

Our ref: 402031
Your ref: PO 2020_3516/1

135 Abbott Street
Cairns QLD 4870
T +61 7 4031 1336

Date: 4 June 2025

The Chief Executive Officer
Douglas Shire Council
PO Box 723
Mossman QLD 4873

Attn: Daniel Lamond - daniel.lamond@douglas.qld.gov.au

Dear Dan,

Noahs Creek, Cape Tribulation Road, Thorntons Beach
Application for a Minor Change to a Development Approval (pursuant to Section 78 of the Planning Act 2016)
Your Ref: OP 2020-3516/1

RPS AAP Consulting Pty Ltd act on behalf of Douglas Shire Council ('Council') in relation to the proposed new bridge crossing of Noahs Creek. We refer to the development approval issued by Douglas Shire Council on 15 October 2020 for the above site (ref: OP 2020_3516/1). The site is located at Noahs Creek Bridge, Cape Tribulation Road, Thornton Beach, adjacent to Lot 900 on SP296959 and Lot 20 on SP296959.

The development approval comprises:

- Development Permit for Operational Works (Bridge Replacement).

On behalf of Douglas Shire Council we make this application to change the development approval to you as the responsible entity.

The proposed change is a minor change. In brief, it involves a change to the location of the bridge abutment location and provision of revised plans.

As the original development application triggered referral to the State Assessment and Referral Agency (SARA), it is expected that a changed referral response will be necessary before Council are able to determine the minor change application.

We provide further detail about the change below.

We trust that the relevant fee of \$484.00, as per Council's current adopted fees and charges schedule, would be waived as Council is the applicant.

1 Proposed Change

The proposed change to the development application is a minor change. In brief, it involves the realignment of the proposed bridge to adjoin the current alignment of Cape Tribulation Road. Ex-Tropical Cyclone Jasper in December 2023 and the subsequent rainfall event, significantly damaged the existing Noahs Creek bridge and replacement of the bridge has become critical.

The existing development approval provides for bridge construction approximately six (6) metres upstream of the of the existing Noahs Creek Bridge, on a parallel alignment. However, given the site's location with the Wet Tropics World Heritage Area, subsequent land resumptions within the adjoining Daintree National Park

and identification of culturally significant rock assemblages on the northern side of Noahs Creek, the approved design has been deemed unacceptable. The approval provided for bridge abutments that would have been located in land recently resumed by the National Park and the alignment would have impacted identified cultural heritage values. Given the imposition of these constraints, Council has sought an alternate bridge design to avoid and mitigate potential impacts.

The changed proposal would facilitate the construction of a permanent replacement bridge crossing of Noahs Creek, critical infrastructure servicing the Cape Tribulation community. The proposed bridge would be on alignment with the existing project and the project footprint would be largely contained within the footprint of the existing development, with proposed bridge abutments would wholly contained within the road reserve.

The revised bridge design comprises:

- Construction of a dual lane, 36m span steel/concrete bridge on an alignment consistent with the exiting bridge;
- 10.3 metre wide structure containing a 9.2 metre wide pavement on two (2) pre-cast concrete piers and bedrock bored piles; and
- Provision of two pre-cast concrete abutments with handpacked grouted rock facing and scour protection rock and toe protection extending below bed surface.

Copies of the revised proposal are attached at Attachment C.

Flora surveys for the proposed development have been undertaken independently by three botanists at different project design stages since 2018. An Environmental Management Plan, prepared by Environment Pacific in March 2025, confirmed that the whilst the site contained a number of protected plant species, specimens located within the existing approaches to the bridge would have likely been removed. Marine plants are limited to mangrove fern (*Acrostichum speciosum*), previously located within the vicinity of the existing bridge and scour protection areas surrounding abutments, however, the 2024 flora survey did not confirm the presence of any species with the proposed project footprint.

Potential impacts associated with the proposed bridge would be minimised and mitigate as follows:

- The proposed alignment would negate the need for additional land resumption;
- The proposed change would facilitate avoidance of areas of identified cultural heritage value;
- The revised bridge alignment would be located within an existing cleared corridor, negating the need for additional vegetation clearing;
- Removal and rehabilitation of the temporary bypass causeway commensurate with World Heritage values following construction and commissioning of the replacement bridge; and
- Implementation of adequate erosion and sediment control measures during the construction phase.

Council seeks to commence the construction as a matter of urgency to ensure works are completed in the dry season subject to obtaining development approval.

A revised environmental management plan has been prepared to support the change application and is provided at **Attachment D**.

2 Minor Change Status

The proposed change to the development approval is consistent with the definition of a 'minor change' under the *Planning Act 2016* as outlined below:

2.1 Minor change definition

Under Schedule 2 of the Planning Act 2016, a minor change (for a development approval) means a change that:	Response
(i) would not result in substantially different development; and	Demonstration that the change does not constitute substantially difference development is provided section 2.2 below.

(ii) if a development application for the development, including the change, were made when the change application is made would not cause

(A) the inclusion of prohibited development in the application; or	The proposed changes would not cause prohibited development to be included in the change application.
(B) referral to a referral agency, other than to the chief executive, if there were no referral agencies for the development application; or	Complies – the proposed minor change would be referred to the same referral agencies as the original application.
(C) referral to extra referral agencies, other than to the chief executive; or	Complies – the proposed changes would not trigger any additional referral agencies to the original application.
(D) a referral agency, in assessing the application under section 55, to assess the application against, or have regard to, a matter, other than a matter the referral agency must have assessed the application against, or had regard to, when the application was made; or	Complies – the proposed changes would require assessment against the matters triggered by the original application.
(E) public notification if public notification was not required for the development application.	Complies – the proposed change would not introduce new development of a material change in the intensity or scale of the approved development.

2.2 Substantially different development criteria

Under Schedule 1 of the Development Assessment rules, a change may be considered to result in substantially different development if any of the following apply to the change:	Response
(a) involves a new use;	The change does not involve a new use.
(b) results in the application applying to a new parcel of land; or	The change does not introduce new land.
(c) dramatically changes the built form in terms of scale, bulk and appearance; or	The proposed change would not result in a dramatic change to the scale, bulk or appearance of the development.
(d) changes the ability of the proposed development to operate as intended; or	The proposed change does not change the ability of the approved bridge to operate as intended.
(e) removes a component that is integral to the operation of the development; or	The proposed changes do not remove a component that is integral to the operation of the development.
(f) significantly impacts on traffic flow and the transport network, such as increasing traffic to the site; or	The changes would not significantly impact traffic flow or the transport network.
(g) introduces new impacts or increase the severity of known impacts; or	The proposed changes would not introduce any new impacts or increase the severity of known impacts.
(h) removes an incentive or offset component that would have balanced a negative impact of the development; or	The change does not remove an incentive or offset component that would have balance a negative impact of the development.
(i) impacts on infrastructure provisions.	The proposed change would not generate greater traffic movements or demand on existing infrastructure provision.

3 Responsible Entity

Pursuant to Section 78(A) of the *Planning Act 2016*, the responsible entity is Douglas Shire Council as the Assessment Manager.

4 Referral Agencies

The State Assessment and Referral Agency (SARA) were a referral agency to this application.

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Pursuant to Section 80 of the *Planning Act 2016*, we understand that SARA is not an affected entity to this change application. A separate application for a changed referral response has been submitted to SARA and Council will be formally advised of the application as an affected entity.

5 Amendments to the approval

5.1 Approved drawings and documents

We anticipate that amendments to the list of approved drawing and documents will need to include the following deletions:

Drawing	Approved Drawings and/or Documents Number	Plan Date
Locality Plan	Plan Prepared by Premises Sheet No. C001	Not nominated
Safety in Design Report	Plan prepared by Premises, Sheet No. C002	12 April 2019
Typical Cross Sections	Plan prepared by Premises, Sheet No. C003	12 April 2019
Road Geometry Plan	Plan prepared by Premises, Sheet No. C004	12 April 2019
Roadworks and Longitudinal Section Plan	Plan prepared by Premises, Sheet No. C005	12 April 2019
Roadworks Details, Pavement and Drainage Plan	Plan prepared by Premises, Sheet No. C006	12 April 2019
Culvert details Plan	Plan prepared by Premises, Sheet No. C007	12 April 2019
Signage and Line Marking Plan	Plan prepared by Premises, Sheet No. C008	12 April 2019
Road Cross Sections Sheet 1 of 2	Plan prepared by Premises, Sheet No. C009	12 April 2019
Road Cross Sections Sheet 2 of 2	Plan prepared by Premises, Sheet No. C010	12 April 2019

The proposed drawings and documents would need to be inserted into the proposed minor change:

Drawing	Revised Drawings and/or Documents Number	Plan Date
Detailed Design		
Cover Sheet, Locality Plan & Drawing Index	JJR-1240502B-ST001	27.01.2025
Specifications and Notes – Sheet 1-3	JJR-1240502B-ST002	27.01.2025
Specifications and Notes – Sheet 2-3	JJR-1240502B-ST003	27.01.2025
Specifications and Notes – Sheet 3-3	JJR-1240502B-ST004	27.01.2025
Site Plan	JJR-1240502B-ST005	27.01.2025
Long Section	JJR-1240502B-ST006	27.01.2025
Plan and Deck Cross Section	JJR-1240502B-ST007	27.01.2025
Abutment & Headstock Elevation	JJR-1240502B-ST008	27.01.2025
Wingwall & Relieving Slab Elevation	JJR-1240502B-ST009	27.01.2025
Anchorage Details	JJR-1240502B-ST010	27.01.2025
Abutment Headstock Plan and Sections	JJR-1240502B-ST011	27.01.2025
Abutment Headstock Reinforcement	JJR-1240502B-ST012	27.01.2025
Pier Headstock Plan and Sections	JJR-1240502B-ST013	27.01.2025
Pier Headstock Reinforcement	JJR-1240502B-ST014	27.01.2025
Pile Coordinate Plan	JJR-1240502B-ST015	27.01.2025
Piles Layout	JJR-1240502B-ST016	27.01.2025

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Precast Wingwall	JJR-1240502B-ST017	27.01.2025
Precast Wingwall Reinforcement – Sheet 1-2	JJR-1240502B-ST018	27.01.2025
Precast Wingwall Reinforcement – Sheet 2-2	JJR-1240502B-ST019	27.01.2025
Plan and Details Kerb – Railing Connection	JJR-1240502B-ST020	27.01.2025
Noah Creek Bridge and Approaches		
Cover Sheet, Locality Plan & Drawing Schedule	Plan prepared by Premises, Sheet No. C001	13.02.2025
Safety in Design Report Sheet 1 of 2	Plan prepared by Premises, Sheet No. C002	13.02.2025
Safety in Design Report Sheet 2 of 2	Plan prepared by Premises, Sheet No. C003	13.02.2025
General Notes	Plan prepared by Premises, Sheet No. C004	13.02.2025
Road Geometry Plan	Plan prepared by Premises, Sheet No. C005	13.02.2025
Typical Sections Sheet 1 of 2	Plan prepared by Premises, Sheet No. C006	13.02.2025
Typical Sections Sheet 2 of 2	Plan prepared by Premises, Sheet No. C007	13.02.2025
Working Plan Sheet 1 of 2	Plan prepared by Premises, Sheet No. C008	13.02.2025
Working Plan Sheet 2 of 2	Plan prepared by Premises, Sheet No. C009	13.02.2025
Property Access Plan Sheet 1 of 2	Plan prepared by Premises, Sheet No. C010	13.02.2025
Property Access Plan Sheet 1 of 2	Plan prepared by Premises, Sheet No. C011	13.02.2025
Stormwater Culvert Details Plan	Plan prepared by Premises, Sheet No. C012	13.02.2025
Soil Erosion & Sediment Control – Sheet 1 of 2	Plan prepared by Premises, Sheet No. C013	13.02.2025
Soil Erosion & Sediment Control – Sheet 2 of 2	Plan prepared by Premises, Sheet No. C014	13.02.2015
Road Cross Sections Sheet 1 of 4	Plan prepared by Premises, Sheet No. C015	13.02.2025
Road Cross Sections Sheet 2 of 4	Plan prepared by Premises, Sheet No. C016	13.02.2025
Road Cross Sections Sheet 3 of 4	Plan prepared by Premises, Sheet No. C017	13.02.2025
Road Cross Sections Sheet 4 of 4	Plan prepared by Premises, Sheet No. C018	13.02.2025

5.2 Conditions

The proposed change will require revisions to the current conditions of approval, including the following deletions:

Condition	Amendments
Condition 10	Delete <i>Prior to the commencement of work, the necessary boundary realignment for road opening into National park land must be finalised.</i>

6 SUPPORTING INFORMATION

In support of these changes, please find attached the following information, which satisfied the requirements of Section 79 of the *Planning Act 2016*:

- **Attachment A:** Completed Change Application Form 5;
- **Attachment B:** Decision Notice (OP 2020_3516/1);
- **Attachment C:** Proposal plans prepared by Premises; and
- **Attachment D:** Noah Creek Bridge Replacement Environment Management Plan, prepared by Environment Pacific.

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We look forward to continuing working with you on this development. In the meantime, if you have any queries please contact the writer (contact details below).

Yours sincerely,
for RPS AAP Consulting Pty Ltd



Stacey Devaney
Senior Planner
stacey.devaney@rpsconsulting.com
(07) 4276 1033

enc:

Attachment A: Completed Change Application Form 5

Attachment B: Decision Notice (OP 2020_3516/1)

Attachment C: Change Proposal Plans

Attachment D: Noah Creek Bridge Replacement Environment Management Plan

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ATTACHMENT A

Completed Change Application Form 5

Change application form

Planning Act Form 5 (version 1.2 effective 7 February 2020) made under Section 282 of the Planning Act 2016.

This form is to be used for a change application made under section 78 of the *Planning Act 2016*. It is important when making a change application to be aware of whether the application is for a minor change that will be assessed under section 81 of the *Planning Act 2016* or for an other change that will be assessed under section 82 of the *Planning Act 2016*.

An applicant must complete all parts of this form, and provide any supporting information that the form identifies as being required to accompany the change application, unless stated otherwise. Additional pages may be attached if there is insufficient space on the form to complete any part.

Note: All terms used in this form have the meaning given under the *Planning Act 2016*, the *Planning Regulation 2017*, or the *Development Assessment Rules (DA Rules)*.

PART 1 – APPLICANT DETAILS

1) Applicant details	
Applicant name(s) (individual or company full name)	Douglas Shire Council c/- RPS AAP Consulting Pty Ltd
Contact name (only applicable for companies)	Stacey Devaney - RPS
Postal address (P.O. Box or street address)	PO Box 1949
Suburb	Cairns
State	QLD
Postcode	4870
Country	Australia
Email address (non-mandatory)	stacey.devaney@rpsconsulting.com
Mobile number (non-mandatory)	
Applicant's reference number(s) (if applicable)	402031

2) Owner's consent - Is written consent of the owner required for this change application?	
Note: Section 79(1A) of the <i>Planning Act 2016</i> states the requirements in relation to owner's consent.	
☒ Yes – the written consent of the owner(s) is attached to this change application	
☐ No	

PART 2 – LOCATION DETAILS

3) Location of the premises (complete 3.1) or 3.2), and 3.3) as applicable)				
3.1) Street address and lot on plan				
☒ Street address AND lot on plan (all lots must be listed), or				
☐ Street address AND lot on plan for an adjoining or adjacent property of the premises (appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).				
a)	Unit No.	Street No.	Street Name and Type	Suburb
			Cape Tribulation Road	Thorntons Beach
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
	4873		Road reserve at Noahs Creek	Douglas Shire Council
b)	Unit No.	Street No.	Street Name and Type	Suburb
			Cape Tribulation Road	Thorntons Beach
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
	4873	900	SP296959	Douglas Shire Council



**Queensland
Government**

3.2) Coordinates of premises (appropriate for development in remote areas, over part of a lot or in water not adjoining or adjacent to land e.g. channel dredging in Moreton Bay)

Note: Place each set of coordinates in a separate row.

☐ Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) (if applicable)
		☐ WGS84 ☐ GDA94 ☐ Other:	

☐ Coordinates of premises by easting and northing

Easting(s)	Northing(s)	Zone Ref.	Datum	Local Government Area(s) (if applicable)
		☐ 54 ☐ 55 ☐ 56	☐ WGS84 ☐ GDA94 ☐ Other:	

3.3) Additional premises

- ☐ Additional premises are relevant to the original development approval and the details of these premises have been attached in a schedule to this application
- ☒ Not required

PART 3 – RESPONSIBLE ENTITY DETAILS

4) Identify the responsible entity that will be assessing this change application

Note: see section 78(3) of the Planning Act 2016

Douglas Shire Council

PART 4 – CHANGE DETAILS

5) Provide details of the existing development approval subject to this change application

Approval type	Reference number	Date issued	Assessment manager/approval entity
☒ Development permit ☐ Preliminary approval	OP 2020_3516/1	15 October 2020	Douglas Shire Council
☐ Development permit ☐ Preliminary approval			

6) Type of change proposed

6.1) Provide a brief description of the changes proposed to the development approval (e.g. changing a development approval for a five unit apartment building to provide for a six unit apartment building):

Proposed change to the location of the abutment of the new Noahs Creek Bridge and provision of revised plans.

6.2) What type of change does this application propose?

- ☒ Minor change application – proceed to Part 5
- ☐ Other change application – proceed to Part 6

PART 5 – MINOR CHANGE APPLICATION REQUIREMENTS

7) Are there any affected entities for this change application		
☒ No – proceed to Part 7 ☐ Yes – list all affected entities below and proceed to Part 7 Note: section 80(1) of the Planning Act 2016 states that the person making the change application must give notice of the proposal and the details of the change to each affected entity as identified in section 80(2) of the Planning Act 2016.		
Affected entity	Pre-request response provided? (where a pre-request response notice for the application has been given, a copy of the notice must accompany this change application)	Date notice given (where no pre-request response provided)
State Assessment and Referral Agency (SARA)	☐ No ☐ Yes – pre-request response is attached to this change application	
	☐ No ☐ Yes – pre-request response is attached to this change application	
	☐ No ☐ Yes – pre-request response is attached to this change application	

PART 6 – OTHER CHANGE APPLICATION REQUIREMENTS

Note: To complete this part it will be necessary for you to complete parts of DA Form 1 – Development application details and in some instances parts of DA Form 2 – Building work details, as mentioned below. These forms are available at <https://planning.dsdmip.qld.gov.au>.

8) Location details - Are there any additional premises included in this change application that were not part of the original development approval?
☒ No ☐ Yes

9) Development details
9.1) Is there any change to the type of development, approval type, or level of assessment in this change application? ☒ No ☐ Yes – the completed Sections 1 and 2 of Part 3 (Development details) of DA Form 1 – Development application details as these sections relate to the new or changed aspects of development are provided with this application.
9.2) Does the change application involve building work? ☒ No ☐ Yes – the completed Part 5 (Building work details) of DA Form 2 – Building work details as it relates to the change application is provided with this application.

10) Referral details – Does the change application require referral for any referral requirements?
Note: The application must be referred to each referral agency triggered by the change application as if the change application was the original development application including the proposed change. ☒ No ☐ Yes – the completed Part 5 (Referral details) of DA Form 1 – Development application details as it relates to the change application is provided with this application. Where referral is required for matters relating to building work the Referral checklist for building work is also completed.

11) Information request under Part 3 of the DA Rules
☒ I agree to receive an information request if determined necessary for this change application ☐ I do not agree to accept an information request for this change application Note: By not agreeing to accept an information request I, the applicant, acknowledge:

- that this change application will be assessed and decided based on the information provided when making this change application and the assessment manager and any referral agencies relevant to the change application are not obligated under the DA Rules to accept any additional information provided by the applicant for the change application unless agreed to by the relevant parties
- Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.

Further advice about information requests is contained in the [DA Forms Guide: Forms 1 and 2](#).

12) Further details

- ☐ Part 7 of DA Form 1 – Development application details is completed as if the change application was a development application and is provided with this application.

PART 7 – CHECKLIST AND APPLICANT DECLARATION

13) Change application checklist

I have identified the:

- responsible entity in 4); and
- for a minor change, any affected entities; and ☒ Yes
- for an other change all relevant referral requirement(s) in 10)

Note: See the Planning Regulation 2017 for referral requirements

For an other change application, the relevant sections of [DA Form 1 – Development application details](#) have been completed and is attached to this application ☐ Yes ☒ Not applicable

For an other change application, where building work is associated with the change application, the relevant sections of [DA Form 2 – Building work details](#) have been completed and is attached to this application ☐ Yes ☒ Not applicable

Supporting information addressing any applicable assessment benchmarks is attached to this application ☒ Yes

Note: This includes any templates provided under 23.6 and 23.7 of DA Form 1 – Development application details that are relevant as a result of the change application, a planning report and any technical reports required by the relevant categorising instrument(s) (e.g. the local government planning scheme, State Planning Policy, State Development Assessment Provisions). For further information, see [DA Forms Guide: Planning report template](#).

Relevant plans of the development are attached to this development application ☒ Yes

Note: Relevant plans are required to be submitted for all relevant aspects of this change application. For further information, see [DA Forms Guide: Relevant plans](#).

14) Applicant declaration

- ☒ By making this change application, I declare that all information in this change application is true and correct.
- ☒ Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the responsible entity and any relevant affected entity or referral agency for the change application where written information is required or permitted pursuant to sections 11 and 12 of the *Electronic Transactions Act 2001*.

Note: It is unlawful to intentionally provide false or misleading information.

Privacy – Personal information collected in this form will be used by the responsible entity and/or chosen assessment manager, any relevant affected entity or referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the change application.

All information relating to this change application may be available for inspection and purchase, and/or published on the assessment manager's and/or referral agency's website.

Personal information will not be disclosed for a purpose unrelated to the *Planning Act 2016*, Planning Regulation 2017 and the DA Rules except where:

- such disclosure is in accordance with the provisions about public access to documents contained in the *Planning Act 2016* and the Planning Regulation 2017, and the access rules made under the *Planning Act 2016* and Planning Regulation 2017; or
- required by other legislation (including the *Right to Information Act 2009*); or
- otherwise required by law.

This information may be stored in relevant databases. The information collected will be retained as required by the *Public Records Act 2002*.

PART 8 – FOR COMPLETION OF THE ASSESSMENT MANAGER – FOR OFFICE USE ONLY

Date received: Reference number(s):

QLeave notification and payment

Note: For completion by assessment manager if applicable

Description of the work			
QLeave project number			
Amount paid (\$)		Date paid (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

Our ref: 402031

ATTACHMENT B

Decision Notice (OP 2020_3516/1)

15 October 2020

Enquiries: Daniel Lamond
Our Ref: OP 2020_3516/1 (976786)
Your Ref: WO3046-NOAH CREEK BRIDGE

Douglas Shire Council
PO Box 723
MOSSMAN QLD 4873

Attention: Scott Hahne

Dear Sir

**Development Application for Operational Works (Bridge Replacement)
At Cape Tribulation Road over Noah Creek
Adjacent Land Described as LOT: 20 NPW: 695**

Please find attached the Decision Notice for the above-mentioned development application.

Please quote Council's application number: OP 2020_3516/1 in all subsequent correspondence relating to this development application.

Should you require any clarification regarding this, please contact Daniel Lamond on telephone 07 4099 9444.

Yours faithfully



For

Paul Hoyer
Manager Environment & Planning

cc. State Assessment and Referral Agency (SARA) E: CairnsSARA@dsdmip.qld.gov.au
encl.

- Decision Notice
 - Approved Drawing(s) and/or Document(s)
 - Concurrence Agency Response
- Advice For Making Representations and Appeals (Decision Notice)



Decision Notice

Approval (with conditions)

Given under section 63 of the Planning Act 2016

Applicant Details

Name: Douglas Shire Council
Postal Address: PO Box 723
MOSSMAN QLD 4873

Property Details

Street Address: Cape Tribulation Road
Real Property Description: LOT: 20 NPW: 695
Local Government Area: Douglas Shire Council

Details of Proposed Development

Development Permit for Operational Works (Bridge Replacement)

Decision

Date of Decision: 15 October 2020
Decision Details: Approved (subject to conditions)

Approved Drawing(s) and/or Document(s)

Copies of the following plans, specifications and/or drawings are enclosed.

Drawing	Reference	Date
Locality Plan	Plan prepared by Premise, Sheet No. C001	Not nominated
Safety in Design Report	Plan prepared by Premise, Sheet No. C002	12 April 2019
Typical Cross Sections	Plan prepared by Premise, Sheet No. C003	12 April 2019
Road Geometry Plan	Plan prepared by Premise,	12 April 2019

	Sheet No. C004	
Roadworks and Longitudinal Section Plan	Plan prepared by Premise, Sheet No. C005	12 April 2019
Roadworks Details, Pavement and Drainage Plan	Plan prepared by Premise, Sheet No. C006	12 April 2019
Culvert Details Plan	Plan prepared by Premise, Sheet No. C007	12 April 2019
Signage and Line Marking Plan	Plan prepared by Premise, Sheet No. C008	12 April 2019
Road Cross Sections Sheet 1 of 2	Plan prepared by Premise, Sheet No. C009	12 April 2019
Road Cross Sections Sheet 2 of 2	Plan prepared by Premise, Sheet No. C010	12 April 2019
Access Details Plan	Plan prepared by Premise, Sheet No. C011	12 April 2019
Resumption Plan	Plan prepared by Premise, Sheet No. C012	12 April 2019
Structural Notes	Plan prepared by Premise, Sheet No. C013	3 June 2019
General Arrangement- Plan	Plan prepared by Premise, Sheet No. C014	5 June 2019
General Arrangement- Long Section	Plan prepared by Premise, Sheet No. C015	5 June 2019
General Arrangement- Scour Protection Details	Plan prepared by Premise, Sheet No. C016	5 June 2019

Assessment Manager Conditions & Advices

General

1. The proposed works are permitted subject to any alterations:
 - a. found necessary by Chief Executive Officer at the time of examination of Engineering drawings or during construction of the works because of particular engineering requirements and.
 - b. to ensure the works comply in all respects with the requirements of the *FNQROC Development Manual* and good engineering practice; and
 - c. to comply with project specific conditions and the following standard conditions of approval.

All works must be carried out in accordance with the approved plans, conditions and specifications, to the requirements and satisfaction of the Chief Executive Officer.

2. Council's examination of the documents should not be taken to mean that the documents have been checked in detail and Council takes no responsibility for their accuracy. If during construction, inadequacies of the design are discovered, it is the responsibility of the Principal Consulting Engineer to resubmit amended plans to Council for approval and rectify works accordingly.
3. Notwithstanding any approval given to engineering documents, where a discrepancy occurs between these documents and Council's standards, then Council's standards shall apply unless the design is RPEQ certified. All works must be performed in accordance with Council standards and Local Laws and other statutory requirements.
4. If in fact there are errors, omissions or insufficient detail on the plans for the purpose of construction, these deficiencies shall be made good during construction and Council reserves the right to withhold approval of construction until such deficiencies are made good to its satisfaction.

Timing of Effect

5. The conditions of this development permit must be effected prior to construction commencing, except where specified otherwise in these conditions of approval, or at Council's discretion.

Public Notification of the Works

6. The applicant must provide:
 - a. Public notification of the development in local newspapers in accordance with Section CP1.11 of the *FNQROC Development Manual*.
 - b. Signage identifying the location of the project, general proposal plan, contact numbers (including out-of-office hours emergency numbers) must be provided at all entrance points to the development. All signage must be appropriately positioned, prior to the commencement of any works on the site.

Erosion and Sediment Control

7. A copy of the contractors Erosion and Sediment Control (ESC) Plan is to be submitted to Council and endorsed by the Consulting Engineer, prior to commencement of any works. In particular, the ESC Plan must address the Institution of Engineers Australia Guidelines for Soil Erosion and Sediment Control and the Environment Protection (Water) Policy and Clauses CP1.05, CP1.13 and D5.10 of Council's *FNQROC Development Manual*. The ESC Plan must be relevant to all phases of the construction and be updated where necessary as works progress.

Portable Long Service Leave Notification

8. As per the QLeave – Building and Construction Industry Authority Guidelines, if the works are over \$150 000, Council must sight a copy of the receipted Portable Long Service Notification and Payment form prior to commencement of work.

Cultural Heritage

9. The *Aboriginal Cultural Heritage Act* 2003 (the Act) seeks to protect artefacts and cultural sites that are of significance to Aboriginal people. The Act requires anyone carrying out an activity to exercise a Duty of Care. Guidelines have been produced to enable assessment of sites under the Act. These are available from Department of Environment Heritage Protection and can be downloaded from their website at www.ehp.qld.gov.au. The work identified in the project documentation is likely to require assessment of the site under the Act.

Necessary boundary realignment

10. Prior to commencement of work, the necessary boundary realignment for road opening into National Park land must be finalised.

Traffic Management Plan

11. Prior to commencement of work, a traffic management plan must be endorsed by Chief Executive Officer. The traffic management plan must be in accordance with the relevant Australian Standards and current best practices.

ADVICES

1. This approval does not negate the requirement for compliance with all other relevant Local Laws and other statutory requirements.
2. For information relating to the *Planning Act 2016* log on to www.dsdmip.qld.gov.au. To access the *FNQROC Development Manual*, Local Laws and other applicable Policies, log on to www.douglas.qld.gov.au.
3. It is recommended that the designer confirm the separation between the proposed mains and existing guard rail footings on the northern bridge approach is appropriate.

REASONS FOR DECISION

1. To ensure the proposed development meets the requirements of the relevant benchmarks from the 2018 Douglas Shire Planning Scheme and in particular, the requirements of the *FNQROC Development Manual* and relevant Australian Standards.

Further Development Permits

Not applicable

Concurrence Agency Response

Referral Agency	Referral Agency Reference	Date
State Assessment and Referral Agency	2003-16006 SRA	15 September 2020

Note – Concurrence Agency Response is attached. This Concurrence Agency Response maybe amended by agreement with the respective agency.

Currency Period for the Approval

This approval, granted under the provisions of the *Planning Act 2016*, shall lapse six (6) years from the day the approval takes effect in accordance with the provisions of Section 85 of the *Planning Act 2016*.

Rights to make Representations & Rights of Appeal

The rights of applicants to make representations and rights 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*.

A copy of the relevant appeal provisions are attached.

REPLACEMENT BRIDGE AND PROPOSED ROAD ALIGNMENT
NOAH CREEK, CAPE TRIBULATION
FOR NQ CIVIL CONTRACTORS PTY LTD



LOCALITY PLAN

Scale 1:1000 (plus)



Civil Drawings List	
Sheet Number	Sheet Title
0001	COVER SHEET
0002	SURVEY IN DESIGN REPORT
0003	TYPICAL CROSS SECTION
0004	ROAD GEOMETRY PLAN
0005	ROADWORKS AND LANDSCAPE SECTION PLAN
0006	ROADWORKS DETAILS, PAVEMENT AND DRAINAGE PLAN
0007	CULVERT DETAILS PLAN
0008	BRIDGE AND LINERWORK PLAN
0009	ROAD CROSS SECTIONS - SHEET 1 OF 2
0010	ROAD CROSS SECTIONS - SHEET 2 OF 2
0011	ACCESS DETAILS PLAN
0012	WEIGHSTON PLAN

Structural Drawing List	
Sheet Number	Sheet Title
0100	STRUCTURAL NOTES
0101	GENERAL ARRANGEMENT - PLAN
0102	GENERAL ARRANGEMENT - LONG SECTION
0103	GENERAL ARRANGEMENT - 3D PERSPECTIVE & BRIDGE ASSEMBLY
0104	GENERAL ARRANGEMENT - DECK CROSS SECTION
0105	GENERAL ARRANGEMENT - BRIDGE & HEADSTOCK ELEVATION
0106	GENERAL ARRANGEMENT - PIERHEAD & RELIEFING GAB ELEVATION
0107	GENERAL ARRANGEMENT - ANCHORAGE DETAILS
0108	PIERS - LAYOUT
0109	GENERAL ARRANGEMENT - BRIDGE HEADSTOCK A & B - SHEET 1
0110	GENERAL ARRANGEMENT - BRIDGE HEADSTOCK A & B - SHEET 2
0111	GENERAL ARRANGEMENT - PIER HEADSTOCK 1 & 2 - SHEET 1
0112	GENERAL ARRANGEMENT - PIER HEADSTOCK 1 & 2 - SHEET 2
0113	GENERAL ARRANGEMENT - PIERHEAD WINDWALL - SHEET 1
0114	GENERAL ARRANGEMENT - PIERHEAD WINDWALL - SHEET 2
0115	GENERAL ARRANGEMENT - PIERHEAD RELIEFING GAB
0116	PIER DECK UNITS - LAYOUT AND ARTICULATION
0117	LAYOUT OF KERR & TRAFFIC BARRIER POST SETOUT PLAN
0118	TRAFFIC BARRIER SETOUT AND DETAILS

ISSUED FOR CONSTRUCTION		DESIGNER	PROJECT DIRECTOR	REVIEW	NO. 0023	DATE	0001	STATUS	A
		C. MATHIASSEN	R. PEREIRA, NQCC 2518						

SURVEY ORIGIN	
TRM	POK 1101
S.L.	117m A.M.S.L.
SITE AREA	
1100m ²	

DESIGN HAZARD SCHEDULE

ITEM	DESIGN HAZARD	POTENTIAL HAZARD	RISK	ELIMINATION / MINIMISATION OF HAZARD / RISK	RESIDUAL RISK
D1	ROAD DESIGN HAZARD	INCREASED SPEED OF TRAFFIC ON CAPE TRIBULATION ROAD WILL INCREASE THE RISK OF REAR END COLLISIONS AT FOREST CREEK RCD HUTS ACCESS AND DRIVEWAYS ON SOUTH-EASTERN SIDE OF BRIDGE.	HIGH	A RAILBAR INTERSECTION FOR VEHICLE SKEWS AND INBRETS WAS RECOMMENDED. THIS HOWEVER IS OUTSIDE THE CURRENT SCOPE OF WORKS FOR THIS PROJECT AND THEREFORE ONLY MINIMUM STANDARDS DRIVEWAY ACCESS AND SHOULDER WIDTHS HAVE BEEN ADOPTED.	HIGH
D2	ROAD DESIGN HAZARD	DRIVEWAYS ON SOUTH-EASTERN SIDE OF BRIDGE DO NOT MEET STANDARD SAFE INTERSECTION SIGHT DISTANCE INCREASING THE RISK OF COLLISIONS. SAFETY BARRIER ON BRIDGE APPROACH DOES NOT MEET MINIMUM LENGTH IN ACCORDANCE WITH THE STANDARD DRAWINGS DUE TO DRIVEWAY LOCATION.	HIGH	PROVIDING A SINGLE ACCESS TO BOTH DRIVEWAYS TO ACHIEVE SAFE INTERSECTION SIGHT DISTANCE AND MINIMUM LENGTH SAFETY BARRIER TO BRIDGE APPROACH RECOMMENDED BY PRELIM TO REDUCE THE RISK OF COLLISIONS. THIS HOWEVER IS OUTSIDE THE CURRENT SCOPE OF WORKS FOR THIS PROJECT AND THE CURRENT ACCESS ARRANGEMENT HAS BEEN MAINTAINED. THE SAFETY BARRIER HAS BEEN SHORTENED TO SUIT THE DRIVEWAY ACCESS.	HIGH
D3	ROAD DESIGN HAZARD	HORIZONTAL RADIUS ON NORTH SIDE ARE AT MINIMUM RADIUS TO SUIT ADVISORY CROSSFALL INCREASING RISK OF UNDER STEERING RESULTING IN A POTENTIAL INCREASE IN SINGLE VEHICLE ACCIDENTS.	LOW	LARGER RADIUS TO SUIT RURAL ROAD DESIGN WAS CONSIDERED, HOWEVER MINIMUM RADIUS WAS ADOPTED TO REDUCE ENVIRONMENTAL IMPACTS DUE TO A SPEED ENVIRONMENT OF LESS THAN 10km/h AND EXISTING ROAD CONDITIONS. DRIVERS WILL BE MORE ALERT AND MAKE THE STEERING CORRECTIONS TO CORRECTORS.	LOW
D4	ROAD EMBANKMENT AND STORMWATER ATTENUATION	TWELVE DRAIN DESIGNED TO REDUCE LAND RECLAMATIONS TO ADJACENT PROPERTY INCREASING RISK OF DRAINAGE IMPACTS TO ROAD AND PROPERTY.	HIGH	IN CONSULTATION WITH COUNCIL A V-DRAIN WAS CONSIDERED AND ADOPTED. HOWEVER A TRIANGULAR DRAIN WAS ADOPTED FROM 10.000 - 0.000 ON LEFT HAND SIDE TO MAINTAIN EXISTING DRAINAGE CAPACITY.	MODERATE

CONSTRUCTION HAZARD SCHEDULE

ITEM	POTENTIAL HAZARD	POSSIBLE PREVENTATIVE ACTION
C1	DEEP EXCAVATION HAZARD	ALL STOPS MUST BE TAKEN TO OBTAIN CURRENT UNDERGROUND SERVICES INFORMATION BEFORE EXCAVATION WORKS COMMENCE. EXCAVATION WORK MUST BE UNDERTAKEN BY APPROPRIATELY EXPERIENCED AND QUALIFIED PERSONNEL. EXCAVATIONS SHALL BE ADEQUATELY SHORDED AND APPROPRIATE BARRICADES AND SIGNAGE ERECTED, IF REQUIRED.
C2	UNDERGROUND ELECTRICAL, TELECOMMUNICATION, GAS AND WATER MAIN HAZARD	WARNING SIGNS AND BARRIERS SHALL BE ERECTED ADVISING OF THE PRESENCE OF THE EXISTING SERVICES. THE SERVICES SHALL BE IDENTIFIED AND MARKED BY THE SUPPLY AUTHORITY PRIOR TO THE COMMENCEMENT OF EXCAVATION. A REPRESENTATIVE OF THE SUPPLY AUTHORITY SHALL REMAIN ON SITE DURING THE EXCAVATION WORK, IF REQUIRED.
C3	WORKS NEAR RAIL, AIRPORTS AND ROADS HAZARD	ALL REQUIRED PERMITS, APPROVALS AND SAFETY REQUIREMENTS FROM THE RELEVANT AUTHORITY SHOULD BE OBTAINED PRIOR TO COMMENCING WORK. A REPRESENTATIVE OF THE RELEVANT AUTHORITY SHALL REMAIN ON SITE DURING CONSTRUCTION WHILE THE HAZARD REMAINS.
C4	POTENTIAL VEHICLE HAZARD	SITE PERSONNEL SHALL BE ADVISED OF THE POTENTIAL HAZARDS AND THE APPROPRIATE PROCEDURES FOR WORKING ADJACENT TO OPERATING PUBLIC ROAD. APPROPRIATE SAFETY CLOTHING SHALL BE WORN AND THE REQUIRED SIGNAGE SHALL BE ERECTED. THE WORKS SHALL BE UNDERTAKEN IN A MANNER WHICH DOES NOT COMPROMISE THE SAFETY OF THE VEHICLE OCCUPANTS OR THE SITE PERSONNEL.
C5	DEMOLITION AND CLEARING HAZARD	SUITABLE QUALIFIED AND EXPERIENCED PERSONNEL SHALL BE RESPONSIBLE FOR THE DEMOLITION AND CLEARING WORKS FOR THE PROJECT AT ALL TIMES. THE CONTRACTORS WORK METHOD STATEMENT SHALL ALSO GIVE CONSIDERATION TO FALLING DEBRIS, COLLAPSE AND DANGEROUS AIRBORNE AGENTS.
C6	TRAFFIC MANAGEMENT HAZARD	SUITABLE QUALIFIED AND EXPERIENCED PERSONNEL SHALL BE RESPONSIBLE FOR THE SAFE AND ORDERLY PASSAGE OF VEHICULAR AND PEDESTRIAN TRAFFIC THROUGH THE PROJECT AT ALL TIMES. THE CONTRACTOR SHALL DEVELOP A TRAFFIC MANAGEMENT PLAN (TMP) FOR THE PROJECT TO ESTABLISH APPROPRIATE CONTROLS IN ACCORDANCE WITH THE MANUAL FOR UNIFORM TRAFFIC CONTROL.

DESIGN HAZARD NOTES:

1. PRELIM AUSTRALIA PTY LTD (PRELIM) HAVING BEEN COMMISSIONED TO CARRY OUT DETAILED DESIGN AND DOCUMENTATION OF THESE WORKS, CONFIRM THAT THE PRELIM DRAWING SET HAS BEEN INTERNALLY REVIEWED FOR DESIGN SAFETY IN ACCORDANCE WITH SECTION 22 OF THE WORKS HEALTH AND SAFETY ACT 2011 QLD.
2. THIS REPORT SURMISES AN INTERNAL REVIEW OF THE PRELIM DETAILED DESIGN DRAWINGS FOR DESIGN SAFETY.
3. THIS REPORT IN NO WAY RELIEVES THE PRINCIPAL CONTRACTOR OR ANY OTHER PARTY OF THEIR OWN OBLIGATIONS AND RESPONSIBILITIES UNDER THE WORKS HEALTH AND SAFETY ACT 2011 QLD, INCLUDING BUT NOT LIMITED TO CONSULTATION WITH THE DESIGNER UNDER SECTION 29 OF THE ACT. THE PREPARATION OF SATISFACTORY SAFE WORK METHOD STATEMENTS AND DUTIES OF CARE.
4. IF IT IS A REQUIREMENT UNDER SECTION 29 OF THE WORKS HEALTH AND SAFETY ACT 2011 QLD, THAT A COPY OF THIS REPORT BE PROVIDED TO THE CONTRACTOR BY THE ENTITY COMMISSIONING THE WORK SHOWN ON THE PRELIM DRAWINGS.
5. AS PER THE DEPARTMENT OF JUSTICE AND THE ATTORNEY-GENERAL, WORKPLACE HEALTH AND SAFETY (QUEENSLAND), A WRITTEN REPORT IS NOT REQUIRED FOR DESIGNS THAT HAVE TYPICAL FEATURES.

CONSTRUCTION HAZARD NOTES:

1. UNDER THE QUEENSLAND WORKS HEALTH AND SAFETY ACT 2011, THE WORKS HEALTH AND SAFETY REGULATION 2011 AND OTHER LEGISLATION AND GUIDELINES, THE PRINCIPAL CONTRACTOR HAS SPECIFIC OBLIGATIONS IN RELATION TO THE SAFE OPERATION OF THE SITE AND OF THE WORKS, TO ASSIST THE PRINCIPAL CONTRACTOR IN COMPLYING WITH THESE OBLIGATIONS THE PROJECT DESIGNERS HAVE IDENTIFIED BY DRAWING NOTES, AREAS WHERE POTENTIAL HAZARDS MAY ARISE. THESE NOTES OR NOTES SHALL NOT NECESSARILY BE CONSIDERED COMPLETE AND ARE BASED UPON THE DESIGNER'S UNDERSTANDING OF THE SAFETY RISKS ASSOCIATED WITH THE WORKS.
2. THESE NOTES OR ADVICE SHALL NOT RELIEVE THE PRINCIPAL CONTRACTOR OF ANY OBLIGATION UNDER THE RELEVANT LEGISLATION OR GUIDELINE. THE PRINCIPAL CONTRACTOR SHALL REMAIN RESPONSIBLE FOR THE PREPARATION OF AN APPROPRIATE WORKS HEALTH AND SAFETY MANAGEMENT PLAN AND SAFE WORK METHOD STATEMENTS FOR THE SITE.
3. PURSUANT TO THE WORKS HEALTH AND SAFETY ACT 2011 WE HEREBY ADVISE THAT OUR DESIGN SAFETY REVIEW HAS IDENTIFIED UNUSUAL OR ATYPICAL DESIGN FEATURES THAT MAY PRESENT ADDITIONAL HAZARDS OR RISKS DURING THE CONSTRUCTION PHASE AND THESE ARE LISTED IN THE CONSTRUCTION HAZARD SCHEDULE.

CONSEQUENCE TABLE

LEVEL	CONSEQUENCE	COST/TIME
5 - CATASTROPHIC	FATALITY OR MULTIPLE PERSONS ONSET WITH LIFE THREATENING HEALTH EFFECTS OR INABILITY TO CONTINUE	HUGE FINANCIAL OR TIME LOSS
4 - MAJOR	EXTENSIVE INJURIES, OR ONSET OF SEVERE OR LIFE THREATENING HEALTH EFFECTS TO SINGLE PERSONS ONSETS, MULTIPLE PERSONS WITH ONSET OF IRREVERSIBLE HEALTH EFFECTS, PERMANENT ABILITY TO PERSON ONSETS	MAJOR FINANCIAL OR TIME LOSS
3 - MODERATE	MEDICAL TREATMENT REQUIRED, IRREVERSIBLE HEALTH EFFECT TO A SINGLE PERSON, MULTIPLE PERSONS ONSETS WITH REVERSIBLE HEALTH EFFECTS	HIGH FINANCIAL OR TIME LOSS
2 - MINOR	FIRST AID, SINGLE OR MULTIPLE INJURIES AMONGST PERSONS ONSETS, SINGLE PERSON ONSETS WITH MODERATE SHORT TERM REVERSIBLE HEALTH EFFECTS	MEDIUM FINANCIAL OR TIME LOSS
1 - INSIGNIFICANT	NO INJURIES OVER EXPOSURE TO A SINGLE PERSON ONSET, BUT NO REPORTED HEALTH EFFECTS	LOW FINANCIAL OR TIME LOSS

LIKELIHOOD TABLE

LEVEL	DESCRIPTION	QUANTIFICATION GUIDE
A - ALMOST CERTAIN	THE EVENT <u>WILL</u> EXPECTED TO OCCUR IN MOST CERTAIN CIRCUMSTANCES	MORE THAN ONCE PER YEAR
B - LIKELY	THE EVENT <u>SHOULD</u> PROBABLY OCCUR IN MOST CIRCUMSTANCES	AT LEAST ONCE IN 1 YEARS
C - POSSIBLE	THE EVENT <u>COULD</u> OCCUR AT SOME TIME	AT LEAST ONCE IN 10 YEARS
D - UNLIKELY	THE EVENT <u>COULD</u> OCCUR AT SOME TIME	AT LEAST ONCE IN 30 YEARS
E - RARE	THE EVENT <u>MAY</u> OCCUR IN EXCEPTIONAL CIRCUMSTANCES	LESS THAN ONCE IN 10 YEARS

RISK ANALYSIS MATRIX

		CONSEQUENCE				
		1 - INSIGNIFICANT	2 - MINOR	3 - MODERATE	4 - MAJOR	5 - CATASTROPHIC
LIKELIHOOD	A - ALMOST CERTAIN	MODERATE	HIGH	EXTREME	EXTREME	EXTREME
	B - LIKELY	MODERATE	HIGH	EXTREME	EXTREME	EXTREME
	C - POSSIBLE	LOW	MODERATE	HIGH	EXTREME	EXTREME
	D - UNLIKELY	LOW	LOW	MODERATE	HIGH	EXTREME
	E - RARE	LOW	LOW	MODERATE	HIGH	HIGH

RISK EVALUATION TABLE

RISK LEVEL	ACTION REQUIRED
EXTREME	UNACCEPTABLE RISK. NO DESIGN REQUIRED. DO NOT PROCEED WITHOUT ADDITIONAL CONTROLS.
HIGH	UNACCEPTABLE RISK. ADDITIONAL CONTROLS NEEDED. CONSIDER FURTHER REVIEW AND CONSIDER RE-DESIGN.
MODERATE	RISK MAY BE ACCEPTABLE. MANAGEMENT TO DETERMINE ACTIONS REQUIRED.
LOW	ACCEPTABLE. MANAGE RISK THROUGH ROUTINE PROCEDURES AND OTHER ADMINISTRATIVE CONTROLS.

ISSUED FOR CONSTRUCTION

DESIGN	1	DESIGN	1
DESIGN	2	DESIGN	2
DESIGN	3	DESIGN	3
DESIGN	4	DESIGN	4
DESIGN	5	DESIGN	5
DESIGN	6	DESIGN	6
DESIGN	7	DESIGN	7
DESIGN	8	DESIGN	8
DESIGN	9	DESIGN	9
DESIGN	10	DESIGN	10



TOWNSVILLE OFFICE
84 DENHAM STREET
PO BOX 1130
TOWNSVILLE, QLD 4810
PH (07) 4772 0666
WEB: www.prelim.com.au

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NO CIVIL CONTRACTORS PTY LTD
PROJECT: REPLACEMENT BRIDGE AND PROPOSED ROAD ALIGNMENT
LOCATION: NOAH CREEK, CAPE TRIBULATION
SAFETY IN DESIGN REPORT

NOCC-0023
000100000
C002
A

PAVEMENT DESIGN (ROADWORKS)

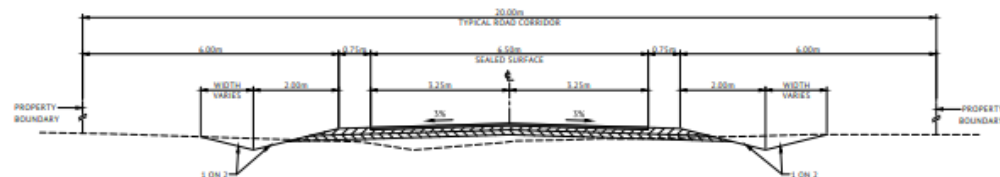
PAVEMENT TYPE A

07mm FULL SERVICE PRIMER/SEAL, GRADE AMCS
14/10mm FULL SERVICE, C170 SEAL
100mm BASE COURSE (DMR TYPE 2.1)
115mm SUB BASE COURSE (DMR TYPE 2.1)

PAVEMENT DESIGN (BRIDGE DECK)

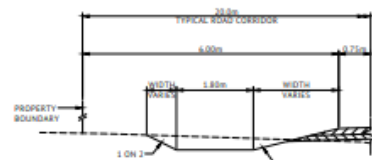
PAVEMENT TYPE B

10mm WATERPROOF MEMBRANE, TYPE A, SEAL C170
SPRAY COAT EMULPRIME TO PAVEMENT
CORRECTION COURSE DENSE GRADE ASPHALT, GRADE AC10 C210
100mm DENSE GRADE ASPHALT, GRADE AC14 C210



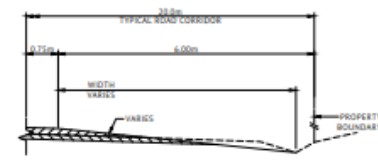
TYPICAL CROSS SECTION (CH.0.000 - CH.303.536)

SCALE 1:50



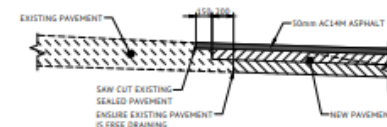
TYPICAL TABLE DRAIN (RHS)

CH.14.000 - CH.16.000



TYPICAL BATTER TO EXISTING (RHS)

CH.40.000 - CH.126.913



PAVEMENT CUTBACK DETAIL

SCALE 1:20

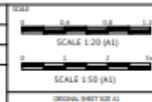
ISSUED FOR CONSTRUCTION

DATE	4	CONTRACTOR	
DATE	2	REVISION	
DATE	1	REVISION	
DATE	1	REVISION	



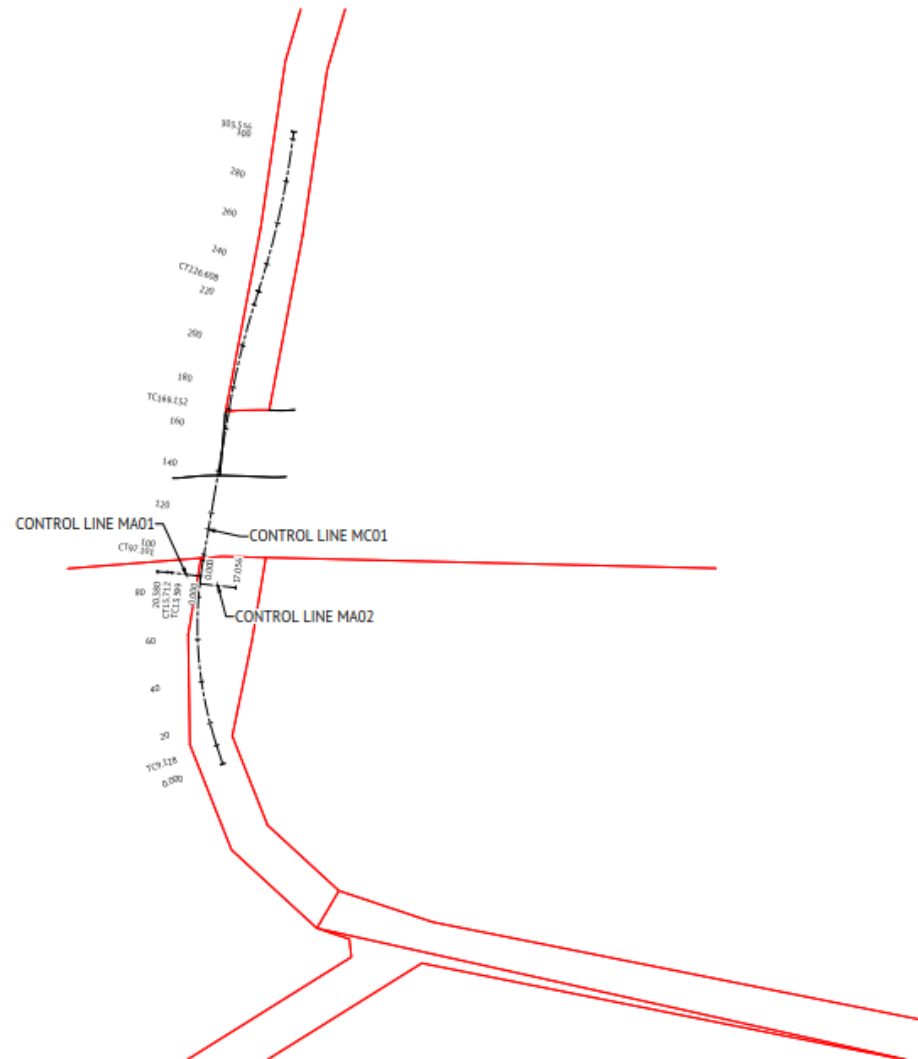
TOWNSVILLE OFFICE
84 DENHAM STREET
PO BOX 1110
TOWNSVILLE, QLD 4810
Ph: (07) 4772 0444
Web: www.premise.com.au

DESIGNED BY: J. COULIS
CHECKED BY: J. PERKINS
DRAWN BY: C. MATHESON
PROJECT NO: 2319



CLIENT: NQ CIVIL CONTRACTORS PTY LTD
PROJECT: REPLACEMENT BRIDGE AND PROPOSED ROAD ALIGNMENT
LOCATION: NOAH CREEK, CAPE TRIBULATION
DRAWN BY: TYPICAL CROSS SECTIONS

PROJECT NO: NQC-0023
DRAWN BY: C003
REV: A



CONTROL LINE MC01 SETOUT							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	AL LENGTH
IP 1	6837.271	729620.847	7664868.758	4.875	7°34'07.62"		
IP 2	7204.271	729668.129	7665233.679	4.910			
TC	7359.054	729687.812	7665387.205	4.961	7°18'21.61"		
IP 3	7403.706	729693.495	7665431.529	4.970		R = 925.000	89.303
CT	7448.357	729703.424	7665475.898	4.950	12°50'15.25"		
IP 4	7499.859	729714.867	7665525.313	4.929	12°50'15.25"		

CONTROL LINE MCA01 SETOUT							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	RAD/SPIRAL	AL LENGTH
IP 1	0.000	332169.517	8214857.996	4.836	277°25'39.08"		
TC	13.599	332156.032	8214859.754	4.356	277°25'39.08"		
IP 2	14.656	332154.904	8214859.890	4.264		R = -25.000	2.113
CT	15.712	332153.927	8214859.918	4.176	272°55'05.70"		
IP 3	20.380	332149.264	8214860.149		272°55'05.70"		

CONTROL LINE MCA02 SETOUT					
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING
IP 1	0.000	332169.099	8214854.513	4.866	96°19'01.84"
IP 2	17.056	332184.051	8214852.654	5.252	96°19'01.84"

SURVEY CONTROL POINTS				
STN NO.	EASTING	NORTHING	R.L.	MARK TYPE
116040	730159.801	7665150.303	5.600	PERMANENT SURVEY MARKER

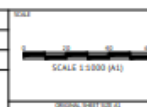
ISSUED FOR CONSTRUCTION

DESIGNED BY	2	TOWNVILLE OFFICE
CHECKED BY	3	VERIFIED GEOMETRY (SHOWN TO LIFT ROAD BRIDGE LEVEL)
APPROVED BY	3	PROJ. MANAGER
DATE	10/01/2020	



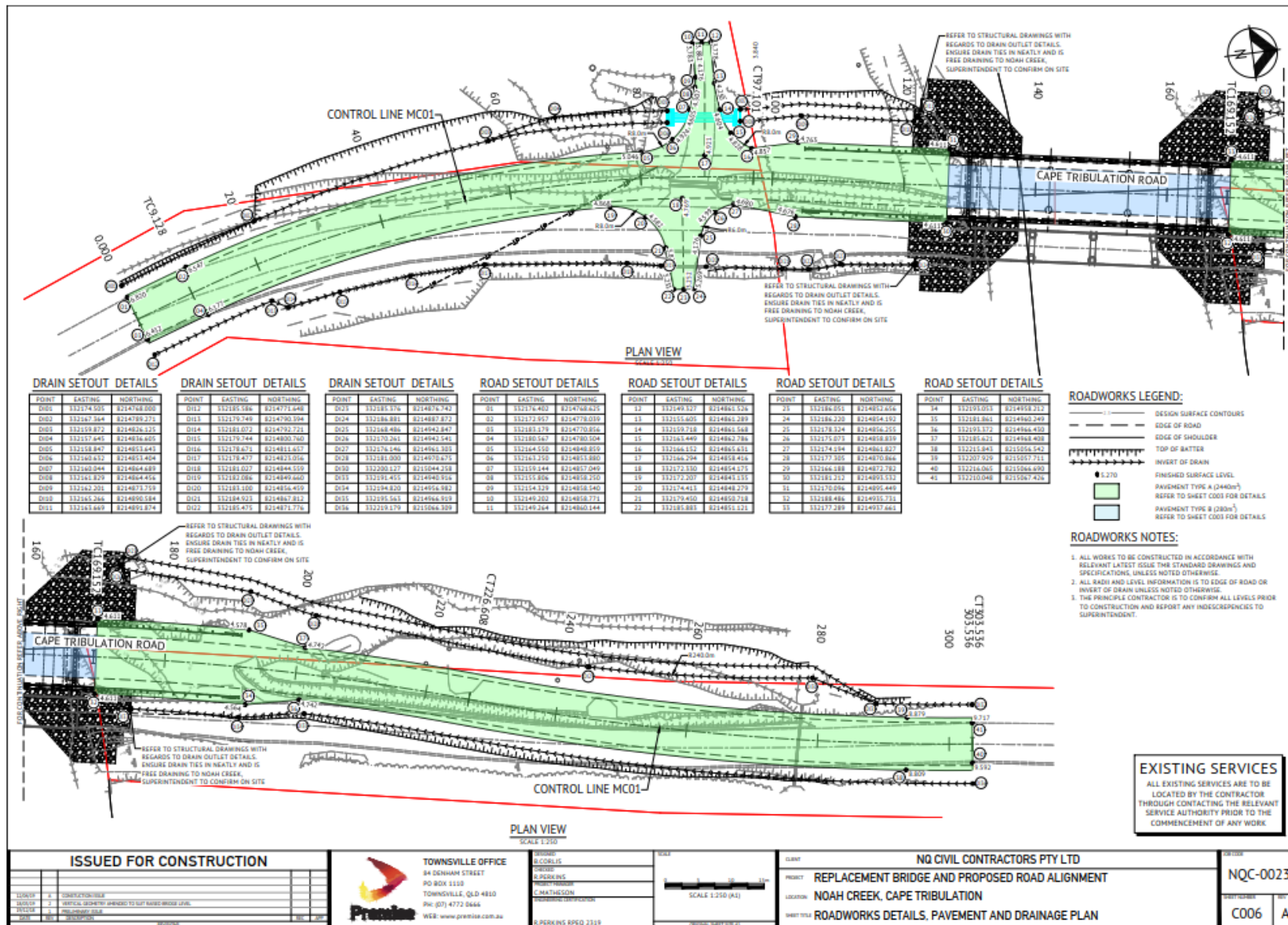
TOWNSVILLE OFFICE
84 DENHAM STREET
PO BOX 1110
TOWNSVILLE, QLD 4810
Ph: (07) 4772 0666
WEB: www.premier.com.au

DESIGNED BY
B. CORLIS
CHECKED BY
B. PERKINS
APPROVED BY
C. MATHESON
PROJECT NO.
NQC-0023

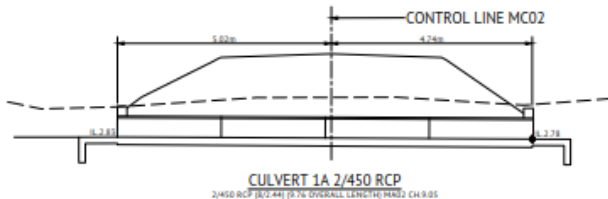


CLIENT
NQC CIVIL CONTRACTORS PTY LTD
PROJECT
REPLACEMENT BRIDGE AND PROPOSED ROAD ALIGNMENT
LOCATION
NOAH CREEK, CAPE TRIBULATION
SHEET TITLE
ROAD GEOMETRY PLAN

PROJECT NO.
NQC-0023
SHEET NO.
C004
REV
A



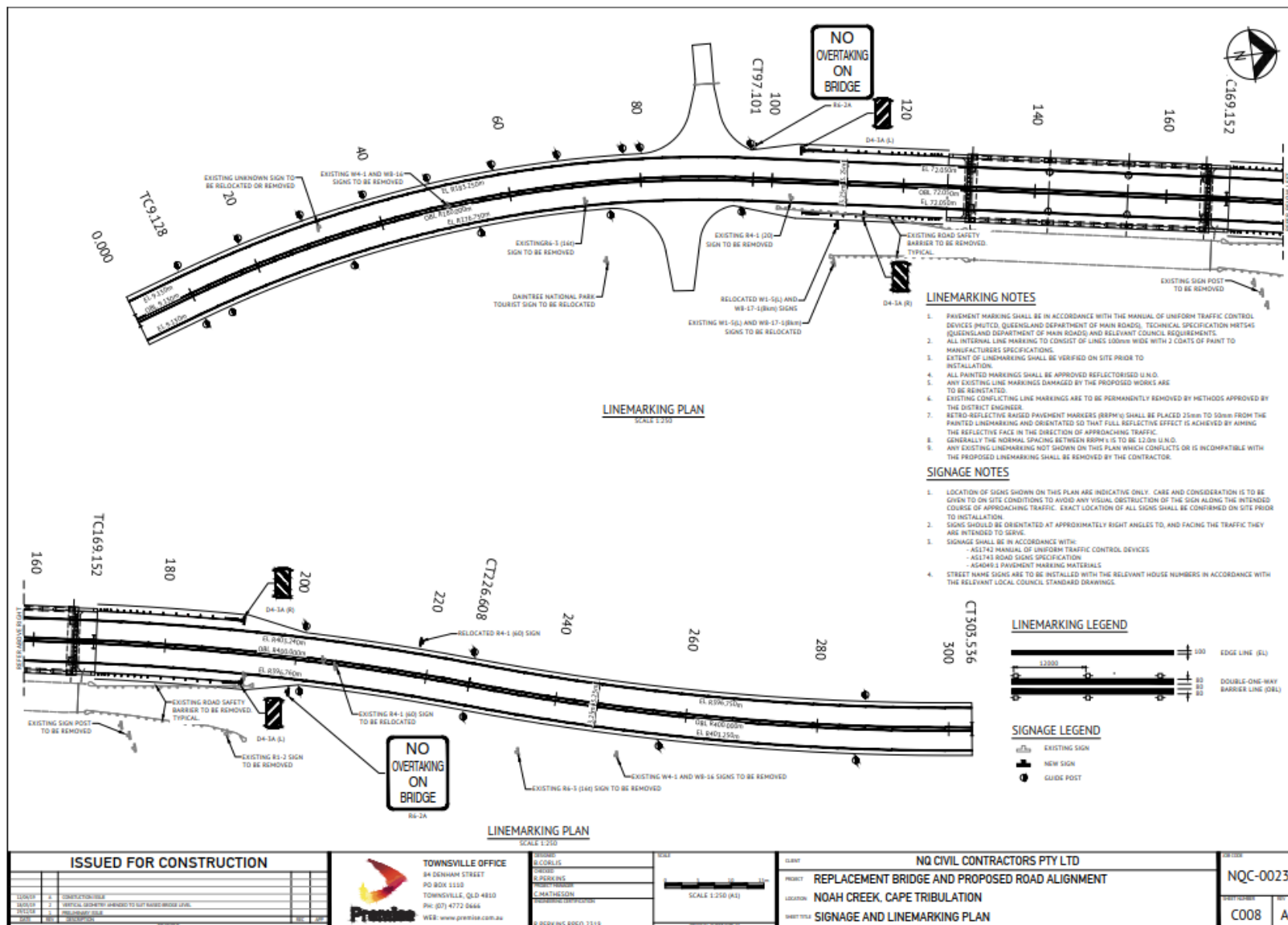
DRAINAGE SCHEDULE

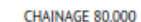
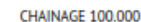
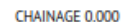
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NOTE:

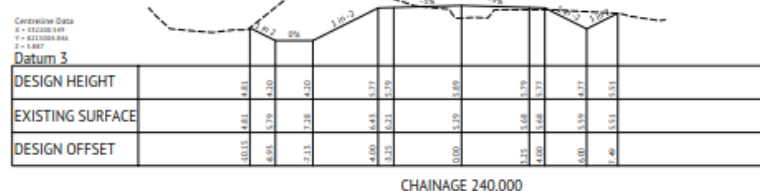
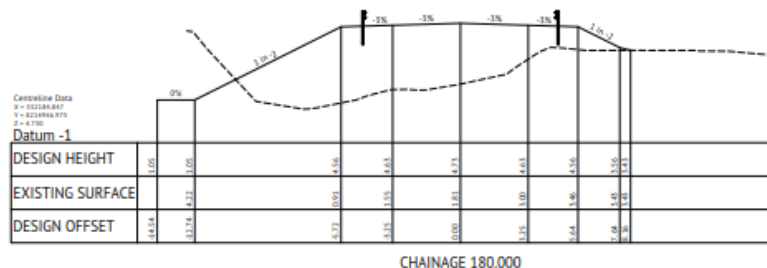
FOR CULVERT DETAILS REFER TO THM STANDARD
DRAWINGS - 1105, 1106, 1109.

ISSUED FOR CONSTRUCTION										 TOWNSVILLE OFFICE 84 DENHAM STREET PO BOX 1100 TOWNSVILLE, QLD 4810 Ph: (07) 4772 0666 WEB: www.premise.com.au		DRAWN: B.CORLIS CHECKED: G.PERKINS PROJECT: TOWNSHIP ENGINEER: C.MATHIASSEN AUTHORIZING: 		SCALE:  SCALE 1:50 (A1) ORIGINAL SHEET 102 OF 11		CLIENT: NQ CIVIL CONTRACTORS PTY LTD PROJECT: REPLACEMENT BRIDGE AND PROPOSED ROAD ALIGNMENT LOCATION: NOAH CREEK, CAPE TRIBULATION SHEET TITLE: CULVERT DETAILS PLAN		DRAWING NO: NQC-0023	
1. CHECKED: B.CORLIS 2. CHECKED: G.PERKINS 3. CHECKED: C.MATHIASSEN 4. CHECKED: 												R. PERKINS REGD 2319						SHEET NUMBER: C007 REV: A	

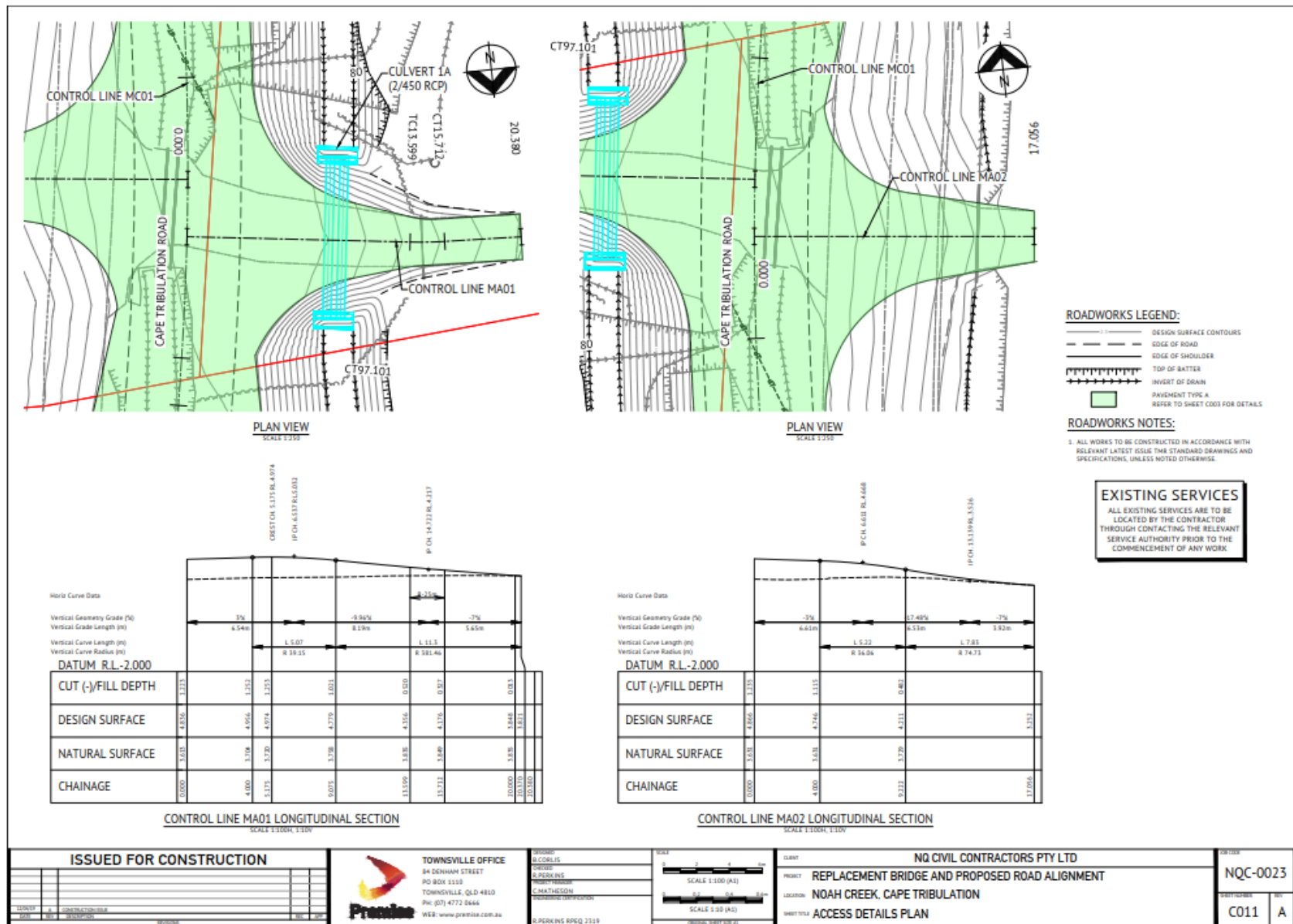


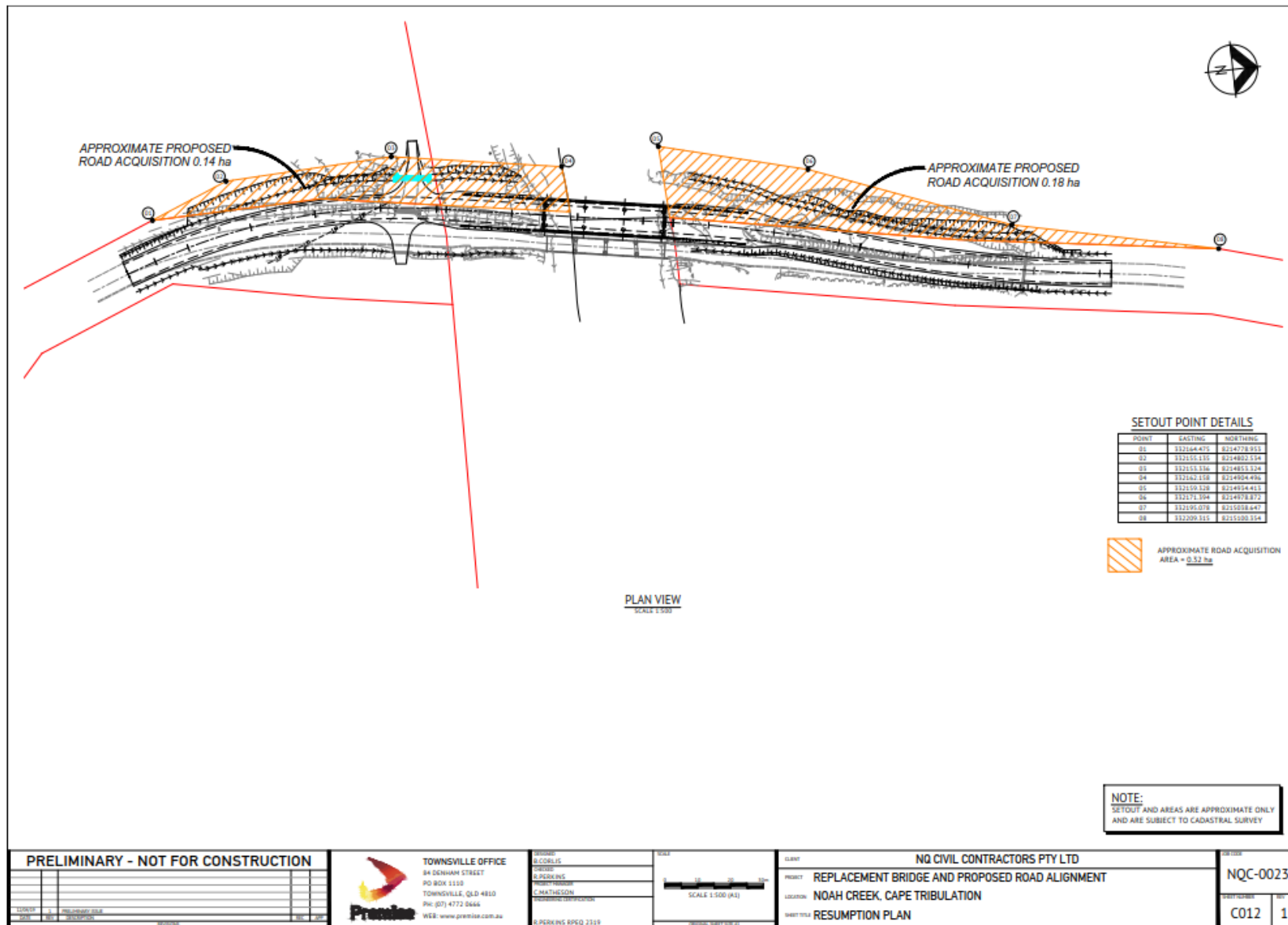


SCALE 1:100 (A1)



ISSUED FOR CONSTRUCTION						 TOWNSVILLE OFFICE 84 DENHAM STREET PO BOX 1100 TOWNSVILLE, QLD 4810 Ph: (07) 4772 8444 Web: www.precise.co.au		DRAWN: M.CORRIE CHECKED: R.PARKINS DESIGNED: R.PARKINS PROJECT MANAGER: C.MATHESON PROFESSIONAL CERTIFICATION: R.PARKINS SPQO 2319 SCALE  SCALE 1:100 (H) ORIGINAL SHEET SIZE A3		CLIENT: NQ CIVIL CONTRACTORS PTY LTD PROJECT: REPLACEMENT BRIDGE AND PROPOSED ROAD ALIGNMENT LOCATION: NOAH CREEK, CAPE TRIBULATION SHEET TITLE: ROAD CROSS SECTIONS - SHEET 2 OF 2		DWG CODE: NQC-002 REVISIONS: <table border="1"> <thead> <tr> <th>NO.</th> <th>DESCRIPTION</th> <th>DATE</th> </tr> </thead> <tbody> <tr> <td>C010</td> <td>A</td> <td></td> </tr> </tbody> </table>	NO.	DESCRIPTION	DATE	C010	A	
NO.	DESCRIPTION	DATE																
C010	A																	

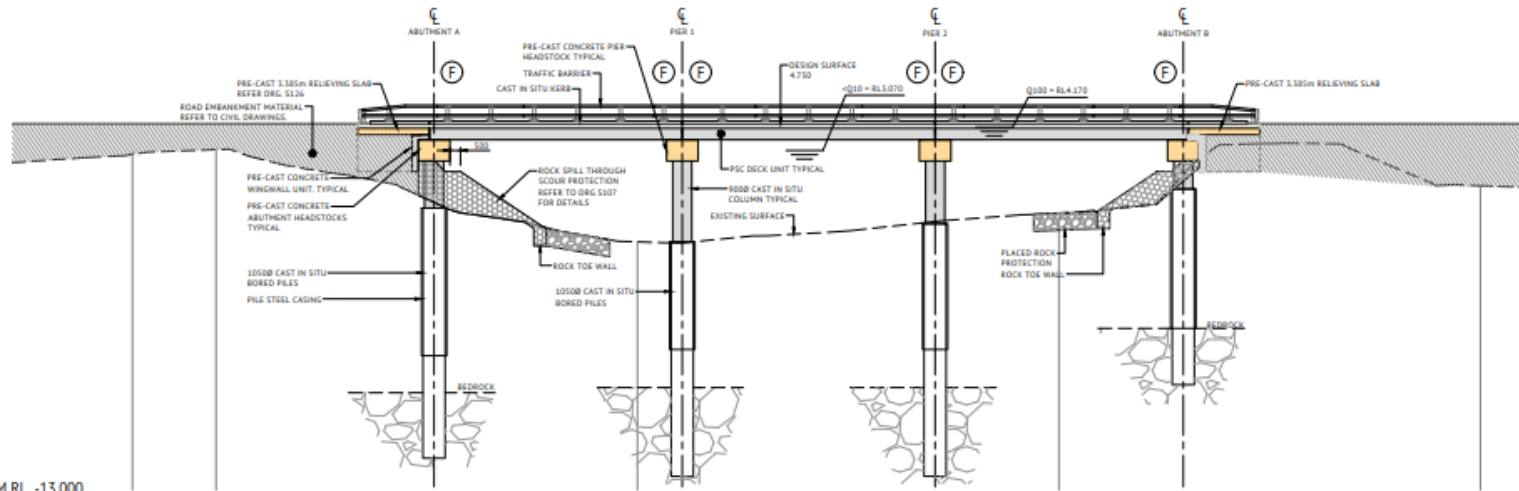




LEGEND



DEMOTES FIXED JOINT ARTICULATION



DATUM RL -13.000

VERTICAL ALIGNMENT	L = 84.644m G = 0%									
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EXISTING SURFACE LEVEL	3.190	3.316	3.071	3.056	3.094	3.107	3.312	3.317	3.317	3.303
CHAINAGE	144000+0.000	144000+3.316	144000+6.632	144000+9.948	144000+13.264	144000+16.580	144000+19.896	144000+23.212	144000+26.528	144000+29.844

LONG SECTION ALONG BRIDGE CONTROL LINE
SCALE 1:100

ISSUED FOR CONSTRUCTION

NO.	DESCRIPTION	DATE	BY	CHECKED
1	ISSUED FOR CONSTRUCTION	15/01/2021	W. JONES	W. JONES



TOWNSVILLE OFFICE
84 DENHAM STREET
PO BOX 1110
TOWNSVILLE, QLD 4810
Ph: (07) 4772 0466
Web: www.premier.com.au

DESIGNED
L. MCGINITY
CHECKED
C. HATHESON
C. HATHESON
PROJECT MANAGER
C. HATHESON
PROJECT MANAGER
C. HATHESON
PROJECT MANAGER

SCALE



CURB

PROJECT

LOCATION

SHEET TITLE

NQ CIVIL CONTRACTORS PTY LTD
REPLACEMENT BRIDGE AND PROPOSED ROAD ALIGNMENT
NOAH CREEK, CAPE TRIBULATION
GENERAL ARRANGEMENT - LONG SECTION

DWG CODE

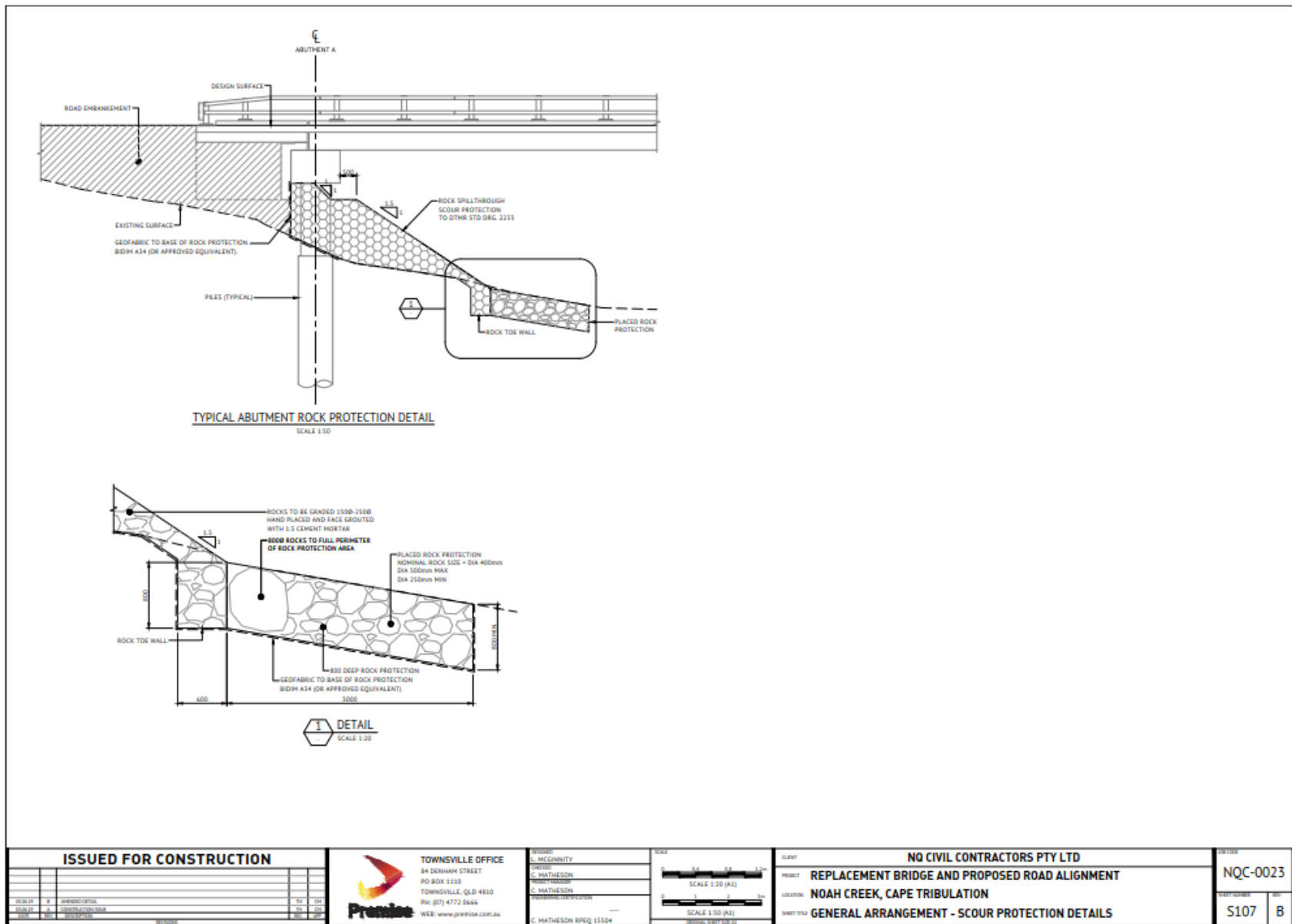
NQC-0023

SHEET NUMBER

S101

REV

C



RA6-N



Queensland Treasury

SARA reference: 2003-16006 SRA
Council reference: OP2020_3516/1
Applicant reference: WO3046-Noah Creek Bridge

15 September 2020

Chief Executive Officer
Douglas Shire Council
PO Box 723
Mossman Qld 4873
enquiries@douglas.qld.gov.au

Attention: Daniel Lamond

Dear Sir / Madam

SARA response— Noah Creek Bridge Replacement

(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 on 20 March 2020.

Response

Outcome:	Referral agency response – with conditions.
Date of response:	15 September 2020
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 work (bridge replacement)
SARA role:	Referral Agency.	
SARA trigger:	Planning Regulation 2017: Schedule 10, Part 6, Division 3, Subdivision 3, Table 1 – Development application for Fisheries – Marine plants (10.6.3.3.1.1) Schedule 10, Part 6, Division 4, Subdivision 3, Table 1 – Development	

Far North Queensland regional office
Ground Floor, Cnr Grafton and Hartley
Street, Cairns
PO Box 2358, Cairns QLD 4870

application for Fisheries – Waterway barrier works (10.6.4.3.1.1)

Schedule 10, Part 17, Division 3, Table 1 - Development application
for Tidal works or works in a coastal management district (10.17.3.1.1)

SARA reference: 2003-16006 SRA
Assessment Manager: Douglas Shire Council
Street address: Noah Creek
Real property description: 20NPW695
Applicant name: Douglas Shire Council
Applicant contact details: 64-66 Front Street
Mossman QLD 4873
daniel.favier@douglas.qld.gov.au

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 Tony Croke, Principal Planner, on 40373205 or via email CairnsSARA@dsdmip.qld.gov.au who will be pleased to assist.

Yours sincerely



Brett Nancarrow
Manager (Planning)

cc Douglas Shire Council, daniel.favier@douglas.qld.gov.au

enc Attachment 1 - Referral agency conditions
Attachment 2 - Advice to the applicant
Attachment 3 - Reasons for referral agency response
Attachment 4 - Representations provisions
Attachment 5 - Approved plans and specifications

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 plans and specifications referenced below are found at Attachment 5)

No.	Conditions	Condition timing
Operational works being removal, destruction or damage of marine plants		
10.6.3.3.1.1—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of Department of Agriculture and Fisheries 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.	Operational works to remove, damage, destroy marine plants being limited to 11 m ² , of mangrove fern and shown in General Arrangement Plan, prepared by Premise, dated 05/06/19, reference NQC-0023-S100 and revision C, amended in Red.	At all times
2.	Provide written notice to notifications@daf.qld.gov.au, when the development authorised under this approval: (a) will start, and (b) when it has been completed. These notices must state this permit number 2003-16006 SRA.	At least 5 business days but no greater than 20 business days prior to the commencement of the works Within 15 business days of the completion of the fisheries development works
3.	For the proposed works, only use clean materials and ensure that the works do not cause contamination.	For the duration of the works
4.	Spoil is not disposed of on tidal lands or within waterways and is managed to prevent acid soil development.	At all times
5.	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 at all times, pursuant to section 145 of the <i>Fisheries Act 1994</i> .	At all times
6.	Marine plants authorised for removal and other material used in the development (e.g. debris, construction material, soil, etc.) are to be promptly removed from the intertidal zone.	For the duration of the works the subject of this approval and to be maintained
Operational works for constructing or raising waterway barrier works in fish habitat		
10.6.4.3.1.1—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of Department of Agriculture and Fisheries 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):		
7.	The bridge construction must be undertaken generally in accordance with the following plans: General Arrangement Plan, prepared by Premise, dated 05/06/19, reference NQC-0023-S100, revision C, as amended in red. General Arrangement – Long Section, prepared by Premise, dated	For the duration of the works

	05/06/19, reference NQC-0023-S101 and revision C. Road Cross Sections – Proposed Retaining Wall Location, prepared by Premise, DRAFT 30/06/19, reference NQC-0023-SKC006, revision 1, as amended in red	
8.	Maintain the development in accordance with the plans referenced in condition 8, and the requirements of any conditions included in this development approval.	At all times
9.	The temporary waterway barrier works must be undertaken generally in accordance with the Noah Creek Bridge Replacement, Environment Management Plan (Construction Phase Services), prepared by Environment Pacific, dated February 2020, reference 080819 EMP and revision D, in particular: • Section 2.2 – Proposed Works.	For the duration of works
10.	In-stream works are to be completed as quickly as possible, but must be avoided during times of: (a) elevated flows of greater than a 10% AEP event; and (b) between 1 November and 1 February to minimise disruption to spawning and migrating fish as well as the dispersal of plant propagules.	At all times
11.	The obsolete Noah Creek Bridge, must be completely removed immediately after the replacement structure inclusive of the approved fish passage, has been completed.	Upon completion of the works subject of this approval
12.	Land profiles that are temporarily disturbed by the development works (other than those within the permanent development footprint, as shown on General Arrangement Plan, prepared by Premise, dated 05/06/19, reference NQC-0023-S100 and revision C, as amended in red, must be promptly restored to pre-work profiles.	Upon completion of the works subject of this approval
13.	The temporary waterway barrier described in condition 9 must be completely removed immediately after completion of construction of the bridge and removal of the old bridge.	Upon completion of the works subject of this approval
Operational works that is Tidal works or works in a coastal management district		
10.17.3.1.1— The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Environment and Science 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):		
14.	The bridge construction must be undertaken generally in accordance with the following plans: • Typical Cross Sections, prepared by Premise, dated 12/04/2019, reference NQC-0023-C003 and version A • Roadworks and Longitudinal Section Plan, prepared by Premise, dated 12/04/2019, reference NQC-0023-C005-A and version A • Roadworks Details, Pavement and Drainage Plan, prepared by Premise, dated 12/04/2019, reference NQC-0023-C006 and version A • Signage and Linemarking Plan, prepared by Premise, dated 12/04/2019, reference NQC-0023-C008, version A • General Arrangement – Plan, prepared by Premise, dated 05/06/2019, reference NQC-0023-S100, version: C • General Arrangement – Long Section, prepared by Premise,	For the duration of the works

	dated 05/06/2019, reference NQC-0023-S101, version C General Arrangement – Scour Protection Details, prepared by Premise, dated 05/06/2019, reference NQC-0023-S107 and version B	
15.	For the proposed works, only use clean materials and ensure that the works do not cause contamination.	For the duration of the works
16.	a) An erosion and sediment control plan must be prepared by a suitably qualified person, in accordance with Best Practice Erosion and Sediment Control (BPESC) guidelines for Australia (International Erosion Control Association). b) Provide the erosion and sediment control plan to the palm@des.qld.gov.au or mailed to: Department of Environment and Science Permit and License Management Implementation and Support Unit GPO Box 2454 Brisbane Qld 4001 c) Undertake the development generally in accordance with the erosion and sediment control plan; and d) Provide written evidence from a suitably qualified person that all elements of this condition have been complied with.	a) and b) Prior to the works occurring c) While works are occurring d) Upon completion of the works
17.	Should the replacement Noah Creek Bridge collapse, fail or otherwise suffer structural consequences which impact their integrity or ability to function as intended, the works must be: (a) reinstated in accordance with this development approval; or (b) removed and disposed of at an appropriately licensed facility.	As soon as reasonably practicable subsequent to the damage
18.	Obtain RPEQ certification confirming that the tidal works, have been constructed in accordance with the relevant Australian Standards]. A copy of the certification must be provided to palm@des.qld.gov.au or mailed to: Department of Environment and Science Permit and License Management Implementation and Support Unit GPO Box 2454 Brisbane Qld 4001	Within two (2) weeks of the completion of the works
19.	A rehabilitation plan must be prepared by suitably qualified person and must be: i. In accordance with the National Standards for the practice of ecological restoration in Australia 2nd edition. December 2017 or more recent. Provide the rehabilitation plan to the palm@des.qld.gov.au or mail to: Department of Environment and Science	Prior to the commencement of the works

	Permit and License Management Implementation and Support Unit GPO Box 2454	
20.	Any vegetation planted as a result of the rehabilitation work must be maintained as detailed within the rehabilitation plan. This includes but is not limited to the control of weed species and controlled pedestrian and vehicle access.	For 6 months after completion of the rehabilitation works

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 2.6 effective 7 February 2020. If a word remains undefined it has its ordinary meaning.
2.	Under Schedule 7, Part 3, Section 9 of the Planning Regulation 2017, operational works in a wetland protection area, that is high impact earthworks, and is carried out for government supported transport infrastructure, is accepted development if it complies with Schedule 14 of the Planning Regulation 2017.

Attachment 3—Reasons for referral agency response

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

The reasons for the department's decision are:

- The works are to replace a public facility, being a vehicle bridge. There is a demonstrated need for the bridge to connect Thornton Beach to Cape Tribulation.
- The bridge will provide adequate fish passage.
- Construction methodology and location of crossing will minimise impacts on the waterway.
- Environmental controls will be installed, and site rehabilitation will be undertaken to mitigate impacts.
- The replacement dual lane bridge is coastal dependent development.
- Impacts on matters of state environmental significance have been avoided, minimised, mitigated and offset.
- The development will not impact coastal processes along the coast as the new bridge is proposed 2km upstream.
- Scour protection works will be implemented for the abutments along Noah Creek. Vegetation will be removed; however, a rehabilitation plan will be in place.
- The proposed development does not significantly increase the risk or impact to people and property from coastal erosion.
- The development maintains the public use and access to state coastal land.
- Where impacts to matters of state environmental significance (MSES) are unavoidable, an Environmental Management Plan includes mitigation measures.
- The proposed location provides an adequate buffer to wetlands.

Material used in the assessment of the application:

- The development application material and submitted plans
- *Planning Act 2016*
- Planning Regulation 2017
- The *State Development Assessment Provisions* (version 2.6 effective 7 February 2020), as published by the department
- The Development Assessment Rules
- SARA DA Mapping system
- State Planning Policy mapping system

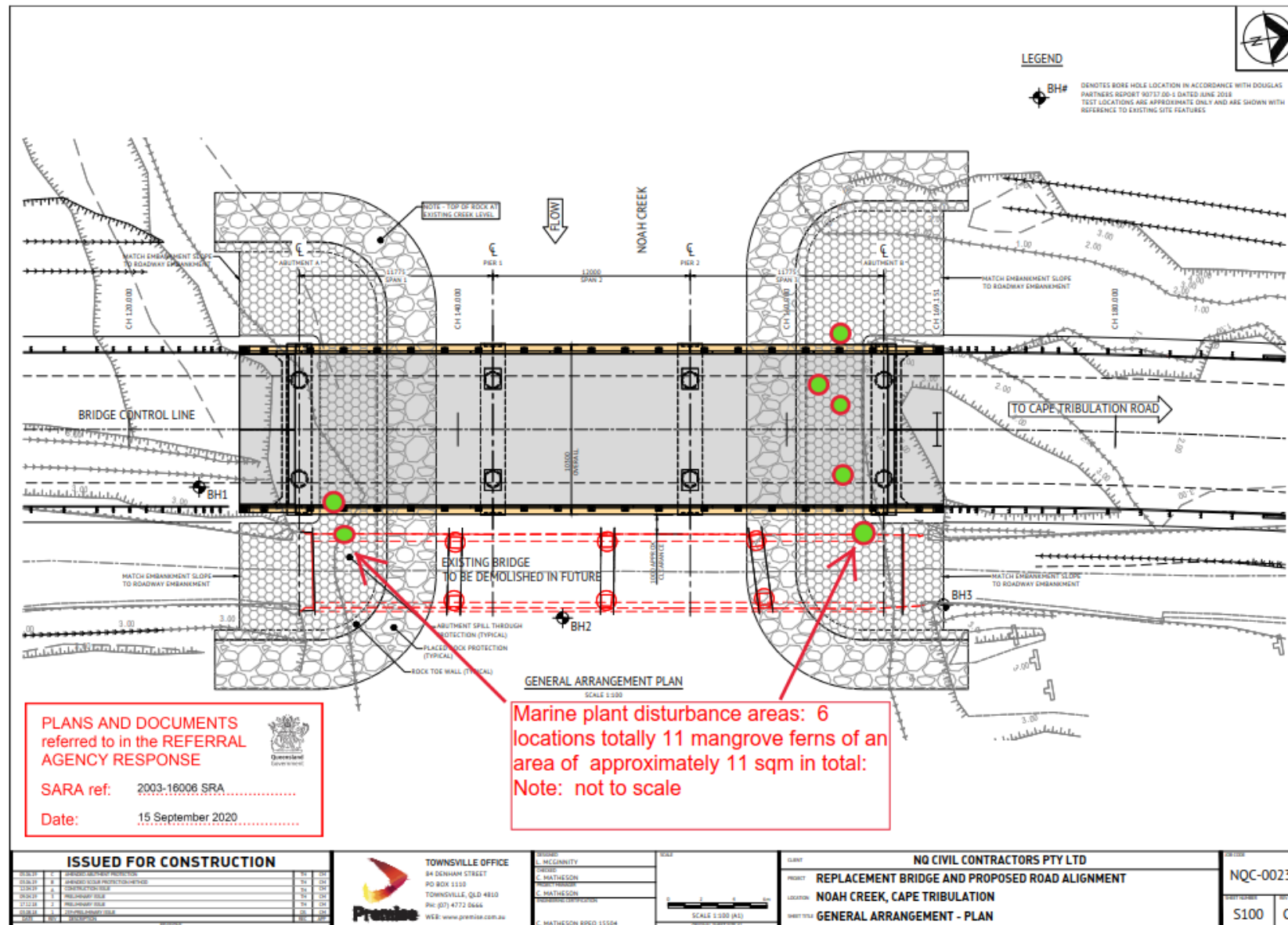
Attachment 4—Change representation provisions

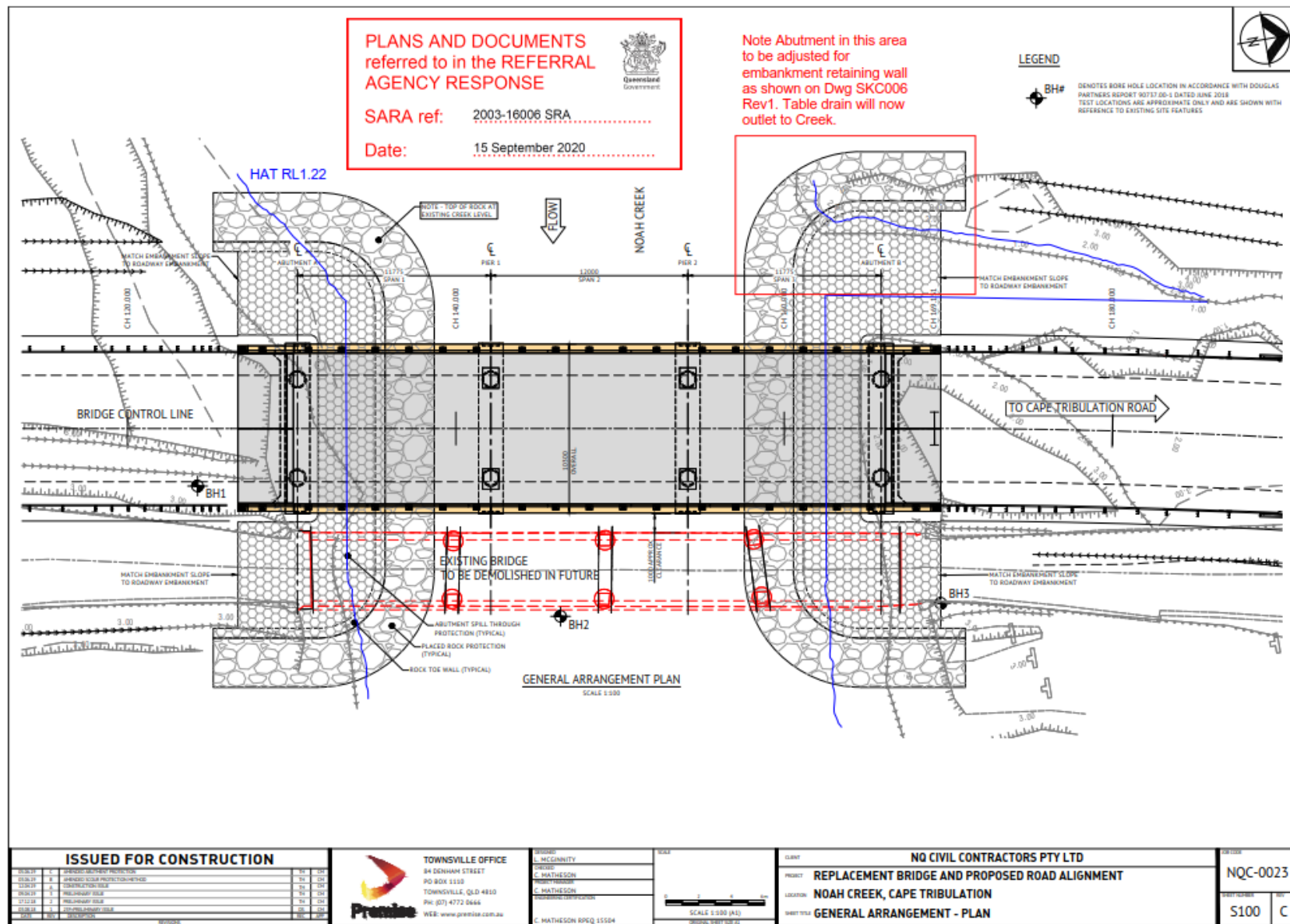
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Attachment 5—Approved plans and specifications

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State Assessment and Referral Agency Approved Plans





Queensland
Government

Date: 15 September 2020



PAVEMENT DESIGN (ROADWORKS)

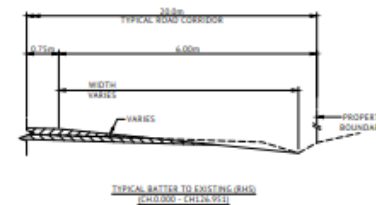
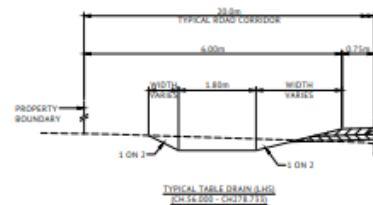
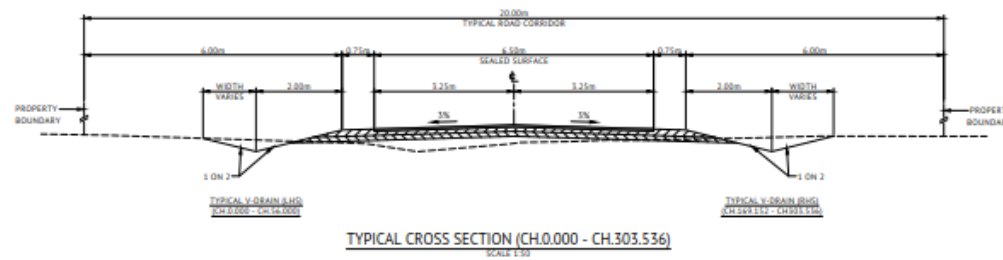
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115mm SUB BASE COURSE (DMR TYPE 2.3)

PAVEMENT DESIGN (BRIDGE DECK)

PAVEMENT TYPE B

10mm WATERPROOF MEMBRANE, TYPE A, SEAL C170
SPRAY COAT EMULSION TO PAVEMENT
CORRECTION COURSE DENSE GRADE ASPHALT, GRADE AC10 C230
10mm DENSE GRADE ASPHALT, GRADE AC14 C230

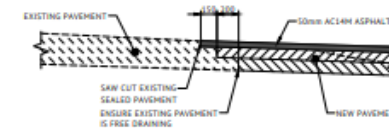


PLANS AND DOCUMENTS
referred to in the REFERRAL
AGENCY RESPONSE



SARA ref: 2003-16006 SRA

Date: 15 September 2020



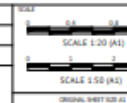
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REVISION	3	REVISIONARY DATA
DATE	15/09/2020	BY: [Signature]



TOWNSVILLE OFFICE
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TOWNSVILLE, QLD 4810
Ph: (07) 4772 0666
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DESIGNED BY:
B. CORLEIS
CHECKED BY:
R. PERKINS
DRAWN BY:
C. HATHORN
REVISIONS:
R. PERKINS RPEQ 2119



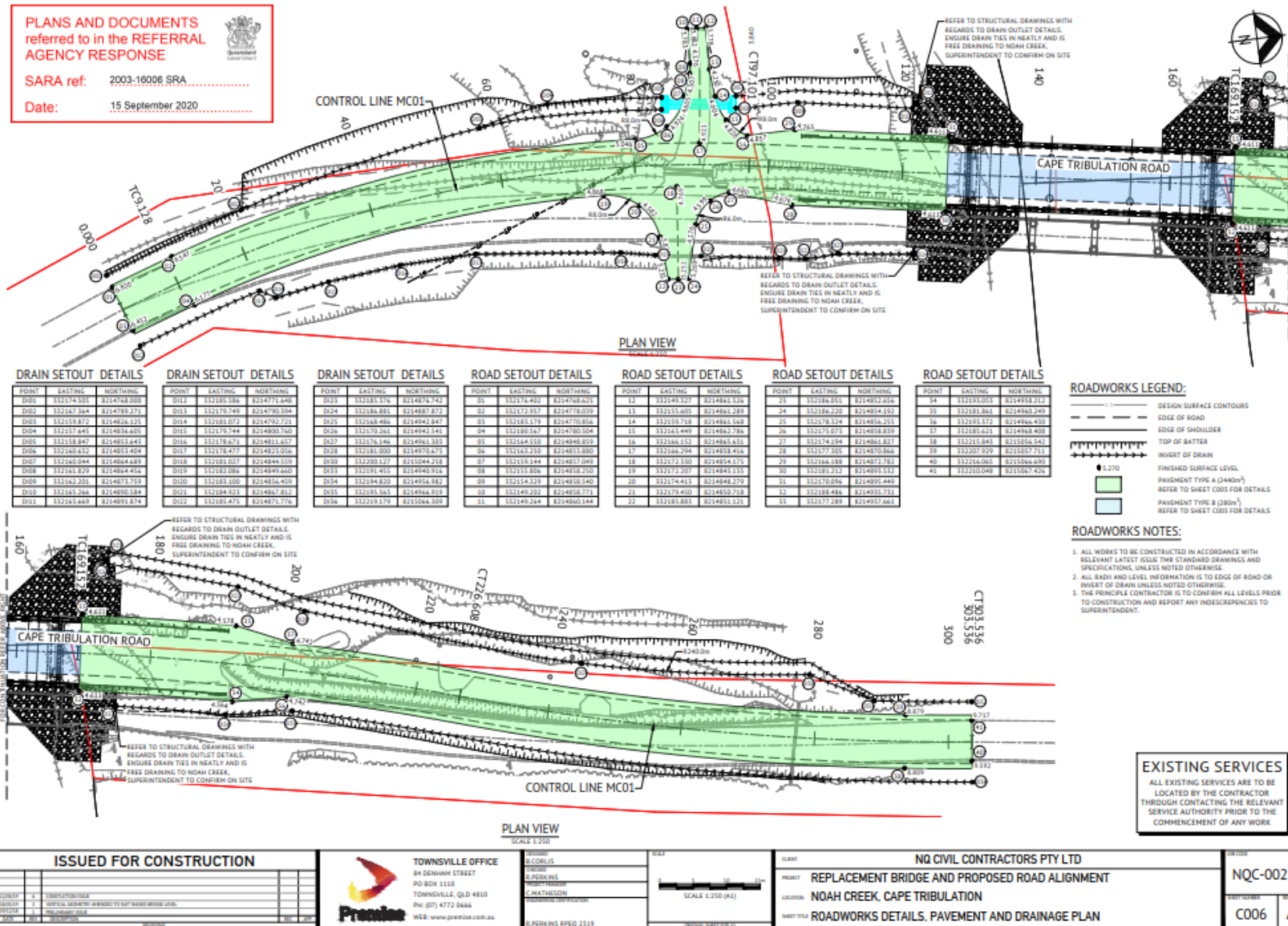
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LOCATION: NOAH CREEK, CAPE TRIBULATION
SHEET TITLE: TYPICAL CROSS SECTIONS

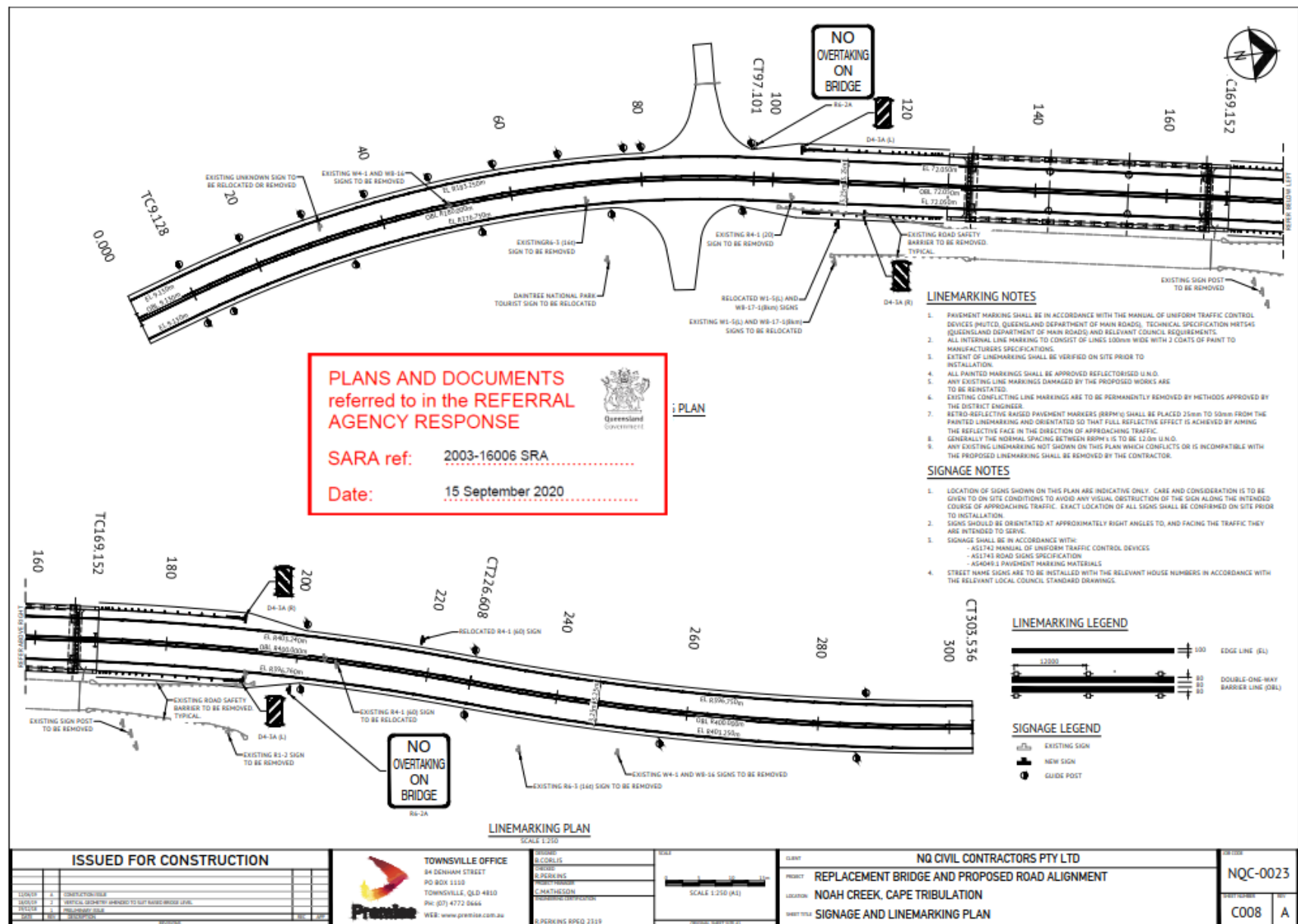
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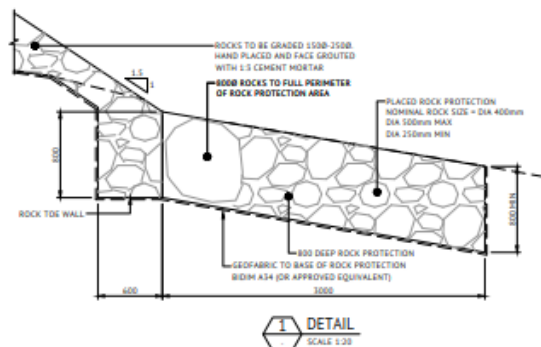
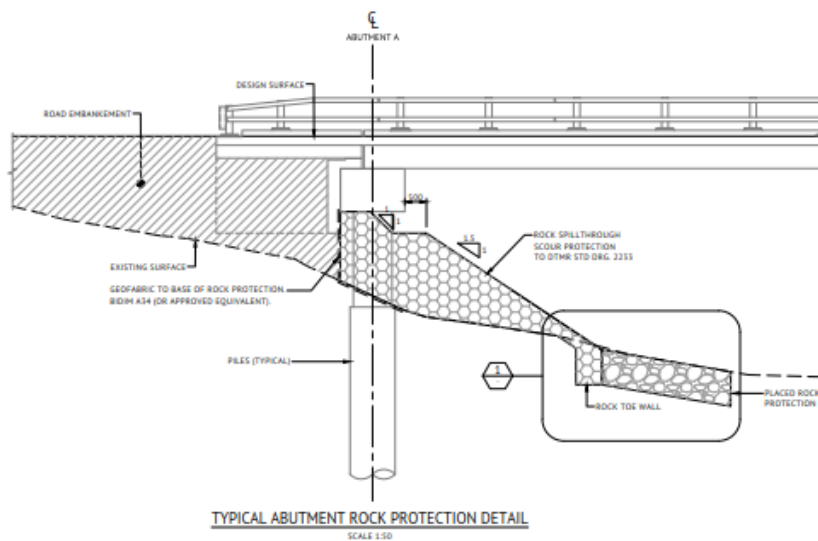
**PLANS AND DOCUMENTS
referred to in the REFERRAL
AGENCY RESPONSE**

SARA ref: 2003-16006 SRA

Date: 15 September 2020







**PLANS AND DOCUMENTS
referred to in the REFERRAL
AGENCY RESPONSE**



SARA ref: 2003-16006 SRA

Date: 15 September 2020

ISSUED FOR CONSTRUCTION				NO CIVIL CONTRACTORS PTY LTD			
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01/01/20	4	REVISIONS	1:50				S107
01/01/20	5	REVISIONS	1:50				B

Division 2 Changing development approvals

Subdivision 1 Changes during appeal period

74 What this subdivision is about

- (1) This subdivision is about changing a development approval before the applicant's appeal period for the approval ends.
- (2) This subdivision also applies to an approval of a change application, other than a change application for a minor change to a development approval.
- (3) For subsection (2), sections 75 and 76 apply—
 - (a) as if a reference in section 75 to a development approval were a reference to an approval of a change application; and
 - (b) as if a reference in the sections to the assessment manager were a reference to the responsible entity; and
 - (c) as if a reference in section 76 to a development application were a reference to a change application; and
 - (d) as if the reference in section 76(3)(b) to section 63(2) and (3) were a reference to section 83(4); and
 - (e) with any other necessary changes.

75 Making change representations

- (1) The applicant may make representations (*change representations*) to the assessment manager, during the applicant's appeal period for the development approval, about changing—
 - (a) a matter in the development approval, other than—
 - (i) a matter stated because of a referral agency's response; or

- (ii) a development condition imposed under a direction made by the Minister under chapter 3, part 6, division 2; or
- (b) if the development approval is a deemed approval—the standard conditions taken to be included in the deemed approval under section 64(8)(c).
- (2) If the applicant needs more time to make the change representations, the applicant may, during the applicant's appeal period for the approval, suspend the appeal period by a notice given to the assessment manager.
- (3) Only 1 notice may be given.
- (4) If a notice is given, the appeal period is suspended—
 - (a) if the change representations are not made within a period of 20 business days after the notice is given to the assessment manager—until the end of that period; or
 - (b) if the change representations are made within 20 business days after the notice is given to the assessment manager, until—
 - (i) the applicant withdraws the notice, by giving another notice to the assessment manager; or
 - (ii) the applicant receives notice that the assessment manager does not agree with the change representations; or
 - (iii) the end of 20 business days after the change representations are made, or a longer period agreed in writing between the applicant and the assessment manager.
- (5) However, if the assessment manager gives the applicant a negotiated decision notice, the appeal period starts again on the day after the negotiated decision notice is given.

76 Deciding change representations

- (1) The assessment manager must assess the change representations against and having regard to the matters that

must be considered when assessing a development application, to the extent those matters are relevant.

- (2) The assessment manager must, within 5 business days after deciding the change representations, give a decision notice to—
 - (a) the applicant; and
 - (b) if the assessment manager agrees with any of the change representations—
 - (i) each principal submitter; and
 - (ii) each referral agency; and
 - (iii) if the assessment manager is not a local government and the development is in a local government area—the relevant local government; and
 - (iv) if the assessment manager is a chosen assessment manager—the prescribed assessment manager; and
 - (v) another person prescribed by regulation.
- (3) A decision notice (a ***negotiated decision notice***) that states the assessment manager agrees with a change representation must—
 - (a) state the nature of the change agreed to; and
 - (b) comply with section 63(2) and (3).
- (4) A negotiated decision notice replaces the decision notice for the development application.
- (5) Only 1 negotiated decision notice may be given.
- (6) If a negotiated decision notice is given to an applicant, a local government may give a replacement infrastructure charges notice to the applicant.

Extracts from the Planning Act 2016 – Appeal Rights

Planning Act 2016
Chapter 6 Dispute resolution
[s 229]

- (2) The person is taken to have engaged in the representative's conduct, unless the person proves the person could not have prevented the conduct by exercising reasonable diligence.
- (3) In this section—
 - conduct** means an act or omission.
 - representative** means—
 - (a) of a corporation—an executive officer, employee or agent of the corporation; or
 - (b) of an individual—an employee or agent of the individual.
 - state of mind**, of a person, includes the person's—
 - (a) knowledge, intention, opinion, belief or purpose; and
 - (b) reasons for the intention, opinion, belief or purpose.

Chapter 6 Dispute resolution

Part 1 Appeal rights

229 Appeals to tribunal or P&E Court

- (1) Schedule 1 states—
 - (a) matters that may be appealed to—
 - (i) either a tribunal or the P&E Court; or
 - (ii) only a tribunal; or
 - (iii) only the P&E Court; and
 - (b) the person—
 - (i) who may appeal a matter (the *appellant*); and
 - (ii) who is a respondent in an appeal of the matter; and

- (iii) who is a co-respondent in an appeal of the matter; and
 - (iv) who may elect to be a co-respondent in an appeal of the matter.
- (2) An appellant may start an appeal within the appeal period.
- (3) The ***appeal period*** is—
 - (a) for an appeal by a building advisory agency—10 business days after a decision notice for the decision is given to the agency; or
 - (b) for an appeal against a deemed refusal—at any time after the deemed refusal happens; or
 - (c) for an appeal against a decision of the Minister, under chapter 7, part 4, to register premises or to renew the registration of premises—20 business days after a notice is published under section 269(3)(a) or (4); or
 - (d) for an appeal against an infrastructure charges notice—20 business days after the infrastructure charges notice is given to the person; or
 - (e) for an appeal about a deemed approval of a development application for which a decision notice has not been given—30 business days after the applicant gives the deemed approval notice to the assessment manager; or
 - (f) for an appeal relating to the *Plumbing and Drainage Act 2018*—
 - (i) for an appeal against an enforcement notice given because of a belief mentioned in the *Plumbing and Drainage Act 2018*, section 143(2)(a)(i), (b) or (c)—5 business days after the day the notice is given; or
 - (ii) for an appeal against a decision of a local government or an inspector to give an action notice under the *Plumbing and Drainage Act 2018*—5 business days after the notice is given; or

- (iii) otherwise—20 business days after the day the notice is given; or
- (g) for any other appeal—20 business days after a notice of the decision for the matter, including an enforcement notice, is given to the person.

Note—

See the P&E Court Act for the court's power to extend the appeal period.

- (4) Each respondent and co-respondent for an appeal may be heard in the appeal.
- (5) If an appeal is only about a referral agency's response, the assessment manager may apply to the tribunal or P&E Court to withdraw from the appeal.
- (6) To remove any doubt, it is declared that an appeal against an infrastructure charges notice must not be about—
 - (a) the adopted charge itself; or
 - (b) for a decision about an offset or refund—
 - (i) the establishment cost of trunk infrastructure identified in a LGIP; or
 - (ii) the cost of infrastructure decided using the method included in the local government's charges resolution.

230 Notice of appeal

- (1) An appellant starts an appeal by lodging, with the registrar of the tribunal or P&E Court, a notice of appeal that—
 - (a) is in the approved form; and
 - (b) succinctly states the grounds of the appeal.
- (2) The notice of appeal must be accompanied by the required fee.
- (3) The appellant or, for an appeal to a tribunal, the registrar, must, within the service period, give a copy of the notice of appeal to—

- (a) the respondent for the appeal; and
 - (b) each co-respondent for the appeal; and
 - (c) for an appeal about a development application under schedule 1, section 1, table 1, item 1—each principal submitter for the application whose submission has not been withdrawn; and
 - (d) for an appeal about a change application under schedule 1, section 1, table 1, item 2—each principal submitter for the application whose submission has not been withdrawn; and
 - (e) each person who may elect to be a co-respondent for the appeal other than an eligible submitter for a development application or change application the subject of the appeal; and
 - (f) for an appeal to the P&E Court—the chief executive; and
 - (g) for an appeal to a tribunal under another Act—any other person who the registrar considers appropriate.
- (4) The *service period* is—
- (a) if a submitter or advice agency started the appeal in the P&E Court—2 business days after the appeal is started; or
 - (b) otherwise—10 business days after the appeal is started.
- (5) A notice of appeal given to a person who may elect to be a co-respondent must state the effect of subsection (6).
- (6) A person elects to be a co-respondent to an appeal by filing a notice of election in the approved form—
- (a) if a copy of the notice of appeal is given to the person—within 10 business days after the copy is given to the person; or
 - (b) otherwise—within 15 business days after the notice of appeal is lodged with the registrar of the tribunal or the P&E Court.

- (7) Despite any other Act or rules of court to the contrary, a copy of a notice of appeal may be given to the chief executive by emailing the copy to the chief executive at the email address stated on the department's website for this purpose.

231 Non-appealable decisions and matters

- (1) Subject to this chapter, section 316(2), schedule 1 and the P&E Court Act, unless the Supreme Court decides a decision or other matter under this Act is affected by jurisdictional error, the decision or matter is non-appealable.
- (2) The *Judicial Review Act 1991*, part 5 applies to the decision or matter to the extent it is affected by jurisdictional error.
- (3) A person who, but for subsection (1) could have made an application under the *Judicial Review Act 1991* in relation to the decision or matter, may apply under part 4 of that Act for a statement of reasons in relation to the decision or matter.

- (4) In this section—

decision includes—

- (a) conduct engaged in for the purpose of making a decision; and
- (b) other conduct that relates to the making of a decision; and
- (c) the making of a decision or the failure to make a decision; and
- (d) a purported decision; and
- (e) a deemed refusal.

non-appealable, for a decision or matter, means the decision or matter—

- (a) is final and conclusive; and
- (b) may not be challenged, appealed against, reviewed, quashed, set aside or called into question in any other way under the *Judicial Review Act 1991* or otherwise,

whether by the Supreme Court, another court, any tribunal or another entity; and

- (c) is not subject to any declaratory, injunctive or other order of the Supreme Court, another court, any tribunal or another entity on any ground.

232 Rules of the P&E Court

- (1) A person who is appealing to the P&E Court must comply with the rules of the court that apply to the appeal.
- (2) However, the P&E Court may hear and decide an appeal even if the person has not complied with rules of the P&E Court.

Part 2 Development tribunal

Division 1 General

233 Appointment of referees

- (1) The Minister, or chief executive, (the *appointer*) may appoint a person to be a referee, by an appointment notice, if the appointer considers the person—
 - (a) has the qualifications or experience prescribed by regulation; and
 - (b) has demonstrated an ability—
 - (i) to negotiate and mediate outcomes between parties to a proceeding; and
 - (ii) to apply the principles of natural justice; and
 - (iii) to analyse complex technical issues; and
 - (iv) to communicate effectively, including, for example, to write informed succinct and well-organised decisions, reports, submissions or other documents.

Our ref: 402031

ATTACHMENT C

Change Proposal Plans

DOUGLAS SHIRE COUNCIL

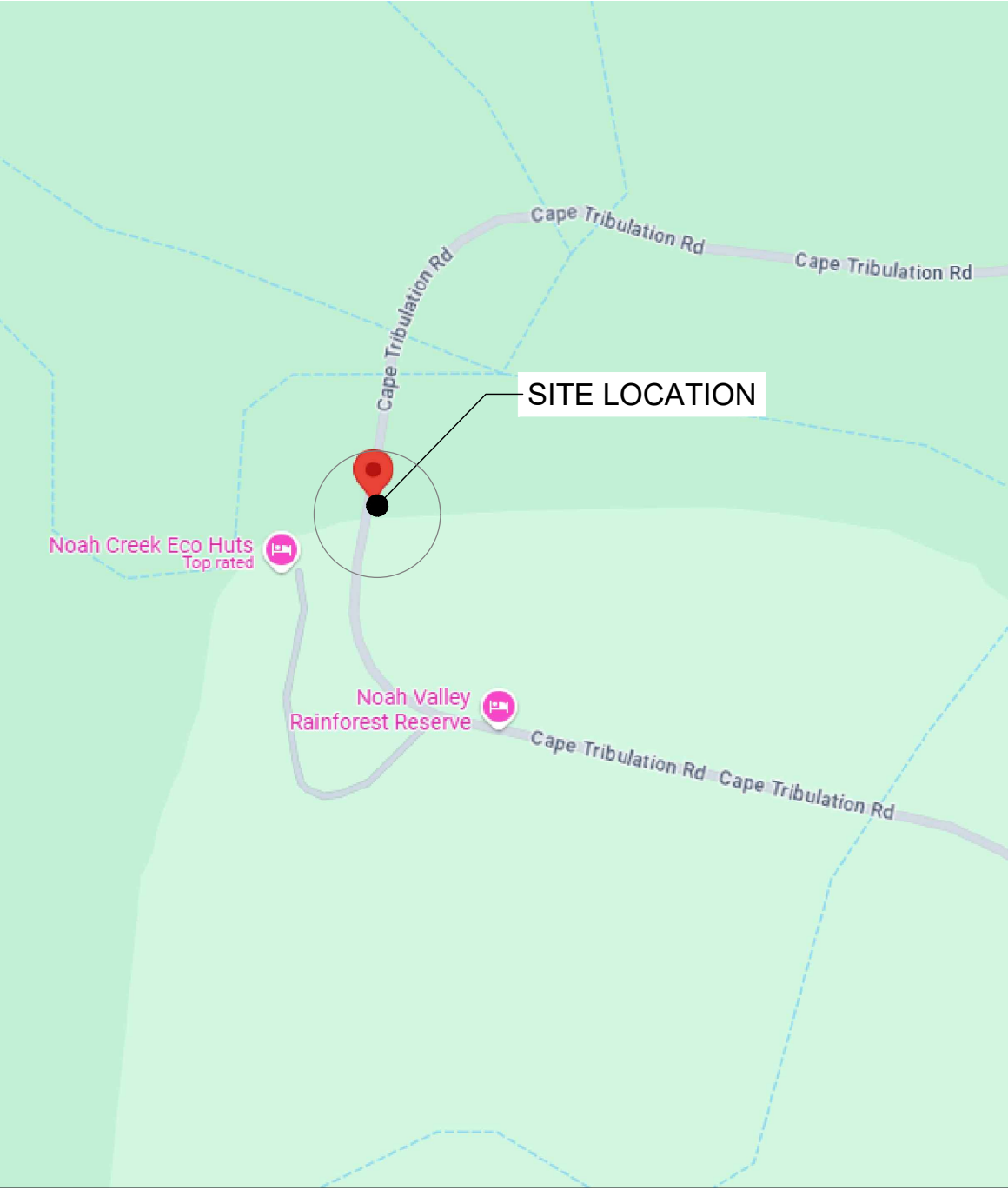
NOAH CREEK BRIDGE

NOAH CREEK, CAPE TRIBULATION RD

DETAILED DESIGN

DRAWING INDEX

DRAWING NUMBER	DRAWING DESCRIPTION
JJR-1240502B-ST001	COVER SHEET, LOCALITY PLAN & DRAWING INDEX
JJR-1240502B-ST002	SPECIFICATIONS AND NOTES- SHEET 1-3
JJR-1240502B-ST003	SPECIFICATIONS AND NOTES- SHEET 2-3
JJR-1240502B-ST004	SPECIFICATIONS AND NOTES- SHEET 3-3
JJR-1240502B-ST005	SITE PLAN
JJR-1240502B-ST006	LONG SECTION
JJR-1240502B-ST007	PLAN AND DECK CROSS SECTION
JJR-1240502B-ST008	ABUTMENT & HEADSTOCK ELEVATION
JJR-1240502B-ST009	WINGWALL & RELIEVING SLAB ELEVATION
JJR-1240502B-ST010	ANCHORAGE DETAILS
JJR-1240502B-ST011	ABUTMENT HEADSTOCK PLAN AND SECTIONS
JJR-1240502B-ST012	ABUTMENT HEADSTOCK REINFORCEMENT
JJR-1240502B-ST013	PIER HEADSTOCK PLAN AND SECTIONS
JJR-1240502B-ST014	PIER HEADSTOCK REINFORCEMENT
JJR-1240502B-ST015	PILE COORDINATE PLAN
JJR-1240502B-ST016	PILES - LAYOUT
JJR-1240502B-ST017	PRECAST WINGWALL
JJR-1240502B-ST018	PRECAST WINGWALL REINFORCEMENT-SHEET 1-2
JJR-1240502B-ST019	PRECAST WINGWALL REINFORCEMENT-SHEET 1-2
JJR-1240502B-ST020	PLAN AND DETAILS KERB - RAILING CONNECTION



LOCALITY PLAN

N.T.S.

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				A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			SCALES AT A3 SIZE DRAWING		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD COVER SHEET, LOCALITY PLAN & DRAWING INDEX						
									DRAFTING CHECK	N.CHUNG											
									DESIGNER	M.OMIDI											
									DESIGN CHECK	N.CHUNG											
									DESIGN MANAGER	N.CHUNG											
									PROJECT MANAGER	N.CHUNG											
												CO-ORDINATE SYSTEM: MGA	ZONE 55	HEIGHT DATUM: A.H.D.	CLIENT PROJECT / DRAWING No	ISSUE STATUS	IFR	JJR PROJECT / DRAWING No	JJR-1240502B-ST001	ISSUE	A

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GENERAL

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH THE BRIDGE SPECIFICATION, PROJECT SPECIFICATION, AND AMENDMENTS, CIVIL DRAWINGS AND OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE PROJECT.
2. ALL DIMENSIONS ARE IN MILLIMETRES, EXCEPT FOR CHAINAGES AND HT'S, WHICH ARE MEASURED IN METRES.
3. DO NOT OBTAIN DIMENSIONS BY SCALING FROM DRAWINGS.
4. SET-OUT COORDINATES ARE TO GEOCENTRIC DATUM OF AUSTRALIA 94.
5. ALL LEVELS AND DIMENSIONS RELEVANT TO SETTING OUT AND OFFSITE FABRICATION SHALL BE CONFIRMED BY THE CONTRACTOR PRIOR TO COMMENCING WORK. ANY DISCREPANCIES MUST BE BROUGHT TO THE ATTENTION OF THE SUPERINTENDENT.
6. THE LOCATIONS OF UNDERGROUND SERVICES HAVE BEEN OBTAINED FROM EXISTING RECORDS FOR WHICH ACCURACY CANNOT BE GUARANTEED. ALL SERVICE LOCATIONS SHALL BE CONFIRMED ON SITE BEFORE COMMENCING WORK.
7. PRIOR TO ANY DEMOLITION, EXCAVATION OR CONSTRUCTION ON THE SITE, THE CONSTRUCTOR SHALL CONTACT THE RELEVANT AUTHORITIES TO ASCERTAIN THE POSSIBLE LOCATION OF ADDITIONAL SERVICES AND THE DETAILED LOCATION AND DEPTH OF ALL SERVICES AND ARRANGE FOR THEIR RELOCATION WHERE NECESSARY.
8. THE CONTRACTOR SHALL MAINTAIN ALL WORK SITES IN A SAFE AND STABLE CONDITION.
9. WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE AUSTRALIAN STANDARDS (AS) AND TMR STANDARDS EXCEPT WHERE VARIED BY THE SPECIFICATIONS.
10. NOMINATION OF PROPRIETARY ITEMS DOES NOT INDICATE EXCLUSIVE PREFERENCE BUT INDICATES THE REQUIRED PROPERTIES OF THE ITEM. ALTERNATIVES HAVING THE REQUIRED PROPERTIES MAY BE USED, SUBJECT TO THE APPROVAL OF THE DESIGNER. PROPRIETY ITEMS SHALL BE INSTALLED IN ACCORDANCE WITH THE MANUFACTURER'S INSTRUCTIONS AND THE APPROPRIATE TECHNICAL SPECIFICATION.
11. BOREHOLE LOCATION SHOWN THUS:  BH1
12. A DATE PLATE IS TO BE CAST INTO THE OUTSIDE FACE OF THE LEFT HAND WING WALL AT ABUTMENT A FOR EACH BRIDGE.
13. A PERMANENT SURVEY MARK IS TO BE CAST INTO THE TOP OF THE LEFT HAND WING WALL AT ABUTMENT A FOR EACH BRIDGE.
14. ALL CROSS REFERENCES BETWEEN DRAWINGS REFER TO THE 'SERIES NUMBER' OF THE ASSOCIATED DRAWINGS AND NOT THE 'DRAWING No.'

EXISTING SERVICES:

DESIGN DATA:

1. BRIDGE DESIGNED IN ACCORDANCE WITH AS5100-2017
2. DESIGN LOADS:

LIVE LOADS: 2 DESIGN LANE SM1600 LOADING

DESIGN SPEED M1600: 70KM/HR (POSTED 60KM/HR) FOR TWO-LANE CARRIAGEWAY INTERIM CONFIGURATION

EARTHQUAKE LOADS: BRIDGE EARTHQUAKE DESIGN CATEGORY = BEDC 2

FLOOD LOADS: DESIGN FLOOD LEVEL

Q10 = RL 3.07

Q20 = RL 3.56

Q100 = RL 4.17

Q200 = RL 4.54

Q2000 = RL 5.17

DESIGN FLOOD VELOCITY

Q20 = 3.16 m/s

Q100 = 3.74 m/s

Q200 = 4.38 m/s

Q2000 = 4.20 m/s

WIND LOADS: Vr = 77 m/s (ULS), 47 m/s (SLS)

THERMAL LOADS: TEMPERATURE DIFFERENTIAL = +23°C / -27°C

MINIMUM LATERAL LOAD: 500kN

BARRIER PERFORMANCE LEVEL: REGULAR
3. CONSTRUCTION LOADS TO BE LIMITED TO LESS THAN DESIGN LOADS.

CONCRETE:

1. ALL CONCRETE WORK INCLUDING COMPACTION OPERATIONS, CURING AND FINISHES SHALL BE IN ACCORDANCE WITH AS5100.5 & MRTS70.
2. ALL EXPOSED EDGES (INSITU AND PRECAST, EXCEPT DECK UNITS) TO HAVE 19x19 CHAMFERS UNLESS SHOWN OTHERWISE.
3. CONCRETE CLASS (FOR DURABILITY) AND MINIMUM COVER TO ALL REINFORCEMENT FOR VARIOUS ELEMENTS SHALL BE AS FOLLOWS :

ELEMENT	EXPOSURE CLASS	CLASS	MIN. COVER (mm)	REMARKS
BLINDING CONCRETE		N20/20		
CONCRETE BORED PILES	C2	S55/20	80	CAST AGAINST FORMWORK
PIER HEADSTOCKS	B2	S50/20	50	RIGID FORMWORK AND INTENSE COMPACTION
ABUTMENT HEADSTOCKS, BALLAST WALLS, AND WING WALLS	B2	S50/20	50	RIGID FORMWORK AND INTENSE COMPACTION
PRECAST BEAMS	B2	S50/20	40	RIGID FORMWORK AND INTENSE COMPACTION
RELIEVING SLABS	B2	S40/20	50	RIGID FORMWORK AND INTENSE COMPACTION

4. NO HOLES, CHASES, OR EMBEDMENT OF PIPES OTHER THAN THOSE SHOWN ON THE DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT PRIOR APPROVAL OF THE SUPERINTENDENT.
5. CONSTRUCTION JOINTS SHALL BE PROPERLY FORMED AND USED ONLY WHERE SHOWN ON THE DRAWINGS OR APPROVED BY THE SUPERINTENDENT.
6. THE CONTRACTOR IS TO TAKE SPECIAL PRECAUTIONS TO IMPROVE THE LONG TERM PERFORMANCE OF THE EXPOSED FACES OF CONCRETE. IN PARTICULAR, NO METAL INSERTS, METAL BAR CHAIRS OR METAL SPACERS OR ANY KIND ARE TO BE PLACED ON THE COVER ZONES.
7. DETAILS OF CONCRETE MIX, AGGREGATE SIZE AND COLOUR, METHOD OF CURING AND FINISH ARE TO BE SUBMITTED FOR APPROVAL BY THE DESIGNER AT LEAST (6) WEEKS PRIOR TO COMMENCING CONCRETE WORKS.

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	A	27.01.2025	ISSUED FOR REVIEW		-	-	DRAFTER	R.ABBASI														
							DRAFTING CHECK	N.CHUNG														
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							DESIGN CHECK	N.CHUNG														
							DESIGN MANAGER	N.CHUNG														
							PROJECT MANAGER	N.CHUNG					CO-ORDINATE SYSTEM: MGA ZONE 55		HEIGHT DATUM: A.H.D.	CLIENT PROJECT / DRAWING No	ISSUE STATUS	IFR	JJR PROJECT / DRAWING No	JJR-1240502B-ST002	ISSUE	A

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REINFORCEMENT

1. REINFORCEMENT IS REPRESENTED DIAGRAMMATICALLY AND NOT NECESSARILY SHOWN IN TRUE PROJECTION.
2. REINFORCING STEEL SHALL BE IN ACCORDANCE WITH MRTS71, AS/NZS4671 AND AS 5100.5
3. ALL HOOKS, BENDS AND COGS ARE STANDARD AND SHALL BE IN ACCORDANCE WITH MRTS71 AND AS5100.5.
4. SPLICES IN REINFORCEMENT SHALL BE MADE ONLY IN THE POSITIONS SHOWN OR AS OTHERWISE APPROVED BY THE DESIGNER.
ALL LAPS SHALL BE FULL STRENGTH SPLICES COMPLYING WITH AS5100 UNO.
5. WELDING OF THE REINFORCEMENT SHALL NOT BE PERMITTED WITHOUT APPROVAL BY THE DESIGNER. TACK WELDING FOR LOCATION PURPOSES IS TO CONFORM TO AS/NZS 1554.3 CLAUSES 3.3.1 AND 3.3.2 WELDING CONSUMABLES TO BE CONTROLLED HYDROGEN TYPE: G493 TO AS/NZS ISO 14341-B OR T493 TO AS/NZS ISO 17632-B UNLESS NOTED OTHERWISE.
6. ALL REINFORCEMENT SHALL BE SECURELY SUPPORTED IN ITS CORRECT POSITION DURING CONCRETING BY APPROVED BAR CHAIRS COMPLYING MRTS70, SPACERS OR SUPPORT BARS.
7. REINFORCEMENT SUFFIXES:

N

GRADE D500N DEFORMED BARS TO AS/NZS 4671

R

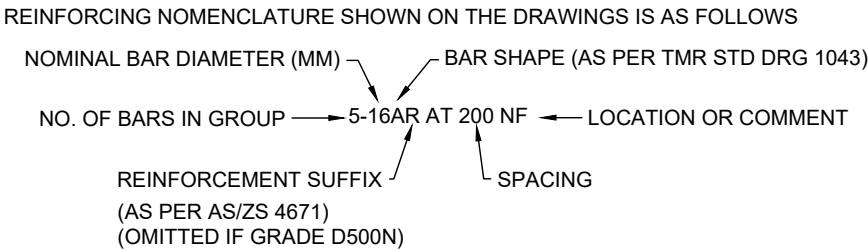
GRADE R250N PLAIN ROUND BARS AS/NZS 4671

W

GRADE D500L HARD-DRAWN REINFORCING WIRE TO AS/NZS 4671

RL AND SL

GRADE D500L WELDED WIRE REINFORCING FABRIC TO AS/NZS 4671



8. SPACING OF REINFORCEMENT SHALL BE TAKEN AS EQUAL UNO.
9. THE LAPPED SPLICE LENGTH SHALL BE AS FOLLOWS UNO:

HORIZ BARS > 300mm CAST BELOW		ALL OTHER BARS	
BAR	MINIMUM LAP LENGTH	BAR	MINIMUM LAP LENGTH
N12	600	N12	500
N16	800	N16	650
N20	1000	N20	800
N24	1250	N24	1000
N28	1550	N28	1150
N32	1900	N32	1450
N36	2300	N36	1750
FABRIC	2 TRANSVERSE BARS + 25mm	FABRIC	2 TRANSVERSE BARS + 25mm

10. LENGTHS SHOWN IN THE ABOVE TABLES ARE BASED ON AS3600 FOR D500N REINFORCEMENT IN TENSION OR COMPRESSION, USING 40 MPa CONCRETE WITH MINIMUM 55mm COVER, MINIMUM 150 CENTRES AND INCLUDES THE UPLIFT FACTOR FOR LAPPING REINFORCEMENT AT MAXIMUM STRESS WITHOUT STAGGERS. IF THE CONTRACTOR REQUIRES A DEVELOPMENT LENGTH AND/OR A LAP LENGTH FOR A DIFFERENT SCENARIO, THEN THE CONTRACTOR SHALL SUBMIT A REQUEST TO THE DESIGNER. LAPS IN REINFORCEMENT SHALL BE STAGGERED SO THAT NO MORE THAN 50% OF BARS ARE LAPPED IN ANY ONE CROSS SECTION AND THAT NO TWO ADJACENT BARS ARE LAPPED AT THE SAME LOCATION. WHERE THIS IS NOT POSSIBLE, THEN THE MINIMUM LAP LENGTH SHALL BE INCREASED BY A FACTOR OF 1.3. ALL REINFORCEMENT SHALL BE ACRS CERTIFIED AND THE SUPPLIER SHALL PROVIDE EVIDENCE OF COMPLIANCE PRIOR TO ANY REINFORCEMENT BEING SUPPLIED TO THE PROJECT.

PILES

1. PILES DESIGNED BASED ON GEOTECHNICAL REPORT 90737.00.R.001 REV 0 BY DOUGLAS PARTNERS
2. TOP OF PILES SHALL BE SCABBLED AND CLEANED PRIOR TO CASTING CONCRETE.

STEELWORK

1. SUPPLY AND FABRICATION OF STEELWORK TO BE IN ACCORDANCE WITH MRTS78
2. STRUCTURAL STEEL GRADES ARE AS FOLLOWS, UNO:-

A.

UB, UC, PFC, EA AND CT TO BE GRADE 300 TO AS/NZS3679.1.

B.

PLATES TO BE GRADE 250 TO AS3678.

C.

CHS TO BE GRADE C350L0 TO AS/NZS1163.

D.

UC TO BE GRADE 350 TO AS/NZS 3679.1

E.

RHS AND SHS TO BE GRADE C450LO TO AS/NZS1163.
3. STAINLESS STEEL TO BE GRADE 316:-

A.

PIPE AND TUBE TO ASTM A312

B.

BAR TO ASTM 276

C.

COIL, SHEET, AND PLATE TO ASTM S210
4. WELDING
WELDING SYMBOLS CONFORM TO AS1101.3

A.

STRUCTURAL STEEL
ALL WELDING TO CONFORM TO AS/NZS 1554.1
ALL WELDS TO BE SP CATEGORY.
WELDING CONSUMABLES FOR GRADE 350LO TO BE CONTROLLED HYDROGEN TYPE: G493 TO AS/NZS ISO 14341-B OR T493 TO AS/NZS ISO 17632-B UNLESS NOTED OTHERWISE.
WELDING CONSUMABLES FOR ALL OTHER STRUCTURAL STEEL SHALL BE CONTROLLED HYDROGEN TYPE: G493 T AS/NZS ISO 14341-B OR T493 TO AS/NZS ISO 17632-B UNLESS NOTED OTHERWISE.

B.

BUTT WELDS SHALL BE PREQUALIFIED FULL PENETRATION.

C.

ALL WELDS SHALL BE BE 6 CFW UNO.
5. BOLT ASSEMBLIES SHALL BE COMPRISE OF CLASS 8.8 BOLTS, CLASS 8.8 WASHERS AND CLASS 8 NUTS TO AS/NZS 1252 UNO.
6. ALL ANCHORS, BOLTS, NUTS AND WASHERS TO BE HOT DIP GALVANISED TO AS1214. ALL STEELWORK TO BE HOT DIP GALVANISED TO AS/NZS 4680 UNO.
7. ALL STEELWORK TO HAVE WELD SPLATTER AND WELDING SLAG REMOVED PRIOR TO HOT DIP GALVANISING.
8. ANY DAMAGED GALVANISED COATINGS SHALL BE RE[AORED IN ACCORDANCE WITH PROJECT SPECIFICATION.
9. MEMBERS TO BE BRANDED WITH AN APPROPRIATE MARK AFTER FABRICATION.
10. ALL FABRICATED COMPONENTS MUST BE SHOP DETAILED BEFORE FABRICATION AND DRAWINGS SUBMITTED TO THE DESIGNER FOR REVIEW MIN. FOURTEEN (14 DAYS) PRIOR TO FABRICATION. THE REVIEW DOES NOT INCLUDE CHECKING OF DIMENSIONS.
11. BEFORE FABRICATION OF ANY STEELWORK (SAFETY RAILS AND PROTECTION SCREENS) FABRICATOR SHALL CONFIRM LOCATION AND LEVEL OF ALL BOLT SETS CAST INTO CONCRETE BARRIERS/KERBS BY USE A SITE SURVEY.
12. DETAILS OF LIFTING LUGS, TEMPORARY BRACING AND METHOD STATEMENT FOR LIFTING, TRANSPORTATION AND ERECTION SHALL BE SUBMITTED TO THE DESIGN ENGINEER FOR APPROVAL.
13. CONTACT SURFACES BETWEEN DISSIMILAR METALS (e.g. STAINLESS STEEL AND GALVANISED STEEL) SHALL BE INSULATED WITH SEPARATOR TAPE OR FIBRE WASHERS, UNO.

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ABBREVIATIONS

NF	- NEAR FACE	PSC	- PRE-STRESSED CONCRETE	UNO	- UNLESS NOTED OTHERWISE
DN	- NOMINAL DIAMETER	FF	- FAR FACE	SS	- STAINLESS STEEL
RC	- REINFORCED CONCRETE	RC	- REINFORCED CONCRETE		
DWS	- DECK WEARING SURFACE	HD	- HOLD DOWN		

STANDARD DRAWINGS

TMR STD DRG No.	TITLE
1043 SHEETS 1, 2 & 3	REINFORCING STEEL - STANDARD BAR SHAPES
1044	REINFORCING STEEL - STD HOOK, LAP AND BEND DETAILS AND GENERAL STEEL REINFORCING INFO.
1063	STANDARD DATE PLATE - GENERAL ARRANGEMENT
2045	BRIDGE KERBS - STANDARD DETAILS OF CAST INSITU KERBS FOR TRANSVERSELY STRESSED PSC UNITS
2052 SHEETS 1 TO 6	PRECAST UNITS - 12m PSC DECK UNIT
2200 SHEETS 1 TO 5	BRIDGE TRAFFIC BARRIERS - POST AND RAIL TRAFFIC BARRIERS REGULAR PERFORMANCE LEVEL
2233	ABUTMENT PROTECTION - TYPE 1 - ROCK SPILLTHROUGH - GREATER THAN 1700 CLEARANCE
2255	BRIDGE APPROACHES - RELIEVING SLAB 3 METRE SPAN

CONSTRUCTION SEQUENCE

- CS.1.
- TO ENSURE THE STRUCTURAL ADEQUACY OF THE PROPOSED BRIDGE, PREMISE ADVISE THE FOLLOWING CONSTRUCTION SEQUENCE SHALL BE ADOPTED BY THE CONTRACTOR. SHOULD ANY MODIFICATION TO THE BELOW MENTIONED SEQUENCE BE REQUIRED PRIOR APPROVAL BY THE PROJECT SUPERINTENDENT SHALL BE SOUGHT:
- PHASE 1. DRIVE STEEL LINER FOR ABUTMENT AND PIER BORED PILES TO REQUIRED DEPTH, EXCAVATE AND CASE BORED PILES.
- PHASE 2. CONSTRUCT ABUTMENT AND PIER HEADSTOCKS AND WINGWALLS
- PHASE 3. BACKFILL BEHIND ABUTMENTS WITH COMPACTED FILL AND RAISE EMBANKMENT TO PAVEMENT LEVEL.
- PHASE 4. CONSTRUCTED GABION ABUTMENT AND APPROACH EMBANKMENT PROTECTION.
- PHASE 5. INSTALL PRECAST CONCRETE DECK UNITS AND ANCHOR TO ABUTMENT AND PIER HEADSTOCKS.
- PHASE 6. GROUT BETWEEN DECK UNITS NOT LESS THAN 48 HOURS BEFORE TRANSVERSE STRESSING.
- PHASE 7. INSTALL TRANSVERSE STRESS BARS AND STRESS BRIDGE SUPERSTRUCTURES.
- PHASE 8. CONSTRUCT BRIDGE, DECK WEARING SURFACE, JOINTS, AND FINISHES AT LEAST 100 DAYS AFTER PRECAST DECK UNIT MANUFACTURE.
- PHASE 9. CONSTRUCT BRIDGE APPROACH AND COMPLETE LINEMARKING.
- PHASE 10.REMOVAL OF SIDE TRACK AND STEEL PIPES.
- PHASE 11. UNDERTAKE DEMOLITION WORKS OF EXISTING BRIDGE STRUCTURE.

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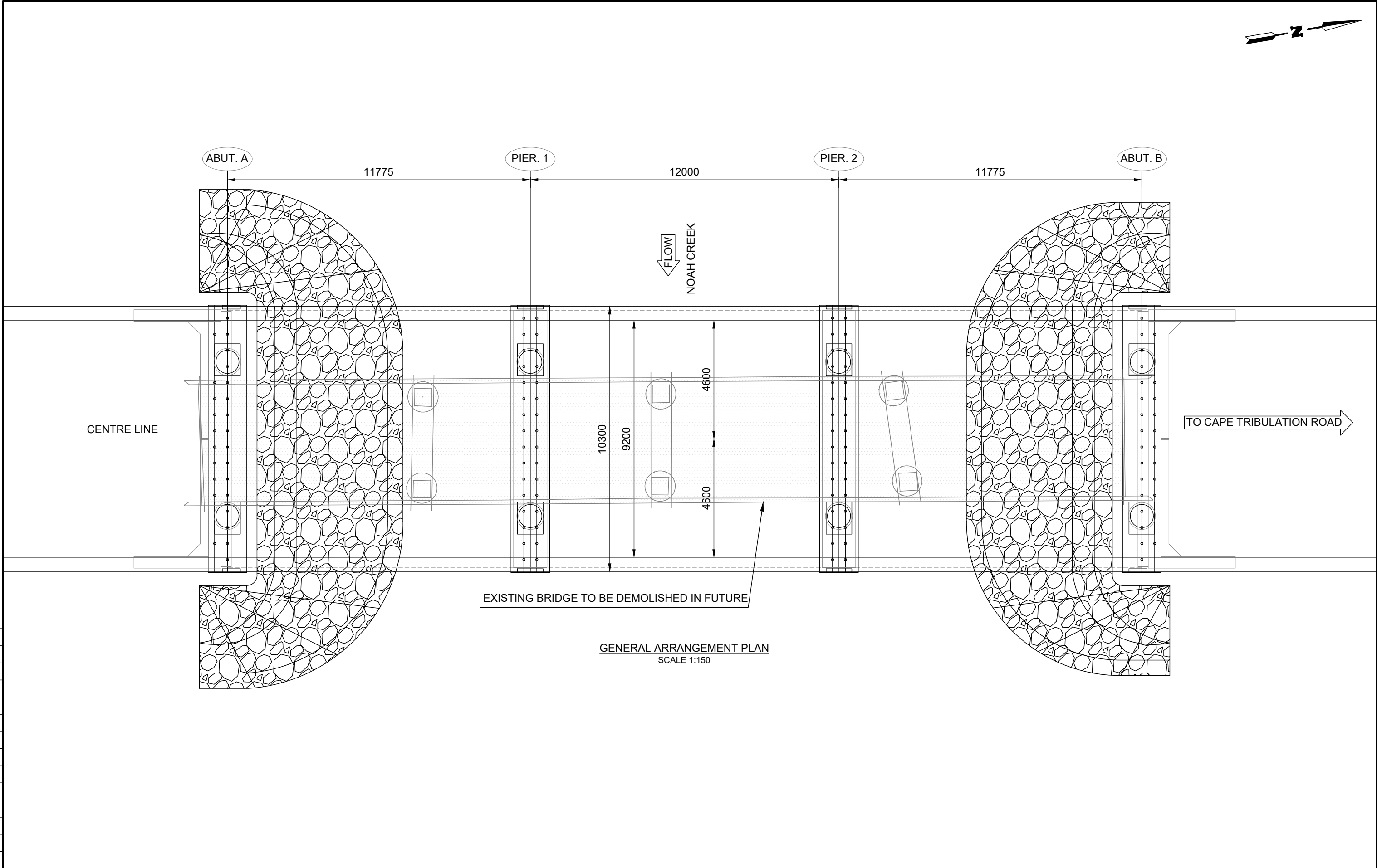
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				DESIGN LOT CODE BR		PLOT DATE TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				DOUGLAS SHIRE COUNCIL								
EXTERNAL REFERENCE FILES (UP TO 35 XREFS)		REV	DATE	AMENDMENT / REVISION DESCRIPTION		DVF No	APPROVAL	TITLE	NAME		DESIGNER	SCALES AT A3 SIZE DRAWING		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD SPECIFICATIONS AND NOTES- SHEET 3-3						
	A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI													
						DRAFTING CHECK	N.CHUNG													
						DESIGNER	M.OMIDI													
						DESIGN CHECK	N.CHUNG													
						DESIGN MANAGER	N.CHUNG													
PROJECT MANAGER	N.CHUNG																			
												CO-ORDINATE SYSTEM: MGA ZONE 55	HEIGHT DATUM: A.H.D.	CLIENT PROJECT / DRAWING No	ISSUE STATUS	IFR	JJR PROJECT / DRAWING No	JJR-1240502B-ST004	ISSUE	A

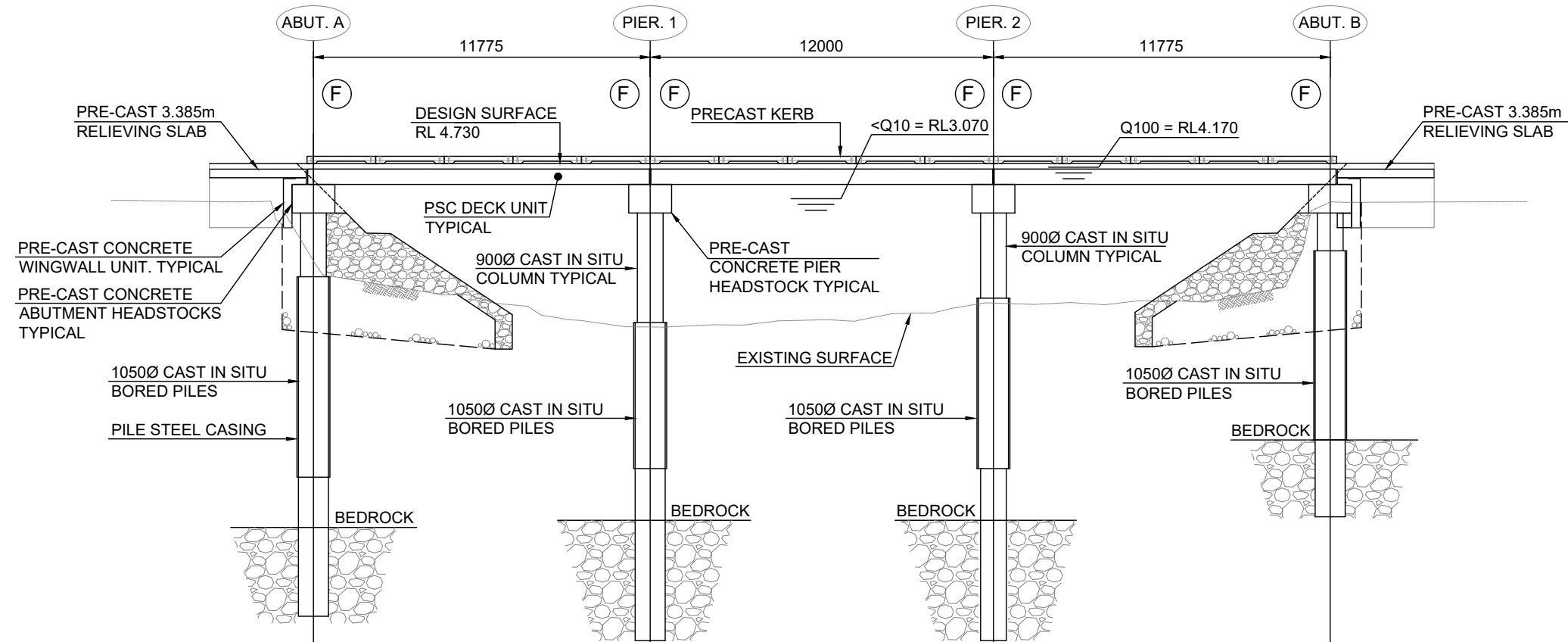
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A3 ORIGINAL
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	A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI																				
						DRAFTING CHECK	N.CHUNG																				
						DESIGNER	M.OMIDI																				
						DESIGN CHECK	N.CHUNG																				
						DESIGN MANAGER	N.CHUNG																				
PROJECT MANAGER	N.CHUNG																										
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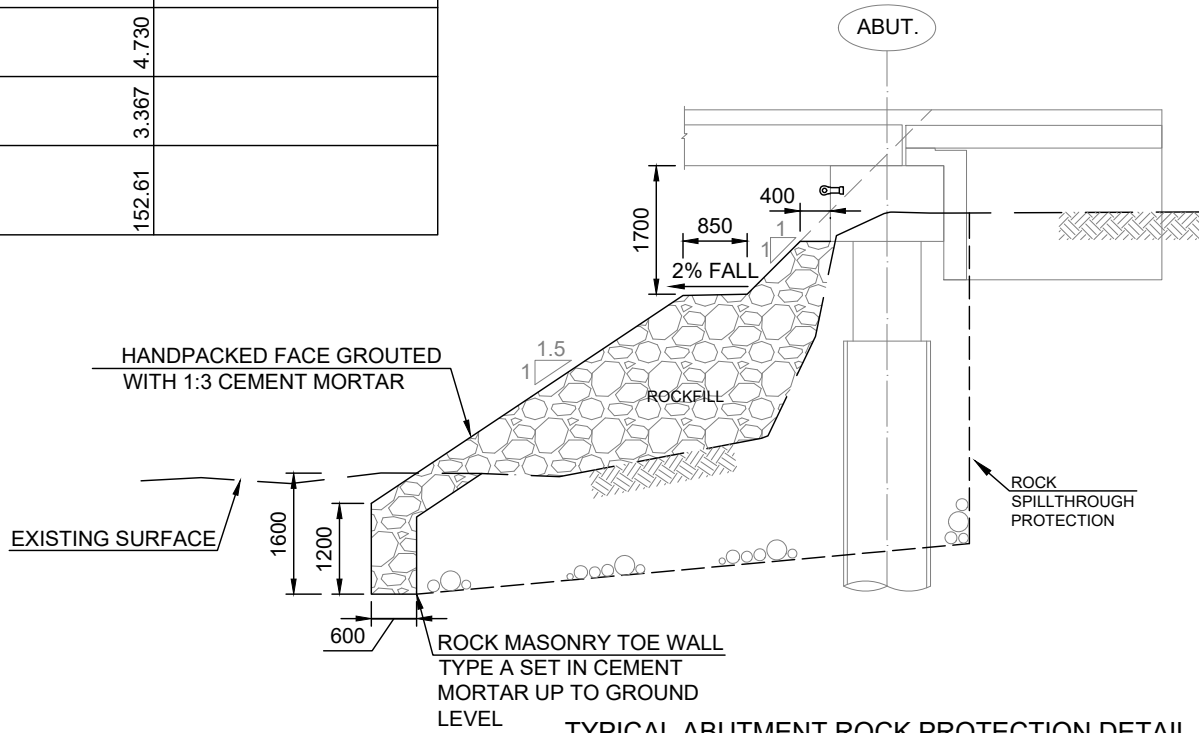
LEGEND

(F) DENOTES FIXED JOINT ARTICULATION



DATUM RL. -13.000					
VERTICAL ALIGNMENT	←			L = 64.644m G = 0%	→
DESIGN SURFACE LEVEL		4.730	4.730	4.730	4.730
EXISTING SURFACE LEVEL - - - - -		1.320	-0.989	-0.153	3.367
CHAINAGE		117.06	128.835	140.835	152.61

LONG SECTION ALONG BRIDGE CONTROL LINE
SCALE 1:200



TYPICAL ABUTMENT ROCK PROTECTION DETAIL
SCALE 1:100

				DESIGN LOT CODE BR		PLOT DATE		TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				DOUGLAS SHIRE COUNCIL					
EXTERNAL REFERENCE FILES (UP TO 35 XREFS)		REV	DATE	AMENDMENT / REVISION DESCRIPTION		DWF No	APPROVAL	TITLE	NAME	PRINCIPAL  		DESIGNER		SCALES AT A3 SIZE DRAWING AS SHOWN				NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD LONG SECTION	

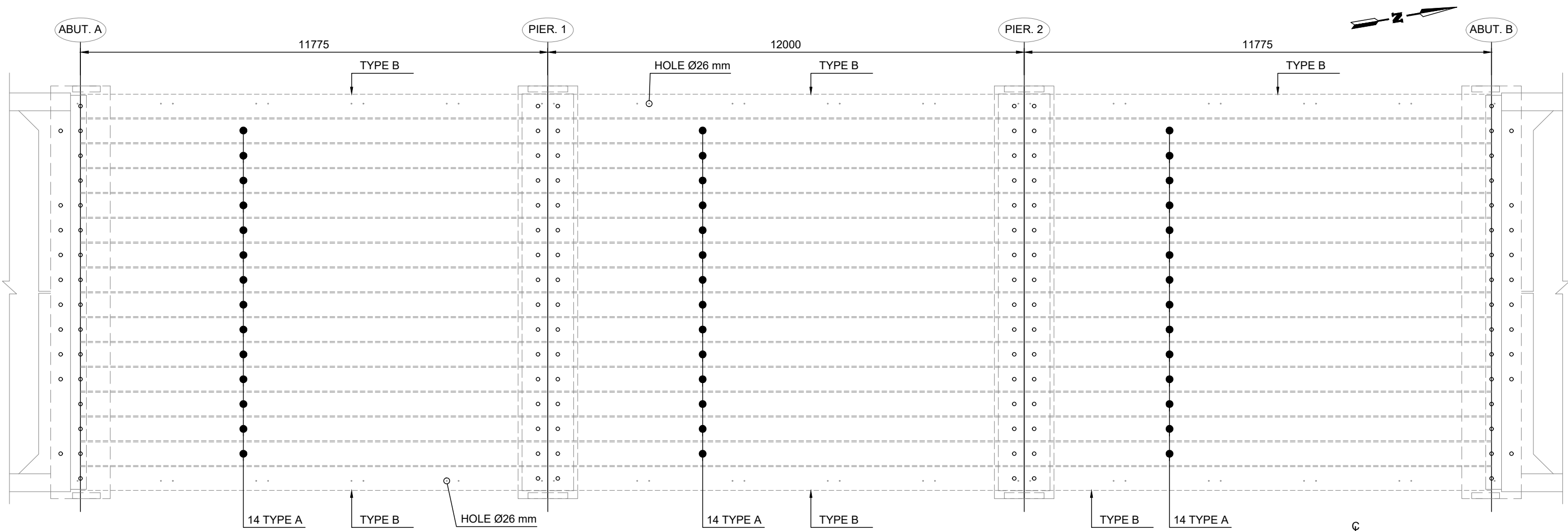
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100 mm ON ORIGINAL

AS ORIGINAL

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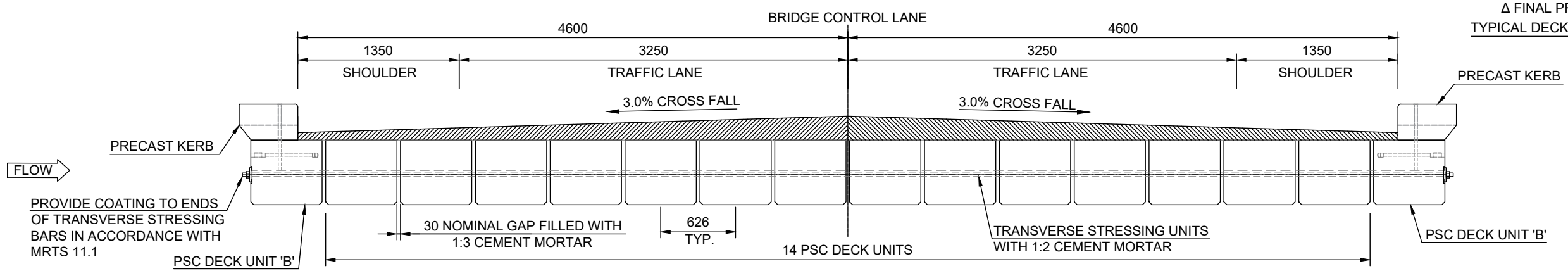
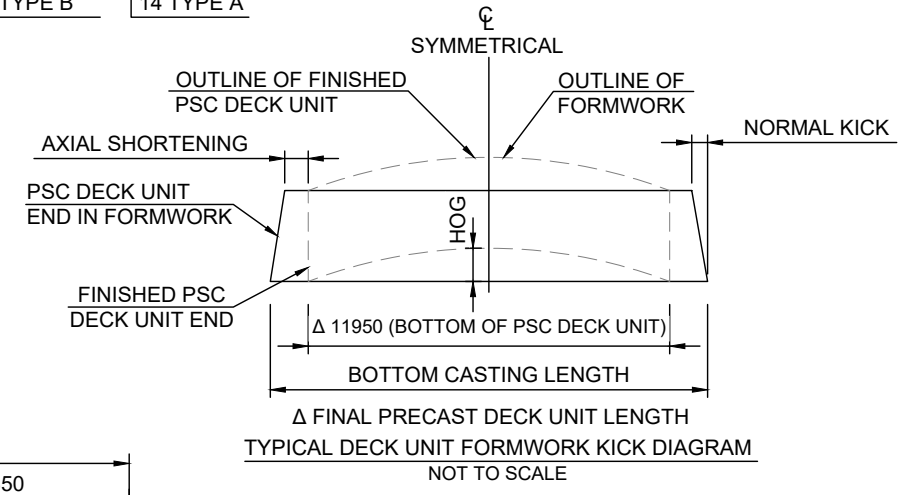
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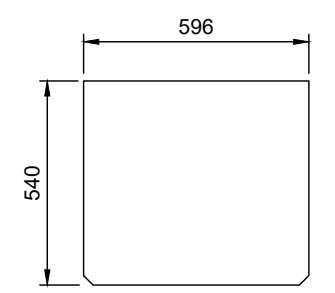
LAYOUT PLAN - PSC DECK UNITS
SCALE 1:100

DECK UNIT SCHEDULE					
TYPE	LENGTH OF DECK UNIT NOM.	LOCATION	SCUPPER	END 1	END 2
TYPE A	12m	INNER	NO	FIXED	FIXED
TYPE B	12m	OUTER	NO	FIXED	FIXED

DESIGN HOG OF DECK UNITS
17mm AT TRANSFER
20mm AT 30 DAYS
27mm AT 100 DAYS

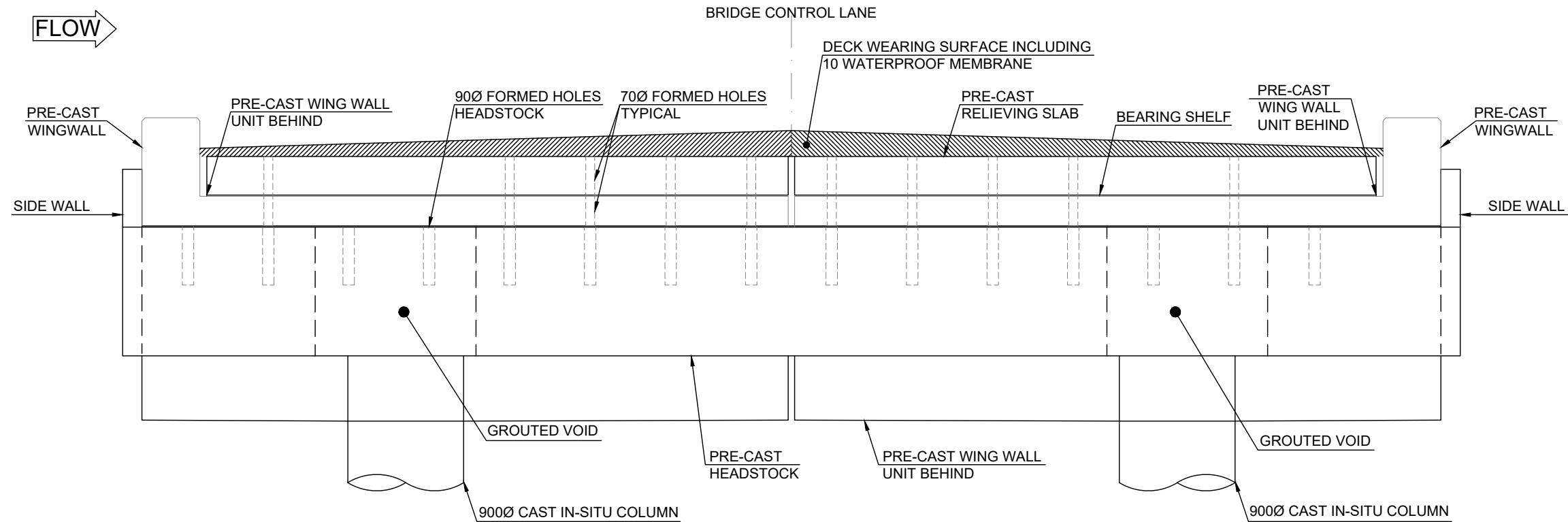


TYPICAL DECK CROSS SECTION
SCALE 1:25



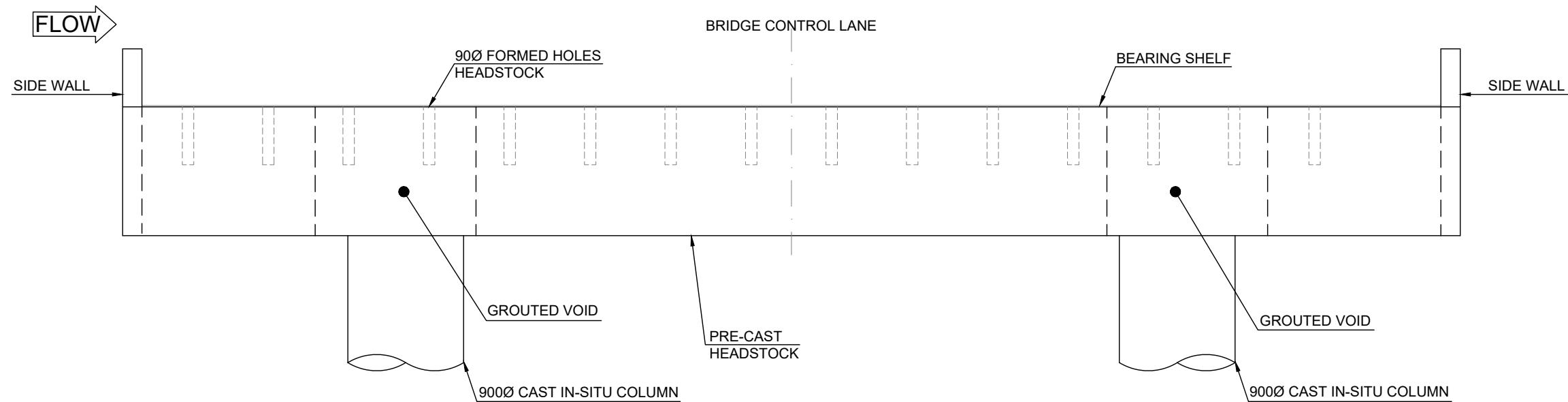
TYPICAL SECTION (INNER UNITS)
SCALE 1:20

EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN LOT CODE BR		PLOT DATE TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				DOUGLAS SHIRE COUNCIL												
				A	27.01.2025	ISSUED FOR REVIEW				Premise		JJ RYAN CONSULTING PTY LTD		AS SHOWN		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PLAN AND DECK CROSS SECTION											
																		CO-ORDINATE SYSTEM: MGA ZONE 55 HEIGHT DATUM: A.H.D.		CLIENT PROJECT / DRAWING No		ISSUE STATUS IFR		JJR PROJECT / DRAWING No JJR-1240502B-ST007		ISSUE A	



ABUTMENT A SHOWN. ABUTMENT B SIMILAR UNO.

ELEVATION - ABUTMENTS
SCALE 1:25

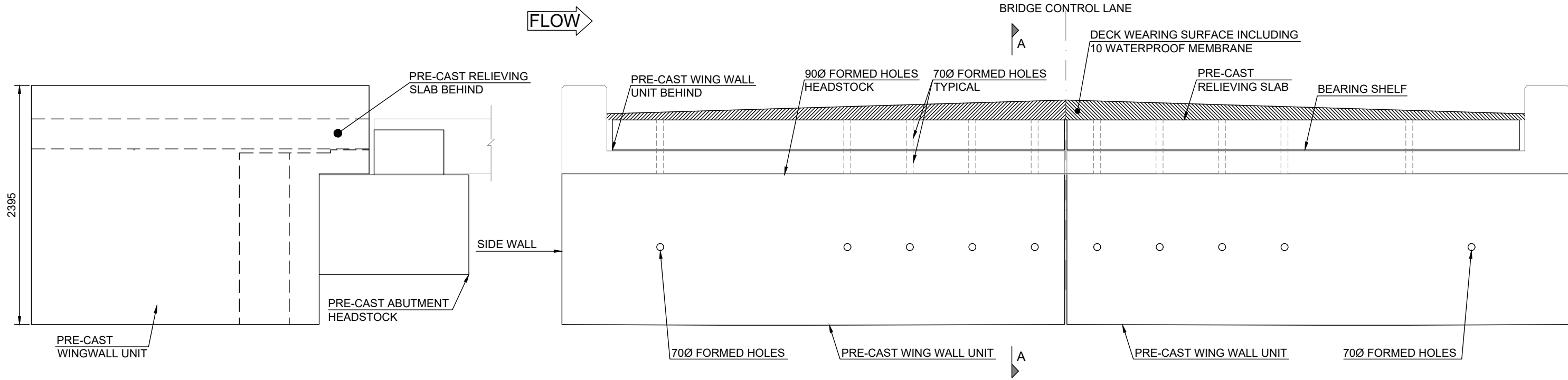


TYPICAL PIER ELEVATION
SCALE 1:25

100 mm ON ORIGINAL
A3 ORIGINAL
5
10
15
20
25
30
35
40
45
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55
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70
75
80
85
90
95
100
THIS SHEET MAY BE PREPARED USING COLOUR AND MAY BE INCOMPLETE IF COPIED
DRAWING FILE LOCATION NAME
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EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN LOT CODE BR		PLOT DATE TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				DOUGLAS SHIRE COUNCIL			
							DVF No	APPROVAL	TITLE	NAME	PRINCIPAL	DESIGNER	SCALES AT A3 SIZE DRAWING					
				A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			AS SHOWN		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD ABUTMENT & HEADSTOCK ELEVATION			
									DRAFTING CHECK	N.CHUNG								
									DESIGNER	M.OMIDI								
									DESIGN CHECK	N.CHUNG								
									DESIGN MANAGER	N.CHUNG								
									PROJECT MANAGER	N.CHUNG								
CO-ORDINATE SYSTEM: MGA		ZONE 55	HEIGHT DATUM: A.H.D.	CLIENT PROJECT / DRAWING No	ISSUE STATUS	IFR	JJR PROJECT / DRAWING No	JJR-1240502B-ST008	ISSUE	A								

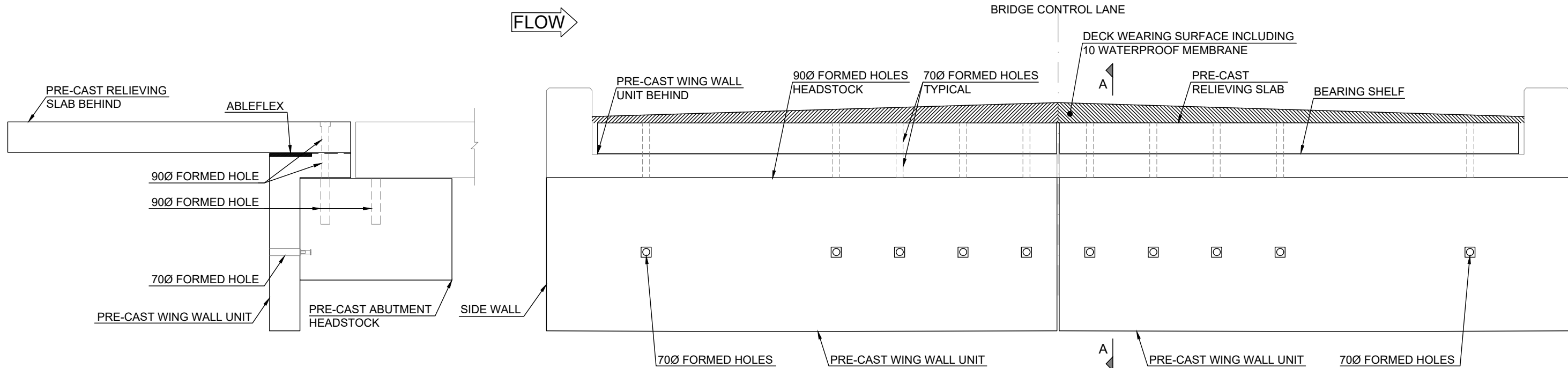
THIS SHEET MAY BE PREPARED USING COLOUR AND MAY BE INCOMPLETE IF COPIED
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TYPICAL WINGWALL AND RELIEVING SLAB SIDE ELEVATION
SCALE 1:25

ABUTMENT A SHOWN. ABUTMENT B SIMILAR UNO.
(ABUTMENT HEADSTOCK NOT SHOWN)

TYPICAL WINGWALL AND RELIEVING SLAB FRONT ELEVATION
SCALE 1:25



SECTION A-A
SCALE 1:25

ABUTMENT A SHOWN. ABUTMENT B SIMILAR UNO.
(ABUTMENT HEADSTOCK NOT SHOWN)

TYPICAL WINGWALL AND RELIEVING SLAB FRONT ELEVATION
SCALE 1:25

EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				DESIGN LOT CODE BR		PLOT DATE TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING			DOUGLAS SHIRE COUNCIL			
REV	DATE	AMENDMENT / REVISION DESCRIPTION	DVF No	APPROVAL	TITLE	NAME	PRINCIPAL	DESIGNER	SCALES AT A3 SIZE DRAWING		NOAH CREEK BRIDGE			
A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			AS SHOWN		NOAH CREEK, CAPE TRIBULATION RD			
					DRAFTING CHECK	N.CHUNG					WINGWALL & RELIEVING SLAB ELEVATION			
					DESIGNER	M.OMIDI								
					DESIGN CHECK	N.CHUNG								
					DESIGN MANAGER	N.CHUNG								
					PROJECT MANAGER	N.CHUNG			CO-ORDINATE SYSTEM: MGA ZONE 55		HEIGHT DATUM: A.H.D.	CLIENT PROJECT / DRAWING No	ISSUE STATUS	ISSUE
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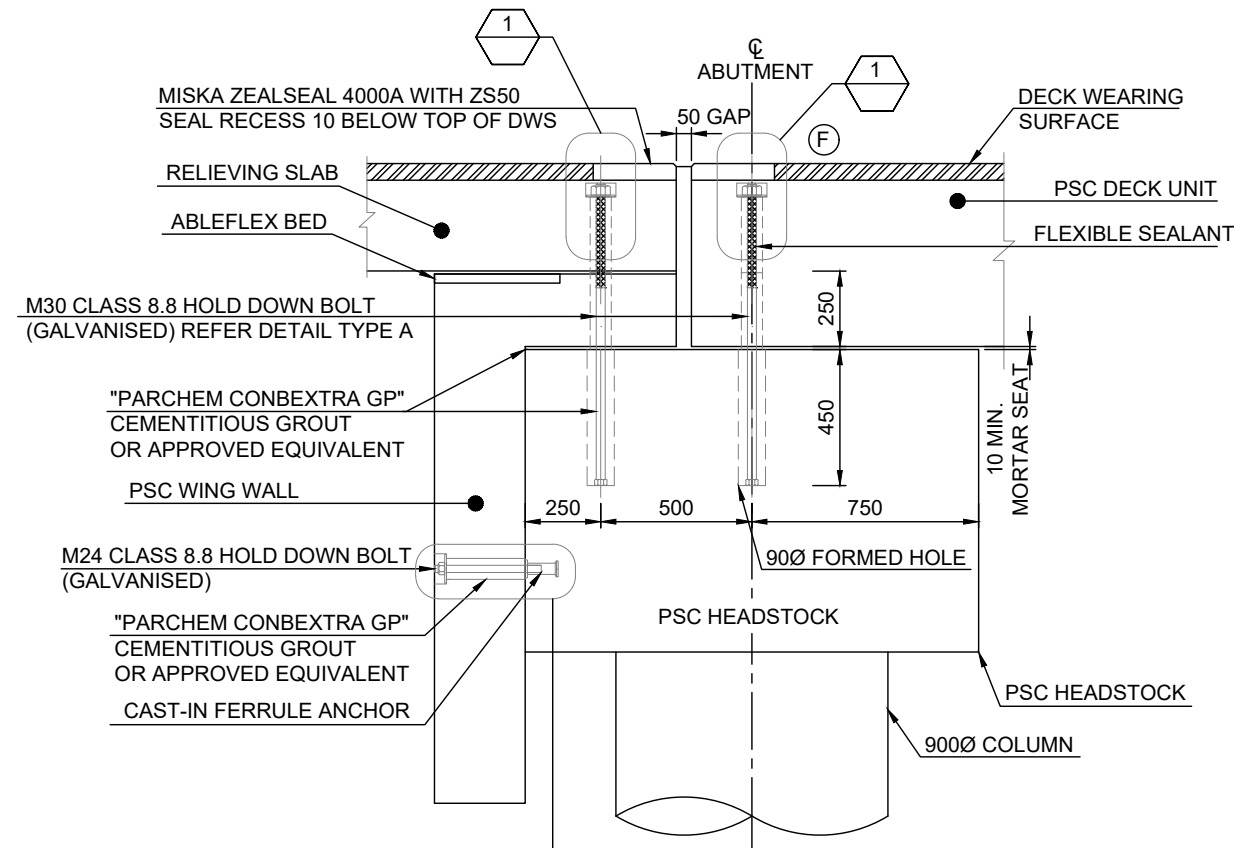
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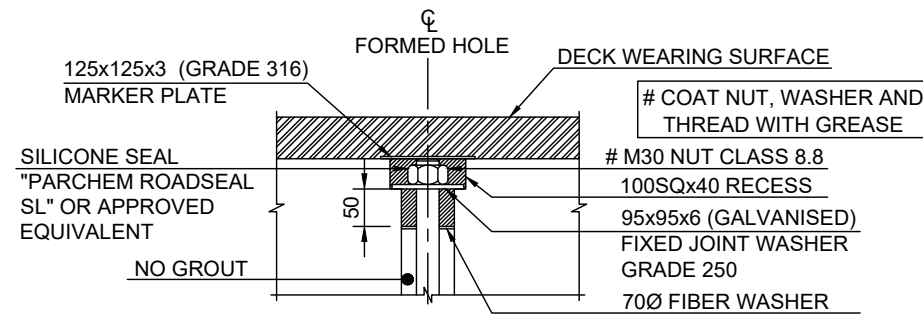
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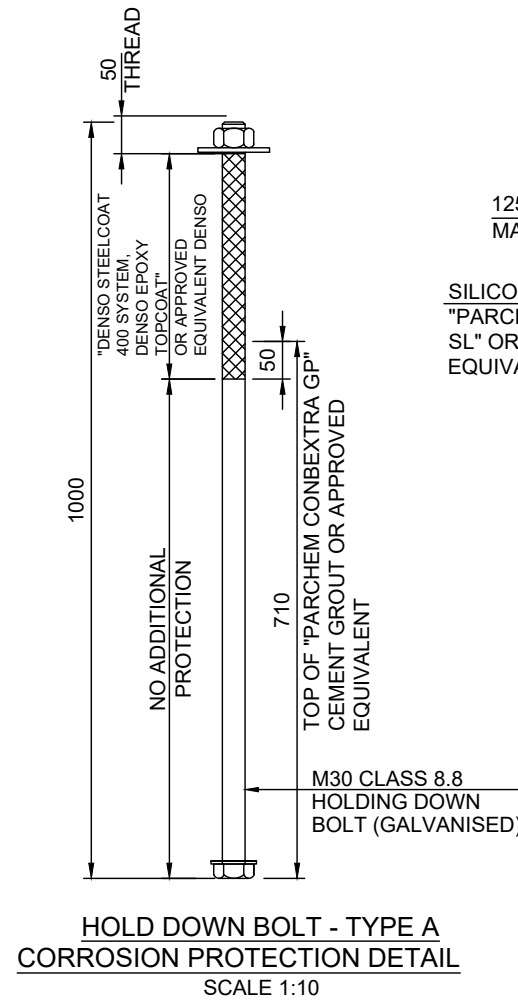
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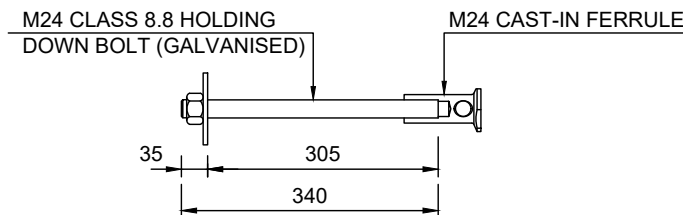
ABUTMENT B OPPOSITE HAND
BOLTED ANCHORAGE DETAIL - ABUTMENT A
SCALE 1:25



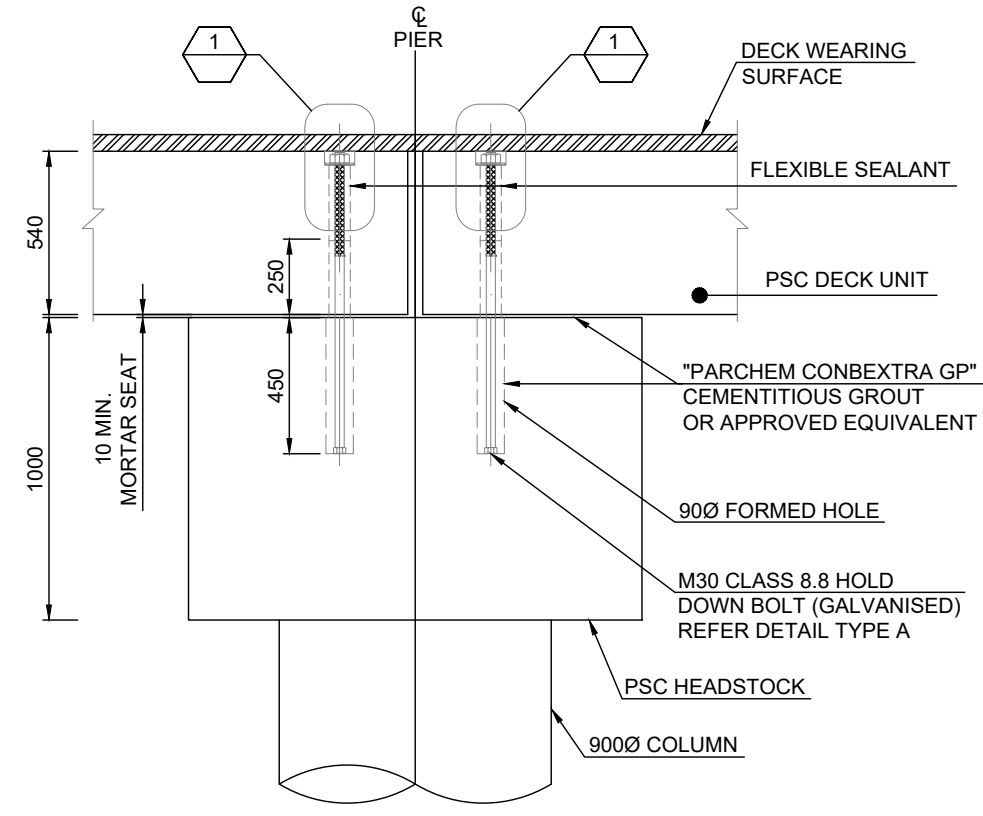
1 DETAIL
SCALE 1:10



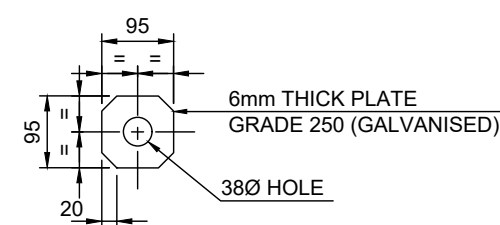
HOLD DOWN BOLT - TYPE A
CORROSION PROTECTION DETAIL
SCALE 1:10



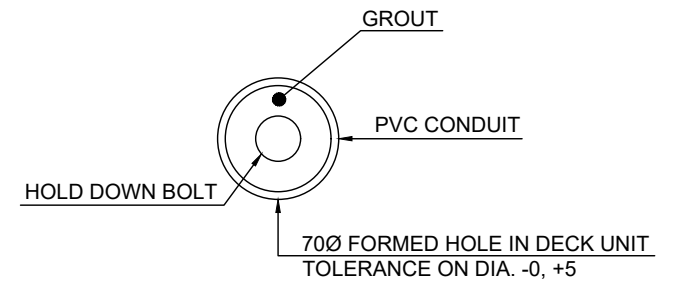
HOLD DOWN BOLT - TYPE B
CORROSION PROTECTION DETAIL
SCALE 1:10



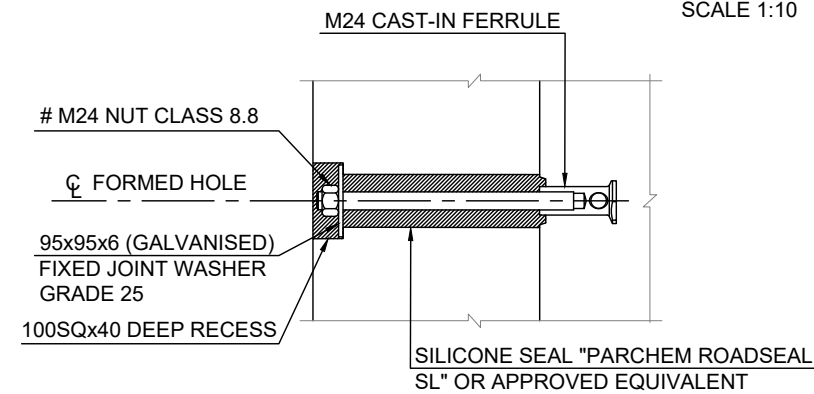
BOLTED ANCHORAGE DETAIL - PIER 1 & 2
SCALE 1:25



FIXED JOINT WASHER
SCALE 1:10



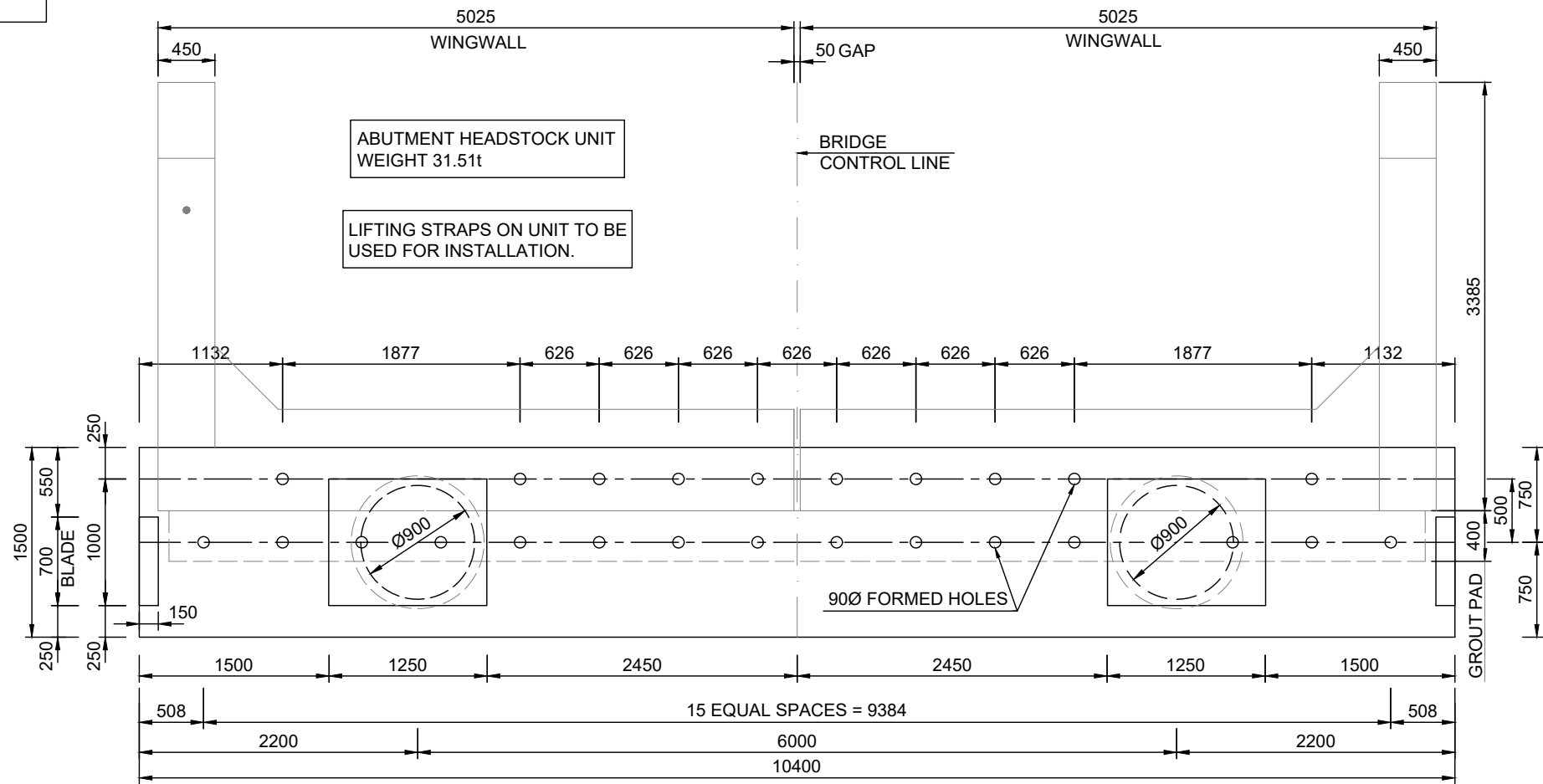
PLAN
FIXED JOINT
SCALE 1:10



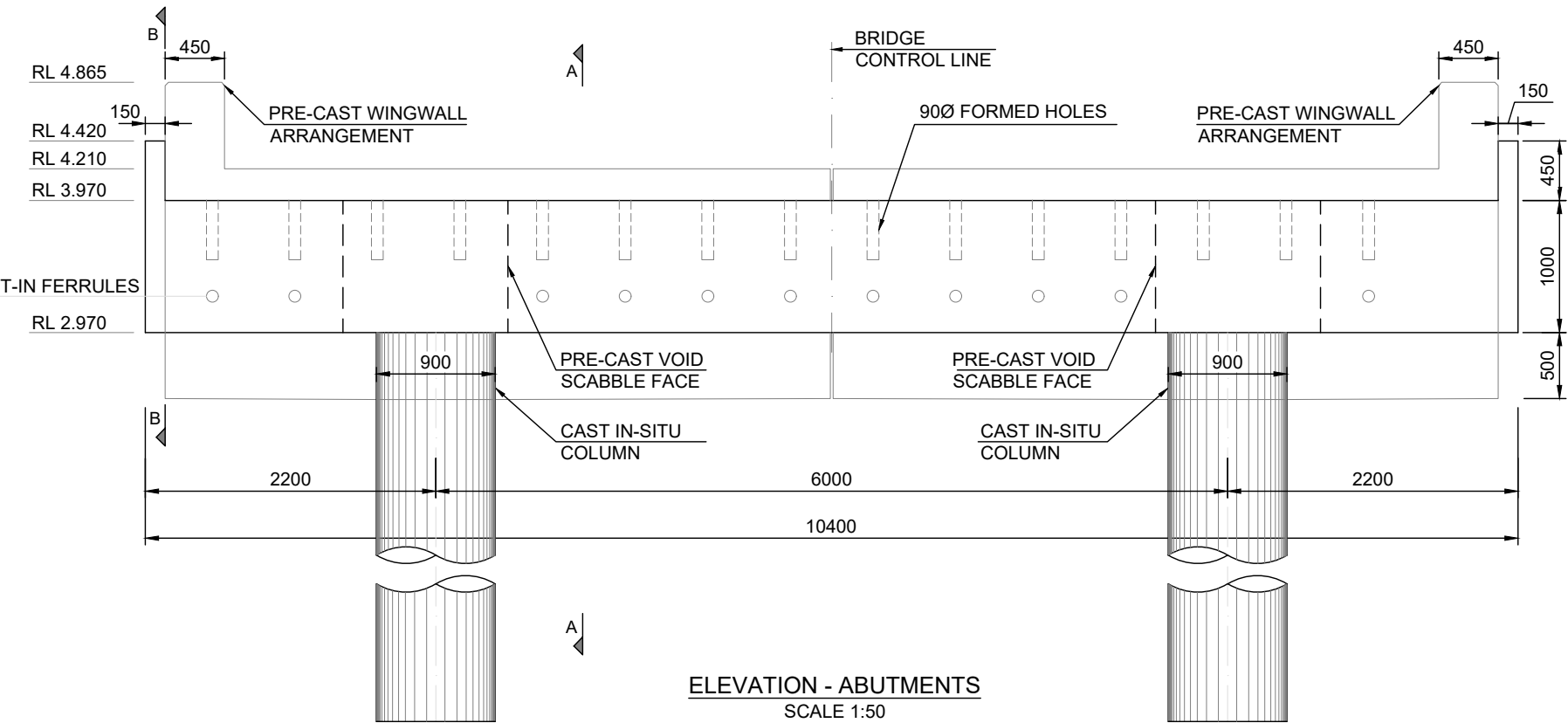
2 DETAIL
SCALE 1:10

EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				DESIGN LOT CODE BR	PLOT DATE	TIME	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING			DOUGLAS SHIRE COUNCIL			
REV	DATE	AMENDMENT / REVISION DESCRIPTION	DWF No	APPROVAL	TITLE	NAME	PRINCIPAL	DESIGNER	SCALES AT A3 SIZE DRAWING	NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD ANCHORAGE DETAILS			
A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			AS SHOWN	NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD ANCHORAGE DETAILS			
					DRAFTING CHECK	N.CHUNG							
					DESIGNER	M.OMIDI							
					DESIGN CHECK	N.CHUNG							
					DESIGN MANAGER	N.CHUNG							
					PROJECT MANAGER	N.CHUNG							
CO-ORDINATE SYSTEM: MGA ZONE 55				HEIGHT DATUM: A.H.D.				CLIENT PROJECT / DRAWING No				ISSUE STATUS	ISSUE
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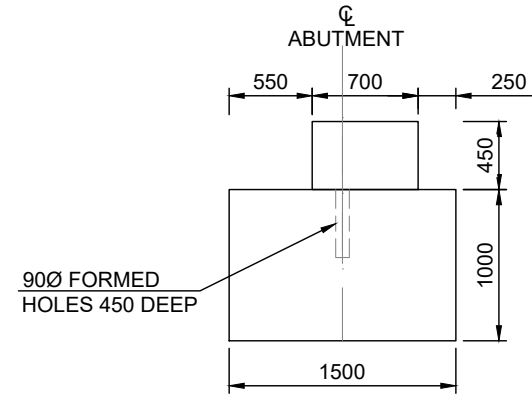
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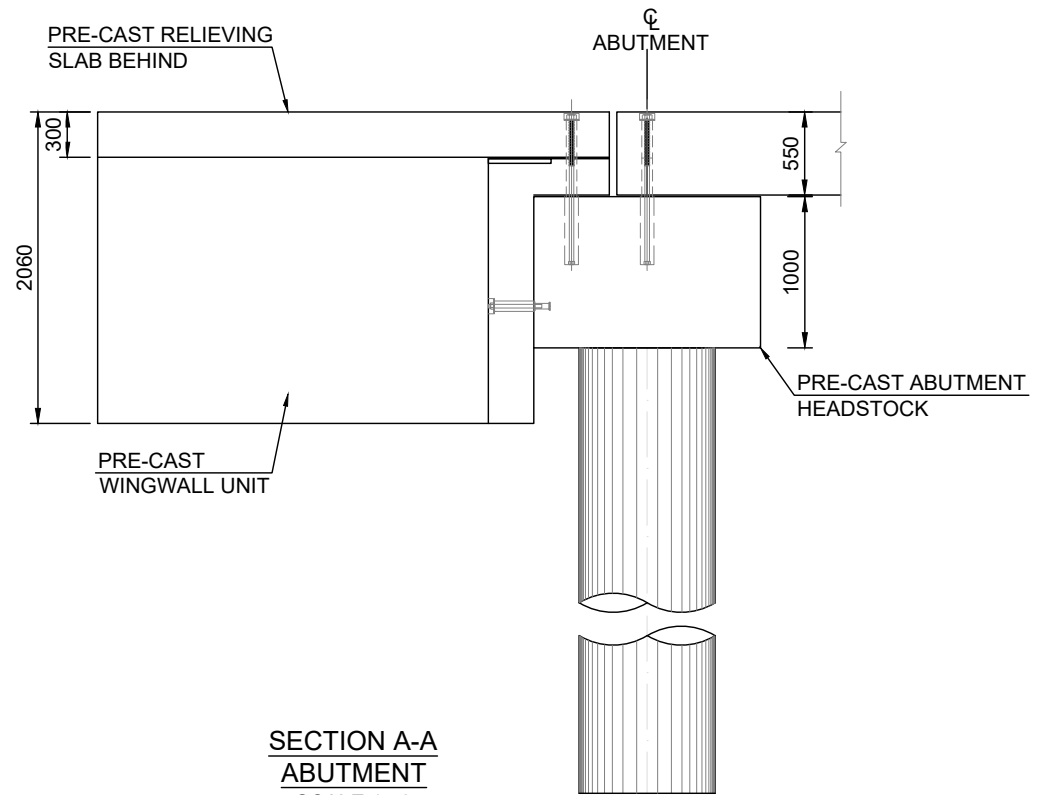
PLAN ABUTMENTS
SCALE 1:50



ELEVATION - ABUTMENTS
SCALE 1:50



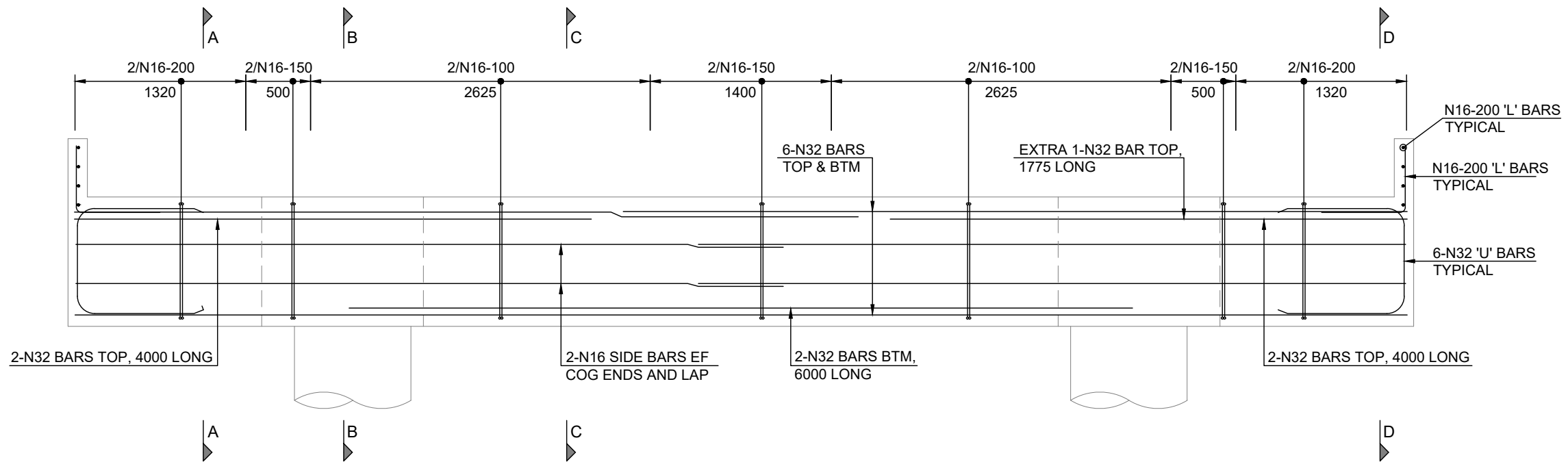
SECTION B-B
HEADSTOCK ABUTMENT
SCALE 1:50



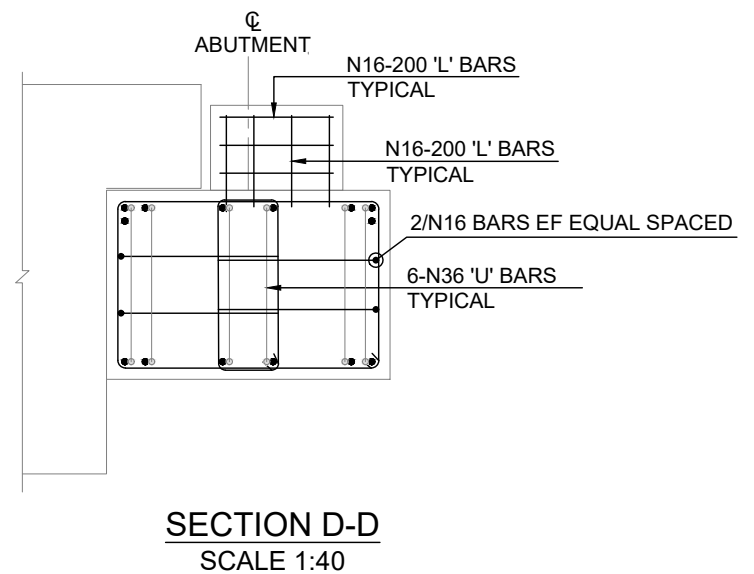
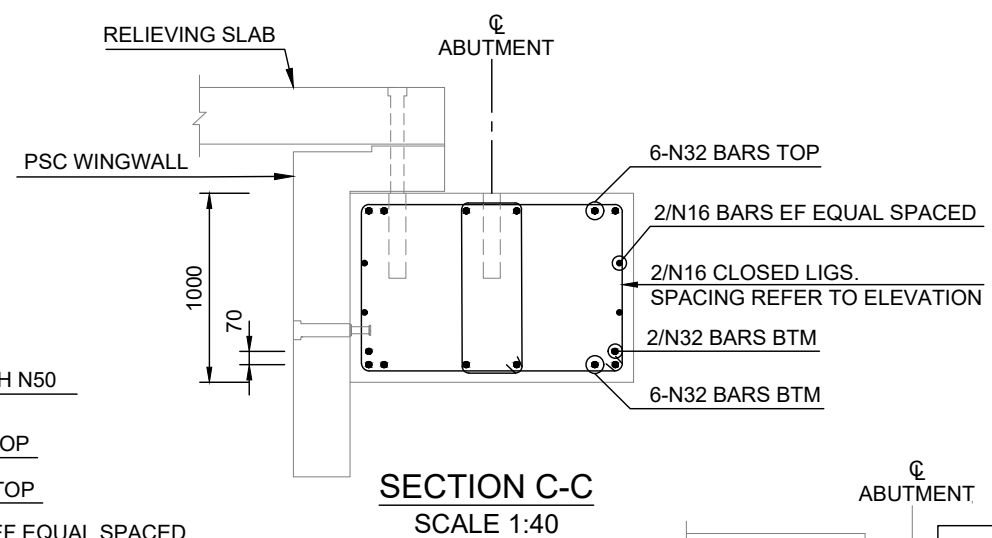
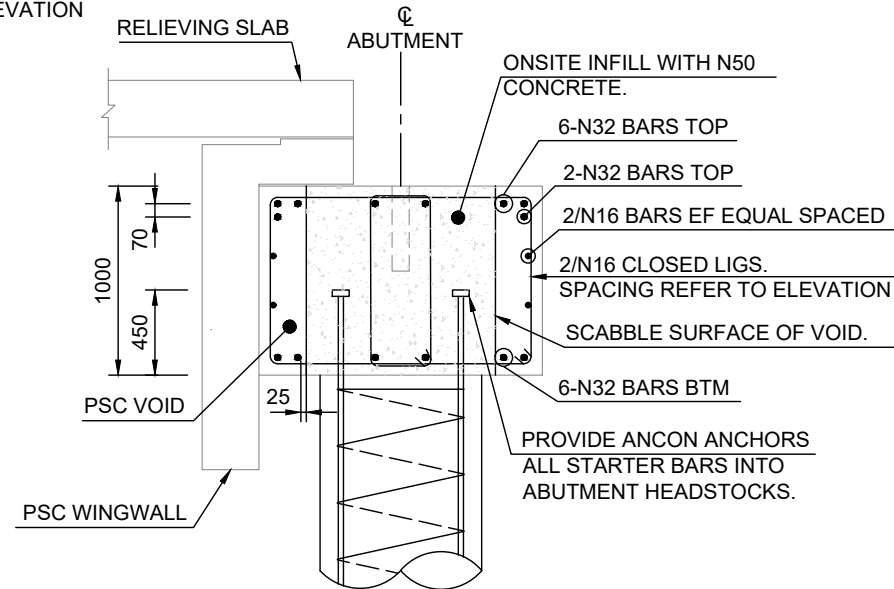
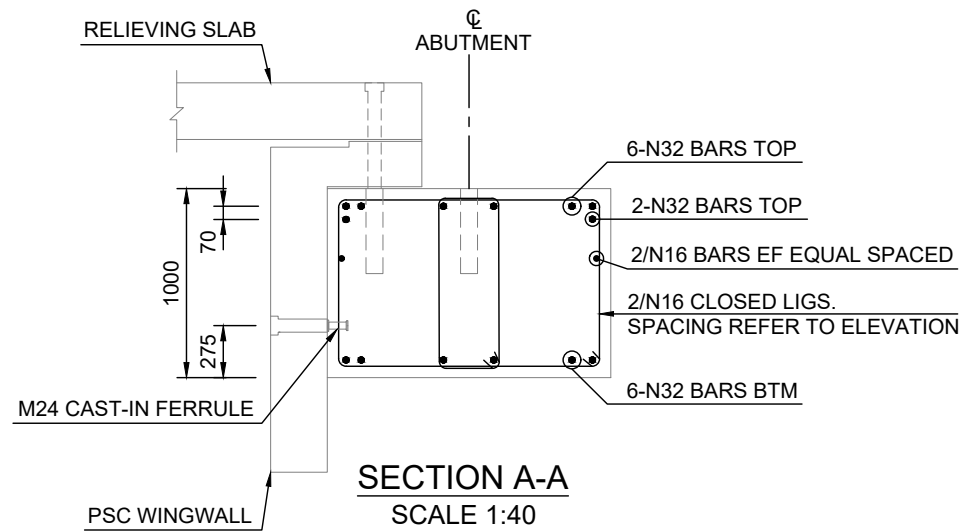
SECTION A-A
ABUTMENT
SCALE 1:50

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				A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			AS SHOWN	NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD ABUTMENT HEADSTOCK PLAN AND SECTIONS			
									DRAFTING CHECK	N.CHUNG							
									DESIGNER	M.OMIDI							
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100 mm ON ORIGINAL
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DRAWING FILE LOCATION NAME
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ABUTMENT A SHOWN. ABUTMENT B SIMILAR.
TYPICAL ABUTMENT HEADSTOCK REINFORCEMENT
ELEVATION
SCALE 1:40



EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				REV	DATE	AMENDMENT / REVISION DESCRIPTION	DESIGN LOT CODE BR		PLOT DATE		TIME	DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				DOUGLAS SHIRE COUNCIL			
	A	27.01.2025	ISSUED FOR REVIEW	-	-	TITLE	NAME		PRINCIPAL		DESIGNER	AS SHOWN	SCALES AT A3 SIZE DRAWING	NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD ABUTMENT HEADSTOCK REINFORCEMENT					
						DRAFTER	R.ABBASI												
						DRAFTING CHECK	N.CHUNG												
						DESIGNER	M.OMIDI												
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						PROJECT MANAGER	N.CHUNG												
CO-ORDINATE SYSTEM: MGA ZONE 55				HEIGHT DATUM: A.H.D.				CLIENT PROJECT / DRAWING No		ISSUE STATUS		JJR PROJECT / DRAWING No		ISSUE					
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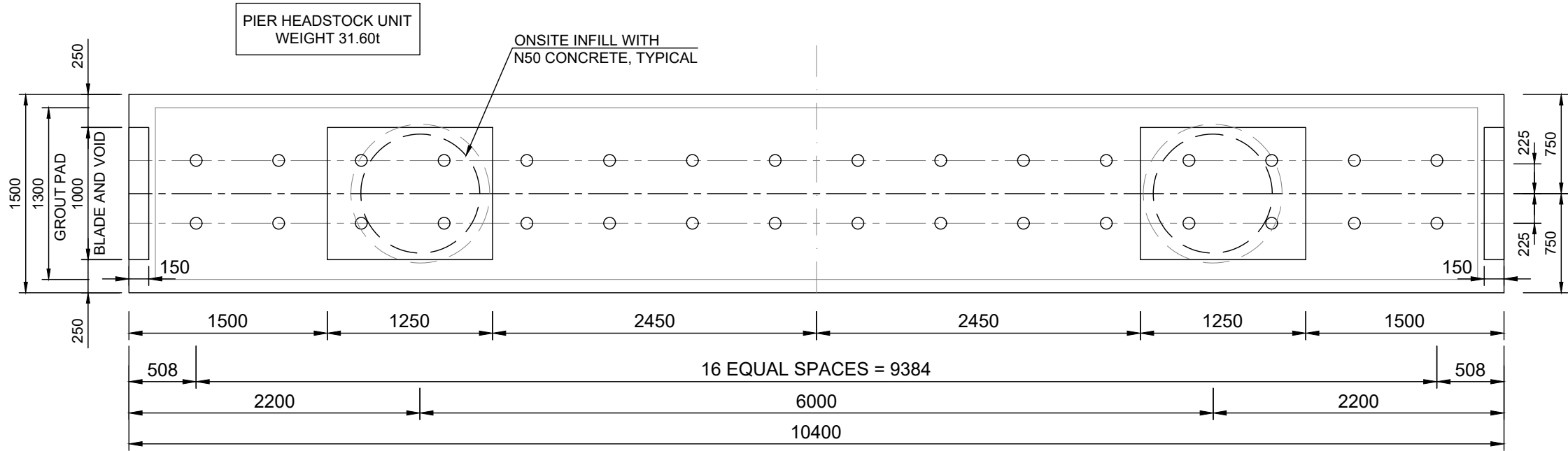
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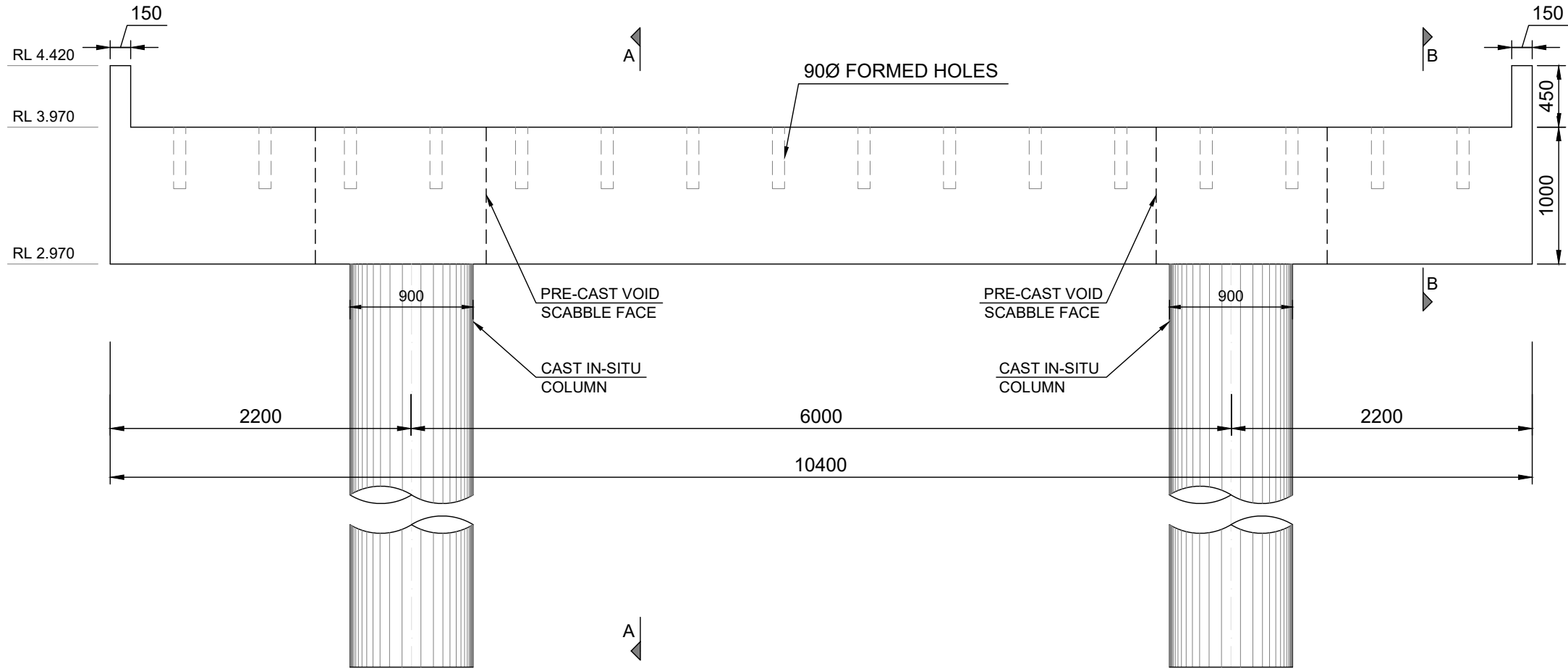
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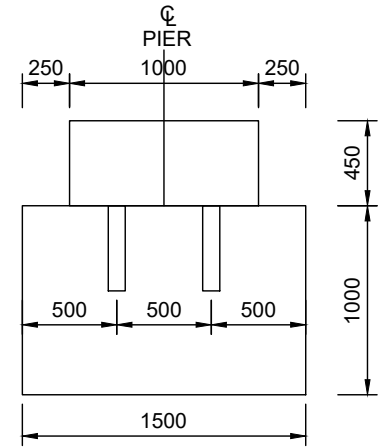
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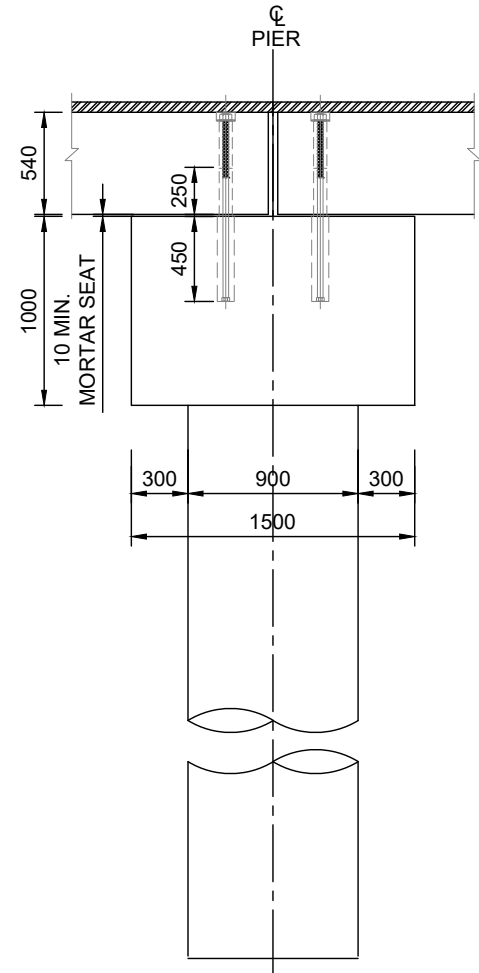
PIER 1 - TOP VIEW
SCALE 1:40



PIER 1
SCALE 1:40



SECTION B-B
SCALE 1:40



SECTION A-A
SCALE 1:40

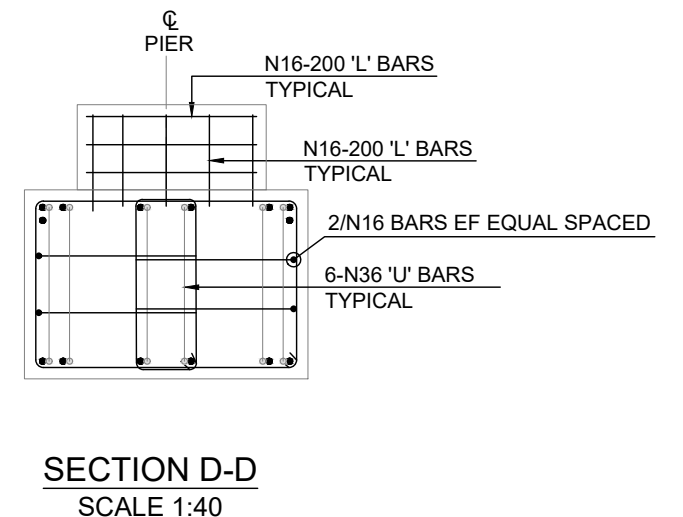
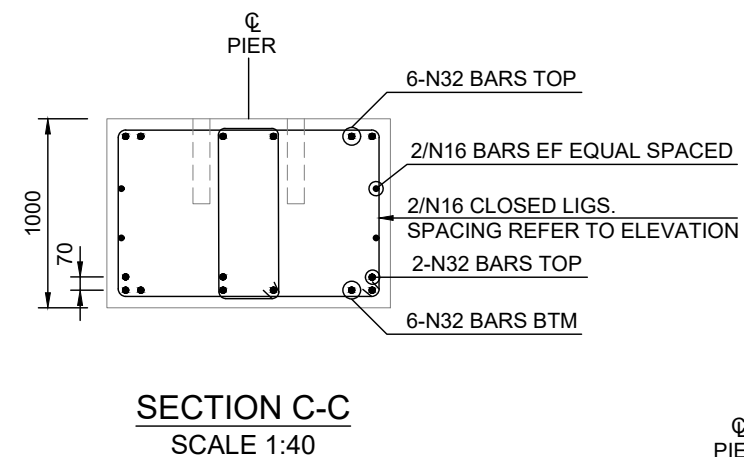
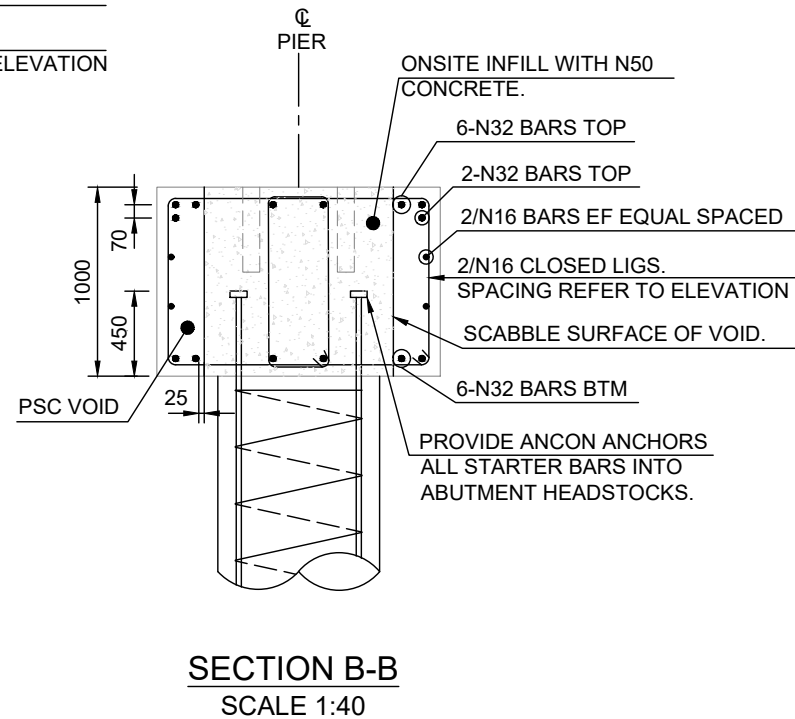
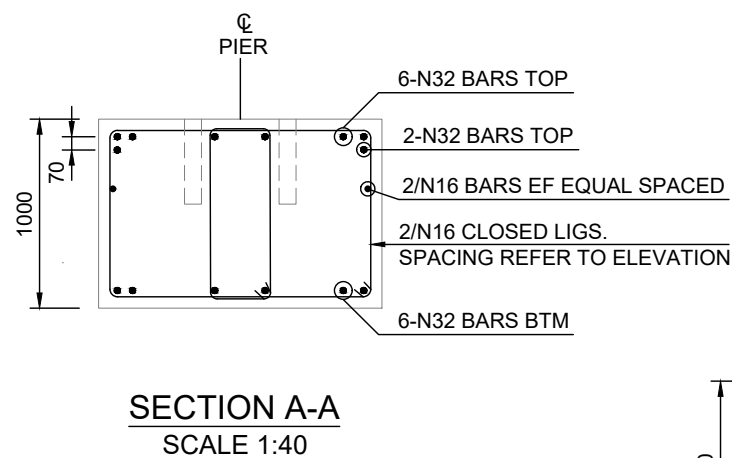
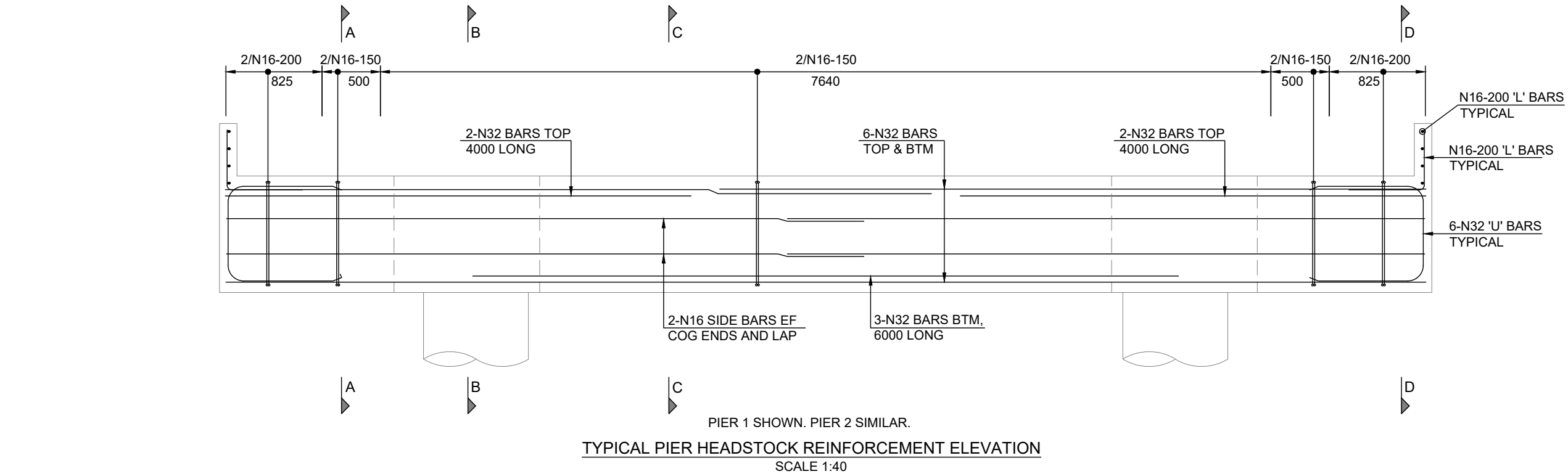
EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				DESIGN LOT CODE BR		PLOT DATE TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING			DOUGLAS SHIRE COUNCIL			
REV	DATE	AMENDMENT / REVISION DESCRIPTION	DVF No	APPROVAL	TITLE	NAME	PRINCIPAL	DESIGNER	SCALES AT A3 SIZE DRAWING		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PIER HEADSTOCK PLAN AND SECTIONS			
A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			AS SHOWN		CLIENT PROJECT / DRAWING No JJR-1240502B-ST013			
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					DESIGNER	M.OMIDI								
					DESIGN CHECK	N.CHUNG								
					DESIGN MANAGER	N.CHUNG								
					PROJECT MANAGER	N.CHUNG			CO-ORDINATE SYSTEM: MGA ZONE 55		HEIGHT DATUM: A.H.D.	ISSUE STATUS IFR	ISSUE A	

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100 mm ON ORIGINAL

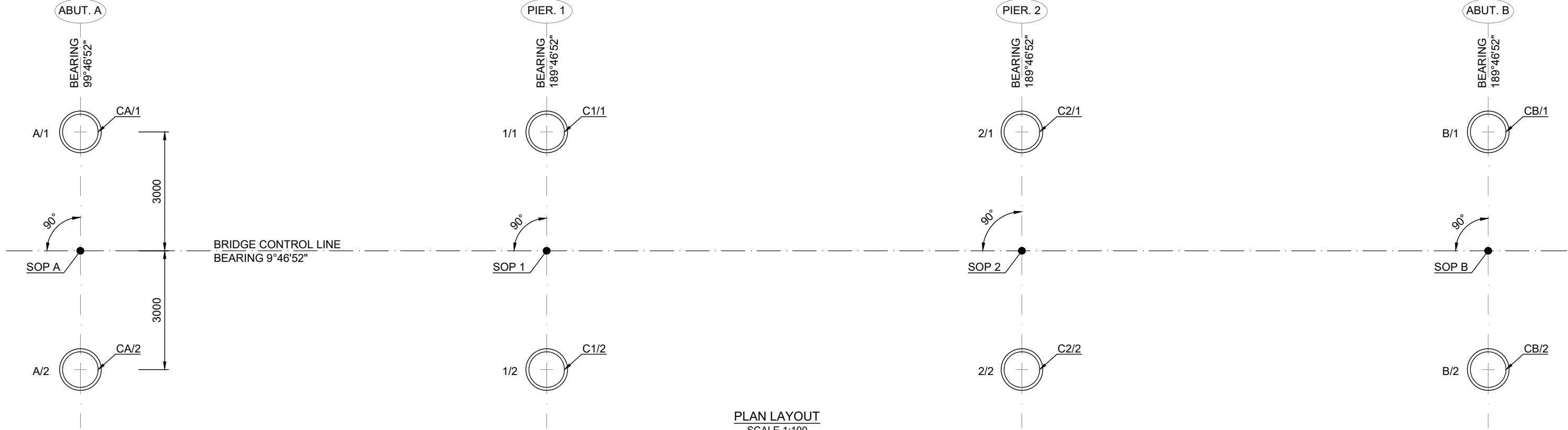
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	A	27.01.2025	ISSUED FOR REVIEW	-	-	TITLE	NAME			PRINCIPAL	DESIGNER	SCALES AT A3 SIZE DRAWING	AS SHOWN			NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PIER HEADSTOCK REINFORCEMENT		
						DRAFTER	R.ABBASI											
						DRAFTING CHECK	N.CHUNG											
						DESIGNER	M.OMIDI											
						DESIGN CHECK	N.CHUNG											
						DESIGN MANAGER	N.CHUNG											
PROJECT MANAGER	N.CHUNG																	
												CO-ORDINATE SYSTEM: MGA ZONE 55	HEIGHT DATUM: A.H.D.	CLIENT PROJECT / DRAWING No	ISSUE STATUS	JJR PROJECT / DRAWING No	ISSUE	
															IFR	JJR-1240502B-ST014	A	

100 mm ON ORIGINAL
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DRAWING FILE LOCATION NAME
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PLAN LAYOUT
SCALE 1:100

STEEL LINER SCHEDULE				
LOCATION	PILE MARK	INNER DIA. (mm)	NOMINAL LENGTH (m)	PROVISIONAL LINER BOTTOM RL Ht (m) AHD
ABUTMENT A	A/1	1050	7.00	-6.25
	A/2	1050	7.00	-6.25
PIER 1	1/1	1050	5.10	-5.95
	1/2	1050	5.10	-5.95
PIER 2	2/1	1050	5.95	-5.95
	2/2	1050	5.95	-5.95
ABUTMENT B	B/1	1050	6.60	-4.95
	B/2	1050	6.60	-4.95

NOTES:

- FOR CONSTRUCTION NOTES REFER TO DRAWING No. NQC-0023-S001 PILE
- CONSTRUCTION AND INSTALLATION TO BE IN ACCORDANCE WITH MRTS65, MRTS68 AND AS2159

PILE SCHEDULE NOTES

- PILE LOAD VALUES GIVEN ARE MAXIMUMS AND MAY NOT OCCUR CONCURRENTLY

NOTE:

STEEL LINER TO BE DESIGNED BY PILING CONTRACTOR

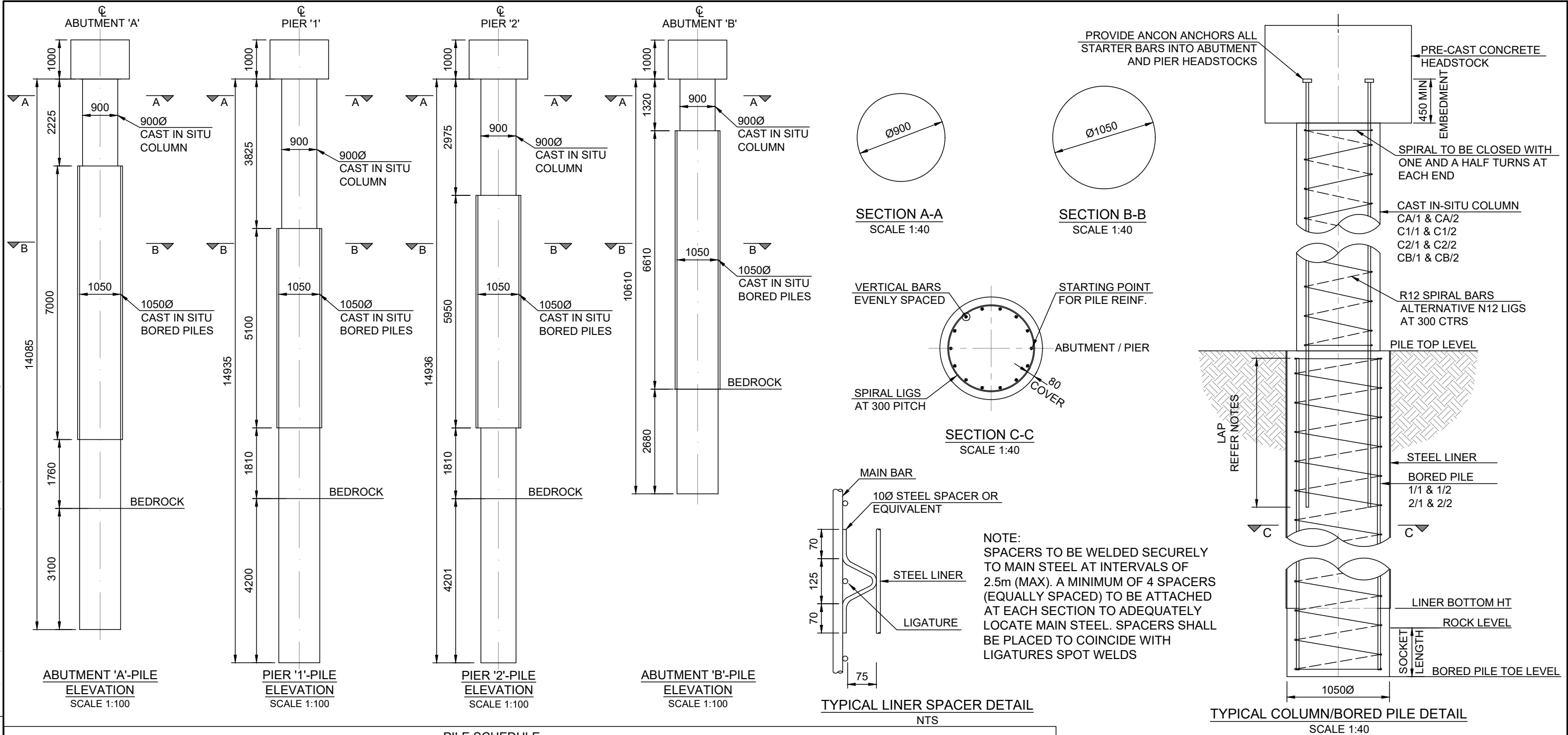
NOTE:

ALLOWANCE, IN PROVISIONAL LINER BOTTOM Ht, OF 1000mm EMBEDMENT, FOR STEEL LINER, INTO HARD RESIDUAL CLAY LEVEL FOR SEALING OF PILES

SETOUT POINTS		
POINT	EASTING	NORTHING
SOP A	332176271.670	8214898073.137
SOP 1	332178272.068	8214909676.974
SOP 2	332180310.691	8214921502.541
SOP B	332182311.089	8214933106.378

EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				REV	DATE	AMENDMENT / REVISION DESCRIPTION	DVF No	APPROVAL	TITLE	NAME	PRINCIPAL		DESIGNER	SCALES AT A3 SIZE DRAWING		DOUGLAS SHIRE COUNCIL													
				A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI				AS SHOWN	NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PILE COORDINATE PLAN														
									DRAFTING CHECK	N.CHUNG																			
									DESIGNER	M.OMIDI																			
									DESIGN CHECK	N.CHUNG																			
									DESIGN MANAGER	N.CHUNG																			
									PROJECT MANAGER	N.CHUNG																			
												CO-ORDINATE SYSTEM: MGA ZONE 55		HEIGHT DATUM: A.H.D.		CLIENT PROJECT / DRAWING No		ISSUE STATUS		IFR		JJR PROJECT / DRAWING No		JJR-1240502B-ST015		ISSUE		A	

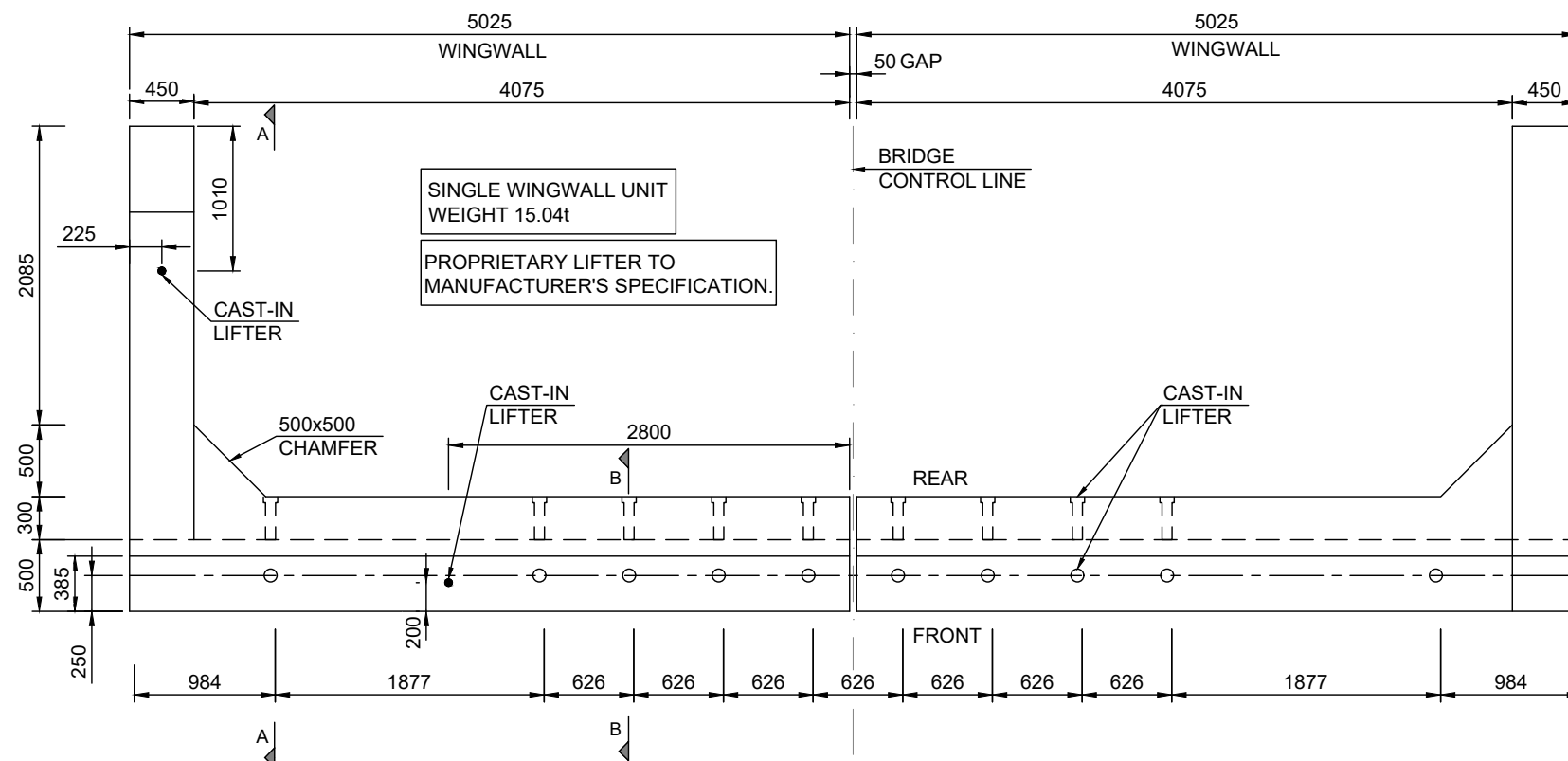
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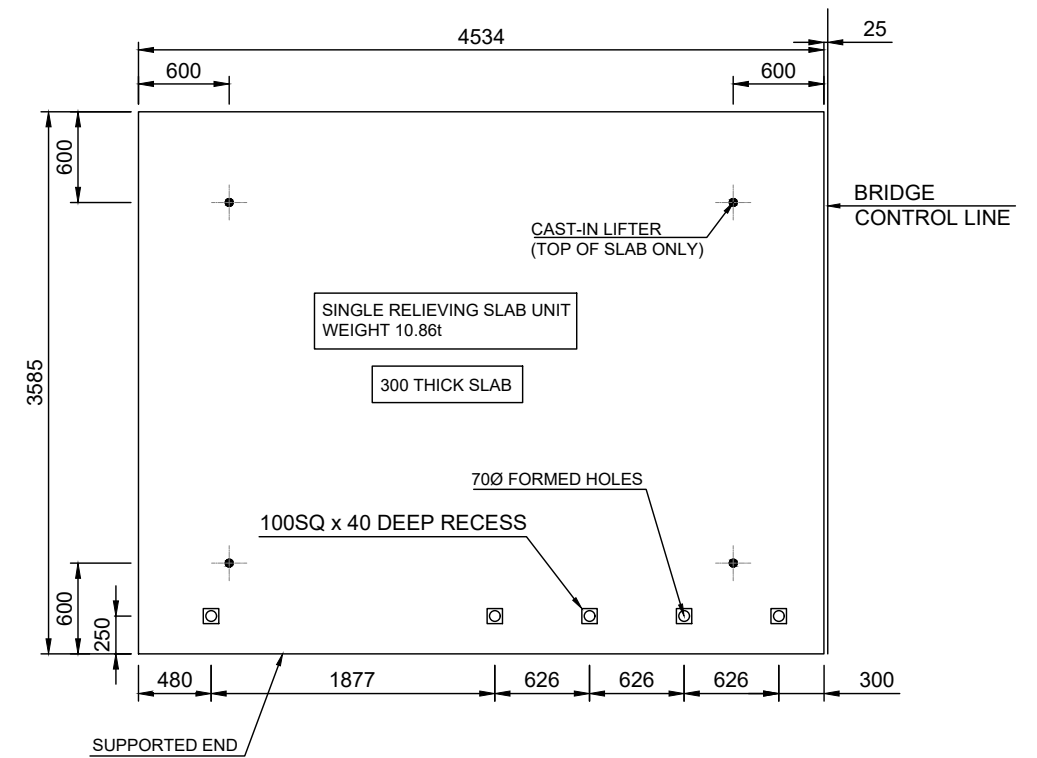
PILE SCHEDULE											
LOCATION	PILE MARK	DIA. (mm)	STARTER BAR REINFORCEMENT	ULTIMATE DESIGN PILE LOAD S* (kN)		ULTIMATE GEOTECH PILE CAPACITY (kN)		PROVISIONAL PILE DESIGN LEVELS		MIN. SOCKET LENGTH (m)	AS CONSTRUCTED LEVELS
			No. & SIZE	N* _C	N* _T	ΦN _c	ΦN _t	PILE TOP RL Ht (m)	PILE TOE RL Ht MIN. (m)		PILE TOE
ABUTMENT A	A/1	1050	14-N28 BARS	2790	190	4790	1465	RL 0.750	RL -11.100	3.10	
	A/2				0						
PIER 1	1/1	1050	14-N28 BARS	3950	190	4005	2250	RL -0.850	RL -12.050	4.30	
	1/2				0						
PIER 2	2/1	1050	14-N28 BARS	3950	190	4005	2550	RL 0.000	RL -12.050	4.30	
	2/2				0						
ABUTMENT B	B/1	1050	14-N28 BARS	2690	230	5000	1670	RL 1.648	RL -7.610	2.65	
	B/2				0						

COLUMN SCHEDULE				
LOCATION	PILE MARK	DIA. (mm)	LENGTH (mm)	STARTER BAR REINFORCEMENT
				No. & SIZE
ABUTMENT A	CA/1	900	2220	12-N28 BARS
	CA/2			
PIER 1	C1/1	900	2820	12-N28 BARS
	C1/2			
PIER 2	C2/1	900	2970	12-N28 BARS
	C2/2			
ABUTMENT B	CB/1	900	1320	12-N28 BARS
	CB/2			

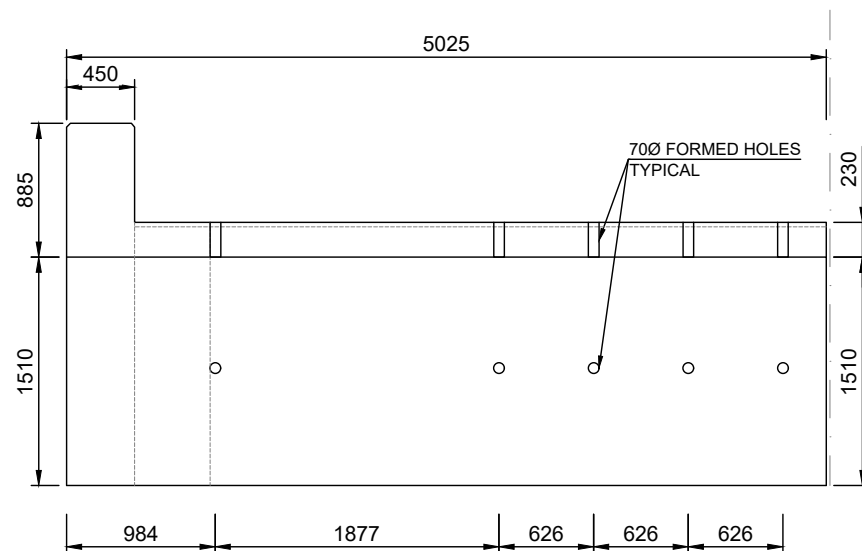
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EXTERNAL REFERENCE FILES (UP TO 35 XREFS)		REV	DATE	AMENDMENT / REVISION DESCRIPTION		DVF No	APPROVAL	TITLE	NAME	PRINCIPAL		DESIGNER	SCALES AT A3 SIZE DRAWING		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PILES - LAYOUT		
	A	27.01.2025	ISSUED FOR REVIEW			DRAFTER	R.ABBASI					AS SHOWN					
						DRAFTING CHECK	N.CHUNG										
						DESIGNER	M.OMIDI										
						DESIGN CHECK	N.CHUNG										
						DESIGN MANAGER	N.CHUNG										
PROJECT MANAGER	N.CHUNG																
										CO-ORDINATE SYSTEM: MGA ZONE 55		HEIGHT DATUM: A.H.D.		CLIENT PROJECT / DRAWING No	ISSUE STATUS	JJR PROJECT / DRAWING No	ISSUE
															IFR	JJR-1240502B-ST016	A



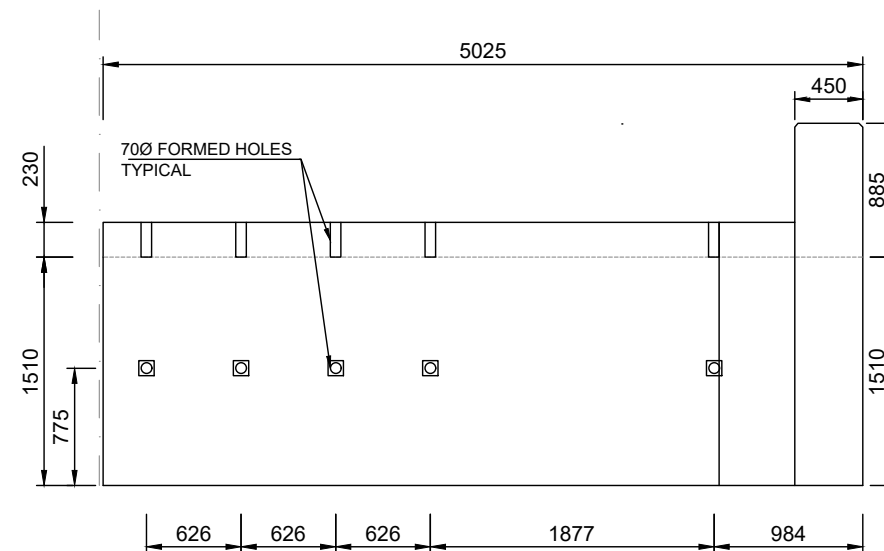
TYPICAL WINGWALL SET OUT PLAN
SCALE 1:50



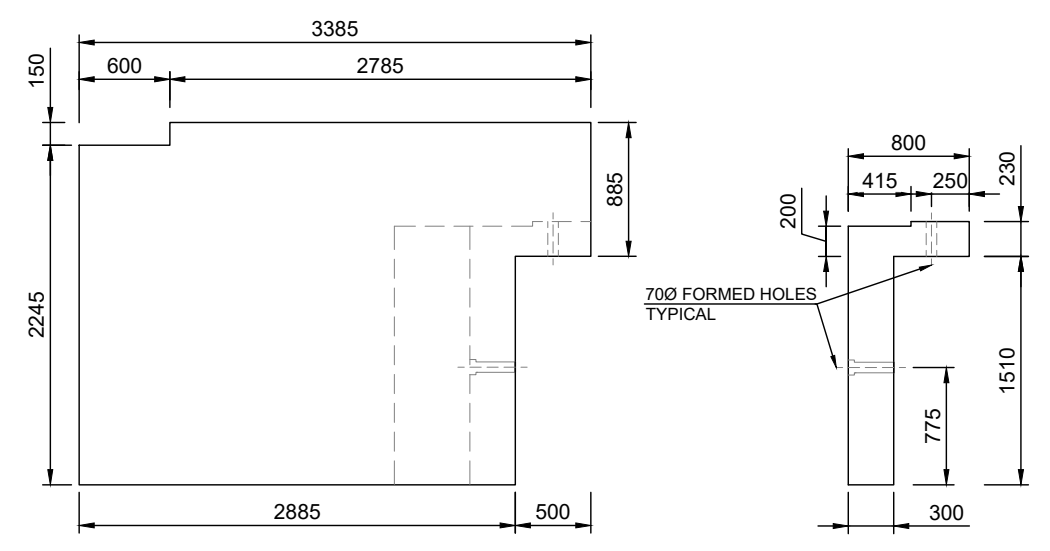
TYPICAL RELIEVING SLAB SETOUT PLAN
SCALE 1:50



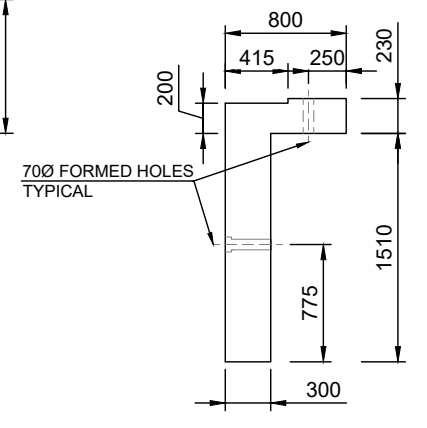
FRONT SETOUT ELEVATION
SCALE 1:50



REAR SETOUT ELEVATION
SCALE 1:50



SIDE SETOUT ELEVATION
SCALE 1:50

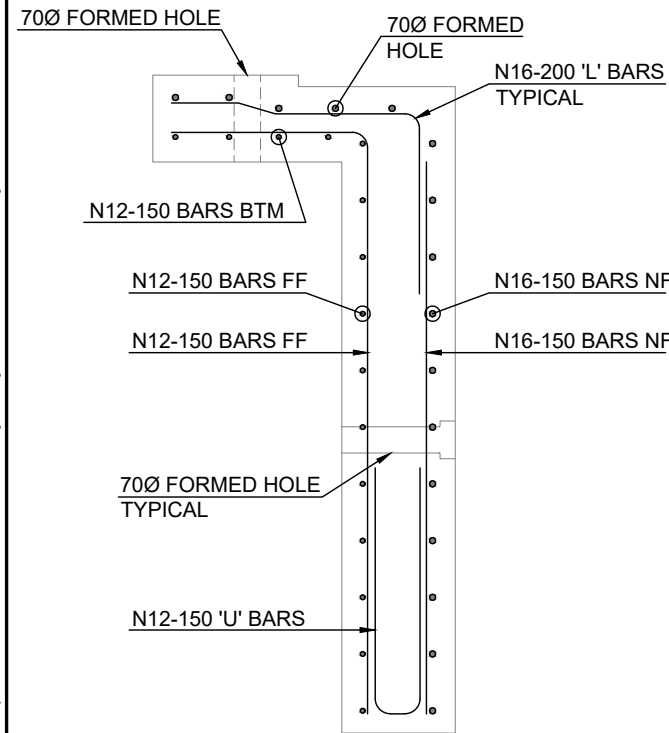


TYPICAL FRONT SECTION
SCALE 1:50

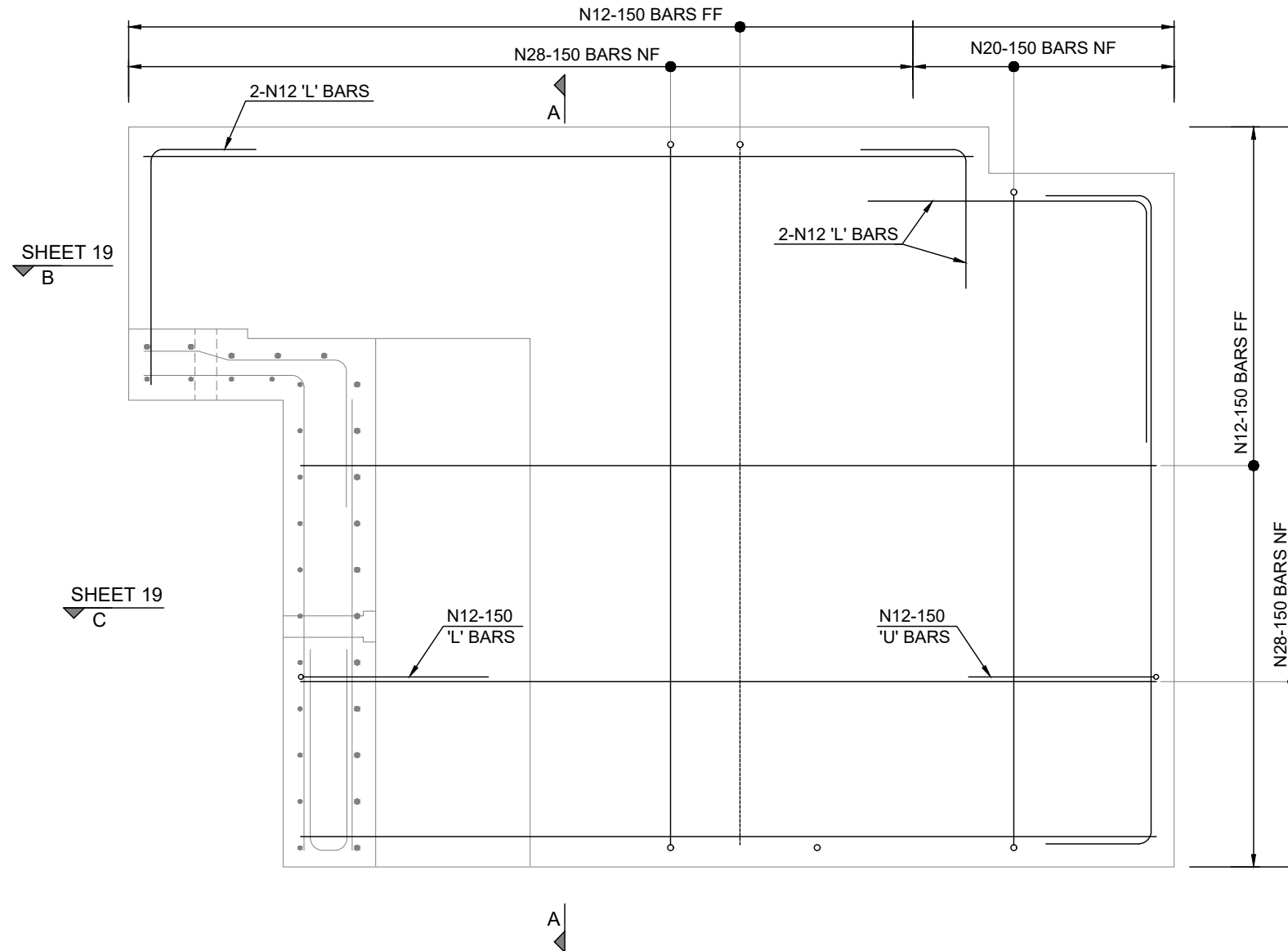
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					DESIGN LOT CODE BR		PLOT DATE		TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING					DOUGLAS SHIRE COUNCIL				
EXTERNAL REFERENCE FILES (UP TO 35 XREFS)		REV	DATE	AMENDMENT / REVISION DESCRIPTION		DVF No	APPROVAL	TITLE	NAME	 		SCALES AT A3 SIZE DRAWING AS SHOWN			NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PRECAST WINGWALL					
	A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI													
						DRAFTING CHECK	N.CHUNG													
						DESIGNER	M.OMIDI													
						DESIGN CHECK	N.CHUNG													
						DESIGN MANAGER	N.CHUNG													
						PROJECT MANAGER	N.CHUNG	CO-ORDINATE SYSTEM: MGA ZONE 55		HEIGHT DATUM: A.H.D.		CLIENT PROJECT / DRAWING No		ISSUE STATUS		JJR PROJECT / DRAWING No		ISSUE		
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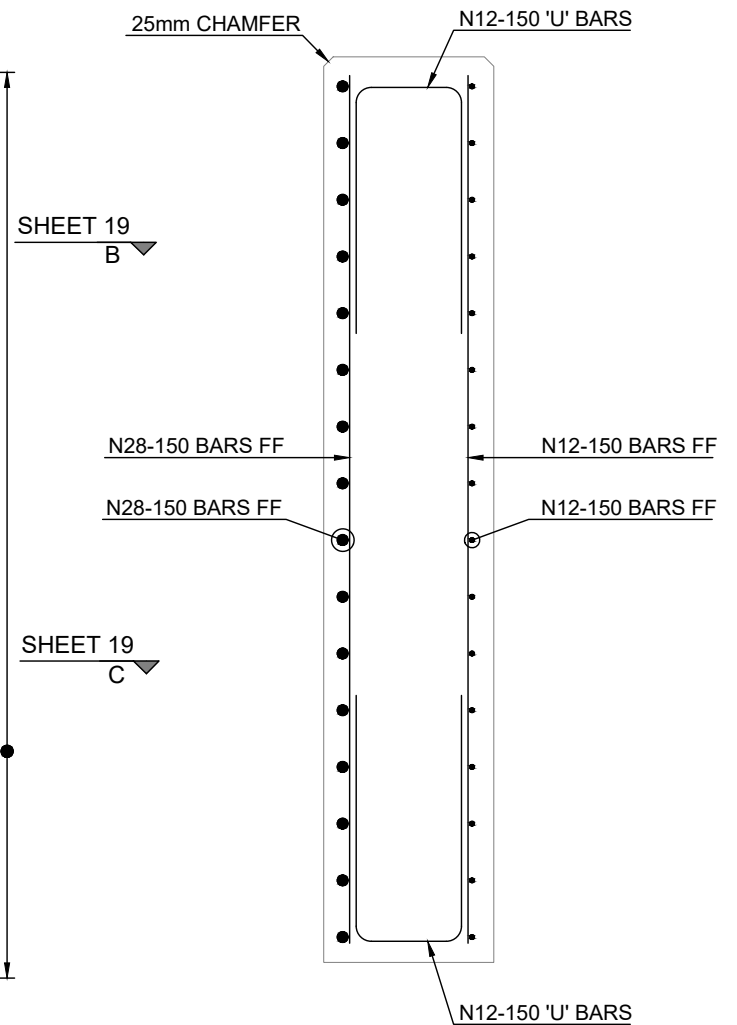
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AS ORIGINAL
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TYPICAL FRONT SECTION
SCALE 1:20



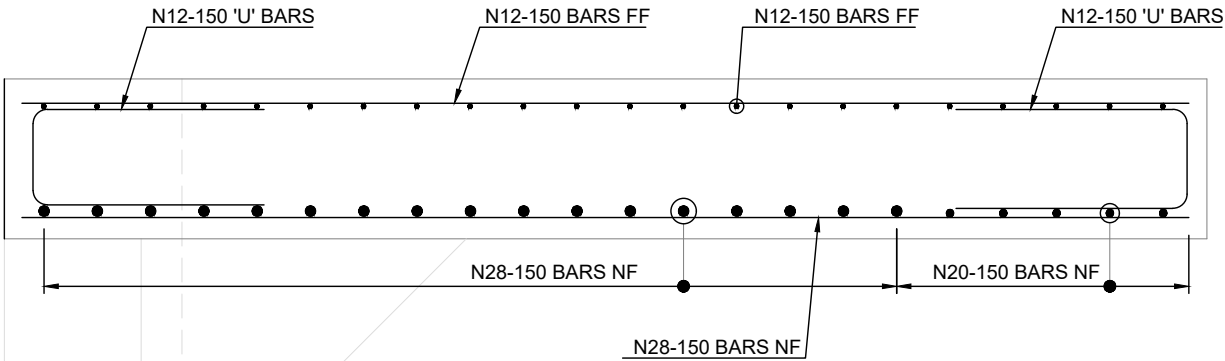
SIDE SETOUT ELEVATION
SCALE 1:20



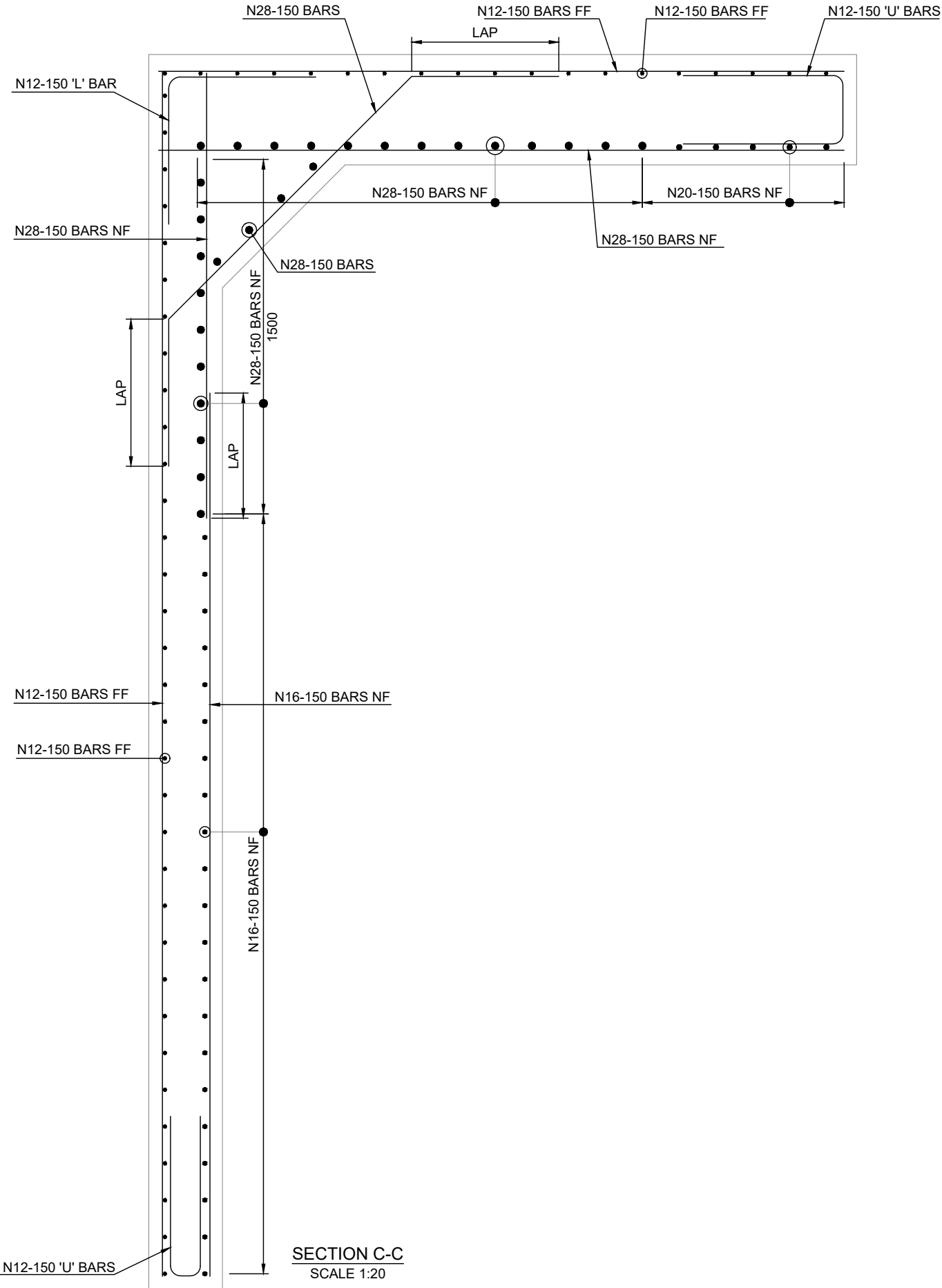
SECTION A-A
SCALE 1:20

EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				DESIGN LOT CODE BR		PLOT DATE TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING			DOUGLAS SHIRE COUNCIL									
REV	DATE	AMENDMENT / REVISION DESCRIPTION	DVF No	APPROVAL	TITLE	NAME	PRINCIPAL	DESIGNER	SCALES AT A3 SIZE DRAWING		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PRECAST WINGWALL REINFORCEMENT-SHEET 1-2									
A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			AS SHOWN											
				DRAFTING CHECK	N.CHUNG															
				DESIGNER	M.OMIDI															
				DESIGN CHECK	N.CHUNG															
				DESIGN MANAGER	N.CHUNG															
					PROJECT MANAGER	N.CHUNG					CO-ORDINATE SYSTEM: MGA	ZONE 55	HEIGHT DATUM: A.H.D.	CLIENT PROJECT / DRAWING No	ISSUE STATUS	IFR	JJR PROJECT / DRAWING No	JJR-1240502B-ST018	ISSUE	A

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SECTION B-B
SCALE 1:20



SECTION C-C
SCALE 1:20

DESIGN LOT CODE BR				PLOT DATE		TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING			DOUGLAS SHIRE COUNCIL			
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										DRAFTING CHECK	N.CHUNG			
										DESIGNER	M.OMIDI			
										DESIGN CHECK	N.CHUNG			
										DESIGN MANAGER	N.CHUNG			
										PROJECT MANAGER	N.CHUNG			
												CO-ORDINATE SYSTEM: MGA ZONE 55		
												HEIGHT DATUM: A.H.D.		
												CLIENT PROJECT / DRAWING No		ISSUE STATUS
												IFR		ISSUE
												JJR PROJECT / DRAWING No		A
												JJR-1240502B-ST019		

DOUGLAS SHIRE COUNCIL

NOAH CREEK BRIDGE
NOAH CREEK, CAPE TRIBULATION RD
PRECAST WINGWALL REINFORCEMENT-SHEET 2-2

IFR

JJR PROJECT / DRAWING No
JJR-1240502B-ST019

ISSUE
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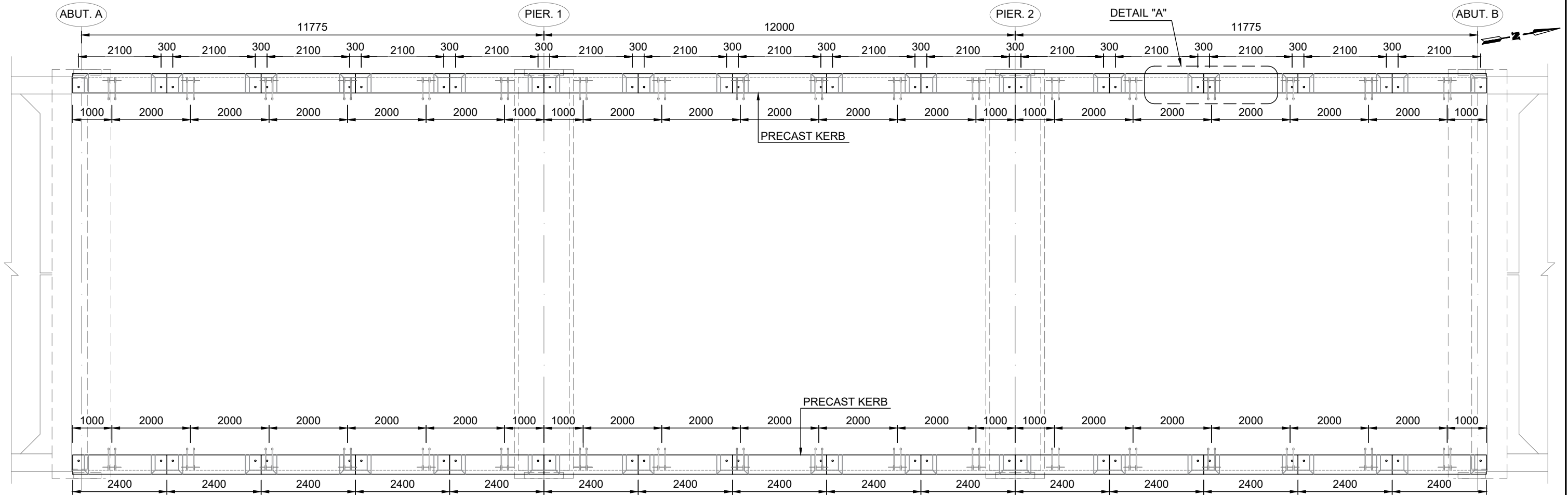
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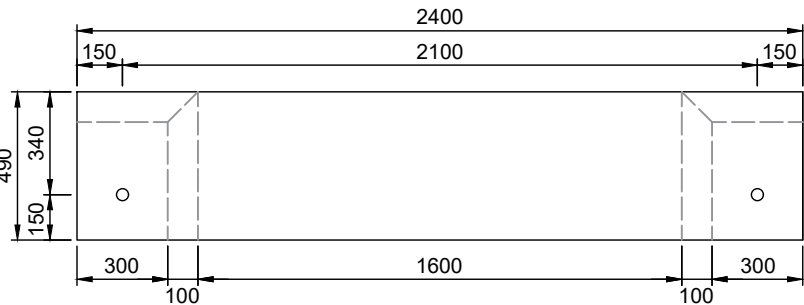
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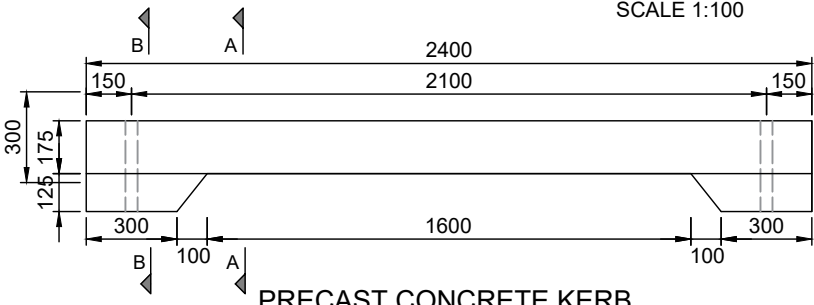
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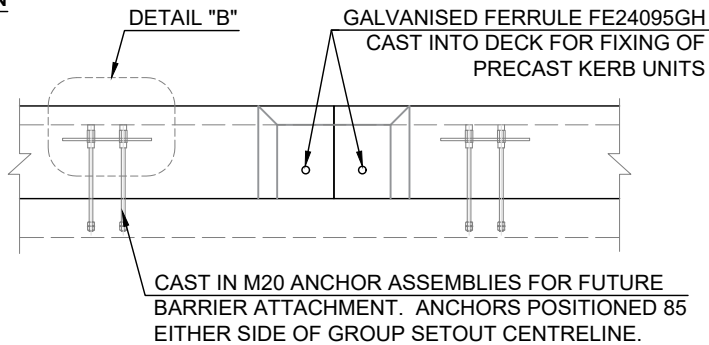
KERB FIXING LAYOUT PLAN
SCALE 1:100



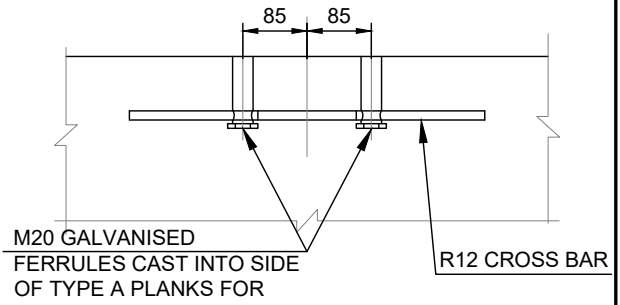
PRECAST CONCRETE KERB
TOP VIEW
SCALE 1:25



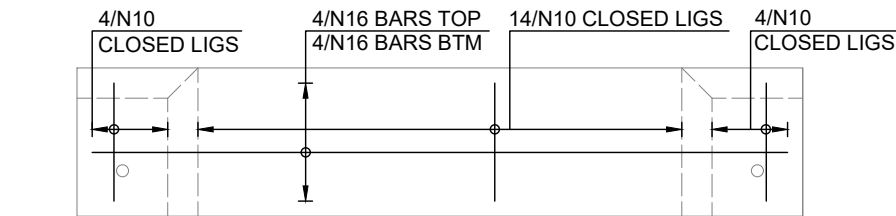
PRECAST CONCRETE KERB
SIDE VIEW
SCALE 1:20



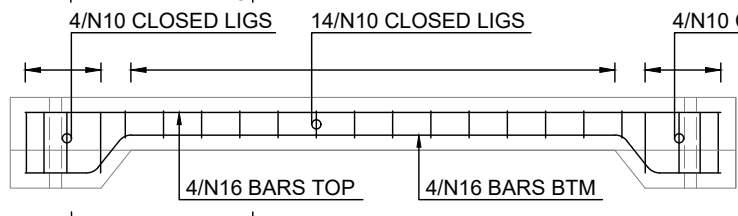
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SCALE 1:40



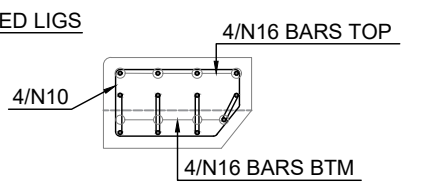
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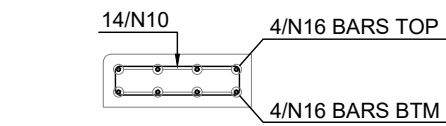
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TOP VIEW
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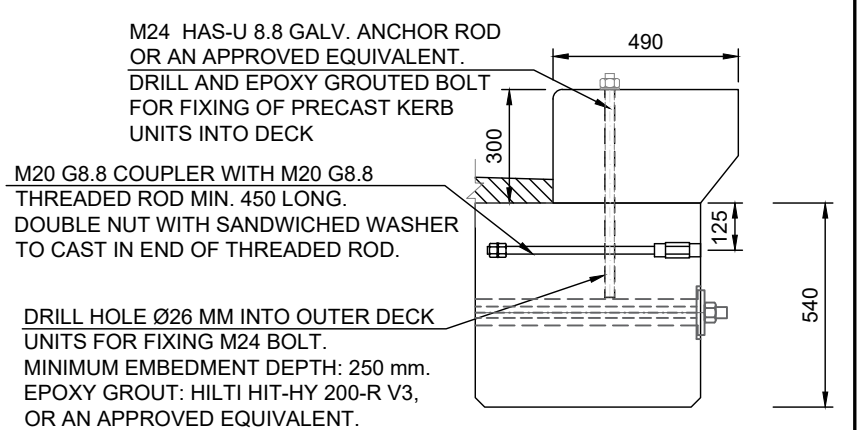
PRECAST CONCRETE KERB
SIDE VIEW
SCALE 1:25



SECTION D-D
SCALE 1:25



SECTION C-C
SCALE 1:25



ASSEMBLY SECTION
SCALE 1:20

EXTERNAL REFERENCE FILES (UP TO 35 XREFS)				DESIGN LOT CODE BR		PLOT DATE TIME		DESIGN MODEL FILE(S) USED FOR DOCUMENTATION OF THIS DRAWING				DOUGLAS SHIRE COUNCIL			
REV	DATE	AMENDMENT / REVISION DESCRIPTION	DWF No	APPROVAL	TITLE	NAME	PRINCIPAL	DESIGNER	SCALES AT A3 SIZE DRAWING		NOAH CREEK BRIDGE NOAH CREEK, CAPE TRIBULATION RD PLAN AND DETAILS KERB - RAILING CONNECTION				
A	27.01.2025	ISSUED FOR REVIEW	-	-	DRAFTER	R.ABBASI			AS SHOWN		CLIENT PROJECT / DRAWING No ISSUE STATUS JJR PROJECT / DRAWING No ISSUE				
				DRAFTING CHECK	N.CHUNG										
				DESIGNER	M.OMIDI										
				DESIGN CHECK	N.CHUNG										
				DESIGN MANAGER	N.CHUNG										
					PROJECT MANAGER	N.CHUNG			CO-ORDINATE SYSTEM: MGA ZONE 55	HEIGHT DATUM: A.H.D.	JJR-1240502B-ST020	A			

NOAH CREEK BRIDGE AND APPROACHES

NOAH CREEK, CAPE TRIBULATION

FOR DOUGLAS SHIRE COUNCIL



LOCALITY PLAN
NTS



DRAWING SCHEDULE	
DRAWING NO.	DRAWING TITLE
C001	COVER SHEET, LOCALITY PLAN & DRAWING SCHEDULE
C002	SAFETY IN DESIGN REPORT - SHEET 1 OF 2
C003	SAFETY IN DESIGN REPORT - SHEET 2 OF 2
C004	GENERAL NOTES
C005	ROAD GEOMETRY PLAN
C006	TYPICAL SECTIONS - SHEET 1 OF 2
C007	TYPICAL SECTIONS - SHEET 2 OF 2
C008	WORKING PLAN - SHEET 1 OF 2
C009	WORKING PLAN - SHEET 2 OF 2
C010	PROPERTY ACCESS PLAN - SHEET 1 OF 2
C011	PROPERTY ACCESS PLAN - SHEET 2 OF 2
C012	STORMWATER CULVERT DETAILS PLAN
C013	SOIL EROSION & SEDIMENT CONTROL - SHEET 1 OF 2
C014	SOIL EROSION & SEDIMENT CONTROL - SHEET 2 OF 2
C015	CAPE TRIBULATION ROAD CROSS SECTIONS - SHEET 1 OF 4
C016	CAPE TRIBULATION ROAD CROSS SECTIONS - SHEET 2 OF 4
C017	CAPE TRIBULATION ROAD CROSS SECTIONS - SHEET 3 OF 4
C018	CAPE TRIBULATION ROAD CROSS SECTIONS - SHEET 4 OF 4

PRELIMINARY - NOT FOR CONSTRUCTION					DOUGLAS SHIRE COUNCIL			JOB CODE
					PROJECT NOAH CREEK BRIDGE AND APPROACHES			P001388
					LOCATION NOAH CREEK, CAPE TRIBULATION			SHEET NUMBER
					SHEET TITLE COVER SHEET, LOCALITY PLAN & DRAWING SCHEDULE			C001
								REV
								2

SAFE DESIGN ASSESSMENT

ITEM NO.	ITEM DESCRIPTION	SAFE DESIGN CRITERIA
1	DESIGN CONSIDERATIONS (GENERAL)	DESIGN STANDARDS/GUIDELINES - FNQROC DEVELOPMENT MANUAL: DESIGN GUIDELINES (ISSUE 9, 2023) - AUSTRoadS GUIDE TO ROAD DESIGN PART 3: GEOMETRIC DESIGN (FEBRUARY 2021) - TMR ROAD PLANNING AND DESIGN MANUAL EDITION 2: VOLUME 3 (OCTOBER 2024) - TMR - MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES - AS1742 - MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES ROAD HIERARCHY - CAPE TRIBULATION ROAD - SUB ARTERIAL ROAD DESIGN SPEEDS - CAPE TRIBULATION ROAD - 70 km/h DESIGN, 60 km/h POSTED. TRAFFIC VOLUME - CAPE TRIBULATION ROAD - 635 AADT (2020 TRAFFIC CENSUS FROM QLD GLOBE), 1400 AADT (DESIGN VOLUME BASED ON 3% GROWTH OVER 25 YEARS) ROADSIDE RISK ASSESSMENT RISK ASSESSMENT WAS COMPLETED IN ACCORDANCE WITH AUSTRoadS GUIDE TO ROAD DESIGN PART 6 - APPENDIX B (AUGUST 2024) CRASH DATA (QLD GLOBE / QLD SPATIAL DATA) WITHIN THE ROAD EXTENT FOR THIS PROJECT A SINGLE VEHICLE OFF-PATH-CURVE CRASH OCCURRED IN 2002 RESULTING IN MINOR INJURIES. APPROXIMATELY 450m SOUTH EAST OF NOAH CREEK BRIDGE A SINGLE VEHICLE OFF-PATH-CURVE CRASH OCCURRED IN 2001 RESULTING IN PROPERTY DAMAGE ONLY. APPROXIMATELY 760m SOUTH EAST OF NOAH CREEK BRIDGE A MULTI-VEHICLE HEAD ON CRASH OCCURRED IN 2008 RESULTING IN A HOSPITALISATION. NO OTHER CRASHES HAVE BEEN IDENTIFIED. BASED ON THE CRASH DATA AS NO CRASHES HAVE OCCURRED FOR MORE THAN 20 YEARS THE LIKELIHOOD OF CRASHES IS RARE. FOR THE DESIGN HAZARD RISK ASSESSMENT THE DESIGNER HAS ADOPTED LIKELIHOOD LEVELS OF RARE OR GREATER.
2	CROSS SECTION	8.0m WIDE SEALED FORMATION, 3.25m SEALED LANES, 0.75m SEALED SHOULDERS HAVE BEEN ADOPTED. SHOULDERS WIDENED TO 1.35m TO MATCH BRIDGE WIDTH. FORMATION WIDTH IS LESS THAN 8.0m WHERE THE DESIGN JOINS EXISTING. IN ACCORDANCE WITH AUSTRoadS AND BASED ON A DESIGN AADT OF 1000-3000 THE ABOVE WIDTHS ARE CONSIDERED A DESIGN EXCEPTION FOR RURAL ROADS. THE WIDTHS WERE ADOPTED IN CONSULTATION WITH AND AGREEMENT OF COUNCIL. LANE WIDTH FOR NORMAL DESIGN DOMAIN (NDD) AND EXTENDED DESIGN DOMAIN (EDD) IS 3.5m. SHOULDER WIDTH FOR NDD IS 1.5m. SHOULDER WIDTH FOR EDD IS 1.25m.
3	HORIZONTAL GEOMETRY	R160m, 7% SUPERELEVATION, 45m TRANSITION - SUITABLE FOR 70 km/h DESIGN SPEED. R1000m, ADVERSE CROSSFALL - SUITABLE FOR 70 km/h DESIGN SPEED FOR RURAL ROADS. R520m, ADVERSE CROSSFALL - SUITABLE FOR 70 km/h DESIGN SPEED, BASED ON ADOPTING HALF THE ABSOLUTE MAXIMUM SIDE FRICTION OF 0.23 FOR TRUCKS. THE ADOPTION OF RADIUS AND ADVERSE CROSSFALL FOR THIS CURVE WAS BASED ON MATCHING THE GEOMETRY OF THE EXISTING ROAD. THIS WAS DONE TO LIMIT THE EXTENT OF WORKS AND AVOID ENCROACHMENT INTO THE CULTURAL HERITAGE ROCK ASSEMBLAGE.
4	VERTICAL GEOMETRY	R2200m SAG CURVE - SUITABLE FOR 70 km/h DESIGN SPEED BASED ON MINIMUM HEADLIGHT SIGHT DISTANCE. R6000m SAG CURVE - SUITABLE FOR 70 km/h DESIGN SPEED BASED ON MINIMUM HEADLIGHT SIGHT DISTANCE. R770m SAG CURVE - SUITABLE FOR 70 km/h DESIGN SPEED BASED ON DESIRABLE MINIMUM COMFORT CRITERIA. AS ABOVE WITH R520m HORIZONTAL CURVE, THIS WAS ADOPTED TO LIMIT THE EXTENT OF WORKS AND AVOID ENCROACHMENT INTO THE CULTURAL HERITAGE ROCK ASSEMBLAGE.
5	ROADSIDE RISK ASSESSMENT	ROADSIDE RISK ASSESSMENT IS BASED ON THE FOLLOWING: - FLAT TERRAIN - RURAL ENVIRONMENT - 70 km/h OPERATING SPEED - 3.25m LANE WIDTHS - 700 AADT IN EACH DIRECTION. THE EXISTING AADT ADOPTED WAS 635 BASED ON 2020 TRAFFIC DATA FROM QLD GLOBE (QLD SPATIAL DATA). THE ADOPTED AADT WAS CALCULATED BASED ON 3% TRAFFIC GROWTH OVER 25 YEARS. 5 YEARS FROM 2020 + 20 YEAR DESIGN LIFE. - 1000m ROAD SEGMENT - R1000m R520m, AND R150m RADII - BACKGROUND HAZARD ADOPTED IS TREE LINE EDGE WITH LATERAL DISTANCE OF 0.75m - ISOLATED HAZARDS IDENTIFIED: - FILL SLOPES, 1 ON 1.5, 5m HIGH, EACH SIDE OF BRIDGE - FILL SLOPES, 1 ON 1.5, 2m HIGH, PROPOSED EACH SIDE OF ROAD FROM APPROX. CH 165 TO CH 179 (RHS) AND CH 210 (LHS). TO AVOID ENCROACHMENT IN PROPERTY AND CULTURAL HERITAGE ROCK ASSEMBLAGE. - VERTICAL DROP, 4m HIGH, 2m WATER DEPTH, THIS IS FOR THE BRIDGE WITH CASTELLATED KERB, NO BRIDGE RAIL AND NO ROAD SAFETY BARRIER ON APPROACHES. - VERTICAL DROP, 2m HIGH, <= 1m WATER DEPTH, PROPOSED GROUTED ROCK RETAINING WALL FROM APPROX. CH 178 TO CH 195. TO AVOID ENCROACHMENT IN CULTURAL HERITAGE ROCK ASSEMBLAGE AND MAINTAIN EXISTING GROUTED ROCK DRAIN. - VERTICAL DROP, 4m HIGH, <= 1m WATER DEPTH, EXISTING CULVERT AT CH 260 - VERTICAL DROP, 0m HIGH, <= 1m WATER DEPTH, EXISTING GROUTED ROCK DRAIN FROM CH 210 TO CH 265 - SIGNS, BREAKAWAY, AVERAGE 60m SPACING

DESIGN HAZARD NOTES:

1. THE DETAILED DESIGN AND DOCUMENTATION OF THESE WORKS HAS BEEN INTERNALLY REVIEWED FOR DESIGN SAFETY IN ACCORDANCE WITH SECTION 22 OF THE WORK HEALTH AND SAFETY ACT 2011 QLD.
2. THIS REPORT SUMMARISES THIS INTERNAL REVIEW FOR DESIGN SAFETY.
3. THIS REPORT IN NO WAY RELIEVES THE PRINCIPAL, CONTRACTOR OR ANY OTHER PARTY OF THEIR OBLIGATIONS AND RESPONSIBILITIES UNDER THE WORK HEALTH AND SAFETY ACT 2011 QLD, INCLUDING (BUT NOT LIMITED TO) CONSULTATION WITH THE DESIGNER UNDER SECTION 294 OF THE REGULATION, THE PREPARATION OF SATISFACTORY SAFE WORK METHOD STATEMENTS AND DUTIES OF CARE.
4. IT IS A REQUIREMENT UNDER SECTION 296 OF THE WORK HEALTH AND SAFETY REGULATION 2011 QLD, THAT A COPY OF THIS REPORT BE PROVIDED TO THE CONTRACTOR BY THE ENTITY COMMISSIONING THE WORK SHOWN ON THESE DRAWINGS.
5. PURSUANT TO THE WORK HEALTH AND SAFETY ACT 2011 THE DESIGN SAFETY REVIEW HAS SOUGHT TO IDENTIFY UNUSUAL OR ATYPICAL DESIGN FEATURES THAT MAY PRESENT ADDITIONAL HAZARDS OR RISKS DURING THE CONSTRUCTION, MAINTENANCE, DEMOLITION, DISPOSAL/RECYCLE AND OPERATIONAL PHASES AND THESE ARE DESCRIBED IN THE DESIGN HAZARD ASSESSMENT TABLES.

LIKELIHOOD TABLE

LEVEL	DESCRIPTION/QUANTIFICATION GUIDE
A - ALMOST CERTAIN	THE EVENT <u>IS</u> EXPECTED TO OCCUR IN MOST CIRCUMSTANCES.
B - LIKELY	THE EVENT <u>IS</u> EXPECTED TO OCCUR IN SOME CIRCUMSTANCES.
C - POSSIBLE	THE EVENT <u>MAY</u> OCCUR IN SOME CIRCUMSTANCES
D - UNLIKELY	THE EVENT <u>IS NOT</u> EXPECTED TO OCCUR IN MOST CIRCUMSTANCES
E - RARE	THE EVENT <u>MAY</u> OCCUR IN EXCEPTIONAL CIRCUMSTANCES.

HAZARD CONTROL TABLE

HIERACHY OF CONTROLS		LEVEL OF CONTROL	
1 - ELIMINATE	ELIMINATE THE HAZARD/RISK - RELOCATE THE DESIGN OR DESIGN ELEMENT AWAY FROM A HAZARD WHICH CONSTITUTES A RISK. REMOVE OR RELOCATE A HAZARD WHICH CONSTITUTES A RISK AWAY FROM THE DESIGN OR DESIGN ELEMENT.	MOST EFFECTIVE	
2- SUBSTITUTE	REPLACE A HAZARD WITH A HAZARD OF LESSER RISK		
3 - ISOLATE	ISOLATE THE PERSON(S) FROM THE HAZARD/RISK.		
4 - ENGINEERING CONTROLS	INCORPORATE ELEMENTS INTO THE DESIGN WHICH REDUCE THE RISK. BY REQUIRING PERSON(S) TO ACT AND BEHAVE IN A SAFER MANNER.		
5 - ADMINISTRATIVE CONTROLS	INCORPORATE FEATURES INTO THE DESIGN WHICH REDUCE THE RISK BY REQUIRING PERSON(S) TO THINK AND BEHAVE IN A SAFER MANNER. NOTE: HOW PERSON(S) RESPOND TO ADMINISTRATIVE CONTROLS IS NOT WITHIN THE DESIGNERS CONTROL.		
6 - PPE	PROTECT PERSON(S) BY USE OF PERSONAL PROTECTIVE EQUIPMENT NOTE: THE USE OF PPE IS NOT WITHIN THE DESIGNERS CONTROL.	LEAST EFFECTIVE	

CONSEQUENCE TABLE

LEVEL	EVENT CONSEQUENCE/COST/TIME
6. - CATASTROPHIC	MULTIPLE FATALITIES POTENTIALLY IN MULTIPLE VEHICLES AND/OR ON THE GROUND. SIGNIFICANT SOCIETAL DISRUPTION AND/OR CONSEQUENTIAL DAMAGE.
5 - SEVERE	FATALITY OR MULTIPLE PERSONS ONSITE WITH LIFE THREATENING HEALTH EFFECTS OR INABILITY TO CONTINUE AND/OR SIGNIFICANT FINANCIAL OR TIME LOSS.
4 - MAJOR	EXTENSIVE INJURIES, OR ONSET OF SEVERE OR LIFE THREATENING HEALTH EFFECTS TO SINGLE PERSON ONSITE. MULTIPLE PERSONS WITH ONSET OF IRREVERSIBLE HEALTH EFFECTS. PERMANENT INJURY TO PERSON ONSITE AND/OR MAJOR FINANCIAL OR TIME LOSS.
3 - MEDIUM	MEDICAL TREATMENT REQUIRED. IRREVERSIBLE HEALTH EFFECT TO A SINGLE PERSON. MULTIPLE PERSONS ONSITE WITH REVERSIBLE HEALTH EFFECTS AND/OR HIGH FINANCIAL OR TIME LOSS.
2 - MINOR	FIRST AID, SINGLE OR MULTIPLE INJURIES AMONGST PERSONS ONSITE. SINGLE PERSON ONSITE WITH MODERATE SHORT TERM REVERSIBLE HEALTH EFFECTS AND/OR MEDIUM FINANCIAL OR TIME LOSS.
1 - INSIGNIFICANT	NO INJURIES. OVER EXPOSURE TO A SINGLE PERSON ONSITE, BUT NO REPORTED HEALTH EFFECTS AND/OR LOW FINANCIAL OR TIME LOSS.

RISK ANALYSIS MATRIX

		CONSEQUENCE					
		1 - INSIGNIFICANT	2 - MINOR	3 -MEDIUM	4 - MAJOR	5 -SEVERE	6 - CATASTROPHIC
LIKELIHOOD	A - ALMOST CERTAIN	MODERATE	HIGH	HIGH	EXTREME	EXTREME	EXTREME
	B - LIKELY	LOW	MODERATE	HIGH	EXTREME	EXTREME	EXTREME
	C - POSSIBLE	LOW	MODERATE	HIGH	HIGH	EXTREME	EXTREME
	D - UNLIKELY	LOW	LOW	MODERATE	MODERATE	HIGH	EXTREME
	E - RARE	LOW	LOW	LOW	LOW	MODERATE	HIGH

RISK EVALUATION

RISK LEVEL	ACTION REQUIRED
EXTREME	UNACCEPTABLE RISK. RE-DESIGN REQUIRED TO REDUCE RISK LEVEL.
HIGH	UNACCEPTABLE RISK. REVIEW OF DESIGN AND/OR FURTHER MITIGATIONS REQUIRED
MODERATE	RISK MAY BE ACCEPTABLE. ADDRESSED BY REASONABLE IMPLEMENTATION OF THE RELEVANT DESIGN STANDARDS/GUIDELINES AND OTHER ADMINISTRATIVE CONTROLS. DESIGNER TO CONSIDER IMPLEMENTATION OF FURTHER REASONABLY PRACTICABLE MITIGATION MEASURES IF AVAILABLE/APPROPRIATE. ROAD TO BE MONITORED WITH A VIEW TO CONFIRMING SAFE PERFORMANCE.
LOW	ACCEPTABLE. ADDRESSED BY REASONABLE IMPLEMENTATION OF THE RELEVANT DESIGN STANDARDS/GUIDELINES AND OTHER ADMINISTRATIVE CONTROLS. DESIGNER TO CONSIDER IMPLEMENTATION OF FURTHER REASONABLY PRACTICABLE MITIGATION MEASURES IF AVAILABLE/APPROPRIATE.

PRELIMINARY - NOT FOR CONSTRUCTION

13/02/2025	2	ISSUED FOR TENDER	SPB	RD	P
20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB	RD	P
DATE	REV	DESCRIPTION	REC	APP	
REVISIONS					



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DESIGNED S.BROGAN
CHECKED S.BROGAN
PROJECT MANAGER R.PERKINS
ENGINEERING CERTIFICATION
R.PERKINS RPEQ 2319

SCALE
ORIGINAL SHEET SIZE A1

CLIENT	DOUGLAS SHIRE COUNCIL	JOB CODE	P001388
PROJECT	NOAH CREEK BRIDGE AND APPROACHES	SHEET NUMBER	C002
LOCATION	NOAH CREEK, CAPE TRIBULATION		
SHEET TITLE	SAFETY IN DESIGN REPORT - SHEET 1 OF 2	REV	2

DESIGN HAZARD RISK ASSESSMENT																	
ITEM NO.	HAZARD	EVENT	INITIAL RISK			MITIGATIONS/CONTROL MEASURES	EXECUTION OF MITIGATIONS/CONTROL MEASURES	RESIDUAL RISK				CONSIDERATION OF ADDITIONAL REASONABLY PRACTICABLE MEASURES	EXECUTION OF MITIGATIONS/CONTROL MEASURES	RESIDUAL RISK			
			CONSEQUENCE	LIKELIHOOD	RISK RATING			LEVEL OF CONTROL	CONSEQUENCE	LIKELIHOOD	RISK RATING			LEVEL OF CONTROL	CONSEQUENCE	LIKELIHOOD	RISK RATING
1	STRAIGHT ROAD SEGMENT, R1000, AND R520: ROADSIDE HAZARDS: - TREE LINED EDGE, BACKGROUND HAZARD - FILL SLOPES, 1 ON 1.5, 5m HIGH, EACH SIDE OF BRIDGE, ISOLATED HAZARDS - FILL SLOPES, 1 ON 1.5, 2m HIGH, PROPOSED EACH SIDE OF ROAD FROM CH 165 TO CH 179 (RHS) AND CH 210 (LHS), ISOLATED HAZARDS - VERTICAL DROP, 4m HIGH, 2m WATER DEPTH, BRIDGE, ISOLATED HAZARD - VERTICAL DROP, 2m HIGH, <= 1m WATER DEPTH, PROPOSED GROUTED ROCK RETAINING WALL FROM CH 178 TO CH 195, ISOLATED HAZARD - VERTICAL DROP, 4m HIGH, <= 1m WATER DEPTH, EXISTING CULVERT AT CH 260, ISOLATED HAZARD - VERTICAL DROP, 0m HIGH, <= 1m WATER DEPTH, EXISTING GROUTED ROCK DRAIN FROM CH 210 TO CH 265, ISOLATED HAZARD - SIGNS, BREAKAWAY, AVERAGE 60m SPACING, ISOLATED HAZARDS	INCREASE IN SEVERITY / CONSEQUENCE OF SINGLE VEHICLE RUN-OFF ROAD CRASHES DUE TO ROADSIDE HAZARDS.	3	E	LOW	IN CONSULTATION WITH COUNCIL THE FOLLOWING DESIGN IS PROPOSED: - CASTELLATED KERB ON THE NEW BRIDGE. BRIDGE RAIL TO BE OMITTED (USE OF CASTELLATED KERB ADOPTED ON INSTRUCTION FROM COUNCIL). - BARRIER KERB ON BRIDGE APPROACHES IN LIEU OF ROAD SAFETY BARRIER (USE OF BARRIER KERB ADOPTED ON INSTRUCTION FROM COUNCIL). - 1 ON 1.5 SLOPE GROUTED ROCK ABUTMENT PROTECTION. - 1 ON 1.5 FILL BATTER SLOPE ON LHS AND RHS OF NORTHERN APPROACH TO MAINTAIN ROADWORKS INSIDE ROAD RESERVE. - 500mm HIGH GROUTED ROCK RETAINING WALL ON LHS OF NORTHERN APPROACH TO MAINTAIN EXISTING GROUTED ROCK DRAIN AND AVOID ENCROACHMENT INTO CULTURAL HERITAGE AREA. - GUIDE POSTS INSTALLED ON SHOULDERS AND AT REGULAR INTERVAL (8m SPACING OR SIMILAR) ON BRIDGE AND APPROACH TO ALERT ROAD USERS TO THE ROAD EDGE. BASED ON THE ABOVE AND IN ACCORDANCE WITH AUSTRROADS GUIDE TO ROAD DESIGN PART 6, A ROADSIDE RISK ASSESSMENT OF ALL ROADSIDE HAZARDS WAS UNDERTAKEN. BASED ON THE HAZARDS IDENTIFIED THE RESULTING COMBINED RISK SCORE IS LESS THAN 1.0 FOR HAZARDS ON THIS ROAD SEGMENT. COUNCIL ARE TO CONFIRM THAT A COMBINED RISK SCORE OF 1.0 OR LESS IS ACCEPTABLE FOR HAZARDS ON THIS ROAD SEGMENT. AN ASSESSMENT OF ROAD CRASHES WAS UNDERTAKEN. BASED ON THE DATA FROM QLD GLOBE NO CRASHES HAVE BEEN IDENTIFIED ON THIS ROAD SEGMENT FOR THE LAST 20 YEARS. BASED ON THE CRASH DATA AND COUNCIL'S ACCEPTANCE OF A RISK SCORE OF 1.0 NO FURTHER TREATMENT OF THE HAZARDS ARE REQUIRED.	DESIGNER / COUNCIL	4	3	E	LOW	THE FOLLOWING OPTIONS TO BE CONSIDERED: - PROVIDE CLEARING BUFFER SO TREE LINE IS LOCATED FURTHER FROM THE ROADSIDE - INSTALL BRIDGE RAIL AND BARRIER ANY OF ABOVE OPTIONS WILL REQUIRE WORKS OUTSIDE THE ROAD RESERVE AND WOULD REQUIRE LAND RESUMPTION AND RESULT IN ADVERSE IMPACTS TO THE CULTURAL HERITAGE AREA AND WTWHA.	COUNCIL / WTMA	2	2	E	LOW
2	ROAD GEOMETRY: R160m HORIZONTAL CURVE ROADSIDE HAZARDS: - TREE LINED EDGE, BACKGROUND HAZARD - SIGNS, BREAKAWAY, AVERAGE 60m SPACING, ISOLATED HAZARDS	INCREASE IN SEVERITY / CONSEQUENCE AND LIKELIHOOD OF SINGLE VEHICLE RUN-OFF ROAD CRASHES DUE TO TIGHT HORIZONTAL CURVE AND ROADSIDE HAZARDS.	3	D	MODERATE	IN ACCORDANCE WITH AUSTRROADS GUIDE TO ROAD DESIGN PART 6, A ROADSIDE RISK ASSESSMENT OF ALL ROADSIDE HAZARDS WAS UNDERTAKEN. BASED ON THE HORIZONTAL CURVE AND HAZARDS IDENTIFIED THE RESULTING COMBINED RISK SCORE IS LESS THAN 2.0 FOR THIS ROAD SEGMENT. THE HIGHER RISK SCORE FOR THIS ROAD SEGMENT IS A RESULT OF THE HORIZONTAL CURVE. COUNCIL ARE TO CONFIRM THAT A COMBINED RISK SCORE OF 2.0 OR LESS IS ACCEPTABLE FOR HAZARDS ON THIS ROAD SEGMENT. AN ASSESSMENT OF ROAD CRASHES WAS UNDERTAKEN. BASED ON THE DATA FROM QLD GLOBE NO CRASHES HAVE BEEN IDENTIFIED ON THIS ROAD SEGMENT FOR THE LAST 20 YEARS. MITIGATION OR TREATMENT OF THIS CURVE IS LIMITED AS EXTENT OF WORKS IS FOR UPGRADE OF THE EXISTING BRIDGE AND THE CURVE MATCHES AN EXISTING CURVE AND IS ONLY A SHORT SECTION OF THE TOTAL LENGTH OF THE EXISTING CURVE. IT SHOULD BE NOTED THAT SEVERAL CURVES OF SIMILAR FEATURES WITH SMALL RADII ARE LOCATED ON CAPE TRIBULATION ROAD AND ANY MITIGATION WOULD HAVE ADVERSE IMPACTS ON THE WET TROPICS WORLD HERITAGE AREA (WTWHA). BASED ON THE CRASH DATA, ADVERSE IMPACTS TO WTWHA, AND COUNCIL'S ACCEPTANCE OF A RISK SCORE OF 2.0 NO FURTHER TREATMENT OF THE ROAD GEOMETRY OR HAZARDS ARE REQUIRED AND THE PROPOSED DESIGN IS TO BE ADOPTED.	DESIGNER / COUNCIL	4	3	D	MODERATE	THE FOLLOWING OPTIONS TO BE CONSIDERED: - INCREASE RADIUS - PROVIDE CLEARING BUFFER SO TREE LINE IS LOCATED FURTHER FROM THE ROADSIDE - INSTALL BARRIER ON THE OUTSIDE OF THE CURVE ANY OF ABOVE OPTIONS WILL LIKELY REQUIRE WORKS OUTSIDE THE ROAD RESERVE AND WOULD REQUIRE LAND RESUMPTION AND RESULT IN ADVERSE IMPACTS TO WTWHA.	COUNCIL / WTMA	2	3	E	LOW
3	NATIVE WILDLIFE HABITAT INCLUDING	POTENTIAL FOR VEHICLES TO COLLIDE WITH NATIVE WILDLIFE	3	D	MODERATE	EXISTING POSTED SPEED IS 60 km/h. AN ASSESSMENT OF ROAD CRASHES WAS UNDERTAKEN. BASED ON THE DATA FROM QLD GLOBE NO CRASHES HAVE BEEN IDENTIFIED ON THIS ROAD SEGMENT FOR THE LAST 20 YEARS. BASED ON THE CRASH DATA AND LOW POSTED SPEED OF 60 km/h NO FURTHER TREATMENT IS PROPOSED.	DESIGNER / COUNCIL	5	3	D	MODERATE	THE FOLLOWING OPTIONS TO BE CONSIDERED: - PROVIDE CLEARING BUFFER SO TREE LINE IS LOCATED FURTHER FROM THE ROADSIDE - REDUCE SPEED FURTHER - INSTALL CASSOWARY WARNING SIGNAGE - INSTALL RUMBLE STRIPS ON APPROACH TO SPEED REDUCTION / WARNING SIGNAGE - INSTALL TRAFFIC ACTIVATED VMS SIGNAGE ANY OF ABOVE OPTIONS WILL LIKELY REQUIRE WORKS OUTSIDE THE PROJECT SCOPE AND REQUIRE ADDITIONAL SURVEY. THE CLEARING BUFFER WILL RESULT IN ADVERSE IMPACTS TO WTWHA.	COUNCIL / WTMA	4	3	E	LOW
4	ROAD GEOMETRY: LANE AND SHOULDER WIDTHS	NARROW LANE AND SHOULDER WIDTHS INCREASING LIKELIHOOD OF MULTI-VEHICLE HEAD ON CRASHES	4	D	MODERATE	EXISTING POSTED SPEED IS 60 km/h. RURAL ROAD EDD LANE WIDTHS ARE DUE TO THE ASSUMPTION THAT A RURAL ROAD IS 100 km/h. URBAN EDD LANE WIDTHS CAN BE 3.0m DUE TO LOWER SPEEDS. AS THE EXISTING POSTED SPEED FOR THIS ROAD IS 60 km/h THE DESIGNER CONSIDERS THE ADOPTION OF 3.25m LANE WIDTHS AS ACCEPTABLE. IT SHOULD BE NOTED THAT THE ADOPTED FORMATION WIDTH OF THE DESIGN IS WIDER THAN THE EXISTING FORMATION WIDTH. AN ASSESSMENT OF ROAD CRASHES WAS UNDERTAKEN. BASED ON THE DATA FROM QLD GLOBE NO CRASHES HAVE BEEN IDENTIFIED ON THIS ROAD SEGMENT FOR THE LAST 20 YEARS. BASED ON THE CRASH DATA AND LOW POSTED SPEED OF 60 km/h NO FURTHER TREATMENT OF THE FORMATION WIDTH IS PROPOSED.	DESIGNER / COUNCIL	4	4	D	MODERATE	ADOPT NDD LANE AND SHOULDER WIDTHS. THIS WILL LIKELY REQUIRE WORKS OUTSIDE THE ROAD RESERVE, LAND RESUMPTION AND RESULT IN ADVERSE IMPACTS TO WTWHA.	COUNCIL / WTMA		4	E	LOW

PRELIMINARY - NOT FOR CONSTRUCTION					 TOWNSVILLE OFFICE 84 DENHAM STREET PO BOX 1110 TOWNSVILLE, QLD 4810 PH: (07) 4772 0666 WEB: www.premise.com.au			DESIGNED S.BROGAN			SCALE		CLIENT DOUGLAS SHIRE COUNCIL				JOB CODE P001388	
			CHECKED S.BROGAN					PROJECT NOAH CREEK BRIDGE AND APPROACHES		SHEET NUMBER C003			REV 2					
			PROJECT MANAGER R.PERKINS					LOCATION NOAH CREEK, CAPE TRIBULATION										
			ENGINEERING CERTIFICATION					SHEET TITLE SAFETY IN DESIGN REPORT - SHEET 2 OF 2										
13/02/2025 2 ISSUED FOR TENDER SPB RDP																		
20/12/2024 1 PRELIMINARY - NOT FOR CONSTRUCTION SPB RDP																		
DATE REV DESCRIPTION			REC APP															
REVISIONS																		

GENERAL NOTES

- ALL DIMENSIONS GIVEN ON THESE DRAWINGS ARE IN METRES UNLESS NOTED OTHERWISE.
- ALL NEW WORK AND MATERIALS SHALL COMPLY WITH THE PROJECT DRAWINGS, PROJECT SPECIFICATION AND CURRENT RELEVANT DTMR STANDARD DRAWINGS.
- ALL WORK SHALL BE JOINED NEATLY TO EXISTING CONSTRUCTION
- THE CONTRACTOR IS TO LOCATE, IDENTIFY AND ESTABLISH THE CONNECTIVITY OF ALL EXISTING SERVICES WITHIN THE LIMITS OF PROPOSED WORKS AND CONFIRM THIS INFORMATION WITH THE ENGINEER PRIOR TO THE COMMENCEMENT OF WORK.
- THE CONTRACTOR IS RESPONSIBLE FOR CO-ORDINATION AND COMMUNICATION OF CONSTRUCTION ACTIVITIES WITH THE ADJOINING LAND OWNERS, THE PRINCIPAL AND DTMR.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR PROVIDING ALL MEASURING DEVICES, SAFETY EQUIPMENT AND MACHINERY REQUIRED TO CARRY OUT INSPECTIONS/MEETINGS AS SPECIFIED OR REQUESTED BY THE ENGINEER.
- PROOF ROLLING NOMINATED SHALL BE CARRIED OUT USING A SINGLE AXLE HIGHWAY TRUCK WITH A REAR AXLE LOAD NOT LESS THAN 8 TONNES AND TYRES INFLATED TO 550 kPa OR APPROVED EQUIVALENT. EQUIPMENT LABOUR AND LOADING REQUIRED FOR PROOF ROLLING IS TO BE PROVIDED BY THE CONTRACTOR.
- THESE NOTES SHALL APPLY TO ALL PORTIONS OF WORK.
- THE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE SPECIFICATIONS. ANY POINT OF CONFLICT WILL BE RESOLVED BY THE PRINCIPAL OR THEIR NOMINATED SUPERINTENDENT.

PRE-CONSTRUCTION & APPROVALS

- A DIAL BEFORE YOU DIG DESKTOP SERVICES ASSESSMENT HAS BEEN CARRIED OUT AS PART OF THE DESIGN. NO AFFECTED SERVICES WERE IDENTIFIED. HOWEVER, SERVICE IDENTIFICATION IS TO BE CARRIED OUT PRIOR TO START OF CONSTRUCTION TO ENSURE THAT NO AFFECTED SERVICES EXIST.
- NO LOCATING OR POTHOLING OF EXISTING SERVICES HAS BEEN CARRIED OUT. THE CONTRACTOR IS TO DETERMINE THE LOCATION AND DEPTH OF ALL EXISTING SERVICES WHICH AFFECT THE WORKS AND REPORT ANY POTENTIAL CLASHES TO THE PRINCIPAL PRIOR TO COMMENCEMENT OF ANY CONSTRUCTION WORKS.
- THE CONTRACTOR IS RESPONSIBLE FOR ARRANGING WITH THE APPROPRIATE AUTHORITY FOR LOCATING EXISTING SERVICES AND FOR ANY MODIFICATIONS TO EXISTING SERVICES REQUIRED AS A RESULT OF THE WORKS.
- THE CONTRACTOR IS RESPONSIBLE TO PROTECT ALL EXISTING SERVICES FROM DAMAGE.
- ANY WORKS DAMAGED AS A RESULT OF CONSTRUCTION ARE TO BE REINSTATED TO RELEVANT AUTHORITY'S REQUIREMENTS AT THE CONTRACTOR'S COST.
- FINISHED SURFACE LEVELS ARE TO BE GRADED UNIFORMLY BETWEEN LEVELS INDICATED ON THE DRAWINGS.

WORKPLACE HEALTH AND SAFETY

- THE CONTRACTOR SHALL BE THE PRINCIPAL CONTRACTOR AS DESIGNATED BY THE WORK HEALTH AND SAFETY ACT (2011).
- THE CONTRACTOR SHALL PREPARE AND IMPLEMENT A WORKPLACE HEALTH AND SAFETY PLAN AS REQUIRED BY THE WORK HEALTH AND SAFETY ACT (2011).

SURVEY AND SETOUT NOTES

- SURVEY ORIGIN USED:
 - COORDINATES ORIGIN PM75103 E 334708.961 N 8221364.186, LEVEL ORIGIN PM191665 RL 1.63m
- HORIZONTAL DATUM IS GDA 2020 MGA ZONE 54.
- VERTCAL DATUM IS AHD (AUSTRALIAN HEIGHT DATUM) DERIVED.
- FOR SURVEY FILE REFER TO AU016113-1-ALL-DETAIL-COMBINED-WITH-CULTURAL-HERITAGE-AREA.DWG.
- SETOUT SHALL BE MADE BY DIGITAL ENGINEERING DATA AND CONFIRMED ONSITE PRIOR TO CONSTRUCTION BY A LICENSED SURVEYOR.
- DESIGN BASED ON DETAILED SURVEY PROVIDED BY THE PRINCIPAL. ALL EXISTING LEVELS TO BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

EARTHWORKS NOTES

- EARTHWORKS DRAWINGS ARE TO BE READ IN CONJUNCTION WITH EROSION AND SEDIMENT CONTROL LAYOUT PLANS AND EROSION AND SEDIMENT CONTROL NOTES AND DETAILS.
- ALL EARTHWORKS TO BE CARRIED OUT UNDER 'LEVEL 1' GEO-TECHNICAL CONTROL IN ACCORDANCE WITH AS3798.
- EXCESS CUT TO BE STOCKPILED AT A SITE APPROVED BY THE PRINCIPAL.

TESTING

- THE PRINCIPAL MAY ORDER ADDITIONAL TESTS. REFER TO MRTS04 FOR STANDARDS OF COMPACTION AND MATERIAL STANDARDS.

EARTHWORKS TESTING

- COMPACTION TESTS:

LOCATION	AREA PER TEST
FINISHED LEVEL OR ROAD SUBGRADE (IN CUT OR FILL)	REFER DTMR MRTS04 SPECIFICATIONS
LOWEST TWO LEVELS OF EMBANKMENT (PER LAYER)	
OTHER LAYERS OF EMBANKMENT (PER LAYER)	
PREPARED NATURAL GROUND UNDER EMBANKMENT	

- QUALITY TESTS - IMPORTED MATERIAL ARE REQUIRED AS SET OUT BY DTMR'S SPECIFICATION OR AS DIRECTED BY THE CONTRACTOR'S GEO-TECHNICAL TESTING AUTHORITY.
- SUBGRADE TESTS - THE NUMBER AND LOCATION OF PAVEMENT SUBGRADE TESTS SHALL BE AS DETERMINED BY THE PRINCIPAL WHO SHALL RECOMMEND CBR VALUES TO BE USED IN ROAD PAVEMENT DESIGN. THE NUMBER AND TYPES OF CBR TESTS SHALL BE DETERMINED BY THE SOIL TESTING CONSULTANT TO BEST REPRESENT THE CONDITION OF THE SUBGRADE EXPECTED IN SERVICE.

DUST

- THE CONTRACTOR TO PROVIDE A WATER TRUCK AS REQUIRED TO ELIMINATE THE DUST PROBLEM CAUSED BY SITE TRAFFIC.

FILL MANAGEMENT

- ALL FILL MATERIAL WILL BE PLACED IN ACCORDANCE WITH DTMR'S MRTS04 SPECIFICATION.
- THE FILL MATERIAL WILL COMPRISE ONLY OF NATURAL EARTH AND ROCK AND SHALL BE FREE OF ALL CONTAMINATES, NOXIOUS, HAZARDOUS, DELETERIOUS AND ORGANIC MATERIAL.
- ALL SITE PREPARATION WORK SHOULD GENERALLY BE CARRIED OUT IN ACCORDANCE WITH DTMR'S MRTS04 SPECIFICATION.
- THE SITE SHOULD BE STRIPPED OF ANY TOPSOIL FROM CUT AND FILL AREAS, ROAD ALIGNMENTS, AND STOCKPILED FOR LATER USE.
- PRIOR TO THE PLACEMENT OF ANY STRUCTURAL FILL THE SITE SHOULD BE PROOF ROLLED USING A MINIMUM 10 TONNE (STATIC WEIGHT) PADFOOT ROLLER. ANY LOOSE OR SOFT AREAS SHOULD BE REMOVED AND REPLACED USING A COMPACTED SELECT FILL.
- DEPRESSIONS FORMED BY THE REMOVAL OR VEGETATION, EXISTING STRUCTURES, UNDERGROUND SERVICES, ETC. SHOULD HAVE ALL DISTURBED SOIL CLEANED OUT AND BE BACKFILLED WITH COMPACTED SELECT FILL MATERIAL.
- ANY STRUCTURAL CLAY FILL SHOULD BE PLACED IN LOOSE LAYERS NOT GREATER THAN 200mm THICK AT A MOISTURE CONTENT IN THE RANGE -2% TO +3% OF THE STANDARD OPTIMUM MOISTURE CONTENT, AND BE COMPACTED TO A MINIMUM DRY DENSITY RATIO OF 98% UNDER STANDARD COMPACTION AS PER (AS1289 5.1.1/5.2.1). CLAY FILL SHOULD BE COMPACTED USING A MINIMUM 10 TONNE VIBRATING PADFOOT ROLLER. MEASURES SHOULD BE ADOPTED TO ENSURE THAT CLAY FILL MATERIAL IS NOT ALLOWED TO DRY OUT PRIOR TO THE PLACEMENT OF SUCCEEDING LAYERS OF FILL AND FINAL COVERING WITH ROAD PAVEMENTS.
- ANY STRUCTURAL, FREE DRAINING SAND FILL SHOULD BE PLACED IN LOOSE LAYERS NOT GREATER THAN 200mm THICK, FLOODED, IF NECESSARY, AND COMPACTED TO A MINIMUM DENSITY INDEX OF 70% AS PER AS1289 5.5.1 USING A STATIC SMOOTH ROLLER DRUM NOT LESS THAN 10 TONNE IN STATIC WEIGHT.
- THE PLACEMENT OF ALL STRUCTURAL FILL TO BE INSPECTED, TESTED AND CERTIFIED BY A GEOTECHNICAL ENGINEER TO A LEVEL 1 REQUIREMENT DURING THE EARTHWORKS OPERATIONS TO ENSURE THAT ALL FILL IS PLACED IN A 'CONTROLLED MANNER', IN ACCORDANCE DTMR'S MRTS04 SPECIFICATION.
- THE PLACEMENT OF FILL TO BE EXECUTED SO AS TO BE FREE DRAINING AT ALL TIMES AND NOT TO BE A NUISANCE OR PONDING TO ADJOINING PROPERTY OR ROADS.
- WHERE UNSUITABLE MATERIAL IN AREAS OF FILL IS ENCOUNTERED, THIS WILL BE TREATED AS SET OUT IN THE DTMR'S MRTS04 SPECIFICATION.
- ALL VEHICLES EXITING FROM THE SITE TO BE CLEAN TO PREVENT MATERIAL BEING TRACKED OR DEPOSITED ON THE ADJOINING PUBLIC ROADS.

ROADWORKS NOTES

- PAVEMENT THICKNESSES NOMINATED ON THESE DRAWINGS ARE PROVISIONAL ONLY AND MAY BE VARIED BY THE PRINCIPAL SUBJECT TO SITE VERIFICATION. PAVEMENT SUBGRADES ARE TO BE INITIALLY CONSTRUCTED TO THE UNDERSIDE OF THE NOMINATED LOWER SUBBASE COURSE.
- REPAIR ANY DAMAGE TO EXISTING ROADWAY (INCLUDING REMOVAL OF CONCRETE SLURRY, ETC, FROM ROADS AND TABLE DRAINS) THAT MAY OCCUR DURING ANY WORKS CARRIED OUT.
- TRAFFIC ROUTE TO REMAIN OPEN AND TRAFFICABLE TO LOCAL TRAFFIC DURING CONSTRUCTION.

PAVEMENT MARKING NOTES

- PAVEMENT MARKING SHALL BE IN ACCORDANCE WITH THE MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES (MUTCD, QUEENSLAND DEPARTMENT OF MAIN ROADS), TECHNICAL SPECIFICATION MRTS45 (QUEENSLAND DEPARTMENT OF MAIN ROADS).
- EXTENT OF LINEMARKING SHALL BE VERIFIED ON SITE PRIOR TO INSTALLATION.
- ALL PAINTED MARKINGS SHALL BE APPROVED REFLECTORISED U.N.O.
- ANY EXISTING LINE MARKINGS DAMAGED BY THE PROPOSED WORKS ARE TO BE REINSTATED.
- EXISTING CONFLICTING LINE MARKINGS ARE TO BE PERMANENTLY REMOVED BY METHODS APPROVED BY THE ENGINEER.
- RETRO-REFLECTIVE RAISED PAVEMENT MARKERS (RRPM'S) SHALL BE PLACED 25mm TO 50mm FROM THE PAINTED LINEMARKING AND ORIENTATED SO THAT FULL REFLECTIVE EFFECT IS ACHIEVED BY AIMING THE REFLECTIVE FACE IN THE DIRECTION OF APPROACHING TRAFFIC.
- GENERALLY THE NORMAL SPACING BETWEEN RRPM'S IS TO BE 12.0m U.N.O.
- ANY EXISTING LINEMARKING NOT SHOWN ON THIS PLAN WHICH CONFLICTS OR IS INCOMPATIBLE WITH THE PROPOSED LINEMARKING SHALL BE REMOVED BY THE CONTRACTOR.

SIGNAGE AND DELINEATION NOTES

- ALL SIGNAGE TO BE INSTALLED IN ACCORDANCE WITH THE MUTCD SERIES OF GUIDELINES.
- LOCATION OF SIGNS SHOWN ON THIS PLAN ARE INDICATIVE ONLY. CARE AND CONSIDERATION IS TO BE GIVEN TO ON SITE CONDITIONS TO AVOID ANY VISUAL OBSTRUCTION OF THE SIGN ALONG THE INTENDED COURSE OF APPROACHING TRAFFIC. EXACT LOCATION OF ALL SIGNS SHALL BE CONFIRMED ON SITE PRIOR TO INSTALLATION.
- SIGNS SHOULD BE ORIENTATED AT APPROXIMATELY 5° FACING OUT FROM RIGHT ANGLES TO, IN THE DIRECTION OF THE TRAFFIC THEY ARE INTENDED TO SERVE.
- SIGNAGE SHALL BE IN ACCORDANCE WITH:
 - MRTS14 ROAD FURNITURE
 - AS1742 MANUAL OF UNIFORM TRAFFIC CONTROL DEVICES;
 - AS1743 ROAD SIGNS SPECIFICATION.
- ROAD EDGE GUIDE POSTS ARE TO BE INSTALLED AS PER MUTCD, PART 2. HEIGHT OF ROAD EDGE GUIDE POSTS TO BE 1000mm ABOVE LEVEL OF SHOULDER OF THE ROAD EDGE. REFER TMR STANDARD DRAWING 1356 FOR DETAILS.

FENCING NOTES

- ALL FENCING REINSTATEMENT TO BE COMPLETED IN CONSULTATION BETWEEN THE PRINCIPAL, THE CONTRACTOR AND CURRENT LAND OWNER.
- FENCING TO BE CONSTRUCTED AS PER DTMR STD DRG 1601, UNLESS ADVISED OTHERWISE BY THE PRINCIPAL.

PRELIMINARY - NOT FOR CONSTRUCTION

13/02/2025	2	ISSUED FOR TENDER	SPB	RDP	
20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB	RDP	
DATE	REV	DESCRIPTION	REC	APP	
REVISIONS					



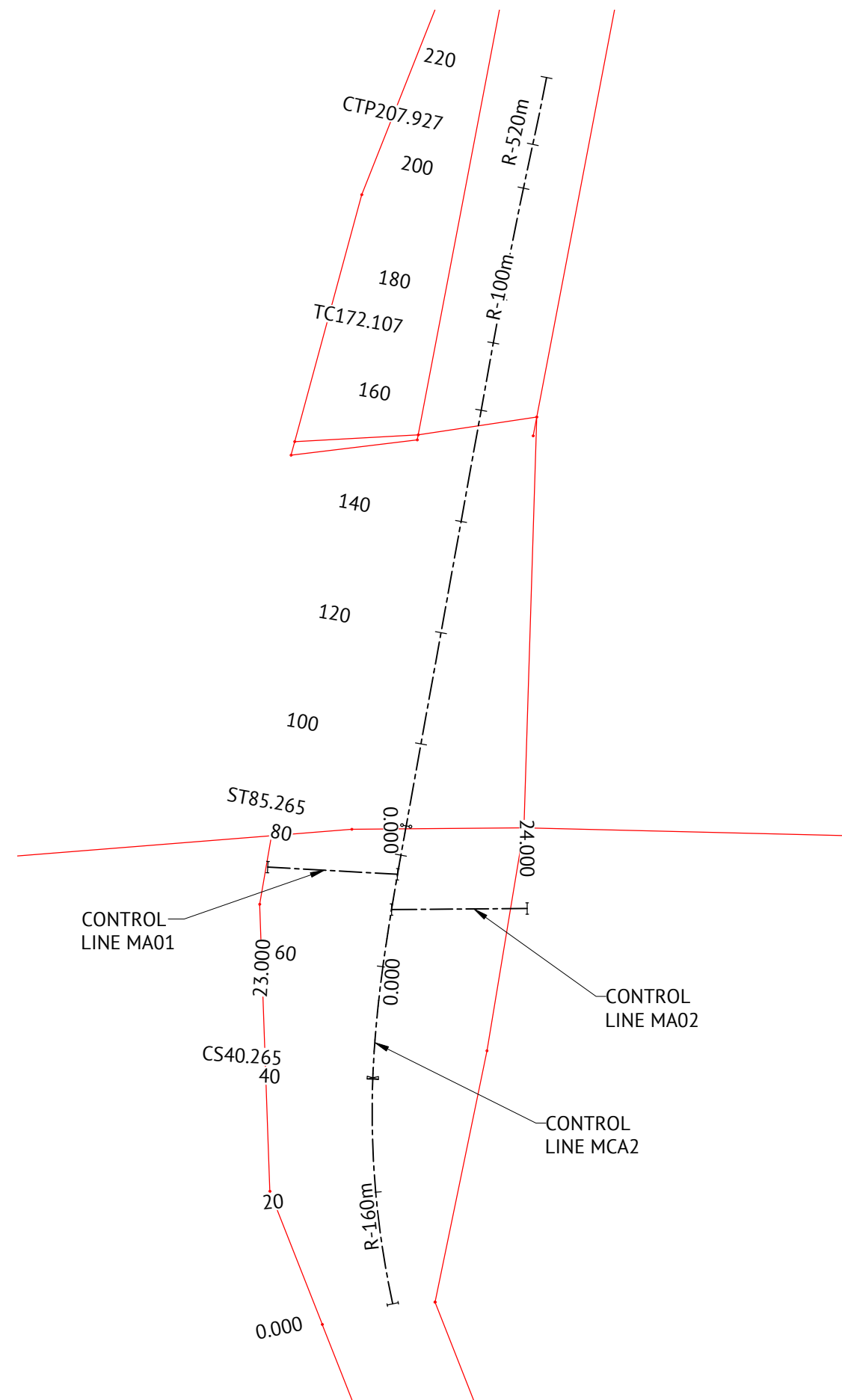
TOWNSVILLE OFFICE
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PH: (07) 4772 0666
WEB: www.premise.com.au

DESIGNED S.BROGAN
CHECKED S.BROGAN
PROJECT MANAGER R.PERKINS
ENGINEERING CERTIFICATION
R.PERKINS RPEQ 2319

SCALE
0 10 20 30m
SCALE 1:500 (A1)
ORIGINAL SHEET SIZE A1

CLIENT	DOUGLAS SHIRE COUNCIL
PROJECT	NOAH CREEK BRIDGE AND APPROACHES
LOCATION	NOAH CREEK, CAPE TRIBULATION
SHEET TITLE	GENERAL NOTES

JOB CODE	P001388
SHEET NUMBER	C004
REV	2



CONTRLO LINE MCA2								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	332176.882	8214782.619	6.216	2°10'12.36"	ARC	160.000	40.265
CS	40.265	332173.354	8214822.623	5.175	2°10'12.36"	TRANSITION		45.000
ST	85.265	332179.255	8214867.195	4.800	10°13'38.35"	LINE		86.842
TC	172.107	332194.674	8214952.656	4.730	10°13'38.35"	ARC	1000.000	35.820
CC	207.927	332201.664	8214987.786	5.067	12°16'46.82"	ARC	-520.000	12.073
E	220.000	332204.095	8214999.611	5.509	10°56'58.04"			

CONTROL LINE MA01							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.LEN
S	0.000	332177.727	8214858.636	4.843	273°09'33.30"	LINE	23.000
E	23.000	332154.762	8214859.903	3.843	273°09'33.30"		

CONTROL LINE MA02							
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.LEN
S	0.000	332176.665	8214852.387	4.875	89°32'57.54"	LINE	24.000
E	24.000	332200.664	8214852.576	2.759	89°32'57.54"		



SURVEY ORIGIN

AHD (DERIVED)
LEVEL ORIGIN: PM191665 RL: 1.63m
COORDINATES ORIGIN: PM75103
E: 334708.961
N: 8221364.186

PRELIMINARY - NOT FOR CONSTRUCTION

15/02/2025	2	ISSUED FOR TENDER	SPB	RDP
20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB	RDP
DATE	REV	DESCRIPTION	REC	APP



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PROJECT MANAGER R.PERKINS
ENGINEERING CERTIFICATION

R.PERKINS RPEO 2319

SCALE

0 10 20 30m

SCALE 1:500 (A1)

ORIGINAL SHEET SIZE A1

CLIENT **DOUGLAS SHIRE COUNCIL**

PROJECT NOAH CREEK BRIDGE AND APPROACHES

LOCATION NOAH CREEK, CAPE TRIBULATION

SHEET TITLE **ROAD GEOMETRY PLAN**

JOB CODE

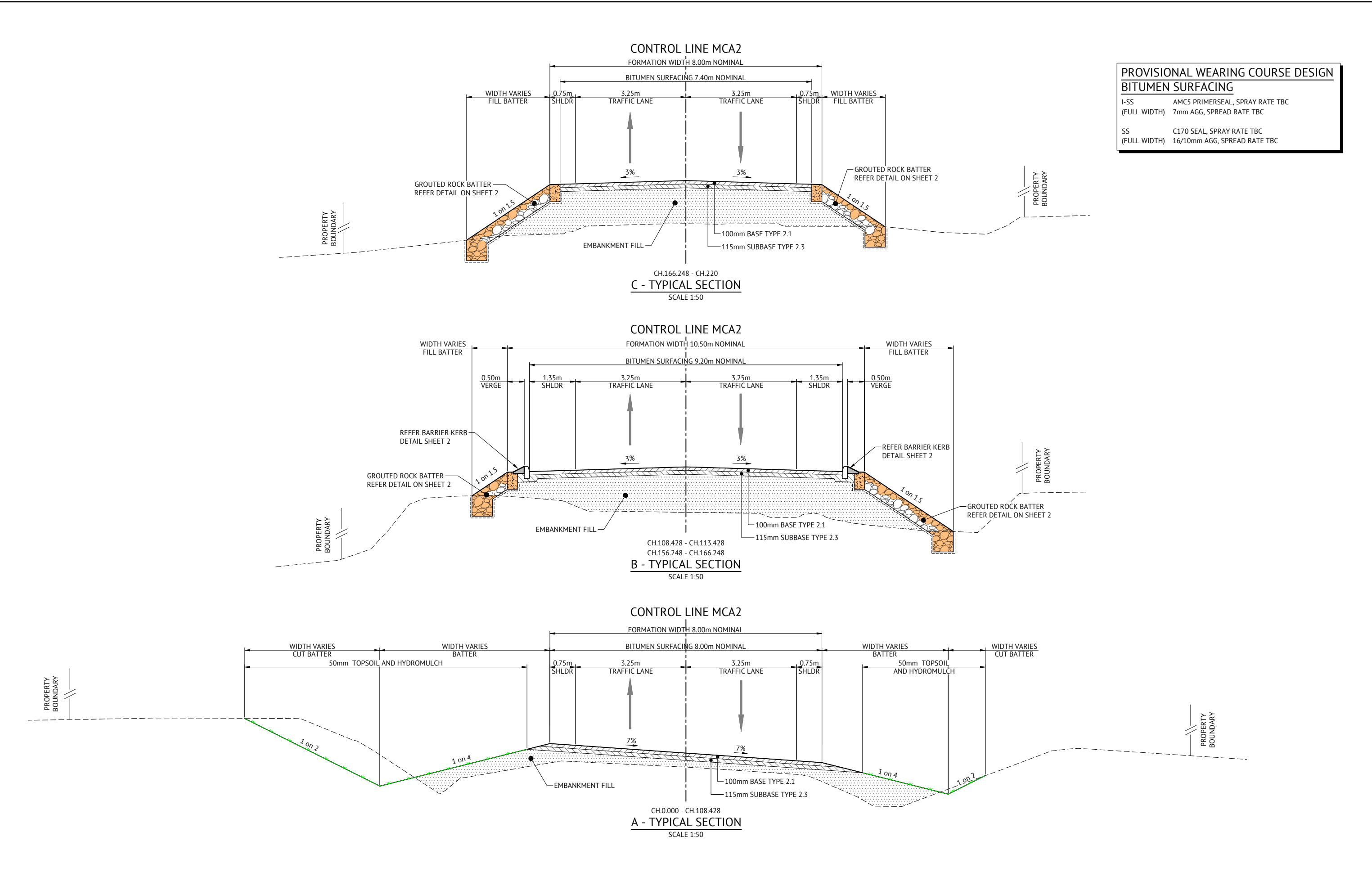
P001388

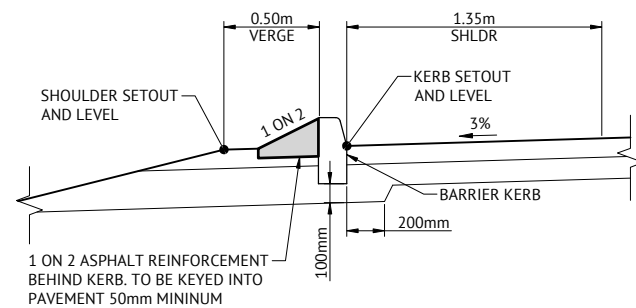
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C005

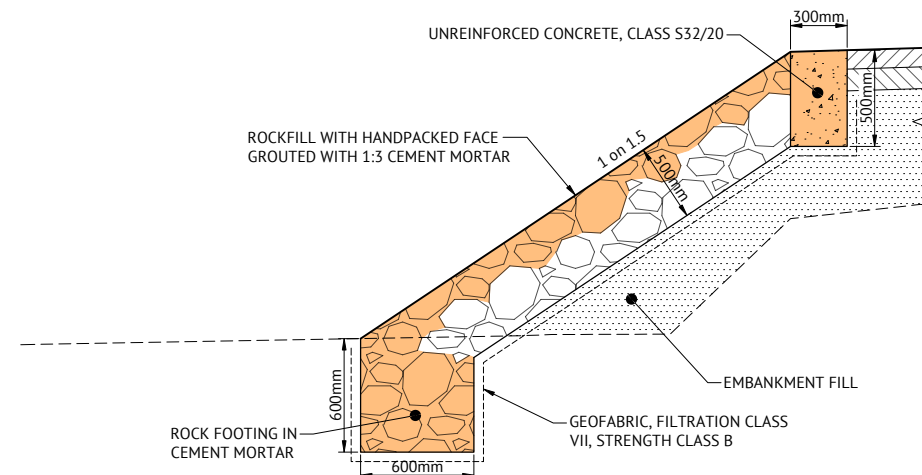
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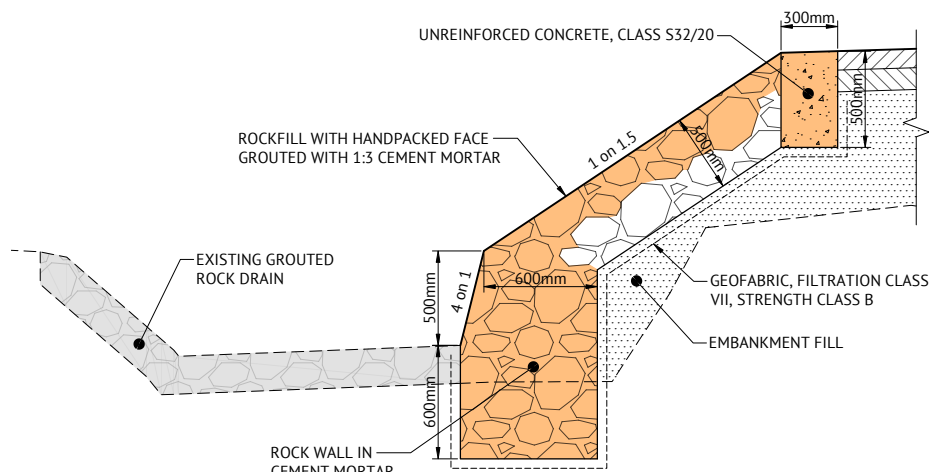




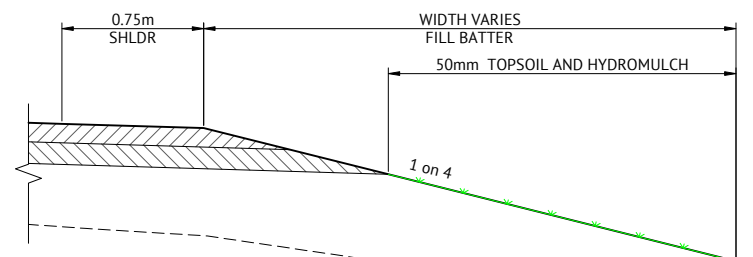
CH 103.428 - CH 113.428 LHS & RHS
CH 156.248 - CH 166.248 LHS & RHS
BARRIER KERB DETAIL
SCALE 1:20



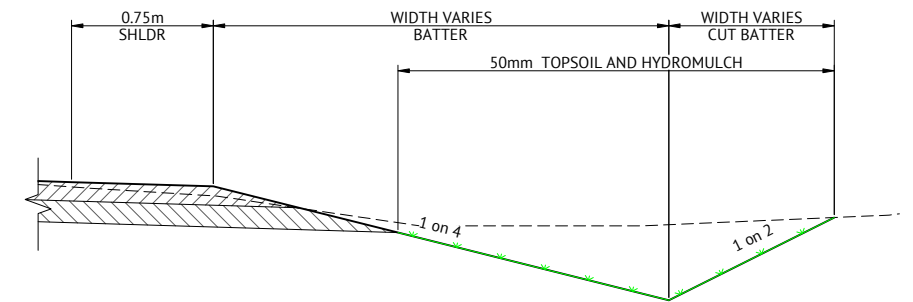
GROUTED ROCK BATTER DETAIL
SCALE 1:20



CH.178.313 - CH.195
C - GROUTED ROCK BATTER AND WALL - LHS
SCALE 1:20



CH.178.748 - CH.205
C - 1 ON 4 BATTER - IN FILL - RHS
SCALE 1:20



CH.205 - CH.220
C - V-DRAIN - IN CUT - RHS
SCALE 1:20

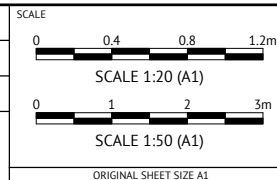
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REC	APP
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20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB	RD

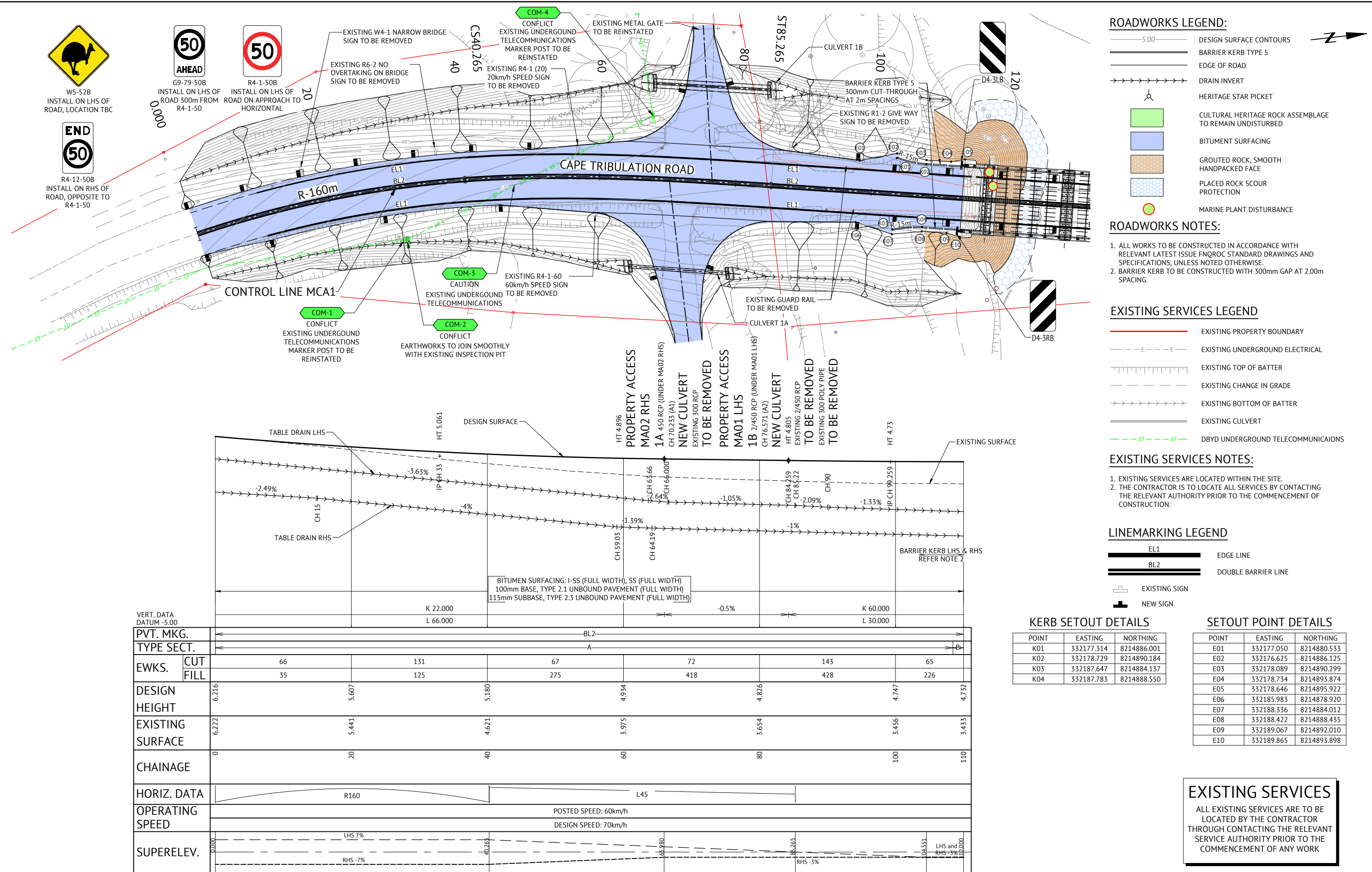


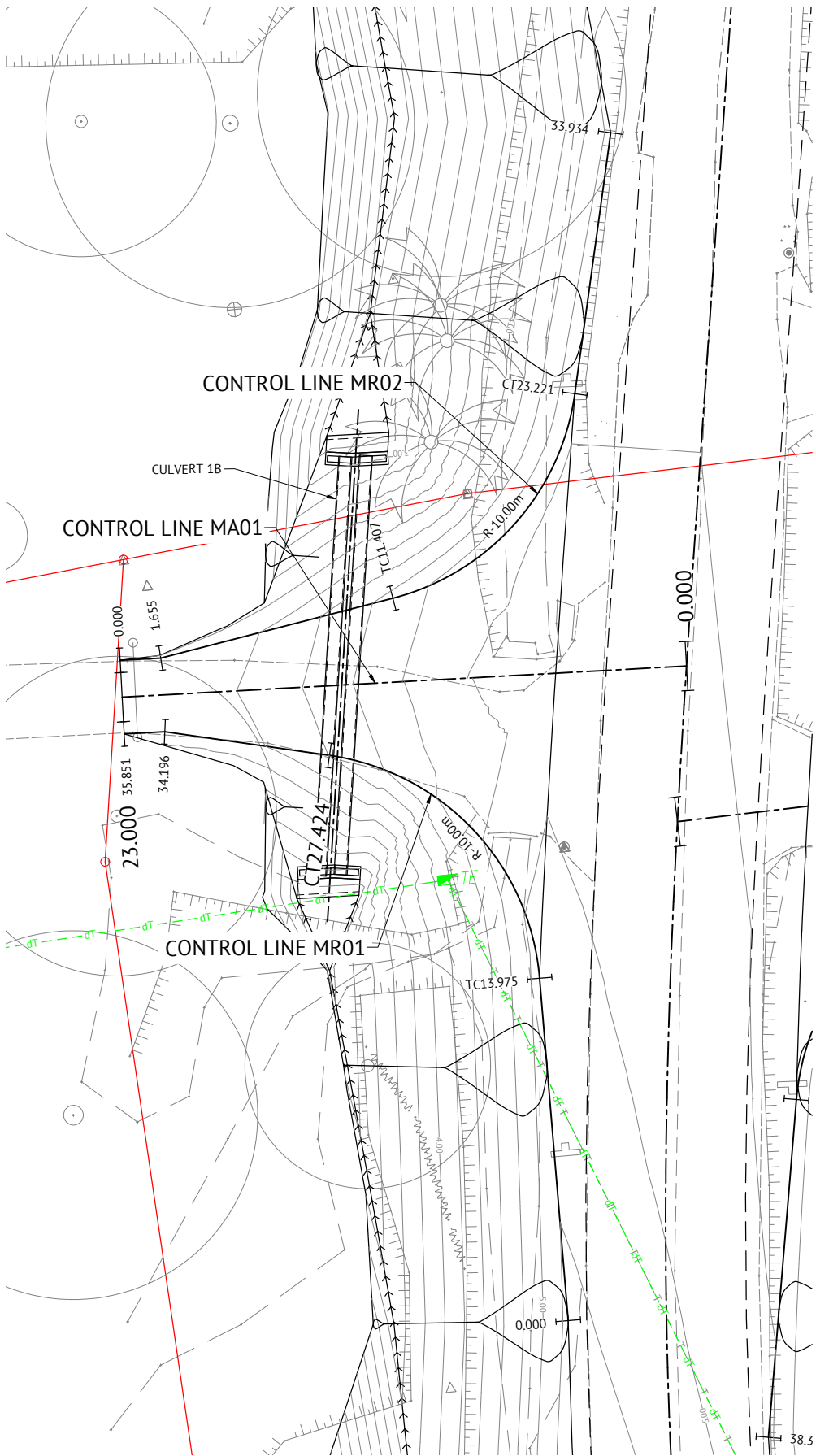
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ENGINEERING CERTIFICATION
R.PERKINS RPEQ 2319



CLIENT	DOUGLAS SHIRE COUNCIL		JOB CODE	P001388	
PROJECT	NOAH CREEK BRIDGE AND APPROACHES		SHEET NUMBER	C007	REV
LOCATION	NOAH CREEK, CAPE TRIBULATION				2
SHEET TITLE	TYPICAL SECTIONS - SHEET 2 OF 2				

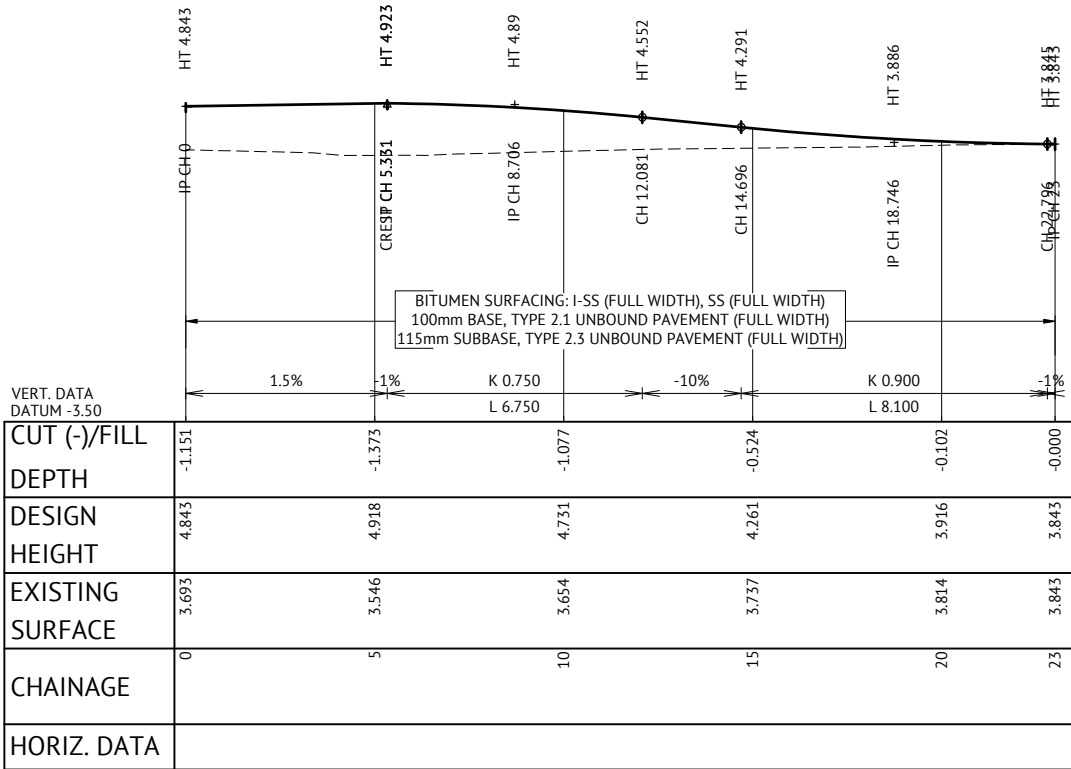




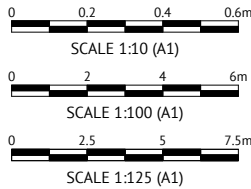
PROPERTY ACCESS MA01
SCALE 1:125

CONTROL LINE MR01								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	332170.014	8214832.703	5.254	1°31'38.76"	LINE		13.975
	5.000	332170.147	8214837.702	5.187	1°31'38.76"			
	10.000	332170.281	8214842.700	5.129	1°31'38.76"			
TC	13.975	332170.387	8214846.673	5.088	1°31'38.76"	ARC	-10.000	13.449
	15.000	332170.361	8214847.698	5.063	355°39'07.87"		-10.000	
	20.000	332168.777	8214852.385	4.811	327°00'15.47"		-10.000	
	25.000	332165.140	8214855.740	4.411	298°21'23.07"		-10.000	
	27.424	332162.889	8214856.622	4.205	284°28'10.59"	LINE		6.773
CT	30.000	332160.394	8214857.266	4.004	284°28'10.59"			
	34.196	332156.331	8214858.315	3.826	273°09'22.33"	LINE		1.655
	35.000	332155.529	8214858.359	3.848	273°09'22.33"			
E	35.851	332154.679	8214858.406	3.870	273°09'22.33"			

CONTROL LINE MR02								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	332154.844	8214861.401	3.807	93°09'34.09"	LINE		1.655
DIS	1.655	332156.497	8214861.310	3.826	81°50'57.75"	LINE		9.753
	5.000	332159.808	8214861.784	3.953	81°50'57.75"			
TC	10.000	332164.757	8214862.493	4.350	81°50'57.75"			
	11.407	332166.151	8214862.693	4.479	81°50'57.75"	ARC	-10.000	11.814
	15.000	332169.540	8214863.823	4.711	61°15'56.02"		-10.000	
CT	20.000	332173.156	8214867.201	4.774	32°37'03.62"		-10.000	
	23.221	332174.429	8214870.145	4.774	14°09'37.37"	LINE		10.713
	25.000	332174.864	8214871.870	4.752	14°09'37.37"			
	30.000	332176.087	8214876.718	4.698	14°09'37.37"			
	33.934	332177.050	8214880.533	4.662	14°09'37.37"			



CONTROL LINE MA01
SCALE 1:100H, 1:10V



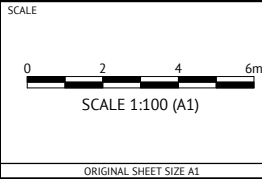
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	SPB REC	RDP APP
13/02/2025	2	ISSUED FOR TENDER	SPB	RDP
20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB	RDP



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R.PERKINS
ENGINEERING CERTIFICATION
R.PERKINS RPEQ 2319



CLIENT

DOUGLAS SHIRE COUNCIL

PROJECT

NOAH CREEK BRIDGE AND APPROACHES

LOCATION

NOAH CREEK, CAPE TRIBULATION

SHEET TITLE

PROPERTY ACCESS PLAN - SHEET 1 OF 2

JOB CODE

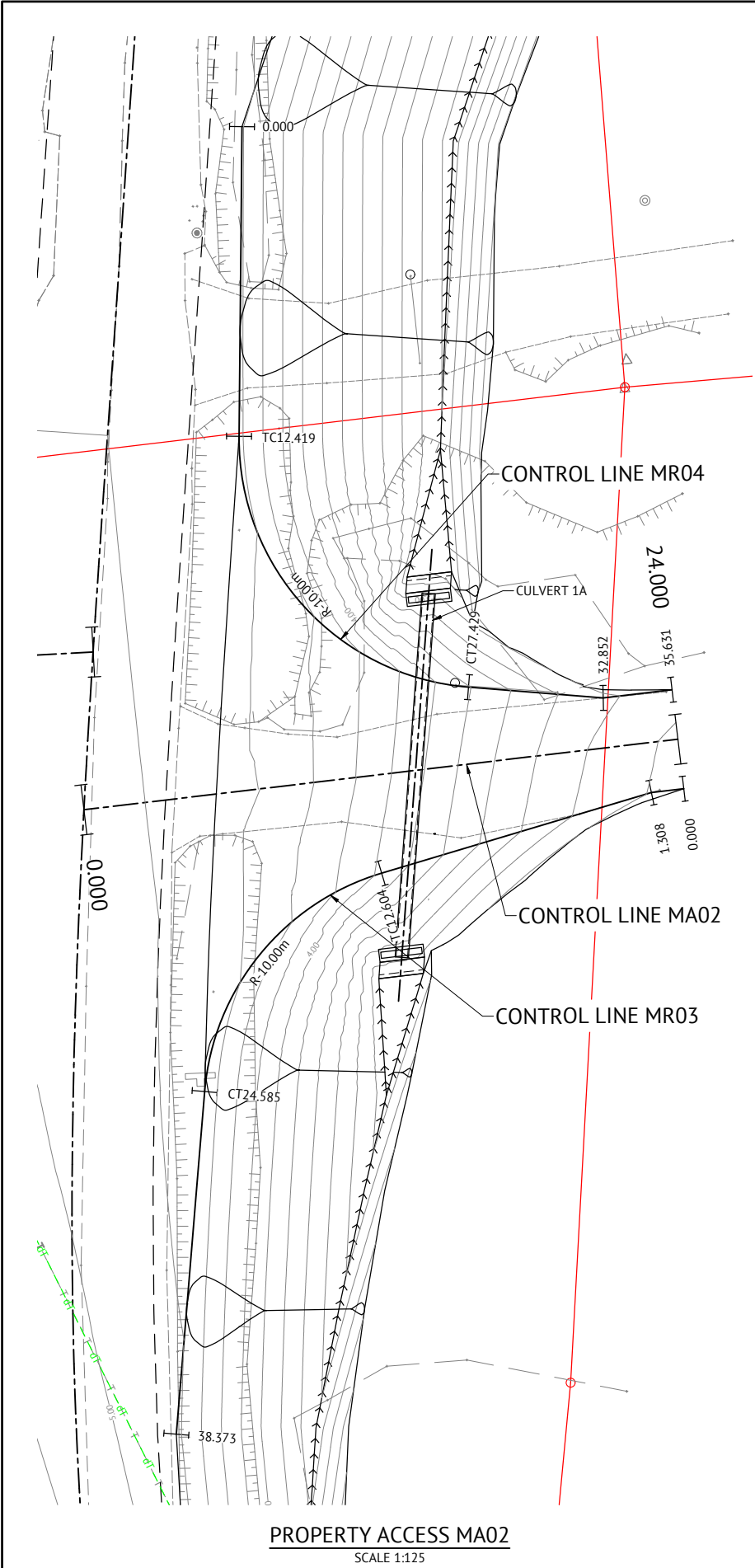
P001388

SHEET NUMBER

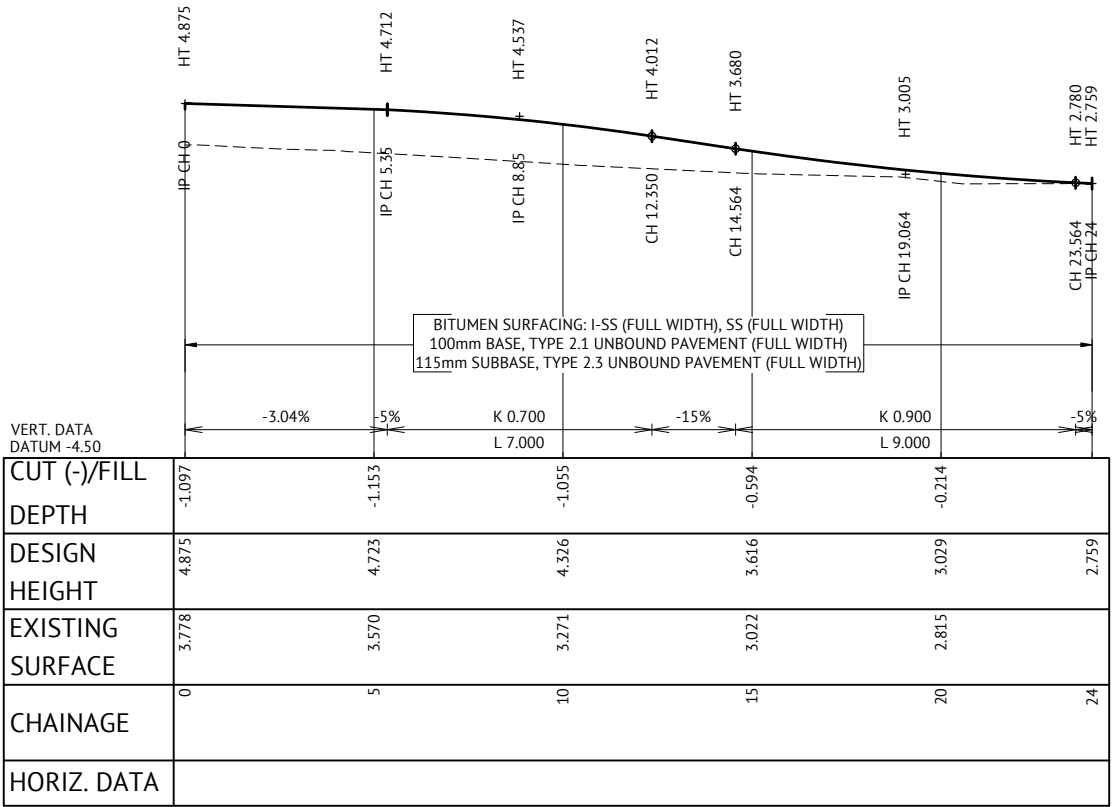
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REV

2



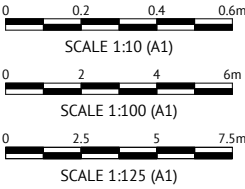
PROPERTY ACCESS MA02
SCALE 1:125



CONTROL LINE MA02
SCALE 1:100H, 1:10V

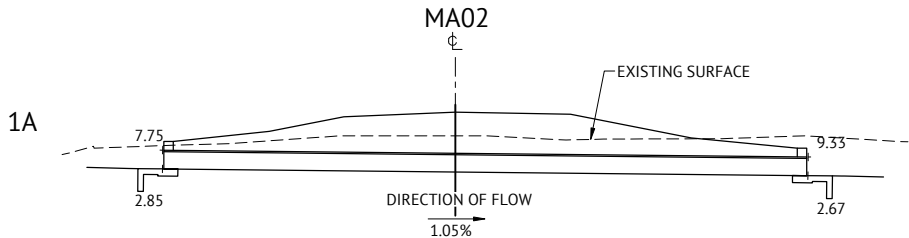
CONTROL LINE MR04								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	332185.983	8214878.921	4.616	186°51'49.18"	LINE		12.419
	5.000	332185.385	8214873.957	4.623	186°51'49.18"			
	10.000	332184.788	8214868.993	4.634	186°51'49.18"			
TC	12.419	332184.499	8214866.591	4.640	186°51'49.18"	ARC	-10.000	15.011
	15.000	332184.523	8214864.017	4.631	172°04'24.16"		-10.000	
	20.000	332186.396	8214859.438	4.435	143°25'31.75"		-10.000	
	25.000	332190.236	8214856.317	3.947	114°46'39.35"		-10.000	
CT	27.429	332192.543	8214855.575	3.614	100°51'31.12"	LINE		5.423
	30.000	332195.068	8214855.091	3.304	100°51'31.12"			
DIS	32.852	332197.869	8214854.554	3.047	89°32'58.25"	LINE		2.779
	35.000	332200.017	8214854.571	2.913	89°32'58.25"			
E	35.631	332200.648	8214854.576	2.881	89°32'58.25"			

CONTROL LINE MR03								
PT	CHAINAGE	EASTING	NORTHING	HEIGHT	BEARING	DEP.SEG	DEP.RAD	DEP.LEN
S	0.000	332200.680	8214850.576	2.725	269°32'58.25"	LINE		1.308
DIS	1.308	332199.372	8214850.565	2.790	259°41'14.86"	LINE		11.296
	5.000	332195.739	8214849.904	3.031	259°41'14.86"			
	10.000	332190.820	8214849.009	3.597	259°41'14.86"			
TC	12.604	332188.258	8214848.543	3.960	259°41'14.86"	ARC	-10.000	11.981
	15.000	332185.975	8214847.837	4.242	245°57'35.82"		-10.000	
	20.000	332182.095	8214844.766	4.603	217°18'43.42"		-10.000	
	24.585	332180.234	8214840.620	4.727	191°02'37.56"	LINE		13.788
CT	25.000	332180.154	8214840.213	4.728	191°02'37.56"			
	30.000	332179.196	8214835.305	4.753	191°02'37.56"			
	35.000	332178.238	8214830.398	4.803	191°02'37.56"			
E	38.373	332177.592	8214827.088	4.851	191°02'37.56"			



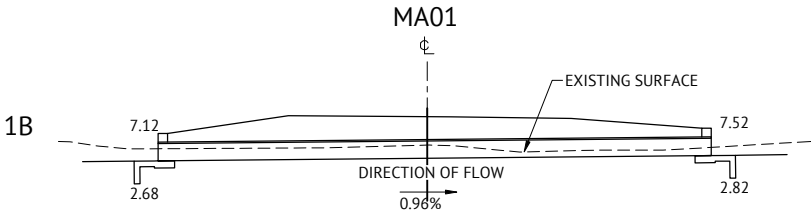
DRAINAGE SCHEDULE

CULVERT								BASE SLAB / FOOTING				HEADWALL		APRON		CUTOFF WALL	BLINDING	EXCAVATION (m³)	BACKFILL	
ALIGNMENT	CHAINAGE (m)	SKEW NO.	ID	STRUCTURE	PIPE CLASS	Exp CLASS	INSTALLATION TYPE	CONCRETE (m³)	REBAR (kg)	FABRIC (m²)	(m²)	CONCRETE (m³)	REBAR (kg)	CONCRETE (m³)	REBAR (kg)	CONCRETE (m³)	CONCRETE (m³)	CULVERT	OVERLAY (m³)	FOUNDATION (m³)
MA01	14.05	96.6	1A	2/450 RCP (14/2.44)	3	B2	NEW	0.5	13.8	2.0	SL92	0.7	13.1	0.6	61.1	0.3	0.3	40.2	14.6	6.5
MA02	13.4	101.0	1A	450 RCP (6/2.44)	3	B2	NEW	0.3	10.4	1.4	SL92	0.5	8.9	0.3	38.2	0.2	0.2	8.5	7.5	3.3
TOTAL QUANTITIES								0.8	24.2			1.2	22.0	0.9	99.3	0.5	0.5	48.7	22.1	9.8
TOTAL FABRIC (AREA / TYPE)								3.4 / SL92												



2/450 RCP (14/2.44) (CLASS 3, RUBBER RING) (17.01 OUTSIDE OF WALLS)
SKEW ANGLE 7° SKEW NUMBER 96.6 (17.08 OVERALL LENGTH)

REINFORCED CONC. FOOTING 0.5m³, HEADWALL 0.7m³, APRON 0.6m³, C/O WALL 0.3m³
OVERLAY MATERIAL 14.6m³
BEDDING/HAUNCH MATERIAL 6.5m³ (H2)
STANDARD DRAWINGS - 1305, 1359
BASIS FOR DIMENSIONS:
EXTERNAL DIA. 534mm, PIPE THICK. 38mm, HEADWALL HT. 230mm
EXPOSURE CLASSIFICATION: B2



450 RCP (6/2.44) (CLASS 3, RUBBER RING) (14.64 OUTSIDE OF WALLS)
SKEW ANGLE 11° SKEW NUMBER 101 (14.64 OVERALL LENGTH)

REINFORCED CONC. FOOTING 0.3m³, HEADWALL 0.5m³, APRON 0.3m³, C/O WALL 0.2m³
OVERLAY MATERIAL 7.5m³
BEDDING/HAUNCH MATERIAL 3.3m³ (H2)
STANDARD DRAWINGS - 1305, 1359
BASIS FOR DIMENSIONS:
EXTERNAL DIA. 534mm, PIPE THICK. 38mm, HEADWALL HT. 230mm
EXPOSURE CLASSIFICATION: B2

PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	REC	APP
13/02/2025	2	ISSUED FOR TENDER	SPB	RDP
20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB	RDP

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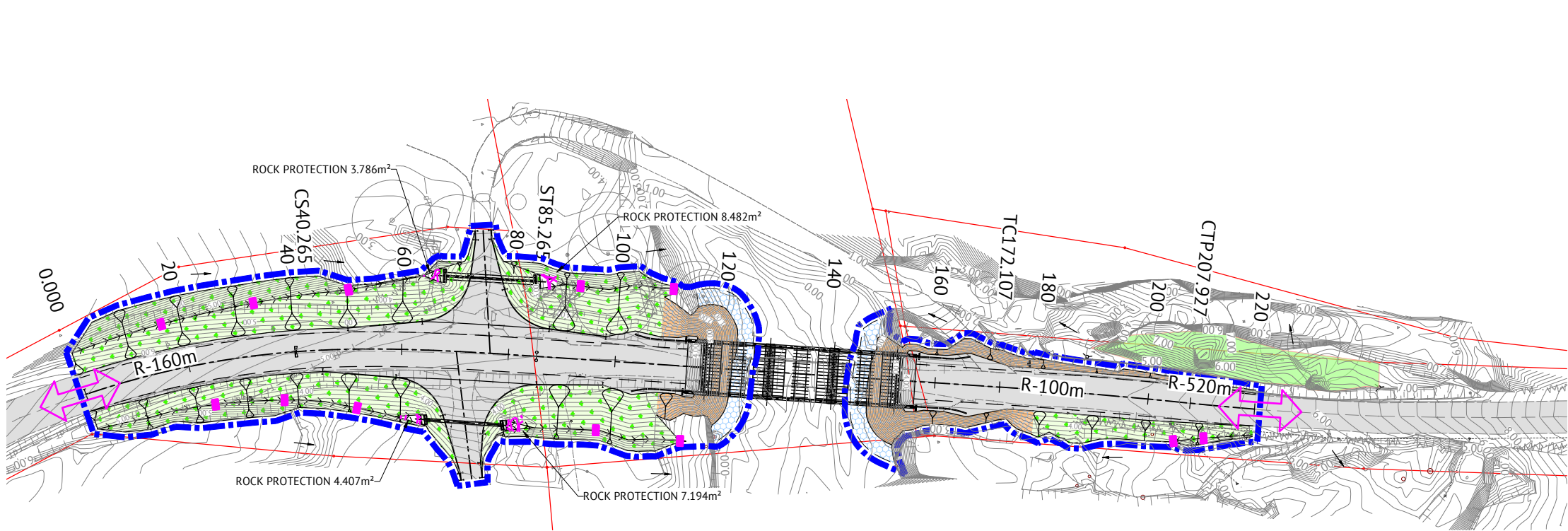
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S.BROGAN
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R.PERKINS
ENGINEERING CERTIFICATION
R.PERKINS RPEQ 2319

SCALE
0 2 4 6m
SCALE 1:100 (A1)
ORIGINAL SHEET SIZE A1

CLIENT	DOUGLAS SHIRE COUNCIL
PROJECT	NOAH CREEK BRIDGE AND APPROACHES
LOCATION	NOAH CREEK, CAPE TRIBULATION
SHEET TITLE	STORMWATER CULVERT DETAILS PLAN

JOB CODE	P001388
SHEET NUMBER	C012
REV	2



PRE-CONSTRUCTION SOIL EROSION
AND SEDIMENT CONTROL LEGEND

6.75

EXISTING SURFACE CONTOURS

(SF)

SEDIMENT FENCE (SF) WITH RETURNS AT 20m SPACINGS

ESTABLISHED SURFACE

CULTURAL HERITAGE ROCK ASSEMBLAGE TO REMAIN UNDISTURBED

DUMPED ROCK SCOUR PROTECTION ON GEOTEXTILE FABRIC (200g/m²)
ROCK GRADING - 400mm THICK
75mm-325mm, AVERAGE SIZE 200mm

CHECK DAM

HYDROMULCH (TO BE APPLIED IMMEDIATELY UPON COMPLETION OF EARTHWORKS AND TOPSOILING)

DIRECTION OF OVERLAND FLOW PATH

EXTENTS OF SITE / CLEARING BOUNDARY

ENTRY/EXIT

MARINE PLANT DISTURBANCE

SOIL EROSION AND SEDIMENT CONTROL NOTES

1.

THE CONTRACTOR IS TO UNDERTAKE EROSION AND SEDIMENT CONTROL WORKS (ESC) FOR THE SITE, GENERALLY IN ACCORDANCE WITH THE COUNCIL'S REQUIREMENTS AND THE INTERNATIONAL EROSION CONTROL ASSOCIATION'S (IECA) 'BEST PRACTICE EROSION AND SEDIMENT CONTROL' MANUAL.

2.

EXISTING SOIL TYPE - CLAYEY SAND, SANDY CLAY OR SILTY CLAY (FINE OR FINE TO MEDIUM GRAINED SAND WITH PLASTICITY RANGING FROM LOW TO HIGH).

3.

THE EROSION AND SEDIMENT CONTROL WORKS ARE TO BE IMPLEMENTED BY THE CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS ONSITE. THE CONTRACTOR IS REQUIRED TO MAINTAIN AN UPDATED ESC PROGRAM AND DRAWINGS IN ACCORDANCE WITH THEIR CONSTRUCTION PROGRAM, THE IECA MANUAL AND THE EROSION HAZARD RISK APPROPRIATE AT THE TIME OF CONSTRUCTION. THESE ESC DOCUMENTS ARE TO BE AVAILABLE ONSITE AT ALL TIMES FOR REVIEW.

4.

THE CONTRACTOR IS TO STAGE THE WORKS SUCH THAT CLEARING, STRIPPING AND EATHWORKS, INCLUDING COMPACTION, TESTING AND RESPREADING OF THE TOPSOIL IS COMPLETED WITHIN THE TIMEFRAMES SPECIFIED IN TABLE 4.4.7 OF IECA BEST PRACTICE EROSION AND SEDIMENT CONTROL MANUAL:

- 2 WEEKS (JANUARY, FEBRUARY)

- 4 WEEKS (DECEMBER, MARCH)

- 6 WEEKS (APRIL, NOVEMBER)

- 8 WEEKS (MAY, OCTOBER)

5.

STOCKPILE LOCATIONS ARE TO BE DESIGNATED BY THE CONTRACTOR ONSITE DURING CONSTRUCTION TO SUIT THE EARTHWORKS PROGRAM. THE STOCKPILE LOCATION IS TO BE CONFIRMED WITH THE SUPERINTENDENT PRIOR TO COMMENCEMENT OF EARTHWORKS.

6.

ALL EROSION AND SEDIMENTATION CONTROL MEASURES REQUIRED BY THE ESC PLANS AND PROGRAM, SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR DURING CONSTRUCTION AND THROUGHOUT THE MAINTENANCE PERIOD (IF APPLICABLE).

7.

ALL MEASURES FOR EROSION AND SEDIMENTATION CONTROL SHALL BE INSTALLED AND MAINTAINED BY THE CONTRACTOR IN SUCH A MANNER SO AS NOT TO PRESENT POTENTIAL HAZARD TO ANY PERSON OR PROPERTY.

8.

THE CONTRACTOR WILL MONITOR AND (IF REQUIRED) PROVIDE FURTHER MITIGATION MEASURES TO PREVENT DUST LEAVING THE SITE BY PROACTIVE USE OF WATER TRUCK PRIOR TO, AND DURING ANY EXCAVATION, BACK FILLING OR GRADING EARTHWORKS INCLUDING HAUL ROADS. THE WORKS SHALL BE UNDERTAKEN IN ACCORDANCE WITH THE CONTRACTORS DUST MANAGMENT PLAN.

9.

FOR SOIL EROSION AND SEDIMENT CONTROL DEVICE DETAILS AND CONSTRUCTION REQUIREMENTS REFER SHEET 2.

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SCALE

0102030m

SCALE 1:500 (A1)

ORIGINAL SHEET SIZE A1

CLIENT

DOUGLAS SHIRE COUNCIL

PROJECT

NOAH CREEK BRIDGE AND APPROACHES

LOCATION

NOAH CREEK, CAPE TRIBULATION

SHEET TITLE

SOIL EROSION & SEDIMENT CONTROL - SHEET 1 OF 2

JOB CODE

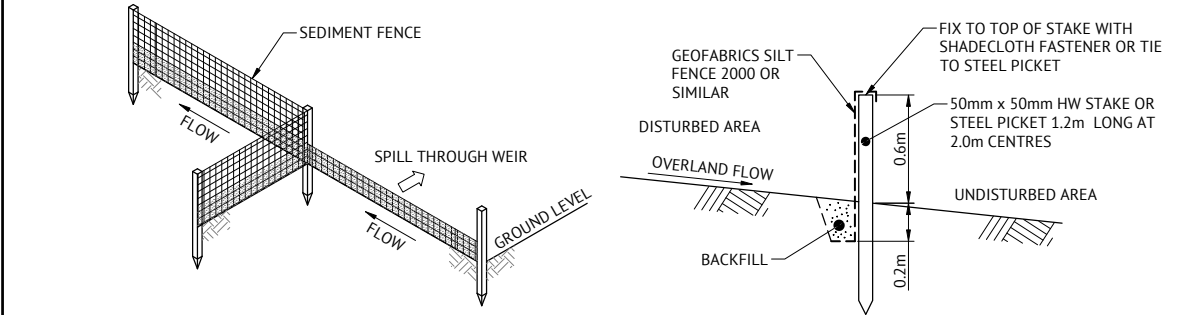
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SHEET NUMBER

C013

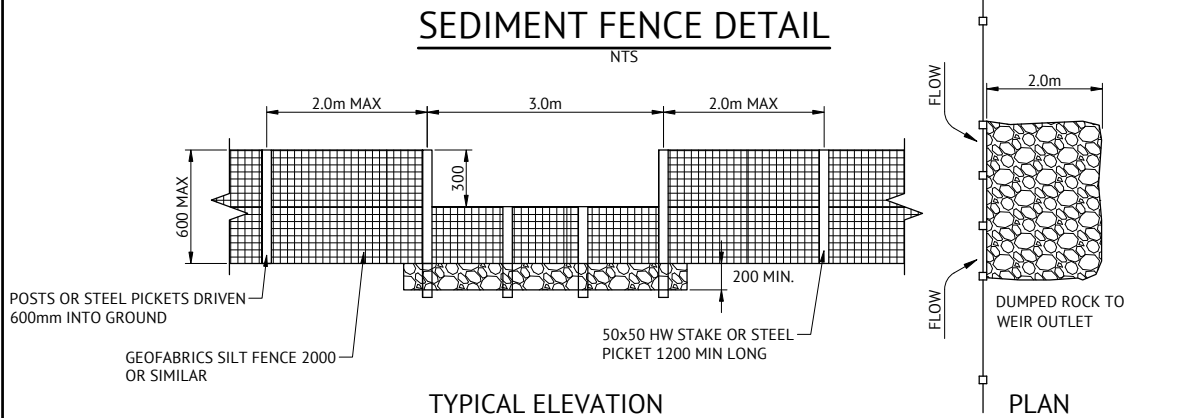
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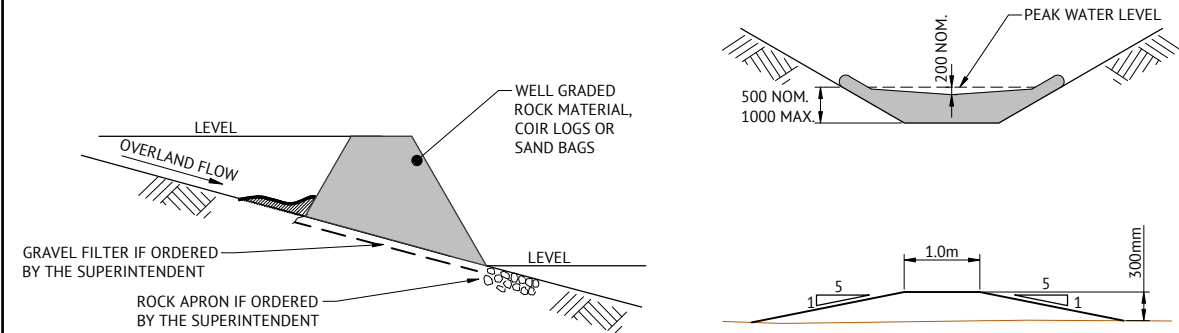
SEDIMENT FENCE RETURN

TYPICAL SECTION



TYPICAL ELEVATION

SPILL THROUGH WEIR

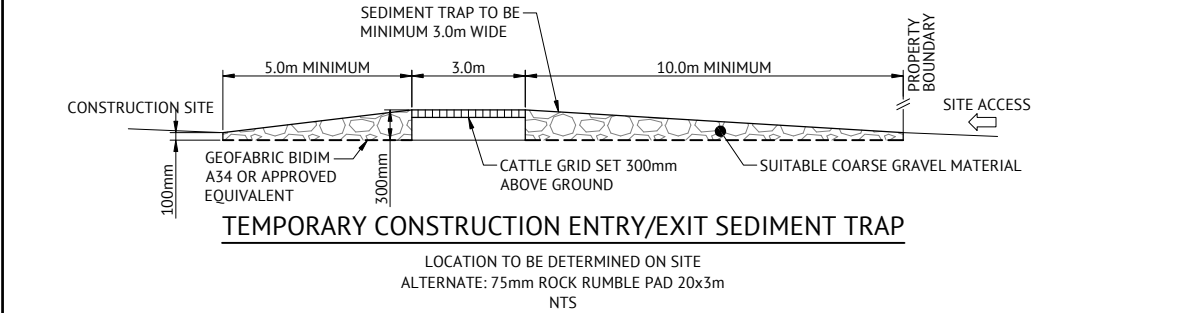


CHECK DAM

NTS

TYPICAL SECTION
TEMPORARY DIVERSION MOUND

NTS



TEMPORARY CONSTRUCTION ENTRY/EXIT SEDIMENT TRAP

LOCATION TO BE DETERMINED ON SITE
ALTERNATE: 75mm ROCK RUMBLE PAD 20x3m
NTS

SEQUENCE OF ACTIONS TO BE UNDERTAKEN BY CONTRACTOR

1. NOTIFICATION	THE SUPERINTENDENT IS TO BE GIVEN NOTIFICATION FOR EACH OF THE FOLLOWING POINTS:- - CONTRACTORS UPDATED ESC PROGRAM AND DRAWINGS IN ACCORDANCE WITH THEIR CONSTRUCTION SCHEDULE. - AFTER THE AREA TO BE CLEARED HAS BEEN MARKED ONSITE AND STOCKPILE LOCATIONS NOMINATED. - ONCE THE LOCATION OF ANY DIVERSION DRAINS, SEDIMENT FENCES AND SEDIMENT BASINS HAVE BEEN DETERMINED ONSITE. - AFTER THE PRE-CONSTRUCTION EROSION CONTROL MEASURES HAVE BEEN INSTALLED.
2. SITE POSSESSION	- ERECT THE BARRIER FENCING TO BUFFER AREAS AND DRAINAGE RESERVES TO ENSURE EXISTING OR UNDISTURBED LAND IS NOT DISTURBED/ENCROACHED DURING CONSTRUCTION. - INSTALLATION OF CONSTRUCTION EXIT TO ENSURE NO SOIL LEAVES THE SITE DURING CONSTRUCTION. - CONSTRUCT TEMPORARY EROSION AND SEDIMENT CONTROL MEASURES SUCH AS SILT FENCING, CHECK DAMS AND DIVERSION BANKS IN ACCORDANCE WITH ESC PLAN. - CONSTRUCT TEMPORARY DIVERSION MOUNDS TO DIVERT 'CLEAN' WATER AROUND CONSTRUCTION SITE.
3. CONSTRUCTION	- ALL ESC MEASURES ARE TO BE IMPLEMENTED IN ACCORDANCE WITH THE INSTALLATION SEQUENCE IN THE ESC PROGRAM AS DEVELOPED TO SUIT THE CONSTRUCTION PROGRAM AND EROSION RISK. - TOPSOIL IS TO BE STRIPPED AND STOCKPILED IN LOCATIONS NOMINATED BY THE CONTRACTOR AND AGREED WITH THE SUPERINTENDENT. A SEDIMENT FENCE IS TO BE CONSTRUCTED ON THE DOWNHILL SIDE OF THE STOCKPILE TO CONTAIN SEDIMENT RUNOFF FROM THE STOCKPILE/S. A DIVERSION DRAIN IS TO BE INSTALLED UPSTREAM OF THE STOCKPILE/S (IF REQUIRED). - AT ALL TIMES THE CONTRACTOR SHALL ENSURE THAT DUST RESULTING FROM THE PROPOSED WORKS, INCLUDING EXCAVATION, BACKFILLING, GRADING AND STOCKPILES IS KEPT TO AN ABSOLUTE MINIMUM IN ACCORDANCE WITH THEIR DUST MANAGEMENT PLAN. - ESC DEVICES REQUIRED TO BE MODIFIED/REMOVED TO ALLOW CONSTRUCTION ACCESS ARE TO BE REINSTATED AT THE COMPLETION OF THE WORK DURING PERIODS OF LOW RISK OF EROSION AND AT THE END OF EACH WORKDAY IF THERE IS A MODERATE/HIGH RISK OF EROSION. - MOVEMENT OF CONSTRUCTION EQUIPMENT AND VEHICLES SHALL BE LIMITED TO THE AREA OF WORK, THE HAUL ROAD AND EXISTING ROADS. - DISTURBED AREAS ARE TO BE STABILISED IN TIMELY MANNER AND IN ACCORDANCE WITH ESC PLANS AND THE IECA MANUAL 'BEST PRACTICE EROSION AND SEDIMENT CONTROL'. DISTURBED AREAS ARE TO BE RESTORED PROGRESSIVELY AS THE WORK IS FINISHED AND BARRICADED OFF FROM CONSTRUCTION ACTIVITIES TO ALLOW REVEGETATION TO BE ESTABLISHED. - ALL BATTERS SHALL BE TOPSOILED, GRASS SEEDED AND WATERED IMMEDIATELY UPON COMPLETION OF EARTHWORKS TO STABILISE THE BATTER. - ADDITIONAL CONTROL DEVICES MAY BE REQUIRED BY THE SUPERINTENDENT.
4. MAINTENANCE	- CHECK THE INTEGRITY OF THE ESC DEVICES DAILY DURING THE MONTHS OF NOVEMBER TO MARCH AND WEEKLY AT OTHER TIMES OF THE YEAR. - CHECK THE INTEGRITY OF THE ESC DEVICES PRIOR TO IMPENDING OR BOM PREDICTED RAINFALL EVENTS. - CHECK THE INTEGRITY OF THE ESC DEVICES IMMEDIATELY FOLLOWING EACH RAINFALL EVENT. - UNDERTAKE THE REQUIRED MAINTENANCE TO THE ESC DEVICES AFTER EACH RAINFALL EVENT (IF REQUIRED). - PROVIDE ADDITIONAL ESC DEVICES, IF THE IMPLEMENTED ESC PLAN FAILS TO CONTAIN THE SEDIMENT ONSITE.
5. GENERAL	- THE CONTRACTOR WILL BE RESPONSIBLE FOR THE IMPLEMENTATION OF THE ESC PLANS AND PROGRAM, THE CONSTRUCTION AND MAINTENANCE OF ESC DEVICES, FROM THE POSSESSION OF THE SITE UNTIL THE SITE IS ACCEPTED BY THE LOCAL AUTHORITY "OFF MAINTENANCE" OR UNTIL SOIL STABILISATION HAS OCCURRED IN ACCORDANCE WITH THE FNQROC REGIONAL DEVELOPMENT MANUAL. - AMENDED OR AN ALTERNATIVE ESC PROGRAM AND PLANS ARE TO BE REVIEWED AND APPROVED BY THE SUPERINTENDENT PRIOR TO IMPLEMENTATION.

TYPICAL ESC DEVICES	CONSTRUCTION REQUIREMENTS	MAINTENANCE REQUIREMENTS
CONSTRUCTION EXITS - USED TO PREVENT THE TRACKING OF DEBRIS FROM TYRES OF VEHICLES ONTO PUBLIC ROAD.	1. REFER TO DETAIL ON THIS DRAWING. 2. SURFACE WATER FLOWING TO THE CONSTRUCTION EXIT SEDIMENT TRAP MUST BE PIPED UNDER THE TRAP OR A PERIMETER BANK SHOULD BE CONSTRUCTED TO DIRECT SURFACE FLOW AWAY FROM THE TRAP. 3. WASH-OFF TO BE DIRECTED TO A SEDIMENT TRAP OR BUFFER ZONE. 4. ONLY PROVIDE ONE CONSTRUCTION EXIT FOR THE SITE UNLESS SITE ACCESS OR TOPOGRAPHY REQUIRE MORE. 5. ENSURE THAT CONTAMINATED VEHICLES CANNOT BYPASS IT WHEN EXITING THE SITE.	1. REMOVAL OF SEDIMENT AND/OR ADDING EXTRA AGGREGATE. 2. REMOVE SEDIMENT TRANSPORTED ONTO ROADWAYS AND APPLY CORRECTIVE MEASURE TO ENSURE NO RE-OCCURENCE. 3. EXTEND THE LENGTH OF THE GRAVEL PAD IF EXCESSIVE SEDIMENT IS STILL BEING TRANSPORTED OFF THE SITE.
CHECK DAMS - USED TO INTERCEPT AND REDUCE THE VELOCITY OF CONCENTRATED FLOW.	1. REFER TO DETAIL ON THIS DRAWING. 2. PROVIDE DOWNSTREAM OF CONCENTRATED OUTLETS AND AT 50m MAX. ALONG OPEN CHANNELS AND AROUND FIELD INLETS TO ALLOW SEDIMENT TO SETTLE OUT PRIOR TO ENTERING STORMWATER PIPES. 3. SHOULD BE SHAPED SUCH THAT WATER FLOW OVER THE CENTRE OF THE ROCK CHECK DAM TO PREVENT WATER FUNNELING AROUND THE DAM AND ERODING THE EDGE OF THE DRAIN. 4. ACCESS WILL BE REQUIRED FOR MAINTENANCE AND THE CHECK DAMS ARE TO BE REMOVED ONCE SUITABLE STABILISATION OF THE DISTURBED CATCHMENT IS ACHIEVED.	1. EXCESSIVE SEDIMENT SHOULD BE REMOVED FROM UPSTREAM OF THE CHECK DAMS AFTER RAINFALL EVENTS. 2. THE UPSTREAM GRAVEL FILTER LAYER SHOULD BE RE-ESTABLISHED WHEN SEDIMENT BEGINS TO FLOW THROUGH THE STRUCTURE OR WHEN PERMEABILITY IS EXCESSIVELY REDUCED.
SEDIMENT FENCES - USED TO TEMPORARILY REDUCE THE VELOCITY OF CONTAMINATED SHEET FLOW AND TO INDUCE GRAVITATIONAL SETTLEMENT OF THE SEDIMENT.	1. REFER TO DETAIL ON THIS DRAWING. 2. ALL SEDIMENT FENCES TO BE INSTALLED PARALLEL TO CONTOURS. 3. REGULAR TURN-BACKS AND A FIRM WIRE MESH BACKING ARE REQUIRED TO PREVENT THE FURTHER CONCENTRATION OF FLOW. 4. THE FENCE SHOULD BE SEGMENTED INTO A SERIES OF L SHAPED FENCES TO AVOID THE CONCENTRATION OF FLOW ALONG THE FENCE. 5. SEDIMENT FENCE RETURNS TO BE PROVIDED AT 20m INTERVALS MAX.	1. REGULAR INSPECTIONS AND MAINTENANCE ARE REQUIRED TO REPAIR DAMAGE CAUSED BY ON-SITE VEHICLES OR OTHER CONSTRUCTION ACTIVITIES. 2. INSPECT AFTER EACH RAINFALL EVENT THAT RESULTS IN STORMWATER RUN-OFF. 3. REMOVE EXCESSIVE SEDIMENT DEPOSITS AFTER RAINFALL EVENTS. 4. INVESTIGATE THE SOURCE OF EXCESSIVE SEDIMENT, REVIEW ESC PLAN AND APPLY REMEDIAL ACTIONS AS NECESSARY.
DIVERSION DRAIN/PERIMETER BANKS - USED TO DIVERT CLEAN WATER AROUND DISTURBED AREAS OR USED WITHIN DISTURBED AREAS TO DIRECT DIRTY WATER TO A SEDIMENT TRAP.	1. REFER TO DETAIL ON THIS DRAWING. 2. MOUNDS/DRAINS MUST HAVE A STABLE OUTLET - PROVIDE ROCK PROTECTION IF NECESSARY. 3. MOUNDS/DRAINS DIVERTING CLEAN WATER SHOULD BE SEEDED OR MULCHED IF THEIR WORKING LIFE IS EXPECTED TO EXCEED 30 DAYS.	1. REGULARLY INSPECT MOUNDS/DRAINS AND REPAIR ANY SLUMPS, WHEEL TRACK DAMAGE OR LOSS OF FREEBOARD. 2. SEDIMENT SHOULD BE REMOVED TO AVOID PONDING.

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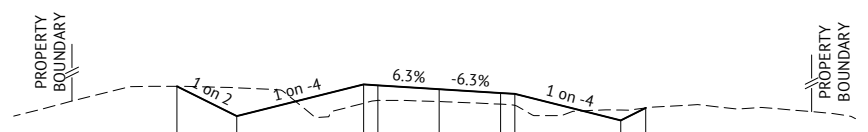
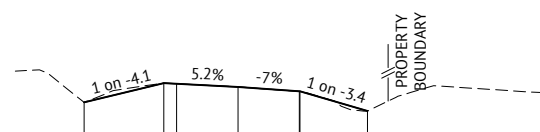
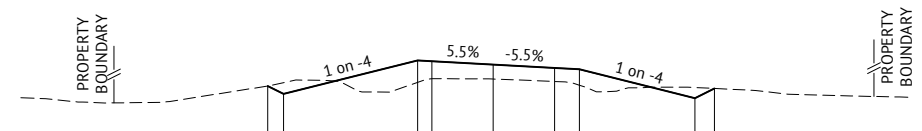
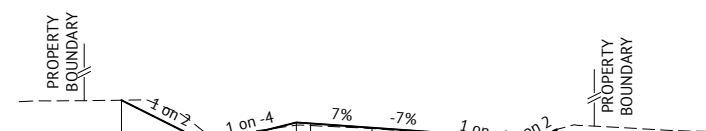
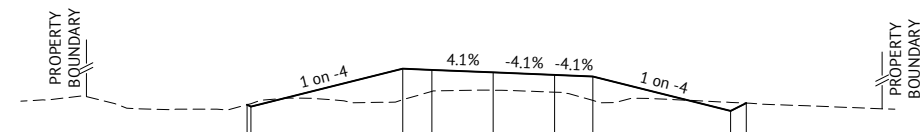
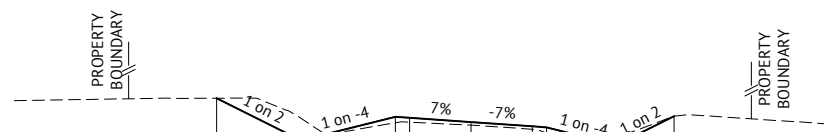
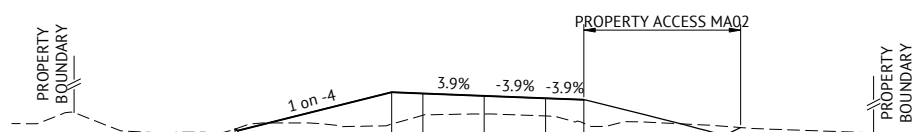
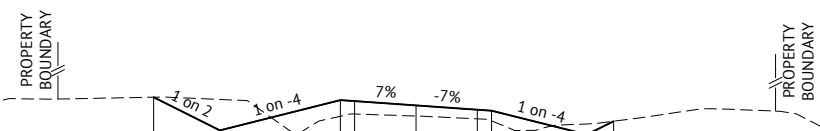
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20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB RDP
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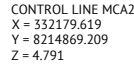
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DESIGNED S.BROGAN	SCALE
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PROJECT MANAGER R.PERKINS	
ENGINEERING CERTIFICATION	
R.PERKINS RPEQ 2319	ORIGINAL SHEET SIZE A1

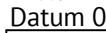
CLIENT DOUGLAS SHIRE COUNCIL
PROJECT NOAH CREEK BRIDGE AND APPROACHES
LOCATION NOAH CREEK, CAPE TRIBULATION
SHEET TITLE SOIL EROSION & SEDIMENT CONTROL - SHEET 2 OF 2

JOB CODE	
P001388	
SHEET NUMBER	REV
C014	2

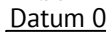




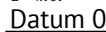
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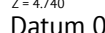


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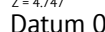


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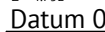
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20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION		SPB	RDP
DATE	REV	DESCRIPTION		REC	APP
REVISIONS					



DESIGNED S.BROGAN
CHECKED S.BROGAN
PROJECT MANAGER R.PERKINS
ENGINEERING CERTIFICATION

R.PERKINS RPEO 2319

SCALE



0 4 8 12m

SCALE 1:200 (A1)

ORIGINAL SHEET SIZE A1

CLIENT	DOUGLAS SHIRE COUNCIL
PROJECT	NOAH CREEK BRIDGE AND APPROACHES
LOCATION	NOAH CREEK, CAPE TRIBULATION
SHEET TITLE	CAPE TRIBULATION ROAD CROSS SECTIONS - SHEET 2 OF 4

DB CODE
 P001388
 SHEET NUMBER
 C016



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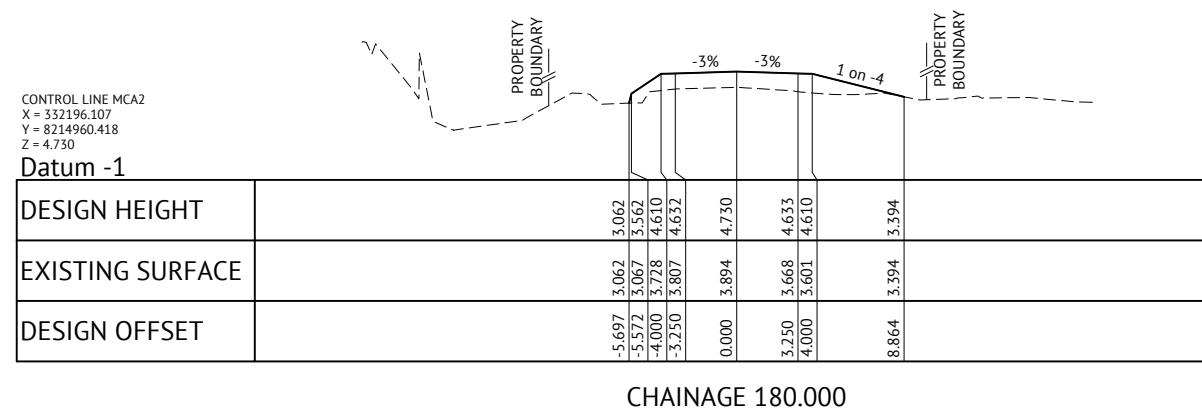
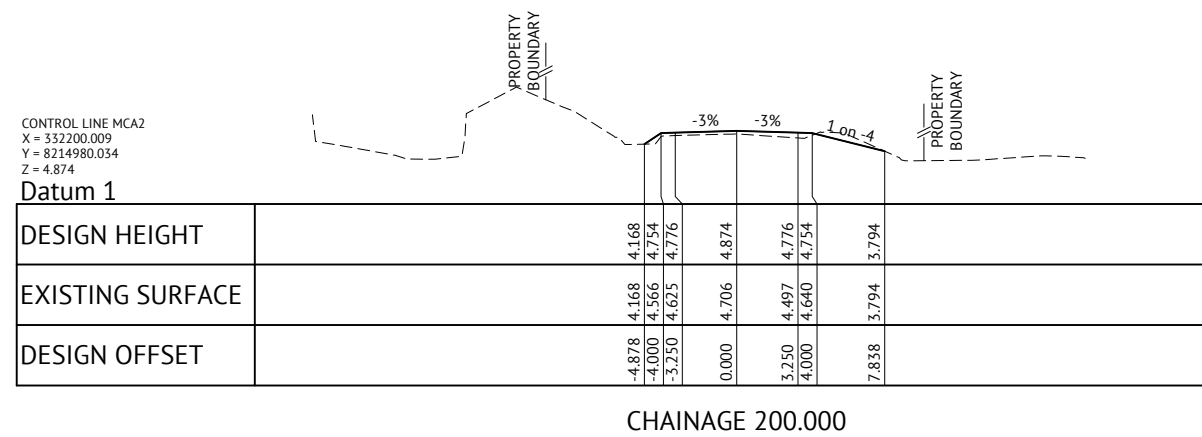
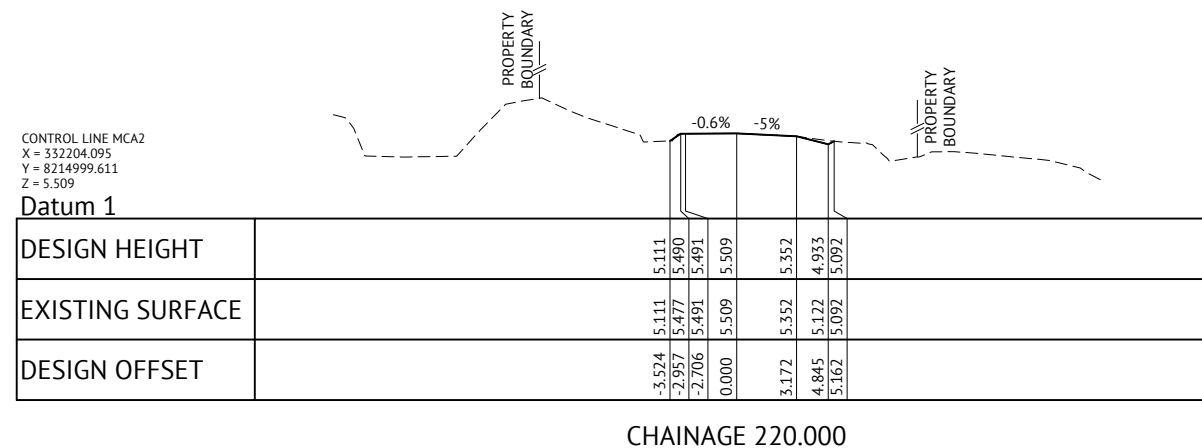


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SCALE 1:200 (A1)

ORIGINAL SHEET SIZE A1

JOB CODE	
P001388	
SHEET NUMBER	REV
C017	2



Our ref: 402031

ATTACHMENT D

Noah Creek Bridge Replacement Environment Management Plan

Douglas Shire Council
Noah Creek Bridge Replacement

**Environment Management Plan
(Planning)**

March 2025



environmentPACIFIC



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2025 Douglas Shire Council– Environment Management Plan, Noah Creek Bridge Replacement

Document Status

Rev	Author	Signature	Reviewer	Signature	Date
A	A Small	AS	K Keane	KK	18/03/2025
B	A Small	AS	External	AS	20/03/2025

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- Appendix B - Incident Report Template
- Appendix C – SARA referral agency response

1. Introduction

1.1 Project Background

Douglas Shire Council (DSC) are replacing the existing bridge over Noah Creek on the Cape Tribulation Road, approximately 25km north of the Daintree River. The existing wooden bridge (approximately 24 m long, excluding abutments) and abutments are in poor condition and have been subject to a number of remedial efforts over the recent years. Load limitations on the bridge are regularly exceeded and a structural inspection in 2016 have identified that the bridge is nearing end of life and needs replacing.

The replacement of the existing bridge has a number of aspects to consider as part of the design/planning and construction process.

- The existing bridge is a critical transport link to/from the village of Cape Tribulation and is vital to 24hr emergency services access as there is no airstrip, boat landing or formal helipad at Cape Tribulation, although helicopters may land in open areas in emergency situations. The bridge supports the economic tourism base of the local region enabling visitors to access Cape Tribulation from the south. The northern route via the Cape Tribulation - Bloomfield Road is not readily accessible by normal vehicles and is impractical for day use to access.
- Subsequently closing the existing bridge to construct a new bridge fully or partially on the existing alignment is not possible from a transport access perspective without first having a viable vehicle access to bypass the construction area.
- From physical geotechnical and hydrological aspects, the location of the Noah Creek bridge is technically challenging for design and construction. Geotechnical reports have identified the substrate as primarily large colluvium aggregate that is subject to movement, and hence substantial foundations are required.
- The Noah Creek catchment originates in the foothills and uplands of Thornton Peak, an area that receives in excess of 9m of rainfall annually. Noah Creek flow is subject to extreme high velocity and high-volume discharges over short periods of time.
- The Noah Creek works area is located within the Wet Tropics World Heritage Area (WTWHA) and the northern bank and road reserve is within the Daintree National Park. The Great Barrier Reef Marine Park (GBRMP) and Great Barrier Reef World Heritage Area begins 200m downstream from the works area. The locality is within a nexus of internationally recognised biodiversity values, and there is a very high level of regulatory requirement that is being addressed throughout the planning and construction for this project. This has imposed limitations and adoptions of alternate approaches in both the design and construction phase that increase complexity and costs for the project.
- There are significance cultural heritage aspects important to the Eastern Kuku Yalanji Traditional Owners that are to be avoided on the northern bank.
- The project works location intersects the migratory breeding patterns of State, Commonwealth and Internationally listed fish of conservation significance whose population maintenance depends on ready access to/from the upstream areas of Noah Creek to the ocean. This poses particular issues with general instream design and construction.

1.2 Project Elements

The replacement of the Noah Creek bridge will be on the alignment of the existing bridge. In order to achieve this the existing emergency heavy vehicle ford bypass will be reconstructed as an all-vehicle temporary sidetrack. Upon completion of the sidetrack, all traffic on the Cape Tribulation Road will be rediverted and the existing dilapidated bridge will be demolished and removed. The new bridge will be constructed over a period of up to 200 days. Post completion, the new bridge will be reopened to traffic, and the temporary vehicle sidetrack will be removed, and the approaches will be rehabilitated.

1.3 Purpose

The entirety of the Noah Creek bridge works area (including the Noah Creek Eco-stay, road reserve and Noah Creek esplanade) is within the WTWHA. DSC have subsequently applied for a permit under s45 of the *Wet Tropics Management Plan 1998* to construct the replacement Noah Creek bridge within the Wet Tropics World Heritage Area.

This EMP is a Planning EMP (P-EMP) with the purpose being to identify environmental obligations and subsequent design recommendations for all aspects of the project which will be located within road and esplanade for which DSC is trustee. This P-EMP will be provided to the prospective Construction Manager/Contractors so that environmental obligations are clearly identified in the tendering process. The recommendations in this EMP will enable the appointed Construction Manager and Contractors, to prepare detailed site and methodology specific Construction Environmental Management Plans (C-EMP) to fulfil environmental obligations for the construction of the temporary sidetrack, the new bridge, the demolition of the old bridge, removal of the temporary sidetrack, and subsequent site rehabilitation.

This P-EMP will outline how construction activities at the Noah Creek bridge replacement works site will be managed to minimise potential harm to surrounding and receiving environments through the planning and design process.

The aim of this P-EMP is to:

- Set out the framework for the Construction Manager/Contractor C-EMP such that works will be compliant with maintenance of WTWHA values and regulatory requirements, including those for fulfilling agreements and conditions on approval from the relevant administering authorities.
- Identify an effective and efficient environmental management process throughout the construction/removal and rehabilitation phases.
- Identify practical and achievable Environmental Management Strategies for implementation in this project, to have comprehensive monitoring, auditing, reporting and control of site impacts during all phases of the project.

This P-EMP contains:

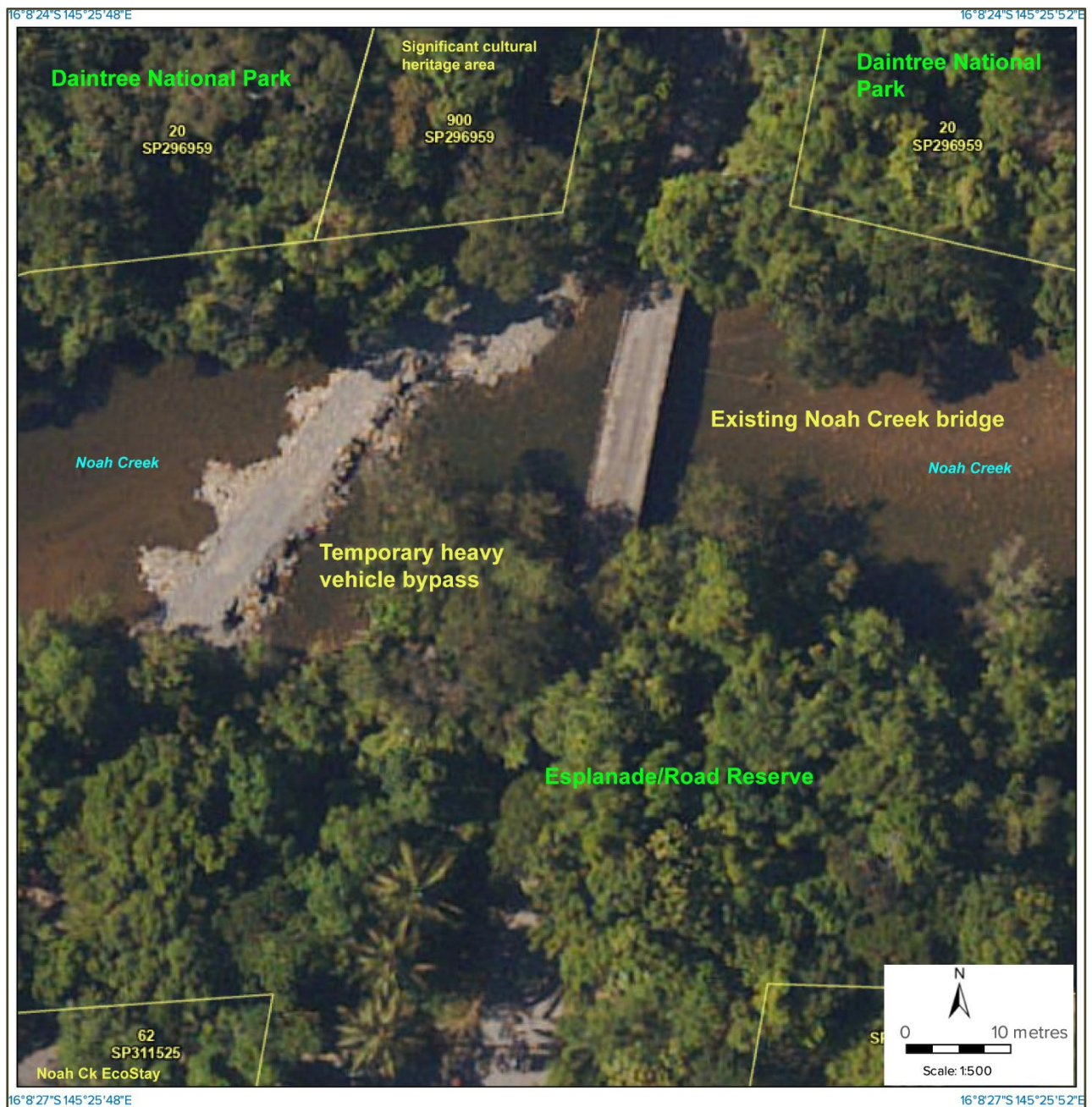
- Background and details of the works to be undertaken
- Requirements and compliance measures as required for the project – where these are not yet available, these will be made available to the Construction Manager/Contractor to incorporate into their C-EMP where applicable.
- DSC and the Construction Manager/Contractor Environmental Obligations
- Environmental Elements to be included in the final Construction EMP for the project.

1.4 Environmental Management Plan Finalisation

The Construction Managers/Contractor C-EMP is to be updated prior to construction with the following:

- Conditions on any approvals from the Commonwealth under the EPBC Act (where applicable).
- Conditions on approval from the WTMA under the Wet Tropics Plan 1998.
- In accordance with the Impact Management Plan and offsets potentially required by Department of Environment and Science (DETSI) Permit and Licence Management (PALM) associated with a protected flora vegetation clearing approval under *the Nature Conservation Act 1992 (NC Act)*.
- Conditions of the Development Application approvals.
- Detailed Erosion and Sediment Control Plan (ESCP) that incorporates final construction methodologies and approval condition requirements.
- Water quality monitoring program for the construction phase, identifying threshold and trigger values with respect to maintenance of aquatic ecosystem health.

Figure 1 Noah Creek Bridge Replacement Location



2. Site Description

2.1 Site Location

The proposed bridge replacement works on the Cape Tribulation Road are to be undertaken at Noah Creek, approximately 25 km north of the Daintree River. The bridge location is at the interface of the salt/freshwater environment, approximately two kilometres upstream from the estuary of the creek. The location is tidally influenced, with a mean daily tidal variation of approximately 70 cm. Refer Figure 1.

The entire site area including the temporary sidetrack, bridge approaches and road Noah Creek esplanade and private property on the southern approach, is within the Wet Tropics World Heritage Area (WTWHA) covering multiple tenures covering esplanade and road reserve, and freehold. At its closest point, the Great Barrier Reef Coast Marine Park – Noah Heads Section (part of the Great Barrier Reef World Heritage Area) begins 200m downstream from the works site area.

The existing bridge and the southern approaches are within the Cape Tribulation Road reserve and the Noah Creek esplanade. Both northern and southern approaches to the new bridge will require a partial widening of the existing road to accommodate two lanes on the new bridge (currently single lane). A section of the existing heavy vehicle ford bypass is within a portion of the Daintree National Park (900SP296959), and the temporary all vehicle sidetrack will be constructed on this alignment. Following commissioning of the new bridge this temporary sidetrack will be removed from the National Park and rehabilitated.

The southern side of Noah Creek (beyond the esplanade) is freehold land lot 62 SP146421, spanning both east and west of the Cape Tribulation Road. With the exception of the resumed section of this property no other parts of the is property will be impacted by the works. The location of the laydown area for equipment and materials, stockpile area and for administrative purposes has not yet been identified and will be part of the Construction Managers/Contractors responsibility in conjunction with DSC.

2.2 Proposed Works

Detailed design of the proposed works for construction will be provided as part of the C-EMP of the Construction Manager/Contractor, following review and incorporation of final approval conditions of permits and authorities. The proposed works to construct the replacement bridge are anticipated to adopt the following general process, with the detailed methodology to be part of the Construction Manager/Contractors C-EMP. Some parts of this methodology may be amended

1. Construction of an all-vehicle/all tide vehicle access sidetrack on the alignment of the existing temporary heavy vehicle ford bypass. This is located approximately 15 m upstream of the existing bridge and will incorporate features that does not obstruct fish passage.
2. Decommissioning/removal of the old Noah Creek Bridge which will involve removal of all bridge structures and will include removing the existing wooden bridge piles (to be cut off at bed level), abutments, and bituminous pavement of the previous approaches.
3. Construction of the replacement Noah Creek Bridge on the existing alignment. This approximately 36m long steel/concrete structure will require new abutments, bank scour protection, new bridge piles, decking and other bridge infrastructure.

4. Removal and rehabilitation of the upstream sidetrack crossing commensurate with the reinstatement and maintenance of Wet Tropics World Heritage values following construction and commissioning of the new bridge.

2.2.1 General Information

Construction has been scheduled to be completed in approximately 200 days from commencement. Construction will avoid the monsoon period December to April, with construction expected to occur in the mid/latter half of the year subject to environmental approvals and monsoon activity.

The temporary sidetrack across Noah Creek would be in place for a period of approximately 120 days and would be constructed in accordance with conditions as set out in Appendix C and any other condition of permits and approvals. During this period water flow would be continuous as the sidetrack will incorporate culverts in all hydraulic regimes of the creek.

Erosion and sediment control measures appropriate to the site will be in place at all times during the construction phase of the sidetrack, piling and bridge construction components of the project.

2.3 Man-made Features

2.3.1 Access Arrangements

General access for transport of machinery, materials and personnel will be via the Cape Tribulation Road to the Noah Creek work site. Access to the Noah Creek bridge replacement works site will be from the northern and southern approaches on the Cape Tribulation Road which will be closed to general traffic after the sidetrack is commissioned. The sidetrack will be constructed on the alignment of the existing heavy vehicle ford while the current bridge remains in commission with access on the current heavy vehicle ford bypass. Post commissioning of the replacement bridge the sidetrack will be removed and the alignment rehabilitated.

2.3.2 Infrastructure Present

The bridge replacement site is on the alignment of the existing Noah Creek bridge. This bridge is on the Cape Tribulation Road, juxtaposed between freehold lot 62 SP146421 and the Daintree National Park with associated infrastructure including concrete drains, culverts, signage and safety rails. A temporary heavy vehicle ford has been constructed approximately 15m upstream of the existing bridge with entry and exits and drainage controls on the northern and southern approaches to the ford.

The Noah Creek Forest Eco-Stay is located on freehold land to the south of the Noah Creek bridge, adjacent the esplanade reserve. This large property includes commercial accommodation via lodges and camp sites, day use tourism facilities, and a commercial orchard on the eastern side of the road. The closest infrastructure to the bridge works area is the Noah Creek Forest Eco-Stay administration centre and car park, approximately 60m from the bridge site works area.

2.4 Natural Features

2.4.1 Regional Ecosystems

Vegetation regulated under the *Vegetation Management Act 1999* (VM Act) has been mapped by the Queensland Herbarium over the project area.

Vegetation mapping undertaken by the Queensland Herbarium identifies the vegetation within the bridge works footprint as Category B remnant regulated vegetation and Category R Endangered Reef catchment regrowth. Supporting vegetation regional ecosystem mapping further classifies the remnant vegetation as Regional Ecosystem RE 7.3.17, an endangered vegetation community under

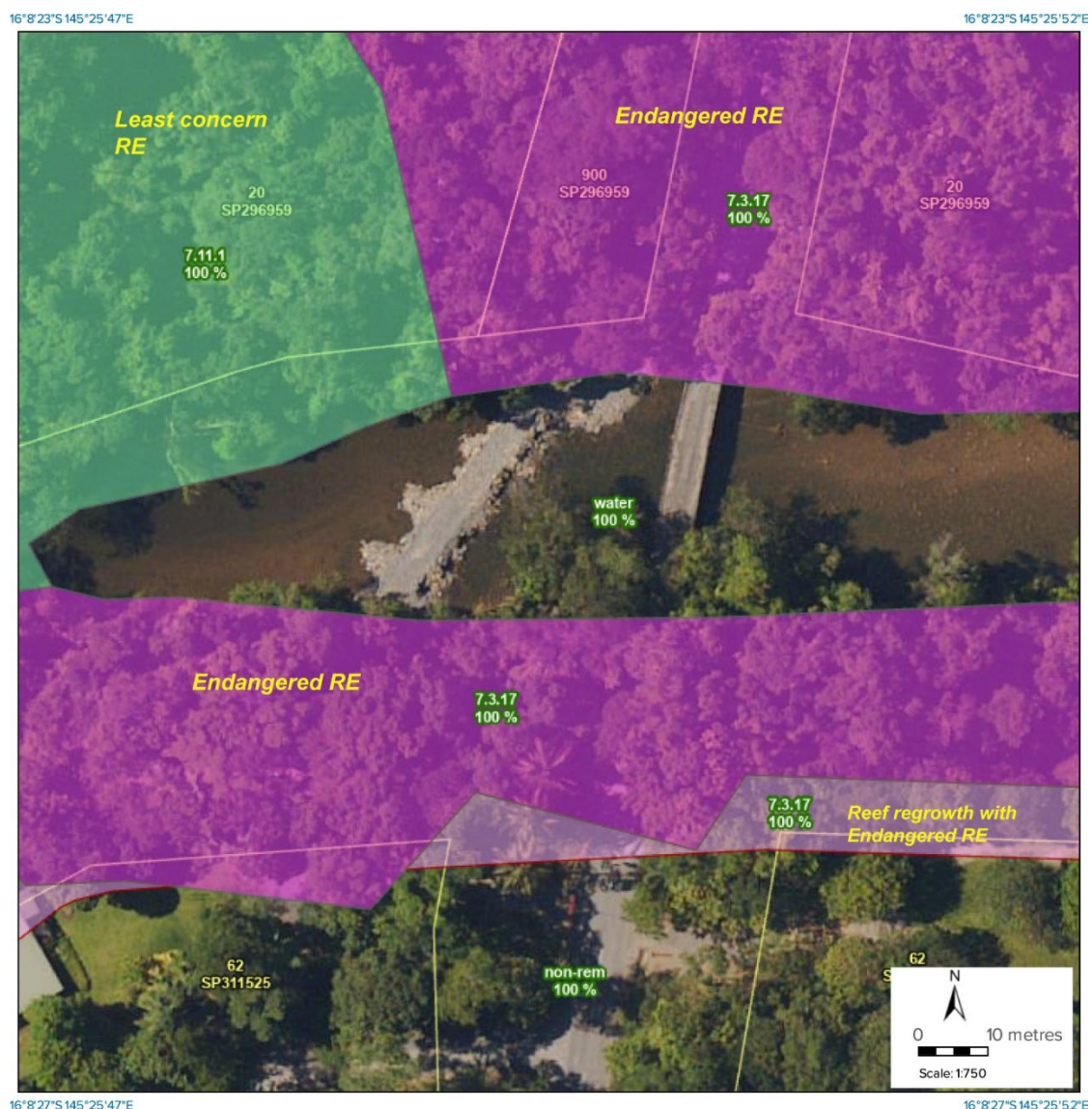
the *Vegetation Management Act 1999*. It is characteristically typified by a very high diversity of species, including many endemic rare and threatened species as part of a complex stratum.

Flora field surveys for the construction area have been undertaken independently by three accredited botanists at different project design stages since 2018 in accordance with the *Flora Survey Guidelines – Protected Plants* (DEHP 2016), for the section of the project within the high risk protected flora survey trigger area, and in accordance with the *Guidelines for Flora Survey & Assessment in Northern Queensland* (Bruce Wannan, DEHP 2013) outside of the mapped high-risk area. The flora field surveys identified the mapped RE generally conformed with the RE designations for the vegetation mapped within the bridge construction area with the following exceptions:

- The RE mapping includes areas currently cleared including the Cape Tribulation Road, ford crossing access and parts of the Noah Creek Forest Eco-stay lodge and orchard areas.
- The RE mapping is incorrect in that it includes characteristic introduced species (coconut palms, African tulip and many ornamental plants) within the southern approach to the sidetrack.

Specific requirements for clearing, mulching and salvage of plants are identified in the relevant EMP sections in this document.

Figure 2 Noah Creek Bridge Regional Ecosystems



2.4.2 Flora of Conservation Significance

Flora surveys have identified a number of protected flora species listed under the schedules of the *Nature Conservation (Wildlife) Regulation 2006* and/or the Commonwealth Protected Matters Search Tool as occurring within the bridge works area. Some of these (e.g. *Noahdendron nicholasii*) are extremely range limited endemic species with small populations.

A list of the impacted species, their characteristics for management impact mitigation during construction, and general location within the project footprint is provided below. Biodiversity offsets and requirements of any Protected Flora Survey Impact Mitigation Plan (IMP) (if issued by DETSI Permit and Licence Management -PALM) are to be implemented. It should be noted that the last protected flora survey was undertaken in 2024, and no surveys have been undertaken since the construction of the heavy vehicle ford.

Table 1 Protected flora within bridge works area

Species	Life form	Conservation status*	Location and management implications
<i>Noahdendron nicholasii</i>	Small trees	Endangered	Two small trees (to 6m) on bank of creek, largest near survey marker closest to bank. Cannot be salvaged owing to size. Every efforts to be made to ensure abutment works do not affect these individuals.
<i>Rhodamnia sessiliflora</i>	Small tree	Endangered	Small tree within the works area, too large to be salvaged.
<i>Heliodendron xanthoxylon</i> Yellow siris	Sub canopy tree and seedlings	Near threatened	Seedlings only in works area – mature trees are within the adjacent national park and will not be impacted by the works.
<i>Austromuelleria trinervia</i> Mueller's silky-oak	Saplings	Near threatened	Saplings present in adjacent National Park but are not at risk from project works.
<i>Euodia hylandii</i>	Small trees and shrubs	Vulnerable	Many individuals located, primarily in road reserve and on northern approaches. Too large to salvage. A number have been lost already owing to heavy vehicle ford construction.
<i>Acronychia acuminata</i>	Shrub	Near threatened	3 records, however in NP outside works footprint on eastern side of northern approach. Unlikely to be impacted.
<i>Ryparosa kurrangii</i>	Small tree	Near threatened	Small tree within the works area, too large to be salvaged.
<i>Samadera baileyana</i>	Small tree	Near threatened	One small tree and a sapling. Tree located behind crocodile warning side within road reserve on northern approach to bridge. Too large to salvage. Directly within works footprint.
<i>Endiandra microneura</i> Noah's walnut	Canopy tree, subcanopy and many saplings and seedlings	Near threatened	Many seedlings present (>300) in the bridge works area. Seedlings up to 0.50m tall throughout the works area may be transplanted to the local community nursery in Diwan. Anything above a seedling will not survive transplanting.
<i>Ceratopetalum macrophyllum</i>	Shrub	Near threatened	Located within the National Park, not within works footprint
<i>Acrostichum speciosum</i>	Mangrove fern	Protected marine species	Previously identified in project footprint 2020, but not located 2024. listed marine species under the <i>Fisheries Act 1994</i> . To be confirmed

*Conservation status as listed under the Schedules of the Queensland *Nature Conservation (Wildlife) Regulation 2006*

Location of the latest mapping of the protected species location (28th May 2024) is shown in the following. *Source: Protected Flora Survey Report, May 2024, RPS*. This was undertaken prior to the construction of the heavy vehicle ford (shown approximately in yellow). No further protected flora surveys have been undertaken since, however it is expected that all specimens within the ford approaches have been removed.

Figure 3 Mapped of location of protected flora – May 2024



2.4.3 Terrestrial Fauna

General Terrestrial Habitat

The Noah Creek area provides complex habitats for a number of endemic, threatened or species otherwise of WTWHA values. These habitats include pristine waterways, endangered complex rainforest, perennial and ephemeral watercourses/drainage lines, riparian communities and anthropogenic resources in the form of an exotic fruit orchard.

The proposed road realignment has specialised niche habitat resources primarily restricted to sheltered gullies and drainage lines that offer key frog habitats, but does offer a broad range of generalist foraging, and roosting opportunities for fauna.

Noah Creek catchment includes a regionally significant population of Southern cassowaries, with at least five adults known to occur in the area. One bird, known by local residents as “Mischka”, has adopted the orchard on the southern approaches as his personal territory and is regularly encountered during surveys.

Protected Fauna Occurrence

Surveys and records have identified the following fauna species as occurring within the project construction area.

Table 2 Protected fauna known to occur on site

Scientific Name	Common name	NC Act Status	EPBC Act Status	Habitat and likely occurrence notes
Amphibians				
<i>Litoria nannotis</i>	Torrent frog	Endangered	Endangered	Known to occur in immediate area upstream of Noah Creek and was recorded upslope of the road
<i>Litoria dayi</i>	Australian lace-lid frog	Endangered	Vulnerable	Known to occur and observed in upper sections of drainage line (previous ford) on northern approaches. Likely to occur in rainforest adjacent to or within any tributary/drainage line with water.
<i>Litoria rheocola</i>	Common mist-frog	Endangered	Endangered	Known to occur and observed in upper sections of drainage line (previous ford) on northern approaches. Likely to occur in rainforest adjacent to or within any tributary/drainage line with water.
Birds				
<i>Casuarius casuaris johnsonii</i>	Southern Cassowary	Endangered	Endangered	Known to occur and observed multiple times while undertaking surveys in the area.
<i>Cyclopsitta diophthalma macleayana</i>	Macleay's fig parrot	Vulnerable	Not listed	Known to occur. Was observed on in riparian vegetation on southern approaches to bridge site.
<i>Symposiachrus trivirgatus</i>	spectacled monarch	Special least concern	Migratory	Present, known to occur. Recorded within Noah Creek Forest EcoStay grounds and observed on site.
Mammals				
<i>Pteropus conspicillatus</i>	Spectacled flying-fox	Vulnerable	Endangered	Present. Observed along in fruit orchard immediately adjacent work area.
<i>Dasyurus maculatus gracilis</i>	Spotted-tail quoll	Endangered	Endangered	Present, known to occur. Regularly sighted in Noah Creek Forest Eco-Stay grounds by guests.
<i>Dendrolagus bennettianus</i>	Bennett's tree-kangaroo		Near threatened	Present, known to occur. Regularly sighted in Noah Creek Forest Eco-Stay grounds by guests.
Reptiles				
<i>Crocodylus porosus</i>	Estuarine crocodile	-	Vulnerable	Present, known to occur. Two individuals (one 3m the other 4.3m) have territories upstream and downstream of bridge and both have been observed in works area.

Fauna Breeding Areas

No nests, tree hollows or other actual evidence of breeding was observed within the works area specifically during the survey period. There are however numerous trees with hollows, canopy species and dense undergrowth areas that could provide nesting/roosting or sheltering opportunities for numerous fauna species. The dense understorey, particularly groves of Calamus palms (rattan palms or wait-or-while) would offer opportunities for shelter/breeding for small mammals (such as rodents and reptiles).

While no fauna was observed in these vegetation clumps, given the seasonal nature of fauna breeding it is possible that fauna may move into the area or be more active following the period of the original

ecological surveys. It is recommended that a fauna spotter/catcher be on site when removing vegetation to verify that no breeding animals are present, and to relocate these if required.

In summary (confirmed threatened species in works area);

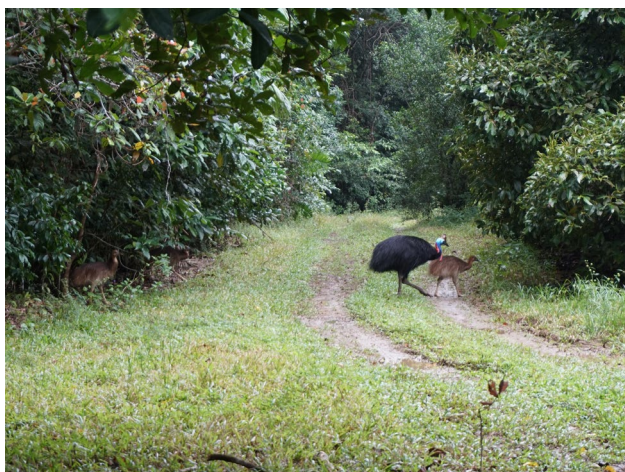
- Three threatened frog species have a high probability of occurring along drainage lines and watercourses and adjacent habitats during the wet season.
- Two listed bird species, the most significant being the Southern cassowary, are resident within the works areas. Many other listed bird species are highly likely to utilise resources within the works areas. Cassowaries regularly cross the existing Noah Creek bridge and frequent the orchard on a regular basis. (Southern cassowary and Macleays fig-parrot) were identified during field surveys.
- Three protected mammals, of which one is a bat, are regularly sighted in the adjoining property. A number of other protected bat species are also expected to occur in the area on at least an opportunistic foraging manner.
- Seven protected plant species recorded in the area are within areas that will be subject to potential clearing for works. Not all of these are salvageable. Note: recent surveys have not confirmed presence of *Acrostichum*

2.4.4 Cassowary Movement

Existing behavioral aspects

The current number of adult Cassowaries on the southern side of Noah Creek regularly accessing the orchard is believed to be five, at least four being male. The dominant male is a bird known locally as 'Mischka', a very successful parent reliably raising (on average) at least three chicks to sub adulthood each breeding season. His territorial area includes the orchard on the eastern side of the Cape Tribulation Road, the Noah Creek Eco-stay (also with many horticultural plantings) on the western side of the road and adjacent fringing forest. During fruiting seasons at the orchards other male birds will also visit the orchards, as do occasional females from north of Noah Creek. In all it is believed that up to seven adult Cassowaries utilise resources centering on the fruit orchards on a seasonal basis.

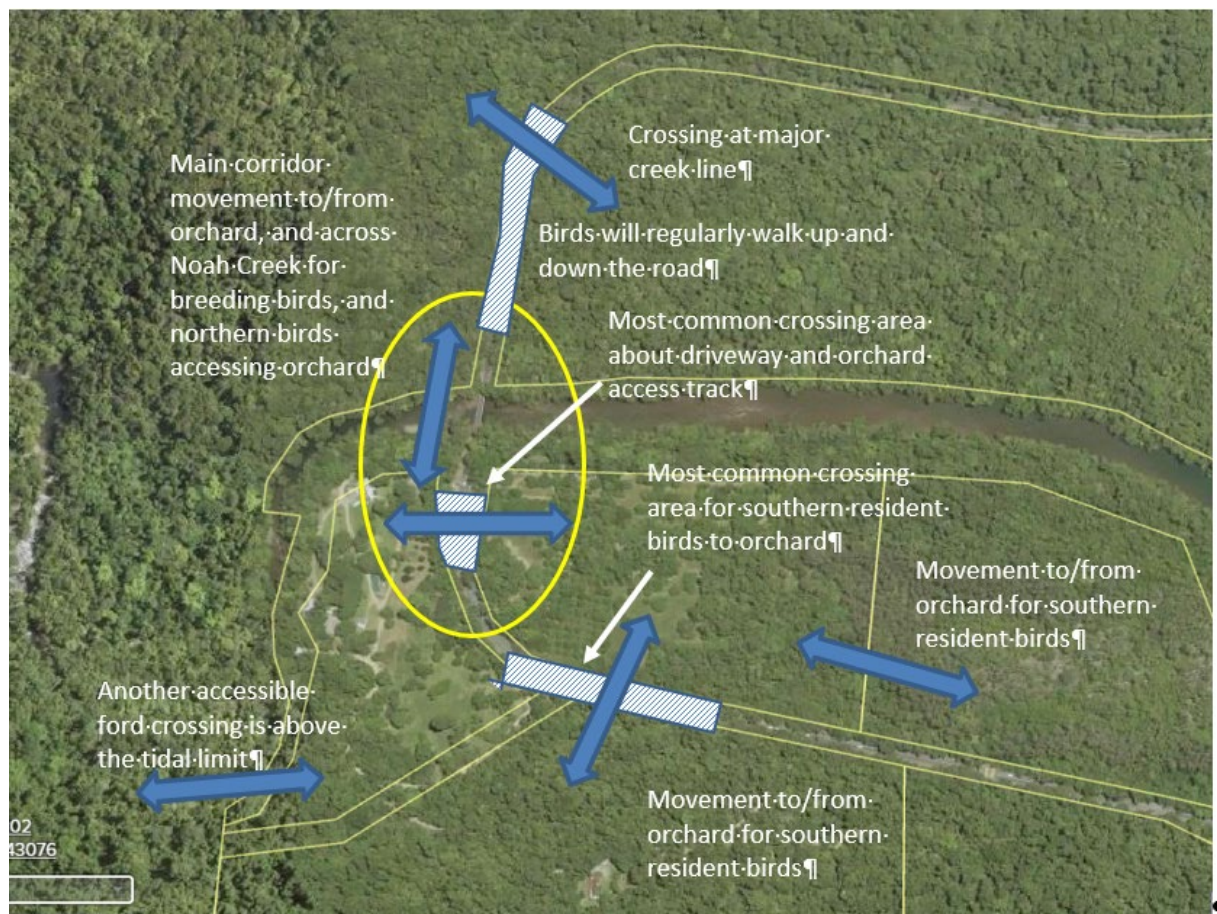
Movement of these birds, notably Mischka and progeny, is very predictable. On an almost daily basis, late morning to early afternoon, this bird can be observed in the orchard on the eastern side of the road. He will often cross the road directly at the entrance to the orchard, across to the driveway of Noah Creek Eco-stay, then venture into the orchards there. He returns via the same route, directly across the driveways and entrance to the orchard.



Mischka and three subadults in the driveway of the orchard. Vegetation on right of photo comprises commercial fruit trees, on the left is the riparian vegetation of Noah Creek (about 25m away).

Other male birds tend to cross the road further to the south of the south side of Noah Creek, and usually enter the orchard (when fruiting: November to about March) downslope from ridges (west to east) on the bend of the Cape Tribulation road approximately 300m south of the bridge. This is the most usual route for other birds (on the south side) to access the orchard although on rare occasions birds approach the orchard directly out of the Melaleuca wetland areas to the east of the orchard. During the orchard fruiting season positively identified birds at Thornton Beach have been observed in the orchard.

The main crossing locations of the Cape Tribulation road on the southern approaches to Noah Creek are the actual main driveway to the Noah Creek Eco-Stay opposite the orchard driveway access, and on the bend of the approaches to Noah Creek between the south-eastern corner of the orchard and rainforest on the opposite side of the road. See the following drawing.



Known female Cassowaries include two individuals that claim territory between Noah Creek and Noah Heads camping area (including the Maardja area at Oliver Creek), and one female from Thornton Beach surrounds. The female birds on the northern side are often seen on the Cape Tribulation Road between Noah Creek and Oliver Creek, as are visiting males from the south side of Noah Creek during breeding season (June to October). A regular crossing point on the road is between the culvert on a creek approximately 150m north of Noah Creek, at the start of the bend, and at a culvert about 80m north of the bridge. More commonly, the northern females cross Noah Creek into the orchard (male territory) during breeding season but are not regular visitors during the orchard fruiting season (November to March). The female from Thornton Beach has only been observed in the orchard for foraging during the fruiting season.

Cassowaries have never been seen crossing Noah Creek using the existing bridge. There is anecdotal information that they do, however the previous manager of the Noah Creek Eco-Stay has also never seen birds (either male or female) using the bridge. Birds have been observed at either

end of the bridge, observations have confirmed they approached the bridge on the northern side walking down the road towards the bridge having just emerged from adjoining vegetation above where the guard rails currently terminate (about 25m each side of the road from the bridge, on both approaches). They do not cross the bridge, but invariably return to above the guard rails and access Noah Creek down the eroded ford crossing on the northern side.

This eroded ford crossing has now been developed as the heavy vehicle ford and is intended to be further developed as the all vehicle sidetrack during the construction period.

Birds have been observed, and photographed, using this previous ford crossing above the bridge at low tide, however never with chicks or subadults. Access and egress from the south have been from the Noah Creek Eco-Stay, where there is a maintained clear access to the creek (now the southern approach to the heavy vehicle ford), and as noted above, access and egress from the north has been via the eroded ford crossing accessed from above the existing guard rails. There is another known crossing point of Noah Creek approximately 400m upstream above the tidal limit, however this is outside the area of influence of the proposed bridge and works.

The birds physically cannot cross under the existing bridge on the south side under any conditions. The bank is vertical, and at the base is the low flow channel of Noah Creek with an immediate drop from the bridge abutments. On the north side, it may be possible for the birds to cross under the bridge on low tide events, however this is of little benefit as there is no access to the creek bank and riparian vegetation on the eastern side of the northern bank owing to it being very steep.



Northern abutments of Noah Creek bridge at low tide. Both banks on either side are very steep, the eastern side being more so



Southern abutments at mid-tide. Bank is almost vertical on both sides of the abutments and drop directly into the low flow channel of Noah Creek. Birds cross the road from orchard to Noah Creek Eco-Stay to the south of the guard rails in picture: literally at the driveway

Existing traffic behaviour and Cassowary risk

The current signposted speed limit on the approaches to Noah Creek bridge approach is 60km/hr, with the actual bridge signposted at 20km/hr owing to poor bridge condition. However, vehicle approach and speed on the bridge is usually slower than as signposted owing to poor bridge condition and give way requirements of the one lane bridge (northern approach traffic must give way) and the propensity for visitors to regularly stop (or almost so) on the Noah Creek bridge to enjoy the amenity of the upstream and downstream views. The slowdown in general traffic speed on the approaches to Noah Creek is also aided by two existing speed humps between Thornton Beach and Noah Creek. Subsequently, the existing speed environment on the southern approach is not one that poses a significant threat to adult Cassowaries between the bend to the south approximately 300m to the south and Noah Creek. There are no reported Cassowary/vehicle collisions reported in this section.

Highest collision risk to Cassowaries under the current traffic regime is on the northern approaches. Birds primarily cross the road on the northern side in two key locations: 1) immediately above the existing guard rails, where they cross Noah Creek via the ford and exit where the guard rail finishes. 2) Between a culvert approximately 80m north of the bridge, and at a significant creek crossing approximately 150m north of the bridge. Birds exiting Noah Creek above the guard rail also tend to walk up the road (northwards) as they have difficulty scaling the steep eroded ford on the western side of the northern approach. Walking up the road also gives them easier access to forest on the eastern side of the road, where they can simply walk down the short embankment from the road.

Approaching Noah Creek from the north there are Cassowary warning signs, but no physical speed deterrents (as per the speed humps on the southern approaches). The larger creek/culvert crossing point is immediately after a via a bend in the road with poor visibility. The road is signposted to a 60km/hr limit. Whilst driver behaviour is normally to slow down for this bend to below 60km/hr, the poor visibility puts Cassowaries on the road after this bend at risk. A bird has been reported as having been knocked down by a small tourist coaster bus at the creek/culvert crossing but sustained no obvious injuries and regained the forest. The poor driver visibility on this corner both modifies driver behaviour (slowing the vehicle down) and thereby decreasing a high-speed risk to Cassowaries but also imposes a risk in that drivers have less time to react to a Cassowary actually being on the road.



Cassowary entering culvert north of Noah Creek bridge. This has not been documented for such a small culvert before

2.4.5 Aquatic Fauna

Fish species within the affected area of the project are regarded as being of especial significance owing to their vulnerability from potential impacts on water quality and notably on their reproductive life cycles. In particular, fish of the Gobiidae (gobies) family known to occur in Noah Creek undertake an amphidromous life cycle. Species of this guild live as adults in the pools above the Noah Creek bridge, in very clear waters regarded as pristine. There are two distinct amphidromous events:

1. Egg spawning and larvae hatching occurs towards the end of the wet season with the tail-end of the wet season high flows (Feb/March) carrying the larvae downstream to the ocean. In the ocean these larvae develop into juveniles, and return upstream approximately mid-year, prior to the very dry season, but at a time when the creeks flows are still sufficient to enable the juveniles to navigate back to the upstream pools where they grow into adults.
2. An annual movement cycle which begins with spawning during the drier months September to December and larval dispersal at the onset of the wet season. Juveniles return upstream three to six months after dispersal, typically early to mid-year when creek flows are sufficient to enable return to the pools above the bridge.

Larvae on their downstream flow to the ocean may only be several millimetres long, and in the juvenile phase to return upstream most species are less than 15mm long. Queensland Fisheries (a division of the Department of Agriculture and Fisheries) has identified that a flow no greater than 0.3m/s should be adopted to enable juvenile fish passage. This is identified as a compliance condition on the development approval for the Noah Creek temporary crossing (SARA reference 2406-40985 SRA, October 2024). Details of other compliance conditions are incorporated into the EMP element in Section 5.8 Waterway barriers and fish passageway.

The upstream behaviour of these juveniles has been observed in the field. These very small fish migrate upstream in the low flow area of Noah Creek, notably the southern bank extending up to 6m from the edge of the bank, and occasionally 2 to 3m on the northern bank, however flow conditions are less conducive on the northern bank. As with all the cling gobies, they have specialised discs under their bodies that act as 'suction pads' which enable them to take hold on rocks when currents are strong. Their movement is erratic, darting from instream rock to rock (or tree root) and is not a continual traverse and hence they require areas of eddies and lesser current to temporarily 'rest up' in their upstream migration. From actual observation, this may only be for a few minutes.

A list of the fish species present or likely to occur that have the potential to be impacted, and notes on their population maintenance requirements in the design and construction phases are set out in the following. Note that this list does not include only species classified as Matters of National Environmental Significance (MSES) or of State Significant Environmental Significance (MSES). ALL native wildlife within the Wet Tropics World Heritage Area is regarded as contributing to World Heritage values, irrespective of their legislative conservation status.

The following table lists the known fish species reliant on fish passageway and/or are vulnerable to impacts from construction arising from water quality degradation. Additionally, another 19 species of fish (not listed) with life cycles requiring access between marine and freshwater environments (or vice versa) at different stages of their life cycles have been recorded from Noah Creek.

Table 3 Fish species Noah Creek

<i>Species</i>	Common Name	Conservation Status Qld	Conservation Status Cwlth	Notes
<i>Stiphodon semoni</i>	Opal cling goby	Critically endangered	Endangered	Present, known to occur and observed upstream from site. Restricted population to pools immediately above bridge.
<i>Sicyopterus cf.lagocephalus</i>	Blue stream goby	Not listed	Not listed	Amphidromous. Occurs above the bridge at higher altitudes. The larvae are known to have a maximum survival rate of 4 days in freshwater before they reach the ocean. E
<i>Stiphodon atratus</i>	Daintree cling goby	Vulnerable	Not listed	Previously named <i>Stiphodon pelewensis</i> . (riffle goby). Amphidromous life cycle and restricted to pools above the bridge.
<i>Stiphodon rutilaureus</i>	Orange cling goby	Vulnerable	Not listed	Amphidromous, entirely restricted to pools in the immediate bridge vicinity (upstream).
<i>Sicyopus discordipinnis</i>	Papuan sicyopus	Not listed	Not listed	Amphidromous, lotic species of higher elevations in Noah Creek but still requires access to the ocean.
<i>Cairnsichthys bitaeniatus</i>	Daintree Rainbowfish	Vulnerable	Not listed	Potamodromous life cycle entirely in freshwater. Occurs in pools above the bridge, highly vulnerable to water quality degradation.
<i>Hypseleotris compressa</i>	Empire gudgeon	Near threatened	Not listed	Potamodromous life cycle entirely in freshwater. Occurs above the bridge, not as vulnerable as some other species.
<i>Kuhlia rupestris</i>	Jungle perch	Near threatened	Not listed	Diadromous life cycle, reliant on movement between fresh and marine environments at different development stages.

2.4.6 Declared Weeds and Introduced Species

One priority weed listed under the DSC *Biosecurity Plan 2017 - 2021* is present adjacent the site. Thunbergia (*Thunbergia laurifolia*) is a ubiquitous weed in the Wet Tropics. Under the *Queensland Biosecurity Act 2014* listed species (Schedule 2 – Restricted Matter, Part 2), two species were identified; African tulip (*Spathodea campanulata*), and lantana (*Lantana camara*). Weeds within the works area, apart from the above, are extremely limited. The Noah Creek Forest Eco-Stay grounds and fruit orchard have a very wide variety of introduced species present as both horticultural and landscape species. There is a very high potential for these to be introduced into the works area following earthworks and soil disturbance and creation of conditions favourable to their introduction.

Electric ants are known to occur in Douglas Shire, with Wonga Beach immediately south of the Daintree River being a declared biosecurity management area for this species. Electric ants and yellow crazy ants present a high biosecurity risk to the environment and their potential introduction via machinery or materials needs to be monitored at all times through construction.

2.5 Geophysical Features

2.5.1 Geomorphology and Soils

Geotechnical investigations in the works area have identified that soils on the existing bridge abutments comprise compacted imported material in the upper horizons and at depth are most likely clay soils derived from mixed alluvium and Hodgkinson formation metamorphics. These investigations within the creek bed upper have also confirmed the presence of deep stratum layers of coarse

alluvium/cobbles with clays derived from alluvium and metamorphics with bedrock at depth 6-10m below the creek bed.

Soils in the project area include alluvial soils derived from a mixture of metamorphic and granite substrates positioned on alluvial terraces or flats and hillslopes to the northeast and southwest of the project site. Loam soils derived from granite and metamorphic substrates are located on hill slopes and alluvial terraces to the south of Noah Creek bridge

To the immediate north of the bridge are shallow rocky soils derived from metamorphic and granite substrates on alluvial terraces or flats and hillslopes. On the banks of Noah Creek itself, soils are a mix of metamorphic and quaternary alluvium derived from basic and acidic rock and include quaternary beach sand and clay loams. The northern section of the previous Cape Tribulation road ford has been abandoned for over 50 years and has been subject to erosion exposing medium to large granite boulders. These are considered to be of cultural significance to the Eastern Kuku Yalanji and are to be completely avoided for this project.

The soils generally do not exhibit any dispersive properties and are vulnerable to erosion only when disturbed. The bed substrate of Noah Creek provides a firm foundation for the sidetrack and owing to the coarse nature of the material, is generally not mobile except under high flow conditions.

2.5.2 Surface Hydrology

Noah Creek is classed as a short, steep, coastal stream which typically originate in mountainous catchments with high rainfall areas to the coast. The creek is of varying width, with a flow channel varying upon the tidal state. At high tide the creek channel is up to approximately 24m, reducing to <14m at low tide. The low flow channel of Noah Creek is located close to the southern bank, up to approximately 6m wide and to 1.5m deep on a low tide. The entire bed consists of a cobble bed rock channel with a large riffle run located immediately upstream of the Noah Creek Bridge with large pools located upstream and downstream. The proposed bridge site is in the upper tidal zone, with an average tidal plane of 70 cm between high and low tide. Peak flows for Noah Creek occur during the monsoon season, typically experienced in the region from December through to March. Noah Creek bridge is currently in a medium storm tide inundation area (less than 1 metre depth).

The Great Barrier Reef Coast Marine Park – Noah Heads Section, commences approximately 200m downstream of the existing bridge, with the mouth of Noah creek two kilometres downstream. A small fringing reef is located directly adjacent to the mouth of Noah Creek. Existing stormwater drainage lines adjacent to the Cape Tribulation road include concrete formed drains on the northern approaches and earth drains on the southern approaches with concrete formed drains immediately adjacent the bridge abutments.

Hydrological modelling of the impact of the culverts of the sidetrack for the average flow event has identified that the modelled flow through/over these culverts will be highly variable. This has very important implications for the breeding patterns of a number of fish species of state, commonwealth and international conservation significance. Refer Section 5.8 in this EMP.

A summary of the modelled surface flow for the sidetrack identified culvert flows in the low flow section of the Noah Creek (southern bank) as varying between 0.55m/s and 1.28 m/s. This range of speeds based on the current preliminary design for the sidetrack (see Appendix A).

It is expected that this preliminary design will be amended based on the information in this P-EMP, and the conditions required by the Development Permit 2406-40985 SRA (October 2024), refer Appendix C.

Minimising disturbance to these drainage features will be a key component in managing erosion and sediment transport impacts.

3. Roles and Responsibilities

3.1 Responsibility Hierarchy

To achieve the overall objective of sound environmental management for works with the least possible impact on the environment, a clear implementation and management structure is required.

The following section provides an overview of the Contractors minimum implementation structure for the project relating to environmental responsibilities. Specific roles and responsibilities shall be included in duty statements.

Identification of the hierarchy is presented below, with details on roles and responsibilities following.

3.2 Project Manager

Douglas Shire Council (DSC) are the overall Project Manager for the Noah Creek bridge replacement project. DSC are trustees for the road reserve within which the bridge is to be constructed and are the project proponents and applicants for all regulatory requirements.

- DSC are an authorised entity under the *Local Government Act 2009* and subsequently hold ultimate responsibility for the performance of the environmental outcomes of the project as holders of the relevant permits/approvals.
- As project proponents and holders of the permits/approvals, DSC are responsible for providing annual return information on permits and approval conditions, including notification of incidents, mitigation/remedial measures employed and any other regulatory information required by permit conditions.
- DSC are the primary point of contact for any regulatory requirement, including notification to agencies, of any environmental aspect that has, or has the potential, to have significant adverse impacts on the environmental values of the WTWHA.
- DSC are a signatory to an ILUA (QI2006/026) over the Daintree National Park and subsequently are required to comply with all notification and cultural heritage engagement requirements under the Daintree National Park Management Plan 2019.
- DSC are responsible for negotiation, identification and settlement of offsets as may be required under approval conditions for the project as may be set by the Commonwealth and/or Queensland Government regulatory agencies.
- DSC will review and approve the final Construction Environmental Management Plan in accordance with approval conditions for the project as may be set by the Commonwealth and/or Queensland Government regulatory agencies.

3.3 Project Construction Manager

No Project Construction Manager/Contractor has yet been appointed by Douglas Shire Council. The appointed Construction Manager/Contractor shall maintain ultimate responsibility for the provision of suitable resources (e.g. financial, personnel, etc.) to ensure that final design and construction works comply with all applicable legal requirements and best practice. The appointed Construction Manager/Contractor shall support all project personnel in the development and implementation of the C EMP and may delegate responsibilities to appropriately qualified personnel where appropriate.

The Construction Manager/Contractor responsibilities will include (but are not limited to):

- Where required, obtain approvals from the relevant regulatory agencies and ensure that all personnel operate in accordance with the EMP, approvals and legislative requirements.

- To prepare a Construction Environmental Management Plan (C-EMP) based on the contents of this planning EMP and submit to DSC for review and approval. This is to include a Water Quality Monitoring Program and Erosion and Sediment Control Plan based on construction methodologies and permit/approval conditions.
- Ensure that all construction personnel are familiar with the C- EMP and are aware of their environmental responsibilities.
- Ensure necessary guidance and advice is provided to all personnel with regard to environmental management requirements.
- Ensure staff are appropriately qualified and trained regarding the requirements and responsibilities of the C-EMP.
- Provide for a site induction (which includes environmental responsibilities) that is mandatory for all staff and contractors.
- Ensure that all relevant licenses/permits/approvals are in place prior to any works being undertaken (if required).
- Monitor and review (where required) environmental performance during construction works of the project.
- Where necessary, coordinate and/or assist in the response to environmental incidents through implementation of corrective actions.
- Report environmental incidents to DSC, and the relevant Administering Authority, including, WTMA, DESI/QPWS, DAF and DoR where incidences are of an immediate and significant threat to environmental values.
- Record and maintain a database detailing environmental incidents and non-conformances including corrective actions taken.

3.4 Project Site Supervisor

The Project Supervisor may be the Construction Manager/Contractor or a suitably qualified nominated Sub-contractor. The Project Site Supervisor is responsible for

- Implementing and complying with this EMP, any regulatory approval conditions, Australian Standards and any relevant Code of Practice and/or Industry Standard.
- Provide a site induction (which includes environmental responsibilities) to all staff involved in construction works.
- Day to day waste management, including provide portable toilets onsite (if required) and ensure that maintenance and disposal of waste is conducted by a licensed contractor as required.
- Monitoring requirements as established in the Water Quality Management Plan element of this EMP, day-to-day inspections of ESCP provisions, audits and any other regular periodic inspections or assessments as required in this EMP and as conditions on approvals/permits.
- Ensure all vehicles arriving onsite utilise the designated entry/exit points and parking area.
- Ensure that all equipment is fuelled, maintained and 'fit for purpose' for the required task prior to arriving at the site.
- Notify the Construction Manager/Contractor of environmental incidents and corrective actions taken (if any).

3.5 All Staff and Subcontractors

All staff and subcontractors will be responsible for ensuring they comply with the C-EMP, their General Environmental Duty (GED) and Duty to Notify in accordance with the *Environmental Protection Act 1994* (EP Act, as detailed below).

3.5.1 General Environmental Duty

Section 319 of the *Environmental Protection Act 1992* (EP Act) states that every person has a GED. This GED requires that a person must not carry out an 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. In deciding measures to be undertaken to fulfil the GED the following must be considered:

- The nature of the harm or potential harm
- The sensitivity of the receiving environment
- The current state of technical knowledge for the activity
- The likelihood of successful application of the different measures that might be taken
- The financial implications of the different measures as they would relate to the type of activity.

Compliance with the GED may be a defence to offences related to causing unlawful environmental harm. If defendants can show that the harm happened while a lawful activity (apart from the EP Act) was being carried out and they fulfilled their GED, then they cannot be found guilty of causing unlawful environmental harm.

3.5.2 Duty to Notify

Section 320 of the EP Act requires that on becoming aware of serious or material environmental harm being caused by an activity that they are involved in, a person has a duty to report that harm, unless the harm is authorised by the Administering Authority (i.e. is undertaken in accordance with an approval or condition of a permit/licence). This is the duty to notify environmental harm. For the Noah Creek bridge replacement project, the Administering Authority is the Wet Tropics Management Authority and/or those agencies that may be identified on conditions of the Development Approval. Failure to fulfil this duty is an offence and can lead to prosecution.

3.6 Key Contact Information

The appointed Construction Manager/Contractor is to maintain a contact register for the key organisations/personnel involved in the project, emergency contact details and key environmental contacts. Environmental contacts should include (but not be limited to):

- Douglas Shire Council: (07) 4099 9444
- Wet Tropics Management Authority: (07) 4241 0500
- Department of Environmental and Science (DES) pollution hotline: 1300 130 372
- Queensland National Parks and Wildlife (Mossman): (07) 4098 2188
- Jabalbina Yalanji Aboriginal Corporation (representing Eastern Kuku Yalanji): (07) 4098 3552
- RSPCA Queensland: 1300 264 625 (for reporting injured or orphaned wildlife)
- Daintree Wildlife Rescue: (07) 40980 7284 (for reporting injured or orphaned wildlife).
- Rainforest Rescue: plant salvage and revegetation following construction: (02) 6684 4360

4. EMP Implementation

4.1 Environmental Obligations

Douglas Shire Council and appointed Construction Manager/Contractor will implement and foster environmentally responsible management of their activities and will comply with all relevant regulatory requirements, policies and permit approval conditions. The principal Construction Manager/Contractor is responsible for ensuring all subcontractors and employees comply with all aspects of their environmental management obligations.

4.1.1 Environmental Policy

The appointed Construction Manager/Contractor will have in place an environmental policy which is to provide a framework for:

- Complying with all relevant legislation, regulations and policies.
- Improving environmental performance.
- Meet and strive to exceed the minimal acceptable requirements of the EP Act in its management of activities in relation to the environment.
- Requires all those who access the Noah Creek works site for construction or auditing purposes to meet the minimal requirements in the treatment of the environment within and about the Noah Creek works site.
- Implements and maintains environmental review procedures.
- Establishes a framework where all activities, current and proposed can be assessed against minimum environmental requirements, ensuring that those requirements are met on a consistent and sustained basis.

The Construction Manager/Contractor (and DSC) will ensure that all employees, operators and lessees are aware of the policy and the commitment to the environment.

4.1.2 Environmental Objectives

Environmental objectives of this project are to:

- Minimise environmental harm in the project area through adoption of planning, design and construction methods that are sympathetic to the maintenance of World Heritage values.
- Ensure that all activities comply with this EMP and subsequently the Construction Managers/Contractors C-EMP.
- Provide an appropriate level of environmental management for their and all subcontractor activities.
- Raise staff awareness of the importance of implementation of this EMP.

The Construction Manager/Contractor and DSC Environmental Policies will be set out as an annex to the C-EMP.

4.2 C-EMP Requirements

The Construction Manager/Contractor will develop their own design, site and construction methodology incorporating following aspects.

4.2.1 Training, Awareness and Competence

All personnel involved in construction works will be required to be formally briefed before commencing any work at the site. The induction is to specifically emphasis conditions on regulatory approvals and permits that are applicable to their area of works (e.g. vegetation clearing). The environmental component of the brief shall include (but not be limited to) the following items:

- All staff to be made aware of their General Environmental Duty and Duty to Notify responsibilities as per the EP Act and the implications of failing to fulfil these duties.
- All staff to be made aware of their environmental responsibilities under this EMP in relation to implementing mitigation measures, reporting environmental incidents and complaints and implementing corrective actions.
- All staff to be given instructions on environmental emergency response procedures (i.e. spill kit locations and usage).
- All tasks are to be reviewed with consideration given to changes to construction works, such as the weather, which may cause the proposed activities to impact on the environment.
- All staff to be aware of requirements for working in a tidal waterway with known large crocodiles.
- All staff to be aware of protocols of interactions with crocodiles and cassowaries present on the site.

4.2.2 Records

All records shall be retained as a hard copy and electronically by the Construction Manager/Contractor. It should be noted that records may be audited at any time, and any/all records be made available as requested by regulatory agencies. The records should include the following:

- Briefing notes, inductions, and any specific environmental training records
- All records pertaining to any conditions under the NCA and approval from WTMA, including this EMP, and any conditions with QPWS/DETSI, DNRM and any other regulatory agency conditions on approvals.
- Monitoring records and external environmental reports, in particular the results of the Water Quality Management Plan which can be audited and/or requested by regulatory agencies at any time.
- Environmental incidents, complaints and non-conformances, and corrective action reports.

Records shall also be made available to DSC as requested. All records shall be kept for a minimum of five years or as required by relevant third-party approval conditions.

4.2.3 Incident Reporting

All environmental incidents from site activities must be reported to DSC in the first instance, unless the instance constitutes a notifiable incident under the *Environment Protection Act 1994* (e.g. major hydrocarbon spill) in which case the DETSI Pollution Hotline on 1300 130 372 is to be contacted at the same time as reported to DSC. Examples of environmental incidents to be reported to DSC include the following:

- Fish kills and/or strandings
- Fuel, oil and/or hydraulic oil leakages/spills (minor only and non-notifiable)
- Fire and/or explosions
- Unearthing of historical or indigenous cultural heritage
- Significant erosion and sediment control failure.

- Vegetation clearing/fauna interactions (snakes, crocodiles, cassowaries).

The Construction Manager/Contractor shall be responsible for investigating environmental incidents and maintaining records of actions taken. Where applicable, environmental incidents shall be reported to DSC and the WTMA (and/or DETSI) by the Construction Manager/Contractor or in accordance with relevant contractual obligations.

4.2.4 Complaints

Complaints represent an opportunity for improvement or enhancement of project environmental performance. All project complaints, including those from members of the public, stakeholder groups and regulatory authorities, shall be recorded by the Construction Manager/Contractor and notification provided to DSC. The Construction Manager/Contractor shall be responsible for investigating and responding to complaints in a timely manner.

4.2.5 Non-conformance and Preventative/Corrective Actions

Non-conformances managed by the C EMP shall include (but not be limited to) the following:

- An incident or near miss with potential or actual environmental impact.
- Complaints regarding project construction works.
- Not meeting an objective or target.
- Management review not being undertaken.

The Construction Manager/Contractors Site Supervisor shall be responsible for identifying and implementing any preventative and/or corrective actions in response to any non-conformance. Preventative and correction actions shall be incorporated into the Construction EMP as required.

4.2.6 Audit and Inspections

Aspects with a potential for environmental impact shall be subject to environmental inspections and audits as required (risk-based approach) and in accordance with the internal procedures of the Construction Manager/Contractor. Internal project audits shall be conducted by DSC (or qualified delegate). Audit objectives shall be to verify compliance with the EMP and applicable permits, approvals and regulations.

It should be noted that external audits may be conducted by regulatory agencies at any time, or in accordance with final conditions on relevant approvals.

4.2.7 Reporting

Reporting by the Construction Manager/Contractor shall be undertaken in accordance with applicable approval/authority conditions or as requested by DSC and regulatory agencies as conditions on approvals. Reporting shall include all relevant information pertaining to environmental matters (e.g. records, monitoring results, incidents, complaints, audits and inspections, etc.) as required under the approval/authority. The Construction Manager/Contractor shall be ultimately responsible for reporting with support from suitably experienced and qualified staff as required.

The Construction Manager/Contractor shall report on environmental performance to DSC (as required) in any meetings or documented progress reports in accordance with contractual obligations.

4.3 Legislative Requirements

The purpose of the environmental approval legislation is to define acceptable environmental performance standards and criteria. Licences and approvals are legally binding agreements between the administering authorities and the holder, which outlines the holder's commitment to protect the

environment. Licence, permit and development approval conditions address the issues most likely to cause or risk environmental harm.

Douglas Shire Council is the regulatory applicant and the owner of the infrastructure under construction, however the obligation for implementing the requirements of various permits and approvals rests with the Construction Manager/Contractor in accordance with contractual requirements with DSC and General Environmental Duty responsibilities under the EP Act. A summary of the regulatory requirements that are to be addressed as part of this bridge construction project are presented in the following. Note that final conditions on many of the approvals are not yet available. When issued, any conditions that are additions to, or are variations to the elements in this EMP will be incorporated and approved by DSC (as permit holders) prior to commencement of construction.

Table 4 Summary of Applicable Legislation

Legislation	Responsible Authority	Activity	License / Permit / Approval	Status
<i>Environment Protection and Biodiversity Conservation Act 1999</i>	Commonwealth Department of the Environment and Energy	Construction with potential for impact on Matters of National Environmental Significance.	Applicable Commonwealth interest MNES including: - Southern cassowary - Two endangered frog species - Two World Heritage Areas (Wet Tropics and Great Barrier Reef) - Endangered fish (gobies) All have the potential to be adversely impacted during the construction phase.	Unknown The project has previously been referred to the Commonwealth (2020) however the statue of limitation has expired and a new referral was recommended by the Development Application Planning Report (RPS 2024) It is unknown whether a new referral application has been lodged.
<i>Nature Conservation Act 1992</i>	Department of Environment Tourism, Innovation and Science	Vegetation disturbance in a high risk protected flora survey trigger area	Applicable: Protected flora clearing approval required for a number of species within road reserve.	Unknown A projected flora clearing report was prepared in May 2024 by RPS. The status and conditions of any subsequent approval is unknown
<i>Nature Conservation Act 1992</i>	Department of Environment Tourism, Innovation and Science	Interference with fauna breeding areas for listed species	To be determined: Potential for a breeding area for listed fauna (protected gobies) to be adversely impacted by culvert design.. If determined as a fauna breeding area for listed species than a Damage Mitigation permit and Species Management Plan will be required.	Unknown Further assessment required by agencies.
<i>Wet Tropics Management Plan</i>	Wet Tropics Management Authority	Construction and operation of	Applicable: Works for construction of the	Assessment in Progress DSC have lodged a permit application to the WTMA.

Legislation	Responsible Authority	Activity	License / Permit / Approval	Status
		infrastructure within the WTWHA	new bridge is subject to permit application and approval from WTMA. This will be concurrently assessed by QPWS and Commonwealth DEE. Conditions from final approval will be addressed in the C-EMP	This P-EMP provides further information to the WTMA for assessment purposes.
<i>Planning Act 20106</i>	Department of Local Government, Racing and Multi-cultural Affairs	Development Application for the entirety of the project required to the State Assessment Referral Agent.	Applicable: Controls overarching development approval for the project under Qld legislation. As an integrated approval it will include the conditions from various agencies on those matters under their own jurisdiction affected by the project. The conditions from the various agencies will be included within the final C-EMP.	In Progress A development permit with conditions has been issued for the construction of the sidetrack on October 1 st 2024. SARA reference 2406-40985 SRA (Appendix C)
<i>Fisheries Act 1994</i>	Department of Agriculture and Fisheries	Use of waterway barriers in a regulated high impact waterway	Applicable Waterway barriers are required for the project.	In Progress A development permit with conditions has been issued for the construction of the sidetrack on October 1 st 2024. SARA reference 2406-40985 SRA (Appendix C)
<i>Aboriginal Cultural Heritage Act 2003</i>	Department of Aboriginal and Torres Strait Islander Partnerships	Require those conducting disturbance activities in areas of significance to take all reasonable and practical measures to avoid harming cultural heritage.	Applicable Aboriginal cultural heritage values are present in the project footprint and the project area is covered by an Indigenous Land Use Agreement c). In order to meet Duty of Care Guidelines an accidental discovery procedure (minimum) is required. DSC have a procedure which is to be followed. Conditions on engagement with the Jabalbina Corporation representing the Eastern Kuku Yalanji for the projects to be determined as part of Development	

Legislation	Responsible Authority	Activity	License / Permit / Approval	Status
			Application approval conditions and negotiated with DSC.	
<i>Biosecurity Act 2014</i>	Department of Agriculture and Fisheries (DAF)	Working in a mapped biosecurity zone.	Applicable (compliance) The general biosecurity obligation (GBO) requires everyone to manage biosecurity risks and threats under their control. Invasive species elements is included in this EMP.	Construction phase
<i>Environmental Protection Act 1994</i>	Department of Environment Tourism, Innovation and Science	Where 'serious and material environmental harm' is caused or threatened.	Applicable (compliance) No approvals triggered. Duty of Care and Duty to Notify.	Construction phase
<i>Vegetation Management Act 1999</i>	Department of Natural Resources and Mines, Manufacturing, and Regional and Rural Development	Clearing of regulated vegetation	Exempt Clearing of endangered vegetation within a road reserve for works by a local govt exempt	Construction phase

4.3.1 Codes of Practice

Codes of practice are formalised agreements between the WTMA and other government agencies for managing infrastructure or other aspects of the WTWHA. These codes of practice may be used as the basis for conditions attached to permit applications approved by the WTMA and State Assessment Referral Agency. Those Codes of Practice applicable to this project are presented in Guideline 9a: "Roads in Rainforest - Best Practice Guidelines for Planning, Design and Management¹" are to be incorporated into design and construction aspects.

¹ <https://www.wettropics.gov.au/section-62-guidelines>

5. Environmental Elements

5.1 Identification of Relevant Environmental Elements

The Queensland Government Guideline - *Preparing Environmental Management Plans* outlines likely environmental elements that should be addressed in an EMP. Relevant environmental elements to the replacement Noah Creek bridge construction as identified in the QLD Guideline are summarised in the following.

Table 5 Environmental Element Assessment

Issue	Applicable	Reference Section
Air quality	✓	Air Quality
Cultural heritage	✓	Cultural Heritage
Complaint recording and reporting	✓	All CEMP elements
Dust	✓	Air Quality
Emergency response	✓	Emergency Response
Erosion and sedimentation	✓	Erosion and Sediment Control
Flora and fauna	✓	Flora and Fauna
Fire management	✓	Emergency Response
Land contamination	✓	Contaminated Land, Fuel and Hazardous Substances
Management of Natural and World Heritage values	✓	Natural and World Heritage Values
Noise	✓	Noise and Vibration
Rehabilitation	✓	Flora and Fauna
Social disruption	✓	Noise and Vibration Air Quality
Traffic (construction)	✓	Noise and Vibration Air Quality Flora and Fauna
Vibration	✓	Noise and Vibration
Visual amenity	✓	All CEMP elements
Waste and site clean-up	✓	Waste
Water quality	✓	Erosion and Sediment Control/Water Quality Management
Weed and pest management	✓	Weed and Pest Management

5.1.1 Environment Management Plan (Construction) Elements

This CEMP consists of the following elements to address the activities outlined in Table 4 with potential to impact on environmental values of the construction or surrounding areas:

- Natural and World Heritage Values
- Cultural Heritage
- Erosion and Sediment Control
- Contaminated Land, Fuel and Hazardous Substances

- Waste
- Flora
- Fauna
- Waterways barriers and fish passage
- Water Quality Management
- Weed and Pest Management
- Air Quality
- Noise and Vibration
- Emergency Response.

This EMP does not specifically address traffic management except in the context of speed environment with respect to fauna management. The Construction Manager/Contractor and DSC will be responsible for developing and implementing a traffic management plan during construction independent of this planning EMP.

Table 6 Environmental Management Plan

5.2 Natural and World Heritage Values				
5.2.1 Aspect The WTWHA is a diverse set of natural ecosystems with a variety of existing uses and tenures. It has been formerly assessed according to its outstanding universal values or world heritage values. This incorporates wet tropics rainforests and ancient ancestry with many unique plants and animals, scenic natural beauty, community benefits and rainforest aboriginal country. The WTMA is charged with managing the WTWHA according to Australia's obligations under the World Heritage Convention. The Noah Creek bridge and all work areas (including stockpile and laydown areas approximately 200m to the south of the bridge) are located within the WTWHA. The Daintree National Park borders the northern approaches to the bridge and the Great Barrier Reef Coast Marine Park – Noah Heads Section boundary is approximately 200m downstream of the bridge. The <i>Wet Tropics World Heritage Protection and Management Act 1993</i> provides for the protection and management of the WTWHA. The <i>Wet Tropics Management Plan 1998</i> (WT Plan) creates a zoning system where various types of activities are allowed or prohibited. Including the proposed revocation area, the entirety of the works area is with Zone C, a zone which allows for the construction and maintenance of infrastructure, subject to WTMA assessment, and where required, a permit authorising the activity proposed. This environmental element also links to Flora and Fauna and Weed and Pest Management. Natural and Heritage values in the context of this element refers to: • Integrity of the Daintree National Park. • Maintenance of water quality of Noah Creek and subsequent downstream integrity of the Great Barrier Reef Coast Marine Park – Noah Heads Section. • Amenity of the story places of the Eastern Kuku Yalanji upstream and adjacent to the bridge works area. • Protected and iconic flora and fauna and habitats of the Wet Tropics World Heritage Area.				
Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
To minimise the potential for impacts to the WTWHA, Daintree National Park and Great Barrier Reef Coast Marine Park – Noah Heads Section.	• All works managed in accordance with the <i>Wet Tropics World Heritage Protection and Management Act 1993</i> and the <i>Wet Tropics Management Plan 1998 Plan</i>. • All works managed in accordance with the <i>Commonwealth Environment Protection and Biodiversity Conservation Act 1999</i>	All personnel must exercise a duty of care, that is, they must take all reasonable and practical measures to ensure their activity does not harm WTWHA heritage items/ places/ values. This includes • If at any time during the activity it is necessary to excavate, relocate, remove or harm a WTWHA heritage	All personnel All personnel	At all times Immediately on discovery

	- All works to comply with conditions of agreements / approvals from any other regulatory authority. - All works to comply with conditions of the WTMA permit. - All works to comply with conditions of the EPBC approval. - No complaints are received from regulatory authorities or the community in relation to the site management of WTWHA heritage items/places/values. No unauthorised disturbance to and/or removal or destruction to WTWHA heritage items/places/values within the WTWHA.	find, the activity should cease immediately, and the Site Supervisor and Project Manager notified. - Upon discovery of a WTWHA heritage find the WTMA and DSC shall be contacted and their advice and agreement sought as to how best to manage the find, to avoid or minimise harm to WTWHA heritage find. - Any WTWHA heritage finds are to be managed in accordance with any agreement reached with the QPWS/WTMA delegate or member and their advice sought as to how best to manage the find to avoid or minimise harm to the heritage find. - Any agreement reached with QPWS/WTMA and DSC shall be recorded and documented.	Construction Manager/Contractor Construction Manager/Contractor Construction Manager/Contractor	Immediately after notification As required At all times
Monitoring			Responsibility	Timing
Any discovery of WTWHA heritage, will be recorded on an Environment Incident Report Form.			Site Supervisor	Upon identification
Monitor excavations for potential signs of WTWHA heritage.			Site Supervisor	During excavation
Reporting			Responsibility	Timing
All personnel to report incidents.			All personnel	At all times
Record and manage all complaints in a register and corrective actions taken.			Construction Manager/Contractor	Following identification
Inform the WTMA and DSC as soon as is practically possible in the event of any WTWHA heritage find or management issue.			Construction Manager/Contractor	Following incident
Inform the WTMA and DSC as soon as practically possible in the event of any WTWHA heritage find or management issue.			Construction Manager/Contractor	Following incident

Corrective Action	Responsibility	Timing
All complaints relating to WTWHA heritage management issues will be investigated promptly and appropriate actions taken.	Project Manager	Upon receipt of complaint
Where investigations identify issues with WTWHA heritage management actions, revision to management plans will be undertaken and further controls implemented, as necessary.	Project Manager	Following investigation
Corrective action will be implemented to meet required outcomes of Administering Authorities.	Project Manager	Where required

5.3 Cultural Heritage

5.3.1 Aspect

The Daintree National Park is subject to an Indigenous Land Use Agreement (ILUA QI2006/026) between the Commonwealth/State and Eastern Kuku Yalanji and comes under the provisions of the Daintree National Park Management Plan (April 2019), and the Eastern Kuku Yalanji Indigenous Protected Area Management Plan (2012). All works adjacent to the Daintree National Park must have due consideration of, and comply with, the management objectives and outcomes of these management plans.

Cultural heritage surveys and assessment have identified that the rock assemblage and associated locality on the western side of the northern approaches to the Noah Creek bridge are of cultural significance to the Eastern Kuku Yalanji. These have been demarcated by survey with the locality included in all preliminary design work to date. Noah Creek itself has been identified by the Aboriginal Cultural Heritage as being of significance in itself to the Eastern Kuku Yalanji and other Cultural Heritage sites have been identified within a 2 km radius recorded of the project area but are outside the project footprint.

Based on the location of the construction location of replacement bridge alignment on the existing bridge, and of the sidetrack on the alignment of the existing heavy vehicle ford, it is unlikely that cultural heritage items/places/values will be disturbed. Notwithstanding, the project works will require of the riparian verge of Noah Creek and in close proximity to known cultural heritage sites of cultural significance. In accordance with the Aboriginal and Cultural Heritage Duty of Care Guidelines, the works are likely to be classified as Category 5, Activities causing additional surface disturbance, as vegetation clearing and earthworks will be undertaken in areas not previously subject to surface disturbance e.g. new bridge abutments. It is therefore likely that Cultural Heritage assessment by appropriately qualified personnel (i.e. representatives of the Eastern Kuku Yalanji will be required during site preparation of new earthworks on the bridge abutments (at the minimum).

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
To minimise impacts to cultural heritage values, places or items of the Eastern Kuku Yalanji through a	All works managed in accordance with the <i>Aboriginal Cultural Heritage Act 2002</i> and the	Site is classified as Category 5 under the current Cultural Heritage Duty of Care guidelines. A suitable qualified person	DSC	Prior to construction

process of identifying, reporting and implementation of mitigation measures.	<i>Aboriginal and Cultural Heritage Duty of Care Guidelines 2004.</i> • Works will not compromise the management objectives of the Daintree national Park Management Plan or the Eastern Kuku Yalanji IPA Management Plan • No complaints are received from regulatory authorities or the community in relation to the handling of cultural heritage items/places/values. • No unauthorised disturbance to and/or removal or destruction to cultural heritage items/places/values within the WTWHA. • No complaints are received from regulatory authorities or the community in relation to the handling of cultural heritage items/places/values. • No unauthorised disturbance to and/or removal or destruction to cultural heritage items/places/values within the WTWHA.	should undertake a cultural heritage assessment of the site • All personnel must exercise a duty of care, that is, they must take all reasonable and practical measures to ensure their activity does not harm Cultural Heritage items/ places/ values. • If at any time during the activity it is necessary to excavate, relocate, remove or harm a Cultural Heritage find, the activity should cease immediately, and the Site Supervisor and Construction Manager/Contractor notified. • Earthworks and vegetation clearing is stop immediately on observance of cultural heritage elements, either by Eastern Kuku Yalanji observers, or by site workers. The affected area is to be immediately flagged, and no further disturbance undertaken until significance of the find has been assessed and a management approach agreed with the relevant party • Upon discovery of a Cultural Heritage find, the representative for the local Aboriginal Party for the area shall be contacted and their advice and agreement sought as to how best to manage the find to avoid or minimise harm to the Aboriginal Cultural Heritage. • Any Cultural Heritage finds are to be managed in accordance with any agreement reached with the local Aboriginal Party. • Any agreement reached with the Aboriginal Party for the area (Eastern Kuku Yalanji) shall be recorded and documented.	All personnel	At all times
			All personnel	Immediately on discovery
			Site supervisors Construction Manager/Contractor	Site clearing
			Construction Manager/Contractor Site Supervisor	Immediately after notification
			Construction Manager/Contractor	At all times
			Construction Manager/Contractor	At all times

Monitoring	Responsibility	Timing
Inspect signage and field demarcation of existing Cultural Heritage location on northern bank of Noah Creek	Site Supervisor	Daily
Any discovery of Aboriginal Cultural Heritage, will be recorded on an Environment Incident Report Form.	Site Supervisor	Upon identification
Monitor excavations for potential signs of Aboriginal Cultural Heritage.	Site Supervisor	During excavation
Reporting	Responsibility	Timing
All personnel to report incidents to Site Supervisor.	All personnel	At all times
Site Supervisor to notify Construction Manager/Contractor and DSC immediately in the event of any Cultural Heritage find or management issue.	Site Supervisor	Following incident
Construction Manager/Contractor to notify the relevant Eastern Kuku Yalanji representative immediately in the event of any Cultural Heritage find or management issue.	Construction Manager/Contractor	Following incident
Inform the DATSIP as soon as is practically possible in the event of any Cultural Heritage find or management issue.	Construction Manager/Contractor	Following incident
Record and manage all complaints in a register and corrective actions taken.	Construction Manager/Contractor	Following identification
Corrective Action	Responsibility	Timing
Where signage or barrier demarcation of Cultural Heritage site on northern bank is damaged, indistinct or unclear, these will be replaced immediately.	Site Supervisor	Upon notification or inspection.
All complaints relating to Cultural Heritage management issues will be investigated promptly and appropriate actions taken.	DSC/ Construction Manager/Contractor	Upon receipt of complaint
Where investigations identify issues with Cultural Heritage management actions, revision to management plans will be undertaken and further controls implemented, as necessary.	DSC /Construction Manager/Contractor	Following investigation
Corrective action will be implemented to meet required outcomes of Administering Authorities.	DSC/ Construction Manager/Contractor	Where required

5.4 Erosion and Sediment Controls

5.4.1 Aspect

Soils in the Noah Creek work area varying according to location. Soils on the abutments comprise compacted imported material in the upper horizons and at depth are clay soils derived from mixed alluvium. Within the creek bed upper layers of the stratum are coarse alluvium/cobbles with a geotechnical survey confirming unconsolidated granite derived cobbles to bedrock at approximately 6m below the creek bed. Soils on the northern approach comprise mixed alluvium with a very high degree of exposed granite rock substrate. On the southern side soils are deep alluvium with limited surface rock.

These soils are not dispersive and generally are only vulnerable to erosion when disturbed, e.g. when vegetation is cleared or unconsolidated drainage lines (e.g. previous ford crossing on northern approach).

The coarse pebbly alluvium of the Noah Creek bed is not prone to suspension, with the heavy particles resilient to most creek and tidal flows and is only mobilised during high flow events. Subsequently the instream component of the surface substrates is not considered a high sedimentation risk for construction of the sidetrack. However, the amount of the clay particles in the creek substrate increases with depth, and in deeper horizons pile driving and drilling activities have the potential to generate significant release of finer particles into the creek. An ESCP is fundamental to controlling off site impacts from four construction aspects:

- Vegetation clearing of abutments, further embankment works for the all-vehicle sidetrack.
- Pile driving/foundation activities for the instream piles.
- General vehicle and traffic movement at
 - a) The laydown and machinery storage area (to be determined).
 - b) Any area off the existing sealed road.
- General construction works on abutments, road/ sidetrack works alignments etc.

ESCP implementation and effectiveness may be audited and inspected without need for notification by regulatory agencies during the course of construction, in accordance with conditions on approvals/permits.

It should be noted that proposed construction works instream are within a tidal environment, and that sediment has the potential to be carried *upstream* on an incoming tide. Works and sediment release on an incoming tide has the potential to be carried into endangered fish and frog habitats, and into water ways of high cultural significance.

Note that this element also relates to Water Quality Management element of this EMP.

Noah Creek crossing is an extremely high-profile public viewpoint. Any and all ESCP measures will be on public display and open to public scrutiny. Visual amenity is a key WTWHA value and the WTMA will routinely undertake inspections to ensure that as far as is practical within a construction site, that WTWHA values are not compromised.

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
Minimise general off-site impacts of sediment transport from construction and laydown/storage areas through implementing erosion control measures appropriate to the scale and intensity of works, sensitivity of receiving environment and conditions of permits/approvals. Minimise potential for sediment to adversely impact on aquatic environments, including the downstream Great Barrier Reef Coastal Marine Park - Noah Heads Section, and upstream culturally and ecologically significant waterway sections of Noah Creek. Water quality of offsite works area within Noah Creek remains compliant with Water Quality Objectives (WOQ) of the <i>Environmental Protection (Water and Wetland Biodiversity) Policy 2019</i> (EPP Water) with specific reference to: <i>Daintree and Mossman River Basins Environmental Values and Water Quality Objectives</i>,	- All works are managed in accordance with the International Erosion Control Association <i>Best Practice Erosion & Sediment Control Guidelines</i>, the <i>Environmental Protection (Water) Policy 2019</i> and any other relevant approval and statutory requirement as per conditions on permits and approvals. - Reference is made to the “Road Maintenance Code of Practice for the Wet Tropics World Heritage Area (2017)” as a guideline for the selection, establishment and maintenance of erosion and sediment control structure. - Water quality objectives as identified under the EPP (Water) are compliant with the maintenance of Environmental Values (EV) as per the <i>Daintree and Mossman River Basins Environmental Values and Water Quality Objectives (2014)</i> - No complaints are received from regulatory authorities or the community in relation to erosion and sediment control issues. - Instream erosion structures shall not be responsible for entrapment or mortality of fish.	- Erosion and sediment control methods shall be implemented in accordance with the International Erosion Control Association’s “<i>Best Practice Erosion and Sediment Control Guidelines</i>” prior to commencing earthworks onsite, and then maintained for duration of construction or until site is stabilised to satisfaction of auditing/monitoring requirements. . - At no time shall instream erosion control measures completely obstruct the flow of Noah Creek. Works within the creek bed and banks that require sediment control structures in stream (e.g. silt curtains), shall be sequenced such that only a part of the creek at any one time will be obstructed to free flow. - Specific requirements of the <i>Wet Tropics Plan 1989</i> and the “Code of Practice for Maintenance of Roads in the Wet Tropics World Heritage Area” as relevant to all aspects of construction. A site and works specific Erosion and Sediment Control Plan (ESCP) shall be developed as part of the Construction Manager/Contractor C-EMP The ESCP shall address (at a minimum): - Laydown and storage areas - Any areas off the sealed Cape Tribulation Road utilised for machinery or vehicle movement or as temporary laydown - Vegetation clearing areas of the revocation area, all riparian areas including construction (abutments) and	Construction Manager/Contractor Construction Manager/Contractor Site Supervisor Construction Manager/Contractor Site Supervisor Construction Manager/Contractor	As required during construction At all times during construction instream At all times during construction Prior to any works commencing.

		any further vegetation works for the sidetrack approaches. • Sufficient materials shall be available to enable implementation of erosion and sediment controls as required. • Work shall be scheduled to ensure that temporary erosion control works are in place by the end of work each day, especially before weekends, if rain is imminent, or when permanent erosion control works are not in place or feasible. • In the event of extreme weather conditions (e.g. storm events) construction work will cease and the need for additional erosion and sediment control shall be assessed and implemented where required. • Soil and surface stability shall be maintained at all times. • Stockpiles of surfacing material or removed soil, will not exceed 1.5 m in height and shall be covered with geofabric or similar material if not proposed to be utilised within one week. • Stockpiles of soil/rock must not remain in the riparian area of the creek (i.e. within 10m of the high point of the bank) for more than 24hours. • Stockpile of road surface material may only be stored at the designated storage area (to be confirmed). • Keep the area of bare earth and the period of time areas remain exposed to a minimum • Keep vehicles to defined access routes. These are to include existing Cape Tribulation Road, and any formed construction access road to the abutment work areas. Access through private	Site Supervisor Site Supervisor Site Supervisor Site Supervisor Site Supervisor Site Supervisor Site Supervisor Site Supervisor Site Supervisor Construction Manager/Contractor	At all times At all times At all times At all times At all times At all times At all times At all times At all times
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		property is only by agreement with the relevant landholder. • Rehabilitate cleared areas promptly and progressively wherever possible. • Vegetation is not to be cleared by pushing with machinery. All vegetation within the works area to be cleared (including where clearing is required within the revocation area) will be via chainsaw. Where practical, vegetation root stock shall be retained in the ground after clearing. Where root stock is to be removed it may be grubbed by machinery. Trunks of large trees are to be placed off site in a manner that mitigates further erosion e.g. within adjoining undisturbed vegetation. Other cleared vegetation is to be mulched and stockpiled for use on exposed areas for additional exposed earth protection and/or for rehabilitation purposes. •	Site Supervisor Site Supervisor	At all times At all times
Monitoring			Responsibility	Timing
Undertake routine visual inspections to ensure erosion and sediment control measures are implemented where required.			Site Supervisor	Daily
Undertake ongoing monitoring of weather conditions (including extreme weather) and alerts relevant to the construction area.			Site Supervisor	Daily
Undertake inspections of the effectiveness of erosion and sediment control measures after significant rainfall events.			Site Supervisor	Where necessary
Reporting			Responsibility	Timing
All personnel to report incidents.			All personnel	At all times
Record and manage all complaints in a register and corrective actions taken.			Construction Manager/Contractor	Throughout construction
Inform firstly DSC, and then the Administering Authority in a timely manner i.e. as soon as practical, in the event of a significant erosion and sediment control issue. A significant issue is one which in which monitored turbidity levels are: a) visually above the surrounding water as a result of obvious point source failure in the ESCP measures, b) natural mass earth movement, e.g. bank slumping, brought by flood events			Construction Manager/Contractor /Site Supervisor	Following identification

Corrective Action	Responsibility	Timing
Appropriate control measures shall be implemented in a timely manner where sedimentation or erosion issues are identified or have the potential to occur in the future.	Construction Manager/Contractor Site Supervisor	Following identification
Restore eroded areas as soon as is practical following event and repair/install sediment control mechanism. (e.g. rock aggregate, geo-textile and concrete).	Construction Manager/Contractor Site Supervisor	Following identification
All complaints in relation to erosion and sediment control shall be investigated, and as required, legitimate problems shall be rectified.	Construction Manager/Contractor	Upon receipt of complaint
Corrective action shall be implemented to meet required outcomes of Administering Authorities.	Construction Manager/Contractor	Where required

5.5 Contaminated Land, Fuel and Hazardous Substances

5.5.1 Aspect

Noah Creek is a pristine Wet Tropics waterway, with an undisturbed upstream catchment, and is critical habitat to endangered fish species relying on migration downstream for annual breeding. Additionally, the Great Barrier Reef Coastal Marine Park – Noah Heads Section, begins approximately 200m downstream of the works area. Further downstream the Noah Creek estuary is at the interface with fringing coral reef and vulnerable to any water contamination. Machinery operating on site presents a risk to the environment through potential for oils, grease, fuels and other contaminants to be accidentally released during construction.

This may occur as the result of fuel/oil or other contaminant spills within the riparian area, or in areas with drainage lines discharging directly (or indirectly) into Noah Creek. An additional risk is posed by pile drilling equipment on pads within Noah Creek, with the potential for accidental direct discharge into the creek.

A search of the Environmental Management Register and the Contaminated Land Register (EMR/CLR) was undertaken for the locality. There are no sites included on the EMR or CLR register.

Management and mitigation of these risks are addressed in this section.

This section also relates to Water Quality Management.

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
Safely manage the potential risks to existing WTWHA values, including adjacent Daintree National Park and downstream Great Barrier Reef Marine Park, from activities that involve the operation of machinery and use and storage of fuel and hazardous materials during construction.	- Fuel and hazardous substances used on site are used in accordance with AS1940 -the storage and handling of flammable and combustible liquids. - No leakages of hydraulic fluids into the aquatic or terrestrial environment. - No spills of fuels, oils or other hydrocarbons into the aquatic or terrestrial environment. - No complaints are received from regulatory authorities or the community in relation to the spillage/leakage from the drilling operations into the environment. - No disturbance to and/or disposal of hazardous waste within the WTWHA. - Water quality monitoring identifies no evidence of hydrocarbons or other contaminants at any time during the construction in any part of Noah Creek. - No fish deaths/strandings are observed i	Where possible, minimum quantities of hazardous substances necessary for the project shall be used on site. Bitumen/asphalt/road surfacing material can only be stored in designated areas (to be confirmed)	Site Supervisor	At all times.
		All mobile equipment shall be refuelled and maintained off-site.	Site Supervisor	At all times
		An appropriate spill kit, personal protective equipment and relevant operator instructions and emergency procedures for the management of wastes and chemicals associated with construction must be kept at the site. This includes a spill kit that is to include air boom and fuel and oil absorbent boom to be available at all times.	Construction Manager/Contractor Site Supervisor	At all times
		Records shall be kept on chemicals and dangerous goods used during construction.	Construction Manager/Contractor	At all times
		First aid and firefighting equipment (handheld extinguishers and fire hoses) shall be available at the construction site.	Site Supervisor Construction Manager/Contractor	At all times
		Construction workers operating vehicles on-site to be appropriately trained and licensed, so that these vehicles are operated in a safe and appropriate manner. All vehicle operators to be briefed on locations of maintenance, storage and refuelling areas.	Site Supervisor Construction Manager/Contractor	Prior to commencing work on site
		All relevant staff shall be trained in appropriate handling, storage and containment practices for chemicals and dangerous goods to be utilised during construction.	Construction Manager/Contractor	Prior to commencing work on site
		No fuel or hazardous substances are to be stored within riparian areas or within 10m of the high point of any drainage line. All such substances are only to be stored at the designated area approximately 200m south of	Construction Manager/Contractor	At all times

		Noah Creek. Transport and use of any of these materials shall be undertaken in accordance with relevant Australian standards (AS), guidelines and legislation, including: - <i>Dangerous Goods Safety Management Act 2001</i> - Regulatory requirements - Safety Data Sheets (SDS) requirements • SDS for products kept on site shall be readily available. • Ensure that the appropriate personnel undertake adequate environmental awareness training covering the requirements of this P-EMP, regarding safe working procedures around hazardous materials and identification of contaminated land indicators. • Any disposal does not occur onsite, including wastewater. All waste disposal is to be to appropriate legal waste disposal offsite.	Site Supervisor	
			Site Supervisor	At all times
			Construction Manager/Contractor	Prior to commencing work on site
			Construction Manager/Contractor Site Supervisor	At all times
Monitoring			Responsibility	Timing
Visual inspections of site to ensure no oil leaks, hydraulic fluid leakages or fuel leakages/spills of any other hazardous material.			Site Supervisor	Throughout construction
An incident register shall be maintained which includes corrective actions undertaken and persons notified.			Construction Manager/Contractor Site Supervisor	Throughout construction
Visual inspection of instream waters for any evidence of hydrocarbon filming, biofouling on structures, fish death/strandings or other obvious impacts to water quality.			Site Supervisor	Daily throughout construction

Reporting	Responsibility	Timing
Any environmental incidents involving spills shall be reported by all personnel, and recorded by Site Supervisor including time of incident, persons involved, details of incident, mitigation measures and actions taken to minimise the probability of recurrence.	All personnel Site Supervisor	Following incident
Inform the Construction Manager/Contractor immediately of any incidents resulting in potential or actual environmental harm.	Site Supervisor	Following incident
Construction Manager/Contractor to inform DSC immediately of receipt of report of any notifiable incidents of potential or actual environmental harm.	Construction Manager/Contractor	Following incident
Where warranted DES Pollution Hotline (1300 130 372) or the local office shall be contacted as soon as practicable after becoming aware of any release of contaminants.	Construction Manager/Contractor	When required
Corrective Action	Responsibility	Timing
All complaints relating to fuels, chemicals or hazardous material use shall be investigated promptly and appropriate actions taken.	Construction Manager/Contractor	Upon receipt of complaint
Disposal of contaminated soil (small or large quantities) shall be disposed of in accordance with relevant regulations.	Construction Manager/Contractor	Following incident response
Corrective action shall be implemented to meet required outcomes of Administering Authorities.	Construction Manager/Contractor	Where required
Spills to be remediated depending on nature of product (Site Supervisor to advise correct procedure). Immediate action should include: - Small hydrocarbon spill (terrestrial): apply absorbent material. - Large hydrocarbon spill: install containment (e.g. block drains, surround with sandbags, dig earthen bund) and apply absorbent material. - Chemical spill: application of appropriate absorbent material and containment. - Aquatic spills: implement spill kit with appropriate air boom and oil and fuel absorbent boom immediately.	Construction Manager/Contractor /Site Supervisor	Following incident
In the event of a spill of dangerous goods, work procedures and control measures shall be reviewed to ensure they are fit for purpose and revised where necessary.	Construction Manager/Contractor	Following incident where required
In the event of an environmental incident, corrective or remedial action shall be taken as is required to render the area safe and avoid or minimise environmental harm.	Construction Manager/Contractor	Following incident where required

5.6 Vegetation

5.6.1 Aspect

The vegetation with the construction area is mapped as Category B regulated vegetation with a conservation and biodiversity management status as "endangered" under the provisions of the *Vegetation Management Act 1999*. This vegetation is also listed under the Commonwealth EPBC Act as a Threatened Ecological Community (TEC). The vegetation about the works area represents a vegetation type (complex mesophyll vine forest) which has less than 10% of the original pre-clearing extent of this vegetation type remaining in the Wet Tropics. Clearing of endangered vegetation for the Noah Creek bridge replacement works is considered to be 'development' under the provisions of the *Planning Act 2016*. Clearing of this vegetation has previously been assessed by the (then) Department of Natural Resources with a determination by the Chief Executive that the clearing is for a 'relevant purpose' under the *Planning Act 2016* and subsequent clearing works have been deemed not to require development approval. Vegetation clearing is also subject to approval via conditions on permit approvals from the Wet Tropics Management Authority, Department of the Environment, Tourism, Innovation and Science, Department of Natural Resources and Mines (for protected flora) and Department of Fisheries (marine plants if confirmed).

All remnant native vegetation within the bridge works construction area is identified as "essential habitat" for a variety of protected flora and fauna, including endangered frogs, birds and provides resources to a number of known recorded threatened flora species (see **Figure 3**). Vegetation clearing of this community has been undertaken for the construction of the temporary heavy vehicle ford. Further vegetation clearing may be required for the replacement of the bridge abutments and immediate approaches and upgrading the heavy vehicle ford entry and exits to accommodate the all-vehicle sidetrack. Should the additional clearing be required, this will impact a threatened vegetation community and on protected flora species. An additional species is classified as a protected marine plant, was previously identified as occurring within the works footprint but not located with the 2024 surveys and this aspect is yet to be confirmed. Refer **Table 1**.

Salvage for protected species is, in most instances, not able to be achieved owing to the size of the plants involved. The C-EMP of the Construction Manager/Contractor will be updated prior to construction when final conditions on approvals from all agencies are available. This EMP management element also relates to Fauna and Water Quality and World Heritage Values.

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
To minimise disturbance to vegetation and surrounding ecosystems in order to maintain environmental quality and natural values of the surrounding areas. Avoidance in design is the prime mechanism to avoid further clearing.	- No complaints are received from regulatory authorities or the community in relation to flora and fauna management. - All works are managed in accordance with the <i>Wet Tropics Plan 1998</i>, <i>Nature Conservation Act 1992</i>, <i>Vegetation Management Act 1999</i>, <i>Fisheries Act 1994</i> and any other relevant legislation and regulatory requirements.	The Project Manager to engage the local Rainforest Rescue Nursery to undertake salvage of the following where they are within the footprint for any further disturbance clearing. - <i>Noahdendron nicholasii</i>. Cuttings to be taken of new growth and shoots of any trees to be removed on northern abutments.	DSC as Project Manager Construction Manager/Contractor	Prior to works commencing

	- Salvage of protected flora species, where practical, has been undertaken prior to construction. - All works to comply with conditions on WTMA permit and any other regulatory approval or agreement. - Vegetation clearing is restricted to only the minimum as required for the safe construction and operation of the bridge and associated infrastructure.	- Seedlings of <i>Euodia hylandii</i>, where practical and small enough to survey replanting. <i>Endiandra microneura</i>. Seedlings and fruit (if present), to be removed from clearing areas where seedlings are small enough to survive transplanting. <i>Samadera bailyeana</i> at the abutment location on the north bank is too large to salvage, but if fruit are available to collect and grow from seed. - Any other fallen fruit, seeds or seedlings deemed to be salvageable by Rainforest Rescue to be collected and propagated at their community nursery for future revegetation. - Orchids on a large tree of <i>Xanthostemon chrysanthus</i> on the southern abutments to be recovered if this tree is cleared and orchids relocated to a suitable location within the riparian zone of Noah Creek. - The area of vegetation to be removed shall be demarcated by bunting/site tape and restricted to the minimum area required for the safe construction of the bridge and road works. - Vegetation on the northern abutments/approaches is within the Eastern Kuku Yalanji ILUA. The relevant Aboriginal Party is to be engaged to provide cultural heritage observers for any clearing within riparian areas of Noah Creek, and for all vegetation on the northern bank and new road approaches to the bridge. - Vegetation is not to be cleared by pushing or excavation with machinery e.g. using excavators. Taller vegetation is to be directionally hand felled by chainsaw into the construction areas to avoid damage to vegetation in the Daintree National Park	Construction Manager/Contractor Site Supervisor Project Manager (DSC) Construction Manager/Contractor Construction Manager/Contractor Site supervisor	Prior to commencing work on site Prior to any clearing works Prior to any clearing works
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		and elsewhere in the WTWHA. It is acknowledged that rootstock in the ground where earthworks and foundations are to occur may be grubbed by machinery with appropriate erosion control measures in place. • Larger vegetation is to be sawn to manageable lengths and placed away from the construction area but in the locality of the road/bridge works and allowed to naturally decompose. If the vegetation is in a locality that is readily accessible to commercial mulchers, then the vegetation may be mulched and the woodchips used on the construction site in a manner that provides additional erosion and sediment transport mitigation properties. • Waste vegetation is not to be burnt and is to be disposed of in the manner above. This excludes non-native species, which are to be mulched and removed and disposed of off-site in accordance with DSC green waste disposal procedure. Mulched non-native species may contain propagules that could germinate if returned to the environment. • Vegetation clearing is to stop immediately on observance of cultural heritage elements, either by Eastern Kuku Yalanji observers, or by site workers. The affected area is to be immediately flagged, and no further disturbance undertaken until significance of the find has been assessed and a management approach agreed with the relevant party. • Vegetation waste or any type is not to be left within Noah Creek or drainage lines. Fallen trees, branches, shrubs are to be removed from all waterways and to be	Construction Manager/Contractor Site supervisor Construction Manager/Contractor Site supervisor Construction Manager/Contractor Site supervisor Project Manager (DSC) Site supervisor	During clearing operations During clearing operations During clearing operations
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		disposed of in similar manner to other cleared vegetation. • Machinery that has recently been used in earthworks/vegetation clearing in a biosecurity restricted zone is to have an approved biosecurity/weed hygiene certificate. • Stockpiles of mulch/fallen material shall be located away from any drainage areas in existing cleared areas and are not to be placed against trees adjacent the works area. Stockpiles are to be temporary only within the riparian areas (i.e. within 10m of the high point of the bank of any waterway) and are to be removed to the accepted laydown/storage area if to be retained for future revegetation works within 48hrs of mulching. • All machinery generally to be washed down prior to clearing operations. This extends to chainsaws and small vehicles (bobcats, dingos and similar vehicles) accessing the site for the first time. Washdowns are to occur prior to mobilising to Noah Creek, south of the Daintree River, and will not be undertaken within the works site or laydown/storage area. • A revegetation program is to be implemented following the demolition and removal of the old bridge. The Construction Manager/Contractor will engage Rainforest Rescue and/or DSC Nursery and the local community nursery in the revegetation of all works area post construction of the new bridge and the removal of the temporary sidetrack.	Construction Manager/Contractor Site Supervisor Construction Manager/Contractor Construction Manager/Contractor	Prior to accessing the construction site During clearing operations Prior to accessing the construction site On practical completion of works.
Monitoring			Responsibility	Timing
Ensure delineation bunting is maintained and vegetation beyond this bunting is not disturbed.			Site supervisor	Daily

Ensure no vegetation remains in the creek during clearing operations.	Site supervisor	Daily
Undertake routine visual inspections of all erosion and sediment control measures.	Site supervisor	Daily
Ensure that disposal and distribution of waste vegetation material does not adversely impact on adjacent Daintree National Park.	Site supervisor	During clearing
Reporting	Responsibility	Timing
All personnel to report incidents.	All personnel	At all times
Any large tree fall during clearing operations into the National Park or vegetation areas outside the demarcated works area that result in significant damage, e.g. broken canopy trees, to be reported to the site supervisor and	All personnel	During clearing
Inform the Administering Authority (WTMA/DETSI) in a timely manner in the event of a significant environmental management issue, e.g. vegetation clearing operations impact on the Daintree National Park.	Site Supervisor, Contactor Manager/Contractor, DSC,	Following identification
Corrective Action	Responsibility	Timing
All complaints shall be investigated promptly and appropriate actions taken.	Contactor Manager/Contractor,	Upon receipt of complaint
Where investigations identify clearing exceeding that approved for construction, or damage to the adjacent NP as a result of clearing, revision to management plans shall be undertaken and further controls implemented, as necessary.	Contactor Manager/Contractor,	Following identification
Corrective action shall be implemented to meet required outcomes of Administering Authorities.	Contactor Manager/Contractor,	Where required

5.7 Terrestrial Fauna

5.7.1 Aspect

There are confirmed records for three threatened frog species occurring within or immediately adjacent the Noah Creek bridge works area. Two species (*Litoria dayii* and *Litoria rheocola*) were recorded in studies for this project as occurring in the section of the eroded ford approximately 100m to the north of Noah Creek, in the road footprint realignment. A third species, *Litoria nannotis*, has been identified within the permanent creek crossing the road approximately 110m to the north of Noah Creek and immediately adjacent the road realignment area (but was not observed in the actual works footprint). These species have a high likelihood of occurrence elsewhere in sheltered gullies and drainage lines, particular the larger eroded ford approach on the northern side of Noah Creek that has a persistent ephemeral flow during the wet season or after rainfall. This gully is within the heavy vehicle ford on the northern approach of the Noah Creek ford.

Two threatened bird species: MacLeay's fig-parrot and Southern cassowary occur within the works area and at least two threatened mammal species (Spotted-tail quoll and spectacled flying fox) are also known to occur. Instream aquatic fish fauna are particularly vulnerable to potential impacts and are discussed in a separate element.

Estuarine crocodiles are known to occur both upstream and downstream of the Noah Creek bridge (approximate 4.3m female is resident), and are regularly sighted either side and under the bridge. Noise is likely to deter them during the day, however with the cessation of activity they will investigate the works area. They have previously been observed during bridge reinforcement works.

The new double lane bridge will alter the speed environment (i.e. increase traffic speed) on the approaches to, and over the bridge. This is a design aspect related to traffic management of the speed environment and is a key design element for the project, particularly as the southern approach is a key cassowary crossing location (between the orchard and the Noah Creek Eco-Stay accommodation). A number of traffic management considerations have been previously identified in conjunction with inputs from DSC and WTMA for the project to manage the speed environment.

The final C-EMP and design with respect to traffic calming is expected to include:

- Installation of rumble strips approximately 75m south of the Noah Creek Eco-Stay on the exit of the bend on the southern approach. The type, and placement of rumble strips are to be in accordance with the Queensland Manual of Uniform Traffic Control Devices (MUTCD), In particular, MUTCD Part 4: Speed Controls.
- Line marking will include as minimum the visual warning approach to the rumble strips, double-line centre lines, preferably with cats eye reflectors installed to accentuate evening and early morning vision when headlights may be turned on.
- General signage. The full range of signage as identified in TMR's Traffic and Road use Management Volume 3 – Signing and Pavement Marking, Part 8, Wildlife Signing Guidelines as relevant to Noah Creek should be applied. Minimum signage should include speed limiting signs and Cassowary warning signs, for both approaches. A 40km/hr signposted limit should be moved to the southern side of the Noah Creek Eco-Stay driveway, between a rumble strip and the driveway. Similarly on the northern side, the speed limit sign could be moved to be near the rumble strip.
- Cassowary crossing warning signs should include two on the southern approach: one at the bend near the southern orchard crossing (low risk area) and the other approaching the driveway/orchard crossing. There should also be at least one on the northern approach, preferably on the last major bend just before the major creek crossing 150m from the bridge.

The above specific design/management aspects have not been specifically identified in the following table, but should be regarded as part of the overall environmental management element for Fauna Management for this project.

The highest risk of impact for all species is during the construction phase, with noise from vegetation clearing, machinery, traffic movement and human presence deterring Cassowaries (and most other fauna) from utilising this area.

This element relates to all other elements in this EMP.

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
- To minimise disturbance to vegetation and surrounding ecosystems in order to maintain environmental quality and natural values of the surrounding areas. - To ensure no adverse impacts on watercourses in the locality, known habitat for three endangered frog species. - To have traffic calming measures in place to manage traffic approach and departure speeds from the sidetrack and bridge both during and post construction - To minimise risk to fauna generally during the construction of the bridge and road approaches.	- No complaints are received from regulatory authorities or the community in relation to flora and fauna management. - Traffic calming measures are incorporated into the project. - All works are managed in accordance with the <i>Wet Tropics Plan, Nature Conservation Act 1992, EPBC Act</i>, and any other relevant legislation. - All works to comply with conditions on WTMA permit and any other regulatory requirements. - Habitat disturbance is minimised to only the minimum as required for the safe construction and operation of the bridge replacement project. - Water quality monitoring results are commensurate with the Water Quality Objectives of the EPP (Water) 2009 for the Daintree/Mossman River Catchments for the maintenance of listed Environmental Values. - No adverse impact is noted on any waterways/drainage line traversing the road approaches north and south of Noah Creek. - No sediment from clearing and earthworks enters Noah Creek or tributaries or is carried off the construction site by overland flow. - No fauna deaths or injuries occur at any stage during the construction project.	- Any drainage line/ tributaries of Noah Creek adjacent to or within the works area are to have appropriate erosion and sediment controls that will mitigate the risk for sediment impacts on these waterways. - Snakes and Cassowaries will be encountered. Staff are not to handle snakes and are to be removed to a safe location away from construction only by a qualified snake handler. All staff shall be inducted into strategies for dealing with the local cassowaries and wildlife generally. - There is to be no construction traffic using local roads between the hours of 6 pm and 6 am to avoid risk of road kill/injury. - Feeding of animals or interfering with animals shall not be permitted. - Prohibit domestic pests and animals on the site during construction. - Only percussive drilling or similar machine rock breaking will be permitted. - Ensure that all erosion and sediment control mechanisms are in place that reduce the risk of off-site transport of sediment into gullies and drainage lines. - Any excavation pits are not to be left open overnight but are to be covered at the end of each to ensure wildlife is not trapped in any pit. For pits over 50cm deep a fauna ladder (e.g. tree branch) should be left in the pit as a means of escape for any fauna that enters a covered pit. - Do not leave food waste scraps or any other waste that is likely to attract wildlife. All putrescible waste is to be placed in bins that are sealable and removed from site as soon as practical.	Construction Manager/Contractor Construction Manager/Contractor Construction Manager/Contractor Site Supervisor Site Supervisor Construction Manager/Contractor Site Supervisor Site Supervisor Site Supervisor	Prior to vegetation clearing or earthworks occurring. Induction and prior to commencing work on site. At all times during construction At all times At all times At all times To be checked each morning. Throughout construction

		• Delineation bunting to be used to demarcate habitat areas that are not to be disturbed (i.e. vegetation that is not to be cleared) and is to be placed prior to work commencing on site. • Groves of dense vegetation, e.g. Calamus (wait-a-while) clumps, may provide shelter and resources to small mammals, birds and other fauna. Prior to removing these an accredited fauna spotter/catcher should examine these for any fauna present, and relocate fauna as appropriate. Similarly, any taller trees with a potential as nesting/roosting for fauna should be examined by an accredited fauna spotter/catcher prior to clearing. • Waterways and drainage lines are known habitat to endangered frogs. Prior to vegetation clearing and earthworks in these areas an accredited fauna spotter/catcher should survey these locations and relocate individuals to a secure location. • In the event that breeding animals are located during clearing operations, clearing will cease until QPWS/DETSI are notified and further direction received from the regulatory authority • Should any animals be encountered, injured or nests discovered, works in that area shall cease and the Site Supervisor be notified immediately. • In the event that injury to native fauna occurs, where practicable, it shall be transported to a local veterinary clinic, wildlife carer or reported to local Queensland Parks and Wildlife Services (QPWS) for advice/action. Contact numbers are:	Construction Manager/Contractor Site Supervisor Construction Manager/Contractor Site Supervisor Construction Manager/Contractor Construction Manager/Contractor Site Supervisor Site Supervisor Site Supervisor	Prior to clearing/earthworks Prior to clearing/earthworks Prior to clearing/earthworks Immediately on notification Immediately on notification Immediately on notification
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		- RSPCA Queensland: 1300 264 625 (for reporting injured or orphaned wildlife) - Daintree Wildlife Rescue: (07) 40980 7284 (for reporting injured or orphaned wildlife).		
Monitoring			Responsibility	Timing
Ensure vegetation clearing delineation bunting is maintained and vegetation beyond this bunting is not disturbed.			Site Supervisor	Daily
Undertake routine visual inspections of all erosion and sediment control measures.			Site Supervisor	Daily
Undertake routine inspection of all riparian and instream areas during construction in these areas for any obvious signs of aquatic impacts, e.g. sedimentation, contaminants, fish kill/injury, vegetation in the water etc.			Site Supervisor	Daily
Ensure that disposal and distribution of waste vegetation material does no adversely impact on adjacent National Park.			Site Supervisor	During clearing
Water quality monitoring and reporting is undertaken in accordance with the Water Quality Monitoring program.			Site Supervisor	At all times
Check any excavated pits for presence of fauna each morning			Site Supervisor	Daily
Fauna/spotter catcher to be responsible for fauna site clearance prior to construction of vegetated habitats and drainage lines/gullies.			Site Supervisor Construction Manager/Contractor	Daily
Reporting			Responsibility	Timing
All personnel to report incidents involving wildlife interactions where the animal is observed to be injured, distressed, trapped or deceased. This includes observations on instream fauna (e.g. fish, reptiles).			All personnel	At all times
Any vegetation clearing during construction resulting in significant damage, outside the demarcated area e.g. tree falls into the adjoining National Park to be reported to DSC and Construction Manager/Contractor.			Site Supervisor	During clearing
Record and manage all wildlife interactions in a register and corrective actions taken. This will include spotter catcher reports documenting any wildlife identified during clearing, (if required) and measures deployed to minimise impacts.			Site Supervisor	Throughout construction
Inform the relevant Administering Authority immediately in the event of any contravention of a condition on an approval/permit issued by that Administering Authority.			Construction Manager/Contractor DSC	Following identification

In the event of any environmental incidence arising from conditions not as a result of construction works (storm events, floods, vehicle accidents in works area), these are to be reported to the DSC as Project Manager. Where these impact on WTWHA then DSC is responsible as permit holder to report to WTMA and any other regulatory authority.	Site Supervisor Construction Manager/Contractor DSC	Following identification
Corrective Action	Responsibility	Timing
All complaints shall be investigated promptly and appropriate actions taken.	Construction Manager/Contractor	Upon receipt of complaint
Where significant mortality or injury to fauna has occurred to fauna of conservation significance, e.g. Cassowary, fire gobies, then activity in the affected area resulting in the incident will cease until actions agreed with regulatory agencies and DSC have been implemented.	Construction Manager/Contractor	Following identification
Where investigations identify environmental nuisance or potential to harm fauna, revision to management plans shall be undertaken and further controls implemented, as necessary.	Construction Manager/Contractor	Following identification
Corrective action shall be implemented to meet required outcomes of Administering Authorities generally in the event of any report on injury/mortality to fauna, or impact on their habitats outside of the demarcated disturbance area.	Construction Manager/Contractor DSC	Where required

5.8 Waterway Barriers and Fish Passage

5.8.1 Aspect

Noah Creek has a number of fish fauna that are at particular risk of impact owing to their migratory breeding requirements and the presence of waterway barriers and/or are especially vulnerable to water quality degradation. Refer **Table 3**. The majority of these species, plus an additional 19 known species, are reliant on the movement between freshwater and the marine environment or vice versa as part of their life cycle. Particularly vulnerable species to impacts arising from waterway barriers include a number of goby species (Gobiidae) which are resident as adults in the immediate upstream pools above the bridge. Construction works, including temporary waterway barriers, have the potential to interrupt their annual movement cycle. There are two amphidromous life cycles exhibited by the Gobiidae family at Noah Creek:

1. An annual movement cycle which begins with spawning during the drier months September to December and larval dispersal at the onset of the wet season. Juveniles return upstream three to six months after dispersal, typically early to mid-year.
2. An annual cycle whereby spawning occurs towards the end of the wet season, with larvae dispersed with the last flows of the wet season and return upstream during low-flow periods at the onset of the drier months.

A number of other fish species recorded, while not listed as threatened, also have marine life cycles and will require access through the bridge construction area, including the sidetrack as either juveniles or adults at different stages of their life cycles.

Fish passageway is a key Performance Outcome under the *Fisheries Act 1994* for development approvals under the *Planning Act 2016* for waterway barriers. Conditions on Development Application approval for the Noah Creek temporary crossing were set out in SARA referral agency response 2406-40985 SRA (1st October 2024). The following relevant compliance conditions from the referral agency related to the provision of fish passage for the temporary sidetrack are set out in the following. These are compliance conditions for the final design of the temporary sidetrack and removal and are requirements under this EMP.

Table 7 Relevant Development Approval Compliance Conditions SARA 2406-40985 SRA Attachment 1

Condition No.	Condition	Timing
Operational work – Waterway barrier works		
10.6.4.3.1.1 – Operational work that is constructing or raising waterway barrier works in fish habitats - The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Agriculture and Fisheries 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):		
10.	Remove the entire existing emergency access track and restore the bank areas impacted from this structure after the replacement structure (temporary pipe culvert), inclusive of the approved fish passage, has been completed.	Within 15 business days of completion of the works
11.	Remove the entire temporary pipe culvert crossing and restore the area after the replacement bridge has been completed. Restoration must include replanting riparian vegetation to the banks to restore suitable fish habitat.	Within 30 business days of completion of the works.
12.	Submit written notice to the Department of Agriculture and Fisheries at notifications@daf.qld.gov.au advising when the development authorised under this referral agency response: (a) will start (pipe culvert in) (b) when existing access track is removed (c) when it has been completed (i.e. existing access track and approved temporary pipe culvert has been removed and all related works completed). Any notice must state the application's reference number: 2406-40985 SRA and provide photographs of the crossing and restored areas	(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 (c) Within 15 business days of the completion of the fisheries development works

15.	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	
16.	In the event of fish kills, stranding, entrapment or any evidence of fish distress (gasping at the surface, rapid breathing, rolling or lethargy) as a result of the approved works: (a) Fish salvage must be undertaken generally in accordance with the Department of Agriculture and Fisheries fact sheet Guidelines for fish salvage found on the Department's website. (b) Submit written notice to the Department of Agriculture and Fisheries at notifications@daf.qld.gov.au at any time(s) fish salvage is undertaken in accordance with part (a) of this condition. Any notice must state the application's reference number: 2406-40985 SRA	At all times	
17.	Restore land profiles that are temporarily disturbed by the development works as shown to pre-work profiles.	Within 10 business days of completion of the works and prior to post works notification.	
18.	Provide upstream and downstream fish passage past the temporary waterway barrier.	At all times	
19.	The fish passage provided must cater for the whole fish community taking into account species, size classes, life stages and swimming abilities as well as the seasonal and flow related biomass of the fish community.	At all times	
20.	Construct and maintain the temporary waterway barrier and any associated infrastructure to avoid fish injury, distress, mortality and/or entrapment.	At all times	
21.	Implement an inspection and monitoring program for the purposes of confirming the performance of the temporary culvert crossing is providing safe and effective fish passage for the entire fish community. The inspection and monitoring program must: a. have been prepared by a person or entity that is suitably qualified and experienced prior to the completion of the works; b. involve the provision of 2 inspection and monitoring reports to notifications@daf.qld.gov.au . Inspections must occur under average flow conditions and as soon as practicable after a 63% AEP event; c. inspection and monitoring reports should detail velocities through the culvert crossing at the outer (i.e. bankside) culverts to demonstrate velocities are 0.3m/s or under and provide safe and adequate fish passage. Additional culverts within the array can also be inspected if relevant to provide additional evidence of velocities at or below 0.3m/s; d. include an alert and action component, which will enable and implement changes to be made to the temporary culvert crossing if data shows outer culvert velocities are not 0.3m/s or under and do not provide safe and adequate fish passage for the entire fish community present. Works must occur promptly (within 3 months) and no later than prior to the commencement of the following wet season;	As identified in Condition 21.	

	e. any changes made to the structure to accommodate fish passage must be documented, and follow-up monitoring done to demonstrate the structure provides safe and adequate fish passage. Reports on the outcomes of this monitoring must be submitted to notifications@daf.qld.gov.au within 6 weeks of the follow-up monitoring event.. The emails attaching the inspection and monitoring reports must state this application reference number 2406-40985 SRA. <i>Note: The majority of the threatened fish species found within Noah Creek are small-bodied (4 – 12 cm). The life cycles of other nonthreatened species involve movement upstream from tidal areas as juveniles. Flow velocities through culverts are a major barrier to fish passage especially small-bodied fish and juveniles. As the crossing is going to be in place for up to 2 years, ensuring velocities are suitable for these species is considered reasonable and essential.</i>		
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Table 8 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 3.0). If a word remains undefined it has its ordinary meaning.
Alert to action (if required)	
2.	If monitoring data shows modifications to the culvert crossing are required, it is advised to seek advice through CairnsSARA@dsdilgp.qld.gov.au regarding whether the proposed modifications are generally in accordance with the current approval, or if a minor change application is required.
3.	Options to modify the crossing to provide lower velocities for fish passage include, but are not limited to: - providing a wider aperture / cross-sectional area for water to flow through (i.e. larger pipes or box culverts; - providing roughening within the culverts such as baffles or replacing with corrugated pipes; - installing bankside rock chutes on the downstream side at a grade no steeper than 1 in 20.

Fish passage design involves creating structures that allow fish to pass through road-waterway crossings without encountering barriers that impede their movement. The design must consider various hydraulic conditions and fish swimming capabilities to ensure effective fish passage. For the Noah Creek temporary all vehicle sidetrack the following broad precepts have been identified in conjunction with referral and assessment agencies.:

- All culverts within the low section of Noah Creek must be able to demonstrate modelled or actual flow velocities < 0.3 m/s in their final design and throughout the required monitoring of these culverts during construction.
- The necessary culverts are long, and represent 'darkened alleys' which may preclude fish entering the culverts. Preference is for box culverts with minimum dimensions of 1.5m width x 1.2 m high to enable maximum light penetration.
- Circular culverts (pipes) present a lessened cross-sectional area to current flow than box culverts with velocities accelerating on the upstream side of the entry.
- Box culverts are preferred in that:
 - o They present a greater cross section area to current flow, thereby minimising the effect of flow constriction at the entrance to circular culverts
 - o Maximise light penetration
 - o Enable a higher proportion of the bed of the culvert to be at bed level or below by comparison with circular culverts
 - o Are easier to provide internal baffles, simulated bed substrate and other aspects required to provide a varied hydraulic environment within the culvert

Overall, fish culvert design aims to create structures that facilitate uninterrupted fish movement, ensuring ecological connectivity and supporting fish populations

Key elements of fish culvert design include.:

1. **Hydraulic Barriers:** Addressing high velocity, shallow water depth, lack of resting places, excess turbulence, and water surface drops that can impede fish movement.
2. **Fishway Components:** Incorporating baffles, rock ramps, and other structures within culverts to create favourable hydraulic conditions for fish passage.
3. **Design Strategies:** Using approaches such as stream simulation, plain culvert design, hydraulic design with baffles, and hybrid designs to create effective fishways
4. **Configuration Options:** Ensuring fish passage through all hydraulic zones of the structure, from downstream to upstream, by providing suitable conditions in each zone.

5. **Mitigation Measures:** Implementing measures to overcome fish migration barriers at temporary crossings, such as enhancing drainage facilities, using alternative structures, and incorporating specialist devices.

Reference material for culvert design: <https://www.jcu.edu.au/college-of-science-and-engineering/fish-passage-planning-and-design/publications/culvert-fishway-planning-and-design-guidelines>

This element relates to all other elements in this EMP.

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
- To ensure water quality of Noah Creek and tributaries remains commensurate with the maintenance of habitat requirements for fauna species. - To ensure that breeding cycles of aquatic fauna, including threatened fish species, are not adversely impacted by waterway barrier works during construction.	- No complaints are received from regulatory authorities or the community in relation to fish deaths or strandings. - All works to comply with conditions on Development Permit 2406-40985 SRA, the WTMA permit and any other regulatory requirements. - Water quality monitoring results are commensurate with the Water Quality Objectives of the EPP (Water) 2009 for the Daintree/Mossman River Catchments for the maintenance of listed Environmental Values. - No sediment from clearing and earthworks enters Noah Creek or tributaries or is carried off the construction site by overland flow under normal weather events. - Fish waterway monitoring shows that culvert design and velocities are commensurate with fish passage for the entire fish community.	- Culvert design and operation is commensurate with mean current flow not exceeding 0.3m/s in the low flow section of Noah Creek as per requirements of Conditions 21.(c) and 21.(d) of approval 2406-40985 SRA - Waterway barrier works are to comply with the <i>Accepted development requirements for operational work that is constructing or raising waterway barrier works, October 2018</i>, Department of Agriculture and Fisheries Operational Guidelines. - Implement an inspection and monitoring program for confirming performance of culvert with respect to effective fish passage as per Condition 21 of approval 2406-40985 SRA - A minimum of 2 inspection and monitoring reports are required during life of the sidetrack as per Condition 21.(b) of approval 2406-40985 SRA - No more than 50% of the low flow bed of Noah Creek is at any one time occupied by water way barriers required for erosion and sediment control works - At no time will erosion and sediment control structures, e.g. instream silt curtain, extend the full width of Noah Creek.	Project Manager Construction Manager/Contractor Construction Manager/Contractor Construction Manager/Contractor Site Supervisor Site Supervisor	Design phase and during operation Design phase and during operation During operation of temporary sidetrack During all construction During all construction During all construction

		- Any drainage line/ tributaries of Noah Creek adjacent to or within the works area are to have appropriate erosion and sediment controls that will mitigate the risk for sediment impacts on these waterways. - A water quality monitoring program is to be established by the Construction Manager/Contractor and submitted as part of the C-EMP. - In the event that any fish kill, strandings entrapment or other evidence of fish distress is noted then actions in accordance with Condition 16. of approval 2406-40985 SRA are to be undertaken.	Construction Manager/Contractor Construction Manager/Contractor Site Supervisor Construction Manager	Throughout construction Throughout construction Immediately on observation
Monitoring			Responsibility	Timing
Implement an inspection and monitoring program for the purposes of confirming the performance of the temporary culvert crossing is providing safe and effective fish passage for the entire fish community as per Condition 21. approval 2406-40985 SRA			Construction Manager/Contractor	Twice during construction
The monitoring program will include an alert and action component, which will enable and implement changes to be made to the temporary culvert crossing if data shows outer culvert velocities are not 0.3m/s or under and do not provide safe and adequate fish passage for the entire fish community present. Works must occur promptly (within 3 months) and no later than prior to the commencement of the following wet season.				
Undertake routine visual inspections of all erosion and sediment control measures.			Site Supervisor	Daily
Undertake routine inspection of all riparian and instream areas during construction in these areas for any obvious signs of aquatic impacts, e.g. sedimentation, contaminants, fish kill/injury, vegetation in the water etc.			Site Supervisor	Daily
A water quality monitoring program as identified in the Construction Managers/Contractors C-EMP is to be implemented.			Construction Manager/Contractor	As per the monitoring program.
Reporting			Responsibility	Timing
Two inspection and monitoring reports on the performance of the sidetrack culverts with respect to fish passage are to be provided to notifications@daf.qld.gov.au Inspections must occur under average flow conditions and as soon as practicable after a 63% AEP event;			Construction Manager/Contractor	Twice during the operation of the sidetrack
Any changes made to the structure to accommodate fish passage must be documented, and follow-up monitoring done to demonstrate the structure provides safe and adequate fish passage. Reports on the outcomes of this monitoring must be submitted to notifications@daf.qld.gov.au within 6 weeks of the follow-up monitoring event.			Construction Manager/Contractor	When changes are made to structures.

In the event of fish kills, stranding, entrapment or any evidence of fish distress (gasping at the surface, rapid breathing, rolling or lethargy) as a result of the approved works: (b) Submit written notice to the Department of Agriculture and Fisheries at notifications@daf.qld.gov.au at any time(s) fish salvage is undertaken in accordance with part (a) of this condition. Any notice must state applications' reference number : 2406-40985 SRA	Site Supervisor	At all times
Inform the relevant Administering Authority immediately in the event of any contravention of a condition on an approval/permit issued by that Administering Authority.	Construction Manager/Contractor DSC	Following identification
In the event of any environmental incidence arising from conditions not as a result of construction works (storm events, floods, vehicle accidents in works area), these are to be reported to the DSC as Project Manager. Where these impact on WTWH then DSC is responsible as permit holder to report to WTMA and any other regulatory authority.	Site Supervisor Construction Manager/Contractor DSC	Following identification
Corrective Action	Responsibility	Timing
In the event of fish kills, stranding, entrapment or any evidence of fish distress (gasping at the surface, rapid breathing, rolling or lethargy) as a result of the approved works: (a) Fish salvage must be undertaken generally in accordance with the Department of Agriculture and Fisheries fact sheet <i>Guidelines for fish salvage</i> found on the Department's website.	Construction Manager/Contractor	Upon receipt of complaint
If monitoring data shows modifications to the culvert crossing are required, it is advised to seek advice through CairnsSARA@dsdilgp.qld.gov.au regarding whether the proposed modifications are generally in accordance with the current approval, or if a minor change application is required.	Construction Manager/Contractor	Following identification
Where significant mortality or injury to fish is noted, then activity in the affected area resulting in the incident will cease until actions agreed with regulatory agencies and DSC have been implemented.	Construction Manager/Contractor	Following identification
Corrective action shall be implemented to meet required outcomes of Administering Authorities generally in the event of any report on injury/mortality to fauna, or impact on their habitats outside of the demarcated disturbance area.	Construction Manager/Contractor DSC	Where required

5.9 Weed and Pest Management

5.9.1 Aspect

The private freeholding on the southern bank of Noah Creek is an existing major vector for non-native species (previously being a grazing area and now an exotic fruit orchard) and it is considered likely that the bridge replacement works could introduce additional exotic species or create favourable habitat conditions for weeds and pests.

There is a high potential for the introduction of major environmental weeds (e.g., Miconia/Mikania) or fauna pests (electric ants/yellow crazy ants) with machinery or equipment that may have been in contact with problematic infested areas elsewhere in North Queensland. Electric ants and yellow crazy ants are a biosecurity risk in North Queensland. All machinery and construction equipment must be inspected prior to arrival on site for evidence of electric ants or yellow crazy ants.

It is necessary to implement a weed and pest hygiene management plan that includes washdown of earthworks vehicles prior to accessing the electric ants work site and a pest (weed and fauna) monitoring and eradication program (for invasive species) in the construction EMP. Site rehabilitation is an important element in the management of weeds post construction.

Sites suitable for rehabilitation (e.g. riparian abutment works area and temporary sidetrack) are to be identified and a site rehabilitation plan that includes active and passive revegetation/rehabilitation is to be developed prior to construction and implemented on a staged basis during construction.

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
- Avoid and effectively manage potential impacts associated with weeds and pests. - No introduction of species considered to be major invasive species, e.g. yellow crazy ants.	- No complaints are received from regulatory authorities or the community in relation to flora and fauna management. - No introduction or spread of new (declared) weeds and pests. - No electric ants or yellow crazy ants become established on site - No complaints are received from regulatory authorities or the community. - Works undertaken in accordance with the DSC Biosecurity Management Plan and <i>Biosecurity Act 2014</i>. All requirements of the WT Plan and supplementary guidelines to be enacted - All earth moving machinery (including tip trucks) to have a certified weed hygiene certificate issued by an authorised person/department..	- Minimise water ponding or build up on-site to reduce the likelihood of providing suitable environments for mosquito breeding. - All vehicles, construction machinery and materials are to be examined for electric ants or yellow crazy ants prior to arrival at site, preferably before crossing the Daintree River or at an inspection site nominated by DSC/Biosecurity Australia. - Mulched vegetation material containing propagules (seeds/stems/fruit) of introduced species is not to be used as mulch for soil stabilisation or revegetation purposes but removed to a location where it will no impact on the Daintree National Park and WTWHA. - Food scraps to be disposed of into bins with closed lids and removed from site regularly to minimise vermin infestations. - If fill is required to imported, only clean imported fill with a weed-free certificate can be used on site.	Site Supervisor Construction Manager/Contractor Site Supervisor Site Supervisor Construction Manager/Contractor	During construction Prior to commencing work on site. At all times during construction At all times during construction At all times

Where investigations show restricted/declared weeds, and pests present, revision to management plans shall be undertaken and further controls implemented, as necessary. Controls may include use of contracted licensed weed eradicator or pest exterminator.	Construction Manager/Contractor	Following identification
Corrective action shall be implemented to meet required outcomes of Administering Authorities permit and approval conditions, or as a result of direction received following notification.	Construction Manager/Contractor	Where required

5.10 Air Quality

5.10.1 Aspect

Dust and fumes are an aspect of the project with the potential to impact on key receptors adjacent to and within the works area. The Noah Creek Forest Eco-Stay is located on freehold land to the south of the Noah Creek bridge, adjacent the esplanade reserve. This large property includes commercial accommodation via lodges and camp sites, day use tourism facilities, and a commercial orchard on the eastern side of the road. The closest infrastructure to the bridge works area is the Noah Creek Forest Eco-Stay administration centre and car park, approximately 60m from the bridge site works area. Air quality has the potential to be adversely impacted by construction activity where road and earthworks are undertaken.

A number of sensitive native plants e.g. filmy ferns, seedlings and groundcovers, are vulnerable to smothering by dust, and dust settling on the waterway will be result in sedimentation of the bed of the creek.

Environmental Objective	Performance Criteria	Mitigation Measures	Responsibility	Timing
- To prevent fumes and other atmospheric emissions generated by construction activities (including traffic movement) from causing a hazard or nuisance to the environment and sensitive receptors adjacent the works, particularly visitors and residents of the Noah Creek Forest Eco-Stay. - To prevent degradation of environmental values within the WTWHA, including smothering of filmy ferns, dust settling into tributaries harbouring frog species and into Noah Creek itself.	- All works are managed in accordance with the EP Act and the Environmental Protection (Air) Policy 2019. - No complaints are received from regulatory authorities or adjacent landholders in relation to dust and fumes impacts - No dieback of understorey/ground cover species noted in adjoining vegetated areas, including the Daintree National Park. - No visible dust accumulation in pools of Noah Creek, watercourses or other drainage features.	- Burning or incineration of waste is not permitted onsite. - When not in use, vehicles and other onsite equipment are to be turned off. - The speed of vehicles on access roads to comply with all speed limits, and off site limited to speeds set by the Construction Managers. - Ensure water trucks are used, if necessary, along access roads, laydown areas and within construction areas. - Disturbed areas, including working areas shall be stabilised as soon as possible.	Site Supervisor Site Supervisor Construction Manager/Contractor Site Supervisor Site Supervisor	During construction At all times At all times When required As soon as practical after completion

Monitoring	Responsibility	Timing
Undertake visual inspections / observations of site during day to day works, to identify problem areas and where corrective action is needed. This includes watercourses, drainage lines and adjacent vegetation.	Site Supervisor	Daily
Reporting	Responsibility	Timing
All personnel to report incidents.	All personnel	At all times
Record and manage all complaints in a register and corrective actions taken.	Construction Manager/Contractor	Throughout construction
Corrective Action	Responsibility	Timing
Appropriate control measures as identified in this EMP shall be implemented in a timely manner where nuisance dust and other air quality issues are identified.	Construction Manager/Contractor	Following identification
Dust accumulation on groundcovers and adjoining vegetation is to be washed down within the Daintree National Park.	Construction Manager/Contractor Site Supervisor	Following identification

5.11 Emergency Response

5.11.1 Aspect

On any construction project there is potential for an emergency situation to occur, such as fire, chemical release, spill, leak, snake bite, equipment failure or any other likely emergency. The Noah Creek bridge project also has the potential for wildlife interactions (snakes, cassowaries and crocodiles) that may require an emergency response. All emergency situations have the potential to cause damage/injury/impact to personnel and environment.

Environmental Objective	Environmental Objective	Mitigation Measures	Responsibility	Timing
For project personnel to respond effectively and efficiently in the event of an emergency during the construction period.	- Emergency plans for construction developed prior to commencement of works on site. - All personnel familiar with emergency procedures and their role in the event of an emergency.	An appropriate spill kit, personal protective equipment and relevant operator instructions and emergency procedures for the management of wastes and chemicals associated with construction must be kept at the site. This includes a spill kit that is to include air boom and fuel and oil absorbent boom to be available at all times.	Construction Manager/Contractor	At all times

		- Records shall be kept on chemicals and dangerous goods used during construction. - First aid and firefighting equipment (hand held extinguishers and fire hoses) shall be available at the construction site. - Construction workers operating vehicles on-site to be appropriately trained and licensed, so that these vehicles are operated in a safe and appropriate manner. All vehicle operators to be briefed on locations of maintenance, storage and refuelling areas. - All relevant staff shall be trained in appropriate handling, storage and containment practices for chemicals and dangerous goods to be utilised during construction. - No fuel or hazardous substances are to be stored within riparian areas or within 10m of the high point of any drainage line. All such substances are only to be stored at a designated area. Transport and use of any of these materials shall be undertaken in accordance with relevant Australian standards (AS), guidelines and legislation, including: <i>Dangerous Goods Safety Management Act 2001</i> - Regulatory requirements - Safety Data Sheets (SDS) requirements. SDS for products kept on site shall be readily available. - Important contact numbers and names to be available on site e.g. 000 for fire, ambulance, police, DES Pollution Hotline - Personnel to undertake adequate environmental awareness and training covering the requirements of this EMP and other management plans regarding emergency response. - An emergency response plan shall be prepared which includes consideration of the following – - Response procedure in the event of a fire, chemical release, spill, leak, explosion,	Construction Manager/Contractor Construction Manager/Contractor Construction Manager/Contractor Construction Manager/Contractor Construction Manager/Contractor Site Supervisor Construction Manager/Contractor Construction Manager/Contractor	At all times At all times Prior to commencing work on site At induction and prior to commencing work on site At all times At all times At induction and prior to commencing work on site Prior to works commencing on site
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		natural disaster, equipment failure, wildlife or any other likely emergency - Communication arrangements and contact details - Roles and responsibilities of project personnel - Emergency controls and alarms - Evacuation procedures - Training requirements - Site security.		
Monitoring			Responsibility	Timing
Undertake review of the emergency response plan post any emergency event to identify responses, corrective actions and effectiveness.			Construction Manager/Contractor	Throughout construction
Review all potential work areas and activities that have the potential to create emergency situation prior to commencement of work			Site Supervisor	Daily
Review workplace incident record on a weekly basis and apply corrective actions when required.			Construction Manager/Contractor	Throughout construction
Reporting			Responsibility	Timing
All personnel to report incidents.			All personnel	At all times
Any personnel or environmental emergencies can be reported by all personnel, and recorded by Site Supervisor including time of incident, persons involved, details of incident, mitigation measures and actions taken to minimise the probability of recurrence.			All personnel Site Supervisor	Following incident
Construction Manager/Contractor to be informed immediately of any incidents resulting in potential or actual environmental harm.			Site Supervisor	Following incident
Construction Manager/Contractor to inform DSC immediately of receipt of report of any notifiable emergencies of potential or actual harm to personnel or environment.			Construction Manager/Contractor	Following incident
Corrective Action			Responsibility	Timing
All complaints shall be investigated promptly and appropriate actions taken.			Construction Manager/Contractor	Upon receipt of a complaint
Where investigations identify inefficient or ineffective procedures, revision to management plan shall be undertaken and further controls implemented, as necessary.			Construction Manager/Contractor DSC	Following identification
Corrective action shall be implemented to meet required outcomes of Administering Authorities.			Construction Manager/Contractor DSC	Where required

5.12 Water Quality Management Plan

5.12.1 Aspect

Minimising the potential for project impacts on water quality is critical to instream habitat values both in the bridge works area, and to the downstream Great Barrier Reef Coastal Marine Park – Noah Heads Section. Maintenance of water quality is a key aspect in maintaining World Heritage values, both for the WTWHA and GPRMP. Noah Creek has a pristine upland catchment, and is regarded as one of the highest environmental value waterways in Australia, supporting endangered vegetation communities, providing habitat to endemic and threatened flora and fauna and having important cultural heritage values to the Eastern Kuku Yalanji traditional owners.

Implementation of a Water Quality Monitoring Program is critical to ensuring that DSC, Construction Manager/Contractor and subcontractors are able to address their obligations under various regulatory requirements. A preliminary *in-situ* program for this project has identified that the water parameters as identified in Tables 2.1, 2.2 and 2.3 (as relevant to High Ecological Values waters HEV 3001) in the *Daintree and Mossman Rivers Basins Environmental Values and Water Quality Objectives, Basins Nos. 108 and 109 and adjacent coastal waters* are relevant, and are to be adopted for this construction project. (<https://environment.des.qld.gov.au/water/policy/pdf/plans/daintree-mossman-evs-wqos.pdf>)

A detailed Water Quality Monitoring Program will be included in the final EMP, incorporating recommendations for parameters, frequency and locations as required in the final conditions on permit/authority approvals.

The following management plan is a summary of all those aspects and requirements from other elements in this EMP as relevant to the maintenance of aquatic environmental values and to meet the WOQ of the Environmental Protection (Water and Wetland Biodiversity) Policy 2019

Environmental Objective	Environmental Objective	Mitigation Measures	Responsibility	Timing
- To minimise the potential for impacts to the WTWHA, Daintree National Park and Great Barrier Reef Coast Marine Park – Noah Heads Section. - To ensure that the EV of Noah Creek and downstream estuarine and reef systems are maintained through construction activities achieving the WQO of the EPP (Water and Wetland Biodiversity) 2019 as relevant to these areas.	- The WOQ parameters under Tables 2.1, 2.2 and 2.3 of the <i>Daintree and Mossman Rivers Basins Environmental Values and Water Quality Objectives, Basins Nos. 108 and 109</i> and adjacent coastal waters relevant to HEV 3001 are not exceeded by any construction activity. - There is no diminution of any WTWHA values within the construction site, or within Noah Creek (upstream and downstream). - All works are managed in accordance with the International Erosion Control Association Best Practice Erosion & Sediment Control Guidelines, the EPP (Water and Wetland	- A water quality monitoring program is to be developed and incorporated into the final Construction EMP on receipt of approval conditions from regulatory/Administrating Authorities - Where parameters exceeding the levels identified in the WQO relevant to Noah Creek are recorded, then an investigation into activities potentially influencing these results is to occur and results documented. Actions in relation to these exceedances will be set by conditions on permits/approvals from the regulatory/Administrating Authorities	Construction Manager/Contractor	At all times
			Construction Manager/Contractor	At all times

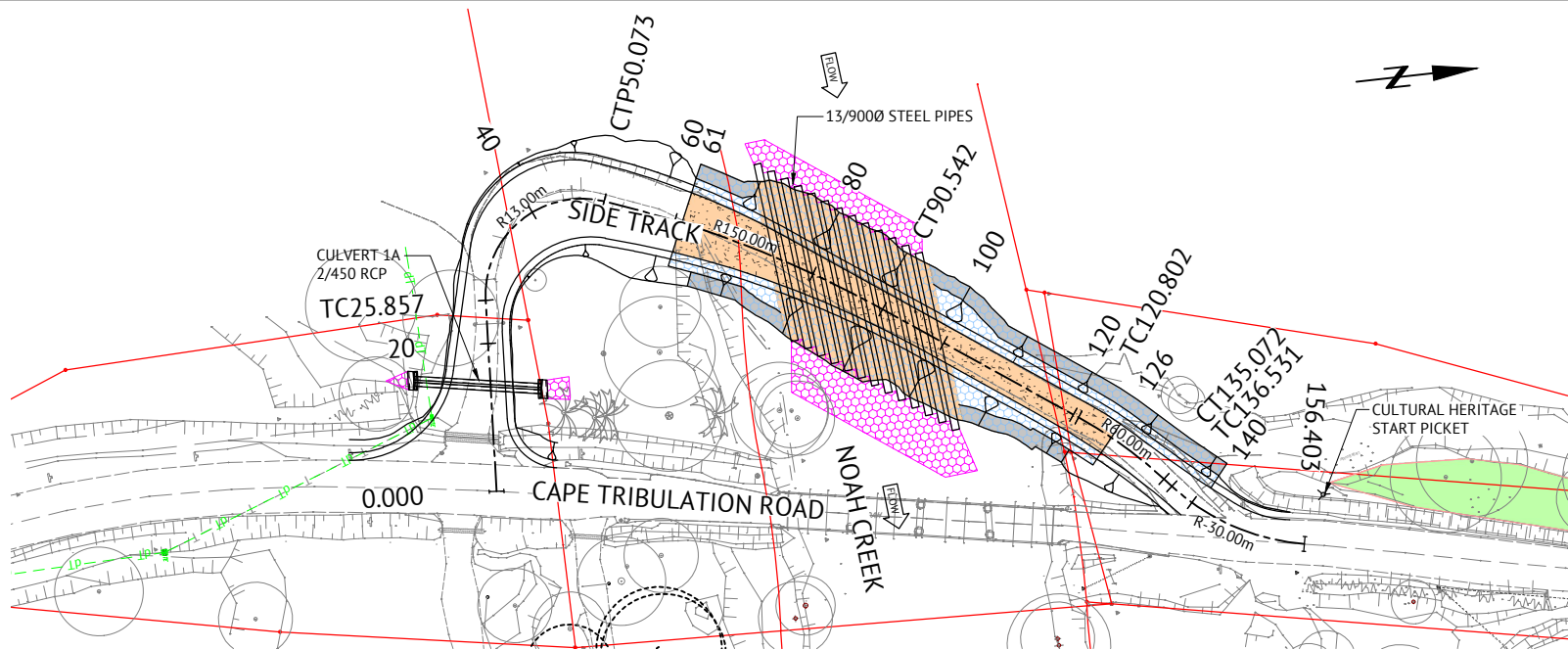
	Biodiversity) 2019 and any other relevant approval and statutory requirement as per conditions on permits and approvals.	- An appropriate spill kit, personal protective equipment and relevant operator instructions and emergency procedures for the management of wastes and chemicals associated with construction must be kept at the site. This includes a spill kit that is to include air boom and fuel and oil absorbent boom to be available on the drill rig pad instream at all times. - A site and works specific Erosion and Sediment Control Plan (ESCP) shall be developed prior to disturbance works (e.g. vegetation clearing) occurring. The ESCP shall address (at a minimum): - Laydown and storage areas when identified. - Any areas off the sealed Cape Tribulation Road utilised for machinery or vehicle movement or as temporary laydown - Vegetation clearing areas of the abutments, any earthworks area during construction - Construction of the sidetrack and instream erosion and sediment control measures. - All aspects related to demolition and removal of the existing bridge. - Instream removal of existing piles, and drilling /construction of new piles - Visual inspections of site to ensure no oil leaks, hydraulic fluid leakages or fuel leakages/spills of any other hazardous material. - Vegetation waste or any type is not to be left within Noah Creek or drainage lines. Fallen trees, branches, shrubs are to be removed from all waterways and to be disposed of in similar manner to other cleared vegetation. - No fuel or hazardous substances are to be stored within riparian areas or within 10m of the high point of any drainage line. All such substances are only to be stored at the	Construction Manager/Contractor	At all times
			Construction Manager/Contractor	Prior to commencing work on site
			Site Supervisor	Daily
			Site Supervisor	At all times
			Site Supervisor	At all times

		designated area to be identified prior to construction. Transport and use of any of these materials shall be undertaken in accordance with relevant Australian standards (AS), guidelines and legislation, including: - <i>Dangerous Goods Safety Management Act 2001</i> - Regulatory requirements - Safety Data Sheets (SDS) requirements. - SDS for products kept on site shall be readily available. - Waterway barrier works are to comply with the <i>Accepted development requirements for operational work that is constructing or raising waterway barrier works, October 2018</i>, Department of Agriculture and Fisheries Operational Guidelines. • Waterway barrier works, are not to occupy more than 50% of the low flow channel of Noah Creek at any time. • For the temporary sidetrack culverts must be installed in accordance with the requirements of the <i>Accepted development requirements for operational work that is constructing or raising waterway barrier works, October 2018</i> in order not to obstruct fishway passage at any time through the low flow channel. • For the temporary sidetrack the culverts must of a design that meets the conditions of approval 2406-40985 SRA • Permanent tributary of Noah Creek on the northern approaches adjacent to the works area are to have appropriate erosion and sediment controls that will mitigate the risk for sediment impacts on these waterways. • In the event that any fish kill or aquatic life is noted as injured or dead, then any instream works will cease until the cause of the injury or mortality is located (where possible).	Construction Manager/Contractor Construction Manager/Contractor DSC Construction Manager/Contractor Construction Manager/Contractor Site Supervisor	At all times Design phase and prior to construction of temporary sidetrack Design phase Prior to works commencing on site Immediately on notification
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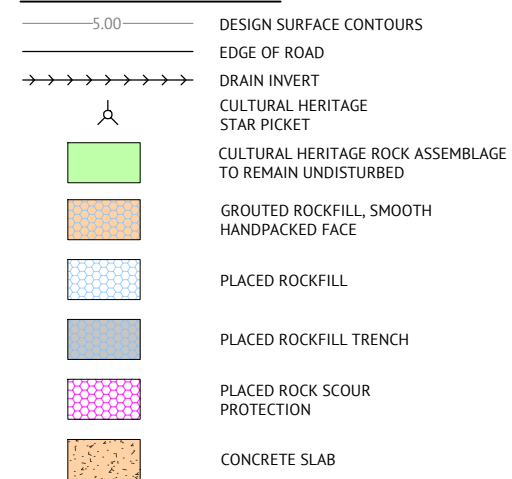
Monitoring	Responsibility	Timing
Undertake routine visual inspections of all erosion and sediment control measures.	Site Supervisor	Daily
Undertake routine inspection of all riparian and instream areas during construction in these areas for any obvious signs of aquatic impacts, e.g. sedimentation, contaminants, fish kill/injury, vegetation in the water etc.	Site Supervisor	Daily
Water quality monitoring and reporting is undertaken in accordance with the Water Quality Monitoring Program.	Site Supervisor	At all times
Reporting	Responsibility	Timing
Water quality data is to be compiled weekly with the results available for external audits at any time.	Construction Manager/Contractor Site Supervisor	At all times
Reporting of monitoring to external agencies will be subject to conditions of approvals from the regulatory/Administrating Authorities.	Construction Manager/Contractor Site Supervisor	At all times
Any personal or environmental emergencies can be reported by all personnel, and recorded by Site Supervisor including time of incident, persons involved, details of incident, mitigation measures and actions taken to minimise the probability of recurrence.	All personnel Site Supervisor	Following incident
Inform the Construction Manager/Contractor and DSC immediately of any incidents resulting in potential or actual environmental harm.	Site Supervisor Construction Manager/Contractor	Following incident
Appropriate control measures shall be implemented in a timely manner where sedimentation or erosion issues are identified or have the potential to occur in the future.	Construction Manager/Contractor	Following identification
Restore eroded areas as soon as is practical following event and repair/install sediment control mechanism. (e.g. rock aggregate, geo-textile and concrete).	Construction Manager/Contractor	Following identification
Corrective action shall be implemented to meet required outcomes of Administering Authorities.	Construction Manager/Contractor	Where required
Construction Manager/Contractor to inform DSC immediately of receipt of report of any notifiable emergencies of potential or actual harm to personnel or environment.	Construction Manager/Contractor	Following incident
Corrective Action	Responsibility	Timing
In the event that WOQ objective parameters are identified as being exceeded then investigations to determine the likely cause of the source are to be undertaken and a review of the activity to take place.	Construction Manager/Contractor	Following identification

Where significant environmental incidences or exceedance of WOQ has occurred as a result of construction activities, then all activity will cease until a management approach has been agreed with the relevant regulatory authority.	Construction Manager/Contractor	Following identification
Where investigations identify inefficient or ineffective procedures, revision to management plan shall be undertaken and further controls implemented, as necessary.	Project Manager	Following identification

Appendix A – Preliminary Sidetrack Design



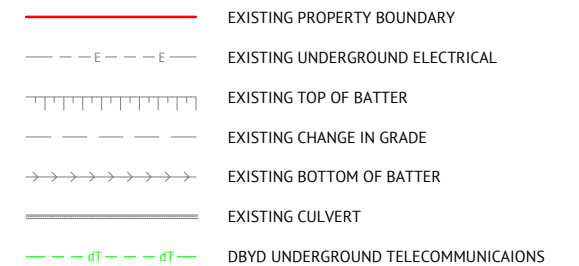
ROADWORKS LEGEND:



ROADWORKS NOTES:

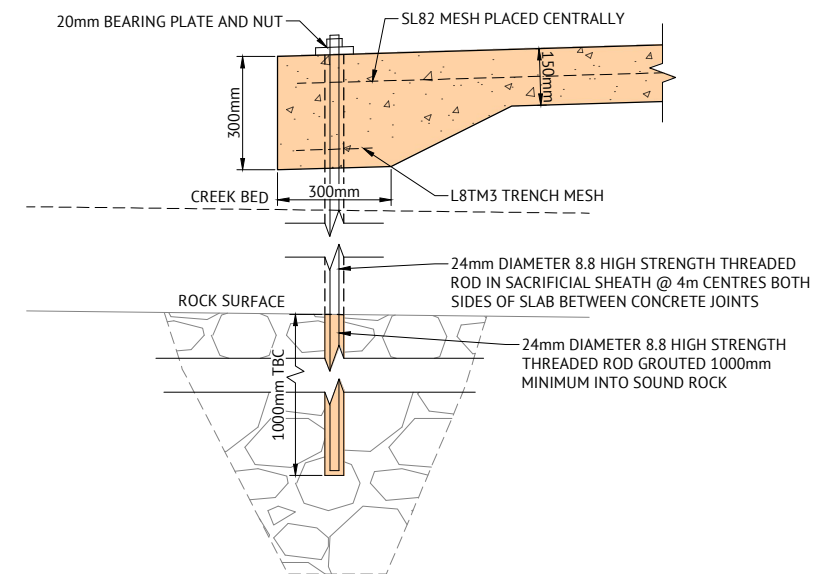
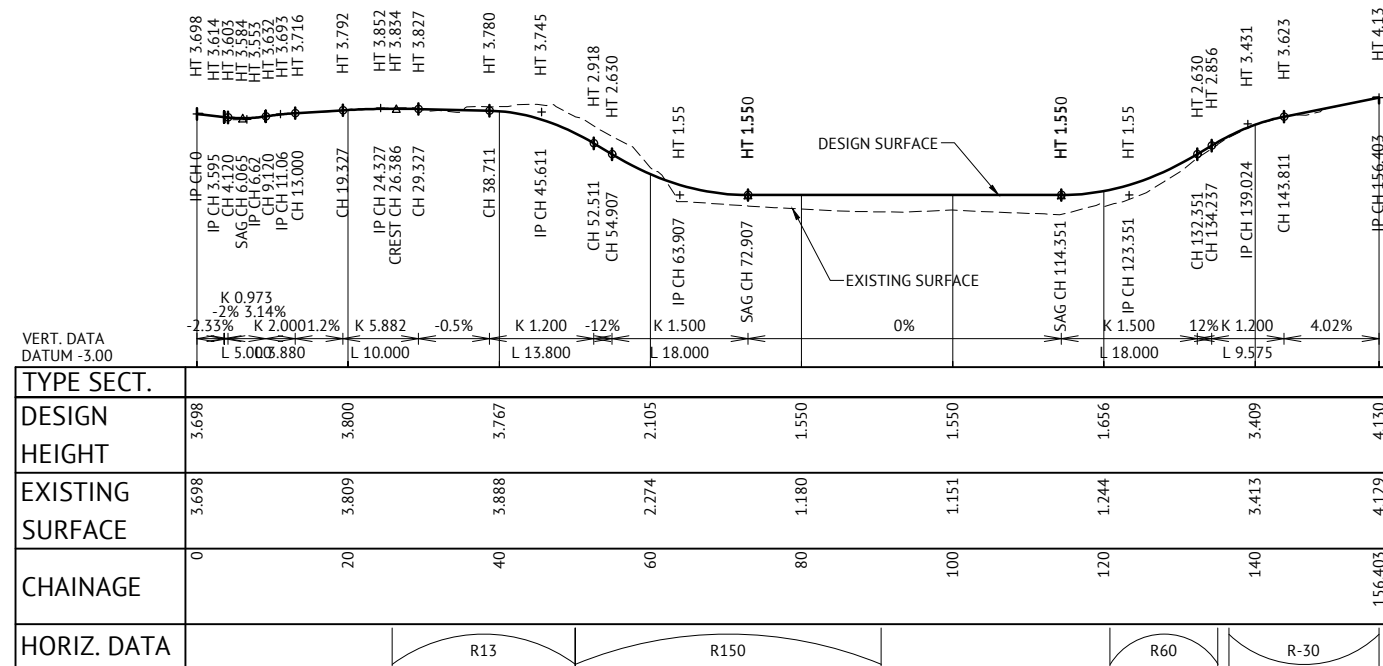
- ALL WORKS TO BE CONSTRUCTED IN ACCORDANCE WITH RELEVANT LATEST ISSUE FNQROC STANDARD DRAWINGS AND SPECIFICATIONS, UNLESS NOTED OTHERWISE.
- FOR ROAD GRADING, LEVELS AND TYPICAL SECTIONS, REFER ROAD LONGITUDINAL/CROSS SECTION AND ROADWORKS DETAILS DRAWINGS.

EXISTING SERVICES LEGEND



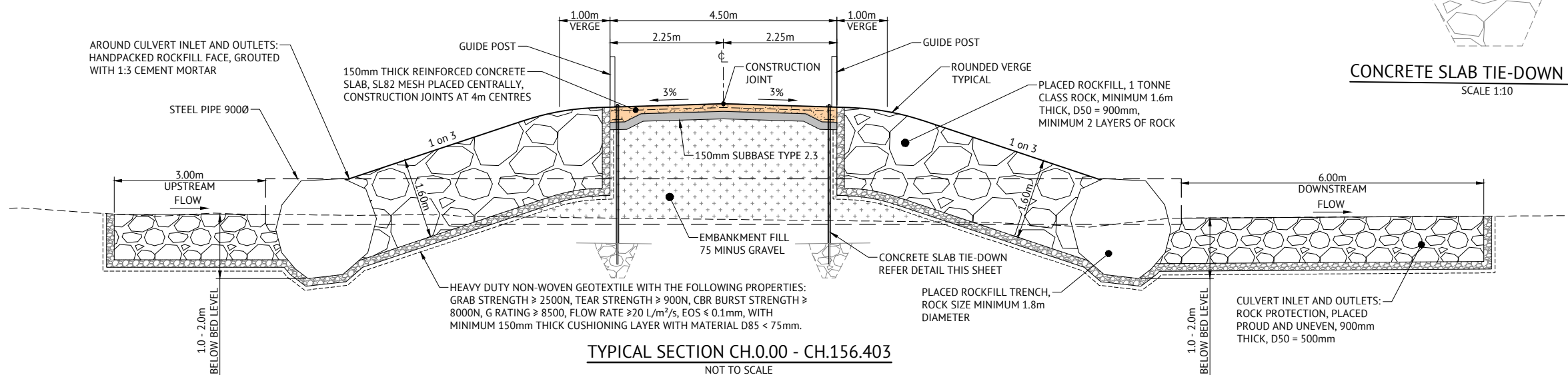
EXISTING SERVICES NOTES:

- EXISTING SERVICES ARE LOCATED WITHIN THE SITE.
- THE CONTRACTOR IS TO LOCATE ALL SERVICES BY CONTACTING THE RELEVANT AUTHORITY PRIOR TO THE COMMENCEMENT OF CONSTRUCTION.



CONCRETE SLAB TIE-DOWN DETAIL

SCALE 1:10



TYPICAL SECTION CH.0.00 - CH.156.403
NOT TO SCALE

EXISTING SERVICES

ALL EXISTING SERVICES ARE TO BE LOCATED BY THE CONTRACTOR THROUGH CONTACTING THE RELEVANT SERVICE AUTHORITY PRIOR TO THE COMMENCEMENT OF ANY WORK

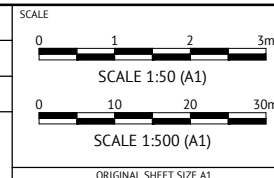
PRELIMINARY - NOT FOR CONSTRUCTION

DATE	REV	DESCRIPTION	SPB	RDP
13/02/2025	2	ISSUED FOR TENDER	SPB	RDP
20/12/2024	1	PRELIMINARY - NOT FOR CONSTRUCTION	SPB	RDP
DATE	REV	DESCRIPTION	REC	APP



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DESIGNED
S.BROGAN
CHECKED
S.BROGAN
PROJECT MANAGER
R.PERKINS
ENGINEERING CERTIFICATION
R.PERKINS RPEQ 2319



CLIENT
DOUGLAS SHIRE COUNCIL
PROJECT
NOAH CREEK BRIDGE - SIDETRACK
LOCATION
NOAH CREEK, CAPE TRIBULATION
SHEET TITLE
WORKING PLAN

JOB CODE
P001388
SHEET NUMBER
SKC21
REV
2

Appendix B - Incident Report Template

ENVIRONMENTAL COMPLAINT RECORD FORM

To be completed on receiving a complaint

SECTION 1: (to be completed by person receiving the complaint)

Current Date: __/__/__	
Current Time: __:__ am / pm	
Complainant Name:	
Complainant Contact Details:	
Ph No. _____	Address: _____ _____
Date of incident / Issue Causing Complaint: __/__/__	
Time of incident / Issue Causing Complaint: __:__ am / pm	
Location of Incident / Issue Causing Complaint: _____	

REASON FOR COMPLAINT

Describe clearly and in detail the circumstances leading to the incident / issue, and the incident / issue itself causing the complaint. As far as possible, verify the facts recorded, and identify witnesses.

.....
.....

Complaint reported to:	
Site Supervisor	Date: __/__/__ Time: __:__ am /
pm	
	Signed:
Project Manager	Date: __/__/__ Time: __:__ am / pm
	Signed:

DETAILS OF ANY INVESTIGATIONS TAKEN:

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.....
.....

CONCLUSIONS FORMED:

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.....
.....

ACTIONS TAKEN TO RESOLVE COMPLAINT:

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ANY ABATEMENT MEASURES IMPLEMENTED:

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.....

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.....

.....

COMPLAINT RESOLVED BY:

Name:

Position:

Signature:

The Project Manager is responsible for assuring the investigation and response to complaints. In some circumstances complaint response may be performed by the client and findings shared with the Project Manager for record.

Records of complaints must be held for five (5) years.

Appendix C – SARA referral agency response

2406-40985 SRA

SARA reference: 2406-40985 SRA
Council reference: OP 2024_5618/1

1 October 2024

Douglas Shire Council
PO Box 723
MOSSMAN QLD 4873
enquiries@douglas.qld.gov.au

Attention: Daniel Lamond

Dear Mr Lamond

SARA referral agency response—3017 Cape Tribulation Road, Thornton Beach (Noah Creek temporary crossing)

(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 19 June 2024.

Response

Outcome:	Referral agency response – with conditions
Date of response:	1 October 2024
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 work for Waterway barrier works and Tidal works (Noah Creek temporary culvert crossing)
SARA role:	Referral agency	
SARA trigger:	Schedule 10, Part 6, Division 4, Subdivision 3, Table 1, Item 1 (Planning Regulation 2017) - Operational works that is	

- constructing or raising waterway barrier works
- Schedule 10, Part 17, Division 3, Table 1, Item 1 (Planning Regulation 2017) - Operational works that is Tidal works or work in a coastal management district

SARA reference: 2406-40985 SRA

Assessment manager: Douglas Shire Council

Street address: 3017 Cape Tribulation Road, Thornton Beach

Real property description: Cape Tribulation Road reserve, Noah Creek, part of Lot 900 on SP296959 and part of Lot 62 on SP311525

Applicant name: Douglas Shire Council C/- RPS AAP Consulting Pty Ltd

Applicant contact details: PO Box 894
Port Douglas QLD 4877
peter@recs.net.au; Patrick.clifton@rpsgroup.com.au

Human Rights Act 2019 considerations: A consideration of the 23 fundamental human rights protected under the *Human Rights Act 2019* has been undertaken as part of this decision. In respect of the details listed above, SARA considers that this decision will not limit the identified human rights, or where a limitation is necessary it is considered reasonable and justifiable on balance and in context of the development.

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 Leanne Simpson, Principal Planning Officer, on 5352 9707 or via email CairnsSARA@dasilgp.qld.gov.au who will be pleased to assist.

Yours sincerely



Brett Nancarrow
Manager (Planning)

cc Douglas Shire Council, peter@recs.net.au, Patrick.clifton@rpsgroup.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 – Tidal works		
Schedule 10, Part 17, Division 3, Table 1, Item 1 (10.17.3.1.1) – Operational work that is Tidal works or work within a coastal management district—The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Environment, 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):		
1.	The works must be undertaken generally in accordance with the following plans: (a) General Arrangement prepared by REC Consulting Engineers dated 26/08/2024, reference C01, revision B. (b) Typical Sections prepared by REC Consulting Engineers dated 26/08/2024, reference C02, revision B. (c) Longitudinal Section Along Control Line prepared by REC Consulting Engineers dated 26/08/2024, reference C03, revision B.	At all times
2.	For the proposed works, only use clean materials and ensure that the works do not cause contamination.	For the duration of the works
3.	Development must prevent the release of sediment to tidal waters by installing and maintaining erosion and sediment control measures in accordance with the Best Practice Erosion and Sediment Control (BPESC) guidelines for Australia (International Erosion Control Association).	For the duration of the works
4.	Should the temporary crossing collapse, fail or otherwise suffer structural consequences which impact the integrity or ability to function as intended, the temporary crossing must be: (a) reinstated in accordance with this development approval; or (b) removed and disposed of at an appropriately licensed facility.	As soon as reasonably practicable subsequent to the damage
5.	Submit “As Constructed drawings” to palm@des.qld.gov.au or mail to: Department of Environment, Science and Innovation Permit and License Management GPO Box 2454 Brisbane Qld 4001	Within 20 business days of the completion of works.
6.	(a) A rehabilitation plan must be prepared by a suitably qualified person for the removal of the temporary waterway barrier works and must be: i. in accordance with the National Standards for the practice of ecological restoration in Australia 2nd edition December	(a) and (b) Prior to the commencement of the works (c) In accordance with

	2017, or more recent edition. (b) Provide the rehabilitation plan to the palm@des.qld.gov.au or mail to: Department of Environment, Science and Innovation Permit and License Management Implementation and Support Unit GPO Box 2454 Brisbane Qld 4001 (c) Undertake the rehabilitation of the development generally in accordance with the rehabilitation plan; and (d) Certification by a suitably qualified person that all elements of this condition have been complied with and rehabilitation has been completed, is to be provided to palm@des.qld.gov.au or mailed to: Department of Environment, Science and Innovation Permit and License Management Implementation and Support Unit GPO Box 2454 Brisbane Qld 4001	the requirements of the rehabilitation plan and to be completed within 20 business days of the completion of the works. (d) within 20 business days from when the rehabilitation work has been completed
7.	Remove and dispose of the entire temporary crossing at an appropriately licenced facility that accepts these types of waste.	Within 2 years of the completion of the works.
Operational work – Waterway barrier works		
10.6.4.3.1.1 – Operational work that is constructing or raising waterway barrier works in fish habitats - The chief executive administering the <i>Planning Act 2016</i> nominates the Director-General of the Department of Agriculture and Fisheries 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):		
8.	Development is limited to the operational works to raise or construct a temporary waterway barrier works that is a pipe culvert crossing within Noah Creek	At all times
9.	The temporary culvert crossing must be constructed generally in accordance with the following plans: (a) General Arrangement prepared by RECS Consulting Engineers, dated 26/08/2024, reference CO1, revision B (b) Typical Sections prepared by RECS Consulting Engineers, dated 26/08/2024, reference CO2, revision B (c) Longitudinal Section Along Control Line prepared by RECS Consulting Engineers, dated 26/08/2024, reference CO3, revision B	At all times
10.	Remove the entire existing emergency access track and restore the bank areas impacted from this structure after the replacement structure (temporary pipe culvert), inclusive of the approved fish passage, has been completed.	Within 15 business days of completion of the works.
11.	Remove the entire temporary pipe culvert crossing and restore the area after the replacement bridge has been completed. Restoration must include replanting riparian vegetation to the banks to restore suitable fish habitat.	Within 30 business days of completion of the works.

12.	Maintain the development in accordance with the plans referenced in condition 11 and the requirements of any conditions included in this referral agency response.	At all times
13.	Submit written notice to the Department of Agriculture and Fisheries at notifications@daf.qld.gov.au advising when the development authorised under this referral agency response: (a) will start (pipe culvert in) (b) when existing access track is removed (c) when it has been completed (i.e. existing access track and approved temporary pipe culvert has been removed and all related works completed). Any notice must state the application's reference number: 2406-40985 SRA and provide photographs of the crossing and restored areas	(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 (c) Within 15 business days of the completion of the fisheries development works
14.	Spoil is not disposed of on tidal lands or within waterways and is managed to prevent acid soil development.	At all times
15.	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
16.	In the event of fish kills, stranding, entrapment or any evidence of fish distress (gasping at the surface, rapid breathing, rolling or lethargy) as a result of the approved works: (a) Fish salvage must be undertaken generally in accordance with the Department of Agriculture and Fisheries fact sheet Guidelines for fish salvage found on the Department's website. (b) Submit written notice to the Department of Agriculture and Fisheries at notifications@daf.qld.gov.au at any time(s) fish salvage is undertaken in accordance with part (a) of this condition. Any notice must state the application's reference number: 2406-40985 SRA	At all times
17.	Restore land profiles that are temporarily disturbed by the development works as shown to pre-work profiles.	Within 10 business days of completion of the works and prior to post works notification.
18.	Provide upstream and downstream fish passage past the temporary waterway barrier.	At all times
19.	The fish passage provided must cater for the whole fish community taking into account species, size classes, life stages and swimming abilities as well as the seasonal and flow related biomass of the fish community.	At all times
20.	Construct and maintain the temporary waterway barrier and any	At all times

	associated infrastructure to avoid fish injury, distress, mortality and/or entrapment.	
21.	Implement an inspection and monitoring program for the purposes of confirming the performance of the temporary culvert crossing is providing safe and effective fish passage for the entire fish community. The inspection and monitoring program must: (a) have been prepared by a person or entity that is suitably qualified and experienced prior to the completion of the works; (b) involve the provision of 2 inspection and monitoring reports to notifications@daf.qld.gov.au. Inspections must occur under average flow conditions and as soon as practicable after a 63% AEP event; (c) inspection and monitoring reports should detail velocities through the culvert crossing at the outer (i.e. bankside) culverts to demonstrate velocities are 0.3m/s or under and provide safe and adequate fish passage. Additional culverts within the array can also be inspected if relevant to provide additional evidence of velocities at or below 0.3m/s; (d) include an alert and action component, which will enable and implement changes to be made to the temporary culvert crossing if data shows outer culvert velocities are not 0.3m/s or under and do not provide safe and adequate fish passage for the entire fish community present. Works must occur promptly (within 3 months) and no later than prior to the commencement of the following wet season; (e) any changes made to the structure to accommodate fish passage must be documented, and follow-up monitoring done to demonstrate the structure provides safe and adequate fish passage. Reports on the outcomes of this monitoring must be submitted to notifications@daf.qld.gov.au within 6 weeks of the follow-up monitoring event. The emails attaching the inspection and monitoring reports must state this application reference number 2406-40985 SRA. <i>Note: The majority of the threatened fish species found within Noah Creek are small-bodied (4 – 12 cm). The life cycles of other non-threatened species involve movement upstream from tidal areas as juveniles. Flow velocities through culverts are a major barrier to fish passage especially small-bodied fish and juveniles. As the crossing is going to be in place for up to 2 years, ensuring velocities are suitable for these species is considered reasonable and essential.</i>	As identified in Condition 21.

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 3.0). If a word remains undefined it has its ordinary meaning.
Alert to action (if required)	
2.	If monitoring data shows modifications to the culvert crossing are required, it is advised to seek advice through CairnsSARA@dsdilgp.qld.gov.au regarding whether the proposed modifications are generally in accordance with the current approval, or if a minor change application is required.
3.	Options to modify the crossing to provide lower velocities for fish passage include, but are not limited to: • providing a wider aperture / cross-sectional area for water to flow through (i.e. larger pipes or box culverts; • providing roughening within the culverts such as baffles or replacing with corrugated pipes; • installing bankside rock chutes on the downstream side at a grade no steeper than 1 in 20.

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 codes of the State Development Assessment Provisions (SDAP), version 3.0:
 - o State code 8: Coastal development and tidal works
 - o State code 18: Constructing or raising waterway barrier works in fish habitats
- The development complies with the assessment benchmarks of State code 8 of SDAP (version 3.0) in that the development:
 - o protects life, buildings and infrastructure from the impacts of coastal erosion;
 - o maintains coastal processes;
 - o conserves coastal resources; and
 - o avoids and minimises impacts on matters of state environmental significance and does not result in a significant residual impact on a matter of state environmental significance.
- The development complies with the assessment benchmarks of State code 18 of SDAP (version 3.0) in that the development:
 - o maintains fish movement and connectivity throughout Noah Creek, and within and between fish habitats;
 - o maintains the health and productivity of fisheries resources and fish habitat;
 - o maintains the community and fishing sectors' use of the area and access to fisheries resources;
 - o provides adequate fish passage upstream and downstream of the crossing; and
 - o avoids and minimises impacts on matters of state environmental significance and 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 3.0), as published by SARA
- the Development Assessment Rules
- SARA DA Mapping system
- State Planning Policy mapping system
- section 58 of the *Human Rights Act 2019*

Attachment 4—Representations about a referral agency response provisions

Attachment 5—Documents referenced in conditions
