

DA Form 1 – Development application details

Approved form (version 1.0 effective 3 July 2017) made under section 282 of the Planning Act 2016.

This form **must** be used to make a development application **involving code assessment or impact assessment**, except when applying for development involving building work.

For a development application involving **building work only**, use *DA Form 2 – Building work details*.

For a development application involving **building work associated with any other type of assessable development**, use this form (*DA Form 1*) **and** parts 4 to 6 of *DA Form 2 – Building work details*.

Unless stated otherwise, all parts of this form **must** be completed in full and all required supporting information **must** accompany the development application.

One or more additional pages may be attached as a schedule to this development application if there is insufficient space on the form to include all the necessary information.

This form and any other form relevant to the development application must be used to make a development application relating to strategic port land and Brisbane core port land under the *Transport Infrastructure Act 1994*, and airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*. For the purpose of assessing a development application relating to strategic port land and Brisbane core port land, any reference to a planning scheme is taken to mean a land use plan for the strategic port land, Brisbane port land use plan for Brisbane core port land, or a land use plan for airport land.

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) <i>(individual or company full name)</i> | Douglas Shire Council C/- Trinity Engineering and Consulting Pty Ltd |
| Contact name <i>(only applicable for companies)</i> | Paul Steele |
| Postal address <i>(P.O. Box or street address)</i> | PO Box 7963 |
| Suburb | Cairns |
| State | Queensland |
| Postcode | 4870 |
| Country | Australia |
| Contact number | (07) 4040 7111 |
| Email address <i>(non-mandatory)</i> | paul@trinityengineering.com.au |
| Mobile number <i>(non-mandatory)</i> | |
| Fax number <i>(non-mandatory)</i> | |
| Applicant's reference number(s) <i>(if applicable)</i> | |

| 2) Owner's consent |
|--|
| 2.1) Is written consent of the owner required for this development application? |
| <input checked="" type="checkbox"/> Yes – the written consent of the owner(s) is attached to this development application <input type="checkbox"/> No – proceed to 3) |



PART 2 – LOCATION DETAILS

3) Location of the premises (complete 3.1 or 3.2), and 3.3 as applicable)

Note: Provide details below and attach a site plan for any or all premises part of the development application. For further information, see [DA Forms Guide: Relevant plans](#).

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 |
| | Postcode | Lot No. | Plan Type and Number (e.g. RP, SP) | Local Government Area(s) |
| b) | Unit No. | Street No. | Street Name and Type | Suburb |
| | Postcode | Lot No. | Plan Type and Number (e.g. RP, SP) | Local Government Area(s) |

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. Only one set of coordinates is required for this part.

Coordinates of premises by longitude and latitude

| Longitude(s) | Latitude(s) | Datum | Local Government Area(s) (if applicable) |
|------------------|-----------------|--|--|
| 145deg27'57.03"E | 16deg33'42.18"S | <input checked="" type="checkbox"/> WGS84 <input type="checkbox"/> GDA94 <input type="checkbox"/> Other: | Douglas Shire Council |

Coordinates of premises by easting and northing

| Easting(s) | Northing(s) | Zone Ref. | Datum | Local Government Area(s) (if applicable) |
|------------|-------------|---|---|--|
| | | <input type="checkbox"/> 54 <input type="checkbox"/> 55 <input type="checkbox"/> 56 | <input type="checkbox"/> WGS84 <input type="checkbox"/> GDA94 <input type="checkbox"/> Other: | |

3.3) Additional premises

Additional premises are relevant to this development application and their details have been attached in a schedule to this application

Not required

4) Identify any of the following that apply to the premises and provide any relevant details

In or adjacent to a water body or watercourse or in or above an aquifer

Name of water body, watercourse or aquifer:

Mowbray River

On strategic port land under the *Transport Infrastructure Act 1994*

Lot on plan description of strategic port land:

Name of port authority for the lot:

In a tidal area

Name of local government for the tidal area (if applicable):

Name of port authority for tidal area (if applicable):

On airport land under the *Airport Assets (Restructuring and Disposal) Act 2008*

Name of airport:

Listed on the Environmental Management Register (EMR) under the *Environmental Protection Act 1994*

EMR site identification:

| |
|--|
| <input type="checkbox"/> Listed on the Contaminated Land Register (CLR) under the <i>Environmental Protection Act 1994</i> |
| CLR site identification: <input type="text"/> |

5) Are there any existing easements over the premises?
Note: Easement uses vary throughout Queensland and are to be identified correctly and accurately. For further information on easements and how they may affect the proposed development, see [DA Forms Guide](#).

Yes – All easement locations, types and dimensions are included in plans submitted with this development application

No

PART 3 – DEVELOPMENT DETAILS

Section 1 – Aspects of development

6.1) Provide details about the first development aspect

a) What is the type of development? *(tick only one box)*

Material change of use Reconfiguring a lot Operational work Building work

b) What is the approval type? *(tick only one box)*

Development permit Preliminary approval Preliminary approval that includes a variation approval

c) What is the level of assessment?

Code assessment Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):*

Construction of new Digger Bridge upstream of existing bridge.

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

Relevant plans of the proposed development are attached to the development application

6.2) Provide details about the second development aspect

a) What is the type of development? *(tick only one box)*

Material change of use Reconfiguring a lot Operational work Building work

b) What is the approval type? *(tick only one box)*

Development permit Preliminary approval Preliminary approval that includes a variation approval

c) What is the level of assessment?

Code assessment Impact assessment *(requires public notification)*

d) Provide a brief description of the proposal *(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots)*

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

Relevant plans of the proposed development are attached to the development application

6.3) Additional aspects of development

Additional aspects of development are relevant to this development application and the details for these aspects that would be required under Part 3 Section 1 of this form have been attached to this development application

Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?

| | |
|------------------------|--|
| Material change of use | <input type="checkbox"/> Yes – complete division 1 if assessable against a local planning instrument |
| Reconfiguring a lot | <input type="checkbox"/> Yes – complete division 2 |
| Operational work | <input checked="" type="checkbox"/> Yes – complete division 3 |
| Building work | <input type="checkbox"/> Yes – complete <i>DA Form 2 – Building work details</i> |

Division 1 – Material change of use

Note: This division is only required to be completed if any part of the development application involves a material change of use assessable against a local planning instrument.

8.1) Describe the proposed material change of use

| Provide a general description of the proposed use | Provide the planning scheme definition (include each definition in a new row) | Number of dwelling units (if applicable) | Gross floor area (m ²) (if applicable) |
|---|---|--|--|
| | | | |
| | | | |
| | | | |

8.2) Does the proposed use involve the use of existing buildings on the premises?

| | | |
|------------------------------|--|--|
| <input type="checkbox"/> Yes | | |
| <input type="checkbox"/> No | | |

Division 2 – Reconfiguring a lot

Note: This division is only required to be completed if any part of the development application involves reconfiguring a lot.

9.1) What is the total number of existing lots making up the premises?

| |
|--|
| |
|--|

9.2) What is the nature of the lot reconfiguration? (tick all applicable boxes)

| | |
|--|--|
| <input type="checkbox"/> Subdivision (complete 10)) | <input type="checkbox"/> Dividing land into parts by agreement (complete 11)) |
| <input type="checkbox"/> Boundary realignment (complete 12)) | <input type="checkbox"/> Creating or changing an easement giving access to a lot from a construction road (complete 13)) |

10) Subdivision

10.1) For this development, how many lots are being created and what is the intended use of those lots:

| Intended use of lots created | Residential | Commercial | Industrial | Other, please specify: |
|------------------------------|-------------|------------|------------|------------------------|
| | | | | |
| Number of lots created | | | | |

10.2) Will the subdivision be staged?

| |
|---|
| <input type="checkbox"/> Yes – provide additional details below |
| <input type="checkbox"/> No |
| How many stages will the works include? |
| What stage(s) will this development application apply to? |

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?

| Intended use of parts created | Residential | Commercial | Industrial | Other, please specify: |
|-------------------------------|-------------|------------|------------|------------------------|
| | | | | |
| Number of parts created | | | | |

12) Boundary realignment
12.1) What are the current and proposed areas for each lot comprising the premises?

| Current lot | | Proposed lot | |
|-------------------------|------------------------|-------------------------|------------------------|
| Lot on plan description | Area (m ²) | Lot on plan description | Area (m ²) |
| | | | |
| | | | |

12.2) What is the reason for the boundary realignment?

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement?
(attach schedule if there are more than two easements)

| Existing or proposed? | Width (m) | Length (m) | Purpose of the easement? <i>(e.g. pedestrian access)</i> | Identify the land/lot(s) benefitted by the easement |
|-----------------------|-----------|------------|--|---|
| | | | | |
| | | | | |

Division 3 – Operational work

Note: This division is only required to be completed if any part of the development application involves operational work.

14.1) What is the nature of the operational work?

| | | |
|---|--|---|
| <input checked="" type="checkbox"/> Road work | <input checked="" type="checkbox"/> Stormwater | <input type="checkbox"/> Water infrastructure |
| <input checked="" type="checkbox"/> Drainage work | <input checked="" type="checkbox"/> Earthworks | <input type="checkbox"/> Sewage infrastructure |
| <input type="checkbox"/> Landscaping | <input checked="" type="checkbox"/> Signage | <input checked="" type="checkbox"/> Clearing vegetation |
| <input type="checkbox"/> Other – please specify: <input type="text"/> | | |

14.2) Is the operational work necessary to facilitate the creation of new lots? *(e.g. subdivision)*

| |
|---|
| <input type="checkbox"/> Yes – specify number of new lots: <input type="text"/> |
| <input checked="" type="checkbox"/> No |

14.3) What is the monetary value of the proposed operational work? *(include GST, materials and labour)*

\$To be confirmed

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application

Douglas Shire Council

16) Has the local government agreed to apply a superseded planning scheme for this development application?

Yes – a copy of the decision notice is attached to this development application

Local government is taken to have agreed to the superseded planning scheme request – relevant documents attached

No

PART 5 – REFERRAL DETAILS

17) Do any aspects of the proposed development require referral for any referral requirements?

Note: A development application will require referral if prescribed by the Planning Regulation 2017.

No, there are no referral requirements relevant to any development aspects identified in this development application – proceed to Part 6

Matters requiring referral to the chief executive of the Planning Regulation 2017:

Clearing native vegetation

Contaminated land *(unexploded ordnance)*

| |
|--|
| <input type="checkbox"/> Environmentally relevant activities (ERA) <i>(only if the ERA have not been devolved to a local government)</i> <input type="checkbox"/> Fisheries – aquaculture <input type="checkbox"/> Fisheries – declared fish habitat area <input checked="" type="checkbox"/> Fisheries – marine plants <input checked="" type="checkbox"/> Fisheries – waterway barrier works <input type="checkbox"/> Hazardous chemical facilities <input type="checkbox"/> Queensland heritage place <i>(on or near a Queensland heritage place)</i> <input type="checkbox"/> Infrastructure – designated premises <input type="checkbox"/> Infrastructure – state transport infrastructure <input type="checkbox"/> Infrastructure – state transport corridors and future state transport corridors <input type="checkbox"/> Infrastructure – state-controlled transport tunnels and future state-controlled transport tunnels <input type="checkbox"/> Infrastructure – state-controlled roads <input type="checkbox"/> Land within Port of Brisbane’s port limits <input type="checkbox"/> SEQ development area <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – community activity <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – indoor recreation <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – residential development <input type="checkbox"/> SEQ regional landscape and rural production area or SEQ Rural living area – urban activity <input type="checkbox"/> Tidal works or works in a coastal management district <input type="checkbox"/> Urban design <input type="checkbox"/> Water-related development – taking or interfering with water <input type="checkbox"/> Water-related development – removing quarry material <i>(from a watercourse or lake)</i> <input type="checkbox"/> Water-related development – referable dams <input type="checkbox"/> Water-related development – construction of new levees or modification of existing levees <i>(category 2 or 3 levees only)</i> <input type="checkbox"/> Wetland protection area |
| Matters requiring referral to the local government: |
| <input type="checkbox"/> Airport land <input type="checkbox"/> Environmentally relevant activities (ERA) <i>(only if the ERA have been devolved to local government)</i> <input type="checkbox"/> Local heritage places |
| Matters requiring referral to the chief executive of the distribution entity or transmission entity: |
| <input type="checkbox"/> Electricity infrastructure |
| Matters requiring referral to: <ul style="list-style-type: none"> • The chief executive of the holder of the licence, if not an individual • The holder of the licence, if the holder of the licence is an individual <input type="checkbox"/> Oil and gas infrastructure |
| Matters requiring referral to the Brisbane City Council: |
| <input type="checkbox"/> Brisbane core port land |
| Matters requiring referral to the Minister under the Transport Infrastructure Act 1994: |
| <input type="checkbox"/> Brisbane core port land <input type="checkbox"/> Strategic port land |
| Matters requiring referral to the relevant port operator: |
| <input type="checkbox"/> Brisbane core port land (below high-water mark and within port limits) |
| Matters requiring referral to the chief executive of the relevant port authority: |
| <input type="checkbox"/> Land within limits of another port |
| Matters requiring referral to the Gold Coast Waterways Authority: |
| <input type="checkbox"/> Tidal works, or development in a coastal management district in Gold Coast waters |
| Matters requiring referral to the Queensland Fire and Emergency Service: |
| <input type="checkbox"/> Tidal works, or development in a coastal management district |

| 18) Has any referral agency provided a referral response for this development application? | | |
|--|-----------------|---------------------------|
| <input checked="" type="checkbox"/> Yes – referral response(s) received and listed below are attached to this development application <input type="checkbox"/> No | | |
| Referral requirement | Referral agency | Date of referral response |
| Pre—lodgement Meeting | DILGP | 18 July 2017 |
| Identify and describe any changes made to the proposed development application that was the subject of the referral response and the development application the subject of this form, or include details in a schedule to this development application (if applicable). | | |
| | | |

PART 6 – INFORMATION REQUEST

| 19) Information request under Part 3 of the DA Rules |
|--|
| <input checked="" type="checkbox"/> I agree to receive an information request if determined necessary for this development application <input type="checkbox"/> I do not agree to accept an information request for this development application |
| Note: By not agreeing to accept an information request I, the applicant, acknowledge: |
| <ul style="list-style-type: none"> that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development 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 . |

PART 7 – FURTHER DETAILS

| 20) Are there any associated development applications or current approvals? (e.g. a preliminary approval) | | | |
|---|------------------|------|--------------------|
| <input type="checkbox"/> Yes – provide details below or include details in a schedule to this development application <input checked="" type="checkbox"/> No | | | |
| List of approval/development application references | Reference number | Date | Assessment manager |
| <input type="checkbox"/> Approval <input type="checkbox"/> Development application | | | |
| <input type="checkbox"/> Approval <input type="checkbox"/> Development application | | | |

| 21) Has the portable long service leave levy been paid? (only applicable to development applications involving building work or operational work) | | |
|--|----------------------|--------------------------------|
| <input type="checkbox"/> Yes – the yellow local government/private certifier’s copy of the receipted QLeave form is attached to this development application <input checked="" type="checkbox"/> No – I, the applicant will provide evidence that the portable long service leave levy has been paid before the assessment manager decides the development application. I acknowledge that the assessment manager may give a development approval only if I provide evidence that the portable long service leave levy has been paid <input type="checkbox"/> Not applicable | | |
| Amount paid | Date paid (dd/mm/yy) | QLeave levy number (A, B or E) |
| \$ | | |

| 22) Is this development application in response to a show cause notice or required as a result of an enforcement notice? |
|--|
| <input type="checkbox"/> Yes – show cause or enforcement notice is attached <input checked="" type="checkbox"/> No |

23) Further legislative requirements**Environmentally relevant activities**

23.1) Is this development application also taken to be an application for an environmental authority for an **Environmentally Relevant Activity (ERA)** under section 115 of the *Environmental Protection Act 1994*?

Yes – the required attachment (form EM941) for an application for an environmental authority accompanies this development application, and details are provided in the table below

No

Note: Application for an environmental authority can be found by searching “EM941” at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.

| | | | |
|----------------------|--|-------------------------|--|
| Proposed ERA number: | | Proposed ERA threshold: | |
|----------------------|--|-------------------------|--|

| | |
|--------------------|--|
| Proposed ERA name: | |
|--------------------|--|

Multiple ERAs are applicable to this development application and the details have been attached in a schedule to this development application.

Hazardous chemical facilities

23.2) Is this development application for a **hazardous chemical facility**?

Yes – Form 69: Notification of a facility exceeding 10% of schedule 15 threshold is attached to this development application

No

Note: See www.justice.qld.gov.au for further information.

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation the chief executive of the *Vegetation Management Act 1999* is satisfied the clearing is for a relevant purpose under section 22A of the *Vegetation Management Act 1999*?

Yes – this development application is accompanied by written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)

No

Note: See www.qld.gov.au for further information.

Environmental offsets

23.4) Is this development application taken to be a prescribed activity that may have a significant residual impact on a **prescribed environmental matter** under the *Environmental Offsets Act 2014*?

Yes – I acknowledge that an environmental offset must be provided for any prescribed activity assessed as having a significant residual impact on a prescribed environmental matter

No

Note: The environmental offset section of the Queensland Government's website can be accessed at www.qld.gov.au for further information on environmental offsets.

Koala conservation

23.5) Does this development application involve a material change of use, reconfiguring a lot or operational work within an assessable development area under Schedule 10, Part 10 of the Planning Regulation 2017?

Yes

No

Note: See guidance materials at www.ehp.qld.gov.au for further information.

Water resources

23.6) Does this development application involve **taking or interfering with artesian or sub artesian water, taking or interfering with water in a watercourse, lake or spring, taking overland flow water or waterway barrier works**?

Yes – the relevant template is completed and attached to this development application

No

Note: DA templates are available from www.dilgp.qld.gov.au.

23.7) Does this application involve **taking or interfering with artesian or sub artesian water, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water** under the *Water Act 2000*?

Yes – I acknowledge that a relevant water authorisation under the *Water Act 2000* may be required prior to commencing development

No

Note: Contact the Department of Natural Resources and Mines at www.dnrm.qld.gov.au for further information.

Marine activities

23.8) Does this development application involve **aquaculture, works within a declared fish habitat area or removal, disturbance or destruction of marine plants?**

Yes – an associated resource allocation authority is attached to this development application, if required under the *Fisheries Act 1994*

No

Note: See guidance materials at www.daf.qld.gov.au for further information.

Quarry materials from a watercourse or lake

23.9) Does this development application involve the **removal of quarry materials from a watercourse or lake** under the *Water Act 2000*?

Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

No

Note: Contact the Department of Natural Resources and Mines at www.dnrm.qld.gov.au for further information.

Quarry materials from land under tidal waters

23.10) Does this development application involve the **removal of quarry materials from land under tidal water** under the *Coastal Protection and Management Act 1995*?

Yes – I acknowledge that a quarry material allocation notice must be obtained prior to commencing development

No

Note: Contact the Department of Environment and Heritage Protection at www.ehp.qld.gov.au for further information.

Referable dams

23.11) Does this development application involve a **referable dam** required to be failure impact assessed under section 343 of the *Water Supply (Safety and Reliability) Act 2008* (the *Water Supply Act*)?

Yes – the 'Notice Accepting a Failure Impact Assessment' from the chief executive administering the *Water Supply Act* is attached to this development application

No

Note: See guidance materials at www.dews.qld.gov.au for further information.

Tidal work or development within a coastal management district

23.12) Does this development application involve **tidal work or development in a coastal management district?**

Yes – the following is included with this development application:

Evidence the proposal meets the code for assessable development that is prescribed tidal work (*only required if application involves prescribed tidal work*)

A certificate of title

No

Note: See guidance materials at www.ehp.qld.gov.au for further information.

Queensland and local heritage places

23.13) Does this development application propose development on or adjoining a place entered in the **Queensland heritage register** or on a place entered in a local government's **Local Heritage Register**?

Yes – details of the heritage place are provided in the table below

No

Note: See guidance materials at www.ehp.qld.gov.au for information requirements regarding development of Queensland heritage places.

| | | | |
|-----------------------------|--|-----------|--|
| Name of the heritage place: | | Place ID: | |
|-----------------------------|--|-----------|--|

Brothels

23.14) Does this development application involve a **material change of use for a brothel?**

Yes – this development application demonstrates how the proposal meets the code for a development application for a brothel under Schedule 3 of the *Prostitution Regulation 2014*

| |
|--|
| <input checked="" type="checkbox"/> No |
| <u>Decision under section 62 of the <i>Transport Infrastructure Act 1994</i></u> |
| 23.15) Does this development application involve new or changed access to a state-controlled road? |
| <input type="checkbox"/> Yes - this application will be taken to be an application for a decision under section 62 of the <i>Transport Infrastructure Act 1994</i> (subject to the conditions in section 75 of the <i>Transport Infrastructure Act 1994</i> being satisfied) |
| <input checked="" type="checkbox"/> No |

PART 8 – CHECKLIST AND APPLICANT DECLARATION

| | |
|--|--|
| 24) Development application checklist | |
| I have identified the assessment manager in question 15 and all relevant referral requirement(s) in question 17 <i>Note: See the Planning Regulation 2017 for referral requirements</i> | <input checked="" type="checkbox"/> Yes |
| If building work is associated with the proposed development, Parts 4 to 6 of <i>Form 2 – Building work details</i> have been completed and attached to this development application | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable |
| Supporting information addressing any applicable assessment benchmarks is with development application <i>Note: This is a mandatory requirement and includes any relevant templates under question 23, a planning report and any technical reports required by the relevant categorising instruments (e.g. local government planning schemes, State Planning Policy, State Development Assessment Provisions). For further information, see DA Forms Guide: Planning Report Template.</i> | <input checked="" type="checkbox"/> Yes |
| Relevant plans of the development are attached to this development application <i>Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.</i> | <input checked="" type="checkbox"/> Yes |
| The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (<i>see 21</i>) | <input type="checkbox"/> Yes <input checked="" type="checkbox"/> Not applicable |

| | |
|--|--|
| 25) Applicant declaration | |
| <input checked="" type="checkbox"/> By making this development application, I declare that all information in this development application is true and correct | |
| <input checked="" type="checkbox"/> Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the assessment manager and any referral agency for the development application where written information is required or permitted pursuant to sections 11 and 12 of the <i>Electronic Transactions Act 2001</i> <i>Note: It is unlawful to intentionally provide false or misleading information.</i> | |
| Privacy – Personal information collected in this form will be used by the assessment manager and/or chosen assessment manager, any relevant referral agency and/or building certifier (including any professional advisers which may be engaged by those entities) while processing, assessing and deciding the development application. All information relating to this development 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 <i>Planning Act 2016</i> , Planning Regulation 2017 and the DA Rules except where: <ul style="list-style-type: none"> • such disclosure is in accordance with the provisions about public access to documents contained in the <i>Planning Act 2016</i> and the Planning Regulation 2017, and the access rules made under the <i>Planning Act 2016</i> and Planning Regulation 2017; or • required by other legislation (including the <i>Right to Information Act 2009</i>); or • otherwise required by law. This information may be stored in relevant databases. The information collected will be retained as required by the <i>Public Records Act 2002</i> . | |

PART 9 – FOR OFFICE USE ONLY

Date received: Reference number(s):

| Notification of engagement of alternative assessment manager | |
|--|--|
| Prescribed assessment manager | |
| Name of chosen assessment manager | |
| Date chosen assessment manager engaged | |
| Contact number of chosen assessment manager | |
| Relevant licence number(s) of chosen assessment manager | |

| QLeave notification and payment | |
|---|--|
| <i>Note: For completion by assessment manager if applicable</i> | |
| Description of the work | |
| QLeave project number | |
| Amount paid (\$) | |
| Date paid | |
| Date receipted form sighted by assessment manager | |
| Name of officer who sighted the form | |

The *Planning Act 2016*, the *Planning Regulation 2017* and the *DA Rules* are administered by the Department of Infrastructure, Local Government and Planning. This form and all other required development application materials should be sent to the assessment manager.

Template 4 – Waterway barrier works

(version 1.0)

This template must be completed and submitted with *DA Form 1 – Development application details* for all development applications operational works involving waterway barrier works.

It is mandatory to complete the details in all applicable parts in this form and provide any supporting information that is required to accompany your development application, unless stated otherwise.

Additional pages may be attached if there is insufficient space on this template for any questions.

Note: All terms used within this template have the meaning given under the Planning Act 2016, the Planning Regulation 2017, or the Development Assessment Rules (DA Rules), Fisheries Act 1994 and Fisheries Regulation 2008.

Part 1 – DEVELOPMENT DETAILS

| | |
|---|--|
| 1) Has a Fish Movement Exemption Notice been issued for the proposed works? | <input type="checkbox"/> Yes – a copy of the Fish Movement Exemption Notice for the proposed work is attached <input checked="" type="checkbox"/> No – details of how the proposed work provides for adequate fish movement is attached |
|---|--|

| | | |
|--|--|--|
| 2) What is the nature of the proposed waterway barrier(s)? <i>(tick all applicable boxes)</i> | <input checked="" type="checkbox"/> New construction <input type="checkbox"/> Temporary <input type="checkbox"/> Partial | <input type="checkbox"/> Raise existing <input type="checkbox"/> Permanent <input type="checkbox"/> Bank to bank |
|--|--|--|

| 3) What type is the proposed work? <i>(tick all applicable boxes)</i> <i>Note: An individual section must be completed for each barrier relevant to this development application. Also ensure that the relevant plans that accompany the development application identify the location of existing works and proposed works.</i> | Type | Number of barriers | Parts to complete |
|--|--|--------------------|-------------------|
| | <input type="checkbox"/> Dam, weir or a barrage | | 2 only |
| | <input checked="" type="checkbox"/> Culvert | | 3 only |
| | <input type="checkbox"/> Causeway | | 4 only |
| | <input type="checkbox"/> Bridge pylon (abutments or pile foundations) | | 4 only |
| | <input type="checkbox"/> Flow-control structure such as a floodgate | | 4 only |
| | <input type="checkbox"/> Pollution-control device (e.g. trash rack or boom gate) | | 4 only |
| | <input type="checkbox"/> Levee bank across a waterway | | 4 only |
| <input type="checkbox"/> Other – specify below (e.g. groyne, construction platform, sediment curtain, causeway) | | 4 only | |

Part 2 – CONSTRUCTING A NEW OR RAISING/MODIFYING AN EXISTING DAM, WEIR, BARRAGE, BUND WALL, COFFER DAM OR OTHER SIMILAR STRUCTURES

Note: If the development application involves more than one barrier relating to this part, generate another part 2 and attach to the application.

| | | |
|---|--------------------------------------|--|
| 4) What is the proposed development application seeking approval for? | <input type="checkbox"/> New barrier | <input type="checkbox"/> Raising/modifying an existing barrier |
|---|--------------------------------------|--|

| | |
|--|--|
| 5) Briefly describe the type of barrier proposed <i>(i.e. dam, weir, tidal barrage)</i> | |
|--|--|

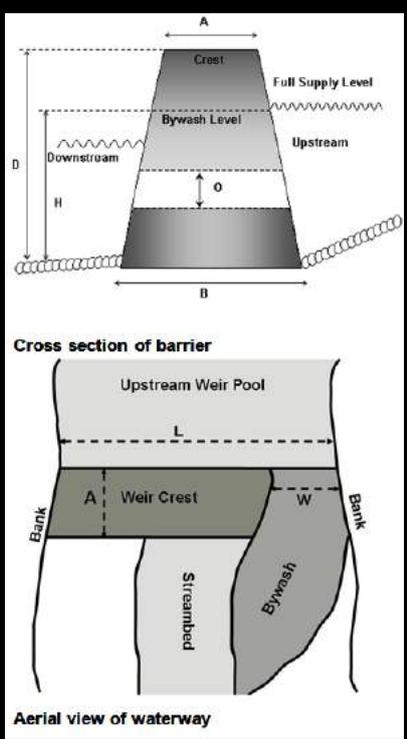
| | |
|--|--|
| 6) If the barrier is temporary (<i>in place less than 12 months</i>) how many days will the barrier be in place? | |
|--|--|

| | | |
|---|---|--------|
| 7) Will the barrier extend across the waterway from bank to bank? | <input type="checkbox"/> Yes, go to question 8 <input type="checkbox"/> No | |
| 7.1) What is the length of the proposed barrier? (<i>across the waterway</i>) | | metres |
| 7.2) What is the width of the waterway? (<i>bank to bank</i>) | | metres |

| | |
|---|--|
| 8) What is the purpose of the proposed barrier? (<i>e.g. creating a new or increasing the capacity of the existing water storage, maintenance work</i>) | |
|---|--|

| | |
|---|--|
| 9) What are the details of the proposed construction materials? (<i>e.g. earth, concrete, rock fill, steel, timber, sand</i>) | |
|---|--|

10) Provide the following details of the proposed barrier in reference to the diagrams below.



| | | |
|--|--|-------------|
| Total crest height (D) | | metres |
| Thickness (A) of crest | | metres |
| Height of spillway/bywash (H) | | metres |
| Width of spillway/bywash inlet (W) | | metres |
| Base width (B) | | metres |
| Internal diameter (O) of outlet pipe/works and discharge capacity | | millimetres |
| Length of wall (L) | | metres |
| Distance of backup from barrier wall at full supply level | | metres |
| Volume of storage | | megalitres |
| If raising an existing waterway barrier, additional height above existing crest | | metres |
| If raising an existing waterway barrier, method of raising (e.g. capping crest, inflatable bag, gates etc.). | | |

Part 3 – CONSTRUCTING A NEW OR MODIFYING (INCLUDING MAINTENANCE AND REPLACEMENT OF) AN EXISTING CULVERT

Note: If the development application involves more than one culvert relating to this part, please generate another part 3 and attach to the application.

| | |
|--|---|
| 11) What is the nature of the proposed work? | <input checked="" type="checkbox"/> Construction of a new culvert <input type="checkbox"/> Maintenance of an existing culvert <input type="checkbox"/> Replacement of an existing culvert |
|--|---|

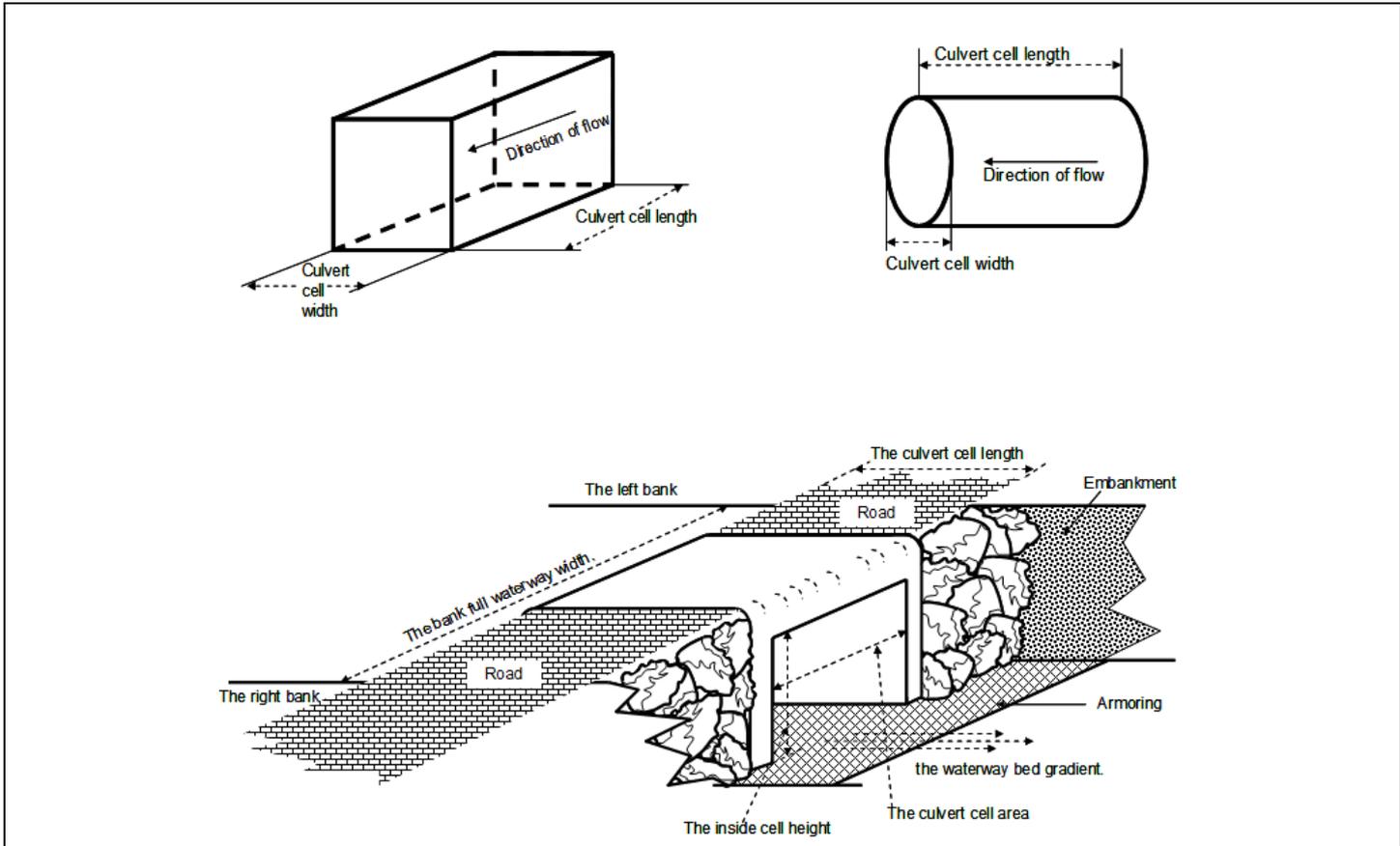
| | |
|--|--|
| 12) What is the purpose of the proposed culvert? | Replacement of the existing Diggers Bridge |
|--|--|

| | |
|---|----------------|
| 13) If the culvert is temporary (<i>in place less than 12 months</i>) how many days will the culvert be in place? | Not applicable |
|---|----------------|

| | | |
|--|---|--------|
| 14) Will the culvert extend across the waterway from bank to bank? | <input checked="" type="checkbox"/> Yes, go to question 15 <input type="checkbox"/> No | |
| 14.1) What is the length of the proposed culvert? (<i>across the waterway</i>) | | metres |
| 14.2) What is the width of the waterway? (<i>bank to bank</i>) | | metres |

| | | | |
|--|---|--|--|
| 15) What type of culvert is proposed? (<i>Tick all applicable boxes</i>) | <input checked="" type="checkbox"/> Box culvert <input type="checkbox"/> Combination culvert | <input type="checkbox"/> Arch culvert <input type="checkbox"/> Other – please specify | <input type="checkbox"/> Pipe culvert <div style="border: 1px solid black; height: 20px; width: 100%;"></div> |
|--|---|--|--|

| | | | |
|--|--|-----|--------|
| 16) In reference to the diagrams below, provide the following details of the proposed culvert. | How many culvert cells are there? | 6 | |
| | What is the upstream downstream culvert cell length? | 12 | metres |
| | What is the inside cell width of each culvert (or diameter of pipe culvert)? | 3.6 | metres |
| | What is the internal height within the culvert cell? | 2.7 | metres |



Part 4 – CONSTRUCTING NEW OR MODIFYING (INCLUDING MAINTENANCE AND REPLACEMENT) AN EXISTING WATERWAY BARRIER EXCEPT THOSE LISTED IN PARTS 2 AND 3

Note: If the development application involves more than one barrier relating to this part, please generate another part 4 and attach to the application.

| | |
|--|--|
| 17) What is the nature of the proposed work? | <input type="checkbox"/> Construction of a new barrier <input type="checkbox"/> Maintenance of an existing barrier <input type="checkbox"/> Replacement of an existing barrier |
|--|--|

| | |
|--|--|
| 18) Briefly describe the proposed barrier. | |
|--|--|

| | |
|---|--|
| 19) If the barrier is temporary (<i>in place less than 12 months</i>) how many days will the barrier be in place? | |
|---|--|

| | | |
|--|--|--------|
| 20) Will the barrier extend across the waterway from bank to bank? | <input type="checkbox"/> Yes, complete question 20.1 and 20.2 <input type="checkbox"/> No | |
| 20.1) What is the length of proposed barrier? (<i>across the waterway</i>) | | metres |
| 20.2) What is the width of the waterway? (<i>bank to bank</i>) | | metres |

| | | |
|---|---|--------|
| 21) What is the purpose of the proposed barrier? | | |
| 22) What is the maximum height of the proposed barrier above the existing bed level? | | metres |
| 23) What are the proposed construction materials? (e.g. earth, concrete, rock fill, timber, sand) | | |
| 24) Does the barrier follow the natural gradient of the bed level? | <input type="checkbox"/> Yes <input type="checkbox"/> No | |

28 November 2017

Douglas Shire Council
PO Box 723
Mossman Qld 4873

Attention: Mr Simon Clarke

Dear Simon,

**APPLICATION FOR DEVELOPMENT PERMIT FOR OPERATIONAL WORKS FOR
REPLACEMENT OF DIGGERS BRIDGE CROSSING
MOWBRAY RIVER AND ROAD RESERVE NEAR LOT 110 ON C157150**

On behalf of our Client, Douglas Shire Council – Infrastructure Branch, we submit this application for a Development Permit for Operational Works approval for the replacement of Diggers Bridge Crossing.

The address is described as Mowbray River and Road Reserve near Lot 110 on C157150.

Pre-lodgement discussions were held with DILGP and Council's planning team. The specific triggers that may apply were inconclusive due to the close proximity to several state and local government planning overlays.

For the purpose of this application it was determined that the Assessment Manager will be Douglas Shire Council as the waterway is a local government tidal area under the Coastal Protection and Management Act 1995.

It was also determined that the proposed culvert crossing structure constitutes Assessable Development – Operational Works for waterway barrier works.

SARA will be a Referral agency for Operational Works in a Coastal District or for Tidal Works and the waterway barrier works.

As noted per discussions with Council's Development Assessment team and DILGP we understand that the works may trigger several assessment Codes. To assist with the assessment of the application responses have been provided against the relevant sections of State Code 8 - Coastal Development and Tidal Work; State Code 18 - Constructing or raising waterway barrier works in fish habitats; and Coastal Protection and Management Regulation, Schedule 3 Part 3.

With respect to these codes, some sections are not applicable as they relate to specific types of work or private works that are not the subject of this application. Responses have not been provided where the items are not applicable to the application.

The application material seeks to address the various assessment triggers in the event that they are applicable and is comprised of the following documents:

1. Department of Natural Resources and Mines Owners Consent
2. DA Form 1 including Template 4 – Waterway Barrier Works;
3. FNQROC Statement of Compliance;
4. Pre-lodgement Meeting Record;
5. Response to State Code 18 - Constructing or raising waterway barrier works in fish habitats;
6. Response to State Code 8 - Coastal Development and Tidal Works;
7. Response to Coastal Protection and Management Regulation 2017, Schedule 3 – Part 3; and
8. Design Drawings.

We trust the attached application and supporting information is sufficient to allow Council to complete its assessment.

Should you have any queries, do not hesitate to contact this office.

Yours sincerely



Paul Steele
Director

- Encl:
- Item 1 Department of Natural Resources and Mines Owners Consent
 - Item 2 DA Form 1 including Template 4 – Waterway Barrier Works;
 - Item 3 FNQROC Statement of Compliance;
 - Item 4 Pre-lodgement Meeting Record;
 - Item 5 Response to State Code 18 - Constructing or raising waterway barrier works in fish habitats
 - Item 6 Response to State Code 8 - Coastal Protection and Management Regulation Schedule 3
 - Item 7 Design Drawings

Item 1

Department of Natural Resources and Mines Owners Consent



Queensland
Government

Department of
Natural Resources and Mines

Author: Graeme Geisler
File number: 2017/004378
Directorate / Unit: State Land Asset Management
Phone: (07) 4741 1657

11 September 2017

Attn: Paul Steele
Trinity Engineering and Consulting Pty Ltd
PO Box 7963
Cairns QLD 4870

By email: admin@trinityengineering.com.au

Dear Paul

Reference is made to the request for owners consent required to accompany the development application for operational works, on parts of the Unallocated State Land (USL) of the Mowbray River, Mowbray and the Road Reserve of Mowbray River Road, Mowbray being waterways barrier works in relation to the replacement of the Diggers Bridge, Mowbray.

The department hereby gives owner's consent to the above development application for operational works, on parts of the Unallocated State Land (USL) of the Mowbray River, Mowbray and the Road Reserve of Mowbray River Road, Mowbray being waterways barrier works in relation to the replacement of the Diggers Bridge, Mowbray.

Although owners consent to the development application has been provided and no tenure under the Land Act is required, your client is to undertake works on the land only if and when the development application has been approved by the assessment manager, and in accordance with the conditions of that approval.

A copy of this letter is to be attached to your DA Form 1 as the required evidence of owners consent.

Your client will also need to comply with all other legislative and regulatory requirements which may also include approvals that are not part of the assessment of the development application under the *Planning Act 2016* e.g. a marine park permit if in a marine park.

Further, please note that the above consent will expire on 11 March 2018. Should the development application not be lodged with the assessment manager prior to this date, you or your client will be required again to lodge the DA Form 1 and any attachments with this Department with a further request for owners consent - any further request will need to be reconsidered by the Department.

It is also advised that any land use activities must comply with the *Aboriginal Cultural Heritage Act 2003* or the *Torres Strait Islander Heritage Act 2003*.

Finally, owner's consent is required under the *Planning Act 2016* to enable the application to be considered properly made for lodging with the assessment manager and is a completely separate process to assessment of the application under the *Planning Act 2016*.

Accordingly, the State may act at a later date as assessment manager or referral agency in the assessment of the development application - providing owners consent will not influence any role the State may have in this development assessment.

If you wish to discuss this matter please contact Graeme Geisler on (07) 4741 1657.

All future correspondence relative to this matter is to be referred to the contact Officer at the address below or by email to Townsville.SLAMS@dnrm.qld.gov.au. Any hard copy correspondence received will be electronically scanned and filed. For this reason, it is recommended that any attached plans, sketches or maps be no larger than A3-sized.

Please quote reference number 2017/004378 in any future correspondence.

Yours sincerely



Deanna Holder

Senior Land Officer

A duly authorised delegate of the Minister
under the current Land Act (Ministerial) Delegation

Item 2

DA Form 1 including Template 4 – Waterway Barrier Works

Item 3
FNQROC Statement of Compliance

FNQROC DEVELOPMENT MANUAL

Council Douglas Shire Council
 (INSERT COUNCIL NAME)

STATEMENT OF COMPLIANCE OPERATIONAL WORKS DESIGN

This form duly completed and signed by an authorised agent of the Designer shall be submitted with the Operational Works Application for Council Approval.

Name of Development Diggers Bridge Replacement

Location of Development Mowbray River Road, Near Lot 110 on C157150

Applicant Douglas Shire Council - Infrastructure Branch

Designer Trinity Engineering and Consulting Pty Ltd

It is hereby certified that the Calculations, Drawings, Specifications and related documents submitted herewith have been prepared, checked and amended in accordance with the requirements of the FNQROC Development Manual and that the completed works comply with the requirements therein, **except** as noted below.

| Compliance with the requirements of the Operational Works Design Guidelines | Non-Compliance refer to non-compliance report / drawing number |
|---|--|
| Plan Presentation | |
| Geotechnical requirements | Refer Douglas Partners Report Dated 13/6/17 |
| Geometric Road Design | |
| Pavements | |
| Structures / Bridges | Refer Form 15 |
| Subsurface Drainage | |
| Stormwater Drainage | |
| Site Re-grading | N/A Road Design Only |
| Erosion Control and Stormwater Management | |
| Pest Plant Management | N/A |
| Cycleway / Pathways | |

| | |
|--|---|
| Landscaping | N/A |
| Water Source and Disinfection/Treatment Infrastructure (if applicable) | N/A |
| Water Reticulation, Pump Stations and water storages | N/A |
| Sewer Reticulation and Pump Stations | N/A |
| Electrical Reticulation and Street Lighting | N/A |
| Public Transport | N/A |
| Associated Documentation/ Specification | Refer Technical Specification |
| Priced Schedule of Quantities | Refer Quantity Surveyor Schedule |
| Referral Agency Conditions | Refer Pre-lodgment Advices |
| Supporting Information (AP1.08) | Refer Supporting Documents per Pre-lodgment Advices DILGP/DSC |
| Other | |

Conscientiously believing the above statements to be true and correct, signed on behalf of:

Designer Trinity Engineering and Consulting Pty Ltd **RPEQ No** 8462

Name in Full Paul Charles Steele

Signature  **Date** 28/11/2017

Item 4
Pre-lodgement Meeting Record



Department of Infrastructure,
Local Government and Planning

Our reference: 1707-144 SPL
Your reference: Diggers Bridge Replacement Project

27 July 2017

Chief Executive Officer
Douglas Shire Council
PO Box 7963
Cairns QLD 4870
admin@trinityengineering.com.au

Attention: Paul Steele

Dear Madam/Sir

Pre-lodgement meeting record

This pre-lodgement record provides a summary of the matters discussed at the pre-lodgement meeting in addition to providing further advice prepared subsequent to the meeting. This record provides advice regarding the likely major issues relevant to the development proposal to assist in the timely processing of a development application. While this advice is provided in good faith, if the proposal is changed from that which was discussed with the department during the pre-application meeting, this advice is not binding.

Reference information

Departmental role: Assessment manager (provided Douglas Shire Council does not determine that matter to be assessable development under the Douglas Shire Planning Scheme, in which case the department will be a referral agency)

Departmental jurisdiction: Schedule 10, Part 6, Division 4, Subdivision 1, Item 12 – Assessable development - operational works for waterway barrier works

Pre-lodgement meeting date: 18 July 2017

Meeting attendees:

| Name | Position | Organisation |
|-----------------------------|------------------------------|--|
| Paul Steele | Director | Trinity Engineering |
| Scott Christensen | Director | Trinity Engineering |
| Michael Matthews | Project Engineer | Douglas Shire Council |
| Apology -Bronwyn Rutherford | Senior Environmental Officer | Department of Environment Heritage Protection |

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

| | | |
|---------------|----------------------------|---|
| Sarah Winny | Fisheries Biologist | Department of Agriculture and Fisheries |
| Amy Bond | Natural Resource Officer | Department of Natural Resources and Mines |
| Julie Colman | Senior Planning Officer | Department Infrastructure Local Government and Planning |
| Joanne Manson | Principal Planning Officer | Department Infrastructure Local Government and Planning |

Location details

| | |
|----------------------------|--|
| Street address: | Mowbray River near 182 Mowbray River Road, Mowbray |
| Real property description: | Mowbray River and road reserve near Lot 110 on C157150 |
| Local government area: | Douglas Shire Council |
| Existing use: | Old timber bridge |
| Relevant site history: | The original Diggers Bridge had previously been replaced with the current bridge. The current bridge is in poor repair and must be replaced. |

Details of proposal

| | |
|--------------------------|---|
| Development type: | Operational work – waterway barrier works |
| Development description: | The works are replacement of an existing timber bridge with an upstream culvert |

Supporting information

| Drawing/report title | Prepared by | Date | Reference no. |
|---|---------------------|------------------|--|
| Drawings provided with the pre-lodgement enquiry | Trinity Engineering | - - - - | 1073-001(A) 1073-002(A) 1073-008(A) 1073-009(A) |
| Drawings tabled at the meeting and provided in email 1 of 3 19/07/2017 | Trinity Engineering | 19/7/2017 | 1073-000(A) 1073-001(B) 1073-002(A) 1073-003(B) 1073-004(B) 1073-005(B) 1073-006(B) 1073-007(B) |
| Drawings tabled at the meeting and provided in email 2 of 3 19/07/2017 | Trinity Engineering | 19/7/2017 | 1073-008(B) to 1073-013(B); & 1073-014(A) |
| Photographs tabled in the meeting and later provided by email 3 of 3 19/07/2017 | Trinity Engineering | 19/7/2017 | IMG-3800, IMG-3802 IMG-3803 IMG-3805 IMG-3806 IMG-4165 IMG-4174 |

| | | | |
|--|---------------------|-----------|--|
| Photographs of flooding provided post meeting – via email 26/7/2017 | Trinity Engineering | 26/7/2017 | |
|--|---------------------|-----------|--|

Meeting minutes

A record of the signed minutes from the meeting is included below.

| Item | Minutes | Action |
|------|---|--|
| 1. | Introduce new pre-lodgment process | Send full details after the meeting. |
| 2. | Apology EHP | |
| 3. | <ul style="list-style-type: none"> - Paul Steele to describe the project and show the precise location of the structure - approximately 10-40m upstream of the current bridge - Not original Diggers Bridge - Load limitations on the quarry - Bridge condition really poor - Small gully to north east and bridge designed to include it - Not in coastal management district and not on bend in creek - Within road reserve - Not same alignment as bridge because doesn't take existing bridge out of service. <p>Marine plants above and below HAT – information is required about plant species, plus photographs, and confirmation of a botanist or similar.</p> <p>Support avoid, mitigate off-set hierarchy is supported.</p> | <p>DAF to confirm whether new location is accepted rather than a replacement of the old bridge.</p> <p>Largely dependent on (where) marine plants are located and if additional justification is sufficient.</p> |
| 4. | <p>Confirm triggers EHP</p> <p>PR – Part 17 - Tidal Works in a Coastal Management District</p> <ul style="list-style-type: none"> - The river is tidal at the proposed location of the culvert | |
| 5. | <p>DAF triggers</p> <p>PR – Part 6 Division 3 – Marine Plants</p> <p>PR – Part 6 Division 4 – Waterway barrier works</p> <p>DAFF agree that construction of half of culvert to be built at a time is a better than obstructing.</p> <p>Report mentions tidal characteristics. The river should be treated as a major risk gray waterway.</p> <p>Marine plants such as mangroves, mangrove fern, salt cooch and samphire species above HAT – more information is to be included in further advice.</p> <p>Disturbing marine plants triggers a DA.</p> <p>Paul asks what is required – response to SDAP State Code 11 – plan showing HAT and plan of disturbance permanent and temporary. No issue with disturbance of marine plants but least impact necessary.</p> | Paul to send a digital version of the plans tabled at the meeting |

| | | |
|----|---|--|
| | <p>Desire that design of the structure won't require ongoing disturbance or create further impacts such as scour etc</p> <p>Paul asks if plan proposal meets the requirements – Sarah responds that only concerned to the extent</p> <p>Paul advised that the site is a generally cleared area with some invasive species</p> <p>Waterway barrier works development approval is required. SDAP State Code 18 and detailed plans.</p> <p>Proposal to leave old bridge in place – response to item 3 of the State Code 18</p> <p>Is the structure proposed to drown out – Yes</p> <p>Identified the current low-flow location – low flow preferential path maintained.</p> <p>Culvert will be impacted at each tide.</p> <p>Is the crossing designed for water to go over the top of the structure – yes</p> <p>Whole valley floods and raising approach road equals a bigger impediment. Include this in your justification.</p> <p>Infrastructure less than 100mm afflux.</p> <p>Mostly looking at the number of barriers fish need to negotiate.</p> <p>Looking for information that depth of cover as low as structurally possible.</p> <p>PO7 of State Code to be addressed.</p> <p>It would be good in plan 009 Section A – add existing bed and bank profiles. Need to see if culvert is spanning 100% of main channel width.</p> <p>Corner culvert digging out part of bed - Paul will show inside toe to inside toe.</p> <p>Need a plan of baffle design - Paul to provide (in accordance with PO4 of State Code 18)</p> <p>Angle of rock scour of concern – requests angles/slope – refers to cross-section B</p> <p>Paul says low flow meanders across the river and angle will need to be provided per each cell.</p> <p>Major risk waterway so likely the highest fee.</p> | |
| 6. | <p>DNRM PR – Part 3 – Clearing Native Vegetation - road area and boundary watercourse and below 0.5ha equal exempt clearing works.</p> | <p>Provide information about who has jurisdiction over the water EHP or DNRM</p> |

| | | |
|----|--|--|
| | <p>DNRM land owner signature – no fee</p> <p>Need to confirm who has jurisdiction over the water – Application to DNRM for owner consent – quarry material requirements EHP or DNRM</p> <p>Timing for owner consent generally quick.</p> <p>Quarry material needs to meet riverine protection exemption document – further information to provided in later advice regarding footings waste etc.</p> | |
| 7. | Section 38 Planning Regulation 2017 – Reduced fee for local government | |

Further Advice

The following information is provided as further advice prepared subsequent to the meeting.

| Item | Advice |
|--|--|
| Tidal Works or Works within a Coastal Management District | |
| 1. | The proposed bridge is approximately 300 metres upstream of the declared Downstream Limit (DL) and not within the coastal management district. The proposed works will not trigger assessment under schedule 10.17.3.1.1 of the Planning Regulation 2017. |
| Marine Plants and Fisheries | |
| 2. | There are no marine plants and the proposed works will not trigger assessment under schedule 10.6.3.1.11 of the Planning Regulation 2017. |
| 3. | The proposed works will trigger assessment for the construction of waterway barrier works (not a bridge) in a major-risk waterway under schedule 10.6.4.1.12 of the Planning Regulation 2017. The relevant fee for an assessment manger application for a culvert in a major-risk waterway is currently \$12,518.00. |
| Constructing or raising waterway barrier works | |
| 4. | <p>The proposed works occur on the Mowbray River which is mapped as a major impact (purple) waterway as per the <i>Queensland waterways for waterway barrier works</i> spatial data layer.</p> <p>However, as per DAF's Guide for the determination of waterways using the spatial data layer Queensland waterways for waterway barrier works, coastal sites that are located on the layer beyond the tidal (grey) zone but which, on ground, have tidal features, such as marine plants (mangroves, seagrass or salt marsh), marine fauna, salt or brackish water, or tidal ebb and flow, should be treated as tidal (grey zone) waterways.</p> <p>As the applicant has stated that the proposed works area is subject to tidal influence, the waterway in the proposed works location should be treated as a major impact (grey) waterway as per the spatial data layer.</p> <p>The applicant should refer to the following factsheets for more information on waterway barrier works: -</p> <ul style="list-style-type: none"> - What is a waterway?; - What is a waterway barrier work?; - What is not a waterway barrier work? |
| Under the <i>Planning Regulation 2017</i> , works involving constructing or raising waterway barrier | |

| | |
|-----|---|
| | <p>works must be undertaken in accordance with the relevant accepted development requirements or under a development approval (assessable development).</p> <p>The construction of a culvert crossing on a major impact (grey) waterway would not meet DAF's Accepted development requirements for operational work that is construction or raising waterway barrier work. Therefore, a development approval is required to the proposed works (assessable development).</p> <p>If possible, avoiding waterways mapped under the <i>Queensland waterways for waterway barrier works spatial data layer</i> would remove the need for an approval and potential fees for this component of the works.</p> |
| 5. | <p>In an application for a development approval for operational works involving constructing or raising waterway barrier works, the following will need to be provided:</p> <ul style="list-style-type: none"> - DA Form 1 including Template 4 – Waterway barrier works; - A full response to the relevant parts of the most up to date version of the SDAP <i>State Code 18: Constructing or raising waterway barrier works in fish habitats</i>. Particular attention should be made to the following PO's: <ul style="list-style-type: none"> o All development - PO1 to PO18 and PO36; - Relevant plans as per DILGPs' DA Forms guide: Relevant plans, including: <ul style="list-style-type: none"> o Detailed plans clearly showing the location of proposed works in relation to the existing mapped waterways; o Detailed plans clearly showing the cross section of the proposed waterway barrier works in relation to the existing bed and banks of each impacted waterway; o Documentation of any impacts to fish passage (if it cannot be demonstrated that impacts can be reasonably avoided or mitigated (minimised), an environmental offset pursuant to the <i>Environmental Offsets Act 2014</i> may need to be provided for any significant residual impact). |
| 6. | <p>Given that the applicant proposes that the existing bridge crossing remains in place, that applicant should consider their response to PO3 of the SDAP State Code 18, being that the number and extent of waterway barrier works and the spatial and temporal extent of their impacts on waterways providing for fish passage are minimised.</p> |
| 7. | <p>In accordance with PO4 of the SDAP State Code 18, for the life of the barrier, adequate fish passage must be provided and maintained at all waterway barrier works. The applicant should consider their response to AO4.13 to AO4.22 or provide an acceptable performance solution to these AO's.</p> |
| 8. | <p>In accordance with PO7 of the SDAP State Code 18, the drownout characteristics of the waterway barrier works and the frequency, timing and duration of drownout conditions need to provide adequate fish passage for the fish community and biomass moving past the barrier.</p> |
| 9. | <p>In accordance with PO15 of the SDAP State Code 18, the natural substrate of the waterway bed is to be retained or reconstructed so that the post-construction substrate is comparable to the natural substrate; for example in terms of size and consistency.</p> |
| 10. | <p>In accordance with PO36 of the SDAP State Code 18, the department maintains an 'avoid, mitigate, offset' requirement that applies to those activities that will, or are likely to, have a significant residual impact on prescribed environmental matters. Depending on the type of works being proposed and the amount of marine plants to be disturbed, the works may have a Significant Residual Impact.</p> <p>The applicant will need to provide details on how the impacts to fish resources will be avoided or minimised and where this cannot be reasonably achieved, offset (see DILGP's Environmental offsets and the planning framework factsheets and guidelines for further details).</p> |

| | |
|---|--|
| 11. | <p>The placement of temporary waterway barriers to facilitate construction of the permanent revetment wall may be conducted under DAF's Accepted development requirements for operational work that is constructing or raising waterway barrier works.</p> <p>If any proposed temporary waterway barrier works cannot meet the accepted development requirements, this aspect of the works will need to be covered under the development approval.</p> |
| Vegetation Clearing – General Advice | |
| 12. | <p>The subject are contains the following features/ vegetation types:</p> <ul style="list-style-type: none"> • Category R area (regrowth watercourse and drainage feature area) • Category X area; and, <p>A watercourse/drainage feature as shown on the vegetation management watercourse and drainage feature map.</p> |
| Vegetation referral advice | |
| 13. | <p>Clearing vegetation on land dedicated as a road:</p> <p>The clearing of Category R vegetation within Mowbray River Road is considered exempt clearing work under Schedule 21, Part 2, Item 5 of the Planning Regulation 2016:</p> <p style="padding-left: 40px;"><i>For land that is dedicated as a road under the Land Act, clearing vegetation -</i></p> <p style="padding-left: 40px;">(a) <i>that is carried out by a local government, or by or for the chief executive (transport), if the clearing -</i></p> <p style="padding-left: 80px;">(i) <i>is necessary to construct or maintain road transport infrastructure or to source construction material for roads; or</i></p> <p style="padding-left: 80px;">(ii) <i>is a category R area or category X area</i></p> <p>Clearing vegetation within the boundary watercourse (Mowbray River):</p> <p>The clearing of Category R vegetation within the Mowbray River (boundary watercourse) is considered exempt clearing work under Schedule 21, Part 1, Section 1, Item 2 of the Planning Regulation 2016:</p> <p style="padding-left: 40px;"><i>Clearing an area of vegetation within a watercourse, as defined under the Vegetation Management Act, schedule, or a lake for an activity, other than an activity relating to a material change of use or reconfiguring a lot, if –</i></p> <p style="padding-left: 40px;">(a) <i>the clearing is -</i></p> <p style="padding-left: 80px;">(i) <i>subject to an approval process, and is approved under the Act or another Act; and</i></p> <p style="padding-left: 80px;">...</p> <p style="padding-left: 80px;">(iii) <i>the area is less than 0.5ha in a category C, R or X area.</i></p> <p>Providing the clearing is limited to under 0.5ha and the proposal is subject to another approval process and is approved under another Act (e.g. development approval for waterway barrier works), the associated clearing within the Category R area in the watercourse would be considered exempt clearing work.</p> |
| Owner's Consent | |
| 14. | <p>Owner's consent from the Department of Natural Resources and Mines is required to lodge a "properly made" development application under the <i>Planning Act 2016</i> for work on land below high-water and outside a canal. No fee is applicable.</p> <p>The forms to apply for owner's consent can be found on the Department of Natural Resources and Mines website:</p> <ul style="list-style-type: none"> • Application form Contact and Land Details Part A: www.dnrm.qld.gov.au/data/assets/pdf_file/0018/101781/state-land-form-la00.pdf |

| | |
|---------------------------|---|
| | <ul style="list-style-type: none"> • Application for owners consent to development applications Part B: www.dnrm.qld.gov.au/_data/assets/pdf_file/0008/101789/state-land-form-la08.pdf <p>The application for owner's consent should also include:</p> <ul style="list-style-type: none"> • Development application details—the DA Form 1 with all necessary other forms or attachments including sketches/plans of existing and proposed improvements proposed to be lodged with the assessment manager • If acting on a person's behalf, a letter from the person advising that you are acting on their behalf • A letter from the leaseholder or trustee, if the development proposal relates to a secondary interest in the land (e.g. sublease, trustee lease); and, • Any additional attachments, as requested <p>Further information can be found at: www.qld.gov.au/environment/land/state/owner-consent/</p> <p>An application for owner's consent can be lodged by email to: SLAMlodgement@dnrm.qld.gov.au or post it to: Department of Natural Resources and Mines PO Box 5318 Townsville QLD 4810</p> <p>The progress of a lodged application can be tracked on the webpage: https://dashboard.dnrm.qld.gov.au/#/services</p> |
| Water Act 2000 | |
| 15. | <p>The proposed bridge across the Mowbray River is located approximately 300 meters upstream of the declared Downstream Limit (DL), defined under the <i>Water Act 2000</i> and identified on the Department of Natural Resources and Mines' Watercourse Identification Map (WIM) (See Figure 1, Attachment 1)</p> <p>Due to the location of the proposed bridge in relation to the DL, any proposed excavation from or placement of material in the watercourse should be undertaken in accordance with the document; "Riverine protection permit exemption requirements", available at: https://www.dnrm.qld.gov.au/?a=109113:policy_registry/riverine-protection-permit-exemption-requirements.pdf</p> <p>The volumetric restrictions generally associated with the riverine protection permit exemption do not apply to local government authorities. Material excavated as a waste product must be disposed in accordance with the exemption document.</p> <p>If the proposed works do not meet the exemption requirements, a Riverine Protection Permit must be applied for under section 218 of the <i>Water Act 2000</i>. There is no fee for this permit. The application to apply for a riverine protection permit is available at: https://www.business.qld.gov.au/industries/mining-energy-water/water/authorisations/riverine-protection</p> <p>The applicant should contact the Department of Natural Resources and Mines on 4447 9137 or RiversNorth@dnrm.qld.gov.au for further advice if required.</p> <p>Information relating to the WIM can be found online at: https://www.business.qld.gov.au/industries/mining-energy-water/water/authorisations/watercourse-map</p> |
| Assessment Manager | |
| 16. | <p>The application does not involve tidal works, and is not therefore prescribed tidal works. Unless the development is assessable operational works under the Douglas Shire Council</p> |

| | |
|--------------------------------|--|
| | <p>Planning Scheme, the State Assessment and Referral Agency will be the Assessment Manager.</p> <p>Applications to SARA, and referrals, are made through the department's new and improved online development assessment system for the <i>Planning Act 2016</i>, MyDAS2. Applications are register, submit and pay through an online lodgement system called MyDAS2.</p> |
| MyDAS2 | |
| 17. | <p>Why do I need to register to use MyDAS2 when I already use MyDAS? Applicants wanting to use MyDAS2 from 3 July 2017 will need register.</p> <p>How do I register to use MyDAS2? To register, navigate to MyDAS2 login screen via https://qld.gov.au/MyDAS2. Click 'Registration' and follow the instructions on one of the attached fact sheet (single user) which explains how to register.</p> <p>The links below are short videos which will also help with registration and preparing an application in MyDAS2.</p> <ul style="list-style-type: none"> • Preparing a development application (4mins 13 sec) https://webcast.gigtv.com.au/Mediasite/Play/0016fae810804809aabeacd556e2b4321d?catalog=6d0b8133-bfd6-4ed4-9205-40325d52f66b • Registering in MyDAS2 (58 secs) https://webcast.gigtv.com.au/Mediasite/Play/fb11870c7c3146ed8bca3c80ef87e8241d?catalog=6d0b8133-bfd6-4ed4-9205-40325d52f66b |
| Potential fee reduction | |
| 18. | <p>When making the application, the payment screen will include an opportunity for the applicant to indicate that the works are government funded community development and a 50% fee reduction may apply under Planning Regulation 2017 section 38.</p> |

For further information please contact Joanne Manson, Principal Planning Officer, on 40373228 or via email CairnsSARA@dilgp.qld.gov.au who will be pleased to assist.

Yours sincerely



Brett Nancarrow
Manager (Planning)

Attachment 1 – Map of the declared Downstream Limit

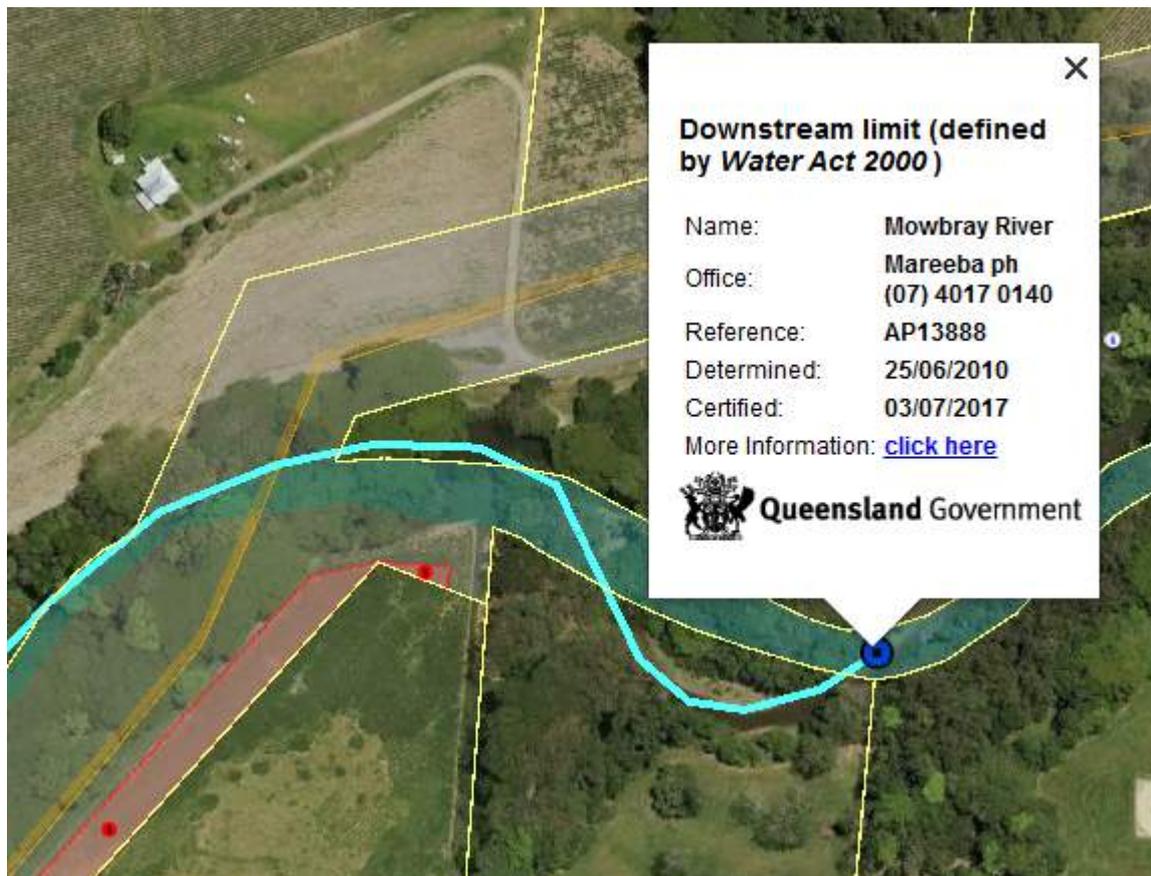


Figure 1: Queensland Globe image showing the declared Downstream Limit (DL) under the *Water Act 2000* for the Mowbray River.

Item 5

Response to State Code 18

Constructing or raising waterway barrier works in fish habitats

State code 18: Constructing or Raising Waterway Barrier Works in Fish Habitats

Table 18.2.2: Operational work

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|---|---|---|
| <p>PO1 There is a demonstrated need for the development and alternatives (locations and designs) which do not involve constructing or raising waterway barrier works are not viable.</p> | <p>No acceptable outcome is prescribed.</p> | <p>Need: Digger Bridge current configuration is a timber bridge located on Mowbray River Road consisting of a one lane carriageway. The existing bridge has a load limit of 20t and a recent bridge inspection identified this structure in poor condition and therefore requires replacement.</p> <p>Diggers Bridge is located in the Mowbray Valley located Southwest of Port Douglas and west of the Captain Cook Highway. This area consists of sugar cane farming, rural residential properties, quarry and the Flames Trees Restaurant. Organised recreational mountain bikes events utilise Diggers Bridge several times a year to connect the rainforest to the beach. The main access to the Mowbray Valley during flooding events is via Mowbray River Road. Council source raw material from the Mowbray River Quarry and the proposed bridge replacement will ensure these raw materials are available for restoring road access throughout the shire after flooding and other natural disasters.</p> <p>Alternatives: The new location seeks to minimise the length of waterway crossing and disturbance to Mowbray River.</p> <p>The existing approach roads do not meet the current geometrical standards for rural roads and therefore required realignment.</p> <p>All these factors were considered when considering replacement options.</p> |
| <p>PO2 Development has a functional requirement to be located within a waterway. Ancillary elements of development occur outside the waterway.</p> <p>Editor's note: Bed and banks of the waterway and any associated wetlands and riparian areas within the development site should be accurately identified on plans provided with the application, together with the location of highest astronomical tide, mean high water spring and mean low water spring tide heights if the waterway is tidal.</p> | <p>No acceptable outcome is prescribed.</p> | <p>The Mowbray River Road crosses the Mowbray River at the proposed crossing location. Downstream from the road reserve is Coastal Management area. The road reserve connectivity is only available at this area.</p> <p>The proposed culvert crossing is located immediately adjacent to the existing bridge and has a functional requirement to be located within the waterway, as discussed above.</p> <p>Vegetation survey has been undertaken and is attached to this application</p> <p>Waterway at this location is not tidal.</p> <p>The existing bed of the river at the crossing location is approximately RL 0.0m AHD. Therefore, the works are subject to tidal influence.</p> |
| <p>PO3 The number and extent of waterway barrier works and the spatial and temporal extent of their impacts on waterways providing for fish passage are minimised.</p> | <p>No acceptable outcome is prescribed.</p> | <p>The design of the new culvert crossing sought to minimise the extent of impact for fish passage and the design included the prescribed requirements for incorporating fish passage structures into the design.</p> <p>The new crossing is located upstream from the old timber bridge.</p> <p>Culvert cells have been aligned with the existing bridge piers where possible.</p> |
| <p>PO4 For the life of the barrier, adequate fish passage must be provided and maintained at all waterway barrier works through:</p> <ol style="list-style-type: none"> fish way(s) that adequately provide for the movement of fish, or | <p>For all crossings:</p> <p>AO4.1 Hydraulic conditions (depth, velocities and turbulence) from the downstream to the upstream limit of the structure allow for fish passage of all fish</p> | <p>AO4.1 A dedicated low flow channel has been included. Fish baffles on outer culvert cells have also been included in the design to accommodate fish movement through the structure.</p> |

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|---|--|---|
| <p>2. the movement of fish is adequately provided for in another way.</p> | <p>attempting to move through the crossing at all flows up to the drownout of the structure.</p> <p>AND</p> <p>AO4.2 For the life of the crossing, the relative levels of:</p> <ol style="list-style-type: none"> 1. a bed level crossing or a culvert invert 2. bed erosion protection 3. apron scour protection, and 4. the stream bed are maintained to avoid drops in elevation at their joins. <p>AND</p> <p>AO4.3 The crossing and associated erosion protection structures are installed at no steeper gradient than the waterway bed gradient.</p> <p>AND</p> <p>AO4.4 The crossing and associated erosion protection structures are roughened throughout to approximately simulate natural bed conditions.</p> <p>AND</p> <p>AO4.5 Design and maintenance measures are in place for the life of the crossing to keep crossings clear of blockages through a regular inspection program in order to retain fish passage through the crossing.</p> <p>AND</p> <p>For waterway crossings other than bridges and culverts:</p> | <p>AO4.2 The design matches into the existing longitudinal profile to avoid drops and joins within the structure.</p> <p>Bed erosion is managed within upstream and downstream cut off walls at the ends of the aprons. The culvert base and apron are "sunken" 500mm below bed level and the bed reinstated.</p> <p>The cut off walls extend up to bed level to control bed erosion through the structure.</p> <p>AO4.3 The proposed structure is installed at 0.5% longitudinal gradient, flatter than the waterway bed gradient.</p> <p>AO4.4 The lowflow channel within the structure design incorporates rock material into the structure base to simulate natural bed conditions.</p> <p>The remaining barrels are filled with rock and then natural bed material to seek to reinstate the existing bed.</p> <p>AO4.5 The structure design incorporated large culvert cells and debris deflectors to minimise blockages. The structure also includes upstream and downstream cut off walls to control erosion risk. Council monitor and inspect creek crossings in the shire post rainfall events to remove larger debris from the inlet.</p> <p>N/A as the crossing is a culvert. However; culvert slab and aprons are "sunken" below bed level.</p> |

State code 18: Constructing or Raising Waterway Barrier Works in Fish Habitats

Table 18.2.2: Operational work

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|----------------------|---|---|
| | <p>AO4.6 The crossing is built at or below bed level so that the surface of the crossing is no higher than the stream bed at the site.</p> <p>AND</p> <p>AO4.7 The lowest point of the crossing is installed at the level of the lowest point of the natural stream bed (pre-construction), within the footprint of the proposed crossing.</p> <p>AND</p> <p>AO4.8 There is a height difference between the lowest point of the crossing and the edges of the low flow section of the crossing so that water is channelled into the low flow section of the crossing.</p> <p>AND</p> <p>AO4.9 The level of the remainder of the crossing is no higher than the lowest point of the natural stream bed outside of the low flow channel.</p> <p>For bridges:</p> <p>AO4.10 Bridge support piles are not constructed within the low-flow channel and do not constrict the edges of the low-flow channel, and the number of piles in-stream are minimised.</p> <p>AND</p> <p>AO4.11 Bridge abutments and bank revetment works do not extend into the waterway beyond the toes of the banks.</p> | <p>N/A</p> <p>N/A</p> <p>N/A</p> <p>N/A – however; the “fish passage” culvert barrel seeks to align with low flow channel.</p> <p>N/A</p> |

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|----------------------|--|---|
| | <p>AND</p> <p>AO4.12 Suitable fish habitats are maintained within the low-flow channel.</p> <p>AND</p> <p>For culverts:</p> <p>AO4.13 Culverts are only installed where the site conditions do not allow for a bridge.</p> <p>AND</p> <p>AO4.14 The combined width of the culvert cell apertures are equal to 100 per cent of the main channel width.</p> <p>AND</p> <p>AO4.15 The base of the culvert incorporates a low flow channel consistent with the natural low flow channel and:</p> <ol style="list-style-type: none"> 1. is buried a minimum of 300 millimetres to allow bed material to deposit and reform the natural bed on top of the culvert base, or 2. the base of the culvert is the stream bed, or 3. the base of the culvert cell and any instream scour protection is roughened throughout to approximately simulate natural bed conditions. <p>AND</p> <p>AO4.16 The outermost culvert cells incorporate roughening elements such as baffles on their bankside sidewalls.</p> <p>AND</p> | <p>N/A</p> <p>Current crossing is a 6-span bridge. Any bridge options are multi-span crossing with in-stream works. Piling in the ground conditions is problematic and expensive.</p> <p>The 6-barrel culvert option seeks to provide multiple large openings and incorporates Debris Deflectors plus fish passages.</p> <p>The culvert openings align with the current waterway area of the river. The culverts essentially span from toe to toe on each bank.</p> <p>Some stream bed profiling is proposed (when viewed as a cross-section). The resulting waterway area is consistent with, or slightly increased from, the pre-development scenario.</p> <p>AO4.15 The proposed structure design incorporates a low flow channel, which is buried nominally 400mm and incorporates rock embedded into the base slab to facilitate material deposit and instream scour protection. The "roughhead" base and sides create natural bed conditions within the low flow channel. The natural material within the rest of the culvert cells simulate the pre-development condition.</p> <p>AO4.16 The proposed structure design incorporates fish baffles into the outermost culvert cell walls as nominated in the Acceptable Solutions.</p> |

State code 18: Constructing or Raising Waterway Barrier Works in Fish Habitats

Table 18.2.2: Operational work

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|----------------------|--|--|
| | <p>AO4.17 Roughening elements are installed on the upstream wingwalls on both banks to the height of the upstream obvert or the full height of the wingwall.</p> <p>AND</p> <p>AO4.18 Roughening elements provide a contiguous lower velocity zone (no greater than 0.3 metres/second) for at least 100 millimetres width from the wall through the length of the culvert and wingwalls.</p> <p>AND</p> <p>AO4.19 Culvert alignment to the stream flow minimises water turbulence.</p> <p>AND</p> <p>AO4.20 There is sufficient light at the entrance to and through the culvert so that fish are not discouraged by a sudden darkness.</p> <p>AND</p> <p>AO4.21 The depth of cover above the culvert is as low as structurally possible, except where culverts have an average recurrence interval (ARI) greater than 50 years.</p> <p>AND</p> <p>AO4.22 For culvert crossings designed with a flood immunity greater than ARI 50, fish passage is provided up to culvert capacity.</p> | <p>Roughening elements are included in the low flow channel from upstream edge of apron to downstream edge of apron. Elements on the wingwalls will be specified for the Acceptable Solutions.</p> <p>For the above elements, consistent with the Acceptable Solutions are included in the design and specification</p> <p>AO4.19 The culvert barrels within the proposed structure have been aligned to be parallel with the stream flow, to minimise water turbulence. The crossing is more perpendicular than the previous bridge to also seek to minimise hydraulic implications.</p> <p>AO4.20 The proposed structure design included large (open) culvert cell spans and height, to maximise light at the entrance and through the culvert.</p> <p>AO4.21 The proposed structure design incorporates a minimal depth concrete roadway over the culvert to reduce depth of cover above the culvert.</p> <p>AO4.22 Not Applicable, crossing immunity is expected to be above ARI 1 and 2-year. Photos of the river in “drown out” show overbank flooding in the Riparian zine will provide fish passage opportunities per existing upstream and downstream scenario.</p> |

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|---|---|---|
| | For all other development, no acceptable outcome is prescribed. | |
| <p>PO5 Waterway barrier works are designed, constructed, operated and maintained to provide lateral and longitudinal fish passage for all members of the fish community, regardless of size, species, life-stage or swimming ability, and accommodating future and seasonal increases in fish biomass.</p> <p>Editor's note: In order to demonstrate compliance with the PO, the seasonal and flow related biomass of the fish community at the location of the proposed waterway barrier works will need to be surveyed and addressed in the design of the fish way by a person suitably qualified and experienced in fish passage biology. In addition, any future increases in fish biomass should be quantified and catered for.</p> <p>Editor's note: Longitudinal fish passage refers to the movement into both permanent and temporary offstream systems, including wetlands, lagoons, floodplain etc. Fragmentation of connectivity into and out of these systems must be mitigated via adequate fish passage.</p> | No acceptable outcome is prescribed. | Refer above. |
| <p>PO6 Development is designed and operated so that all components of waterway barrier works (including but not limited to scour protection, intake and outlet structures, spillway, stilling basin, apron and dissipation structures) and all pathways of potential fish movement provide safe fish passage.</p> <p>Stepped spillways (including sheet pile weirs) are not acceptable.</p> <p>Editor's note: Stepped spillway (including sheet pile weirs) have been associated with high mortalities and injuries to fish.</p> <p>Editor's note: Assessment of this PO will include consideration of adequate tailwater depth at the toe of the spillway (for example:</p> <p>stilling basin) at commencement to spill (for example: 30 per cent of the head difference).</p> | No acceptable outcome is prescribed. | <p>The proposed structure design has sought to incorporate fish passage components including fish baffles, low flow channel and rock material to culvert base.</p> <p>The cut off walls at the upstream and downstream ends of the aprons include upstands to retain bed material within the culvert cells.</p> |
| <p>PO7 The drownout characteristics of the waterway barrier works and the frequency, timing and duration of drownout conditions will provide adequate fish passage for the fish community and biomass moving past the barrier.</p> <p>Editor's note: Determining adequacy of fish passage will involve consideration of passage achieved during drownout and during other hydraulic conditions and the relative frequencies of these conditions among other things.</p> | No acceptable outcome is prescribed. | Refer to photos of recent flooding that show the operation and flood-plain flow conditions. |

State code 18: Constructing or Raising Waterway Barrier Works in Fish Habitats

Table 18.2.2: Operational work

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|---|---|--|
| <p>PO8 Development does not increase the risk of mortality, disease or injury, or compromise the health, productivity, marketability or suitability for human consumption of fisheries resources, having regard to (but not limited to):</p> <p>biotic and abiotic conditions, such as water and sediment quality</p> <p>substances that are toxic to plants or toxic to or cumulative within fish</p> <p>design of structures</p> <p>impacts on reproductive success effect on fish energy reserves</p> <p>whether fish may be physically damaged, injured, killed, trapped or stranded</p> <p>fish passage and access to habitat generally, and</p> <p>the impacts of pest fish and other relevant pest species.</p> <p>Editor's note: A fish salvage plan may be required to demonstrate compliance with the performance outcome and may form a condition of any approval.</p> <p>Editor's note: Permits or other authorities may be required under the Fisheries Act 1994 for the use of regulated fishing apparatus and to possess fisheries resources.</p> | <p>No acceptable outcome is prescribed.</p> | <p>The proposed structure design seeks to replace the existing structure and does not intend to create a worsening effect on the waterway.</p> <p>The culvert base and aprons is sunken 500mm below the bed level.</p> <p>The culverts seek to replication the current low flow channel at this location.</p> <p>The design has sought to address aquatic passage in low flow; full width river flow; and drown out conditions. It is submitted that the design seeks to be a minimal impact design.</p> |
| <p>PO9 Development:</p> <p>avoids non-essential hardening or unnatural modification of the main channel of the waterway</p> <p>retains natural fish habitat and features such as rock outcrops and boulders, wherever possible</p> <p>avoids channelisation (i.e. straightening) of meandering waterways or where channels need to be significantly modified, simulates natural watercourses and habitat features (for example, by including meanders, pools, riffles, shaded and open sections, deep and shallow sections and different types of substrata), and</p> <p>avoids construction during times of elevated flows.</p> | | <p>The proposed structure design seeks to avoid hardening or unnatural modification of the main channel through the inclusion of a rock lined low flow channel which will facilitate material sedimentation and fish passage.</p> <p>The deck thickness has been minimised to limit hydraulic impacts in high flows.</p> |

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|---|----------------------|---|
| <p>PO10 Where waterway barrier works will modify water levels or flow characteristics of the waterway, existing up and downstream structures are upgraded to provide adequate fish passage in accordance with the new levels or flow characteristics.</p> | | <p>The proposed structure does not propose to change the water levels or flow characteristics.</p> <p>Hydraulic modelling indicates the afflux is in the order of 100mm in an approximate 5m deep flow environment.</p> |
| <p>PO11 Sufficient water exchange and flow is maintained and provided to sustain and where necessary restore, water quality and the health and condition of fisheries resources, ecological functions and fish passage.</p> | | <p>The proposed structure does not propose to alter the water quality, health and ecological functions of the fish passage.</p> <p>The low flow channel seeks to replicate the current low flow conditions. The balance of the structure seeks to replicate existing bed conditions with natural material infill.</p> |
| <p>PO12 Development likely to cause drainage or disturbance to acid sulfate soils, prevents the release of contaminants and impacts on fisheries resources and fish habitats.</p> <p>Editor's note: Management of acid sulfate soil is consistent with the current Queensland acid sulfate soil technical manual: Soil management guidelines v4.0, Department of Science, Information Technology, Innovation and the Arts, 2014.</p> | | <p>The proposed structure design is limited to shallow footing excavation.</p> <p>Geotechnical investigations on the site did not encounter acid sulfate soils.</p> <p>However, should construction work encounter PASS, an ASS/PASS management plan will be prepared by the Contractor to deal with the matter.</p> |
| <p>PO13 Construction avoids direct and indirect disturbance, or where avoidance is not possible, minimises direct and indirect disturbance to beds, banks and vegetation adjacent to the permanent development footprint.</p> | | <p>Construction in the waterway is limited to shallow footing excavation and localised embankment works to reduce scouring and erosion. Revegetation of disturbed areas is to be undertaken upon completion of construction works.</p> |
| <p>PO14 After completion of in-stream works, disturbed areas of the bed and banks of the waterway outside the permanent development footprint are returned to their original profile and stabilised to promote regeneration of natural fish habitats.</p> <p>Editor's note: Monitoring of the success of fish habitat regeneration, within and adjacent to the work site, is likely to be conditioned as part of any development approval.</p> | | <p>Disturbed areas outside of the structures footprint will be reinstated and revegetated.</p> |
| <p>PO15 The natural substrate of the waterway bed is retained or reconstructed so that the post-construction substrate is comparable to the natural substrate; for example in terms of size and consistency.</p> | | <p>The proposed structure design incorporates rock material into the base slab, which will facilitate material deposit and reinstate the natural substrate and seek to replicate the consistency of the existing surface.</p> |
| <p>PO16 Development maintains or improves community access to tidal land and waterways.</p> | | <p>The proposed structure seeks to improve community access through the provision of a pedestrian pathway on the downstream side. The realigned approaches address existing traffic safety issues at this location.</p> |

State code 18: Constructing or Raising Waterway Barrier Works in Fish Habitats

Table 18.2.2: Operational work

| PERFORMANCE OUTCOMES | ACCEPTABLE SOLUTIONS | COMMENT |
|--|---|--|
| <p>PO17 Development maintains or improves community access to fisheries resources and fish habitats including recreational and indigenous fishing access.</p> <p>Editor's note: In some cases, compensation for impact on fisheries access, operations and/or productivity may be necessary. The Guideline on fisheries adjustment provides advice for proponents on relevant fisheries adjustment processes and is available by request from the Department of Agriculture and Fisheries.</p> | <p>No acceptable outcome is prescribed.</p> | <p>The proposed structure seeks to improve community access through the provision of a pedestrian pathway on the downstream side.</p> <p>Council is considering community based uses for the existing structure once its road traffic functions are no longer required.</p> |
| <p>PO18 Development maintains or improves commercial fishing access and linkages between a commercial fishery and infrastructure, services and facilities.</p> <p>Editor's note: In some cases, compensation for impact on fisheries access, operations and/or productivity may be necessary. The Guideline on fisheries adjustment provides advice for proponents on relevant fisheries adjustment processes and is available by request from the Department of Agriculture and Fisheries.</p> | <p>No acceptable outcome is prescribed.</p> | <p>The upgraded crossing provides improved linkages within the Mowbray Valley.</p> |
| <p>PO36 Development:</p> <p>avoids impacts on matters of state environmental significance, or</p> <p>minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible, and</p> <p>provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance.</p> <p>Editor's note: For the purpose of this code, the matters of state environmental significance assessed are marine plants, waterways that provide for fish passage and declared fish habitat areas.</p> <p>Editor's note: Guidance for determining if the development will have a significant residual impact on the matter of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014. Where the significant residual impact is considered an acceptable impact on the matter of state</p> | <p>No acceptable outcome is prescribed.</p> | <p>As stated throughout, the crossing:</p> <ul style="list-style-type: none"> - is within the existing road reserve; - is more perpendicular than the old crossing; - incorporates fish passage elements for: <ul style="list-style-type: none"> o lowflow; o normal flow; and o drownout. - It seeks to be a minimal impact crossing by adopting large culvert cells and has a buried / sunken base and aprons with rock and natural bed material infill. |

Item 6
Response to State Code 8 - Coastal Development and Tidal Works

State code 8: Coastal Development and Tidal Works

Table 8.2.1: All development

| PERFORMANCE OUTCOMES | ACCEPTABLE OUTCOMES | COMMENT |
|--|--------------------------------------|---|
| Development in the erosion prone area | | |
| <p>PO1 Development does not occur in the erosion prone area unless the development:</p> <ol style="list-style-type: none"> 1. is one of the following types of development: <ol style="list-style-type: none"> a. coastal-dependent development; or b. temporary, readily relocatable or able to be abandoned; or c. essential community infrastructure; or d. redevelopment of an existing permanent building or structure that cannot be relocated or abandoned; and 2. cannot feasibly be located elsewhere. | No acceptable outcome is prescribed. | N/A – the works are not in the erosion prone area being over 3km from the coastline and over 4km measured along the Mowbray River alignment. |
| <p>PO2 Development other than coastal protection work:</p> <ol style="list-style-type: none"> 1. avoids impacting on coastal processes; and 2. ensures that the protective function of landforms and vegetation is maintained. <p>Note: In considering reconfiguring a lot application, the state may require land in the erosion prone area to be surrendered to the</p> | No acceptable outcome is prescribed. | Proposed works do not impact on coastal processes noting distance from coastline per response above. |
| <p>State for coastal management purposes under the <i>Coastal Protection and Management Act 1995</i>.</p> <p>Where the planning chief executive receives a copy of a land surrender requirement or proposed land surrender notice under the <i>Coastal Protection and Management Act 1995</i>, this must be considered in assessing the application.</p> | | |
| <p>PO3 Development is located, designed and constructed to minimise the impacts from coastal erosion by:</p> <ol style="list-style-type: none"> 1. locating the development as far landward as practicable; or 2. where it is demonstrated that 1 is not feasible, mitigate or otherwise accommodate the risks posed by coastal erosion. | No acceptable outcome is prescribed. | Per previous responses, the proposed works are not expected to be subject to coastal erosion and will not increase the risk of coastal erosion occurring. |

State code 8: Coastal Development and Tidal Works

Table 8.2.1: All development

| PERFORMANCE OUTCOMES | ACCEPTABLE OUTCOMES | COMMENT |
|--|--------------------------------------|---|
| PO4 Development does not significantly increase the risk or impacts to people and property from coastal erosion . | No acceptable outcome is prescribed. | Per previous responses, the proposed works are not expected to be subject to coastal erosion and will not increase the risk of coastal erosion occurring. |
| PO5 Development other than coastal protection work avoids directly or indirectly increasing the severity of coastal erosion either on or off the site. | No acceptable outcome is prescribed. | Per previous responses, the proposed works are not expected to be subject to coastal erosion and will not increase the risk of coastal erosion occurring. |
| PO6 In areas where a coastal building line is present, building work is located landward of the coastal building line unless coastal protection work has been constructed to protect the development. | No acceptable outcome is prescribed. | N/A – Works are km from Coastline. |
| Artificial waterways | | |
| PO7 Development of artificial waterways , canals and dryland marinas minimises impacts on coastal resources by: <ol style="list-style-type: none"> maintaining the tidal prism volume of the natural waterway to which it is connected demonstrating a whole-of-life strategy for the disposal of dredged material. | No acceptable outcome is prescribed. | N/A – Works are within natural river. |
| Coastal protection work | | |
| PO8 Works for beach nourishment minimise adverse impacts on coastal processes and avoid any increase in the severity of erosion on adjacent land by: <ol style="list-style-type: none"> sourcing sand from an area that does not adversely impact on the active beach system ensuring imported sand is compatible with natural beach sediments and coastal processes of the receiving beach. | No acceptable outcome is prescribed. | N/A – Works are road crossing. |
| PO9 Erosion control structures are only constructed where there is an imminent threat to buildings or infrastructure of value, and there is no feasible option for either: <ol style="list-style-type: none"> beach nourishment; or relocation or abandonment of structures. <p>Note: The monetary value of buildings or infrastructure should be more than the cost of associated erosion control structures.</p> | No acceptable outcome is prescribed. | N/A – Works are road crossing. |

State code 8: Coastal Development and Tidal Works

Table 8.2.1: All development

| PERFORMANCE OUTCOMES | ACCEPTABLE OUTCOMES | COMMENT |
|--|--------------------------------------|--|
| <p>PO10 Erosion control structures minimise interference with coastal processes, or any increase to the severity of erosion on adjacent land by:</p> <ol style="list-style-type: none"> 1. locating the erosion control structure as far landward as practicable and directly adjacent to the structure it is intended to protect 2. where required and feasible, importing sand to the site to mitigate any increase in the severity of erosion 3. the design of the structure. | No acceptable outcome is prescribed. | N/A – Works are road crossing. |
| Water quality | | |
| <p>PO11 Development:</p> <ol style="list-style-type: none"> 1. maintains or enhances environmental values of receiving waters 2. achieves the water quality objectives of Queensland waters 3. avoids the release of prescribed water contaminants to tidal waters. <p>Note: See Environmental Protection (Water) Policy 2009 for the relevant water quality objectives.</p> | No acceptable outcome is prescribed. | <p>The Diggers Bridge replacement proposes a new culvert crossing upstream from the old bridge.</p> <p><u>Alignment:</u> The location is further away from downstream environmental areas, and is more centrally located in the road reserve. The alignment is more perpendicular and hence shorter.</p> <p><u>Environmental features:</u> Culvert base is below bed level and the “natural” invert is to be reinstated through the culverts.</p> <p><u>Fish Passage:</u> a low flow cell is included aligning with the current low flow channel and of a similar width.</p> |
| Category C and R areas of vegetation | | |
| <p>PO12 Development:</p> <ol style="list-style-type: none"> 1. avoids impacts on category C areas of vegetation and category R areas of vegetation; or 2. minimises and mitigates impacts on category C areas of vegetation and category R areas of vegetation after demonstrating avoidance is not reasonably possible. | No acceptable outcome is prescribed. | Refer report by Astebla. The vegetation on banks is mainly introduced species (Raintrees). A very small area of freshwater mangroves will be removed to facilitate the crossing. |

State code 8: Coastal Development and Tidal Works

Table 8.2.1: All development

| PERFORMANCE OUTCOMES | ACCEPTABLE OUTCOMES | COMMENT |
|--|--------------------------------------|--|
| | | |
| Public use of and access to state coastal land | | |
| PO13 Development maintains or enhances public use of and access to and along state coastal land (except where this is contrary to the protection of coastal resources or public safety). | No acceptable outcome is prescribed. | Proposed development is for a road crossing and is entirely about maintaining and enhancing public use of and access. |
| PO14 Private marine development ensures that works: <ol style="list-style-type: none"> 1. are used for marine access purposes only 2. minimise the use of state coastal land 3. do not interfere with access between navigable waterways and adjacent properties. | No acceptable outcome is prescribed. | N/A – no private works are proposed. |
| PO15 Development ensures erosion control structures are located within the premises they are intended to protect unless there is no feasible alternative. | No acceptable outcome is prescribed. | Erosion control measures including cutoff walls below bed level, rock protection within stream etc are included in the design. |
| Matters of state environmental significance | | |

State code 8: Coastal Development and Tidal Works

Table 8.2.1: All development

| PERFORMANCE OUTCOMES | ACCEPTABLE OUTCOMES | COMMENT |
|--|--------------------------------------|---|
| <p>PO16 Development:</p> <ol style="list-style-type: none"> avoids impacts on matters of state environmental significance; or minimises and mitigates impacts on matters of state environmental significance after demonstrating avoidance is not reasonably possible; and provides an offset if, after demonstrating all reasonable avoidance, minimisation and mitigation measures are undertaken, the development results in an acceptable significant residual impact on a matter of state environmental significance. <p>Statutory note: For Brisbane core port land, an offset may only be applied to development on land identified as E1 Conservation/Buffer, E2 Open Space or Buffer/Investigation in the Brisbane Port LUP precinct plan. For the Brisbane Port LUP, see www.portbris.com.au.</p> <p>Note: Guidance for determining if the development will have a significant residual impact on the matter of state environmental significance is provided in the Significant Residual Impact Guideline, Department of State Development, Infrastructure and Planning, 2014. Where the significant residual impact is considered an acceptable impact on the matter of state environmental significance and an offset is considered appropriate, the offset should be delivered in accordance with the <i>Environmental Offsets Act 2004</i>.</p> | No acceptable outcome is prescribed. | <p>The proposed crossing alignment was adopted after reviewing the state mapping and assessing the site constraints.</p> <p>The alignment is centrally located within an existing road reserve and is the shortest practical crossing.</p> <p>The road reserve appears to be just upstream from most of the State overlays and environmental areas.</p> |
| Performance outcomes | Acceptable outcomes | Comment |
| Private marine development | | |
| PO17 Private marine development does not require the construction of coastal protection work , shoreline or riverbank hardening or dredging for marine access purposes . | No acceptable outcome is prescribed. | N/A – Application is not for a private marina. |
| Disposal of solid waste or dredged material from artificial waterways | | |
| PO18 Solid waste from land and dredged material from artificial waterways is not disposed of in tidal water unless it is for beneficial reuse . | No acceptable outcome is prescribed. | N/A – Application is not for an artificial waterway. |

State code 8: Coastal Development and Tidal Works

Table 8.2.1: All development

| PERFORMANCE OUTCOMES | ACCEPTABLE OUTCOMES | COMMENT |
|---|--------------------------------------|---|
| Disposal of dredged material other than from artificial waterways | | |
| PO19 Dredged material is returned to tidal water where this is needed to maintain coastal processes and sediment volume. | No acceptable outcome is prescribed. | The application does not propose “dredging” however, material will be excavated from the bed to facilitate construction. Bed material is to be reinstated through the culvert once constructed to re-establish the invert. |
| PO20 Where it is not needed to maintain coastal processes and sediment volume, the quantity of dredged material disposed to tidal water is minimised through beneficial reuse or disposal on land. | No acceptable outcome is prescribed. | As per above response too PO19, natural creek material is to be reinstated through the worksite. Excess material will be disposed on land at Council’s landfill. |
| All dredging and any disposal of dredged material in tidal water | | |
| PO21 All dredging and any disposal of dredged material in tidal water is: 1. demonstrated to be safe with regard to protection of the marine environment and by meeting the National Assessment Guidelines for Dredging 2009, Department of Environment and Energy, 2009, or later version; and 2. supported by a monitoring and management plan that protects the marine environment and that complies with the National Assessment Guidelines for Dredging 2009, Department of Environment and Energy, 2009, or later version. | No acceptable outcome is prescribed. | Refer responses to PO19 and PO20. |
| Reclamation | | |
| PO22 Development does not involve reclamation of land below tidal water , other than for the purposes of: 1. coastal-dependent development, public marine development or community infrastructure; or 2. strategic ports, priority ports, boat harbours or strategic airports and aviation facilities, in accordance with a statutory land use plan or master plan, where there is a demonstrated net benefit for the state or region and no feasible alternative exists; or 3. coastal protection work or work necessary to protect coastal resources or coastal processes . | No acceptable outcome is prescribed. | N/A – Application is not proposing reclamation work. |

State code 8: Coastal Development and Tidal Works

Table 8.2.1: All development

| PERFORMANCE OUTCOMES | ACCEPTABLE OUTCOMES | COMMENT |
|---|--|--|
| <p>PO23 Works are located and designed such that they continue to operate safely during and following a defined storm tide event.</p> | <p>AO23.1 Tidal work is designed and located in accordance with the Guideline: Building and engineering standards for tidal works, Department of Environment and Heritage Protection, 2017.</p> | <p>Worksite is over 4km upstream along the Mowbray River and is designed for river flows (rainfall) for heights well in excess of storm tide levels.</p> |

Item 7

Response to Coastal Protection and Management Regulation 2017, Schedule 3 – Part 3

Coastal Protection and Management Regulation 2017

Schedule 3 – Part 3 Performance Outcomes and Acceptable Outcomes

| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|---|--|--|
| Character and amenity (generally) – prescribed tidal works not in a canal. | | |
| <p>2.1 Prescribed tidal works not in a canal are compatible with their location, having regard to the following—</p> <ol style="list-style-type: none"> 1. the character and amenity of the works' immediate surroundings and the locality within which the works are located; 2. if the relevant planning scheme states the desired character or amenity for the works' immediate surroundings or the locality within which the works are located—the stated desired character or amenity. | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <ol style="list-style-type: none"> 1. subject to paragraph (d), prescribed tidal works do not extend past the side boundary or extended side boundary of the lot connected to the works; 2. subject to paragraph (d), prescribed tidal works are the only works of their type along the edge of the tidal water fronting the lot connected to the works; 3. subject to paragraph (d)— <ol style="list-style-type: none"> 1. for prescribed tidal works for a private purpose—the works are not roofed; or 2. for prescribed tidal works for a non-private purpose—the works are not roofed unless they are the main access to land; 4. if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a), (b) or (c)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a), (b) or (c); | <p>The project proposes a new road crossing upstream from the old bridge, which is in poor condition and at the end of its serviceable life.</p> <p>With respect to location; the works are within an existing road corridor and provide connectivity to existing road corridors on either side of the River.</p> <p>The location is further away from downstream environmental areas than the current crossing being replaced. It is also more centrally located in the road reserve.</p> <p>The alignment is more perpendicular and hence the length of the crossing is shorter. The width of the crossing is the minimum required for two-way road traffic and the pedestrian crossing on one side.</p> <p>With respect to compatibility with the immediate surroundings, the foundations are set below bed level and the invert is to be reinstated through the culverts. The structure includes a dedicated barrel for fish passage aligning with the current low flow channel in the river.</p> <p>It is considered that the proposed crossing meets the Performance objectives for Character and amenity (general).</p> |
| Character and amenity (height, scale and size) | | |
| <p>3.1 Prescribed tidal works are of a height, scale and size to ensure the works are compatible with the character and amenity of their location, having regard to the following—</p> <ol style="list-style-type: none"> 1. the height, scale and size of the natural features of the works' immediate surroundings and the locality within which the works are located; 2. the height, scale and size of the existing buildings or other structures in the works' immediate surroundings and the locality within which the works are located; 3. if the relevant planning scheme states the desired height, scale or size of buildings or other structures in the works' immediate surroundings or the locality within which the works are located—the stated desired height, scale or size. | <p>The height, scale and size of the prescribed tidal works is consistent with each relevant planning scheme standard.</p> | <p>The height of the crossing is such that it essentially connects the existing top of bank levels on each side.</p> <p>The culvert deck level is slightly lower so that overtopping occurs within the river corridor first.</p> <p>The height is also slightly increased from the previous crossing to increase the immunity to road users.</p> <p>The width of the crossing is the minimum required for two-way road traffic and the pedestrian crossing on one side.</p> <p>The length of the crossing is based on fitting the structure from toe of bank on one side to toe on bank on the other to seek to replicate the existing waterway area and minimise the disturbance to the banks upstream or downstream from the works.</p> <p>It is considered that the proposed crossing meets the Performance objectives for Character and amenity (height, scale and size).</p> |

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Schedule 3 – Part 3 Performance Outcomes and Acceptable Outcomes

| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|---|---|---|
| Character and amenity (materials and colours) | | |
| <p>4.1 The materials used for, and the colours of, prescribed tidal works are compatible with the character and amenity of the works' location, having regard to the following—</p> <ol style="list-style-type: none"> 1. the natural features of the works' immediate surroundings and the locality within which the works are located; 2. the existing buildings or other structures in the works' immediate surroundings and the locality within which the works are located; 3. if the relevant planning scheme states the desired materials to be used for, or desired colours of, buildings or other structures in the works' immediate surroundings or the locality within which the works are located—the stated desired materials or colours. | <p>The materials used for, and colours of, the prescribed tidal works are consistent with each relevant planning scheme standard.</p> | <p>The material used will be concrete and Rock with the bed material proposed to be reinstated thought the structure to reinstate the channel invert once completed.</p> <p>The resulting colours are muted and consistent with the immediate surrounds and locality.</p> |
| Earthwork, vegetation and rehabilitation | | |
| <p>7.1 Excavation and filling for prescribed tidal works—</p> <ol style="list-style-type: none"> 1. is carried out only to the extent reasonably necessary for the works; and 2. does not have a significant adverse effect on— <ol style="list-style-type: none"> 1. the natural features, including the banks, of the tidal water in the works' immediate surroundings; or 2. the level of the surface of the land under the tidal water in the works' immediate surroundings or any foreshore near the works. | <p>The earthwork and filling for the prescribed tidal works is consistent with each relevant planning scheme standard.</p> | <p>The footprint of the works is the minimum necessary for the crossing length from bank to bank at the required road and pedestrian crossing width.</p> <p>The works are fully contained within the existing road reserve.</p> <p>Levels are dictated by upstream and downstream levels and the invert will be reinstated post construction to maintain river flows conditions.</p> |
| <p>7.2 The location and construction of prescribed tidal works ensures vegetation is cleared or disturbed only to the extent reasonably necessary for the works.</p> | <p>Vegetation on land affected by the prescribed tidal works is dealt with in a way consistent with the following standards—</p> <ol style="list-style-type: none"> 1. subject to paragraph (b), the clearing or disturbance of vegetation for a purpose associated with the construction of prescribed tidal works, including, for example, parking for construction or workers' vehicles or stockpiling of construction materials— <ol style="list-style-type: none"> 1. (i) is avoided; or 2. (ii) if the clearing or disturbance of vegetation for a purpose associated with the construction of the works cannot be avoided—the clearing or disturbance is limited | <p>A qualified botanist was engaged to inspect the site of the proposed crossing which was pegged by a surveyor for the purpose of the inspection.</p> <p>The proposed clearing will be limited to the extent required. Access to the crossing on either side is relatively unconstrained and the vegetation beyond the top of bank is heavily disturbed and dominated by non-native/introduced species</p> <p>The footprint of disturbed native species is very small.</p> |

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Schedule 3 – Part 3 Performance Outcomes and Acceptable Outcomes

| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|--|--|--|
| | <p>to the smallest area of land reasonably necessary for the purpose;</p> <p>3. any other relevant planning scheme standard that is not inconsistent with the standard mentioned in paragraph (a).</p> | |
| <p>7.3 After the construction of prescribed tidal works, any land damaged or destabilised by, and any vegetation damaged, destroyed or removed by, the construction of the works is rehabilitated.</p> | <p>Land or vegetation affected by the prescribed tidal works is dealt with in a way consistent with the following standards—</p> <p>1. subject to paragraph (b)—</p> <p>1. land surfaces damaged or destabilised by the prescribed tidal works are restored and stabilised; and</p> <p>2. vegetation damaged, destroyed or removed by prescribed tidal works is replaced with native vegetation for the locality within which the works are located, to the extent it is reasonably practicable to replace the vegetation with native vegetation;</p> <p>3. if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a);</p> <p>4. any other relevant planning scheme standard that is not inconsistent with the standards mentioned in paragraphs (a) and (b).</p> | <p>Per previous responses, the invert will be stabilised below the surface and reinstated at bed level with natural material removed during the works, which is consistent with the acceptable outcome that “<i>land surfaces damaged or destabilised by the prescribed tidal works are restored and stabilised</i>”;</p> <p>Vegetation being removed is almost exclusively no-native species with the exception of a very small footprint identified by the botanist.</p> |
| <p>Public access - availability</p> | | |

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| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|---|---|---|
| <p>8.1 Prescribed tidal works do not have a significant adverse effect on the availability of public access to, along or across State coastal land.</p> | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <ol style="list-style-type: none"> 1. subject to paragraph (b), prescribed tidal works do not involve the erection or placement of any physical barrier preventing existing public access to, along or across State coastal land near the works; 2. if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a); 3. any other relevant planning scheme standard that is not inconsistent with the standards mentioned in paragraphs (a) and (b). | <p>The works increase the public access to the area by providing a safer road crossing (now two way with improved sight distance and geometry) and now provides a dedicated pedestrian walkway.</p> |
| Public access - safety | | |
| <p>9.1 The location and design of prescribed tidal works does not adversely affect the safety of members of the public accessing State coastal land.</p> | <p>Public access to State coastal land near the prescribed tidal works is consistent with each relevant planning scheme standard.</p> | <p>As above safety is increased as a result of the proposed work. In particular the provision of the pedestrian walkway separates from the road carriageway.</p> |
| Infrastructure, including, access, parking, sewerage and water services | | |
| <p>11.1 Prescribed tidal works have appropriate infrastructure, including, in particular, road access, parking facilities, sewerage services and water services, having regard to the following—</p> <ol style="list-style-type: none"> 1. the nature and scale of the works; 2. the number of people that may be on or at the works at any given time; 3. the number of vehicles that may be on or moored at the works at any given time; 4. the protection of any foreshores near the works and the vegetation and marine plants on the foreshores. | <p>The infrastructure for prescribed tidal works is consistent with each relevant planning scheme standard.</p> | <p>Provision is made for services crossings to be attached to the structure at the deck level. A dedicated Water main crossing and conduit for other services is included in the design.</p> |
| Design, construction and safety – all prescribed works | | |

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| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|--|---|---|
| <p>12.1 Prescribed tidal works are designed and constructed in a way to ensure they are structurally sound, having regard to the following—</p> <ul style="list-style-type: none"> (a) relevant engineering standards; (b) the location of the works; (c) the purpose for which the works are to be used; (d) the impact of flooding, storm tide, overtopping by waves, projected sea level rise, tidal influences and hydrodynamic forces; (e) the design life of the works; (f) the dead load of the works and the intended live load for the works; (g) the impact of hydrostatic pressures on the works; (h) the stability of individual components of the works, including, for example, boulders, concrete blocks or sandbags. | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <ul style="list-style-type: none"> (a) subject to paragraph (c), each Australian Standard relevant to the design or construction of structures, to the extent requirements stated in the Standard apply to the design or construction of prescribed tidal works; (b) subject to paragraph (c), the projected sea level rise is factored into the design and construction of the prescribed tidal works; (c) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a) or (b)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a) or (b). | <p>A specialist structural Engineering firm was sub-consulted for the works to ensure the crossing was designed to be structurally sound.</p> <p>Structural certification (Form 15), has been provided certifying the design.</p> <p>Stream flow modelling confirmed river flow depths for various events and provided the inputs for velocity and depth of inundation.</p> <p>Geotechnical investigations provided the inputs for the founding conditions and also nominated preparation works.</p> <p>Council nominated the crossing to be constructed without bridge rails or guardrails due to implications from debris. The current crossing similarly does not have bridge rails nor does the Spring creek crossing further south in the Mowbray Valley Road network.</p> |
| <p>12.2 Prescribed tidal works do not adversely affect the structural integrity of any existing revetment or seawall or another existing structure.</p> | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <ul style="list-style-type: none"> (a) subject to paragraph (b), prescribed tidal works, including any abutment, piling or other structure connected with the works— <ul style="list-style-type: none"> a do not place an additional load on any existing revetment or seawall or another existing structure; or b can be structurally supported by an existing revetment or seawall or another existing structure; (b) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a). | <p>There are no existing revetment or seawalls in the vicinity of the works.</p> <p>The only other existing structure in the vicinity is the existing bridge which will be decommissioned following the works.</p> <p>There is separation between the structure and the existing structure will not be subjected to loads from the new crossing.</p> |

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| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|--|---|---|
| 12.3 Prescribed tidal works are designed and constructed in a way to ensure they do not adversely affect the stability of the bed and banks of tidal water. | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <p>(a) subject to paragraph (b), prescribed tidal works do not cause, by changing the flow of water, the removal of, or disturbance to, the sediment on the bed and banks of tidal water;</p> <p>(b) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a).</p> | <p>The design of the proposed works included optimising the location of the works within the river to seek to avoid adversely affecting the stability of the bed and banks of tidal water.</p> <p>Specifically, the foundations are below the invert of the river with the invert to be reinstated through the culverts upon completion.</p> <p>The low flow channel has been selected to align with the current low flow invert of the river.</p> <p>Additional stabilisation downstream from the crossing is proposed below bed level and again reinstated with existing bed material.</p> <p>The works are also positioned so that the waterway area is contained within the footprint of the bed of the river to minimise impacts where the crossing interfaces with the upstream and downstream banks.</p> |
| <p>12.4 Prescribed tidal works are designed and constructed using materials suitable for marine environments, having regard to their ability to resist the following—</p> <p>(a) attack by marine organisms;</p> <p>(b) corrosion;</p> <p>(c) deterioration or breakage resulting from exposure to environmental conditions including, for example, the following—</p> <p style="margin-left: 40px;">a abrasion;</p> <p style="margin-left: 40px;">b immersion in seawater;</p> <p style="margin-left: 40px;">c wave action.</p> | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <p>(a) subject to paragraph (b), each Australian Standard relevant to the materials that should be used, or the measures that should be taken to treat materials used, for structures, to the extent the requirements stated in the Standard apply to structures located in a marine environment;</p> <p>(b) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a).</p> | <p>The works are over 3km from the coastline and over 4km measured along the Mowbray River alignment.</p> <p>Notwithstanding this, the materials are suitable for the marine environment and consist primarily of concrete and rock, with natural materials then reinstated through the structure.</p> |
| 12.5 Prescribed tidal works are designed and constructed in a way to ensure they do not adversely affect the operation or maintenance of any existing stormwater outlet. | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <p>(a) subject to paragraph (c), vessels moored at prescribed tidal works do not impede the discharge of stormwater;</p> <p>(b) subject to paragraph (c), prescribed tidal works do not restrict access to any stormwater outlet;</p> <p>(c) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a) or (b)—the relevant planning scheme standard, to the extent it is more</p> | <p>The crossing includes provision for the surface drainage to enter the river system. This includes the existing small gully on the north-west side of the crossing.</p> |

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| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|--|--|---|
| | stringent than the standard mentioned in paragraph (a) or (b). | |
| <p>12.6 Prescribed tidal works are designed and constructed in a way to ensure they do not adversely affect the water quality of tidal water, including, in particular, as a result of—</p> <ul style="list-style-type: none"> (a) release, into the tidal water, of materials used in the construction of the works; or (b) disturbance to the sediment on the bed and banks of the tidal water; or (c) exposure to acid sulphate soils. | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <ul style="list-style-type: none"> (a) subject to paragraph (b), each Australian Standard relevant to the design or construction of structures under, within or over tidal water, to the extent the requirements stated in the Standard are directed at maintaining the water quality of tidal water; (b) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a). | <p>During the construction of the works there will need to be disturbance of the sediment on the bed of the river, however, the works are to be staged with construction requirements to build the crossing in two halves.</p> <p>This will ensure the river can continue to flow whilst construction work progresses.</p> <p>Post construction the reinstatement of the invert with natural material will return the bed to similar conditions that exist pre-construction.</p> <p>A geotechnical assessment was undertaken to assess the risk of encountering acid sulphate soils. The testing and advice from the geotechnical investigations determined that there was low risk of encountering these soils.</p> <p>Notwithstanding this, the specification requires that the contractor test for the presence of these soils during excavations works for the foundations.</p> |
| <p>12.7 Prescribed tidal works are designed and constructed in a way to ensure they are safe for persons using the works.</p> | <p>The design and construction of the prescribed tidal works is consistent with the following standards—</p> <ul style="list-style-type: none"> (a) subject to paragraph (d), each Australian Standard relevant to the design or construction of structures, the materials that should be used, or the measures that should be taken to treat materials used, for structures, to the extent the requirements stated in the Standard are directed at ensuring any surface of prescribed tidal works on which a person may stand or walk is— <ul style="list-style-type: none"> a. not slippery; and b. does not have any feature that may cause the person to trip or fall; (b) subject to paragraph (d), any part of prescribed tidal works that is unsafe for persons using the works is surrounded by adequate barriers to deter persons from entering the part; (c) subject to paragraph (d), each Australian Standard relevant to the design or construction of structures, to the extent the requirements stated in the Standard are directed at ensuring prescribed tidal works provide safety ladders or other design features for the safety of a person who falls off the works into water; | <p>The proposed new crossing includes a dedicated pedestrian walkway.</p> <p>The walkway is located on the eastern side and has a pedestrian barrier specified on that edge.</p> <p>A barrier kerb provides delineation from vehicles on the road side.</p> <p>The new two-lane crossing replaces an existing single lane bridge increasing the traffic safety. The associated approach road realignment also addresses traffic issues with the current alignment and geometry.</p> |

Coastal Protection and Management Regulation 2017

Schedule 3 – Part 3 Performance Outcomes and Acceptable Outcomes

| PERFORMANCE OUTCOME | ACCEPTABLE OUTCOME | COMMENT |
|--|--|---|
| | <p>(d) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a), (b) or (c)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a), (b) or (c).</p> | |
| Design, construction and safety - bridges | | |
| <p>14.1 Prescribed tidal works that are a bridge do not adversely affect existing public use of tidal water, including, for example, use of the tidal water for canoeing, swimming or other recreational activities.</p> | <p>The design and construction of the bridge is consistent with the following standards—</p> <ul style="list-style-type: none"> i. subject to paragraph (b), the clearance levels under a bridge are high enough to allow continued public use of tidal water over which it is constructed; ii. if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a). | <p>The proposed crossing replaces the existing timber bridge that has been assessed as being in poor condition.</p> <p>The waterway is not navigable at this location with flows dropping to less than 200mm at times.</p> <p>With its location in Far north Queensland and the threat of crocodiles, the area is not suitable for canoeing or swimming.</p> <p>The presence of the dedicated walkway positively impacts the use by the public.</p> |
| <p>14.2 Prescribed tidal works that are a bridge do not adversely affect the flow of tidal water under the bridge.</p> | <p>The design and construction of the bridge is consistent with the following standards—</p> <ul style="list-style-type: none"> (a) subject to paragraph (b)— <ul style="list-style-type: none"> a. if a bridge can be adequately supported without erecting or placing a foundation support in tidal water—no foundation support to support the bridge is erected or placed in the tidal water; or b. otherwise—only the minimum number of foundation supports required to support the bridge is used; (b) if a relevant planning scheme standard is more stringent than the standard mentioned in paragraph (a)—the relevant planning scheme standard, to the extent it is more stringent than the standard mentioned in paragraph (a). | <p>As noted above, the proposed culvert crossing replaces the existing timber bridge.</p> <p>The design has optimised the footprint, crossing orientation, vertical levels of deck and invert to achieve the performance criteria that the works do not adversely affect the flow of water under the bridge.</p> <p>This includes the inclusion of a low flow barrel that generally aligns with the current low flow channel.</p> |

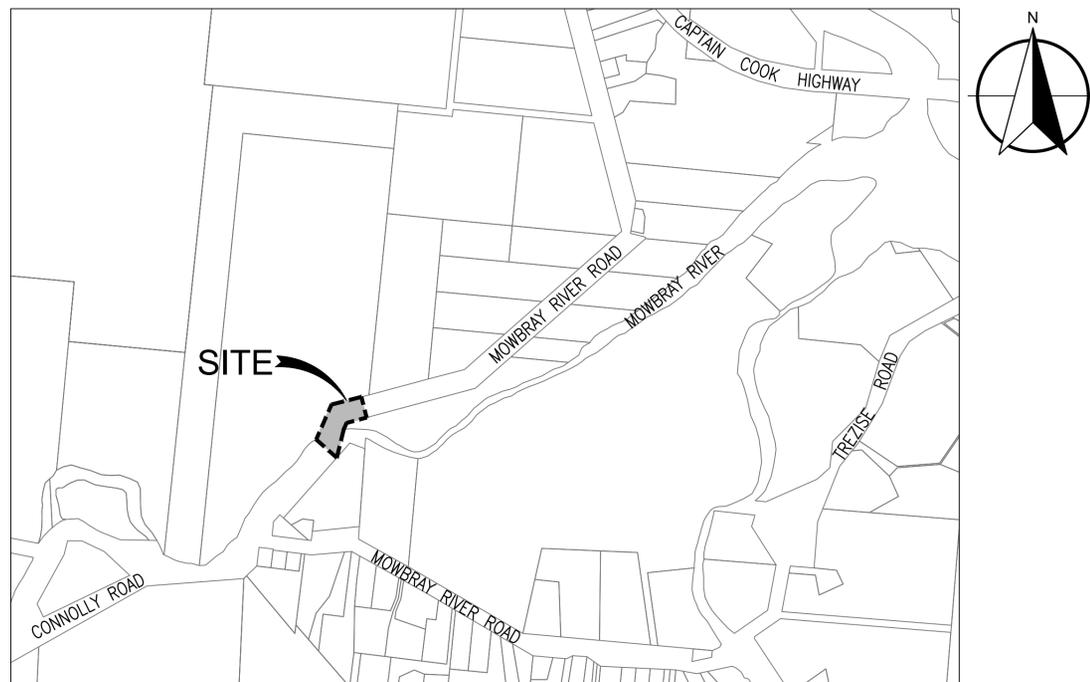
Item 8
Design Drawing



DIGGERS BRIDGE UPGRADE

for

DOUGLAS SHIRE COUNCIL



LOCALITY PLAN
NOT TO SCALE

SCHEDULE OF PROJECT DRAWINGS

| | |
|----------|--|
| 1073-000 | LOCALITY PLAN AND DRAWING INDEX |
| 1073-001 | GENERAL ARRANGEMENT PLAN |
| 1073-002 | ROADWORKS PLAN |
| 1073-003 | ROAD LONGITUDINAL SECTION, SETOUT DETAILS AND TYPICAL SECTIONS |
| 1073-004 | ANNOTATED ROAD CROSS SECTIONS - SHEET 1 OF 3 |
| 1073-005 | ANNOTATED ROAD CROSS SECTIONS - SHEET 2 OF 3 |
| 1073-006 | ANNOTATED ROAD CROSS SECTIONS - SHEET 3 OF 3 |
| 1073-007 | ROAD CURVE WIDENING SETOUT |
| 1073-008 | CONCRETE ROADWAY DETAILS |
| 1073-009 | LINEMARKING AND SIGNAGE PLAN |
| 1073-010 | SERVICES PLAN |
| 1073-011 | PROPERTY ACCESS DETAILS |
| 1073-012 | CULVERT GENERAL ARRANGEMENT PLAN |
| 1073-013 | CULVERT SECTIONS AND FOOTING DETAILS |
| 1073-014 | CONCRETE ROADWAY REINFORCEMENT PLAN AND DETAILS |
| 1073-015 | EROSION AND SEDIMENT CONTROL STRATEGY |

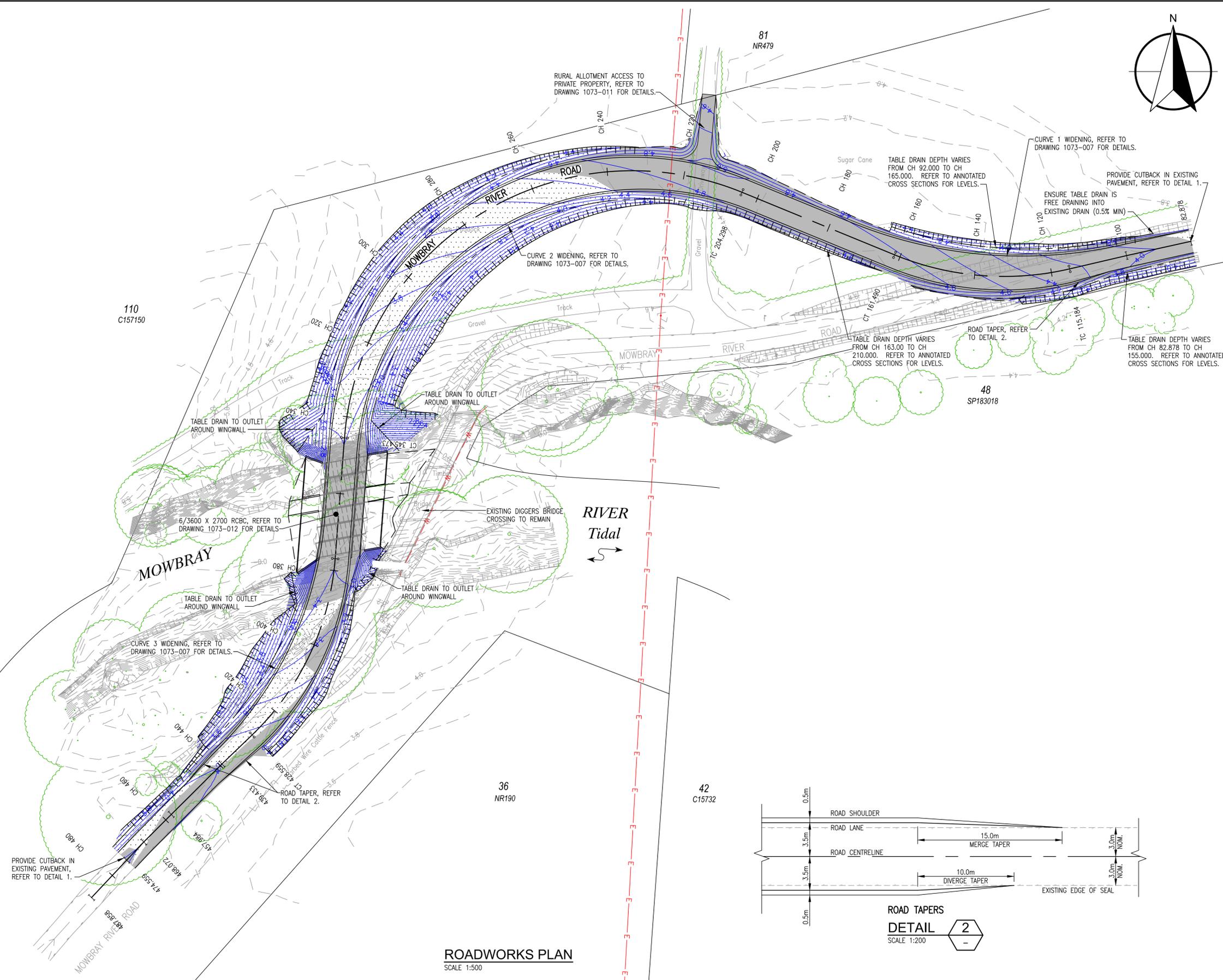


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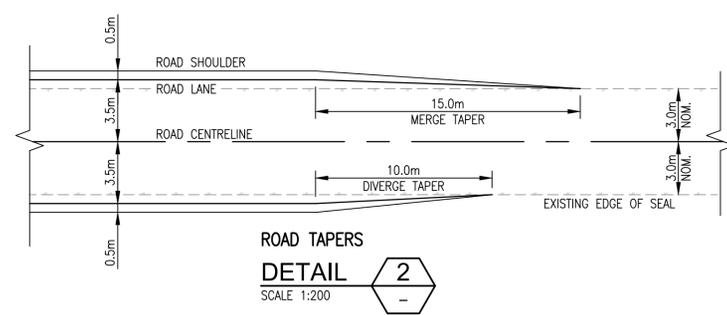
- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- DESIGN SURFACE LEVELS SHOWN ARE AFTER ALL EARTHWORKS ARE COMPLETED, INCLUDING 75mm TOPSOILING.
- BATTERS SHALL BE (UNLESS NOTED OTHERWISE):
- ROAD FRONTAGE : 1 ON 4 (MAX.)
- ALL DESIGN SURFACES ARE TO BE GRADED EVENLY BETWEEN SHOWN LEVELS UNLESS OTHERWISE SHOWN.
- REFER TO FNQROC STANDARD DRAWINGS:
S1010 : PUBLIC UTILITIES ON ROADS AND VERGES
S1035 : PATHWAYS/BIKEWAYS
S1040 : STREET NAME SIGNS
- LOCATION OF ALL EXISTING SERVICES TO BE CONFIRMED PRIOR TO CONSTRUCTION BY CONTRACTOR THROUGH LIAISON WITH RELEVANT AUTHORITIES.
- NEW ROADWORKS TO JOIN SMOOTHLY TO EXISTING WORKS. PROVIDE CUT BACK TO EXISTING SEALED ROADS WHERE NECESSARY. REFER TO DETAIL 1.
- TRIM AND DRILL SEED ALL FOOTPATHS/ROAD VERGES. BATTERS >0.5m TO BE HYDROMULCHED AFTER FINAL EARTHWORKS AND TOPSOILING IS COMPLETED.
- TOPSOIL STOCKPILE TO BE LOCATED AT LOCATION CONFIRMED BY SUPERINTENDENT.

LEGEND

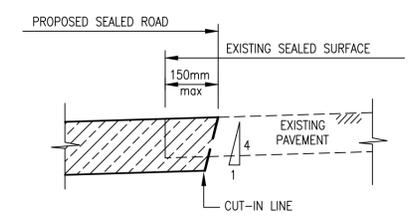
- CUT AREAS
- FILL AREAS
- DESIGN SURFACE CONTOUR (0.2m INTERVAL)
- ROAD CENTRELINE
- TOP OF BATTER
- TOE OF BATTER
- ROAD CHAINAGE
- ROADSIDE TABLE DRAIN INVERT
- EXISTING TOP OF BANK
- EXISTING TOE OF BANK
- EXISTING EDGE OF ROAD SEAL
- EXISTING WATER PIPE
- EXISTING OVERHEAD ELECTRICITY
- EXISTING TREE CANOPY
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING SURFACE CONTOUR (0.2m INTERVAL)



ROADWORKS PLAN
SCALE 1:500



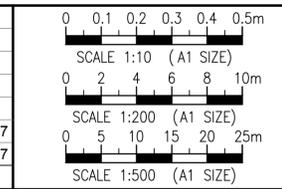
ROAD TAPERS
DETAIL 2
SCALE 1:200



CUT BACK PAVEMENT
DETAIL 1
SCALE 1:10

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Printed: 25 August 2017, 11:44 AM

| No. | Description | Reviewed | Approved | Date |
|-----|--------------------|----------|----------|----------|
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| A | PRELIMINARY ISSUE | - | - | 19/07/17 |

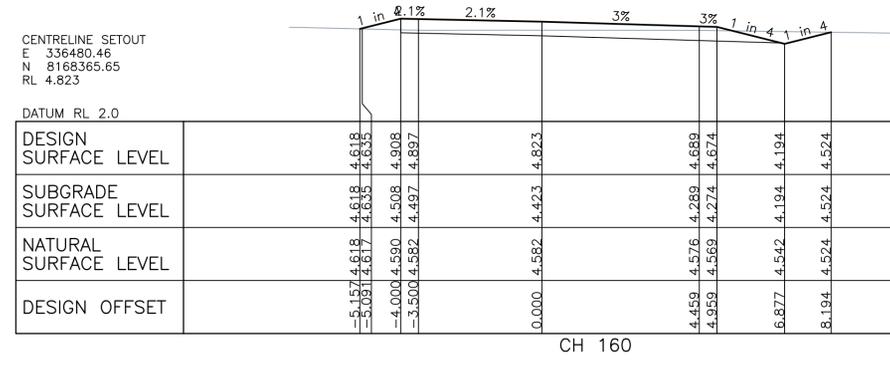
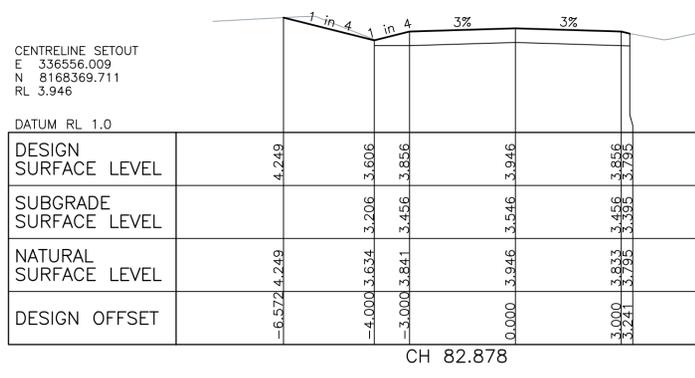
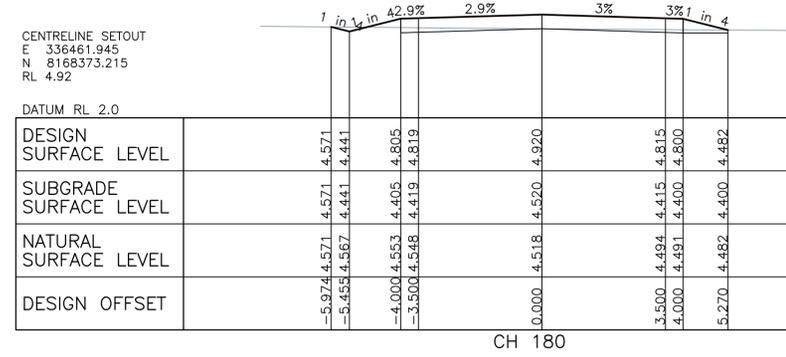
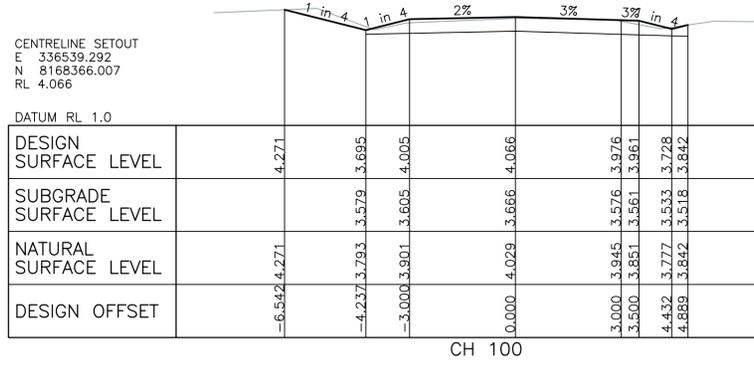
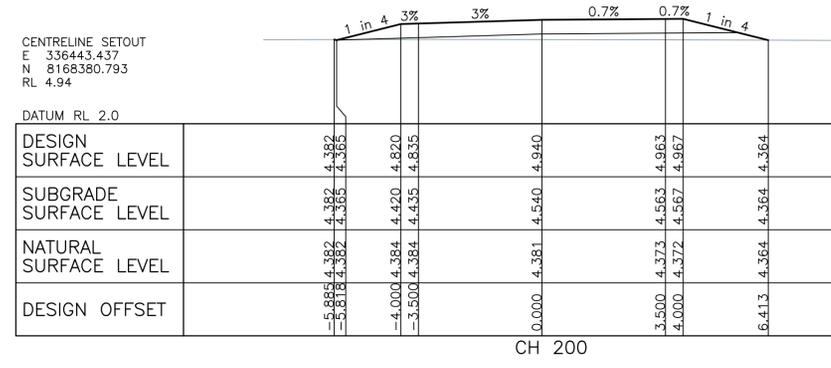
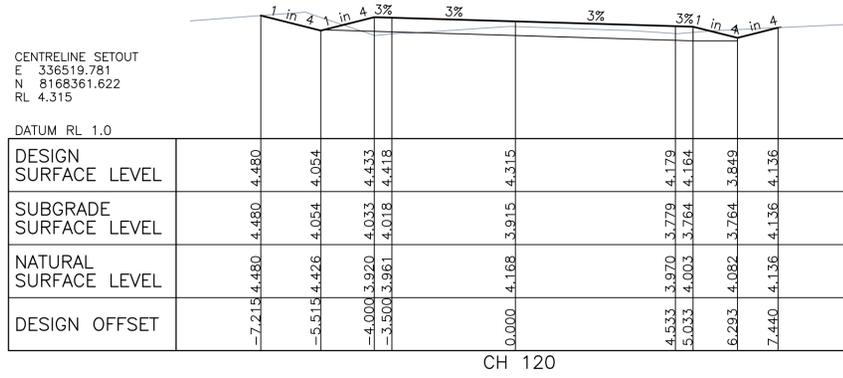
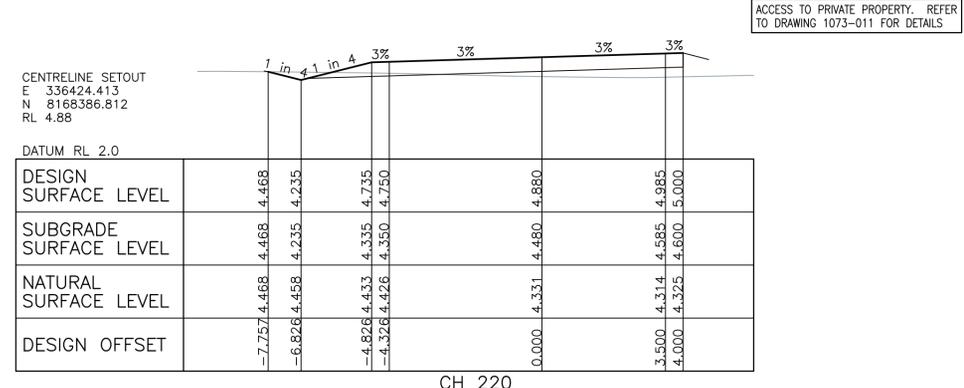
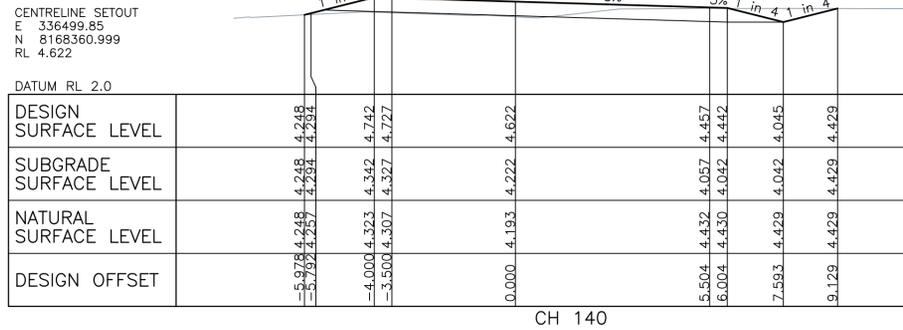


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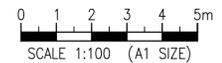
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| Drawn | Designed |
| RML | RML |

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|---------------|--------------|-------------------------------|----------|
| Client | | DOUGLAS SHIRE COUNCIL | |
| Project | | DIGGERS BRIDGE UPGRADE | |
| Title | | ROADWORKS PLAN | |
| Drawing Check | Design Check | Approved | |
| RPEQ | Date | Drawing No. | Revision |
| | | 1073-002 | B |



MOWBRAY RIVER ROAD ANNOTATED CROSS SECTIONS
SCALE 1:100



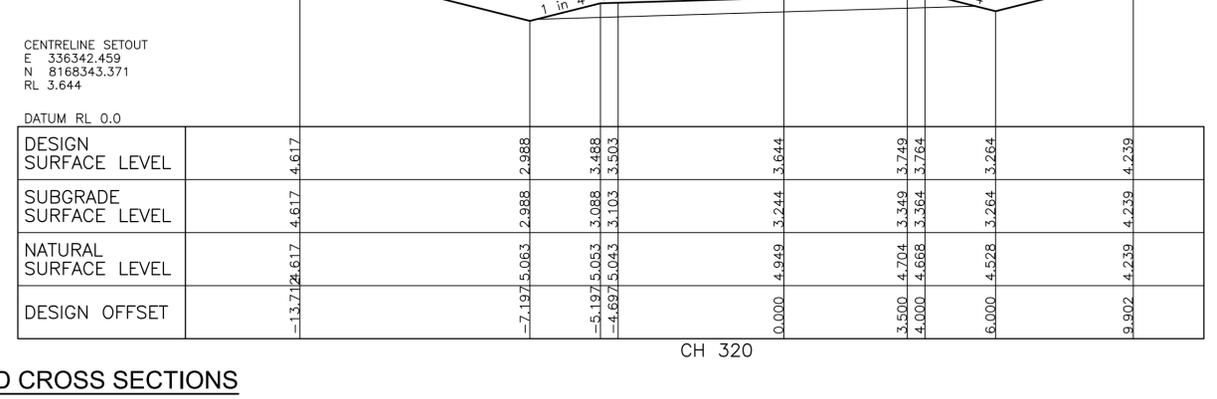
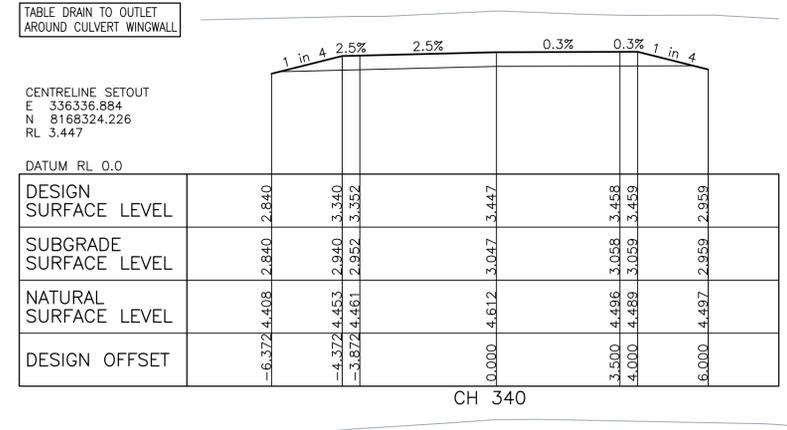
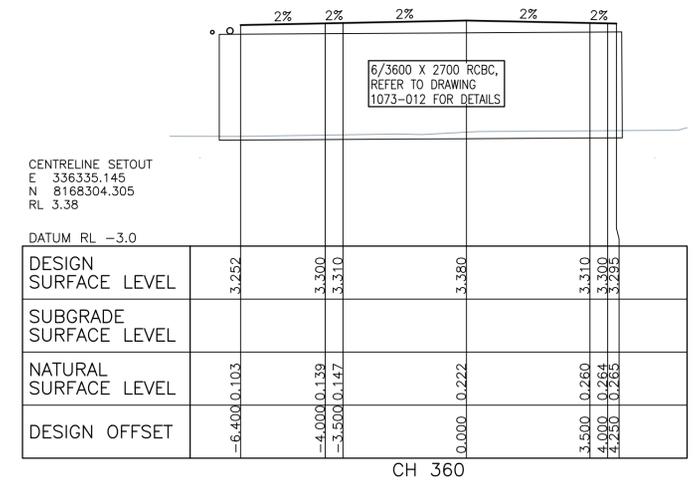
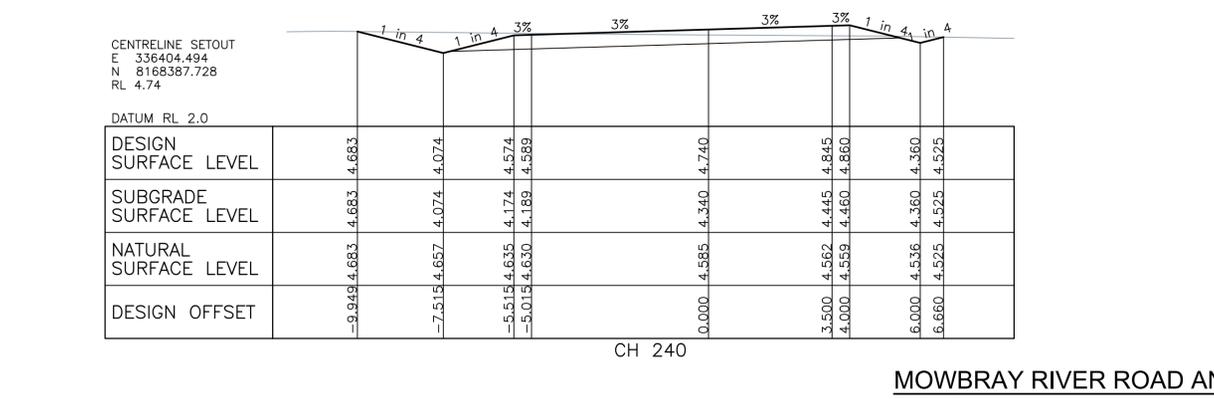
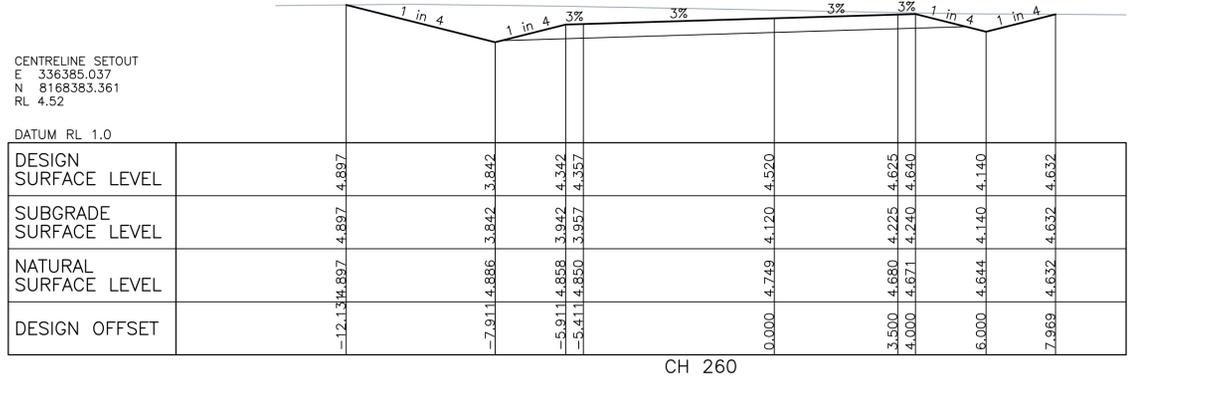
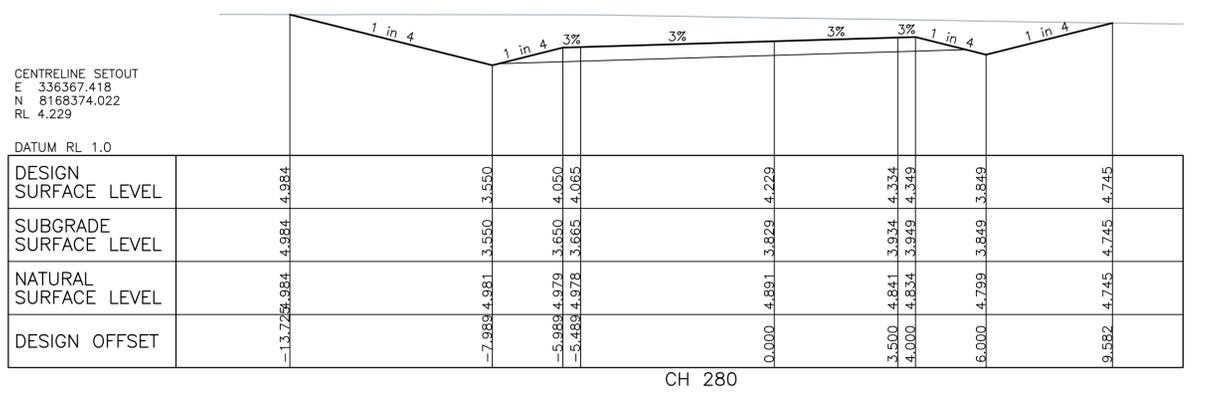
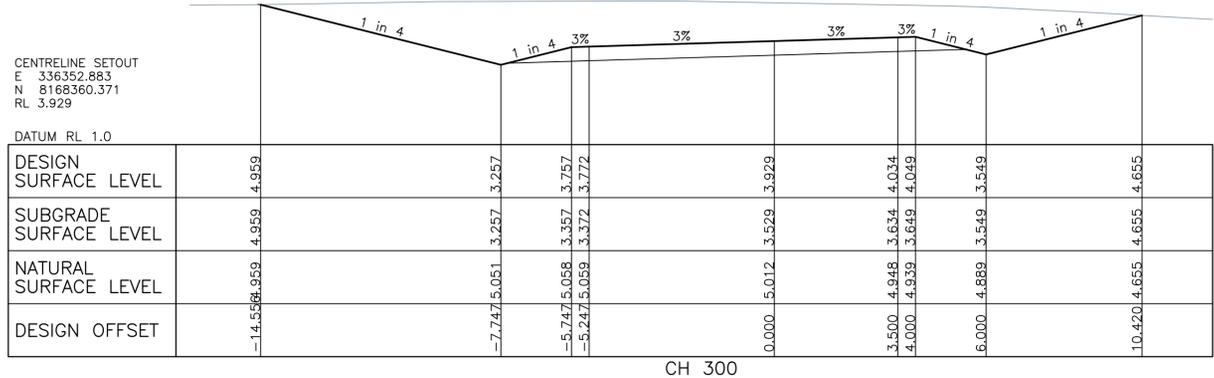
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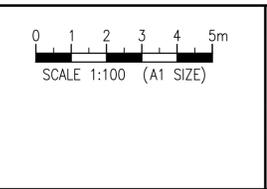
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| Title ANNOTATED ROAD CROSS SECTIONS SHEET 1 OF 3 | | RPEQ | |
| Drawn RML | Designed RML | Drawing Check | Design Check |
| Approved | | Date | Revision |
| Drawing No. 1073-004 | | Revision C | |



MOWBRAY RIVER ROAD ANNOTATED CROSS SECTIONS
SCALE 1:100

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| C | FOR APPROVAL ISSUE | ARH | PCS | 25/08/17 |
| B | PRELIMINARY ISSUE | - | - | 19/07/17 |
| A | PRELIMINARY ISSUE | - | - | 10/7/17 |



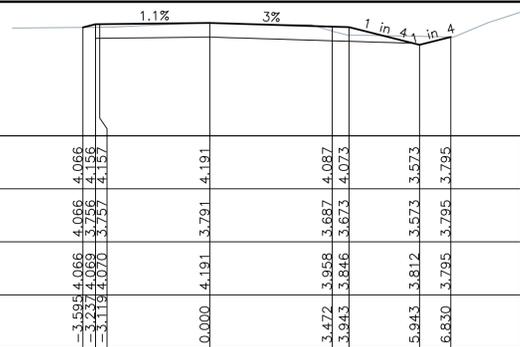
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| Drawn RML | | Title ANNOTATED ROAD CROSS SECTIONS SHEET 2 OF 3 | |
| Designed RML | Drawing Check | Design Check | Approved |
| RPEQ | Date | Drawing No. 1073-005 | Revision C |

External References: TEC-TITLE-A1_b.dwg

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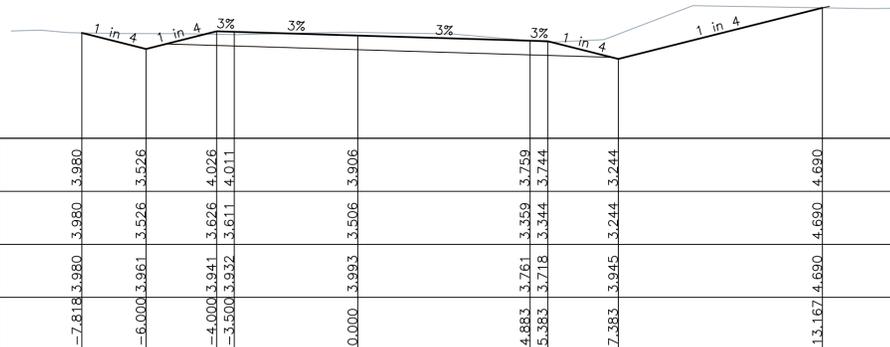


DATUM RL 1.0

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| SUBGRADE SURFACE LEVEL | | | | | | | | | |
| NATURAL SURFACE LEVEL | | | | | | | | | |
| DESIGN OFFSET | | | | | | | | | |

CH 440

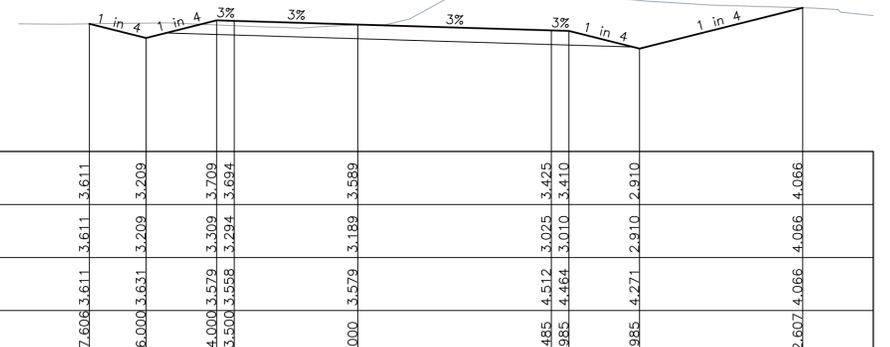
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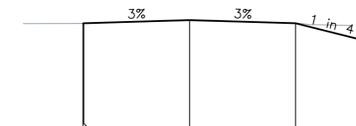
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CH 400

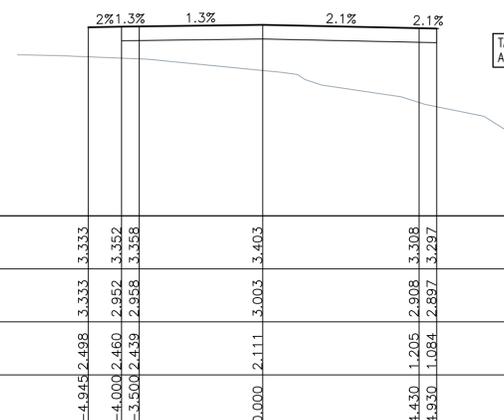
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CH 474.559

TABLE DRAIN TO OUTLET
AROUND CULVERT WINGWALL



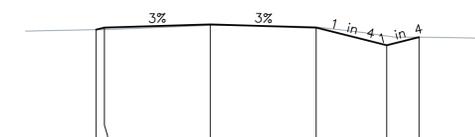
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| NATURAL SURFACE LEVEL | | | | |
| DESIGN OFFSET | | | | |

CH 380

TABLE DRAIN TO OUTLET
AROUND CULVERT WINGWALL

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RL 4.348



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| SUBGRADE SURFACE LEVEL | | | | |
| NATURAL SURFACE LEVEL | | | | |
| DESIGN OFFSET | | | | |

CH 460

MOWBRAY RIVER ROAD ANNOTATED CROSS SECTIONS

SCALE 1:100



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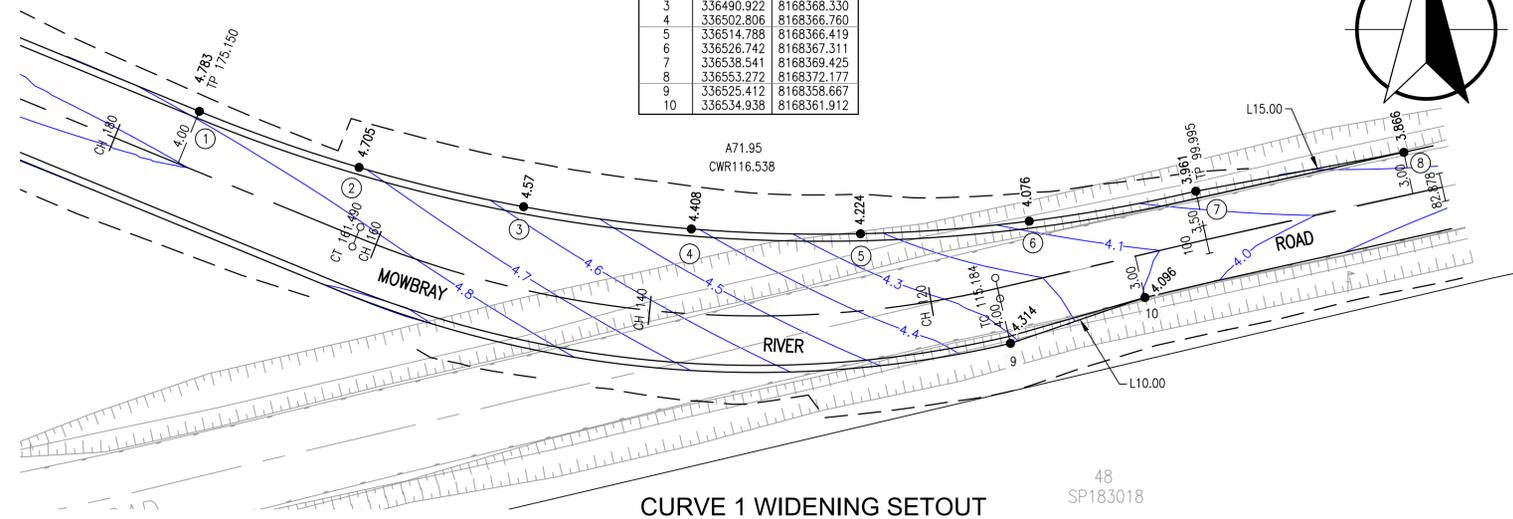
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| Scale (A1 size) | |
| 1:100 | |
| Drawing not to be used for construction unless approved. | |
| Drawn | Designed |
| RML | RML |

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| Client | | DOUGLAS SHIRE COUNCIL | |
| Project | | DIGGERS BRIDGE UPGRADE | |
| Title | | ANNOTATED ROAD CROSS SECTIONS | |
| | | SHEET 3 OF 3 | |
| Drawing No. | Revision | RPEQ | Date |
| 1073-006 | C | | |

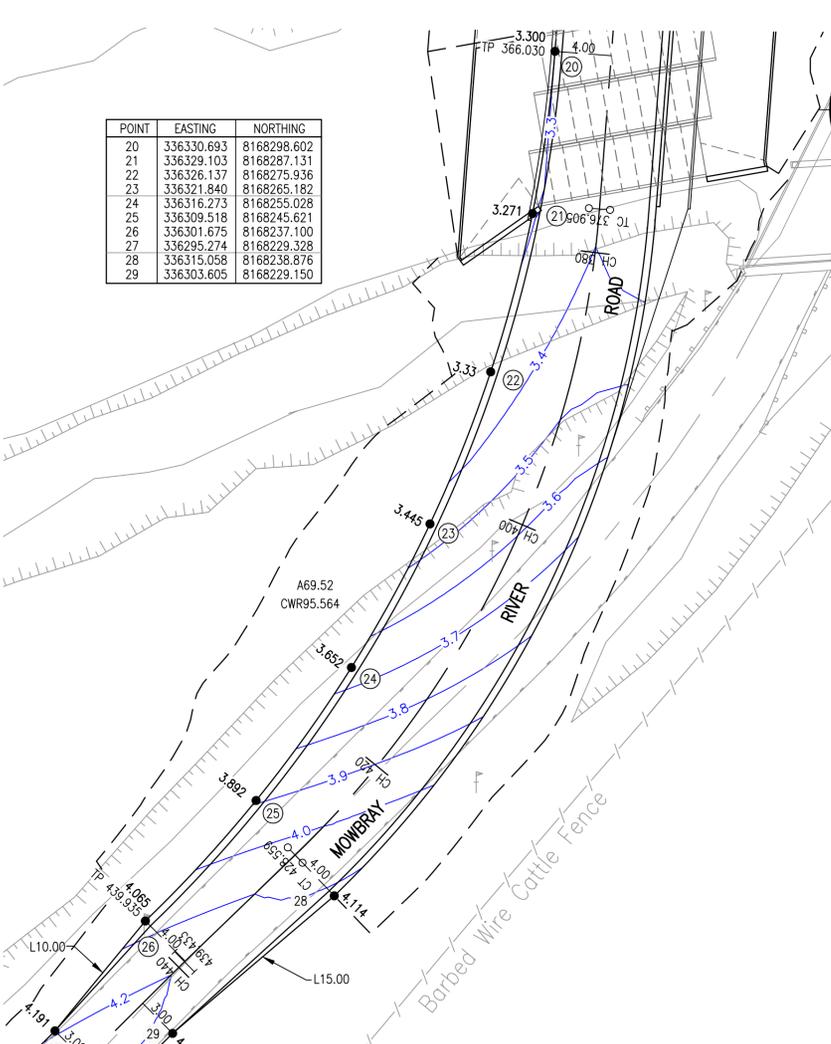
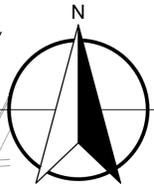
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| B | PRELIMINARY ISSUE | - | - | 19/07/17 |
| A | PRELIMINARY ISSUE | - | - | 10/7/17 |

| POINT | EASTING | NORTHING |
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| 2 | 336479.262 | 8168371.113 |
| 3 | 336490.922 | 8168368.330 |
| 4 | 336502.806 | 8168366.760 |
| 5 | 336514.788 | 8168366.419 |
| 6 | 336526.742 | 8168367.311 |
| 7 | 336538.541 | 8168369.425 |
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| 10 | 336534.938 | 8168361.912 |



CURVE 1 WIDENING SETOUT
SCALE 1:250

| POINT | EASTING | NORTHING |
|-------|------------|-------------|
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| 21 | 336329.103 | 8168287.131 |
| 22 | 336326.137 | 8168275.936 |
| 23 | 336321.840 | 8168265.182 |
| 24 | 336316.273 | 8168255.028 |
| 25 | 336309.518 | 8168245.621 |
| 26 | 336301.675 | 8168237.100 |
| 27 | 336295.274 | 8168229.328 |
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CURVE 3 WIDENING SETOUT
SCALE 1:250

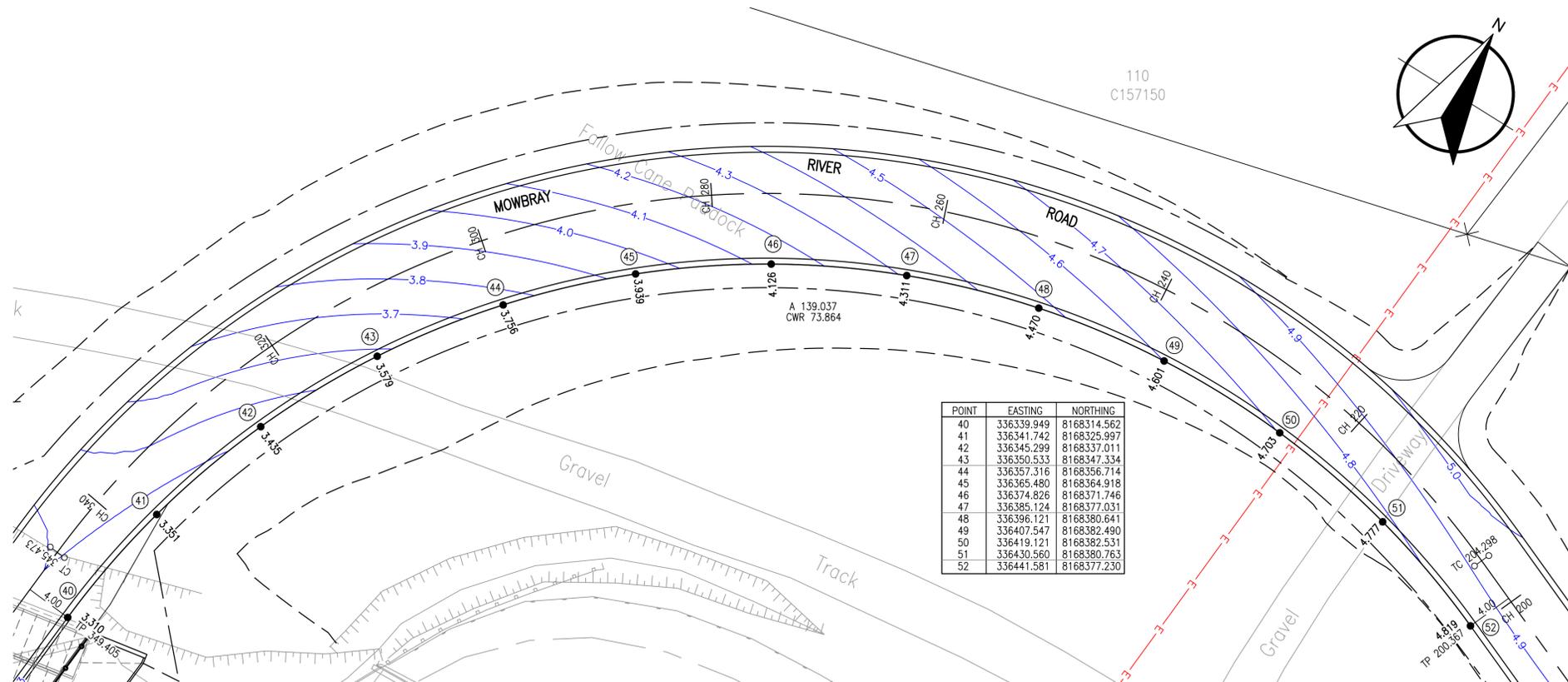
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| TP 14.821 | TANGENT POINT CHAINAGE |
| 4.026 | LEVEL |
| A15.75 | ARC LENGTH |
| L12.45 | STRAIGHT LENGTH |
| CWR15.20 | CURVE WIDENING RADIUS |
| 3.00 | OFFSET FROM ROAD CENTRELINE |
| 140 | ROAD CHAINAGE |
| (25) | KERB SETOUT POINT |
| + | STREET SIGN |
| WHITE | ROAD EDGE GUIDE POST |
| RED | ROAD CENTRELINE |
| --- | EXISTING TOP OF BANK |
| --- | EXISTING TOE OF BANK |
| --- | EXISTING EDGE OF ROAD SEAL |
| W | EXISTING WATER PIPE |
| E | EXISTING OVERHEAD ELECTRICITY |
| --- | EXISTING FENCE |
| --- | EXISTING GUARDRAIL |

NOTES

- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- LEVELS SHOWN ARE TO ROAD SHOULDER I.E. EDGE OF FORMATION.
- DIMENSIONS AND RADII SHOWN ARE TO ROAD SHOULDER I.E. EDGE OF FORMATION.
- LEVELS ARE SHOWN EQUALLY DIVIDED BETWEEN TANGENT POINTS.
- REFER TO ROAD SETOUT DETAILS FOR COORDINATES OF ROAD CHAINAGES AND TANGENT POINTS.
- REFER TO ROAD LONGITUDINAL SECTION FOR SUPER ELEVATION TRANSITIONS.

| POINT | EASTING | NORTHING |
|-------|------------|-------------|
| 40 | 336339.949 | 8168314.562 |
| 41 | 336341.742 | 8168325.997 |
| 42 | 336345.299 | 8168337.011 |
| 43 | 336350.533 | 8168347.334 |
| 44 | 336357.316 | 8168356.714 |
| 45 | 336365.480 | 8168364.918 |
| 46 | 336374.826 | 8168371.746 |
| 47 | 336385.124 | 8168377.031 |
| 48 | 336396.121 | 8168380.641 |
| 49 | 336407.547 | 8168382.490 |
| 50 | 336419.121 | 8168382.531 |
| 51 | 336430.560 | 8168380.763 |
| 52 | 336441.581 | 8168377.230 |



CURVE 2 WIDENING SETOUT
SCALE 1:250

Printed: 25 August 2017, 11:50 AM File: T:\1073 Diggers Bridge\Drawings\1073-007(C).dwg

| No. | Description | Reviewed | Approved | Date |
|-----|--------------------|----------|----------|----------|
| C | FOR APPROVAL ISSUE | ARH | PCS | 25/08/17 |
| B | PRELIMINARY ISSUE | - | - | 19/07/17 |
| A | PRELIMINARY ISSUE | - | - | 10/7/17 |

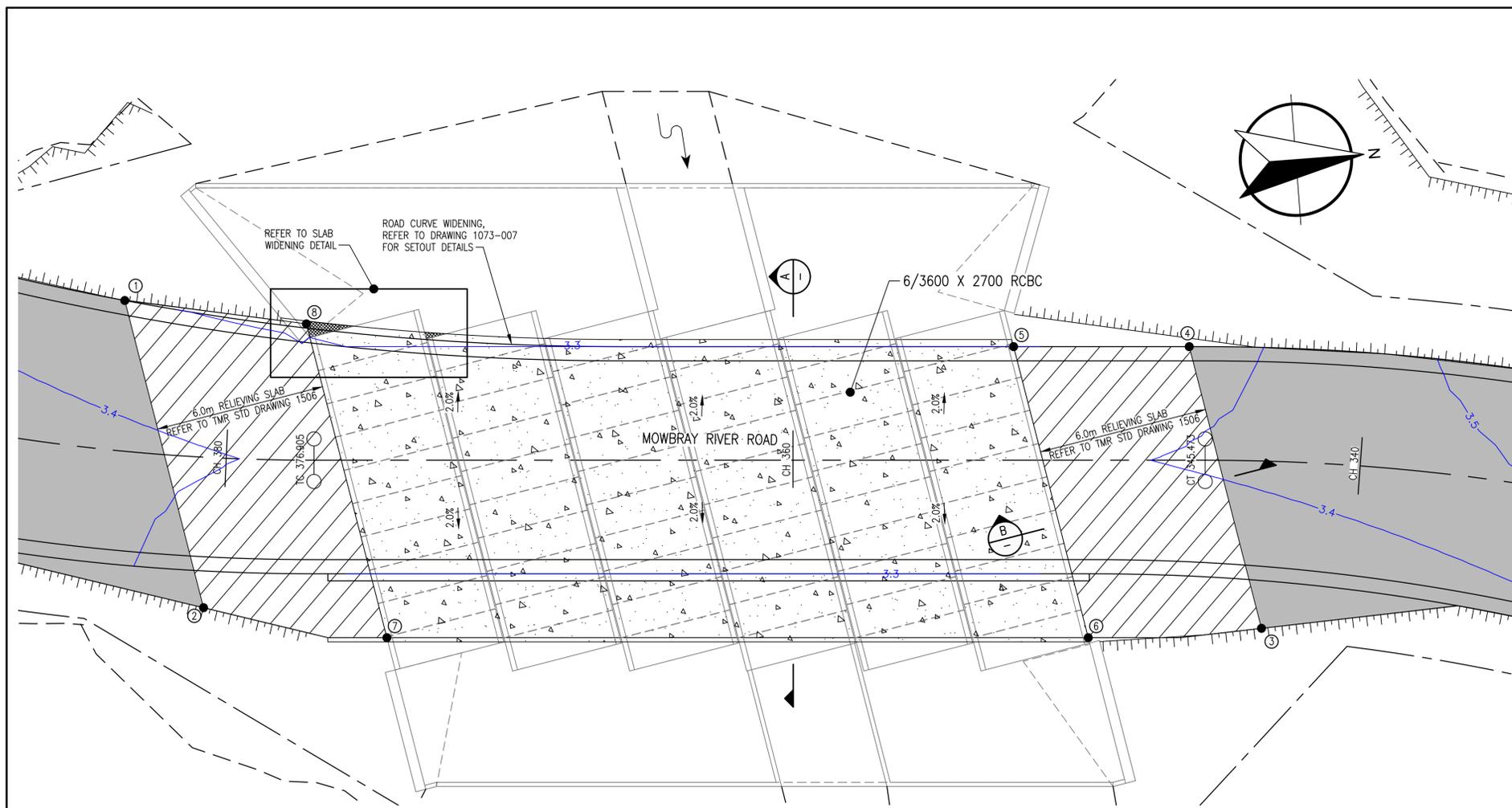


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| | | | |
|---|-----------------|--|----------------------|
| Scale (A1 size) 1:250 | | Client DOUGLAS SHIRE COUNCIL | |
| Drawing is not to be used for construction unless approved. | | Project DIGGERS BRIDGE UPGRADE | |
| Title ROAD CURVE WIDENING SETOUT | | RPEQ | |
| Drawn RML | Designed RML | Drawing Check | Design Check |
| Approved | Date | Drawing No. 1073-007 | Revision C |

External References: TEC-TITLE-A1_b.dwg; 1073-X-SURVEY.dwg; 1073-X-DESIGN.dwg



CONCRETE ROADWAY PLAN
SCALE 1:100

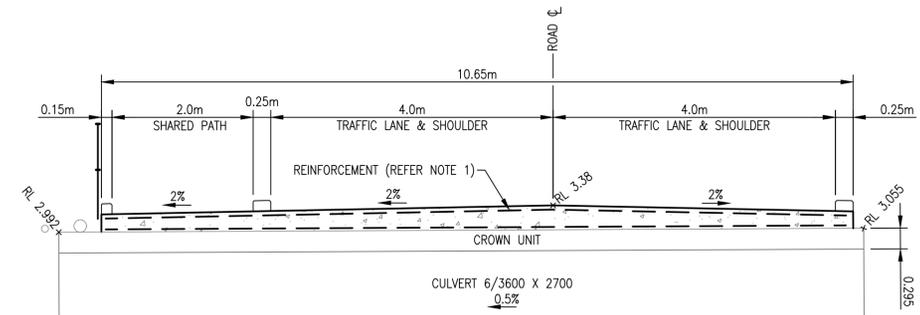
NOTES

1. FOR CONCRETE ROADWAY REINFORCEMENT PLAN AND DETAILS REFER DRAWING 1073-014.

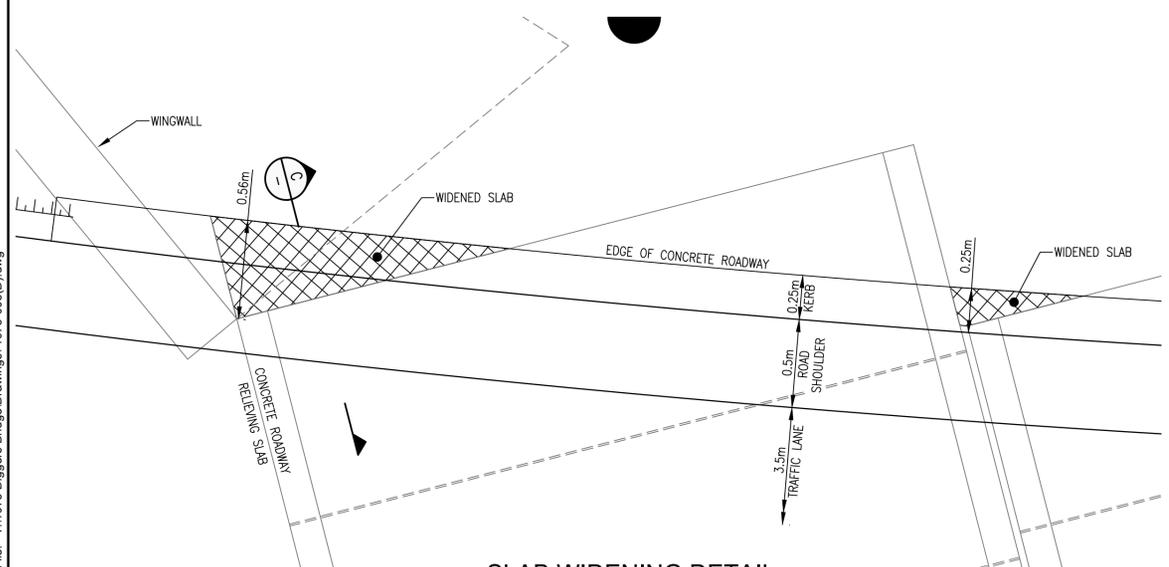
LEGEND

- ROAD CENTRELINE
- BATTER TOP
- BATTER TOE
- CH 160
- ROAD CHAINAGE
- ROADSIDE TABLE DRAIN INVERT
- EXISTING TOP OF BANK
- EXISTING TOE OF BANK
- EXISTING EDGE OF ROAD SEAL
- EXISTING WATER PIPE
- EXISTING OVERHEAD ELECTRICITY
- EXISTING FENCE
- EXISTING GUARDRAIL
- EXISTING SURFACE CONTOUR (0.2m INTERVAL)
- CONCRETE RELIEVING SLAB
- CONCRETE ROADWAY
- PAVEMENT AND SEAL

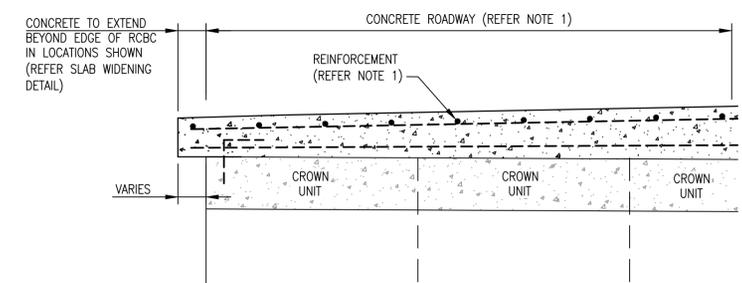
| POINT | EASTING | NORTHING |
|-------|------------|-------------|
| 1 | 336327.721 | 8168281.231 |
| 2 | 336338.721 | 8168283.168 |
| 3 | 336342.320 | 8168320.315 |
| 4 | 336332.233 | 8168318.538 |
| 5 | 336331.756 | 8168312.362 |
| 6 | 336342.178 | 8168314.197 |
| 7 | 336340.273 | 8168289.533 |
| 8 | 336329.034 | 8168287.554 |



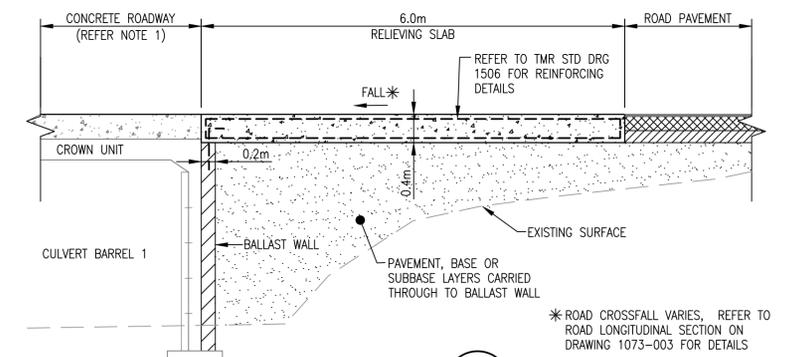
SECTION A
SCALE 1:50



SLAB WIDENING DETAIL
SCALE 1:20



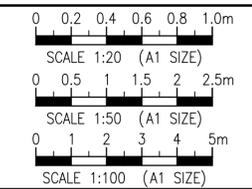
SECTION C
SCALE 1:20



SECTION B
SCALE 1:50

File: T:\1073 Diggers Bridge\Drawings\1073-008(D).dwg

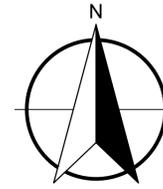
| No. | Description | Reviewed | Approved | Date |
|-----|--------------------|----------|----------|----------|
| D | FOR APPROVAL ISSUE | ARH | PCS | 25/08/17 |
| C | PRELIMINARY ISSUE | - | - | 26/07/17 |
| B | PRELIMINARY ISSUE | - | - | 19/07/17 |
| A | PRELIMINARY ISSUE | - | - | 10/7/17 |



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| AS SHOWN | | DOUGLAS SHIRE COUNCIL | |
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| | | Title CONCRETE ROADWAY DETAILS | |
| Drawn RML | Designed RML | Drawing Check | Design Check |
| Approved | | RPEQ | Date |
| | | Drawing No. | Revision |
| | | 1073-008 | D |



NOTES

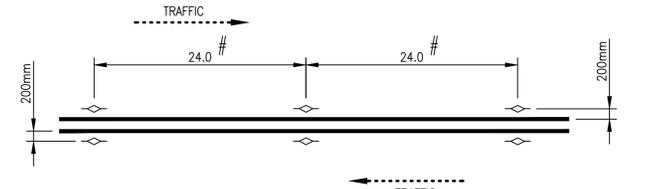
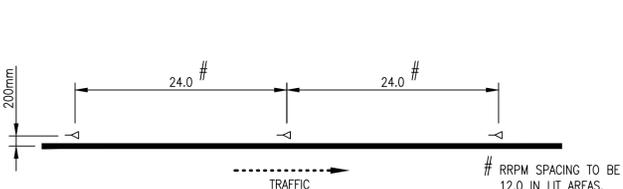
1. ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
2. ALL SIGNAGE & LINEMARKING TO BE INSTALLED IN ACCORDANCE WITH MANUAL OF UNIFORM TRAFFIC DEVICES AND AS1742.

LEGEND

- ROAD SIGN (SINGLE)
- ROAD SIGN (DOUBLE)
- ROAD EDGE GUIDE POST
- ROAD CENTRELINE
- ROAD CHAINAGE
- ROADSIDE TABLE DRAIN INVERT
- EXISTING TOP OF BANK
- EXISTING TOE OF BANK
- EXISTING EDGE OF ROAD SEAL
- EXISTING WATER PIPE
- EXISTING OVERHEAD ELECTRICITY
- EXISTING TREE CANOPY
- EXISTING TREE TRUNK AND NO.
- EXISTING FENCE
- EXISTING GUARDRAIL

LINEMARKING DIMENSIONS TABLE

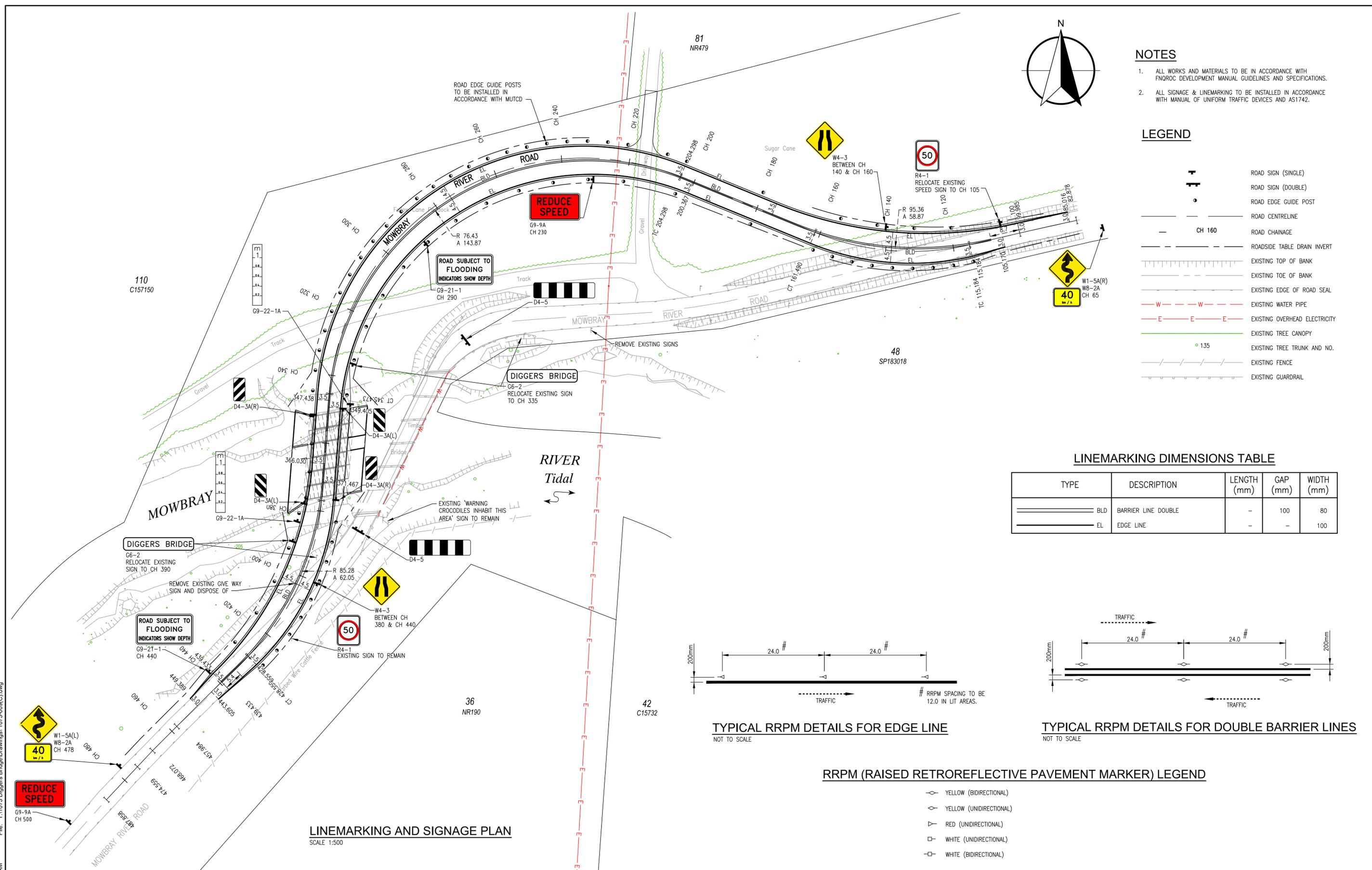
| TYPE | DESCRIPTION | LENGTH (mm) | GAP (mm) | WIDTH (mm) |
|------|---------------------|-------------|----------|------------|
| BLD | BARRIER LINE DOUBLE | - | 100 | 80 |
| EL | EDGE LINE | - | - | 100 |



RRPM (RAISED RETROREFLECTIVE PAVEMENT MARKER) LEGEND

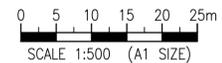
- YELLOW (BIDIRECTIONAL)
- YELLOW (UNIDIRECTIONAL)
- RED (UNIDIRECTIONAL)
- WHITE (UNIDIRECTIONAL)
- WHITE (BIDIRECTIONAL)

LINEMARKING AND SIGNAGE PLAN
SCALE 1:500



Printed: 25 August 2017, 11:51 AM File: T:\1073 Diggers Bridge\Drawings\1073-009(C).dwg

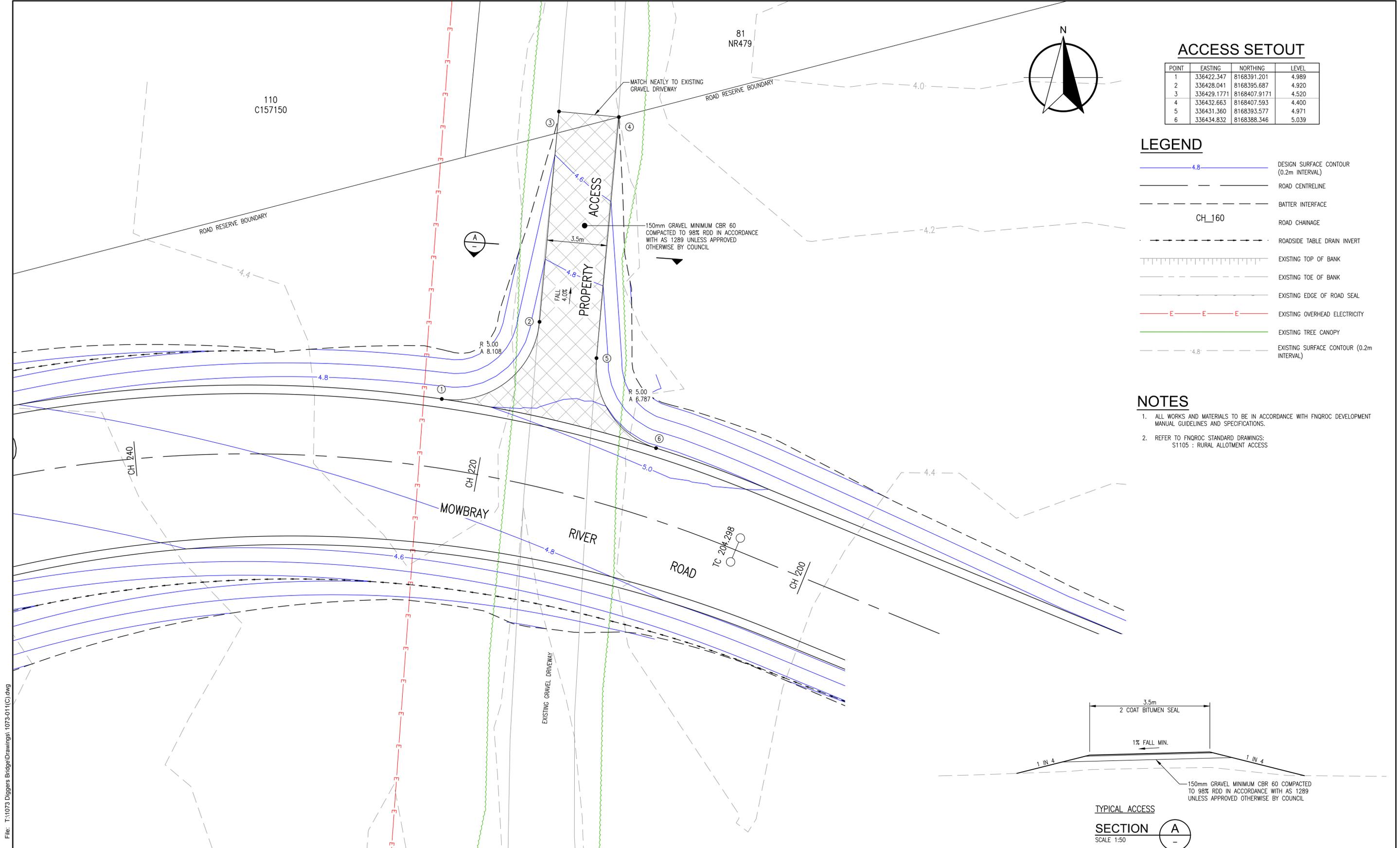
| No. | Description | Reviewed | Approved | Date |
|-----|--------------------|----------|----------|----------|
| C | FOR APPROVAL ISSUE | ARH | PCS | 25/08/17 |
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| AS SHOWN | | DOUGLAS SHIRE COUNCIL | |
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| | | Title LINEMARKING AND SIGNAGE PLAN | |
| Drawn RML | Designed RML | Drawing Check | Design Check |
| Approved | RPEQ | Date | Drawing No. 1073-009 |
| | | | Revision C |



ACCESS SETOUT

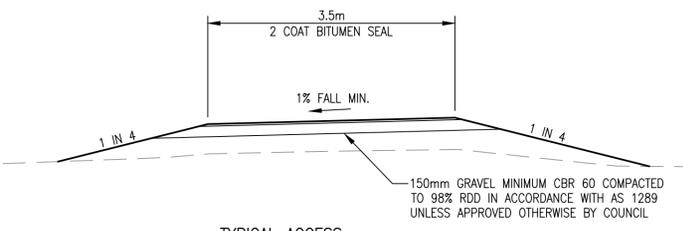
| POINT | EASTING | NORTHING | LEVEL |
|-------|-------------|--------------|-------|
| 1 | 336422.347 | 8168391.201 | 4.989 |
| 2 | 336428.041 | 8168395.687 | 4.920 |
| 3 | 336429.1771 | 8168407.9171 | 4.520 |
| 4 | 336432.663 | 8168407.593 | 4.400 |
| 5 | 336431.360 | 8168393.577 | 4.971 |
| 6 | 336434.832 | 8168388.346 | 5.039 |

LEGEND

- DESIGN SURFACE CONTOUR (0.2m INTERVAL)
- ROAD CENTRELINE
- BATTER INTERFACE
- ROAD CHAINAGE
- ROADSIDE TABLE DRAIN INVERT
- EXISTING TOP OF BANK
- EXISTING TOE OF BANK
- EXISTING EDGE OF ROAD SEAL
- EXISTING OVERHEAD ELECTRICITY
- EXISTING TREE CANOPY
- EXISTING SURFACE CONTOUR (0.2m INTERVAL)

NOTES

- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- REFER TO FNQROC STANDARD DRAWINGS: S1105 : RURAL ALLOTMENT ACCESS

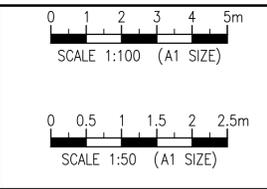


TYPICAL ACCESS
SECTION A
SCALE 1:50

PRIVATE PROPERTY ACCESS DETAILS
SCALE 1:100

Printed: 25 August 2017, 11:54 AM File: T:\1073 Diggers Bridge Drawings\1073-011(C).dwg

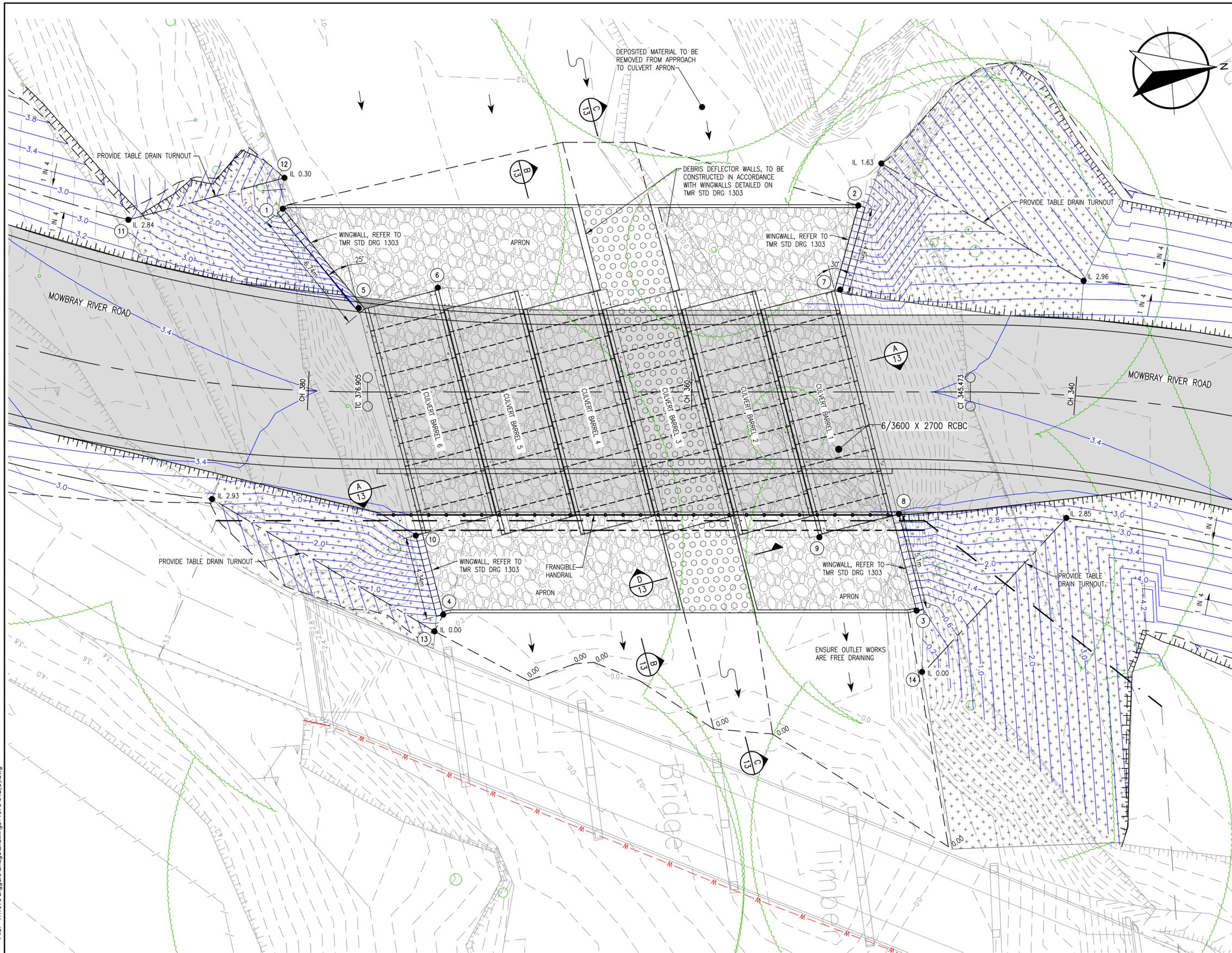
| No. | Description | Reviewed | Approved | Date |
|-----|--------------------|----------|----------|----------|
| C | FOR APPROVAL ISSUE | ARH | PCS | 25/08/17 |
| B | PRELIMINARY ISSUE | - | - | 19/07/17 |
| A | PRELIMINARY ISSUE | - | - | 10/7/17 |



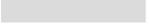
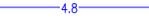
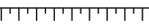
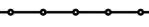
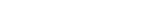
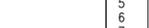
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| | | Title PROPERTY ACCESS DETAILS | |
| Drawn RML | Designed RML | Drawing Check | Design Check |
| Approved | | RPEQ | Date |
| | | Drawing No. | Revision |
| | | 1073-011 | C |



LEGEND

-  #300 SELECT PLACED ROCK EMBEDDED INTO CONCRETE
-  CONCRETE SLAB/PIERS
-  GROUTED ROCK PITCHING
-  #400 SELECT ROCK MATERIAL (LOOSE)
-  PROPOSED ROAD
-  4.8 DESIGN SURFACE CONTOUR (0.2m INTERVAL)
-  ROAD CENTRELINE
-  BATTER TOP
-  BATTER TOE
-  CH 160 ROAD CHAINAGE
-  ROADSIDE TABLE DRAIN INVERT
-  #150 DI CL WATER MAIN
-  FUTURE #150 DI CL WATER MAIN (BY OTHERS)
-  #100 STEEL SERVICE CONDUIT
-  FRANGIBLE HANDRAIL
-  EXISTING TOP OF BANK
-  EXISTING TOE OF BANK
-  EXISTING EDGE OF ROAD SEAL
-  W - - - W EXISTING WATER PIPE
-  E - - - E EXISTING OVERHEAD ELECTRICITY
-  EXISTING TREE CANOPY
-  EXISTING FENCE
-  EXISTING GUARDRAIL
-  4.8 EXISTING SURFACE CONTOUR (0.2m INTERVAL)

CULVERT WINGWALL SETOUT

| POINT | EASTING | NORTHING |
|-------|------------|-------------|
| 1 | 336323.998 | 8168283.775 |
| 2 | 336326.141 | 8168313.709 |
| 3 | 336347.392 | 8168315.115 |
| 4 | 336345.701 | 8168290.489 |

CULVERT BASE SLAB SETOUT

| POINT | EASTING | NORTHING |
|-------|------------|-------------|
| 5 | 336329.453 | 8168287.323 |
| 6 | 336328.714 | 8168291.519 |
| 7 | 336330.428 | 8168312.433 |
| 8 | 336342.307 | 8168314.586 |
| 9 | 336343.194 | 8168310.352 |
| 10 | 336341.489 | 8168289.382 |

TABLE DRAIN SETOUT

| POINT | EASTING | NORTHING |
|-------|------------|-------------|
| 11 | 336323.949 | 8168275.703 |
| 12 | 336322.401 | 8168283.988 |
| 13 | 336346.530 | 8168289.968 |
| 14 | 336350.595 | 8168315.152 |

CULVERT ARRANGEMENT PLAN

SCALE 1:100

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| No. | Description | Reviewed | Approved | Date |
|-----|--------------------|----------|----------|----------|
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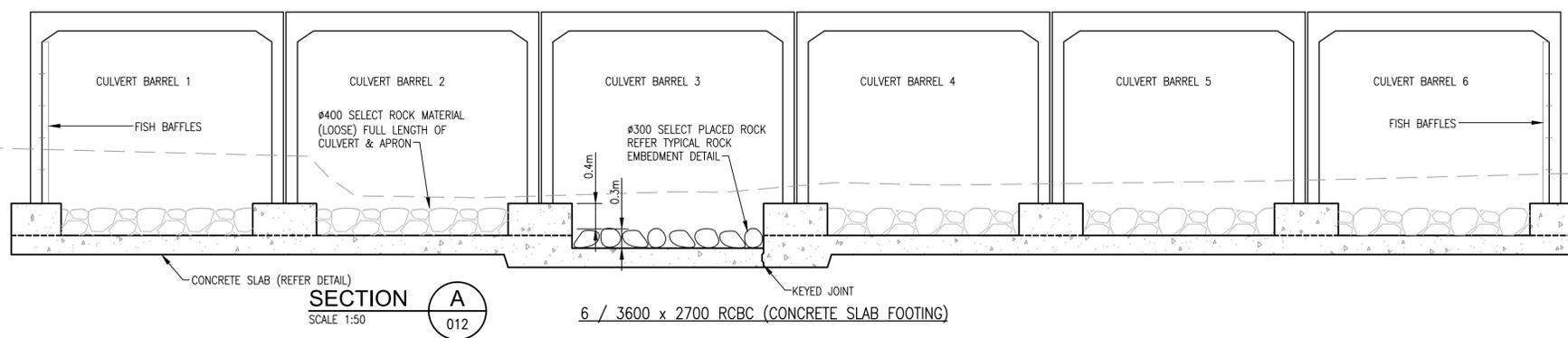
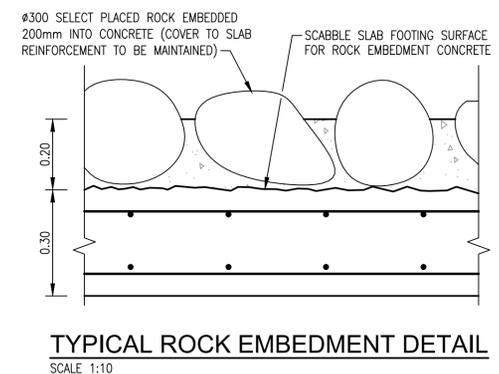
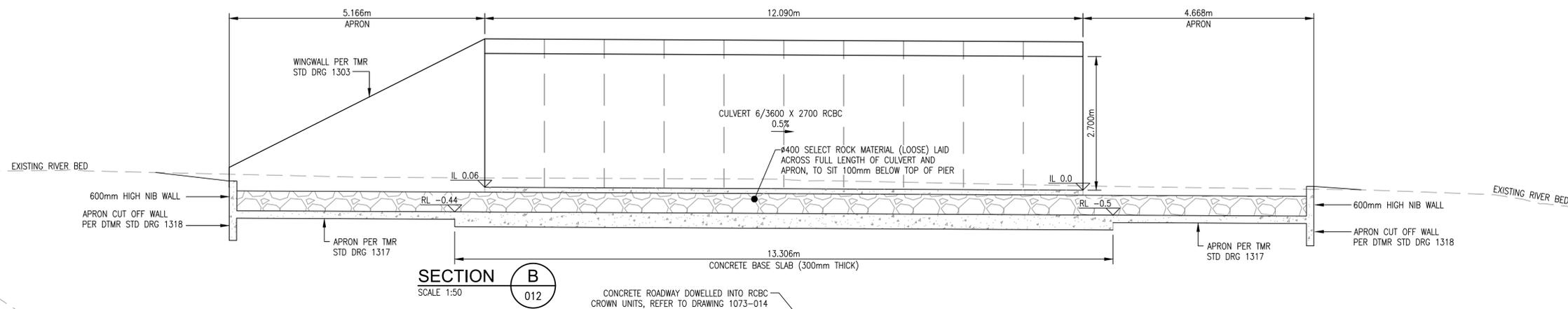
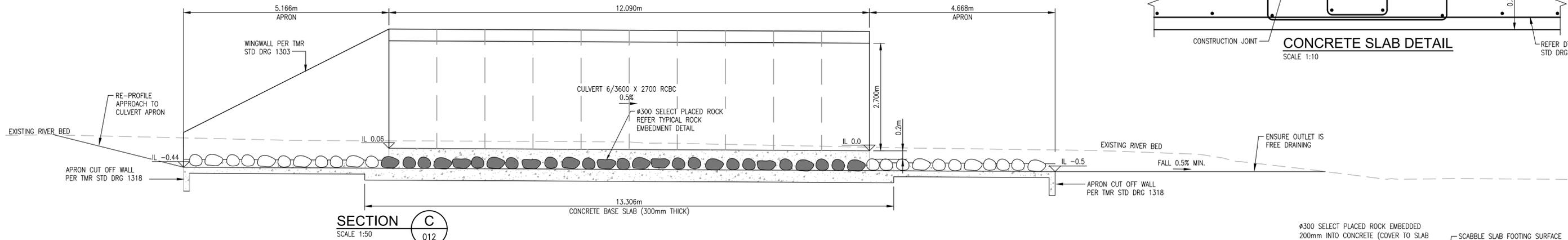
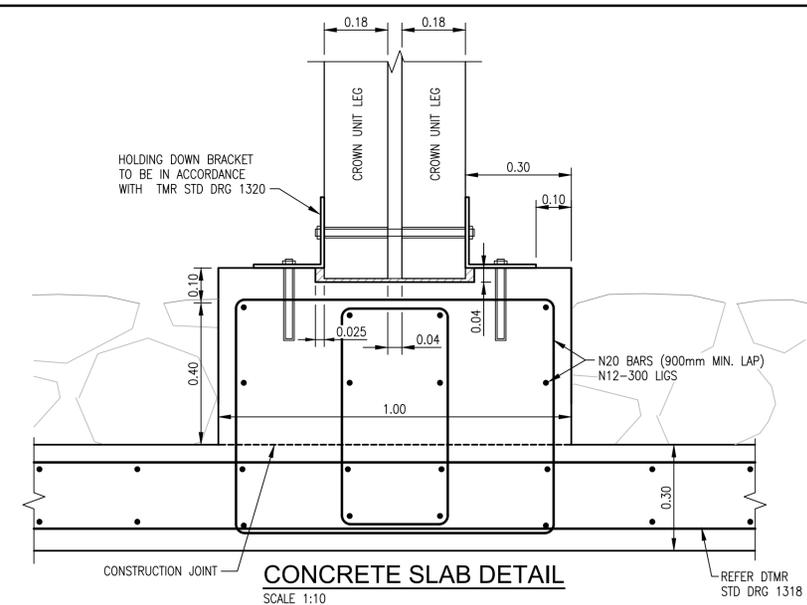
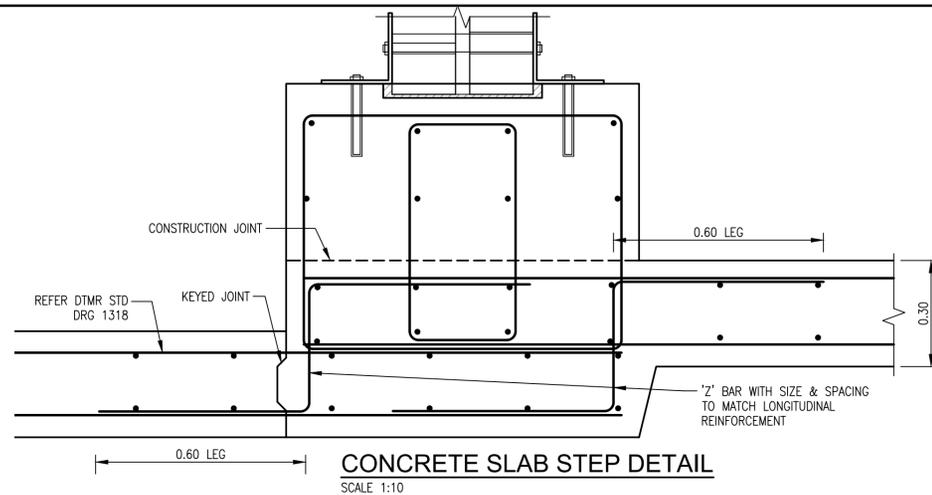
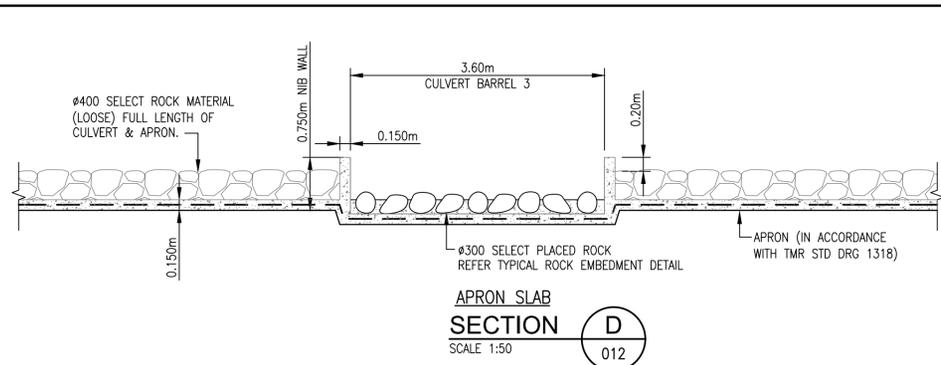
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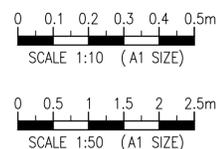
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| Drawn | Designed |
| RML | RML |

| Client | | | | | | | | |
|----------------------------------|----------|---------------|--------------|----------|------|------|-------------|----------|
| DOUGLAS SHIRE COUNCIL | | | | | | | | |
| Project | | | | | | | | |
| DIGGERS BRIDGE UPGRADE | | | | | | | | |
| Title | | | | | | | | |
| CULVERT GENERAL ARRANGEMENT PLAN | | | | | | | | |
| Drawn | Designed | Drawing Check | Design Check | Approved | RPEQ | Date | Drawing No. | Revision |
| | | | | | | | 1073-012 | C |



| No. | Description | Reviewed | Approved | Date |
|-----|--------------------|----------|----------|----------|
| C | FOR APPROVAL ISSUE | ARH | PCS | 25/08/17 |
| B | PRELIMINARY ISSUE | - | - | 19/07/17 |
| A | PRELIMINARY ISSUE | - | - | 10/7/17 |



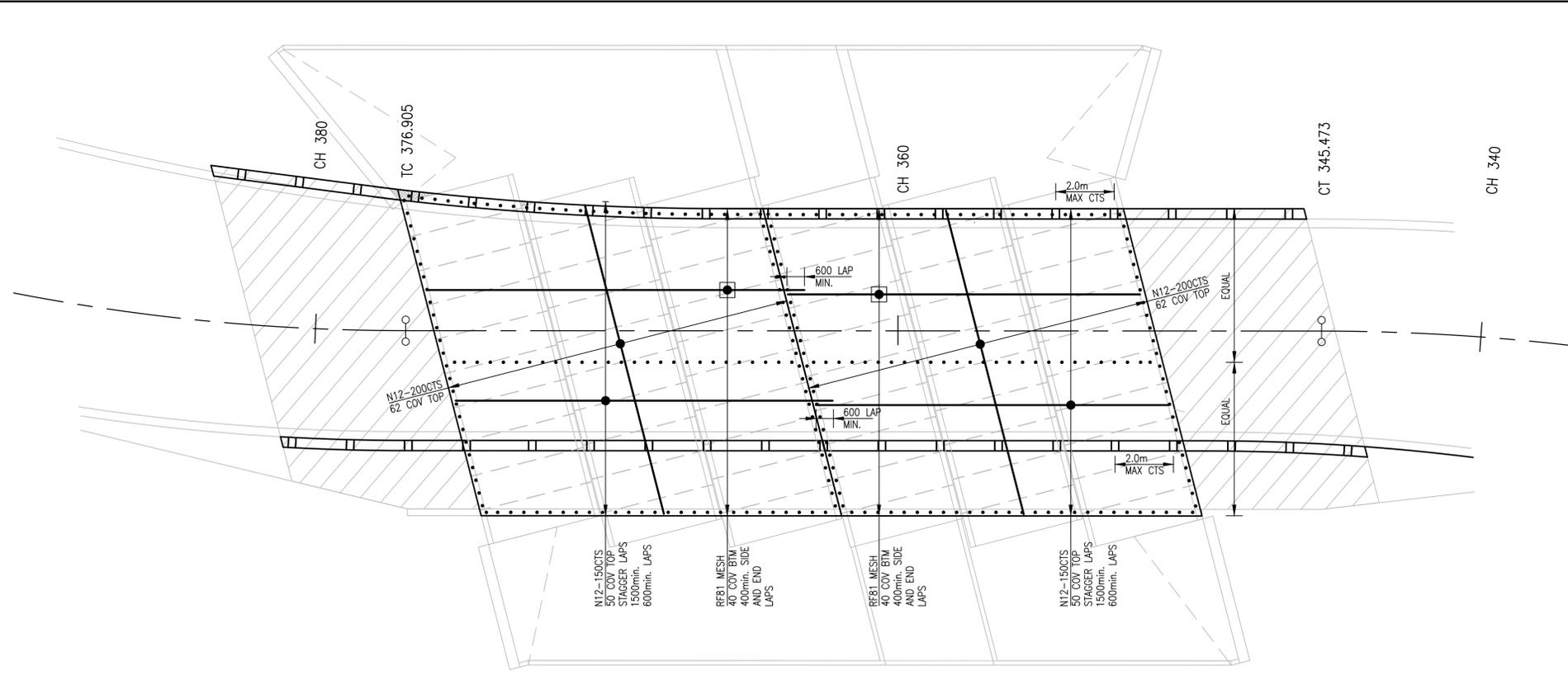
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|---|-----------------|--|--------------------------------|
| AS SHOWN | | DOUGLAS SHIRE COUNCIL | |
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| | | Title CULVERT SECTIONS AND FOOTING DETAILS | |
| Drawn RML | Designed RML | Drawing Check | Design Check |
| Approved | RPEQ | Date | Drawing No. 1073-013 |
| | | | Revision C |



CONCRETE ROADWAY REINFORCEMENT PLAN

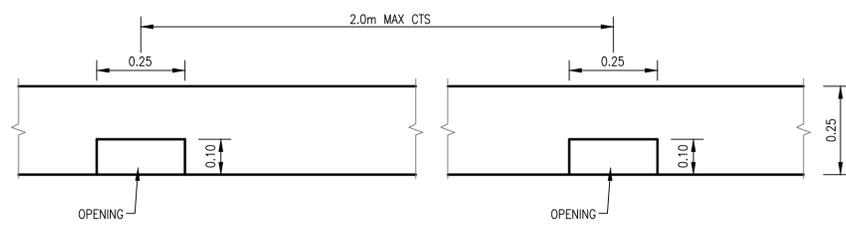
SCALE 1:100

CONCRETE NOTES

- ALL CONCRETE WORK SHALL BE IN ACCORDANCE WITH THE CURRENT EDITIONS OF AS 3600 AND AS 1379, EXCEPT WHERE VARIED BY THE CONTRACT DOCUMENTS.
- CONCRETE QUALITY:

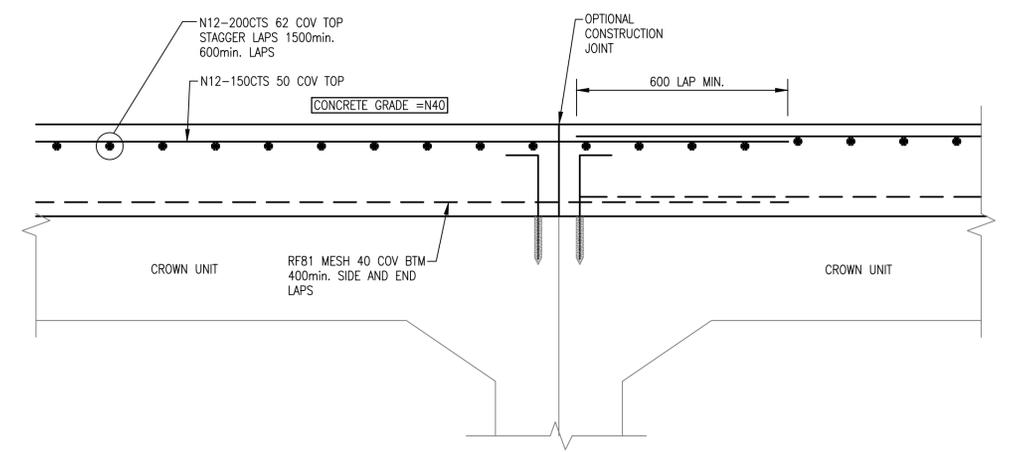
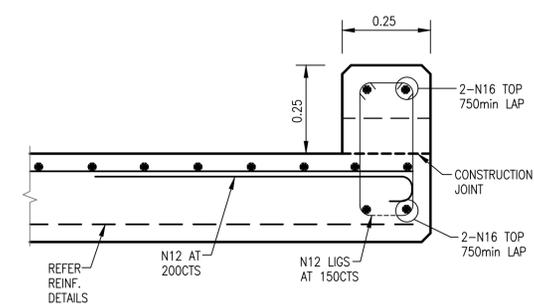
| ELEMENT | CONCRETE GRADE | SLUMP | MAX. SIZE AGGREGATE | CEMENT TYPE | ADMIXTURE |
|--------------|----------------|-------|---------------------|-------------|-----------|
| ALL CONCRETE | N40 | 80 | 20 | GP | - |

CONCRETE GRADE TO BE CONCRETE CHARACTERISTIC STRENGTH (f_c) AT 28 DAYS.
METHOD OF PLACEMENT - PUMPED
TYPE OF ASSESSMENT - PROJECT
- ALL CONCRETE TO BE ADEQUATELY VIBRATED.
- NO HOLES OR CHASES OTHER THAN THOSE SHOWN ON THE STRUCTURAL DRAWINGS SHALL BE MADE IN CONCRETE MEMBERS WITHOUT THE PRIOR APPROVAL OF THE ENGINEER. PIPES OR ELECTRICAL CONDUITS SHALL NOT BE PLACED WITHIN THE CONCRETE COVER TO REINFORCEMENT WITHOUT THE APPROVAL OF THE ENGINEER. THE CONCRETE COVER TO EMBEDDED PIPES OR CONDUITS SHALL BE A MIN OF 20mm.
- CONSTRUCTION JOINTS SHALL BE MADE ONLY WHERE SHOWN ON THE DRAWINGS OR WHERE APPROVED BY THE ENGINEER.
- ALL CONCRETE SURFACES SHALL BE CURED BY AN APPROVED METHOD FOR SEVEN DAYS IMMEDIATELY THE CONCRETE IS SET.
- ALL FORMWORK AND PROPPING TO SUSPENDED DECKS AND BEAMS SHALL REMAIN IN POSITION FOR 14 DAYS AFTER PLACING CONCRETE UNLESS SPECIFIED OTHERWISE. SUCH FLOOR SHALL REMAIN UNLOADED FOR 28 DAYS.
- ALL REINFORCEMENT TO COMPLY WITH THE CURRENT EDITIONS OF AS 1302, AS 1303, AS 1304 AND SHALL BE DESIGNATED THUS :
 N DEFORMED BARS GRADE 500 PLUS
 Y HOT ROLLED DEFORMED BARS GRADE 400Y
 R PLAN ROUND BARS GRADE 250R
 F WELDED WIRE FABRIC GRADE 450F
 W STEEL WIRE, PLAIN AND DEFORMED. GRADE 450W
 ALL FABRIC SHALL BE SUPPLIED IN FLAT SHEETS.
- WELDING OF THE REINFORCEMENT SHALL NOT BE PERMITTED UNLESS SHOWN ON THE DRAWINGS.



TYPICAL KERB DETAILS

SCALE 1:10

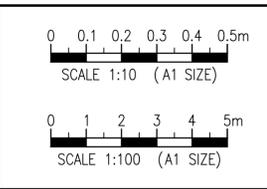


CONSTRUCTION JOINT DETAIL

SCALE 1:10

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| Revisions | | No. | Description | Reviewed | Approved | Date |
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| A | FOR APPROVAL ISSUE | | | ARH | PCS | 25/08/17 |



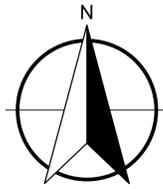
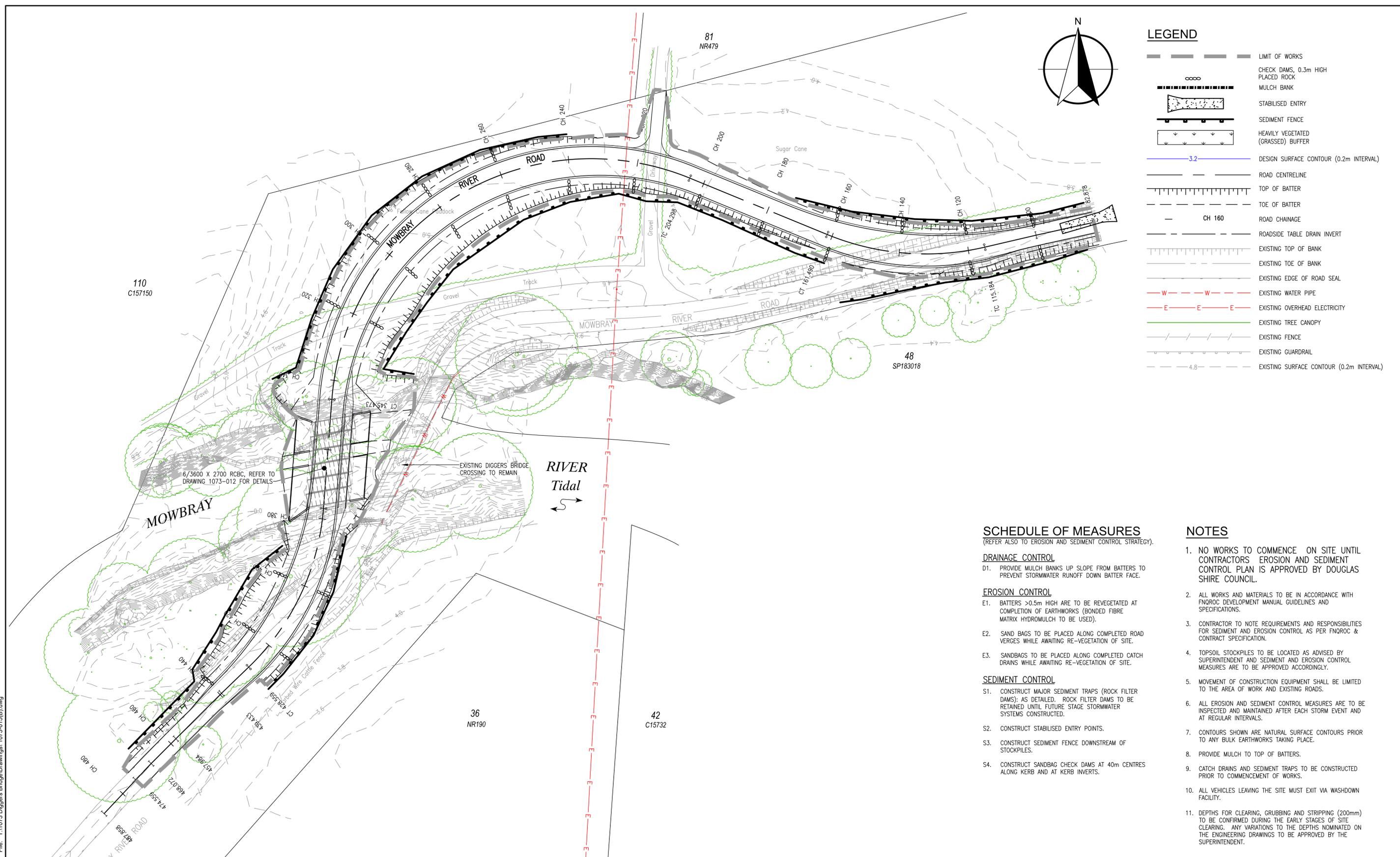
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| | | DIGGERS BRIDGE UPGRADE | |
| | | Title | |
| | | CONCRETE ROADWAY REINFORCEMENT PLAN AND DETAILS | |
| Drawn | Designed | Drawing Check | Design Check |
| RML | RML | Approved | RPEQ |
| Date | Drawing No. | Revision | |
| | 1073-014 | A | |

External References: TEC-TITLE-A1_b.dwg



LEGEND

| | |
|--|--|
| | LIMIT OF WORKS |
| | CHECK DAMS, 0.3m HIGH PLACED ROCK |
| | MULCH BANK |
| | STABILISED ENTRY |
| | SEDIMENT FENCE |
| | HEAVILY VEGETATED (GRASSED) BUFFER |
| | DESIGN SURFACE CONTOUR (0.2m INTERVAL) |
| | ROAD CENTRELINE |
| | TOP OF BATTER |
| | TOE OF BATTER |
| | ROAD CHAINAGE |
| | ROADSIDE TABLE DRAIN INVERT |
| | EXISTING TOP OF BANK |
| | EXISTING TOE OF BANK |
| | EXISTING EDGE OF ROAD SEAL |
| | EXISTING WATER PIPE |
| | EXISTING OVERHEAD ELECTRICITY |
| | EXISTING TREE CANOPY |
| | EXISTING GUARDRAIL |
| | EXISTING SURFACE CONTOUR (0.2m INTERVAL) |

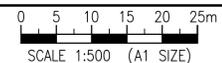
SCHEDULE OF MEASURES
(REFER ALSO TO EROSION AND SEDIMENT CONTROL STRATEGY).

- DRAINAGE CONTROL**
- D1. PROVIDE MULCH BANKS UP SLOPE FROM BATTERS TO PREVENT STORMWATER RUNOFF DOWN BATTER FACE.
- EROSION CONTROL**
- E1. BATTERS >0.5m HIGH ARE TO BE REVEGETATED AT COMPLETION OF EARTHWORKS (BONDED FIBRE MATRIX HYDROMULCH TO BE USED).
 - E2. SAND BAGS TO BE PLACED ALONG COMPLETED ROAD VERGES WHILE AWAITING RE-VEGETATION OF SITE.
 - E3. SANDBAGS TO BE PLACED ALONG COMPLETED CATCH DRAINS WHILE AWAITING RE-VEGETATION OF SITE.
- SEDIMENT CONTROL**
- S1. CONSTRUCT MAJOR SEDIMENT TRAPS (ROCK FILTER DAMS): AS DETAILED. ROCK FILTER DAMS TO BE RETAINED UNTIL FUTURE STAGE STORMWATER SYSTEMS CONSTRUCTED.
 - S2. CONSTRUCT STABILISED ENTRY POINTS.
 - S3. CONSTRUCT SEDIMENT FENCE DOWNSTREAM OF STOCKPILES.
 - S4. CONSTRUCT SANDBAG CHECK DAMS AT 40m CENTRES ALONG KERB AND AT KERB INVERTS.

NOTES

- NO WORKS TO COMMENCE ON SITE UNTIL CONTRACTORS EROSION AND SEDIMENT CONTROL PLAN IS APPROVED BY DOUGLAS SHIRE COUNCIL.
- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNOROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- CONTRACTOR TO NOTE REQUIREMENTS AND RESPONSIBILITIES FOR SEDIMENT AND EROSION CONTROL AS PER FNOROC & CONTRACT SPECIFICATION.
- TOPSOIL STOCKPILES TO BE LOCATED AS ADVISED BY SUPERINTENDENT AND SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE APPROVED ACCORDINGLY.
- MOVEMENT OF CONSTRUCTION EQUIPMENT SHALL BE LIMITED TO THE AREA OF WORK AND EXISTING ROADS.
- ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED AND MAINTAINED AFTER EACH STORM EVENT AND AT REGULAR INTERVALS.
- CONTOURS SHOWN ARE NATURAL SURFACE CONTOURS PRIOR TO ANY BULK EARTHWORKS TAKING PLACE.
- PROVIDE MULCH TO TOP OF BATTERS.
- CATCH DRAINS AND SEDIMENT TRAPS TO BE CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.
- ALL VEHICLES LEAVING THE SITE MUST EXIT VIA WASHDOWN FACILITY.
- DEPTHS FOR CLEARING, GRUBBING AND STRIPPING (200mm) TO BE CONFIRMED DURING THE EARLY STAGES OF SITE CLEARING. ANY VARIATIONS TO THE DEPTHS NOMINATED ON THE ENGINEERING DRAWINGS TO BE APPROVED BY THE SUPERINTENDENT.

EROSION AND SEDIMENT CONTROL PLAN
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| | | Title | |
| | | EROSION AND SEDIMENT CONTROL STRATEGY | |
| Drawn | Designed | Drawing Check | Design Check |
| RML | RML | Approved | RPEQ |
| Date | Drawing No. | Revision | |
| | 1073-015 | B | |

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|-----|--------------------|----------|----------|----------|
| B | FOR APPROVAL ISSUE | ARH | PCS | 25/08/17 |
| A | PRELIMINARY ISSUE | - | - | 19/07/17 |

External References: TEC-TITLE-A1_b.dwg; 1073-X-SURVEY.dwg; 1073-X-DESIGN.dwg