

FNQROC DEVELOPMENT MANUAL

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

Location of Development

Applicant

Designer

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	
Geometric Road Design	
Pavements	
Structures / Bridges	
Subsurface Drainage	
Stormwater Drainage	
Site Re-grading	
Erosion Control and Stormwater Management	
Pest Plant Management	
Cycleway / Pathways	

Landscaping	
Water Source and Disinfection/Treatment Infrastructure (if applicable)	
Water Reticulation, Pump Stations and water storages	
Sewer Reticulation and Pump Stations	
Electrical Reticulation and Street Lighting	
Public Transport	
Associated Documentation/ Specification	
Priced Schedule of Quantities	
Referral Agency Conditions	
Supporting Information (AP1.08)	
Other	

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

Designer **RPEQ No**

Name in Full

Signature **Date**

DA Form 1 – Development application details

Approved form (version 1.3 effective 28 September 2020) 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 only 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 (i.e. material change of use, operational work or reconfiguring a lot)**, 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>	Jumrum Rainforest Pty Ltd
Contact name <i>(only applicable for companies)</i>	Kael Whitnell
Postal address <i>(P.O. Box or street address)</i>	51 Sheridan Street
Suburb	Cairns
State	Queensland
Postcode	4870
Country	Australia
Contact number	07 4281 6897
Email address <i>(non-mandatory)</i>	kael@aroindustries.com.au
Mobile number <i>(non-mandatory)</i>	0474 068 078
Fax number <i>(non-mandatory)</i>	NA
Applicant's reference number(s) <i>(if applicable)</i>	ARO0336 – Jumrum Subdivision Stage 2

2) Owner's consent

2.1) Is written consent of the owner required for this development application?

- Yes – the written consent of the owner(s) is attached to this development application
 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
	-		Fallon Road	Kuranda
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
	4881	72	RP903071	Mareeba Shire Council
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.

- Coordinates of premises by longitude and latitude

Longitude(s)	Latitude(s)	Datum	Local Government Area(s) (if applicable)
-16.84008	145.62267	<input type="checkbox"/> WGS84 <input checked="" type="checkbox"/> GDA94 <input type="checkbox"/> Other: <input type="text"/>	Mareeba 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: <input type="text"/>	

3.3) Additional premises

- Additional premises are relevant to this development application and the details of these premises have been attached in a schedule to this development 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:

- 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:

<input type="checkbox"/> Listed on the Environmental Management Register (EMR) under the <i>Environmental Protection Act 1994</i>
EMR site identification: <input type="text"/>
<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):*

Stage 2 of Jumrum subdivision consisting of 30 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

6.2) 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 <i>(include each definition in a new row)</i>	Number of dwelling units <i>(if applicable)</i>	Gross floor area (m ²) <i>(if applicable)</i>

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? <i>(tick all applicable boxes)</i>	
<input type="checkbox"/> Subdivision <i>(complete 10)</i>	<input type="checkbox"/> Dividing land into parts by agreement <i>(complete 11)</i>
<input type="checkbox"/> Boundary realignment <i>(complete 12)</i>	<input type="checkbox"/> Creating or changing an easement giving access to a lot from a constructed road <i>(complete 13)</i>

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? (e.g. pedestrian access)	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 checked="" type="checkbox"/> Water infrastructure
<input checked="" type="checkbox"/> Drainage work	<input checked="" type="checkbox"/> Earthworks	<input type="checkbox"/> Sewage infrastructure
<input checked="" type="checkbox"/> Landscaping	<input checked="" type="checkbox"/> Signage	<input checked="" type="checkbox"/> Clearing vegetation
<input checked="" type="checkbox"/> Other – please specify:	Electrical	

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

<input checked="" type="checkbox"/> Yes – specify number of new lots:	30
<input type="checkbox"/> No	

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

\$1,500,000.00 - \$2,000,000.00 (estimate)

PART 4 – ASSESSMENT MANAGER DETAILS

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

Mareeba 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

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

No

PART 5 – REFERRAL DETAILS

17) Does this development application include any aspects that have 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 Act 2016:**

- Clearing native vegetation
- Contaminated land (*unexploded ordnance*)
- Environmentally relevant activities (ERA) (*only if the ERA has not been devolved to a local government*)
- Fisheries – aquaculture
- Fisheries – declared fish habitat area
- Fisheries – marine plants
- Fisheries – waterway barrier works
- Hazardous chemical facilities
- Heritage places – Queensland heritage place (*on or near a Queensland heritage place*)
- Infrastructure-related referrals – designated premises
- Infrastructure-related referrals – state transport infrastructure
- Infrastructure-related referrals – State transport corridor and future State transport corridor
- Infrastructure-related referrals – State-controlled transport tunnels and future state-controlled transport tunnels
- Infrastructure-related referrals – near a state-controlled road intersection
- Koala habitat in SEQ region – interfering with koala habitat in koala habitat areas outside koala priority areas
- Koala habitat in SEQ region – key resource areas
- Ports – Brisbane core port land – near a State transport corridor or future State transport corridor
- Ports – Brisbane core port land – environmentally relevant activity (ERA)
- Ports – Brisbane core port land – tidal works or work in a coastal management district
- Ports – Brisbane core port land – hazardous chemical facility
- Ports – Brisbane core port land – taking or interfering with water
- Ports – Brisbane core port land – referable dams
- Ports – Brisbane core port land – fisheries
- Ports – Land within Port of Brisbane's port limits (*below high-water mark*)
- SEQ development area
- SEQ regional landscape and rural production area or SEQ rural living area – tourist activity or sport and recreation activity
- SEQ regional landscape and rural production area or SEQ rural living area – community activity
- SEQ regional landscape and rural production area or SEQ rural living area – indoor recreation
- SEQ regional landscape and rural production area or SEQ rural living area – urban activity
- SEQ regional landscape and rural production area or SEQ rural living area – combined use
- Tidal works or works in a coastal management district
- Reconfiguring a lot in a coastal management district or for a canal
- Erosion prone area in a coastal management district
- Urban design
- Water-related development – taking or interfering with water
- Water-related development – removing quarry material (*from a watercourse or lake*)
- Water-related development – referable dams
- Water-related development – levees (*category 3 levees only*)
- Wetland protection area

Matters requiring referral to the **local government:**

- Airport land
- Environmentally relevant activities (ERA) (*only if the ERA has been devolved to local government*)

<input type="checkbox"/> Heritage places – Local heritage places
Matters requiring referral to the Chief Executive of the distribution entity or transmission entity: <input type="checkbox"/> Infrastructure-related referrals – 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"/> Infrastructure-related referrals – Oil and gas infrastructure
Matters requiring referral to the Brisbane City Council: <input type="checkbox"/> Ports – Brisbane core port land
Matters requiring referral to the Minister responsible for administering the Transport Infrastructure Act 1994: <input type="checkbox"/> Ports – Brisbane core port land (<i>where inconsistent with the Brisbane port LUP for transport reasons</i>) <input type="checkbox"/> Ports – Strategic port land
Matters requiring referral to the relevant port operator , if applicant is not port operator: <input type="checkbox"/> Ports – Land within Port of Brisbane's port limits (<i>below high-water mark</i>)
Matters requiring referral to the Chief Executive of the relevant port authority: <input type="checkbox"/> Ports – Land within limits of another port (<i>below high-water mark</i>)
Matters requiring referral to the Gold Coast Waterways Authority: <input type="checkbox"/> Tidal works or work in a coastal management district (<i>in Gold Coast waters</i>)
Matters requiring referral to the Queensland Fire and Emergency Service: <input type="checkbox"/> Tidal works or work in a coastal management district (<i>involving a marina (more than six vessel berths)</i>)

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
Restriction to lot boundaries within remnant vegetation area	DNRM	To be provided.
Identify and describe any changes made to the proposed development application that was the subject of the referral response and this development application, or include details in a schedule to this development application (<i>if applicable</i>).		
<i>Amendments to lot boundaries.</i>		

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: <i>By not agreeing to accept an information request I, the applicant, acknowledge:</i>
<ul style="list-style-type: none"> • <i>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</i> • <i>Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules.</i>
<i>Further advice about information requests is contained in the DA Forms Guide.</i>

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? (e.g. a preliminary approval)			
<input checked="" type="checkbox"/> Yes – provide details below or include details in a schedule to this development application <input type="checkbox"/> No			
List of approval/development application references	Reference number	Date	Assessment manager
<input type="checkbox"/> Approval <input type="checkbox"/> Development application	DA/12/0035	22 April 2014	Mareeba Shire Council
<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 – a 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 (e.g. building and construction work is less than \$150,000 excluding GST)		
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 <i>Environmental Protection Act 1994</i> ?	
<input type="checkbox"/> Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below <input checked="" type="checkbox"/> No <i>Note: Application for an environmental authority can be found by searching "ESR/2015/1791" as a search term at www.qld.gov.au. An ERA requires an environmental authority to operate. See www.business.qld.gov.au for further information.</i>	
Proposed ERA number:	Proposed ERA threshold:
Proposed ERA name:	
<input type="checkbox"/> 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 ?	
<input type="checkbox"/> Yes – Form 69: Notification of a facility exceeding 10% of schedule 15 threshold is attached to this development application <input checked="" type="checkbox"/> No <i>Note: See www.business.qld.gov.au for further information about hazardous chemical notifications.</i>	

Clearing native vegetation

23.3) Does this development application involve **clearing native vegetation** that requires written confirmation that 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 includes written confirmation from the chief executive of the *Vegetation Management Act 1999* (s22A determination)
- No

Note: 1. Where a development application for operational work or material change of use requires a s22A determination and this is not included, the development application is prohibited development.
2. See <https://www.qld.gov.au/environment/land/vegetation/applying> for further information on how to obtain a s22A determination.

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 habitat in SEQ Region

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

- Yes – the development application involves premises in the koala habitat area in the koala priority area
- Yes – the development application involves premises in the koala habitat area outside the koala priority area
- No

Note: If a koala habitat area determination has been obtained for this premises and is current over the land, it should be provided as part of this development application. See koala habitat area guidance materials at www.des.qld.gov.au for further information.

Water resources

23.6) Does this development application involve **taking or interfering with underground water through an artesian or subartesian bore, taking or interfering with water in a watercourse, lake or spring, or taking overland flow water under the Water Act 2000**?

- Yes – the relevant template is completed and attached to this development application and I acknowledge that a relevant authorisation or licence under the *Water Act 2000* may be required prior to commencing development
- No

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

DA templates are available from <https://planning.dsdmip.qld.gov.au/>. If the development application involves:

- Taking or interfering with underground water through an artesian or subartesian bore: complete DA Form 1 Template 1
- Taking or interfering with water in a watercourse, lake or spring: complete DA Form 1 Template 2
- Taking overland flow water: complete DA Form 1 Template 3.

Waterway barrier works

23.7) Does this application involve **waterway barrier works**?

- Yes – the relevant template is completed and attached to this development application
- No

DA templates are available from <https://planning.dsdmip.qld.gov.au/>. For a development application involving waterway barrier works, complete DA Form 1 Template 4.

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, Mines and Energy at www.dnrme.qld.gov.au and www.business.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 Science at www.des.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.dnrme.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.des.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.des.qld.gov.au for information requirements regarding development of Queensland heritage places.

Name of the heritage place:		Place ID:	
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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*
 No

Decision under section 62 of the Transport Infrastructure Act 1994

23.15) Does this development application involve new or changed access to a state-controlled road?

- Yes – this application will be taken to be an application for a decision under section 62 of the *Transport Infrastructure Act 1994* (subject to the conditions in section 75 of the *Transport Infrastructure Act 1994* being satisfied)
 No

Walkable neighbourhoods assessment benchmarks under Schedule 12A of the Planning Regulation

23.16) Does this development application involve reconfiguring a lot into 2 or more lots in certain residential zones (except rural residential zones), where at least one road is created or extended?

- Yes – Schedule 12A is applicable to the development application and the assessment benchmarks contained in schedule 12A have been considered
- No

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

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

Yes

Note: See the *Planning Regulation 2017* for referral requirements

If building work is associated with the proposed development, Parts 4 to 6 of [DA Form 2 – Building work details](#) have been completed and attached to this development application

Yes

Not applicable

Supporting information addressing any applicable assessment benchmarks is with the development application

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](#).

Yes

Relevant plans of the development are attached to this development application

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

Yes

The portable long service leave levy for QLeave has been paid, or will be paid before a development permit is issued (see 21)

Yes

Not applicable

25) Applicant declaration

- By making this development application, I declare that all information in this development application is true and correct
- Where an email address is provided in Part 1 of this form, I consent to receive future electronic communications from the 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 *Electronic Transactions Act 2001*

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

Privacy – Personal information collected in this form will be used by the 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 *Planning Act 2016*, *Planning Regulation 2017* and the DA Rules except where:

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

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

PART 9 – FOR COMPLETION OF THE ASSESSMENT MANAGER – 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 (dd/mm/yy)	
Date receipted form sighted by assessment manager			
Name of officer who sighted the form			

JUMRUM RAINFOREST ESTATE PTY LTD

JUMRUM SUBDIVISION STAGE 2

OPERATIONAL WORKS SUPPORTING INFORMATION REPORT

CIVIL ENGINEERING, MANAGEMENT AND BUSINESS ADVISORY

CAIRNS OFFICE

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Cairns City QLD 4870
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1 INTRODUCTION

ARO Industries has been commissioned by Jumrum Rainforest Estate Pty Ltd to undertake the detailed design and documentation of civil works, for the stage 2 of the Jumrum Rainforest subdivision in Kuranda.

A reconfiguration of a lot (1 into 83 Lots) was approved subject to conditions by Mareeba Shire Council on 22 April 2014. For Council's reference, a copy of the Decision Notice for the Development Application DA/12/0035 – Application for reconfiguring a lot – subdivision (1 into 83 lots) is included in **Appendix A**. The development hereby submitted has been prepared in compliance with the conditions of that Decision Notice.

2 ENGINEERING DOCUMENTATION

In accordance with Council's requirements, we have provided a copy of the engineering design drawings in **Appendix E**. These include the following drawings:

ARO0336 - C00	Cover Sheet, Locality Plan and Drawing Schedule
ARO0336 - C01	General Arrangement Plan
ARO0336 - C02	Roadworks and Stormwater Drainage Plan – Sheet 1 of 2
ARO0336 - C03	Roadworks and Stormwater Drainage Plan – Sheet 2 of 2
ARO0336 - C04	Type Cross Section and Miscellaneous Details
ARO0336 - C05	Road A Longitudinal Section
ARO0336 - C06	Road B, C and D Longitudinal Sections
ARO0336 - C07	Road A Annotated Cross Sections – Sheet 1 of 3
ARO0336 - C08	Road A Annotated Cross Sections – Sheet 2 of 3
ARO0336 - C09	Road A Annotated Cross Sections – Sheet 3 of 3
ARO0336 – C10	Roads B and D Annotated Cross Sections
ARO0336 – C11	Road C Annotated Cross Sections
ARO0336 – C12	Intersection Setout and Details – Sheet 1 of 2
ARO0336 – C13	Intersection Setout and Details – Sheet 2 of 2
ARO0336 – C14	Driveway Setout and Details – Sheet 1 of 2
ARO0336 – C15	Driveway Setout and Details – Sheet 2 of 2
ARO0336 – C16	Stormwater Drainage Longitudinal Sections – Sheet 1 of 3
ARO0336 – C17	Stormwater Drainage Longitudinal Sections – Sheet 2 of 3
ARO0336 – C18	Stormwater Drainage Longitudinal Sections – Sheet 3 of 3
ARO0336 – C19	Culvert Plan, Section and Elevation
ARO0336 – C20	Water Reticulation Plan – Sheet 1 of 2
ARO0336 – C21	Water Reticulation Plan – Sheet 2 of 2
ARO0336 – C22	Erosion and Sediment Control Plan – Sheet 1 of 2
ARO0336 – C23	Erosion and Sediment Control Plan – Sheet 2 of 2

3 SUPPORTING INFORMATION

3.1 ROADWORKS

Access to the site will be from Fallon Road. Roadworks included in Stage 2 are:

- Continuation of Road A to a culdesac (currently under construction as part of the Operational Works approval OW/16/0006).
- Access street to service lots 67-76 (Road B).
- Access road to service Lot 73 on RP903071 (previous alignment found to be insufficient, realigned to more suitable location).
- Commencement of Road C with temporary turn around area for access to future stages.

Access handles to rear allotments are proposed to be bitumen driveways in accordance with the conditions of the Development Application.

3.2 STORMWATER DRAINAGE

The stormwater drainage infrastructure has been designed in accordance with FNQROC Design Guidelines and the Queensland Urban Drainage Manual.

3.2.1 Jumrum Creek Crossing

Stage 2 includes the construction of a culvert crossing over Jumrum Creek. Jumrum Creek is listed as a red waterway under the Department of Agriculture and Fisheries (DAF) guidelines. Advice was sought from DAF in regard to the arrangement of the crossing to conform with their requirements. DAF confirmed that a culvert crossing is an acceptable outcome. This correspondence is provided in **Appendix C**.

The file note detailing the design process and investigations undertaken to date are provided in **Appendix D**.

3.2.2 Internal Stormwater Network

It is understood that a suitable Stormwater Management Plan has been provided to Council as part of the Operational Works Application for Stage 1 of the development.

3.3 STORMWATER QUALITY MANAGEMENT PLAN

The State Planning Policy 2017 outlines the assessment benchmarks for performance outcomes of developments in terms of water quality. Benchmarks state that performance outcomes are required only of the reconfiguration of a lot for an *urban purpose*. The State Planning Regulation 2017 defines an urban purpose as:

'urban purpose means a purpose for which land is used in cities or towns—

(a) including residential, industrial, sporting, recreation and commercial purposes; but

(b) not including rural residential, environmental, conservation, rural, natural or wilderness area purposes.'

The development is currently zoned under Mareeba Shire Council planning scheme as Rural Residential which will be retained for the developed lots. It is understood that the development does not trigger stormwater quality management performance outcomes and no permanent pollutant trap and ongoing maintenance by Council will be required. Throughout construction, water monitoring will be undertaken as required by the EPBC approval held by the developer.

Notwithstanding the above, water quality management and erosion sediment controls will be provided throughout the construction of Stage 2. An Erosion and Sediment Control Strategy (ARO336 – C22 & C23) has been produced to minimise erosion and the movement of sediment from the site during construction. The strategy is to be used as a guide by the Contractor in producing their Erosion and Sediment Control Plan for construction works.

It is noted that the final Erosion and Sediment Control measures are subject to the Contractor's construction methodology. It is envisaged that the final Erosion Sedimentation Control infrastructure will generally follow those provided in the strategy.

The Contractor is required to produce an erosion and sediment control plan in line with this strategy and their construction methodology.

3.4 SEWERAGE

There is no reticulated sewerage infrastructure for the development. Lots will utilise onsite effluent disposal. Effluent disposal investigations in accordance with AS/NZS1547 are to be undertaken by the purchasers of the lots.

3.5 WATER RETICULATION

Stage 2 of the development will continue the water reticulation network construction as part of Stage 1. The water reticulation network will continue to be serviced by existing infrastructure on Fallon Road.

The water reticulation network was modelled using EPANET 2.2. The Hazen-Williams equation was utilized for frictional losses as specified by section D6.07 of the FNQROC Development Manual. The file note demonstrating conformance to the FNQROC Development Manual is provided in **Appendix B**.

3.6 GEOTECHNICAL INVESTIGATIONS

No Geotechnical Investigations of the site have been undertaken to date.

ARO acknowledge the requirements of Condition 3.12 – Landslide in DA/12/0035 and the requirement for building envelopes with a grade greater than 15% to have a slope stability report completed prior to endorsement of the plan of survey.

3.7 UTILITY SERVICES

In accordance with Council's requirements, SPA Consulting Pty Ltd has been engaged to carry out the electrical and communication design, including assessment of the streetlighting and negotiations with Ergon Energy. Final documentation will be forwarded to Council upon receipt.

3.8 STREET TREE PLANTING

In accordance with Council's requirements, LA3 – Landscape Architecture & Urban Design was engaged to carry out the street tree design. This is provided in **Appendix E**.

3.9 EASEMENTS

As per Condition 4.2 of the Development conditions, an easement in over the access handle for Lot 63 in favour of Lots 61 and 62 is proposed for the purpose of access/drainage/maintenance.

The access is the full length of the access and has a formation width of 5.5m.

3.10 ENVIRONMENTAL COVENANT

As per Condition 3.10 of the Development Conditions, an environmental covenant will be provided for all areas outside the prescribed building envelopes.

It is understood that the wording for this covenant has previously been accepted by Council.

3.11 CONCURRENCY AGENCY CONDITIONS

3.11.1 Department of Resources

Department of Resources (formally Department of Natural Resources and Minerals) conditions apply to Stage 2 of the development. Conditions relate to the area of remnant vegetation in overlaying with Lot 75.

Confirmation that these conditions have been met has been sought from the department and will be forwarded to Council upon receipt.

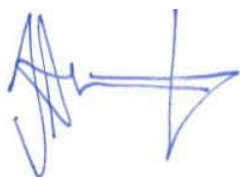
3.11.2 Department of Transport and Main Roads

Department of Transport and Main Roads conditions apply to the building certification of structures in Stage 3 and do not apply to this Operational Works application.

3.12 RECOMMENDATIONS

Following consideration of this Design Submission Report and the accompanying design documentation it is recommended that:

- Council issues an Operational Works Permit to construct the works.



Andrew Armstrong (RPEQ 21116)

Senior Civil Engineer



Kael Whitnell

Civil Engineer

APPENDIX A
MSC Decision Notice DA/12/0035

22 April 2014

Jumrum Rainforest Pty Ltd
C/ Planning Far North
PO Box 7801
CAIRNS QLD 4870

Decision Notice

Approval

Sustainable Planning Act 2009 s334 and s335

Dear Applicant/s

APPLICATION FOR RECONFIGURING A LOT - SUBDIVISION (1 INTO 83 LOTS)
LOT 72 RP 903071
SITUATED AT 1593 KENNEDY HIGHWAY, KURANDA

I wish to advise that, at Council's Ordinary Meeting held on *16 April 2014* the above development application was -

- Approved in full with conditions.

The conditions relevant to this approval are detailed in **section 6** of this notice. These conditions are clearly identified to indicate whether the Assessment Manager or a Concurrence Agency imposed them.

Approval under Section 331

This application **has not** been deemed to be approved under Section 331 of the Sustainable Planning Act 2009 (SPA).

1. Details of the approval -

- Development Permit for Reconfiguring a Lot - Subdivision of 1 lot into 83 lots in nine (9) stages

2. Other necessary development permits and/or compliance permits -

Listed below are other development permits and/or compliance permits that are necessary to allow the development to be carried out:

- Development Permit for Operational Works

3. Other approvals required from Council -

- NIL

4. Submissions -

Not applicable

5. Conflict with a relevant instrument and reasons for the decision despite the conflict -

The assessment manager does/does not consider that the assessment manager's decision conflicts with a relevant instrument.

6. Conditions -**(A) ASSESSMENT MANAGER'S CONDITIONS (COUNCIL)****(a) Development assessable against the Planning Scheme****1. Development must be carried out substantially in accordance with the approved plans and the facts and circumstances of the use as submitted with the application, subject to any alterations:**

- found necessary by Council's delegated officer at the time of examination of the engineering plans or during construction of the development because of particular engineering requirements; and
- to ensure compliance with the following conditions of approval.

2. Timing of Effect

- 2.1** The conditions of the development permit must be complied with to the satisfaction of Council's delegated officer prior to the endorsement of the plan of survey, except where specified otherwise in these conditions of approval.

3. General

- 3.1** The applicant/developer is responsible for the cost of necessary alterations to existing public utility mains, services or installations required by works in relation to the proposed development or any works required by condition(s) of this approval.
- 3.2** All payments or bonds required to be made to the Council pursuant to any condition of this approval or the Adopted Infrastructure Charges Notice must be made prior to the endorsement of the plan of survey and at the rate applicable at the time of payment.
- 3.3** The developer must relocate (in accordance with FNQROC Development Manual standards) any services such as water, sewer, drainage, telecommunications and electricity that are not wholly located within the lots that are being created/serviced where required by the relevant authority, unless approved by Council's delegated officer.
- 3.4** Where utilities (such as sewers on non-standard alignments) traverse lots to service another lot, easements must be created in favour of Council for access and maintenance purposes. The developer is to pay all costs (including Council's legal expenses) to prepare and register the easement documents.
- 3.5** Where approved existing buildings and structures are to be retained, setbacks to any new property boundaries are to be in accordance with Planning Scheme requirements for the relevant structure and/or Queensland Development Code.

A plan demonstrating compliance must be submitted prior to endorsement of the plan of survey.

3.6 Prior to the endorsement of the plan of survey the applicant must provide a letter from any Concurrence Agencies confirming that their conditions have been complied with and/or that they have no objection to Council's endorsement of the plan of survey.

3.7 All works must be designed, constructed and carried out in accordance with FNQROC Development Manual requirements (as amended) and to the satisfaction of Council's delegated officer.

3.8 Flood Immunity

The applicant/developer must provide a plan showing the extent of a 100 ARI year flood event, certified by a RPEQ (Registered Professional Engineer of Queensland). Where a proposed lot is impacted by the 100 ARI year flow, a building envelope of at least 1000m² (minimum dimensions of 20m x 15m) must be provided at least **300mm** above 100 ARI year flood levels.

3.9 No filling is to occur below the 100 ARI flood level unless approved as part of a subsequent development permit for operational works.

3.10 Environmental Covenant

The applicant shall be responsible for the preparation and registration of a statutory covenant with Council pursuant to S97A of the Land Title Act for the purposes of preserving native animals, plants and their habitat.

The covenant area shall comprise all parts of each lot excluding the building envelopes identified on Drawing Number 1180 SK14-34 Amdt B and the areas required for approved operational works infrastructure, to the satisfaction of Council's delegated officer.

The covenant must stipulate that the covenant area must be protected, preserved and conserved, including by strictly adhering to the following non-exhaustive conditions (which may be varied by written agreement between the parties):-

- (a) no existing living vegetation or hereafter existing in the covenant area, may be cut down, damaged or destroyed;
- (b) no buildings or fences may be erected in the covenant area;
- (c) no native animals within the covenant area shall be killed or interfered with;
- (d) no other acts may be carried out on or in respect of the covenant area which, in the opinion of the Council, acting reasonably may have a detrimental impact on the covenant area;

Notwithstanding clause (a) to (d), if any living or dead vegetation on the covenant area poses a risk to human safety:-

- (e) The vegetation may be cut down or trimmed with the prior written consent of the Council, not to be unreasonably withheld, so as to remove the risk;

Notwithstanding clause (a) to (e), if any native or indigenous animal on the covenant area poses a risk to human safety the native or indigenous animal may

be removed with the prior written consent of the Council and any other approvals which might be required by law.

The covenant agreement shall be signed by the registered owner prior to endorsement of the survey plan by Council and the signed covenant shall be jointly lodged for registration with the survey plan, in the Department of Natural Resources & Mines.

The covenant document shall be to the satisfaction of Council's delegated officer, and the applicant shall be responsible for the cost of preparation and registration of the covenant.

3.11 Bushfire Management

Buildings and Structures

- are sited in locations of lowest hazard within the lot;
- achieve setbacks from hazardous vegetation of 1.5 times the predominant mature canopy tree height or 10 metres, whichever is the greater;
- are 10 metres from any retained vegetation strips or small areas of vegetation;
- are sited so that elements of the development least susceptible to fire are sited closest to the bushfire hazard; and
- are connected to a reticulated water supply with a minimum flow and pressure of 10 litres a second and 200kPa.

Bushfire Management Plan

A Bushfire Management Plan will be prepared in accordance with Appendix 8 of State Planning Policy 1/03 - Mitigating the Adverse Impacts of Flood, Bushfire and Landslide to the satisfaction of Council's delegated officer.

The approved use will comply with the requirements of the Management Plan at all times.

3.12 Landslide

For each building envelope containing a slope of 15% or greater, the developer must provide site-specific geo-technical report prepared by a suitably qualified Registered Professional Engineer of Queensland (RPEQ) that certifies:

- The long term stability of the building envelope; and
- The building envelope will not be adversely affected by landslide activity originating on sloping land above the development site.

3.13 Charges

All outstanding rates, charges and expenses pertaining to the land are to be paid in full.

4. Infrastructure Services and Standards

4.1 Access

Access must be provided/constructed to each allotment in accordance with the FNQROC Development Manual, to the satisfaction of Council's delegated officer.

A bitumen sealed or concrete driveway shall be provided within each battleaxe lot access handle to the satisfaction of Council's delegated officer. Each driveway will:

- have a minimum formation width of 3 metres
- be constructed for the full length of the access handle
- be formed with one-way crossfall to cater for stormwater drainage such that any stormwater runoff is contained within the access strip
- service and utility conduits are to be provided for the full length of the concrete or sealed driveway constructed within the access handle of the battle axe allotment(s).

4.2 Easements

An easement must be provided over the access handle for Lot 63 in favour of Lots 61 and 62 for the purposes of access/drainage/maintenance.

A bitumen sealed or concrete driveway shall be provided within the access easement to the satisfaction of Council's delegated officer. The driveway will:

- have a minimum formation width of 3 metres
- be constructed for the full length of the access handle
- be formed with one-way crossfall to cater for stormwater drainage such that any stormwater runoff is contained within the access strip
- service and utility conduits are to be provided for the full length of the concrete or sealed driveway constructed within the access handle of the battle axe allotment(s).

Where Council is party to a proposed easement and/or if the proposed easement is in favour of Council the applicant/developer is to pay all costs (including Council's legal expenses) to prepare and register the easement documents, using Council's standard form of easement. The approved easement documents must be submitted at the same time the applicant/developer seeks endorsement of the plan of survey and must be lodged and registered in the Department of Natural Resources & Mines in conjunction with the plan of survey.

4.3 Stormwater Drainage/Water Quality

- (a) As part of any subsequent application for Operational Works, the applicant must submit a Stormwater Management Plan and Report prepared and certified by a suitably qualified design engineer (RPEQ) that meets or exceeds the standards of design and construction set out in the Queensland Urban Drainage Manual (QUDM) and the FNQROC Development Manual to the satisfaction of Council's delegated officer.
- (b) That Stormwater Management Plan will deal with the entire site, and will also generally be in accordance with the plan prepared by Jim Papas Drafting Pty Ltd on 16 April 2013, and must ensure a non-worsening effect on surrounding land as a consequence of the development, and must take all reasonable and practicable measures to ensure discharge occurs in compliance with the Queensland Urban Drainage Manual (QUDM) and the FNQROC Development Manual.
- (c) As part of any subsequent application for operational works the applicant must also provide:
 - A Stormwater Quality Management Plan and Report prepared and certified by a suitably qualified design engineer (RPEQ) that meets or exceeds the standards of design and construction set out in the

Urban Stormwater Quality Planning Guideline and the Queensland Water Quality Guideline to the satisfaction of Council's delegated officer;

- The Stormwater Quality Management Plan must include an Erosion and Sediment Control Plan that meets or exceeds the Soil Erosion and Sedimentation Control Guidelines (Institute of Engineers Australia) to the satisfaction of Council's delegated officer; and
 - A demonstration of compliance against the Filling and Excavation Code.
- (d) All stormwater channels through private property must be registered, with the easement for drainage purposes in favour of Council. All documentation leading to the registration of the easement must be completed at no cost to Council.
- (e) Construction of drainage must be to FNQROC standards (section D4), including the provision for an ARI 100 year overland flow through open space areas, or, easements within the balance area.
- (f) All stormwater drainage must be collected from site and discharged to an approved legal point of discharge, being the proposed retention basins in this instance.
- (g) The applicant must video (at their cost) all stormwater lines and submit the video for inspection by Council's delegated officer prior to the development being taken "off maintenance" to ensure that no defects have occurred during the 12 month maintenance period.
- (h) Detention basins that are constructed within existing creeks and gullies and that are within the Environmental Covenant areas (Condition 3.10) shall be left in the natural condition as much as practicable. Any detention basins that are not within the Environmental Covenant areas shall be constructed such that they are capable of being mowed where necessary, landscaped and maintained. Batter slopes within areas intended for park will be a maximum of 1 in 6 for park road frontages, and 1 in 4 in all other cases.
- (i) Any necessary temporary drains and associated drainage easements within the balance area will be provided as part of the relevant stage works and survey plans.

4.4 Earthworks

As part of a subsequent application for Operational Works, an earthworks plan is to be submitted, prepared by a suitably qualified RPEQ demonstrating compliance with the Filling and Excavation Code including the following detail:

- Maintenance of access roads to and from the site such that they remain free of all fill material and are cleaned as necessary
- Preservation of all drainage structures from the effects of structural loading generated by the earthworks;
- Protection of adjoining properties and roads from ponding or nuisance from stormwater.

All site earthworks, drainage and pavement construction are to be designed and supervised by a RPEQ. Testing is to be carried out by NATA Registered Laboratories and results submitted as part of the As Constructed information. The Supervising Engineer must submit a certificate demonstrating that all work

has been satisfactorily completed to the quality control criteria for the site and in accordance with AS3798 (as amended).

4.5 Roadworks – External Construction

The developer is required to construct the following works, designed in accordance with FNQROC Development Manual standards to the satisfaction of Council's delegated officer.

- (i) In Stage 1, the construction of frontage works on Fallon Road generally in accordance with Jim Papas Drafting Pty Ltd Drawing number 1180 C04 Amdt B.
- (ii) In Stage 2A, the reconstruction of the 90 degree corner on Fallon Road (adjacent to Lot 3 on RP857692) with improved vertical alignment, and improved horizontal alignment to the extent achievable within the existing road reserve.
- (iii) In Stage 2A, the construction of kerbing on the southern side of Fallon Road from the end of the kerb constructed under 4.5(i), up to about Chainage 25 on Fallon Road as shown on Jim Papas Drafting Pty Ltd Drawing number 1180 C04 Amdt B.
- (iv) The value (as agreed by Council's delegated officer) of the external works required under Condition 4.5 (ii) and (iii), shall be credited towards any contribution required under Mareeba Shire Planning Scheme Policy No. 6: Augmentation of the Road Network Contribution.

Prior to works commencing, plans for the works described above must be approved as part of an Operational Works application.

4.6 Roadworks – Internal

Internal Road A must be constructed to Minor Collector Road standard in accordance with FNQROC Development Manual standards to the satisfaction of Council's delegated officer.

All other internal roads must be constructed to Access Street standard in accordance with FNQROC Development Manual standards to the satisfaction of Council's delegated officer.

A temporary turnaround area, with gravel surface, must be provided at the end of the new road construction adjacent to the balance area of the overall subdivision to allow traffic manoeuvring.

4.7 Water Supply

- (a) Where the existing reticulated water supply does not currently service the site or is not at an adequate capacity, the developer is required to extend or upgrade the reticulated water supply infrastructure to connect the site to Council's existing infrastructure at a point that has sufficient capacity to service the development in accordance with FNQROC Development Manual standards (as amended). The water reticulation shall be constructed generally in accordance with the Jim Papas Drafting Pty Ltd Drawing Number 1180 SK14-70(A).
- (b) Specific water supply infrastructure requirements:

- (i) Stage 1, 2A and 2B, up to a maximum of 33 lots, is to be supplied by a minimum of 150 mm nominal bore water main connected to Council's existing water infrastructure within Fallon Road;
 - (ii) Before or during the development of a 34th lot, a second water main of an appropriate size agreed to by Council's delegated officer is to be constructed from Masons Road to the development, extending to and connecting with the main constructed under (b)(i).
 - (iii) Council suggests that the applicant seek an easement through a neighbouring allotment such as Lot 0 on SP111147 to facilitate the second connection required under (b)(ii). Any easement must be created in favour of Council for water supply purposes.
 - (iv) The value (as agreed by Council's delegated officer) of the works associated with the second water main described in (b)(ii) including acquiring, surveying and registering the easement, design, construction and connection of the water main, shall be credited towards any contribution under Mareeba Shire Planning Scheme Policy 2 - Headworks Charges for Water Supply and Sewerage.
- (c) A water service connection must be provided to each proposed lot in accordance with FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer.

4.8 On-Site Wastewater Management

At the time of building construction an on-site effluent disposal system must be constructed on each lot generally in accordance with the report prepared by Golder Associates and received at Council on 12 April 2013 in compliance with the latest version On-Site Domestic Wastewater Management Standard (ASNZ1547) to the satisfaction of the Council's delegated officer.

4.9 Electricity provision/supply

The applicant/developer must ensure that an appropriate level of electricity supply is provided to each allotment in accordance with FNQROC Development Manual standards (as amended) to the satisfaction of Council's delegated officer.

Written advice from an Electricity Service Provider is to be provided to Council indicating that an agreement has been made for the provision of **underground** power reticulation.

4.10 Telecommunications

The applicant/developer must enter into an agreement with a telecommunication carrier to provide telecommunication services to each allotment and arrange provision of necessary conduits and enveloping pipes.

4.11 Pathway linking Road D to Road C - Stage 3E

- (a) A 2m wide pedestrian/cycle concrete path will be provided generally in accordance with the requirements of the FNQROC Development Manual, and to the satisfaction of Council's delegated officer.
- (b) A plan of the pedestrian/cycle path will be submitted prior to lodgement of an application for Operational Works for Stage 3E.

4.12 Lighting

Street lighting must be provided to all roads in accordance with FNQROC Development Manual requirements (as amended) and to the satisfaction of Council's delegated officer.

4.13 Street Tree Planting

Street tree planting must be provided in accordance with FNQROC Development Manual requirements (as amended) and to the satisfaction of Council's delegated officer. The plan depicting species must be submitted to Council's delegated officer for approval. The street trees must be planted in accordance with the approved plan.

4.14 Building Envelope

- (a) All buildings and associated firebreak and effluent disposal areas for each allotment must be located within the approved Building Envelope for the respective allotment as identified on Drawing Number 1180 SK14-34 Amdt B - Plan of Building Envelopes dated August 2012.
- (b) No vegetation is to be removed for the purposes of a dwelling and development ancillary to a dwelling, including for on-site effluent disposal, from outside the designated building envelope.
- (c) The two (2) isolated areas of building envelope on proposed Lots 10 and 11 within the Q100 inundation area as identified on Drawing 1180 SK14-34 Amdt B must be restricted to non-habitable uses that are without walls, such as barbeque shelters and pavilions.

4.15 Landscaping / Site Maintenance

Landscaping / site maintenance carried out as per this approval, and in accordance with the FNQROC Manual, shall be maintained for all areas, including parks, covenants, easements, noise mounds, traffic islands, medians, roundabouts and road verges as follows:

- replacement of trees / shrubs / plantings as required
- landscaping / site maintenance shall include mowing / slashing of all areas outlined above
- landscaping / site maintenance is to be continued throughout the Defects Liability Period until date of Final Acceptance

Contrary to Section D9.23 Paragraph 7 of the FNQROC Manual, the maintenance period for irrigation works and landscaping shall be a minimum of twelve months.

(B) ASSESSMENT MANAGER'S ADVICE

- (a) An Adopted Infrastructure Charges Notice has been issued with respect to the approved development. The Adopted Infrastructure Charges Notice details the type of infrastructure charge/s, the amount of the charge/s and when the charge/s are payable.
- (b) The Adopted Infrastructure Charges Notice does not include all charges or payments that are payable with respect to the approved development. A number of other charges or payments may be payable as conditions of approval. The applicable fee is set out in Council's Fees & Charges Schedule for each respective financial year.
- (c) Easement Documents

The Mareeba Shire Council has developed standard easement documentation to assist in the drafting of formal easement documents for Council easements. Please contact the Regional Land Use Planning Group for more information regarding the drafting of easement documents for Council easements.

(d) Endorsement Fees

Please be advised that Council charges a fee for the endorsement of a Survey Plan, Community Management Statements, easement documents, and covenants. The fee is set out in Council's Fees & Charges Schedule applicable for each respective financial year.

(e) Compliance with applicable codes/policies

The development must be carried out to ensure compliance with the provisions of Council's Local Laws, Planning Scheme Policies, Planning Scheme and Planning Scheme Codes to the extent they have not been varied by a condition of this approval.

(f) Notation on Rates Record

A notation will be placed on Council's Rate record with respect to each lot regarding the following conditions:

- a registered covenant
- an approved building envelope plan
- conditions regarding bushfire management
- an approved bushfire management plan
- a registered easement over the subject site
- flood immunity
- An on-site effluent disposal system must be constructed in accordance with the approved site and soil evaluation report
- Department of Transport and Main Road conditions and Department of Natural Resources and Mines conditions.

(g) Transportation of Soil

All soil transport to or from the site must be covered to prevent dust or spillage during transport. If soil is tracked or spilt onto the road pavements as a result of works on the subject site, it must be removed prior to the end of the working day and within four (4) hours of a request from a Council Officer.

(h) Environmental Protection and Biodiversity Conservation Act 1999

The applicant is advised that referral may be required under the *Environmental Protection and Biodiversity Conservation Act 1999* if the proposed activities are likely to have a significant impact on a matter of national environmental significance. Further information on these matters can be obtained from www.environment.gov.au.

(i) Cultural Heritage

In carrying out the activity the applicant must take all reasonable and practicable measures to ensure that no harm is done to Aboriginal cultural heritage (the "cultural heritage duty of care"). The applicant will comply with the cultural heritage duty of care if the applicant acts in accordance with gazetted cultural heritage duty of care guidelines. An assessment of the proposed activity against the duty of care guidelines will determine whether or to what extent Aboriginal cultural heritage may be harmed by the activity. Further information on cultural heritage, together with a copy of the duty of care guidelines and cultural heritage search forms, may be obtained from www.datsima.qld.gov.au.

7. IDAS referral agencies -

The IDAS Referral Agencies applicable to this application are:

For an application involving	Name of referral agency	Status	Address
<p>Clearing Vegetation If the reconfiguration involves any lot with an area of 2 ha or larger AND the size of any lot to be created is 25 ha or smaller AND</p> <p>On any lot created, additional exempt operational work, other than operational work that is only the clearing of regulated regrowth vegetation can be carried out</p>	Department of Natural Resources and Mines	Concurrence	<p>Administration Officer Permit and Licence Management Implementation & Support Unit Department of Environment & Heritage Protection GPO Box 2454 CITY EAST QLD 4001</p>
<p>Reconfiguring a lot on land relating to a State-controlled road unless: (a) the total number of lots is not increased; and (b) the total number of lots abutting the State-controlled road is not increased</p>	Department of Transport & Main Roads	Concurrence	<p>Department of Transport & Main Roads Assets & Operations Far North Region (Cairns) PO Box 6185 CAIRNS QLD 4870 Attn: Senior Planner</p>

8. Approved Plans -

The approved plans and/or documents for this development approval area listed in the following table:

Plan/Document Number	Plan/Document Title	Prepared by	Dated
1180 SK14-32 Amdt C	Dimensions of Proposed Lots	Jim Papas Drafting Pty Ltd	29.01.13
1180 SK14-33 Amdt B	Lot Layout, Building Envelopes and Extent of Clearing	Jim Papas Drafting Pty Ltd	29.01.13
1180 SK14-34 Amdt B	Plan of Building Envelopes	Jim Papas Drafting Pty Ltd	29.01.13
1180 SK14-36 Amdt B	Proposed Road Layout and Stormwater Drainage	Jim Papas Drafting Pty Ltd	29.01.13
1180 SK14-37 Amdt B	Water and Soil Management Plan	Jim Papas Drafting Pty Ltd	29.01.13
1180 SK14-38 Amdt A	Plan of Building Envelopes overlaying Existing Contours and Slope Analysis	Jim Papas Drafting Pty Ltd	28.01.13
1180 C04 Amdt B	Roadworks and Stormwater Drainage Plan	Jim Papas Drafting Pty Ltd	28.02.11

9. When approval lapses if development not started (s341)

This development approval will lapse in accordance with Section 341 of the Sustainable Planning Act 2009 if development does not start within relevant period as stated below:

- Reconfiguring a Lot requiring Operational Works – four (4) years (starting the day the approval takes effect);

If there is one (1) or more subsequent related approvals' for a development approval for a Material Change of Use or a reconfiguration, the relevant period for the approval will be taken to have started on the day the latest related approval takes effect.

10. Appeal rights –***Applicant may make representations about decision***

The applicant may make written representations to the assessment manager about: -

- (a) a matter stated in the decision notice, other than a refusal or a matter about which a concurrence agency told the assessment manager under section 287(1) or (5); or
- (b) the standard conditions applying to a deemed approval.

However, the applicant can not make representations under subsection (1)(a) about a condition attached to an approval under the direction of the Minister.

Attachment 3 is an extract from SPA which contains details regarding making representations about the decision.

Appeals by applicants

An applicant for a development application may appeal to the Planning and Environment Court against the following:

- the refusal, or refusal in part of the development application
- any condition of a development approval, another matter stated in a development approval and the identification or inclusion of a code under section 242 of SPA
- the decision to give a preliminary approval when a development permit was applied for
- the length of a period mentioned in section 341
- a deemed refusal of the development application.

The timeframes for starting an appeal in the Planning and Environment Court are set out in section 461(2) of SPA.

Applicants may also have a right to appeal to the Building and Development Dispute Resolution Committee. For more details, see SPA, chapter 7, part 2.

Appeals by submitters

A submitter for a development application may appeal to the Planning and Environment Court against:

- the part of the approval relating to the assessment manager's decision about any part of the application requiring impact assessment
- the part of the approval relating to the assessment manager's decision under section 327.

Details about submitter appeal rights for the Planning and Environment Court are set out in sections 462, 463 and 464 of SPA.

Submitters may also have a right to appeal to the Building and Development Dispute Resolution Committee. For more details, see SPA, chapter 7, part 2.

Attachment 4 is an extract from SPA which details the applicant's appeal rights and the appeal rights of any submitters regarding this decision.

11. When the development approval takes effect -

This development approval takes effect:

- from the time the decision notice is given, if there is no submitter and the applicant does not appeal the decision to the court

OR

- subject to the decision of the court, when the appeal is finally decided, if an appeal is made to the court.

Should you require any further information please contact Council's **Senior Planner, Brian Millard** on the above telephone number.

Yours faithfully

**BRIAN MILLARD
SENIOR PLANNER**

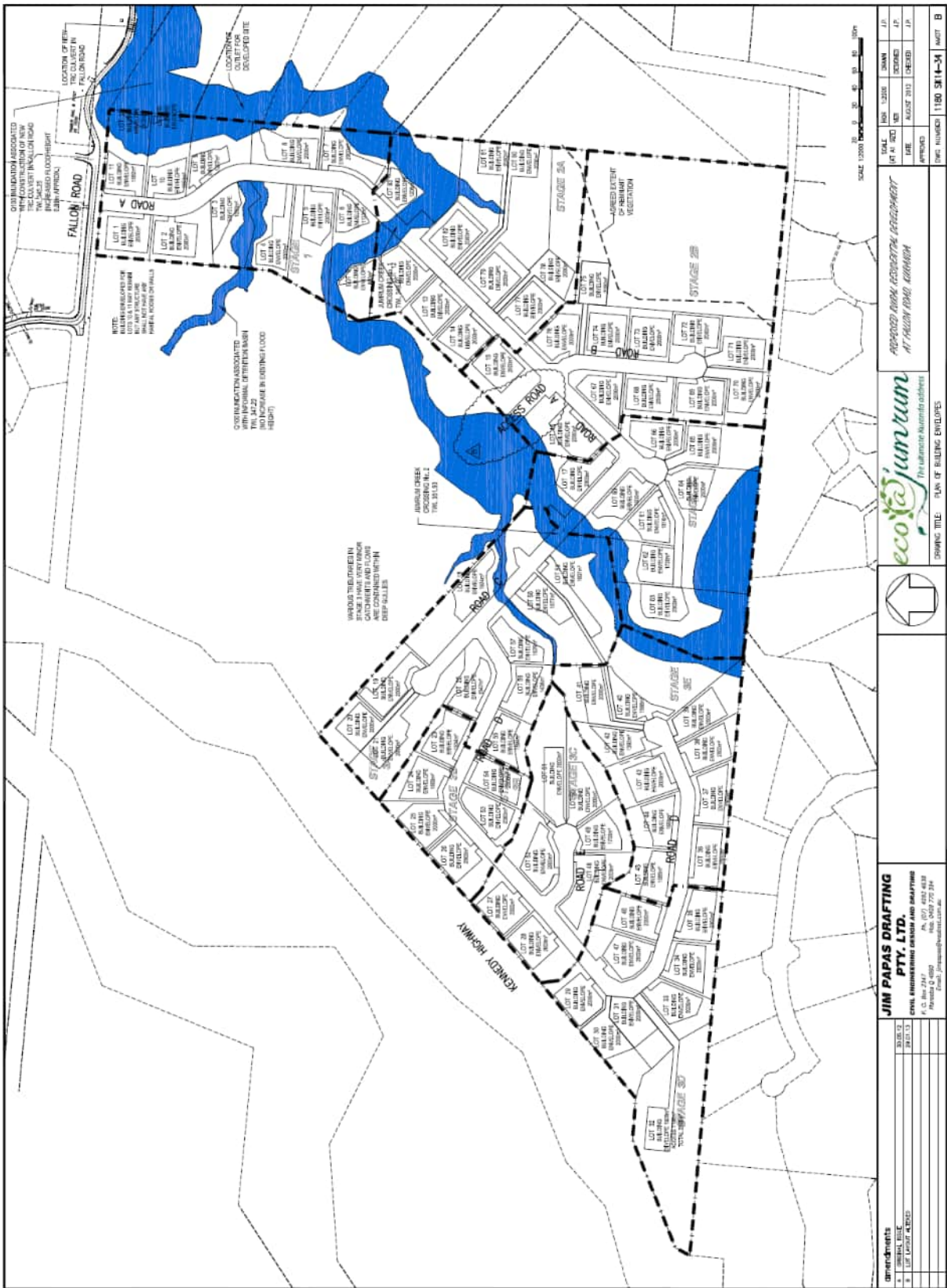
Enclosures:

**Attachment 1 - Approved Plans of Development
Attachment 2 - Concurrence Agency Conditions
Attachment 3 - SPA Extract - Making Representations about Decision
Attachment 4 - SPA Extract on Appeal Rights**

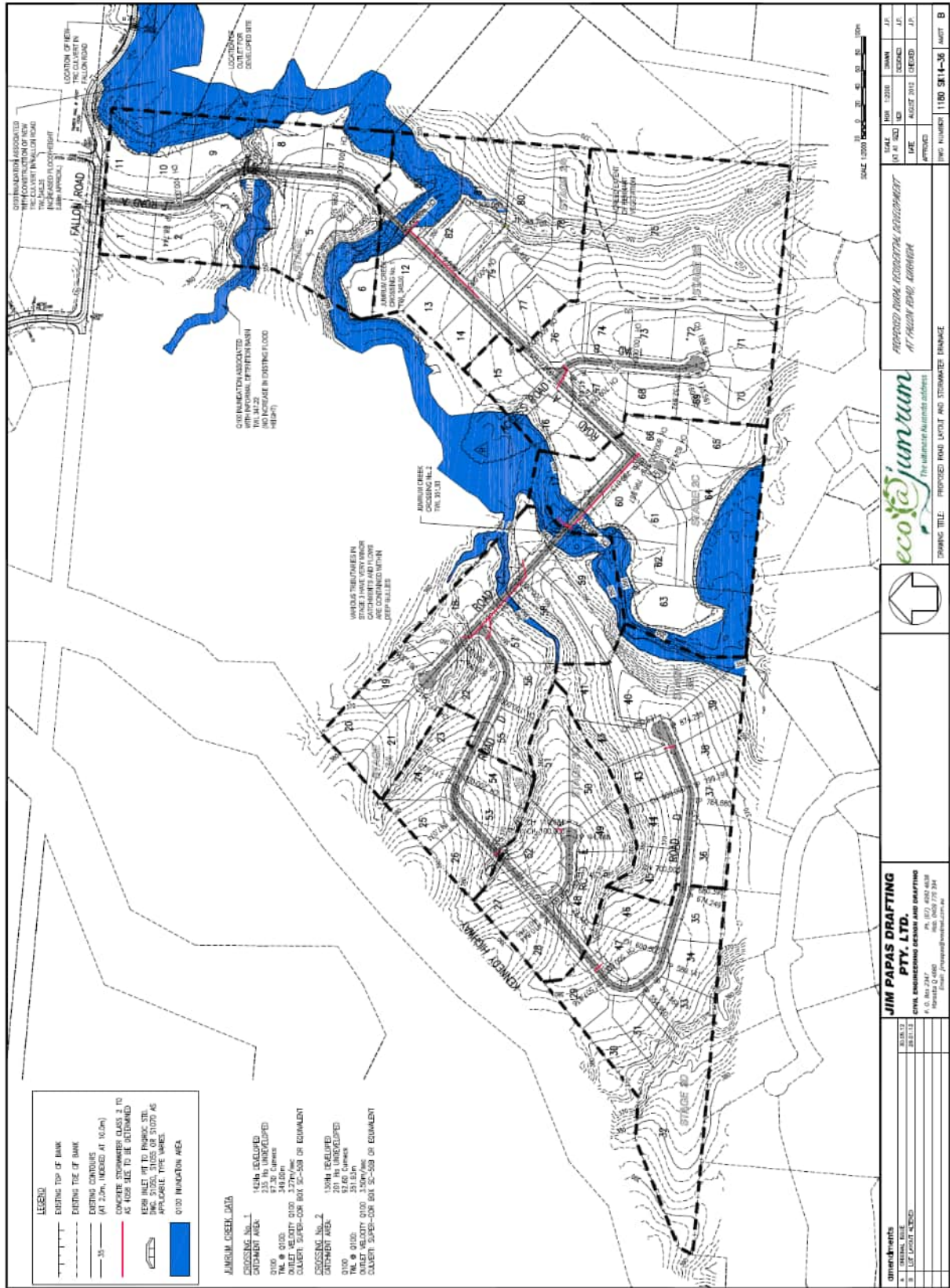
Copy:

**SARA Cairns
Department of Transport and Main Roads
REF: TMR12-004751 (500/371)
CairnsSARA@dsdip.qld.gov.au**

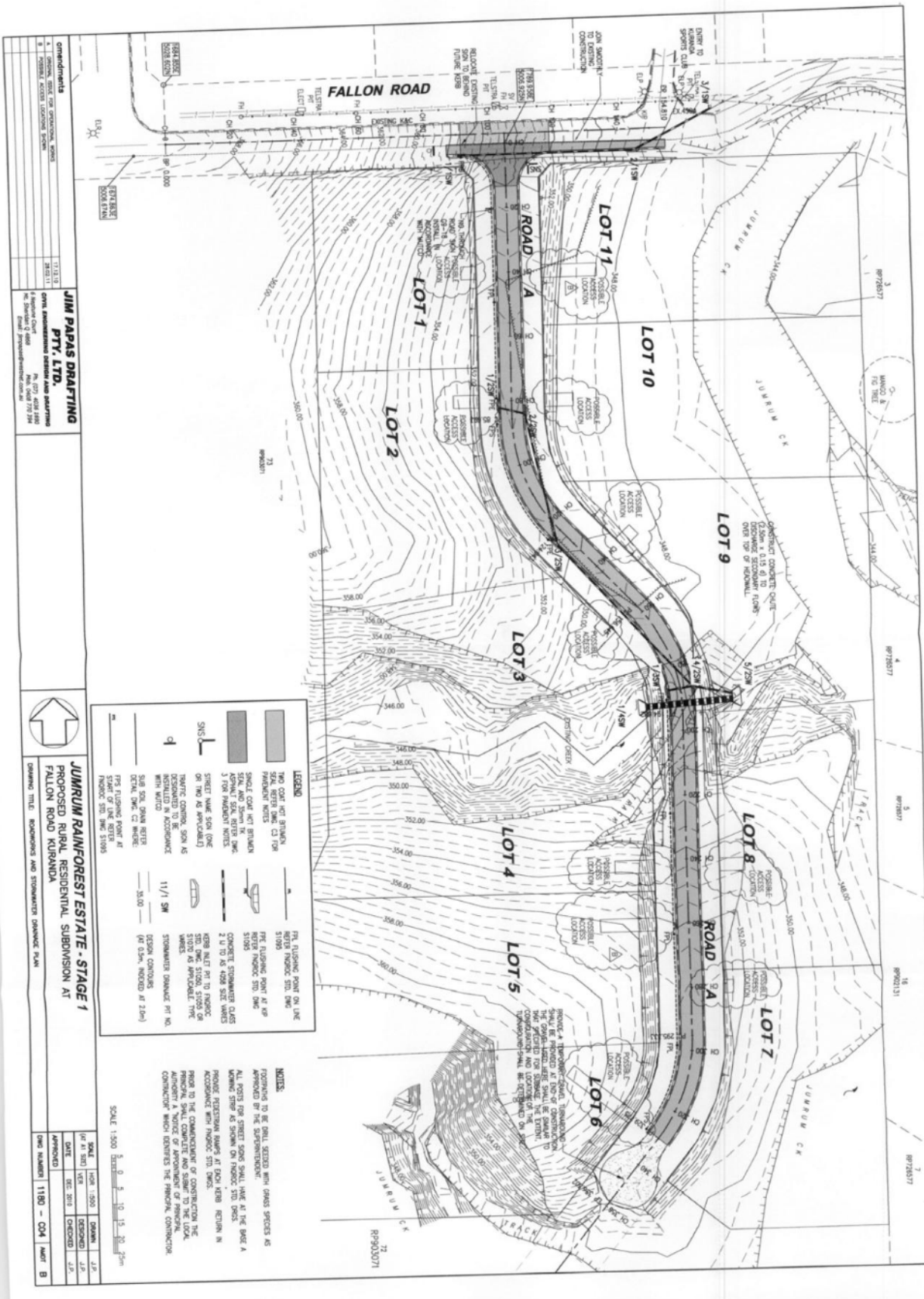
**SARA Cairns
Department of Natural Resources and Mines
REF: Ecotrack:512454 / eLVAS: 2013/000437
CairnsSARA@dsdip.qld.gov.au**



<p>JIM PAPAS DRAFTING PTY. LTD. CIVIL ENGINEERING DESIGN AND DRAFTING 1/11-13/11 P.O. Box 2347 Mareeba Qld 4870 Ph: 07 5497 7753 Fax: 07 5497 7754 Email: j.papaspap@jimspapas.com.au</p>		<p>eco2a The ultimate Australian address SHARING TITLE PLAN OF BUILDING ENVELOPES</p>	
<p>APPROVED UNDER VEGETATION MANAGEMENT AT FALLON ROAD, KERRIBRA</p>		<p>SCALE: 1:1000 DATE: 14/04/2014 DRAWN: J.P. CHECKED: J.P. DATE: 14/04/2014 CHECKED: J.P. APPROVED: J.P. DATE: 14/04/2014 CHECKED: J.P. SHEET NUMBER: 1100 SK14-34 SHEET: B</p>	



<p>JIM PAPAS DRAFTING PTY. LTD. CIVIL ENGINEERING DESIGN AND DRAFTING 10/100 WILSON ROAD MCKEEN HILLS QLD 4076 Phone: 08 9499 777 Fax: 08 9499 778 Email: j.papas@jimspapas.com.au</p>		<p>ecota'jun run The ultimate Adelaide address</p>		<p>APPROVED FROM ECOLOGICAL MANAGEMENT AT FALCON ROAD, ADELAIDE</p>	
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JIM PAPAS DRAFTING PTY. LTD.
 CIVIL, MECHANICAL, ELECTRICAL AND ARCHITECTURAL
 11/13/13
 23/01/11
 11/13/13
 11/13/13



JUMRUM RAIN/FOREST ESTATE - STAGE 1
 PROPOSED RURAL RESIDENTIAL SUBDIVISION AT
 FALLON ROAD KURANDA

DATE	BY	CHECKED	APPROVED
11/13/13	J.P.	J.P.	J.P.
11/13/13	J.P.	J.P.	J.P.
11/13/13	J.P.	J.P.	J.P.

LEGEND

TWO POST WET STRUCTURE	FIRE FLUSHING POINT ON LINE
SINGLE POST WET STRUCTURE	FIRE FLUSHING POINT AT KERB
STORMWATER CLASS 1	STORMWATER CLASS 2
STORMWATER CLASS 3	STORMWATER CLASS 4
STORMWATER CLASS 5	STORMWATER CLASS 6
STORMWATER CLASS 7	STORMWATER CLASS 8
STORMWATER CLASS 9	STORMWATER CLASS 10
STORMWATER CLASS 11	STORMWATER CLASS 12

NOTES

- PROPOSING TO BE ENTAIL SECTED WITH GRASS SPECIES AS APPROVED BY THE SUPERINTENDENT.
- ALL POSTS FOR STREET SODS SHALL HAVE AT THE BASE A MOUNDING STEP AS SHOWN ON FINISH STL DWS.
- PROVIDE REVISION MARKS AT EACH KERB RETURN IN ACCORDANCE WITH FINISH STL DWS.
- BEFORE TO THE COMMENCEMENT OF CONSTRUCTION THE FINISH STL SHALL BE CHECKED AND FOUND TO BE ACCURATE TO THE FINISH STL DWS.
- CONTRACTOR WHICH IDENTIFIES THE FINISH STL CONSTRUCTION.

ATTACHMENT 2 - CONCURRENCE AGENCY CONDITIONS

URP - ROC
IT Planning



26 November 2012

The Chief Executive Officer
Tablelands Regional Council
PO Box 573
ATHERTON QLD 4883

Attention: Brian Millard

THE ORIGINAL OF THIS DOCUMENT
CAN BE FOUND ON PHYSICAL FILE
DA/12/0035
LOCATION: IT Planning



Dear Sir

CONCURRENCE AGENCY RESPONSE – CONDITIONS

Proposed Development: DEVELOPMENT PERMIT for RECONFIGURATION OF LOT (83 LOTS & NEW ROADS)
Real Property Description: Lot 72RP903071
Street Address: 1593 Kennedy Highway, Kuranda QLD 4881
Assessment Manager ref.: DA/12/0035(M)-(REC/08/0064)
Local Government Area: Tablelands Regional Council

Reference is made to the referral agency material for the development application described above which was received by the Department of Transport and Main Roads (the department) under section 272 of the *Sustainable Planning Act 2009* (SPA) on 23 November 2012.

An assessment of the proposed development has been undertaken against the purposes of the *Transport Infrastructure Act 1994* for state-controlled roads. Based on this jurisdiction, the department provides this concurrence agency response under Section 285 of the SPA in accordance with the following submitted material:

Name of Report/ Plan Title	Author/ Consultant	Report/ Plan Number & Version	Report/Plan Date
Town Planning Report	Planning Far North	C12-033	November 2012
Lot Layout, Building Envelopes & Extent of Clearing	Jim Papas Drafting	1180 SK14-33 Amdt A	August 2012

Department of Transport and Main Roads
Program Delivery and Operations
Far North Region
Cairns Corporate Tower, 15 Lake Street Cairns Queensland 4870
PO Box 6185 Cairns Queensland 4870

Our ref TMR12-004751 (500/371)
 Your ref DA/12/0035(M)-(REC/08/0064)
 Enquiries Malcolm Hardy
 Telephone +61 7 4050 5511
 Facsimile +61 7 40505429
 Website www.tmr.qld.gov.au
 Email Malcolm.R.Hardy@tmr.qld.gov.au

The department advises the assessment manager that it requires conditions to attach to any development approval for the application. The department would also like to provide advice about the application to the assessment manager under Section 287(6) of the SPA.

Under Section 325(1) of the SPA, the assessment manager must therefore attach this response, including the enclosed Department of Transport and Main Roads Concurrence Agency Conditions and Statement of Reasons, to any approval for the application.

The department may change its concurrence agency response in accordance with Section 290(1)(b) of the SPA.

The department must be provided with a copy of the assessment manager's decision notice regarding the application within five (5) business days after the day the decision is made in accordance with Section 334 of the SPA.

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

If you have any questions or wish to seek clarification about any of the details in this response, please contact Malcolm Hardy, Senior Town Planner (Corridor Management) on 07 4050 5511.

Yours sincerely



Malcolm Hardy
Senior Town Planner (Corridor Management)

Enc. Department of Transport and Main Roads Agency Conditions and Statement of Reasons

C/c Jumrum Rainforest Pty Ltd
C/- Planning Far North Pty Ltd
PO Box 7801
Cairns QLD 4870



Our ref.: TMR12-004751 (500/371)
Your ref.: C12-033

C/c Jumrum Rainforest Pty Ltd
C/- Planning Far North Pty Ltd
PO Box 7801
Cairns QLD 4870

Attention: Bruce Hedley

Please find attached correspondence for your information and action as required. Should you wish to discuss this correspondence, please contact Malcolm Hardy, Senior Town Planner (Corridor Management) on 07 4050 5511.

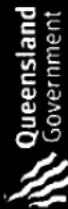
Yours sincerely

A handwritten signature in black ink that reads "Malcolm Hardy".

Malcolm Hardy
Senior Town Planner (Corridor Management)

26 November 2012

Enc. Department of Transport and Main Roads Agency Conditions and Statement of Reasons



**Department of Transport and Main Roads
Concurrence Agency Conditions and Statement of Reasons**

Proposed Development: DEVELOPMENT PERMIT for RECONFIGURATION OF LOT (83 LOTS & NEW ROADS)
Real Property Description: Lot 72RP903071
Street Address: 1593 Kennedy Highway, Kuranda QLD 4881
Assessment Manager ref.: DA/12/0035(M)-(REC/08/0064)
Local Government Area: Tablelands Regional Council

No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
1	<p>Development Permit - Reconfiguring a Lot (83 Lots & New Roads)</p> <p>Development must be carried out generally in accordance with the following plan and report, except as modified by these concurrence agency conditions:</p> <ul style="list-style-type: none"> • Jim Papas Drafting Lot Layout, Building Envelopes & Extent of Clearing, 1180 SK14-33 Amdt A, dated August 2012 • Planning Far North Town Planning Report C12-033, dated November 2012 	<p>Prior to submitting the Plan of Survey to the local government for approval</p>	<p>The purposes of the Transport Infrastructure Act 1994.</p> <p>The Department of Transport and Main Roads' assessment of the development application was undertaken on the basis of the cited plan/s and/or report/s which depict how the proposed development will be carried out.</p>
2	<p>The permitted road access location for the development is between Lot 72 on RP903071 and the Kennedy Highway generally in accordance with the Lot Layout, Building Envelopes & Extent of Clearing, that is via Fallon Road.</p>	<p>Prior to submitting the Plan of Survey to the local government for approval</p>	<p>The purposes of the Transport Infrastructure Act 1994 (TIA).</p> <p>Vehicular access at the permitted road access location minimises impacts on the safety and efficiency of the state-controlled road network.</p>



No.	Conditions of Development	Condition Timing	Jurisdiction and Reasons
3	Direct access is not permitted between the Kennedy Highway and the subject site at any location other than the permitted road access location.	Prior to submitting the Plan of Survey to the local government for approval	<p>The purposes of the Transport Infrastructure Act 1994.</p> <p>Vehicular access at the permitted road access location minimises impacts on the safety and efficiency of the state-controlled road network.</p>
4	<p>(a) The development must incorporate noise attenuation measures in building design and setback from the Kennedy Highway frontage.</p> <p>(b) The relevant building certifiers for proposed Lots 20, 21 and 24 to 32 must provide certification that the development has been designed and constructed in accordance with part (a) of this condition.</p>	Prior to building certification on proposed Lots 20, 21 and 24 to 32	<p>The purposes of the Transport Infrastructure Act 1994 (TIA).</p> <p>The development is creating a noise sensitive area in proximity to a state-controlled road.</p> <p>Comments or additional information</p> <p>Mandatory Part (MP) 4.4 of the Queensland Development Code (QDC) commenced on 1 September 2010 and applies to building work for the construction or renovation of a residential building in a designated transport noise corridor. MP4.4 seeks to ensure that the habitable rooms of Class 1, 2, 3 and 4 buildings located in a transport noise corridor are designed and constructed to reduce transport noise. Transport noise corridor means land designated under</p>



No. Conditions of Development **Condition Timing** **Jurisdiction and Reasons**

Chapter 8B of the Building Act 1975 as a transport noise corridor. Information about transport noise corridors is available at state and local government offices. A free online search tool can be used to find out whether a property is located in a designated transport noise corridor. This tool is available at the Department of Local Government and Planning website (<http://www.dlgp.qld.gov.au/building/transport-noise-corridor-search-tool.html>) and allows searches on a registered lot number and/or property address to determine whether and how the QDC applies to the land.

- 5 Any landscaping on the subject land that is within 5 metres of the road frontage with the Kennedy Highway must be retained and planted in accordance with the Department of Transport and Main Roads' Road Landscape Manual 2004, section C5 – Safety Requirements and Landscape Design. At all times The purposes of the Transport Infrastructure Act 1994 (TIA).
Landscaping or other objects can impact on sight distance visibility along the state-controlled road, affecting the safety of the state-controlled road network. Landscaping should be retained in a predominantly natural setting found at the Kennedy Highway, Kuranda



<p>Advice for state-controlled roads</p> <p>Under section 43 of the <i>Transport Infrastructure Act 1994</i>, a local government must obtain the Department of Transport and Main Roads' approval if it intends to approve the erection, alteration or operation of an advertising sign or other advertising device that would be visible from a state-controlled road; and beyond the boundaries of the state-controlled road; and reasonably likely to create a traffic hazard for the state-controlled road.</p>
<p>An application for a Road Corridor Permit is required for any ancillary works and encroachments on the state-controlled road under section 50(2) and Schedule 6 of the <i>Transport Infrastructure Act 1994</i> and Part 5 and Schedule 1 of the <i>Transport Infrastructure (State-Controlled Roads) Regulation 2006</i>. Please contact the Department of Transport and Main Roads on 4050 5451 (Ron Kaden) to make an application for a Road Corridor Permit. Ancillary works and encroachments include but are not limited to advertising signs or other advertising devices, paths or bikeways, buildings/shelters, vegetation clearing, landscaping and planting.</p>
<p>Pursuant to Section 580 of the <i>Sustainable Planning Act 2009</i> it is a development offence to contravene a development approval, including any condition in the approval.</p>
<p>Pursuant to Section 80 of the <i>Transport Infrastructure Act 1994</i>, the construction, augmentation, alteration or maintenance of a public utility plant on a state-controlled road reserve, must be in accordance with the Department of Transport and Main Roads' requirements.</p>

INFORMATION ATTACHMENT TO CONCURRENCE AGENCY RESPONSE**Representations on Referral Agency Response**

If the applicant intends to make a representation to the Department of Transport and Main Roads (the department) regarding the attached concurrence agency response, the applicant needs to do this before the assessment manager decides the application. The assessment manager cannot decide the application before 10 business days after receiving the final concurrence agency response, pursuant to section 318(5) of the *Sustainable Planning Act 2009* (SPA).

The applicant will need to give the assessment manager written notice under section 320(1) of SPA to stop the decision-making period to make a representation to the department and subsequently contact the department to make the representation. The decision making period cannot be stopped for more than 3 months.

Planning and Environment Court Appeals

If an appeal is lodged in the Planning and Environment Court in relation to this application, the appellant must give written notice of the appeal to the department under Section 482(1) of the SPA. This notice should be forwarded to the Planning Law Team, Planning Management Branch, Department of Transport and Main Roads, GPO Box 213, Brisbane QLD 4001 within 2 days if the appeal is started by a submitter, or otherwise within 10 business days after the appeal is started.



URP-ROL
r URP

Notice

Concurrence Agency Response

This notice is issued by the Department of Natural Resources and Mines (DNRM) pursuant to section 287 (concurrence agency response) of the Sustainable Planning Act 2009 (the Act).

Chief Executive Officer
Tablelands Regional Council
PO Box 573
ATHERTON QLD 4883

Attn: Mr Brian Millard

Your reference: DA/12/0035(M)-(REC/08/0064)

cc. Jumrum Rainforest Pty Ltd
c/- Planning Far North Pty Ltd
PO Box 7801
CAIRNS QLD 4870

Attn: Bruce Hedley

Applicant reference: C12-033

THE ORIGINAL OF THIS DOCUMENT
CAN BE FOUND ON PHYSICAL FILE
DA/12/0035
LOCATION URP MISA

Our reference: Ecotrack: 512454
eLVAS: 2013/000437

Re: Concurrence Agency Response

1. Application Details

Assessment Manager reference:	DA/12/0035(M)-(REC/08/0064)
Date application properly referred to DNRM:	18 January 2013
Development approval applied for:	Development permit
Aspect of development:	Reconfiguring a Lot – Clearing Vegetation Sustainable Planning Regulation 2009 – Schedule 7, table 2, item 4
Development description:	Reconfiguring a Lot – 1 into 83
Property/Location description:	Lot 72 on RP903071, 1593 Kennedy Highway, Kuranda – Tablelands Regional Council

2. The Chief Executive, Department of Natural Resources and Mines (DNRM) concurrence agency response for the concurrence agency referral jurisdiction for the aspect of development involved with the application the subject of this Notice is to tell the assessment manager as follows.
- (a) Conditions must attach to any development approval, and those conditions are attached to this Notice.



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Concurrence Agency Response

3. Approved plans / specifications

Document No.	Document Name	Date
RARP 2013/000437	Referral Agency Response (Vegetation) Plan RARP 2013/000437	11/10/2013

4. General advice to assessment manager

Pursuant to sections 334 and 363 of the Act, a copy of a decision notice or negotiated decision notice issued by the assessment manager must be forwarded to DNRM as a referral agency for the relevant application at Vegetation Management Unit, DNRM, PO Box 156 Mareeba Qld 4880 OR PO Box 5318 Townsville Qld 4810 and an electronic copy to palm@ehp.qld.gov.au.

The State's Native Title Work Procedures provide that responsibility for assessment of native title issues for an IDAS application rests with the assessment manager. Therefore, DNRM as a referral agency for the relevant application has not provided notification to native title parties.

6. Additional information for applicants**Cultural Heritage**

A search has been performed on the inventory of recorded Aboriginal cultural heritage sites over Lot 72 on RP903071 and no Aboriginal cultural heritage notings were found. Under section 23 of the *Aboriginal Cultural Heritage Act 2003* a person who carries out an activity must take all reasonable and practicable measures to ensure the activity does not harm Aboriginal cultural heritage (the "cultural heritage duty of care"). Maximum penalties for breaching the duty of care are \$1,000,000 for a corporation and \$100,000 for an individual.

Applicants will comply with the duty of care in relation to Aboriginal cultural heritage if they are acting in accordance with cultural heritage duty of care guidelines gazetted under the *Aboriginal Cultural Heritage Act 2003*, available on the Department of Aboriginal and Torres Strait Islander and Multicultural Affairs website, or in accordance with an agreement with the Aboriginal party for the area or a cultural heritage management plan approved under part 7 of the *Aboriginal Cultural Heritage Act 2003*.

Applicants are also encouraged to undertake a search of the Aboriginal Cultural Heritage Database and the Aboriginal Cultural Heritage Register, administered by the Cultural Heritage Coordination Unit, Department of Aboriginal and Torres Strait Islander and Multicultural Affairs. Application forms to undertake a free search of the Cultural Heritage Register and the Database may be obtained by contacting the Cultural Heritage Coordination Unit on 13 74 68 or on the Department of Aboriginal and Torres Strait Islander and Multicultural Affairs website www.multicultural.qld.gov.au.

Other legislation

This notification refers to the provisions of the *Vegetation Management Act 1999* and Sustainable Planning Regulation 2009 only and is based on the information you have provided regarding the proposed activities on the land. Should any issue subsequently emerge on site that requires further consideration by the department, it is the responsibility of the landholder to contact the department. Other legislation, including

Notice
Concurrence Agency Response

the acts listed below may affect clearing activities. You should contact the business units below to determine if your clearing activity will be affected.

It should be noted that all native plants in Queensland are protected under the *Nature Conservation Act 1992*. You must contact the nature conservation area of the Queensland Government on the details below before clearing vegetation.

Act(s)	Agency	Contact details	
<ul style="list-style-type: none"> Aboriginal Cultural Heritage Act 2003 Torres Strait Islander Cultural Heritage Act 2003 	Department of Aboriginal and Torres Strait Islander and Multicultural Affairs	General enquiries: 13 QGOV (13 74 68) Permit and Licence Management: 1300 130 372	
<ul style="list-style-type: none"> Soil Conservation Act 1986 Water Act 2000 	Department of Natural Resources and Mines		
<ul style="list-style-type: none"> Coastal Protection and Management Act 1995 Environmental Protection Act 1994 Queensland Heritage Act 1992 Wild Rivers Act 2005 	Department of Environment and Heritage Protection		
<ul style="list-style-type: none"> Nature Conservation Act 1992 	Department of Environment and Heritage Protection		
	Department of National Parks, Recreation, Sport and Racing		
<ul style="list-style-type: none"> Forestry Act 1959 	Department of Natural Resources and Mines		
	Department of Agriculture, Fisheries and Forestry		General enquiries: 13 25 23
<ul style="list-style-type: none"> Fisheries Act 1994 	Department of Agriculture, Fisheries and Forestry		
<ul style="list-style-type: none"> Local Government Act 1993 Sustainable Planning Act 2009 	Local Government		Contact your nearest local government office
<ul style="list-style-type: none"> Environment Protection and Biodiversity Conservation Act 1999 	Department of Sustainability, Environment, Water, Population and Communities		General enquiries: (02) 6274 1111

Notice
Concurrence Agency Response



Delegate
Shannon Farrell
Senior Vegetation Management Officer
Delegate, Chief Executive administering the *Vegetation Management Act 1999*

18/10/2013

Enquiries:
Edina Losoncz-Gorshtein
Vegetation Management Officer
Department of Natural Resources
and Mines
187-209 Stanley Street,
Townsville QLD 4810
PO Box 5318, Townsville QLD
4810
Phone: 4799 7052
Email: edina.losoncz-gorshtein
@dnrm.qld.gov.au

Attachment(s)

DNRM Permit No. SPCC05147313
Referral Agency Response (Vegetation) Plan 2013/000437



Sustainable Planning Act 2009

DNRM Permit ¹ number: SPCC05147313

Assessment manager reference:	DA/12/0035(M)-(REC/08/0064)
DNRM reference:	eLVAS: 2013/000437; Trackjob: IC0113WAL0001; Ecotrack application: 512454
Date application properly referred:	18 January 2013
Permit type:	Concurrence agency response
Date of decision:	18 October 2013
Decision:	The application satisfies the <i>Concurrence Agency Policy for Reconfiguring a Lot (RaL) 21 October 2009</i> - subject to the conditions set out in Schedule 1
Relevant laws and policies:	<i>Vegetation Management Act 1999</i> <i>Sustainable Planning Act 2009</i> Sustainable Planning Regulation 2009 <i>Concurrence Agency Policy for Reconfiguring a Lot (RaL) 21 October 2009</i>
Jurisdiction(s):	Reconfiguring a Lot – Clearing Vegetation Sustainable Planning Regulation 2009 – Schedule 7, table 2, item 4

Development Description(s)

Property/Location		Development
1593 Kennedy Highway, Kuranda	72 RP903071	Reconfiguring a lot

¹ Permit includes licences, approvals, permits, authorisations, certificates, sanctions or equivalent/similar as required by legislation administered by the Department of Natural Resources and Mines.



DNRM Permit number: SPCC05147313

Reason(s) for inclusion of conditions

In accordance with section 289 of the *Sustainable Planning Act 2009*, the reason(s) for inclusion of conditions stated in this permit required by the concurrence agency response for the application are detailed in Schedule 2.



Delegate

Shannon Farrell

Delegate, Chief Executive administering the *Vegetation Management Act 1999*
Department of Natural Resources and Mines

DNRM Permit number: SPCC05147313

Schedule 1 – CONDITIONS

1. No clearing as a result of reconfiguring Lot 72 RP903071 is to occur within the area shown as Area A on the attached Referral Agency Response (Vegetation) Plan, RARP 2013/000437.
2. No infrastructure is to be established or located within the area shown as Area A on the attached Referral Agency Response (Vegetation) Plan, RARP 2013/000437.
3. No lot boundaries are permitted within the areas shown as Area A or Area B on the attached Referral Agency Response (Vegetation) Plan, RARP 2013/000437.
4. No infrastructure – except fences, roads and underground services – is to be established or located within the areas shown as Area B and Area C on the attached Referral Agency Response (Vegetation) Plan, RARP 2013/000437.
5. All lots within 20 metres of Area A must include a building envelope which must be located outside of the areas shown as Area A, Area B and Area C on the attached Referral Agency Response (Vegetation) Plan, RARP 2013/000437.
6. These conditions do not prevent vegetation being cleared for a purpose described in Schedule 24 of the Sustainable Planning Regulation 2009 or if cleared in accordance with any subsequent development approval.

Definitions

Where terms used in this decision are not specifically defined but are defined in the VMA; *Sustainable Planning Act 2009* (SPA); and the relevant Regional Vegetation Management Code, the definitions that are in these Acts and the code apply.

END OF CONDITIONS



DNRM Permit number: SPCC05147313

Schedule 2 - Statement of Reasons

Department of Natural Resources and Mines – Referral Agency Response Application to clear for Reconfiguring a Lot Jumrum Rainforest Pty Ltd

The following Statement of Reasons is provided

Introduction

1. The Department of Natural Resources and Mines (DNRM) received an application from Jumrum Rainforest Pty Ltd on 12 December 2012 which was properly referred on 18 January 2013
2. The application is to clear for Reconfiguring a lot on Lot 72 on Plan RP903071 – Tablelands Regional Council
3. An Information Request was sent to applicant on 4 February 2013
4. The Information Request response period was extended by 10 business days on 2 August 2013
5. A response to the Information Request was received by DNRM on 16 August 2013
6. Referral Agency assessment period was extended by 20 business days to 14 October 2013
7. Request for Applicant agreement to further extend assessment period by 14 business days sent on 10 October 2013
8. Agreement from applicant to further extend assessment period was received on 11 October 2013
9. An Assessment Report was sent to the Delegate of the Chief Executive, Shannon Farrell, Senior Vegetation Management Officer on 15 October 2013.
10. The Delegate determined the Decision on 18 October 2013.

Evidence

1. Application dated 12 December 2012
 - a) Completed IDAS Forms 1, 7 and 11
 - b) Property Vegetation Management Plan
2. *Sustainable Planning Act 2009* and Sustainable Planning Regulation 2009
3. *Vegetation Management Act 1999*
4. Department of Natural Resources and Mines *Concurrence Agency Policy for Reconfiguring a Lot-version 2, 21 October 2009*
5. Sustainable Planning Act Delegation (No.2) 2012
6. Regional Ecosystem mapping (version 6.1)
7. Vegetation Information Network (VIN) Database Remnant RE Summary
8. 2011 orthophoto imagery
9. Tablelands Regional Council planning scheme (Mareeba Shire Planning Scheme 2004)
10. eLVAS case (2008/004305)
11. Assessment Report dated 15 October 2013
12. Regional Ecosystem Description Database

Findings of fact

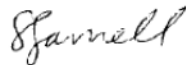
1. The subject lot contains non-remnant areas and least concern remnant vegetation also mapped as essential habitat.
2. The subject lot is in an area of low fire risk and the vegetation described as having low flammability. Therefore, a reduced firebreak width of 20m was assessed around proposed infrastructure which is consistent with previous assessments on the subject lot.
3. Clearing will occur within part of the remnant vegetation mapped as a least concern regional ecosystem under an existing exemption that allows clearing for routine management – establishing a necessary fence, road or vehicular track for a maximum width of 10 metres – as per part 2, schedule 24 of the Sustainable Planning Regulation 2009.
4. The conditions will restrict any further clearing to non-remnant areas for the development or for fire protection and maintenance of infrastructure resulting from the development.

DNRM Permit number: SPCC05147313

5. As a result, the application was assessed against and met Criteria Table B of the *Concurrence Agency Policy for Reconfiguring a Lot, 21 October 2009*.

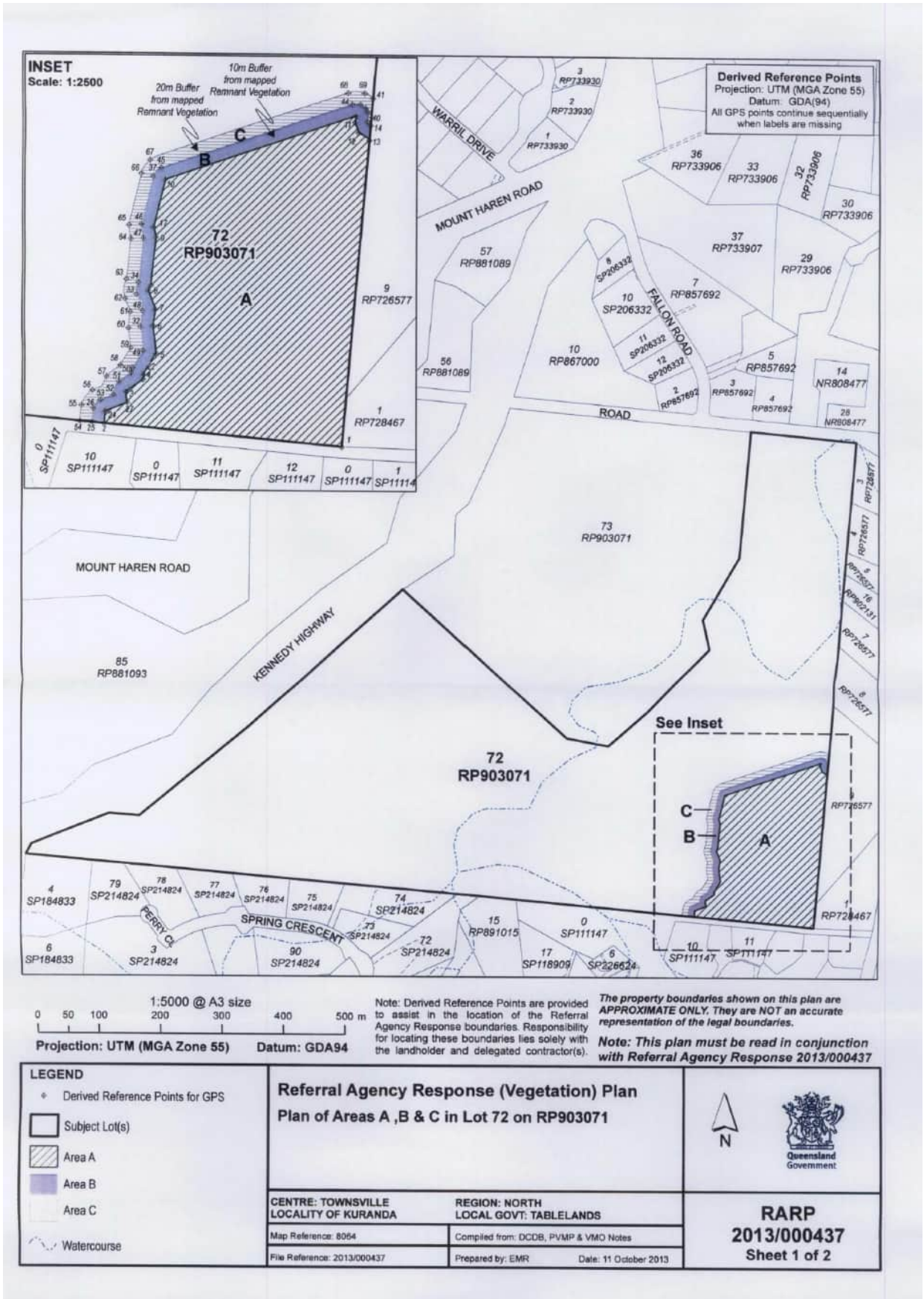
Decision

It is considered by the assessing officer that this application meets the requirements of the *Concurrence Agency Policy for Reconfiguring a Lot (21 October 2009)*.




Shannon Farrell
Senior Vegetation Management Officer
North Region

18/10/2013



Derived Reference Points
Projection: UTM (MGA Zone 55)
Datum: GDA(94)
All GPS points continue sequentially when labels are missing

Point	Parcel	Easting#1	Northing	Point	Parcel	Easting#2	Northing
1	A1	353430	8137318	35	B1	353268	8137487
2	A1	353236	8137336	36	B1	353266	8137498
3	A1	353255	8137353	37	B1	353276	8137538
4	A1	353268	8137372	38	B1	353437	8137598
5	A1	353278	8137393	39	B1	353448	8137595
6	A1	353276	8137416	40	B1	353450	8137584
7	A1	353278	8137429	41	C1	353454	8137603
8	A1	353272	8137444	42	C1	353452	8137580
9	A1	353278	8137488	43	C1	353450	8137592
10	A1	353285	8137535	44	C1	353439	8137598
11	A1	353441	8137588	45	C1	353282	8137545
12	A1	353443	8137575	46	C1	353266	8137498
14	B1	353452	8137580	47	C1	353268	8137487
13	A1	353451	8137568	48	C1	353267	8137427
15	B1	353439	8137583	49	C1	353268	8137395
16	B1	353285	8137535	50	C1	353259	8137381
17	B1	353276	8137496	51	C1	353248	8137370
18	B1	353274	8137452	52	C1	353244	8137359
19	B1	353278	8137429	53	C1	353233	8137355
20	B1	353276	8137416	54	C1	353226	8137338
21	B1	353278	8137393	55	C1	353218	8137351
22	B1	353268	8137376	56	C1	353227	8137363
23	B1	353254	8137362	57	C1	353238	8137374
24	B1	353237	8137346	58	C1	353249	8137383
25	B1	353226	8137337	59	C1	353257	8137397
26	B1	353227	8137348	60	C1	353256	8137413
27	B1	353244	8137359	61	C1	353257	8137426
28	B1	353248	8137370	62	C1	353253	8137437
29	B1	353259	8137380	63	C1	353253	8137450
30	B1	353268	8137395	64	C1	353258	8137486
31	B1	353266	8137414	65	C1	353256	8137498
32	B1	353267	8137427	66	C1	353266	8137540
33	B1	353262	8137441	67	C1	353273	8137551
34	B1	353264	8137452	68	C1	353434	8137607
				69	C1	353448	8137607

<p>Projection: UTM (MGA Zone 55) Datum: GDA94</p> <p>Note: Derived Reference Points are provided to assist in the location of the Referral Agency Response boundaries. Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).</p> <p><i>The property boundaries shown on this plan are APPROXIMATE ONLY. They are NOT an accurate representation of the legal boundaries.</i></p> <p>Note: This plan must be read in conjunction with Referral Agency Response 2013/000437</p>	<p>Referral Agency Response (Vegetation) Plan Plan of Areas A ,B & C in Lot 72 on RP903071</p>	
<p>CENTRE: TOWNSVILLE LOCALITY OF KURANDA</p>	<p>REGION: NORTH LOCAL GOVT: TABLELANDS</p>	<p>RARP 2013/000437 Sheet 2 of 2</p>
<p>Map Reference: 8054</p>	<p>Compiled from: DCDB, PVMP & VMO Notes</p>	<p>Prepared by: EMR Date: 11 October 2013</p>

ATTACHMENT 3 - MAKING REPRESENTATIONS ABOUT DECISION**PART 8 - DEALING WITH DECISION NOTICES AND APPROVALS****DIVISION 1 CHANGING DECISION NOTICES AND APPROVALS DURING APPLICANT'S APPEAL PERIOD****360 APPLICATION OF DIV 1**

This division applies only during the applicant's appeal period.

361 APPLICANT MAY MAKE REPRESENTATIONS ABOUT DECISION

- (1) The applicant may make written representations to the assessment manager about—
 - (a) a matter stated in the decision notice, other than a refusal or a matter about which a concurrence agency told the assessment manager under section 287(1) or (5); or
 - (b) the standard conditions applying to a deemed approval.
- (2) However, the applicant can not make representations under subsection (1)(a) about a condition attached to an approval under the direction of the Minister.

362 ASSESSMENT MANAGER TO CONSIDER REPRESENTATIONS

The assessment manager must consider any representations made to the assessment manager under section 361.

363 DECISION ABOUT REPRESENTATIONS

- (1) If the assessment manager agrees with any of the representations about a decision notice or a deemed approval, the assessment manager must give a new decision notice (***the negotiated decision notice***) to—
 - (a) the applicant; and
 - (b) each principal submitter; and
 - (c) each referral agency; and
 - (d) if the assessment manager is not the local government and the development is in a local government area—the local government.
- (2) Before the assessment manager agrees to a change under this section, the assessment manager must consider the matters the assessment manager was required to consider in assessing the application, to the extent the matters are relevant.
- (3) Only 1 negotiated decision notice may be given.
- (4) The negotiated decision notice—
 - (a) must be given within 5 business days after the day the assessment manager agrees with the representations; and
 - (b) must comply with section 335; and
 - (c) must state the nature of the changes; and
 - (d) replaces—

- (i) the decision notice previously given; or
 - (ii) if a decision notice was not previously given and the negotiated decision notice relates to a deemed approval—the standard conditions applying to the deemed approval.
- (5) If the assessment manager does not agree with any of the representations, the assessment manager must, within 5 business days after the day the assessment manager decides not to agree with any of the representations, give written notice to the applicant stating the decision about the representations.

364 GIVING NEW INFRASTRUCTURE CHARGES NOTICE OR REGULATED INFRASTRUCTURE CHARGES NOTICE

- (1) This section applies if the development approved by the negotiated decision notice is different from the development approved in the decision notice or deemed approval in a way that affects the amount of an infrastructure charge or regulated infrastructure charge.
- (2) The local government may give the applicant a new infrastructure charges notice under section 633 or regulated infrastructure charges notice under section 643 to replace the original notice.

365 GIVING NEW REGULATED STATE INFRASTRUCTURE CHARGES NOTICE

- (1) This section applies if the development approved by the negotiated decision notice is different from the development approved in the decision notice or deemed approval in a way that affects the amount of a regulated State infrastructure charge.
- (2) The relevant State infrastructure provider may give the applicant a new regulated State infrastructure charges notice under section 669 to replace the original notice.

366 APPLICANT MAY SUSPEND APPLICANT'S APPEAL PERIOD

- (1) If the applicant needs more time to make the representations, the applicant may, by written notice given to the assessment manager, suspend the applicant's appeal period.
- (2) The applicant may act under subsection (1) only once.
- (3) If the representations are not made within 20 business days after the day written notice was given to the assessment manager, the balance of the applicant's appeal period restarts.
- (4) If the representations are made within 20 business days after the day written notice was given to the assessment manager—
- (a) if the applicant gives the assessment manager a notice withdrawing the notice under subsection (1)—the balance of the applicant's appeal period restarts the day after the assessment manager receives the notice of withdrawal; or
 - (b) if the assessment manager gives the applicant a notice under section 363(5)—the balance of the applicant's appeal period restarts the day after the applicant receives the notice; or
 - (c) if the assessment manager gives the applicant a negotiated decision notice—the applicant's appeal period starts again the day after the applicant receives the negotiated decision notice.

ATTACHMENT 4 - APPEAL RIGHTS**DIVISION 8 APPEALS TO COURT RELATING TO DEVELOPMENT APPLICATIONS AND APPROVALS****461 APPEALS BY APPLICANTS**

- (1) An applicant for a development application may appeal to the court against any of the following—
 - (a) the refusal, or the refusal in part, of the development application;
 - (b) any condition of a development approval, another matter stated in a development approval and the identification or inclusion of a code under section 242;
 - (c) the decision to give a preliminary approval when a development permit was applied for;
 - (d) the length of a period mentioned in section 341;
 - (e) a deemed refusal of the development application.
- (2) An appeal under subsection (1)(a), (b), (c) or (d) must be started within 20 business days (the **applicant's appeal period**) after—
 - (a) if a decision notice or negotiated decision notice is given—the day the decision notice or negotiated decision notice is given to the applicant; or
 - (b) otherwise—the day a decision notice was required to be given to the applicant.
- (3) An appeal under subsection (1)(e) may be started at any time after the last day a decision on the matter should have been made.

462 APPEALS BY SUBMITTERS—GENERAL

- (1) A submitter for a development application may appeal to the court only against—
 - (a) the part of the approval relating to the assessment manager's decision about any part of the application requiring impact assessment under section 314; or
 - (b) the part of the approval relating to the assessment manager's decision under section 327.
- (2) To the extent an appeal may be made under subsection (1), the appeal may be against 1 or more of the following—
 - (a) the giving of a development approval;
 - (b) any provision of the approval including—
 - (i) a condition of, or lack of condition for, the approval; or
 - (ii) the length of a period mentioned in section 341 for the approval.
- (3) However, a submitter may not appeal if the submitter—
 - (a) withdraws the submission before the application is decided; or
 - (b) has given the assessment manager a notice under section 339(1)(b)(ii).

- (4) The appeal must be started within 20 business days (the **submitter's appeal period**) after the decision notice or negotiated decision notice is given to the submitter.

463 ADDITIONAL AND EXTENDED APPEAL RIGHTS FOR SUBMITTERS FOR PARTICULAR DEVELOPMENT APPLICATIONS

- (1) This section applies to a development application to which chapter 9, part 7 applies.
- (2) A submitter of a properly made submission for the application may appeal to the court about a referral agency's response made by a prescribed concurrence agency for the application.
- (3) However, the submitter may only appeal against a referral agency's response to the extent it relates to—
- (a) if the prescribed concurrence agency is the chief executive (environment)—development for an aquacultural ERA; or
 - (b) if the prescribed concurrence agency is the chief executive (fisheries)—development that is—
 - (i) a material change of use of premises for aquaculture; or
 - (ii) operational work that is the removal, damage or destruction of a marine plant.
- (4) Despite section 462(1), the submitter may appeal against the following matters for the application even if the matters relate to code assessment—
- (a) a decision about a matter mentioned in section 462(2) if it is a decision of the chief executive (fisheries);
 - (b) a referral agency's response mentioned in subsection (2).

464 APPEALS BY ADVICE AGENCY SUBMITTERS

- (1) Subsection (2) applies if an advice agency, in its response for an application, told the assessment manager to treat the response as a properly made submission.
- (2) The advice agency may, within the limits of its jurisdiction, appeal to the court about—
- (a) any part of the approval relating to the assessment manager's decision about any part of the application requiring impact assessment under section 314; or
 - (b) any part of the approval relating to the assessment manager's decision under section 327.
- (3) The appeal must be started within 20 business days after the day the decision notice or negotiated decision notice is given to the advice agency as a submitter.
- (4) However, if the advice agency has given the assessment manager a notice under section 339(1)(b)(ii), the advice agency may not appeal the decision.

APPENDIX B
Water Reticulation Investigation

**ARO0336 - JUMRUM SUBDIVISION STAGE 2
WATER RETICULATION MODELLING FILE NOTE**

1 Background

The purpose of this file note is to document water reticulation modelling undertaken by ARO Industries for the Jumrum Rainforest Stage 2 Operational Works Application.

Analysis of the water reticulation network associated with the development was undertaken to determine the network’s ability to meet the design guidelines of the FNQROC Development Manual Design Manual D6 – Water Reticulation.

The proposed development of Lot 72 Fallon Road (Lot/Plan 72RP903071) consists of 82 Lots (>4000m²). Stage 2 consists of 30 lots (lots 12-17 and 60-83).

2 Modelling Parameters

2.1 Water Network Reticulation Model

The water reticulation network was modelled using EPANET 2.2. The Hazen-Williams equation was utilized for frictional losses as specified by section D6.07 of the FNQROC Development Manual.

A dynamic water reticulation model of Kuranda was provided by Mareeba Shire Council to which, the development was added. The development network can be seen in Figure 1 below.

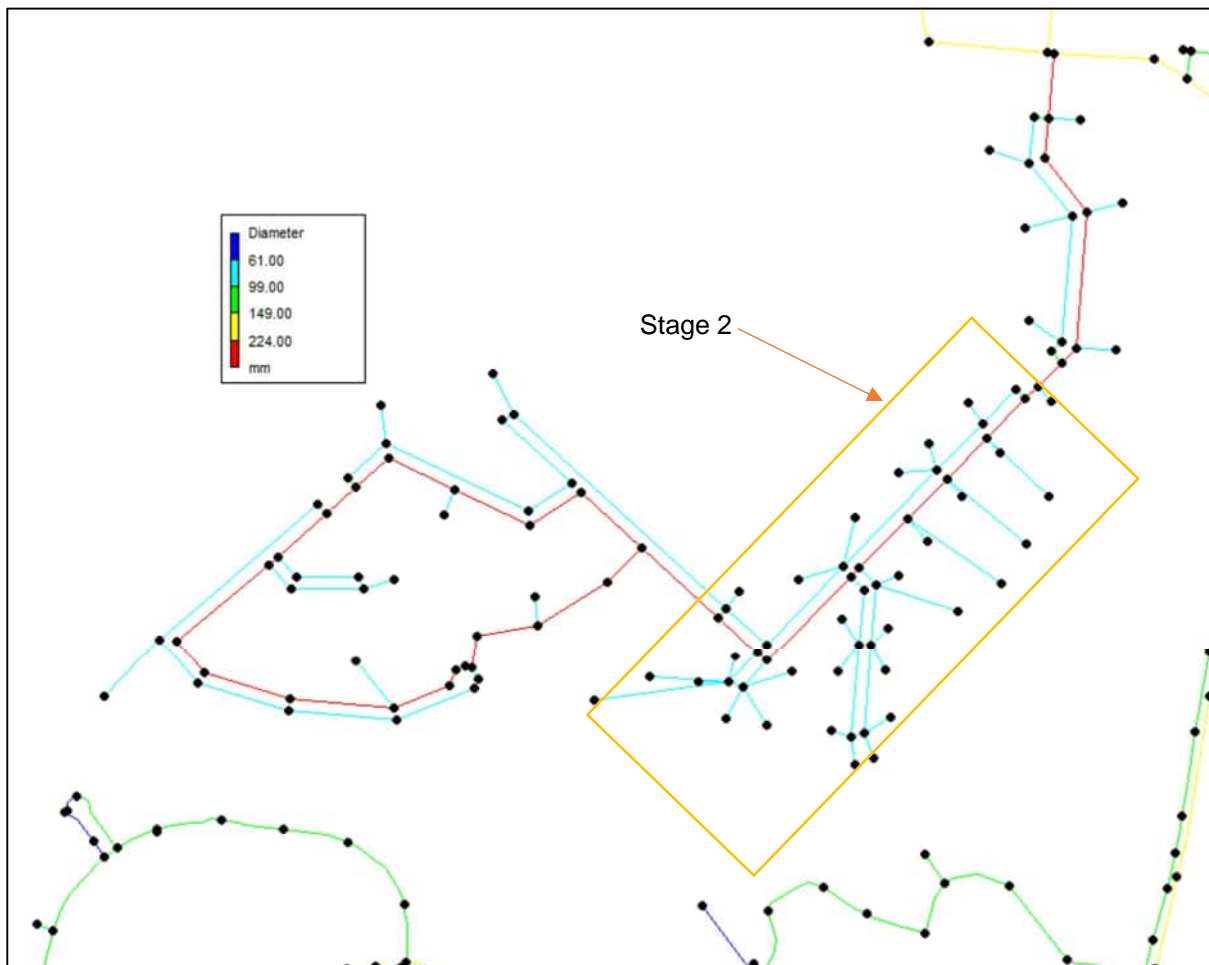


Figure 1 - EPANET Development Model

Hydrant flow tests were undertaken at the connection point to the existing 150mm main on Fallon Road. This was used to validate the model. These fire hydrant tests are provided in **Appendix A**.

The Kuranda water reticulation system is supplied by three reservoirs: Myola, Hilltop and Platypus. Investigations have determined that the development will be supplied by Hilltop and Myola Reservoirs. Council drawings stated that non-return valves at the pump station on Mason Road does not allow the Platypus reservoir to supply in a northward direction beyond this point.

The hydrant test was used in the MSC supplied dynamic model to validate the model. It is assumed that the reservoir levels in the dynamic model are representative of the reservoir levels at the time of the hydrant test. These values are summarised in *Table 1* below.

Table 1 – Water reticulation model validation

Data Source	Time	Flow	head
Dynamic Model	10:30	11.51	43.38
Hydrant Test result (interpolated)	10:35	11.51*	44.29

*Excluding existing residential demand on network

The hydrant test results validate the supplied model and the MSC dynamic model was converted to a static model for simplicity. Reservoir levels were modified to deliver a constant head at 15% capacity as per FNQROC requirements. The following amendments were made:

- Isolate section of residential properties being serviced by the Platypus Road reservoir.
- Turn off Warrill Pump station servicing Hilltop Reservoir (assumed pump cycles on to re-fill reservoir at off peak time)
- Council demand patterns modified to provide a constant Peak Hour flow.

2.2 Residential Demands

The dynamic model provided by Council had existing residential demands already inputted, these were not modified by ARO. Development residential demands were calculated in accordance with the FNQROC Development Manual Design Guidelines Section D6.07.

The Average Daily Consumption (AD) is specified as 500 litres/EP/day for properties in the Mareeba Shire Council (MSC) Local Government Area (LGA).

The following peaking factors were utilized for the network model:

- Mean Day Max Month (MDMM) = 1.50 x AD
- Peak Day (PD) = 2.25 x AD
- Peak Hour (PH) = 1/12 x PD

Stage 2 residential demand consists of 30 lots of >4000m². These demands are summarized in Table 2 below.

Table 2 - Development residential demand on network

Lot Size	EP/Lot	No. Lots	L/EP/day	Total EP	AD	MDMM	PD	PH
					L/s	L/s	L/s	L/s
Lot > 1500m ²	3.7	30	500	111	0.642	0.964	1.445	2.891

2.3 Water Supply Requirements

Water Supply to any development must meet certain requirements for:

- 1) Minimum Service Pressures,
- 2) Minimum firefighting flows,
- 3) Maximum network flow velocities

2.4 Service Pressure (Excluding firefighting)

Section D6.07 of the Design Guidelines states that a pressure range of between 22m (at peak hourly consumption) and 60m (static head) must be achieved.

To model the property connections, each lot in stage 2 was modelled independently and remaining lots in the development were modelled in catchment. The elevation of these property connection nodes was determined from publicly available LIDAR. The Node elevations were calculated as:

- The average road level for properties which sloped down from the road; or
- The average elevation of the building envelopes and road elevation level for properties which sloped towards the road.

2.5 Fire Fighting Flow Analysis

Firefighting parameters were determined as per the FNQROC Development Manual. The required firefighting flow for a residential development is 15L/s for two hours. The hydrant with the least available pressure head is selected and undergoes two testing scenarios. These scenarios are summarized below.

1. Fire Fighting Flow + Background 2/3 Peak Hour Demands
 - 15L/s for two hours firefighting flow.
 - 2/3 Peak Hour demands.
 - Minimum pressure of 6m throughout the network.
 - Minimum pressure of 12m at hydrant.
2. Fire Fighting Flow + Background Peak Hour Demands
 - 15L/s for two hours firefighting flow.
 - Peak Hour demands.
 - Positive pressure throughout network.

2.6 Maximum Velocity

As per the FNQROC Development Manual, the velocity of the system must not exceed 2.5m/s except in the event of fire flows where a velocity of 4m/s *may* be acceptable.

3 Model Results

3.1 Service Pressures (Excluding firefighting)

3.1.1 Minimum Service Pressures

To determine the minimum service pressure, Peak Hour existing and development residential demands were adopted. These results are summarised in Table 3 below.

Table 3 – Minimum Service Pressures results

Scenario	Minimum Pressures	Location
Stage 2 Only	20.71 - 21.55m (building envelope)	Lot 71, 72, 73
	23.09m (street level)	End of line of 100m diameter main in front of Lot 71
Entire Development	11.58m	South-west of development (final stage)

It was determined that stage 2 modelling generally satisfies the minimum pressure requirements with the exception of Lots 71, 72 and 73. Given the marginal difference between modelled lots and the FNQROC stated minimum, it is considered that these pressures are acceptable.

FNQROC guidelines state that where building envelope pressure is less than 30.0m, a notation will be placed on the rates file advising the owner that a booster pump required to augment the pressures to the building is to be supplied, installed, maintained and replaced at the property owner’s expense. Lots that may require this notice in Stage 2 are:

- Lot 65
- Lot 67
- Lot 72
- Lot 73

- Lot 68
- Lot 69
- Lot 70
- Lot 71
- Lot 74
- Lot 75
- Lot 76

It was determined that the final stage of the development experiences low pressures (below FNQROC minimum of 22m). Further modelling will be required to determine the requirement of a Council or privately owned pump station. These pressures are shown in Figures 2 and 3.

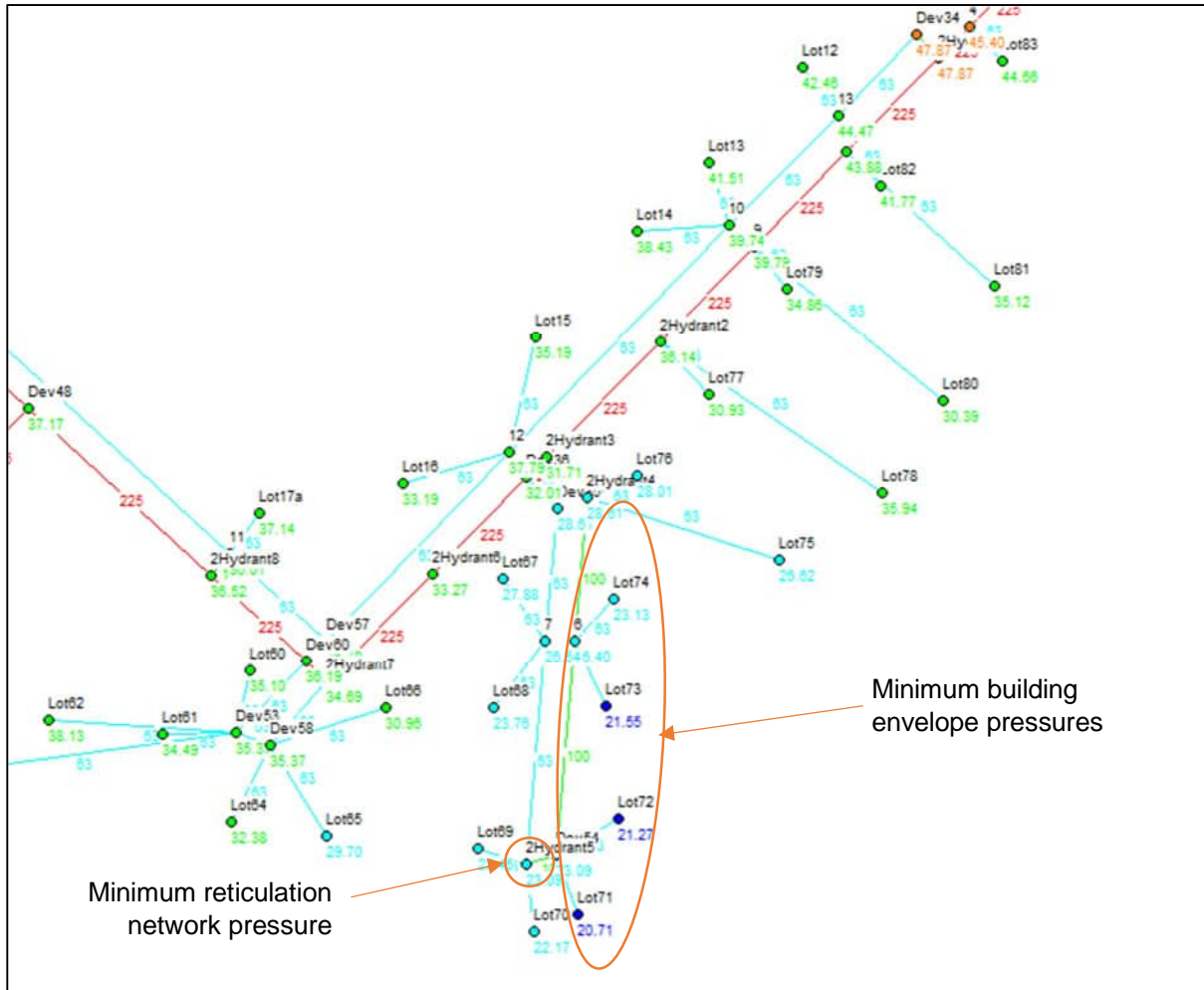


Figure 2 – Stage 2 minimum service pressure EPANET model

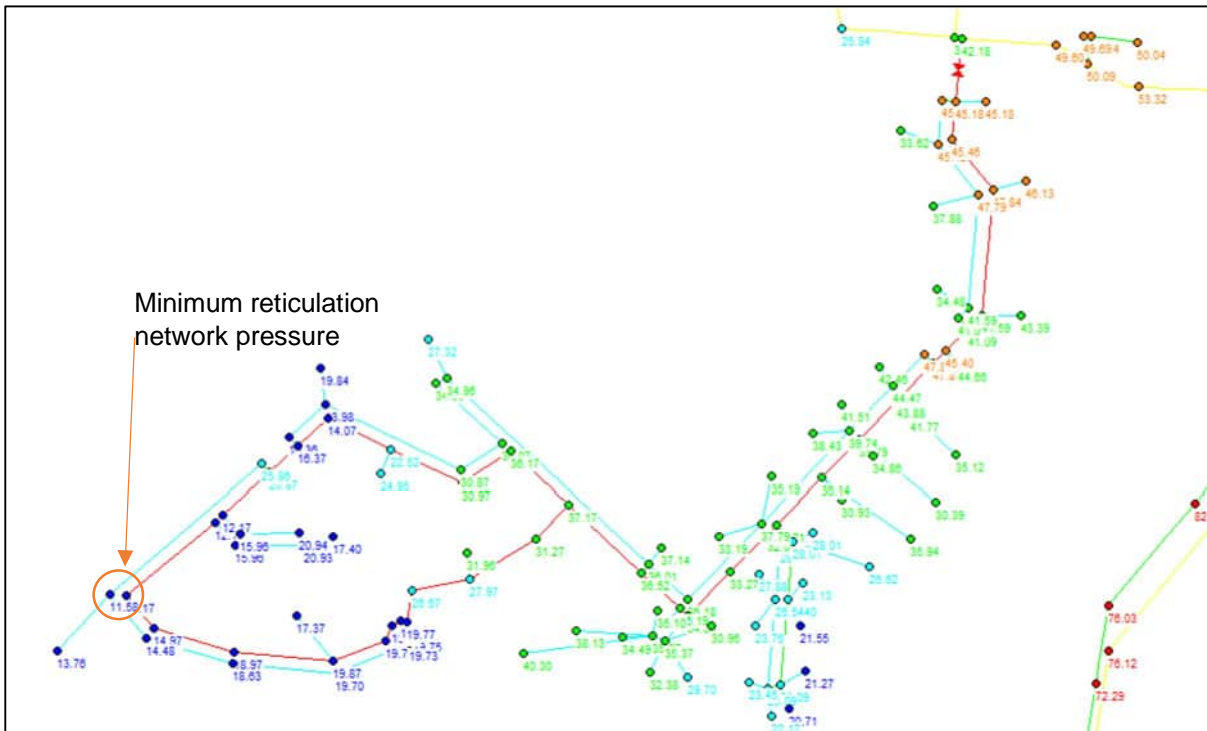


Figure 3 – Development minimum service pressure EPANET model

It is noted that pipe velocities do not exceed 2.5m/s for the minimum pressure model.

Stage 2: Minimum service pressures are generally met (>22m) across the reticulation network with some properties requiring rate notice notation of lower pressures.

Development: Further investigation/design is required for future stages.

3.1.2 Maximum Service Pressures

To determine the maximum service pressure, existing and development demands of 0L/s were adopted. These results are summarised in Table 4 below.

Table 4 – Maximum Service Pressures results

Scenario	Maximum Pressures	Location
Stage 2 Only	60.30	Stage 2 – Hydrant 1
Entire Development	60.30	Stage 2 – Hydrant 1

It was determined that the development generally satisfies the maximum pressure requirements. A pressure reducing valve was installed in Stage 1 to mitigate maximum service pressure issues. This analysis is conservative as it assumed a 95% reservoir level and zero background demand for the entire network. It is considered that these pressures are satisfactory. These pressures are shown in Figures 4 and 5.

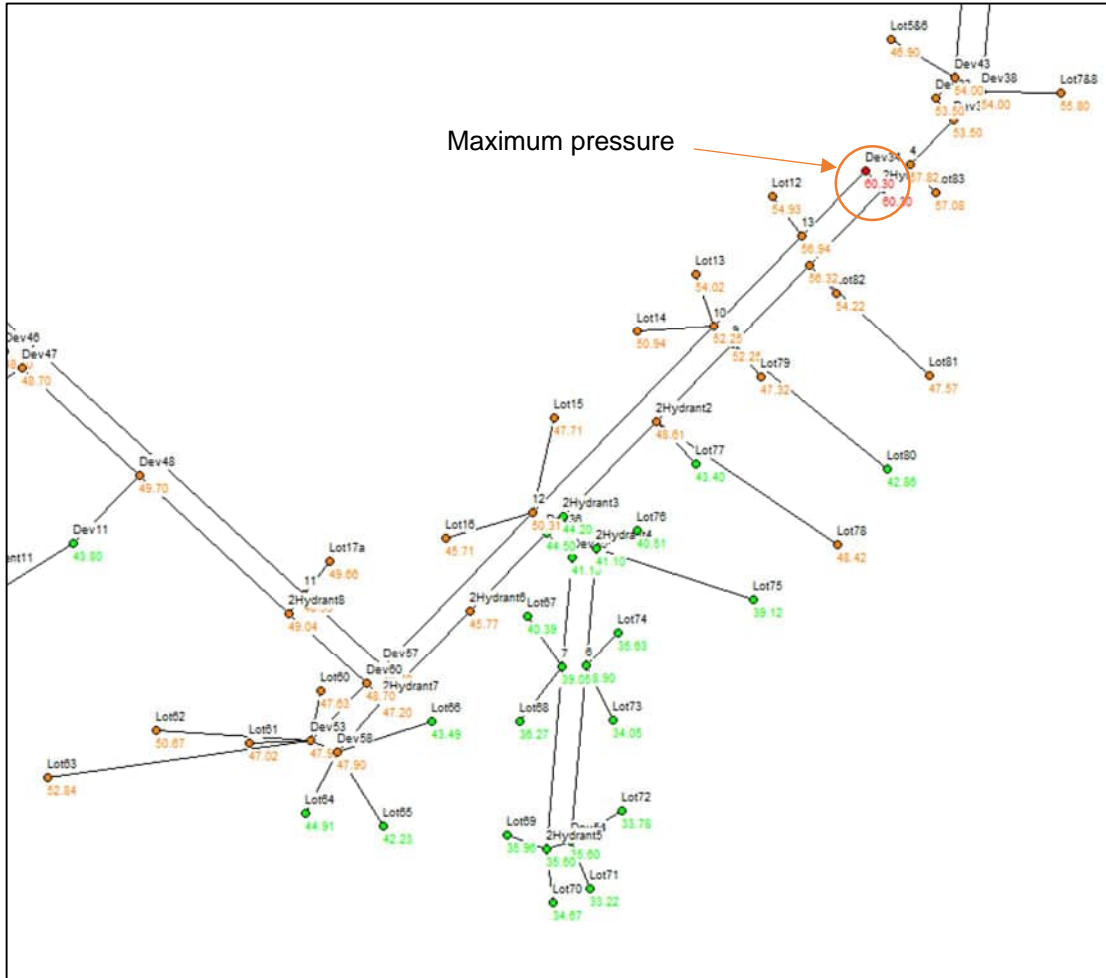


Figure 4 – Stage 2 Maximum service pressure EPANET model

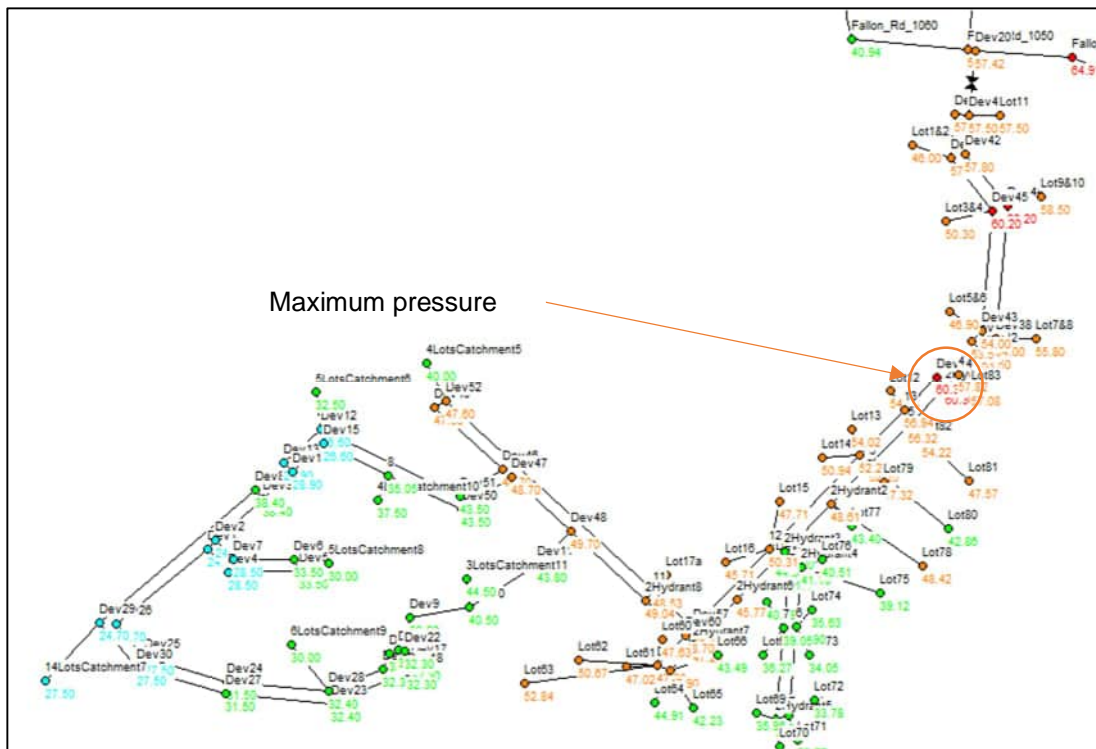


Figure 5 - Development Maximum service pressure EPANET model

It is noted that pipe velocities do not exceed 2.5m/s for maximum pressure modelling.

Stage 2: Pressures generally meet the maximum allowable service pressures (>60m).
Development: Pressures generally meet the maximum allowable service pressures (>60m).

3.2 Firefighting Flow

Two hydrants were modelled as part of the firefighting flows checks:

- The hydrant adjacent Lot 71 was modelled as it had the least pressure at the connection for Stage 2; and
- The hydrant in the south-west corner of the development as it had the least pressure available considering the entire development.

This is shown in *Figure 6 below*. This hydrant was the target of the fire flow modelling.

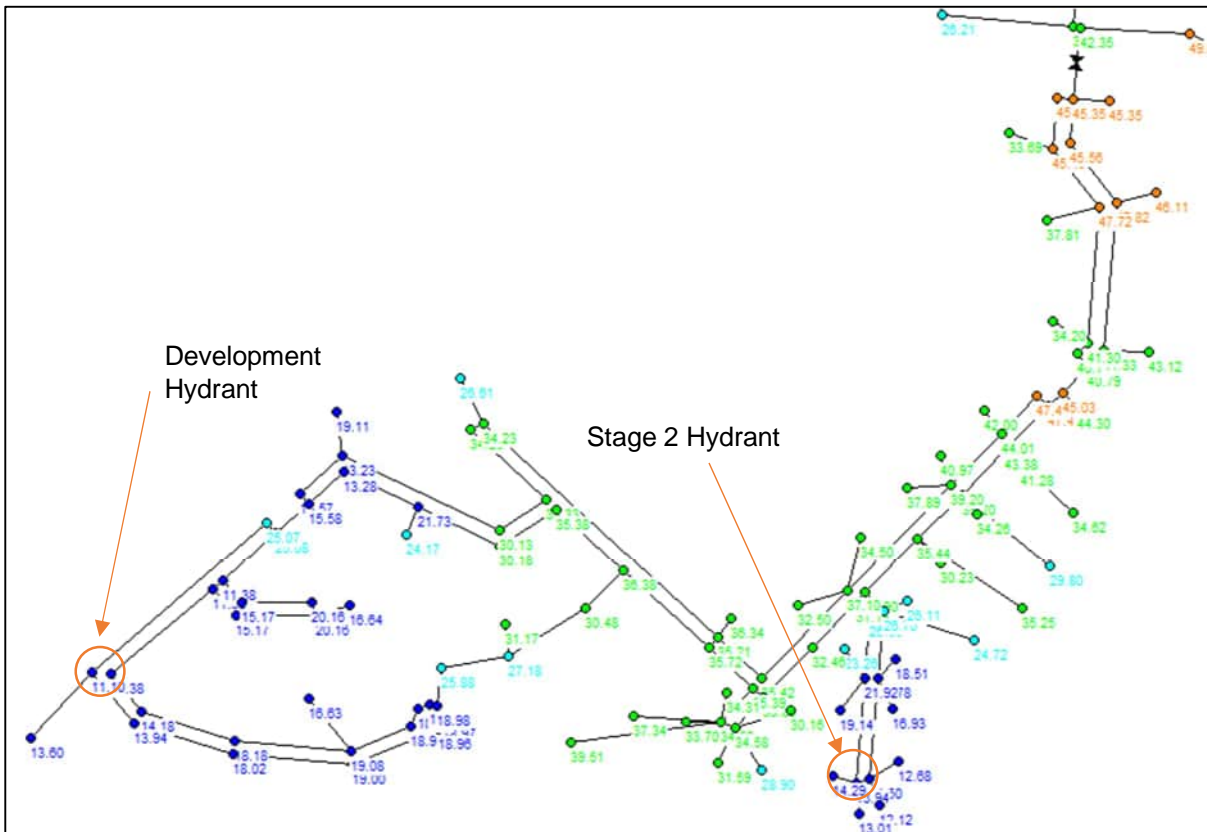


Figure 6 – Hydrant Location EPANET model

3.2.1 Firefighting Flow + 2/3 Peak Hour Demands

As per FNQROC development guidelines, a hydrant flow of 15L/s was adopted. Existing and development residential 2/3 Peak Hour demands were adopted. These results are summarised in Table 5 below.

Table 5 – Fire Flow + 2/3 Peak Hour Service Pressures results

Scenario	Minimum Pressure at Hydrant	Minimum Pressure in Network
Stage 2 Hydrant	6.99m (hydrant in use)	5.17 (Lot 71 building envelope)
	19.76 (adjacent hydrant)	7.56 (Lot 71 street level)
South-west Hydrant	3.67m (hydrant in use)	6.0m (building envelope final stage)
	3.72m (adjacent hydrant)	3.5m (street level)

It was determined that a construction of stage 2 satisfies the Fire Fighting + 2/3 PH requirements.

It was determined that the final stage of the development experiences low pressures. Further modelling will be required to determine if the future network needs to be augmented to meet FNQROC requirements. These pressures are shown in Figures 6 and 7.

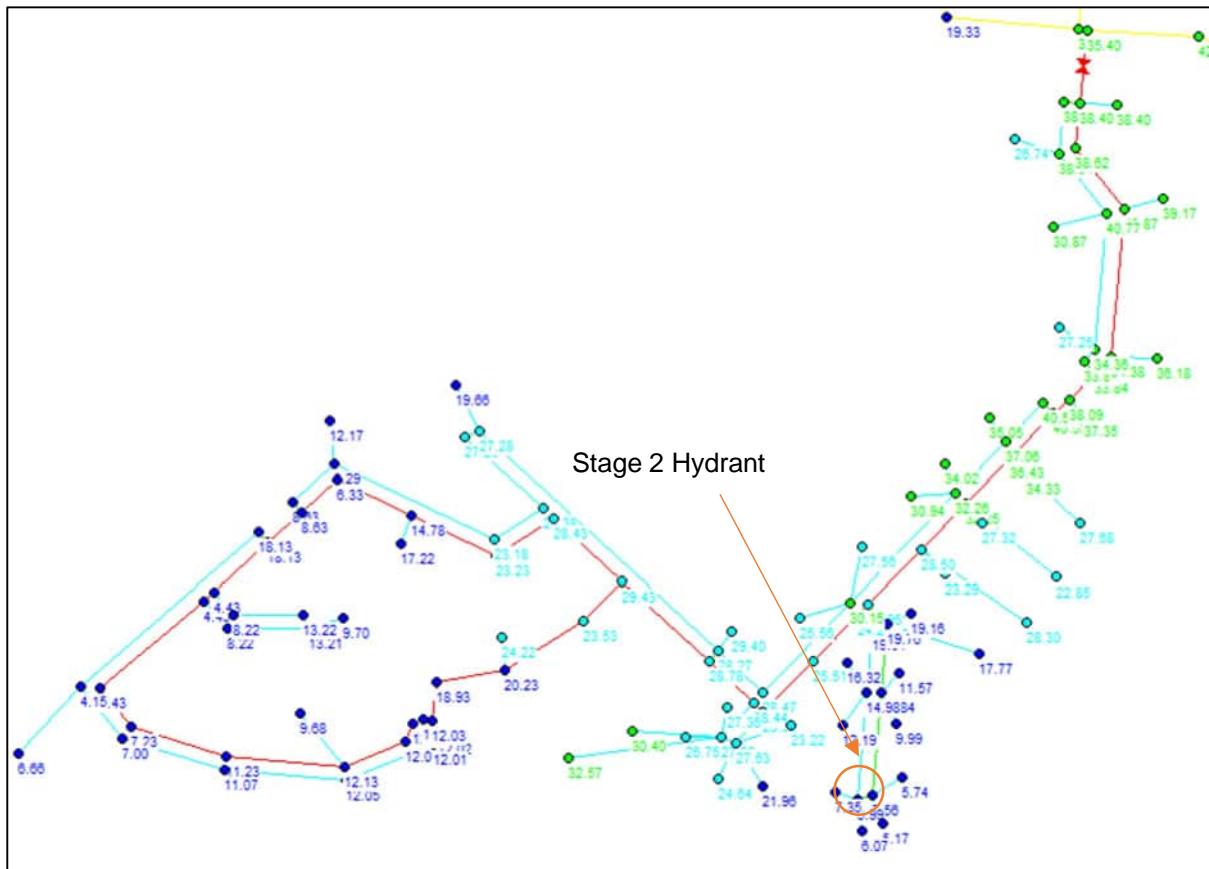


Figure 7 – Stage 2 firefighting + 2/3 PH service pressure EPANET model

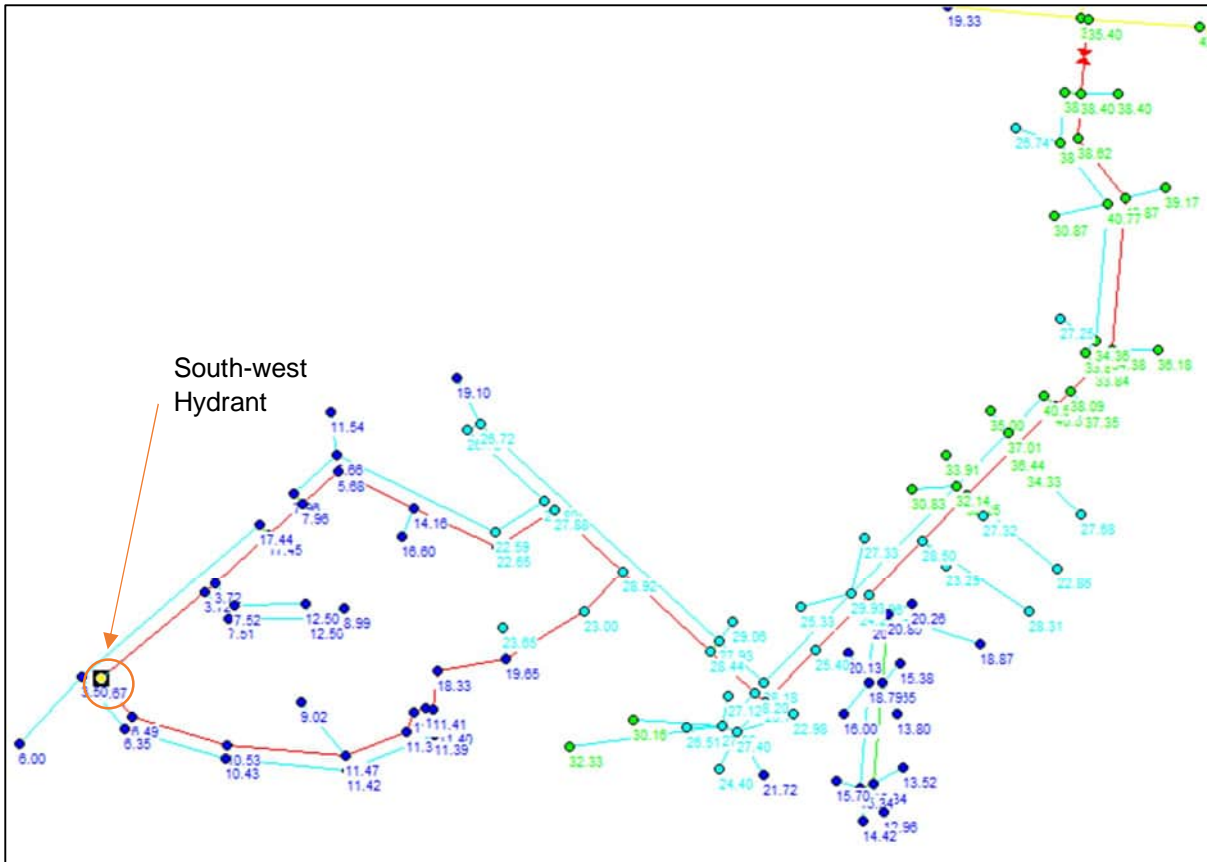


Figure 8 - Development firefighting + 2/3 PH service pressure EPANET model

It is noted that pipe velocities do not exceed 2.5m/s for both scenarios.

Stage 2: Minimum service pressures during firefighting + 2/3 PH are met, 12.0m residual pressure is maintained at an adjacent hydrant.

Development: Pressures remain positive but minimum pressure requirement at adjacent hydrant not achieved.

3.2.2 Fire Flow + Peak Hour Demands

As per FNQROC development guidelines, a hydrant flow of 15L/s was adopted. Existing and development residential Peak Hour demand were adopted. These results are summarised in Table 6 below.

Table 6 – Fire Flow + Peak Hour Service Pressures results

Scenario	Minimum Pressure at Hydrant	Minimum Pressure in Network
Stage 2 Hydrant	4.86m (hydrant in use)	3.05m (Lot 71 building envelope)
	12.78m (adjacent hydrant)	5.43m (street level)
South-west Hydrant	1.63m (hydrant in use)	3.32m (building envelope final stage)
	1.67m (adjacent hydrant)	1.15m (street level final stage)

It was determined that a construction of stage 2 satisfies the Fire Fighting + PH requirements.

It was determined that the final stage of the development experiences negative pressures. Further modelling will be required meet these requirements. These pressures are shown in Figures 9 and 10.

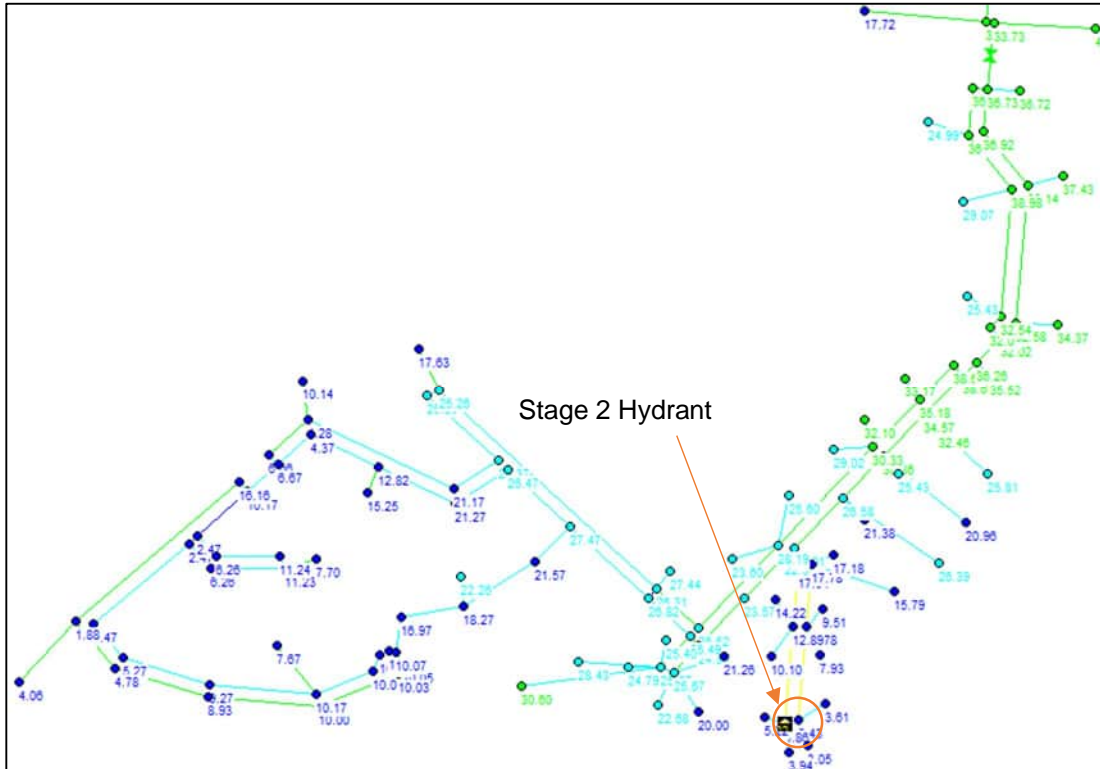


Figure 9 – Stage 2 firefighting + PH service pressure EPANET model

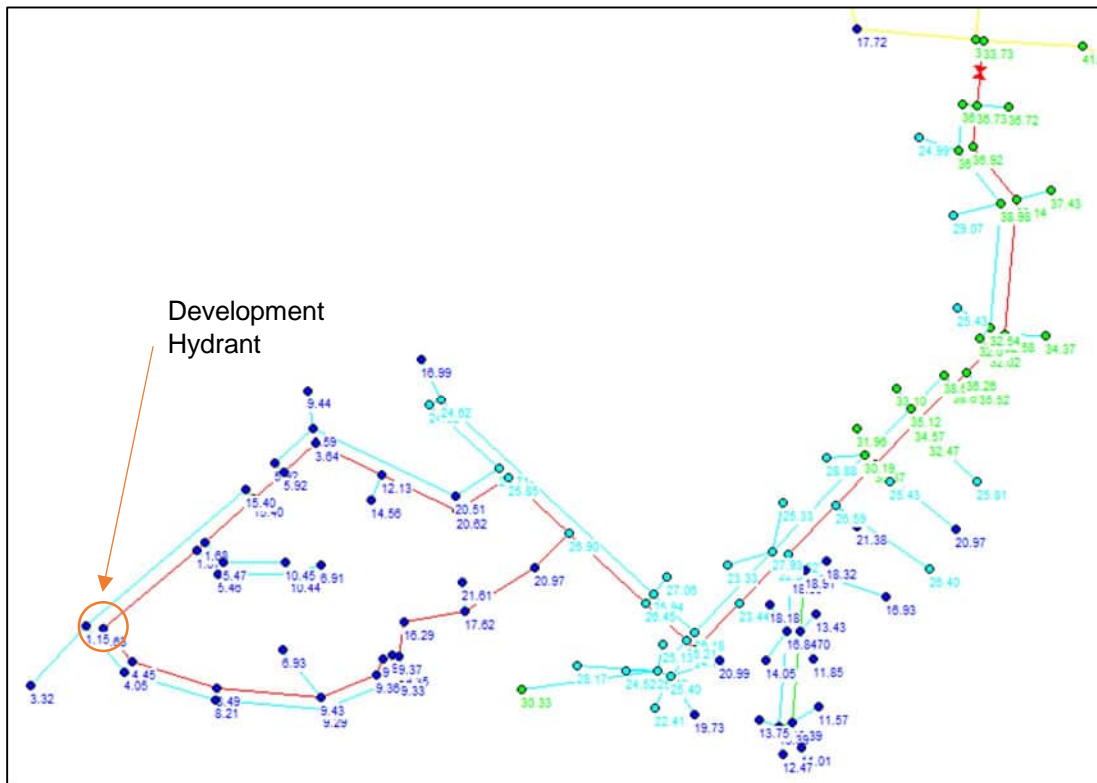


Figure 10 – Development firefighting + PH service pressure EPANET model

It is noted that pipe velocities do not exceed 2.5m/s for both scenarios.

Stage 2: Minimum service pressures during firefighting + PH are met
Development: Minimum service pressures during firefighting + PH are met.

4 Conclusion

The water reticulation network for the Jumrum subdivision has been assessed against the requirements of the FNQROC Design Manual D6 – Water Reticulation. Based on the available information, it has been determined that:

- 1) Stage 2 water reticulation pipe sizing satisfies FNQROC requirements
- 2) Further design and modelling is required for future stages (recommended that installation of pump is considered)



FILE NOTE

Appendix A
Hydrant Flow Test

APPENDIX C

DAF Confirmation of crossing arrangement

15 August 2023

Our ref: Jumrum Rainforest Stage 2
File ref: ARO0336

Department of Agriculture and Fisheries
PO Box 5396
Cairns QLD 4870

Attention: Department of Agriculture and Fisheries

Dear Sir/Madam,

JUMRUM RAINFOREST SUBDIVISION – CROSSING ARRANGEMENT CLARIFICATION

The purpose of this correspondence is to seek clarification regarding the interpretation of the ‘*Accepted development requirements for operational work that is construction or raising waterway barrier works*’ for construction of a culvert crossing over a high impact waterway (Jumrum Creek).

BACKGROUND

The crossing is located on Lot 72 on RP903071 over Jumrum Creek (-16.83795,145.62338). This lot is part of the Jumrum Rainforest Subdivison (Stage 2). ARO are currently engaged for the design of this stage of works.

It is proposed to build a RCBC culvert crossing that conforms to the accepted development guidelines through this crossing. The purpose of this letter is to request confirmation of interpretations made of these guidelines.

MAIN CHANNEL

It is noted that to meet the accepted development culvert crossing configuration, the crossing must span 75% of the main channel width. A comparison of the waterway cross section and the DAF provided annotate diagram is shown in Figure 1 and 2 below.

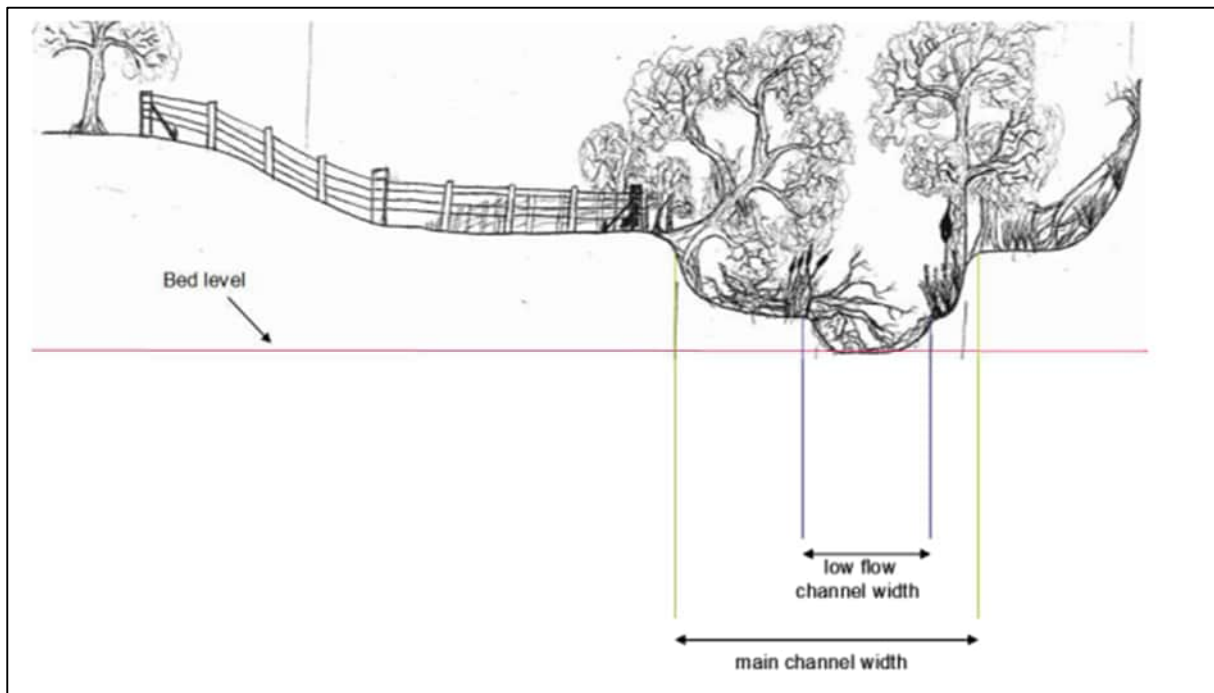


Figure 1 – DAF waterway cross section example

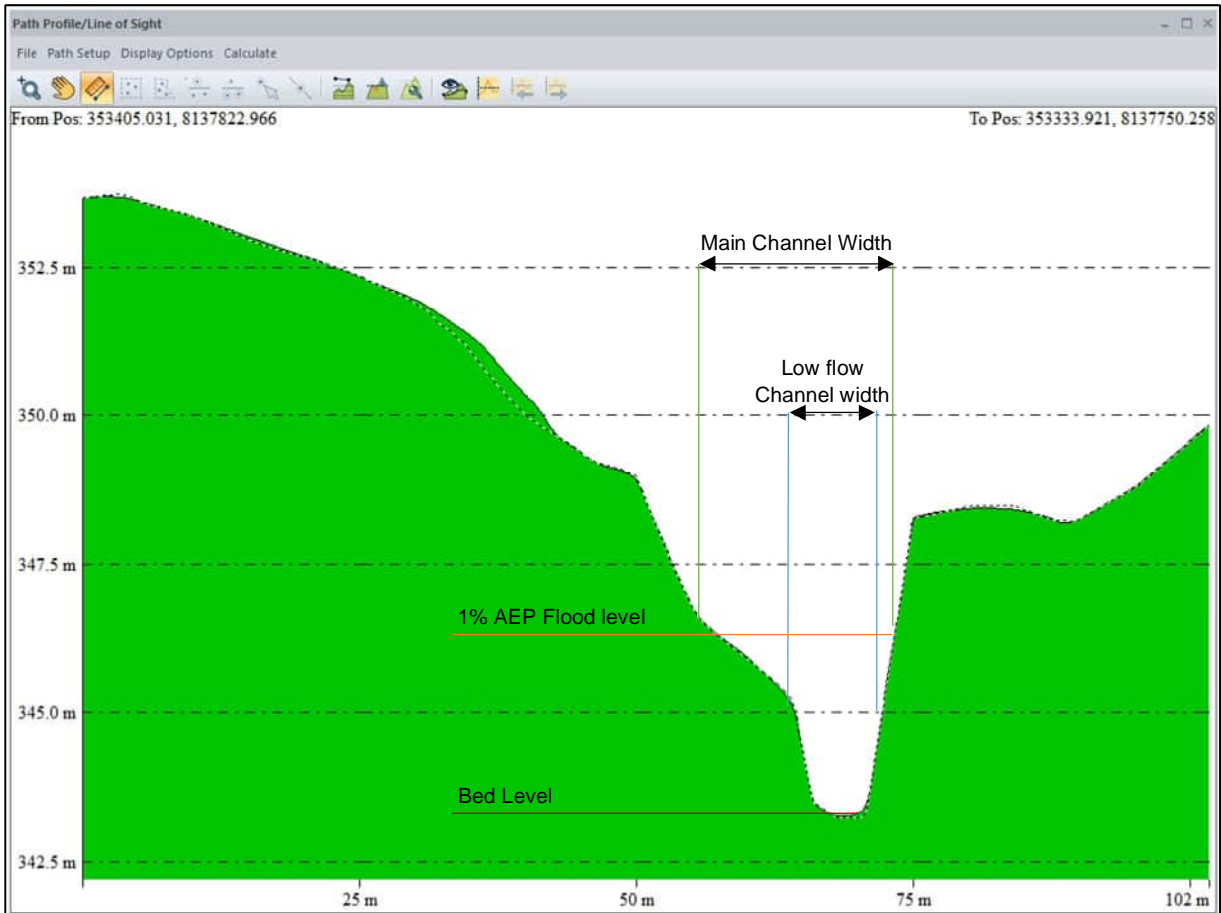


Figure 2 – Jumrum Creek waterway annotated cross section

We note that the existing creek crossing bank is highly eroded and the 1% AEP flood level is significantly lower than the top of bank of the crossing. Site photos are provided in Figure 3 below.



Figure 3 – Site photos of Jumrum Creek (Typical)

ARO believe that the main channel width and low flow channel widths represent the practical flow paths through Jumrum Creek and the high banks either side of the crossing are due to erosion over numerous wet seasons. ARO request confirmation of these interpretations.

CULVERT ARRANGEMENT

Noting the requirement for the culvert array to span 75% of the main channel, ARO wish to confirm the clearing extents that are allowed to achieve this.

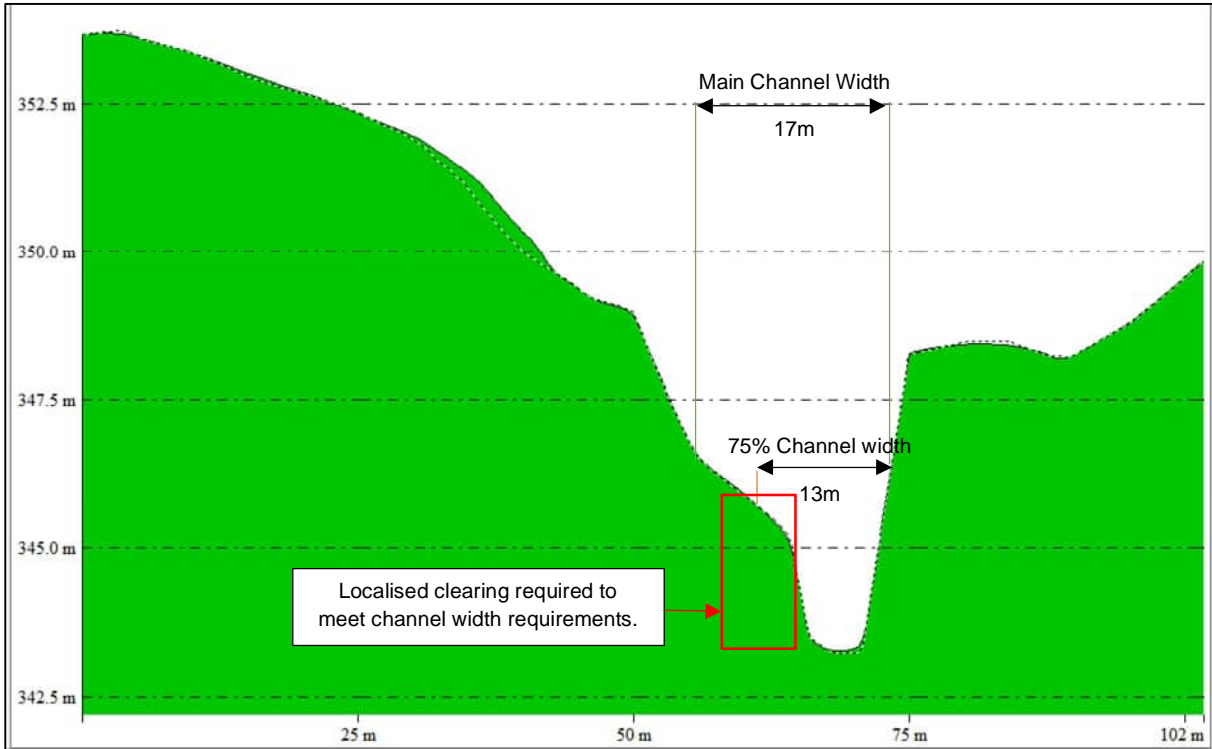


Figure 4 –Earthworks extents required to meet 75% main channel width

To ensure the culvert array spans 75% of the main channel, removal of a portion of the bank will be required at the crossing. This arrangement is depicted in Figure 5 below.

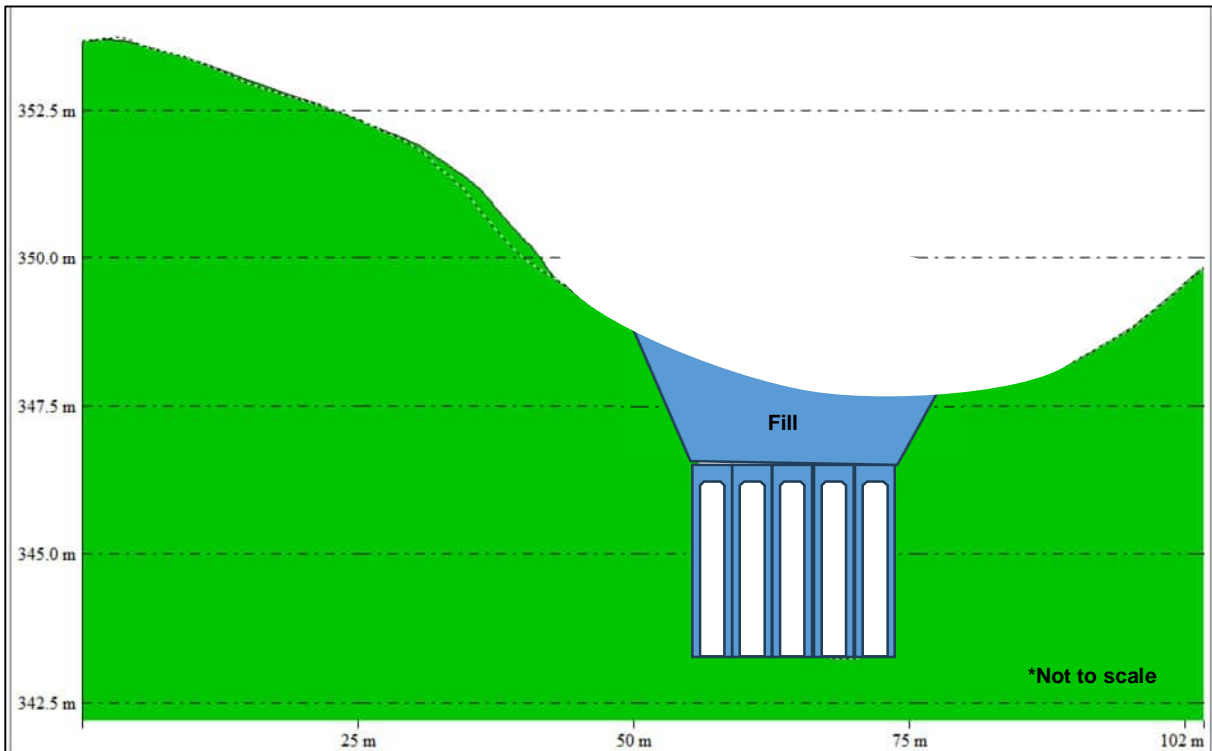


Figure 5 –Proposed culvert arrangement

ARO request confirmation that this is acceptable from DAF and still falls within the accepted development guidelines.

ARO have explored the option of an alternative culvert arrangement to minimise earthworks to the bank of the river. However, we believe the disturbance to the bank will be comparable (piles, batter protection etc) and contribute to a reduction in allowable flow through the crossing during high flow periods. This alternative is provided in Figure 5 below for information.

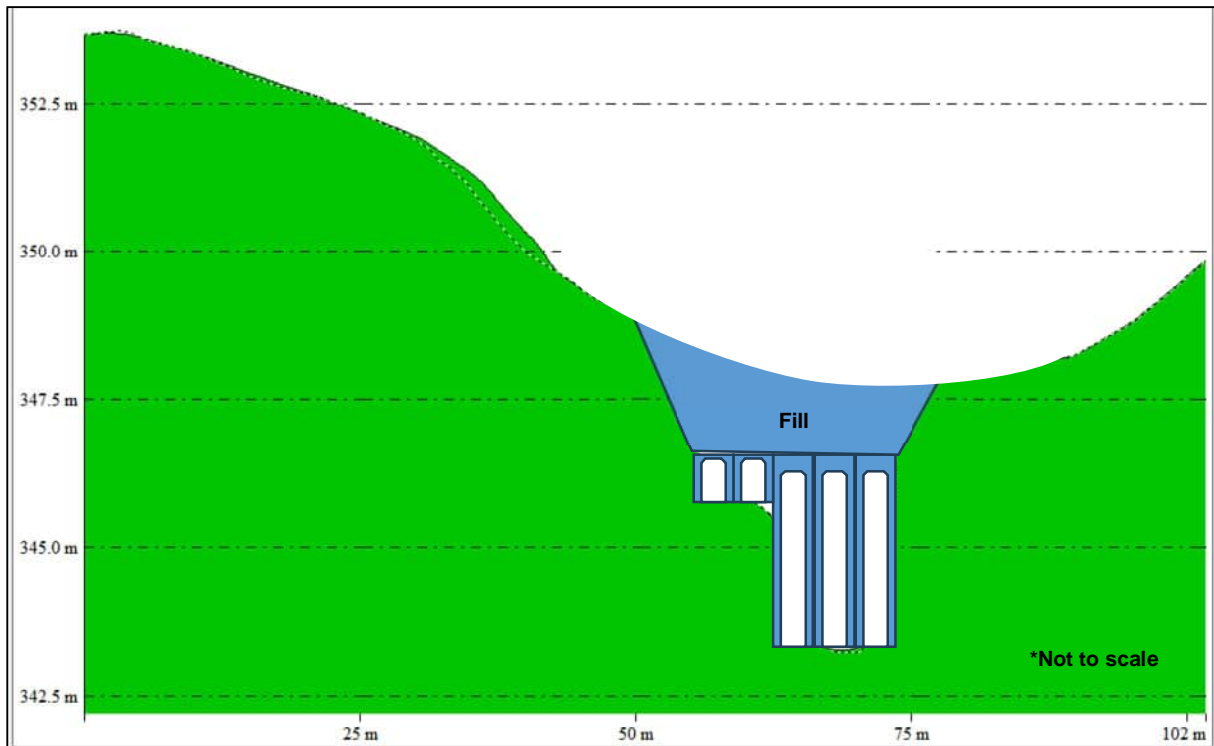


Figure 6 –Considered culvert arrangement

SUMMARY

These interpretations and assessments have been made with the best information available.
 ARO believe the interpretations made are consistent with the DAF accepted development outcomes.
 ARO seek confirmation that the interpretations made are consistent with DAFs assessment of the site.
 ARO are happy to attend a meeting with DAF representatives to expedite the outcome of the request.
 Please do not hesitate to contact our office if you have any queries in relation to this request.

Yours sincerely
ARO INDUSTRIES PTY LTD



Kael Whitnell
 Civil Engineer



SARA reference: 2308-36227 SPL
 Applicant reference: ARO0336

29 August 2023

J Bros Pty Ltd
 C/- ARO Industries Pty Ltd
 PO Box 5358
 CAIRNS QLD 4870
 admin@aroindustries.com.au

Attention: Kael Whitnell

Dear Sir/Madam

SARA Pre-lodgement advice—Jumrum Rainforest Stage 2— Crossing arrangement

I refer to your pre-lodgement request received on 15 August 2023 in which you sought pre-lodgement advice from the State Assessment and Referral Agency (SARA) regarding the proposed development at the above address. This notice provides advice on aspects of the proposal that are of relevance to SARA.

SARA's understanding of the project

SARA understands that the proposal seeks to construct a reinforced concrete box culvert crossing over a high impact waterway (Jumrum Creek; -16.83795,145.62338) on Lot 72 on RP903071. It is understood that Lot 72 forms part of the Jumrum Rainforest Subdivision (Stage 2).

You are seeking clarification regarding the interpretation of *the 'Accepted development requirements for operational work that is construction or raising waterway barrier works'* in relation to the proposed culvert crossing.

Supporting information

The advice in this letter is based on the following documentation that was submitted with the pre-lodgement request.

Drawing/report title	Prepared by	Date
ARO0336 Jumrum Rainforest Stage 2 – Crossing alignment confirmation	ARO Industries Pty Ltd	15 August 2023

Pre-lodgement advice

The following advice outlines the aspects of the proposal that are of relevance to SARA.

Compliance with accepted development requirements	
1.	<p>The proposed works constitute waterway barrier works and are located on a red mapped waterway according to the spatial data layer, <i>Queensland waterways for waterway barrier works</i>. New or replacement culvert crossings can be constructed in a red waterway under work type 1.1 of the ADR.</p> <p>As proposed, the culvert crossing is likely to comply with the Accepted development requirements for operational work that is constructing or raising waterway barrier works (ADR) if the following concerns can be addressed:</p> <ul style="list-style-type: none"> • No wingwalls, or roughening elements for the culverts have been proposed in the designs. These elements are required to be implemented in order to comply with the ADR. • There is no information regarding the requirement to set the culverts a minimum of 300mm below bed level. This is also a requirement of compliance with the ADR. <p>While both of the proposed culvert array options satisfy the requirement of spanning a minimum of 75% of the main channel, the Department of Agriculture and Fisheries (DAF) has advised its preference is for the culvert array depicted in Figure 6 - Considered culvert arrangement, for the following reasons:</p> <ul style="list-style-type: none"> • The design provides better hydraulic conditions for fish passage up to full capacity of the culvert array. • The design minimises impacts to the waterway banks.
Assessable development	
2.	<p>If the proposed culvert crossing cannot meet the ADR it will constitute assessable development and require development approval under the Planning Act 2016. A development application would need to demonstrate the culvert crossing is designed, constructed and maintained to provide safe adequate fish passage for all fish in all flows. Hydrological data for a series of flow events may be required to demonstrate the preferred culvert design meets this requirement.</p> <p>If possible, avoiding waterways (e.g. through an alternative crossing, such as a bridge) would remove the need for a development approval and potential fees for this component of the works.</p> <p>If the proposed culvert crossing requires a development approval, it is recommended that you seek further pre-lodgement advice from SARA in relation to development application requirements, including advice on addressing the State Development Assessment Provisions (SDAP), State code 18: Constructing or raising waterway barrier works in fish habitats.</p> <p>Further pre-lodgement advice can be requested using the 'Related Actions' and 'Request more pre-lodgement advice from SARA' tabs in MyDAS2 under application 2308-36227 SPL.</p>

This advice outlines aspects of the proposed development that are relevant from the jurisdiction of SARA. This advice is provided in good faith and is:

- based on the material and information provided to SARA
- current at the time of issue

- not applicable if the proposal is changed from that which formed the basis of this advice.

This advice does not constitute an approval or an endorsement that SARA supports the development proposal. Additional information may be required to allow SARA to properly assess the development proposal when a formal application has been lodged.

If you require further information please contact Jenny Sapuppo, A/Principal Planning Officer, on 07 5644 3220 or via email CairnsSARA@dasilgp.qld.gov.au who will be pleased to assist.

Yours sincerely



Brett Nancarrow
Manager (Planning)

Development details	
Proposal:	Waterway barrier works – Construction of a culvert crossing over Jumrum Creek (-16.83795,145.62338)
Street address:	1593 Kennedy Highway, Kuranda
Real property description:	Lot 72 on RP903071
SARA role:	Nil – if development complies with ADR requirements
Assessment manager:	To be confirmed
Assessment criteria:	SDAP, State code 18: Constructing or raising waterway barrier works in fish habitats
Existing use:	Waterway
Relevant site history:	Lot 72 forms part of the Jumrum Rainforest Subdivision (Stage 2).

APPENDIX D

Jumrum Creek Culvert Design File Note

ARO0336 - JUMRUM SUBDIVISION STAGE 2

JUMRUM CREEK CROSSING FILE NOTE

1 Background

The purpose of this file note is to document the Jumrum Creek culvert crossing undertaken by ARO Industries for the Jumrum Rainforest Stage 2 Operational Works Application.

Analysis of the crossing was undertaken to determine the crossings suitability and conformance to FNQROC Development Manual Design Manual and DAF Waterway Barrier requirements.

The proposed development of Lot 72 Fallon Road (Lot/Plan 72RP903071) consists of 82 Lots (>4000m²). Stage 2 consists of 30 lots (lots 12-17 and 60-83).

2 Catchment

The culvert catchment was determined based publicly available LiDAR through QSpatial.

The flows through the crossing were determined utilising the Regional Flood Frequency Estimation Model.

The following flows were determined:

AEP (%)	Discharge (m3/s)
50	16.4
20	30.9
10	42.8
5	55.7
2	74.5
1	90.2

FNQROC requires cross drainage for minor roads to be designed to 10-year ARI (10% AEP). However, to allow more fill on top of the culvert than 750mm, ARO have designed for a 50-year ARI (2% AEP) as dictated by DAF accepted development requirements. It is noted that crossing immunity will not be a limiting factor due to the high banks either side of the creek.

3 Existing Conditions

At the location of the crossing, the existing conditions (open channel flows) were determined. Hydraulic Toolbox was used for this analysis. Results are summarised below.

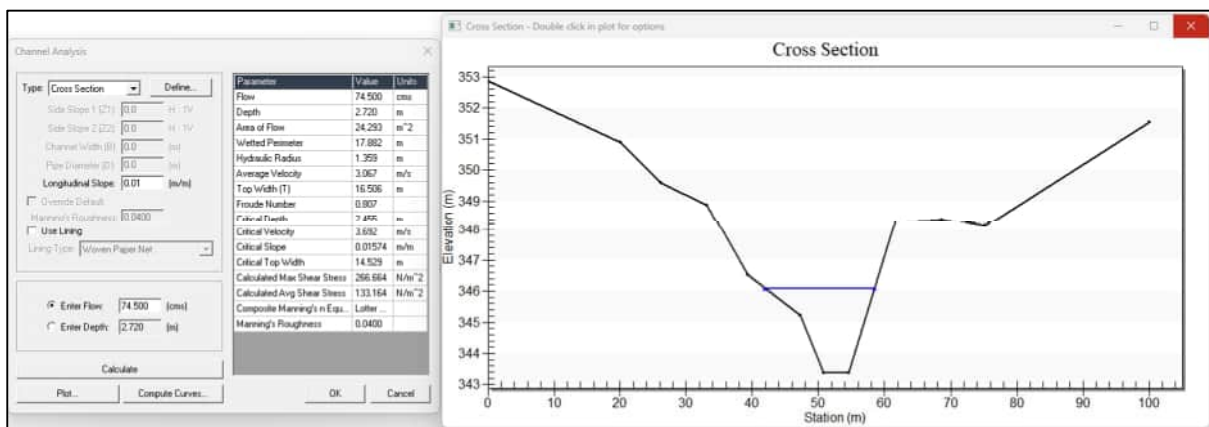


Figure – 2% AEP open channel flow modelling

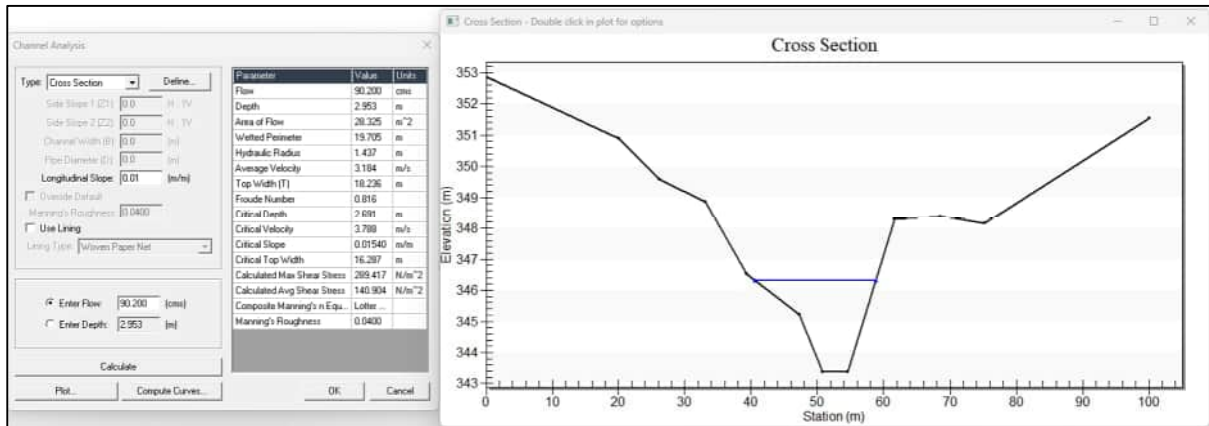


Figure – 1% AEP open channel flow modelling

It is noted that velocities vary between 3.067-3.692m/s for a 2% AEP event and 3.184-3.788m/s for a 1% AEP event.

4 Proposed Crossing

It is proposed to construct a culvert structure through the crossing (RCBC). The proposed structure was modelled in HY-8 and it was determined that the 6 x 2400 x 1800 (300mm embedment) is required to convey flows whilst maintaining accepted velocities as per QUDM.

Modelling a 2% AEP event achieves the following outcomes:

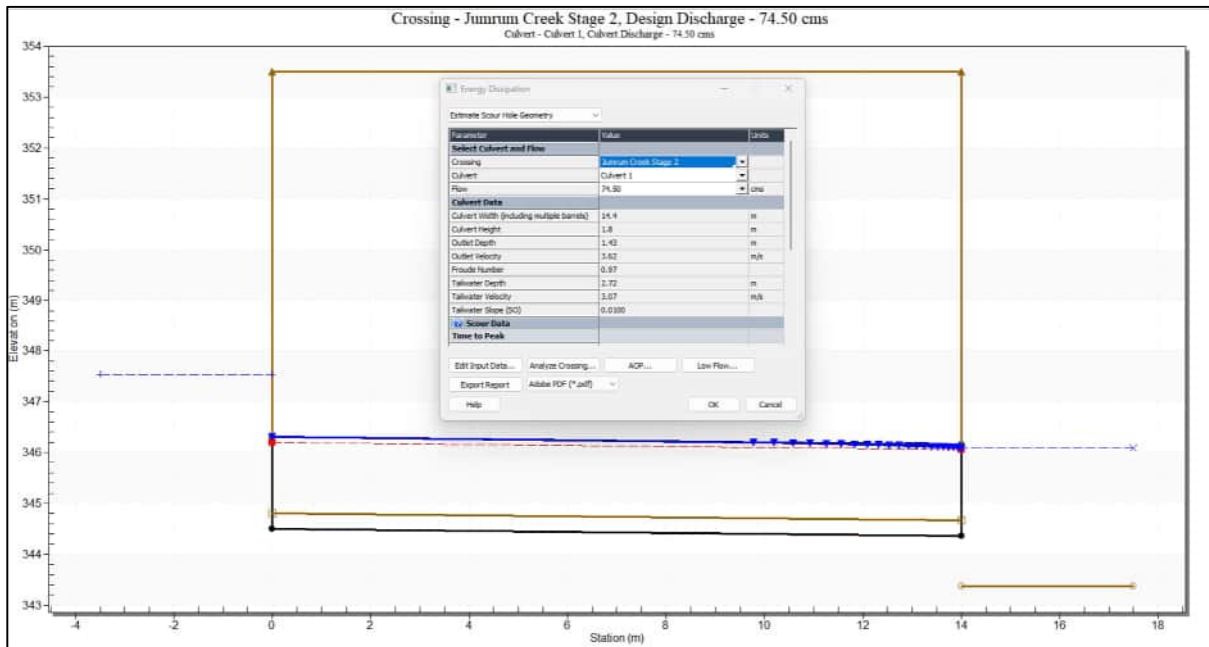


Figure – 2% AEP culvert modelling

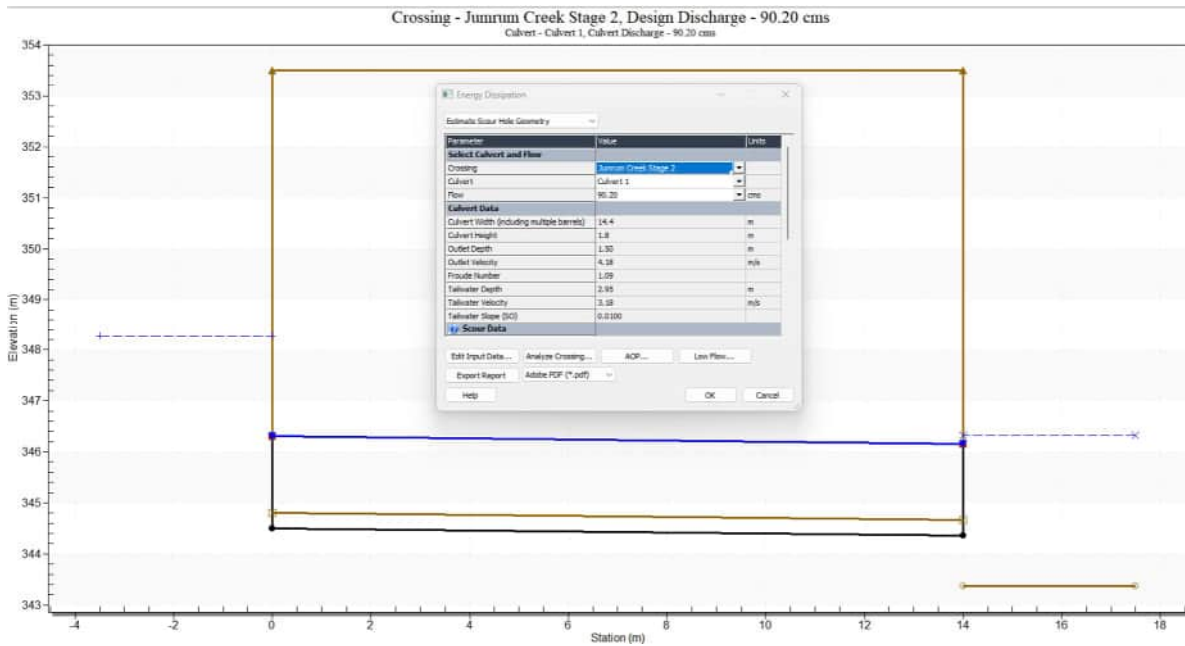


Figure – 1% AEP culvert modelling

It is noted that both scenarios are within the less than the absolute maximum as noted by QUDM and comparable to the desirable maximum.

7.11 Flow velocity limits

The velocity of stormwater in pipes and box sections should be maintained within acceptable limits to ensure that:

- self cleaning of the pipe or box section is maintained
- scouring and erosion of the conduit (particularly the invert) does not occur.

The range of acceptable flow velocities are as detailed in Table 7.11.1.

Table 7.11.1 – Acceptable flow velocities for pipes and box sections

Flow condition	Absolute minimum ^[1] (m/s)	Desirable minimum ^[1] (m/s)	Desirable maximum ^[2] (m/s)	Absolute maximum ^[2] (m/s)
Partially full	0.7	1.2	4.7	7.0
Full	0.6	1.0	4.0	6.0

Notes:

- [1] Minimum flow velocities apply to 63% AEP (1 year ARI) design storm, and apply to all pipe materials.
- [2] Maximum flow velocities apply to concrete pipes. For other pipe materials, refer to manufacturer's advice.

Figure – QUDM Flow Velocity Limits

5 DAF Requirements

The DAF guidelines outline the requirements of a culvert crossing through a red waterway. These requirements are reproduced in the figure below.

Culvert crossing configuration

Culvert crossing configurations **must** meet one of the following options:

- Option 1 (Appendix 1, Figure 6)
 - The width of the culvert cell aperture or culvert array must span a minimum of 75% of the main channel width. ✓
 - The obvert (internal roof) of the culvert cell(s) must be a minimum of 600 mm above the commence to flow water level (or bed level, for ephemeral waterways). ✓
 - If the culvert crossing is designed with a flood immunity of an Average Recurrence Interval (ARI) of less than 50 years: ✓
 - the depth of cover is no greater than 750 mm; or
 - the culvert commences full flow at or greater than a 2 year ARI⁶.
 - All culverts in the crossing are set at a minimum of 300 mm below bed level unless installed on bedrock, where the natural bed surface is maintained through the culvert. ✓

Figure – DAF Culvert Requirements

DAF states that a minimum of 75% of the main channel width must be culverts. A main channel width of 17.5m was determined through detailed survey. A minimum of 13.125m of culvert cells are required to meet the minimum DAF requirement. An array of 6 culverts achieves a width of 14.4m. This requirement is achieved.

DAF states that the obvert of the culvert cell must be a minimum of 600mm above the commence to flow water level. The obvert level is 600mm above at 50% AEP, therefore, conforms with commence to flow level (99.5% AEP).

DAF states that if the culvert crossing is designed with a flood immunity of an ARI of less than 50 years then the depth of cover is no greater than 750mm or the culvert must commence full flow at or greater than a 2 year ARI. The Culvert crossing is designed with a 50 / 100 year ARI immunity. Therefore, depth of cover and commence full flow parameters do not apply.

DAF states that Culverts are to have 300mm embedment. Culverts are designed to have a 300mm embedment.

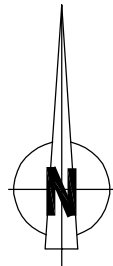
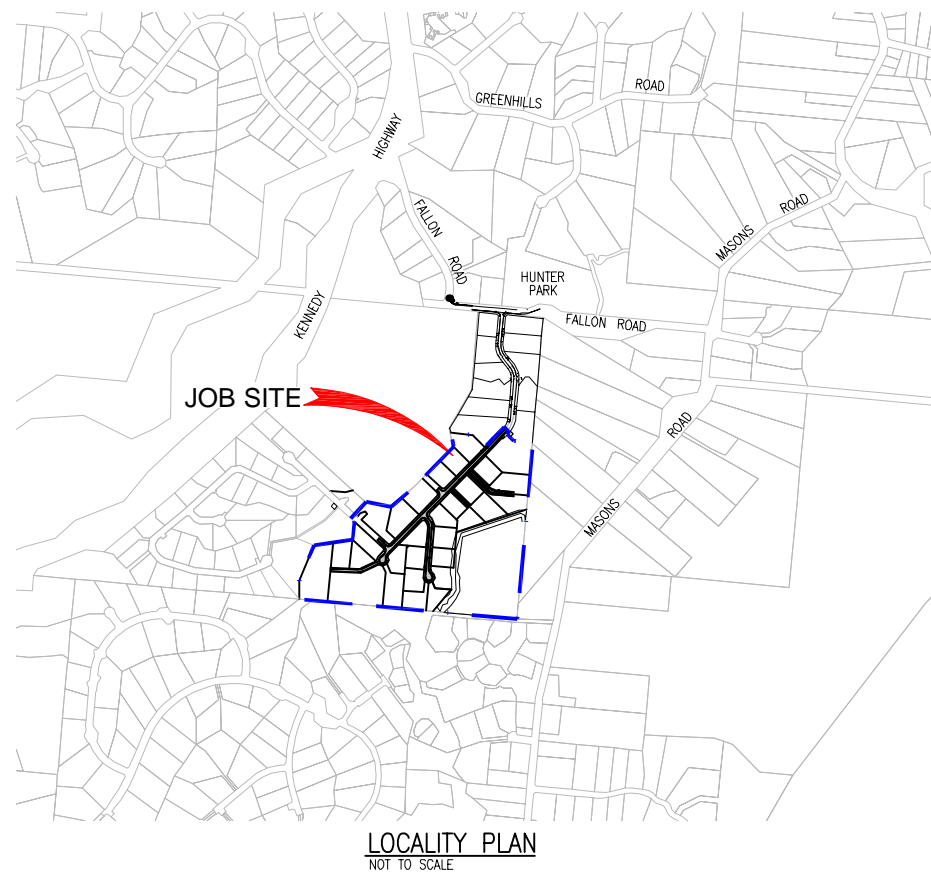
6 Conclusion

It is demonstrated that the proposed crossing conforms with the DAF accepted development guidelines, QUDM and FNQROC immunity requirements.

APPENDIX E

ARO Industries Engineering Drawings

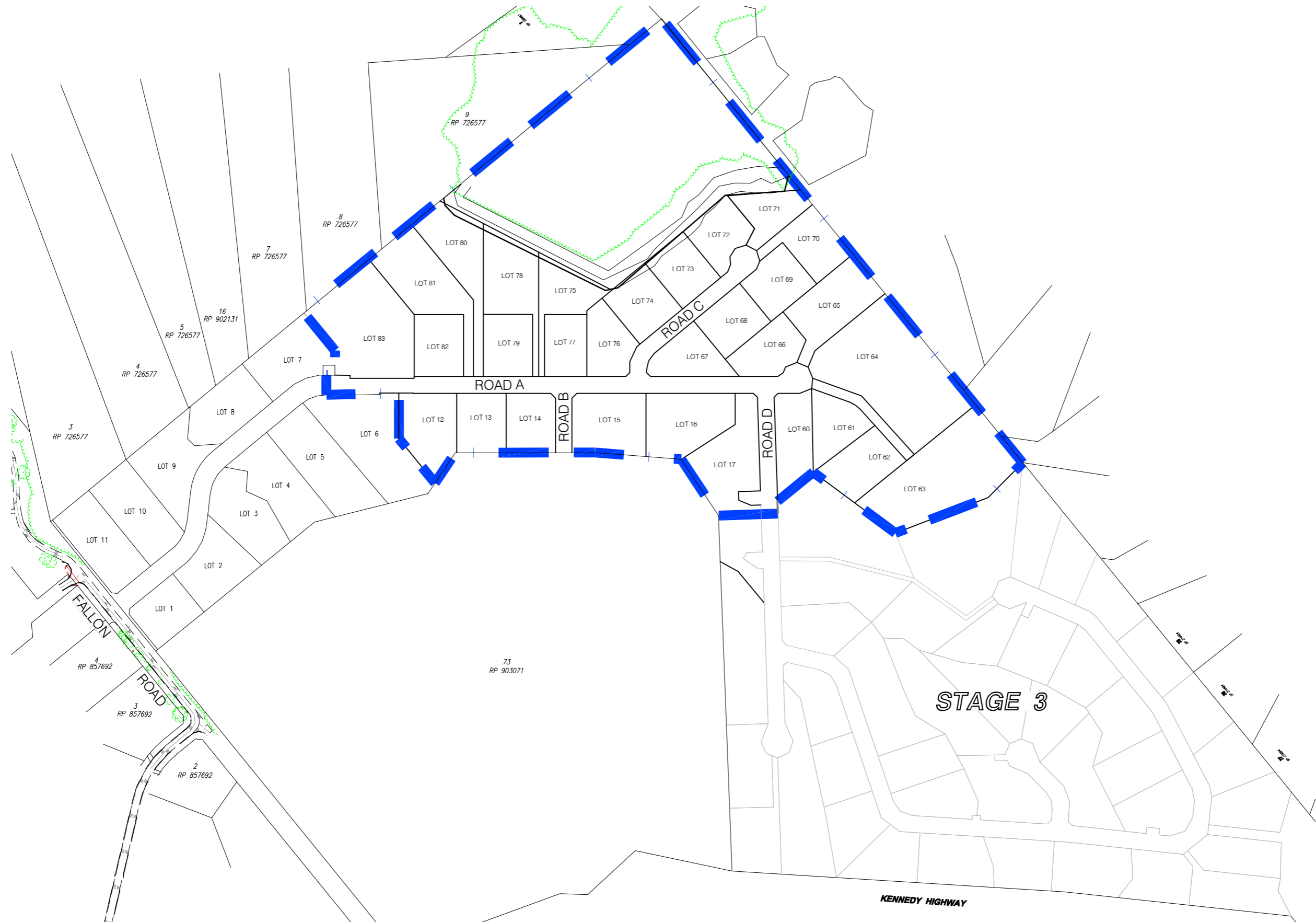
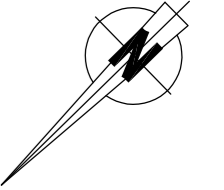
ECO @ JUMRUM STAGE 2 AT FALLON ROAD, KURANDA



DRAWING SCHEDULE

ARO0336-C00	COVER SHEET, LOCALITY PLAN AND DRAWING SCHEDULE
ARO0336-C01	GENERAL ARRANGEMENT PLAN
ARO0336-C02	ROADWORKS AND STORMWATER DRAINAGE PLAN – SHEET 1 OF 2
ARO0336-C03	ROADWORKS AND STORMWATER DRAINAGE PLAN – SHEET 2 OF 2
ARO0336-C04	TYPE CROSS SECTION AND MISCELLANEOUS DETAILS
ARO0336-C05	ROAD A LONGITUDINAL SECTION
ARO0336-C06	ROAD B, C AND D LONGITUDINAL SECTIONS
ARO0336-C07	ROAD A ANNOTATED CROSS SECTIONS – SHEET 1 OF 3
ARO0336-C08	ROAD A ANNOTATED CROSS SECTIONS – SHEET 2 OF 3
ARO0336-C09	ROAD A ANNOTATED CROSS SECTIONS – SHEET 3 OF 3
ARO0336-C10	ROADS B AND D ANNOTATED CROSS SECTIONS
ARO0336-C11	ROAD C ANNOTATED CROSS SECTIONS
ARO0336-C12	INTERSECTION SETOUT AND DETAILS – SHEET 1 OF 2
ARO0336-C13	INTERSECTION SETOUT AND DETAILS – SHEET 2 OF 2
ARO0336-C14	DRIVEWAY SETOUT AND DETAILS – SHEET 1 OF 2
ARO0336-C15	DRIVEWAY SETOUT AND DETAILS – SHEET 2 OF 2
ARO0336-C16	STORMWATER DRAINAGE LONGITUDINAL SECTIONS – SHEET 1 OF 3
ARO0336-C17	STORMWATER DRAINAGE LONGITUDINAL SECTIONS – SHEET 2 OF 3
ARO0336-C18	STORMWATER DRAINAGE LONGITUDINAL SECTIONS – SHEET 3 OF 3
ARO0336-C19	CULVERT PLAN, SECTION AND ELEVATION
ARO0336-C20	WATER RETICULATION PLAN – SHEET 1 OF 2
ARO0336-C21	WATER RETICULATION PLAN – SHEET 2 OF 2
ARO0336-C22	EROSION AND SEDIMENT CONTROL PLAN – SHEET 1 OF 2
ARO0336-C23	EROSION AND SEDIMENT CONTROL PLAN – SHEET 2 OF 2

APPROVAL ISSUE



PLAN
SCALE 1:2000

0 20 40 60 80 100m
SCALE 1:2000 (A1)

APPROVAL ISSUE

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Client Logo	
[Client Logo Placeholder]	

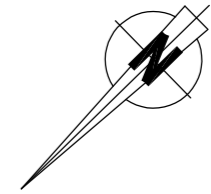
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Project	ECO @ JUMRUM STAGE 2
Title	GENERAL ARRANGEMENT
Drawing No.	ARO0336-C01

Drawn	MS	Designed	MS	Approved	
Drawing Check	AA	Design Check	AA	RPEQ	Date

Scale (A1 size)	1:500
Drawing is not to be used for construction unless approved.	



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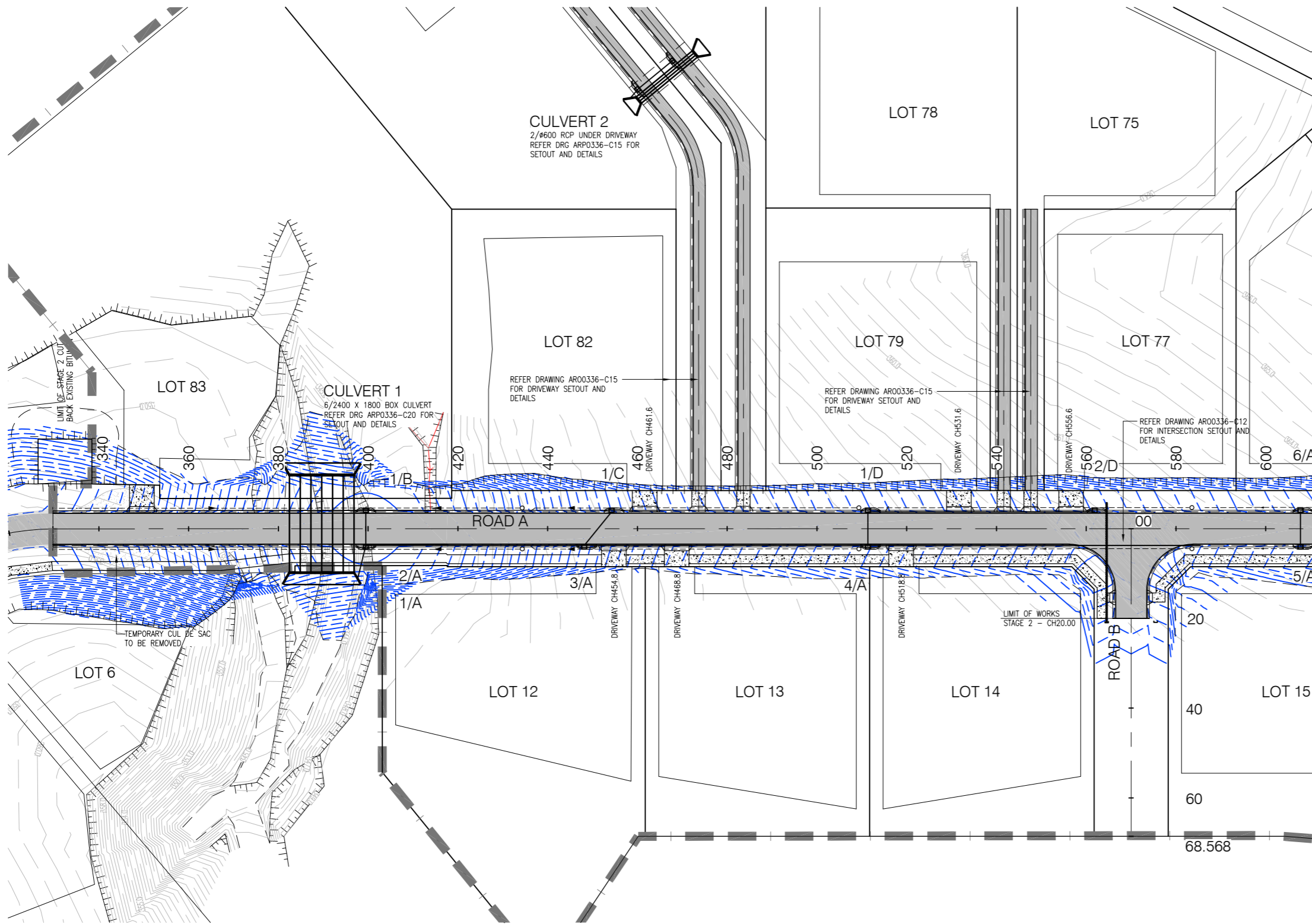


LEGEND

- 4.0' EXISTING SURFACE CONTOUR (0.5m INTERVAL)
- STREET SIGN
- KERB RAMP
- TOP OF BATTER
- TOE OF BATTER
- EDGE OF EXISTING SEALED ROAD
- EXISTING STORMWATER
- EXISTING WATER
- EXISTING OVERHEAD ELECTRICITY
- EDGE OF EXISTING VEGETATION

NOTES

1. CONTRACTOR TO LIAISE WITH RELEVANT AUTHORITIES TO LOCATE ALL EXISTING SERVICES PRIOR TO COMMENCEMENT OF CONSTRUCTION.
2. ALL WORKS TO BE IN ACCORDANCE WITH FNROC MANUAL GUIDELINES AND SPECIFICATIONS.
3. DESIGN SURFACE LEVELS SHOWN ARE AFTER ALL EARTHWORKS ARE COMPLETED, INCLUDING 75mm TOPSOILING.
4. BATTERS SHALL BE (UNLESS NOTED OTHERWISE):
 - ROAD FRONTAGE OF LOTS: 1 ON 4 (MAX.)
 - SIDES AND REAR OF LOTS (CUT): 1 ON 2
 - SIDES AND REAR OF LOTS (FILL): 1 ON 2
5. ALL DESIGN SURFACE LEVELS ARE TO BE GRADED EVENLY BETWEEN SHOWN LEVELS UNLESS NOTED OTHERWISE.
6. REFER TO FNROC STANDARD DRAWINGS:
 - S1000 : CONCRETE KERB & CHANNEL
 - S1010 : PUBLIC UTILITIES ON ROADS AND VERGES
 - S1015 : ACCESS CROSSOVERS
 - S1016 : KERB RAMP
 - S1035 : PATHWAYS/BIKEWAYS
 - S1040 : STREET NAME SIGNS
7. ALL SECTIONS OF ROADWAY WITH A LONGITUDINAL GRADE GREATER THAN 10% ARE TO HAVE A 10mm PRIMER SEAL APPLIED TO THE BASE COURSE PRIOR TO THE PLACEMENT OF THE ASPHALTIC CONCRETE.
8. FOOTPATHS AND ROAD VERGES TO BE TRIMMED AND DRILL SEED. ALL BATTERS >0.5m TO BE HYDROMULCHED AFTER FINAL EARTHWORKS AND TOPSOILING IS COMPLETED.
9. TOPSOIL STOCKPILE TO BE LOCATED AT SITE ACCEPTABLE TO SUPERINTENDENT.



ROADWORKS AND STORMWATER PLAN
SCALE 1:500

0 5 10 15 20 25m
SCALE 1:500 (A1)

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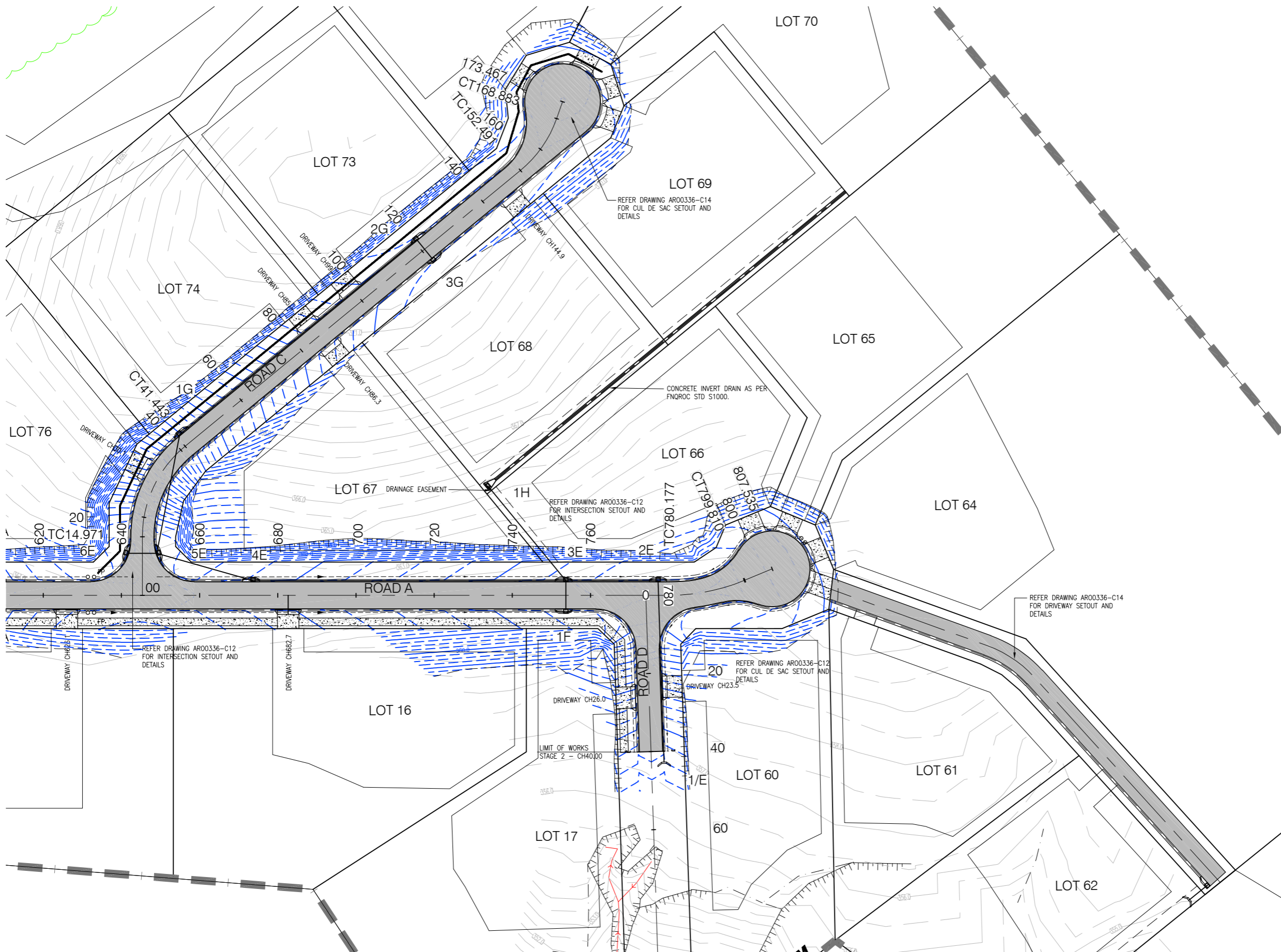
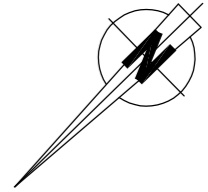
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Project	ECO @ JUMRUM STAGE 2
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Drawing Check	AA	Design Check	AA	RPEQ	Date	Drawing is not to be used for construction unless approved.	

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ROADWORKS AND STORMWATER PLAN
SCALE: 1:1000

NOTE
REFER DRAWING ARO0336-C02 FOR LEGEND AND NOTES.

APPROVAL ISSUE

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Drawing Check	AA	Design Check	AA	RPEQ	Date	Drawing is not to be used for construction unless approved.	

ARO

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ROAD A CONTROL LINE SETOUT

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
329.768	353402.001	8137819.756				
418.634	353339.922	8137756.168				
TC 780.177	353087.203	8137497.621	224°20'48.73"	R = -50.000	19.633	22°29'53.72"
CT 799.810	353076.551	8137481.278	201°50'55.01"			
807.535	353073.676	8137474.109	201°50'55.01"			

ROAD B CONTROL LINE SETOUT

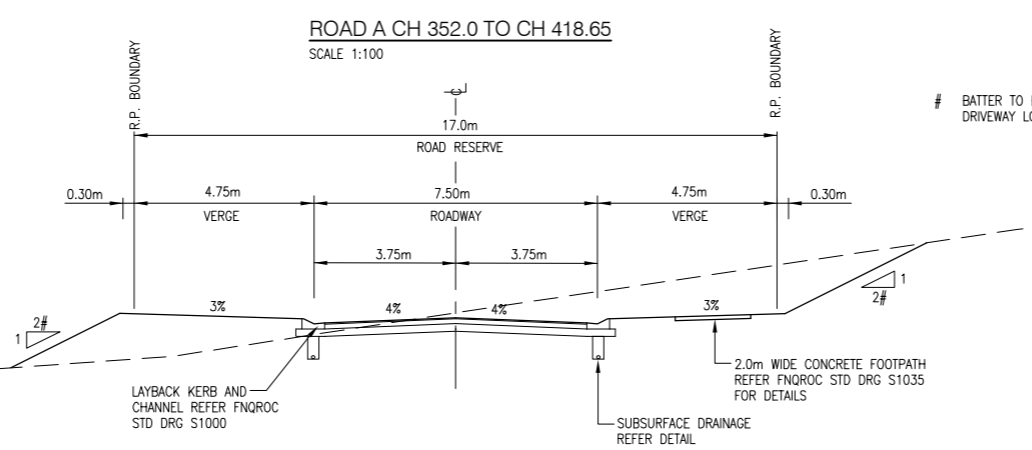
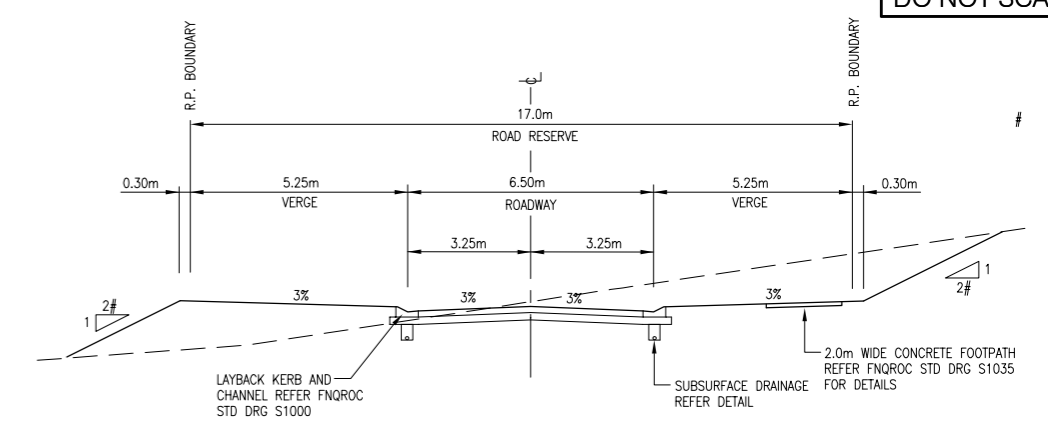
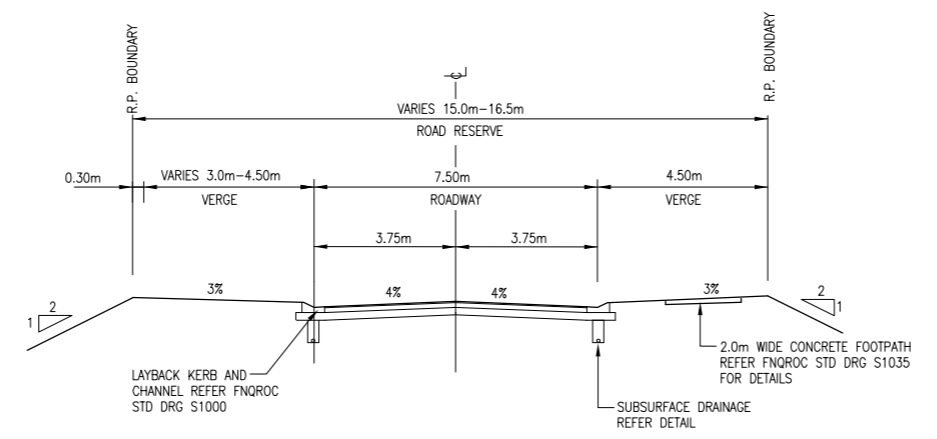
CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
0.000	353234.105	8137647.911	314°20'48.73"			
68.568	353185.071	8137695.840	314°20'48.73"			

ROAD C CONTROL LINE SETOUT

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
0.000	353181.441	8137594.032	134°20'48.73"			
TC 14.971	353192.147	8137583.568	134°20'48.73"	R = 30.000	26.472	50°33'29.37"
CT 41.443	353201.067	8137559.549	184°54'18.10"			
TC 152.491	353191.572	8137448.908	184°54'18.10"	R = -30.000	16.392	31°18'23.21"
CT 168.883	353194.592	8137433.003	153°35'54.89"			
173.467	353196.630	8137428.897	153°35'54.89"			

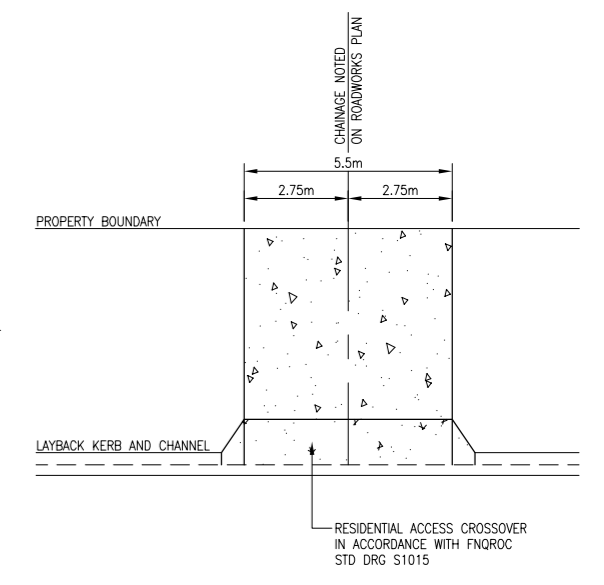
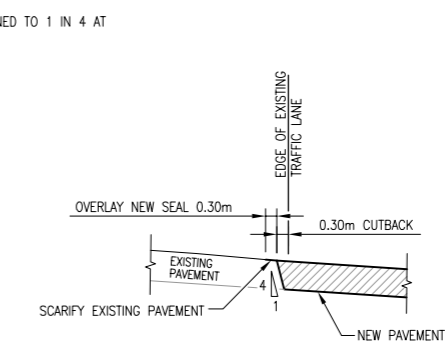
ROAD D CONTROL LINE SETOUT

CHAINAGE	EASTING	NORTHING	BEARING	RAD/SPIRAL	A.LENGTH	DEFL.ANGLE
0.000	353091.413	8137501.928	312°26'47.57"			
369.287	352818.914	8137751.160	312°26'47.57"			



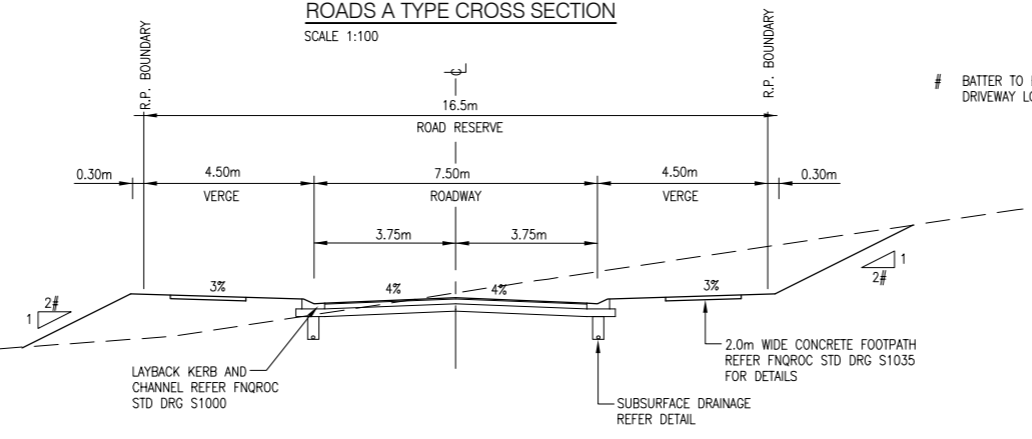
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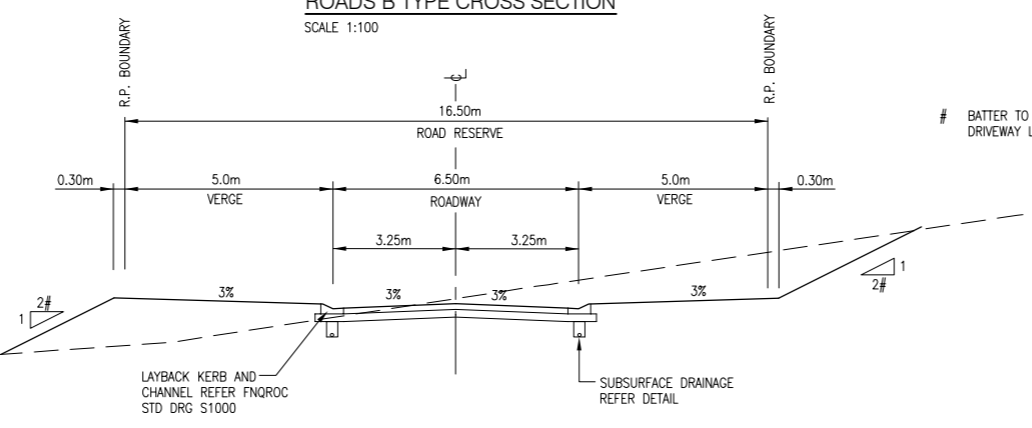
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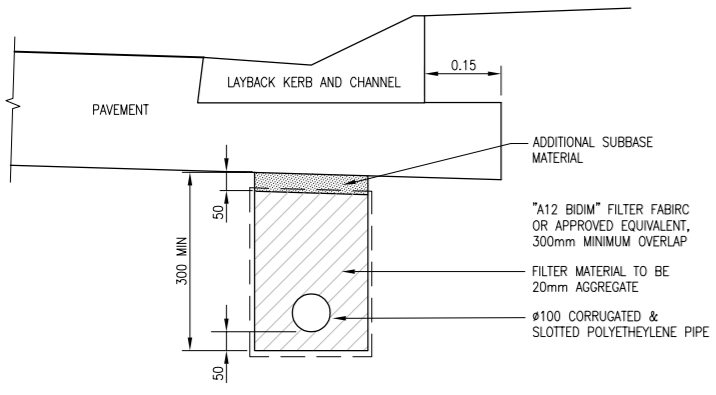
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SCALE 1:100



ROAD C TYPE CROSS SECTION

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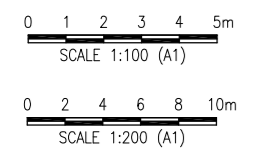


SUBSURFACE DRAINAGE FLUSHING POINTS SHALL BE PROVIDED AT HEAD OF LINES, HIGH POINTS AND NOT MORE THAN 50m SPACING IN ACCORDANCE WITH FNQROC STD DRG S1095

NOTES

- ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
- PAVEMENT DESIGN IS BASED ON AN ASSUMED SUBGRADE CBR OF 10.
- THE CONTRACTOR IS TO CONFIRM SUBGRADE CBR DURING CONSTRUCTION AND PAVEMENT DESIGN IS TO BE CONFIRMED WITH SUPERINTENDENT AND MAREEBA SHIRE COUNCIL.
- SUPERINTENDENT IS TO CONFIRM FINAL PAVEMENT DETAILS PRIOR TO CONSTRUCTION.

DESIGN SUBGRADE CBR 10 (REFER NOTES 2 & 3)



No.	Description	Reviewed	Approved	Date
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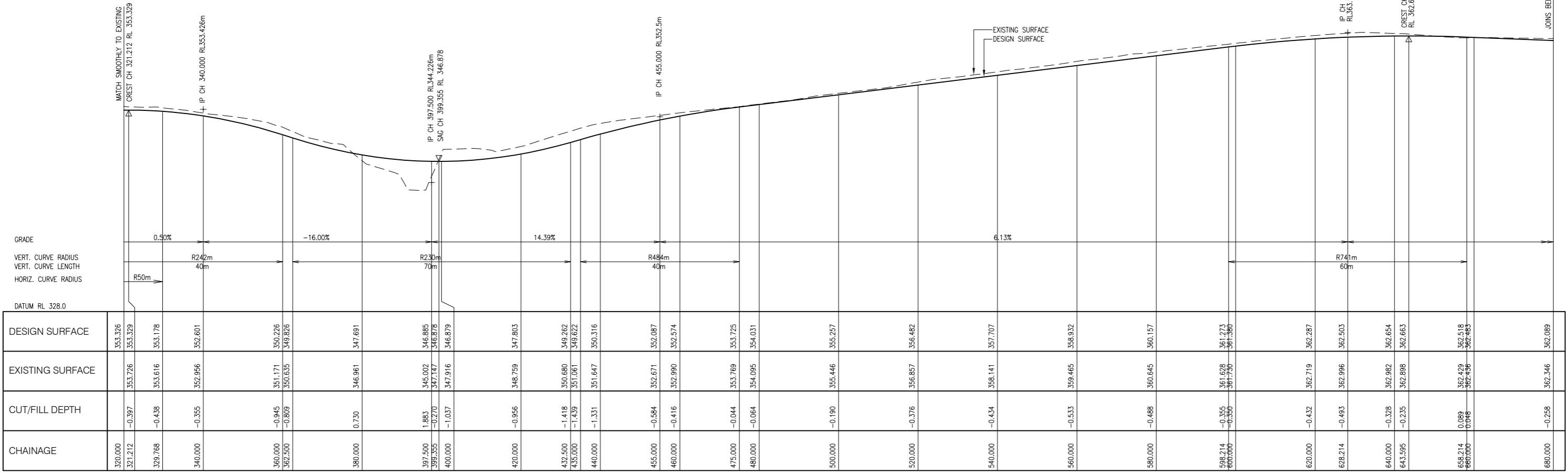
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Project	ECO @ JUMRUM STAGE 2
Title	TYPE CROSS SECTIONS AND MISCELLANEOUS DETAILS

Drawn	MS	Designed	MS	Approved	
Drawing Check	AA	Design Check	AA	RPEQ	Date

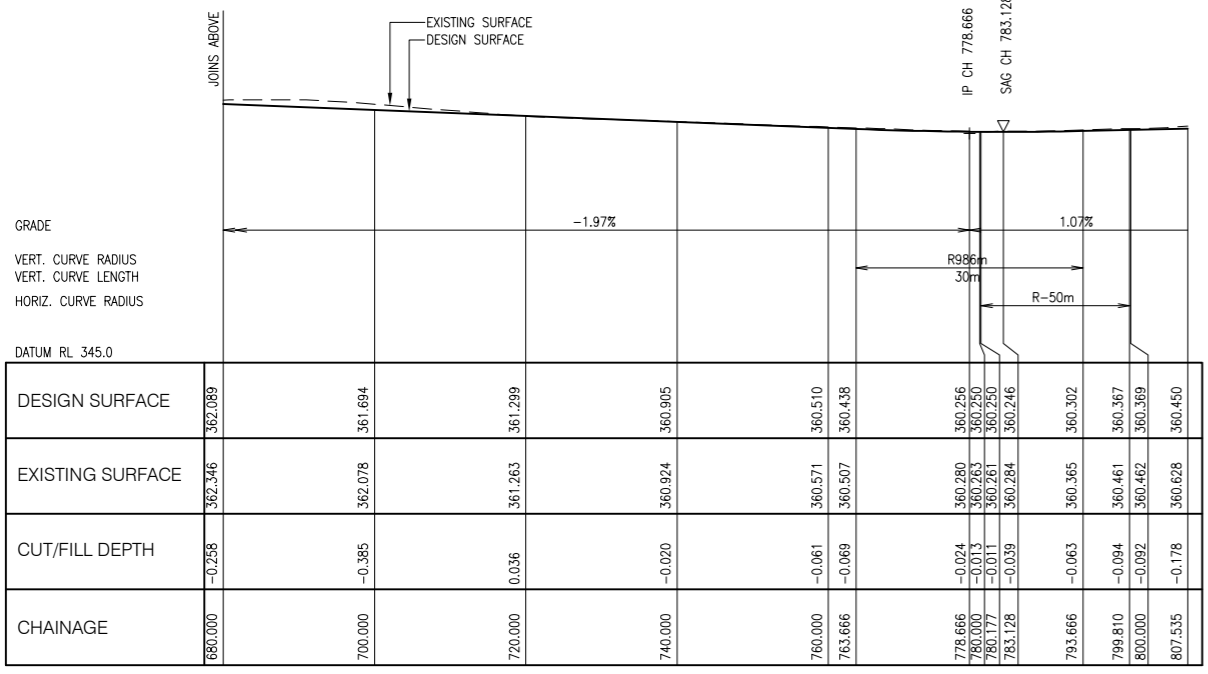
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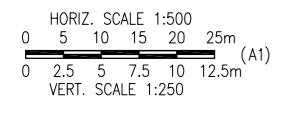
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ROAD A LONGITUDINAL SECTION
SCALE HOR 1:500, VERT 1:250

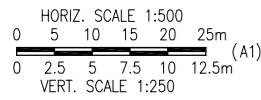
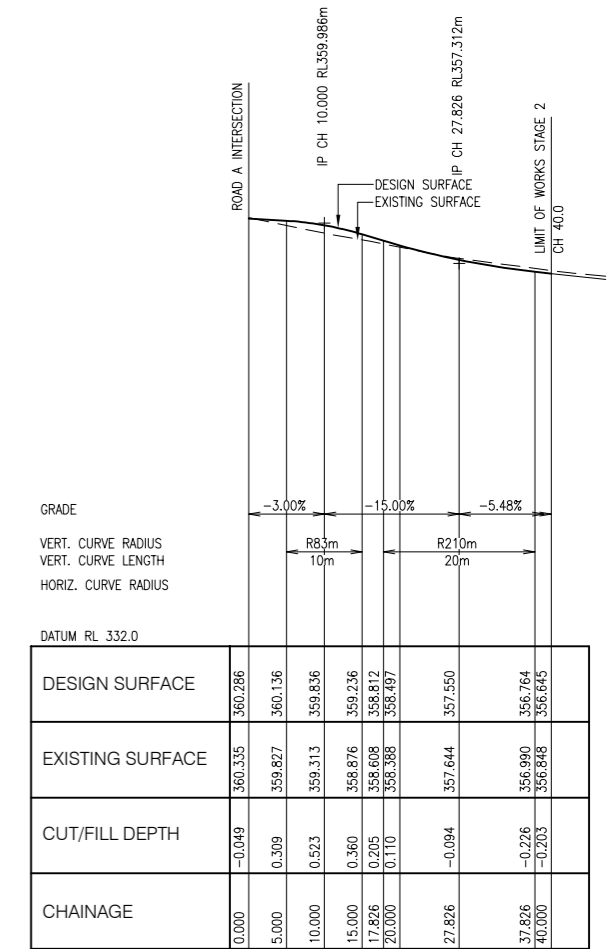
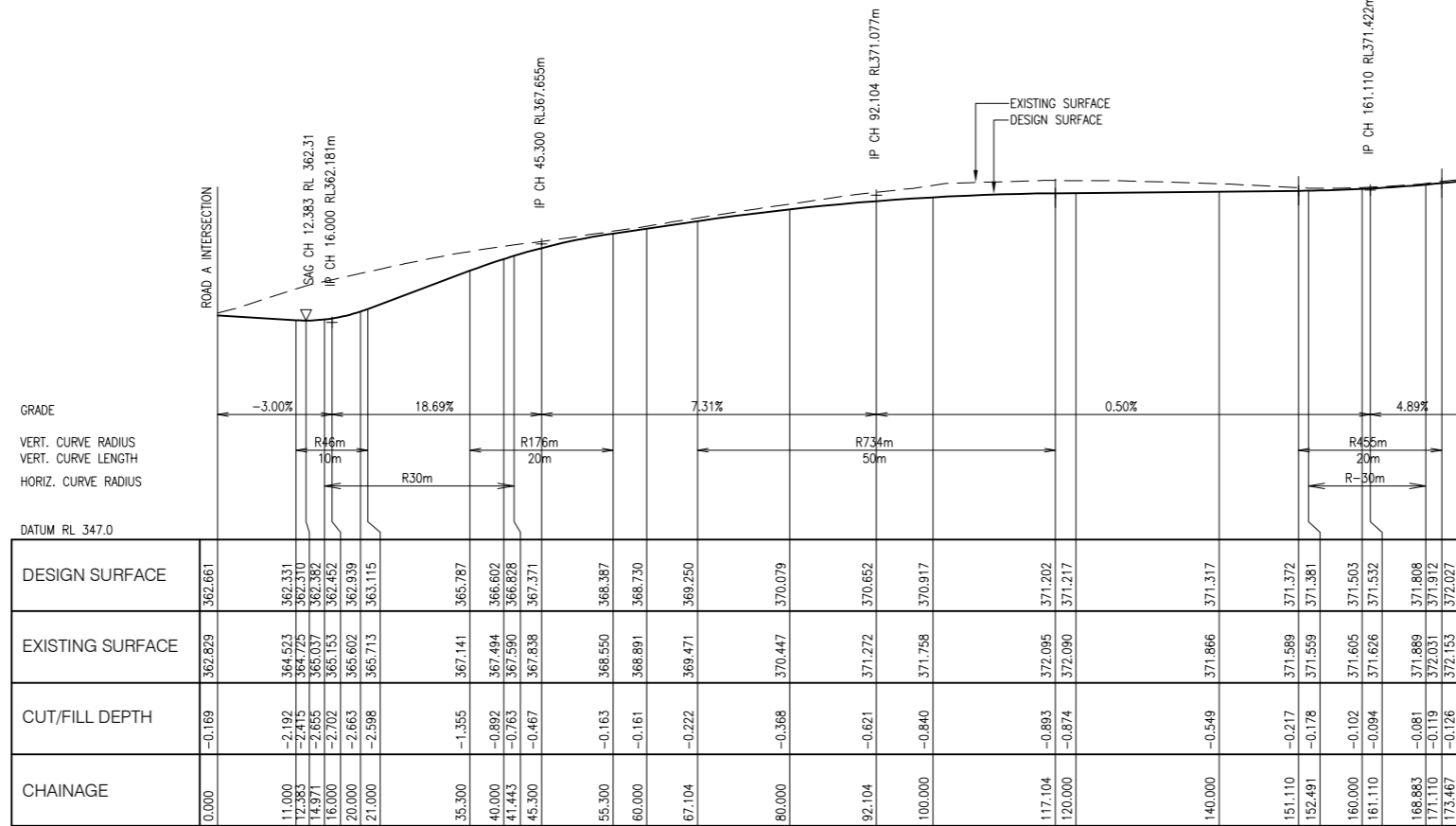
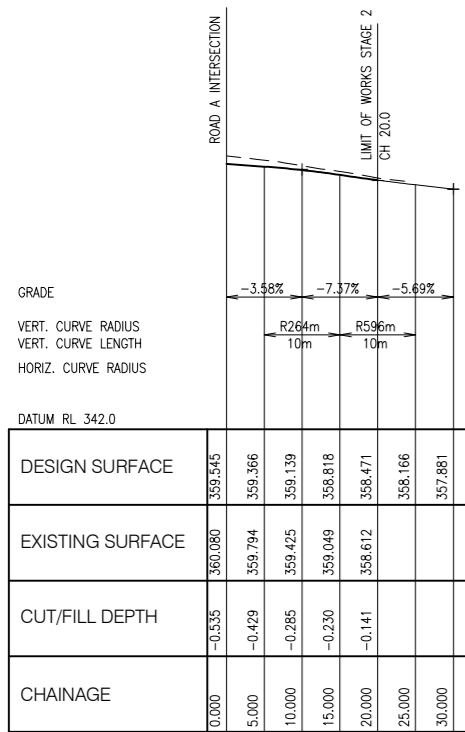


ROAD A LONGITUDINAL SECTION
SCALE HOR 1:500, VERT 1:250



Revisions	No.	Description	Reviewed	Approved	Date	Client Logo	Client	J BROS PTY LTD	Drawn	MS	Designed	MS	Approved	Scale (A1 size)		
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							Title	ROAD A LONGITUDINAL SECTION				Drawing is not to be used for construction unless approved.				
							Drawing No.	ARO0336-C05				Drawing is not to be used for construction unless approved.				
														51 Sheridan Street Cairns Qld 4870 T (07) 4281 6897 E admin@arindustries.com.au W www.arindustries.com.au ABN: 49 641 461 298		

APPROVAL ISSUE



No.	Description	Reviewed	Approved	Date
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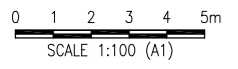
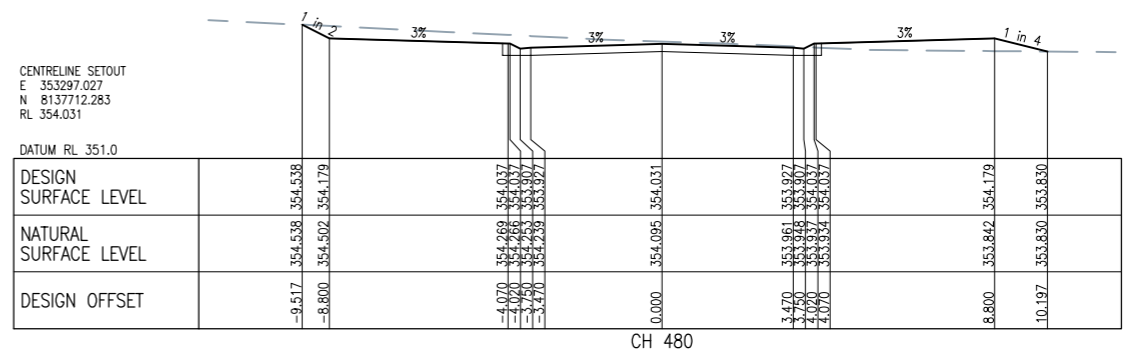
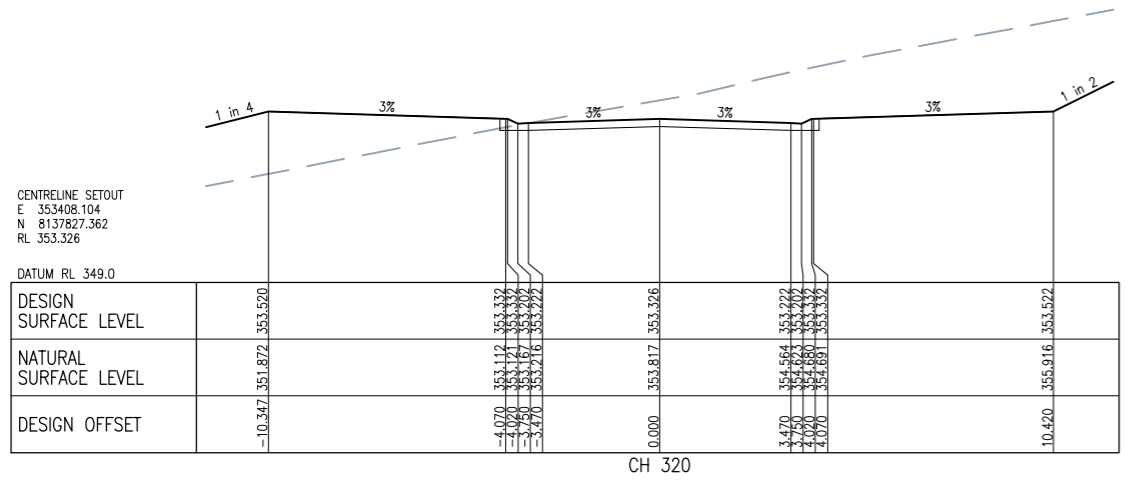
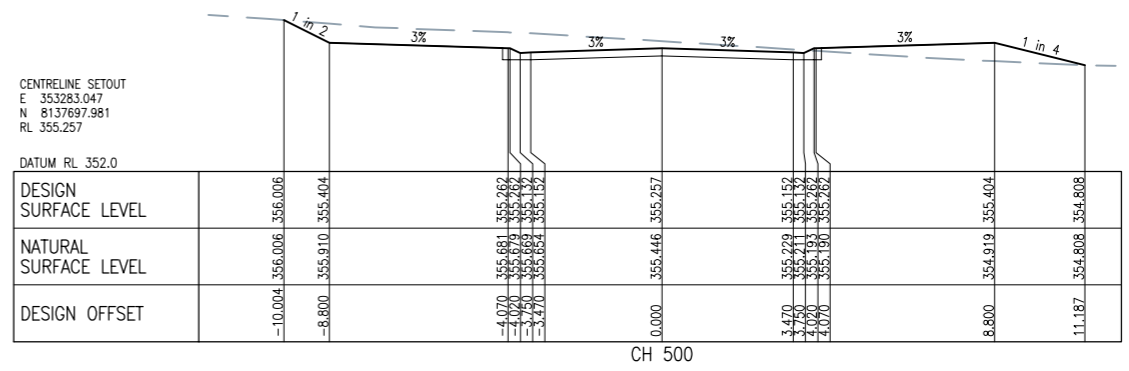
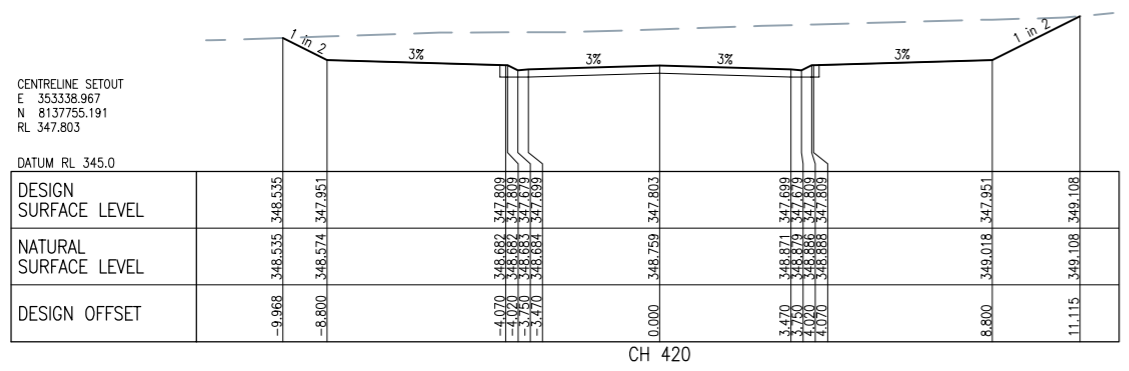
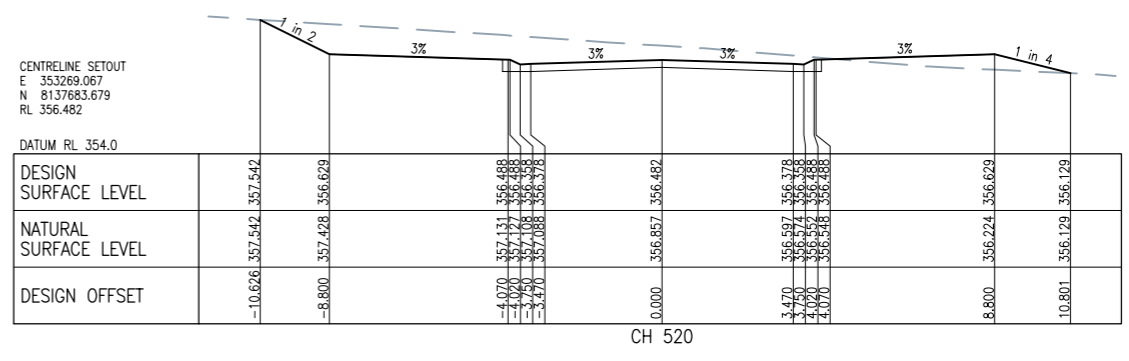
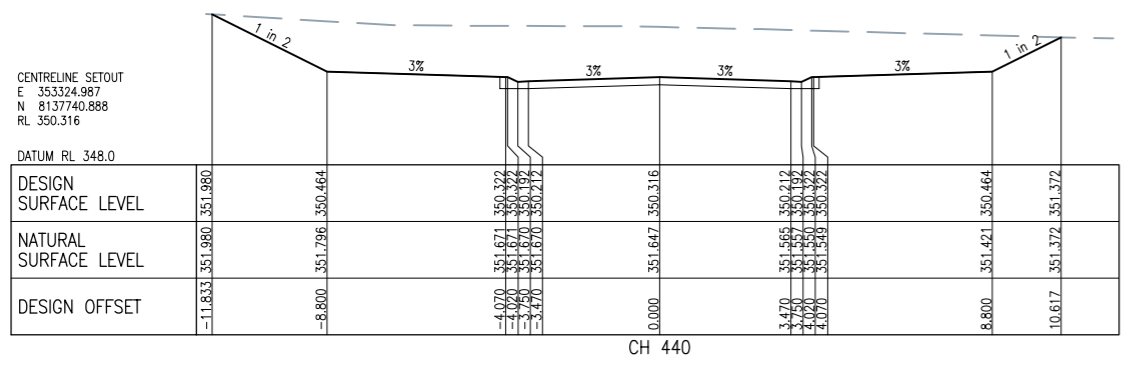
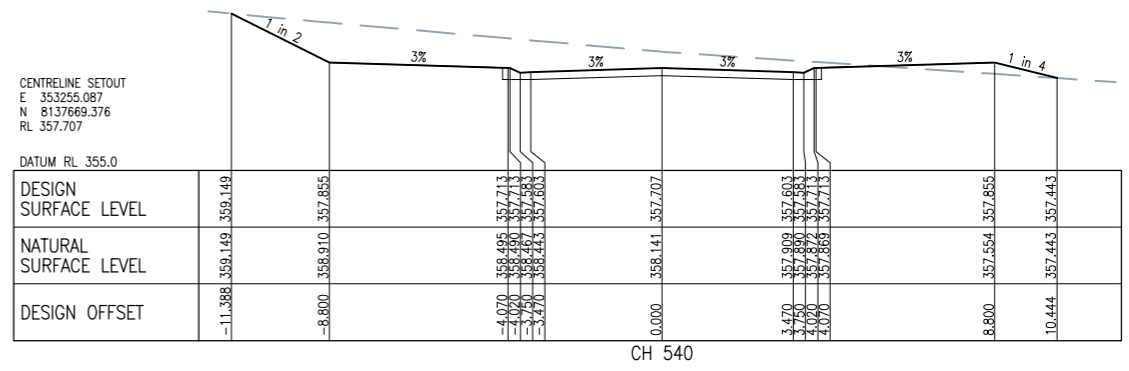
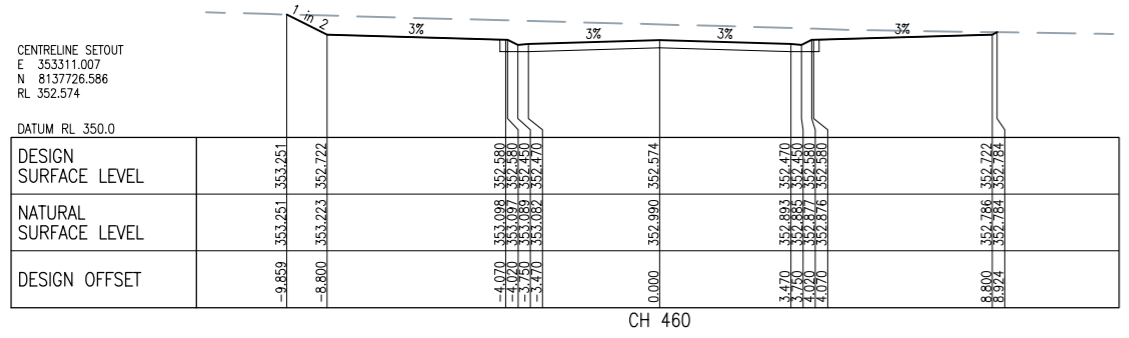
Client	Project	Title
J BROS PTY LTD	ECO @ JUMRUM STAGE 2	ROADS B, C AND D LONGITUDINAL SECTIONS

Client	Project	Title	Drawn	Designed	Approved	Scale (A1 size)
J BROS PTY LTD	ECO @ JUMRUM STAGE 2	ROADS B, C AND D LONGITUDINAL SECTIONS	MS	MS		AS SHOWN
			Drawing Check	Design Check	RPEQ	Date
			AA	AA		

Client	Project	Title	Drawn	Designed	Approved	Scale (A1 size)
J BROS PTY LTD	ECO @ JUMRUM STAGE 2	ROADS B, C AND D LONGITUDINAL SECTIONS	MS	MS		AS SHOWN
			Drawing Check	Design Check	RPEQ	Date
			AA	AA		

APPROVAL ISSUE

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No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo

Client
J BROS PTY LTD
Project
ECO @ JUMRUM STAGE 2
Title
ROAD A ANNOTATED CROSS SECTIONS
SHEET 1 OF 3

Drawing No.
ARO0336-C07

Drawn	Designed	Approved	Date
MS	MS		
AA	AA	RPEQ	

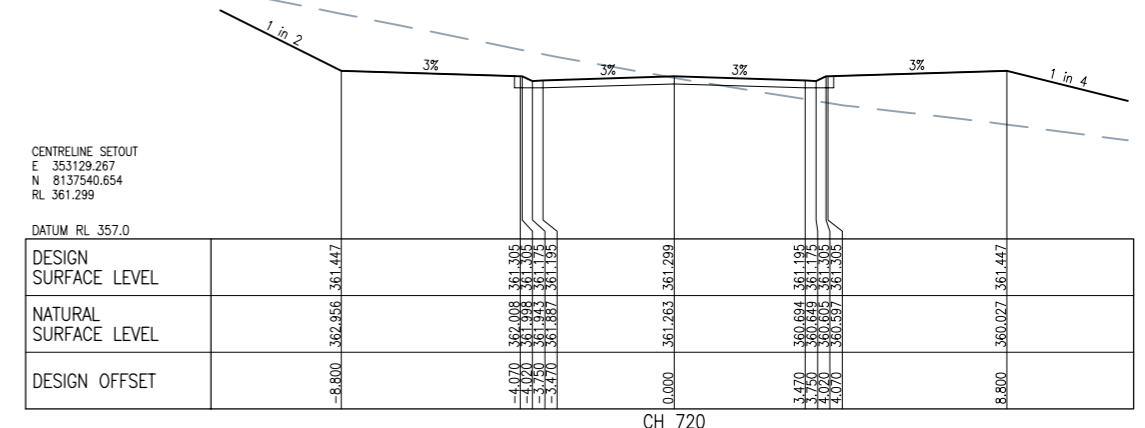
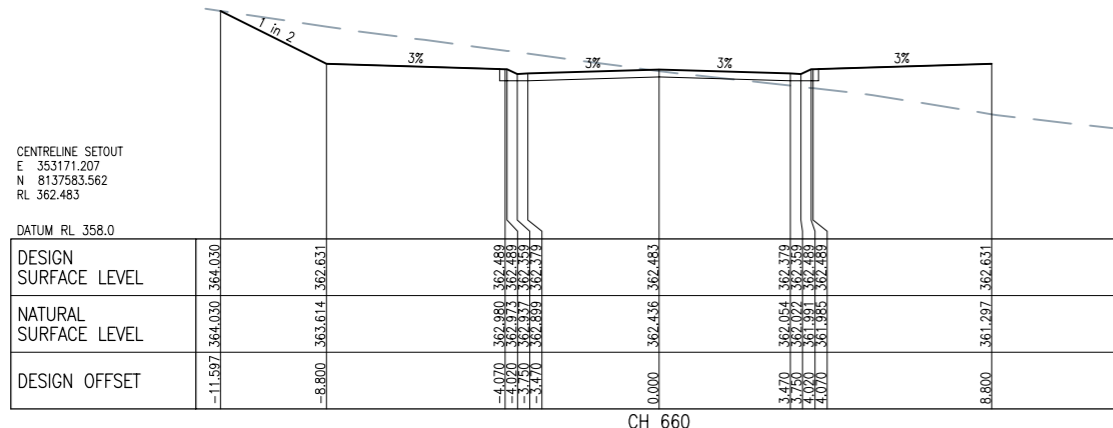
Scale (A1 size)
AS SHOWN

Drawing is not to be used for construction unless approved.

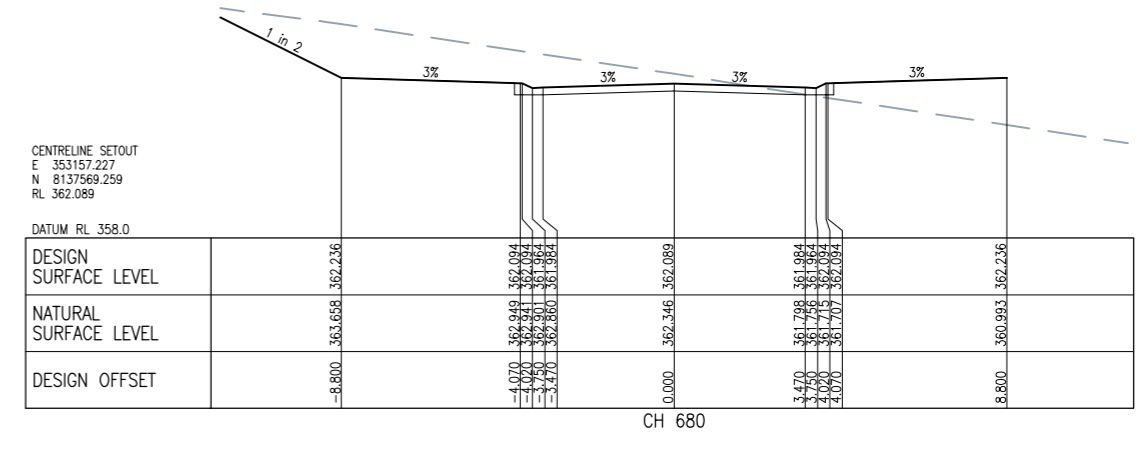
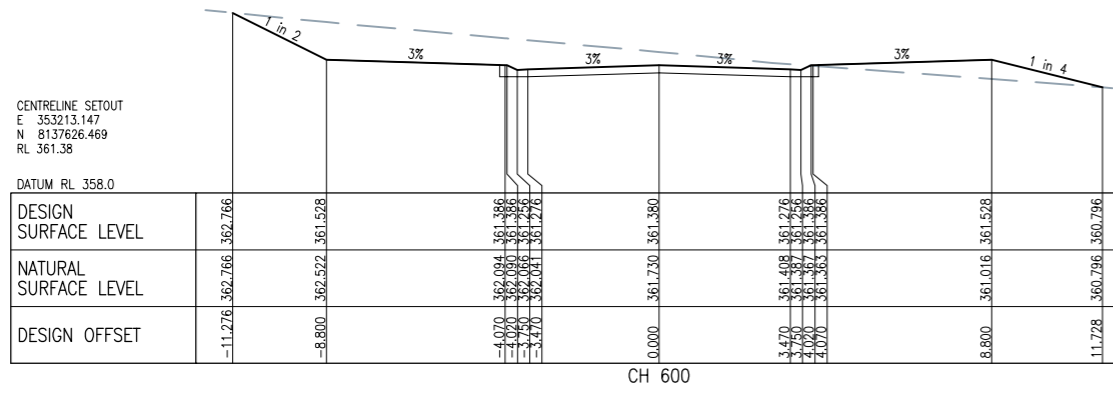
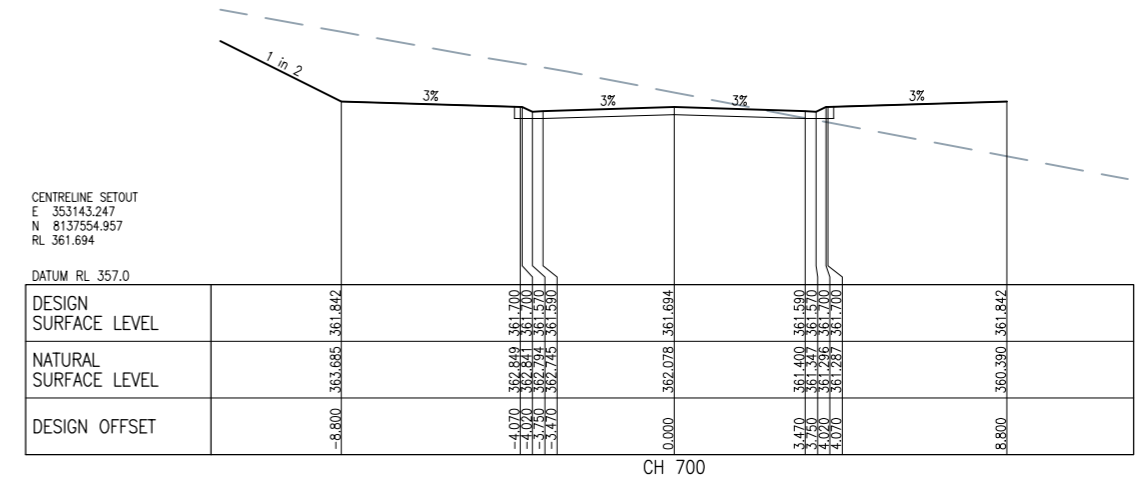
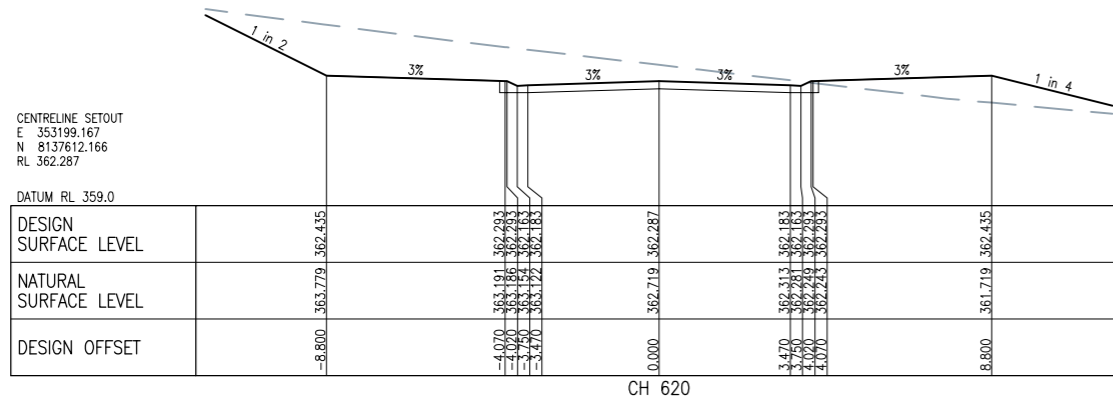


APPROVAL ISSUE

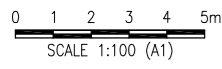
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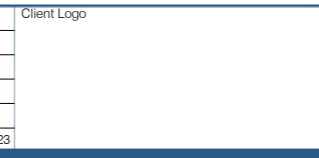
INTERSECTION ROAD C
REFER DRAWING ARO0336-C12 FOR
DETAILS



INTERSECTION ROAD B
REFER DRAWING ARO0336-C12 FOR
DETAILS



No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023



Client: J BROS PTY LTD
Project: ECO @ JUMRUM STAGE 2
Title: ROAD A ANNOTATED CROSS SECTIONS
SHEET 2 OF 3

Drawn	MS	Designed	MS	Approved	RPEQ	Date
Drawing Check	AA	Design Check	AA			

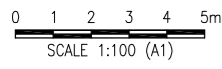
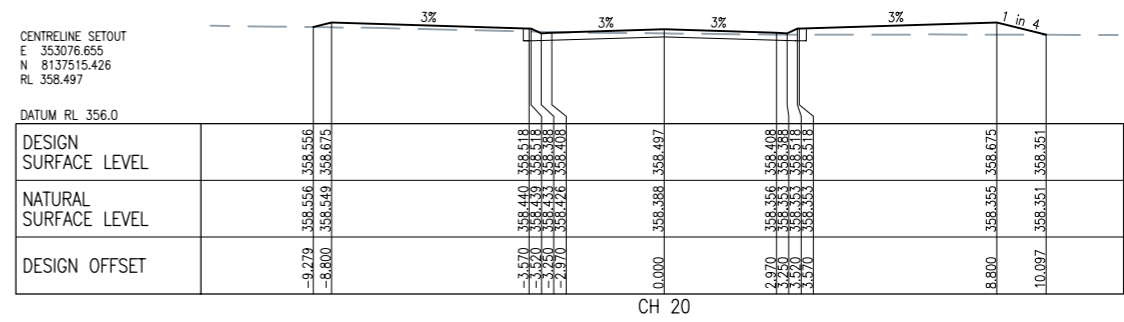
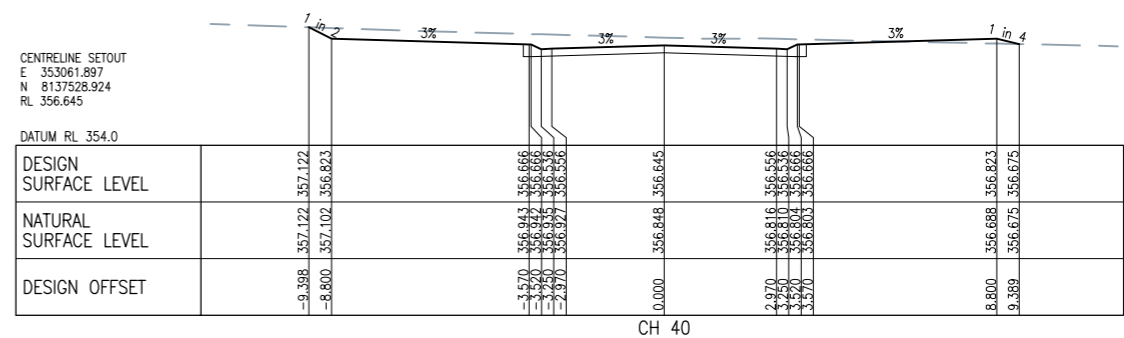
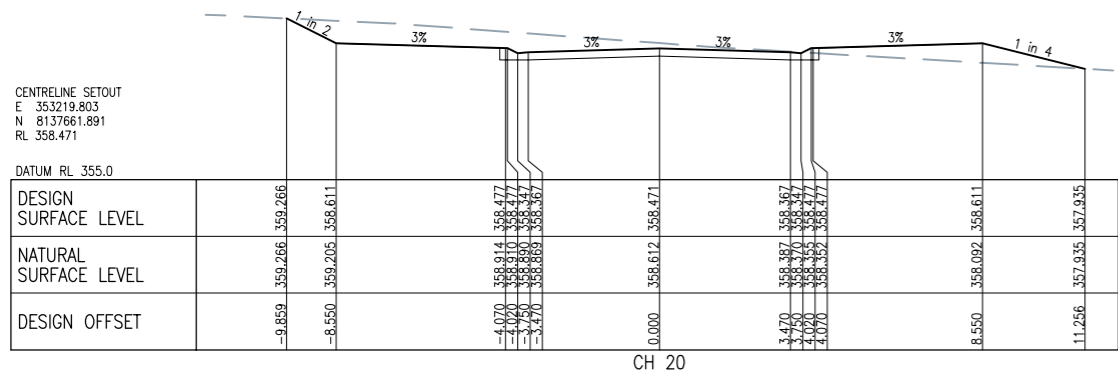
Scale (A1 size)
AS SHOWN
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No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo

Client
J BROS PTY LTD
Project
ECO @ JUMRUM STAGE 2
Title
ROADS B AND D ANNOTATED CROSS SECTIONS

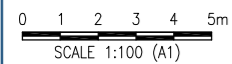
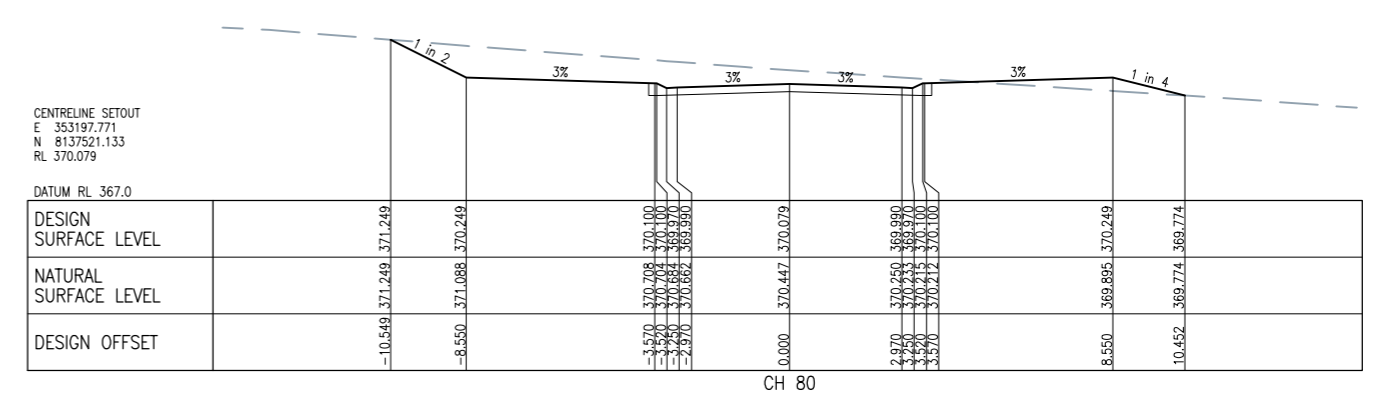
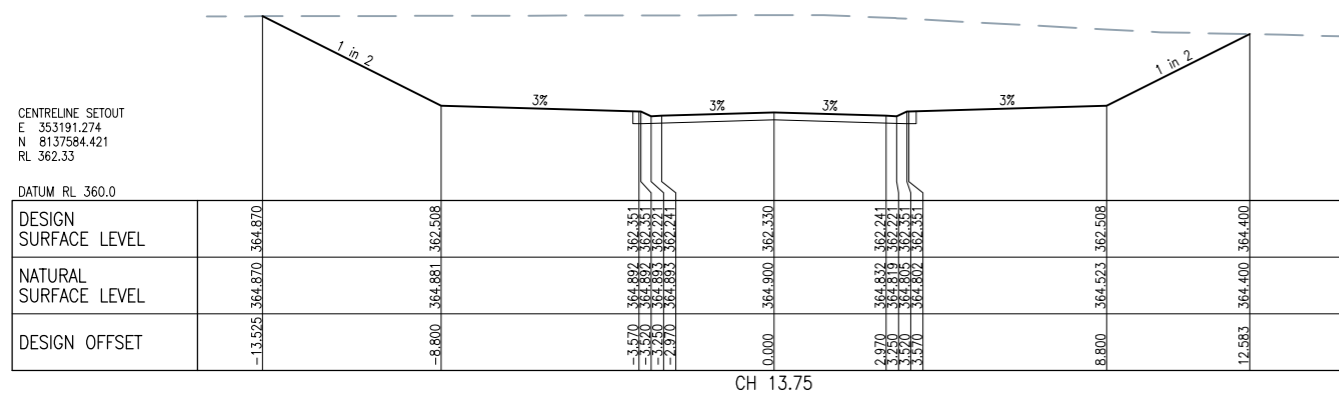
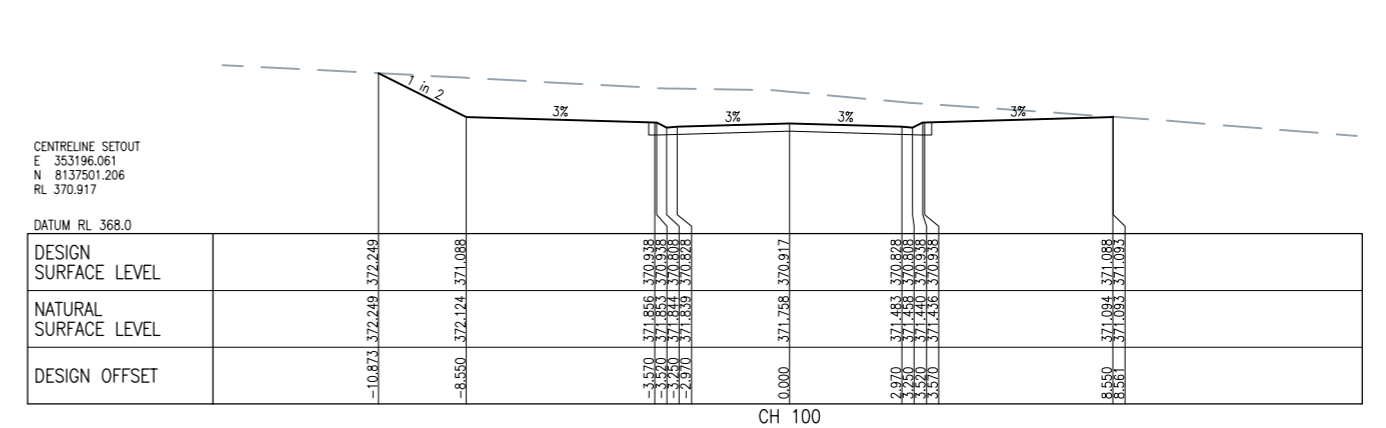
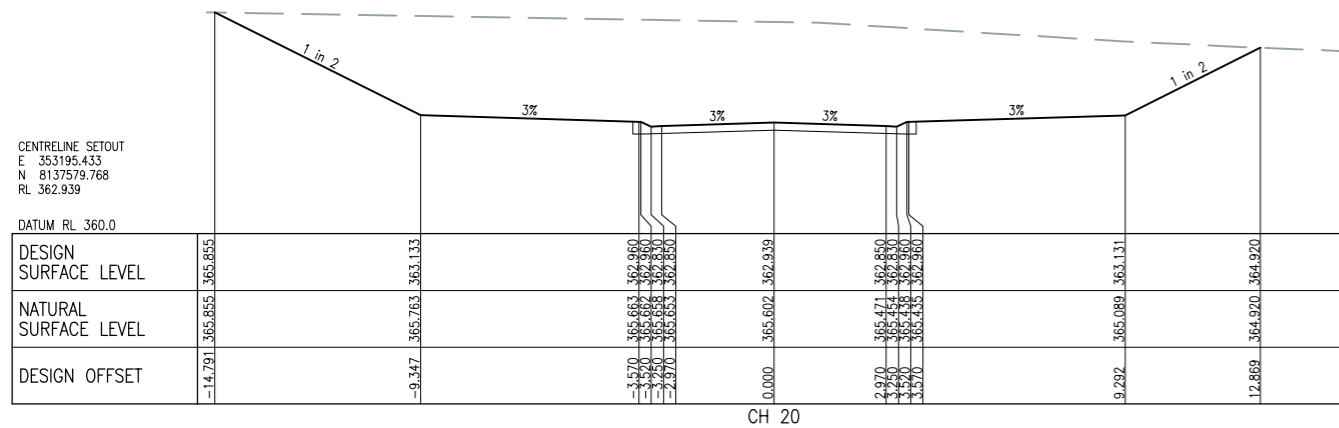
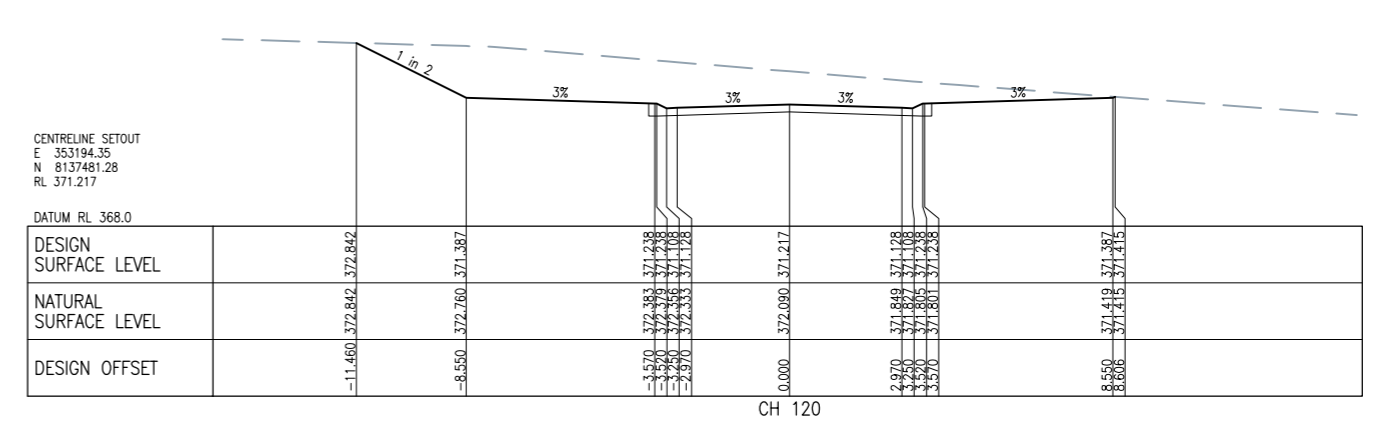
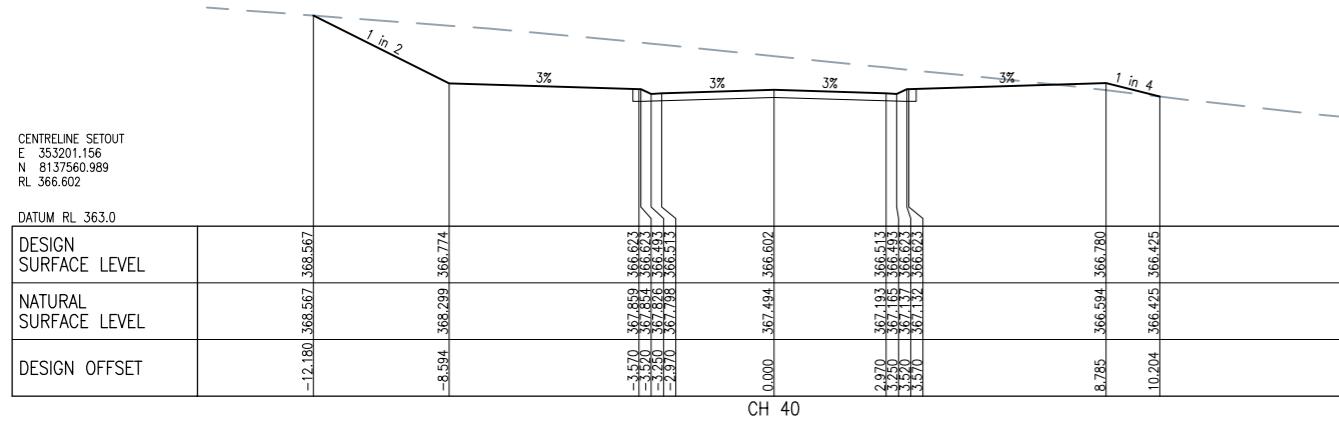
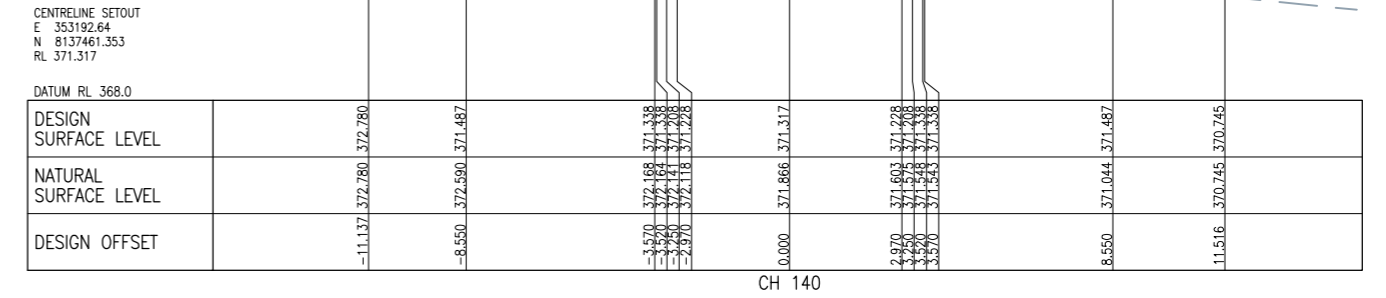
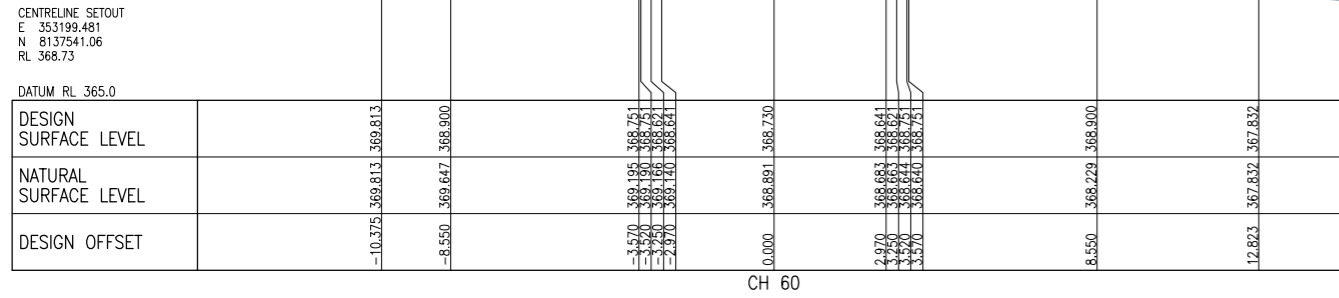
Drawn
MS
Designed
MS
Approved
RPEQ
Date

Scale (A1 size)
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INTERSECTION ROAD A
REFER DRAWING ARO0336-C12 AND
ARO0336-C13 FOR DETAILS

No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo

Client
J BROS PTY LTD
Project
ECO @ JUMRUM STAGE 2
Title
ROAD C ANNOTATED CROSS SECTIONS

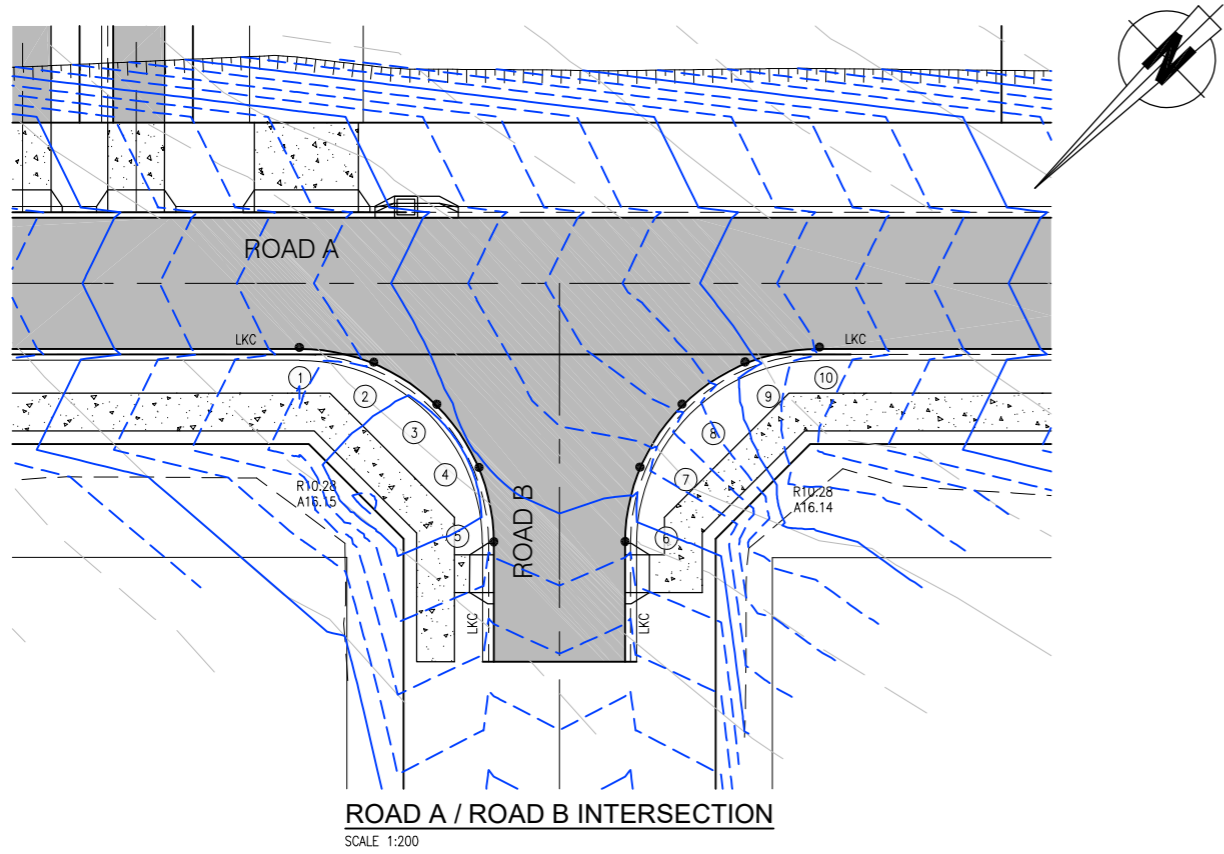
Drawn
MS
Designed
MS
Approved
RPEQ
Date

Scale (A1 size)
AS SHOWN
Drawing is not to be used for construction unless approved.

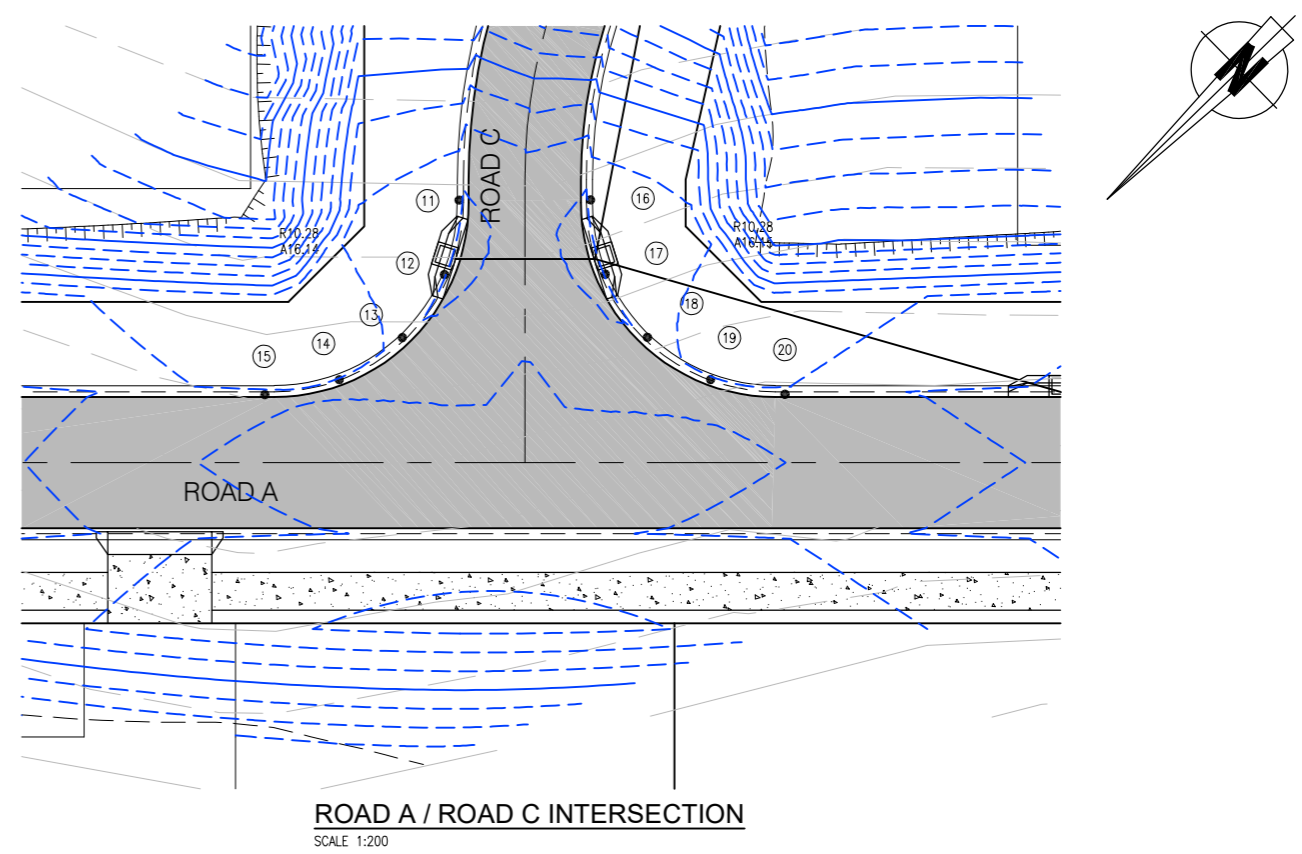


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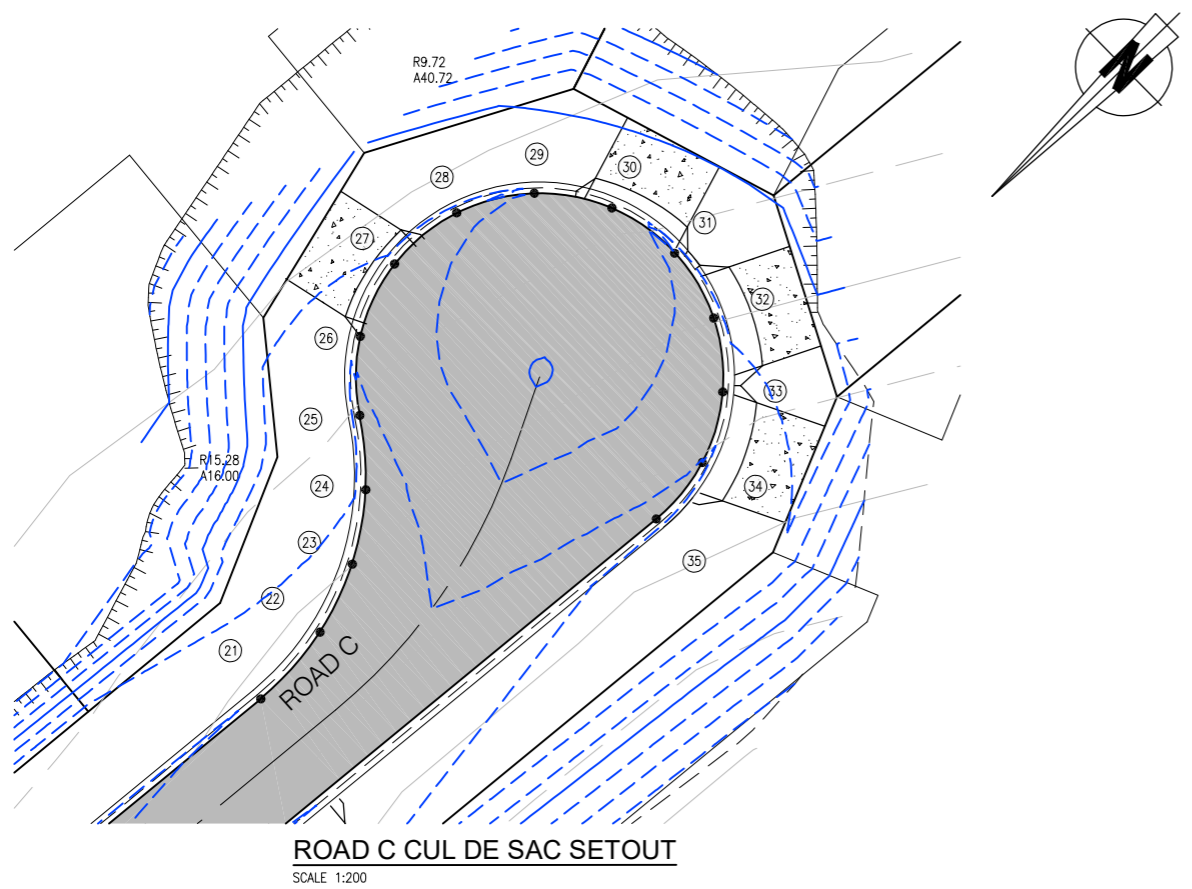
APPROVAL ISSUE



ROAD A / ROAD B INTERSECTION
SCALE 1:200



ROAD A / ROAD C INTERSECTION
SCALE 1:200



ROAD C CUL DE SAC SETOUT
SCALE 1:200

0 2 4 6 8 10m
SCALE 1:200 (A1)

No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo

Client: J BROS PTY LTD
 Project: ECO @ JUMRUM STAGE 2
 Title: INTERSECTION SETOUT AND DETAILS
 SHEET 1 OF 2
 Drawing No.: ARO0336-C12

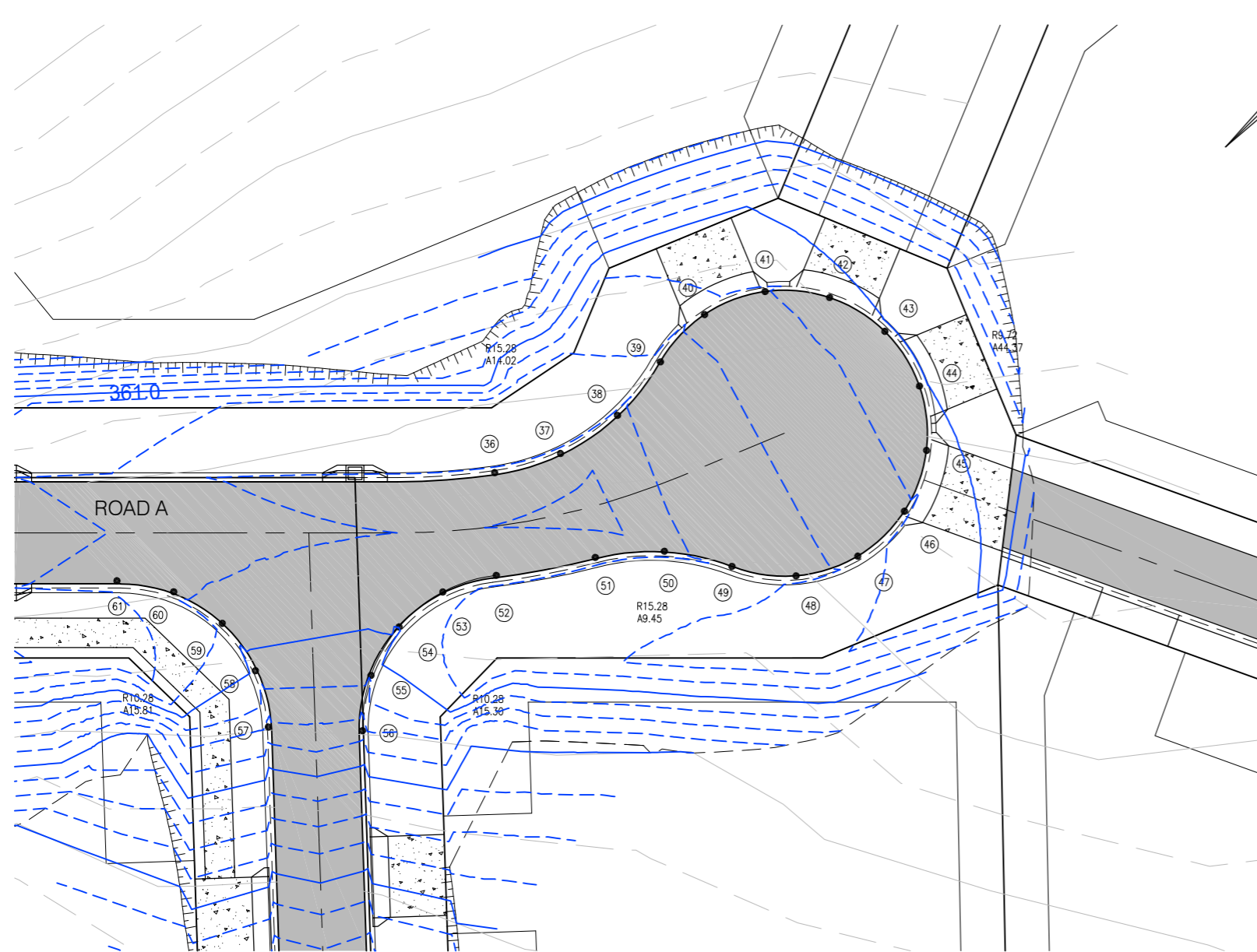
Drawn	Designed	Approved	Scale (A1 size)
MS	MS		
Drawing Check: AA	Design Check: AA	RPEQ	Date

Drawing is not to be used for construction unless approved.



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ROAD A / ROAD D INTERSECTION
SCALE 1:200

LEGEND

- LKC LAYBACK KERB AND CHANNEL
- BKC BARRIER KERB AND CHANNEL
- LBKT LAYBACK KERB AND TRAY
- BK BARRIER KERB
- 4.6 DESIGN SURFACE CONTOUR (0.1m INTERVAL)
- KTP 14.821 KERB TANGENT POINT CHAINAGE
- 4.026 KERB LEVEL
- R10.00 RADIUS
- 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
- SIGN
- EXISTING SIGN
- 2m WIDE CONCRETE PATHWAY
- KERB RAMP
- ACCESS CROSSOVER
- ROAD EDGE GUIDE POST
- WHITE RED

NOTES

1. ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
2. KERB LEVELS SHOWN ARE TO LIP OF KERB AND CHANNEL OR PAVEMENT AT FACE OF KERB.
3. DIMENSIONS AND KERB RADII SHOWN ARE TO LIP OF KERB AND CHANNEL OR TO FACE OF KERB ONLY.
4. KERB LEVELS ARE SHOWN EQUALLY DIVIDED BETWEEN KERB TANGENT POINTS.
5. REFER ALSO TO ROAD SETOUT DETAILS FOR COORDINATES OF ROAD CHAINAGES AND TANGENT POINTS.
6. REFER TO THE FOLLOWING FNQROC STANDARD DRAWINGS:
S1000 – CONCRETE KERB AND CHANNEL
S1015 – ACCESS CROSSOVERS
S1016 – KERB RAMP
7. ASPHALTIC CONCRETE THICKNESS ON ALL ROADS TO BE INCREASED TO 50mm AT ALL INTERSECTIONS.

0 2 4 6 8 10m
SCALE 1:200 (A1)

No.	Description	Reviewed	Approved	Date	Client Logo
1	APPROVAL ISSUE			22/12/2023	

Client	J BROS PTY LTD		
Project	ECO @ JUMRUM STAGE 2		
Title	INTERSECTION SETOUT AND DETAILS SHEET 2 OF 2		
Drawing No.	ARO0336-C13		

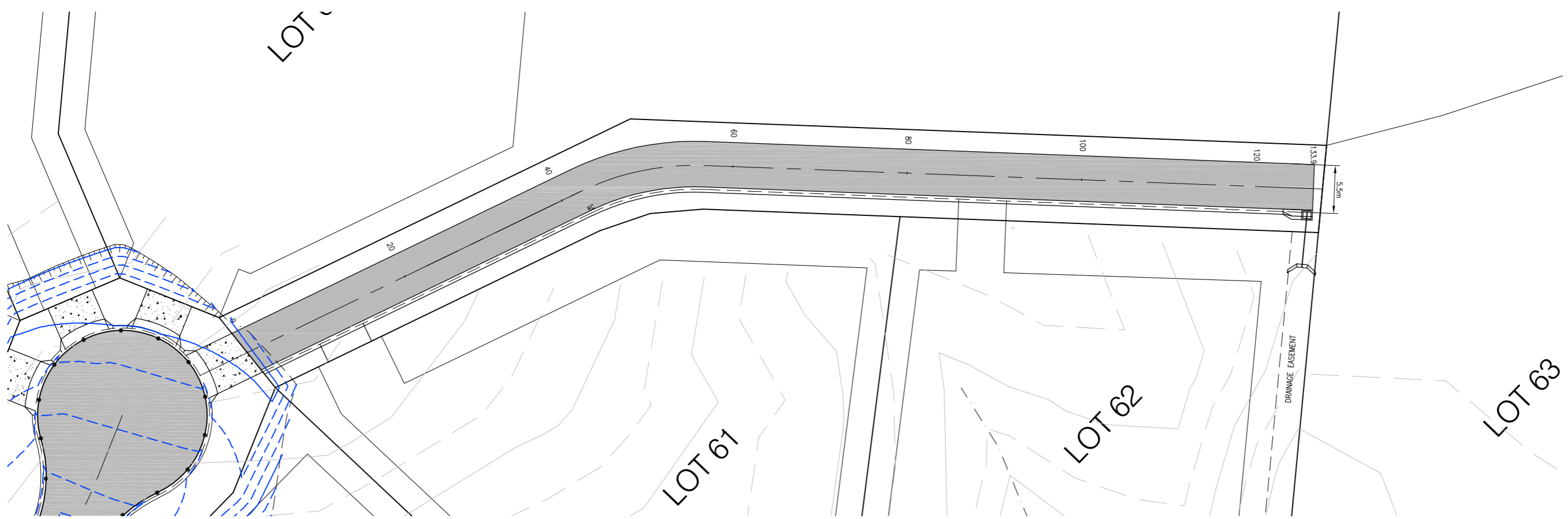
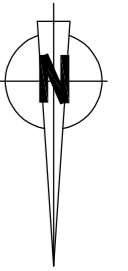
Drawn	MS	Designed	MS	Approved		Scale (A1 size)	
Drawing Check	AA	Design Check	AA	RPEQ	Date	Drawing is not to be used for construction unless approved.	

APPROVAL ISSUE

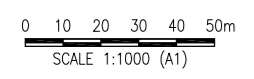
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LOTS 61, 62 AND 63 DRIVEWAY LAYOUT
SCALE 1:250



No.	Description	Reviewed	Approved	Date	Client Logo
1	APPROVAL ISSUE			22/12/2023	

Client	J BROS PTY LTD		
Project	ECO @ JUMRUM STAGE 2		
Title	DRIVEWAY SETOUT AND DETAILS SHEET 1 OF 2		
Drawing No.	ARO0336-C14		

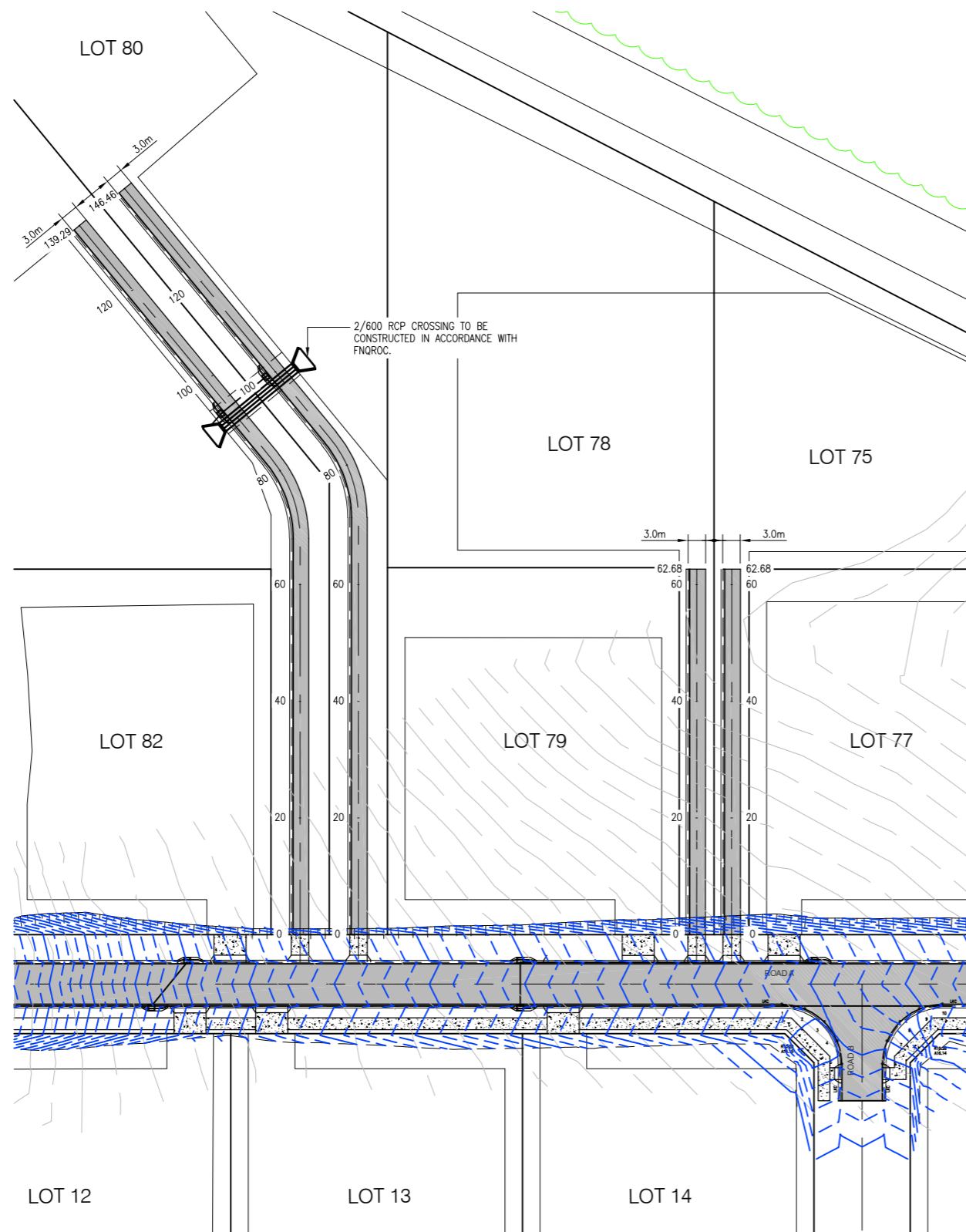
Drawn	MS	Designed	MS	Approved		Scale (A1 size)	
Drawing Check	AA	Design Check	AA	RPEQ	Date	Drawing is not to be used for construction unless approved.	



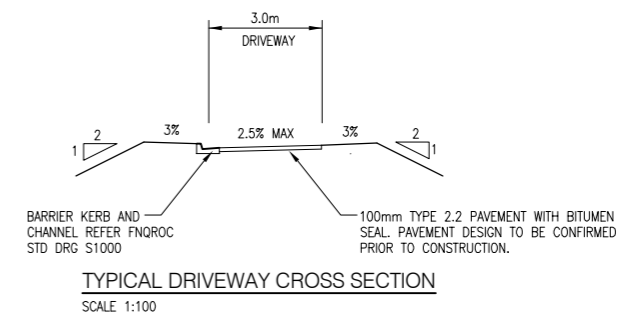
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APPROVAL ISSUE



LOTS 61, 62 AND 63 DRIVEWAY LAYOUT
SCALE 1:500



0 10 20 30 40 50m
SCALE 1:1000 (A1)

No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo

Client: J BROS PTY LTD
Project: ECO @ JUMRUM STAGE 2
Title: DRIVEWAY SETOUT AND DETAILS
SHEET 2 OF 2

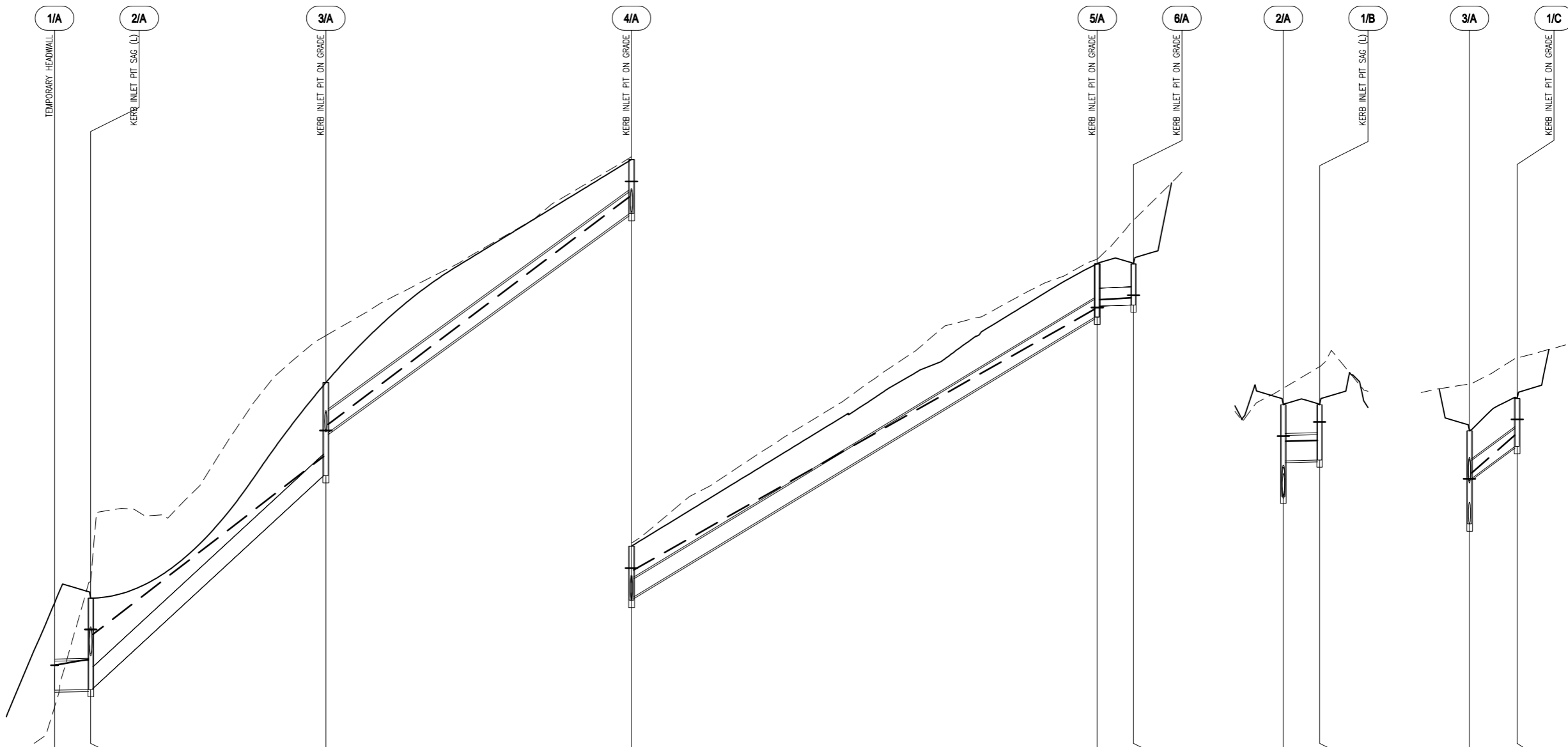
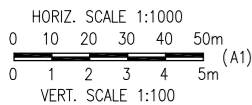
Drawn	Designed	Approved	Date
MS	MS		
Drawing Check	Design Check	RPEQ	
AA	AA		

Scale (A1 size)
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DATUM RL	343.00		351.00		339.00		344.00			
COVER (& NATURAL SURFACE) LEVEL	345.45 (344.50)	346.75 (347.10)	351.21 (352.19)	355.83 (355.89)	361.67 (361.77)	361.67 (362.57)	346.75 (347.10)	346.75 (347.54)	351.21 (352.19)	351.89 (352.72)
DEPTH TO INVERT	0.60	1.89 1.87	1.93 1.04	1.12 1.05	1.10 0.88	0.85	1.89 1.16	1.14	1.93 0.99	0.99
HYDRAULIC GRADE LINE	345.36	345.49 346.00 346.11	349.69 350.35 350.22	355.06 355.34 355.38	360.74 360.93 360.77	360.97 361.02	345.49 346.00 346.11	346.02 346.40	349.69 350.34 350.22	351.13 351.45
INVERT LEVEL	344.85	344.86 344.88	349.29 350.18	354.71 354.78	360.57 360.79	360.82	344.86 345.60	345.61	349.29 350.23	350.89
PIPE CHAINAGE	0.00	7.48	56.13	119.36	215.72	223.22	0.00	7.50	0.00	9.88
PIPE LENGTH		L=7.06	L=47.72		L=95.44	L=6.66		L=6.66		L=9.04
PIPE SIZE (mm)		600	450		375	375		525		375
PIPE GRADE (%)		0.2%	9.23%		7.28%	6.07%		0.25%		7.38%
PIPE GRADE (1 in)		1 in 500	1 in 10.8		1 in 16.5	1 in 250		1 in 400		1 in 13.6
PIPE COVER MINIMUM		Cover=1.16	Cover=0.50		Cover=0.60	Cover=0.50		Cover=0.60		Cover=0.60
PIPE CLASS		Class=2	Class=PVC		Class=2	Class=PVC		Class=2		Class=2
PIPE ROUGHNESS		n=0.013	n=0.013		n=0.013	n=0.013		n=0.013		n=0.013
Vcap - CAPACITY VELOCITY (m/s)		Vcap=0.97	Vcap=5.45		Vcap=4.84	Vcap=3.91		Vcap=1.00		Vcap=0.99
Vc - CRITICAL DEPTH VELOCITY (m/s)		Vc=2.46	Vc=2.28		Vc=1.85	Vc=1.13		Vc=1.57		Vc=1.39
Vn - NORMAL DEPTH VELOCITY (m/s)		Vn=2.25	Vn=5.12		Vn=4.29	Vn=2.68		Vn=1.13		Vn=3.42
Vf - FULL PIPE VELOCITY (m/s)		Vf=2.25	Vf=2.14		Vf=1.54	Vf=0.49		Vf=0.94		Vf=0.91
Qcap - CAPACITY FLOW (L/s)		Qcap=275	Qcap=867		Qcap=769	Qcap=432		Qcap=215		Qcap=476
Q - PIPE FLOW (L/s)		Q=637	Q=341		Q=244	Q=55		Q=203		Q=101
Qi - PIT INFLOW (L/s) & CHOKE (%)		Qi=98 100%	Qi=100%		Qi=31 100%	Qi=18 100%		Qi=203 100%		Qi=101 100%
Ku (& Kw) - PIT LOSS FACTORS		1.99 (2.39)	1.96 (2.27)		2.33 (2.65)	2.24 (2.66)		8.49		7.70
PIT TYPE	HW OUT auto	SAG RD PIT L	RD PIT		RD PIT	RD PIT		SAG RD PIT L		RD PIT
PIT SETOUT	353346.68E 8137778.83N 344.85Z	353350.61E 8137772.48N 346.75Z	353316.80E 8137737.48N 351.23Z	353272.61E 8137692.27N 355.85Z	353205.05E 8137623.55N 361.67Z	353210.41E 8137618.31N 361.67Z		353350.61E 8137772.48N 346.75Z	353355.97E 8137767.24N 346.75Z	353317.50E 8137728.26N 351.91Z
ROAD CHAINAGE & OFFSET	67.95 10.99	69.76 3.75	448.16 3.47	511.38 3.47	607.75 3.75	607.75 -3.75		69.76 3.75	399.50 -3.47	448.16 3.47

LINE A

LINE B

LINE C

APPROVAL ISSUE

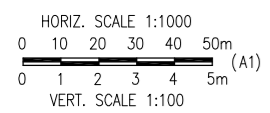
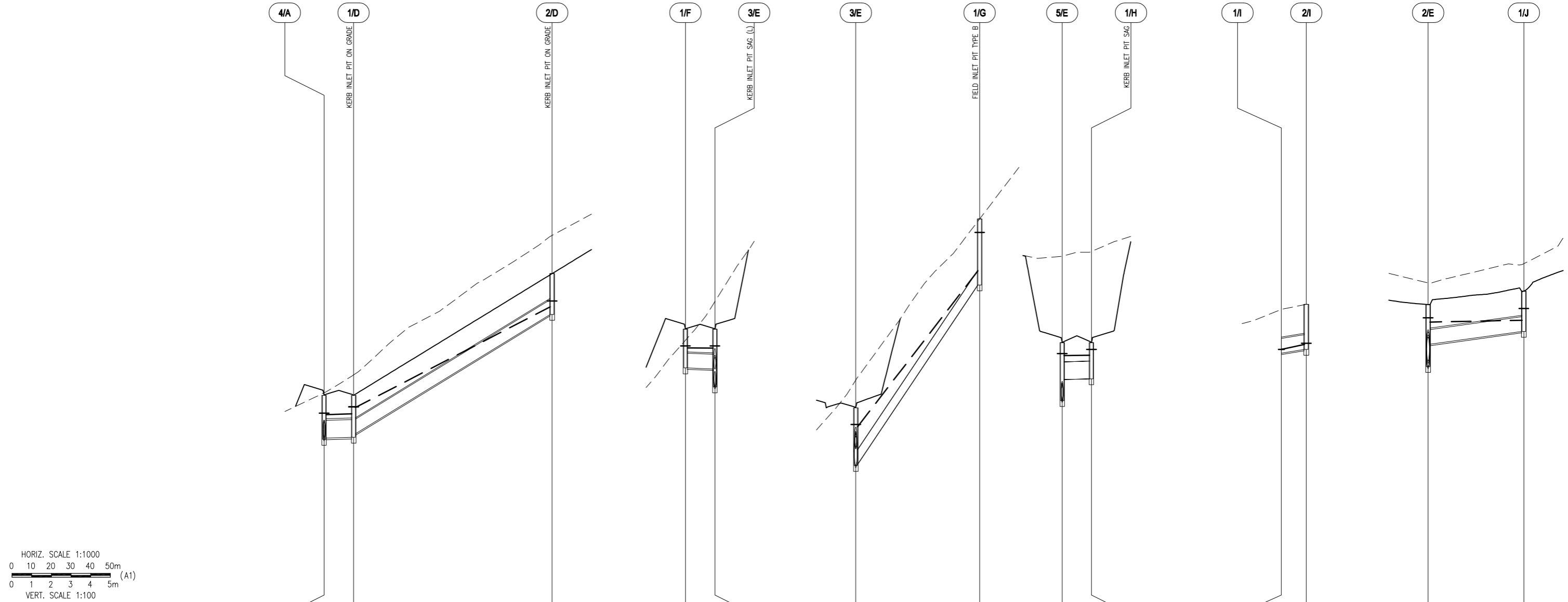
No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client	J BROS PTY LTD
Project	ECO @ JUMRUM STAGE 2
Title	STORMWATER DRAINAGE LONG SECTIONS SHEET 1 OF 3

Drawn	MS	Designed	MS	Approved	
Drawing Check	AA	Design Check	AA	RPEQ	Date
Drawing No.	ARO0336-C16				

Scale (A1 size)	
Drawing is not to be used for construction unless approved.	

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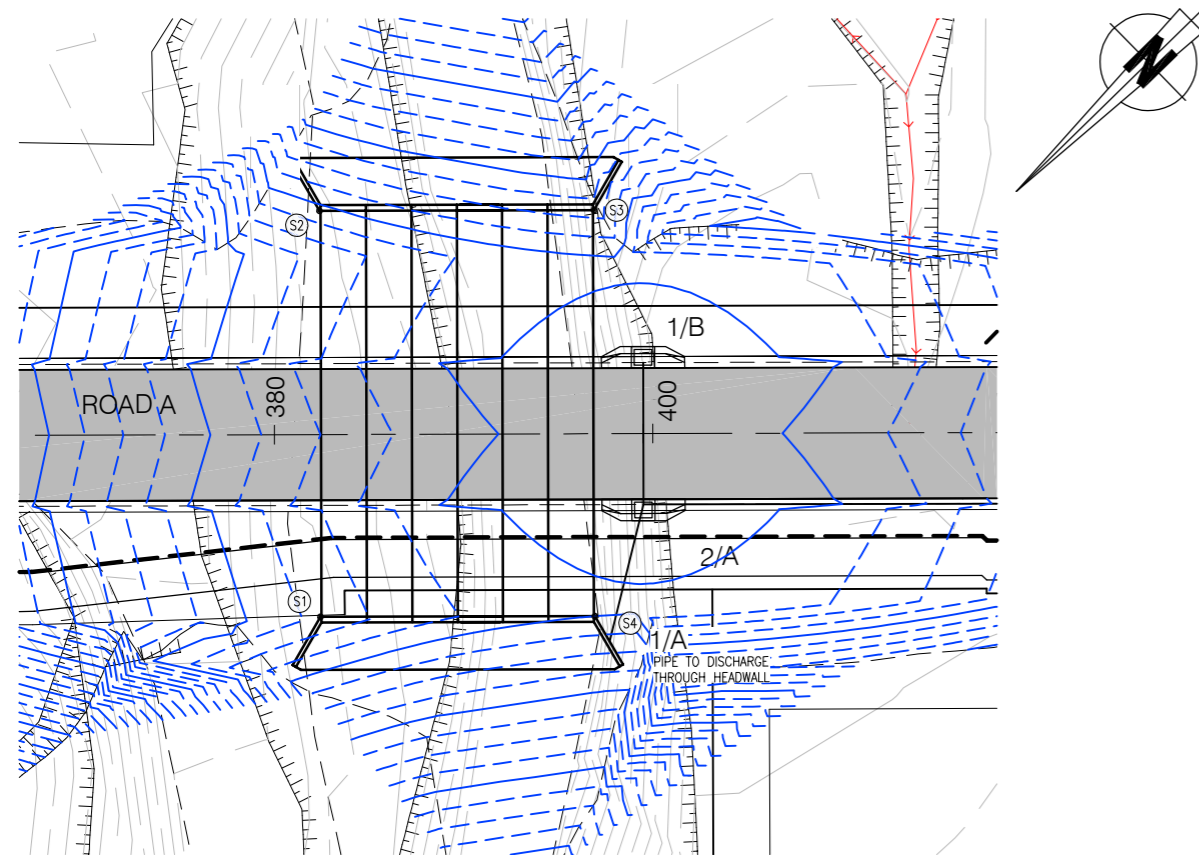


DATUM RL		350.00		350.00		350.00		350.00		350.00		350.00		350.00		350.00		350.00								
COVER (& NATURAL SURFACE) LEVEL	355.83	(355.89)	355.83	(356.35)	358.92	(359.90)	360.51	(360.23)	360.51	(361.21)	360.51	(361.21)	365.32	362.17	(364.36)	362.17	(364.49)	354.27	347.00	355.14	(355.02)	(360.69)	360.14	(361.18)	360.48	
DEPTH TO INVERT	1.12	1.09	0.98	1.07	1.04	1.01	0.99	1.47	1.47	1.45	1.68	1.47	0.94	0.92	0.38	1.14	1.01	1.58	1.58	1.01	1.58	1.01	1.58	1.02	1.02	
HYDRAULIC GRADE LINE	355.06	355.34	355.52	355.36	358.08	358.08	360.09	360.03	359.78	360.03	359.78	360.09	363.99	364.97	361.47	361.84	361.85	361.99	353.99	354.12	354.15	359.69	359.17	359.80	359.74	360.04
INVERT LEVEL	354.71	354.74	354.85	354.76	357.89	357.89	359.52	359.04	359.04	359.50	359.04	359.06	363.63	360.69	361.23	361.25	361.99	353.90	354.00	354.15	359.13	358.56	358.56	359.45	359.45	
PIPE CHAINAGE	58.02		50.52		0.00		0.00		7.50		0.00		31.52	0.00		7.45		6.34		0.00		24.36		0.00		
PIPE LENGTH		L=6.66		L=49.59				L=6.66			L=30.65				L=6.61				L=5.87				L=23.43			
PIPE SIZE (mm)		450		375				375			375				450				375				375			
PIPE GRADE (%)		0.3%		6.13%				0.4%			14.91%				0.3%				1.65%				1.4%			
PIPE GRADE (1 in)		1 in 333.3		1 in 16.3				1 in 250			1 in 6.7				1 in 333.3				1 in 60.5				1 in 71.5			
PIPE COVER MINIMUM		Cover=0.60		Cover=0.60				Cover=0.60			Cover=0.52				Cover=0.50				Cover=0.60				Cover=0.60			
PIPE CLASS		Class=2		Class=2				Class=2			Class=PVC				Class=PVC				Class=2				Class=2			
PIPE ROUGHNESS		n=0.013		n=0.013				n=0.013			n=0.013				n=0.013				n=0.013				n=0.013			
Vcap - CAPACITY VELOCITY (m/s)		Vcap=0.98		Vcap=3.93				Vcap=1.00			Vcap=6.13				Vcap=0.98				Vcap=2.05				Vcap=1.88			
Vc - CRITICAL DEPTH VELOCITY (m/s)		Vc=1.54		Vc=1.23				Vc=0.99			Vc=2.69				Vc=1.26				Vc=0.95				Vc=1.36			
Vn - NORMAL DEPTH VELOCITY (m/s)		Vn=1.12		Vn=2.90				Vn=0.90			Vn=5.91				Vn=1.02				Vn=1.44				Vn=1.83			
Vf - FULL PIPE VELOCITY (m/s)		Vf=1.02		Vf=0.65				Vf=0.33			Vf=2.65				Vf=0.57				Vf=0.29				Vf=0.85			
Qcap - CAPACITY FLOW (L/s)		Qcap=156		Qcap=434				Qcap=111			Qcap=677				Qcap=156				Qcap=226				Qcap=207			
Q - PIPE FLOW (L/s)		Q=162		Q=71				Q=36			Q=293				Q=91				Q=32				Q=94			
Qi - PIT INFLOW (L/s) & CHOKE (%)	Qi=31	100%	Qi=93	100%	Qi=71	100%	Qi=36	100%	Qi=79	100%	Qi=79	100%	Qi=293	100%	Qi=54	100%	Qi=91	100%	Qi=32	7.00		Qi=173	100%	Qi=94	100%	
Ku (& Kw) - PIT LOSS FACTORS	2.33	(2.65)	2.99	(3.34)	7.00		9.70	1.81	(2.23)	2.73		1.81	(2.23)	2.73	1.78	(2.01)	8.84		7.00			2.09		8.09		
PIT TYPE	RD PIT		RD PIT		RD PIT		RD PIT		RD PIT		SAG RD PIT		SAG RD PIT		SAG RD PIT		SAG RD PIT		RD PIT			RD PIT		RD PIT		
PIT SETOUT	353272.61E	8137692.27N	353277.57E	8137697.42N	353242.26E	8137651.29N	353103.24E	8137518.99N	353108.40E	8137513.95N	353139.71E	8137511.26N	353186.55E	8137583.86N	353191.73E	8137589.16N	353191.73E	8137457.19N	352937.95E	8137450.88N	(null)Z	353091.91E	8137497.07N	353083.68E	8137474.22N	
ROAD CHAINAGE & OFFSET	511.38		511.38		561.90		753.68		753.68		753.68		753.68		10.77		10.77					777.28		803.71		
	3.47		-3.47		-3.47		3.47		-3.75		-3.75		-3.75		3.71		3.71					-3.75		-3.75		

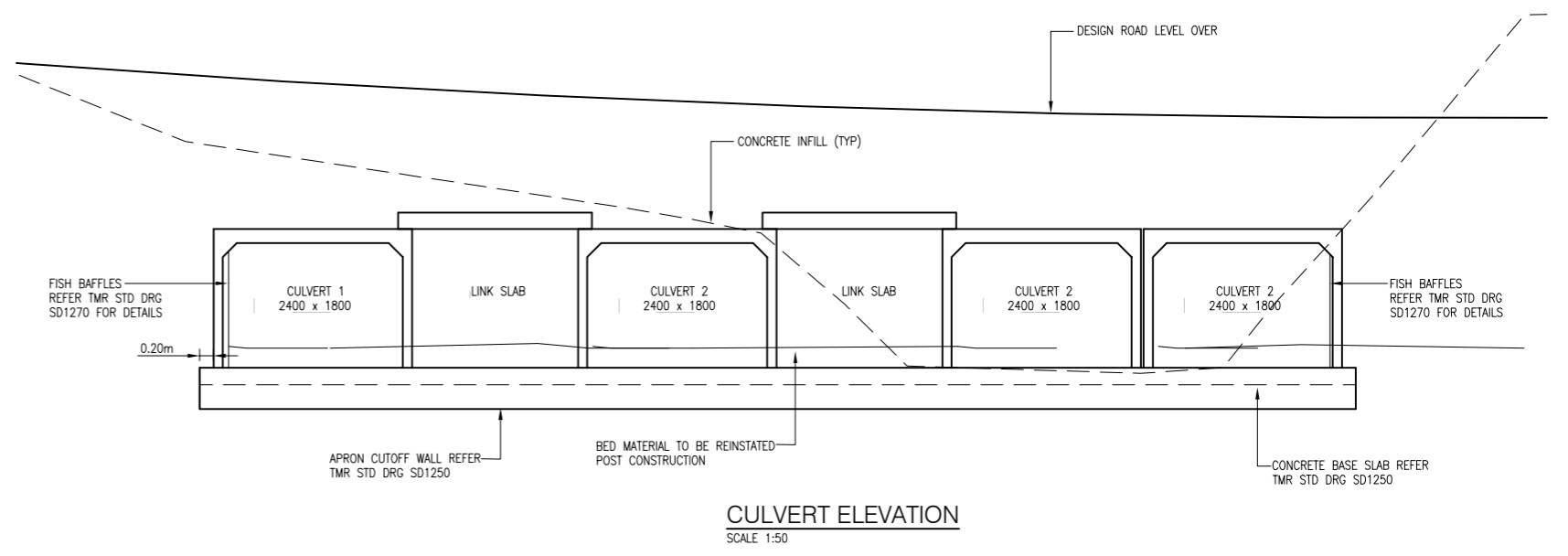
No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo		Client J BROS PTY LTD		Drawn MS		Designed MS		Approved		Scale (A1 size)	
Project ECO @ JUMRUM STAGE 2		Title STORMWATER DRAINAGE LONG SECTIONS		Drawing Check AA		Design Check AA		RPEQ		Date	
Drawing No. ARO0336-C17		Revision 1		Drawing is not to be used for construction unless approved.		Revision 1				51 Sheridan Street Cairns Qld 4870 T (07) 4281 6897 E admin@arindustries.com.au W www.arindustries.com.au ABN: 49 641 461 298	

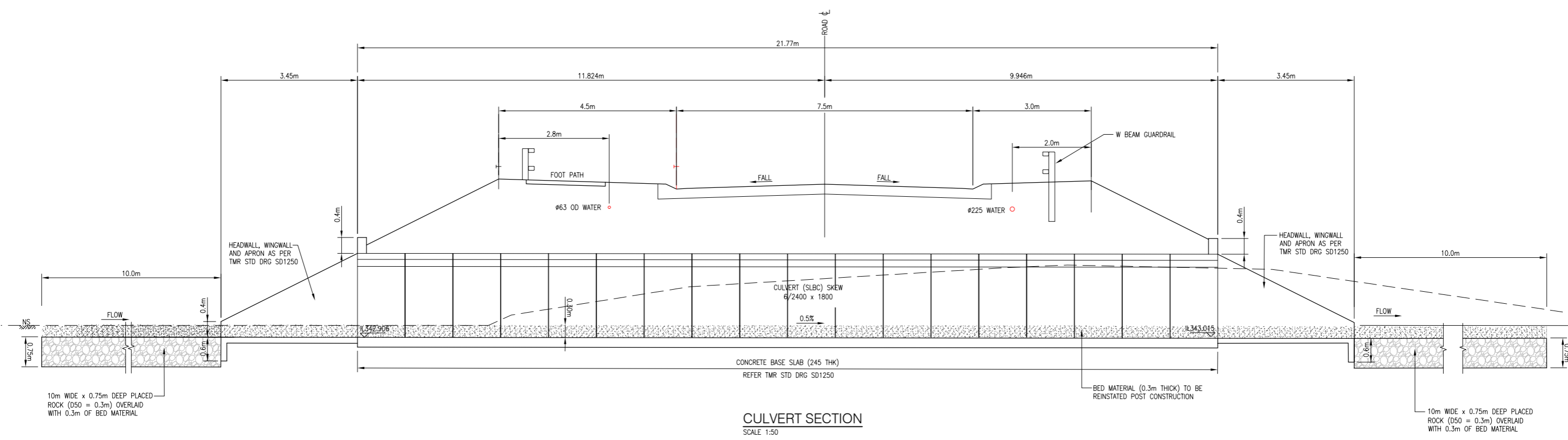
APPROVAL ISSUE



CULVERT PLAN
SCALE 1:200



CULVERT ELEVATION
SCALE 1:50



CULVERT SECTION
SCALE 1:50

APPROVAL ISSUE

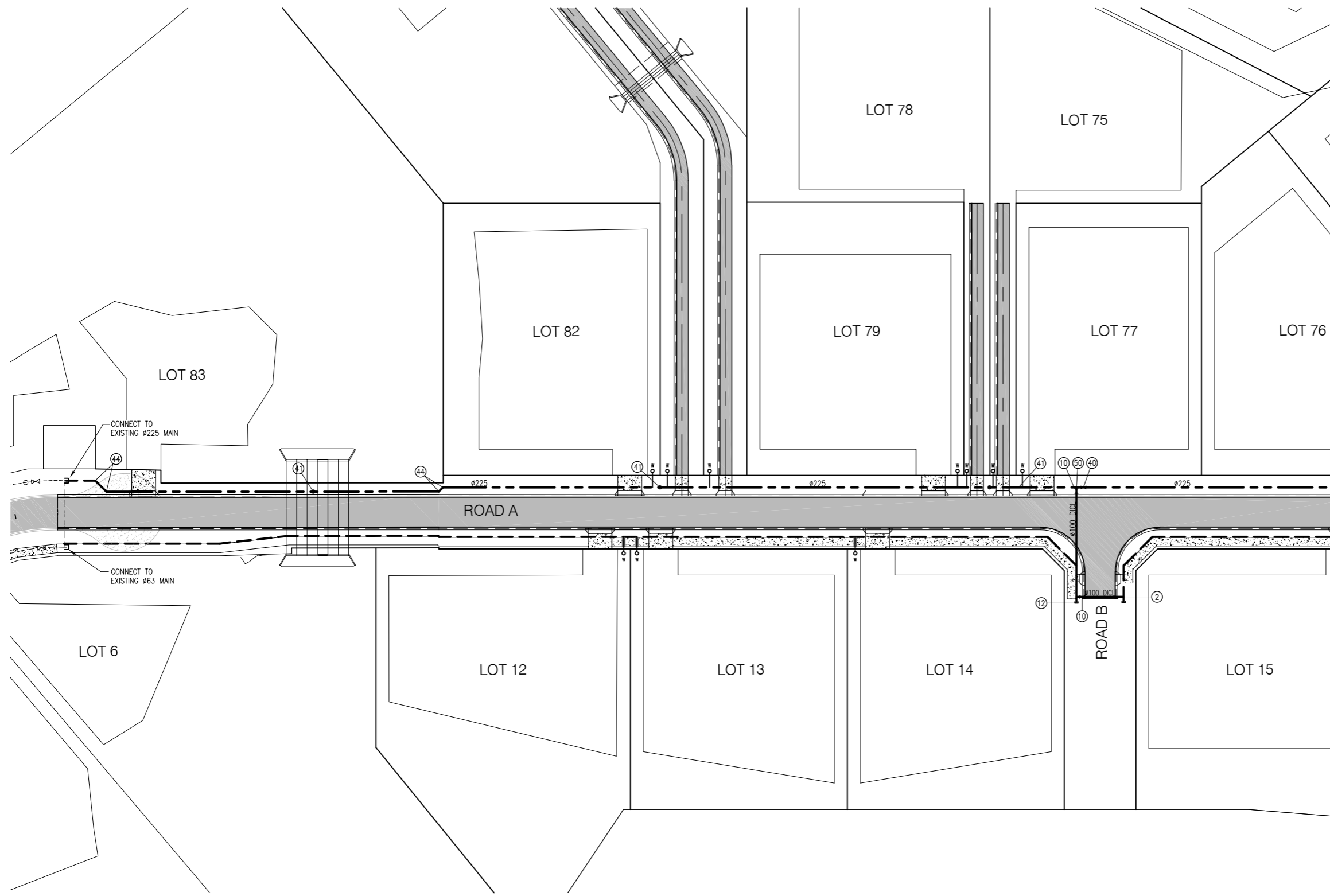
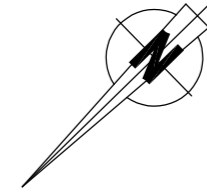
No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo

Client: J BROS PTY LTD
 Project: ECO @ JUMRUM STAGE 2
 Title: CULVERT PLAN SETOUT AND DETAILS
 Drawing No.: ARO0336-C19

Drawn	Designed	Approved	Date
MS	MS		
Drawing Check: AA	Design Check: AA	RPEQ	

Scale (A1 size)
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LEGEND

- Ø63 OD WATER MAIN (MDPE PIPE PN16)
- Ø100 WATER MAIN (UPVC PIPE CLASS 16 RUBBER RING JOINT)
- Ø225 WATER MAIN (UPVC PIPE CLASS 16 RUBBER RING JOINT)
- Ø100 DICL Ø100 DICL WATER MAIN (CLASS PN35)
- Ø225 DICL Ø225 DICL WATER MAIN (CLASS PN35)
- HYDRANT, VALVE AND ENDCAP
- W WATER SERVICE CONNECTION (INSTALLATION BY COUNCIL)
- ○ W WATER SERVICE CONNECTION UNDER FOOTPATH

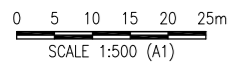
NOTES

1. ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
2. ALIGNMENT OF WATER MAINS SHALL BE 2.8m AS PER FNQROC UNLESS NOTED OTHERWISE.
3. REFER TO FNQROC STANDARD DRAWINGS:
S2000 : VALVE BOX INSTALLATION
S2005 : HYDRANT BOX INSTALLATION
S2010 : KERB AND ROAD MARKERS
S2016 : WATER RETICULATION BEDDING DETAILS
S2020 : MAIN CONNECTION DETAILS
4. REFER TO SEQ WATER SERVICE PROVIDERS STANDARD DRAWINGS:
SEQ-WAT-1205 : THRUST BLOCK DETAILS CONCRETE BLOCKS
SEQ-WAT-1207 : THRUST AND ANCHOR BLOCKS GATE VALVES AND VERTICAL BENDS
5. LOCATION OF HOUSE CONNECTIONS TO BE AS PER FNQROC DESIGN GUIDELINES. LOCATIONS SHOWN ON PLAN ARE INDICATIVE AND TO BE USED AS A GENERAL GUIDE ONLY.
6. WHERE HYDRANTS AND STREET LIGHTING LOCATION COINCIDE, HYDRANT TO BE PLACED 1.0m (MIN.) AWAY FROM LIGHT.
7. LOCATION OF ALL EXISTING SERVICES TO BE CONFIRMED ON SITE BY CONTRACTOR AND SUPERINTENDENT PRIOR TO CONSTRUCTION. THIS IS INCLUSIVE OF EXISTING SERVICES SHOWN ON PLAN.
8. PROVIDE TEMPORARY ENDCAPS AND VALVES AT END OF ROADS B AND D FOR CONNECTION TO FUTURE STAGES.
9. VALVES ON LINES Ø100 OR GREATER TO BE ANCHORED AS PER WSA STD DRG WAT-1207.
10. CONDUITS FOR WATER SERVICE CONNECTION TO BE PROVIDED UNDER FOOTPATHS IN ROAD A WHERE SHOWN. CONDUITS TO BE Ø80mm (MIN.), WITH MINIMUM 300mm COVER, AND ARE TO EXTEND 300mm PAST EDGE OF FOOTPATH. LOCATION OF CONDUITS TO BE CLEARLY MARKED IN FOOTPATH BY CASTING NON-FERROUS CUP HEAD BOLT INTO STILL WET CONCRETE, AS PER FNQROC DESIGN GUIDELINES.

WATER SCHEDULE

- ① DIA 63 OD VALVE & BOX
- ② DIA 63 OD x 100 CONNECTOR
- ③ DIA 63 OD x 225 CONNECTOR
- ④ DIA 225 VALVE & BOX
- ⑤ DIA 225 HYDRANT
- ⑥ DIA 225 ENDCAP
- ⑦ DIA 225 x 45° BEND
- ⑧ DIA 225 x 22.5° BEND
- ⑨ DIA 225 x 11.25° BEND
- ⑩ DIA 100 VALVE & BOX
- ⑪ DIA 100 HYDRANT
- ⑫ DIA 100 ENDCAP
- ⑬ DIA 100 x 45° BEND
- ⑭ DIA 100 x 22.5° BEND
- ⑮ DIA 100 x 11.25° BEND
- ⑯ DIA 225 x 100 TEE
- ⑰ DIA 225 - 100 WYE

PLAN
SCALE 1:500



No.	Description	Reviewed	Approved	Date
1	APPROVAL ISSUE			22/12/2023

Client Logo

Client: J BROS PTY LTD
 Project: ECO @ JUMRUM STAGE 2
 Title: WATER RETICULATION PLAN SHEET 1 OF 2

Drawn	Designed	Approved	Scale (A1 size)
MS	MS		1:500
Drawing Check	Design Check	RPEQ	Date
AA	AA		

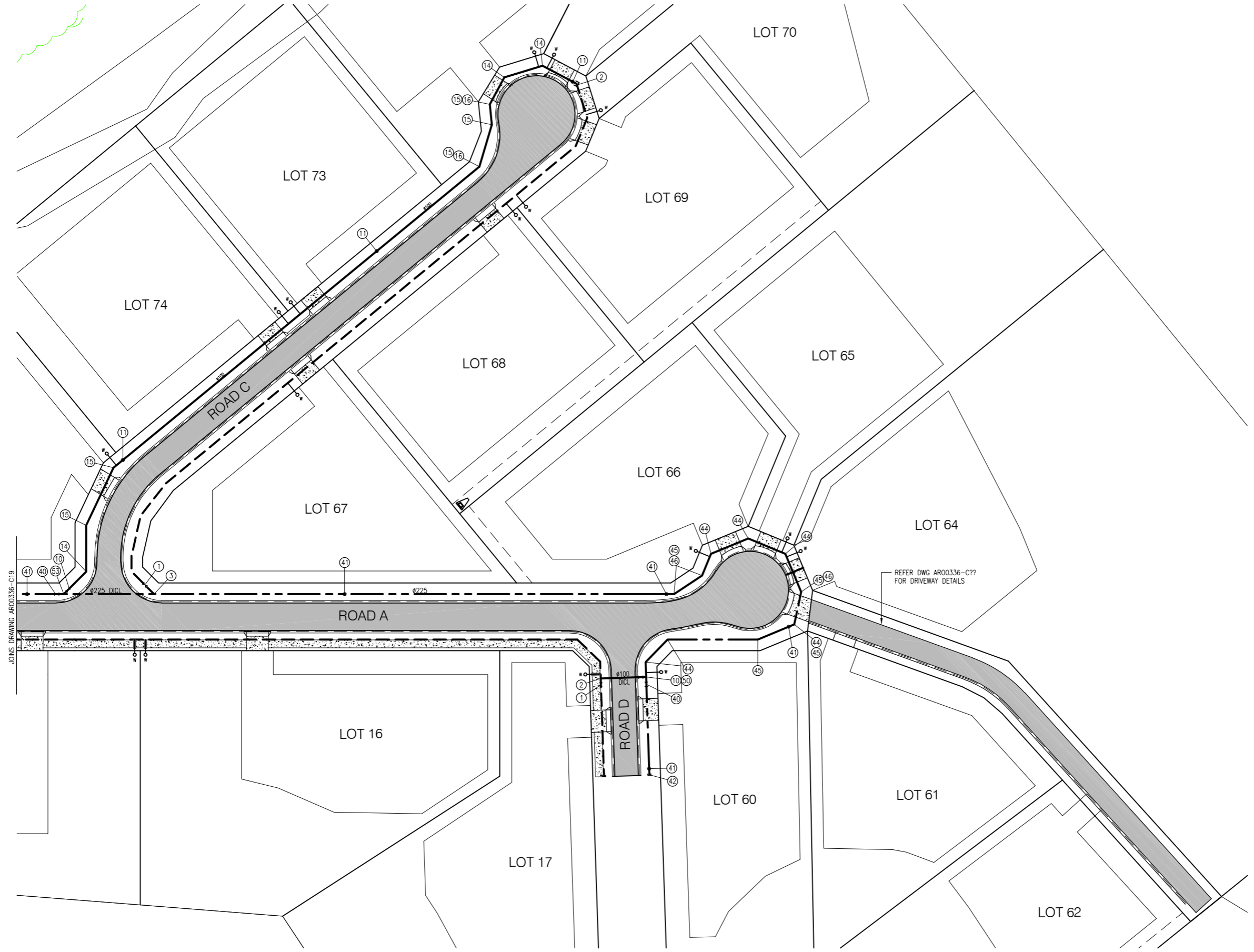
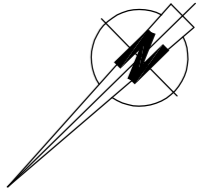
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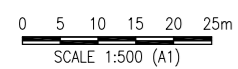
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PLAN
SCALE 1:500

NOTE
REFER DRAWING ARO0336-C19 FOR LEGEND AND NOTES.



APPROVAL ISSUE

No.	Description	Reviewed	Approved	Date	Client Logo
1	APPROVAL ISSUE			22/12/2023	

Client	J BROS PTY LTD
Project	ECO @ JUMRUM STAGE 2
Title	WATER RETICULATION PLAN SHEET 2 OF 2
Drawing No.	ARO0336-C21

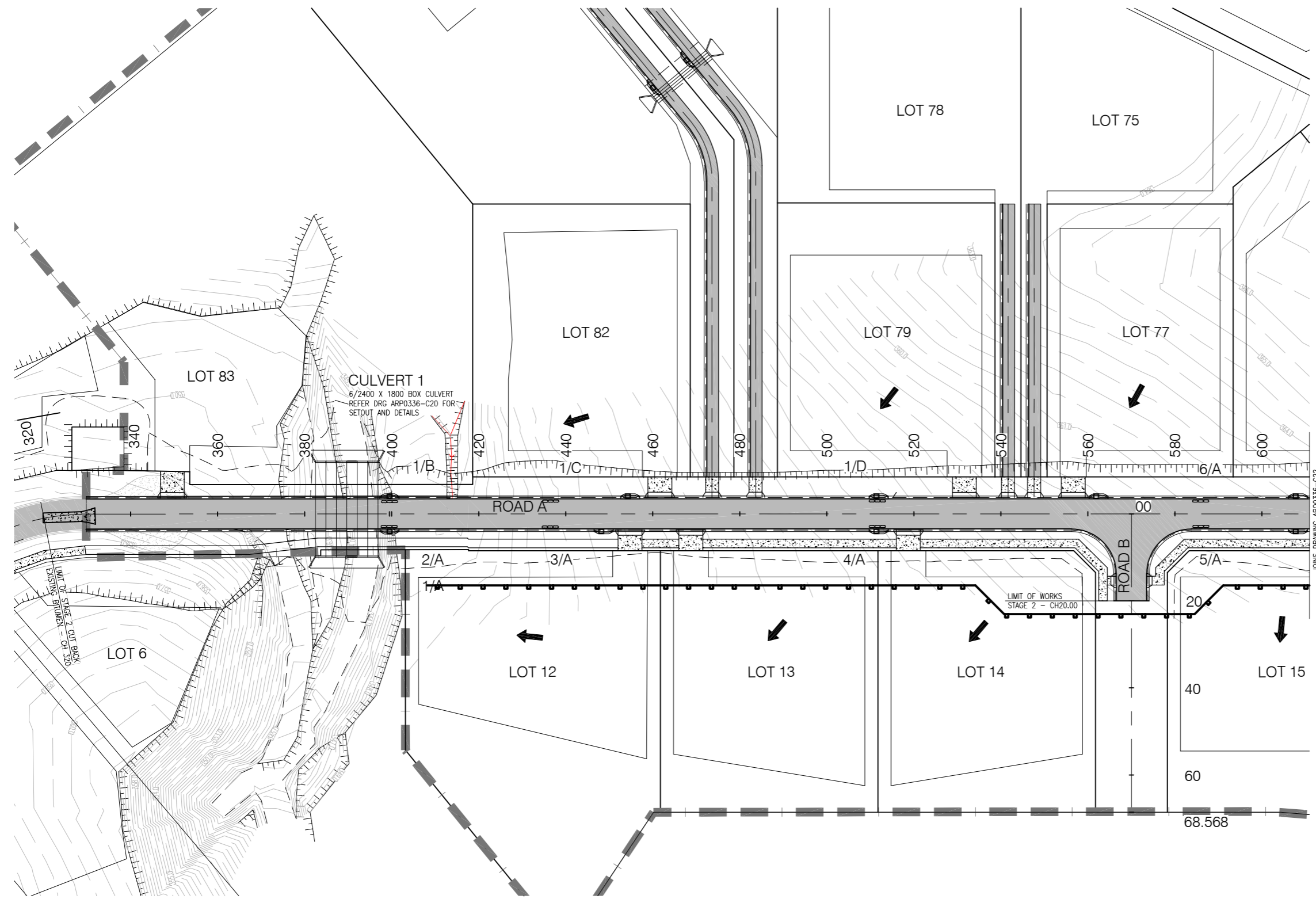
Drawn	MS	Designed	MS	Approved	
Drawing Check	AA	Design Check	AA	RPEQ	Date

Scale (A1 size)	1:500
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LEGEND

- STAGE BOUNDARY
- CHECK DAMS, 0.3m HIGH PLACED ROCK
- DIRECTION OF FALL ON LOTS
- EXISTING SURFACE CONTOUR (0.5m INTERVAL)
- BATTER TOE/TOP
- MULCH BANK
- CATCH DRAIN (REFER DETAIL A)
- STABILISED ENTRY
- SEDIMENT FENCE
- TEMPORARY DRAIN
- SANDBAG KERB INLET PIT

NOTES

1. NO WORKS TO COMMENCE ON SITE UNTIL CONTRACTORS EROSION AND SEDIMENT CONTROL PLAN IS APPROVED BY MAREEBA SHIRE COUNCIL.
2. ALL WORKS AND MATERIALS TO BE IN ACCORDANCE WITH FNQROC DEVELOPMENT MANUAL GUIDELINES AND SPECIFICATIONS.
3. CONTRACTOR TO NOTE REQUIREMENTS AND RESPONSIBILITIES FOR SEDIMENT AND EROSION CONTROL AS PER FNQROC & CONTRACT SPECIFICATION.
4. TOPSOIL STOCKPILES TO BE LOCATED AT SITE ACCEPTABLE TO SUPERINTENDENT AND SEDIMENT AND EROSION CONTROL MEASURES ARE TO BE APPROVED ACCORDINGLY.
5. MOVEMENT OF CONSTRUCTION EQUIPMENT SHALL BE LIMITED TO THE AREA OF WORK AND EXISTING ROADS.
6. ALL EROSION AND SEDIMENT CONTROL MEASURES ARE TO BE INSPECTED AND MAINTAINED AFTER EACH STORM EVENT AND AT REGULAR INTERVALS.
7. EACH LOT TO HAVE SINGLE ACCESS POINT ONLY UNLESS DIRECTED OTHERWISE BY SUPERINTENDENT.
8. CONTOURS SHOWN ARE NATURAL SURFACE CONTOURS PRIOR TO ANY BULK EARTHWORKS TAKING PLACE.
9. PROVIDE MULCH TO TOP OF BATTERS.
10. CATCH DRAINS AND SEDIMENT TRAPS TO BE CONSTRUCTED PRIOR TO COMMENCEMENT OF WORKS.
11. ALL VEHICLES LEAVING THE SITE MUST EXIT VIA WASHDOWN FACILITY.
12. DEPTHS FOR CLEARING, GRUBBING AND STRIPPING 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.

SCHEDULE OF MEASURES

DRAINAGE CONTROL

- D1. CATCH DIRTY WATER RUNOFF AND DIVERT TO SEDIMENT CONTROL DEVICES.
- D2. 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. PROVIDE MULCH BANKS UPSTREAM FROM BATTERS AND ON THE DOWNSTREAM SIDE OF EACH LOT.
- E3. SAND BAGS TO BE PLACED ALONG COMPLETED ROAD VERGES WHILE AWAITING RE-VEGETATION OF SITE.
- E4. SANDBAGS TO BE PLACED ALONG COMPLETED CATCH DRAINS WHILE AWAITING RE-VEGETATION OF SITE.
- E5. CONSTRUCT CHECK DAMS AT 40m CENTRES ALONG FUTURE ROAD CORRIDORS AS SHOWN.

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 AND ROAD A.
- S4. CONSTRUCT SANDBAG CHECK DAMS AT 40m CENTRES ALONG KERB AND AT KERB INVERTS.
- S5. PROVIDE KERB LINE TURF STRIPS WITH RETURNS AT 10m INTERVALS.

PLAN
SCALE 1:500

0 5 10 15 20 25m
SCALE 1:500 (A1)

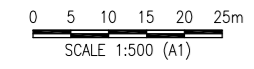
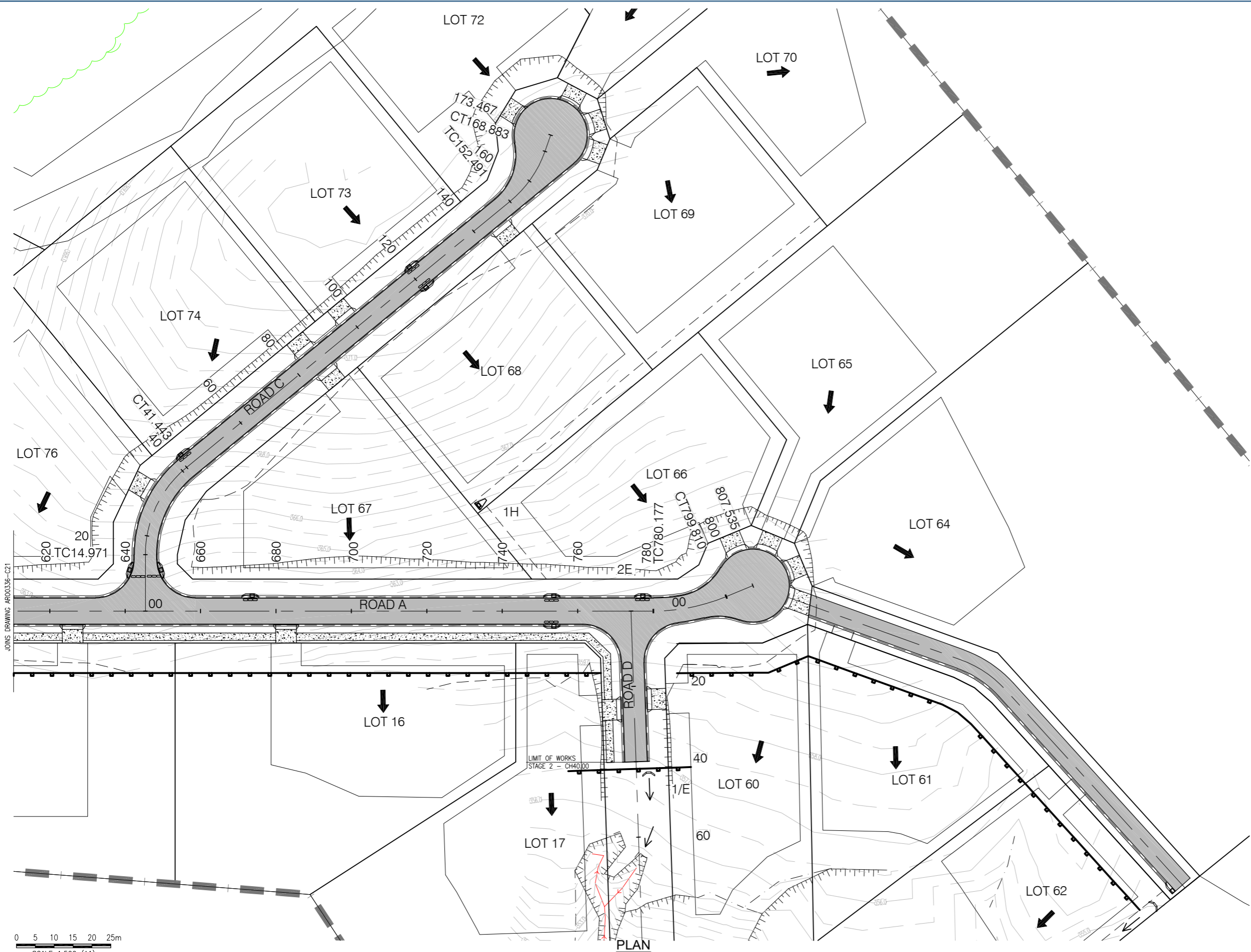
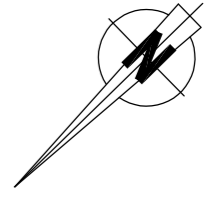
No.	Description	Reviewed	Approved	Date	Client Logo
1	APPROVAL ISSUE			22/12/2023	

Client	J BROS PTY LTD		
Project	ECO @ JUMRUM STAGE 2		
Title	EROSION AND SEDIMENT CONTROL STRATEGY SHEET 1 OF 2		
Drawing No.	ARO0336-C22		

Drawn	MS	Designed	MS	Approved		Scale (A1 size)	1:500
Drawing Check	AA	Design Check	AA	RPEQ	Date	Drawing is not to be used for construction unless approved.	

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NOTE
REFER DRAWING ARO0336-C02 FOR LEGEND AND NOTES.

APPROVAL ISSUE

No.	Description	Reviewed	Approved	Date	Client Logo
1	APPROVAL ISSUE			22/12/2023	

Client	J BROS PTY LTD
Project	ECO @ JUMRUM STAGE 2
Title	EROSION AND SEDIMENT CONTROL STRATEGY SHEET 2 OF 2
Drawing No.	ARO0336-C23

Drawn	MS	Designed	MS	Approved	
Drawing Check	AA	Design Check	AA	RPEQ	Date

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LANDSCAPE DESIGN

JUMRUM RAINFOREST ESTATE

STAGE 1 & 2 KURANDA

DRAWING LIST

DWG NO.	REV	DRAWING NAME	SCALE (A3 SIZE)
363-L00	A	COVER PAGE & PLANTING SCHEDULE	NTS
363-L01	A	LANDSCAPE PLAN	1:2500

PLANTING SCHEDULE

QTY	CODE	SCIENTIFIC NAME	COMMON NAME	SIZE	SPACING
STREET TREES					
19	BUC cel	Buckinghamia celsissima	Ivory Curl	25 LT	As Shown
25	MEL ell	Melicope elleryana	Pink Evodia	25 LT	As Shown
15	STE sin	Stenocarpus sinuatus	Firewheel Tree	25 LT	As Shown



Buckinghamia celsissima



Melicope elleryana



Stenocarpus sinuatus

STANDARD NOTES

1. SETOUT AND DIMENSIONS

THE CONTRACTOR SHALL SET OUT ALL PATHS, WALLS, HARD SURFACES AND ELEMENTS EITHER ON OR OFF SITE PRIOR TO CONSTRUCTION AND SHALL OBTAIN THE SUPERINTENDENTS SET OUT APPROVAL PRIOR TO WORKS COMMENCING. WRITTEN DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALE, CHECK ALL DRAWINGS SCALES IN CONJUNCTION WITH DRAWINGS SIZE. COORDINATE ALL WORKS WITH OTHER TRADES AND HEAD CONTRACTOR. THE CONTRACTOR SHALL SETOUT AND COORDINATE ALL EQUIPMENT AND ELEMENTS WITH EXISTING SITE SERVICES AND NOTIFY OF ANY CLASHES OR DISCREPANCIES PRIOR TO CONSTRUCTION.

2. SERVICES AND SITE ASSETS

THE CONTRACTOR SHALL INVESTIGATE THE NATURE AND LOCATION OF ALL EXISTING SERVICES AND RETAINED SITE ASSETS AFFECTED BY THEIR WORKS. FAILURE TO TAKE DUE CARE SHALL NOT LIMIT THE CONTRACTORS LIABILITIES.

3. REFERENCES

THE CONTRACTOR SHALL REFER TO ALL CONTRACT DOCUMENTS, THE SPECIFICATION AND DRAWINGS PRIOR TO AND DURING THE WORKS.

4. DISCREPANCIES

NOTIFY SUPERINTENDENT OF ANY SUSPECTED OR KNOWN DISCREPANCIES OR ERRORS PRIOR TO THE ORDERING OF AFFECTED MATERIALS AND/OR CONSTRUCTION OF AFFECTED WORKS.

5. RELEVANT STANDARDS

THE CONTRACTOR SHALL UNDERTAKE ALL PRICING AND WORKS IN ACCORDANCE WITH CURRENT INDUSTRY BEST PRACTICE AND ALL RELEVANT AUSTRALIAN STANDARDS, FNQROC, AND THE MAREEBA SHIRE COUNCIL PLANNING SCHEME.

6. SERVICE LOCATOR

THE CONTRACTOR SHALL UNDERTAKE A DIAL BEFORE YOU DIG PROCESS PRIOR TO COMMENCING WORKS ON SITE. THE CONTRACTOR SHALL ENGAGE A SERVICE LOCATOR TO MAP THE SPECIFIC LOCATIONS AND DEPTH OF ALL SERVICES AND ADVISE ALL RELEVANT STAFF AND SUBCONTRACTORS IN WRITING PRIOR TO COMMENCING WORKS ON SITE.

7. IRRIGATION

SUPPLY AND INSTALL IRRIGATION SYSTEM TO FNQROC STANDARDS, CERTIFIED BY AN IAA CID (IRRIGATION AUSTRALIAN ASSOCIATION CERTIFIED IRRIGATION DESIGNER) AND TO CLIENT'S APPROVAL

8. PLANT ESTABLISHMENT & MAINTENANCE

AREAS OF PLANTING CAN ONLY BE GIVEN FINAL COMPLETION AFTER MINIMUM 13 WEEKS ESTABLISHMENT POST PRACTICAL COMPLETION. REPLACE ALL DEAD PLANT STOCK DURING THIS PERIOD AND NEW STOCK ESTABLISHED FOR MINIMUM 13 WEEKS. FINAL COMPLETION IS GIVEN AT 13 WEEKS POST PRACTICAL COMPLETION AND ONGOING MAINTENANCE BEGINS.

9. WORK HEALTH & SAFETY (WHS)

THE CONTRACTOR SHALL FOLLOW THE APPROVED & CURRENT PROJECT WORK HEALTH & SAFETY MANUAL.

10. SOFT LANDSCAPE

PLANTS:

1. ALL CONTAINER STOCK SHALL BE INSPECTED IN THE NURSERY PRIOR TO TRANSPORT TO SITE.
2. ALL CONTAINER STOCK PLANTING SHALL BE INSPECTED ON SITE PRIOR TO PLANTING. GIVE (5) WORKING DAYS NOTICE PRIOR TO SUCH ACTIVITY TO ALLOW LANDSCAPE ARCHITECT'S REPRESENTATIVE TO ATTEND. ALL PLANTS TO BE TRUE TO SCHEDULED NOMENCLATURE, WELL FORMED, HARDENED OF NURSERY STOCK. THEY ARE TO BE CONTAINER GROWN IN POTTING MIXTURE WITH A HEALTHY ROOT SYSTEM, FULLY ESTABLISHED BUT NOT POT BOUND. THE CONTAINERS TO BE OF THE SIZE AND TYPE SPECIFIED FOR THE PLANT SIZE NOMINATED AS SET OUT IN THE PLANT SCHEDULE. ALL POTS SHALL BE FREE OF WEEDS.

IMPORTED SOIL

3. IMPORT AND SPREAD PREMIUM TOPSOIL MIX. SOIL SHALL BE FREE OF WEEDS, STICKS ROCKS AND OTHER DELETERIOUS MATTER. ALL IMPORTED SOIL BLENDS APPROVED TO AUSTRALIAN STANDARDS / AS4419 OR AS APPROVED BY SUPERINTENDENT.
4. EXCAVATE EXISTING SITE SOIL ON ALL GARDEN BEDS TO 300mm DEPTH AND FILL WITH APPROVED IMPORTED SOIL BLENDS.
5. ALL BUILDING RUBBLE AND OTHER UNSUITABLE MATERIAL INCLUDING WEEDS TO BE REMOVED FROM LANDSCAPE AREAS. ENSURE COMPACTED SOIL OR ROAD BASE IS NOT LOCATED DIRECTLY BELOW GARDEN BEDS. IF SO THEN REMOVE/EXCAVATE THE COMPACTED MATERIAL SO SOIL PROFILE CAN DRAIN TO NATURAL GROUND. EXCAVATED MATERIAL IS TO BE DISPOSED OF IN AN APPROVED MANNER.

PLANTING AREAS:

6. IN PLANTING, EXCAVATE A HOLE FOR EACH PLANT TWICE THE DIAMETER OF THE ROOT BALL AND 100mm DEEPER THAN THE ROOT BALL. ALL TREE AND LARGE SIZE CONTAINER STOCK (300mm PLUS) HOLES SHALL BE EXCAVATED TO PROVIDE A MINIMUM CLEARANCE OF 300mm BETWEEN ROOT BALL AND SUB GRADE. BREAK UP THE BASE OF THE HOLE TO A FURTHER DEPTH OF 100mm AND LOOSEN THE SIDES OF THE HOLE. REMOVE PLANTS FROM THE CONTAINER WITH MINIMUM DISTURBANCE TO THE ROOT BALL AND PLACE IT IN ITS FINAL POSITION IN THE CENTRE OF THE HOLE AND PLUMB. ENSURE THE PLANT ROOT BALL IS LEVEL WITH THE FINISHED SURFACE OF THE SOIL SURROUNDING THE HOLE OR BED.
7. BACKFILL WITH TOPSOIL AS SPECIFIED. LIGHTLY TAMP AND WATER THOROUGHLY TO ELIMINATE AIR POCKETS. ENSURE THAT TOPSOIL IS NOT PLACED OVER THE TOP OF THE ROOT BALL.

TURF AREAS:

8. MAKE GOOD EXISTING TURF IF DAMAGED. NEW TURF SHALL CONSIST OF 25mm DEPTH OF DENSE, WELL ROOTED, VIGOROUS GRASS GROWTH WITH 25mm DEPTH OF TOPSOIL. TURF TO BE USED SHOULD BE ROLLED B GRADE TURF MIX OF SPECIES 80% BUFFALO GRASS (AXONOPUS COMPRESSUS) & 20% COUCH GRASS VARIETIES.

MULCH:

9. MULCH SHALL BE AGED FOREST AND HARDWOOD WOODCHIPS 20 TO 50mm SIZE STOCKPILED FOR A MINIMUM OF 6 WEEKS, FREE FROM ROCKS, ANY NOXIOUS WEEDS OR HAZARDOUS COMPONENTS, NON-BIODEGRADABLE AND TOXIC MATERIAL OR APPROVED EQUIVALENT, INSTALLED TO A DEPTH OF 100mm. MULCH IS NOT TO CONTAIN PEANUT SHELLS. MULCH SHALL SPREAD TO FORM A DISH AROUND THE BASE OF ALL PLANTS IN GARDEN AREAS TO REDUCE RISK OF ROTTING OF FUNGI GROWTH.

Drawing Revisions

Issue	Date	Subject	Authorised
A	01.11.2023	PRELIMINARY - FOR COORDINATION	JMC

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PROJECT TITLE:

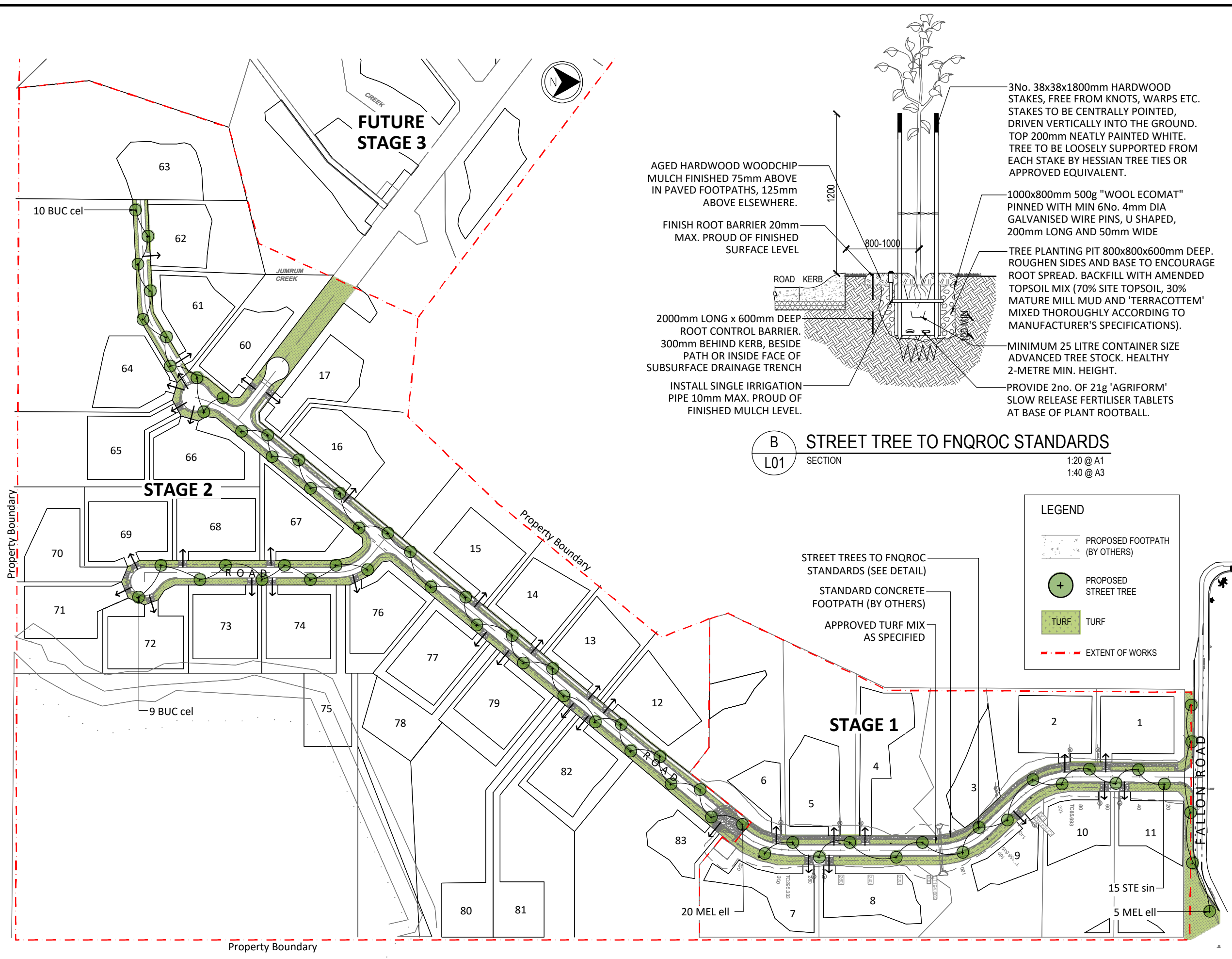
Jumrum Rainforest Estate
Stage 1 & 2
Fallon Road, Kuranda QLD

DRAWING TITLE:

COVER PAGE, SPECIFICATION
NOTES & PLANT LIST

Scale: NTS	Drawn: JAE	Checked: JTB	Authorised: JMC
At: A3 SIZE	Date: 1 November 2023		

Drawing No:	Issue	Sheet No.
363 - L00	A	1



AGED HARDWOOD WOODCHIP MULCH FINISHED 75mm ABOVE IN PAVED FOOTPATHS, 125mm ABOVE ELSEWHERE.

FINISH ROOT BARRIER 20mm MAX. PROUD OF FINISHED SURFACE LEVEL

2000mm LONG x 600mm DEEP ROOT CONTROL BARRIER. 300mm BEHIND KERB, BESIDE PATH OR INSIDE FACE OF SUBSURFACE DRAINAGE TRENCH

INSTALL SINGLE IRRIGATION PIPE 10mm MAX. PROUD OF FINISHED MULCH LEVEL.

3No. 38x38x1800mm HARDWOOD STAKES, FREE FROM KNOTS, WARPS ETC. STAKES TO BE CENTRALLY POINTED, DRIVEN VERTICALLY INTO THE GROUND. TOP 200mm NEATLY PAINTED WHITE. TREE TO BE LOOSELY SUPPORTED FROM EACH STAKE BY HESSIAN TREE TIES OR APPROVED EQUIVALENT.

1000x800mm 500g "WOOL ECOMAT" PINNED WITH MIN 6No. 4mm DIA GALVANISED WIRE PINS, U SHAPED, 200mm LONG AND 50mm WIDE

TREE PLANTING PIT 800x800x600mm DEEP. ROUGHEN SIDES AND BASE TO ENCOURAGE ROOT SPREAD. BACKFILL WITH AMENDED TOPSOIL MIX (70% SITE TOPSOIL, 30% MATURE MILL MUD AND 'TERRACOTTEM' MIXED THOROUGHLY ACCORDING TO MANUFACTURER'S SPECIFICATIONS).

MINIMUM 25 LITRE CONTAINER SIZE ADVANCED TREE STOCK. HEALTHY 2-METRE MIN. HEIGHT.

PROVIDE 2no. OF 21g 'AGRIFORM' SLOW RELEASE FERTILISER TABLETS AT BASE OF PLANT ROOTBALL.

B STREET TREE TO FNQROC STANDARDS
L01 SECTION
1:20 @ A1
1:40 @ A3

LEGEND

- PROPOSED FOOTPATH (BY OTHERS)
- PROPOSED STREET TREE
- TURF
- EXTENT OF WORKS

STREET TREES TO FNQROC STANDARDS (SEE DETAIL)

STANDARD CONCRETE FOOTPATH (BY OTHERS)

APPROVED TURF MIX AS SPECIFIED

STREET TREE NOTES

- THE ALIGNMENT AND PLACEMENT OF STREET TREES MEASURED FROM THE TREE AT THE ESTIMATED ULTIMATE SIZE SHALL BE IN ACCORDANCE WITH THE FOLLOWING:
- a) GREATER THAN 4.0 METRES FROM ELECTRICITY OR TELECOMMUNICATION POLES OR PILLARS;
 - b) GREATER THAN 7.5 METRES FROM STREETLIGHTS TO ENSURE EFFECTIVE STREET LIGHTING;
 - c) GREATER THAN 4.0 METRE RADIUS FROM HIGH VOLTAGE TRANSMISSION LINES;
 - d) GREATER THAN 2.0 METRES FROM STORMWATER KERB INLET PITS;
 - e) TREES ARE TO BE PLANTED IN THE FRONT OF PROPERTIES AT THE CENTRE OF THE LOT AT A RATE OF ONE PER LOT, OR AT THE NECESSARY RATE TO PROVIDE A MAXIMUM 20 METRE SPACING;
 - f) TREES ARE TO BE PLACED A MINIMUM OF 800mm AND A MAXIMUM OF 1000mm FROM THE BACK OF KERB;
 - g) TREES ARE TO BE PLACED A MINIMUM OF THREE (3) METRES FROM DRIVEWAY;
 - h) AT INTERSECTIONS, TREES ARE TO BE PLACED A MINIMUM OF TEN (10) METRES BACK FROM THE FACE OF THE KERB OF THE ADJOINING TREES;
 - i) TREES ARE TO BE LOCATED SO AS NOT TO OBSTRUCT ACCESS TO ANY SERVICES OR SIGNAGE;
 - j) TREES ARE TO BE LOCATED SO AS NOT TO OBSTRUCT PEDESTRIAN OR VEHICULAR TRAFFIC, NOR CREATE TRAFFIC HAZARD OR CAUSE DAMAGE TO EXISTING TREES.

A LANDSCAPE PLAN
L01 SCALE
1:1250 @ A1
1:2500 @ A3

Drawing Revisions

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DRAWING TITLE:
LANDSCAPE PLAN

Scale: 1:2500	Drawn: JAE	Checked: JTB	Authorized: JMC
At: A3 SIZE	Date: 1 November 2023		

Drawing No: 363 - L01	Issue A	Sheet No. 2
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