

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) (individual or company full name)	Nathan Verri Pty Ltd
Contact name (only applicable for companies)	c/- RPS Australia East Pty Ltd
Postal address (P.O. Box or street address)	PO Box 1949
Suburb	Cairns
State	QLD
Postcode	4870
Country	Australia
Contact number	07 4276 1017
Email address (non-mandatory)	Patrick.Clifton@rpsgroup.com.au
Mobile number (non-mandatory)	0499 557 621
Fax number (non-mandatory)	
Applicant's reference number(s) (if applicable)	PR151295

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

PART 2 – LOCATION DETAILS

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

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

3.1) Street address and lot on plan

- ☒ Street address **AND** lot on plan (all lots must be listed), **or**
☐ Street address **AND** lot on plan for an adjoining or adjacent property of the premises (appropriate for development in water but adjoining or adjacent to land e.g. jetty, pontoon. All lots must be listed).

a)	Unit No.	Street No.	Street Name and Type	Suburb
		1	Marine Parade	Newell
	Postcode	Lot No.	Plan Type and Number (e.g. RP, SP)	Local Government Area(s)
	4873	9	RP711018	Douglas 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)
		<input type="checkbox"/> WGS84 <input type="checkbox"/> GDA94 <input type="checkbox"/> Other:	

- ☐ Coordinates of premises by easting and northing

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

3.3) Additional premises

- ☐ Additional premises are relevant to this development application and 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? <i>(tick only one box)</i>
<input checked="" type="checkbox"/> Material change of use <input type="checkbox"/> Reconfiguring a lot <input type="checkbox"/> Operational work <input type="checkbox"/> Building work
b) What is the approval type? <i>(tick only one box)</i>
<input checked="" type="checkbox"/> Development permit <input type="checkbox"/> Preliminary approval <input type="checkbox"/> Preliminary approval that includes a variation approval
c) What is the level of assessment?
<input checked="" type="checkbox"/> Code assessment <input type="checkbox"/> Impact assessment <i>(requires public notification)</i>
d) Provide a brief description of the proposal <i>(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):</i>
Dwelling House
e) Relevant plans <i>Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms guide: Relevant plans.</i>
<input checked="" type="checkbox"/> 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? <i>(tick only one box)</i>
<input type="checkbox"/> Material change of use <input type="checkbox"/> Reconfiguring a lot <input type="checkbox"/> Operational work <input type="checkbox"/> Building work
b) What is the approval type? <i>(tick only one box)</i>
<input type="checkbox"/> Development permit <input type="checkbox"/> Preliminary approval <input type="checkbox"/> Preliminary approval that includes a variation approval
c) What is the level of assessment?
<input type="checkbox"/> Code assessment <input type="checkbox"/> Impact assessment <i>(requires public notification)</i>
d) Provide a brief description of the proposal <i>(e.g. 6 unit apartment building defined as multi-unit dwelling, reconfiguration of 1 lot into 3 lots):</i>
e) Relevant plans <i>Note: Relevant plans are required to be submitted for all aspects of this development application. For further information, see DA Forms Guide: Relevant plans.</i>
<input type="checkbox"/> Relevant plans of the proposed development are attached to the development application
6.3) Additional aspects of development
<input type="checkbox"/> 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
<input checked="" type="checkbox"/> Not required

Section 2 – Further development details

7) Does the proposed development application involve any of the following?	
Material change of use	<input checked="" 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 type="checkbox"/> Yes – complete division 3
Building work	<input type="checkbox"/> Yes – complete DA Form 2 – Building work details

Division 1 – Material change of use

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

8.1) Describe the proposed material change of use			
Provide a general description of the proposed use	Provide the planning scheme definition (include each definition in a new row)	Number of dwelling units (if applicable)	Gross floor area (m ²) (if applicable)
Dwelling House	Dwelling House	1	N/A
8.2) Does the proposed use involve the use of existing buildings on the premises?			
<input type="checkbox"/> Yes			
<input checked="" type="checkbox"/> No			

Division 2 – Reconfiguring a lot

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

9.1) What is the total number of existing lots making up the premises?	
9.2) What is the nature of the lot reconfiguration? (tick all applicable boxes)	
<input type="checkbox"/> Subdivision (complete 10))	<input type="checkbox"/> Dividing land into parts by agreement (complete 11))
<input type="checkbox"/> Boundary realignment (complete 12))	<input type="checkbox"/> Creating or changing an easement giving access to a lot from a constructed road (complete 13))

10) Subdivision				
10.1) For this development, how many lots are being created and what is the intended use of those lots:				
Intended use of lots created	Residential	Commercial	Industrial	Other, please specify:
Number of lots created				
10.2) Will the subdivision be staged?				
<input type="checkbox"/> Yes – provide additional details below				
<input type="checkbox"/> No				
How many stages will the works include?				
What stage(s) will this development application apply to?				

11) Dividing land into parts by agreement – how many parts are being created and what is the intended use of the parts?				
Intended use of parts created	Residential	Commercial	Industrial	Other, please specify:
Number of parts created				

12) Boundary realignment			
12.1) What are the current and proposed areas for each lot comprising the premises?			
Current lot		Proposed lot	
Lot on plan description	Area (m ²)	Lot on plan description	Area (m ²)
12.2) What is the reason for the boundary realignment?			

13) What are the dimensions and nature of any existing easements being changed and/or any proposed easement? (attach schedule if there are more than two easements)				
Existing or proposed?	Width (m)	Length (m)	Purpose of the easement? (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 type="checkbox"/> Road work <input type="checkbox"/> Drainage work <input type="checkbox"/> Landscaping <input type="checkbox"/> Other – please specify:	<input type="checkbox"/> Stormwater <input type="checkbox"/> Earthworks <input type="checkbox"/> Signage <input type="checkbox"/> Water infrastructure <input type="checkbox"/> Sewage infrastructure <input type="checkbox"/> Clearing vegetation
14.2) Is the operational work necessary to facilitate the creation of new lots? (e.g. subdivision)	
<input type="checkbox"/> Yes – specify number of new lots:	
<input type="checkbox"/> No	
14.3) What is the monetary value of the proposed operational work? (include GST, materials and labour)	
\$	

PART 4 – ASSESSMENT MANAGER DETAILS

15) Identify the assessment manager(s) who will be assessing this development application
Douglas Shire Council
16) Has the local government agreed to apply a superseded planning scheme for this development application?
<input type="checkbox"/> Yes – a copy of the decision notice is attached to this development application <input type="checkbox"/> The local government is taken to have agreed to the superseded planning scheme request – relevant documents attached <input checked="" type="checkbox"/> 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 <i>Transport Infrastructure Act 1994</i>:
<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 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
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>).		

PART 6 – INFORMATION REQUEST

19) Information request under Part 3 of the DA Rules
<input checked="" type="checkbox"/> I agree to receive an information request if determined necessary for this development application
<input type="checkbox"/> I do not agree to accept an information request for this development application
Note: By not agreeing to accept an information request I, the applicant, acknowledge: <ul style="list-style-type: none"> • that this development application will be assessed and decided based on the information provided when making this development application and the assessment manager and any referral agencies relevant to the development application are not obligated under the DA Rules to accept any additional information provided by the applicant for the development application unless agreed to by the relevant parties • Part 3 of the DA Rules will still apply if the application is an application listed under section 11.3 of the DA Rules. Further advice about information requests is contained in the DA Forms Guide .

PART 7 – FURTHER DETAILS

20) Are there any associated development applications or current approvals? (e.g. a preliminary approval)

- ☐ Yes – provide details below or include details in a schedule to this development application
☒ No

List of approval/development application references	Reference number	Date	Assessment manager
<input type="checkbox"/> Approval <input type="checkbox"/> Development application			
<input type="checkbox"/> Approval <input type="checkbox"/> Development application			

21) Has the portable long service leave levy been paid? (only applicable to development applications involving building work or operational work)

- ☐ Yes – a copy of the receipted QLeave form is attached to this development application
☐ 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
☒ 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?

- ☐ Yes – show cause or enforcement notice is attached
☒ No

23) Further legislative requirements

Environmentally relevant activities

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

- ☐ Yes – the required attachment (form ESR/2015/1791) for an application for an environmental authority accompanies this development application, and details are provided in the table below
☒ No

Note: Application for an environmental authority can be found by searching “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.

Proposed ERA number:		Proposed ERA threshold:	
Proposed ERA name:			

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

Hazardous chemical facilities

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

- ☐ Yes – Form 69: Notification of a facility exceeding 10% of schedule 15 threshold is attached to this development application
☒ No

Note: See www.business.qld.gov.au for further information about hazardous chemical notifications.

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:	
-----------------------------	--	-----------	--

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

Note: For completion by assessment manager if applicable

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

1 MARINE PARADE, NEWELL - MCU (DWELLING HOUSE)

Town Planning Report



PR151295
Version C
10 January 2022

REPORT

Document status

Version	Purpose of document	Authored by	Reviewed by	Approved by	Review date
A	Draft for client	Patrick Clifton	Patrick Clifton	Patrick Clifton	6/01/2022
B	Client Review	Patrick Clifton	Patrick Clifton	Patrick Clifton	7/01/2022
C	Application Submission	Patrick Clifton	Patrick Clifton	Patrick Clifton	10/01/2022

Approval for issue

Patrick Clifton



10 January 2022

This report was prepared by RPS within the terms of RPS' engagement with its client and in direct response to a scope of services. This report is supplied for the sole and specific purpose for use by RPS' client. The report does not account for any changes relating the subject matter of the report, or any legislative or regulatory changes that have occurred since the report was produced and that may affect the report. RPS does not accept any responsibility or liability for loss whatsoever to any third party caused by, related to or arising out of any use or reliance on the report.

Prepared by:

Prepared for:

RPS

Nathan Verri Pty Ltd

Patrick Clifton
Principal Planner

135 Abbott Street
Cairns QLD 4870

T +61 7 4031 1336
E patrick.clifton@rpsgroup.com.au

Contents

SUMMARY	1
1 INTRODUCTION	2
2 SITE DETAILS	3
2.1 Site Particulars	3
2.2 Planning Context	3
3 PROPOSAL	5
3.1 Overview	5
3.2 Built Form	5
4 LEGISLATIVE REQUIREMENTS	6
4.1 Assessment Manager	6
4.2 Categories of Assessment	6
4.3 Referrals	6
4.4 Public Notification	6
5 STATUTORY PLANNING ASSESSMENT	7
5.1 State and Regional Assessment Benchmarks	7
5.1.1 State Planning Policy	7
5.1.2 Regional Plan	7
5.1.3 Development Assessment under Schedules 9 and 10 (SDAP)	7
5.2 Local Authority Assessment Benchmarks	7
5.2.1 Statement of Compliance – Douglas Shire Council Planning Scheme	8
6 CONCLUSION	10

Tables

Table 1: Summary	1
Table 2: Site Particulars	3
Table 3: Planning Context	3
Table 4: Development Statistics	5
Table 5: Categories of Assessment	6
Table 6 Planning Scheme Code Responses	7

Figures

Figure 1 Site Location	3
------------------------------	---

Appendices

- Appendix A Certificate of Title
- Appendix B Proposal Plans & Engineering Report
- Appendix C Queensland Development Code Assessment
- Appendix D Planning Scheme Code Responses

SUMMARY

Table 1: Summary

Details			
Site Address:	1 Marine Parade, Newell		
Real Property Description:	Lot 9 RP711018		
Site Area:	1,146m ²		
Regional Plan Land Use Designation:	Urban Footprint		
Zone:	Low Density Residential Zone		
Local Plan:	Coastal Communities Local Plan		
Overlays:	Acid Sulfate Soils Overlay; Coastal Environment Overlay; Flood and Storm Tide Hazard Overlay; and, Landscape Values Overlay.		
Owner:	Gerard Zurawski		
Proposal			
Brief Description/ Purpose of Proposal	Dwelling House		
Application Details			
Aspect of Development	Preliminary approval	Development permit	
Material change of use	<input type="checkbox"/>	<input checked="" type="checkbox"/>	
Building Work	<input type="checkbox"/>	<input type="checkbox"/>	
Operational Work	<input type="checkbox"/>	<input type="checkbox"/>	
Reconfiguration of a Lot	<input type="checkbox"/>	<input type="checkbox"/>	
Assessment Category	<input checked="" type="checkbox"/> Code	<input type="checkbox"/> Impact	
Public Notification	<input checked="" type="checkbox"/> No	<input type="checkbox"/> Yes:	
Superseded Planning Scheme Application	<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No	
Referral Agencies			
Agency	Concurrence	Advice	Pre-lodgement response
N/A	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/> Yes <input type="checkbox"/> No
Other			
Applicant contact person	Patrick Clifton Principal Planner D: +61 7 42761017 E: Patrick.Clifton@rpsgroup.com.au		

1 INTRODUCTION

RPS has been engaged by Nathan Verri Pty Ltd to seek a Development Permit for Material Change of Use for the establishment of a Dwelling House on land at 1 Marine Parade, Newell, and described as Lot 9 on RP711018. The site has an area of 1,146m² and frontage to Marine Parade to the west of approximately 21 metres and the unconstructed part of Newell Road to the south of approximately 50 metres. The site is currently improved by a domestic outbuilding located in the north western part of the site and has established vegetation to the site boundaries. To the east the site has frontage to the foreshore and to the north the site adjoins an established dwelling.

The site is within the Douglas Shire Council area and under the Douglas Shire Council Planning Scheme the site has the following designations/classifications:

- Zone – Low Density Residential Zone;
- Local Plan – Coastal Communities Local Plan (No Precinct);
- Overlays:
 - Acid Sulfate Soils (<5m AHD);
 - Coastal Environment (Erosion Prone Area);
 - Flood and Storm Tide Hazard (Medium and High Storm Tide Hazard);
 - Landscape Values (Coastal Scenery).

In accordance with the Tables of Assessment, the development of a Dwelling House is accepted development subject to requirements. However, we are advised in this instance that the development is not able to satisfy the requirements of the Overlay Codes and consequently a Code Assessable application for Material Change of Use is required. In addition, the proposed development is not able to satisfy the requirements of the Queensland Development Code and consequently an Early Concurrence Agency Referral is sought as part of this application process.

This report provides greater detail on the nature of the proposal and provides an assessment of the proposal against the relevant Assessment Benchmarks. Based on the assessment the proposal is recommended for approval subject to reasonable and relevant conditions.

2 SITE DETAILS

2.1 Site Particulars

Key details of the subject site are as follows:

Table 2: Site Particulars

Site Particulars	
Site Address	1 Marine Parade Newell
Real Property Description	Lot 9 RP711018
Site Area	1,146m ²
Landowner(s)	Gerard Zurawski

The site location and its extent are shown in **Figure 1** below.

Certificate/s of title confirming site ownership details are included at **Appendix A**.



Figure 1 Site Location

Source: Queensland Globe

2.2 Planning Context

The planning context of the site includes the following:

Table 3: Planning Context

Instrument	Designation
State Planning Policy	
Safety and Resilience to Hazards	<ul style="list-style-type: none"> Flood hazard area - Level 1 - Queensland floodplain assessment overlay; Erosion prone area; Medium storm tide inundation area; and, High storm tide inundation area.
Development Assessment Mapping System	
Coastal Protection	<ul style="list-style-type: none"> Erosion prone area; Medium storm tide inundation area; and, High storm tide inundation area
Native Vegetation Clearing	<ul style="list-style-type: none"> Category X on the Regulated Vegetation Management Map.
FNQ Regional Plan 2009 - 2031	
Regional Plan designation	Urban Footprint
Douglas Shire Council Planning Scheme 2018	
Zoning	Low Density Residential
Local Plan	Coastal Communities Local Plan (no precinct)
Overlays	<ul style="list-style-type: none"> Acid Sulfate Soils Overlay <5m AHD; Coastal Environment Overlay – Erosion Prone Area; Flood and Storm Tide Hazard Overlay – Medium and High Storm Tide Hazard and Flood Plain Assessment Overlay; and, Landscape Values Overlay – Coastal Scenery.

3 PROPOSAL

3.1 Overview

It is proposed to develop the site for the purpose of a single storey Dwelling House. The Dwelling House would be setback 7.53 metres from the western boundary to the Marine Parade frontage, approximately 8 metres to the eastern boundary to the foreshore, 0.9 metres to the northern side boundary and 0 metres to the southern boundary to the unconstructed part of Newell Road for a minor part and a general setback of 0.9 metres.

The Dwelling House would have a site coverage of 372.6m² or 32.5% and would contain three bedrooms, living/dining/kitchen area, double garage and utility rooms. External to the development and to the rear would be a large external outdoor living area overlooking a raised pool and sun deck.

Access to the Dwelling House would be provided via a driveway from Marine Parade located adjacent the northern boundary and would provide access to the garage, which would be setback 9.2 metres from the property frontage.

Externally the Dwelling House would have a height of approximately 7.8 metres at the highest point from natural ground and would be finished with pressed metal roof tiles and rendered walls.

As part of the development, it is proposed to provide protection for the Dwelling House from potential sea level rises and potential storm tide surges. This would involve the construction of a seawall to the southern aide boundary and to the swimming pool edge facing the eastern side boundary. The sea wall has been the subject of engineering design and would be constructed of sheet piles with a crest level of 4.2m AHD and to a depth of up to -12.8 m AHD and would provide structural protection to the Dwelling House in a 50 year ARI event based on a forecasted year 2100 scenario.

Architectural proposal plans and the engineering report and plans are included at **Appendix B**.

The detail of the proposal is discussed further below.

3.2 Built Form

Key development statistics (compared with key planning scheme acceptable outcomes) include:

Table 4: Development Statistics

Aspect

Building height	Approx. 7.8 metres
Site cover	32.5%
Setbacks	
Front (West)	7.53 metres
Southern Side	0- 0.9 metres to OMP (1.2 metres to wall)
Northern Side	0.9- 1.5 metres to OMP
Rear (East)	10.1 metres
Car Parking	Double Garage

4 LEGISLATIVE REQUIREMENTS

4.1 Assessment Manager

In accordance with Schedule 8 of the Planning Regulation 2017, the assessment manager for this application is Douglas Shire Council.

4.2 Categories of Assessment

The table below summarises the categorising instruments and categories of assessment applicable to this application.

Table 5: Categories of Assessment

Aspect of development	Categorising instrument	Category of assessment
Dwelling House	Table 5.6.f Low Density Residential Zone	Self-assessable

In accordance with the Tables of Assessment, the Material Change of Use for the purpose of a Dwelling House is identified as Self-Assessable development and an application is not required where the development is able to satisfy the applicable Assessment Benchmarks. In this instance the development is unable to satisfy the requirements of the Overlay Codes and, consequently, a Code Assessable Planning Application is required. Pursuant to section 5.4(c)(ii)(A)(B) of the Douglas Shire Planning Scheme the assessment only needs to be assessed against the self-assessable Acceptable Outcomes that were not complied with.

4.3 Referrals

There are no referrals required to external agencies in respect of this application; however, as the development is not able to satisfy the requirements of the Queensland Development Code in respect of Building Setbacks, an Early Concurrence Agency Referral response is sought from Council as part of this application process.

Notwithstanding that the proposed Dwelling House does not satisfy the Acceptable Solutions relating to the setbacks to the secondary road frontage and the side boundary, it is considered that the development is able to satisfy the Performance Criteria.

An assessment of the proposed development against the Queensland Development Code is attached at **Appendix C**.

4.4 Public Notification

This application does not require public notification as it is subject to code assessment.

5 STATUTORY PLANNING ASSESSMENT

5.1 State and Regional Assessment Benchmarks

5.1.1 State Planning Policy

The *Planning Regulation 2017* requires the assessment manager to assess the application against the assessment benchmarks stated in the State Planning Policy, Part E, to the extent Part E of the State Planning Policy is not identified in the planning scheme as being appropriately integrated into the planning scheme.

It is understood that the Minister has identified that the State Planning Policy has been appropriately integrated into the Douglas Shire Council Planning Scheme and consequently no further assessment is required in this instance.

5.1.2 Regional Plan

The *Planning Regulation 2017* requires the assessment manager to assess the application against the assessment benchmarks stated in the regional plan, to the extent the Regional Plan is not identified in the planning scheme as being appropriately integrated into the planning scheme.

The application site is identified in the Urban Footprint designation of the Far North Queensland Regional Plan. Consistent with the State Planning Policies, it is understood that the Planning Scheme has been determined to appropriately advance the Regional Plan and, on that basis, no further assessment is required in this instance.

5.1.3 Development Assessment under Schedules 9 and 10 (SDAP)

There are no State Development Assessment Provisions that Apply to the assessment of this application.

5.2 Local Authority Assessment Benchmarks

This application is to be assessed against the relevant Assessment Benchmarks contained in the Douglas Shire Planning Scheme. The assessment applicable benchmarks are identified below.

Table 6 Planning Scheme Code Responses

Planning Scheme Codes	Applicability	Comment
Zone code		
Low Density Residential Zone Code	Applies	Complies with applicable Assessment Benchmarks.
Local Plan Code		
Coastal Communities Local Plan Code	Applies	Complies with applicable Assessment Benchmark.
Overlay Codes		
Acid Sulfate Soils Overlay Code	Applies	Complies with applicable Assessment Benchmarks.
Coastal Environment Overlay Code	Applies	Generally, complies with the applicable Acceptable Outcomes. Detailed consideration is required in respect of Performance Outcome PO2 relating to setback to the coastal boundary. Refer below.
Flood and Storm Tide Hazard Overlay Code	Applies	Generally, complies with the applicable Acceptable Outcomes.

Planning Scheme Codes	Applicability	Comment
		Detailed consideration is required in respect of Performance Outcome PO1 relating to new buildings in the overlay area. Refer below.
Landscape Values Overlay Code	Not applicable	Not identified as an Assessment Benchmark
Development Codes		
Dwelling House Code	Applies	Complies with applicable Assessment Benchmark.
Access, Parking and Servicing Code	Applies	Complies with applicable Assessment Benchmarks.
Filling and Excavation Code	Applies	Generally, complies with the applicable Acceptable Outcomes. Detailed consideration is required in respect of Performance Outcome PO2 relating to visual impact and site stability. Refer below.
Infrastructure Works Code	Applies	Complies with applicable Assessment Benchmarks.

A detailed assessment against the relevant Planning Scheme Codes is provided at **Appendix D**.

5.2.1 Statement of Compliance – Douglas Shire Council Planning Scheme

5.2.1.1 Coastal Environment Overlay Code

Performance Outcome PO2 of the Coastal Environment Overlay Code states:

PO2

Where a coastal building line does not exist on a lot fronting the coast or a reserve adjoining the coast, development is setback to maintain the amenity and use of the coastal resource.

The associated Acceptable Outcome states:

AO2

Where a coastal building line does not exist on a lot fronting the coast or a reserve adjoining the coast, development (including all buildings and structures such as swimming pools) and retaining walls are set back not less than 6 metres from the seaward boundary of the lot.

The buildings and structures would be setback 5 metres from the seaward boundary of the lot. Whilst this is less than the accepted 6 metres, the setback is consistent with the existing development along Marine Parade to the north and is considered to be a suitable setback to maintain the amenity of the area and the coastal resource. The proposed development is considered to satisfy the Performance Outcome.

5.2.1.2 Flood and Storm Tide Hazard Overlay Code

Performance Outcome PO2 of the Flood and Storm Tide Hazard Overlay Code states:

PO1

Development is located and designed to:

- (a) ensure the safety of all persons;*
- (b) minimise damage to the development and contents of buildings;*
- (c) provide suitable amenity;*
- (d) minimise disruption to residents, recovery time, and rebuilding or restoration costs after inundation events.*

The associated Acceptable Outcome states:

AO1.3

New buildings are:

- (a) not located within the overlay area;*
- (b) located on the highest part of the site to minimise entrance of flood waters;*
- (c) provided with clear and direct pedestrian and vehicle evacuation routes off the site.*

The proposed development would be located within the Medium and High Storm Tide Hazard Area and the Flood Plain Assessment Overlay. However, the Dwelling House and the associated 'sea wall' has been designed to provide a suitable setback to the seaward boundary and engineered to withstand potential coastal storm tide impacts and minimise damage to the development and contents of the building. A safe evacuation route is provided via Marine Parade and the design positively contributes to the amenity of the area. The proposed Dwelling House is considered to satisfy the Performance Outcome.

5.2.1.3 Filling and Excavation Code

Performance Outcome PO2 of the Filling and Excavation Code states:

PO2

Filling and excavation are carried out in such a manner that the visual/scenic amenity of the area and the privacy and stability of adjoining properties is not compromised.

The associated Acceptable Outcome states:

AO2.2

Filling and excavation does not occur within 2 metres of the site boundary.

Filling and excavation associated with the development would be limited to the building footprint with the highest part of any retaining structure being adjacent the unconstructed road reserve and within the site. The minor retaining wall adjacent the northern side boundary would not increase opportunities for overlooking or adversely affect the stability of the adjoining property. The proposed filling would not affect the visual amenity of the area and would not affect the privacy or amenity of the adjoining occupiers. The proposed development is considered to satisfy the Performance Outcome.

6 CONCLUSION

RPS has been engaged by Nathan Verri Pty Ltd to seek a Development Permit for Material Change of Use for the establishment of a Dwelling House on land at 1 Marine Parade, Newell, and described as Lot 9 on RP711018. The site has an area of 1,146m² and frontage to Marine Parade to the west of approximately 21 metres and the unconstructed part of Newell Road to the south of approximately 50 metres. The site is currently improved by a domestic outbuilding located in the north western part of the site and has established vegetation to the site boundaries. To the east the site has frontage to the foreshore and to the north the site adjoins an established dwelling.

In accordance with the Tables of Assessment, the development of a Dwelling House is accepted development subject to requirements. However, in this instance, the development is not able to satisfy the requirements of the Overlay Codes and consequently a Code Assessable application for Material Change of Use is required. In addition, the proposed development is not able to satisfy the requirements of the Queensland Development Code and consequently an Early Concurrence Agency Referral is sought as part of this application process.

The development does not satisfy the Acceptable Solutions of the Queensland Development Code relating to building setbacks or the Acceptable Outcomes of the Coastal Environment Overlay Code, the Flood and Storm Tide Hazard Overlay Code and the Filling and Excavation Code relating to setback from the coastal boundary, building within the flood and storm tide overlay area and setback of fill to the boundaries, respectively. Notwithstanding, the Dwelling House has been designed to provide a suitable level of protection from potential storm tide impacts and would not adversely affect the amenity of the coastal environment or the amenity or privacy of the adjoining residents. On this basis, it is considered that the proposed development is able to satisfy the higher order Performance Solutions and Performance Outcomes.

It is considered that the development is a suitable development on the site and the site can contain the use. The application is submitted for approval subject to reasonable and relevant conditions.

Appendix A

Certificate of Title

Queensland Titles Registry Pty Ltd
ABN 23 648 568 101

Title Reference:	20576185	Search Date:	06/01/2022 11:28
Date Title Created:	10/06/1959	Request No:	39773955
Previous Title:	20422106		

ESTATE AND LAND

Estate in Fee Simple

LOT 9 REGISTERED PLAN 711018

Local Government: DOUGLAS

REGISTERED OWNER

Dealing No: 720393277 13/11/2020

GERARD ZURAWSKI

EASEMENTS, ENCUMBRANCES AND INTERESTS

1. Rights and interests reserved to the Crown by
Deed of Grant No. 20422106 (POR 290)

ADMINISTRATIVE ADVICES

NIL

UNREGISTERED DEALINGS

NIL

** End of Current Title Search **

Appendix B

Proposal Plans & Engineering Report



1
20

LOCALITY MAP

SCALE 1 : 350 ON A3

bàlay Vandyke
BUILDING DESIGN

FOR
ZURAWSKI

AT
MARINE PARADE NEWELL BEACH

Job No :
201835

DRAWING No.
01

OF
18

REV.
Q

designed by
matt piromalli

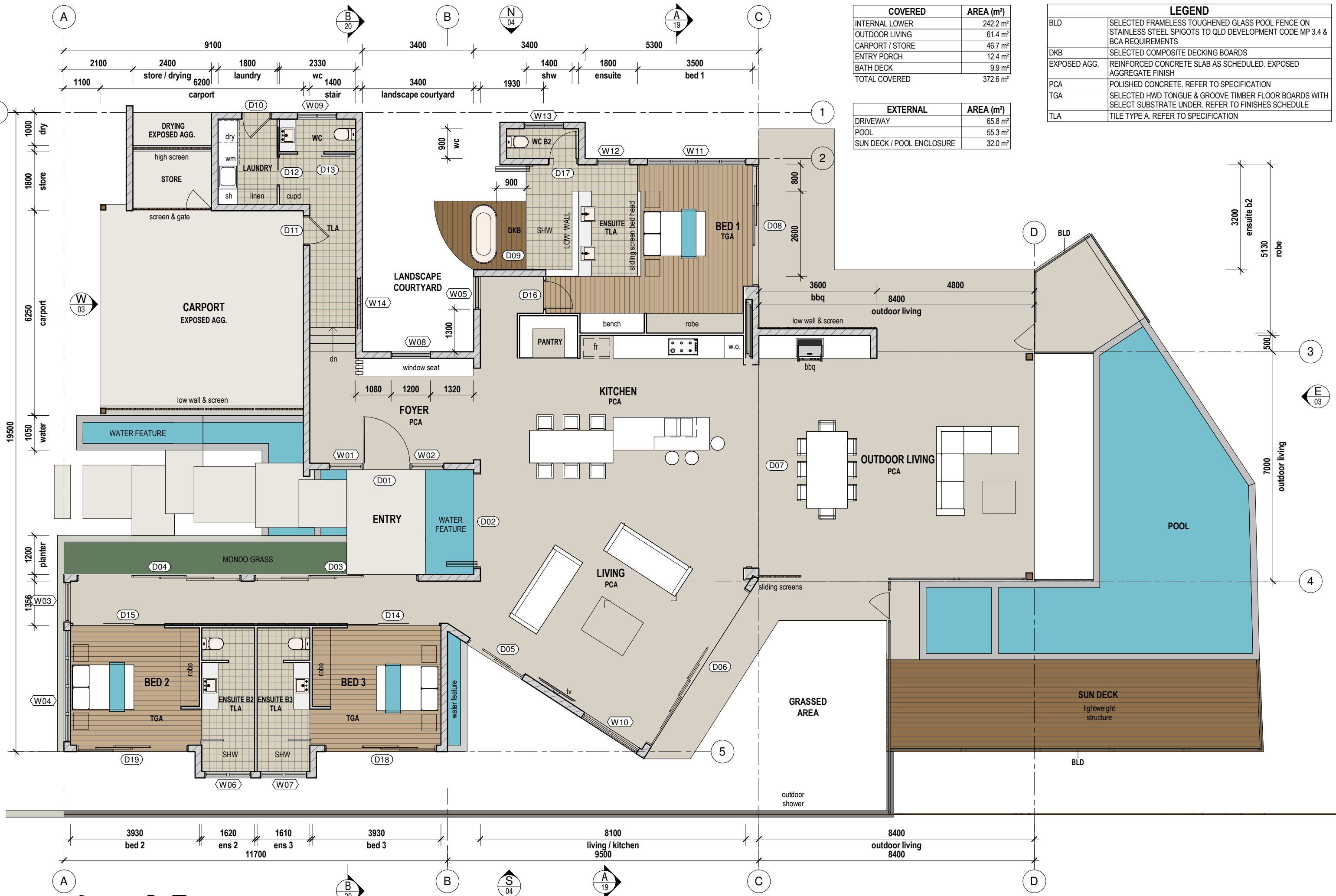
DESIGN DEVELOPMENT
bàlay Vandyke building designers ©

DRAWING SCHEDULE			
#	SHEET NAME	ISSUE	REV
01	LOCALITY MAP	13/12/21	Q
02	FLOOR PLAN	13/12/21	Q
03	FRONT & REAR ELEVATIONS	13/12/21	Q
04	SIDE ELEVATIONS	13/12/21	Q
05	WINDOW & DOOR SCHEDULE	13/12/21	Q
06	SITE PLAN	13/12/21	Q
07	ROOF PLAN	13/12/21	Q

No.	DATE	DESCRIPTION
N	18/09/21	INTERIOR DESIGNER CHANGES
O	28/09/21	ROOF OPTIONS
P	08/10/21	REVISED DD WITH DUTCH GABLE ROOF
Q	13/12/21	D.A. ISSUE

D:\balay Vandyke\Projects\Folder\201835-Q Zurawski.rvt
13/12/2021 4:49:51 PM

balay Vandyke building designers ©



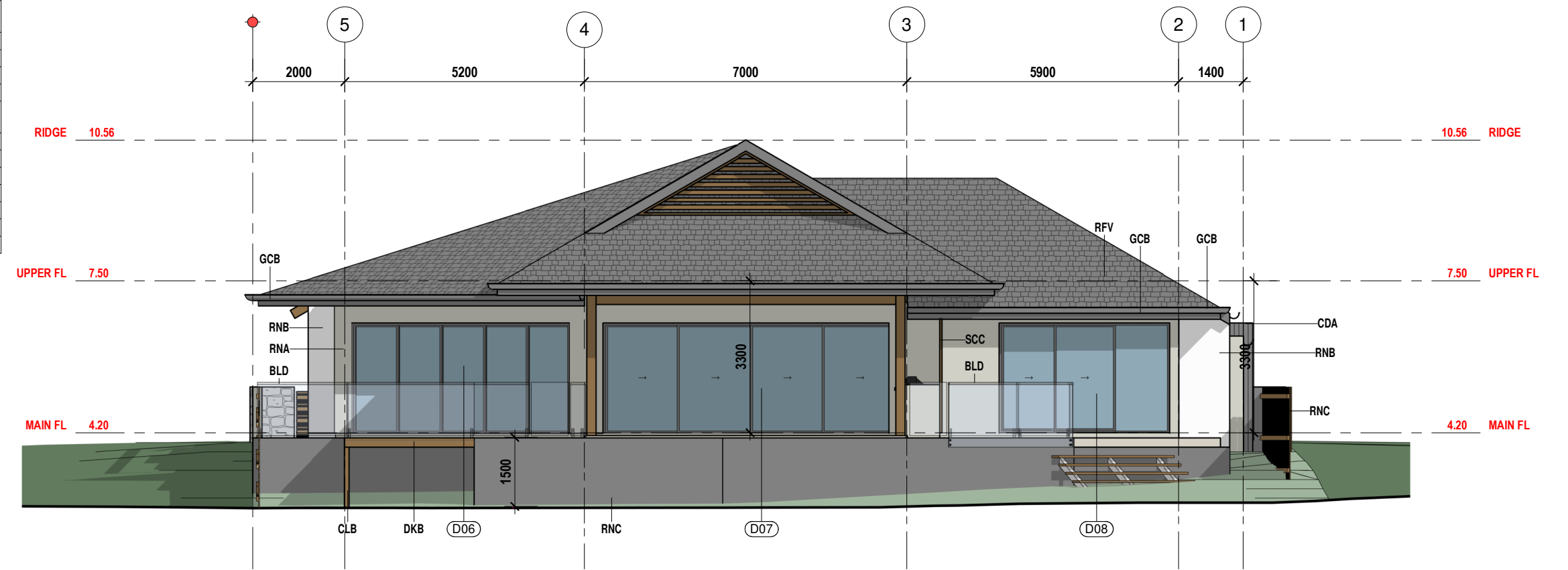
COVERED	AREA (m²)
INTERNAL LOWER	242.2 m²
OUTDOOR LIVING	61.4 m²
CARPORT / STORE	46.7 m²
ENTRY PORCH	12.4 m²
BATH DECK	9.9 m²
TOTAL COVERED	372.6 m²

EXTERNAL	AREA (m²)
DRIVEWAY	65.8 m²
POOL	55.3 m²
SUN DECK / POOL ENCLOSURE	32.0 m²

LEGEND	
BLD	SELECTED FRAMELESS TOUGHENED GLASS POOL FENCE ON STAINLESS STEEL SPIGOTS TO QLD DEVELOPMENT CODE MP 3.4 & BCA REQUIREMENTS
DKB	SELECTED COMPOSITE DECKING BOARDS
EXPOSED AGG.	REINFORCED CONCRETE SLAB AS SCHEDULED. EXPOSED AGGREGATE FINISH
PCA	POLISHED CONCRETE. REFER TO SPECIFICATION
TGA	SELECTED HWD TONGUE & GROOVE TIMBER FLOOR BOARDS WITH SELECT SUBSTRATE UNDER. REFER TO FINISHES SCHEDULE
TLA	TILE TYPE A. REFER TO SPECIFICATION

No.	DATE	DESCRIPTION
N	18/09/21	INTERIOR DESIGNER CHANGES
O	28/09/21	ROOF OPTIONS
P	08/10/21	REVISED DD WITH DUTCH GABLE ROOF
Q	13/12/21	D.A. ISSUE

LEGEND	
BLD	SELECTED FRAMELESS TOUGHENED GLASS POOL FENCE ON STAINLESS STEEL SPIGOTS TO QLD DEVELOPMENT CODE MP 3.4 & BCA REQUIREMENTS
CDA	SELECTED FIBRE CEMENT CLADDING. REFER TO SPECIFICATION
CLB	TIMBER COLUMN. REFER TO STRUCTURAL LEGEND FOR SIZE
DKB	SELECTED COMPOSITE DECKING BOARDS
FNB	TIMBER FENCE &/OR GATE. DESIGN & INSTALLATION BY OWNER'S PREFERRED SUPPLIER
GCB	175 COLORBOND HALF ROUND GUTTER WITH MINIMUM CROSS SECTIONAL AREA OF 11000 sq.mm
RFV	PRESSED METAL ROOF TILES INSTALLED AS PER MANUFACTURERS INSTRUCTIONS
RNA	SELECT RENDER FINISH. REFER TO SPECIFICATION
RNB	SELECT RENDER FINISH. REFER TO SPECIFICATION
RNC	SELECT RENDER FINISH. REFER TO SPECIFICATION
SCC	TIMBER SCREEN. REFER TO SPECIFICATION
SNA	SELECT STONE CLADDING. REFER TO SPECIFICATION
TLD	TILE TYPE D. REFER TO SPECIFICATION

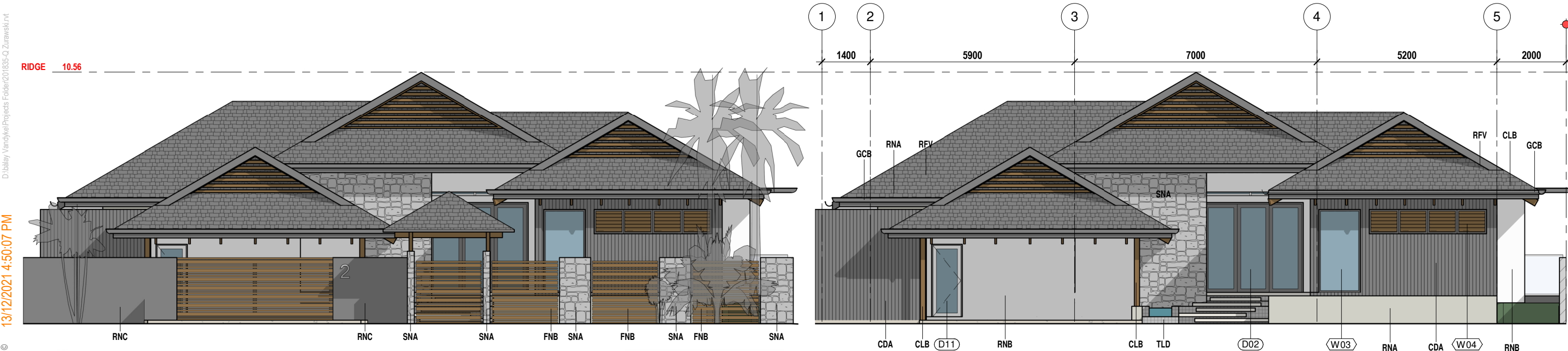


E
02 EAST ELEVATION
SCALE 1 : 110 ON A3

D:\balay Vandyke\Projects\Folder\201835-Q Zurawski.rvt

13/12/2021 4:50:07 PM

balay Vandyke building designers ©



W.
02 STREET ELEVATION
SCALE 1 : 110 ON A3

W
02 WEST ELEVATION
SCALE 1 : 110 ON A3

balay Vandyke
BUILDING DESIGN

FOR
ZURAWSKI

AT
MARINE PARADE NEWELL BEACH

Job No :
201835

DRAWING No.
03

OF
18

REV.
Q

designed by
matt piromalli

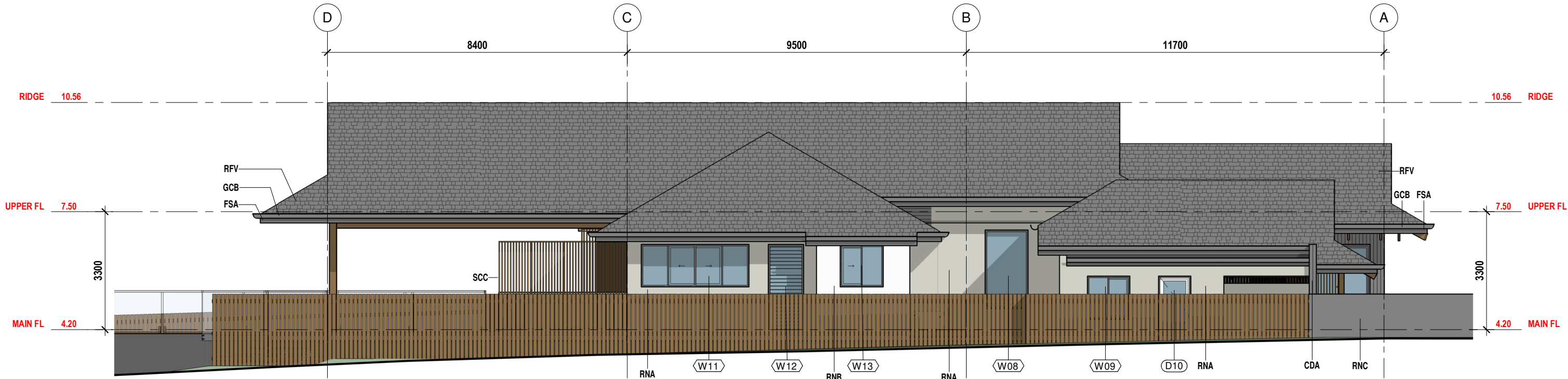
DESIGN DEVELOPMENT
balay Vandyke building designers ©

No.	DATE	DESCRIPTION
N	18/09/21	INTERIOR DESIGNER CHANGES
O	28/09/21	ROOF OPTIONS
P	08/10/21	REVISED DD WITH DUTCH GABLE ROOF
Q	13/12/21	D.A. ISSUE

LEGEND	
BLD	SELECTED FRAMELESS TOUGHENED GLASS POOL FENCE ON STAINLESS STEEL SPIGOTS TO QLD DEVELOPMENT CODE MP 3.4 & BCA REQUIREMENTS
CDA	SELECTED FIBRE CEMENT CLADDING. REFER TO SPECIFICATION
CLB	TIMBER COLUMN. REFER TO STRUCTURAL LEGEND FOR SIZE
FSA	PROPRIETARY COLORBOND FASCIA
GCB	175 COLORBOND HALF ROUND GUTTER WITH MINIMUM CROSS SECTIONAL AREA OF 11000 sq.mm
RFV	PRESSED METAL ROOF TILES INSTALLED AS PER MANUFACTURERS INSTRUCTIONS
RNA	SELECT RENDER FINISH. REFER TO SPECIFICATION
RNB	SELECT RENDER FINISH. REFER TO SPECIFICATION
RNC	SELECT RENDER FINISH. REFER TO SPECIFICATION
SCC	TIMBER SCREEN. REFER TO SPECIFICATION



S
02 SOUTH ELEVATION
SCALE 1 : 110 ON A3



N
02 NORTH ELEVATION
SCALE 1 : 110 ON A3

D:\balay Vandyke\Projects\Folder\201835-Q Zura\skt.rvt
13/12/2021 4:50:12 PM
balay Vandyke building designers ©

No.	DATE	DESCRIPTION
N	18/09/21	INTERIOR DESIGNER CHANGES
O	28/09/21	ROOF OPTIONS
P	08/10/21	REVISED DD WITH DUTCH GABLE ROOF
Q	13/12/21	D.A. ISSUE

DOOR SCHEDULE													
#	DESCRIPTION	TYPE	LOCATION	REF	WIDTH	HEIGHT	HEAD	DOOR TYPE	HARDWARE	ARCHITRAVE	FRAME & FINISH	GLAZING / FINISH	SCREENING
01	SINGLE PIVOT TIMBER DOOR	PIVOT	ENTRY	MAIN FL	1,500 mm	2,600 mm	2,600 mm				POWDERCOAT ALUMINIUM - MONUMENT	TIMBER - PAINT FINISH	NONE
02	THREE PANEL BIFOLD DOOR	BF	LIVING	MAIN FL	2,900 mm	2,600 mm	2,600 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	RETRACTABLE FLYSCREEN
03	THREE PANEL SLIDING GLASS DOOR	OXX SGD	CORRIDOR	MAIN FL	5,000 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	SLIDING FLYSCREEN
04	THREE PANEL SLIDING GLASS DOOR	OXX SGD	CORRIDOR	MAIN FL	5,000 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	SLIDING FLYSCREEN
05	TWO PANEL SLIDING GLASS DOOR	XO SGD	LIVING	MAIN FL	2,000 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	SLIDING FLYSCREEN
06	THREE PANEL SLIDING GLASS DOOR	OXXXX SGD	LIVING	MAIN FL	5,600 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	SLIDING FLYSCREEN
07	FOUR PANEL CAVITY SLIDING GLASS DOOR	XXXX CSGD	KITCHEN	MAIN FL	6,400 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	RETRACTABLE FLYSCREEN
08	THREE PANEL SLIDING GLASS DOOR	OXX SGD	BED 1	MAIN FL	3,700 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	SLIDING FLYSCREEN
09	THREE PANEL BIFOLD DOOR	BF	ENSUITE	MAIN FL	3,200 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	RETRACTABLE FLYSCREEN
10	SINGLE 820 HINGED TIMBER DOOR	820	LAUNDRY	LOWER FL	900 mm	2,200 mm	2,200 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	OBSCUR E GREEN GLASS	HINGED FLYSCREEN
11	SINGLE 820 HINGED TIMBER DOOR	820	CARPORT	LOWER FL	900 mm	2,100 mm	2,100 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	TIMBER	NONE
12	SINGLE 820 CAVITY SLIDER DOOR	CSD	LAUNDRY	LOWER FL	900 mm	2,100 mm	2,100 mm				TIMBER	TIMBER VENEER	NONE
13	SLIDING BARN DOOR	800 FS	WC	LOWER FL	800 mm	2,100 mm	2,100 mm				PAINTED TIMBER	MIRROR	NONE
14	THREE PANEL SLIDING SHOJI SCREEN	SS	BED 3	MAIN FL	2,800 mm	2,700 mm	2,700 mm				PAINTED TIMBER	RICEPAPER GLASS	NONE
15	THREE PANEL SLIDING SHOJI SCREEN	SS	BED 2	MAIN FL	2,800 mm	2,700 mm	2,700 mm				PAINTED TIMBER	RICEPAPER GLASS	NONE
16	SINGLE 820 HINGED TIMBER DOOR	820	BED 1	MAIN FL	900 mm	2,400 mm	2,400 mm				PAINTED TIMBER	PAINTED TIMBER	NONE
17	SINGLE 820 HINGED TIMBER DOOR	820	WC B2	MAIN FL	900 mm	2,400 mm	2,400 mm				TIMBER	TIMBER VENEER	NONE
18	THREE PANEL SLIDING GLASS DOOR	OXX SGD	BED 3	MAIN FL	3,400 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	SLIDING FLYSCREEN
19	THREE PANEL SLIDING GLASS DOOR	OXX SGD	BED 2	MAIN FL	3,400 mm	2,400 mm	2,400 mm	REFER GLAZIERS SCHEDULE			POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	SLIDING FLYSCREEN

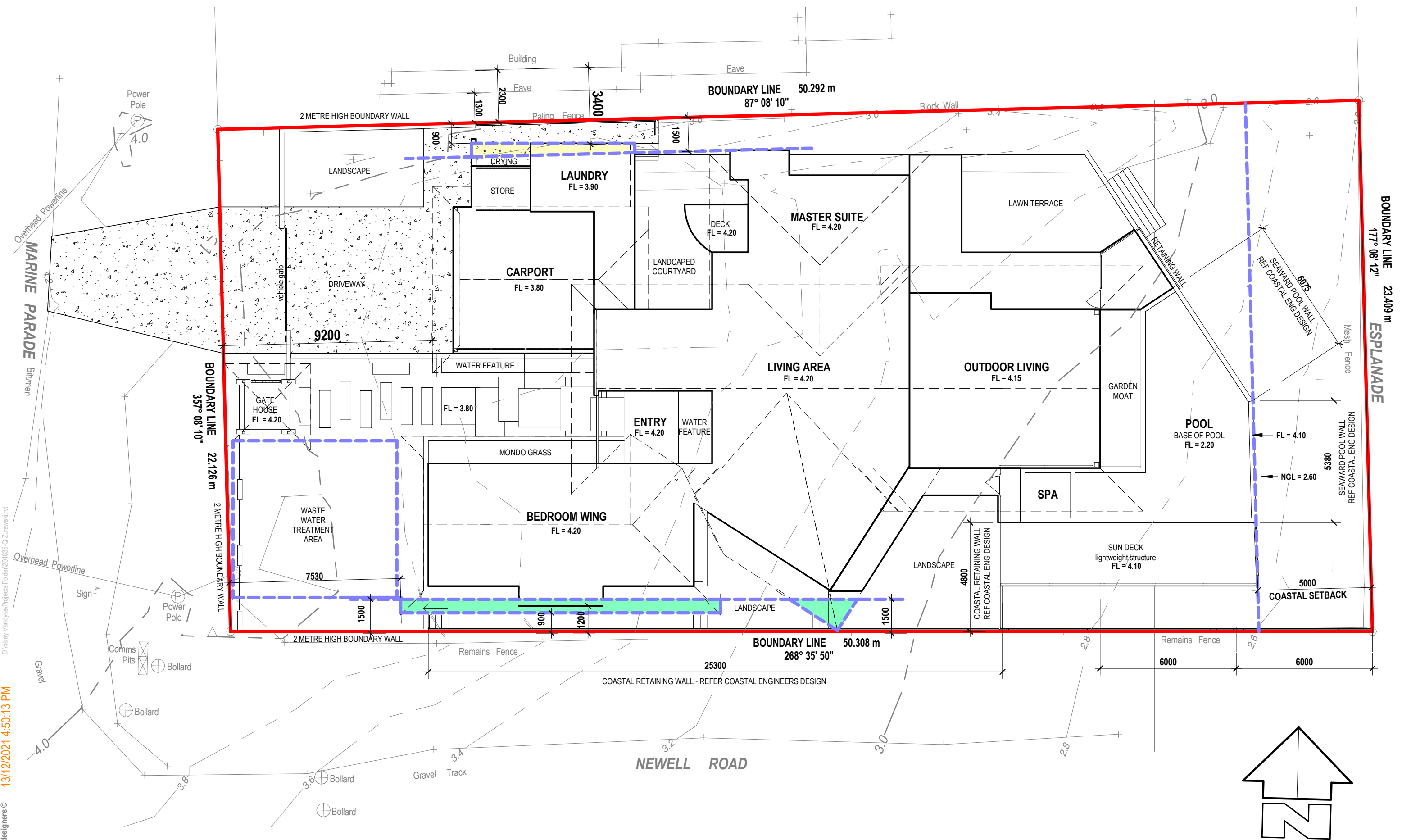
WINDOW SCHEDULE												
#	DESCRIPTION	TYPE	LOCATION	REF	WIDTH	HEIGHT	SILL	HEAD	ARCHITRAVE	FRAME & FINISH	GLAZING / FINISH	SCREENING
01	SINGLE PANEL FIXED GLASS WINDOW	F	FOYER	MAIN FL	1,000 mm	2,600 mm	0 mm	2600 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	NONE
02	SINGLE PANEL FIXED GLASS WINDOW	F	FOYER	MAIN FL	1,000 mm	2,600 mm	0 mm	2600 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	NONE
03	SINGLE PANEL FIXED GLASS WINDOW	F	CORRIDOR	MAIN FL	1,200 mm	2,400 mm	0 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	NONE
04	MULTI PANEL VARIABLE TIMBER BLADE LOUVRE	TL	BED 2	MAIN FL	3,400 mm	700 mm	1,700 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	TIMBER	FLYSCREEN
05	SINGLE PANEL FIXED GLASS WINDOW	F	KITCHEN	MAIN FL	1,000 mm	2,400 mm	0 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	NONE
06	MULTI PANEL VARIABLE GLASS BLADE LOUVRE	GL	ENSUITE B2	MAIN FL	1,400 mm	500 mm	1,900 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	FLYSCREEN
07	MULTI PANEL VARIABLE GLASS BLADE LOUVRE	GL	ENSUITE B3	MAIN FL	1,400 mm	500 mm	1,900 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	FLYSCREEN
08	SINGLE PANEL FIXED GLASS WINDOW	F	FOYER	MAIN FL	1,200 mm	2,200 mm	600 mm	2800 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	FLYSCREENS
09	DOUBLE PANEL SLIDING GLASS WINDOW	XO	WC	LOWER FL	1,200 mm	1,200 mm	1,000 mm	2200 mm		POWDERCOAT ALUMINIUM - MONUMENT	RICEPAPER GLASS	FLYSCREEN
10	MULTI PANEL FIXED GLASS WINDOW	F	LIVING	MAIN FL	2,000 mm	2,400 mm	0 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	NONE
11	FOUR PANEL SLIDING GLASS WINDOW	OXXO	BED 1	MAIN FL	3,000 mm	1,200 mm	1,200 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	FLYSCREEN
12	SINGLE PANEL VARIABLE GLASS BLADE LOUVRE	GL	ENSUITE	MAIN FL	1,000 mm	2,400 mm	0 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	RICEPAPER GLASS	FLYSCREEN
13	DOUBLE PANEL SLIDING GLASS WINDOW	XO	WC B2	MAIN FL	1,200 mm	1,200 mm	1,200 mm	2400 mm		POWDERCOAT ALUMINIUM - MONUMENT	RICEPAPER GLASS	FLYSCREEN
14	MULTI PANEL VARIABLE GLASS BLADE LOUVRE	GL	CORRIDOR	LOWER FL	1,600 mm	600 mm	2,900 mm	3500 mm		POWDERCOAT ALUMINIUM - MONUMENT	GREEN GLASS	FLYSCREEN

CORNICE / SKIRTS / INTERNAL WALL LINING & FINISHES					
ROOM	AREA	CORNICE	SKIRT	WALL LINING	WALL FINISH
STORE	4 m²				
DRYING	2 m²				
LAUNDRY	5 m²				
CARPORT	39 m²				
FOYER	17 m²				
WC B2	2 m²				
ENSUITE	11 m²				
BED 1	21 m²				
PANTRY	2 m²				
ENTRY	5 m²				
KITCHEN	33 m²				
BED 2	14 m²				
ENSUITE B2	7 m²				
ENSUITE B3	7 m²				
CORRIDOR	15 m²				
BED 3	14 m²				
LIVING	57 m²				
ENTRY VOID	12 m²				
KITCHEN VOID	21 m²				
OUTDOOR LIVING	59 m²				
CORRIDOR	8 m²				
WC	2 m²				
PDR	1 m²				

No.	DATE	DESCRIPTION
N	18/09/21	INTERIOR DESIGNER CHANGES
O	28/09/21	ROOF OPTIONS
P	08/10/21	REVISED DD WITH DUTCH GABLE ROOF
Q	13/12/21	D.A. ISSUE

D:\balay Vandyke\Projects\Folder\201835-Q_Zurawski.rvt 13/12/2021 4:50:13 PM

balay Vandyke building designers ©



3 SITE PLAN
20 SCALE 1 : 150 ON A3

balay Vandyke
BUILDING DESIGN

FOR
ZURAWSKI

AT
MARINE PARADE NEWELL BEACH

Job No : 201835
DRAWING No. 06
OF 18
REV. Q
designed by matt piromalli

DESIGN DEVELOPMENT
balay Vandyke building designers ©

No.	DATE	DESCRIPTION
N	18/09/21	INTERIOR DESIGNER CHANGES
O	28/09/21	ROOF OPTIONS
P	08/10/21	REVISED DD WITH DUTCH GABLE ROOF
Q	13/12/21	D.A. ISSUE



JBP

scientists
and engineers

1 Marine Parade Seawall design report

Concept Design Report

Prepared for Planning Approval

December 2021



nathanverri
MASTERS OF DESIGN & BUILDING

JBP Project Manager

Daniel Rodger
 Jeremy Benn Pacific
 Suite T46, 477 Boundary Street
 Spring Hill QLD 4000
 Australia

Revision History

Revision Ref / Date Issued	Amendments	Issued to
S3-P01/ December 2021		NV

Contract

This report describes work commissioned by Nathan Verri on behalf of Nathan Verri Pty Ltd, by an email dated on 10 December 2021. Nathan Verri Pty Ltd's representative for the contract was Nathan Verri. Clare Yang, Ben Cowling and Daniel Rodger of JBP carried out this work.

Prepared by Clare Yang MEng
 Coastal and Civil Engineer

Prepared by Ben Cowling BEng
 Coastal and Civil Engineer

Reviewed and approved by Daniel Rodger BSc MEng CEng CMarEng MIEAust
 Director

Disclaimer

Jeremy Benn Pacific ("JBP") has prepared this report for the sole use of Nathan Verri Pty Ltd (the "Client") and its appointed agents in accordance with the Agreement under which our services were performed.

JBP has no liability regarding the use of this report except to the Client. No other warranty, expressed or implied, is made as to the professional advice included in this report or any other services provided by JBP. This report cannot be relied upon by any other party without the prior and express written agreement of JBP.

The conclusions and recommendations contained in this report are based upon information provided by others and upon the assumption that all relevant information has been provided by those parties from whom it has been requested and that such information is accurate. Information obtained by JBP has not been independently verified by JBP, unless otherwise stated in the report.

The methodology adopted and the sources of information used by JBP in providing its services are outlined in this report. The work described in this report was undertaken in December 2021 and is based on the conditions encountered and the information available during this period of time. The scope of this report and the services are accordingly factually limited by these circumstances.

Any assessments of works or costs identified in this report are based upon the information available at the time, and where appropriate are subject to further investigations or information which may become available.

JBP disclaim any undertaking or obligation to advise any person of any change in any matter affecting the report, which may come or be brought to JBP's attention after the date of the report.

Certain statements made in the report that are not historical facts may constitute estimates, projections or other forward-looking statements, and even though they are based on reasonable assumptions as of the date of the report, such forward-looking statements by their nature involve risks and uncertainties that could cause actual results to differ materially from the results predicted. JBP specifically does not guarantee or warrant any estimate or projections contained in this report.

Unless otherwise stated in this report, the assessments made assume that the sites and facilities will continue to be used for their current purpose without significant changes.

Copyright

© JBA Pacific Scientists and Engineers Pty Ltd 2021

Trading as Jeremy Benn Pacific and JBP Scientists and Engineers

ABN: 56 610 411 508

ACN: 610 411 508

Executive Summary

This report has been prepared by JBPacific (JBP) on behalf of Nathan Verri Pty Ltd to complete a concept design for a coastal seawall at 1 Marin Parade, Newell Queensland. This seawall design has been completed at a 'Concept Design' level, based on assumed ground conditions and beach levels. On acceptance of Planning Approval additional ground investigations, coastal and structural calculations are required to produce "Detailed Design - For Construction" design plans.

Nathan Verri Pty Ltd proposed to build a private dwelling on lot 9, plan RP711018. The land parcel is within the zone of reduced foundation capacity and the erosion prone area, hence may subject to ongoing erosion leading to toe scour, loss of vegetation, structural damage, and localised collapses. A coastal seawall has been designed to mitigate potential erosion and overtopping volumes for a 1 in 50-year Average Recurrence Interval (ARI) storm event, occurring in a 2100 planning horizon.

A vertical sheetpile wall has been proposed at this concept design phase. This has been designed to meet the following characteristics:

- Overtopping performance: The wall has a crest level of 4.2m AHD. This will limit the 50-year ARI wave overtopping in a 2100 scenario to 50 litres/s/m, which is not expected to cause structural damage. However, the area behind the seawall will not be considered safe for pedestrians.
- Structural stability (internal): The structure is designed to retain soil and withstand wave attack from the design storm event with an acceptable deflection. Seawalls are designed to withstand foreseeable load combinations.
- Geotechnical stability (global): The structure is designed to remain globally stable achieving a Factor of Safety (FoS) of 1.5 in the onerous design case.

Based on these design targets the wall has the following features:

- The wall will use the Arcelor Mittal of Sheet pile Z design AZ 50-700.
- It has a crest level of 4.2m AHD
- It must reach a depth of:
 - -12.8m AHD for shore-facing walls, which is to include an anchoring system back into the property footings
 - -10.8m AHD for the southern-facing walls
- The pool and building weights are assumed to be completely taken by micro-piles (not included in this design) and are therefore not exerting any surcharge on the seawall.

Contents

Executive Summary	iii
1 Introduction	1
2 Available data	2
2.1 Site description.....	2
2.2 Field inspections	2
2.3 Tidal planes.....	3
2.4 Extreme wave conditions	3
2.5 Extreme storm tide levels.....	3
2.6 Topographical data	4
2.7 Geotechnical data	4
2.8 Proposed design of dwelling	4
3 Seawall design.....	7
3.1 Introduction	7
3.2 Design standard	7
3.3 Crest design - overtopping performance.....	8
3.4 Toe design - future bed and scour levels	9
3.5 Sheet pile aesthetics	9
3.6 Preliminary Geotechnical Modelling.....	10
3.7 Design summary	14
3.8 Concept drawings	15
4 Limitations and Geotechnical Risks.....	16

List of Figures

Figure 1-1: Site location at 1 Marine Parade, Newell Beach, Queensland.	1
Figure 2-1: Newell Beach at site location, looking south toward Mossman River	2
Figure 2-2: Newell Beach at Mossman River entrance, approximately 400m south of study site	2
Figure 2-3: Proposed design (Source: Nathan Verri 14 Dec 2021).....	5
Figure 2-4: Proposed dwelling design. (Source: Nathan Verri 14 Dec 2021)	5
Figure 2-5: Proposed cross section of seaward wall (Source: Nathan Verri 14 Dec 2021) 6	
Figure 3-1: Long-term erosion at site.	8
Figure 3-2: Sheet pile walls with textured capping beam or cladding.	10
Figure 3-3: Arcelor Mittal Sheet pile Z design AZ 50-700	13
Figure 3-4: Shore facing wall - further geotechnical analysis using Wallap	14

List of Tables

Table 2-1: Port Douglas tidal planes	3
Table 2-2: Newell Beach extreme wave conditions for present day and 2100 planning horizons	3
Table 2-3: Newell Beach tide plus surge levels (not inclusive of wave effects) for present day and 2100 planning horizons	4
Table 2-4: Newell Beach storm tide levels (inclusive of wave setup) for present day and 2100 planning horizons	4
Table 3-1: The Neural Network inputs.....	9
Table 3-2: Assumed Soil Parameters, to be revised with GI data.....	11
Table 3-3: Summary on design calculation	11
Table 3-4: Summary of design scenarios	11
Table 3-5: Characteristic soil parameters taken from Table D4 of AS4678-2002 Earth Retaining Structures.....	12
Table 3-6: Design parameters following application of partial factors	12
Table 3-7: Appendix A documents	15

Abbreviations

AHD	Australian Height Datum
ARI	Average Recurrence Interval
CEM	Coastal Engineering Manual
FOS.....	Factor of safety
GI	Geotechnical Investigation
HAT	Highest Astronomical Tide
JBP	JBPacific
kN.....	Kilonewton
kPa.....	Kilopascal
LAT	Lowest Astronomical Tide
m	Metre
MGA.....	Map Grid of Australia
MHWN	Mean High Water Neaps
MHWS.....	Mean High Water Springs
MLWN	Mean Low Water Neaps
MLWS	Mean Low Water Springs
mm	Millimetre
MSL.....	Mean Sea Level
STL	Storm Tide Levels
UDL.....	Uniformly distributed load

1 Introduction

This project was undertaken by Jeremy Benn Pacific (JBP) on behalf of Nathan Verri Pty Ltd to produce a concept design for a coastal seawall along the perimeter of 1 Marine Parade, Newell, Queensland. The location is shown in Figure 1-1, approximately 81.4km north of Cairns. This seawall design has been completed at a 'Concept Design' level, based on assumed ground conditions and beach levels. On acceptance of Planning Approval additional ground investigations, coastal and structural calculations are required to produce "Detailed Design - For Construction" design plans.

The private dwelling proposed by Nathan Verri on the lot 9, plan RP711018 land parcel is within the coastal erosion prone area and the zone of reduced foundation capacity, which indicates the lot may subject to scouring, erosion, overtopping and geotechnical instability in the future. This document summarises the work undertaken at the Conceptual Design Phase including project background, details of the key assumptions and methodology used to deliver each key component. In addition to this introductory chapter, the report includes:

- **Section 2 Available data**
- **Section 3 Seawall design**

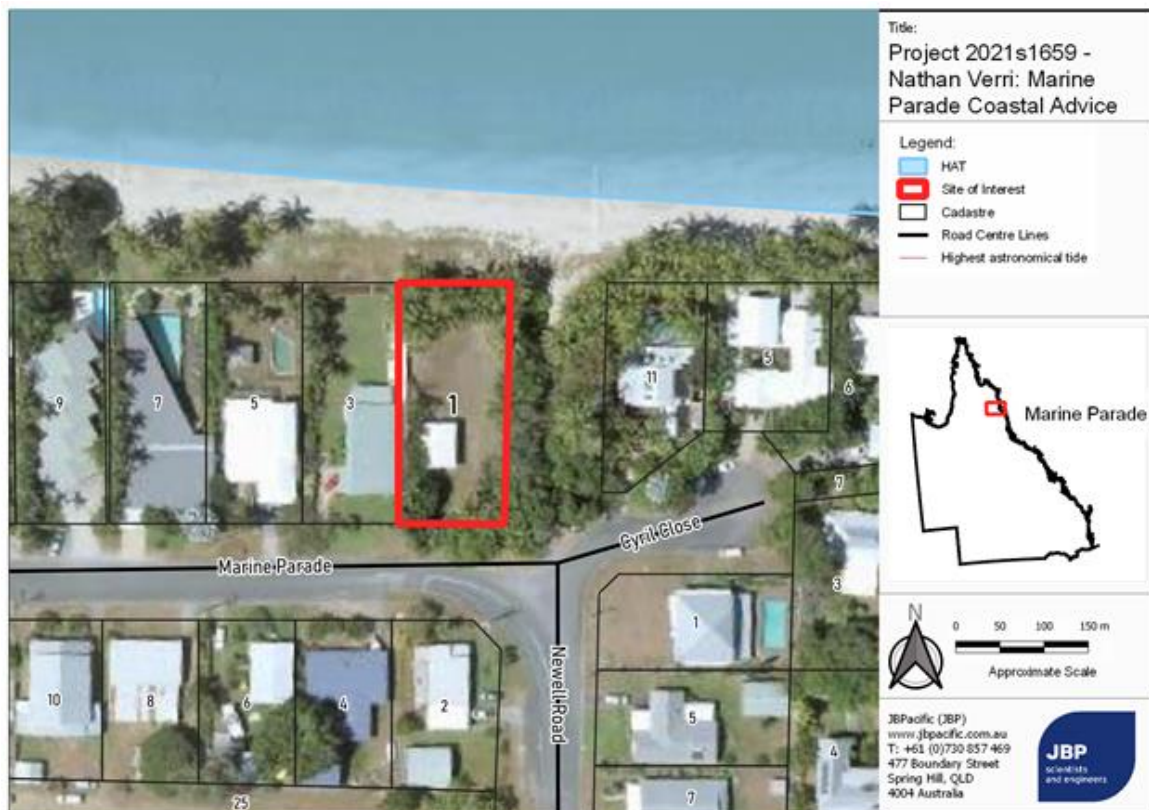


Figure 1-1: Site location at 1 Marine Parade, Newell Beach, Queensland.

2 Available data

2.1 Site description

Newell Beach is situated at the head of a barrier spit coastal system. A narrow dune system, approximately 20 to 80 m wide, makes up the foreshore area and has primarily been formed by wave action. The upper and lower beach is relatively steep, and the intertidal zone is approximately 10 to 20m wide¹.

2.2 Field inspections

Images of Newell Beach are shown in Figure 2-1 and Figure 2-2, taken during site inspections by JBPacific engineers on 23/10/2020.



Figure 2-1: Newell Beach at site location, looking south toward Mossman River



Figure 2-2: Newell Beach at Mossman River entrance, approximately 400m south of study site

¹ DSC Resilient Coast Strategic Plan. Accessed 15 December 2021 from:
https://douglas.qld.gov.au/download/resilient_coast/Resilient-Coast-Strategic-Plan.pdf

2.3 Tidal planes

Tidal levels have been sourced from the Maritime Safety Queensland (MSQ) Queensland tide tables 2021. The closest tidal reference point is located at Port Douglas, which is presented in Table 2-1. Climate change allowances have been included in tide levels. Current projections are based on Queensland State Planning Policy (2017) sea level rise of 0.8m by 2100. This has been taken as a 0.8m increase between 2020 and 2100.

Table 2-1: Port Douglas tidal planes

Tide levels at Port Douglas				
Tide level	2021 (mLAT)	2021 (mAHD)*	2060** (mAHD)	2100** (mAHD)
HAT	3.36	1.78	2.18	2.58
MHWS	2.49	0.91	1.31	1.71
MHWN	1.83	0.25	0.65	1.05
MSL	1.6	0.02	0.42	0.82
MLWN	1.37	-0.21	0.19	0.59
MLWS	0.7	-0.88	-0.48	-0.08
PSM10077	6.058	4.48	4.88	4.37
AHD	1.58	0.00	0.00	0.00
LAT	0	-1.58	-1.18	-0.78
*: AHD quoted based on Permanent Mark 10077, referenced from Queensland Globe.				
**: Raised by 0.4 and 0.8m respectively basing on 2021 tide levels				

2.4 Extreme wave conditions

Extreme wave conditions for Newell Beach have been sourced from the Cairns Regional Storm Tide Inundation Study (CRSTIS)² at output point 273 (330323, 8183540), located approximately 500m offshore. Table 2-2 shows significant wave heights (Hs) and peak period (Tp) for present day and 2100 planning horizons.

Table 2-2: Newell Beach extreme wave conditions for present day and 2100 planning horizons

ARI	Present Day		2100	
1 in x years	Hs (m)	Tp (s)	Hs (m)	Tp (s)
20	2.01	5.46	2.17	5.67
100	2.68	6.31	2.70	6.33
200	2.73	6.40	2.74	6.38
500	2.77	6.36	2.77	6.41

2.5 Extreme storm tide levels

Extreme storm tide levels have been sourced from the CRSTIS at output point 273 (330323, 8183540), and from the Storm Tide Inundation Methodologies Study³ prepared by JBPacific for Douglas Shire Council. Table 2-3 shows the storm tide estimates without wave setup and Table 2-4 shows the storm tide levels, including wave setup, the latter based on new modelling undertaken in JBPacific (2021).

² BMT (2013) Cairns Regional Storm Tide Inundation Study.

³ JBPacific (2021) Storm Tide Inundation Methodologies Study, prepared for Douglas Shire Council

Table 2-3: Newell Beach tide plus surge levels (not inclusive of wave effects) for present day and 2100 planning horizons

ARI	Tide plus surge Present Day (mAHD)	Tide plus surge 2100 (mAHD)
1 in 100 years	1.93	2.87
1 in 200 years	2.28	3.39
1 in 500 years	2.76	4.10

Table 2-4: Newell Beach storm tide levels (inclusive of wave setup) for present day and 2100 planning horizons

ARI	STL Present Day (mAHD)	STL 2100 (mAHD)
1 in 100 years	2.13	3.07
1 in 200 years	2.48	3.59
1 in 500 years	2.96	4.30

2.6 Topographical data

The design was developed based on 1mLiDAR data from Geoscience Australia and will be revised when survey data is made available by the client as part of this commission. It is assumed that these levels will not change significantly before construction.

2.6.1 Cadastre

Cadastral property boundaries were sourced from Digital Cadastral Database (DCDB) and will be revised by detailed survey information.

2.7 Geotechnical data

No Geotechnical Investigation (GI) has been undertaken for this project, with all ground conditions estimated based on typical values. This will limit the designs to a Concept level only, suitable to demonstrate the viability of a seawall option for planning purposes. On acceptance of Planning Approval additional ground investigations, coastal and structural calculations are required to produce "Detailed Design - For Construction" design plans.

2.8 Proposed design of dwelling

Proposed dwelling designs have been provided by Nathan Verri on 14 December 2021. These are considered conceptual designs only, which have been developed for Planning Approval. Figure 2-3 to Figure 2-5 shows a plan view layout and cross sections of the design.



Figure 2-3: Proposed design (Source: Nathan Verri 14 Dec 2021)

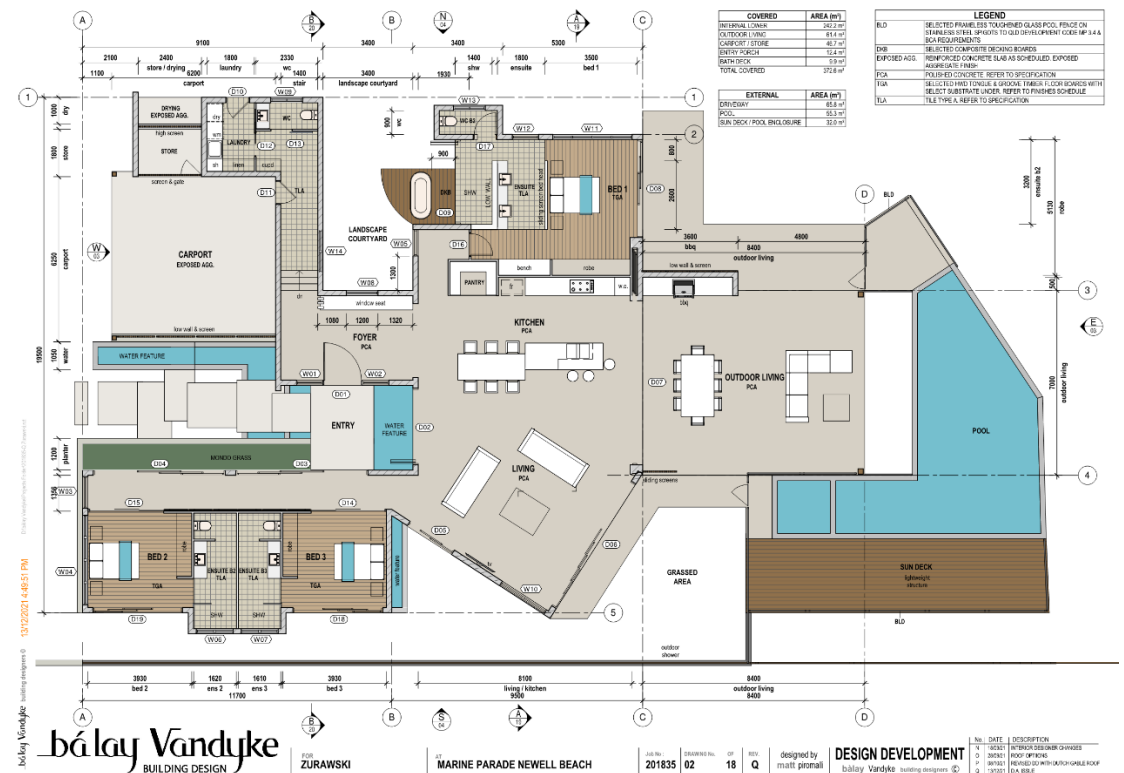


Figure 2-4: Proposed dwelling design. (Source: Nathan Verri 14 Dec 2021)



Figure 2-5: Proposed cross section of seaward wall (Source: Nathan Verri 14 Dec 2021)

3 Seawall design

3.1 Introduction

The concept design has been developed to demonstrate the viability of a seawall to mitigate coastal risks at the site. The concept phase has initially considered the required Design Standard for the seawall.

- **Design standard:** Design life, design return period, required standards or guidance.

The likely seawall geometry has then been based on the following coastal engineering calculations:

- **Crest design - Overtopping performance:** As the structure is at the coastal frontage, overtopping may occur, and has been mitigated behind the structure to acceptable thresholds. A theoretical review of the overtopping performance has been undertaken to provide information on safe operation conditions and development of inspection and maintenance schedules.
- **Structural stability (internal):** The structure is designed to retain soil and withstand wave attack from the design storm event with an acceptable deflection. Seawalls are designed to withstand foreseeable load combinations.
- **Geotechnical stability (global):** The structure is designed to remain globally stable achieving a Factor of Safety (FoS) of 1.5 in the onerous design case.

The design is to be reviewed upon GI information and survey are made available.

3.2 Design standard

The concept design has been developed using the design characteristics:

- A design life extending to 2100, exceeding the minimum of 60 years stated in Australian Standards (AS) 4678 for residential dwellings.
- A 1 in 50-year ARI design event in year 2100 (based on guidance within the DEHP (2013) coastal hazard technical guide⁴). The Coastal Protection and Management Regulation (2017) which gives provision for the design of structures to withstand a 1 in 50-year event. The QLD Coastal Hazard Technical Guide provides an informal approach to consider the joint probability of sea levels and waves for this event in a tide dominant environment, which consists of a 1 in 100-year storm tide and a 1 in 20-year wave height. This has been adopted for this project.

The concept design has followed the following design standards. However, all designs are conceptual, and a detailed design is required in the future.

- DEHP (2013), The coastal hazard technical guide, Determining coastal hazard areas.
- EurOtop, (2018). Manual on Wave Overtopping of Sea Defences and Related Structures.
- US Army Corps of Engineers (USACE), (2002) Coastal Engineering Manual (CEM).
- AS 4678 Earth-retaining structures.
- AS 1170 Structural design actions.
- AS 2159 Piling design and installations.

Calculations have been based the wave conditions sourced from the Cairns Regional Storm Tide Inundation Study (CRSTIS) and JBPacific (2021):

- Present day Mean Low Water Spring tide level: -0.88mAHD.
- 1 in 100-year ARI Storm tide level (2100): 3.07m AHD (which excludes wave effects).

⁴ DEHP, (2013), The coastal hazard technical guide, Determining coastal hazard areas, P5

- 1 in 20-year ARI nearshore wave conditions (2100): Calculated using the offshore conditions and the future storm tide level in 2100. Assuming irregular waves, depth and steepness limitations were estimated by Kamphuis (1991)⁵, and a future beach level of 0mAHD. The estimated nearshore wave conditions were calculated to be $H_s = 1.48\text{m}$, $T_p = 6.26\text{s}$.

Future beach levels have been considered for the 2100 scenario. Natural coastlines undergo gradual erosion or accretion in response to predominant seasonal coastal processes such as wave climate, tidal currents, and sediment supply. The long-term trends of erosion or accretion can be observed through analysis of a combination of aerial and satellite imagery. The Digital Earth Australia (DEA) Coastlines⁶ dataset has been used to assess the rate of long-term erosion at Newell Beach. The DEA Coastlines dataset combines satellite data with tidal modelling to map the average annual location of a coastline at mean sea level. The data includes annual shorelines and rates of coastal change along the Australian coastline from 1988 to present. Figure 3-1 shows annual shoreline movement and annual rates of change at the site of interest.

Analysis of this dataset showed that the area has been in a recession state over the course of the record indicating the beach level at the proposed seawall, approximately 2.5mAHD from 1mLiDAR, is likely to drop in elevation in the long-term. The degree of beach lowering has not been analysed in detail, and two nominal future beach sand level used for designs - based on +1 and 0mAHD. These assumptions are to be updated at the detailed design phase.



Figure 3-1: Long-term erosion at site.

3.3 Crest design - overtopping performance

The crest level of the seawalls is designed to limit the overtopping rates to an acceptable, safe threshold during the design storm event whilst maintain aesthetically appealing. The design event is the 50-year ARI storm event occurring in a 2100 scenario, which assumes the beach levels in front of the sea wall are eroded.

For this concept design an overtopping threshold of 50 litres/s/m was selected to meet structural conditions. This level of overtopping is not expected to cause damage to the seawall or any rear pavements. However, the area behind the seawall will not be considered safe for pedestrians.

⁵ Kamphuis, J.W., 1991, "Wave Transformation", Co. Eng., Vol. 15

⁶ Bishop-Taylor, R., Sagar, S., Lymburner, L., Alam, I., & Sixsmith, J. (2019). Sub-pixel waterline extraction: Characterising accuracy and sensitivity to indices and spectra. Remote Sensing, 11(24), 2984. Available: <https://www.mdpi.com/2072-4292/11/24/2984>

Calculations have been sourced from the EurOtop II manual for a vertical seawall, using the parameters shown in shown in Table 3-1. For a crest level of 4.2m AHD the future overtopping rate is 48 litres/s/m in a 50-year AIR, 2100 planning horizon.

Table 3-1: The Neural Network inputs

Input parameters	Value	Note
Water depth at toe, h (m)	3.07	Assuming future beach level at 0m AHD
Significant wave height at toe, H _{mo} (m)	1.48	-
Spectral wave period, T _{mm10} (s)	6.26	Converted from T _p
Toe submergence, h _t (m)	3.07	Bottom of toe placed at scour level
Slope of structure	0.00	Vertical structure
Roughness of structure	1.00	Assumes a smooth structure
Structure elements size (m)	0.00	A flat, impermeable wall
Armour crest level above water, A _c (m)	1.13	Iterations done through changing A _c
Wave return wall crest level about water, R _c (m)	1.13	In the absent of wave return wall, equal to A _c
Armour crest width, G _c (m)	0.30	Assumed width of retaining wall capping beam

3.4 Toe design - future bed and scour levels

Scour is erosion resulting from shear forces associated with flowing water and wave actions. Waves and currents may generate sediment mobility. Interactions with the structure (wave reflection, wave draw-down, generation of turbulence) may result in scour of bed or beach materials directly in front of the toe of the structure, with the potential to cause undermining. The effect of scour is temporary as scour holes are typically restored as the storm passes; the water level drops and the wave height lowers.

A maximum toe depth was estimated using scour equations from Sutherland et al (2007)⁷ for a vertical wall on a sand seabed. The estimated scour depth is 1.16m depending chiefly on significant wave height, wave period, water depth at structure toe and slope of revetment. This scour will occur on either the present day or future sand levels.

3.5 Sheet pile aesthetics

The wall design has allowed for an aesthetically appealing façade with a minimised footprint. A sheet pile wall was selected at this concept design phase. It is a vertical retaining structure that often consists of sections of steel sheet with interlocking edges that are driven into the ground with a capping beam. The structure can be cantilever or anchored depending on the required retaining height. Sheet piles of multiple sizes are readily available, and the driving process can be quick, easy, neat, and monitored to ensure construction quality. It is suitable in regions with appropriate soil strata requires minimal excavation. If required, low noise pile drive options can be used such as vibratory drivers. The application of sheet pile walls in Australia is common, including in temporary works, such as coffer dams or permanent retaining walls.

The suitability of sheet piles largely depends on local geology, which has not been investigated in detail at this concept stage. It has been assumed that the site has no rock stratum from ground level to 20m below ground level.

The appearance of a sheet pile wall can be largely improved with textured capping beam and cladding with cast in situ concrete or pre-cast panels. A variety of textures and patterns have been used in other projects and the cladding can bring additional ecological value into the project if designed properly. The cladding or capping beam can conceal the steel sheets and any sign of deterioration as shown in Figure 3-2.

⁷ Sutherland, J., Brampton, A.H., Obhrai, C., Dunn, S. and Whitehouse, R.J.S, 2007. Understanding the lowering of beaches in front of coastal defence structures, stage 2. Joint Defra/Environment Agency Flood and Coastal Erosion Risk Management R&D Programme, R&D Technical Report FD1927/TR. London: Defra.



Figure 3-2: Sheet pile walls with textured capping beam or cladding⁸.

3.6 Preliminary Geotechnical Modelling

A two-part geotechnical and structural assessment was undertaken.

- Initial Geo5 modelling for slope stability
- Additional calculations for corrosion, bending, shear and web shear buckling

3.6.1 Geo5 modelling

The structure design was initially conducted using the GEO5 package “Piling Design” aiming to achieve a structural Factor of Safety (FoS) of 1.5 using the limit state method and cross checked with FoS method. Further refinement was undertaken, as discussed in Section 3.6.2.

In the absence of deep borehole logs and a full Ground Investigation, a reasonable soil profile has been assumed. The nominal soil parameters were based on an assessment of soil properties done on site, suggesting sandy material in near surface stratum. As the assessment only covers 1.5m below ground, deeper soil profile has to be assumed for the pile design. Assumed soil profile and properties⁹ are as shown in Table 3-2.

Additional surcharges have been applied as follows:

- The pool and building weights are assumed to be completely taken by piles and are not exerting any surcharge on the seawall. A conservative design approach that still considered soil in the space of the pool has been adopted, which may represent a temporary condition during construction.
- A rear live load surcharge of 2kPa defined by AS 1170.1 Section 3.4, as a "Domestic and residential property".

The initial modelling shows the required piling length is 18m, which has been reviewed in further detail in Section 3.6.2. The achieved FoS for all scenarios are summarised in Table 3-3. All geotechnical stability checks all have an SoP above 1.3 and are considered satisfactory.

⁸ Photos sourced from: <https://www.redlandbrick.co.uk/recent-projects/brick-panels-recent-projects/flood-defence/>; <https://coastalpartners.org.uk/project/north-portsea-island-tipner-lake>; <https://mackley.co.uk/engineering-ecology-into-portsea-sea-defences/>.

⁹ Sourced from Table D4 of AS4678-2002 Earth Retaining Structures

Table 3-2: Assumed Soil Parameters, to be revised with GI data

Soil Type	Profile (mAHD)	Unit Weight (kN/m ³)	Saturated Unit Weight (kN/m ³)	Friction angle (°)	Cohesion (kPa)
Select Fill	Rear Surface Soil – P.D. Surface soil of Toe	21	22	36	0
Medium Dense Sand	4-8m Shore side	20	20	35	0
Loose Sand	Beach Surface Soil – 4m	19	19	30	0
Clay	Last Layer – Model Boundary	21	21	19	0
*: AS 4678—2002: D2.2.2, D3 and 4.2.4					

Table 3-3: Summary on design calculation

Planning horizon	Design scenarios	Water level (mAHD)		Beach level at structure toe	Geotechnical stability (FoS)	Structural stability (% capacity utilised)	
-	-	Behind wall	In front of Wall	-	-	Bending moment	Shear stress
PD	a	2.13	-1.58	2.8	9.5	0.4%	1.3%
2100	b	3.07	3.07	-0.16	11.6	-	-
	c	3.07	-0.78	1	4.5	6.7%	8.1%
	d	3.07	3.07	-1.16	11.9	-	-
	e	3.07	-0.78	0	3.4	18.5%	14.2%
-: Non-critical scenarios							

3.6.2 Bending, shear and web shear buckling

Additional structural calculations have been undertaken to design the pile for the 'worst case' scenario shown in Table 3-3 (case e). These have considered the following:

- Corrosion
- Bending
- Bending and shear
- Web shear buckling

The 'Case E' scenario is a long-term condition, occurring following rapid drawdown after a 50-year ARI storm in 2100.

Table 3-4: Summary of design scenarios

Design scenarios	Water level (mAHD)		Top of wall (mAHD)	Beach level (mAHD)	Comments
Case E	Behind wall	In front of Wall	-	-	-
Shore facing wall	3.07	-0.78	4.2	0	Rapid draw down case after storm
Southern wall	3.07	-0.78	4.2	2.2	Maximum retained height is 2.0m

Surcharge and Loads

For the shore facing direction wall, we assume the pool is supported with piles, that have been designed to carry all the surcharge into the soil. The only surcharge that we will account for is live surcharges defined by AS 1170.1 Section 3.4. As a domestic and residential property, the live load surcharge is designed for 2kPa.

For the strength and stability limit states, the requirement in AS 1170.1 for a load factor of 1.5 to be applied to earth pressures is deemed to be met by applying a load factor of 1.25 on the dead loads and 1.5 on the live loads in combination with the material factors.

Because the sheet pile is embedded into the ground to support the pool, only one face will ever be exposed and any wind loads applied on wall will be beneficial to the calculations. The wind loads would be non-permanent and variable and therefore neglected in design calculations.

Characteristic Geotechnical Parameters

Soil located behind the wall are assumed to be engineered select fill, with characteristics of the following defined by a well rated select fill soils of AS 4678—2002: D2.2.2, D3 and 4.2.4. Other soil was selected based on expected soil types in a beach front property and align ranging from poor to average granular soils in Table D4 of AS4678-2002 Earth Retaining Structures.

It has been assumed that the Young's Modulus of the beach sand increases with depth as a result of compact from overburden. Following guidance values provided by Orbzud and Truty 2012 the assigned values are considered appropriate.

Partial factors have been applied to the characteristic geotechnical parameters based on uncertainty and reduction of structural components presented in AS4678-2002 Table 5.1 and 5.2, which are shown in Table 3-6.

Table 3-5: Characteristic soil parameters taken from Table D4 of AS4678-2002 Earth Retaining Structures

Soil Type	Extent	Bulk density	Friction angle	Cohesion	Youngs Modulus 10
Select Granular Fill	Property Surface Soil – 4m	20 kN/m ³	32°	0 kPa	10 MPa
Loose Sand	Beach Surface Soil – 4m Property 4m – depth	18 kN/m ³	30°	0 kPa	15 MPa +1MPa/m

Table 3-6: Design parameters following application of partial factors

Unit	Characteristic	SLS	ULS
Select Fill	$\phi' = 32^\circ$ $c' = 0 \text{ kPa}$	$\phi' = 29.4^\circ$ $c' = 0 \text{ kPa}$	$\phi' = 25.1^\circ$ $c' = 0 \text{ kPa}$
Loose Sand	$\phi' = 30^\circ$ $c' = 0 \text{ kPa}$	$\phi' = 30^\circ$ $c' = 0 \text{ kPa}$	$\phi' = 26.1^\circ$ $c' = 0 \text{ kPa}$

10 Orbzud, F. Truty, A. Vulliet, L. (2012) Numerical modeling and neural networks to identify model parameters from piezocone tests: II. Multi-parameter identification from piezocone data. International journal for numerical and analytical methods in geomechanics, 2012-04-25, Vol.36 (6), p.743-779

Sheet pile design

The design of the sheet pile is specified to a standard design from Arcelor Mittal of Sheet pile Z design AZ 50-700.

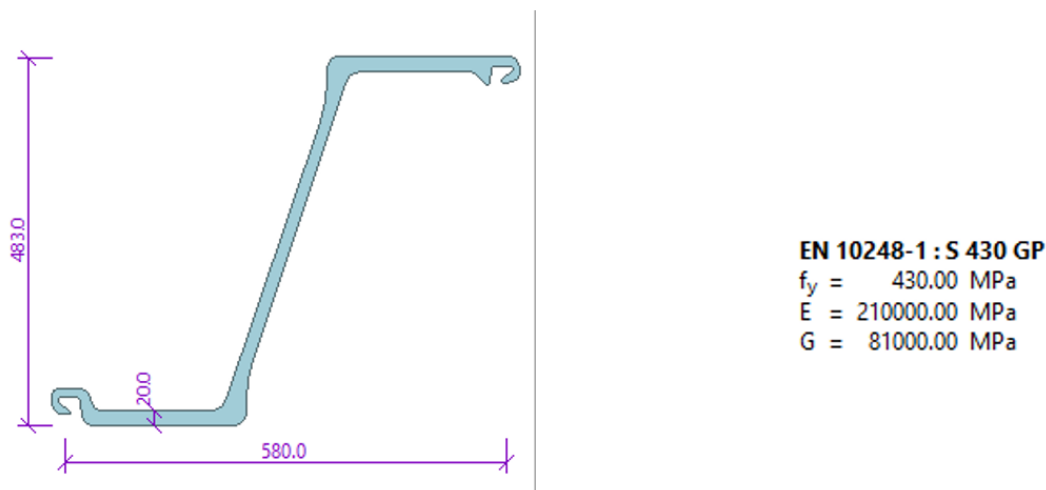


Figure 3-3: Arcelor Mittal Sheet pile Z design AZ 50-700

Pile durability has been estimated using the Arcelor Mittal Durability 3.5.2 Software Beta Version 07/2017. The design considers the loss of steel thickness from the tables 4.1 and/or 4.2 of EN 1993-5 for a front face of 'sea water in temperate climate in zone of permanent immersion or in the intertidal zone' and rear of assumed 'compacted non-aggressive fills' to 2100 (a 77 year design life).

The section loss over 77 years is a total of 4.6mm. The reduction factors for the inertia and section modulus at end of design life is:

- Initial inertia: 124890cm⁴/m
- Reduced inertia; 100110 cm⁴/m
- Elastic modulus of S430 steel: 210GPa

Pile driveability will need to be assessed following ground investigation. Driveability of the assumed ground conditions has been assessed using Arcelor Mittal piling handbook 9th edition, reprint 2016. Impact driving or vibro (Movax, Sonic) is considered suitable for the ground conditions subject to ground investigation confirmation and specialist piling contractor review. Following this initial assessment, it is suggested that the sheet piles has a steel grade of S430 GP.

Structural design checks

The sheet pile Geo5 model results were reviewed in further detail using the GeoSolve Wallap Retaining Wall Analysis Program 2017 version 6.06 Revision A52.B71.R55. The following stages have been adopted for each model.

- Shore facing wall
 - Apply 2kPa surcharge at 4.2mAHD to represent load imposed by property offset 0.5m from crest
 - Excavate to represent current beach levels at 2.4mAHD
 - Apply flood water pressure conditions at 3.07mAHD
 - Excavate beach level to -1.16mAHD to represent temporary scour conditions
 - Fill beach levels to 0.0mAHD to represent infilling of scour hole with loose sand
 - Apply drawdown groundwater conditions (3.07mAHD | -0.78mAHD)
 - Change modulus of wall to represent end of design life properties of pile

- Southern wall
 - The southern wall has a top of wall level of 4.2m AHD and a future toe level of 2.2m AHD for a maximum retained height of 2.0m.

Based on the modelling checks, the seawall facing the shoreline (adjacent to the pool) will require a 17m pile (extending to -12.8m AHD), plus an additional anchoring system to restrain the pile to manage deflections (see Figure 3-4). This is due to a deflection at the top of the shore facing wall to be approximately 100mm under the Case E scenario. Deflection at top of pile result in ground loss behind the pile as the pile moves forward, resulting in settlement at surface level. The calculations have been rerun for the shore facing wall with the addition of a 25mm anchor spaced every second pan (2.32m) inclined at an angle of 10 degrees. This is assumed to be undertaken following Ground Investigations at the detailed design stage, and may consider a tie-back into the property footings

The southern facing wall will require a 15m pile, extending to -10.8m AHD. No additional tie-backs or anchors are required for the southern facing wall based on this concept-stage analysis.

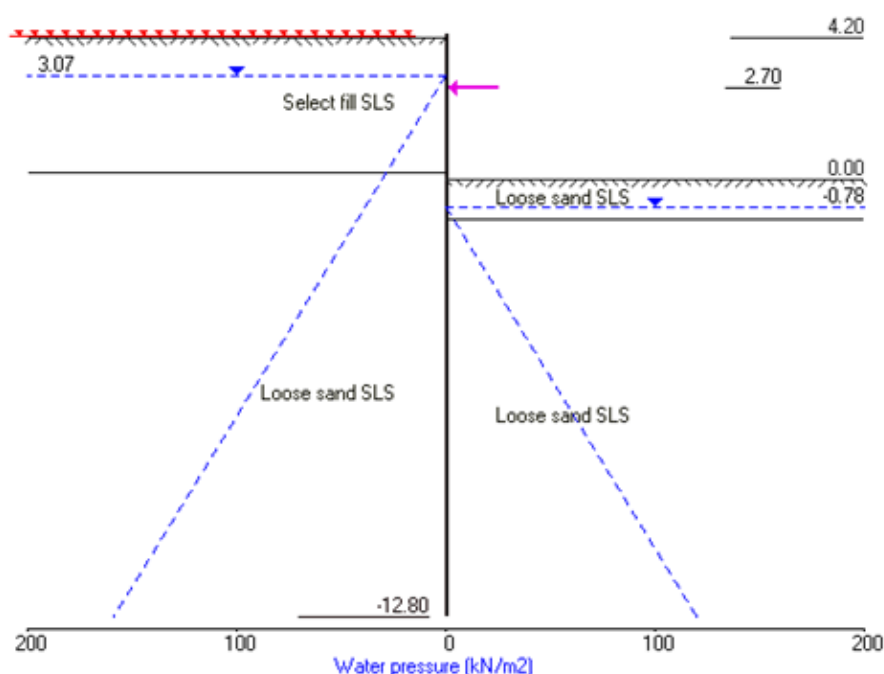


Figure 3-4: Shore facing wall - further geotechnical analysis using Wallap

3.7 Design summary

A vertical sheetpile wall has been proposed at this concept design phase. This has been completed at a 'Concept Design' level, based on assumed ground conditions and beach levels (see limitations in Section 4). On acceptance of Planning Approval additional ground investigations, coastal and structural calculations are required to produce "Detailed Design - For Construction" design plans.

At this concept phase the following wall characteristics have been calculated:

- The wall will use the Arcelor Mittal of Sheet pile Z design AZ 50-700.
- It has a crest level of 4.2m AHD. This will limit the 50-year ARI wave overtopping in a 2100 scenario to 50 litres/s/m, which is not expected to cause structural damage. However, the area behind the seawall will not be considered safe for pedestrians.
- It must reach a depth of:
 - i. -12.8m AHD for shore-facing walls, which is to include an anchoring system back into the property footings

- ii. -10.8m AHD for the southern-facing walls
- The pool and building weights are assumed to be completely taken by micro-piles (not included in this design) and are therefore not exerting any surcharge on the seawall.

3.8 Concept drawings

Concept design drawings have been developed and issued as a separate package.

Table 3-7: Appendix A documents

Drawing number	Title
0001	Drawing Schedule and Locality Plan
1001	Site Layout and General Arrangement
1201	Typical Section - Eastern Pool
1202	Typical Section - Southern Boundary

4 Limitations and Geotechnical Risks

This report has been completed at a 'Concept Design' level, to demonstrate the potential for a sheet pile seawall to mitigate erosion and overtopping risks. On acceptance of Planning Approval additional ground investigations, coastal and structural calculations are required to produce "Detailed Design - For Construction" design plans. The following limitations apply:

- The design has used wave overtopping thresholds suitable for structural design under a 2100 design scenario. However there may be a risk to people and loose objects positioned immediately behind the seawall.
- The design has been based on a hypothetical ground model and parameters typical for beach profile.
 - This is likely to be variability to the ground conditions used in this report, which needs to be confirmed via a Ground Investigation with deep boreholes.
 - Satellite imagery analysis shows the beach is subject to long-term recession, and likely to experience beach lowering in the future. A nominal value has been used in this report, and future conditions may have excessive scour of beach material in front of pile in the future.
 - The ground profile is assumed to be free of bedrock to -20m AHD. However, there may be obstructions in the subsurface causing early pile refusal. This is to be confirmed via Ground Investigation.
 - There is the potential for elevated groundwater levels behind pile.
 - There is the potential for a change in land use/ surcharging behind pile.
- Control measures
 - Calculations provided are outline only not be used for construction. Confirmation of ground profile by targeted ground investigation required to validate design.
 - Scour assessment undertaken and prediction of future scour over design life calculated. Ground investigation is required to validate design.
 - Groundwater levels based on coastal flood modelling analysis. To be confirmed during ground investigation including water monitoring.
 - A 2kPa allowed has been used in the design as per current standards and guidance. This is to be published in construction documentation and included in Health and Safety file.



Offices in
Australia
Cambodia
Ireland
Romania
Singapore
UK
USA

Registered Office
477 Boundary Street,
Spring Hill QLD 4000
Australia

t: +61 (0)7 3085 7470
e: info@jbppacific.com.au

JBA Pacific Scientists and
Engineers Pty Ltd 2021
ABN: 56 610 411 508
ACN: 610 411 508

Visit our website
www.jbppacific.com.au

DESIGN & TECHNICAL SERVICES

NATHAN VERRI

1 MARINE PARADE - COASTAL ADVICE

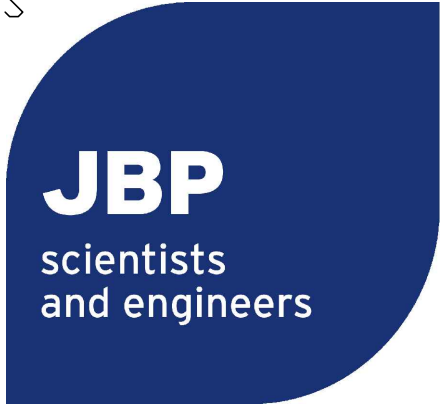
DRAWING SCHEDULE		
DRAWING NUMBER	SHEET TITLE	REVISION
0001	TITLE SHEET	S3-P01
1001	GENERAL ARRANGEMENT	S3-P01
1201	TYPICAL SECTION - EASTERN POOL	S3-P01
1202	TYPICAL SECTION - SOUTHERN BOUNDARY	S3-P01



MARINE PARADE LOCALITY PLAN

THE ABOVE DRAWING SET HAS BEEN PRODUCED AND
CERTIFIED BY:
JEREMY BENN PACIFIC ENGINEERS
AND SCIENTISTS PTY LTD.
CERTIFIED BY: D.W. RODGER
RPEQ NO: 17794
PROJECT NO: 2021s1659
DATE: 24.12.2021

SIGNED.....



CONCEPT DESIGN
FOR PLANNING
APPROVAL ONLY

-						
-						
-						
-						
S3 - P01	21/12/2021	FOR COMMENT	BC	BC	CY	
STATUS-REVISION	DATE	DESCRIPTION	DRAWN	DESIGNED	CHECKED	APPRVD



Jeremy Benn Pacific
T46, 477 Boundary Street
Spring Hill
QLD 4000, Australia
www.jpacific.com.au
07 3085 7470

The property of this drawing and design vested in JBA Pacific Scientists and Engineers Pty Ltd.
It shall not be reproduced in whole or in part, nor disclosed to a third party, without the prior
written consent of JBA Pacific Scientists and Engineers Pty Ltd.

Client



nathanverri
MASTERS OF DESIGN & BUILDING

MARINE PARADE COASTAL ADVICE
NATHAN VERRI
NEWELL
CONCEPT
TITLE SHEET

Drawn: BC	16/12/2021	ENG CERTIFICATION RPEQ	DANIEL RODGER	Scale	AS SHOWN @ A1
Designed: BC	16/12/2021				
Checked: CY	21/12/2021	JBP Drawing Number 2021s1659-JBAP-00-00-DR-C-0001			Status - Revision S3 - P01
Approved:		Client Drawing Number			Revision A

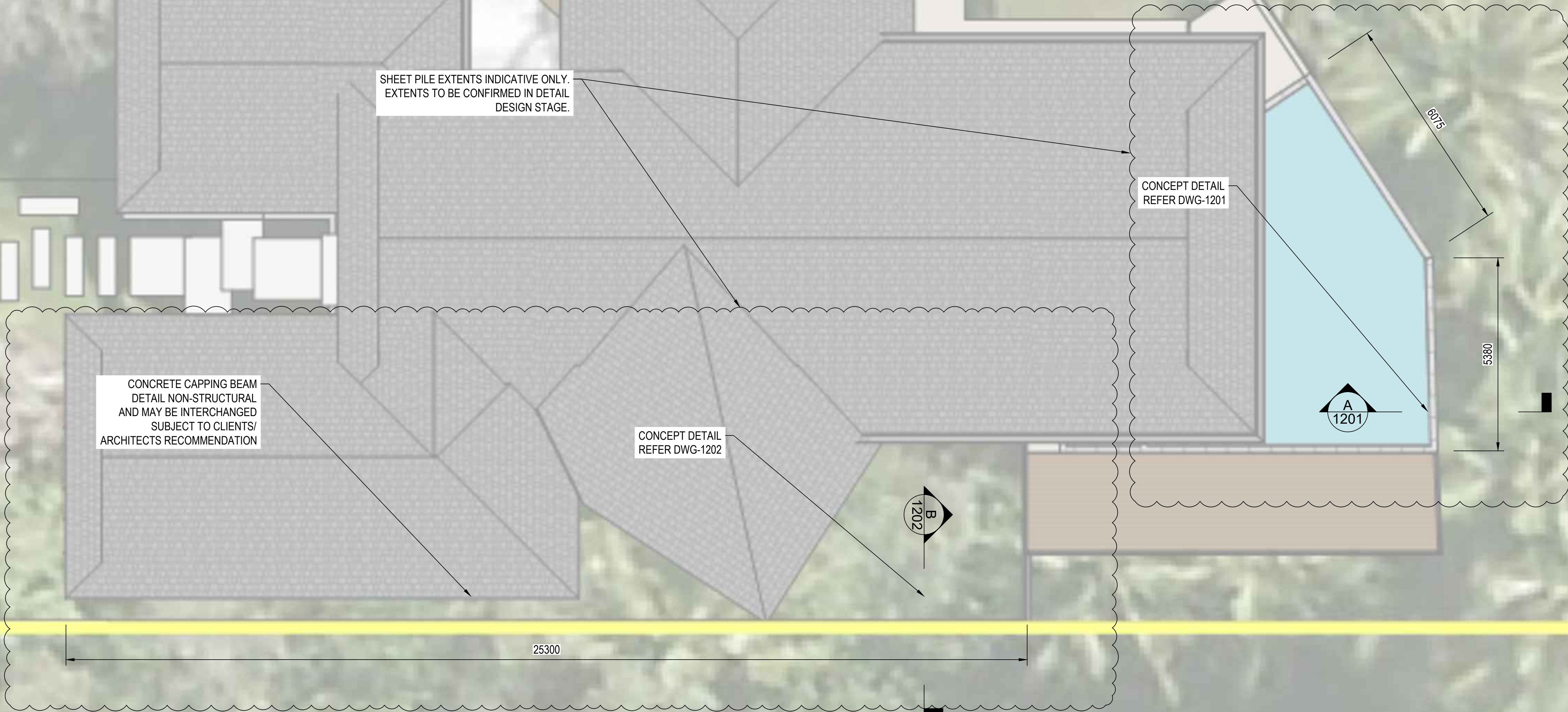


<ul style="list-style-type: none">WORKING IN A TIDAL ENVIRONMENTMOVEMENT OF PLANT IN AND AROUND WATEREXCAVATIONPILING WORKS	<ul style="list-style-type: none">PUBLIC INTERACTION WITH SITE AND BEACH TRAFFICUNAUTHORIZED SITE ACCESSWORKING ON PROPERTY BOUNDARIES	<ul style="list-style-type: none">POLLUTION HAZARDS ASSOCIATED WITH WORKING NEAR THE SEARISK OF DAMAGE TO FLORA AND FAUNA
Construction Risks	Public Risks	Environmental Risks

In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above.
It is assumed that all works detailed on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

- General Notes
- All dimensions shown are in millimetres unless otherwise stated and levels are in metres to Australian Height Datum.
 - Do not scale from this drawing. All dimensions must be checked/verified on site.
 - All works on the coast will be carried out with care to minimise the risk of pollution adhering to Pollution Prevention Guidelines.
 - All existing levels quoted on the drawings are from the time of survey. Levels and setting out should be checked by the site engineer to ensure their relevance at the time of construction.
 - All materials and workmanship shall be as defined in the specification unless noted otherwise on drawings.



SHEET PILE EXTENTS INDICATIVE ONLY.
EXTENTS TO BE CONFIRMED IN DETAIL
DESIGN STAGE.

CONCEPT DETAIL
REFER DWG-1201

CONCRETE CAPPING BEAM
DETAIL NON-STRUCTURAL
AND MAY BE INTERCHANGED
SUBJECT TO CLIENTS/
ARCHITECTS RECOMMENDATION

CONCEPT DETAIL
REFER DWG-1202

PUBLIC WALKWAY BEACH ACCESS
ADJACENT TO SOUTHERN BOUNDARY

GENERAL ARRANGEMENT
NOT TO SCALE

THE ABOVE DRAWING SET HAS BEEN
PRODUCED AND CERTIFIED BY:
JEREMY BENN PACIFIC ENGINEERS
AND SCIENTISTS PTY LTD
CERTIFIED BY: D.W. RODGER
RPEQ NO: 17794
PROJECT NO: 2021s1659
DATE: 24.12.2021

SIGNED.....
JBP
scientists
and engineers

CONCEPT DESIGN
FOR PLANNING
APPROVAL ONLY

-							
-							
-							
-							
S3 - P01	21/12/2021	FOR COMMENT		BC	BC	CY	
STATUS-REVISION	DATE	DESCRIPTION		DRAWN	DESIGNED	CHECKED	APPRVD



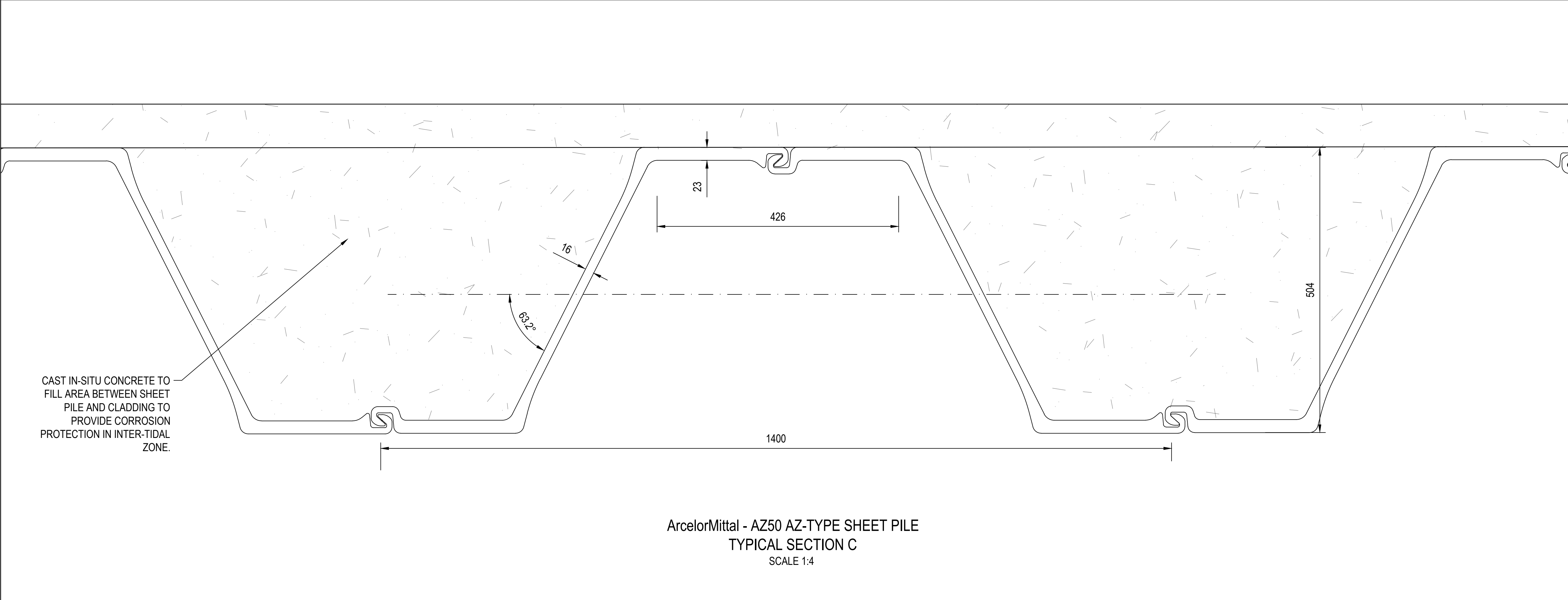
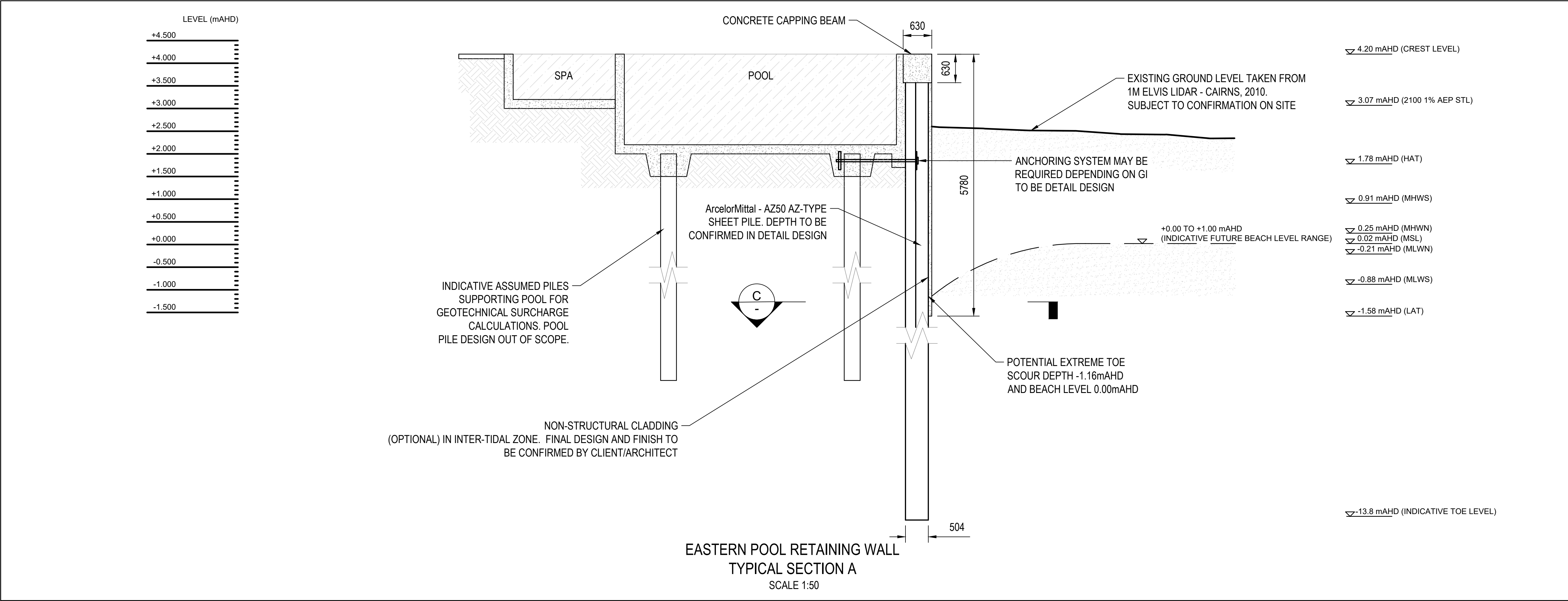
Jeremy Benn Pacific
T46, 477 Boundary Street
Spring Hill
QLD 4000, Australia
www.jbpacific.com.au
07 3085 7470

Client



MARINE PARADE COASTAL ADVICE
NATHAN VERRI
NEWELL
CONCEPT
GENERAL ARRANGEMENT

Drawn: BC	16/12/2021	ENG CERTIFICATION RPEQ	Scale AS SHOWN @ A1
Designed: BC	16/12/2021	JBP Drawing Number 2021s1659-JBAP-00-00-DR-C-1001	Status - Revision S3 - P01
Checked: CY	21/12/2021	Client Drawing Number	Revision A
Approved:			



<ul style="list-style-type: none">WORKING IN A TIDAL ENVIRONMENTMOVEMENT OF PLANT IN AND AROUND WATEREXCAVATIONPILING WORKS	<ul style="list-style-type: none">PUBLIC INTERACTION WITH SITE AND BEACH TRAFFICUNAUTHORIZED SITE ACCESSWORKING ON PROPERTY BOUNDARIES	<ul style="list-style-type: none">POLLUTION HAZARDS ASSOCIATED WITH WORKING NEAR THE SEARISK OF DAMAGE TO FLORA AND FAUNA
Construction Risks	Public Risks	Environmental Risks

In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above. It is assumed that all works detailed on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

General Notes

- All dimensions shown are in millimetres unless otherwise stated and levels are in metres to Australian Height Datum.
- Do not scale from this drawing. All dimensions must be checked/verified on site.
- All works on the coast will be carried out with care to minimise the risk of pollution adhering to Pollution Prevention Guidelines.
- All existing levels quoted on the drawings are from the time of survey. Levels and setting out should be checked by the site engineer to ensure their relevance at the time of construction.
- All materials and workmanship shall be as defined in the specification unless noted otherwise on drawings.

THE ABOVE DRAWING SET HAS BEEN PRODUCED AND CERTIFIED BY:
JEREMY BENN PACIFIC ENGINEERS
AND SCIENTISTS PTY LTD
CERTIFIED BY: D.W. RODGER
RPEQ NO: 17794
PROJECT NO: 2021s1659
DATE: 24.12.2021

SIGNED.....

JBP
scientists
and engineers

**CONCEPT DESIGN
FOR PLANNING
APPROVAL ONLY**

Drawn: BC	16/12/2021	ENG CERTIFICATION RPEQ	Scale AS SHOWN @ A1
Designed: BC	16/12/2021	JBP Drawing Number 2021s1659-JBAP-00-00-DR-C-1201	Status - Revision S3 - P01
Checked: CY	21/12/2021	Client Drawing Number	Revision A
Approved:			

-							
-							
-							
-							
S3	-	P01	21/12/2021	FOR COMMENT	BC	BC	CY
STATUS-REVISION	DATE	DESCRIPTION			DRAWN	DESIGNED	CHECKED

JBP
scientists
and engineers

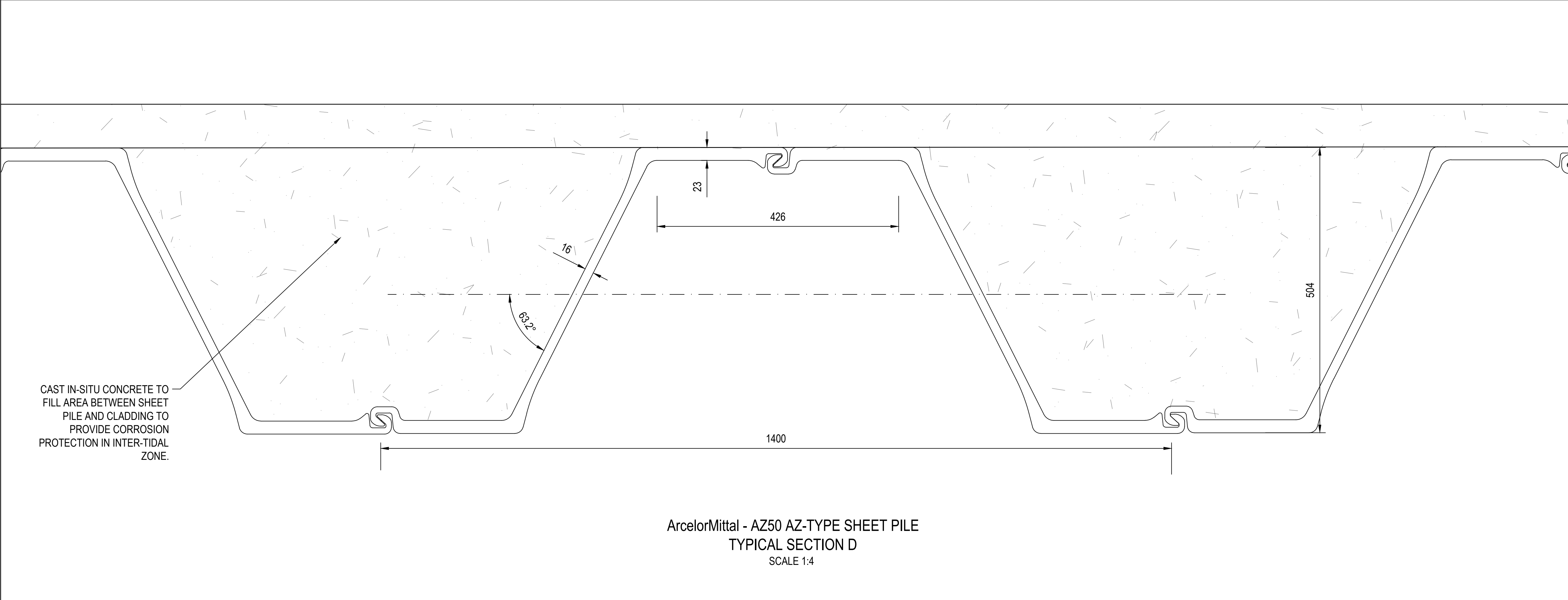
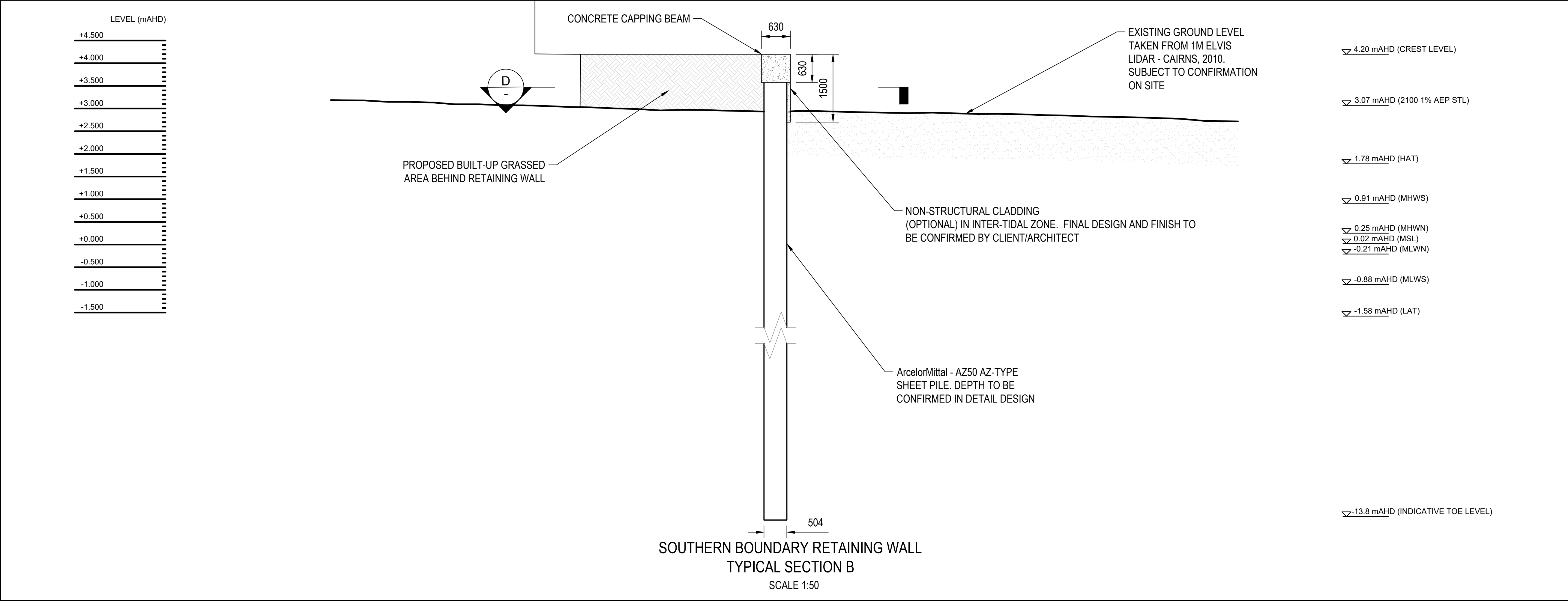
Jeremy Benn Pacific
T46, 477 Boundary Street
Spring Hill
QLD 4000, Australia
www.jbpacific.com.au
07 3085 7470

Client

nathanverri
MASTERS OF DESIGN & BUILDING

MARINE PARADE COASTAL ADVICE
NATHAN VERRI
NEWELL
CONCEPT
TYPICAL SECTION - EASTERN POOL

Original drawing size @ scale 1:1 = A1 841mm x 594mm



<ul style="list-style-type: none">WORKING IN A TIDAL ENVIRONMENTMOVEMENT OF PLANT IN AND AROUND WATEREXCAVATIONPILING WORKS	<ul style="list-style-type: none">PUBLIC INTERACTION WITH SITE AND BEACH TRAFFICUNAUTHORIZED SITE ACCESSWORKING ON PROPERTY BOUNDARIES	<ul style="list-style-type: none">POLLUTION HAZARDS ASSOCIATED WITH WORKING NEAR THE SEARISK OF DAMAGE TO FLORA AND FAUNA
Construction Risks	Public Risks	Environmental Risks


In addition to the hazards/risks normally associated with the types of work detailed on this drawing take note of the above. It is assumed that all works detailed on this drawing will be carried out by a competent contractor working, where appropriate, to an appropriate method statement.

SAFETY, HEALTH AND ENVIRONMENTAL INFORMATION BOX

General Notes

- All dimensions shown are in millimetres unless otherwise stated and levels are in metres to Australian Height Datum.
- Do not scale from this drawing. All dimensions must be checked/verified on site.
- All works on the coast will be carried out with care to minimise the risk of pollution adhering to Pollution Prevention Guidelines.
- All existing levels quoted on the drawings are from the time of survey. Levels and setting out should be checked by the site engineer to ensure their relevance at the time of construction.
- All materials and workmanship shall be as defined in the specification unless noted otherwise on drawings.

THE ABOVE DRAWING SET HAS BEEN PRODUCED AND CERTIFIED BY: JEREMY BENN PACIFIC ENGINEERS AND SCIENTISTS PTY LTD
CERTIFIED BY: D.W. RODGER
RPEQ NO: 17794
PROJECT NO: 2021s1659
DATE: 24.12.2021

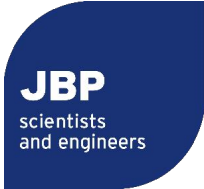
SIGNED: 

JBP
scientists
and engineers

**CONCEPT DESIGN
FOR PLANNING
APPROVAL ONLY**

Drawn: BC	16/12/2021	ENG CERTIFICATION RPEQ	Scale AS SHOWN @ A1
Designed: BC	16/12/2021	JBP Drawing Number 2021s1659-JBAP-00-00-DR-C-1202	Status - Revision S3 - P01
Checked: CY	21/12/2021	Client Drawing Number	Revision A
Approved:			

-							
-							
-							
-							
S3	-	P01	21/12/2021	FOR COMMENT	BC	BC	CY
STATUS-REVISION	DATE	DESCRIPTION			DRAWN	DESIGNED	CHECKED



Jeremy Benn Pacific
T46, 477 Boundary Street
Spring Hill
QLD 4000, Australia
www.jbpacific.com.au
07 3085 7470

The property of this drawing and design vested in JBA Pacific Scientists and Engineers Pty Ltd. It shall not be reproduced in whole or in part, nor disclosed to a third party, without the prior written consent of JBA Pacific Scientists and Engineers Pty Ltd.

Client

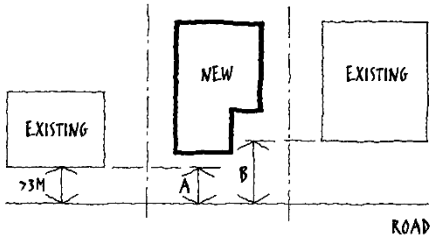


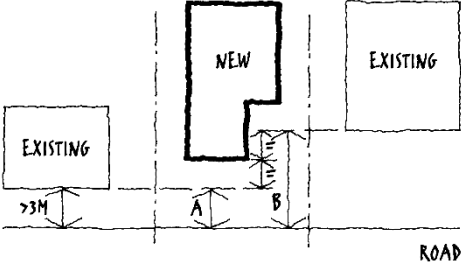
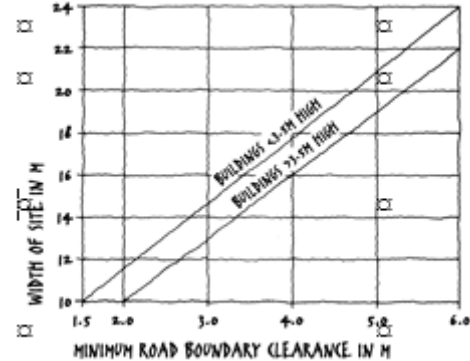
MARINE PARADE COASTAL ADVICE
NATHAN VERRI
NEWELL
CONCEPT
TYPICAL SECTION - SOUTHERN BOUNDARY

Appendix C

Queensland Development Code Assessment

MP 1.2 – Design and Siting Standard for Single Detached Housing on Lots 450m² and Over

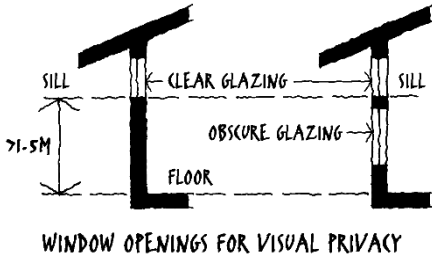
Performance Criteria	Acceptable Solutions	Applicant response
Element 1 – Design and Siting of Buildings and Structures		
Buildings and Structures P1 The location of a building or structure facilitates an acceptable streetscape, appropriate for – <ul style="list-style-type: none"> (a) the bulk of the building or structure; and (b) the road boundary setbacks of neighbouring buildings or structures; and (c) the outlook and views of neighbouring residents; and (d) nuisance and safety to the public. Figure 1  <p>WHERE B LESS A IS NOT MORE THAN 2M SETBACK = ANY DISTANCE BETWEEN A AND B</p> Figure 2	A1 <ul style="list-style-type: none"> (a) For a detached dwelling, garage or a carport the minimum road setback is – <ul style="list-style-type: none"> (i) 6m; or (ii) where there are existing detached dwellings on both adjoining lots and at least one of the detached dwellings is setback from the road between 3m and 6m, and the difference between their road setbacks is- <ul style="list-style-type: none"> (A) not more than 2m- a distance between the two buildings (Figure 1); or (B) more than 2m- the average of the road setbacks of the adjacent buildings (Figure 2); and (b) For a corner lot, the minimum road setbacks are- <ul style="list-style-type: none"> (i) as for A1(a)(i); or (ii) where the lot has an average depth of 24 m or less – 	Complies with P1 <p>The proposed Dwelling House would be setback 7.53 metres from the road boundary to the west containing the constructed Marine Parade; however, it would have a minimum of 0 metres setback to the frontage to the unconstructed Newell Road to the south with a general setback of 0.9 metres.</p> <p>There are no neighbouring properties to the Newell Road frontage, and it is unlikely that this part of the road reserve would contain a constructed road.</p> <p>The encroachment would not result in a building of significant bulk having an overbearing appearance on this section of the street frontage and would not affect the outlook of any neighbouring residents. As it is not a trafficable road, it would also not cause a nuisance or adversely affect the safety of the public.</p>

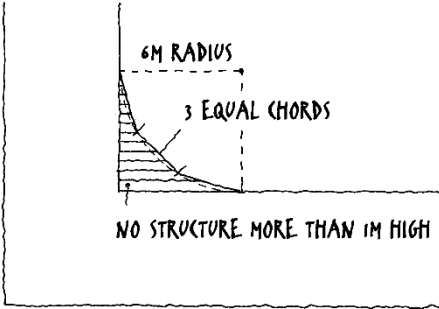
Performance Criteria	Acceptable Solutions	Applicant response
 <p>WHERE B LESS A IS 2M OR MORE SETBACK = AVERAGE DISTANCE BETWEEN A AND B</p> <p>Table A1</p>  <p>Figure 3</p>	<p>(A) for the nominated road frontage – as in Table A1; and</p> <p>(B) for the other road frontage - as for A1(a)(i); and</p> <p>(C) no building or structure over 2m high is built within a 9m by 9m truncation at the corner of the 2 road frontages (Figure 3).</p> <p>(c) For open carports, the minimum road setback may be less than required by A(i)(a) if –</p> <p>(i) the aggregate perimeter dimension of walls, solid screens, and supports located within the setback does not exceed 15% of the total perimeter dimension (along the line of supports) of that part of the carport within the same setback (Figure 4); and</p> <p>(ii) there is no alternative on-site location for a garage or carport that –</p> <p>(A) complies with A(i)(a); and</p> <p>(B) will allow vehicular access having a minimum width of 2.5m; and</p> <p>(C) has a maximum gradient of 1 in 5.</p> <p>(d) For structures the minimum road setbacks are as for A1(a),(b), and (c) except for –</p> <p>(i) swimming pools, where the minimum distance from the water to the road frontage is –</p> <p>(A) where the vertical distance to the coping above the finished ground</p>	

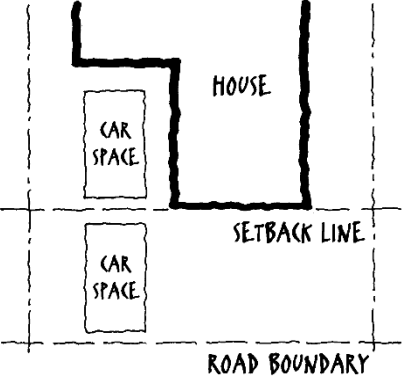
MP1.2
11 March 2010

Performance Criteria		Acceptable Solutions		Applicant response
habitable rooms of buildings on adjoining lots. (c) do not adversely impact on the amenity and privacy of residents on adjoining lots.		less - 1.5m; and (ii) where the height of that part is greater than 4.5m but not more than 7.5m - 2m; and (iii) where the height is greater than 7.5m - 2m plus 0.5m for every 3m or part exceeding 7.5m.		metres and a 2 metre high boundary fence from the wall of the neighbouring dwelling. The proposed setback would not adversely affect the solar access or ventilation to the Dwelling or House or the neighbouring property and would not impact on the amenity of the adjoining occupiers.
Table A2		(b) For a rectangular or near rectangular narrow lot with a 15m or less frontage, the minimum side and rear setbacks for that part are – (i) where the height is not more than 7.5m – in accordance with Table A2; and (ii) where the height is more than 7.5m – 2m plus 0.5m for every 3m or part of 3m by which the height exceeds 7.5m.		
Road <i>Frontage</i>	Side and Rear Boundary Clearances			
in metres	<i>Height</i> in metres			
	4.5 or less	4.5 to 7.5		
14.501 – 15.000	1.425	1.900		
14.001 – 14.500	1.350	1.800		
13.501 – 14.000	1.275	1.700		
13.001 – 13.500	1.200	1.600		
12.501 – 13.000	1.125	1.500		
12.001 – 12.500	1.050	1.400		
11.501 – 12.000	0.975	1.300		
11.001 – 11.500	09.00	1.200		
10.501 – 11.000	0.825	1.100		
10.500 or less	0.750	1.000		
		(c) Structures may be exempted from A2 (a) and (b) where – (i) the structure is not a deck, patio, pergola, verandah, gazebo or the like other than one permitted under A2 (c) (v) (ii) the structure is not used for entertainment, recreational purposes or the like (iii) a screen, fence or retaining wall or a combination of screens, fences or retaining walls is not more than 2m in height or (iv) a rainwater tank, including any		

Performance Criteria	Acceptable Solutions	Applicant response
	<p>supporting structure such as a stand, is not more than 2.4m high.</p> <p>(v) subject to (ii), it is a pergola or other structure which is-</p> <p>(A) not enclosed by walls or roofed; and</p> <p>(B) not more than 2.4m in height at the boundary; and</p> <p>(C) primarily ornamental or for horticultural purposes.</p> <p>(d) Subject to A2(c), class 10a buildings or parts may be within the boundary clearances nominated in A2(a) and (b) where –</p> <p>(i) the height of a part within the boundary clearance is not more than 4.5m and has a mean height of not more than 3.5m; and</p> <p>(ii) the total length of all buildings or parts, of any class, within the boundary clearance is not more than 9m along any one boundary; and</p> <p>(iii) the class 10a buildings or parts within the boundary clearance are located no closer than 1.5m to a required window in a habitable room of an adjoining dwelling.</p> <p>(e) Swimming pools may be within the boundary clearances nominated in A2(a) and (b) where -</p> <p>(i) a solid wall or fence, constructed to prevent water entry onto adjoining</p>	

Performance Criteria	Acceptable Solutions	Applicant response
	<p>lots, at least 1.8m high above finished ground level, is erected between the swimming pool and the boundary of the lot; and</p> <p>(ii) the top of the wall or fence is at least 1.0m above the top of the coping of the pool.</p>	
P3 Adequate open space is provided for recreation, service facilities and landscaping.	A3 The maximum area covered by all buildings and structures roofed with impervious materials, does not exceed 50% of the lot area.	Complies with A3 The site coverage would be less than 50%.
P4 The height of a building is not to unduly – (a) overshadow adjoining houses; and (b) obstruct the outlook from adjoining lots.	A4 For lot slopes - (a) up to 15%, the building height is not more than 8.5m; and (b) of 15% or more, the building height is not more than 10m.	Complies with A4 The height of the Dwelling House would not exceed 8.5 metres.
P5 Buildings are sited and designed to provide adequate visual privacy for neighbours. Figure 5 	A5 Where the distance separating a window or balcony of a detached dwelling from the side or rear boundary is less than 1.5 m – (a) a permanent window and a balcony has a window/balcony screen extending across the line of sight from the sill to at least 1.5m above the adjacent floor level; or (b) a window has a sill height more than 1.5m above the adjacent floor level, or (c) a window has obscure glazing below 1.5m (Figure 5).	Complies with A5 A solid boundary wall of 2 metres in height would be constructed on the side boundary between the laundry and the adjoining property.

Performance Criteria	Acceptable Solutions	Applicant response
P6 The location of a building or structure facilitates normal building maintenance.	A6 A wall is – <ul style="list-style-type: none"> (a) set back a minimum of 750mm from the side or rear boundary; or (b) where less than 750mm to the boundary, maintenance free, such as unpainted or untreated masonry or prefinished steel sheeting. 	Complies with A6 No wall would be less than 750mm from the side boundaries.
P7 The size and location of structures on corner sites provide for adequate sight lines. Figure 6 	A7 Fences, screens, and retaining walls and other structures are not more than 1m high within a truncation made by 3 equal chords of a 6m radius curve at the corner of the 2 road frontages (Figure 6).	Complies with P7 The site, whilst nominally being a corner site, only has frontage to a constructed road to one frontage and the unconstructed road is not trafficable by vehicles. On this basis the proposed development would not affect any sight lines at a trafficable intersection.
Element 2 – Space for on-site car parking		
P8 Sufficient space for on-site carparking to satisfy the projected needs of residents and visitors, appropriate for – <ul style="list-style-type: none"> (a) the availability of public transport; and (b) the availability of on-street parking; and (c) the desirability of on- street parking in 	A8 For each detached dwelling, space is provided for parking two vehicles on the lot and the space has – <ul style="list-style-type: none"> (a) minimum dimensions as follows: <ul style="list-style-type: none"> (i) for a single uncovered parking space- 4.9m by 2.6m wide; and (ii) for a single covered parking space- 	Complies with A8 The double garage would have dimensions of 6.2 metres by 6.2 metres.

Performance Criteria	Acceptable Solutions	Applicant response
<p>respect to the streetscape; and</p> <p>(d) the residents likelihood to have or need a vehicle.</p> <p>Figure 7</p> 	<p>5m by 3m wide; and</p> <p>(iii) for a double covered parking space 5 by 5.5m wide; and</p> <p>(iv) for a single garage- 6m by 3m wide internally; and</p> <p>(v) for a double garage- 6m by 5.7m wide internally.</p> <p>(b) Car parking spaces may be in tandem, provided one space is behind the road setback required under Element 1 (Figure7)</p>	

Appendix D

Planning Scheme Code Responses

6.2.6 Low density residential zone code

6.2.6.1 Application

- (1) This code applies to assessing development in the Low Density Residential zone.
- (2) When using this code, reference should be made to Part 5.

6.2.6.2 Purpose

- (1) The purpose of the Low density residential zone code is to provide for predominantly dwelling houses supported by community uses and small-scale services and facilities that cater for local residents.
- (2) The local government purpose of the code is to:
 - (a) implement the policy direction set in the Strategic Framework, in particular:
 - (i) Theme 1: Settlement pattern, Element 3.4.2 – Urban settlement, Element 3.4.5 Residential areas and activities, Element 3.4.7 – Mitigation of hazards.
 - (ii) Theme 4: Strong community and identity, Element 3.7.3 – Active communities, Element 3.7.4 – Sense of place, community and identity, Element 3.7.5 – Housing choice and affordability.
 - (iii) Theme 6: Infrastructure and transport, Element 3.9.2 - Energy, Element 3.9.3 – Water and waste management, Element 3.9.4 Transport, Element 3.9.5 – Information technology.
 - (b) retain the low density residential character and amenity of the area, consisting predominantly of low-rise 1 and 2 storey detached dwelling houses;
 - (c) provide support for compatible small scale non-residential use activities;
 - (d) ensure development occurs on appropriately sized and shaped lots.
- (3) The purpose of the code will be achieved through the following overall outcomes:
 - (a) A range of housing, predominantly detached dwelling houses, on a range of lot sizes is provided.
 - (b) Development maintains a high level of residential amenity having regard to traffic, noise, dust, odour, lighting and other locally specific impacts.
 - (c) Development reflects and enhances the existing low density scale and character of the area.
 - (d) Development is reflective and responsive to the environmental constraints of the land.
 - (e) Development is supported by necessary community facilities, open space and recreational areas and appropriate infrastructure to support the needs of the local community.

Criteria for assessment**Table 6.2.6.3.a – Low density residential zone code – assessable development**

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
PO1 The height of all buildings and structures must be in keeping with the residential character of the area.	AO1 Buildings and structures are not more than 8.5 metres and two storeys in height. Note – Height is inclusive of the roof height.	Complies with AO1 The proposed Dwelling House would have a height of less than 8.5 metres.
For assessable development		
PO2 The establishment of uses is consistent with the outcomes sought for the Low density residential zone and protects the zone from the intrusion of inconsistent uses.	AO2 Uses identified in Table 6.2.6.3.b are not established in the Low density residential zone.	Not applicable A Dwelling House is identified as Self-assessable development.
PO3 The setback of buildings and structures: (a) maintains the amenity of adjoining lots and the residential character of the area; (b) achieves separation from neighbouring buildings and frontages.	AO3 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO4 Development is located, designed, operated and	AO4 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-

Performance outcomes	Acceptable outcomes	Applicant response
<p>managed to respond to the natural characteristics, features and constraints of the site and surrounds.</p> <p>Note – Planning scheme policy – Site assessments provides guidance on identifying the characteristics and features and constraints of a site and its surrounds.</p>		assessable development.
<p>PO5</p> <p>Development does not adversely affect the residential character and amenity of the area in terms of traffic, noise, dust, odour, lighting or other physical or environmental impacts.</p>	<p>AO5</p> <p>No acceptable outcomes are prescribed.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as Self-assessable development.</p>
<p>PO6</p> <p>New lots contain a minimum area of:</p> <p>(a) 600m² (in sewerred areas);</p> <p>(b) 1000m² (in unsewered areas).</p>	<p>AO6</p> <p>No acceptable outcomes are prescribed.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as Self-assessable development.</p>
<p>PO7</p> <p>New lots have a minimum road frontage of 15 metres.</p>	<p>AO7</p> <p>No acceptable outcomes are prescribed.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as Self-assessable development.</p>
<p>PO8</p> <p>New lots contain a 20m x 15m rectangle.</p>	<p>AO10</p> <p>No acceptable outcomes are prescribed.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as Self-assessable development.</p>

Table 6.2.6.3.b - Inconsistent uses within the Low density residential zone

Inconsistent uses		
<ul style="list-style-type: none"> • Adult store • Agricultural supplies store • Air services • Animal husbandry • Aquaculture • Bar • Brothel • Bulk landscape supplies • Car wash • Club • Crematorium • Cropping • Detention facility • Emergency services • Extractive industry • Food and drink outlet • Function facility • Funeral parlour • Garden centre • Hardware and trade supplies • High impact industry 	<ul style="list-style-type: none"> • Hospital • Hotel • Indoor sport and recreation • Intensive animal industry • Intensive horticulture • Landing • Low impact industry • Major electricity infrastructure • Major sport, recreation and entertainment facility • Marine industry • Medium impact industry • Motor sport facility • Nature based tourism • Nightclub entertainment facility • Non-resident workforce accommodation • Office • Outdoor sales • Outstation • Parking station 	<ul style="list-style-type: none"> • Permanent plantation • Port services • Renewable energy facility • Research and technology industry • Resort complex • Roadside stall • Rooming accommodation • Rural industry • Rural workers accommodation • Service industry • Shop • Shopping Centre • Showroom • Special industry • Theatre • Transport depot • Veterinary services • Warehouse • Wholesale nursery • Winery

Note – This table does not imply that all other uses not listed in the table are automatically consistent uses within the zone. Assessable development must still demonstrate consistency through the assessment process.

7.2.2 Coastal communities local plan code

7.2.2.1 Application

- (1) This code applies to assessing development within the Coastal communities local plan area covering Wonga Beach, Newell and Cooya Beach as identified on the Coastal communities local plan maps contained in Schedule 2.
- (2) When using this code, reference should be made to Part 5.

7.2.2.2 Context and setting

Editor's note - This section is extrinsic material under section 15 of the Statutory Instruments Act 1992 and is intended to assist in the interpretation of the Coastal communities local plan code.

The Coastal communities consist of the three residential communities of Wonga Beach, Newell and Cooya Beach: each located 13 km to the north-north-east, 5 km to the north-east and 4 km to the east of the Mossman town centre, respectively.

All are located on the flat coastal plain along the Coral Sea. Each community is located on the coastal sandy swales of the foreshore and are therefore low-lying and vulnerable to coastal erosion and storm tide hazards.

Wonga Beach is the largest community and currently consists of two sections, each with separate access to the Mossman-Daintree Road. The northern part of Wonga Beach has access to the Mossman-Daintree Road via Wonga Beach Road and consists predominantly of detached housing, the Wonga Beach primary school in Snapper Island Drive, a small caravan park on the Esplanade and other low key tourist accommodation, mainly in the form of bed and breakfast facilities.

The southern part of Wonga Beach has access to the Mossman-Daintree Road via Oleander Drive and Marlin Drive. Detached housing is the predominant form of development and a small service station and local centre and a community hall are located on Oleander Drive on, and close, to the Mossman-Daintree Road intersection. Wonga Beach Park is located at the southern end of Wonga Beach and contains a skate park and barbecue facilities.

The northern and southern parts of Wonga Beach are not connected by a beach side road however they are linked by a pedestrian and bicycle path known as the 'Wonga Community Link'.

Newell consists predominantly of older-stock detached residential housing. A caravan park and small convenience store is located at Marine Parade – Pacific Street and a boat ramp is provided in the south giving access to the northern bank of the Mossman River.

Cooya Beach consists of residential development and caters for a significant amount of newer residential growth in the coastal communities, particularly along Cooya Beach Road. Cooya Beach also has a neighbourhood centre, a child care centre and has a boat ramp at its northern end providing access to the southern bank of the Mossman River.

A particular characteristic of each of the coastal communities is the distinct demarcation between urban and rural settings, with either sugar cultivation or cattle grazing directly abutting the urban edge.

All communities have a ready supply of vacant lots, with a limited capacity for further residential expansion. Of the three communities, only the new residential estate on the western side of Cooya Beach is connected to reticulated sewerage network.

7.2.2.3 Purpose

- (1) The purpose of the Coastal communities local plan code is to provide for attractive residential areas in the Shire as an alternative to Mossman and Port Douglas.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) maintain development in coastal communities as primarily low density residential development;
 - (b) protect residential communities from incursion by tourist accommodation and facilities;
 - (c) facilitate the development of local commercial and community services and facilities, including active and passive open space at a level adequate to service the resident population;
 - (d) ensure new residential development is limited in extent and is designed to integrate with existing communities;
 - (e) ensure Good Quality Agricultural Land is protected from the impacts of residential development or residential expansion;
 - (f) protect environmentally sensitive coastal areas and coastal processes from the detrimental impacts associated with urban development;
 - (g) protect parts of the Local Plan Area used for the cultivation of sugar cane from incompatible development, where such land is zoned for continued Rural use.
- (3) The purpose of the code will be further achieved through the following overall outcomes:
 - (a) Precinct 1 – Wonga Beach rural precinct;
 - (b) Precinct 2 – Wonga Beach low density residential precinct;
 - (c) Precinct 3 – Wonga Beach local centre precinct;
 - (d) Precinct 4 – Wonga Beach rural residential precinct;
 - (e) Precinct 5 – Wonga Beach Lifu Close precinct;
 - (f) Precinct 6 – Newell low density residential precinct;

- (g) Precinct 7 – Newell local centre precinct.

Precinct 1 – Wonga Beach rural precinct

- (4) In addition to the overall outcomes, the outcomes sought for the precinct are to ensure that:
- (a) the open rural character and amenity of the precinct is maintained;
 - (b) clear visual separation is maintained between the residential areas of Wonga Beach and the Mossman-Daintree Road;
 - (c) development reliant on exposure to the Mossman-Daintree Road, including tourist facilities and attractions, does not occur.

Precinct 2 – Wonga Beach low density residential precinct

- (5) In addition to the overall outcomes, the outcomes sought for the precinct are to ensure that:
- (a) development consists of low density residential housing and open space. Other uses are not facilitated within the precinct;
 - (b) a road connection between Oasis Drive and Marlin Drive is not provided. However a pedestrian and cycling link is maintained along the western boundary of the precinct, and any development provides adequate visibility to this link to ensure the personal safety and security for the users of the link;
 - (c) development is setback from the established foreshore vegetation and good highly visible public access is provided along the edge of the foreshore vegetation that permits safe access to the beach;
 - (d) development incorporates adequate water-sensitive urban design techniques to cater for any storm water flows required to be conveyed across the site.

Precinct 3 – Wonga Beach local centre precinct

- (6) In addition to the overall outcomes, the following outcomes are achieved in the precinct:
- (a) local shopping and community facilities are consolidated within the precinct on the corner of Oleander Drive and Mossman-Daintree Road. No other shopping facilities are considered to be necessary in Wonga Beach;
 - (b) retailing activities, including the service station are not intended to exceed 400m² in gross floor area;
 - (c) pedestrian connections between uses within the precinct are maintained and enhanced;
 - (d) access and car parking is coordinated between uses;
 - (e) supplementary landscape planting is provided to enhance the appearance of the precinct and to provide for shade trees.

Precinct 4 – Wonga Beach rural residential precinct

- (7) In addition to the overall outcomes, the following outcomes are achieved in the precinct:

- (a) any further lot reconfiguration within this precinct ensures that large lots are maintained to provide for housing diversity and for the protection of the existing rural residential character.

Precinct 5 – Wonga Beach Lifu Close precinct

- (8) In addition to the overall outcomes, the following outcomes are achieved in the precinct:
- (a) further lot reconfiguration is discouraged within this precinct, unless adequate road access and frontages can be provided to each new lot. This may require consolidation of existing lots to achieve appropriate design solutions;
- (b) multiple rear lots are not established.

Precinct 6 – Newell low density residential precinct

- (9) In addition to the overall outcomes, the following outcomes are achieved in the precinct:
- (a) a limited size low density residential extension of the existing street pattern is facilitated, subject to an engineering analysis demonstrating that there are no significant constraints preventing such an extension.

Precinct 7 – Newell local centre precinct

- 10) In addition to the overall outcomes, the following outcomes are achieved in the precinct:
- (a) Any redevelopment of the local shopping facility is contained within the local centre precinct and is limited to 150m² for all centre uses.

Criteria for assessment

Table 7.2.2.4 a – Coastal communities local plan – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
Development in the Coastal communities local plan area generally		
PO1 Buildings and structures complement the height of surrounding development and buildings are limited to two storeys.	AO1 Buildings and structures are not more than 8.5 metres in height. Note – Height is inclusive of roof height.	Complies with AO1 The Dwelling House would have a maximum height of less than 8.5 metres.

Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
Development in the Coastal communities local plan area generally		
PO2 Development retains and enhances key landscape elements including character trees and areas of significant vegetation contributing to the character and quality of the local plan area and significant views and vistas and other landmarks important to the Coastal communities' context (as identified on the Coastal Communities Townscape Plan map contained in Schedule 2).	AO2.1 Development provides for the retention and enhancement of existing mature trees and character vegetation that contribute to the character of the coastal communities, including: <ul style="list-style-type: none"> (a) the coconut fringed vegetation along the foreshore and esplanade areas; (b) low-lying melaleuca swamp lands and the mangrove communities along river banks and creeks. 	Not applicable A Dwelling House is identified as Self-assessable development.
	AO2.2 Development protects and does not intrude into important views and vistas as identified on the Coastal Communities Townscape Plan map contained in Schedule 2).	Not applicable A Dwelling House is identified as Self-assessable development.
PO3 Development contributes to the protection, reinforcement and where necessary enhancement of gateways and key intersections identified on the Coastal Communities Townscape Plan map contained in Schedule 2	PO3 Development adjacent to the gateways and key intersections as identified on the Coastal Townscape Plan maps contained in Schedule 2 and where permitted under the planning scheme, incorporates architectural features and landscaping treatments and design elements that enhances the sense of arrival	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	and way finding within each coastal suburb.	
PO4 Landscaping of development sites complements the desirable qualities of the existing character of the coastal communities.	AO4 Landscaping incorporates the requirements of Planning scheme policy SC6.7 - Landscaping.	Not applicable A Dwelling House is identified as Self-assessable development.
Additional requirements for Precinct 2 – Wonga Beach low density residential precinct		
PO5 Development takes into account, the opportunities and constraints with particular attention paid to storm-tide hazards, water-sensitive urban design management of storm water flow paths, and retention of foreshore vegetation.	AO5 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO6 Development avoids a road connection between Oasis Drive and Marlin Drive that would exacerbate traffic volumes or unduly increase traffic hazards, particularly along Marlin Drive and Oleander Drive. Proposals for a road extension into Precinct 2 should be from the north and not from Marlin Drive. A turning circle immediately at the end of Marlin Drive may be acceptable.	AO6 A road connection between Oasis Drive and Marlin Drive is not provided. Proposals for a road extension into Precinct 2 should be from the north and not from Marlin Drive. A turning circle immediately at the end of Marlin Drive may be acceptable.	Not applicable A Dwelling House is identified as Self-assessable development.
PO7 Development maintains a pedestrian and bicycle link along the western boundary of the precinct and	AO7 A pedestrian and bicycle link is retained along the western boundary of the precinct which is clearly	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
establishes adequate opportunities for surveillance along and across to the link.	visible from adjoining streets and / or public open space areas (i.e. – is not obscured at the rear of residential lots).	
PO8 The line of foreshore vegetation along the eastern side of the precinct, including the foreshore coconut palms, is retained and development is setback to avoid damage to the vegetation.	AO8 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO9 Highly visible public access is provided along the eastern side of the precinct to the foreshore.	AO9 A constructed public esplanade road (taking into account the requirements of AO6) is provided along the eastern side of the precinct clear of the foreshore vegetation, including the foreshore coconut palms.	Not applicable A Dwelling House is identified as Self-assessable development.
PO10 Storm-water flows are conveyed across the site incorporating water-sensitive urban design principles.	AO10 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
Additional requirements for Precinct 3 – Wonga Beach local centre precinct		
PO11 Retailing activities, including the service station do not exceed 400m2 across each of the three allotments contained within the Centre zone. No retailing activities occur within the Community Facilities zone within the precinct.	AO11 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
PO12 Pedestrian connections, vehicular access, car parking areas and landscaping are integrated across each of the three sites so as to function as an integrated local centre.	AO12 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO13 Supplementary landscaping is provided to enhance the appearance of the precinct, including the provision of shade trees.	AO13 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
Additional requirements for Precinct 4 – Wonga Beach rural residential precinct		
PO14 New lots contain a minimum area of 2000m ² .	AO14 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO15 New lots contain a 40 metre x 25 metre rectangle.	AO15 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
Additional requirements for Precinct 5 – Wonga Beach Lifu Close precinct		
PO16 Lot reconfiguration is permitted only where adequate dedicated road access can be provided to each lot.	AO16 Further lot reconfiguration in the form of additional lots does not occur.	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
Note - The provision of multiple rear lots off the top of the Lifu Close cul-de-sac does not represent an acceptable performance outcome due to the inadequate shape and servicing needs (in particular refuse collection) associated with the existing configuration of the lots.		
Additional requirements for Precinct 6 – Newell low density residential precinct		
PO17 Development consists of low density residential lots off a new road extension that connects Pacific Street to Coulthard Close.	AO17 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO18 Any further lot reconfiguration within the precinct is contingent upon an engineering analysis that demonstrates that there are no constraints that would prevent the development of land for low density residential lots.	AO18 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
Additional requirements for Precinct 6 – Newell low density residential precinct		
PO19 Any redevelopment of the local shopping facility is confined to a maximum of 150m ² for all centre uses.	AO19 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.

8.2.1 Acid sulfate soils overlay code

8.2.1.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Acid sulfate soils overlay, if:
 - (a) self-assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land in the Acid sulphate soils overlay is identified on the Acid sulfate soils overlay map in Schedule 2 and includes the following sub-categories:
 - (a) Land at or below the 5m AHD sub-category;
 - (b) Land above the 5m AHD and below the 20m AHD sub-category.
- (3) When using this code, reference should be made to Part 5.

8.2.1.2 Purpose

- (1) The purpose of the acid sulfate soils overlay code is to:
 - (a) implement the policy direction in the Strategic Framework, in particular:
 - (i) Theme 2: Environment and landscape values, Element 3.5.4 Coastal zones.
 - (ii) Theme 3: Natural resource management, Element 3.6.2 land and catchment management, Element 3.6.3 Primary production, forestry and fisheries.
- (2) enable an assessment of whether development is suitable on land within the Acid sulfate soils overlay sub-categories.
- (3) The purpose of the code will be achieved through the following overall outcomes:
 - (a) Development ensures that the release of any acid and associated metal contaminant is avoided by not disturbing acid sulfate soils when excavating, removing soil or extracting ground water or filling land;
 - (b) Development ensures that disturbed acid sulfate soils, or drainage waters, are treated and, if required, on-going management practices are adopted that minimise the potential for environmental harm from acid sulfate soil and protect corrodible assets from acid sulfate soil.

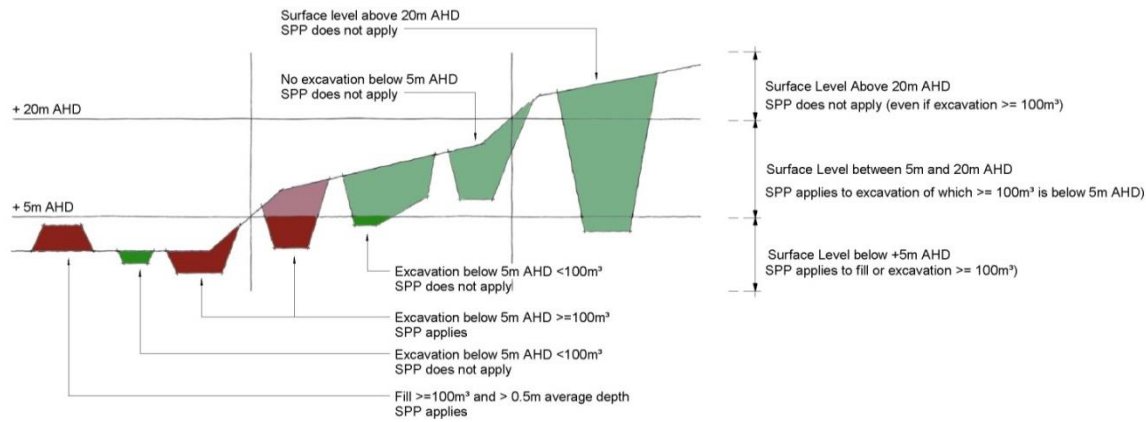
Criteria for assessment

Table 8.2.1.3.a – Acid sulfate soils overlay code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For assessable development		
PO1 The extent and location of potential or actual acid sulfate soils is accurately identified.	AO1.1 No excavation or filling occurs on the site. or AO1.2 An acid sulfate soils investigation is undertaken. Note - Planning scheme policy SC 6.12– Potential and actual acid sulfate soils provides guidance on preparing an acid sulfate soils investigation.	Complies with AO1.1 No excavation or filling would be undertaken as part of the development outside of the building footprint.
PO2 Development avoids disturbing potential acid sulfate soils or actual acid sulfate soils, or is managed to avoid or minimise the release of acid and metal contaminants.	AO2.1 The disturbance of potential acid sulfate soils or actual acid sulfate soils is avoided by: (a) not excavating, or otherwise removing, soil or sediment identified as containing potential or actual acid sulfate soils; (b) not permanently or temporarily extracting groundwater that results in the aeration of previously saturated acid sulfate soils; (c) not undertaking filling that results in: (i) actual acid sulfate soils being moved below the water table; (ii) previously saturated acid sulfate soils	Complies with AO2.1 It is not proposed to disturb acid sulfate soils as part of the development and no soils would be removed or exposed.

Performance outcomes	Acceptable outcomes	Applicant response
	<p>being aerated.</p> <p>or</p> <p>AO2.2</p> <p>The disturbance of potential acid sulfate soils or actual acid sulfate soils is undertaken in accordance with an acid sulfate soils management plan and avoids the release of metal contaminants by:</p> <ul style="list-style-type: none"> (a) neutralising existing acidity and preventing the generation of acid and metal contaminants; (b) preventing the release of surface or groundwater flows containing acid and metal contaminants into the environment; (c) preventing the in situ oxidisation of potential acid sulfate soils and actual acid sulfate soils through ground water level management; (d) appropriately treating acid sulfate soils before disposal occurs on or off site; (e) documenting strategies and reporting requirements in an acid sulfate soils environmental management plan. <p>Note - Planning scheme policy SC 6.12 – Acid sulfate soils provides guidance on preparing an acid sulfate soils management plan.</p>	
<p>PO3</p> <p>No environmental harm is caused as a result of exposure to potential acid sulfate soils or actual acid sulfate soils.</p>	<p>AO3</p> <p>No acceptable outcomes are prescribed.</p>	<p>Complies with PO3</p> <p>The proposed development would not disturb Acid Sulfate Soils.</p>

Figure 8.2.1.3.a – Acid sulfate soils (SPP triggers)



8.2.3 Coastal environment overlay code

8.2.3.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Coastal environment overlay, if:
 - (a) self assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land in the Coastal hazard overlay is identified on the Coastal environment overlay map in Schedule 2 and includes the following sub-categories:
 - (a) Coastal management district sub-category;
 - (b) Erosion prone area sub-category.
- (3) When using this code, reference should be made to Part 5.

8.2.3.2 Purpose

- (1) The purpose of the Coastal environment overlay code is to:
 - (a) implement the policy direction in the Strategic Framework, in particular:
 - (i) Theme 1 Settlement pattern: Element 3.4.7 Mitigation of hazards;
 - (ii) Theme 2 Environment and landscape values: Element 3.5.4 Coastal zones;
 - (iii) Theme 3 Natural resource management: Element 3.6.2 Land and catchment management.
 - (b) enable an assessment of whether development is suitable on land within the Coastal processes sub-categories.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) facilitate the protection of both coastal processes and coastal resources;
 - (b) facilitating coastal dependent development on the foreshore over other development;
 - (c) public access to the foreshore protects public safety;
 - (d) maintain the erosion prone area as a development free buffer zone (other than for coastal dependent, temporary or relocatable development);
 - (e) require redevelopment of existing permanent buildings or structures in an erosion prone area to avoid coastal erosion risks, manage coastal erosion risks through a strategy of planned retreat or mitigate coastal erosion risks;

- (f) require development to maintain or enhance natural processes and the protective function of landforms and vegetation that can mitigate risks associated with coastal erosion;
- (g) locate and design community infrastructure to maintain the required level of functionality during and immediately after a coastal hazard event.

Criteria for assessment

Table 8.2.3.3.a – Coastal environment overlay code – self-assessable and assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
PO1 No works other than coastal protection works extend seaward of the coastal building line.	AO1.1 Development (including all buildings and other permanent structures such as swimming pools and retaining walls) does not extend seaward of a coastal building line. Note – Coastal building lines are declared under the Coastal Protection and Management Act 1995 and are administered by the State Department of Environment and Heritage Protection.	Not applicable The site is not subject to a coastal building line.
	AO1.2 Coastal protection works are only undertaken as a last resort where coastal erosion presents an immediate threat to public safety or existing buildings or structures and the property cannot be relocated or abandoned.	Complies with AO1.2 Coastal protection works to the seaward boundary would be limited to the protection of a swimming pool, which is able to be abandoned.
	AO1.3 Coastal protection works are as far landward as practicable on the lot containing the property to the maximum extent reasonable.	Complies with AO1.3 The coastal protection works would be located immediately adjacent the proposed dwelling house and are considered to be located as far landward as is reasonable

Performance outcomes	Acceptable outcomes	Applicant response
		possible.
	AO1.4 Coastal protection work mitigates any increase in the coastal hazard.	Complies with AO1.4 The coastal protection works are proposed to mitigate any perceived risk from potential coastal hazards.
PO2 Where a coastal building line does not exist on a lot fronting the coast or a reserve adjoining the coast, development is setback to maintain the amenity and use of the coastal resource.	AO2 Where a coastal building line does not exist on a lot fronting the coast or a reserve adjoining the coast, development (including all buildings and structures such as swimming pools) and retaining walls are set back not less than 6 metres from the seaward boundary of the lot.	Complies with PO2 The buildings and structures would be setback 5 metres from the seaward boundary of the lot, which is consistent with the development along marine parade and is considered to be a suitable setback to maintain the amenity of the area and the coastal resource.
For assessable development		
Erosion prone areas		
PO3 Development identifies erosion prone areas (coastal hazards).	AO3 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO4 Erosion prone areas are free from development to allow for natural coastal processes.	AO4.1 Development is not located within the Erosion prone area, unless it can be demonstrated that the development is for:	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	(a) community infrastructure where no suitable alternative location or site exists for this infrastructure; or (b) development that reflects the preferred development outcomes in accordance with the zoning of the site (i.e. in the Low density residential zone, a dwelling house is a preferred development outcome in accordance with the zoning of the site)	
	AO4.2 Development involving existing permanent buildings and structures within an erosion prone area does not increase in intensity of its use by: (a) adding additional buildings or structures; or (b) incorporating a land use that will result in an increase in the number of people or employees occupying the site.	Not applicable A Dwelling House is identified as Self-assessable development.
Coastal management districts		
PO5 Natural processes and protective functions of landforms and vegetation are maintained.	PO5.1 Development within the coastal management district: (a) maintains vegetation on coastal land forms where its removal or damage may: (i) destabilise the area and increase the potential for coastal erosion, or (ii) interrupt the natural sediment trapping	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	<p>processes or dune or land building processes;</p> <p>(b) maintains sediment volumes of dunes and near-shore coastal landforms, or where a reduction in sediment volumes cannot be avoided, increased risks to development from coastal erosion are mitigated by location, design and construction and operating standards;</p> <p>(c) minimises the need for erosion control structures or riverine hardening through location, design and construction standards;</p> <p>(d) maintains physical coastal processes outside the development footprint for the development, including longshore transport of sediment along the coast;</p> <p>(e) reduces the risk of shoreline erosion for areas adjacent to the development footprint to the maximum extent feasible in the case of erosion control structures.</p>	
	<p>PO5.2</p> <p>Where development proposes the construction of an erosion control structure:</p> <p>(a) it is demonstrated that it is the only feasible option for protecting permanent structures from coastal erosion; and</p> <p>(b) those permanent structures cannot be abandoned or relocated in the event of coastal erosion occurring</p>	<p>Not applicable</p> <p>A Dwelling House is identified as Self-assessable development.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	PO5.3 Development involving reclamation: <ul style="list-style-type: none"> (a) does not alter, or otherwise minimises impacts on, the physical characteristics of a waterway or the seabed near the reclamation, including flow regimes, hydrodynamic forces, tidal water and riverbank stability; (b) is located outside active sediment transport area, or otherwise maintains sediment transport processes as close as possible to their natural state; (c) ensures activities associated with the operation of the development maintain the structure and condition of vegetation communities and avoid wind and water run-off erosion. 	Not applicable A Dwelling House is identified as Self-assessable development.
PO6 Development avoids or minimises adverse impacts on coastal resources and their values to the maximum extent reasonable.	AO6.1 Coastal protection work that is in the form of beach nourishment uses methods of placement suitable for the location that do not interfere with the long-term use of the locality, or natural values within or neighbouring the proposed placement site. and	Not applicable A Dwelling House is identified as Self-assessable development.
	AO6.2 Marine development is located and designed to expand on or redevelop existing marine infrastructure unless it is demonstrated that it is not practicable to co-locate the development with existing marine	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	infrastructure; and	
	AO6.3 Measures are incorporated as part of siting and design of the development to maintain or enhance water quality to achieve the environmental values and water quality objectives outlined in the Environmental Protection (Water) Policy 2009. and	Not applicable A Dwelling House is identified as Self-assessable development.
	AO6.4 Development avoids the disturbance of acid sulfate soils, or where it is demonstrated that this is not possible, the disturbance of acid sulfate soils is carefully managed to minimise and mitigate the adverse effects of disturbance on coastal resources. and	Not applicable A Dwelling House is identified as Self-assessable development.
	AO6.4 Design and siting of development protects and retains identified ecological values and underlying ecosystem processes within the development site to the greatest extent practicable.	Not applicable A Dwelling House is identified as Self-assessable development.
P07 Development is to maintain access to and along the foreshore for general public access.	AO7.1 Development provides for regular access points for pedestrians including approved walking tracks,	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	boardwalks and viewing platforms. and	
	A07.2 Development provides for regular access points for vehicles including approved roads and tracks. or	Not applicable A Dwelling House is identified as Self-assessable development.
	A07.3 Development demonstrates an alternative solution to achieve an equivalent standard of performance.	Not applicable A Dwelling House is identified as Self-assessable development.
PO8 Public access to the coast is appropriately located, designed and operated.	A08.1 Development maintains or enhances public access to the coast. or	Not applicable A Dwelling House is identified as Self-assessable development.
	A08.2 Development is located adjacent to state coastal land or tidal water and minimises and offsets any loss of access to and along the foreshore within 500 metres. or	Not applicable A Dwelling House is identified as Self-assessable development.
	A08.3 Development adjacent to state coastal land or tidal water demonstrates an alternative solution to achieve	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	an equivalent standard and quality of access	
PO9 Development adjacent to state coastal land or tidal water is located, designed and operated to: <ul style="list-style-type: none"> (a) maintain existing access to and along the foreshore; (b) minimise any loss of access to and along the foreshore, or (c) offset any loss of access to and along the foreshore by providing for enhanced alternative access in the general location. 	AO9.1 Development adjacent to state coastal land or tidal water: <ul style="list-style-type: none"> (a) demonstrates that restrictions to public access are necessary for: <ul style="list-style-type: none"> (i) the safe and secure operation of development; (ii) the maintenance of coastal landforms and coastal habitat; or (b) maintains public access (including public access infrastructure that has been approved by the local government or relevant authority) through the site to the foreshore for: <ul style="list-style-type: none"> (i) pedestrians via access points including approved walking tracks, boardwalks and viewing platforms; (ii) vehicles via access points including approved roads or tracks. 	Not applicable A Dwelling House is identified as Self-assessable development.
	AO9.2 Development adjacent to state coastal land or tidal water: <ul style="list-style-type: none"> (a) is located and designed to: <ul style="list-style-type: none"> (i) allow safe unimpeded access to, over, under or around built infrastructure located on, over or along the foreshore, 	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	<p>for example through the provision of esplanades or easement corridors to preserve future access;</p> <p>(ii) ensure emergency vehicles can access the area near the development.</p> <p>or</p> <p>(b) minimises and offsets any loss of access to and along the foreshore within 500m of existing access points and development is located and designed to:</p> <p>(i) allow safe unimpeded access to, over, under or around built infrastructure located on, over or along the foreshore, and</p> <p>(ii) ensure emergency vehicles can access the area near the development.</p>	
AO10 Development that involves reconfiguring a lot for urban purposes adjacent to the coast is designed to ensure public access to the coast in consideration of public access demand from a whole-of-community basis and the maintenance of coastal landforms and coastal habitat.	AO10.1 Development complies if consideration of public access demand from a whole-of-community basis and the maintenance of coastal landforms and coastal habitat is undertaken. or	Not applicable A Dwelling House is identified as Self-assessable development.
	AO10.2 Development demonstrates an alternative solution to achieve an equivalent standard and quality of access.	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
PO11 Development maintains public access to State coastal land by avoiding private marine development attaching to, or extending across, non-tidal State coastal land.	AO11 Private marine access structures and other structures such as decks or boardwalks for private use do not attach to or extend across State coastal land that is situated above high water mark	Not applicable A Dwelling House is identified as Self-assessable development.
PO12 Development in connection with an artificial waterway enhances public access to coastal waters.	AO12 The artificial waterway avoids intersecting with or connection to inundated land or leased land where the passage, use or movement of vessels in water on the land could be restricted or prohibited by the registered proprietor of the inundated land or leased land.	Not applicable A Dwelling House is identified as Self-assessable development.
Coastal landscapes, views and vistas		
PO13 Development maintains and / or enhances natural coastal landscapes, views and vistas.	AO13 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
PO14 Coastal settlements are consolidated through the concentration of development within the existing urban areas through infill and conserving the natural state of the coastal area outside existing urban areas.	AO14 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
Private marine development		

Performance outcomes	Acceptable outcomes	Applicant response
PO15 Private marine development is to avoid attaching to, or extending across, non-tidal State coastal land.	AO15 Private marine development and other structures such as decks or boardwalks for private use do not attach to, or extend across, State coastal land that is situated above high water mark. Note – For occupation permits or allocations of State land, refer to the <i>Land Act 1994</i> .	Not applicable A Dwelling House is identified as Self-assessable development.
PO16 The location and design of private marine development does not adversely affect the safety of members of the public access to the foreshore.	AO16 Private marine development does not involve the erection or placement of any physical barrier preventing existing access, along a public access way to the foreshores.	Not applicable A Dwelling House is identified as Self-assessable development.
PO17 Private marine development is of a height and scale and size compatible with the character and amenity of the location.	AO17 Private marine development has regard to: <ul style="list-style-type: none"> (a) the height, scale and size of the natural features of the immediate surroundings and locality; (b) the height, scale and size of existing buildings or other structures in the immediate surroundings and the locality; (c) if the relevant planning scheme states that desired height, scale or size of buildings or other structures in the immediate surroundings or locality – the stated desired height, scale or size. Note – The prescribed tidal works code in the <i>Coastal Protection and Management Regulation 2003</i> outlines design and construction requirements that must be complied with.	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
PO18 Private marine development avoids adverse impacts on coastal landforms and coastal processes.	AO18 Private marine development does not require the construction of coastal protection works, shoreline or riverbank hardening or dredging for marine access.	Not applicable A Dwelling House is identified as Self-assessable development.
For dry land marinas and artificial waterways		
PO19 Dry land marinas and artificial waterways: <ul style="list-style-type: none"> (a) avoid impacts on coastal resources; (b) do not contribute to the degradation of water quality; (c) do not increase the risk of flooding; (d) do not result in the degradation or loss of MSES; (e) do not result in an adverse change to the tidal prism of the natural waterway to which development is connected. (f) does not involve reclamation of tidal land other than for the purpose of: <ul style="list-style-type: none"> (i) coastal dependent development, public marine development; or (i) community infrastructure, where there is no feasible alternative; or (iii) strategic ports, boat harbours or strategic airports and aviation facilities in accordance with a statutory land 	AO19 No acceptable solutions are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
<p>use plan; or</p> <p>(iv) coastal protection works or works necessary to protect coastal resources and processes.</p>		

8.2.4 Flood and storm tide hazard overlay code

8.2.4.1 Application

- (1) This code applies to assessing a material change of use, reconfiguring a lot, operational work or building work within the Flood and storm tide hazard overlay, if:
 - (a) self assessable or assessable development where the code is identified as being applicable in the Assessment criteria for the Overlay Codes contained in the Levels of Assessment Tables in section 5.6;
 - (b) impact assessable development.
- (2) Land in the Flood and storm tide hazard overlay is identified on the Flood and storm tide hazard overlay map in Schedule 2 and includes the:
 - (a) Storm tide – high hazard sub-category;
 - (b) Storm tide – medium hazard sub-category;
 - (c) Flood plain assessment sub-category;
 - (d) 100 ARI Mossman, Port Douglas and Daintree Township Flood Studies sub-category.
- (3) When using this code, reference should be made to Part 5.

Note - The Flood and storm tide hazards overlay maps contained in Schedule 2 identify areas (Flood and storm tide inundation areas) where flood and storm tide inundation modelling has been undertaken by the Council. Other areas not identified by the Flood and inundation hazards overlay maps contained in Schedule 2 may also be subject to the defined flood event or defined storm tide event.

8.2.4.2 Purpose

- (1) The purpose of the Flood and storm tide hazard overlay code is to:
 - (a) implement the policy direction in the Strategic Framework, in particular:
 - (i) Theme 1 Settlement pattern: Element 3.4.7 Mitigation of hazards;
 - (ii) Theme 6 Infrastructure and transport: Element 3.9.2 Energy.
 - (b) enable an assessment of whether development is suitable on land within the Flood and storm tide hazard sub-categories.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) development siting, layout and access responds to the risk of the natural hazard and minimises risk to personal safety;
 - (b) development achieves an acceptable or tolerable risk level, based on a fit for purpose risk assessment;
 - (c) the development is resilient to natural hazard events by ensuring siting and design accounts for the potential risks of natural hazards to property;

- (d) the development supports, and does not unduly burden disaster management response or recovery capacity and capabilities;
- (e) the development directly, indirectly and cumulatively avoids an unacceptable increase in severity of the natural hazards and does not significantly increase the potential for damage on site or to other properties;
- (f) the development avoids the release of hazardous materials as a result of a natural hazard event;
- (g) natural processes and the protective function of landforms and/or vegetation are maintained in natural hazard areas;
- (h) community infrastructure is located and designed to maintain the required level of functionality during and immediately after a hazard event.

Criteria for assessment

Table 8.2.4.3.a – Flood and storm tide hazards overlay code –assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
PO1 Development is located and designed to: <ul style="list-style-type: none"> a) ensure the safety of all persons; b) minimise damage to the development and contents of buildings; c) provide suitable amenity; d) minimise disruption to residents, recovery time, and rebuilding or restoration costs after inundation events. Note – For assessable development within the flood plain assessment sub-category, a flood study by a suitably qualified professional is required to identify compliance with the intent of the acceptable outcome.	AO1.1 Development is sited on parts of the land that is not within the Flood and Storm tide hazards overlay maps contained in Schedule 2; or For dwelling houses,	Complies with AO1.2 The Dwelling House has been designed with a finished floor level to provide the required flood immunity.
	AO1.2 Development within the Flood and Storm Tide hazards overlay maps (excluding the Flood plain assessment sub-category) is designed to provide immunity to the Defined Inundation Event as outlined Table 8.2.4.3.b plus a freeboard of 300mm.	
	AO1.3 New buildings are:	Complies with PO1 The proposed development has been

Performance outcomes	Acceptable outcomes	Applicant response
	(a) not located within the overlay area; (b) located on the highest part of the site to minimise entrance of flood waters; (c) provided with clear and direct pedestrian and vehicle evacuation routes off the site.	designed to provide a suitable setback to the seaward boundary and engineered to withstand potential coastal storm tide impacts. A safe evacuation route is provided via Marine Parade the design positively contributes to the amenity of the area.
	AO1.4 In non urban areas, buildings and infrastructure are set back 50 metres from natural riparian corridors to maintain their natural function of reducing velocity of floodwaters.	Not applicable The site is within an urban area.
For assessable development		
PO2 The development is compatible with the level of risk associated with the natural hazard.	AO2 The following uses are not located in land inundated by the Defined Flood Event (DFE) / Storm tide: (a) Retirement facility; (b) Community care facility; (c) Child care centre.	Not applicable A Dwelling House is identified as self-assessable development.
PO3 Development siting and layout responds to flooding potential and maintains personal safety	For Material change of use AO3.1 New buildings are: (a) not located within the overlay area; (b) located on the highest part of the site to	Not applicable A Dwelling House is identified as self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
	<p>minimise entrance of flood waters;</p> <p>(c) provided with clear and direct pedestrian and vehicle evacuation routes off the site.</p> <p>or</p> <p>A03.2</p> <p>The development incorporates an area on site that is at least 300mm above the highest known flood inundation level with sufficient space to accommodate the likely population of the development safely for a relatively short time until flash flooding subsides or people can be evacuated.</p> <p>or</p> <p>A03.3</p> <p>Where involving an extension to an existing dwelling house that is situated below DFE /Storm tide, the maximum size of the extension does not exceed 70m² gross floor area.</p> <p>Note – If part of the site is outside the Hazard Overlay area, this is the preferred location of all buildings.</p>	
	<p>For Reconfiguring a lot</p> <p>A03.4</p> <p>Additional lots:</p> <p>(a) are not located in the hazard overlay area;</p> <p>or</p> <p>(b) are demonstrated to be above the flood level identified for the site.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	<p>Note - If part of the site is outside the Hazard Overlay area, this is the preferred location for all lots (excluding park or other open space and recreation lots).</p> <p>Note – Buildings subsequently developed on the lots will need to comply with the relevant building assessment provisions under the <i>Building Act 1975</i>.</p>	
	<p>A03.5</p> <p>Road and/or pathway layout ensures residents are not physically isolated from adjacent flood free urban areas and provides a safe and clear evacuation route path:</p> <p>(a) by locating entry points into the reconfiguration above the flood level and avoiding culs-de-sac or other non-permeable layouts; and</p> <p>(b) by direct and simple routes to main carriageways.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>
	<p>A03.6</p> <p>Signage is provided on site (regardless of whether the land is in public or private ownership) indicating the position and path of all safe evacuation routes off the site and if the site contains, or is within 100m of a floodable waterway, hazard warning signage and depth indicators are also provided at key hazard points, such as at floodway crossings or entrances to low-lying reserves.</p> <p>or</p> <p>A03.7</p> <p>There is no intensification of residential uses within the</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	flood affected areas on land situated below the DFE/Storm tide	
	<p>For Material change of use (Residential uses)</p> <p>AO3.8</p> <p>The design and layout of buildings used for residential purposes minimise risk from flooding by providing:</p> <p>(a) parking and other low intensive, non-habitable uses at ground level;</p> <p>Note - The high-set 'Queenslander' style house is a resilient low-density housing solution in floodplain areas. Higher density residential development should ensure only non-habitable rooms (e.g. garages, laundries) are located on the ground floor.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>
<p>PO4</p> <p>Development is resilient to flood events by ensuring design and built form account for the potential risks of flooding.</p>	<p>For Material change of use (Non-residential uses)</p> <p>AO4.2</p> <p>Non residential buildings and structures allow for the flow through of flood waters on the ground floor.</p> <p>Note - Businesses should ensure that they have the necessary contingency plans in place to account for the potential need to relocate property prior to a flood event (e.g. allow enough time to transfer stock to the upstairs level of a building or off site).</p> <p>Note - The relevant building assessment provisions under the <i>Building Act 1975</i> apply to all building work within the Hazard Area and need to take into account the flood potential within the area.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>
	<p>AO4.3</p> <p>Materials are stored on-site:</p> <p>(a) are those that are readily able to be moved in a</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	<p>flood event;</p> <p>(b) where capable of creating a safety hazard by being shifted by flood waters, are contained in order to minimise movement in times of flood.</p> <p>Notes -</p> <p>(a) Businesses should ensure that they have the necessary contingency plans in place to account for the potential need to relocate property prior to a flood event (e.g. allow enough time to transfer stock to the upstairs level of a building or off site).</p> <p>(b) Queensland Government Fact Sheet 'Repairing your House after a Flood' provides information about water resilient products and building techniques.</p>	
<p>PO5</p> <p>Development directly, indirectly and cumulatively avoids any increase in water flow velocity or flood level and does not increase the potential flood damage either on site or on other properties.</p> <p>Note – Berms and mounds are considered to be an undesirable built form outcome and are not supported.</p>	<p>For Operational works</p> <p>AO5.1</p> <p>Works in urban areas associated with the proposed development do not involve:</p> <p>(a) any physical alteration to a watercourse or floodway including vegetation clearing; or</p> <p>(b) a net increase in filling (including berms and mounds).</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>
	<p>AO5.2</p> <p>Works (including buildings and earthworks) in non urban areas either:</p> <p>(a) do not involve a net increase in filling greater than 50m³; or</p> <p>(b) do not result in any reductions of on-site flood</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	<p>storage capacity and contain within the subject site any changes to depth/duration/velocity of flood waters;</p> <p>or</p> <p>(c) do not change flood characteristics outside the subject site in ways that result in:</p> <ul style="list-style-type: none"> (i) loss of flood storage; (ii) loss of/changes to flow paths; (iii) acceleration or retardation of flows or any reduction in flood warning times elsewhere on the flood plain. 	
	<p>For Material change of use</p> <p>AO5.3</p> <p>Where development is located in an area affected by DFE/Storm tide, a hydraulic and hydrology report, prepared by a suitably qualified professional, demonstrates that the development maintains the flood storage capacity on the subject site; and</p> <ul style="list-style-type: none"> (a) does not increase the volume, velocity, concentration of flow path alignment of stormwater flow across sites upstream, downstream or in the general vicinity of the subject site; and (b) does not increase ponding on sites upstream, downstream or in the general vicinity of the subject site. 	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	<p>For Material change of use and Reconfiguring a lot</p> <p>AO5.4</p> <p>In non urban areas, buildings and infrastructure are set back 50 metres from natural riparian corridors to maintain their natural function of reducing velocity of floodwaters.</p> <p>Note – Fences and irrigation infrastructure (e.g. irrigation tape) in rural areas should be managed to minimise adverse the impacts that they may have on downstream properties in the event of a flood.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>
<p>PO6</p> <p>Development avoids the release of hazardous materials into floodwaters.</p>	<p>For Material change of use</p> <p>AO6.1</p> <p>Materials manufactured or stored on site are not hazardous or noxious, or comprise materials that may cause a detrimental effect on the environment if discharged in a flood event;</p> <p>or</p> <p>AO6.2</p> <p>If a DFE level is adopted, structures used for the manufacture or storage of hazardous materials are:</p> <p>(a) located above the DFE level;</p> <p>or</p> <p>(b) designed to prevent the intrusion of floodwaters.</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>
	<p>AO6.3</p> <p>Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of</p>	

Performance outcomes	Acceptable outcomes	Applicant response
	inundation by the DFE.	
	AO6.4 If a flood level is not adopted, hazardous materials and their manufacturing equipment are located on the highest part of the site to enhance flood immunity and designed to prevent the intrusion of floodwaters. Note – Refer to <i>Work Health and Safety Act 2011</i> and associated Regulation and Guidelines, the <i>Environmental Protection Act 1994</i> and the relevant building assessment provisions under the <i>Building Act 1975</i> for requirements related to the manufacture and storage of hazardous materials.	Not applicable A Dwelling House is identified as self-assessable development.
P07 The development supports, and does not unduly burden, disaster management response or recovery capacity and capabilities.	A07 Development does not: <ul style="list-style-type: none"> (a) increase the number of people calculated to be at risk of flooding; (b) increase the number of people likely to need evacuation; (c) shorten flood warning times; and (d) impact on the ability of traffic to use evacuation routes, or unreasonably increase traffic volumes on evacuation routes. 	Not applicable A Dwelling House is identified as self-assessable development.
P08 Development involving community infrastructure: <ul style="list-style-type: none"> (a) remains functional to serve community need during and immediately after a flood event; 	AO8.1 The following uses are not located on land inundated during a DFE/Storm tide: <ul style="list-style-type: none"> (a) community residence; and 	Not applicable A Dwelling House is identified as self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant response
<p>is designed, sited and operated to avoid adverse impacts on the community or environment due to impacts of flooding on infrastructure, facilities or access and egress routes;</p> <p>retains essential site access during a flood event;</p> <p>is able to remain functional even when other infrastructure or services may be compromised in a flood event.</p>	<p>(b) emergency services; and</p> <p>(c) residential care facility; and</p> <p>(d) utility installations involving water and sewerage treatment plants; and</p> <p>(e) storage of valuable records or items of historic or cultural significance (e.g. archives, museums, galleries, libraries).</p> <p>or</p> <p>AO8.2</p> <p>The following uses are not located on land inundated during a 1% AEP flood event:</p> <p>(a) community and cultural facilities, including facilities where an education and care service under the Education and care Services National law (Queensland) is operated or child care service under the <i>Child Care Act 2002</i> is conducted,</p> <p>(b) community centres;</p> <p>(c) meeting halls;</p> <p>(d) galleries;</p> <p>(e) libraries.</p> <p>The following uses are not located on land inundated during a 0.5% AEP flood event.</p> <p>(a) emergency shelters;</p> <p>(b) police facilities;</p> <p>(c) sub stations;</p>	

Performance outcomes	Acceptable outcomes	Applicant response
	<p>(d) water treatment plant</p> <p>The following uses are not located on land inundated during a 0.2% AEP flood event:</p> <ul style="list-style-type: none"> (a) correctional facilities; (b) emergency services; (c) power stations; (d) major switch yards. <p>and/or</p> <p>AO8.3</p> <p>The following uses have direct access to low hazard evacuation routes as defined in</p> <p>Table 8.2.4.3.c :</p> <ul style="list-style-type: none"> (a) community residence; and (b) emergency services; and (c) hospitals; and (d) residential care facility; and (e) sub stations; and (f) utility installations involving water and sewerage treatment plants. 	
	<p>AO8.4</p> <p>Any components of infrastructure that are likely to fail to function or may result in contamination when inundated by flood, such as electrical switch gear and</p>	<p>Not applicable</p> <p>A Dwelling House is identified as self-assessable development.</p>

Performance outcomes	Acceptable outcomes	Applicant response
	motors, telecommunications connections, or water supply pipeline air valves are: (a) located above DFE/Storm tide or the highest known flood level for the site; (b) designed and constructed to exclude floodwater intrusion / infiltration.	
	AO8.5 Infrastructure is designed and constructed to resist hydrostatic and hydrodynamic forces as a result of inundation by a flood.	Not applicable A Dwelling House is identified as self-assessable development.

Table 8.2.4.3.b - Minimum immunity (floor levels) for development

Minimum immunity to be achieved (floor levels)	Uses and elements of activities acceptable in the event
20% AEP level	<ul style="list-style-type: none"> • Parks and open space.
5% AEP level	<ul style="list-style-type: none"> • Car parking facilities (including car parking associated with use of land).
1% AEP level	<ul style="list-style-type: none"> • All development (where not otherwise requiring an alternative level of minimum immunity).
0.5% AEP level	<ul style="list-style-type: none"> • Emergency services (if for a police station); • Industry activities (if including components which store, treat or use hazardous materials); • Substation; • Utility installation.
0.2% AEP level	<ul style="list-style-type: none"> • Emergency services; • Hospital; • Major electricity infrastructure; • Special industry.

Table 8.2.4.3.c - Degree of flood

Criteria	Low	Medium	High	Extreme
Wading ability	If necessary children and the elderly could wade. (Generally, safe wading velocity depth product is less than 0.25)	Fit adults can wade. (Generally, safe wading velocity depth product is less than 0.4)	Fit adults would have difficulty wading. (Generally, safe wading velocity depth product is less than 0.6)	Wading is not an option.
Evacuation distances	< 200 metres	200-400 metres	400-600 metres	600 metres
Maximum flood depths	< 0.3 metre	< 0.6 metre	< 1.2 metres	1.2 metres
Maximum flood velocity	< 0.4 metres per second	< 0.8 metres per second	< 1.5 metres per second	1.5 metres per second
Typical means of egress	Sedan	Sedan early, but 4WD or trucks later	4WD or trucks only in early stages, boats or helicopters	Large trucks, boats or helicopters
Timing Note: This category cannot be implemented until evacuation times have been established in the Counter Disaster Plan (Flooding)	Ample flood forecasting. Warning and evacuation routes remain passable for twice as long as evacuation time.	Evacuation routes remain trafficable for 1.5 times as long as the evacuation.	Evacuation routes remain trafficable for only up to minimum evacuation time.	There is insufficient evacuation time.

Note: The evacuation times for various facilities or areas would (but not necessarily) be included in the Counter Disaster Plan.
 Generally safe wading conditions assume even walking surfaces and no obstructions, steps, soft underfoot etc.

9.3.8 Dwelling house code

9.3.8.1 Application

(1) This code applies to assessing development for a dwelling house if:

- (a) self-assessable development or assessable development where this code identified in the assessment criteria column of a table of assessment; or
- (b) impact assessable development.

(2) When using this code, reference should be made to Part 5.

Note—Where the land is identified in an overlay map, additional provisions relating to that overlay also apply. For example, minimum floor levels for a dwelling house on a site subject to certain types of flooding are identified in the Flood and storm tide inundation overlay code.

Note – For a proposal to be self-assessable, it must meet all of the self-assessable outcomes of this code and any other applicable code. Where it does not meet all the self-assessable outcomes, the proposal becomes assessable development and a development application is required. Where a development application is triggered, only the specific acceptable outcomes that the proposal fails to meet need to be assessed against the corresponding performance outcomes. Other self-assessable outcomes that are met are not assessed as part of the development application.

9.3.8.2 Purpose

- (1) The purpose of the Dwelling house code is to assess the suitability of development to which this code applies.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) The dwelling house, including all habitable buildings on site, is occupied by a single household;
 - (b) A dwelling house, including a secondary dwelling or domestic out-buildings; ensures that the secondary dwelling is sub-ordinate to the primary dwelling house;
 - (c) Development of a dwelling house provides sufficient and safe vehicle access and parking for residents;
 - (d) The built form, siting, design and use of each dwelling is consistent with the desired neighbourhood character and streetscape elements of the area.

9.3.8.3 Criteria for assessment

Table 9.3.8.3.a – Dwelling house code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		

Performance outcomes	Acceptable outcomes	Applicant response
PO1 Secondary dwellings: <ul style="list-style-type: none"> (a) are subordinate, small-scaled dwellings; (b) contribute to a safe and pleasant living environment; (c) are established on appropriate sized lots; (d) do not cause adverse impacts on adjoining properties. 	AO1 The secondary dwelling: <ul style="list-style-type: none"> (a) has a total gross floor area of not more than 80m², excluding a single carport or garage; (b) is occupied by 1 or more members of the same household as the dwelling house. 	Not applicable No Secondary Dwellings are proposed.
PO2 Resident's vehicles are accommodated on- site.	AO2 Development provides a minimum number of onsite car parking spaces comprising: <ul style="list-style-type: none"> (a) 2 car parking spaces which may be in tandem for the dwelling house; (b) 1 car parking space for any secondary dwelling on the same site. 	Complies with AO2 The proposed Dwelling House would provide two car parking spaces.
PO3 Development is of a bulk and scale that: <ul style="list-style-type: none"> (a) is consistent with and complements the built form and front boundary setbacks prevailing in the street and local area; (b) does not create an overbearing development for adjoining dwelling houses and their private open space; ((c) does not impact on the amenity and privacy of residents in adjoining dwelling houses; (d) ensures that garages do not dominate the 	AO3 Development meets the acceptable outcome for building height in the applicable Zone code associated with the site.	Complies with AO3 Refer to the assessment against the zone code.

Performance outcomes	Acceptable outcomes	Applicant response
appearance of the street.		

9.4.1 Access, parking and servicing code

9.4.1.1 Application

- (1) This code applies to assessing:
 - (a) operational work which requires a compliance assessment as a condition of a development permit; or
 - (b) a material change of use or reconfiguring a lot if:
 - (i) self-assessable or assessable development where this code is identified in the assessment criteria column of the table of assessment;
 - (ii) impact assessable development, to the extent relevant.
- (2) When using this code, reference should be made to Part 5.

9.4.1.2 Purpose

- (1) The purpose of the Access, parking and servicing code is to assess the suitability of access, parking and associated servicing aspects of a development.
- (2) The purpose of the code will be achieved through the following overall outcomes: (
 - (a) sufficient vehicle parking is provided on-site to cater for all types of vehicular traffic accessing and parking on-site, including staff, guests, patrons, residents and short term delivery vehicles;
 - (b) sufficient bicycle parking and end of trip facilities are provided on-site to cater for customer and service staff;
 - (c) on-site parking is provided so as to be accessible and convenient, particularly for any short term uses;
 - (d) development provides walking and cycle routes through the site which link the development to the external walking and cycling network;
 - (e) the provision of on-site parking, loading / unloading facilities and the provision of access to the site do not impact on the efficient function of street network or on the area in which the development is located;
 - (f) new vehicular access points are safely located and are not in conflict with the preferred ultimate streetscape character and local character and do not unduly disrupt any current or future on-street parking arrangements.

9.4.1.3 Criteria for assessment

Table 9.4.1.3.a – Access, parking and servicing code – assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		
PO1 Sufficient on-site car parking is provided to cater for the amount and type of vehicle traffic expected to be generated by the use or uses of the site, having particular regard to: <ul style="list-style-type: none"> (a) the desired character of the area; (b) the nature of the particular use and its specific characteristics and scale; (c) the number of employees and the likely number of visitors to the site; (d) the level of local accessibility; (e) the nature and frequency of any public transport serving the area; (f) whether or not the use involves the retention of an existing building and the previous requirements for car parking for the building (g) whether or not the use involves a heritage building or place of local significance; (h) whether or not the proposed use involves the retention of significant vegetation. 	AO1.1 The minimum number of on-site vehicle parking spaces is not less than the number prescribed in Table 9.4.1.3.b for that particular use or uses. Note - Where the number of spaces calculated from the table is not a whole number, the number of spaces provided is the next highest whole number.	Complies with AO1.1 The proposed Dwelling House would provide a minimum of two spaces.
	AO1.2 Car parking spaces are freely available for the parking of vehicles at all times and are not used for external storage purposes, the display of products or rented/sub-leased.	Able to comply with AO1.2 All parking spaces would be freely available for the parking of vehicles.
	AO1.3 Parking for motorcycles is substituted for ordinary vehicle parking to a maximum level of 2% of total ordinary vehicle parking.	Not applicable No motorcycle parking is proposed.
	AO1.4 For parking areas exceeding 50 spaces parking, is provided for recreational vehicles as a substitute for ordinary vehicle parking to a maximum of 5% of total ordinary vehicle parking rate.	Not applicable Only two spaces are proposed.
PO2	AO2	Complies with AO2

Performance outcomes	Acceptable outcomes	Applicant response
Vehicle parking areas are designed and constructed in accordance with relevant standards.	Vehicle parking areas are designed and constructed in accordance with Australian Standard: (a) AS2890.1; (b) AS2890.3; (c) AS2890.6.	The vehicle parking spaces and access satisfy the relevant Australian Standards.
PO3 Access points are designed and constructed: (a) to operate safely and efficiently; (b) to accommodate the anticipated type and volume of vehicles (c) to provide for shared vehicle (including cyclists) and pedestrian use, where appropriate; (d) so that they do not impede traffic or pedestrian movement on the adjacent road area; (e) so that they do not adversely impact upon existing intersections or future road or intersection improvements; (f) so that they do not adversely impact current and future on-street parking arrangements; (g) so that they do not adversely impact on existing services within the road reserve adjacent to the site; (h) so that they do not involve ramping, cutting	AO3.1 Access is limited to one access cross over per site and is an access point located, designed and constructed in accordance with: (a) Australian Standard AS2890.1; (b) Planning scheme policy SC6.5 – FNQROC Regional Development Manual - access crossovers.	Complies with AO3.1 Only one crossover is proposed.
	AO3.2 Access, including driveways or access crossovers: (a) are not placed over an existing: (i) telecommunications pit; (ii) stormwater kerb inlet; (iii) sewer utility hole; (iv) water valve or hydrant. (b) are designed to accommodate any adjacent footpath; (c) adhere to minimum sight distance	Complies with AO3.2 The proposed crossover would be clear of any infrastructure and would provide suitable sight lines.

Performance outcomes	Acceptable outcomes	Applicant response
of the adjoining road reserve or any built structures (other than what may be necessary to cross over a stormwater channel).	requirements in accordance with AS2980.1.	
	AO3.3 Driveways are: <ul style="list-style-type: none"> (a) designed to follow as closely as possible to the existing contours, but are no steeper than the gradients outlined in Planning scheme policy SC6.5 – FNQROC Regional Development Manual; (b) constructed such that where there is a grade shift to 1 in 4 (25%), there is an area with a grade of no more than 1 in 6 (16.6%) prior to this area, for a distance of at least 5 metres; (c) on gradients greater than 1 in 6 (16.6%) driveways are constructed to ensure the cross-fall of the driveway is one way and directed into the hill, for vehicle safety and drainage purposes; (d) constructed such that the transitional change in grade from the road to the lot is fully contained within the lot and not within the road reserve; (e) designed to include all necessary associated drainage that intercepts and directs storm water runoff to the storm water drainage system. 	Not applicable The site is not a sloping site.
	AO3.4 Surface construction materials are consistent with the current or intended future streetscape or character of	Complies with AO3.4 The driveway would be constructed of

Performance outcomes	Acceptable outcomes	Applicant response
	the area and contrast with the surface construction materials of any adjacent footpath.	exposed aggregate or similar.
PO4 Sufficient on-site wheel chair accessible car parking spaces are provided and are identified and reserved for such purposes.	A04 The number of on-site wheel chair accessible car parking spaces complies with the rates specified in AS2890 Parking Facilities.	Not applicable Wheel chair accessible car parking spaces are not required for a Dwelling House.
PO5 Access for people with disabilities is provided to the building from the parking area and from the street.	A05 Access for people with disabilities is provided in accordance with the relevant Australian Standard.	Not applicable Wheel chair accessible car parking spaces are not required for a Dwelling House.
PO6 Sufficient on-site bicycle parking is provided to cater for the anticipated demand generated by the development	A06 The number of on-site bicycle parking spaces complies with the rates specified in Table 9.4.1.3.b	Not applicable Bicycle parking spaces are not required for a Dwelling House.
PO7 Development provides secure and convenient bicycle parking which: <ul style="list-style-type: none"> (a) for visitors is obvious and located close to the building's main entrance; (b) for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; (c) is easily and safely accessible from outside the site. 	A07.1 Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers);	Not applicable Bicycle parking spaces are not required for a Dwelling House.
	A07.2 Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street.	Not applicable Bicycle parking spaces are not required for a Dwelling House.
	A07.3	Not applicable

Performance outcomes	Acceptable outcomes	Applicant response
	Development provides visitor bicycle parking which does not impede pedestrian movement.	Bicycle parking spaces are not required for a Dwelling House.
PO8 Development provides walking and cycle routes through the site which: <ul style="list-style-type: none"> (a) link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes; (b) encourage walking and cycling; (c) ensure pedestrian and cyclist safety. 	AO8 Development provides walking and cycle routes which are constructed on the carriageway or through the site to: <ul style="list-style-type: none"> (a) create a walking or cycle route along the full frontage of the site; (b) connect to public transport and existing cycle and walking routes at the frontage or boundary of the site. 	Not applicable Waling or cycle routes are not required as part of this development.
PO9 Access, internal circulation and on-site parking for service vehicles are designed and constructed: <ul style="list-style-type: none"> (a) in accordance with relevant standards; (b) so that they do not interfere with the amenity of the surrounding area; (c) so that they allow for the safe and convenient movement of pedestrians, cyclists and other vehicles. 	AO9.1 Access driveways, vehicle manoeuvring and onsite parking for service vehicles are designed and constructed in accordance with AS2890.1 and AS2890.2.	Complies with AO9.1 The driveway has been designed and would be constructed to satisfy the relevant Australian Standard.
	AO9.2 Service and loading areas are contained fully within the site.	Not applicable Not required for a Dwelling House.
	AO9.3 The movement of service vehicles and service operations are designed so they:	Not applicable Not required for a Dwelling House.

Performance outcomes	Acceptable outcomes	Applicant response
	(a) do not impede access to parking spaces; (b) do not impede vehicle or pedestrian traffic movement.	
PO10 Sufficient queuing and set down areas are provided to accommodate the demand generated by the development.	AO10.1 Development provides adequate area on-site for vehicle queuing to accommodate the demand generated by the development where drive through facilities or drop-off/pick-up services are proposed as part of the use, including, but not limited to, the following land uses: <ul style="list-style-type: none"> (a) car wash; (b) child care centre; (c) educational establishment where for a school; (d) food and drink outlet, where including a drive through facility; (e) hardware and trade supplies, where including a drive-through facility; (f) hotel, where including a drive-through facility; (g) service station. 	Not applicable Not required for a Dwelling House.
	AO10.2 Queuing and set-down areas are designed and constructed in accordance with AS2890.1.	Not applicable Not required for a Dwelling House.

9.4.4 Filling and excavation code

9.4.4.1 Application

- (1) This code applies to assessing:
 - (a) operational work for filling or excavation which is self-assessable or code assessable development if this code is an applicable code identified in the assessment criteria column of a table of assessment; or
 - (b) a material change of use or reconfiguring a lot if:
 - (i) assessable development where this code is identified as a prescribed secondary code in the assessment criteria column of a table of assessment; or
 - (ii) impact assessable development, to the extent relevant.

Note—This code does not apply to building work that is regulated under the Building Code of Australia.

- (2) When using this code, reference should be made to Part 5.

9.4.4.2 Purpose

- (1) The purpose of the Filling and excavation code is to assess the suitability of development for filling or excavation.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) filling or excavation does not impact on the character or amenity of the site and surrounding areas;
 - (b) filling and excavation does not adversely impact on the environment;
 - (c) filling and excavation does not impact on water quality or drainage of upstream, downstream or adjoining properties;
 - (d) filling and excavation is designed to be fit for purpose and does not create land stability issues;
 - (e) filling and excavation works do not involve complex engineering solutions.

9.4.4.3 Criteria for assessment

Table 9.4.4.3.a – Filling and excavation code – for self-assessable and assessable development

Performance outcomes	Acceptable outcomes	Applicant response
For self-assessable and assessable development		

Performance outcomes	Acceptable outcomes	Applicant response
Filling and excavation - General		
PO1 All filling and excavation work does not create a detrimental impact on the slope stability, erosion potential or visual amenity of the site or the surrounding area.	AO1.1 The height of cut and/or fill, whether retained or not, does not exceed 2 metres in height. and Cuts in excess of those stated in A1.1 above are separated by benches/ terraces with a minimum width of 1.2 metres that incorporate drainage provisions and screen planting.	Complies with AO1.1 Any retaining walls would not exceed 2 metres in height. .
	AO1.2 Cuts are supported by batters, retaining or rock walls and associated benches/terraces are capable of supporting mature vegetation.	Not applicable No cuts are proposed.
	AO1.3 Cuts are screened from view by the siting of the building/structure, wherever possible.	Not applicable No cuts are proposed.
	AO1.4 Topsoil from the site is retained from cuttings and reused on benches/terraces.	Not applicable No cuts are proposed.
	AO1.5 No crest of any cut or toe of any fill, or any part of any retaining wall or structure is closer than 600mm to any	Complies with AO1.5 The proposed retaining structure to the southern boundary would be on the boundary

Performance outcomes	Acceptable outcomes	Applicant response
	boundary of the property, unless the prior written approval of the adjoining landowner has been obtained.	with the unconstructed road reserve and the retaining structure to the northern boundary would be minor and setback from the side boundary.
	AO1.6 Non-retained cut and/or fill on slopes are stabilised and protected against scour and erosion by suitable measures, such as grassing, landscaping or other protective/aesthetic measures	Not applicable No non-retained cuts or fill are proposed.
Visual Impact and Site Stability		
PO2 Filling and excavation are carried out in such a manner that the visual/scenic amenity of the area and the privacy and stability of adjoining properties is not compromised.	AO2 The extent of filling and excavation does not exceed 40% of the site area, or 500m ² whichever is the lesser, except that AO2.1 does not apply to reconfiguration of 5 lots or more.	Complies with AO2 The extent of fill would be limited to the building footprint and would be less than 40% of the site.
	AO2.2 Filling and excavation does not occur within 2 metres of the site boundary.	Complies with PO2 The filling and excavation would be limited to the building footprint with the highest part of any retaining structure being adjacent the unconstructed road reserve. The minor retaining adjacent the northern side boundary would not increase opportunities for overlooking or adversely affect the stability of the adjoining property.

Performance outcomes	Acceptable outcomes	Applicant response
Flood and Drainage		
PO3 Filling and excavation does not result in a change to the run off characteristics of a site which then have a detrimental impact on the site or nearby land or adjacent road reserves.	AO3.1 Filling and excavation does not result in the ponding of water on a site or adjacent land or road reserves.	Complies with AO3.1 All stormwaters would be collected and discharged to a lawful point of discharge.
	AO3.2 Filling and excavation does not result in an increase in the flow of water across a site or any other land or road reserves.	Complies with AO3.2 The minor filling would be limited to the building footprint area with all stormwaters collected and directed to a lawful point of discharge.
	AO3.3 Filling and excavation does not result in an increase in the volume of water or concentration of water in a watercourse and overland flow paths.	Complies with AO3.3 The minor filling would be limited to the building footprint area with all stormwaters collected and directed to a lawful point of discharge.
	AO3.4 Filling and excavation complies with the specifications set out in Planning Scheme Policy No SC5 – FNQROC Development Manual.	Not applicable All filling and excavation would be undertaken as building works.
Water Quality		
PO4 Filling and excavation does not result in a reduction	AO4 Water quality is maintained to comply with the specifications set out in Planning Scheme Policy No	Complies with AO4 The minor fill and excavation associated with the development would not decrease the

Performance outcomes	Acceptable outcomes	Applicant response
of the water quality of receiving waters.	SC5 – FNQROC Development Manual.	quality of the receiving waters.
Infrastructure		
PO5 Excavation and filling does not impact on Public Utilities.	AO5 Excavation and filling is clear of the zone of influence of public utilities.	Complies with AO5 No fill or excavation would be undertaken within the vicinity of any public utilities.

9.4.5 Infrastructure works code

9.4.5.1 Application

- (1) This code applies to assessing:
 - (a) operational work which requires an assessment as a condition of a development permit or is assessable development if this code is identified in the assessment criteria column of a table of assessment;
 - (b) a material change of use or reconfiguring a lot if:
 - (i) assessable development where this code is identified in the assessment criteria column of the table of assessment;
 - (ii) impact assessable development, to the extent relevant.

Note – The Filling and excavation code applies to operational work for filling and excavation.

- (2) When using this code, reference should be made to Part 5.

9.4.5.2 Purpose

- (1) The purpose of the Infrastructure works code is to ensure that development is safely and efficiently serviced by, and connected to, infrastructure.
- (2) The purpose of the code will be achieved through the following overall outcomes:
 - (a) the standards of water supply, waste water treatment and disposal, stormwater drainage, local electricity supply, telecommunications, footpaths and road construction meet the needs of development and are safe and efficient;
 - (b) development maintains high environmental standards;
 - (c) development is located, designed, constructed and managed to avoid or minimise impacts arising from altered stormwater quality or flow, wastewater discharge, and the creation of non-tidal artificial waterways;
 - (d) the integrity of existing infrastructure is maintained;
 - (e) development does not detract from environmental values or the desired character and amenity of an area.

9.4.5.3 Criteria for assessment

Table 9.4.5.3.a – Infrastructure works code –assessable development

Performance outcomes	Acceptable outcomes	Applicant Response
For self-assessable and assessable development		
Works on a local government road		
PO1 Works on a local government road do not adversely impact on footpaths or existing infrastructure within the road verge and maintain the flow, safety and efficiency of pedestrians, cyclists and vehicles.	AO1.1 Footpaths/pathways are located in the road verge and are provided for the hierarchy of the road and located and designed and constructed in accordance with Planning scheme policy SC5 – FNQROC Regional Development Manual.	Not applicable No footpaths or pathways are proposed.
	AO1.2 Kerb ramp crossovers are constructed in accordance with Planning scheme policy SC 5 – FNQROC Regional Development Manual.	Complies with AO1.2 The driveway crossover would be constructed to the standard required by the FNQROC Development Manual.
	AO1.3 New pipes, cables, conduits or other similar infrastructure required to cross existing footpaths: <ul style="list-style-type: none"> (a) are installed via trenchless methods; or (b) where footpath infrastructure is removed to install infrastructure, the new section of footpath is installed to the standard detailed in the Planning scheme policy SC5 – FNQROC Regional Development Manual, and is not less than a 1.2 metre section. 	Not applicable No footpath is provided to the site frontage.
	AO1.4	Not applicable

Performance outcomes	Acceptable outcomes	Applicant Response
	<p>Where existing footpaths are damaged as a result of development, footpaths are reinstated ensuring:</p> <p>(a) similar surface finishes are used;</p> <p>(b) there is no change in level at joins of new and existing sections;</p> <p>(c) new sections are matched to existing in terms of dimension and reinforcement.</p> <p>Note – Figure 9.4.5.3.a provides guidance on meeting the outcomes.</p>	No footpath is provided to the site frontage
	<p>AO1.5</p> <p>Decks, verandahs, stairs, posts and other structures located in the road reserve do not restrict or impede pedestrian movement on footpaths or change the level of the road verges.</p>	<p>Not applicable</p> <p>No structures would be located within the road reserve.</p>
Accessibility structures		
<p>PO2</p> <p>Development is designed to ensure it is accessible for people of all abilities and accessibility features do not impact on the efficient and safe use of footpaths.</p> <p>Note – Accessibility features are those features required to ensure access to premises is provided for people of all abilities and include ramps and lifts.</p>	<p>AO2.1</p> <p>Accessibility structures are not located within the road reserve.</p>	<p>Not applicable</p> <p>No accessibility structures are proposed.</p>
	<p>AO2.2</p> <p>Accessibility structures are designed in accordance with AS1428.3.</p>	<p>Not applicable</p> <p>No accessibility structures are proposed.</p>
	<p>AO2.3</p> <p>When retrofitting accessibility features in existing</p>	<p>Not applicable</p>

Performance outcomes	Acceptable outcomes	Applicant Response
	buildings, all structures and changes in grade are contained within the boundaries of the lot and not within the road reserve.	No accessibility structures are proposed.
Water supply		
PO3 An adequate, safe and reliable supply of potable, fire fighting and general use water is provided.	AO3.1 The premises is connected to Council's reticulated water supply system in accordance with the Design Guidelines set out in Section D6 of the Planning scheme policy SC5 – FNQROC Regional Development Manual; or AO3.2 Where a reticulated water supply system is not available to the premises, on site water storage tank/s with a minimum capacity of 10,000 litres of stored water, with a minimum 7,500 litre tank, with the balance from other sources (e.g. accessible swimming pool, dam etc.) and access to the tank/s for fire trucks is provided for each new house or other development. Tank/s are to be fitted with a 50mm ball valve with a camlock fitting and installed and connected prior to occupation of the house and sited to be visually unobtrusive.	Complies with AO3.1 The site is provided with a connection to the reticulated water supply.
Treatment and disposal of effluent		
PO4 Provision is made for the treatment and disposal of	AO4.1 The site is connected to Council's sewerage system	Complies with AO4.2 The proposed Dwelling House would be serviced

Performance outcomes	Acceptable outcomes	Applicant Response
effluent to ensure that there are no adverse impacts on water quality and no adverse ecological impacts as a result of the system or as a result of increasing the cumulative effect of systems in the locality.	<p>and the extension of or connection to the sewerage system is designed and constructed in accordance with the Design Guidelines set out in Section D7 of the Planning scheme policy SC5 – FNQROC Regional Development Manual;</p> <p>or</p> <p>AO4.2</p> <p>Where not in a sewerage scheme area, the proposed disposal system meets the requirements of Section 33 of the <i>Environmental Protection Policy (Water) 1997</i> and the proposed on site effluent disposal system is designed in accordance with the <i>Plumbing and Drainage Act (2002)</i>.</p>	by an on-site effluent disposal system that would satisfy the legislative requirements and is required to be approved prior to the issue of a Development Permit for Building Works.
Stormwater quality		
<p>PO5</p> <p>Development is planned, designed, constructed and operated to avoid or minimise adverse impacts on stormwater quality in natural and developed catchments by:</p> <p>(a) achieving stormwater quality objectives;</p> <p>(b) protecting water environmental values;</p> <p>(c) maintaining waterway hydrology.</p>	<p>AO5.1</p> <p>A connection is provided from the premises to Council's drainage system;</p> <p>or</p> <p>AO5.2</p> <p>An underground drainage system is constructed to convey stormwater from the premises to Council's drainage system in accordance with the Design Guidelines set out in Sections D4 and D5 of the Planning scheme policy SC5 – FNQROC Regional Development Manual.</p>	<p>Complies with AO5.1</p> <p>Stormwater drainage would be directed to the lawful point of discharge.</p>
	AO5.3	Not applicable

Performance outcomes	Acceptable outcomes	Applicant Response
	<p>A stormwater quality management plan is prepared, and provides for achievable stormwater quality treatment measures meeting design objectives listed in Table 9.4.5.3.b and Table 9.4.5.3.c, reflecting land use constraints, such as:</p> <ul style="list-style-type: none"> (a) erosive, dispersive and/or saline soil types; (b) landscape features (including landform); (c) acid sulfate soil and management of nutrients of concern; (d) rainfall erosivity. 	A Stormwater quality management plan is not considered applicable to a small scale development.
	<p>AO5.4</p> <p>Erosion and sediment control practices are designed, installed, constructed, monitored, maintained, and carried out in accordance with an erosion and sediment control plan.</p>	<p>Able to comply with AO5.4</p> <p>Erosion and Sediment control practices are able to be installed, monitored and maintained during the construction phase.</p>
	<p>AO5.5</p> <p>Development incorporates stormwater flow control measures to achieve the design objectives set out in Error! Reference source not found. and Error! Reference source not found., including management of frequent flows, peak flows, and construction phase hydrological impacts.</p> <p>Note – Planning scheme policy SC5 – FNQROC Regional Development Manual provides guidance on soil and water control measures to meet the requirements of the <i>Environmental Protection Act 1994</i>.</p> <p>Note – During construction phases of development, contractors and builders are to have consideration in their work methods and site preparation for their environmental duty to protect stormwater</p>	<p>Not applicable</p> <p>A stormwater flow control measures are not considered applicable to a small scale development.</p>

Performance outcomes	Acceptable outcomes	Applicant Response
	quality.	
Non-tidal artificial waterways		
PO6 Development involving non-tidal artificial waterways is planned, designed, constructed and operated to: <ul style="list-style-type: none"> (a) protect water environmental values; (b) be compatible with the land use constraints for the site for protecting water environmental values; (c) be compatible with existing tidal and non-tidal waterways; (d) perform a function in addition to stormwater management; (e) achieve water quality objectives. 	AO6.1 Development involving non-tidal artificial waterways ensures: <ul style="list-style-type: none"> (a) environmental values in downstream waterways are protected; (b) any ground water recharge areas are not affected; (c) the location of the waterway incorporates low lying areas of the catchment connected to an existing waterway; (d) existing areas of ponded water are included. 	Not applicable No waterways are proposed.
	AO6.2 Non-tidal artificial waterways are located: <ul style="list-style-type: none"> (a) outside natural wetlands and any associated buffer areas; (b) to minimise disturbing soils or sediments; (c) to avoid altering the natural hydrologic regime in acid sulfate soil and nutrient hazardous areas. 	Not applicable No waterways are proposed.
	AO6.3 Non-tidal artificial waterways located adjacent to, or connected to a tidal waterway by means of a weir,	Not applicable No waterways are proposed.

Performance outcomes	Acceptable outcomes	Applicant Response
	lock, pumping system or similar ensures: (a) there is sufficient flushing or a tidal range of >0.3 m; or (b) any tidal flow alteration does not adversely impact on the tidal waterway; or (c) there is no introduction of salt water into freshwater environments.	
	AO6.4 Non-tidal artificial waterways are designed and managed for any of the following end-use purposes: (a) amenity (including aesthetics), landscaping or recreation; or (b) flood management, in accordance with a drainage catchment management plan; or (c) stormwater harvesting plan as part of an integrated water cycle management plan; or (d) aquatic habitat.	Not applicable No waterways are proposed.
	AO6.5 The end-use purpose of the non-tidal artificial waterway is designed and operated in a way that protects water environmental values.	Not applicable No waterways are proposed.
	AO6.6 Monitoring and maintenance programs adaptively manage water quality to achieve relevant water	Not applicable No waterways are proposed.

Performance outcomes	Acceptable outcomes	Applicant Response
	quality objectives downstream of the waterway.	
	AO6.7 Aquatic weeds are managed to achieve a low percentage of coverage of the water surface area, and pests and vectors are managed through design and maintenance.	Not applicable No waterways are proposed.
Wastewater discharge		
PO7 Discharge of wastewater to waterways, or off site: (a) meets best practice environmental management; (b) is treated to: (i) meet water quality objectives for its receiving waters; (ii) avoid adverse impact on ecosystem health or waterway health; (iii) maintain ecological processes, riparian vegetation and waterway integrity; (iv) offset impacts on high ecological value waters.	AO7.1 A wastewater management plan is prepared and addresses: (a) wastewater type; (b) climatic conditions; (c) water quality objectives; (d) best practice environmental management.	Not applicable No wastewater would be discharged off-site.
	AO7.2 The waste water management plan is managed in accordance with a waste management hierarchy that: (a) avoids wastewater discharge to waterways; or (b) if wastewater discharge cannot practicably be avoided, minimises wastewater discharge to waterways by re-use, recycling, recovery and treatment for disposal to sewer, surface water and ground water.	Not applicable No wastewater would be discharged off-site

Performance outcomes	Acceptable outcomes	Applicant Response
	AO7.3 Wastewater discharge is managed to avoid or minimise the release of nutrients of concern so as to minimise the occurrence, frequency and intensity of algal blooms.	Not applicable No wastewater would be discharged off-site
	AO7.4 Development in coastal catchments avoids or minimises and appropriately manages soil disturbance or altering natural hydrology and: (a) avoids lowering ground water levels where potential or actual acid sulfate soils are present; (b) manages wastewater so that: (i) the pH of any wastewater discharges is maintained between 6.5 and 8.5 to avoid mobilisation of acid, iron, aluminium and other metals; (ii) holding times of neutralised wastewater ensures the flocculation and removal of any dissolved iron prior to release; (iii) visible iron floc is not present in any discharge; (iv) precipitated iron floc is contained and disposed of; (v) wastewater and precipitates that cannot be contained and treated for discharge on site are removed and disposed of through trade waste or another lawful method.	Not applicable No wastewater would be discharged off-site

Performance outcomes	Acceptable outcomes	Applicant Response
Electricity supply		
PO8 Development is provided with a source of power that will meet its energy needs.	AO8.1 A connection is provided from the premises to the electricity distribution network; or AO8.2 The premises is connected to the electricity distribution network in accordance with the Design Guidelines set out in Section D8 of the Planning scheme policy SC5 – FNQROC Regional Development Manual. Note - Areas north of the Daintree River have a different standard.	Complies with AO8.1 A connection would be provided to the electricity distribution network.
	AO9.1 Pad-mount electricity infrastructure is: (a) not located in land for open space or sport and recreation purposes; (b) screened from view by landscaping or fencing; (c) accessible for maintenance.	Not applicable No padmount infrastructure is proposed.
PO9 Development incorporating pad-mount electricity infrastructure does not cause an adverse impact on amenity.	AO9.2 Pad-mount electricity infrastructure within a building, in a Town Centre is designed and located to enable an active street frontage. Note – Pad-mounts in buildings in activity centres should not be	Not applicable No padmount infrastructure is proposed.

Performance outcomes	Acceptable outcomes	Applicant Response
	located on the street frontage.	
Telecommunications		
PO10 Development is connected to a telecommunications service approved by the relevant telecommunication regulatory authority.	AO10 The development is connected to telecommunications infrastructure in accordance with the standards of the relevant regulatory authority.	Complies with AO10 The site would be connected to the available telecommunications infrastructure.
PO11 Provision is made for future telecommunications services (e.g. fibre optic cable).	AO11 Conduits are provided in accordance with Planning scheme policy SC5 – FNQROC Regional Development Manual.	Able to comply with AO11 Conduits are able to be provided if considered necessary; however, the area is serviced by a fixed wireless network rather than fixed line network and the conduits would serve no practical purpose.
Road construction		
PO12 The road to the frontage of the premises is constructed to provide for the safe and efficient movement of: (a) pedestrians and cyclists to and from the site; (b) pedestrians and cyclists adjacent to the site; (c) vehicles on the road adjacent to the site; (d) vehicles to and from the site; (e) emergency vehicles.	AO12.1 The road to the frontage of the site is constructed in accordance with the Design Guidelines set out in Sections D1 and D3 of the Planning scheme policy SC5 – FNQROC Regional Development Manual, for the particular class of road, as identified in the road hierarchy.	Not applicable No new roads are proposed as part of this development.
	AO12.2 There is existing road, kerb and channel for the full road frontage of the site.	Not applicable No new roads are proposed as part of this development.

Performance outcomes	Acceptable outcomes	Applicant Response
	AO12.3 Road access minimum clearances of 3.5 metres wide and 4.8 metres high are provided for the safe passage of emergency vehicles.	Not applicable No new roads are proposed as part of this development.
Alterations and repairs to public utility services		
PO13 Infrastructure is integrated with, and efficiently extends, existing networks.	AO13 Development is designed to allow for efficient connection to existing infrastructure networks.	Complies with AO13 The site is an existing serviced site.
PO14 Development and works do not affect the efficient functioning of public utility mains, services or installations.	AO14.1 Public utility mains, services and installations are not required to be altered or repaired as a result of the development; or AO14.2 Public utility mains, services and installations are altered or repaired in association with the works so that they continue to function and satisfy the relevant Design Guidelines set out in Section D8 of the Planning scheme policy SC5 – FNQROC Regional Development Manual.	Complies with AO14.1 Public utility mains are not required to be altered or repaired as part of this development.
Construction management		
PO15 Work is undertaken in a manner which minimises	AO15	Not applicable No vegetation is proposed to be retained as part

Performance outcomes	Acceptable outcomes	Applicant Response
adverse impacts on vegetation that is to be retained.	<p>Works include, at a minimum:</p> <ul style="list-style-type: none"> (a) installation of protective fencing around retained vegetation during construction; (b) erection of advisory signage; (c) no disturbance, due to earthworks or storage of plant, materials and equipment, of ground level and soils below the canopy of any retained vegetation; (d) removal from the site of all declared noxious weeds. 	of this development.
PO16 Existing infrastructure is not damaged by construction activities.	AO16 Construction, alterations and any repairs to infrastructure is undertaken in accordance with the Planning scheme policy SC5 – FNQROC Regional Development Manual. Note - Construction, alterations and any repairs to State-controlled roads and rail corridors are undertaken in accordance with the Transport Infrastructure Act 1994.	Able to comply with AO16 It is not proposed to damage any existing infrastructure and all repairs would be undertaken to the FBNQROC Development Manual standard.
For assessable development		
High speed telecommunication infrastructure		
PO17 Development provides infrastructure to facilitate the roll out of high speed telecommunications infrastructure.	AO17 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.

Performance outcomes	Acceptable outcomes	Applicant Response
Trade waste		
PO18 Where relevant, the development is capable of providing for the storage, collection treatment and disposal of trade waste such that: (a) off-site releases of contaminants do not occur; (b) the health and safety of people and the environment are protected; (c) the performance of the wastewater system is not put at risk.	AO18 No acceptable outcomes are prescribed.	Not applicable A Dwelling House is identified as Self-assessable development.
Fire services in developments accessed by common private title		
PO19 Hydrants are located in positions that will enable fire services to access water safely, effectively and efficiently.	AO19.1 Residential streets and common access ways within a common private title places hydrants at intervals of no more than 120 metres and at each intersection. Hydrants may have a single outlet and be situated above or below ground.	Not applicable No common private title is proposed.
	AO19.2 Commercial and industrial streets and access ways within a common private title serving commercial properties such as factories and warehouses and offices are provided with above or below ground fire hydrants located at not more than 90 metre intervals and at each intersection. Above ground fire hydrants	Not applicable No common private title is proposed.

Performance outcomes	Acceptable outcomes	Applicant Response
	have dual-valved outlets.	
PO20 Hydrants are suitable identified so that fire services can locate them at all hours. Note – Hydrants are identified as specified in the Department of Transport and Main Roads Technical Note: 'Identification of street hydrants for fire fighting purposes' available under 'Publications'.	AO20 No acceptable outcomes are prescribed.	Not applicable No common private title is proposed.

Individual owner's consent for making a development application under the *Planning Act 2016*

I, Gerard Zurawski

as owner of the premises identified as follows:

1 Marine Parade, Newell, described as Lot 9 on RP711018.

consent to the making of a development application under the *Planning Act 2016* by:

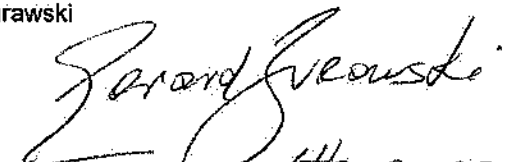
Nathan Verri Pty Ltd

on the premises described above for:

A Dwelling House

Gerard Zurawski

Date:


January 6th 2022