

The Metro North-West JDAP (MNWJDAP) is undertaking a trial as part of a Planning Reform Initiative.

You will notice some updates to the agendas, reports and minutes published for the MNWJDAP.

Any comments and feedback on these documents are welcome by contacting the Planning Reform team on

6551 9915 or planningreform@dplh.wa.gov.au.



Metro North-West Joint Development Assessment Panel Agenda

Meeting Date and Time: Friday, 24 April 2020; 9:30am
Meeting Number: MNWJDAP/287
Meeting Venue: *This meeting is available for members of the public to attend via electronic means.*

To connect to the meeting via your computer - <https://zoom.us/j/92791927721>
Meeting ID - 927 9192 7721

To connect to the meeting via teleconference dial the following phone number -
+61 8 7150 1149
Insert Meeting ID followed by the hash (#) key when prompted - **927 9192 7721**

This DAP meeting will be conducted by electronic means open to the public rather than requiring attendance in person.

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Attendance

DAP Members

Ms Sheryl Chaffer (A/Presiding Member)
Ms Kym Petani (A/Deputy Presiding Member)
Mr Fred Zuideveld (Third Specialist Member)
Cr Suzanne Thompson (Local Government Member, City of Joondalup)
Cr Philippa Taylor (Local Government Member, City of Joondalup)

Officers in attendance

Item 8.1

Mr Chris Leigh (City of Joondalup)
Mr Jeremy Thompson (City of Joondalup)

Item 8.2

Ms Elisabeth Tamouridou (Western Australian Planning Commission)
Ms Caroline Hatherly (Western Australian Planning Commission)

Minute Secretary

Ms Adele McMahon (DAP Secretariat)
Ms Megan Ventriss (DAP Secretariat)

Applicants and Submitters

Mr Lex Barnett (Taylor Burrell Barnett)

Members of the Public / Media

Nil

1. Opening of Meeting, Welcome and Acknowledgement

The A/Presiding Member declares the meeting open and acknowledges the traditional owners and pay respects to Elders past and present of the land on which the meeting is being held.

The A/Presiding Member announced that the Metro North-West JDAP is currently undertaking a trial of revised templates to promote greater consistency and transparency of information published on the DAP website. During this time, changes to the content contained within the Agendas, Minutes and Responsible Authority Reports may be observed.

2. Apologies

Ms Karen Hyde (Presiding Member)

3. Members on Leave of Absence

Nil



4. Noting of Minutes

Signed minutes of previous meetings are available on the [DAP website](#).

5. Declarations of Due Consideration

Any member who is not familiar with the substance of any report or other information provided for consideration at the DAP meeting must declare that fact before the meeting considers the matter.

6. Disclosure of Interests

Member	Item	Nature of Interest
Ms Karen Hyde	8.1 & 8.2	Direct Pecuniary Interest and Impartiality Interest <i>Taylor Burrell Barnett, Ms Hyde's employer are the applicant for these applications for construction of the Ocean Reef Marina breakwaters on behalf of development WA.</i>

7. Deputations and Presentations

The City of Joondalup and the Western Australian Planning Commission may be provided with the opportunity to respond to questions of the panel, as invited by the Presiding Member.

8. Form 1 – Responsible Authority Reports – DAP Applications

8.1 Ocean Reef Foreshore Reserve, Ocean Reef

Development Description: Ocean Reef Marina Breakwaters
Applicant: Taylor Burrell Barnett on behalf of Development WA
Owner: City of Joondalup
Responsible Authority: City of Joondalup
DAP File No: DAP/20/01756

8.2 Ocean Reef Marina - portions of Lots 15446, 555, 10518, 10098, and 503

Development Description: Ocean Reef Marina Breakwaters
Applicant: Taylor Burrell Barnett on behalf of Development WA
Owner: Development WA, City of Joondalup, Water Corporation
Responsible Authority: Western Australian Planning Commission
DAP File No: DAP/20/01755

9. Form 2 – Responsible Authority Reports – DAP Amendment or Cancellation of Approval

Nil



10 State Administrative Tribunal Applications and Supreme Court Appeals

Current SAT Applications				
File No. & SAT DR No.	LG Name	Property Location	Application Description	Date Lodged
DAP/19/01557 DR159/2019	City of Joondalup	Lot 104 & 105 (8 & 10) Brechin Court, Duncraig	3 Levels, 16 Apartments, Multiple Dwellings	01/08/2019

11 General Business

In accordance with Section 7.3 of the DAP Standing Orders 2017 only the Presiding Member may publicly comment on the operations or determinations of a DAP and other DAP members should not be approached to make comment.

12 Meeting Closure

OCEAN REEF FORESHORE RESERVE, OCEAN REEF – OCEAN REEF MARINA BREAKWATERS

Form 1 – Responsible Authority Report (Regulation 12)

DAP Name:	Metro North-West JDAP
Local Government Area:	City of Joondalup
Applicant:	Ms Karen Hyde, Taylor Burrell Barnett
Owner:	City of Joondalup
Value of Development:	more than \$20 million <input checked="" type="checkbox"/> Mandatory (Regulation 5) <input type="checkbox"/> Opt In (Regulation 6)
Responsible Authority:	City of Joondalup
Authorising Officer:	Chris Leigh, Manager Planning Services
LG Reference:	DA20/0138
DAP File No:	DAP/20/01756
Application Received Date:	5 March 2020
Report Due Date:	15 April 2020
Application Statutory Process Timeframe:	60 Days
Attachment(s):	1. Location and zoning/reservation plan 2. Development plans 3. Ocean Reef Marina concept plan 4. Construction staging plan 5. Planning report and technical appendices
Is the Responsible Authority Recommendation the same as the Officer recommendation?	Not applicable

Responsible Authority Recommendation

That the Metro North-West Joint Development Assessment Panel resolves to:

- Accept** that the DAP Application reference DAP/20/01756 is appropriate for consideration as a 'use not listed (breakwater development)' under the *City of Joondalup Local Planning Scheme No. 3*.
- Approve** DAP Application reference DAP/20/01756 and accompanying plans (Attachment 2) in accordance with Clause 68 of Schedule 2 (Deemed Provisions) of the *Planning and Development (Local Planning Schemes) Regulations 2015*, the *Metropolitan Region Scheme* and the *City of Joondalup Local Planning Scheme No.3* subject to the following conditions:

Conditions

- Pursuant to clause 26 of the *Metropolitan Region Scheme*, this approval is deemed to be an approval under clause 24(1) of the *Metropolitan Region Scheme*.

2. This decision constitutes planning approval only and is valid for a period of two years from the date of approval. If the subject development is not substantially commenced within the specified period, the approval shall lapse and be of no further effect.
3. This approval relates to the portion of works within the area zoned 'Urban' under the *Metropolitan Region Scheme* and development within this area shall be in accordance with the approved plan(s), any other supporting information and conditions of approval. It does not relate to any other development on the lots.
4. A dilapidation report shall be undertaken for the construction vehicle routes to the west of Marmion Avenue within the City of Joondalup local government area and shall be submitted to and approved by the City prior to commencement of development. Following the completion of works, any rectification works shall be undertaken as required by the City.
5. Details of modifications to the principal shared paths and footpaths connections shall be submitted to and approved by the City prior to commencement of development. Modifications shall be implemented in accordance with the approved details, to the satisfaction of the City.
6. A Construction Management Plan shall be submitted to, and approved, by the City prior to the commencement of development. The management plan shall detail how it is proposed to manage:
 - all forward works for the site;
 - the delivery and storage of materials and equipment to the site;
 - the parking arrangements for the contractors and subcontractors;
 - the protection of vegetation outside the development area;
 - the management of dust;
 - the management of noise;
 - construction signage;
 - potential conflict points between pedestrians and construction traffic;
 - communication with surrounding residents prior to commencement of works and during construction;

Works shall be undertaken in accordance with the approved Construction Management Plan.

7. All works shall be contained within the development footprint, as indicated on the approved plans.

Advice Notes

1. In regard to condition 5, the modifications to the principal shared paths and footpath connections shall reflect Option 1, as outlined in the Transport Assessment Report.

Reasons for Responsible Authority Recommendation

This report only relates to the component of the breakwater development that is located within the 'Urban' zone under the *Metropolitan Region Scheme* (MRS), which includes the stockpile area and portion of the construction access for the northern breakwater

(Attachment 2 refers). The remaining portion of the development is located on reserved land under the MRS and is subject of a separate report the responsibility of the Western Australian Planning Commission (WAPC).

The works the subject of this application will facilitate the construction of the northern breakwater and is within the development footprint of future landside development of the Ocean Reef Marina. The development is consistent with the current and future planning framework and it is considered that appropriate consideration has been given to mitigate the environmental and construction impacts as discussed in the report.

As a result, it is recommended that the JDAP approve the application subject to conditions.

Details: outline of development application

Region Scheme	Metropolitan Region Scheme
Region Scheme Zone/Reserve	Urban
Local Planning Scheme	<i>City of Joondalup Local Planning Scheme No. 3</i>
Local Planning Scheme Zone/Reserve	No zone
ACP/Structure Plan/Precinct Plan	Not applicable
ACP/Structure Plan/Precinct Plan Zone	Not applicable
Use Class (proposed) and permissibility:	Use not listed – breakwater development
Lot Size:	24.047ha
Existing Land Use:	The site forms part of the Ocean Reef foreshore reserve. A small portion of the site is developed for car parking/boat storage.
State Heritage Register	No
Local Heritage	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Heritage List <input type="checkbox"/> Heritage Area
Design Review	<input checked="" type="checkbox"/> N/A <input type="checkbox"/> Local Design Review Panel <input type="checkbox"/> State Design Review Panel <input type="checkbox"/> Other
Bushfire Prone Area	Yes
Swan River Trust Area	No

Proposal:

The development that is the subject of this application forms part of the construction and development of the breakwaters associated with Ocean Reef Marina.

Overall the development comprises:

- Construction of northern and southern breakwaters of the Ocean Reef Marina, requiring an estimated 900,000 tonnes of construction material to be delivered to the site.

- Construction of an access road to provide access for construction vehicles to the northern breakwater.
- Access to the southern breakwater construction provided by roads to be constructed as part of a separate development application (refer to background section).
- Rock stockpile area for the northern breakwater.
- Demolition of the existing breakwaters following completion of construction of the new breakwaters.

The development plans for the overall development are provided at Attachment 2.

The component of the works that are subject to this application are only those works located on the land zoned 'Urban' under the MRS, which includes the stockpile area and portion of the construction access for the northern breakwater (Attachment 2 refers). As such, this report only address matters relating to this aspect of the development. The remaining portion of the development is located on reserved land under the MRS and is subject of a separate report the responsibility of the WAPC. The component of the works that are subject to City approval and portion subject to WAPC approval is demonstrated in Attachment 2.

Background:

The proposed landside works the subject of this report are located within the Ocean Reef Foreshore Reserve. The majority of the area that is impacted by the development the subject of this application is vegetation, however has been identified as future development for the Ocean Reef Marina. The most recent concept plan for the Ocean Reef Marina is provided at Attachment 3.

There is an extensive history to the current Ocean Reef Marina project and the marina has been identified in numerous strategic documents as a key future commercial and tourism location for the northern corridor of Perth. It is planned to be a vibrant waterfront precinct providing a range of recreational, tourism, residential, boating and employment opportunities. More recently, in September 2017, the State Government announced that LandCorp (now Development WA) will lead the development and work with the City to deliver the project. In February 2018, Council endorsed the Memorandum of Understanding between the City and LandCorp, outlining how to work together to deliver the project. The City continues to have representatives on the Ocean Reef Marina Government Steering Committee, project team and various working groups.

MRS amendment

As the first stage in developing a statutory planning framework for the Ocean Reef Marina, an amendment to the MRS was gazetted in November 2019. This amendment rezoned a portion of the Ocean Reef Marina area to 'Urban', with the remaining area that will be relatively undeveloped classified as 'Parks and Recreation' and 'Waterways' reserves. As part of the amendment process, the area rezoned to 'Urban' was excised from Bush Forever Site 325 (BF 325) and the impacts are being mitigated and managed through an approved Negotiated Planning Outcome.

9:30amThe MRS amendment also addressed a range of other state planning policy requirements, including the requirements of:

- Coastal hazard risk
- Waterways management
- Preliminary bushfire risk and management
- Environmental approvals

Improvement Plan and Improvement Scheme

To support the ongoing planning and development of the area an Improvement Plan and Improvement Scheme are currently being progressed by Development WA. The purpose of the improvement plan and scheme is to provide a statutory land use planning framework to guide development in the area and align with the strategic objectives.

The Improvement Plan, outlining the Ocean Reef Marina area, was gazetted and took effect on 31 December 2019. The gazettal of the Improvement Plan provides the head of power for the preparation of the Improvement Scheme. The Improvement Scheme was submitted to the WAPC in December 2019 and is currently out for public comment, closing on 26 June 2020.

As the Improvement Scheme has not yet been finalised, the subject application is required to be considered in accordance with the MRS and LPS3. The absence of an Improvement Scheme being finalised does not prevent the applications for the breakwaters from being processed.

Previous development application for early works

Two development applications for early works were considered by Council at its meeting on 18 February 2020. The key component of these works included construction of roads and a site compound area to facilitate the ongoing development of Ocean Reef Marina (including the breakwaters) and to minimise conflict between users of existing facilities and construction works and vehicles.

The development application for the component of works on land zoned 'Urban' under the MRS was approved by Council, subject to conditions. Council also advised the WAPC that it supported the component of works on land reserved under the MRS which was approved by the WAPC on 27 February 2020.

Legislation and Policy:

Legislation

- *Planning and Development Act 2005.*
- *Metropolitan Region Scheme.*
- *Planning and Development (Local Planning Schemes) Regulations 2015.*
- *City of Joondalup Local Planning Scheme No.3.*

State Government Policies

- *State Planning Policy 2.6 State Coastal Planning Policy*
- *State Planning Policy 3.7 Planning for Bushfire Risk Management*

Structure Plans/Activity Centre Plans

Not applicable.

Local Policies

- *Coastal Local Planning Policy*

Consultation:

Public Consultation

Consultation on the proposed development has not been undertaken as the development is considered to be consistent with the overall planning for the area. It is also noted that the proposed works align with the concept plans that have previously been used in community consultation undertaken as part of the MRS amendment.

Should the development be approved, a condition is recommended requiring a Construction Management Plan, which is to include details on communication to surrounding residents on the construction of the breakwaters.

Referrals/consultation with Government/Service Agencies

Not applicable.

Design Review Panel Advice

Not applicable.

Other Advice

Not applicable.

Planning Assessment:

The proposal has been assessed against all relevant legislative requirements of LPS3, State and Local Planning Policies outlined in the Legislation and Policy section of this report.

The following matters have been identified as key considerations for the determination of this application:

- Consistency with the planning framework
- Clearing of vegetation
- Impact of construction

These matters are outlined and discussed below. As set out above, this application only deals with a small portion of the overall breakwater development, being for a portion of the access road and stockpile area. The majority of the works are subject to a separate report the responsibility of the WAPC.

Planning framework

The Ocean Reef Marina has been consistently identified in the WAPC's *North-West Sub-regional Planning Framework* and City strategies, including the *Strategic Community Plan*, *Local Planning Strategy* and *Economic Development Strategy*.

The proposed works the subject of this application are to facilitate the construction of the breakwaters, being a temporary road and stockpile area, and are contained within the overall development footprint of the Ocean Reef Marina. Whilst an overall statutory planning framework for the development is yet to be finalised through the Improvement Scheme, the development aligns with the concept plan that is being refined and used to inform the Improvement Scheme. It is therefore considered that the proposed works are appropriate within the current general planning framework and is consistent with future planning of the area.

Whilst the site is in a bushfire prone area, given the nature of the works a bushfire management plan is not required under SPP3.7.

In regard to the City's *Coastal Planning Local Planning Policy* and SPP2.6 the works proposed are consistent with the Coastal Hazard Risk Management and Adaptation Plan previously assessed as part of the MRS Amendment and considered suitable against SPP2.6.

Clearing

To accommodate the access for the northern breakwater and stockpile area, existing vegetation will require clearing. The area to be cleared was excised from Bush Forever through the MRS amendment. The works proposed to accommodate the breakwater construction is within the overall development footprint identified for the Ocean Reef Marina that will continue to be developed as future stages.

It is noted that obtaining development approval does not exempt a developer from obtaining and complying with other statutory legislation and approvals. Should the application be approved, a condition is recommended requiring a Construction Management Plan which is required to include details on how to manage the protection of surrounding the development.

Construction and timing

The construction of the northern access road is due to commence in late 2020 and is required prior to the construction of the breakwaters. The northern and southern breakwaters are to be constructed concurrently, with the timing of this construction to consider existing environmental factors, such as abalone spawning season and protection of these existing habitats. A staging plan for construction is provided at Attachment 4.

To facilitate the breakwater construction, approximately 900,000 tonnes of construction material is required to be delivered to the site, equating to approximately 16,000-18,000 tonnes of material per week. It is anticipated that the site will have up to 150 construction vehicle delivery trips per day, with the typical delivery vehicle to be a prime mover with one triaxle trailer (up to 19 metres in length). Larger vehicles may be utilised, however this would be subject to further approval from Main Roads WA.

Delivery vehicles are expected to access Hodges Drive via the Mitchell Freeway, and enter the site via the northern and southern access points from Ocean Reef Road. The transport report also identifies that Ocean Reef Road between Mitchell Freeway and the development site may also be utilised during school drop-off and pick-up to minimise vehicle conflict with school traffic on Hodges Drive.

It is expected that up to 10 staff will be on-site at any time as part of the construction activities, with there being ample area for parking on-site for staff vehicles.

The information provided as part of the application outlines that construction work will be required to be carried out in accordance with the control of noise and vibrations as outlined in AS 2436-2010 *Guide to noise and vibration control on construction, demolition and maintenance sites*.

Access to the existing facilities at Ocean Reef Marina will be maintained via a new entry road from Hodges Drive, with access for construction of the southern breakwater being provided via a separate service road. These roads and associated works were approved as part of the development application for early works.

Whilst the construction works will cause disruption to the surrounding area, it is considered that appropriate measures have been proposed to mitigate this impact. Should the development be approved, a condition is recommended requiring a Construction Management Plan to be submitted and approved by the City prior to commencing construction. This construction management plan will require the contractor to demonstrate how they will address measures such as noise, dust, protection of adjacent vegetation and communication with surrounding residents.

Conclusion:

The construction of the breakwaters will be a significant step in the overall development of the Ocean Reef Marina and is consistent with the planning framework.

It is recommended that the application be approved, subject to conditions.

Alternatives

In accordance with clause 17(4) of the Regulations, the JDAP may determine an application by either approving the application with or without conditions or refusing the application.

As a result, the JDAP can amend or delete the conditions of approval recommended by the responsible authority and/or include additional conditions of approval should they be considered necessary to ensure the proposal complies with the relevant planning framework.

Should the JDAP resolve to refuse the application, this determination needs to be made based on valid planning considerations as outlined under clause 67 of the *Planning and Development (Local Planning Schemes) Regulations 2015* and as articulated in the *Development Assessment Panel Practice Notes: Making Good Planning Decisions*.

However, as outlined in the Planning Assessment and Officer's Comment sections above, the City considers that the development meets the relevant provisions and/or objectives of the planning framework and the application is therefore recommended for approval.

If the applicant is aggrieved by the decision or any aspect of the decision, the applicant has a right of review in accordance with the *State Administrative Tribunal Act 2004* and the *Planning and Development Act 2005*.



Figure 2 Context Plan

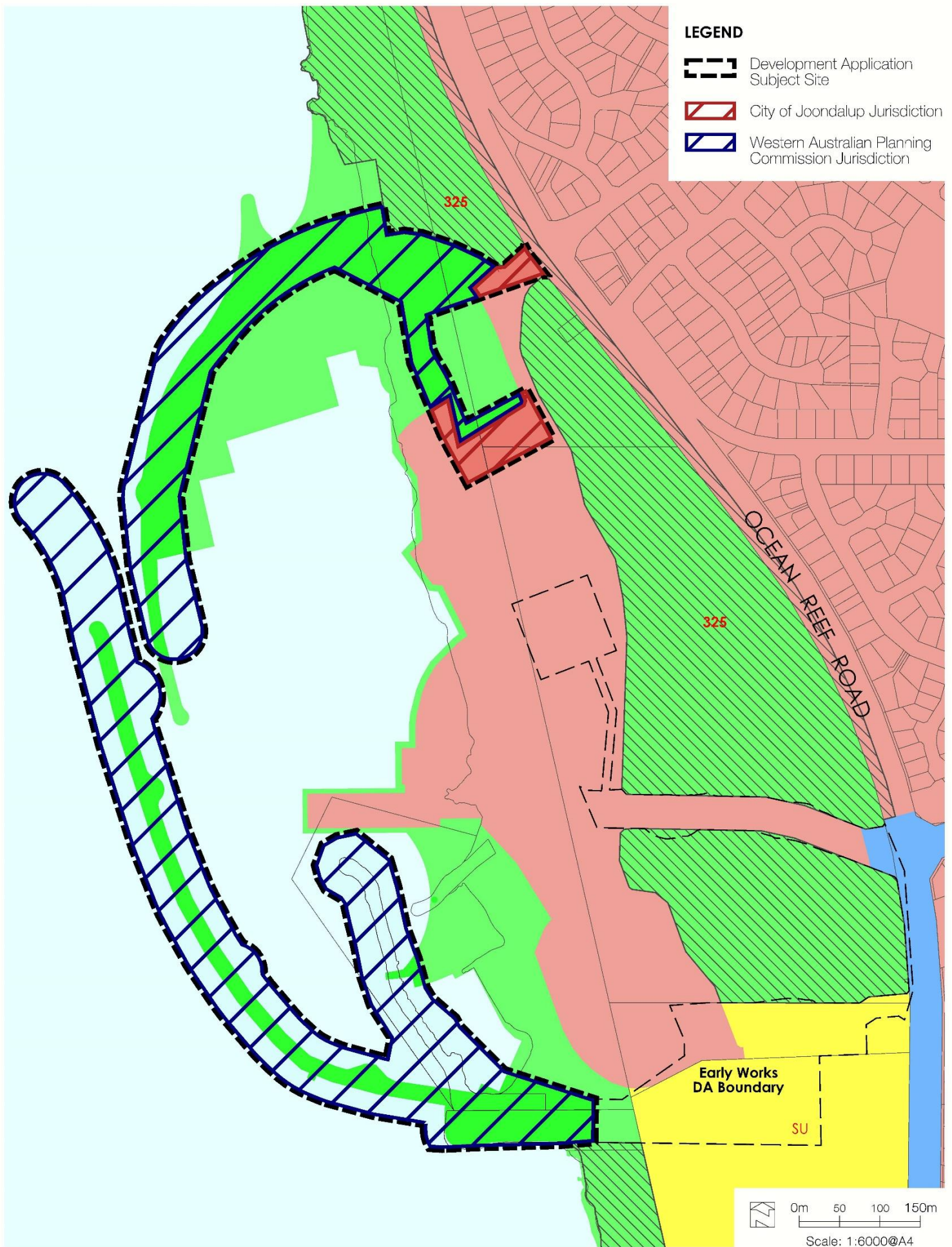
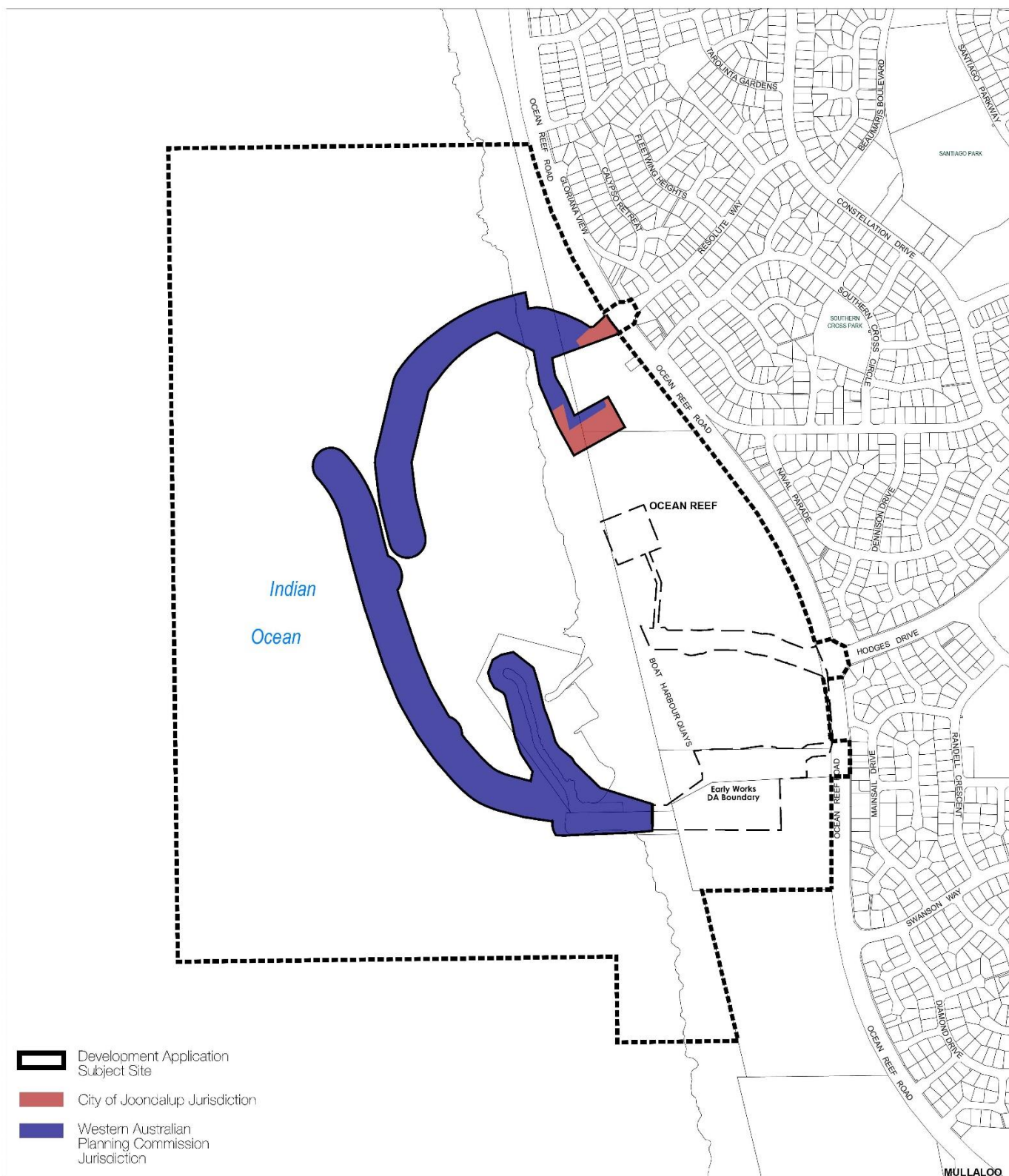


Figure 4 Metropolitan Region Scheme Extract



Improvement plan

No. 51

IMPROVEMENT PLAN NO. 51 - OCEAN REEF MARINA



Improvement Plan



Created on date: Thursday, 2 May 2019
Document Name: ip51_Ref2998_v1

Produced by Data Analytics, Department of Planning, Perth WA
Base information supplied by
Western Australian Land Information Authority SLIP 1096-2016-1

Project Manager: J. Gildenhuys

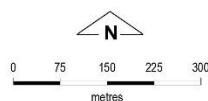
Geospatial Officer: A. Power

Examined: J. Ballarotta

Revised:

Version No: 1

Date:



Scale: 1:120,000@A4

Plan Number:

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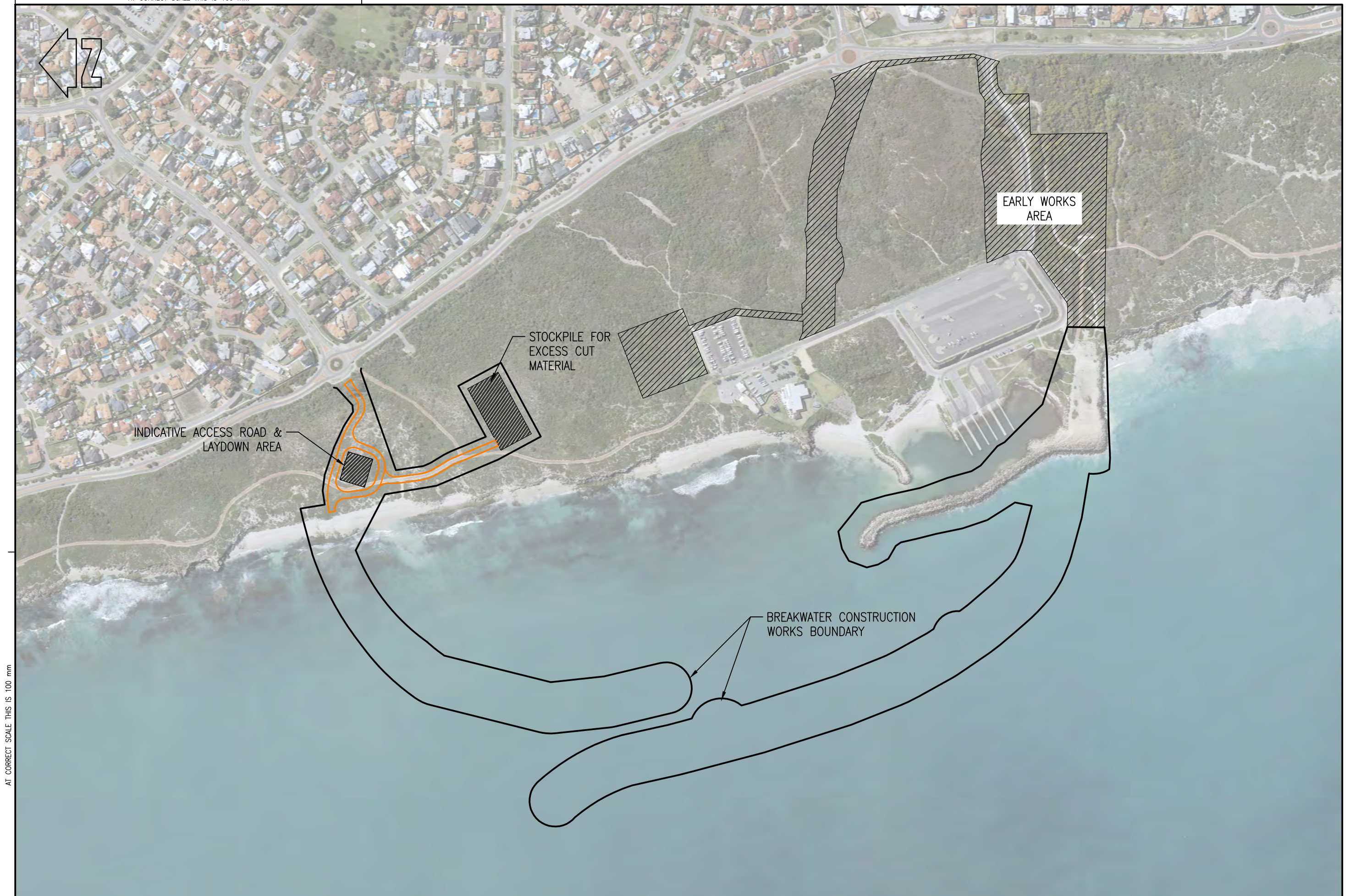
2998

File number: 819/02/34/0001

Plan reference:
Metropolitan Region Scheme
1:25000 sheets 7 & 11

Figure 5 Improvement Plan No. 51 and location of Development Application Subject Site

AT CORRECT SCALE THIS IS 100 mm



AT CORRECT SCALE THIS IS 100 mm

m p rogers & associates pl
coastal and port engineers

Suite 1, 128 Main Street
Osborne Park 6017 t: +61 8 9254 6600
Western Australia admin@coastsandports.com.au

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BREAKWATER CONSTRUCTION WORKS BOUNDARY
OCEAN REEF MARINA

SCALE
AT A3 1:5000

FEBRUARY 2020
SK1657-06C

AT CORRECT SCALE THIS IS 100 mm



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coastal and port engineers

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Western Australia admin@coastsandports.com.au

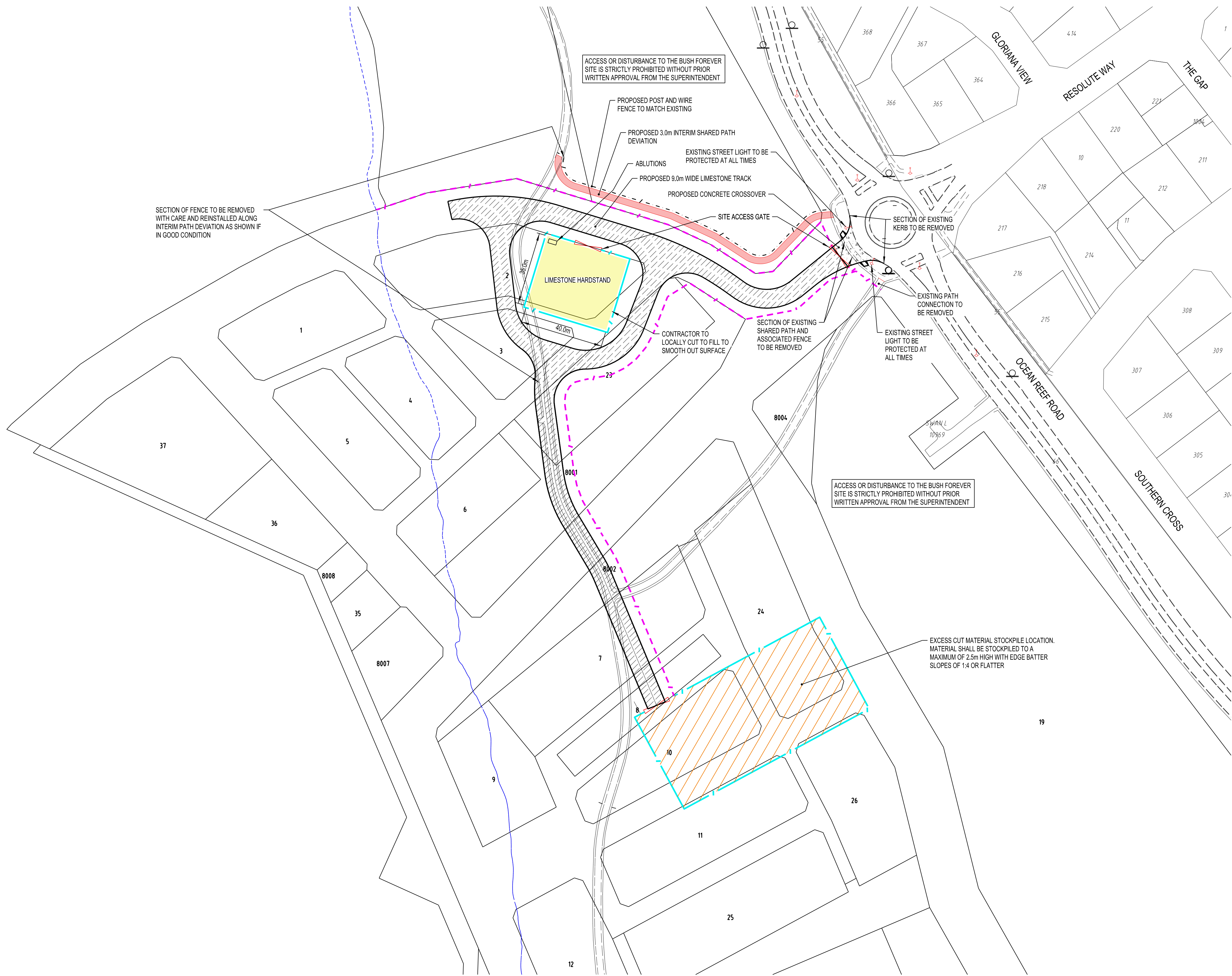
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DRAFT PEN & BREAKWATER LAYOUT
OCEAN REEF MARINA

SCALE
AT A3 1:4000

JANUARY 2020

SK1657-07B



- NOTES
1. GENERAL
- 1.1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL 35865 DRAWINGS AND THE SPECIFICATION.
2. CLEARING
- 2.1. NO VEGETATION TO BE CLEARED FROM THE BUSH FOREVER SITES UNO.
3. CONSTRUCTION WATER
- 3.1. THE CONTRACTOR SHALL OBTAIN CONSTRUCTION WATER FROM THEIR OWN SOURCES.
4. EXISTING SERVICES
- 4.1. THE CONTRACTOR SHALL OBTAIN DIAL BEFORE YOU DIG INFORMATION PRIOR TO COMMENCEMENT OF ANY WORKS ON SITE.
- 4.2. THE CONTRACTOR SHALL ACCURATELY LOCATE ANY EXISTING SERVICE THAT MAY POTENTIALLY INHIBIT THE PROPOSED WORKS WITHIN A MAXIMUM OF TWO WEEKS AFTER THE DATE OF POSSESSION OF SITE TO AVOID IMPACTING THE PROGRAM.
- 4.3. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY SHOULD ANY EXISTING SERVICE PREVENT OR INHIBIT THE PROPOSED WORKS AND AWAIT FURTHER INSTRUCTION PRIOR TO PROCEEDING, UNLESS NOTED OTHERWISE.
- 4.4. THE RELEVANT AUTHORITY STANDARDS SHALL BE ADHERED TO AND CAUTION SHALL BE EXERCISED DURING WORKS IN THE VICINITY OF LIVE AUTHORITY SERVICES.
5. DUST CONTROL & STABILISATION DURING THE CONTRACT PERIOD
- 5.1. THE CONTRACTOR SHALL ALLOW FOR DUST CONTROL MEASURES IN ACCORDANCE WITH THE SPECIFICATION.
- 5.2. THE CONTRACTOR SHALL STABILISE EXPOSED AREAS WITH DUSTEX (OR SIMILAR APPROVED) AT THE COMPLETION OF EACH WORK WEEK. APPLICATION RATES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 5.3. STOCKPILES CAPABLE OF GENERATING DUST SHALL BE KEPT TO A MAXIMUM OF 1.5m HEIGHT, UNLESS ADDITIONAL STABILISATION IS APPROVED BY THE SUPERINTENDENT AND IMPLEMENTED.
- 5.4. DUST FENCING SHALL BE ERECTED AND MAINTAINED AROUND THE PERIMETER OF THE SITE FOR THE DURATION OF WORKS OR UNTIL FINAL STABILISATION OCCURS, WHICHEVER OCCURS LATER.
- 5.5. THE CONTRACTOR SHALL SUBMIT A DUST MANAGEMENT PLAN TO THE LOCAL AUTHORITY AND GAIN APPROVAL PRIOR TO COMMENCEMENT OF GROUND DISTURBING ACTIVITIES. THE CONTRACTOR SHALL PAY ALL FEES ASSOCIATED WITH SUBMISSION OF THE DUST MANAGEMENT PLAN.
6. FINAL STABILISATION
- 6.1. THE FINISHED SURFACE, INCLUDING ANY AREAS OUTSIDE OF THE SITE AREA EXPOSED BY THE CONTRACTOR DURING THE WORKS, SHALL BE STABILISED BY APPLICATION OF SEEDED AND DYED HYDROMULCH AS SPECIFIED.

- LEGEND
- PROPOSED GATE
 - PROPOSED 1.8m HIGH CHAINMESH SITE COMPOUND FENCING
 - PROPOSED 1.8m HIGH TEMPORARY SITE FENCING
 - PROPOSED 150 LIMESTONE HARDSTAND
 - PROPOSED 3m RED AC SHARED PATH INTERIM DEVIATION
 - EXISTING 3m RED AC SHARED PATH
 - PROPOSED PRAM RAMP
 - EXISTING EDGE OF WATER
 - PROPOSED POST AND WIRE FENCE (TO MATCH EXISTING)
 - EXISTING STREET LIGHT
 - EXISTING FENCE
 - STOCKPILE AREAS


PLAN
SCALE 1:1000

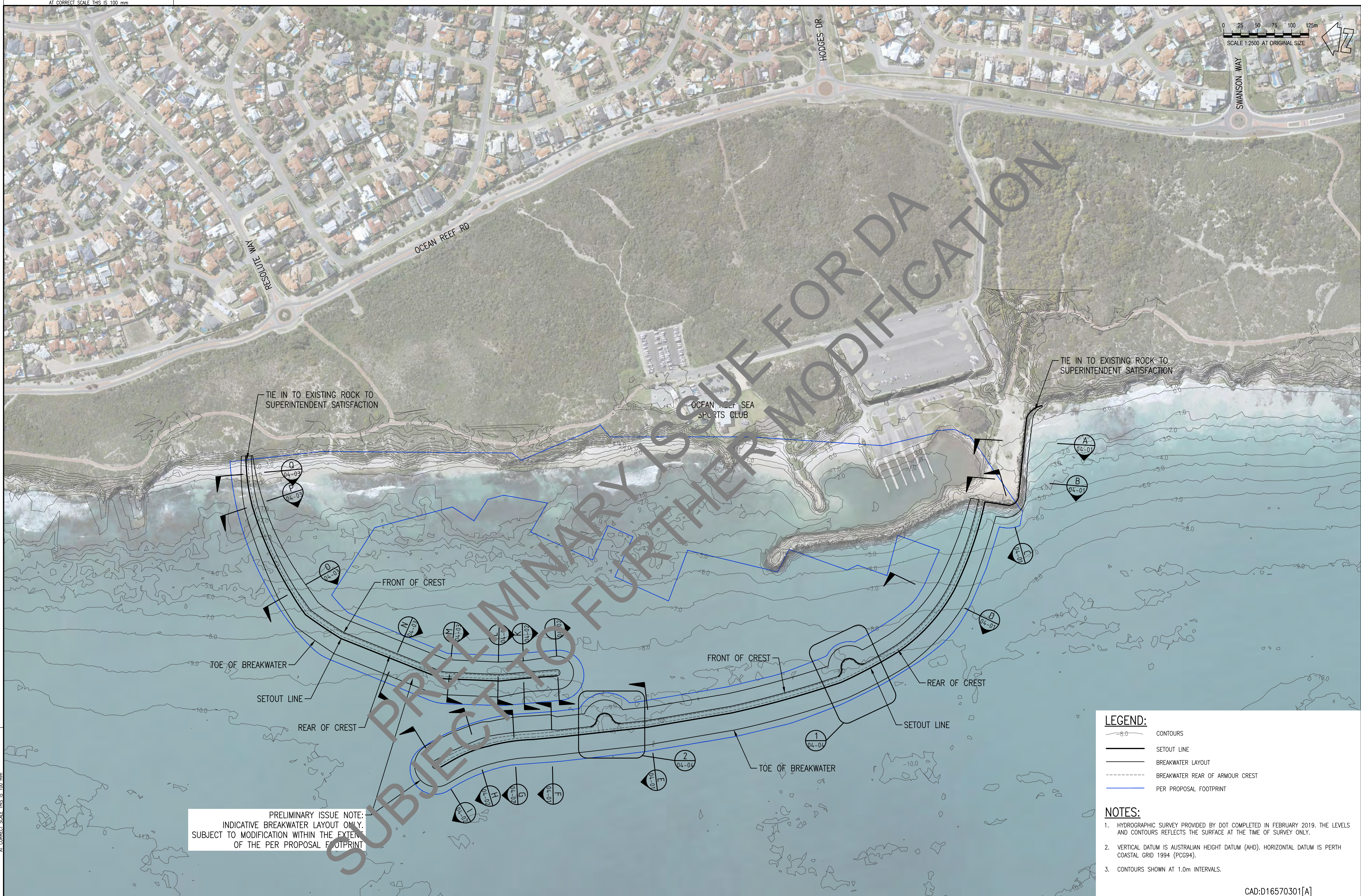
B	STOCKPILE LOCATION ADDED, LIMESTONE TRACK AND FENCING AMENDED ACCORDINGLY	LDB	LDB	JF	J.FABLING	31-01-2020	
A	ORIGINAL ISSUE	LDB	LDB	JF	J.FABLING	21-01-2020	
REV	DESCRIPTION	DRW	DGN	VER	APPROVED	DATE	



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A1 @ 1:1000 (A3 @ 1:2000)	
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PCG94	AHD
WAPC No.	COORDINATES
	DATUM

CLIENT	DevelopmentWA
PROJECT	OCEAN REEF MARINA - BREAKWATER
TITLE	SITWORKS PLAN

 WOOD & GRIEVE ENGINEERS <small>NOW PART OF</small> 	DEVELOPMENT APPLICATION		
35865	CI-060-SI-P3	B	
PROJECT No.	DRAWING No.	REVISION	



								COPYRIGHT				CLIENT				m p rogers & associates pl coastal and port engineers				PROJECT OCEAN REEF MARINA BREAKWATERS			
								The concepts and information contained in this document are the Copyright of m p rogers & associates. Use or copying of the document in whole or part without the written permission of m p rogers & associates constitutes an infringement of copyright.				DESIGNED L DE LUCIA				Suite 1, 128 Main Street Osborne Park 6017 Western Australia				TITLE LAYOUT			
								This plan is not to be used for construction unless issued as Rev 0 and signed below				DRAWN R BORJA				t: +61 8 9254 6600 f: +61 8 9254 6699 admin@coastsandports.com.au				SCALE AT A1 1:2,500			
A 07.02.20 CRD PRELIMINARY ISSUE FOR DA												CHECKED C DOAK				DRAWING NUMBER D1657-03-01				REV A			
REV	DATE	APPROVED	AMENDMENT	REV	DATE	APPROVED	AMENDMENT																

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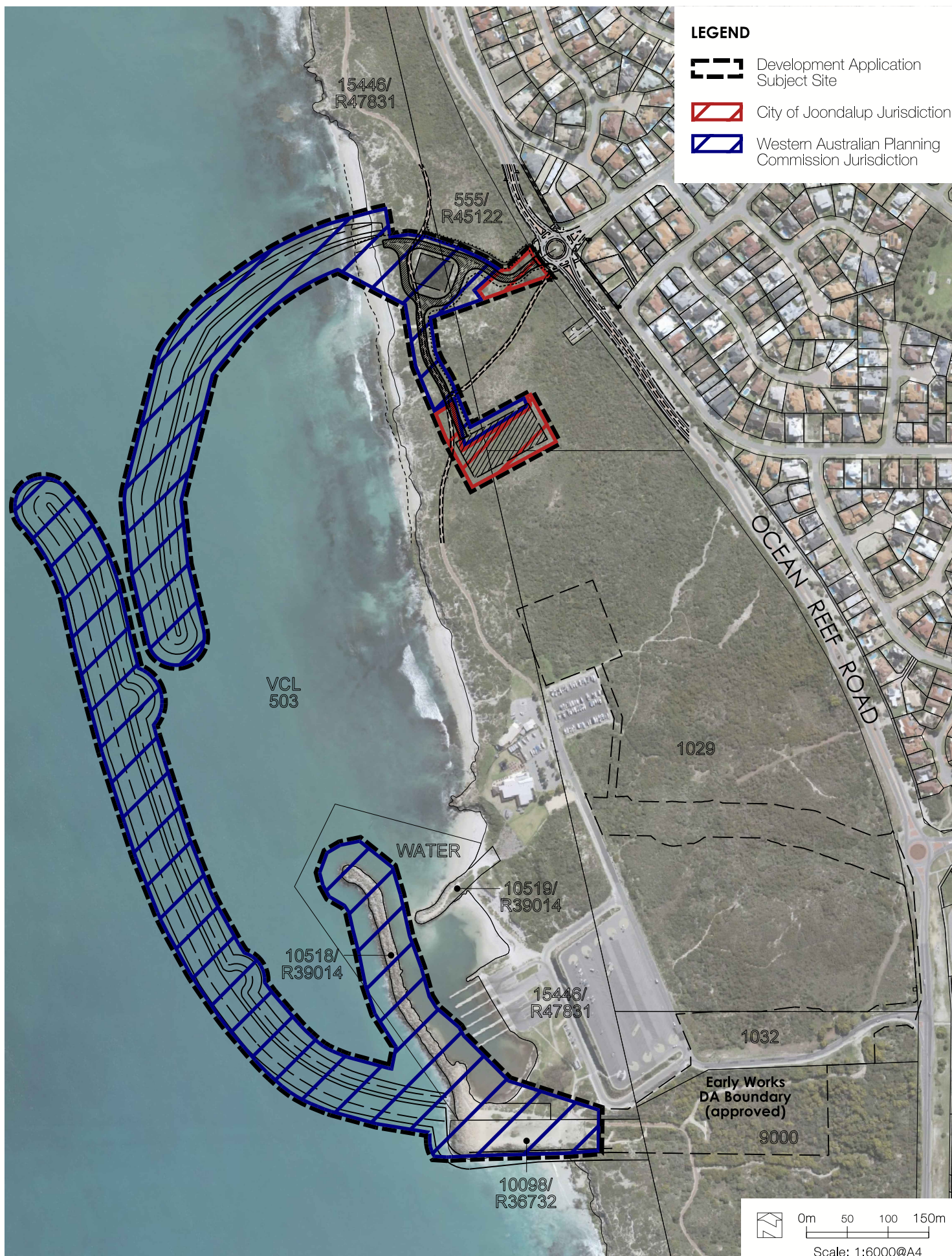
GENERAL NOTES:

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE TECHNICAL SPECIFICATION. ANY DISCREPANCIES ARE TO BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING.
2. HYDROGRAPHIC SURVEY PROVIDED BY DEPARTMENT OF TRANSPORT (DOT), COMPLETED IN FEBRUARY 2019. THE LEVELS AND CONTOURS REFLECTS THE SURFACE AT THE TIME OF SURVEY ONLY.
3. HORIZONTAL DATUM IS PERTH COASTAL GRID 1994 (PCG94), VERTICAL DATUM IS AUSTRALIAN HEIGHT DATUM (AHD).
4. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF & PROTECT ANY SERVICES IN THE WORKS AREA. CONTACT DIAL BEFORE YOU DIG ON 1100.
5. SET OUT COORDINATES AND DIMENSIONS ARE TO BE CONFIRMED ON SITE PRIOR TO WORKS COMMENCING. REFER ANY DISCREPANCY TO THE SUPERINTENDENT. IF IN DOUBT ASK.
6. AERIAL PHOTOGRAPH PROVIDED BY CITY OF JOONDALUP, TAKEN IN AUGUST 2019.
7. DISTANCES, DIMENSIONS AND LEVELS SHOWN IN METRES, UNLESS NOTED OTHERWISE.
8. SITE ACCESS AND LAYDOWN AREAS TO BE CONFIRMED WITH SUPERINTENDENT PRIOR TO WORKS.
9. ON COMPLETION OF THE WORKS A SET OF MARKED UP AND SIGNED "AS CONSTRUCTED" DRAWINGS SHALL BE FORWARDED TO THE SUPERINTENDENT.

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CURVE DOT 01615-13-02 31/10/2016

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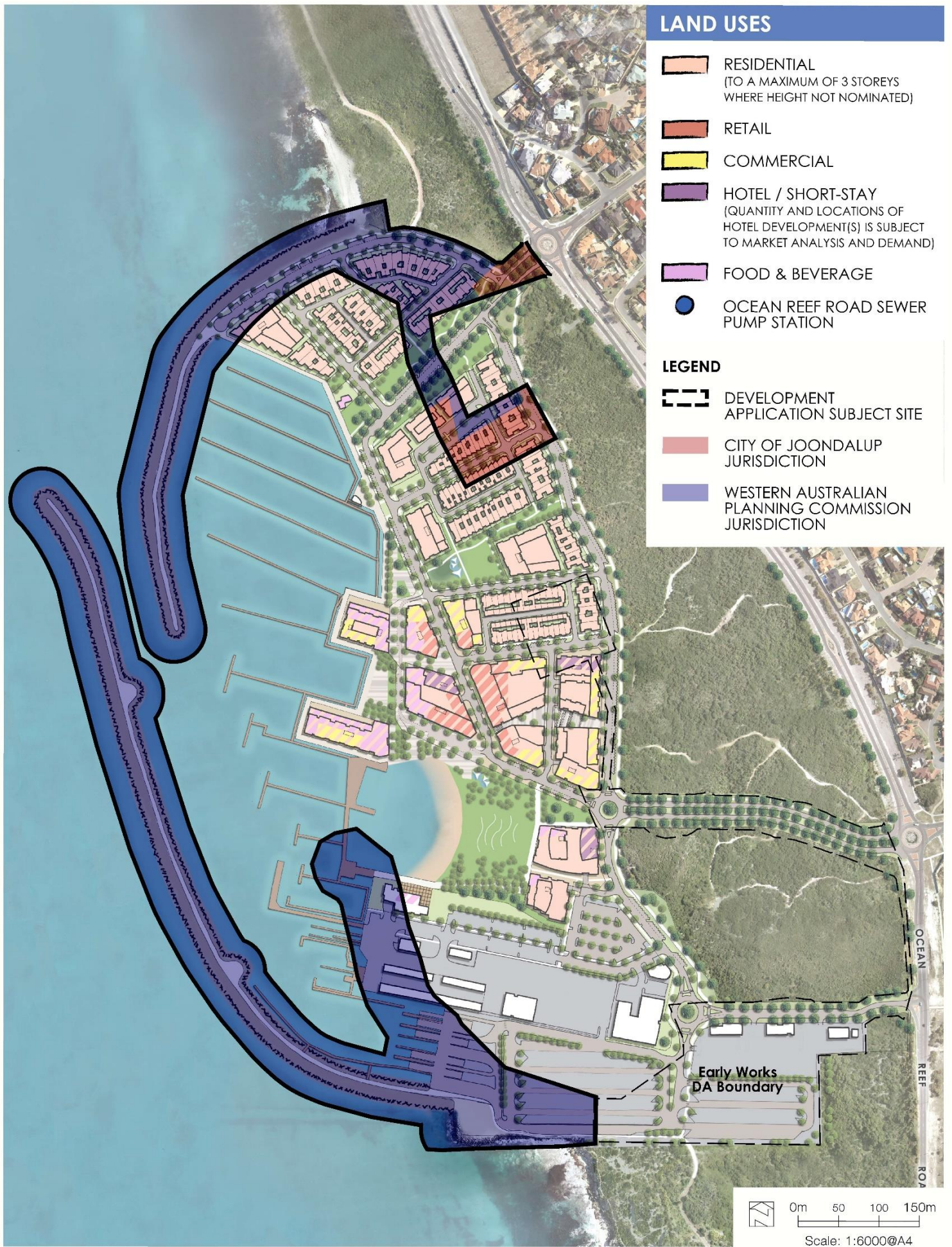


Figure 3 Draft Preferred Concept Plan



North & south haul road construction, October 2020.



Breakwater construction, commences January 2021.



Breakwater construction ongoing, April 2021.



Breakwater construction ongoing, September 2021.



Breakwater construction, complete Jan 2022.



New boat ramp lanes (4) & parking construction, commences January 2022.
All existing boat ramp lanes operational.
Seawall construction, commences.



Marine services area earthworks, commences April 2022.
4 new ramp lanes operational.
4 existing ramp lanes operational, 4 existing ramp lanes closed.
Seawall construction, ongoing.

Marine services earthworks, ongoing July 2022.
All new ramp lanes (8) operational, all existing ramp lanes (8) closed.
Sea wall construction, ongoing.
Removal of existing breakwater, under way.



Marine services area earthworks, ongoing August 2022.
Sea wall construction, ongoing.
Car-park earthworks, commenced.
Stage 1 bulk earthworks, commenced.

Ocean Reef Marina

Development Application – Breakwaters (City of Joondalup)



Prepared for DevelopmentWA
Prepared by Taylor Burrell Barnett in association with MP Rogers & Associates, Wood & Grieve Engineers,
Arup, UDLA & Strategen-JBS&G.
February 2020



Document History & Status

Ocean Reef Marina

Breakwaters Development Application (CoJ)

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Revision	Reviewer	Date Issued
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1.0 Introduction

1.1 Background

Taylor Burrell Barnett, in collaboration with MP Rogers & Associates, Wood & Grieve Engineers, UDLA, Arup, and Strategen-JBS&G, on behalf of DevelopmentWA, is pleased to lodge an application for approval to commence development in respect of two new outer breakwaters at Ocean Reef Marina.

The Ocean Reef Marina is set to become a world-class waterfront precinct providing recreational, tourism, residential and boating facilities. When complete, the development will feature 12,000sqm of retail and commercial space, capacity for 550 boat pens and 200 boat stackers, 1,000+ homes and more than 5ha of community spaces.

The site was originally flagged in the 1970s as a potential location for a marina development, envisaged to meet additional boating demand in the north metropolitan corridor. In 1979 the City of Joondalup acquired Lot 1029 for pursuing development of a marina, and subsequently progressed concept plans and consultation processes. In 2014 the City submitted a request to amend the Metropolitan Region Scheme (MRS).

In 2016, DevelopmentWA was appointed as lead proponent on the project. DevelopmentWA undertook a concept design review in consultation with key stakeholders. Upon DevelopmentWA taking the role as lead agency for the Ocean Reef Marina Project, it was considered that an Improvement Plan and Improvement Scheme would be the most suitable planning framework to progress the strategic planning and development for the Ocean Reef Marina site, concurrently to the MRS Amendment 1270/41 being finalised. The Improvement Plan was gazetted on 31 December 2019, and it is anticipated that the Improvement Scheme will be advertised and finalised during 2020.

On 9 October 2019, the WAPC confirmed that MRS Amendment 1270/41 was endorsed by the Minister for Planning and approved by the Governor. The MRS Amendment was subsequently presented to both Houses of Parliament, and became legally effective in the MRS on 29 November 2019 when it was not subject to any motions of disallowance.

Given the finalisation of the MRS Amendment 1270/41, approval is now being sought to facilitate development of two new breakwaters, to facilitate future stages of development of the Ocean Reef Marina.

The proposed breakwaters are predominantly located over land reserved under the MRS, as illustrated in **Section 2.2.1** of this report, which will necessitate separate development approvals to be obtained from:

- Western Australian Planning Commission (WAPC) for the portion of works located on land reserved for 'Parks and Recreation' and 'Waterways' under the MRS; and
- City of Joondalup for the portion of works located on land zoned 'Urban' under the MRS.

1.2 Proposal

This development application relates only to the portion of the works on land zoned 'Urban' under the MRS, for approval by the City of Joondalup, including a portion of the access route, and a portion of the temporary stockpile area.

To assist the City of Joondalup with the assessment of this application, the following supporting information is provided to demonstrate compliance with the City of Joondalup's planning requirements:

- Planning Application Forms – **Appendix A**
 - MRS Form 1
 - City of Joondalup Application for Development Approval Form

- Certificates of Title – **Appendix B**
- Development Application Plans – **Appendix C**
- Landscape Approach – **Appendix D**
- Transport Assessment – **Appendix E**
- Staging Plan – **Appendix F**

1.3 Site Description and Ownership

The Ocean Reef Marina site defined by the boundary of Improvement Plan 51 (refer **section 2.2.2**). It is located on the Indian Ocean coast in the City of Joondalup. The site is currently used for the existing Ocean Reef Boat Harbour and club facilities.

The portion of the Ocean Reef Marina site subject to this application comprises portions of Lots 1029, 555 and 15446 (subject site) (refer **Figure 1**). The proposed development also falls within portions of lots 10098, 503, 10518, which falls within the WAPC jurisdiction, and is subject to approval from the WAPC. The proposed development also extends of a Water isolation lot, which was originally excluded from the Marmion Marine Park area. The entire Improvement Plan 51 (refer **Figure 5**) has now been excluded from the Marmion Marine Park. Landgate has not allocated any lot numbers for the Water lot at the time of submitting this Development Application. The subject site is predominantly Crown land. The City of Joondalup also holds a portion of the land in freehold. A copy of the Certificates of Title are attached as **Appendix B**. The legal description of the land wholly or partly within this development application, as well as the land falling within the WAPC development application area, is described in the following table.

Table 1: Land Ownership

Lot No.	Volume	Folio	Plan	Registered Proprietor
15446	LR3133	571	P040340	STATE OF WESTERN AUSTRALIA
555	LR3166	566	P402198	STATE OF WESTERN AUSTRALIA
10518	LR3146	799	P216093	STATE OF WESTERN AUSTRALIA
10098	LR3048	270	P216093	STATE OF WESTERN AUSTRALIA
503	LR3171	220	P415761	STATE OF WESTERN AUSTRALIA
1029	1957	865	57604	CITY OF JOONDALUP

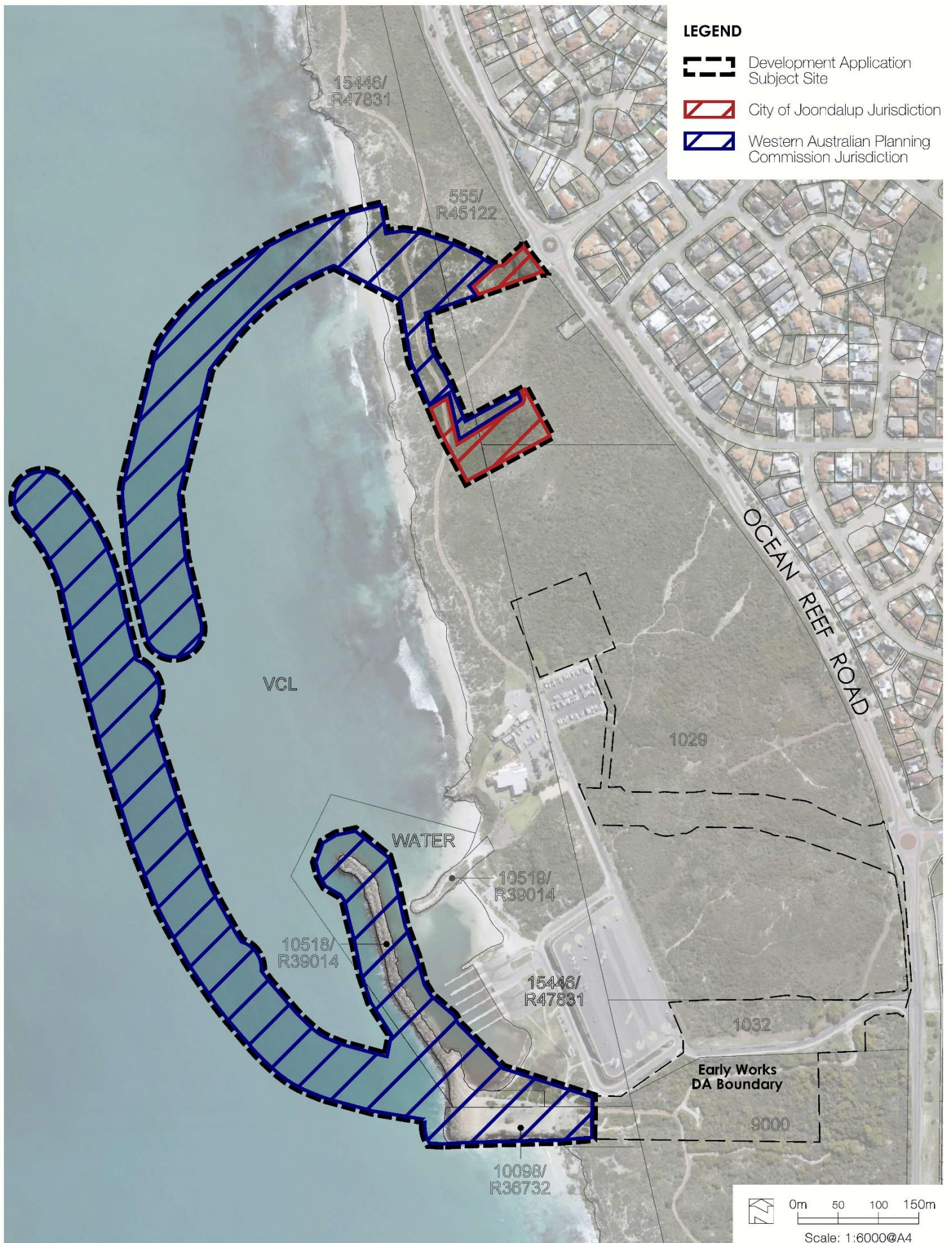


Figure 1 Subject Site

1.4 Context

The Ocean Reef Marina is located approximately 29 kilometres north of the Perth CBD; 12 kilometres south of the Mindarie Keys Marina; 6 kilometres west of the Joondalup strategic metropolitan centre; and 9 kilometres north of the Hillarys Boat Harbour.

The Ocean Reef Marina site is located in proximity to residential development east of Ocean Reef Road, as well as a range of schools, open space facilities and retail centres as identified on **Figure 2**.

It is connected to the regional road network via Boat Harbour Quays which intersects with Ocean Reef Road. Hodges Drive and Resolute Way both intersect with the portion of Ocean Reef Road adjacent to the site.

A formalised dual use path currently extends from Burns Beach to Hillarys Boat Harbour, which connects to the regional path network. The dual use path presently bisects the Ocean Reef Marina site.



Figure 2 Context Plan

1.5 Concept Plan

The draft preferred Concept Plan (Concept Plan) for Ocean Reef Marina is included in **Figure 3**. The Concept Plan has been developed to deliver key community benefits including a publicly accessible beach, public open space, boat pens, boat ramp and trailer parking infrastructure, public promenade along the waterfront, and publicly accessible breakwaters.

Key features of the Concept Plan reflect stakeholder expectations as identified through previous concepts prepared by the City of Joondalup, and feedback from community and stakeholder engagement. The key features in the Concept Plan needed to meet the following expectations:

- Waterfront cafés and restaurants;
- 12,000 square metres of retail/commercial space;
- Public open space;
- Internal beach;
- Capacity for 550 boat pens and 200 boat stackers;
- 1,000+ dwelling units;
- Up to 3,300 parking bays;
- Marine services located close to boat ramps and trailer parking;
- Club facilities integrated with the marine services, linked to a beachside park;
- Improved walkability; and
- Relocation of the ANZAC Memorial.

In some cases, the Concept Plan can exceed the expectations listed above. There may be more commercial/retail space, parking bays, boat pens / boat stackers, and dwelling units, than what is listed above.

As demonstrated in **Figure 3**, dunal vegetation and landform is retained between the development footprint of the Ocean Reef Marina, and the suburban area east of Ocean Reef Road.

The proposed breakwaters are consistent with the Concept Plan.



Figure 3 Draft Preferred Concept Plan

2.0 Planning Framework

2.1 Strategic Planning Context

The Ocean Reef Marina site has been consistently identified in the WAPC's *North-West Sub-regional Planning Framework* and the City of Joondalup's strategies including its *Strategic Community Plan 2012-2022* (CoJ, 2018), *Local Planning Strategy* (CoJ, 2017) and the *Economic Development Strategy* (CoJ, 2017).

2.1.1 North-West Sub-Regional Planning Framework (WAPC, 2018)

The North-West Sub-regional *Planning Framework* (WAPC, 2018) provides a spatial framework for delivering the objectives of Perth and Peel @3.5million strategy. The Framework intends to aid in linking State and local government strategic planning, and applies dwelling targets to each local authority in the sub-region. The Ocean Reef Marina was shown on the Framework map as a marina investigation area. The proposed Ocean Reef Marina development footprint is consistent with the location in the Framework, and has been rezoned under the MRS.

2.1.2 Strategic Community Plan (City of Joondalup, 2018)

The City of Joondalup's *Strategic Community Plan* recognises the Ocean Reef Marina project to be an essential catalyst for regional tourism development and the provision of diverse housing and accommodation options, and as a priority transformational project which the City aims to continue its engagement with State Government on the delivery of the project.

The Community Strategic Plan states that "the benefits that it will bring socially, economically and environmentally to the local and regional community is what will drive the City to continue pursuing the project into the future". The proposed breakwaters are required to facilitate the redevelopment of the Ocean Reef Marina, and would help deliver upon the City's strategic planning.

2.1.3 City of Joondalup Local Planning Strategy (City of Joondalup, 2017)

The City of Joondalup's endorsed *Local Planning Strategy* sets out the long-term planning direction for the local government; applies state and regional planning policies; and provides a rationale for the zones and other provisions of the City's local planning scheme.

The Strategy recognises that as part of the City's *Tourism Development Plan*, Ocean Reef Marina is proposed to become a significant tourism, recreational, commercial, and residential mixed-use node and is identified as a 'Future Strategic Tourism site'. This is the only future strategic tourism site identified within the local government area and therefore is regarded as the City's main focus for tourism growth. The Strategy acknowledges the proposal for developing the Ocean Reef Marina for commercial, residential, short-stay accommodation uses, and public amenities.

Whilst identified for its tourism potential and employment opportunities, Ocean Reef Marina is also identified as a 'Future Development Site for Housing'. It is recognised to accommodate future residential land uses such as short-term accommodation and freehold residential lots.

The proposed breakwaters are consistent with the City's *Local Planning Strategy* in that it will facilitate the future redevelopment of the Ocean Reef Marina.

2.1.4 Economic Development Strategy (City of Joondalup, 2017)

The City of Joondalup's *Economic Development Strategy* sets out the long-term agenda to expand opportunities for business, investment, innovation, research and education. The Ocean Reef Marina is identified as a Future Strategic Tourism Site, and the Strategy recognises that this project will be a major attractor for the City and driver for the local economy.

2.2 Statutory Planning Context

2.2.1 Metropolitan Region Scheme

The portion of the proposed development subject to this application is located on land zoned 'Urban' in the MRS (refer **Figure 4**).

The majority of the proposed breakwaters are located on land reserved 'Parks and Recreation' and 'Waterways' in the MRS. These works are subject to a separate development application to be determined by the WAPC.

It is noted that in July 2013, the City of Joondalup submitted a request to amend the Metropolitan Region Scheme (MRS Amendment 1270/41). MRS Amendment 1270/41 was initiated on 22 April 2014 to rezone part of the project area to 'Urban', with the remainder of the project area classified as 'Parks and Recreation' and 'Waterways' reserves. The amendment area was excised from Bush Forever Site 325 through a Negotiated Planning Outcome.

MRS Amendment 1270/41 was referred to the EPA pursuant to s.48A of the EP Act. On 9 June 2014, the EPA advised that it considered that the proposed scheme amendment should not be assessed under Part IV Division 3 of the EP Act, and provided a statement of reasons and public advice (EPA, 2014). For the purposes of Part IV of the EP Act, the MRS Amendment was defined as an assessed scheme amendment.

The WAPC's final decision on the amendment included a number of pre-requisites to be addressed:

- SPP 2.6: approval of the CHRMAP, by the DPLH and DoT.
- SPP 2.8: finalisation of the Negotiated Planning Outcome by the proponent and the DPLH, DBCA, and OEPA.
- SPP 3.7: approval of the Bushfire Management Plan by WAPC/DFES.
- DC 1.8: identification of a waterways manager, being DoT.
- EP Act 1986: approval and publication of Ministerial Statement 1107 by the Minister for Environment.

The pre-requisites were all subsequently addressed, and the MRS Amendment came into effect on 29 November 2019.

Whilst the footprint of the proposed breakwaters is in slight variance with the indication of the breakwaters on the MRS, the alignment of the breakwaters subject to this application have been considered in accordance with the Section 45C of the EP Act 1986 approval, and therefore are consistent with the PER and Section 45C, as detailed in **Section 3.1** of this report.

The proposed breakwaters are also consistent with the Negotiated Planning Outcome.

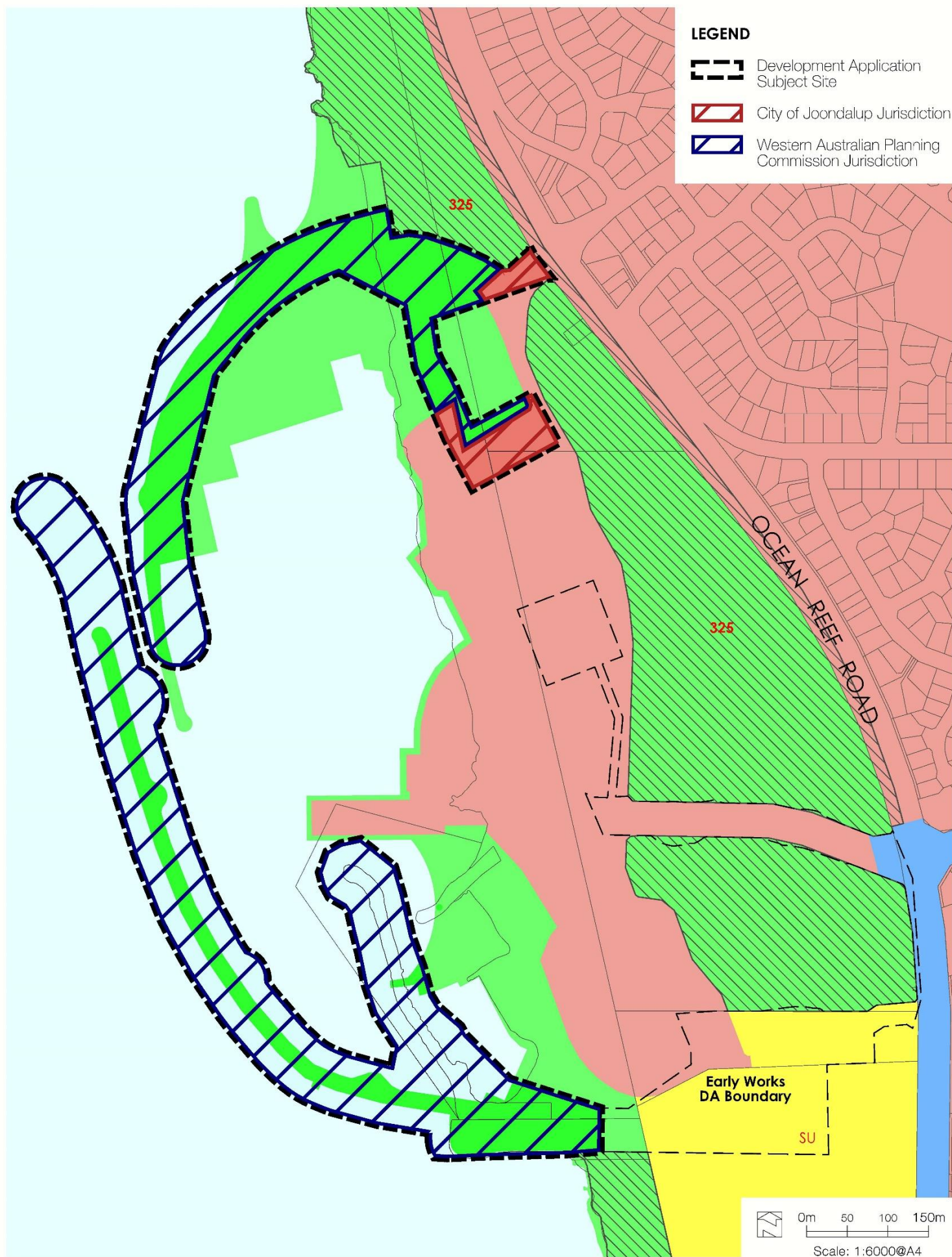


Figure 4 Metropolitan Region Scheme Extract

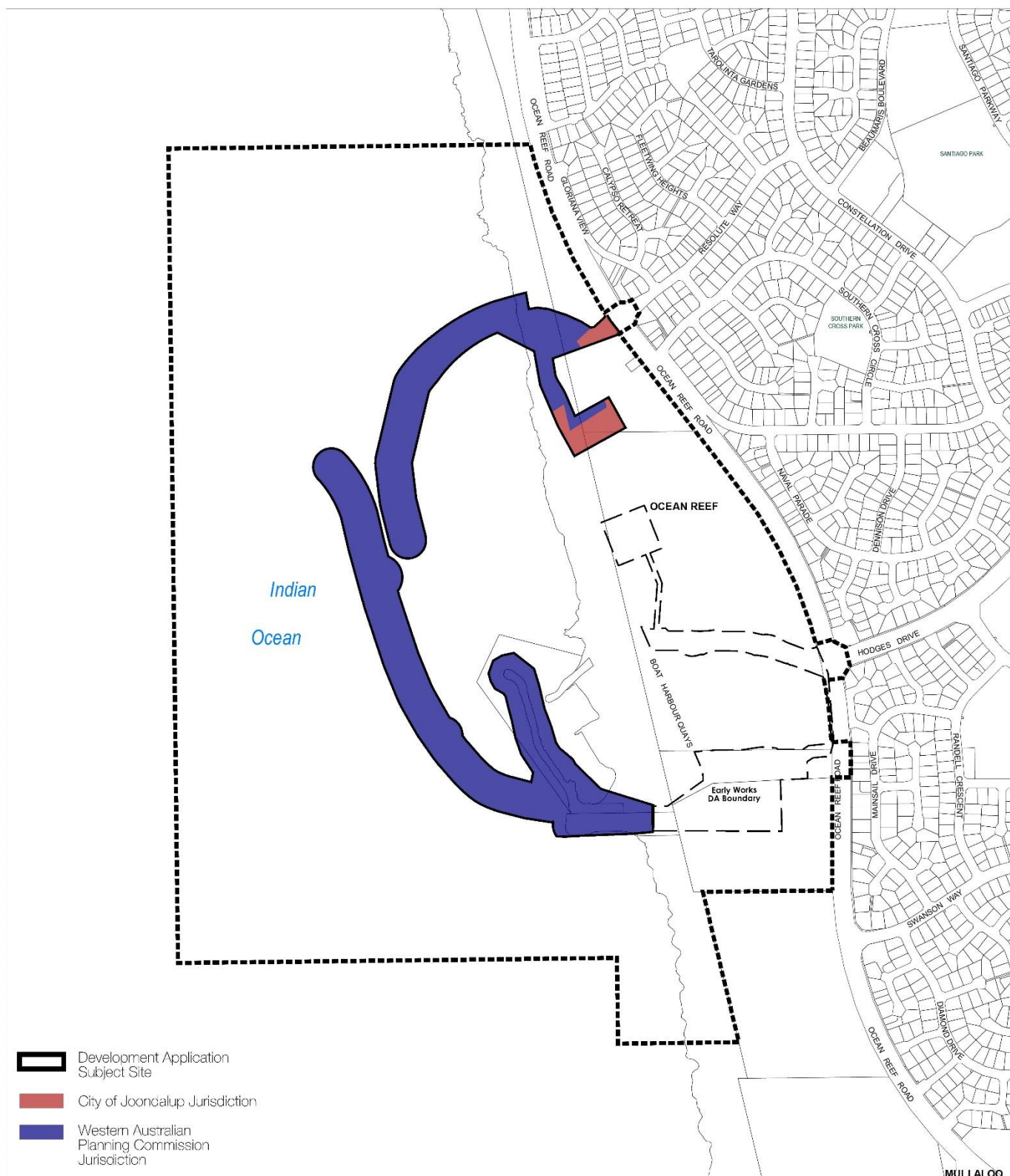
2.2.2 Improvement Plan & Improvement Scheme

Upon DevelopmentWA taking the role as lead agency for the Ocean Reef Marina project, it was considered that an Improvement Plan and Improvement Scheme would be the most suitable planning framework to progress the strategic planning and development for the Ocean Reef Marina site.

Pursuant to Part 8 of the *Planning and Development Act 2005*, on 29 May 2019 the WAPC recommended to the Minister for Planning and Governor that the identified land area be dealt with and be the subject of Improvement Plan No. 51: Ocean Reef Marina (Improvement Plan 51) (refer **Figure 5**). Improvement Plan 51 was subsequently gazetted on 31 December 2019. Improvement Plan 51 is the head of power for the preparation of the Improvement Scheme.

The Improvement Scheme will provide land use and development controls over the scheme area, and also provides heads of power to prepare Improvement Scheme policies and Local Development Plans. The draft Improvement Scheme was submitted to the WAPC for consideration in December 2019, and initiated in January 2020. It is anticipated that draft the Improvement Scheme would be advertised and finalised during 2020. Whilst the Improvement Scheme is in effect, the MRS and City's *Local Planning Scheme No. 3* will be suspended and cease to apply to land within the Improvement Scheme Area. The proposed development is in accordance with the Improvement Scheme as indicated on **Figure 6**.

Given the Improvement Scheme is not due to come into effect until late 2020, this development application is being made under the MRS and City's LPS 3 to provide a level of certainty to progress the detailed design, which will subsequently inform the contractual arrangements to enable construction commencement by the end of 2020 in accordance with the State Government commitment.



Improvement plan
No. 51

IMPROVEMENT PLAN NO. 51 - OCEAN REEF MARINA



Improvement Plan



Created on date: Thursday, 2 May 2019
Document Name: ip51_Ref2998_v1

Produced by Data Analytics, Department of Planning, Perth WA
Base information supplied by
Western Australian Land Information Authority SLIP 1096-2016-1

Project Manager: J. Gildenhuys

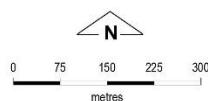
Geospatial Officer: A. Power

Examined: J. Ballarotta

Revised:

Version No: 1

Date:



Scale: 1:120,000@A4

Plan Number:

3.2738

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File number: 819/02/34/0001

Plan reference:
Metropolitan Region Scheme
1:25000 sheets 7 & 11

Figure 5 Improvement Plan No. 51 and location of Development Application Subject Site

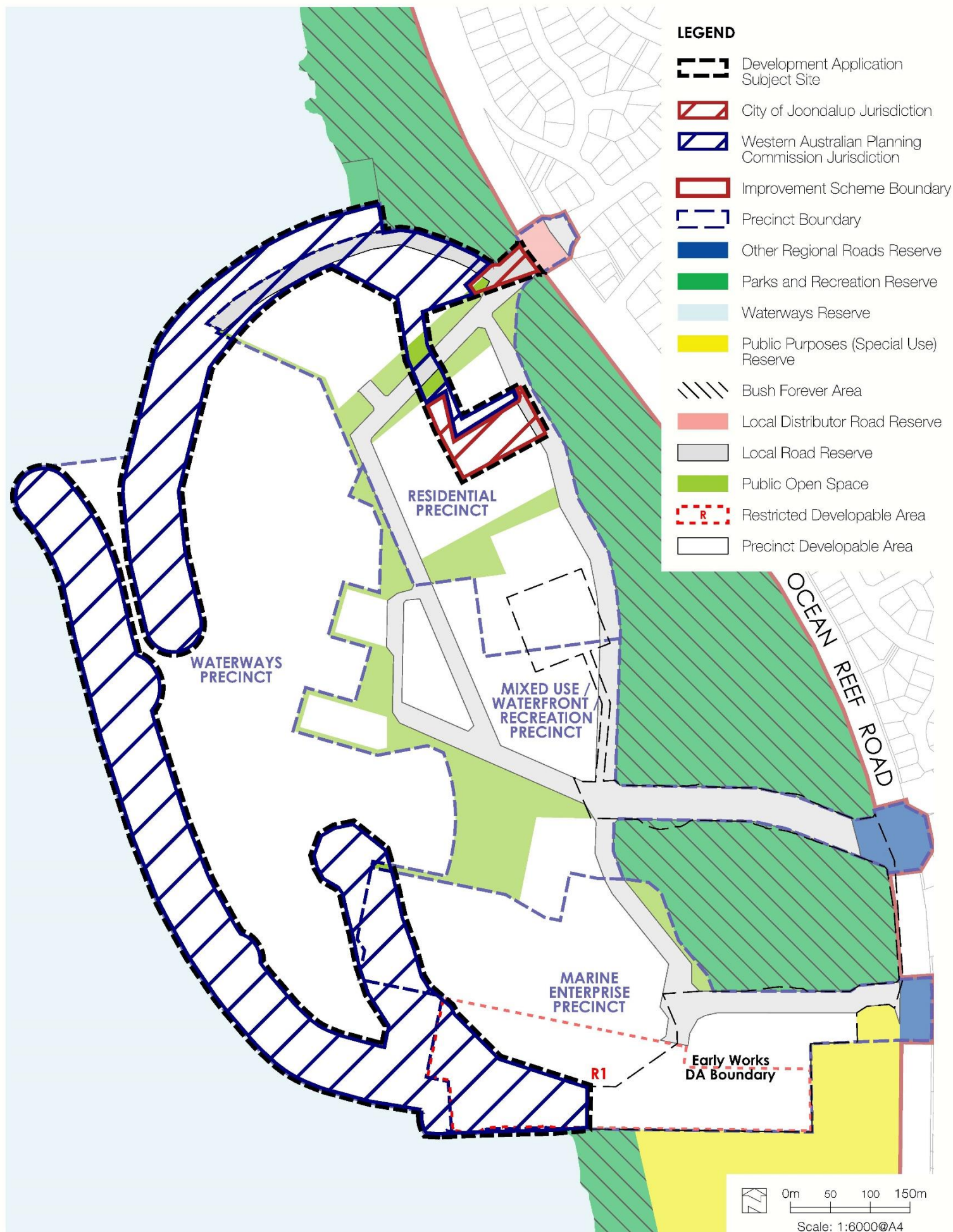


Figure 6 Ocean Reef Marina Draft Improvement Scheme Map and Development Application Subject Site

2.2.3 City of Joondalup Local Planning Scheme No. 3

The portion of the proposed development subject to this application is identified as “No Zone” in LPS 3 (refer **Figure 7**).

The remaining portion of the proposed development subject to development approval from the WAPC, is located on land reserved under the MRS, and for the most part is located on land outside the City of Joondalup local government district boundary, and there outside of the LPS 3 area.

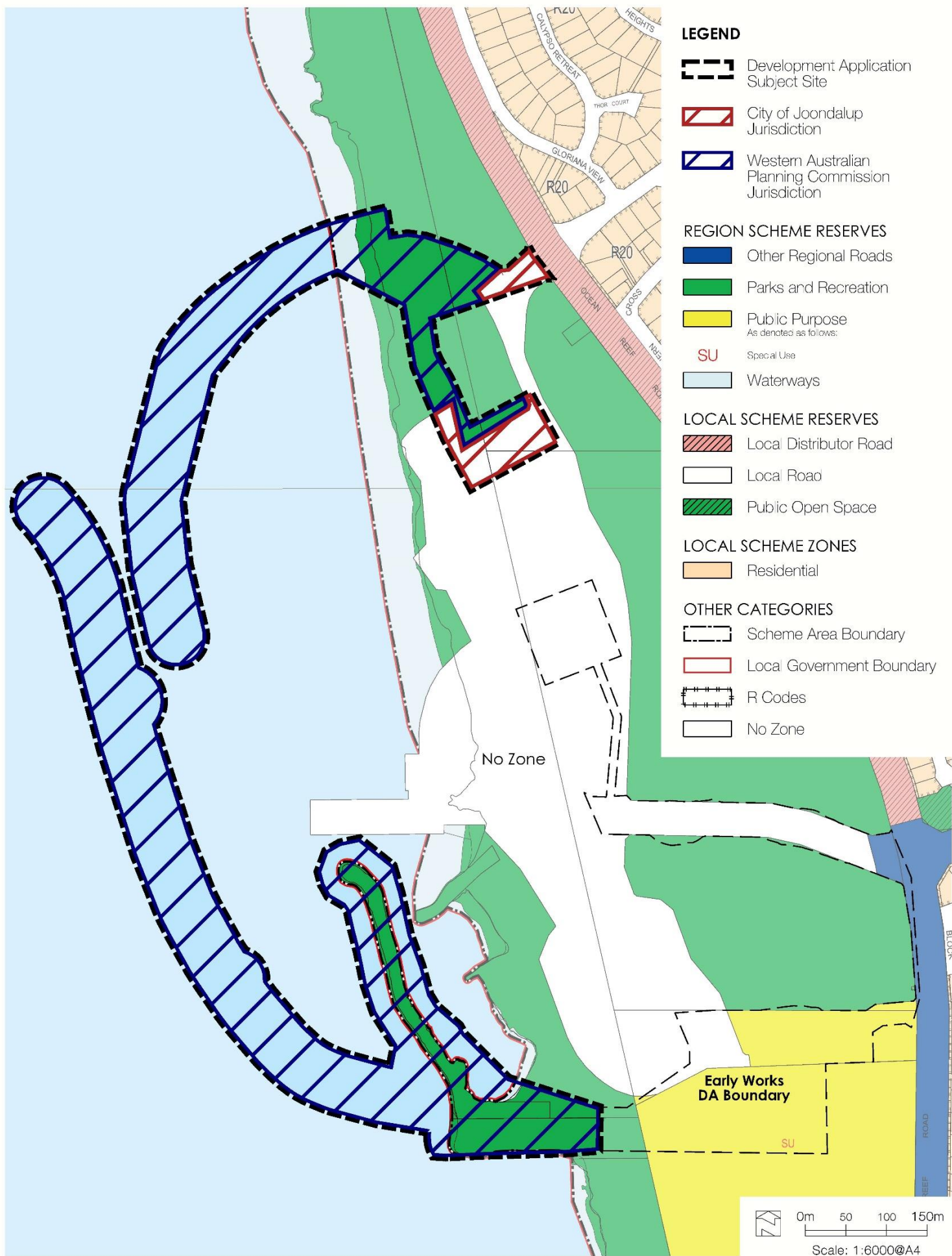


Figure 7 City of Joondalup Local Planning Scheme No. 3 Extract

2.2.4 State Planning Policies

State Planning Policy 2.6 State Coastal Planning Policy (WAPC, 2006)

SPP 2.6 State Coastal Planning Policy is intended to control development along the coast, guiding coastal setbacks, land use and development height. The Policy requires coastal and hazard risk management and adaption to be appropriately planned for, encouraging innovative approaches to managing coastal hazard risk.

The City of Joondalup and subsequently DevelopmentWA commissioned MP Rogers and Associates Pty Ltd to finalise the Coastal Hazard Risk Management and Adaptation Plan (CHRMAP). The CHRMAP was peer reviewed and assessed against SPP 2.6 and is suitable for the purposes of development of the Ocean Reef Marina.

The Ocean Reef Marina represents an artificial development on the coastline, which has been considered as being 'appropriate' within SPP 2.6. The proposed development is consistent with the CHRMAP.

State Planning Policy 3.7 Planning for Bushfire Risk Management (WAPC, 2015)

SPP 3.7 directs how land should address bushfire risk management and seeks to guide the implementation of effective risk-based land use planning and development to preserve life and reduce the impact of bushfire on property and infrastructure.

The policy is accompanied by Guidelines for Planning in Bushfire Prone Areas which provides advice on how bushfire risk is to be addressed when planning, designing or assessing a planning proposal within a designated bushfire prone area.

The breakwaters are exempt from requiring a BMP as discussed in **Section 4.1.7** of this report.

2.2.5 Local Planning Policies

Coastal Local Planning Policy (City of Joondalup, 2017)

The objective of the City's Coastal Local Planning Policy is to ensure compliance with SPP 2.6 State Coastal Planning Policy. As identified in **Section 2.2.3**, the proposed development is consistent with the CHRMAP which has been prepared for the subject site.

3.0 Environmental Approvals

3.1 Public Environmental Review

The marine component of the Ocean Reef Marina was referred and assessed by the Environmental Protection Authority (EPA) under s 38 of the *Environmental Protection Act 1986* (EP Act). The Proposal was approved on 7 August 2019 with the issue of Ministerial Statement 1107 under Section 45 of the EP Act. The EPA assessment was associated with the footprint of the marina identified in MRS Amendment 1270/41. A subsequent amendment was issued under Section 45C of the EP Act, issued on 6 January 2020, to modify the internal configuration of the marina and entrance channel. Ministerial Statement 1107 contains a number of conditions that apply to the construction and operation of the marine component of the Ocean Reef Marina. The five key conditions require the proponent to prepare and implement the following documents prior to commencement of construction:

- **Marina Construction Monitoring and Management Plan;** detailing construction procedures and protocols to minimise impacts to Marine Environmental Quality and Benthic Communities and Habitats.
- **Coastal Processes and Wrack Management Plan;** detailing how the design, construction and operation of the proposal will minimise sediment and wrack accumulation within the marina, on adjacent shorelines and on seagrass and macroalgal communities.
- **Abalone Habitat and Biomass Baseline Survey and Abalone Habitat and Biomass Monitoring Plan;** to demonstrate that the indirect impacts to abalone are not greater than predicted; and
- **Offset Strategy (Benthic Communities and Habitat),** which broadly consists of the following:
 - funding for research and investigations into threats and pressures;
 - monitoring of habitats and water quality; and
 - support for an education and interpretation program.

These documents, discussed in **Section 4.0**, will either be updated or prepared, and finalised prior to construction commencing, as per the requirements of the Ministerial Statement.

4.0 The Development Proposal

4.1 Development Overview

The details of the proposed development are included in the Development Application Plans (refer **Appendix C**), and summarised below:

4.1.1 Breakwaters

The breakwaters will consist of two rubble mound rock structures, extending a combined length of approximately 2,000 metres. This includes an inner, northern breakwater (~700 metres) and an outer, southern breakwater (~1,200 metres). Both breakwaters are connected to the shoreline and extend offshore providing calm waters within. The key function of the breakwaters is to protect the internal marina infrastructure from coastal hazards. Calm waters inside the marina will be provided for boating facilities as well as the recreational, tourism and residential precincts.

A 50-year design life has been selected for the breakwaters with a 100-year Average Recurrence Interval (ARI) design event. This is consistent with other developments throughout the state. Design conditions for the breakwaters were established via interrogation of relevant historical met-ocean data, as well as validated numerical modelling (MRA 2019). Functional design criteria were prepared to inform the design based on accepted local and global standards for marina and breakwater design and confirmed by the Department of Transport. Design of the breakwaters was undertaken by M P Rogers & Associates utilising a combination of globally recognised procedures based on available literature; and advanced physical modelling techniques undertaken at Manly Hydraulics Laboratory (MRA 2020).

The breakwaters will be composed of a combination of granite and limestone rock material. Granite rock will be utilised on the outside of the breakwaters to protect against the severe wave conditions that would be expected outside the marina. Limestone rock will be utilised on the inside of the breakwaters where calmer waters will be present. Limestone rock will be utilised as the core material for the structures. An indicative cross section of the breakwaters is shown in **Figure 8**.

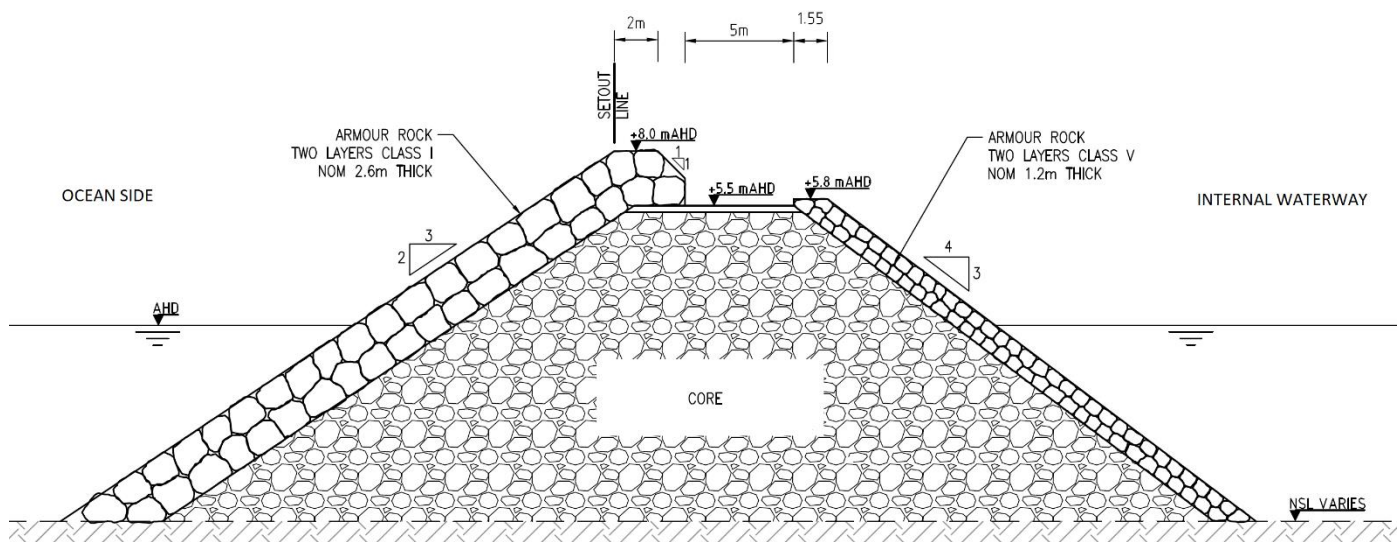


Figure 8 Indicative Cross Section of Proposed Breakwaters

The design of the breakwaters has been optimised to ensure that they are as small as possible, yet still sufficiently robust to provide the necessary level of protection to adjacent infrastructure. The breakwater design incorporates a flat section at the top of the core which will provide the foundation for the initial construction, but will also be required to enable future maintenance of the structures. This section would be available for pedestrian access in the future, however may be unsafe in severe storm conditions and may require management as outlined in the CHRMAP and as commonly experienced for other structures. This management is expected to require signage to warn users of potential risks during severe events (subject to the necessary approvals), as is commonplace elsewhere, such as the signage on the breakwaters at Mindarie Marina, as shown below.



Figure 9 Example of Signage Required on Breakwaters (Mindarie Marina)

Preliminary design drawings for the breakwaters are included in **Appendix C**. These drawings show the general layout of the breakwaters as well as the general configurations of the cross sections. Minor modifications to these designs are expected as the detailed design is finalised. Modifications will largely be informed by the results of marine geotechnical investigations which are currently underway. These geotechnical investigations have involved core drilling and jet probing of the seabed. These geotechnical works will determine the subsurface characteristics of the seabed, which is required to determine potential allowances for settlement of the structures as well as the toe design. The breakwater footprint will be contained entirely within the breakwater footprint recently approved by the Section 45C process.

4.1.2 Stockpile

Rock stock piles would be limited in height to around 3 to 4 metres in elevation above existing ground level. Stockpiles would be constrained to the areas shown on the Development Application Plans included in **Appendix C**. There would be no limit in the stockpile size, so long as they stay within the defined boundary.

4.1.3 Demolition of Existing Breakwater

The demolition of the existing outer breakwater of the Ocean Reef Boat Harbour will be completed after the construction of the new breakwaters reaches a point where the breakwaters have crossed. Crossing of the breakwaters is required to ensure that they provide the necessary level of protection to the facility. Material sourced from the demolition of the existing breakwater will be used in the construction of the new breakwater. The smaller, internal Ocean Reef Boat Harbour breakwater will remain in place and will be demolished as part of the internal marina works.

4.1.4 Clearing

The proposed breakwaters will require clearing of existing vegetation within the land side of the Development Application footprint. The clearing required as part of the proposed breakwaters will be subject to a native vegetation permit under Section 51C of the Environmental Protection Act 1986 (EP act), unless a valid exemption applies to some of the area proposed to be cleared. Construction of the proposed breakwaters will commence once the necessary clearing permit is obtained. The clearing permit for the purpose of this application would be prepared and processed in a similar manner to those prepared for

other project works, including the early works and geotechnical studies, which clearing permits were accepted for on the 6 February 2020 (with final approval subject to outcome of a period of public consultation).

4.1.5 Landscaping

The details of the landscape approach have been prepared by UDLA and are included in **Appendix D**.

Whilst the standard approach to breakwaters in WA is minimal landscape treatment, the Ocean Reef Marina provides the opportunity to create 'front-line' marine environments that are both functional and aesthetically pleasing, which will be a unique feature of the development.

These opportunities include;

- Walking/Riding Paths;
- Art Installations (permanent and curated);
- Vegetation;
- Seating/Rest Points; and
- Fishing/Viewing Platforms.

It is acknowledged that there will be many constraints to consider with the above landscape approaches including the safety of the public both day to day and in large storm events, the ongoing settlement and movement of the breakwater, the interface of the marina landside with the development, the cost to construct on the breakwaters and the ongoing management and maintenance of any breakwater works. These constraints will be considered with each design approach and all proposed treatments will be designed in consultation with relevant statutory authorities and groups. For example, if it was agreed that vegetation would be placed along the breakwaters then the approach would include frontline locally native species that will survive in the harsh environments and require no connected irrigation system. Similarly, any lighting required could be supplied with a solar or wind powered electrical supply.

Whilst the breakwater landscape treatment will require significantly more consultation and consideration, the current approach is to make allowances for potential treatment to occur. This future proofs the breakwaters through the design phase without committing to any approaches at this early phase of landscape design.

4.1.6 Servicing and Infrastructure Strategy

4.1.6.1 Electrical Infrastructure

Lighting to Western Power and Australian Standards is proposed for the norther access route. This lighting will be fed by applications to Western Power for low voltage connections. This lighting is an interim solution and will be amended as required for the final adopted public realm development theme.

Existing overhead powerlines will be maintained in the interim, with pavement levels set to ensure adequate clearance for vehicular movement beneath the lines.

4.1.6.2 Water Supply

Existing water supply to the boat ramp and clubs will be maintained as is not being amended as part of this application.

The contractor may choose to make applications to Authorities for a scheme water connection to their site facilities.

4.1.6.3 Sewerage

Existing wastewater disposal onsite is not being amended as part of this proposal. Wastewater from the Contractors site facilities shall be stored within self-contained portable ablution facilities and regularly pumped out and disposed offsite to approved facilities.

4.1.7 Drainage

Management of stormwater during construction activities is required to ensure control of sediments into the marine environment. The Marina Construction Monitoring and Management Plan deals with the sedimentation associated with the marine construction activities (refer **Section 4.3**).

As the terrestrial works are temporary in nature, they are not required to be in accordance with the DWMS and LWMS prepared for the overall Ocean Reef Marina development. All future permanent development, subject to future development approvals, will be required to be in accordance with the Ocean Reef Marina DWMS and LWMS.

4.1.8 Workforce

Construction of the breakwaters is a machinery intensive process. The majority of the workforce will be truck drivers, responsible for carting rock products to site, and in the case of core material, dumping that rock into the ocean to form the breakwaters. Armour material will be trucked to the site and then placed rock-by-rock with hydraulic excavators.

It is expected that there would generally be around 10 personnel who will be on site full time during works hours (1x site supervisor, 1x surveyor, 2x truck spotters, 2x excavator operations and 4 others either on loaders or doing other assorted jobs).

4.1.9 Access and Parking

A Transport Assessment has been prepared by Arup which is included in **Appendix E** and summarised below.

A total of approximately 900,000 tonnes of construction material is required to be delivered to the site to facilitate the construction of the breakwaters, equating to approximately 16,000 – 18,000 tonnes of material per week. To facilitate the delivery of this material, it is anticipated that up to 27 construction material deliveries will be made to the site every hour, for a maximum of 11 hours per day. This is likely to be a consistent transport rate for approximately 1 year. This translates to a maximum of 150 construction material delivery trips (300 one-way trips) per day and excludes private vehicle access for construction staff.

Deliveries are anticipated to travel to site via Mitchell Freeway and Hodges Drive (refer to **Figure 10** below) and will mainly involve delivery of limestone, gravel etc. associated with road pavements. The expected typical delivery vehicle understood to be a Prime Mover with one Triaxle Trailer (i.e. up to 19 metres in length), however approval may be sought from Main Roads WA to allow for B-Double access, which would halve the number of delivery trips per day. In order for B-Doubles to access the site, Hodges Drive (west of Marmion Avenue), Ocean Reef Road and Boat Harbour Quays would need to be added to the Restricted Access Vehicle (RAV) road network, requiring liaison and approval processes with Main Roads. The proposed works are not reliant on this occurring, and this process would occur independently of this Development Application, in liaison with the City of Joondalup and the DPLH.

The construction traffic will be managed through A Pedestrian, Cyclist & Traffic Management Plan, prepared under the Construction Management Plan by the Contractor, and guided by the Transport Assessment Report

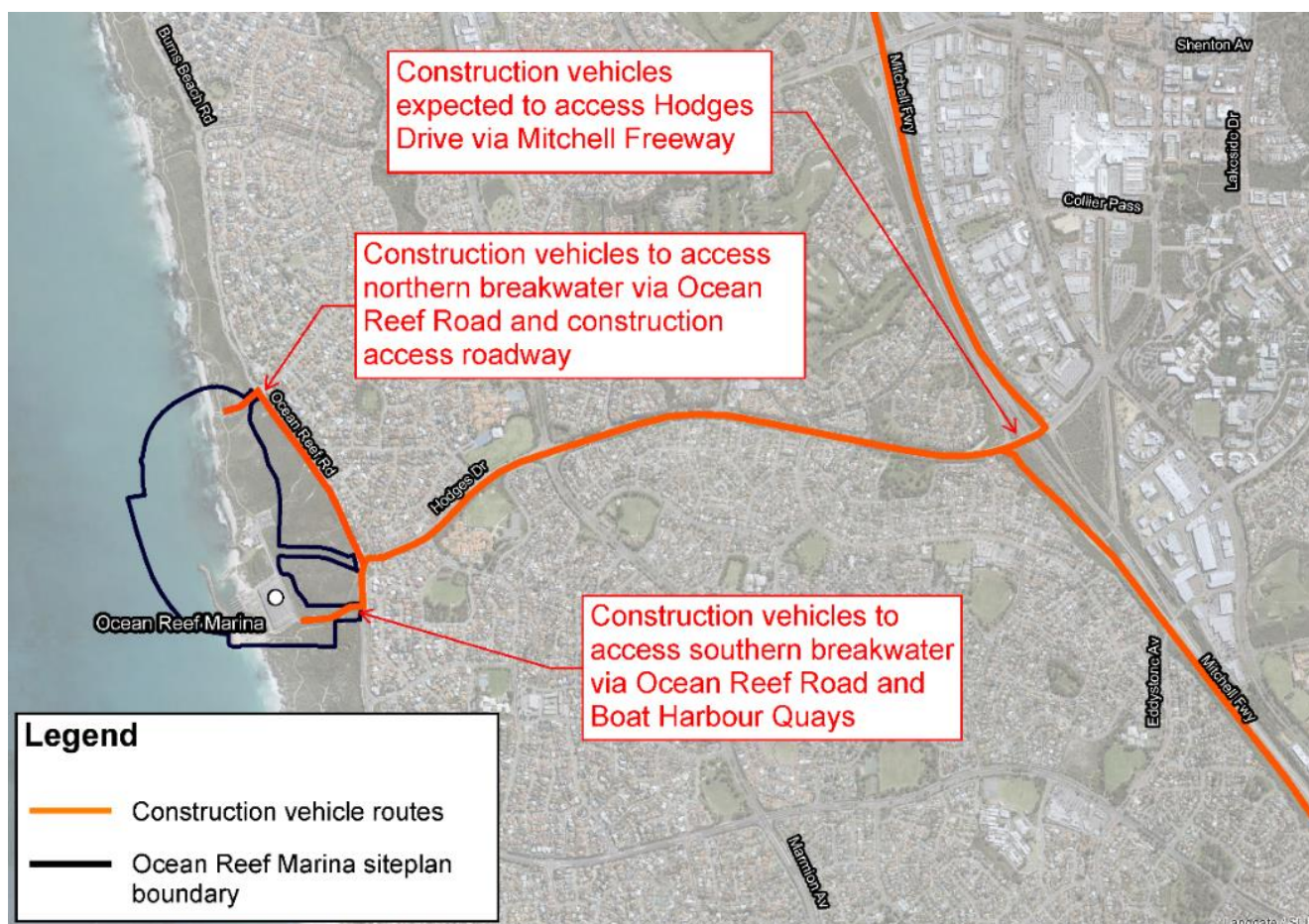


Figure 10 Construction Delivery Vehicle Access Routes

It is also anticipated that up to 10 staff will be on site at any one time, which translates to approximately 30 trips per day (including trips to and from site as well as some additional trips by staff vehicles to support staff and construction activities).

It is therefore estimated that up to approximately 330 external trips per day would be generated by construction and staff activities as part of the proposed breakwater works.

The traffic surveys previously carried out as part of the overall Transport Assessment for the Ocean Reef Marina identify Boat Harbour Quays currently carries up to 1,500 vehicles per day, with Ocean Reef Road currently carrying between 5,000 and 8,000 vehicles per day in the vicinity of the site, and Hodges Drive currently carrying 8,400 vehicles per day west of Marmion Avenue. These roads will readily accommodate a further 330 vehicle trips per day. It is recommended that Ocean Reef Road between Mitchell Freeway and the Ocean Reef Marina site be considered for construction vehicle access during peak school traffic periods (i.e. pick-up and drop-off periods), to minimise disruption along Hodges Drive during these times.

Public access to the existing boat ramp and club facilities will continue to be provided throughout the breakwaters construction programme.

There will be ample parking available within the southern site compound (to be constructed as part of the Early Works construction package) and the breakwater laydown areas for staff vehicles.

The Construction Traffic Management Plan guidance included in the Transport Assessment Report focusses on the northern breakwater location where there are changes that impact traffic management.

4.1.10 Pedestrian and Bicycle Access

Pedestrian and bicycle access along the north-south Principal Shared Path (PSP) (also known as the Coastal Shared Path) will continue to be provided via a temporary alignment, of which two alignment options have been considered:

Detour along the southern and eastern sides of the construction hardstand area, and the northern side of Hodges Drive extension (as per the Early Works PSP alignment, to tie in with the existing PSP).

Detour along the southern and eastern sides of the construction hardstand area, the western side of Ocean Reef Road and the northern side of the proposed construction vehicle access roadway (to the northern breakwater), to tie in with the existing PSP.

It is preferred to utilise the existing PSP as much as possible in terms of pedestrian amenity (being as close to the coast as possible) and construction costs. The alignment of the PSP will be determined through the detailed design phase, through consultation with the City of Joondalup and the DPLH. It is anticipated a condition will be placed on the development approval in this regard.

Construction traffic management will be provided by way of adequate temporary advisory/warning signage and/or manual traffic control where construction traffic entering or exiting the site conflicts with other traffic, including at the intersection of Ocean Reef Road/ Resolute Way (where access to the northern breakwater site is proposed). Traffic control and management shall be in accordance with AS1742.3 and Main Roads WA *“Traffic Management for Works on Roads – Code of Practice”*.

4.2 Bushfire Considerations

As outlined in Planning Bulletin 111/2016; Planning in Bushfire Prone Areas, State Planning Policy 3.7 applies to development applications for habitable buildings in Bushfire Prone Areas. While the subject site is located within a mapped Bushfire Prone Area, the proposed development does not include a habitable building, nor is the proposed land use considered high-risk or vulnerable. As such, the application of SPP 3.7 does not apply to this development application.

It is noted that a Bushfire Management Plan has been prepared for the broader Ocean Reef Marina development, which will be updated at each relevant planning stage, as required

4.3 Marina Construction Monitoring and Management Plan

In accordance with Ministerial Statement 1107, a Marina Construction Monitoring and Management Plan will be prepared and submitted to the EPA prior to construction, in consultation with the Department of Transport, the Department of Primary Industries and Regional Development and the Department of Biodiversity, Conservation and Attractions. The Marina Construction Monitoring and Management Plan will include:

1. Map(s) spatially representing the Zone of High Impact and Zone of Influence;
2. Map(s) spatially representing the environmental quality objectives to be achieved and the levels of ecological protection;
3. A requirement for all marina construction activities to be managed with the objective of achieving the Environmental Protection Outcomes (established in the Ministerial Statement conditions);
4. Evaluation of further practicable measures to reduce and manage the level of fines in breakwater construction material;
5. Descriptions of the environmental indicators to be monitored (physical, chemical and biological) and management triggers that will be used for assessing environmental performance against the Environmental Protection Outcomes;
6. The monitoring methodologies to be applied to measure the environmental indicators;
7. The timing and frequency for monitoring the environmental indicators at the different impact and reference sites to inform adaptive management of the identified marina construction activities;
8. The procedures for assessing the monitoring data against the management triggers to assess achievement of the Environmental Protection Outcomes;
9. Procedure for determining whether any exceedances are attributable to the implementation of the proposal;
10. Management actions that will be implemented in the event that the management triggers are not met;
11. Mechanisms to provide the public with details of any exceedances of management triggers and contingency actions as soon as practicable; and
12. Protocols and procedures (incorporating marine fauna observers, defined buffers and search times, ramp up and shutdown procedures) to manage and minimise impacts to marine fauna.

4.4 Construction Management Strategy

Prior to the commencement of the construction works onsite the Contractor will be required to prepare and submit for approval a comprehensive Construction Management Plan. The Construction Management Plan will be required to be prepared in accordance with all requirements of the PER approval. It is anticipated the requirement for a Construction Management Plan to be prepared will from a condition of development approval. The Construction Management Plan will address the key parameters summarised in the following sections.

4.4.1 Site Layout

The Contractor will be required to provide a site layout plan for approval outlining key features of the site during the construction works. This would include details such as laydown areas, temporary access works or stockpile areas, pedestrian, cyclist and traffic management, fencing & signage, any reinstatements that may be required and any other information relevant to the Construction Management Plan. The contractor will be limited in their works extent to the areas identified within this application.

4.4.2 Works Methodology, Programme & Quality Control

The Contractor will be required to provide a detailed works methodology and quality control plan for the works. This will include details on staging, the machinery and workforce that will be utilised, the methods for undertaking the works and processes for ensuring requirements of the specification are being achieved. The Contractor will be required to provide a detailed programme of the works outlining start dates, finish dates and duration of the overall works and stages as well as individual tasks.

4.4.3 Environmental Management & Approvals

Within the Construction Management Plan, the Contractor will be required to provide details of environmental management throughout the works including how compliance with all approvals will be achieved. This will include details of sediment and turbidity management, protection of flora and fauna, refuelling, spill management, chemical management and any other information relevant to environmental management and compliance with the PER approval.

4.4.4 Vegetation Protection

Details of environmental management will be required to include how the Contractor will protect vegetation not to be cleared as part of the works. This will include details such as tree protection zones and any other relevant information.

4.4.5 Waste Management

The Contractor will be required to outline how any debris and waste material will be managed and disposed of in accordance with all regulatory and legislative requirements.

4.4.6 Occupational Health & Safety

The Contractor will be required to outline how they will comply with all relevant Occupational Health & Safety legislation. This will include requirements contained in the *Occupational Safety and Health Act 1984* and the *Occupational Safety and Health Regulations 1996*.

4.4.7 Pedestrian, Cyclist and Traffic Management Plan

The Contractor will be required to outline how pedestrian, cyclist and traffic movements will be accounted for and managed during the construction works. Any Authority that is responsible for the care, control and management of any roads that the Contractor will be using during the Works will review the Contractor's Pedestrian, Cyclist & Traffic Management Plan and the Contractor will be required to meet all of these Stakeholders requirements for the duration of the works.

4.4.8 Marking of the Works, Fencing & Signage

The Contractor will be required to provide, maintain and exhibit such fences, barriers, signs and notices on and around the works as required to make the area safe for the general public for the duration of the works. Details of these measures will be required to be outlined in the Construction Management Plan.

The Contractor will be required to provide, maintain and exhibit any day marks, lights, warning lights, barriers, signs and notices on or around the Works as required by the Department of Transport, or to make the area safe for navigation and the general public during the period of the Works. Details of these measures will be required to be outlined in the Construction Management Plan.

4.4.9 Point of Contact

The Contractor will be required to nominate contact details of a member of staff, contactable by agencies and the public for any queries, issues or concerns that may arise during the works.

4.4.10 Limitation of Inconvenience

The Contractor will be required to plan and execute the works in a manner that minimises the inconvenience to the public. The Contractor will be required to outline how they will maintain public access to boat ramps at the site for the duration of the works. The Contractor will be required to outline how they will maintain public access to the sea sports club for the duration of the works. The Contractor will be required to work in conjunction with user groups, event holders and stakeholders to allow access to the site for such activities as may be practicable.

4.4.11 Construction Days / Hours

The Contractor will be required to provide construction days and hours as required to meet the programme for the works. It is currently proposed that 6 working days of Monday to Saturday between 7am and 6pm would be acceptable. Extended or alternative working hours will be subject to approval. The Contractor will be required to work in conjunction with the sea sports club to ensure access to club facilities for events is provided.

4.4.12 Noise and Vibration

The Contractor will be required to outline how noise and vibration will be managed throughout the construction works. The construction works will be required to be carried out in accordance with control of noise and vibrations as outlined in AS 2436-2010 *Guide to noise and vibration control on construction, demolition and maintenance sites*.

4.4.13 Dust and Wind-Blown Material

The Contractor will be required to outline how dust and wind-blown material will be managed throughout the construction works. The Contractor will be responsible for the effective control of all dust and windborne material emanating from the site throughout the works. The Contractor's management of dust & windblown material will be required to be in accordance with *A Guideline for Prevention of Dust and Smoke Pollution from Land Development Sites in Western Australia* (Department of Environmental Protection, November, 1996).

4.5 Coastal Processes and Wrack Management Plan

A draft Coastal Processes and Wrack Management Plan was prepared by MP Rogers & Associates Pty Ltd in 2016 in response to the requirements from the Department of Transport, and to ensure the impacts associated with Ocean Reef Marina development are both understood and manageable.

The draft Coastal Processes and Wrack Management Plan was prepared in the draft concept design phase, and is required to be revised to reflect the current breakwater design, in accordance with Ministerial Statement 1107 in consultation with the Department of Transport, Department of Water and Environmental Regulation and Department of Biodiversity, Conservation and Attractions. The revised plan is required to include:

1. Shoreline mapping and beach profiles at Ocean Reef Marina using onground surveys which monitor beach width and slope, and records significant inflection points and features including primary dune, vegetation line, scarp, high tide mark, water line;
2. Procedures to track changes in sediment distribution, including management triggers, within the near-shore area adjacent to Ocean Reef Marina;
3. The use of the most up-to-date wave and current data collected by the Department of Transport to optimise the breakwater layout and harbour entrance;
4. Monitoring of wrack accumulation within the marina and on adjacent shorelines against management trigger values;
5. Management measures that will be implemented in the event that management triggers are exceeded including methods of sediment and wrack bypassing and maintenance dredging;
6. Description of wrack disposal locations and procedures for undertaking sediment and wrack bypassing so that impacts to seagrass and macroalgal communities are avoided;

7. An outline of community engagement to be undertaken prior to and during implementation of the management measures and disposal locations and procedures to ensure impacts on recreational values are identified and minimised; and
8. Spatial data to define the following areas:
 - a) the near-shore area adjacent to the Ocean Reef Marina;
 - b) the adjacent shorelines; and
 - c) the wrack disposal locations.

4.6 Abalone Habitat and Biomass Baseline Survey and Monitoring Plan

In accordance with Ministerial Statement 1107, an Abalone Habitat and Biomass Baseline Survey and Monitoring Plan will be prepared and submitted to the EPA prior to construction of the breakwaters, in consultation with the Department of Primary Industries and Regional Development and the Department of Biodiversity, Conservation and Attractions. The baseline survey and monitoring plan will:

1. Describe the potential indirect impacts of the proposal on abalone habitat and biomass;
2. Detail the proposed methodology for the baseline surveys including the parameters to be monitored to determine whether there are any adverse changes to abalone biomass beyond those predicted;
3. Describe the method, including the development of monitoring criteria, to demonstrate that the actual indirect impacts to abalone biomass are within those predicted;
4. Identify and spatially define the proposed survey locations, within the 500-metre abalone monitoring zone, and reference/control sites and provide rationale for the location of the sites;
5. Detail the proposed frequency and timing for the baseline surveys and ongoing monitoring;
6. Detail the proposed frequency and timing of reporting for the ongoing monitoring;
7. Include contingency management actions that will be implemented in the event that monitoring indicates that the indirect impacts to abalone habitat or biomass are beyond those predicted; and
8. Complement the monitoring program required as a separate condition of the PER in relation to loss of seagrass and macroalgal communities.

4.7 Staging and Implementation

Staging of the Ocean Reef Marina development is proposed in the following order as depicted in **Appendix F**:

- Early Works (subject to the Ocean Reef Early Works Development Approvals) – April 2020 – October 2020
- Breakwater Construction
 - Northern access road construction - October 2020
 - Utilisation of early works roads and northern access road to commence construction of northern and southern breakwaters concurrently, to commence following abalone spawning season - January 2021 – January 2022
 - Removal of existing outer breakwater following construction of new breakwaters reaches a point where the breakwaters have crossed
- Future Stages January 2022 – 2024+
 - New boat ramp lands and parking
 - Seawall construction
 - Removal of existing inner breakwater
 - Earthworks (marine services, car-park and bulk)
 - Sea Sports Club and Sea Rescue Site and Construction
 - Subdivisional works
 - Hodges Drive internal roundabout
 - Hodges to Boat Harbour Quays link road

The construction staging takes into account the principal of ensuring public safety, whilst ensuring access to clubs and public access throughout the construction program. Prior to construction commencing, signage providing information to inform community user groups will be provided (subject to separate development approval). DevelopmentWA will continue to work in consultation with the City of Joondalup and the DPLH throughout the construction process of the Ocean Reef Marina project.

5.0 Compliance with Planning Framework

The following table demonstrates the proposed development is compliant with the site's planning framework.

Table 2: Compliance with Planning Framework

Planning Document	Provision	Compliance	Comment / Justification
MRS	<p>Subject site reserved "Parks and Recreation" and "Waterways" in the MRS.</p> <p>Clause 30</p> <ul style="list-style-type: none"> i) The purpose for which the land is zoned or reserved under the Scheme; ii) The orderly and proper planning of the locality; and iii) The preservation of amenities of the locality 	✓	<ul style="list-style-type: none"> i) The proposed breakwaters are consistent with the reservations under the MRS. The proposed breakwaters provide opportunities for recreational, tourism and boating facilities, consistent with the site's Parks and Recreation and Waterways reservations in the MRS. Although the alignment of the breakwaters is in slight variance to the alignment as indicated on the MRS, the proposal is consistent with the Section 45C approval, and therefore consistent with the PER. Additionally, the proposed works located on Urban zoned land under the MRS are of a temporary nature, which will facilitate the ultimate development of the Ocean Reef Marina, and is therefore consistent with the Urban zone in the MRS. ii) The proposed breakwaters are consistent with the orderly and proper planning of its locality. The breakwaters are a compatible use within the Parks and Recreation and Waterways reservations and have been designed to minimise impact on the surrounding land uses. The proposed development has been designed to ensure public safety, whilst ensuring access to clubs and public access throughout the construction program. The works have also been designed to be consistent with the approved CHRMAR. The proposed works will facilitate the development of the Ocean Reef Marina, which has been consistently identified in the site's strategic planning framework. The proposed works are therefore consistent with the orderly and proper planning of the locality. iii) The ultimate Ocean Reef Marina development, including the proposed breakwaters will enhance the amenities of the locality, making it a world-class marina for enjoyment by the public. <p>The proposed early works have been designed to have minimal impact on the amenities of the locality, with any potential impacts being managed and mitigated</p>

			<p>through the construction management strategy and subsequent construction management plan being prepared by the contractor.</p> <p>The works have been designed to have minimal impact on the pedestrian accessibility through the locality, with the conservation of the existing PSP to provide continual full pedestrian access.</p> <p>The works have also been staged to ensure continual access to the club and boat ramps. Additionally, the breakwaters have been designed to enable future landscaping to be provided, which will be both functional and aesthetically pleasing, ensuring the preservation of the amenities of the locality.</p>
City of Joondalup LPS No. 3	The site's MRS reservations are reflected in the City of Joondalup LPS 3.	✓	As outlined above, the proposed early works are consistent with the reservations under the Metropolitan Region Scheme, and therefore, consistent with the City of Joondalup LPS 3.
State Planning Policy 2.6 State Coastal Planning Policy	Policy measures 5.5 Coastal hazard risk management and adaptation planning	✓	The proposed development is consistent with the CHRMAP prepared for the Ocean Reef Marina, and the development is therefore consistent with the provisions of SPP 2.6
State Planning Policy 3.7 Planning for Bushfire Risk Management	Policy measure 6.5 Information to accompany development applications – requirement for Bushfire Management Plan	✓	The proposed development is exempt from the requirement to obtain a BMP in accordance with SPP 3.7.
Coastal Local Planning Policy	The objective of the City's Coastal Local Planning Policy is to ensure compliance with SPP 2.6 State Coastal Planning Policy.	✓	The proposed development is consistent with the CHRMAP which has been prepared for the subject site.

6.0 Pre-Lodgement Consultation

6.1 Overall Stakeholder Consultation

The Ocean Reef Marina Government Steering Committee (GSC) was established for the overall Ocean Reef Marina project in 2007, and includes representatives from DevelopmentWA, Department of Transport, Department of Planning, Lands and Heritage, City of Joondalup, and the Member for Joondalup. The GSC receives regular updates on the project, and has received updates in relation to the breakwater configuration.

A Project Working Group (PWG) was also established for the overall Ocean Reef Marina project, and includes representatives from DevelopmentWA, City of Joondalup, Department of Planning, Lands and Heritage, and the project planning and legal consultants. The PWG coordinated the finalisation of MRS Amendment 1270/41, preparation of the Improvement Plan 51, and drafting of the Improvement Scheme and associated planning instruments. The PWG also received updates in relation to the breakwater configuration.

6.2 Department of Transport

The Department of Transport, as the future intended waterway manager, has been consulted in regards to the preparation of the Transport Report prepared for the Ocean Reef Marina draft Improvement Scheme

Additionally, the project team have been liaising with Department of Transport regarding the design of the breakwaters throughout the design process. This has included provision of preliminary information in support of the Detailed Design. As the geotechnical information becomes available and the detailed design is confirmed, full design details will be provided to Department of Transport in support of a jetty licence application.

6.3 City of Joondalup

A pre-consultation meeting was held with the City of Joondalup to discuss the proposed breakwater development on the 16 January 2020. Officers from the Planning, Engineering and Projects teams were present at the meeting. Matters discussed at the meeting included:

- PSP – options for the PSP to be continued through the development during the construction works. DA to be conditioned to enable determination of appropriate detour to the satisfaction of the City.
- Construction Process – overview of construction process of the proposed breakwaters, including traffic movements and material delivery.
- Design Process - overview of design process and impact of geotechnical works on finalising breakwater design. DA to be conditioned to enable final geotechnical design and working drawings to be approved by the City.
- Staging – overview of the construction staging of the proposed breakwaters in the context of the balance of the Ocean Reef Marina development.
- Development Approval timeframes – development approval for the proposed breakwaters is required to be obtained in early 2020, to provide a level of certainty to DevelopmentWA that the development can be approved, to enable the detailed design to progress, and initiate Expression of Interest (EOI) to contractors. The extensive costs and timeframes associated with progressing the detailed design and EOIs requires a level of certainty to reduce the significant risks of undertaking these stages without development approval.

6.4 Department of Planning, Lands and Heritage

A pre-consultation meeting was held with the Department of Planning, Lands and Heritage to discuss the proposed development on the 7 February 2020. Matters discussed at the meeting included the overall breakwater design, traffic and transport and proposed staging.

7.0 Conclusion

This application demonstrates that for the proposed development for the breakwaters are consistent with the subject site's planning framework, including:

- North-West Sub Regional Planning Framework;
- City of Joondalup Strategic Community Plan;
- City of Joondalup Local Planning Strategy;
- City of Joondalup Economic Development Strategy;
- Metropolitan Region Scheme; and
- City of Joondalup Local Planning Scheme No. 3.

It is requested that the application be assessed and development approval is issued for the proposed development. We look forward to working with the City of Joondalup to achieve the development approval on the subject site.

APPENDIX A

Planning Application Forms

APPENDIX B

Certificates of Title

WESTERN



AUSTRALIA

REGISTER NUMBER

1029/D57604DUPLICATE
EDITION**N/A**

DATE DUPLICATE ISSUED

N/AVOLUME
1957FOLIO
865

RECORD OF CERTIFICATE OF TITLE

UNDER THE TRANSFER OF LAND ACT 1893

The person described in the first schedule is the registered proprietor of an estate in fee simple in the land described below subject to the reservations, conditions and depth limit contained in the original grant (if a grant issued) and to the limitations, interests, encumbrances and notifications shown in the second schedule.



REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 1029 ON DIAGRAM 57604

REGISTERED PROPRIETOR:
 (FIRST SCHEDULE)

CITY OF JOONDALUP OF BOAS AVENUE, JOONDALUP

(A H289093) REGISTERED 7/12/1999

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
 (SECOND SCHEDULE)

1. EXCEPT AND RESERVING METALS, MINERALS, GEMS AND MINERAL OIL SPECIFIED IN TRANSFER 5773/1940.
2. THE LAND THE SUBJECT OF THIS CERTIFICATE OF TITLE EXCLUDES ALL PORTIONS OF THE LOT DESCRIBED ABOVE EXCEPT THAT PORTION SHOWN IN THE SKETCH OF THE SUPERSEDED PAPER VERSION OF THIS TITLE. VOL 1957 FOL 865.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
 * Any entries preceded by an asterisk may not appear on the current edition of the duplicate certificate of title.
 Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: 1957-865 (1029/D57604)
 PREVIOUS TITLE: 1552-759
 PROPERTY STREET ADDRESS: 362 OCEAN REEF RD, OCEAN REEF.
 LOCAL GOVERNMENT AUTHORITY: CITY OF JOONDALUP

NOTE 1: J434783 CORRECTION MADE ON ORIGINAL CERTIFICATE OF TITLE - BUT NOT SHOWN ON CURRENT EDITION OF THE DUPLICATE.

WESTERN



AUSTRALIA

REGISTER NUMBER

10098/DP216093DUPLICATE
EDITION**N/A**

DATE DUPLICATE ISSUED

N/AVOLUME
LR3048FOLIO
270

RECORD OF QUALIFIED CERTIFICATE OF CROWN LAND TITLE

UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.



REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 10098 ON DEPOSITED PLAN 216093

STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)

STATUS ORDER/INTEREST: RESERVE UNDER MANAGEMENT ORDER

PRIMARY INTEREST HOLDER: WATER CORPORATION OF 629 NEWCASTLE STREET LEEDERVILLE WA 6007
(XE O194495) REGISTERED 16/7/2019

LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)

1. G578797 RESERVE 36732 FOR THE PURPOSE OF BREAKWATER AND SEWER OUTFALL FACILITIES
REGISTERED 9/9/1997.
O194495 MANAGEMENT ORDER. CONTAINS CONDITIONS TO BE OBSERVED. WITH POWER TO
LEASE FOR ANY TERM NOT EXCEEDING 2 YEARS. REGISTERED 16/7/2019.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
Lot as described in the land description may be a lot or location.
(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
(3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: LR3048-270 (10098/DP216093)
PREVIOUS TITLE: LR3048-270
PROPERTY STREET ADDRESS: LOT 10098 OCEAN REEF RD, OCEAN REEF.
LOCAL GOVERNMENT AUTHORITY: CITY OF JOONDALUP
RESPONSIBLE AGENCY: WATER CORPORATION

END OF PAGE 1 - CONTINUED OVER

ORIGINAL CERTIFICATE OF CROWN LAND TITLE
QUALIFIED

REGISTER NUMBER: 10098/DP216093 VOLUME/FOLIO: LR3048-270

PAGE 2

NOTE 1: A000001A CORRESPONDENCE FILE 1086/1969.
NOTE 2: LAND PARCEL IDENTIFIER OF SWAN LOCATION 10098 ON SUPERSEDED PAPER
CERTIFICATE OF CROWN LAND TITLE CHANGED TO LOT 10098 ON DEPOSITED PLAN
216093 ON 22-AUG-02 TO ENABLE ISSUE OF A DIGITAL CERTIFICATE OF TITLE.
NOTE 3: THE ABOVE NOTE MAY NOT BE SHOWN ON THE SUPERSEDED PAPER CERTIFICATE
OF TITLE.

WESTERN



AUSTRALIA

REGISTER NUMBER

15446/DP40340DUPLICATE
EDITION**N/A**

DATE DUPLICATE ISSUED

N/AVOLUME
LR3133FOLIO
571

**RECORD OF QUALIFIED CERTIFICATE
OF
CROWN LAND TITLE**

**UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED**

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.



REGISTRAR OF TITLES

LAND DESCRIPTION:

LOT 15446 ON DEPOSITED PLAN 40340

**STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)**

STATUS ORDER/INTEREST: RESERVE UNDER MANAGEMENT ORDER

PRIMARY INTEREST HOLDER: CITY OF JOONDALUP OF POST OFFICE BOX 21, JOONDALUP
(XE K360388) REGISTERED 28/9/2007

**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)**

1. 1966416 RESERVE 47831 FOR THE PURPOSE OF RECREATION AND PURPOSES INCIDENTAL THERETO REGISTERED 27/7/2004.
- K360387 CHANGE OF RESERVE PURPOSE. PURPOSE CHANGED TO RECREATION, TELECOMMUNICATIONS & PURPOSES INCIDENTAL THERETO REGISTERED 28/9/2007.
- K360388 MANAGEMENT ORDER. CONTAINS CONDITIONS TO BE OBSERVED. WITH POWER TO LEASE FOR ANY TERM NOT EXCEEDING 21 YEARS, SUBJECT TO THE CONSENT OF THE MINISTER FOR LANDS. REGISTERED 28/9/2007.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
Lot as described in the land description may be a lot or location.
(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
(3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP40340
PREVIOUS TITLE: LR3126-654

END OF PAGE 1 - CONTINUED OVER

ORIGINAL CERTIFICATE OF CROWN LAND TITLE
QUALIFIED

REGISTER NUMBER: 15446/DP40340

VOLUME/FOLIO: LR3133-571

PAGE 2

PROPERTY STREET ADDRESS:

362L BOAT HARBOUR QYS, OCEAN REEF.

LOCAL GOVERNMENT AUTHORITY:

CITY OF JOONDALUP

RESPONSIBLE AGENCY:

DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSD)

NOTE 1: 1966411

SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

NOTE 2: 1966416

CORRESPONDENCE FILE 50729-2004-01RO

WESTERN



AUSTRALIA

REGISTER NUMBER

10518/DP216093DUPLICATE
EDITION**N/A**

DATE DUPLICATE ISSUED

N/AVOLUME
LR3146FOLIO
799

**RECORD OF QUALIFIED CERTIFICATE
OF
CROWN LAND TITLE**

**UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED**

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

**LAND DESCRIPTION:**

LOT 10518 ON DEPOSITED PLAN 216093

**STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)**

STATUS ORDER/INTEREST: RESERVE UNDER MANAGEMENT ORDER**PRIMARY INTEREST HOLDER:** MINISTER FOR TRANSPORT

**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)**

1. RESERVE 39014 FOR THE PURPOSE OF HARBOUR PURPOSES
MANAGEMENT ORDER. CONTAINS CONDITIONS TO BE OBSERVED.

Warning: (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
Lot as described in the land description may be a lot or location.
(2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
(3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND: DP216093
PREVIOUS TITLE: LR3146-799
PROPERTY STREET ADDRESS: LOT 10518 HODGES DR, OCEAN REEF.
LOCAL GOVERNMENT AUTHORITY: CITY OF JOONDALUP
RESPONSIBLE AGENCY: DEPARTMENT OF TRANSPORT (SMHD)

NOTE 1: K217275 CORRESPONDENCE FILE 01854-1974-01RO

WESTERN



AUSTRALIA

REGISTER NUMBER

555/DP402198DUPLICATE
EDITION**N/A**

DATE DUPLICATE ISSUED

N/AVOLUME
LR3166FOLIO
566

**RECORD OF CERTIFICATE
OF
CROWN LAND TITLE
UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED**

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES

**LAND DESCRIPTION:**

LOT 555 ON DEPOSITED PLAN 402198

**STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)**

STATUS ORDER/INTEREST: RESERVE UNDER MANAGEMENT ORDER

PRIMARY INTEREST HOLDER: CITY OF JOONDALUP OF POST OFFICE BOX 21, JOONDALUP
(XE H352772) REGISTERED 2/2/2000

**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)**

1. N218049 RESERVE 45122 FOR THE PURPOSE OF RECREATION REGISTERED 5/1/2016.
H352772 MANAGEMENT ORDER. CONTAINS CONDITIONS TO BE OBSERVED. REGISTERED
2/2/2000.
2. H306399 EASEMENT TO WATER CORPORATION FOR SEWERAGE PURPOSES. SEE DEPOSITED PLAN
402198. REGISTERED 10/12/1999.

Warning: A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
Lot as described in the land description may be a lot or location.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

SKETCH OF LAND:	DP402198
PREVIOUS TITLE:	LR3047-762
PROPERTY STREET ADDRESS:	626 BURNS BEACH RD, ILUKA.
LOCAL GOVERNMENT AUTHORITY:	CITY OF JOONDALUP
RESPONSIBLE AGENCY:	DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSD)

END OF PAGE 1 - CONTINUED OVER

ORIGINAL CERTIFICATE OF CROWN LAND TITLE

REGISTER NUMBER: 555/DP402198

VOLUME/FOLIO: LR3166-566

PAGE 2

NOTE 1: N218049 CORRESPONDENCE FILE 02221-1996-02RO

WESTERN



AUSTRALIA

REGISTER NUMBER

503/DP415761DUPLICATE
EDITION**N/A**

DATE DUPLICATE ISSUED

N/AVOLUME
LR3171FOLIO
220

**RECORD OF QUALIFIED CERTIFICATE
OF
CROWN LAND TITLE**

**UNDER THE TRANSFER OF LAND ACT 1893
AND THE LAND ADMINISTRATION ACT 1997
NO DUPLICATE CREATED**

The undermentioned land is Crown land in the name of the STATE OF WESTERN AUSTRALIA, subject to the interests and Status Orders shown in the first schedule which are in turn subject to the limitations, interests, encumbrances and notifications shown in the second schedule.

REGISTRAR OF TITLES



LAND DESCRIPTION:

LOT 503 ON DEPOSITED PLAN 415761

**STATUS ORDER AND PRIMARY INTEREST HOLDER:
(FIRST SCHEDULE)**

STATUS ORDER/INTEREST: UNALLOCATED CROWN LAND

PRIMARY INTEREST HOLDER: STATE OF WESTERN AUSTRALIA

**LIMITATIONS, INTERESTS, ENCUMBRANCES AND NOTIFICATIONS:
(SECOND SCHEDULE)**

- Warning:
- (1) A current search of the sketch of the land should be obtained where detail of position, dimensions or area of the lot is required.
Lot as described in the land description may be a lot or location.
 - (2) The land and interests etc. shown hereon may be affected by interests etc. that can be, but are not, shown on the register.
 - (3) The interests etc. shown hereon may have a different priority than shown.

-----END OF CERTIFICATE OF CROWN LAND TITLE-----

STATEMENTS:

The statements set out below are not intended to be nor should they be relied on as substitutes for inspection of the land and the relevant documents or for local government, legal, surveying or other professional advice.

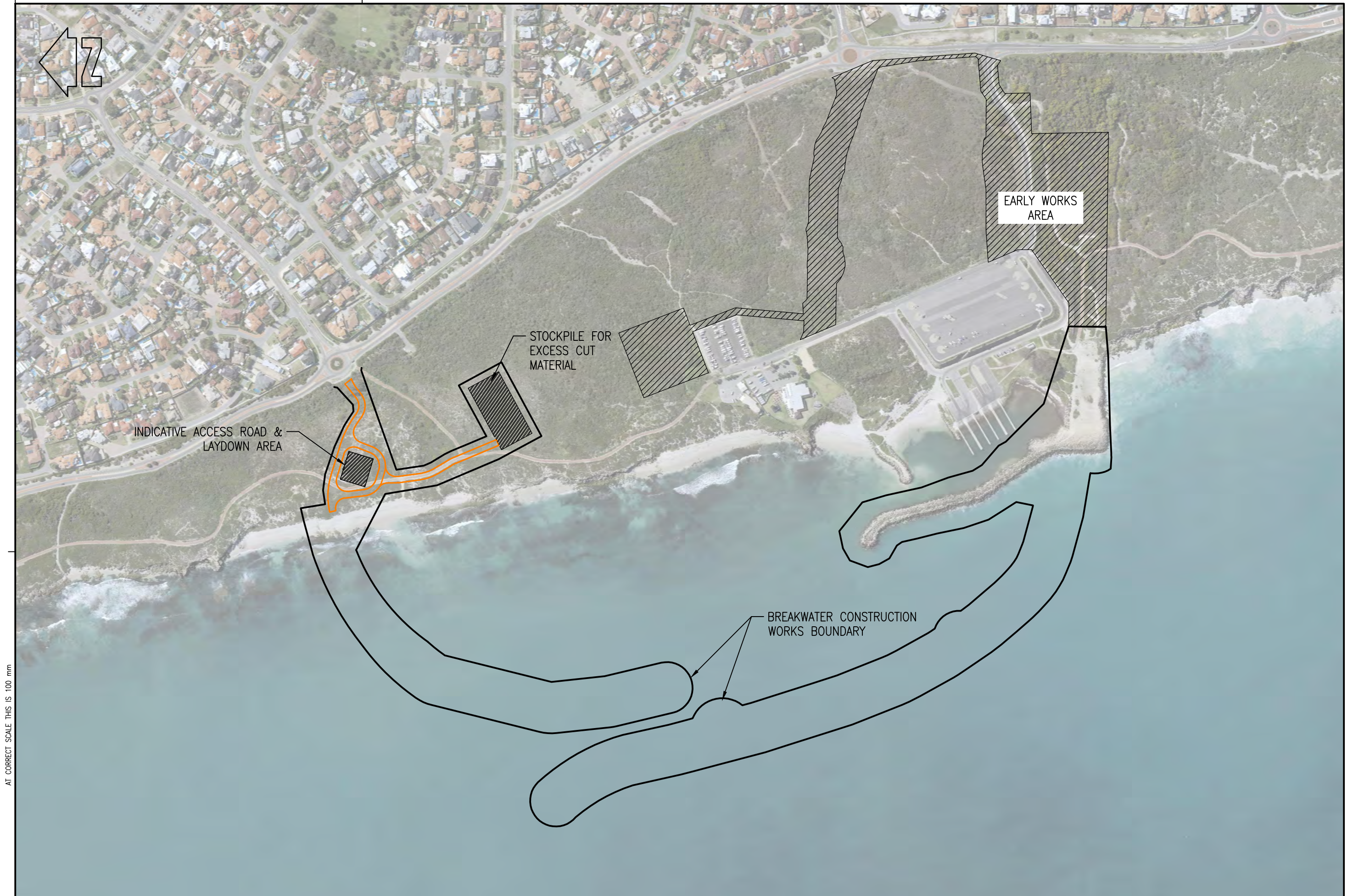
SKETCH OF LAND:	DP415761
PREVIOUS TITLE:	LR3171-215
PROPERTY STREET ADDRESS:	NO STREET ADDRESS INFORMATION AVAILABLE.
LOCAL GOVERNMENT AUTHORITY:	NO LOCAL GOVERNMENT AUTHORITY INFORMATION AVAILABLE
RESPONSIBLE AGENCY:	DEPARTMENT OF PLANNING, LANDS AND HERITAGE (SLSD)

NOTE 1: O295783 CORRESPONDENCE FILE 00039-2013-01RO
NOTE 2: SUBJECT TO SURVEY - NOT FOR ALIENATION PURPOSES

APPENDIX C

Development Application Plans

AT CORRECT SCALE THIS IS 100 mm



AT CORRECT SCALE THIS IS 100 mm

m p rogers & associates pl
coastal and port engineers

Suite 1, 128 Main Street
Osborne Park 6017 t: +61 8 9254 6600
Western Australia admin@coastsandports.com.au

DRAWN	L DE LUCIA
CHECKED	C DOAK

BREAKWATER CONSTRUCTION WORKS BOUNDARY
OCEAN REEF MARINA

SCALE
AT A3 1:5000

FEBRUARY 2020
SK1657-06C

AT CORRECT SCALE THIS IS 100 mm



AT CORRECT SCALE THIS IS 100 mm

m p rogers & associates pl
coastal and port engineers

Suite 1, 128 Main Street
Osborne Park 6017 t: +61 8 9254 6600
Western Australia admin@coastsandports.com.au

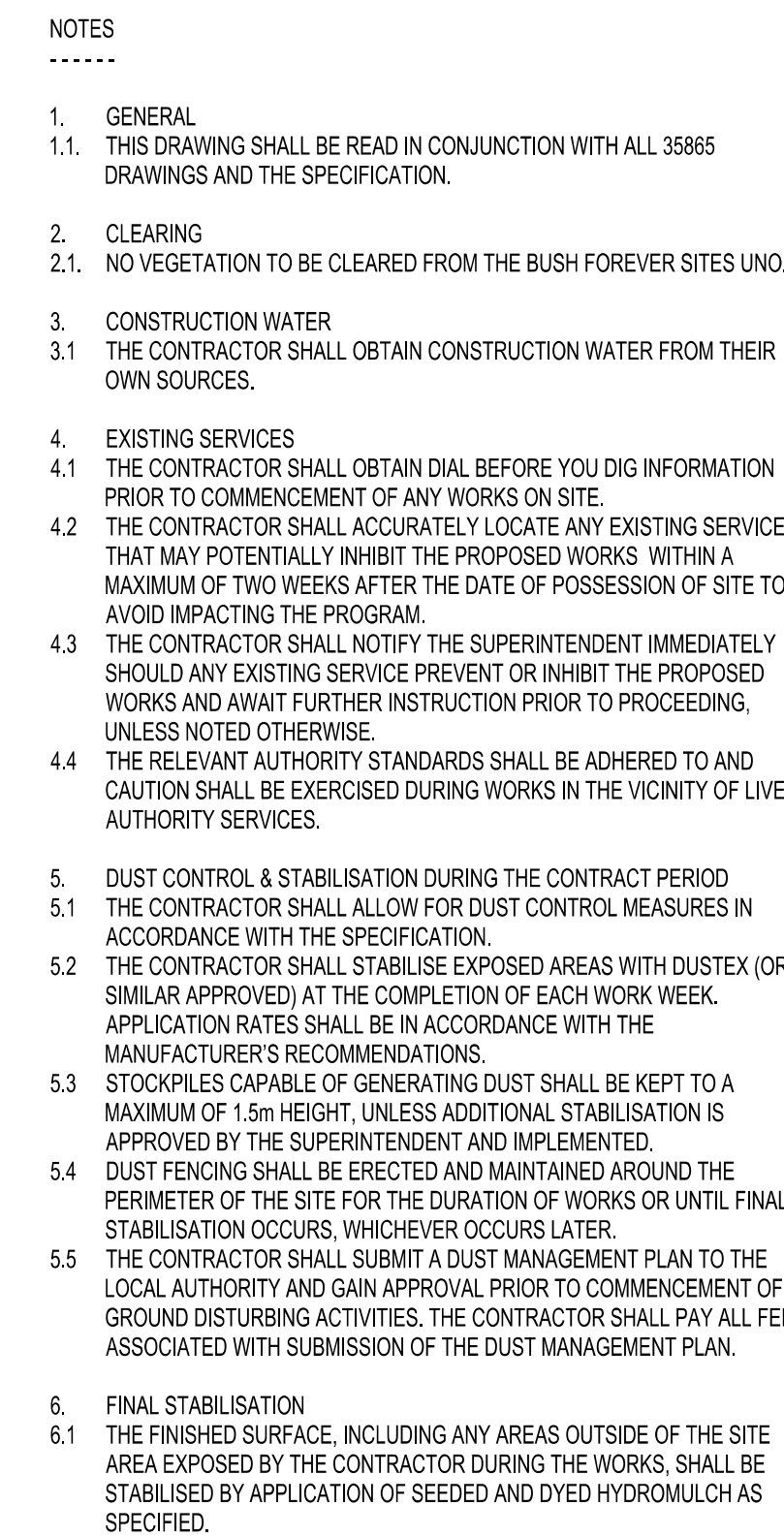
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DRAFT PEN & BREAKWATER LAYOUT
OCEAN REEF MARINA

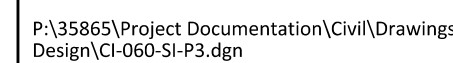
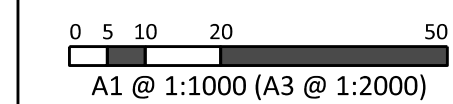
SCALE
AT A3 1:4000

JANUARY 2020
SK1657-07B

P:\MRA Paying Jobs\K1657 LandCorp - ORM Detailed Design\5 MRA Dwgs\Sketches\SK1657-07



LEGEND	
	PROPOSED GATE
	PROPOSED 1.8m HIGH CHAINMESH SITE COMPOUND FENCING
	PROPOSED 1.8m HIGH TEMPORARY SITE FENCING
	PROPOSED 150 LIMESTONE HARDSTAND
	PROPOSED 3m RED AC SHARED PATH INTERIM DEVIATION
	EXISTING 3m RED AC SHARED PATH
	PROPOSED PRAM RAMP
	EXISTING EDGE OF WATER
	PROPOSED POST AND WIRE FENCE (TO MATCH EXISTING)
	EXISTING STREET LIGHT
	EXISTING FENCE
	STOCKPILE AREAS

[illegible]

	BSG04
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CLIENT
DevelopmentWA

PROJECT
OCEAN REEF MARINA - BREAKWATER

TITLE
SITeworks PLAN



35865	CI-060-SI-P3	B
PROJECT No.	DRAWING No.	REVISION



OCEAN REEF MARINA BREAKWATERS

DRAWING No.	TITLE
D1657-01-01	DRAWING LIST & LOCALITY PLAN
D1657-02-01	EXISTING FEATURES & SITE PLAN
D1657-03-01	LAYOUT
D1567-04-01	TYPICAL SECTIONS - SHEET 1 OF 3
D1657-04-02	TYPICAL SECTIONS - SHEET 2 OF 3
D1657-04-03	TYPICAL SECTIONS - SHEET 3 OF 3
D1657-04-04	DETAILS

GENERAL NOTES:

- THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE TECHNICAL SPECIFICATION. ANY DISCREPANCIES ARE TO BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING.
- HYDROGRAPHIC SURVEY PROVIDED BY DEPARTMENT OF TRANSPORT (DOT), COMPLETED IN FEBRUARY 2019. THE LEVELS AND CONTOURS REFLECTS THE SURFACE AT THE TIME OF SURVEY ONLY.
- HORIZONTAL DATUM IS PERTH COASTAL GRID 1994 (PCG94), VERTICAL DATUM IS AUSTRALIAN HEIGHT DATUM (AHD).
- THE CONTRACTOR SHALL CONFIRM THE LOCATION OF & PROTECT ANY SERVICES IN THE WORKS AREA. CONTACT DIAL BEFORE YOU DIG ON 1100.
- SET OUT COORDINATES AND DIMENSIONS ARE TO BE CONFIRMED ON SITE PRIOR TO WORKS COMMENCING. REFER ANY DISCREPANCY TO THE SUPERINTENDENT. IF IN DOUBT ASK.
- AERIAL PHOTOGRAPH PROVIDED BY CITY OF JOONDALUP, TAKEN IN AUGUST 2019.
- DISTANCES, DIMENSIONS AND LEVELS SHOWN IN METRES, UNLESS NOTED OTHERWISE.
- SITE ACCESS AND LAYDOWN AREAS TO BE CONFIRMED WITH SUPERINTENDENT PRIOR TO WORKS.
- ON COMPLETION OF THE WORKS A SET OF MARKED UP AND SIGNED "AS CONSTRUCTED" DRAWINGS SHALL BE FORWARDED TO THE SUPERINTENDENT.

0.63 mAHd	HAT	1.40 mCD
0.38 mAHd	MHHW	1.15 mCD
0.04 mAHd	MSL	0.81 mCD
-0.30 mAHd	MLLW	0.47 mCD
-0.51 mAHd	LAT	0.26 mCD
-0.77 mAHd	CD	0.00 mCD

TAKEN FROM DOT FREMANTLE SUBMERGENCE
CURVE DOT 01615-13-02 31/10/2016

TIDAL LEVELS
1:20



LOCALITY PLAN
1:5,000

AT CORRECT SCALE THIS IS 100 mm

								CAD:D16570101[A]			
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				This plan is not to be used for construction unless issued as Rev 0 and signed below				m p rogers & associates pl coastal and port engineers Suite 1, 128 Main Street Osborne Park 6017 Western Australia t: +61 8 9254 6600 f: +61 8 9254 6699 admin@coastsandports.com.au			
								PROJECT OCEAN REEF MARINA BREAKWATERS			
								TITLE DRAWING LIST & LOCALITY PLAN			
								SCALE AT A1 AS SHOWN			
								DRAWING NUMBER D1657-01-01			
								REV A			

PRELIMINARY ISSUE NOTE:
INDICATIVE BREAKWATER LAYOUT ONLY.
SUBJECT TO MODIFICATION WITHIN THE EXTENT
OF THE PER PROPOSAL FOOTPRINT

—8.0— CONTOURS

———— SETOUT LINE

———— BREAKWATER LAYOUT

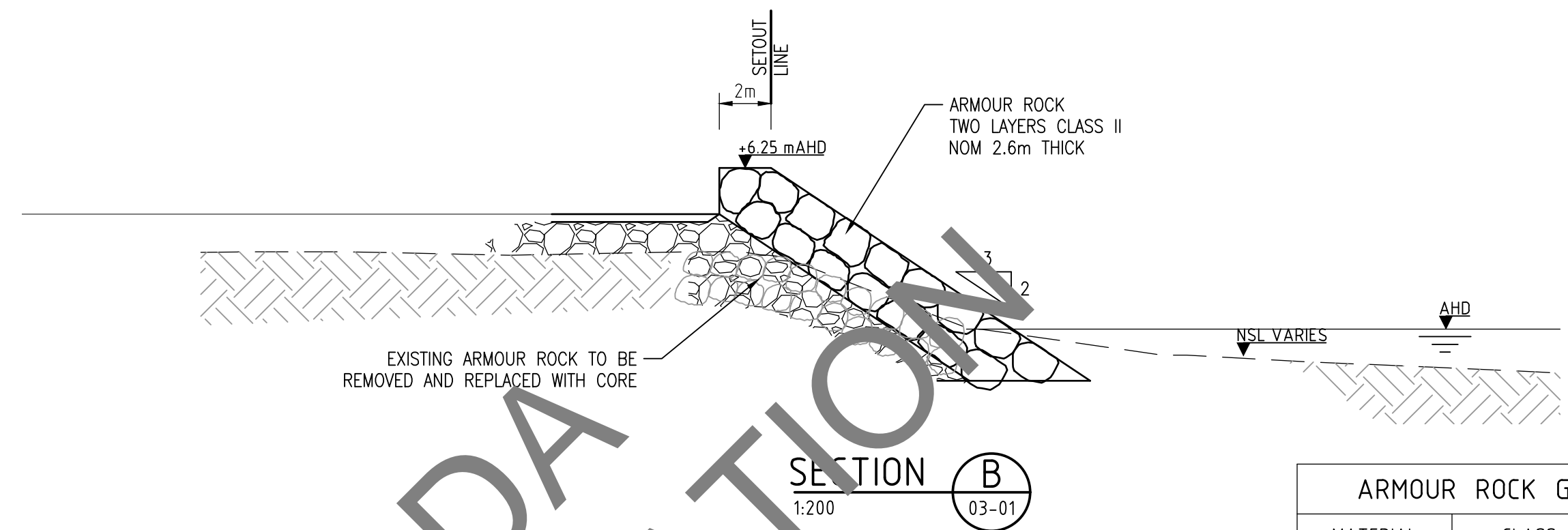
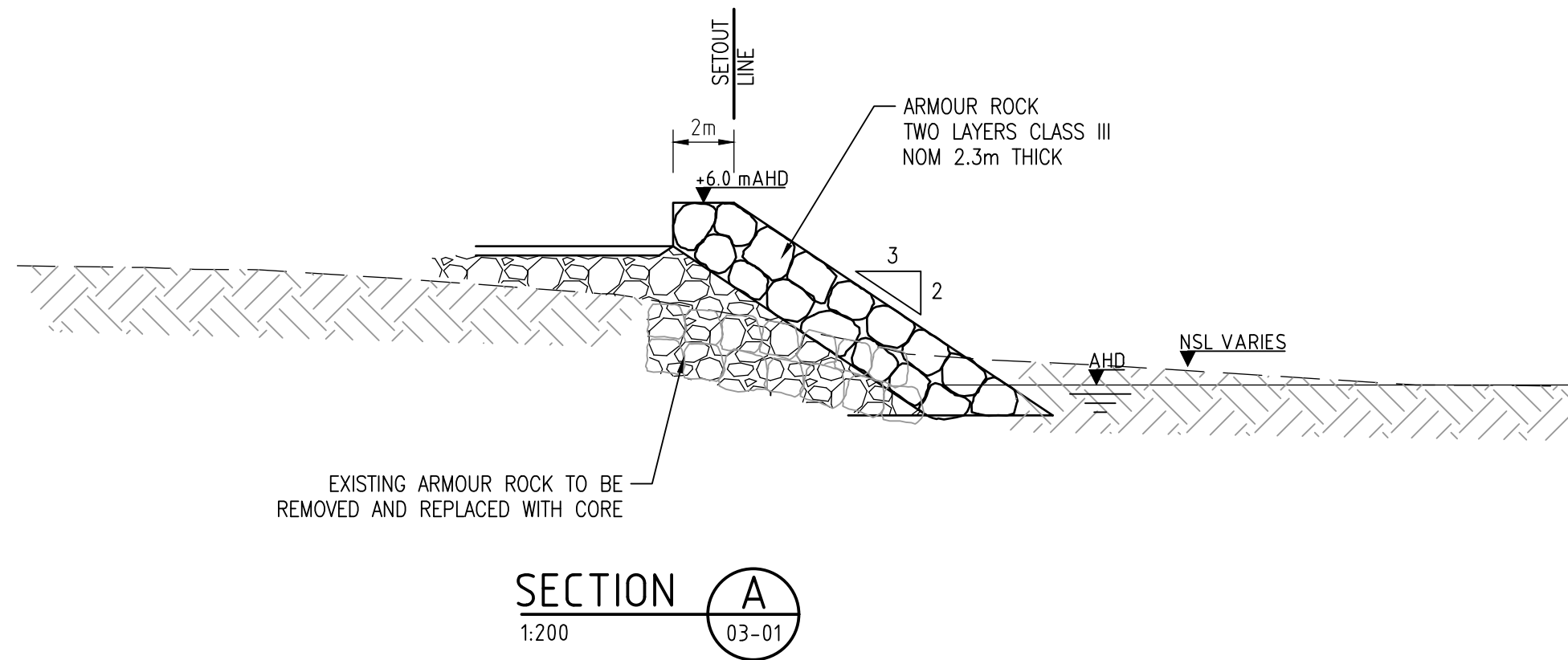
- - - - - BREAKWATER REAR OF ARMOUR CREST

———— PER PROPOSAL FOOTPRINT

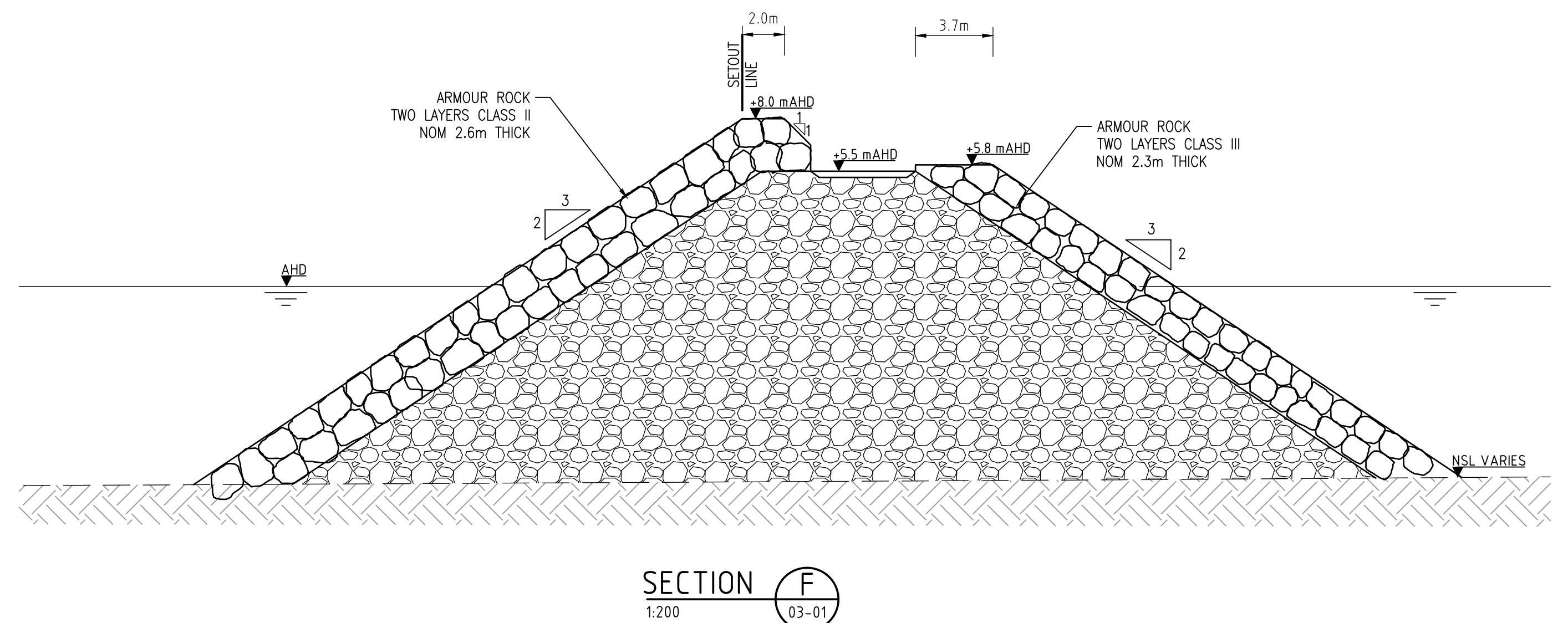
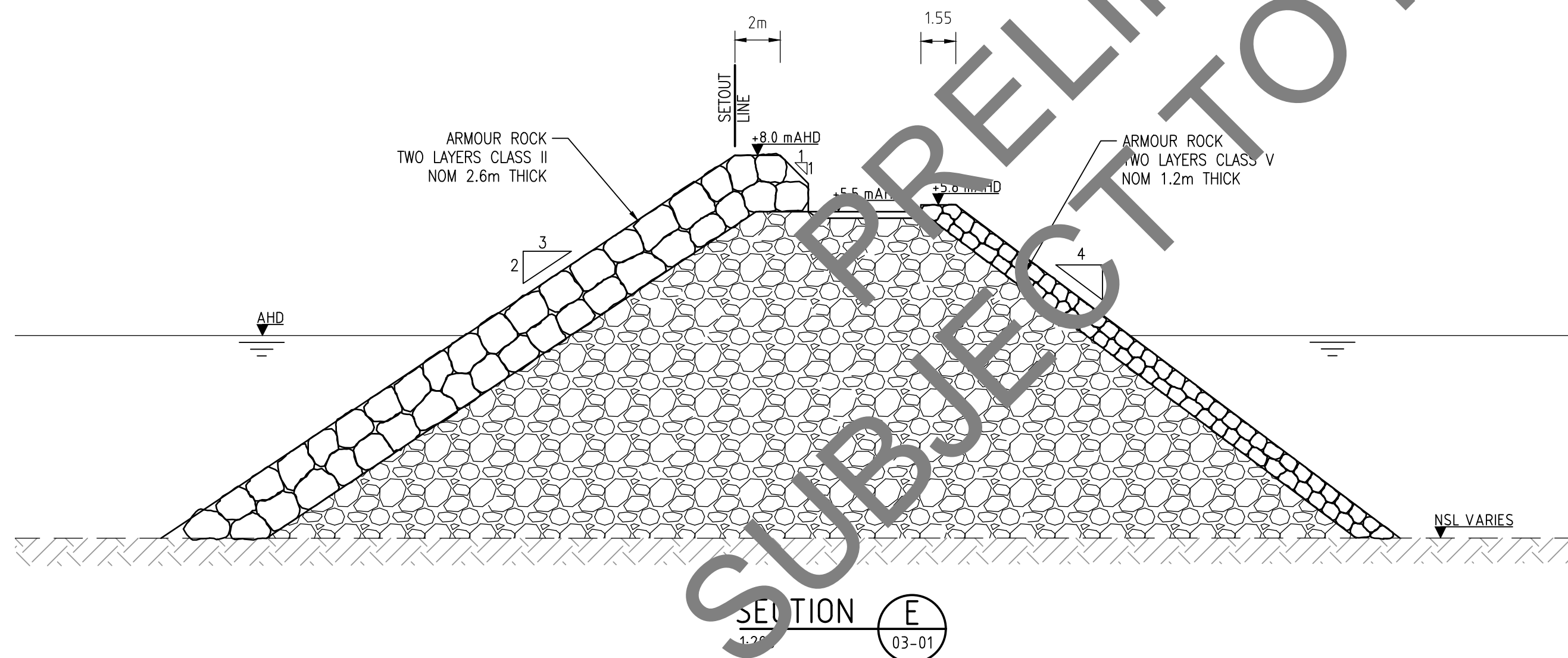
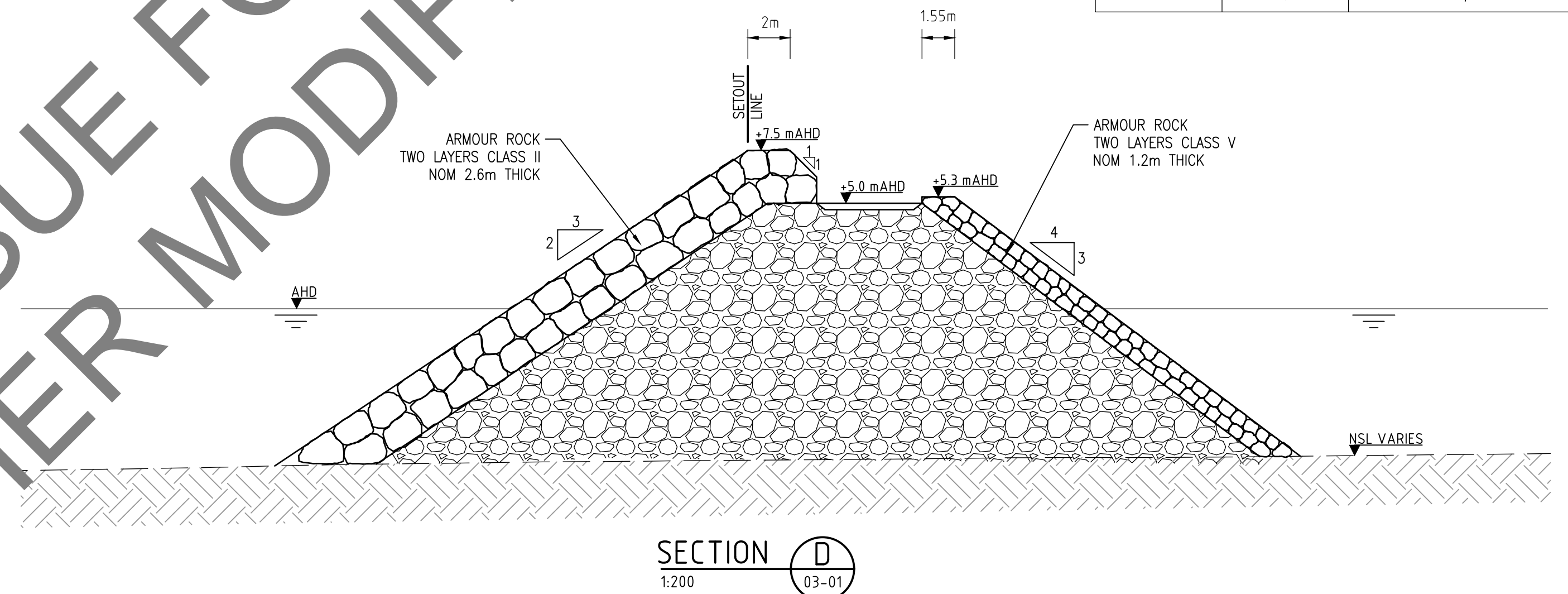
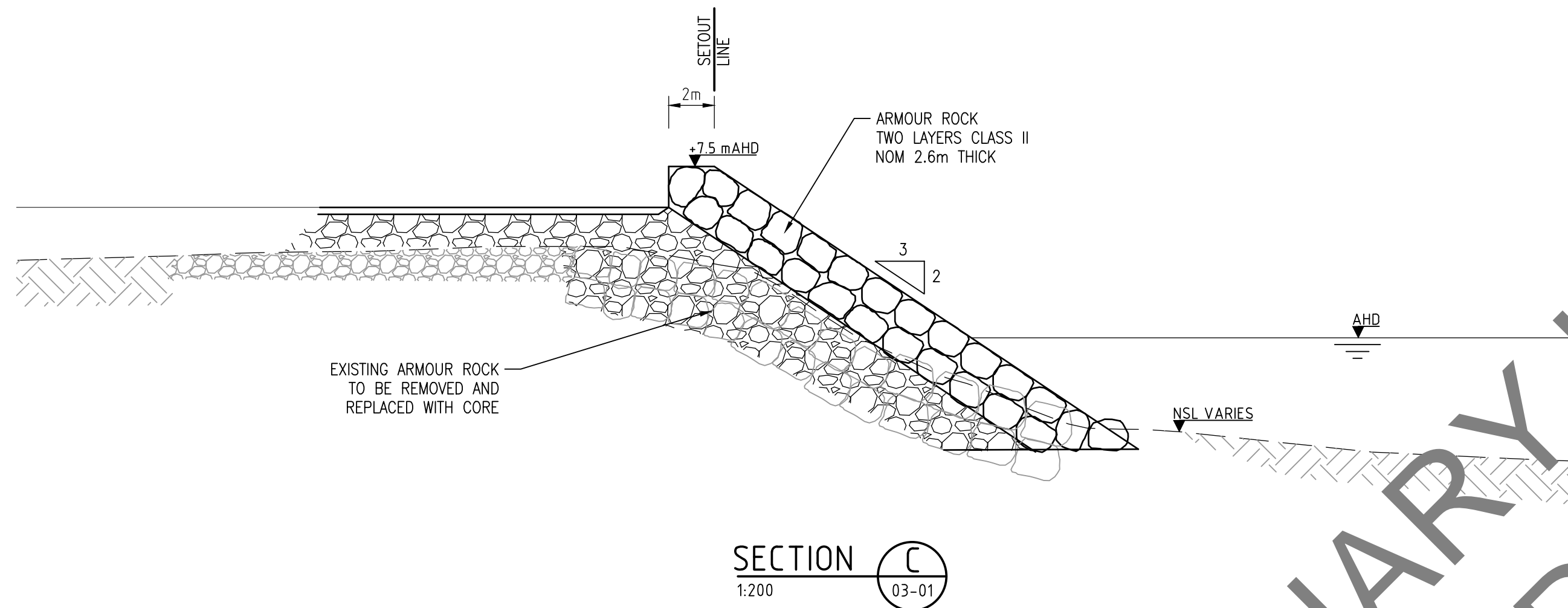
1. HYDROGRAPHIC SURVEY PROVIDED BY DOT COMPLETED IN FEBRUARY 2019. THE LEVELS AND CONTOURS REFLECTS THE SURFACE AT THE TIME OF SURVEY ONLY.
2. VERTICAL DATUM IS AUSTRALIAN HEIGHT DATUM (AHD). HORIZONTAL DATUM IS PERTH COASTAL GRID 1994 (PCG94).
3. CONTOURS SHOWN AT 1.0m INTERVALS.

CAD:D16570301[A]

[illegible]

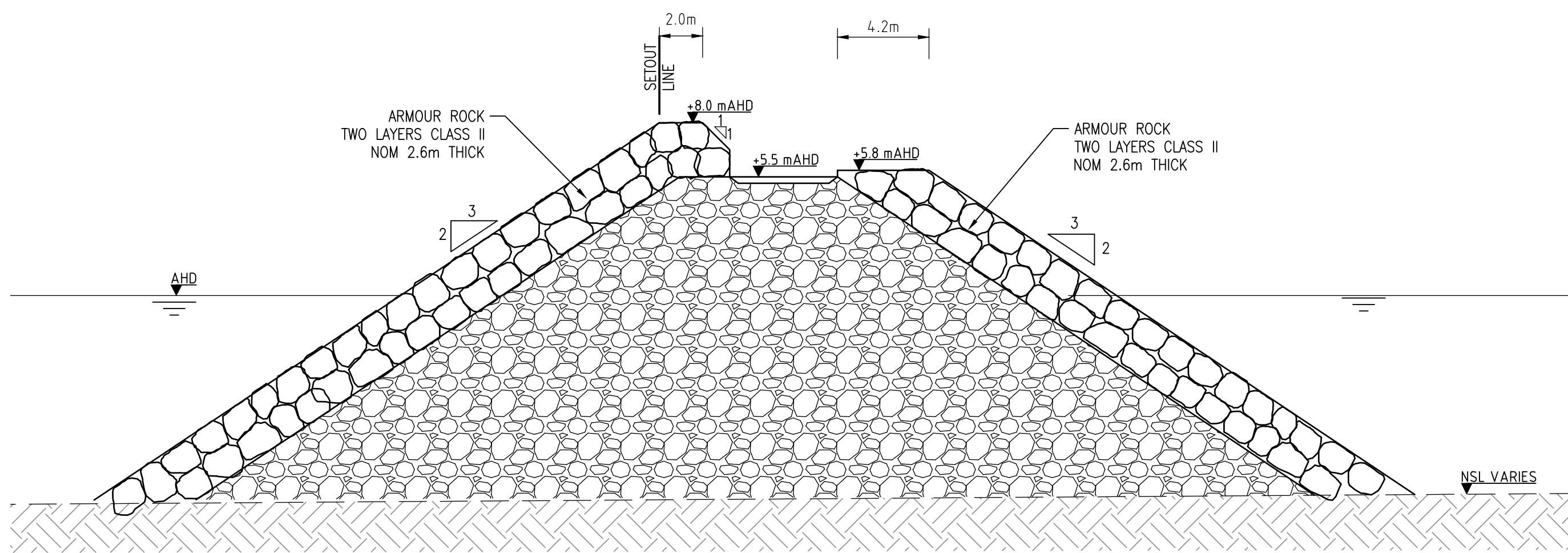


ARMOUR ROCK GRADING REQUIREMENTS		
MATERIAL	CLASS	GRADING
GRANITE	I	6.0t - 10.0t, 50% > 8.0t
GRANITE	II	4.0t - 8.0t, 50% > 6.0t
GRANITE	III	2.0t - 6.0t, 50% > 4.0t
GRANITE	IV	1.0t - 3.0t, 50% > 2.0t
LIMESTONE	V	0.5t - 1.5t, 50% > 0.8t

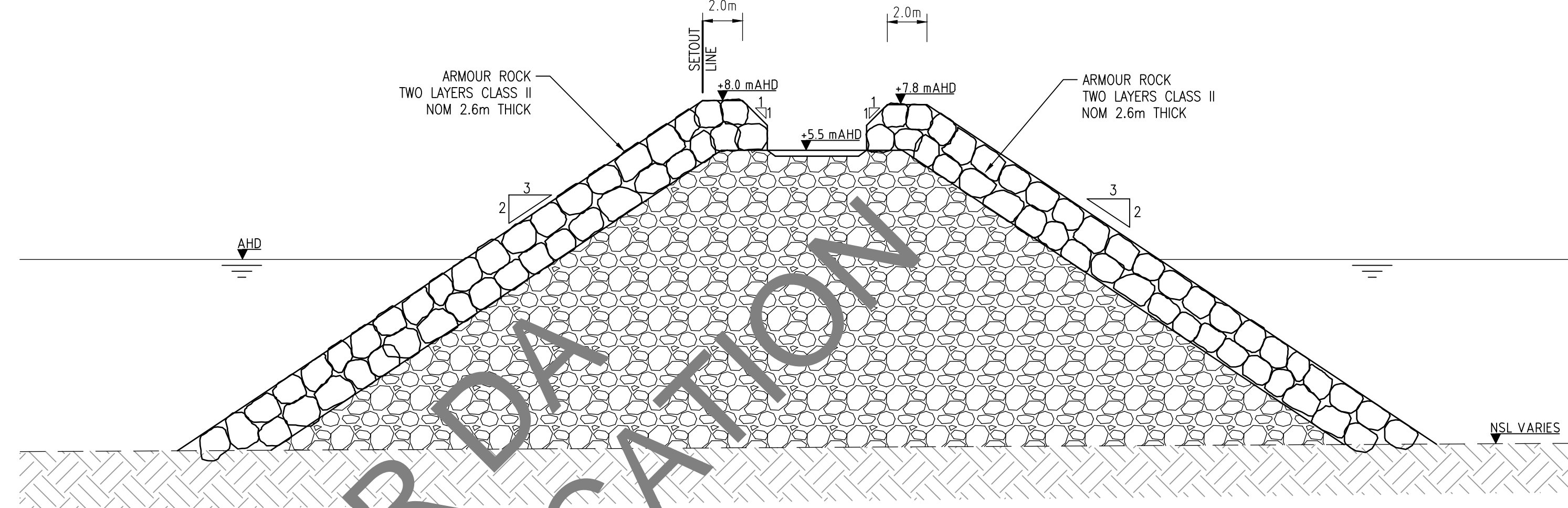


CAD:D16570401[A]

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												DevelopmentWA				Suite 1, 128 Main Street Osborne Park 6017 Western Australia				OCEAN REEF MARINA BREAKWATERS			
												DESIGNED L DE LUCIA				CHECKED C DOAK				TITLE			
												DRAWN R BORJA				CHECKED C DOAK				TYPICAL SECTIONS SHEET 1 OF 3			
																				SCALE AT A1			
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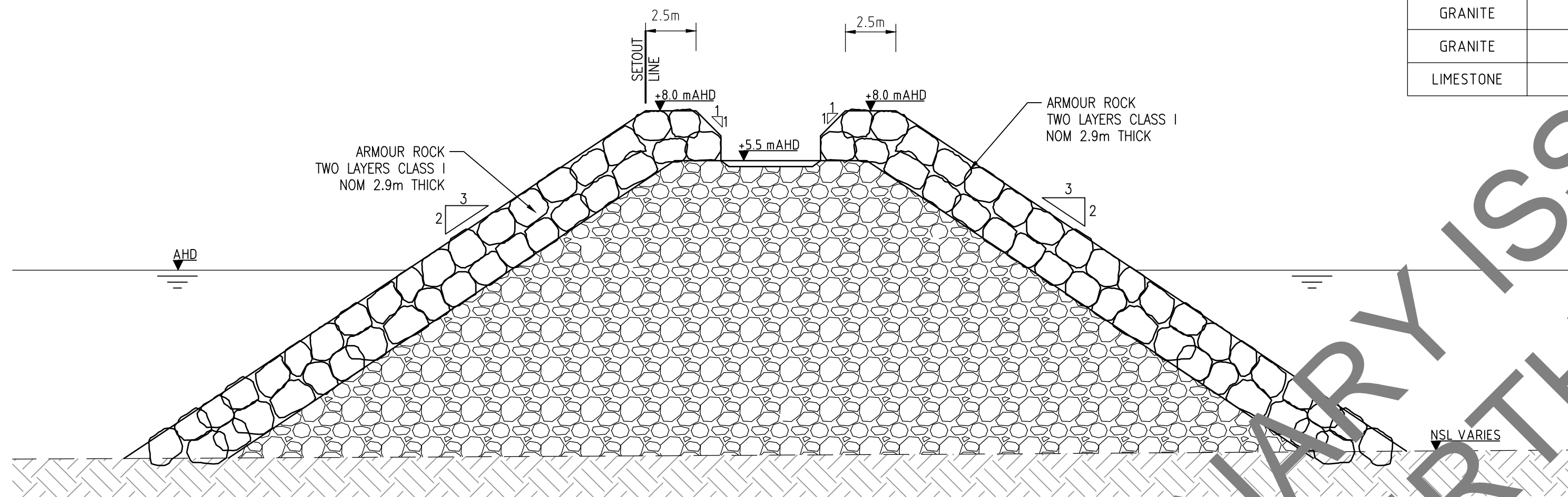


SECTION G
1:200
03-01

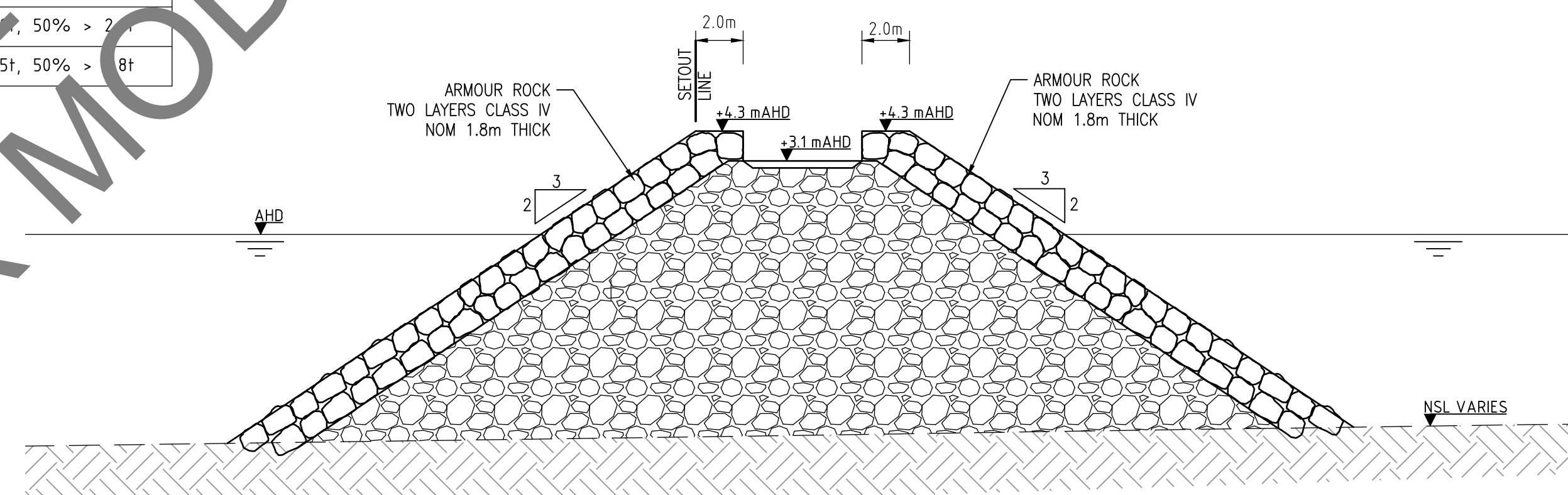


SECTION H
1:200
03-01

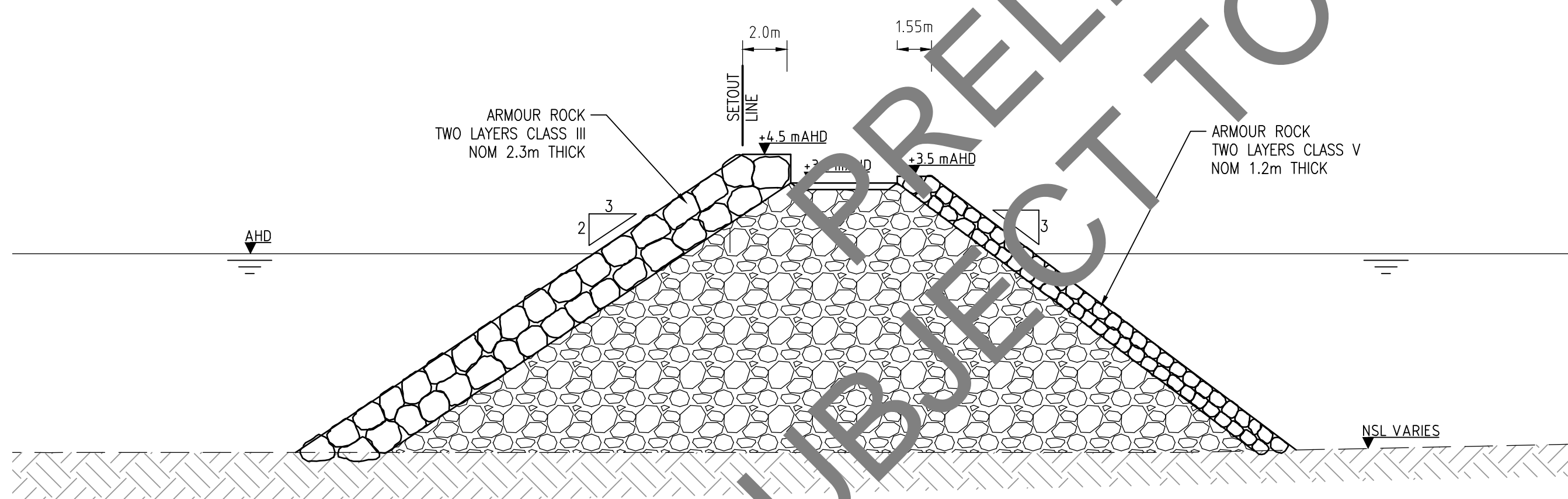
ARMOUR ROCK GRADING REQUIREMENTS		
MATERIAL	CLASS	GRADING
GRANITE	I	6.0t - 10.0t, 50% > 8.0t
GRANITE	II	4.0t - 8.0t, 50% > 6.0t
GRANITE	III	2.0t - 6.0t, 50% > 4.0t
GRANITE	IV	1.0t - 3.0t, 50% > 2.0t
LIMESTONE	V	0.5t - 1.5t, 50% > 0.8t



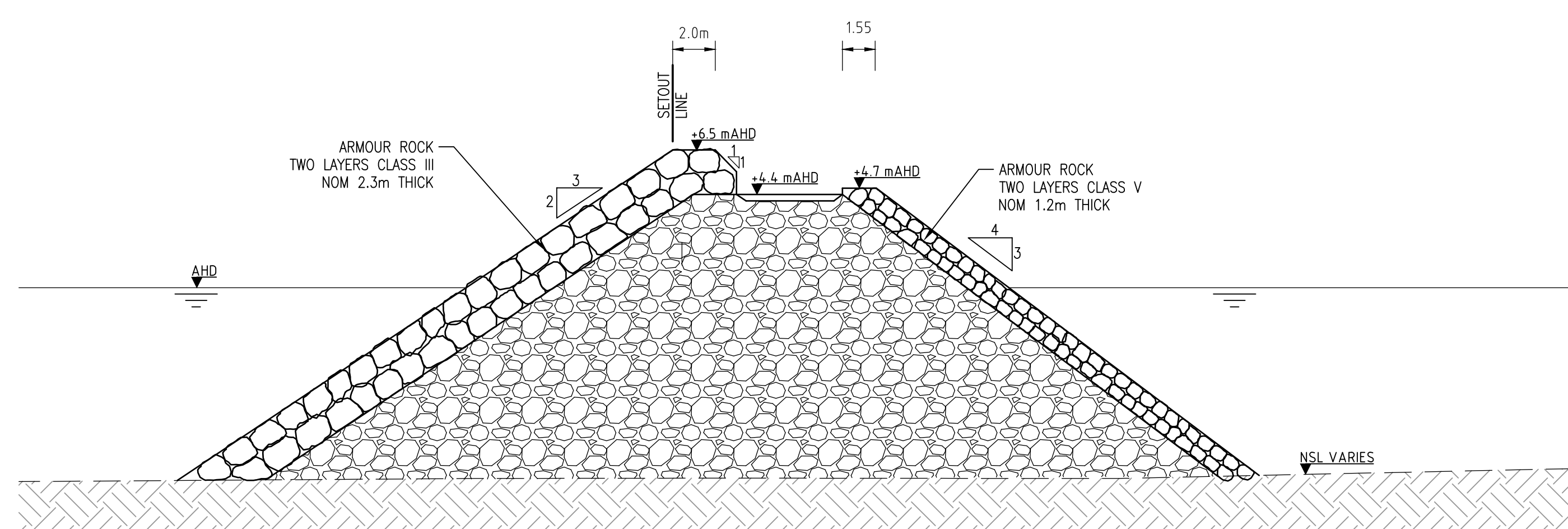
SECTION I
1:200
03-01



SECTION J
1:200
03-01



SECTION K
1:200
03-01



SECTION L
1:200
03-01

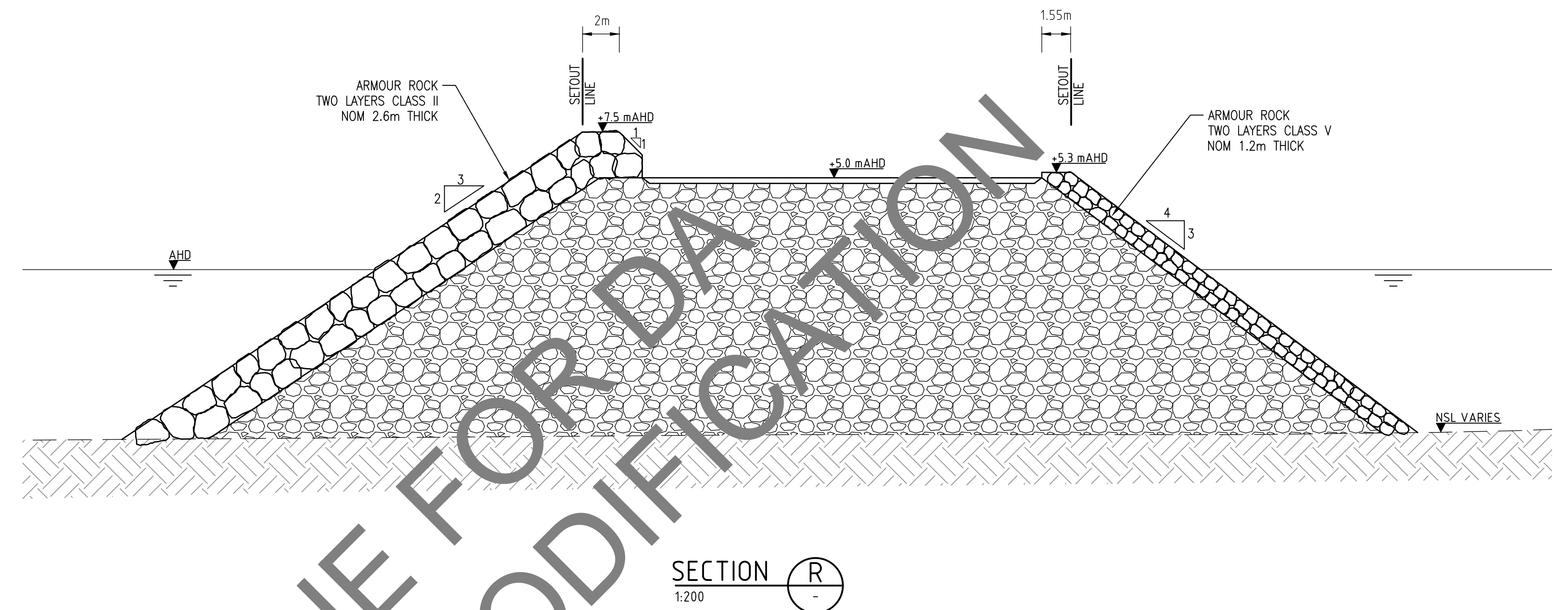
CAD:D16570402[A]

								COPYRIGHT				CLIENT				m p rogers & associates pl				PROJECT			
								The concepts and information contained in this document are the Copyright of m p rogers & associates. Use or copying of the document in whole or part without the written permission of m p rogers & associates constitutes an infringement of copyright.				DevelopmentWA				coastal and port engineers				OCEAN REEF MARINA BREAKWATERS			
								This plan is not to be used for construction unless issued as Rev 0 and signed below				DESIGNED L DE LUCIA				t: +61 8 9254 6600				TITLE			
												DRAWN R BORJA				f: +61 8 9254 6699				SHEET 2 OF 3			
																admin@coastsandports.com.au				SCALE AT A1			
A				07.02.20				CRD				PRELIMINARY ISSUE FOR DA								AS SHOWN			
REV				DATE				APPROVED				AMENDMENT				DRAWING NUMBER				D1657-04-02			
																				REV			
																				A			



CAD:D16570403[A]

[illegible]



TOE OF BREAKWATER

SETOUT LINE

TURNING BAY

FRONT OF CREST

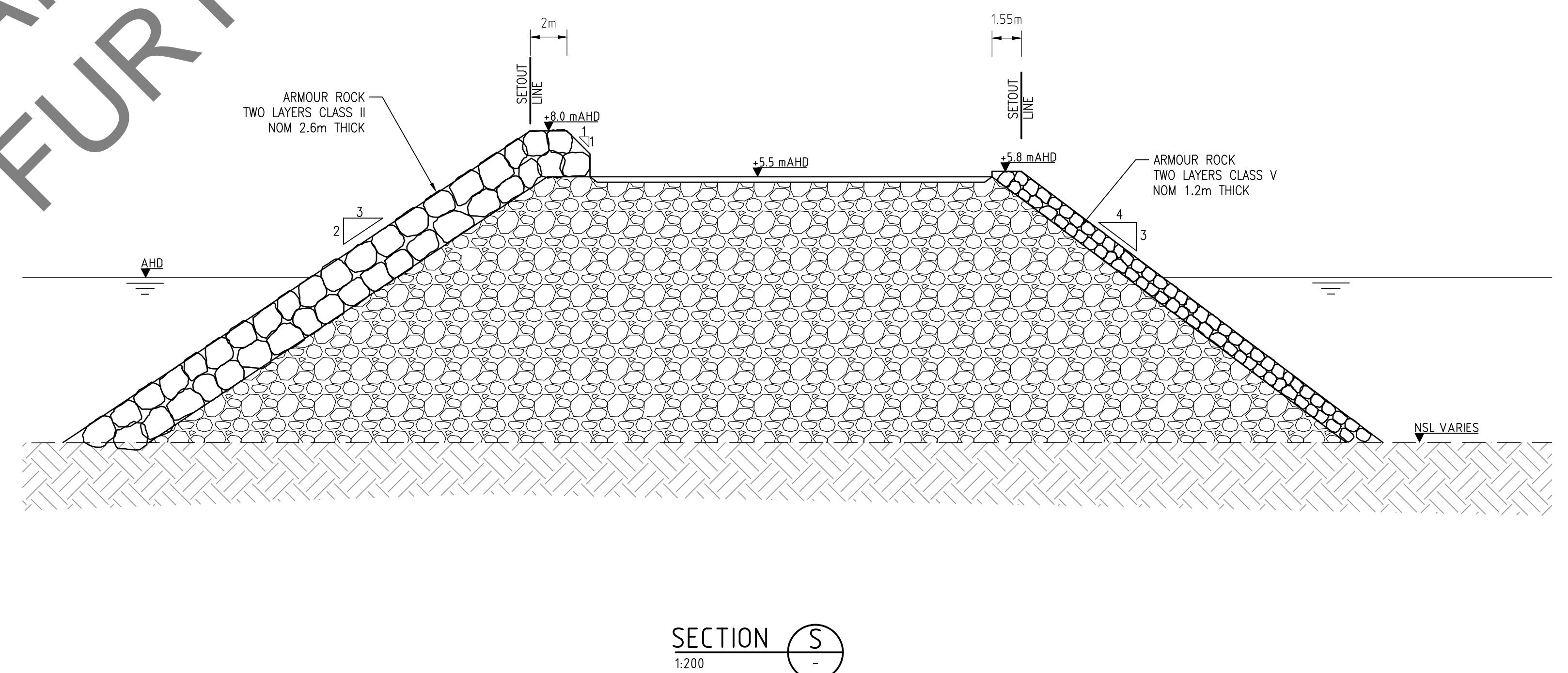
REAR OF CREST

INSIDE TOE OF BREAKWATER

PRELIMINARY SUBJECT TO

1:500

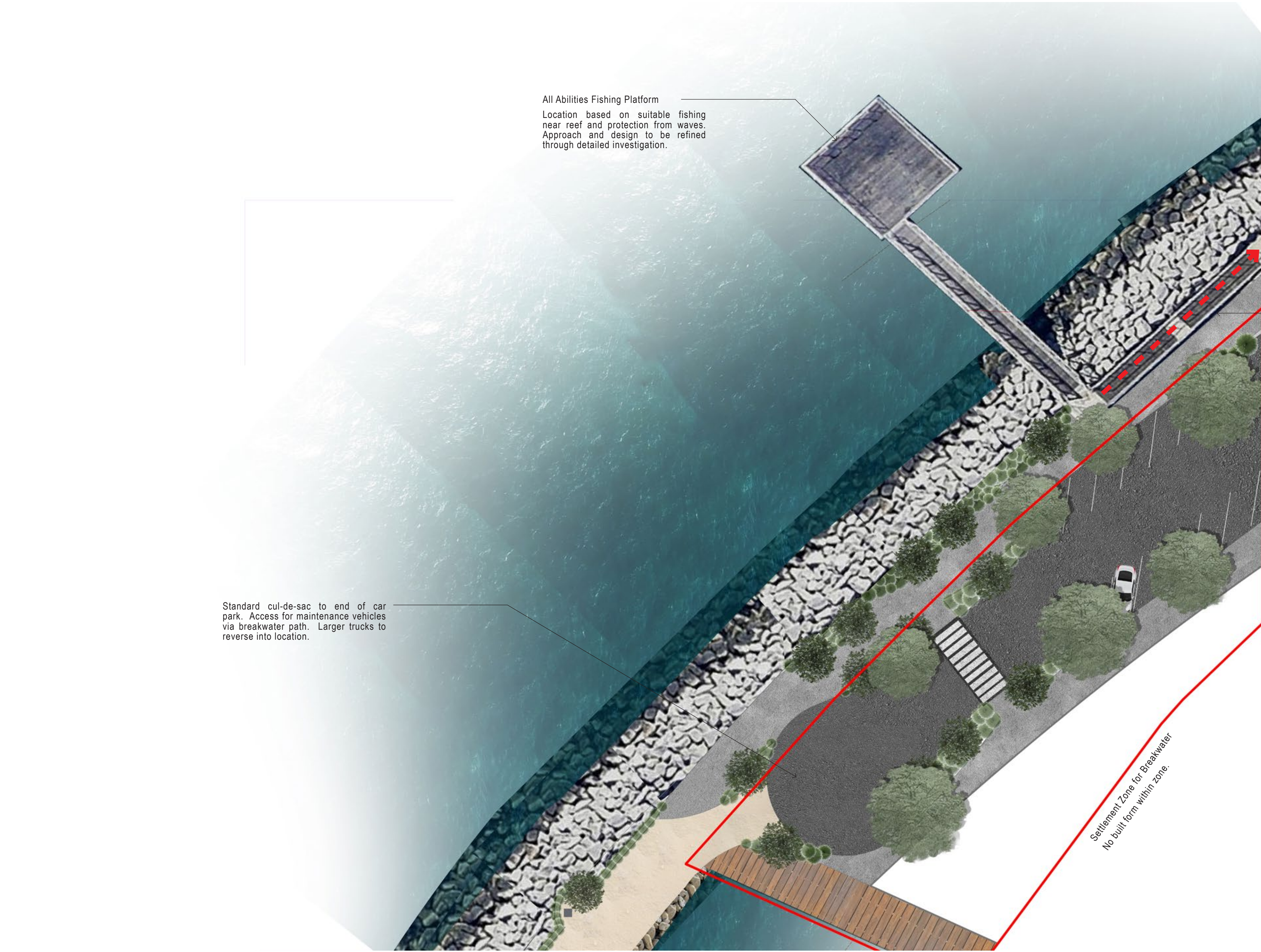
2



APPENDIX D

Landscape Approach





Ocean Reef Marina - Northern Breakwater Interface
Plan 1:250

APPROACH

Whilst the standard approach to breakwaters in WA is minimal landscape treatment the Ocean Reef Marina provides opportunity to create 'front-line' marine environments that are both functional and aesthetically pleasing, which will be a unique feature of the development.

These opportunities include;

- Walking/Riding Paths,
- Art Installations (permanent and curated),
- Vegetation,
- Seating/Rest Points, and
- Fishing/Viewing Platforms.

It is acknowledged that there will be many constraints to consider with the above landscape approaches including the safety of the public both day to day and in large storm events, the ongoing settlement and movement of the breakwater, the interface of the marina landside with the development, the cost to construct on the breakwaters and the ongoing management and maintenance of any breakwater works. These constraints will be considered with each design approach and all proposed treatments will be designed in consultation with relevant statutory authorities and groups. For example if it was agreed that vegetation would be placed along the breakwaters then the approach would include frontline locally native species that will survive in the harsh environments and require no connected irrigation system. Similarly any lighting required could be supplied with a solar or wind powered electrical supply.

The breakwater landscape treatment will require significantly more consultation and consideration the current approach is to make allowances for potential treatment to occur. This future proofs the breakwaters through the design phase without committing to any approaches at this early phase of landscape design.

OCEAN REEF MARINA ENTRY ROADS BREAKWATER - POTENTIAL LANDSCAPE TREATMENTS TO BE EXPLORED FURTHER

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Access Ramp to Fishing Platform.
Entry to ramp to be located near ACROD bay in carpark.



Breakwater Vignette

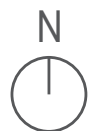


Compacted Limestone Footpath

SITE AREA



udla
NEW IDEAS THROUGH
SHARED DESIGN-THINKING



PROJECT NAME:
Ocean Reef Marina

CLIENT:
Development WA

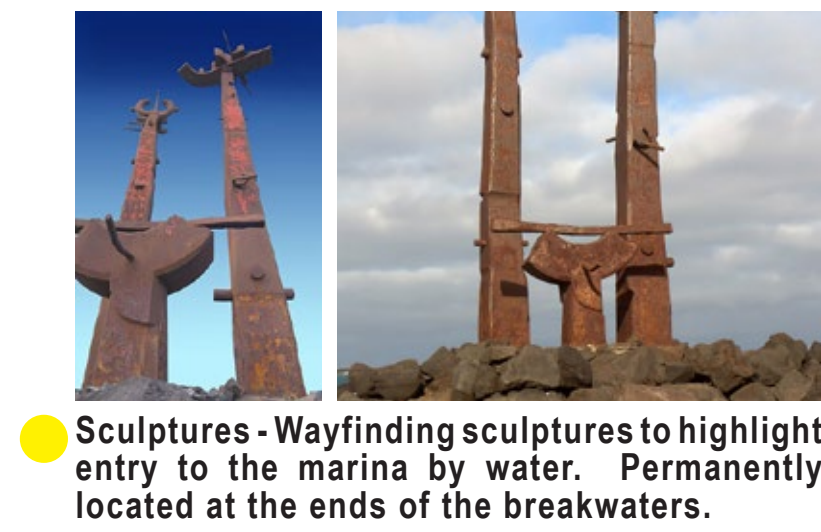
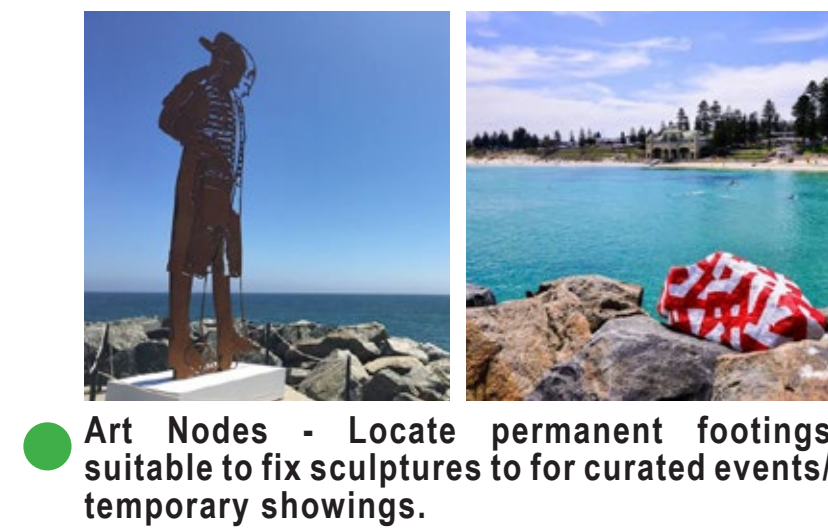
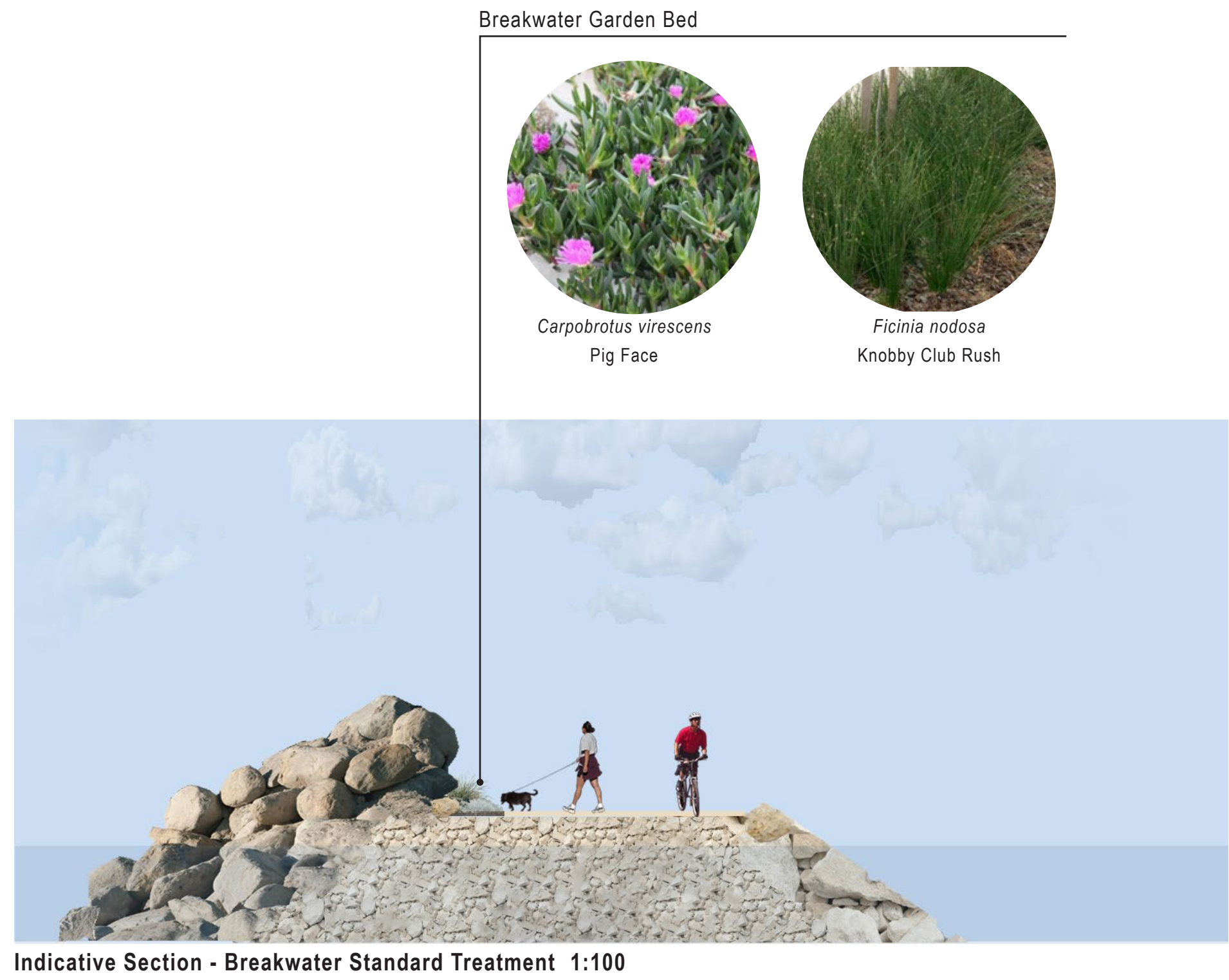
DRAWN:
SH

SCALE:
As Shown

DRAWING:
L-DA-01

ISSUE DATE:
18/12/2019

REVISION:
A



Node: Opportunity for seating and trees to be located along the breakwater. Seating to be placed as needed, tree nodes approximately every 20m.



OCEAN REEF MARINA ENTRY ROADS BREAKWATER - POTENTIAL LANDSCAPE TREATMENTS TO BE EXPLORED FURTHER



KEY

- A Northern Entry Road POS &**
- B Southern Entry Road POS**
- C Northern Linear POS &**
- D Southern Linear POS**

Creating a green entry to the site these POS create significant recreational opportunities for residents and draw the dune vegetation through to the water front.

- E Central POS**

The central residential POS will provide recreational and social opportunity that focuses on local community needs. This will include infrastructure such as play equipment, gathering spaces, informal sport facilities and passive recreation opportunities to support the health and well-being of users.

- F Promenade North POS (both)**

POS situated around proposed cafe/restaurant, providing an activation to the northern promenade, services the residential community and activities that may not be easily accommodated in larger POS, such as a dog park or community garden.

- G Triangle POS**

The promenade allows for significant recreation opportunities, along with a connection to the water front and boats. This POS will facilitate more popular events and activities along the promenade.

- H Plaza POS**

A highly functional urban plaza that will address the retail and commercial hubs providing infrastructure for markets, alfresco dining and events.

- I Beach POS**

The beach park will be the 'jewel in the crown' of the site, a central recreational hub that will be a regional destination.

- J Bush Forever**

A reality of the development will be the removal of bush-forever vegetation, the retained areas will be carefully considered to protect and enhance ecological value.

- K Breakwater**

Breakwaters will present opportunity for increased, improved public realm through design approaches with the engineering team to include vegetation, seating nodes, recreational opportunities and art elements, where possible.

Significant Infrastructure

- Playground
- Youth Space
- Fishing Platform
- Lookout / Viewing Deck
- Entry Statement
- Water Slides / Pool (to be considered in detail design in consultation with managing statutory authority)
- Beach

Key Themes and Approaches

1. Northern Arrival + Southern Arrival - 'Settled into the Dunes'

The dunes are fundamental to the identity of this site and as such the approach to the development from the dunes, and this interface is extremely important to the Marinas sense of place. The north/south 'arrival' zones will bookend the site and will be connected through a green spine dual interface.

2. Central Residential - 'A Marina Community'

The residential zone of the Marina is both literally (for a majority of the site) and thematically the transition between the dune system and the water edge. Streetscapes and POS utilise an east west orientation to create visual and physical connections from water to dune.

3. Commercial Waterfront Precinct - 'Celebrating WA Marine Culture and Heritage'

The Ocean Reef Marina will be a celebration of WA maritime culture and heritage, with a central activated heart connecting out into the water through the breakwaters. This highly activated zone is to be an aspirational public realm that draws inspiration from the local vernacular stories and memories of WA boating, fishing, diving, surfing and maritime culture.

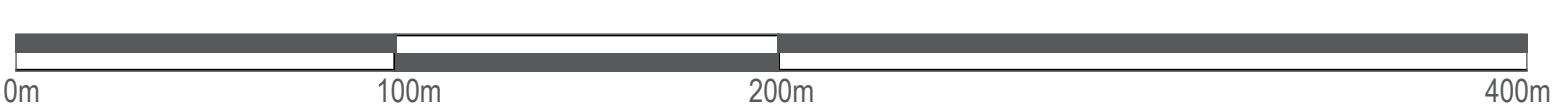
More detail on the Precincts and Overall Landscape Masterplan development and approach is available in the Public Realm Masterplan Document, UDLA, 2019.



OCEAN REEF MARINA
PUBLIC REALM MASTERPLAN



udla pty. ltd. www.udla.com.au +61 8 9336 7577 Level 1A, 3-5 Josephson St, Fremantle, 6160.



PROJECT NAME:
Ocean Reef Marina

CLIENT:
Landcorp

DRAWN:
SH

SCALE:
1:2000 @A1

DRAWING:
MP - 01

ISSUE DATE:
January 2020

REVISION:
F

APPENDIX E

Transport Assessment



DevelopmentWA
Ocean Reef Marina
Breakwaters Transport Assessment

Final | 6 February 2020

This report takes into account the particular instructions and requirements of our client.

It is not intended for and should not be relied upon by any third party and no responsibility is undertaken to any third party.

Job number 271843-00

Arup Pty Ltd ABN 18 000 966 165

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PO Box 5750
St Georges Terrace
Perth WA 6831
Australia
www.arup.com

ARUP

Document verification

ARUP

Job title		Ocean Reef Marina		Job number	
				271843-00	
Document title		Breakwaters Transport Assessment		File reference	
Document ref					
Revision	Date	Filename	20200204_Breakwaters Transport Assessment.docx		
Draft 1	4 Feb 2020	Description	First draft		
			Prepared by	Checked by	Approved by
		Name	James Carn	Darryl Patterson	Darryl Patterson
		Signature			
Final	5 Feb 2020	Filename	20200205_Breakwaters Transport Assessment.docx		
		Description	Final report		
			Prepared by	Checked by	Approved by
		Name	James Carn	Darryl Patterson	Darryl Patterson
		Signature			
Final - Revision 1	6 Feb 2020	Filename	20200206_Breakwaters Transport Assessment.docx		
		Description	Revision in response to planning comments		
			Prepared by	Checked by	Approved by
		Name	James Carn	Darryl Patterson	Darryl Patterson
		Signature			
		Filename			
		Description			
			Prepared by	Checked by	Approved by
		Name			
		Signature			
<div> Issue Document verification with document <input checked="" type="checkbox"/> </div>					

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3.1 Anticipated Vehicle Movements	6
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Executive Summary

The report presents the high level principles to assist in the preparation of construction traffic management plans for the Breakwaters construction package of the Ocean Reef Marina (OCERM) development. Public access to the boat harbour and north- south near the foreshore (principally on the Principal Shared Path) is to remain during the Breakwaters construction, noting that there will be a level of diversion required for the PSP. There is also a need to manage the interface between construction access and vehicular, walking and cycling access for the general public on safety grounds and to make sure access is provided at an appropriate level of service.

It is anticipated that up to 27 construction material loads will be delivered to the site every hour, for a maximum of 11 hours per day. This translates to a maximum of 150 construction material deliveries (300 total trips) per day and excludes private vehicle access for construction staff. Deliveries are anticipated to travel to site via Mitchell Freeway and Hodges Drive (refer to **Figure 1** below) and will mainly involve delivery of rock (boulders etc.) associated with breakwater construction. The expected typical delivery vehicle understood to be a Prime Mover with one Triaxle Trailer (i.e. up to 19 metres in length), however approval may be sought from Main Roads to allow for B-Double access dependent upon the operating contractor, which would halve the number of delivery trips per day.

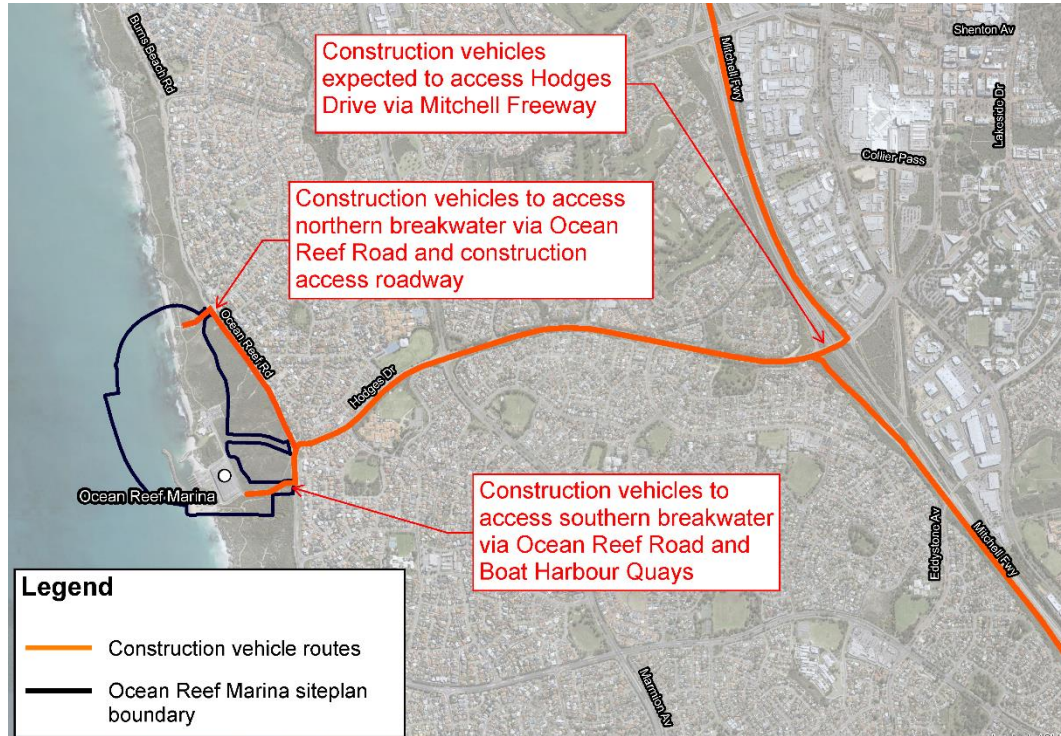


Figure 1: Construction delivery vehicle access routes

It is also anticipated that up to 10 staff will be on site at any one time, which translates to approximately 30 trips per day (including trips to and from site as well as some additional trips by staff vehicles to support staff and construction activities).

It is therefore estimated that up to approximately 330 external trips per day would be generated by construction and staff activities as part of the Breakwater works.

The traffic surveys previously carried out as part of the overall Transport Assessment for the Ocean Reef Marina identify Boat Harbour Quays currently carries up to 1,500 vehicles per day, with Ocean Reef Road currently carrying between 5,000 and 8,000 vehicles per day in the vicinity of the site, and Hodges Drive currently carrying 8,400 vehicles per day west of Marmion Avenue. These roads will readily accommodate a further 330 vehicle trips per day. It is recommended that Ocean Reef Road between Mitchell Freeway and the Ocean Reef Marina site be considered for construction vehicle access during peak school traffic periods (i.e. pick-up and drop-off periods), to minimise disruption along Hodges Drive during these times.

Public access to the existing boat ramp and club facilities will continue to be provided throughout the Breakwaters programme.

This Construction Traffic Management Plan (TMP) guidance focusses on the northern breakwater location where there are changes that impact traffic management.

Pedestrian and bicycle access along the north-south Principal Shared Path (PSP) will continue to be provided via a temporary alignment, of which two alignment options have been considered:

- Detour along the southern and eastern sides of the construction hardstand area, and the northern side of Hodges Drive extension (as per the Early Works PSP alignment, to tie in with the existing PSP).
- Detour along the southern and eastern sides of the construction hardstand area, the western side of Ocean Reef Road and the northern side of the proposed construction vehicle access roadway (to the northern breakwater), to tie in with the existing PSP.

It is preferred to utilise the existing PSP as much as possible in terms of pedestrian amenity (being as close to the coast as possible) and construction costs.

Construction traffic management will be provided by way of adequate temporary advisory/warning signage and/or manual traffic control where construction traffic entering or exiting the site conflicts with other traffic, including at the intersection of Ocean Reef Road/ Resolute Way (where access to the northern breakwater site is proposed). Traffic control and management shall be in accordance with AS1742.3 and Main Roads WA “Traffic Management for Works on Roads – Code of Practice”.

1 Introduction and Background

Following on from the recent Transport Assessment Report prepared by Arup for the proposed Ocean Reef Marina development, Arup has now been engaged to undertake an assessment relating to construction traffic management advice for the construction of the north and south breakwaters. This package comprises construction of a hardstand area in the north of the site for construction deliveries to the northern breakwater, a western extension of Resolute Way into the site (as a restricted construction access roadway towards the northern breakwater), and extension of the previously proposed hardstand area in the south of the site for construction access to the southern breakwater. Construction traffic management for the southern hardstand area (adjacent to the proposed southern breakwater location) has already been assessed as part of the Early Works package.

This report presents high level principles to assist in the preparation of construction traffic management plans for the Breakwaters construction by the construction contractor. These include the necessary access arrangements to maintain public access to the existing Ocean Reef Boat Harbour facilities during construction, as well as maintaining pedestrian and cyclist access along the north-south Principal Shared Path (to be temporarily realigned around the construction hardstand area).

The following standards and guidelines have been referenced as part of the provision of construction traffic management principles and subsequent conclusions and recommendations within the report:

- Main Roads WA Traffic Management for Works on Roads Code of Practice (September 2018)
- Main Roads Guidelines on the provisions for all path users at roadwork sites in built up areas (April 2015)
- AS 1742.3-2009 Manual of uniform traffic control devices Part 3: *Traffic control for works on roads*

These documents provide guidance on the need for and requirements of construction traffic management plans.

2 Breakwaters Construction Scope

The Breakwaters construction package comprises the following works:

- Northern breakwater construction to the west of the Ocean Reef Road/ Resolute Way roundabout, in the northwest portion of the Ocean Reef Marina site;
- Southern breakwater construction in the southwest portion of the Ocean Reef Marina site (to the immediate west of the laydown (Site Compound) area to be constructed as part of the Early Works package);
- Laydown area (Site Compound) for the northern breakwater construction;
- Construction vehicle access for the northern laydown area, to intersect with the Ocean Reef Road/ Resolute Way roundabout as a western leg of the intersection;
- Diversion of existing Coastal Shared Use Path (PSP)
- Construction-site related signage

The scope of works for the northern breakwater (requiring assessment for construction traffic management) is illustrated below in **Figure 2**.

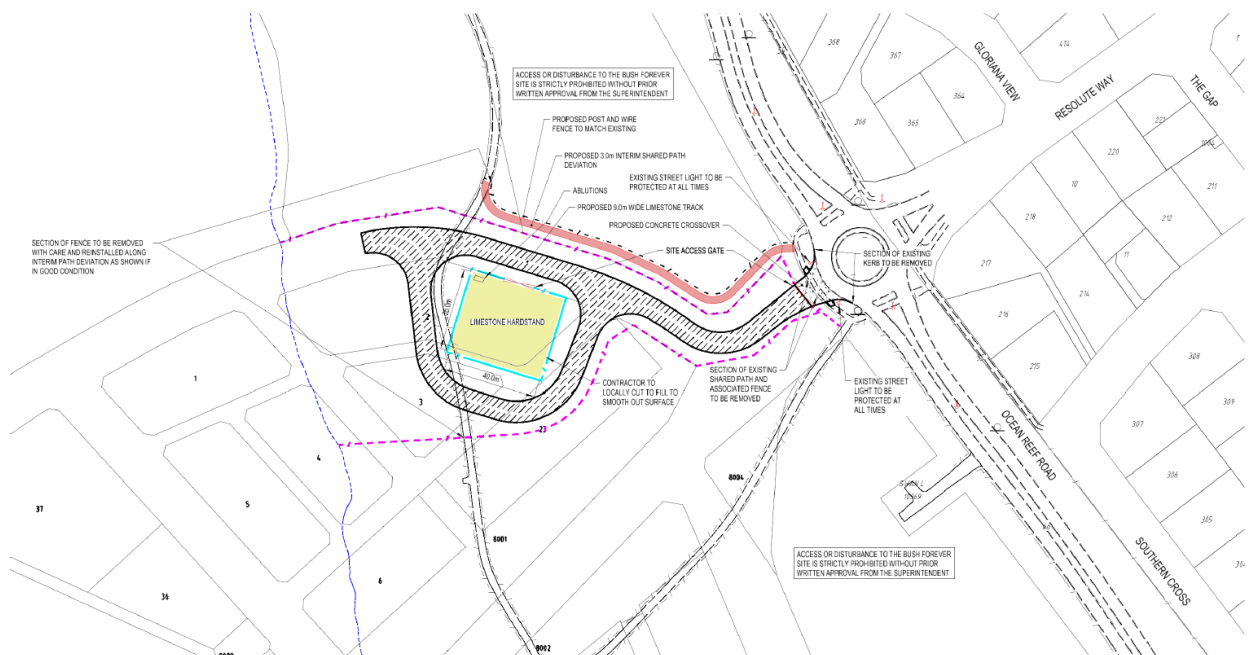


Figure 2: Northern breakwater construction site plan

3 Construction Traffic Management

3.1 Anticipated Vehicle Movements

Based on advice from MP Rogers, construction delivery movements are anticipated to be similar in scale to that experienced during the construction of breakwaters at Port Coogee. In that project, approximately 16,000 tonnes of material were delivered per week, translating to approximately 2,700 tonnes per day (based on a 6 day working week).

On this basis, it is anticipated that approximately 2,700 tonnes of construction material will be delivered to the Ocean Reef Marina site every day during the Breakwaters works, with a maximum delivery window of 11 hours per day. The expected typical delivery vehicle is understood to be a Prime Mover with one Triaxle Trailer (i.e. up to 19 metres in length), with a trailer capacity of 18 tonnes. This translates to a maximum of 150 construction material delivery loads (300 one-way trips) per day (excluding private vehicle access for construction staff), or approximately 27 trips per hour. Deliveries are anticipated to travel to site via Mitchell Freeway and Hodges Drive (as shown in **Figure 3** below) and will mainly involve delivery of rock associated with the breakwaters.

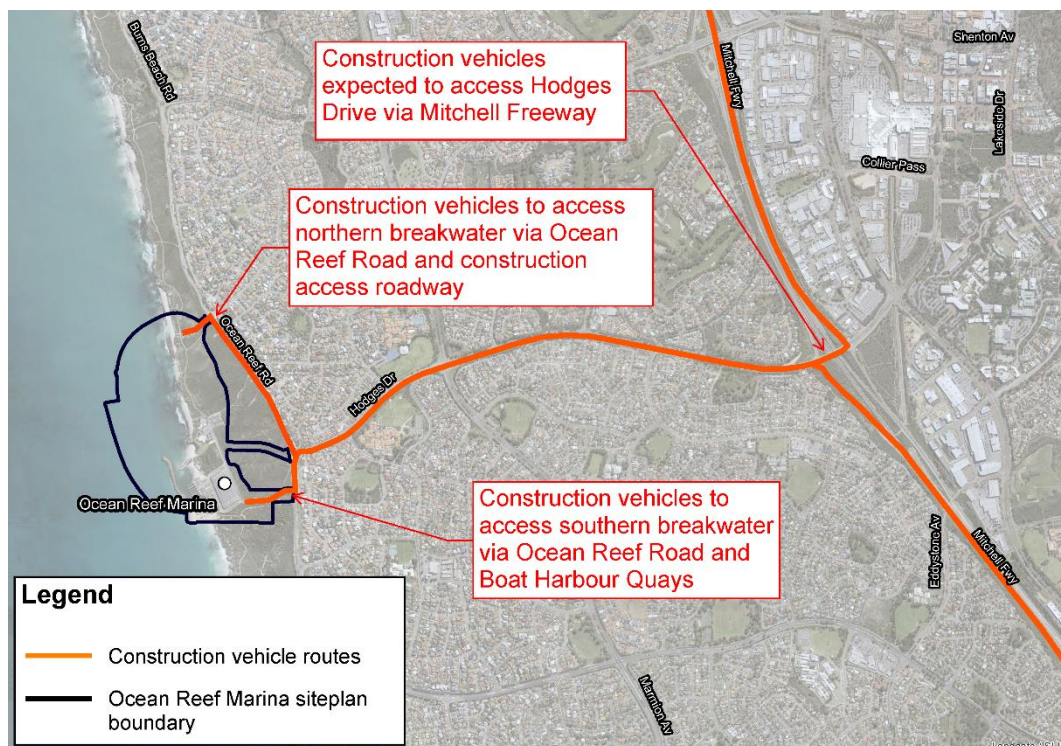


Figure 3: Construction vehicle access routes to Ocean Reef Marina site

In order to increase delivery efficiency, the possibility of allowing B-Doubles to access the site has been considered. This would result in a halving of the number of trips required to deliver the anticipated 2,700 tonnes of construction material per day (i.e. 75 loads or 150 one-way trips per day). In order for B-Doubles to access the site, Hodges Drive (west of Marmion Avenue), Ocean Reef Road and Boat Harbour Quays would need to be added to the Restricted Access Vehicle (RAV) road network, requiring liaison and approval processes with Main Roads. Swept path analysis undertaken by Arup confirms B-Double movements could be accommodated along the construction vehicle access routes, however encroachment onto the mountable sections of kerbing within the central islands of the Ocean Reef Road/ Hodges Drive and Ocean Reef Road/ Resolute Way would occur, as shown in **Figures 4 to 8**.



Figure 4: B-Double movements at Ocean Reef Road/ Resolute Way roundabout

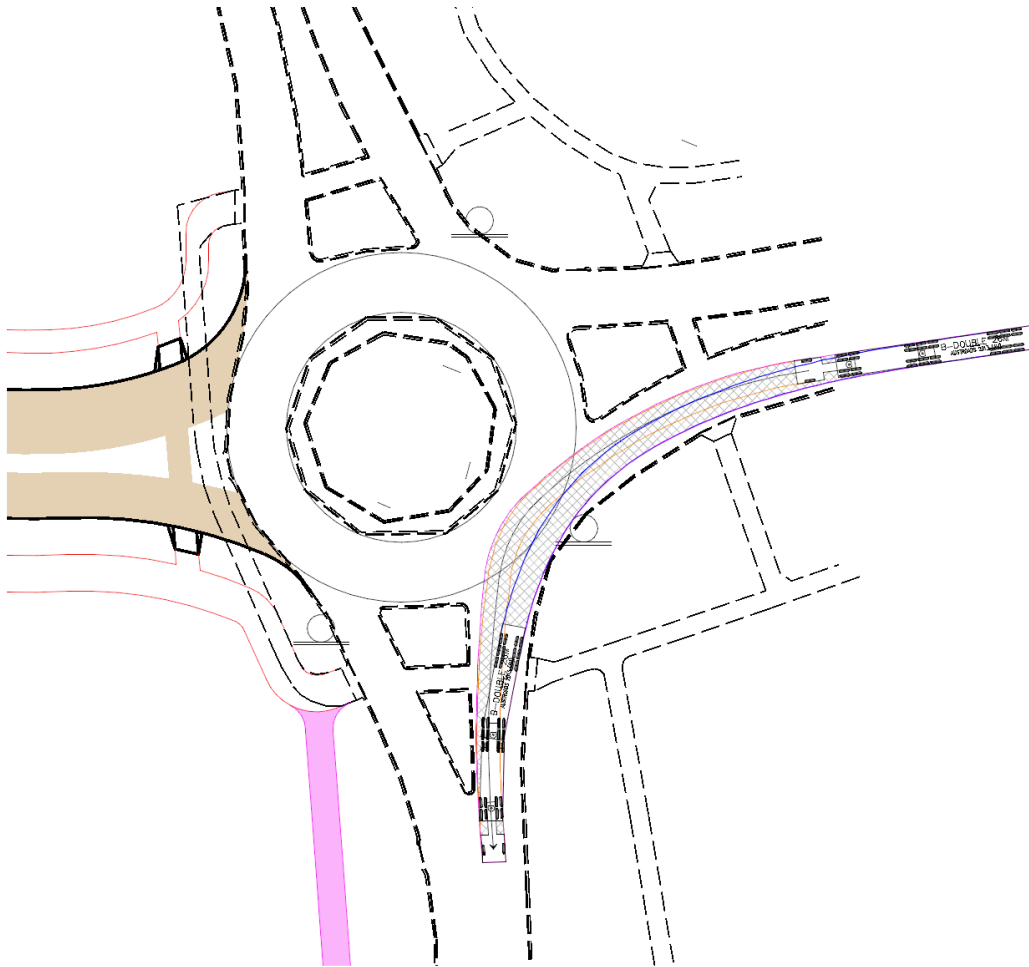


Figure 5: B-Double left-turn into Ocean Reef Road from Hodges Drive

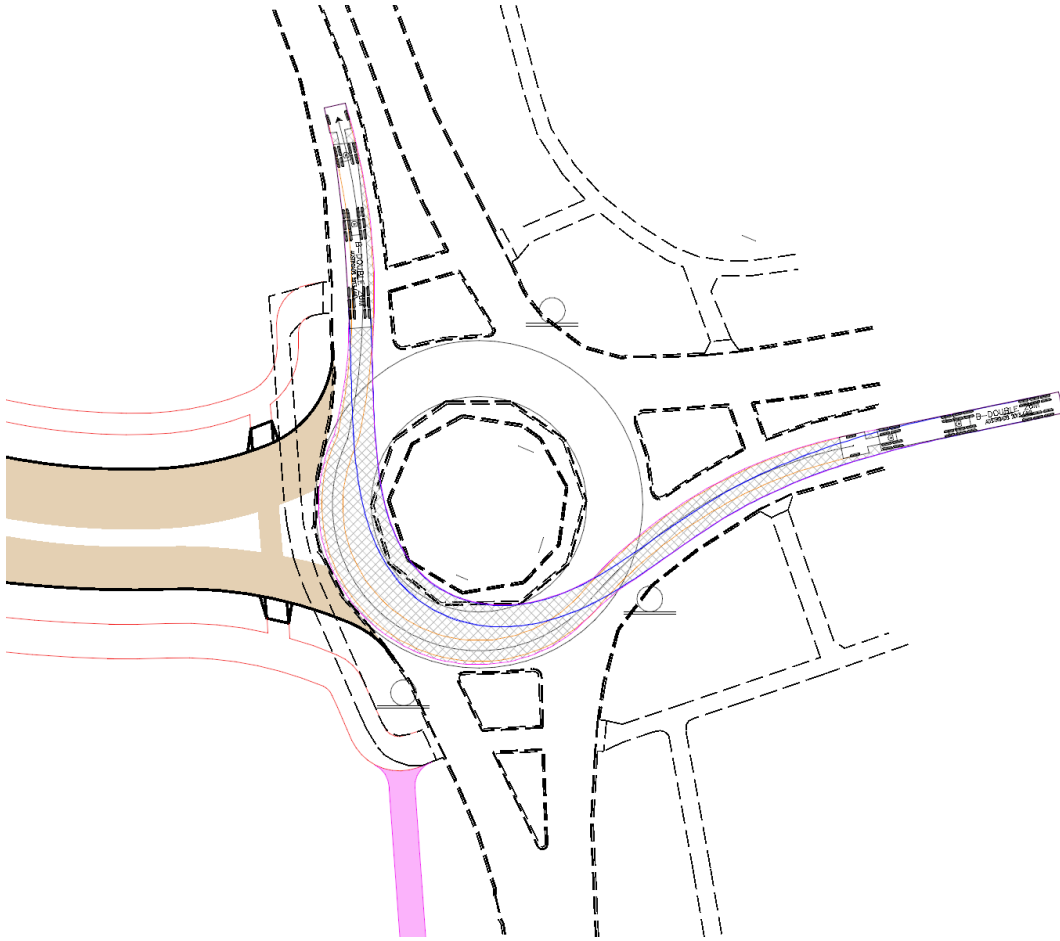


Figure 6: B-Double right-turn into Ocean Reef Road from Hodges Drive



Figure 7: B-Double left-turn into Mitchell Fwy NB on-ramp from Hodges Drive

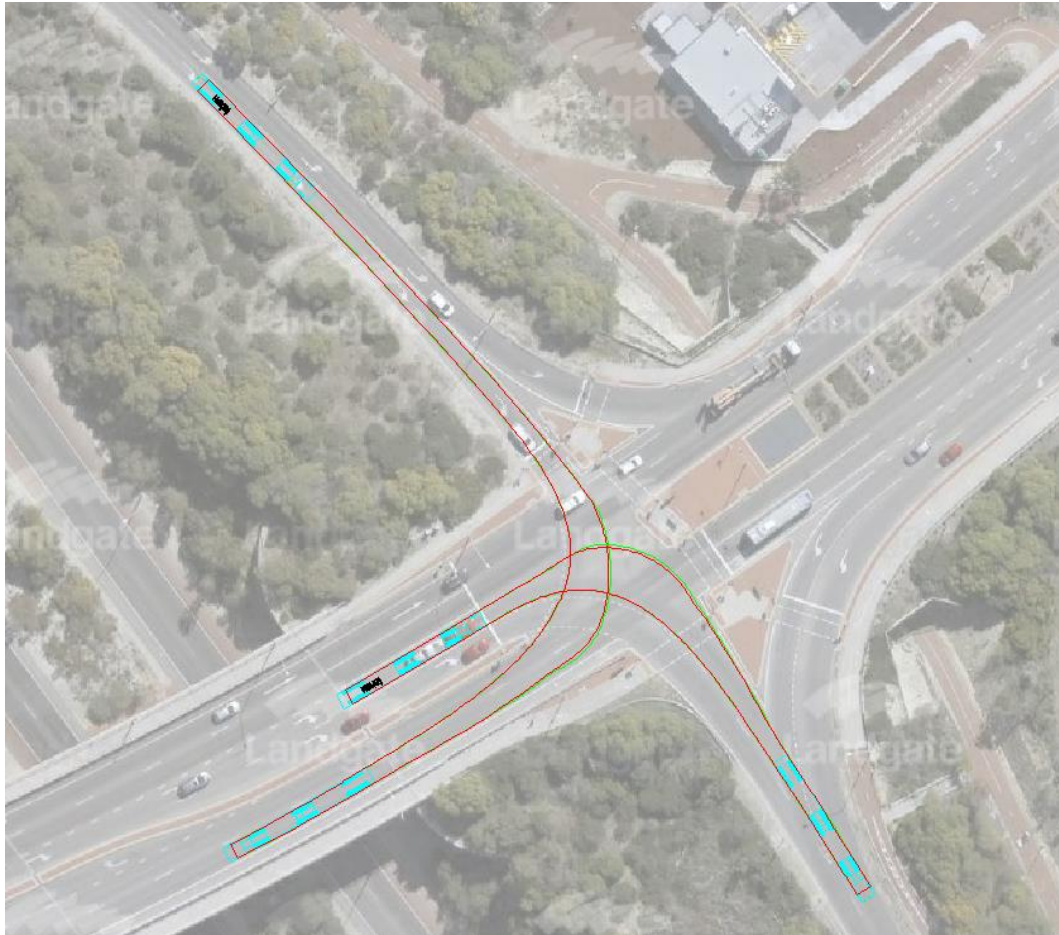


Figure 8: B-Double movements at Hodges Drive/ Mitchell Fwy SB ramps

It is understood that construction activities will be limited to 7.00am to 6.00pm Monday to Friday for the duration of the Breakwaters Construction Contract, which is expected to comprise a construction period of 12 months. Both breakwaters are anticipated to be constructed simultaneously.

It is also anticipated that up to 10 staff will be on site at any one time, which translates to approximately 30 trips per day (including trips to and from site as well as some additional trips by staff vehicles to support staff and construction activities). There will be ample parking available within the southern site compound (to be constructed as part of the Early Works construction package) and the breakwater laydown areas for staff vehicles.

It is therefore estimated that up to approximately 330 external trips per day would be generated by construction and staff activities as part of the Breakwaters.

3.2 Estimated Traffic Impact

Traffic surveys previously carried out as part of the overall Transport Assessment for the Ocean Reef Marina identify that Boat Harbour Quays currently carries a weekly maximum of 2,200 vehicles per day, including a maximum of 241 vehicles per hour. The surveys also identify that Ocean Reef Road between Hodges Drive and Boat Harbour Quays currently carries a maximum of 628 vehicles per hour, with data from Main Roads indicating a daily traffic flow of between 5,000 and 8,000 vehicles per day in the vicinity of the site.

Main Roads data also indicates that Hodges Drive currently carries 8,400 vehicles per day west of Marmion Avenue, with a maximum of 1,120 vehicles per hour.

As the capacity for a two-lane roadway is typically 1,200 vehicles per hour per lane (allowing for delays at intersections), it is expected that Boat Harbour Quays, Ocean Reef Road and Hodges Drive will readily accommodate the anticipated traffic increase of up to 330 trips per day associated with the Breakwaters construction.

Additionally, traffic impact analysis carried out as part of the Transport Assessment report for Ocean Reef Marina indicates that the intersections of Boat Harbour Quays/ Ocean Reef Road and Ocean Reef Road/ Hodges Drive both currently operate at an overall Level of Service A, indicating significant spare capacity during average weekday conditions.

It is important to note that there are two major schools located along Hodges Drive between Marmion Avenue and Ocean Reef Road, with congestion understood to occur during school pick-up and drop-off periods. Whilst the construction operator would have a desirability to use Hodges Drive as the most direct route between Mitchell Freeway and Ocean Reef Marina, the use of Ocean Reef Road as an alternative to Hodges Drive should be considered during school pick-up and drop-off periods to minimise amenity concerns adjacent the schools and to avoid the existing congestion during these periods.

3.3 Construction Traffic Management

The Main Roads document '*Traffic Management for Works on Roads*' provides guidance on the need for and requirements of construction traffic management plans. The guidelines outline best practice and procedures relating to traffic management at work sites on roads in accordance with state legislation and national standards.

In assessing this document in conjunction with AS 1742.3 *Traffic control for works on roads*, it is clear that day to day traffic management will be required to be in place through warning signage and through physically separating the works site from public access. There will also need to be active traffic management (i.e. use of traffic controllers) in place under the following circumstances as summarised in **Table 2:**

Table 2: Use of Traffic Controllers (Source: AS 1742.3 *Traffic control for works on roads*)

Situation	Purpose of control
Bituminous surfacing under traffic	To slow down, stop or direct traffic, as appropriate
Single-lane operation	To restrict traffic flow to a single direction at any time and to alternate the direction of flow as necessary
Low-speed operation	To warn and slow down traffic at locations where a temporary speed limit would be required but has not been installed
Temporary total closures, e.g. blasting works	To stop traffic to inform drivers of the likely delay, and to hold traffic until it is safe to proceed
Plant crossings	To stop traffic as needed to avoid conflict with plant crossing or entering the roadway at an established plant crossing point
Limited sight distance within work site	To slow down and warn motorists of a hidden or partially hidden hazard ahead
Emergency situations	To stop and direct traffic as necessary

In respect of the above table, it is recommended that manual traffic control be implemented in the following specific situations which may be present during the Breakwaters construction:

- Where construction vehicles need to track on the opposite side of the road for site access (although this should be avoided wherever possible);
- Where sightlines for construction vehicles exiting the northern breakwater site at the Ocean Reef Road/ Resolute way roundabout do not comply with Austroads guidelines (to be determined during detailed design of the construction access roadway)
- If there are particular peaks in construction deliveries accessing the site compounds.

3.4 Pedestrian/ Cyclist Access

As indicated above in **Figure 2**, pedestrian and bicycle access along the north-south PSP will continue to be provided via a temporary alignment. The following alignment options have been considered for the PSP detour and are illustrated below in **Figure 9**:

- **Option 1:** Detour along the southern and eastern sides of the construction hardstand area, and the northern side of Hodges Drive extension (as per the Early Works PSP alignment, to tie in with the existing PSP. This would maintain as much of the existing PSP alignment as possible in between the breakwater sites, with a small detour around the northern breakwater construction site (including part of the existing shared path between the PSP and Resolute Way).

- Option 2:** Detour along the southern and eastern sides of the construction hardstand area, the western side of Ocean Reef Road and the northern side of the proposed construction vehicle access roadway (to the northern breakwater), to tie in with the existing PSP. This alignment may be required during future construction work packages which will develop the land in between the breakwater sites. A sub-option for this alignment (**Option 3**) has also been considered whereby the PSP would detour from the coast further to the south of the OCERM site along an existing path towards Swanson Way, to then travel along the western side of Ocean Reef Road. However, this more southerly option is not preferred as it would require additional works to construct a PSP standard alignment between Swanson Way and Hodges Drive (in addition to PSP construction north of Hodges Drive). Additionally it is preferred to utilise the existing PSP as much as possible in terms of pedestrian amenity (being as close to the coast as possible) and construction costs.

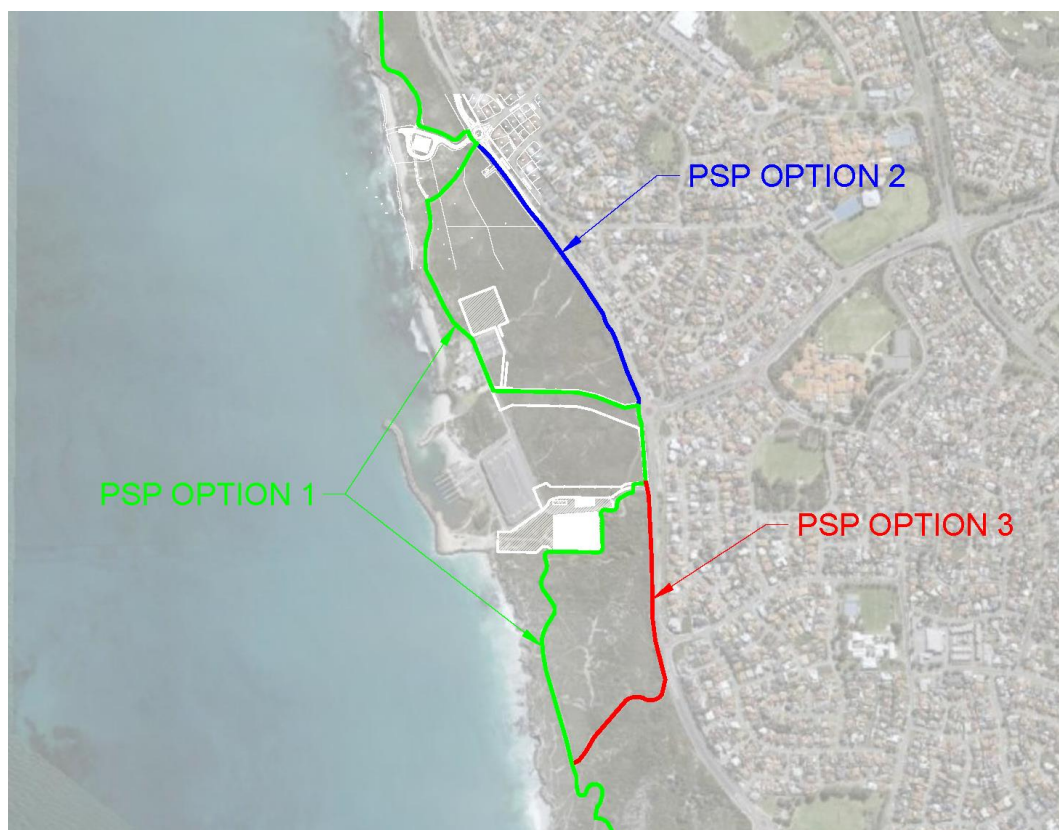


Figure 9: Temporary PSP Alignment Options

The Main Roads *Guidelines on the Provisions for All Path Users at Roadwork Sites in Built Up Areas* state key points when preparing traffic management plans that affect path users. Of particular relevance for the construction traffic management planning are the following points:

- Path users should be provided with a safe, accessible path that adequately replicates the original path, for the entire duration of the roadworks.
- Path users must be fully aware that the changes to the original path of travel have been made, and for how long the changes will be in effect.

In light of the above principles, signage relating to deviation of the PSP will be required to advise pedestrians and cyclists of the altered route in advance timing of the deviation. Advanced notification of the deviation (at least one week's notice) will also be required. Opportunities also exist for the viewing platforms for the relocated PSP option along the western side of Ocean Reef Road to allow viewing of the Indian Ocean and construction activities.

Traffic management including adequate warning signage will be required at the crossing of the diverted PSP with Boat Harbour Quays and the construction vehicle access to the northern breakwater. In addition, it is critical to pedestrian and cyclist safety that no construction vehicles be able to reverse over the PSP crossing.

The Main Roads guidelines give further details on the quality of the path (e.g. need for pram ramps, the need for the surface to be comparable to the path it is temporarily replacing and be well maintained, etc). Fencing should also be installed where there is a serious hazard adjacent to a path or any temporary detour in the vicinity of roadworks which is the case at Ocean Reef Marina. Solid, continuous fencing should be used on all temporary detour facilities.

4 Conclusions and Recommendations

This document provides the high-level staging and associated guidance for preparation of detailed construction traffic management plans for the Breakwaters. The detailed traffic management plans will need to be prepared by the contractor and signed off by a person holding a current Advanced Worksite Traffic Management and the local government representative.

It is concluded that the adjacent road network to the site will be able to accommodate the anticipated traffic flows associated with the construction activities for the Breakwaters, including pavement material deliveries and staff vehicles.

It is recommended that liaison with Main Roads be undertaken in order to confirm the likelihood (and subsequent approval process) of Hodges Drive, Ocean Reef Road and Boat Harbour Quays being added to the RAV network to accommodate B-Double movements for construction deliveries.

APPENDIX F

Staging Plan

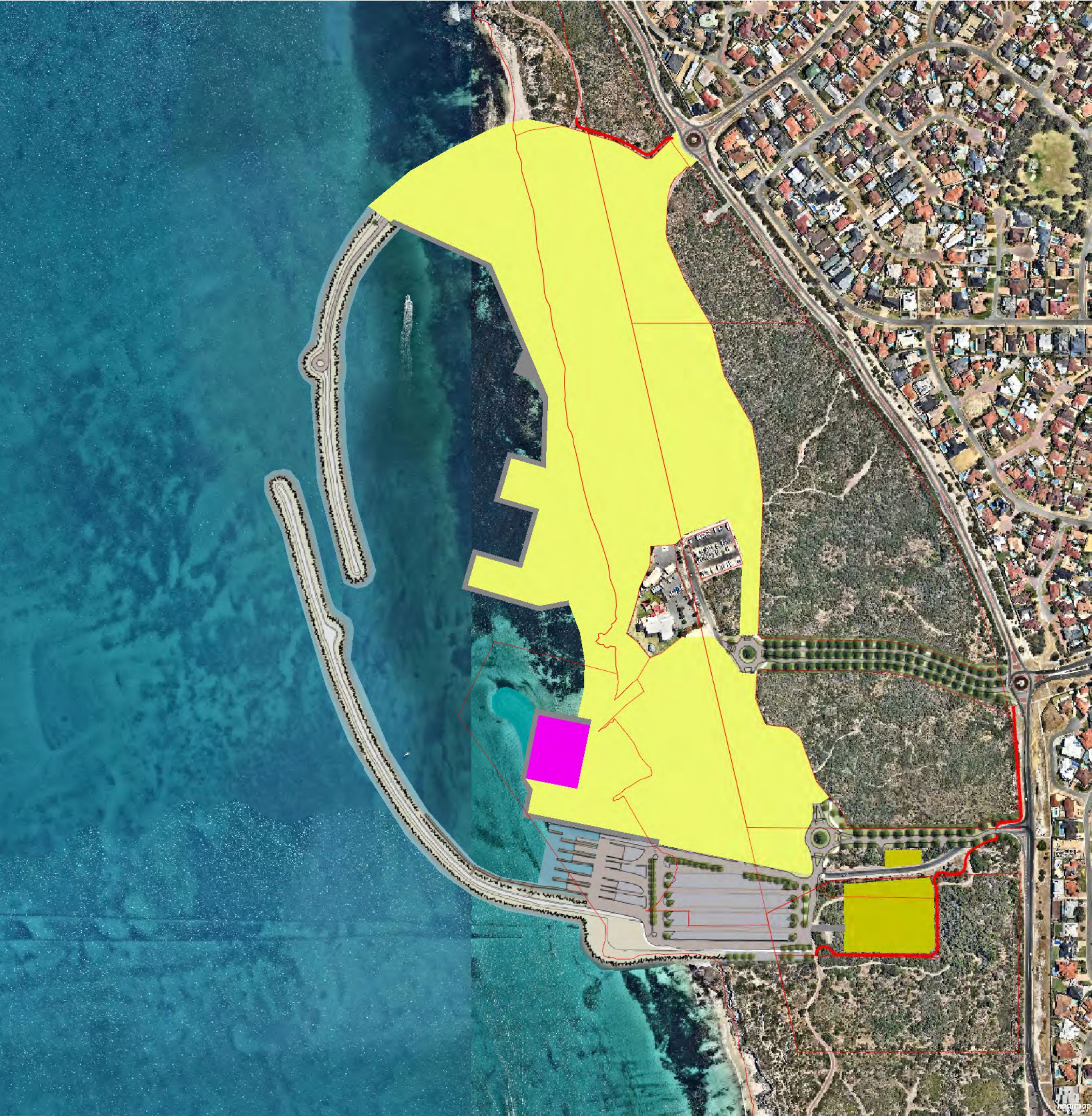




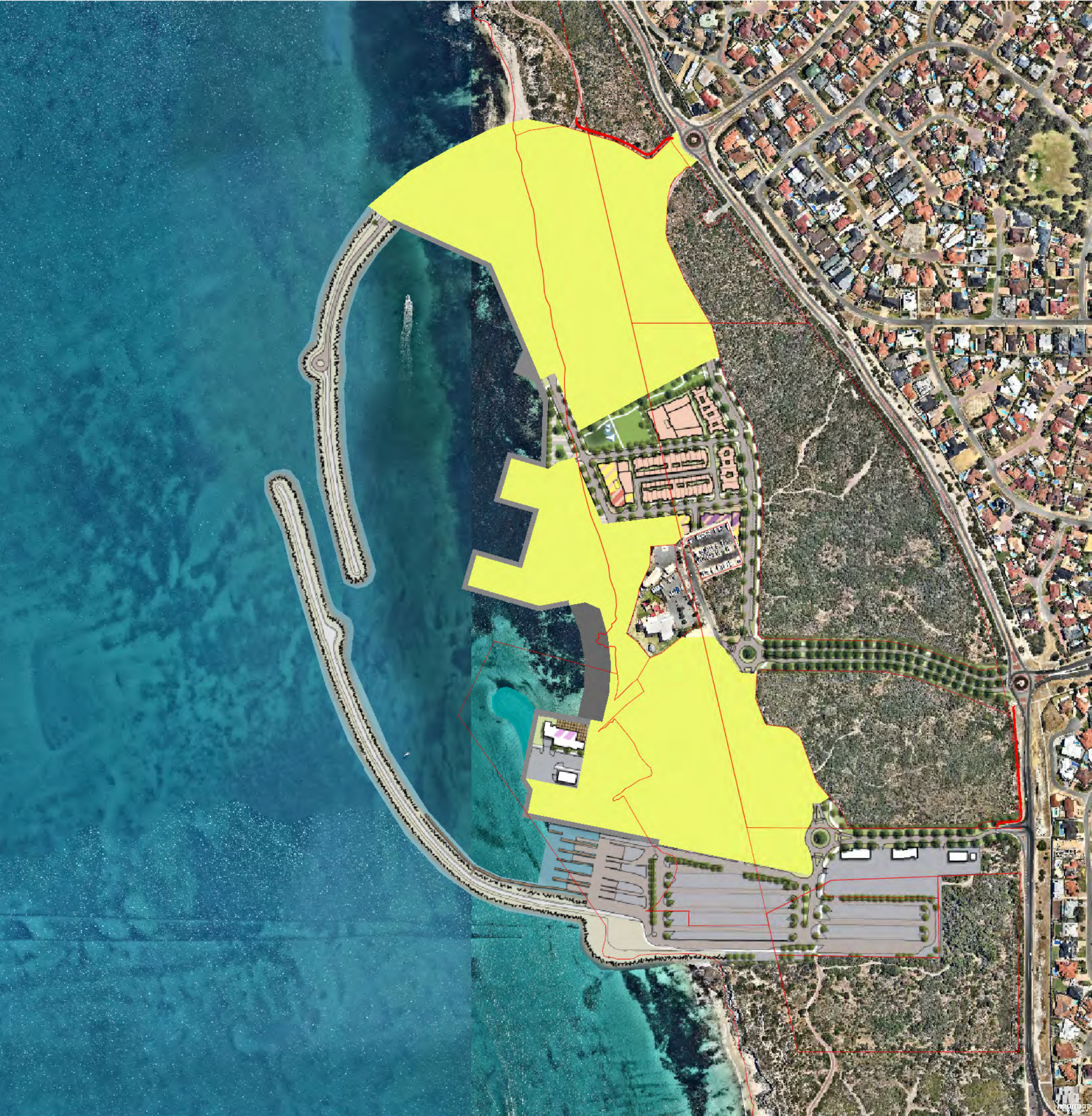
Sea wall construction, complete.
Marine services area earthworks, ongoing.
Car-park earthworks, ongoing.
Bulk earthworks (with reclaiming behind sea wall), ongoing.



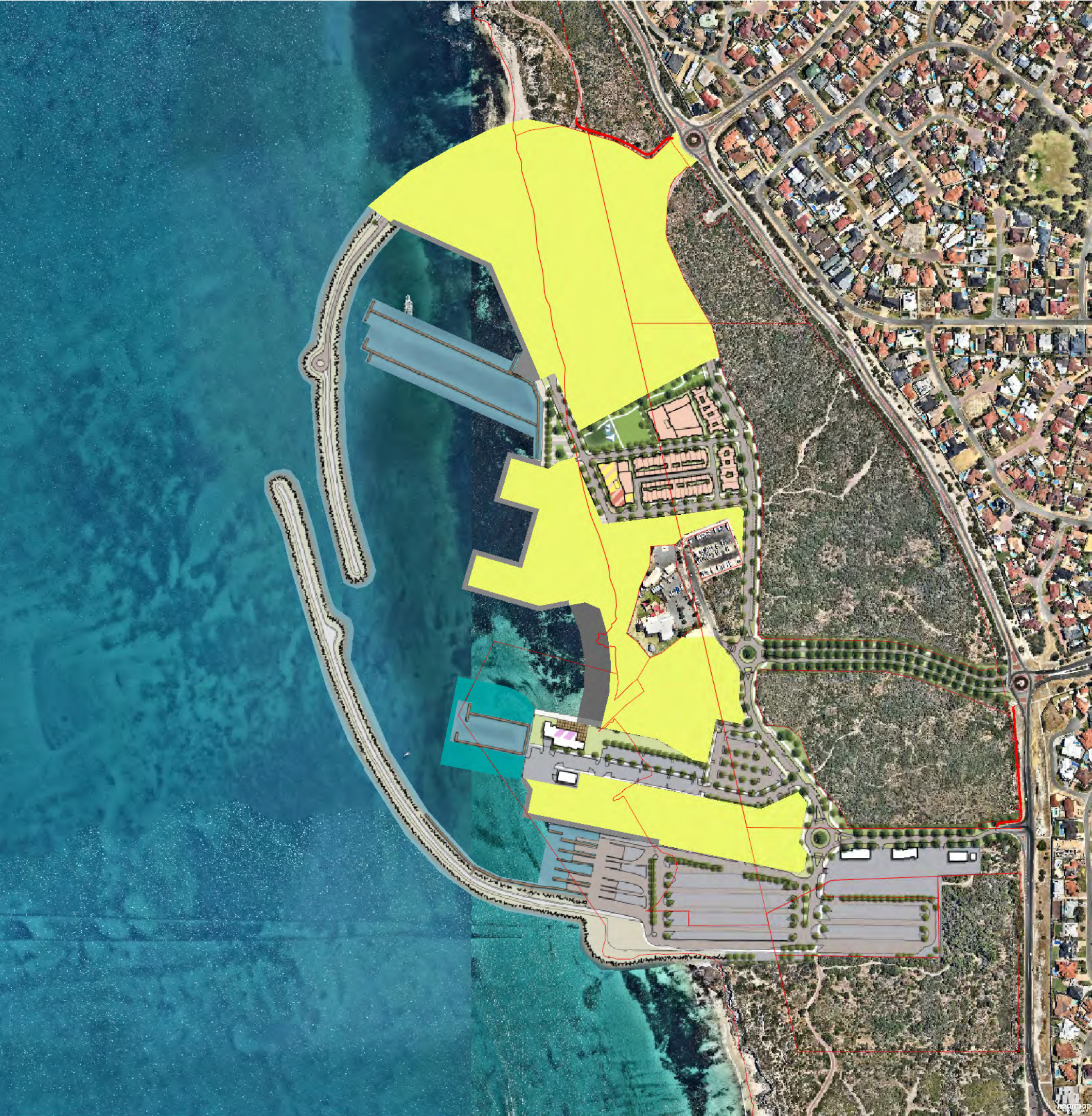
Marine services earthworks, complete.
Sea Sports Club & Sea Rescue site, prepared July 2022.
Car-park earthworks, complete.
Bulk earthworks (with reclaiming behind sea wall), ongoing.



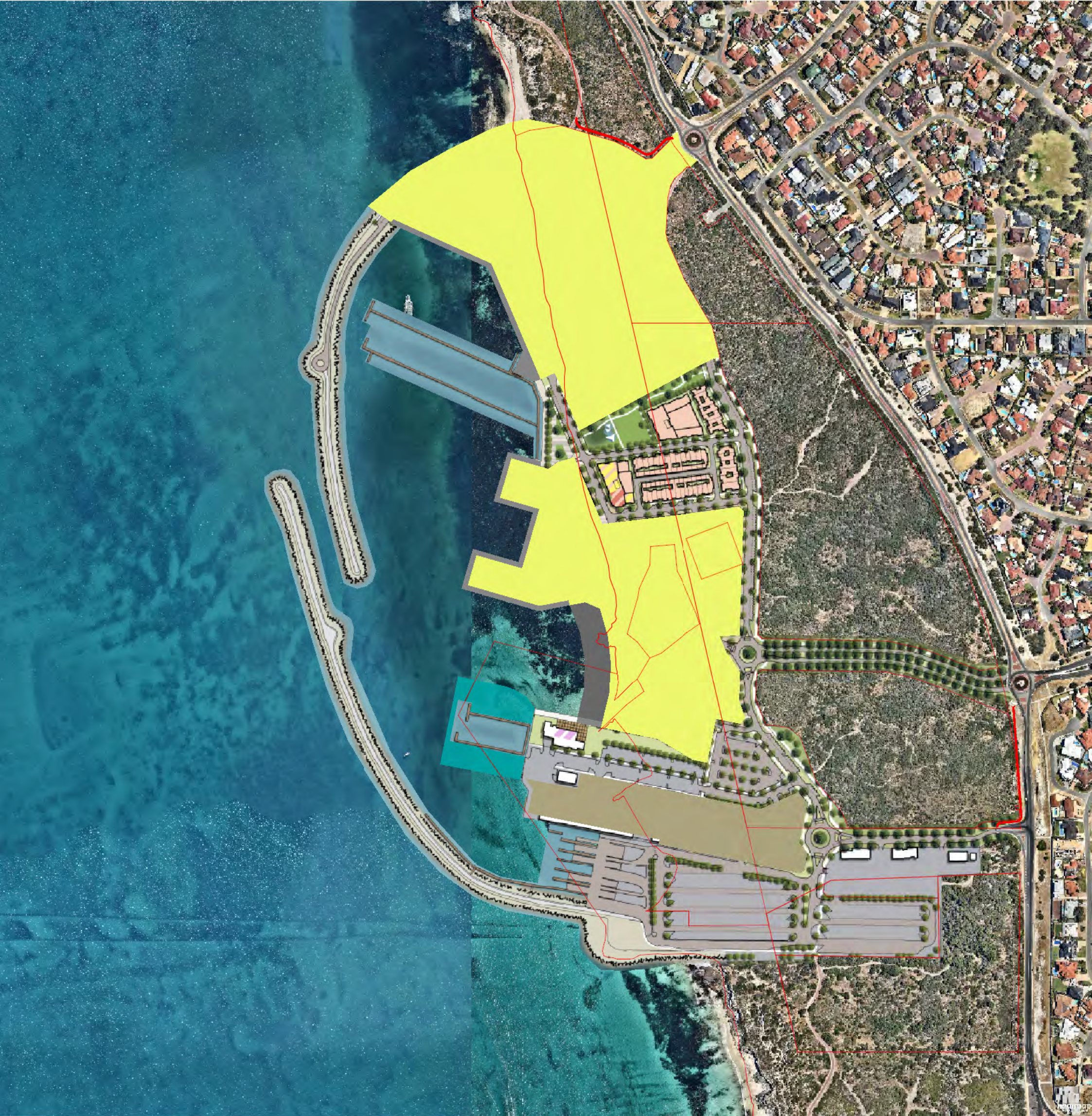
Bulk earthworks, ongoing.
Sea Sports Club & Sea Rescue construction, commenced August 2022.



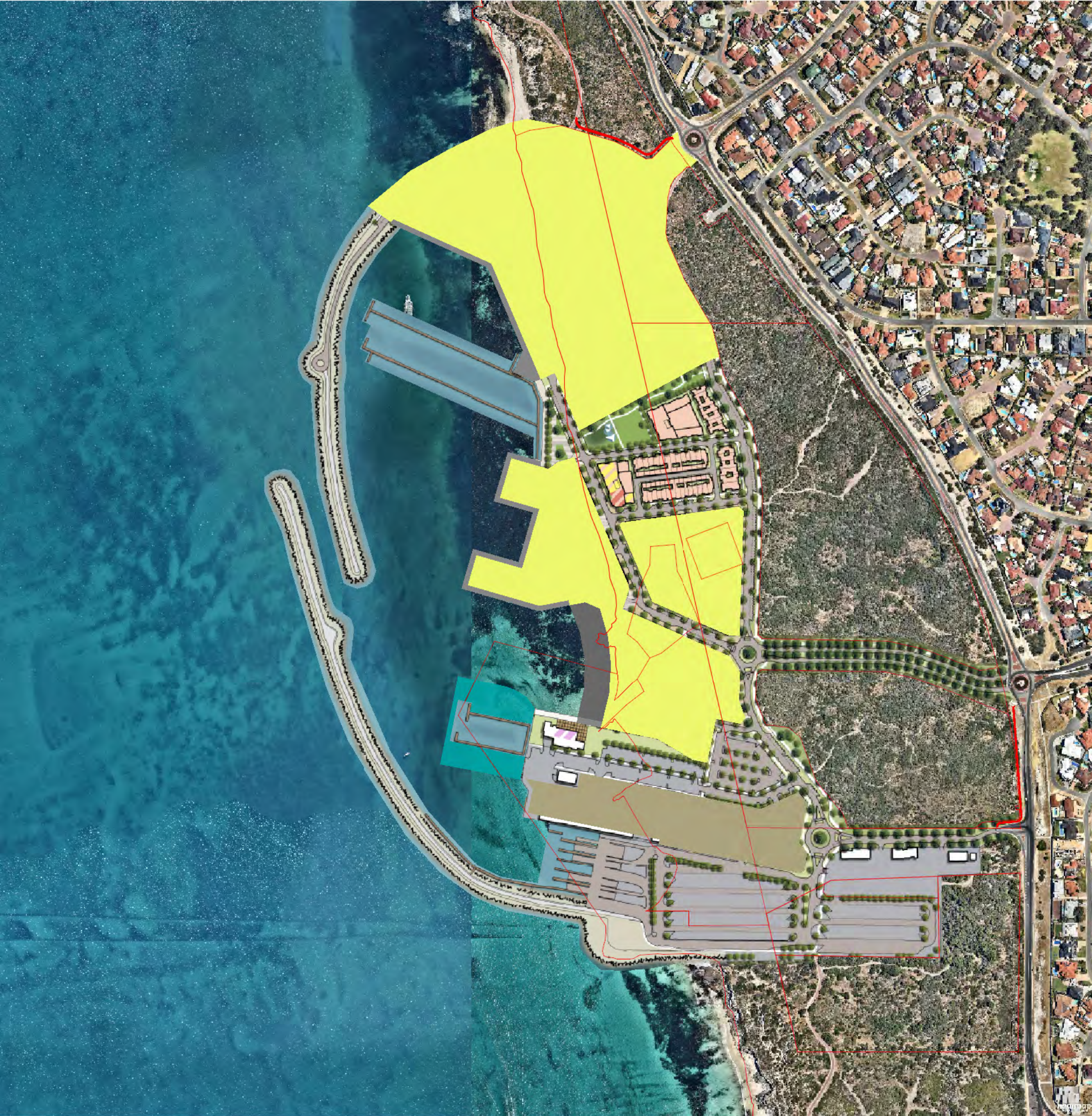
Stage 1 sub-divisional works, commenced August 2022.
Hodges Drive extension internal roundabout construction,
commenced.
Sea Sports Club & Sea Rescue construction, ongoing.
Southern car-park construction, complete.



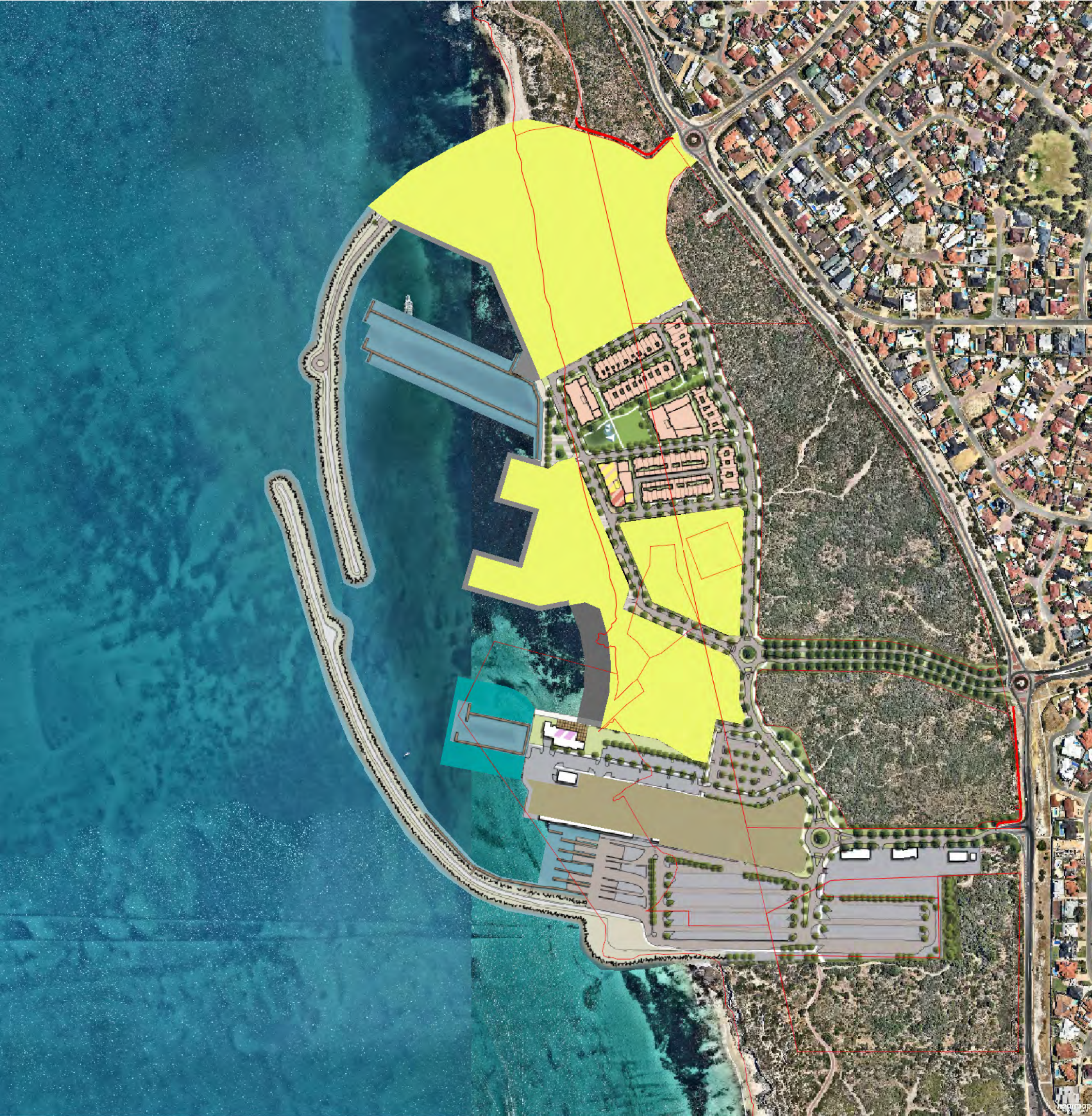
Sea Sports Club & Sea Rescue construction, complete July 2023.
Hodges to Boat Harbour Quays link road, complete.
Initial dock construction, complete.



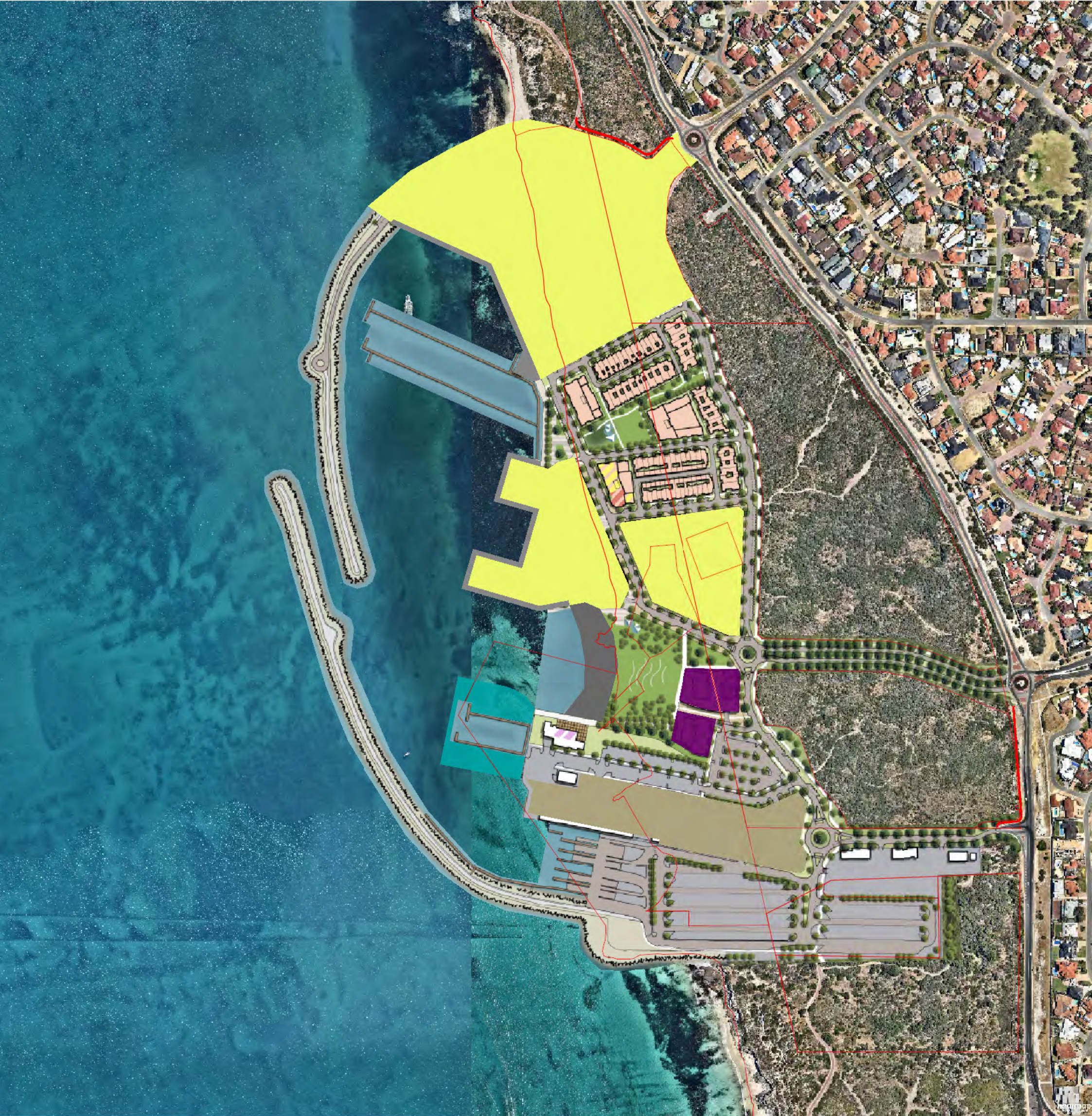
Old club site demolition, complete.
Stage 1 works, complete August 2023.



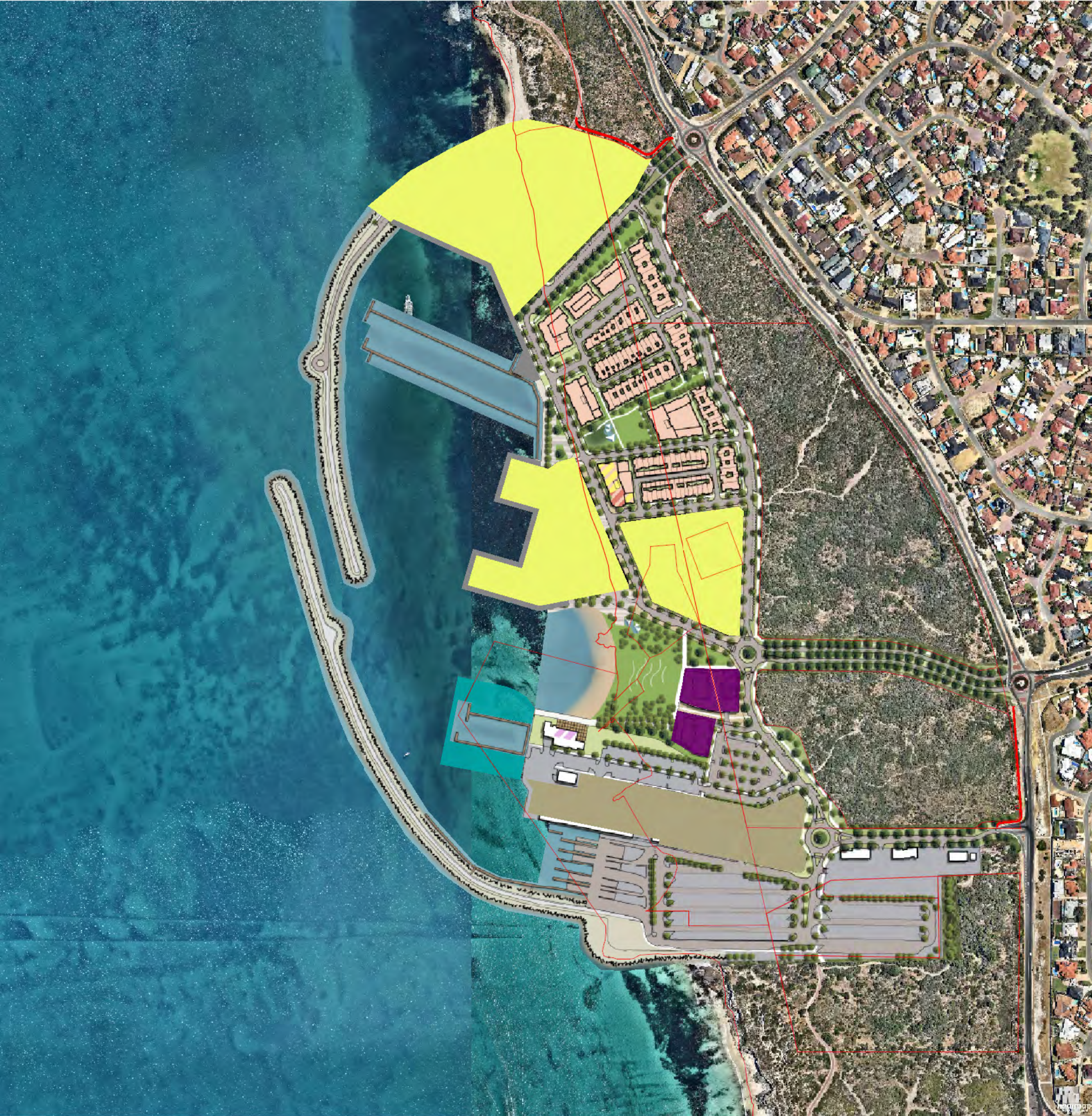
Town centre road construction, complete July 2024.



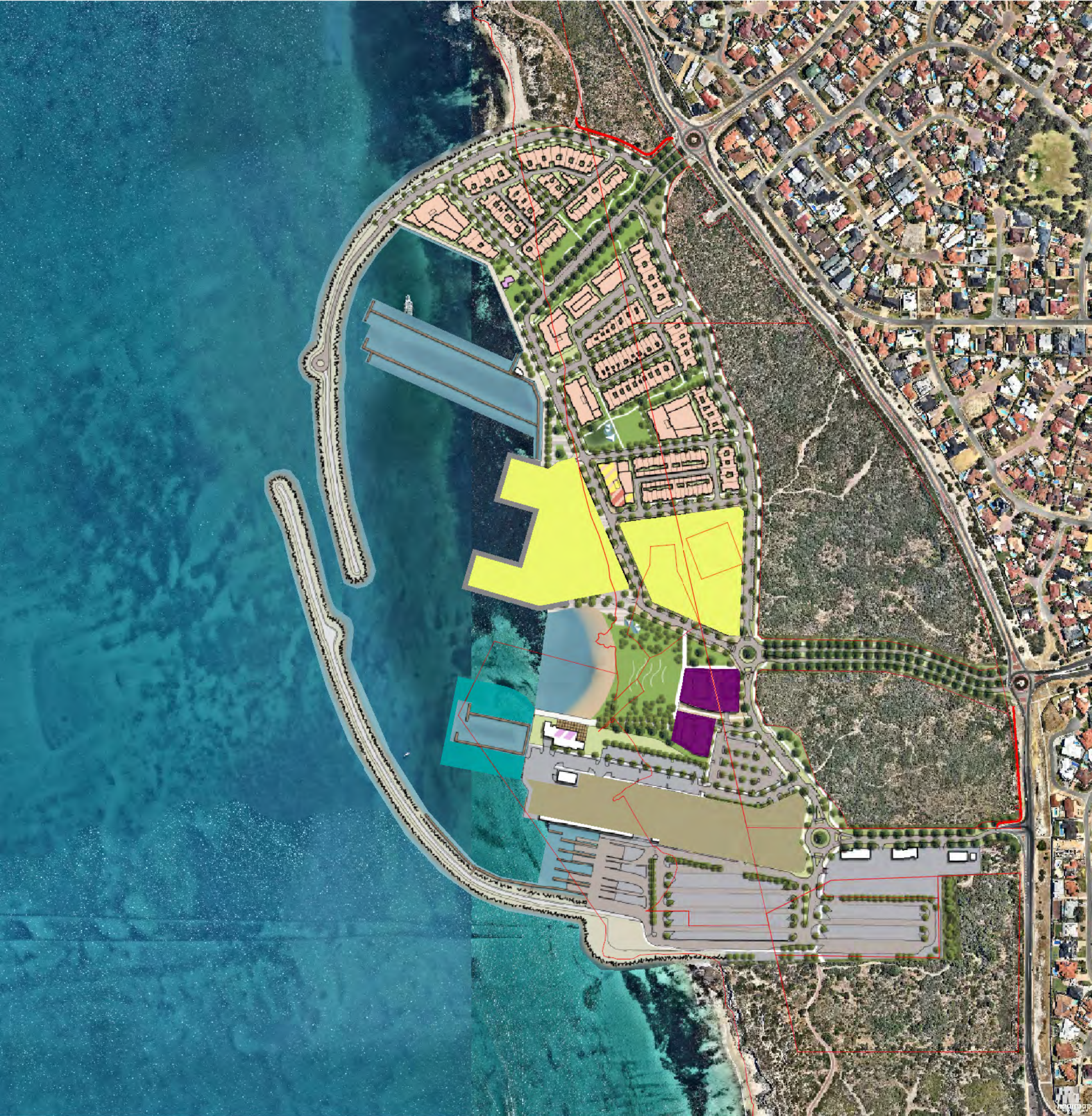
Stage 2 sub-divisional works, commenced.



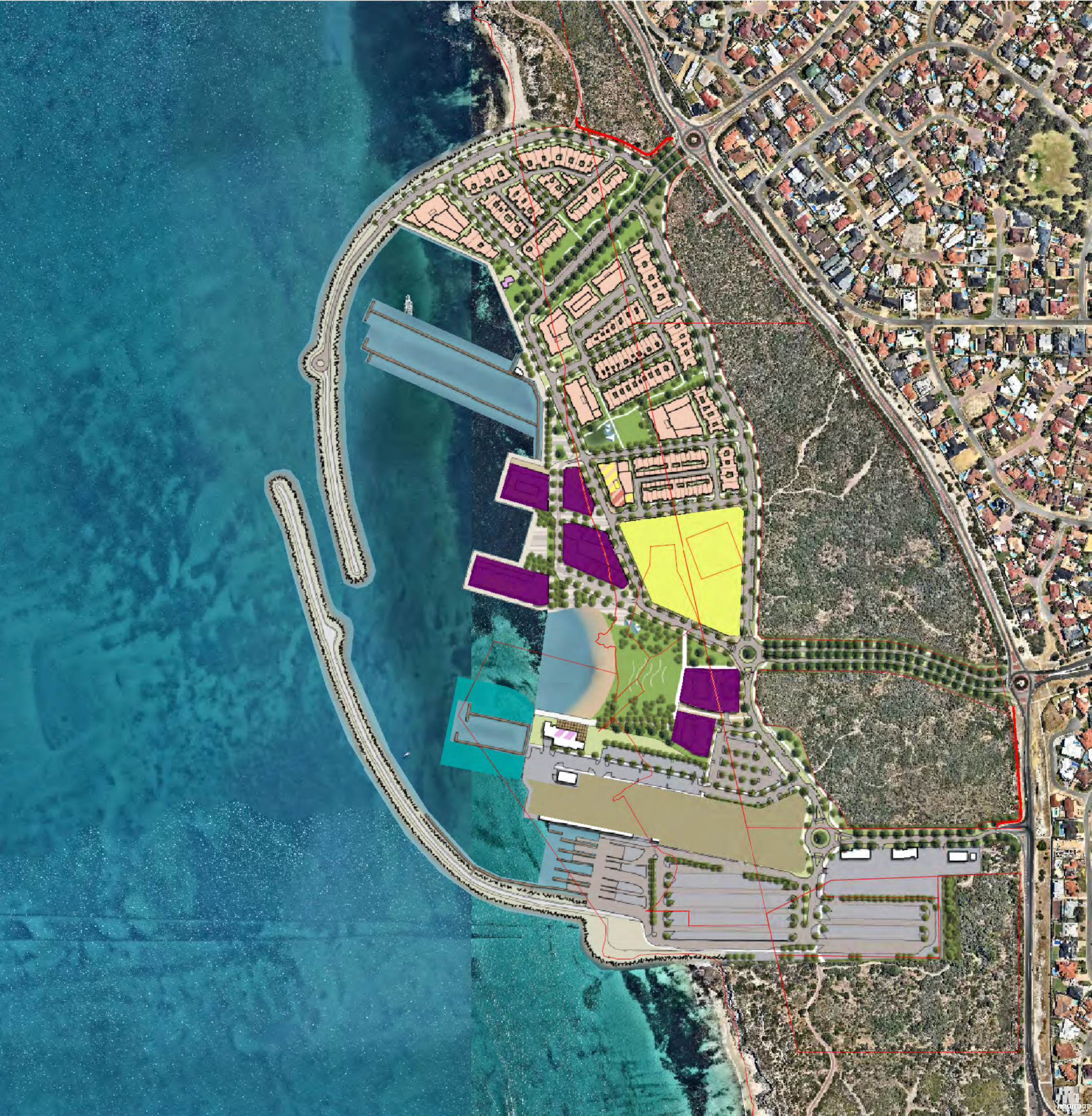
Stage 2 sub-divisional works, ongoing.
Central landscaping, under way.



Beach area, complete.
Stage 3 sub-divisional works, under way.



Stage 4 sub-divisional works, commenced.



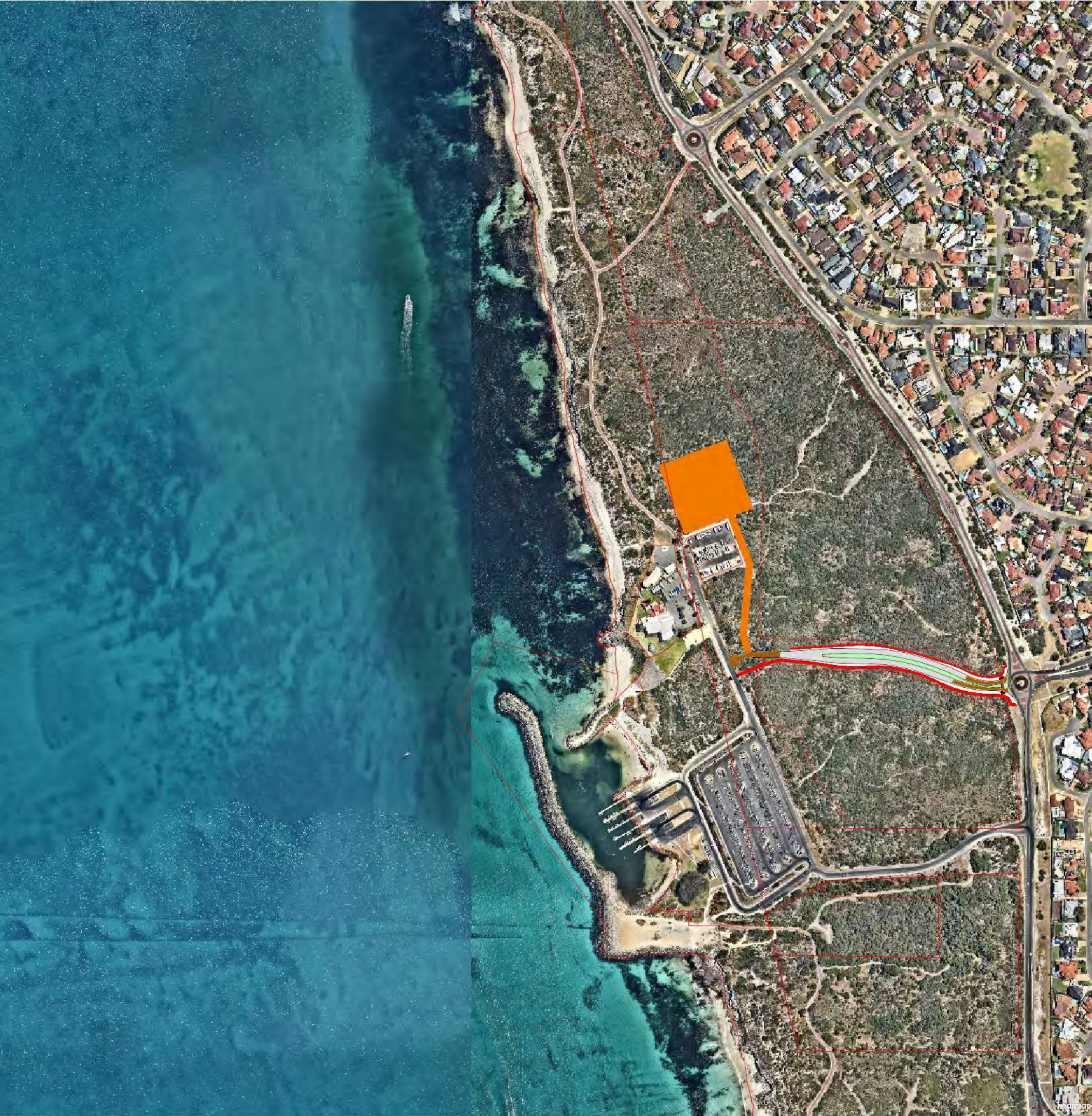
Stage 4 sub-divisional works, ongoing.
Village town centre construction, under way.



Sub-divisional works (all stages), complete.
Dock construction, complete.
Outer landscaping, complete.



Ocean Reef Marina



Early works

Hodges Drive Extension, commences April 2020.



Early Works

PSP deviation & lay down, commences May 2020.



Early Works

Boat Harbour Quays deviation & Hodges Drive extension, complete July 2020.



North & south haul road construction, October 2020.



Breakwater construction, commences January 2021.



Breakwater construction ongoing, April 2021.



Breakwater construction ongoing, September 2021.



Breakwater construction, complete Jan 2022.



New boat ramp lanes (4) & parking construction, commences January 2022.
All existing boat ramp lanes operational.
Seawall construction, commences.



Marine services area earthworks, commences April 2022.
4 new ramp lanes operational.
4 existing ramp lanes operational, 4 existing ramp lanes closed.
Seawall construction, ongoing.



Marine services earthworks, ongoing July 2022.
All new ramp lanes (8) operational, all existing ramp lanes (8) closed.
Sea wall construction, ongoing.
Removal of existing breakwater, under way.



Marine services area earthworks, ongoing August 2022.
Sea wall construction, ongoing.
Car-park earthworks, commenced.
Stage 1 bulk earthworks, commenced.



Form 1 – Responsible Authority Report (Regulation 12)

Property Location:	Ocean Reef Marina - portions of Lots 15446, 555, 10518, 10098, and 503
Development Description:	Inner northern breakwater and outer southern breakwater that form part of the Ocean Reef Marina Development
DAP Name:	Metro North West JDAP
Applicant:	Taylor Burrell Barnett on behalf of Development WA
Owner:	Development WA, City of Joondalup, Water Corporation
Value of Development:	Mandatory Application - more than \$20 million
LG Reference:	04171
Responsible Authority:	Western Australian Planning Commission
Authorising Officer:	Director Metropolitan North, Land Use Planning
DAP File No:	DAP/20/01755
Report Due Date:	15 April 2020
Application Received Date:	28 February 2020
Application Process Days:	
Attachment(s):	1: Development Plans 2: Site Map 3: MRS Reservation and Zoning Map 4: Location Map 5: Staging Plan 6: Concept Plan 7: Improvement Plan 51

Officer Recommendation:

That the Metro North-West Joint Development Assessment Panel resolves to:

1. **Accept** that the DAP Application reference DAP/20/01755 is appropriate for consideration under the Parks and Recreation and Waterways reservation of the Metropolitan Region Scheme.
2. **Approve** DAP Application reference DAP/20/01755 and accompanying plans date-stamped **28 February 2020** by the Department of Planning Lands and Heritage (Attachment 1), pursuant to clause 30(1) of the Metropolitan Region Scheme subject to the following conditions and advice notes:

Conditions:

1. The development approval is valid for five years from the date of the approval and shall be substantially commenced within a three year period, if not the approval shall lapse and be of no further effect.
2. A Detailed Design Report for the breakwater structures is to be submitted, approved, and works undertaken in accordance with the approved Detailed Design Report, to the specification of the Department of Transport- Maritime Business Unit and to the satisfaction of the Western Australian Planning Commission.

3. The principal shared path and its associated intersections with other parts of the shared path network shall be rerouted by the applicant at their cost. Plans shall be prepared, endorsed and implemented prior to the development being executed by the proponent to the specification of the City of Joondalup and satisfaction of the Western Australian Planning Commission.
4. A Construction Management Plan shall be prepared, submitted and endorsed prior to the commencement of development and then implemented, to the specification of the City of Joondalup and to the satisfaction of the Western Australian Planning Commission.
5. All works are to be contained within the development footprint, as indicated on the approved plans.

Advice Notes

1. In regard to the Detailed Design Report, the applicant is advised to liaise with the Department of Transport, Maritime Business Unit, regarding the design criteria of the breakwater structures, including but not limited to armour sizes, crest level, filter layer and core material design. The Detailed Design Report shall include:
 - (a) detailed calculations in accordance with the agreed design standards.
 - (b) all information as necessary in support of the final design.
 - (c) final reports of numerical and physical modelling.
 - (d) construction drawings.
2. The applicant is advised that the Construction Management Plan shall detail how it is proposed to manage:
 - (a) all forward works for the site;
 - (b) the delivery and storage of materials and equipment to the site;
 - (c) the parking arrangements for the contractors and subcontractors;
 - (d) the protection of vegetation outside the development area;
 - (e) the management of dust and noise;
 - (f) construction signage;
 - (g) potential conflict points between pedestrians and construction traffic; and
 - (h) communication with surrounding residents prior to commencement of works and during construction.
3. The applicant is advised that this is a development approval under the Metropolitan Region Scheme. It is not an approval to commence or carry out development under any other law. It is the responsibility of the applicant to obtain any other necessary approvals, consents, permits and licences required under any other law, and to commence and carry out development in accordance with all the relevant laws. Conditions under Ministerial Statement 1107 under Section 45 of the *Environmental Protection Act 1986* remain a requirement of the Office of the Environmental Protection Authority.

Details: outline of development application

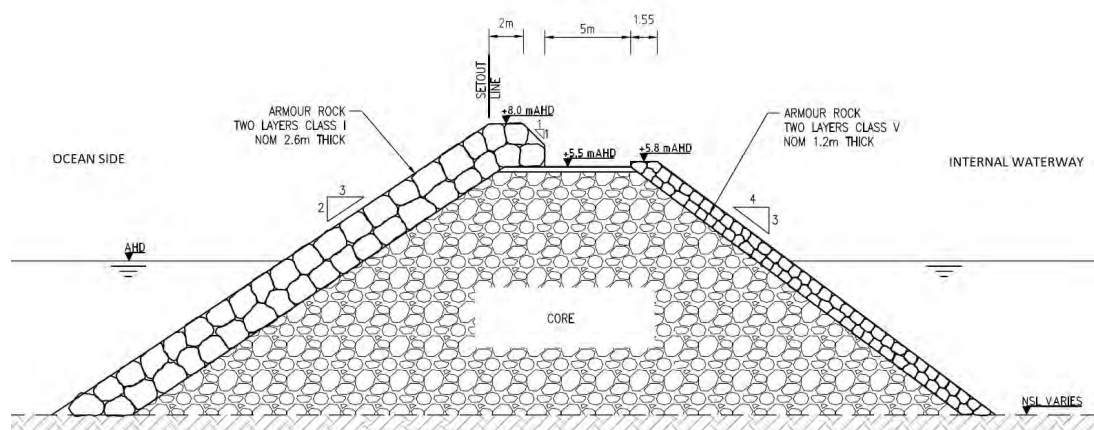
Zoning	MRS:	Urban, Parks and Recreation, Waterways
	TPS:	No zone
Use Class:		n/a
Strategy Policy:		
Development Scheme:		Metropolitan Region Scheme draft Improvement Scheme 51: Ocean Reef Marina
Lot Size:		61.9 ha
Existing Land Use:		Ocean Reef Marina, Waterways

The proposed development is for the construction of an inner northern breakwater and an outer southern breakwater at the Ocean Reef Marina (ORM) (**Attachment 1 - Development Plans**). The key function of the breakwaters is to protect the internal marina infrastructure. Calm waters inside the marina will provide for boating facilities as well as the recreational, tourism and residential precincts at the ORM.

The development relates to portion of Lots 15446, 555, 10518, 10098, and 503 which is reserved for Parks and Recreation and Waterways under the Metropolitan Region Scheme (MRS) (**Attachment 2 - Site Plan**). A small portion of the development is situated on MRS Urban zoned land and is subject to a separate assessment by the City of Joondalup (**Attachment 3 - MRS Reservation and Zoning Map**).

The breakwaters will consist of two rubble mound rock structures extending 1,200 metres and 700 metres from the shoreline for the outer southern breakwater and the northern breakwater respectively, and will be constructed using granite and limestone rock. Granite will be utilised on the outside of the breakwaters to protect against the wave actions and limestone rock will be utilised on the inside of the breakwaters. The design incorporates a flat section at the top of the core which will provide the foundation for the initial construction and will enable future maintenance of the structures (as per diagram below).

The construction includes the following phases: a) stockpile of granite and limestone; b) demolition of existing breakwater; c) clearing of some of the vegetation land side; d) construction of the new breakwaters; and e) landscaping.



Background:

The ORM Development is a state government priority project being delivered by Development WA in collaboration with the City of Joondalup.

The ORM site is located on the coast, at the existing Ocean Reef Boat Harbour, in the City of Joondalup, approximately 28 kilometres north of the Perth CBD and 5 kilometres west of the Joondalup City Centre (**Attachment 4 - Location Plan**). When fully developed, it will cover an area of land and sea of approximately 90 hectares.

It is connected to the regional road network via Boat Harbour Quays which intersects with Ocean Reef Road. Hodges Drive and Resolute Way both intersect with the portion of Ocean Reef Road adjacent to the site. An existing dual use path extends from Burns Beach to Hillarys Boat Harbour connecting to the regional path network.

The ORM Development will be progressed in three stages as shown in the Table 1 below (**Attachment 5 - Staging Plan**). The first stage was approved by the Western Australian Planning Commission (WAPC) on 19 February 2020 and will provide for a new boat harbour quays entry road, diversion of the existing coastal shared path and boat ramp access, and a laydown area with site facilities.

Table 1 - Ocean Reef Marina - Development Stages		
Stage 1	Early works (approved)	first half of 2020
Stage 2	Construction of breakwaters	late 2020/early 2021
Stage 3	Landside works (development sites, roads, public open space)	late 2021/early 2022

The ORM concept plan prepared by the City of Joondalup depicts: a) a mixed use working marina with club facilities, commercial uses and a boating precinct inclusive of ramps, coastal amenities and parking to the south, b) a central retail, tourist and residential precinct and c) a northern residential precinct (**Attachment 6 - Concept Plan**).

An Amendment to the MRS to rezone the site to Urban, Parks and Recreation and Waterways, was approved on 29 November 2019. Through this process, the marine component of the development was assessed by the Environmental Protection Authority (EPA) under S.38 of the *Environmental Protection Act 1986* (EP Act) that resulted in the issue of Ministerial Statement 1107. Ministerial Statement 1107 contains a number of conditions that apply to the construction and operation of the marine component of the ORM. The land backed portion of the development was also assessed as part of that process.

An Improvement Plan (gazetted) and a draft Improvement Scheme (currently being advertised) have been prepared to provide a planning framework and development guidance for the ORM Development, discussed further in the Planning Assessment section below (**Attachment 7 - Improvement Plan 51 Boundary**).

Legislation and Policy:

Legislation

Planning and Development Act 2005 (PD Act)

Environmental Protection Act 1986 (EP Act).

Improvement Plan 51 and draft Improvement Scheme

State Government Policies

Metropolitan Region Scheme (MRS) and MRS Amendment 1270/41

State Planning Policy 2.6 State Coastal Planning Policy

State Planning Policy 2.8 - Bushland Policy for the Perth Metropolitan Region

Local Policies

Ocean Reef Marina Concept Plan

Consultation:

Public Consultation

The development was not formally advertised by the City of Joondalup, therefore no public consultation occurred through this process. Extensive public consultation has occurred previously through MRS Amendment 1270/41 process and development of the Ocean Reef Marina Concept Plan.

Consultation with other Agencies or Consultants

The City of Joondalup supports the proposal subject to conditions and advice relating to a Construction Management Plan and vehicle movements during and post the breakwaters construction.

The Department of Transport (DoT) - Maritime Business Unit, supports the proposal subject to conditions and advice relating to the engineering design of the breakwater structure.

Given the ORM is subject to an Environmental Ministerial Statement - 1107 and a Negotiated Planning Outcome (NPO) has been executed, the Department of Biodiversity Conservation and Attractions provides no comment on the proposal.

The Department of Primary Industries and Regional Development raises no objection to the proposal and requests that consideration be given to delay of construction to March 2021 in order to allow the entire 2020/21 recreational abalone fishing season and the majority (11 months) of the commercial abalone fishing season to be completed without the previously anticipated impacts.

The Department of Environmental Regulation provide no comment on the proposed development.

Planning Assessment:

Table 2 below outlines the development proposals consistency with the state, regional and local planning framework.

Table 2 - Planning Framework

Planning Document	Requirement	Status	Compliance
<i>Planning and Development Act 2005</i> (PD Act)	Under Section 162, Division 5, Part 10 - <i>Development Control</i> , development cannot commence or be carried out until approval has been obtained under the relevant scheme.	The application is for a development approval.	Requirement met.
<i>Environmental Protection Act 1986</i> (EP Act).	The marine component of the Ocean Reef Marina was assessed by the EPA under S.38 of the <i>EP Act</i> . The Proposal was approved on 7 August 2019, , with the issue of Ministerial Statement 1107 under S.45 of the EP Act.	The Ministerial Statement requires the proponent to prepare and implement prior to commencement of construction: <ul style="list-style-type: none"> • A Marina Construction Monitoring and Management Plan; • The draft Coastal Processes and Wrack Management Plan to be updated; • An Abalone Habitat and Biomass Baseline Survey and Monitoring Plan; and • An Offset Strategy (Benthic Communities and Habitat). 	These requirements are to be undertaken as required by the EP Act, through the Office of the EPA and are not enforced via this planning process. This will form an advice note to the applicant.
<i>Metropolitan Region Scheme</i> (MRS)	Clause 30 of the MRS requires the WAPC to have regard to the following factors when determining a development application: <ul style="list-style-type: none"> (i) the purpose for which the land is zoned or reserved under the MRS; (ii) the preservation of the amenities in the locality; and (iii) the orderly and proper planning of the locality. 	The site is reserved Parks and Recreation and Waterways	The development is consistent with the reservation of land, considers the amenity of the locality and is consistent with orderly and proper planning principles. Any amenity concerns through the construction phase will be dealt with via a Construction Management Plan that is recommended as a condition of approval.

State Planning Policy 2.6 State Coastal Planning Policy (SPP 2.6)	<p>Clause 5.5 of SPP 2.6 states that <i>Adequate coastal hazard risk management and adaptation planning should be undertaken by the responsible management authority and/or proponent where existing or proposed development or landholders are in an area at risk of being affected by coastal hazards over the planning timeframe.</i></p> <p>The City of Joondalup and Development WA commissioned MP Rogers and Associates Pty Ltd to finalise the Coastal Hazard Risk Management and Adaptation Plan (CHRMAP).</p>	The CHRMAP was peer reviewed and assessed against SPP 2.6 and is suitable for the purposes of development of the Ocean Reef Marina. The Ocean Reef Marina represents an artificial development on the coastline, which has been considered as being 'appropriate' under SPP 2.6.	The proposed development is consistent with the CHRMAP.
Improvement Plan 51	Improvement Plan No. 51: Ocean Reef Marina was gazetted in December 2019 pursuant to part 8 of the PD Act. The Plan provides a statutory land use planning framework to guide development in the area to give effect to the strategic planning objectives for the Ocean Reef Marina.	The Plan provides the head of power for the preparation of an improvement scheme.	Requirements met.
Draft Improvement Scheme	The draft ORM Improvement Scheme and Report have been prepared to provide land use and development controls over the scheme area.	On advertising until 26 June 2020.	Not applicable.
Ocean Reef Marina Concept Plan	The Concept Plan has been developed by the City of Joondalup to deliver key community benefits including a publicly accessible beach, public open space, boat pens, boat ramp and trailer parking infrastructure, public promenade along the waterfront, and publicly accessible breakwaters.		Consistent

Officer Comments

The proposal has been assessed against legislative requirements of relevant State Planning Policies, the MRS and local planning guidance as outlined in Table 2 of this report.

The following matters have been identified as key considerations for the determination of this application:

Development Footprint and Breakwater Design

The alignment of the breakwaters has been modified recently as opposed to the alignment indicated on the MRS, due to a redesign of the entrance supported by extensive modelling. Additionally the internal layout and design of the marina has been modified (achieving a better design) and is supported by a Section 45C approval granted by the EPA on 6 January 2020.

The DoT Maritime Business Unit has been involved in the ORM Development since its inception, advising on the engineering aspects and coastal management of the site. As the statutory authority responsible for the construction of harbours in Western Australia under the *Marine and Harbours Act 1981*, the DoT has a role to ensure that the breakwaters are designed and constructed in accordance with the relevant standards and to assist with this, a detailed design report is required prior to construction to ensure appropriate design (shape and form) of the breakwaters. This requirement is recommended to form a condition of approval.

Movement Network

The traffic and movement impacts have been assessed through the Breakwater Transport Assessment, submitted with the development proposal. The Assessment outlines traffic movements during the construction phase of the breakwaters and how public access to the existing boat ramp and club facilities can be provided.

The following key points arose from the Breakwater Transport Assessment:

- Public access to the boat harbour is to remain during the breakwaters construction, with a level of diversion required for the north-south principal shared path
- During construction, it is anticipated that up to 150 construction material deliveries per day (300 total trips) will be undertaken, and up to 10 staff will be on-site at any given time, (30 trips per day) which equates to approximately 330 external trips per day.

The traffic surveys identify that Boat Harbour Quays currently carries up to 1,500 vehicles per day; Ocean Reef Road currently carrying between 5,000 and 8,000 vehicles per day in the vicinity of the site, and Hodges Drive currently carrying 8,400 vehicles per day west of Marmion Avenue. As such, it is considered that the surrounding road network has the capacity to accommodate a further 330 vehicle trips per day.

It is noted that swept path diagrams included within the Assessment shows B-Double vehicles mounting the kerb within roundabouts at the Ocean Reef Road / Resolute

Way and Ocean Reef Road/ Hodges Drive intersections. This issue was raised with the applicant and a new swept path analysis has been provided and supported. Additional measures to be undertaken during the construction phase for traffic movement can be addressed through a Construction Management Plan which forms a recommended condition of approval.

Vegetation Clearing

The proposed breakwaters will require clearing of existing vegetation to provide access to the northern breakwaters and the stockpile area (**see Attachment 2**). The area to be cleared was excised from Bush Forever through the MRS amendment process.

The clearing required as part of the proposed breakwaters will be subject to a native vegetation permit under Section 51C of the EP Act, unless a valid exemption applies to some of the area proposed to be cleared.

The clearing permit for the purpose of this application would be prepared and processed in a similar manner to those prepared for other project works, including the early works for the ORM Development.

Construction Phase

The northern and southern breakwaters are to be constructed concurrently, with the coordination of construction being guided by the Staging Plan (**see Attachment 5**) of the ORM Development.

Prior to the commencement of the construction works the applicant is to prepare a comprehensive Construction Management Plan in consultation with City of Joondalup. This will require the contractor to adopt measures for noise and dust management, protection of adjacent vegetation and communication with surrounding residents. This is reflected in the relevant condition of approval.

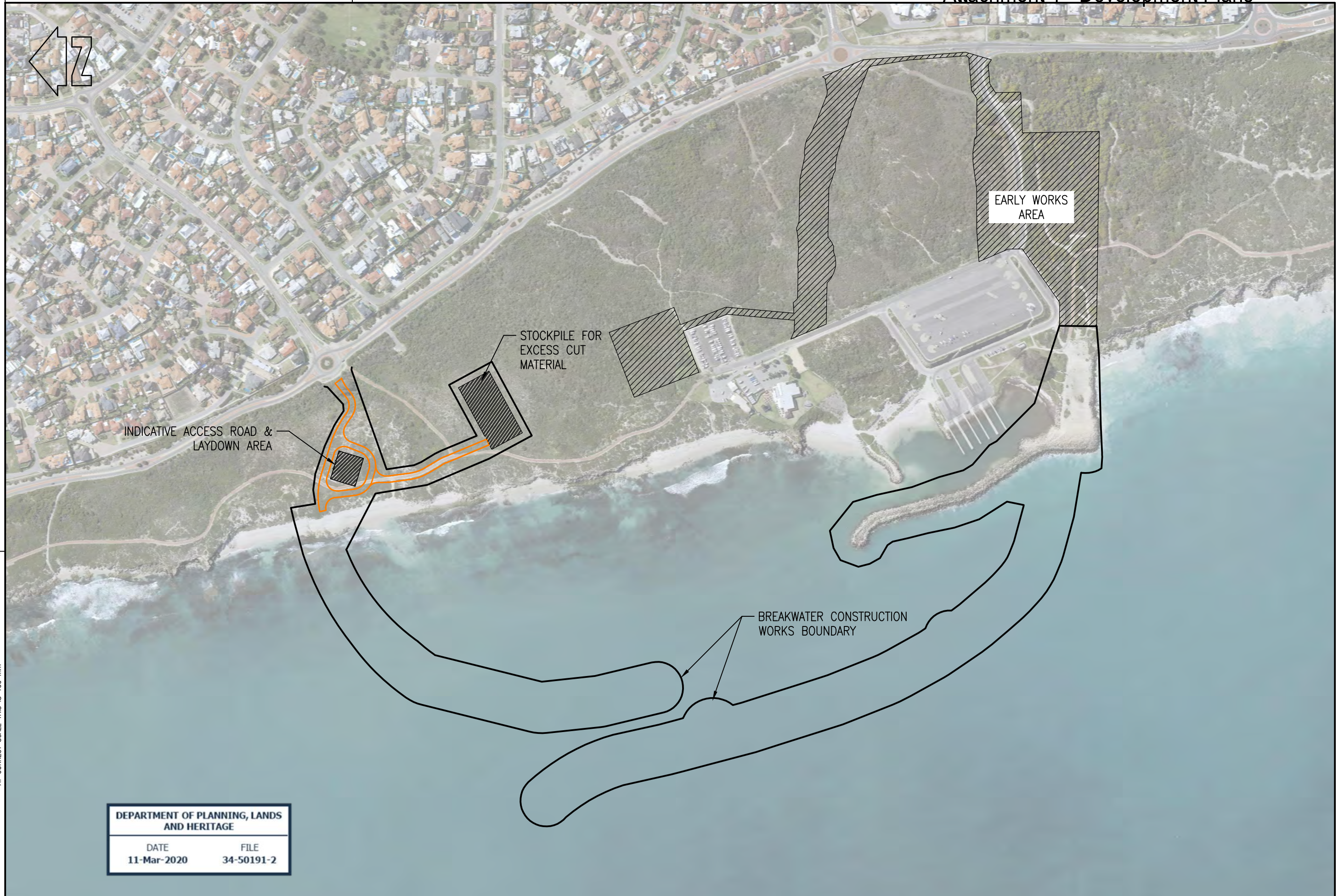
Conclusion:

The proposal which comprises stage 2 of the ORM Development is considered to generally accord with the reservation of the land under the MRS, addresses the amenity for which it is located, and is consistent with the orderly and proper planning of the locality.

All planning considerations have been assessed and appropriate management measures can be implemented through the imposition of appropriate conditions and advice. Accordingly, conditional approval is recommended.

AT CORRECT SCALE THIS IS 100 mm

AT CORRECT SCALE THIS IS 100 mm



m p rogers & associates pl
coastal and port engineers

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Osborne Park 6017 t: +61 8 9254 6600
Western Australia admin@coastsandports.com.au

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BREAKWATER CONSTRUCTION WORKS BOUNDARY
OCEAN REEF MARINA

SCALE
AT A3 1:5000

FEBRUARY 2020
SK1657-06C



DEPARTMENT OF PLANNING, LANDS AND HERITAGE	
DATE 11-Mar-2020	FILE 34-50191-2

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coastal and port engineers

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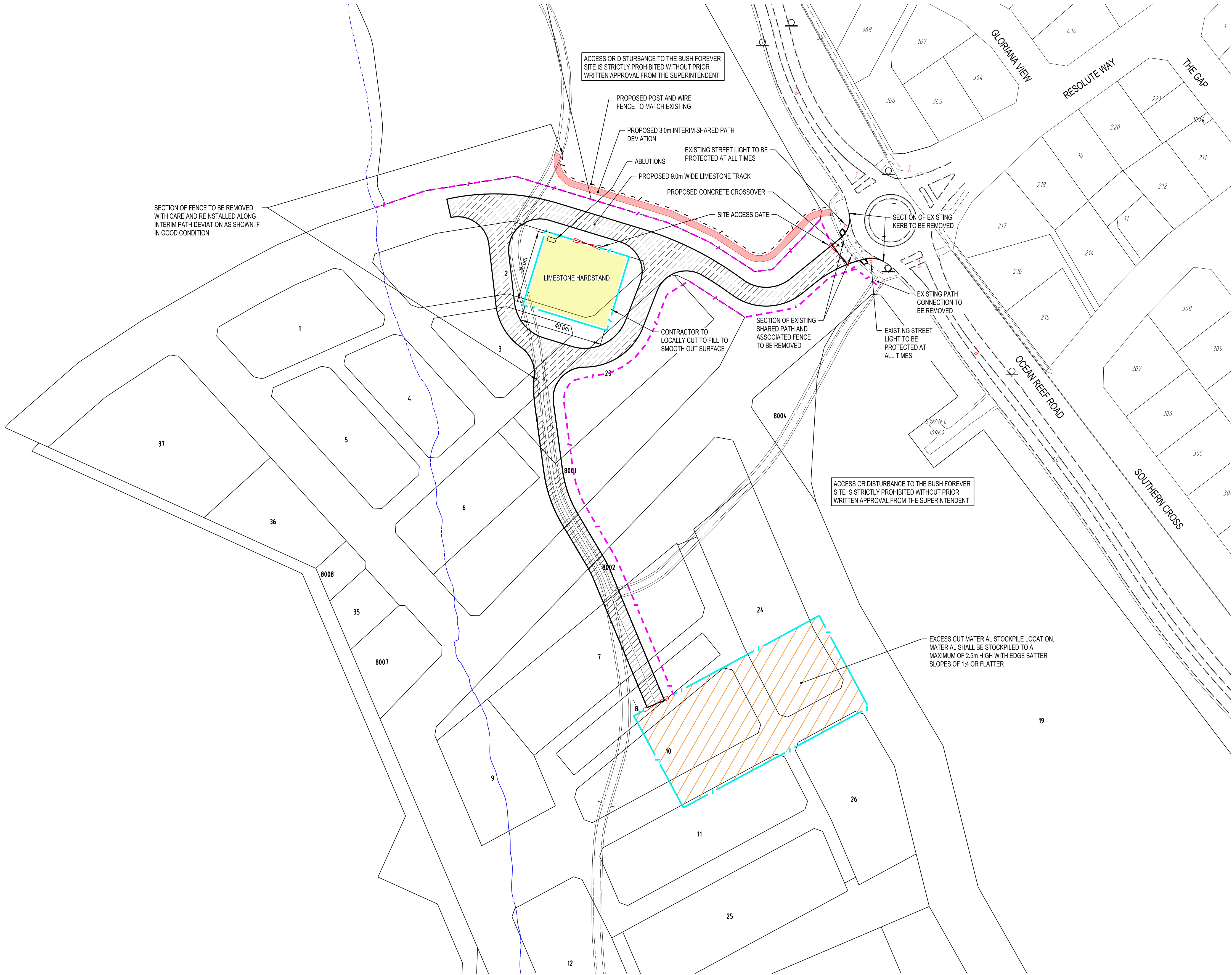
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DRAFT PEN & BREAKWATER LAYOUT
OCEAN REEF MARINA

SCALE
AT A3 1:4000

JANUARY 2020
SK1657-07B

DEPARTMENT OF PLANNING, LANDS AND HERITAGE	
DATE	FILE
11-Mar-2020	34-50191-2



- NOTES
1. GENERAL
- 1.1. THIS DRAWING SHALL BE READ IN CONJUNCTION WITH ALL 35865 DRAWINGS AND THE SPECIFICATION.
2. CLEARING
- 2.1. NO VEGETATION TO BE CLEARED FROM THE BUSH FOREVER SITES UNO.
3. CONSTRUCTION WATER
- 3.1. THE CONTRACTOR SHALL OBTAIN CONSTRUCTION WATER FROM THEIR OWN SOURCES.
4. EXISTING SERVICES
- 4.1. THE CONTRACTOR SHALL OBTAIN DIAL BEFORE YOU DIG INFORMATION PRIOR TO COMMENCEMENT OF ANY WORKS ON SITE.
- 4.2. THE CONTRACTOR SHALL ACCURATELY LOCATE ANY EXISTING SERVICE THAT MAY POTENTIALLY INHIBIT THE PROPOSED WORKS WITHIN A MAXIMUM OF TWO WEEKS AFTER THE DATE OF POSSESSION OF SITE TO AVOID IMPACTING THE PROGRAM.
- 4.3. THE CONTRACTOR SHALL NOTIFY THE SUPERINTENDENT IMMEDIATELY SHOULD ANY EXISTING SERVICE PREVENT OR INHIBIT THE PROPOSED WORKS AND AWAIT FURTHER INSTRUCTION PRIOR TO PROCEEDING, UNLESS NOTED OTHERWISE.
- 4.4. THE RELEVANT AUTHORITY STANDARDS SHALL BE ADHERED TO AND CAUTION SHALL BE EXERCISED DURING WORKS IN THE VICINITY OF LIVE AUTHORITY SERVICES.
5. DUST CONTROL & STABILISATION DURING THE CONTRACT PERIOD
- 5.1. THE CONTRACTOR SHALL ALLOW FOR DUST CONTROL MEASURES IN ACCORDANCE WITH THE SPECIFICATION.
- 5.2. THE CONTRACTOR SHALL STABILISE EXPOSED AREAS WITH DUSTEX (OR SIMILAR APPROVED) AT THE COMPLETION OF EACH WORK WEEK. APPLICATION RATES SHALL BE IN ACCORDANCE WITH THE MANUFACTURER'S RECOMMENDATIONS.
- 5.3. STOCKPILES CAPABLE OF GENERATING DUST SHALL BE KEPT TO A MAXIMUM OF 1.5m HEIGHT, UNLESS ADDITIONAL STABILISATION IS APPROVED BY THE SUPERINTENDENT AND IMPLEMENTED.
- 5.4. DUST FENCING SHALL BE ERRECTED AND MAINTAINED AROUND THE PERIMETER OF THE SITE FOR THE DURATION OF WORKS OR UNTIL FINAL STABILISATION OCCURS, WHICHEVER OCCURS LATER.
- 5.5. THE CONTRACTOR SHALL SUBMIT A DUST MANAGEMENT PLAN TO THE LOCAL AUTHORITY AND GAIN APPROVAL PRIOR TO COMMENCEMENT OF GROUND DISTURBING ACTIVITIES. THE CONTRACTOR SHALL PAY ALL FEES ASSOCIATED WITH SUBMISSION OF THE DUST MANAGEMENT PLAN.
6. FINAL STABILISATION
- 6.1. THE FINISHED SURFACE, INCLUDING ANY AREAS OUTSIDE OF THE SITE AREA EXPOSED BY THE CONTRACTOR DURING THE WORKS, SHALL BE STABILISED BY APPLICATION OF SEEDED AND DYED HYDROMULCH AS SPECIFIED.

- LEGEND
- PROPOSED GATE
- PROPOSED 1.8m HIGH CHAINMESH SITE COMPOUND FENCING
- PROPOSED 1.8m HIGH TEMPORARY SITE FENCING
- PROPOSED 150 LIMESTONE HARDSTAND
- PROPOSED 3m RED AC SHARED PATH INTERIM DEVIATION
- EXISTING 3m RED AC SHARED PATH
- PROPOSED PRAM RAMP
- EXISTING EDGE OF WATER
- PROPOSED POST AND WIRE FENCE (TO MATCH EXISTING)
- EXISTING STREET LIGHT
- EXISTING FENCE
- STOCKPILE AREAS

PLAN
SCALE 1:1000

B	STOCKPILE LOCATION ADDED, LIMESTONE TRACK AND FENCING AMENDED ACCORDINGLY	LDB	LDB	JF	J.FABLING	31-01-2020
A	ORIGINAL ISSUE	LDB	LDB	JF	J.FABLING	21-01-2020
REV	DESCRIPTION	DRW	DGN	VER	APPROVED	DATE



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WAPC No.	COORDINATES	DATUM

CLIENT	DevelopmentWA
PROJECT	OCEAN REEF MARINA - BREAKWATER
TITLE	SITWORKS PLAN

 WOOD & GRIEVE ENGINEERS NOW PART OF Stantec	DEVELOPMENT APPLICATION		
	35865	CI-060-SI-P3	B
	PROJECT No.	DRAWING No.	REVISION



OCEAN REEF MARINA BREAKWATERS

DRAWING No.	TITLE
D1657-01-01	DRAWING LIST & LOCALITY PLAN
D1657-02-01	EXISTING FEATURES & SITE PLAN
D1657-03-01	LAYOUT
D1567-04-01	TYPICAL SECTIONS - SHEET 1 OF 3
D1657-04-02	TYPICAL SECTIONS - SHEET 2 OF 3
D1657-04-03	TYPICAL SECTIONS - SHEET 3 OF 3
D1657-04-04	DETAILS

GENERAL NOTES:

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE TECHNICAL SPECIFICATION. ANY DISCREPANCIES ARE TO BE REFERRED TO THE SUPERINTENDENT BEFORE PROCEEDING.
2. HYDROGRAPHIC SURVEY PROVIDED BY DEPARTMENT OF TRANSPORT (DOT), COMPLETED IN FEBRUARY 2019. THE LEVELS AND CONTOURS REFLECTS THE SURFACE AT THE TIME OF SURVEY ONLY.
3. HORIZONTAL DATUM IS PERTH COASTAL GRID 1994 (PCG94), VERTICAL DATUM IS AUSTRALIAN HEIGHT DATUM (AHD).
4. THE CONTRACTOR SHALL CONFIRM THE LOCATION OF & PROTECT ANY SERVICES IN THE WORKS AREA. CONTACT DIAL BEFORE YOU DIG ON 1100.
5. SET OUT COORDINATES AND DIMENSIONS ARE TO BE CONFIRMED ON SITE PRIOR TO WORKS COMMENCING. REFER ANY DISCREPANCY TO THE SUPERINTENDENT. IF IN DOUBT ASK.
6. AERIAL PHOTOGRAPH PROVIDED BY CITY OF JOONDALUP, TAKEN IN AUGUST 2019.
7. DISTANCES, DIMENSIONS AND LEVELS SHOWN IN METRES, UNLESS NOTED OTHERWISE.
8. SITE ACCESS AND LAYDOWN AREAS TO BE CONFIRMED WITH SUPERINTENDENT PRIOR TO WORKS.
9. ON COMPLETION OF THE WORKS A SET OF MARKED UP AND SIGNED "AS CONSTRUCTED" DRAWINGS SHALL BE FORWARDED TO THE SUPERINTENDENT.

0.63 mAHd	HAT	1.40 mCD
0.38 mAHd	MHHW	1.15 mCD
0.04 mAHd	MSL	0.81 mCD
-0.30 mAHd	MLLW	0.47 mCD
-0.51 mAHd	LAT	0.26 mCD
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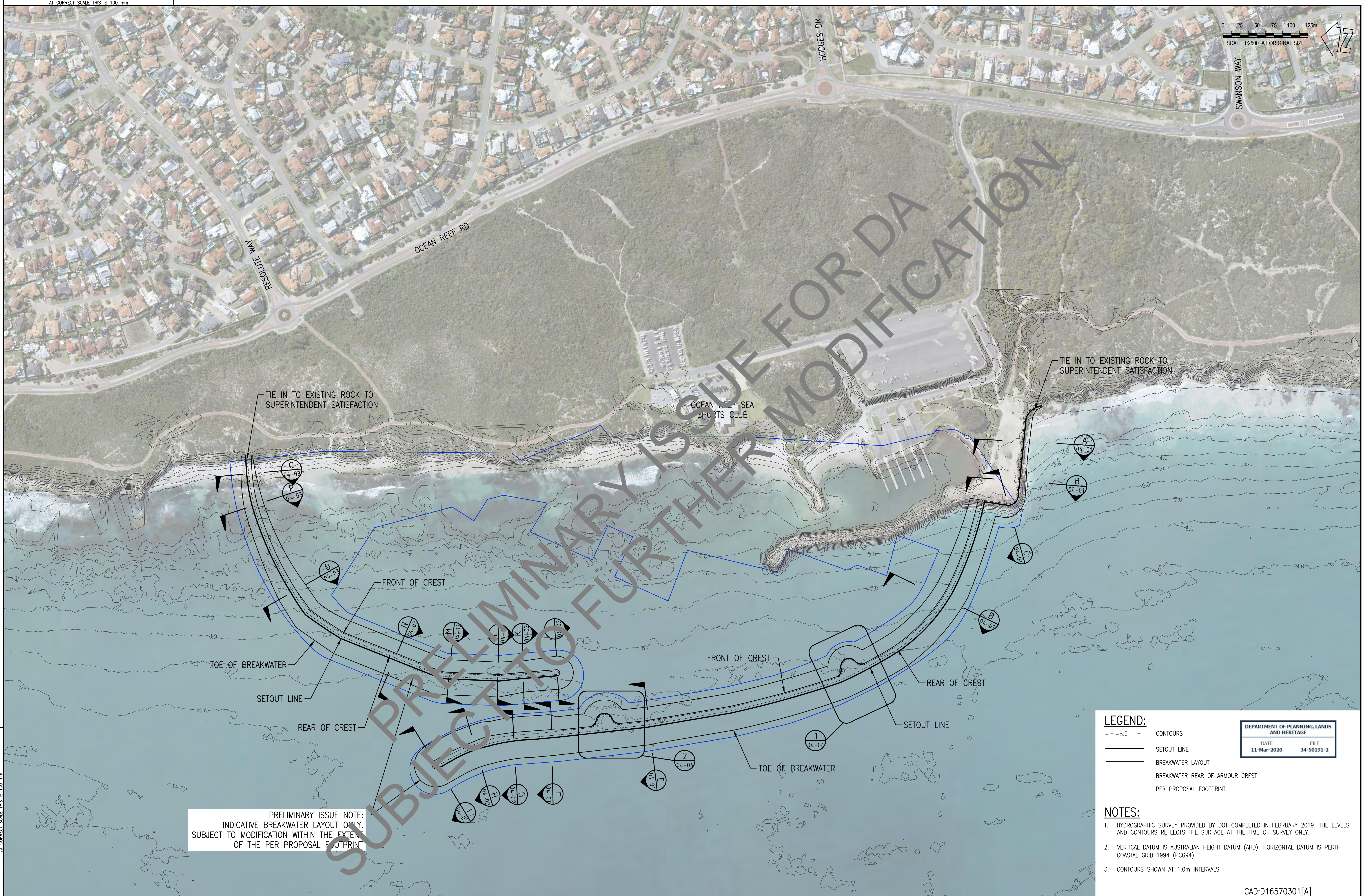


LOCALITY PLAN
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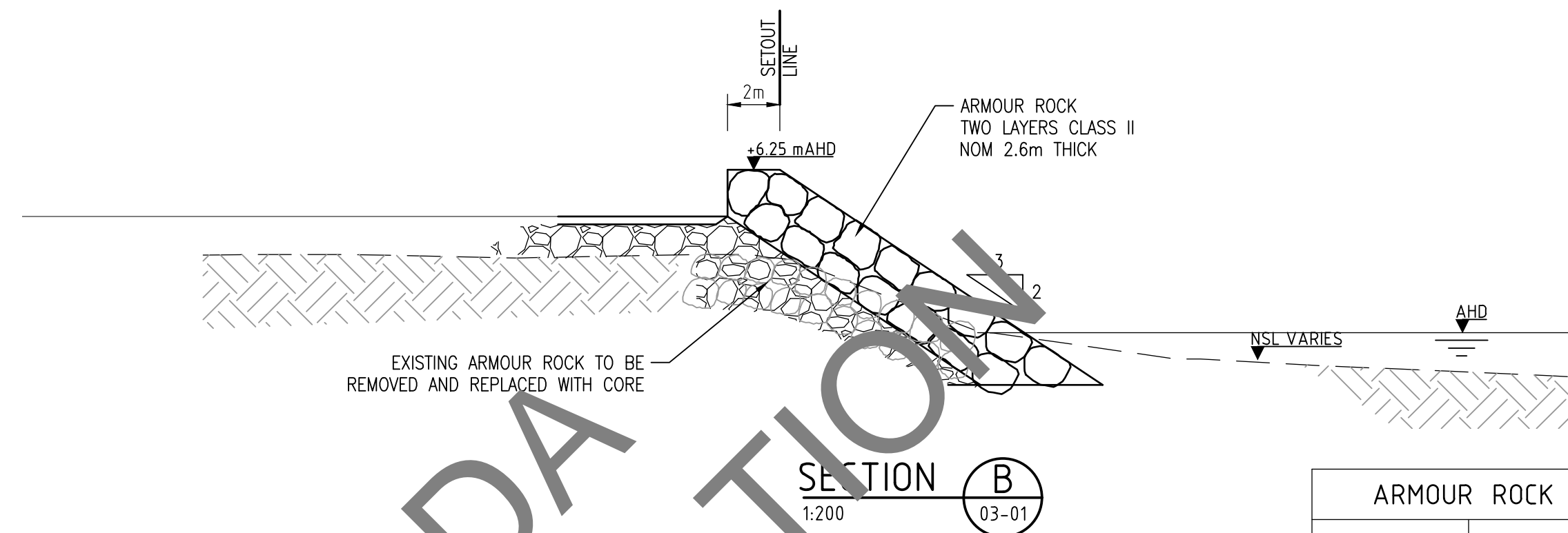
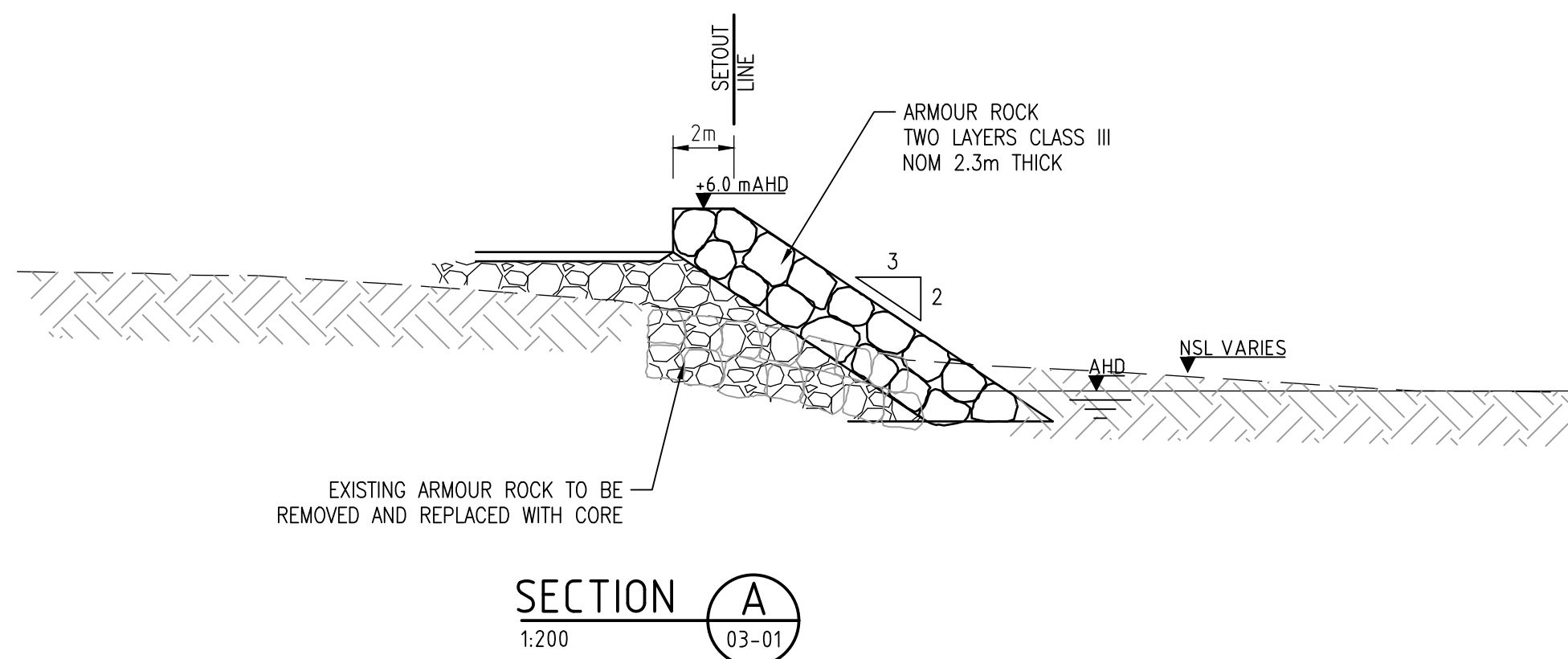
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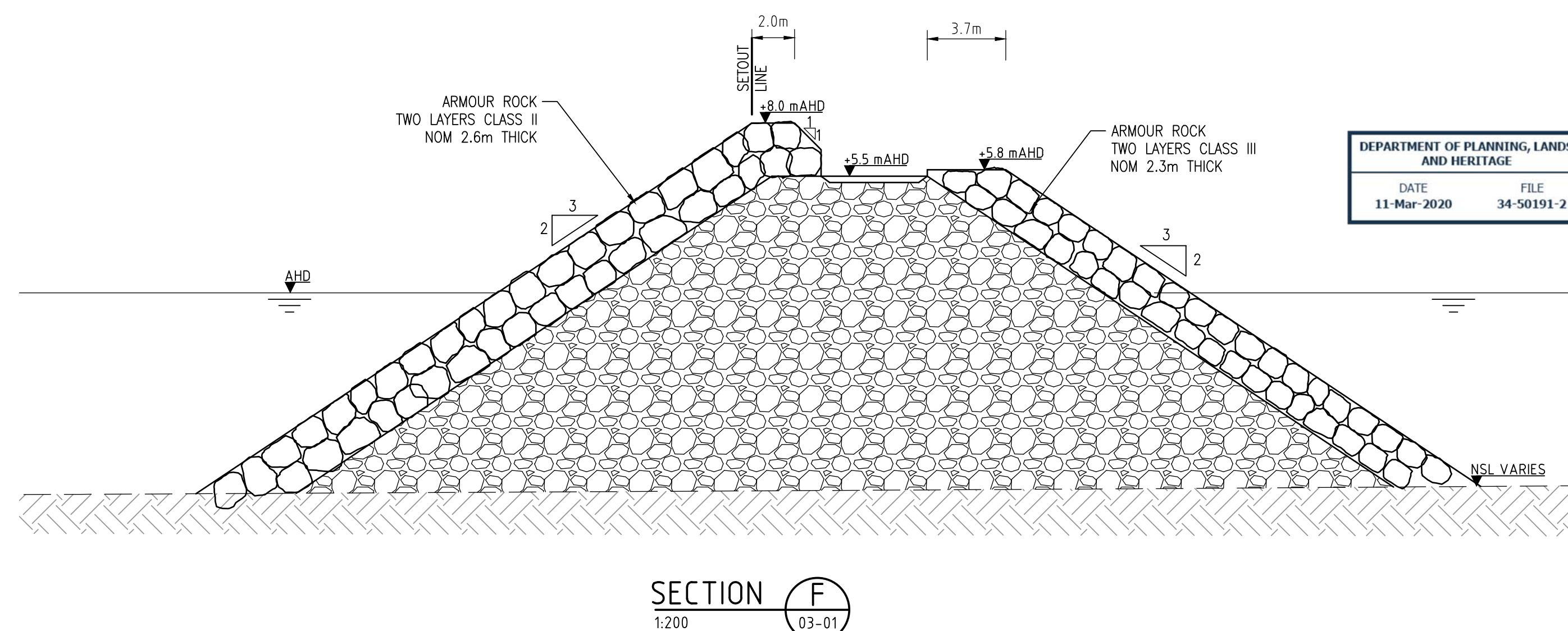
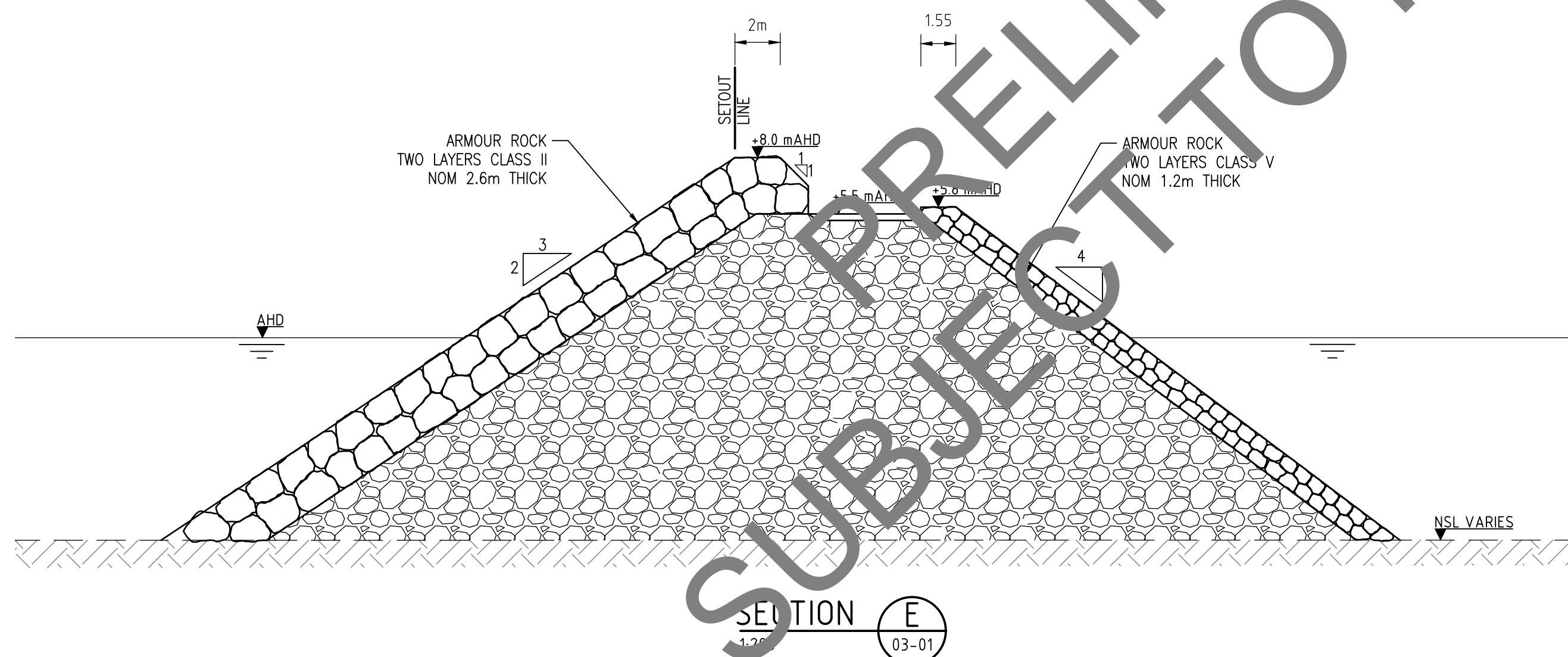
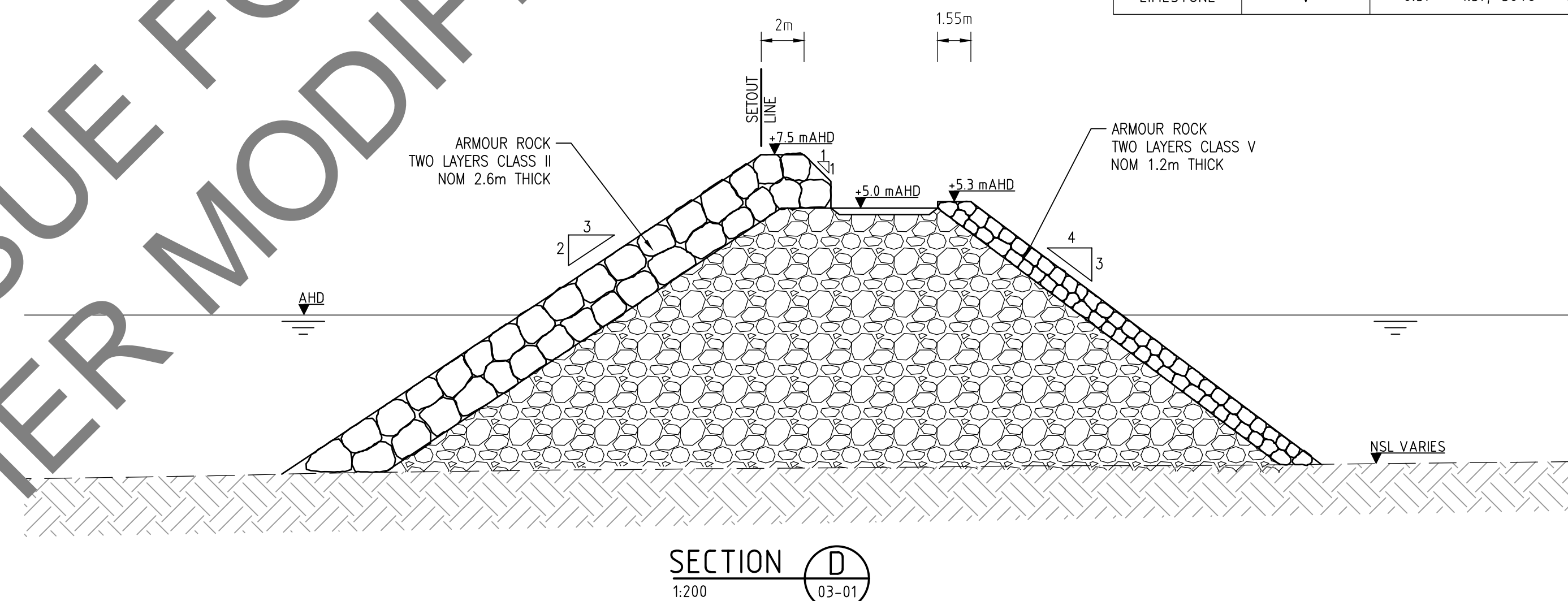
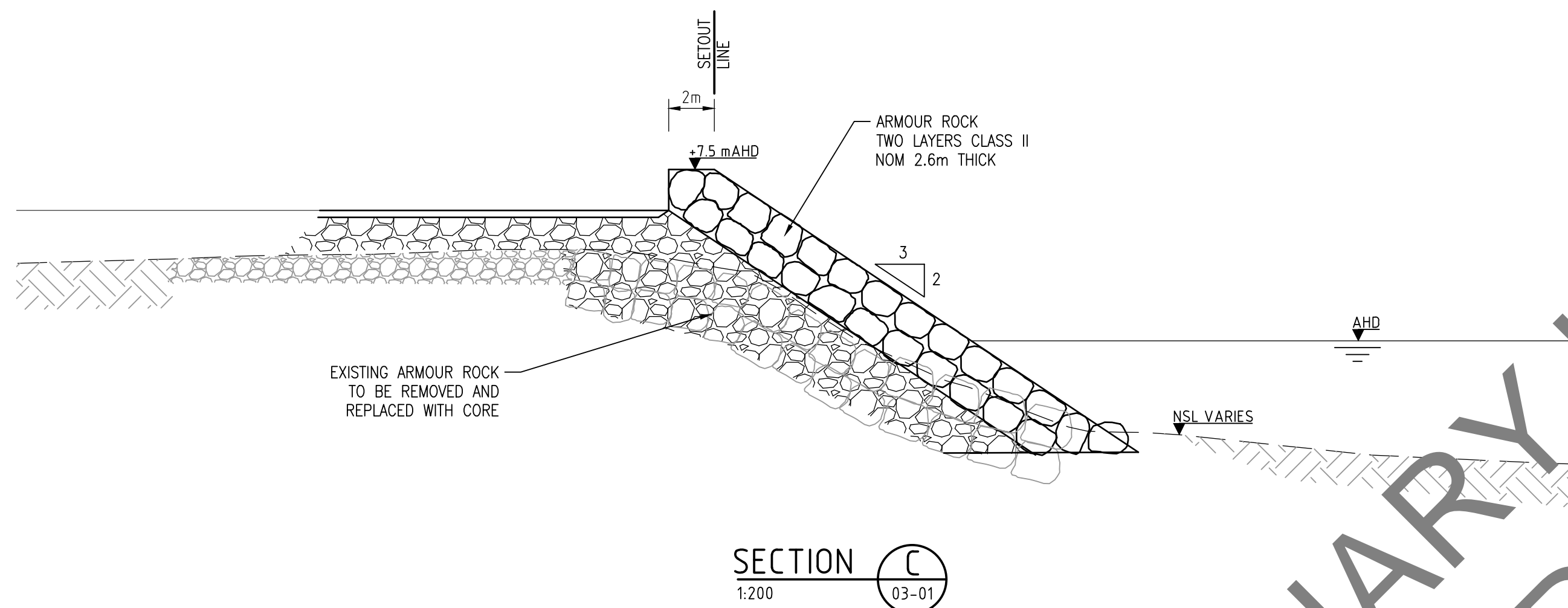
								COPYRIGHT		This plan is not to be used for construction unless issued as Rev 0 and signed below		CLIENT		m p rogers & associates pl coastal and port engineers		PROJECT OCEAN REEF MARINA BREAKWATERS	
								The concepts and information contained in this document are the Copyright of m p rogers & associates. Use or copying of the document in whole or part without the written permission of m p rogers & associates constitutes an infringement of copyright.				DESIGNED L DE LUCIA		CHECKED C DOAK		TITLE DRAWING LIST & LOCALITY PLAN	
												DRAWN R BORJA		CHECKED C DOAK		APPROVED	
												Suite 1, 128 Main Street Osborne Park 6017 Western Australia		t: +61 8 9254 6600 f: +61 8 9254 6699 admin@coastsandports.com.au		SCALE AT A1 AS SHOWN	
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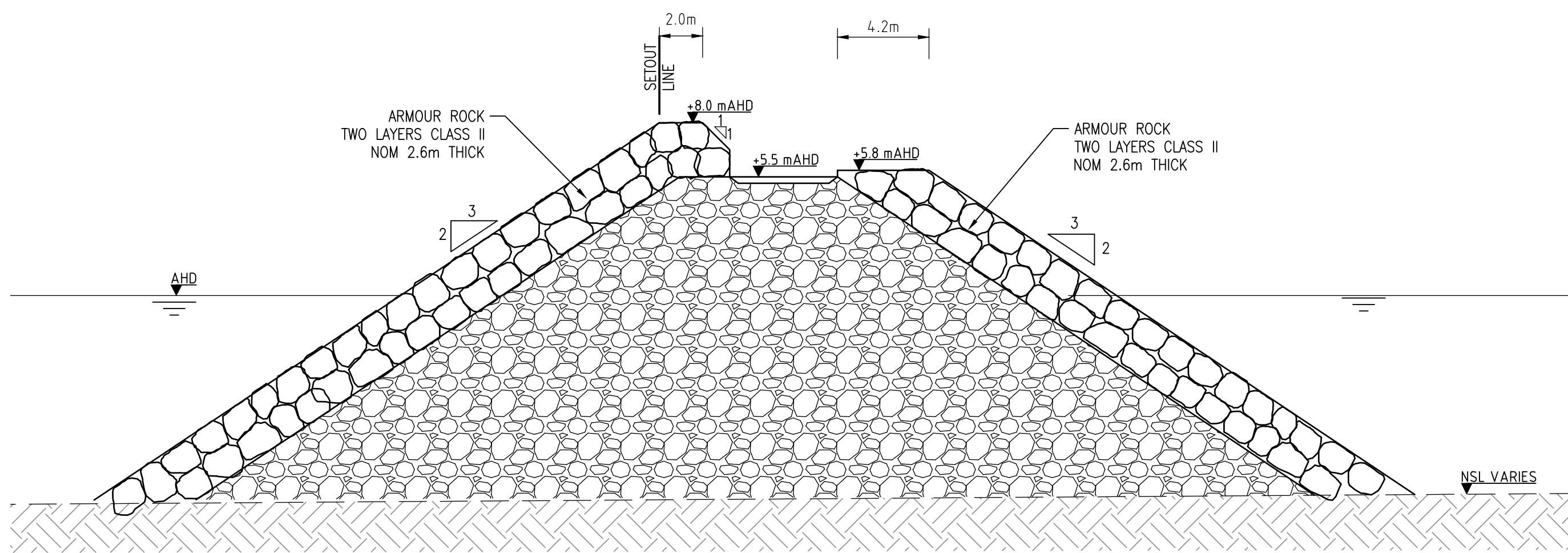
ARMOUR ROCK GRADING REQUIREMENTS		
MATERIAL	CLASS	GRADING
GRANITE	I	6.0t - 10.0t, 50% > 8.0t
GRANITE	II	4.0t - 8.0t, 50% > 6.0t
GRANITE	III	2.0t - 6.0t, 50% > 4.0t
GRANITE	IV	1.0t - 3.0t, 50% > 2.0t
LIMESTONE	V	0.5t - 1.5t, 50% > 0.8t



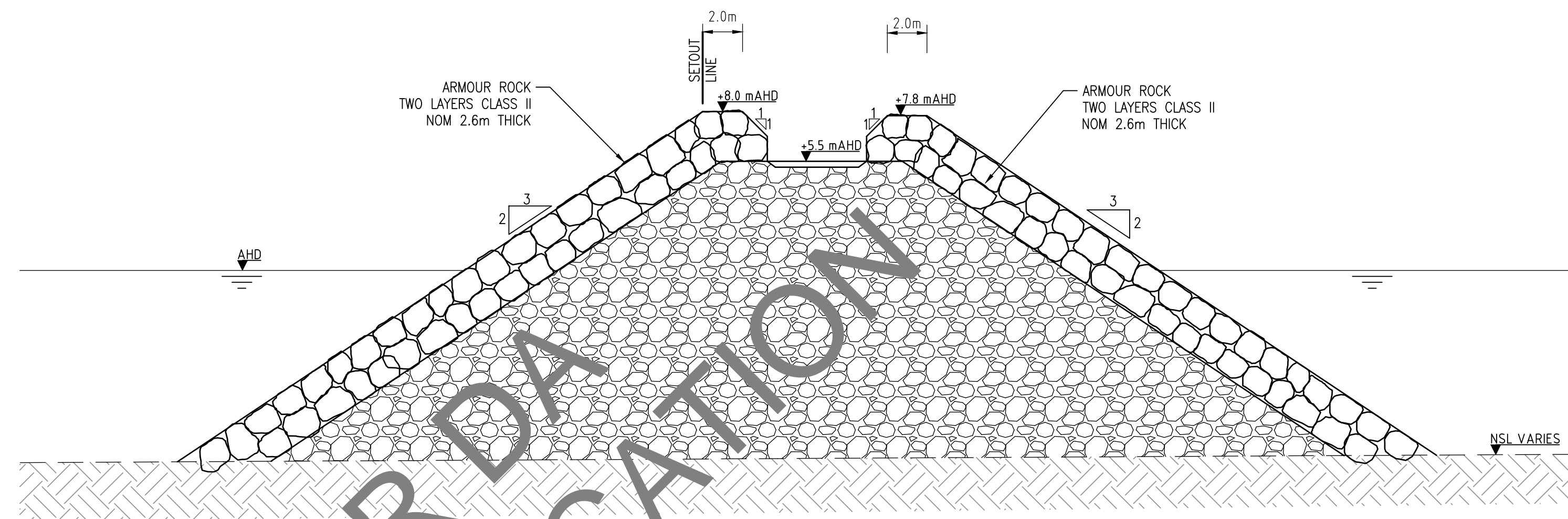
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DATE	FILE	
11-Mar-2020	34-50191-2	

CAD:D16570401[A]

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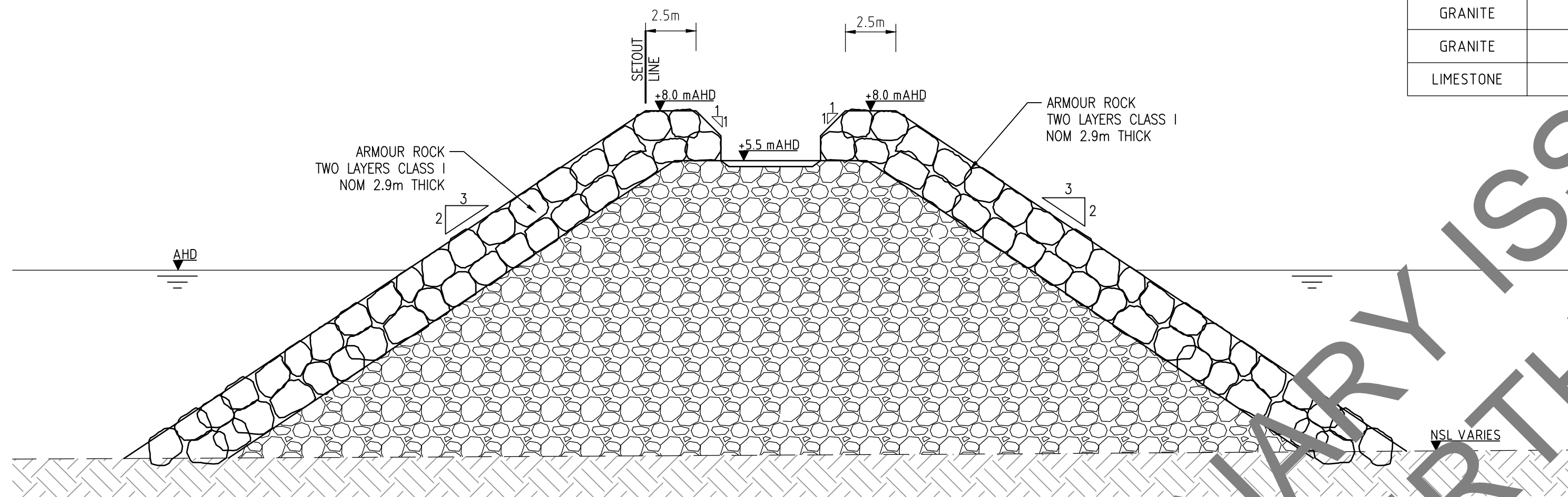


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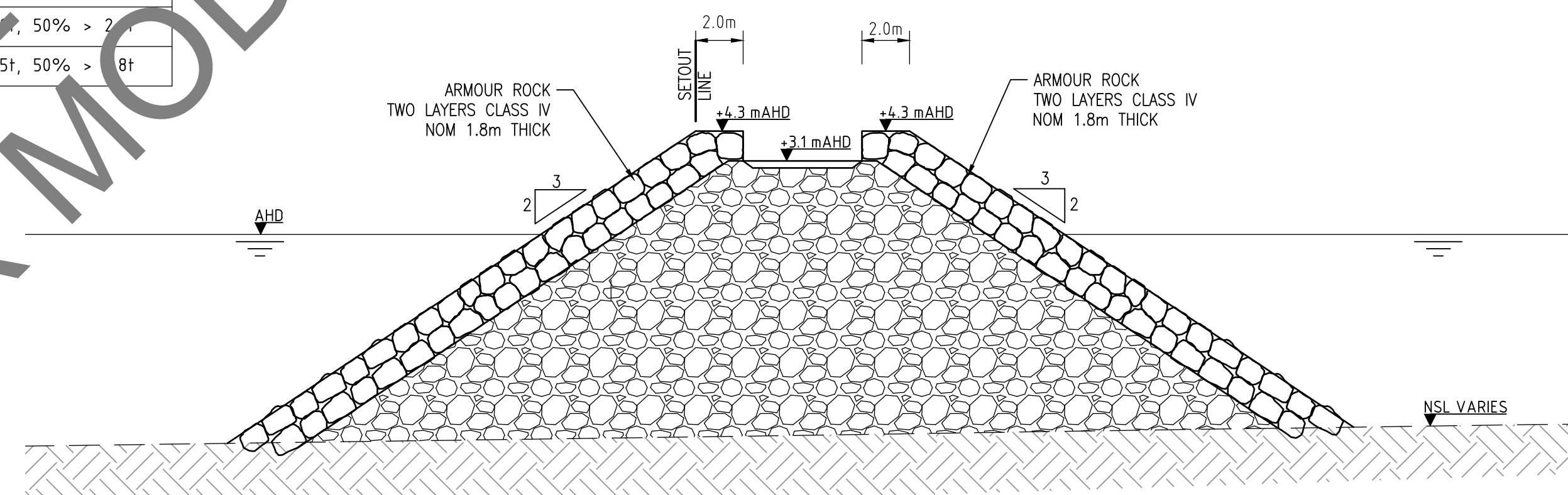


SECTION H
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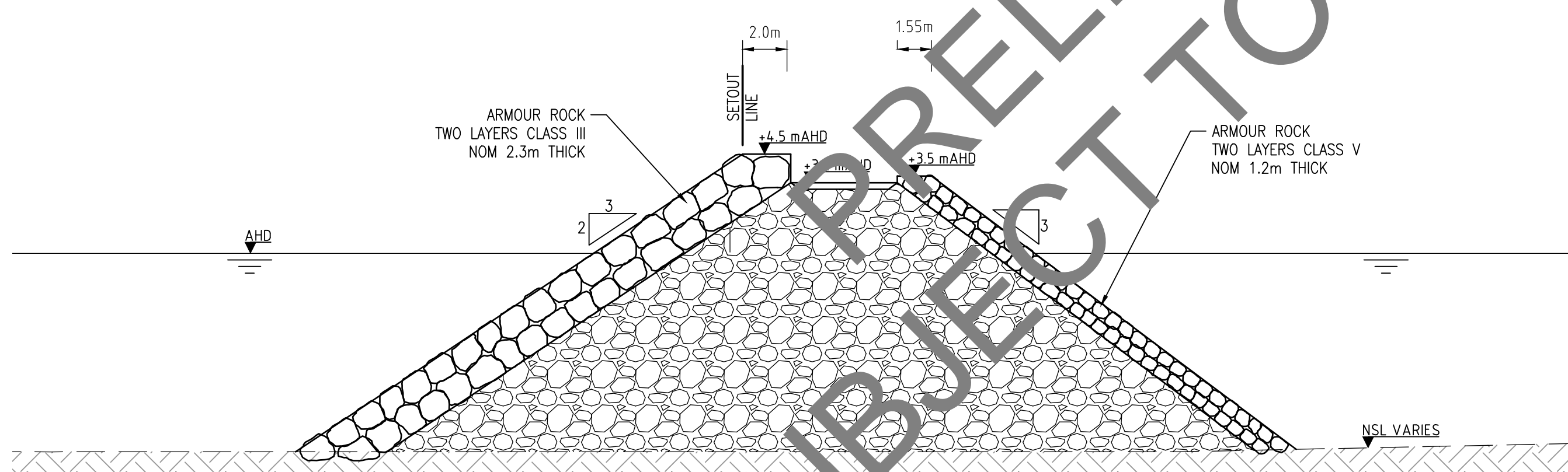
ARMOUR ROCK GRADING REQUIREMENTS		
MATERIAL	CLASS	GRADING
GRANITE	I	6.0t - 10.0t, 50% > 8.0t
GRANITE	II	4.0t - 8.0t, 50% > 6.0t
GRANITE	III	2.0t - 6.0t, 50% > 4.0t
GRANITE	IV	1.0t - 3.0t, 50% > 2.0t
LIMESTONE	V	0.5t - 1.5t, 50% > 0.8t



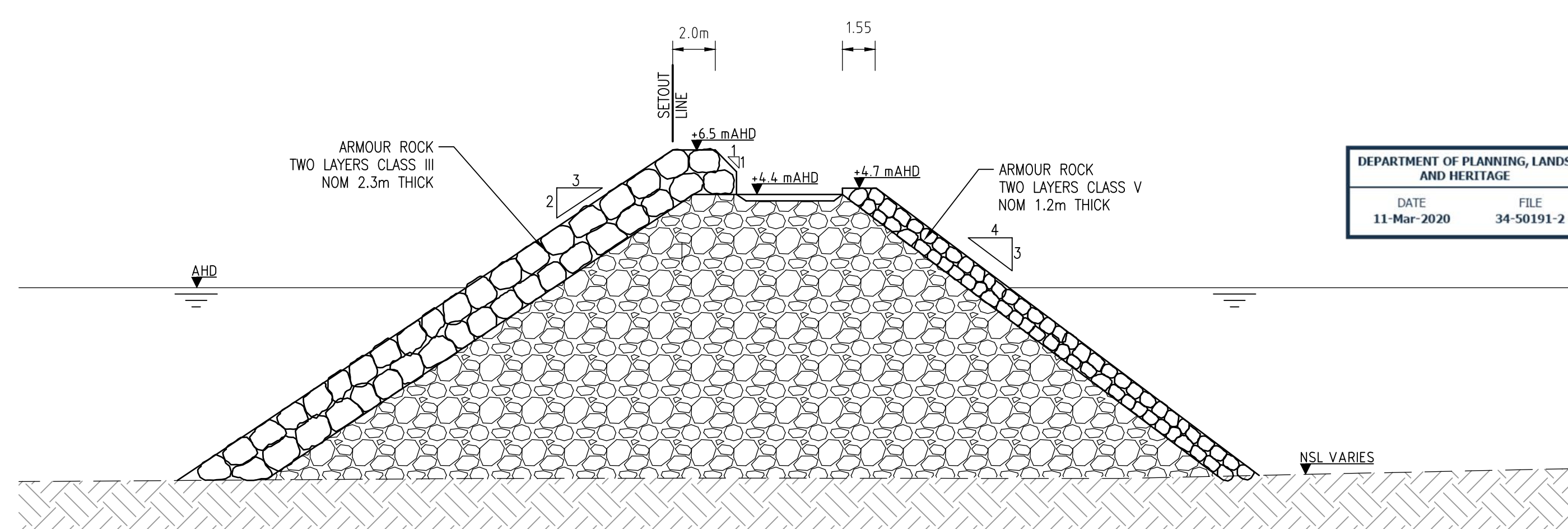
SECTION I
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03-01



SECTION J
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03-01



SECTION K
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03-01



SECTION L
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03-01

DEPARTMENT OF PLANNING, LANDS AND HERITAGE
DATE 11-Mar-2020 FILE 34-50191-2

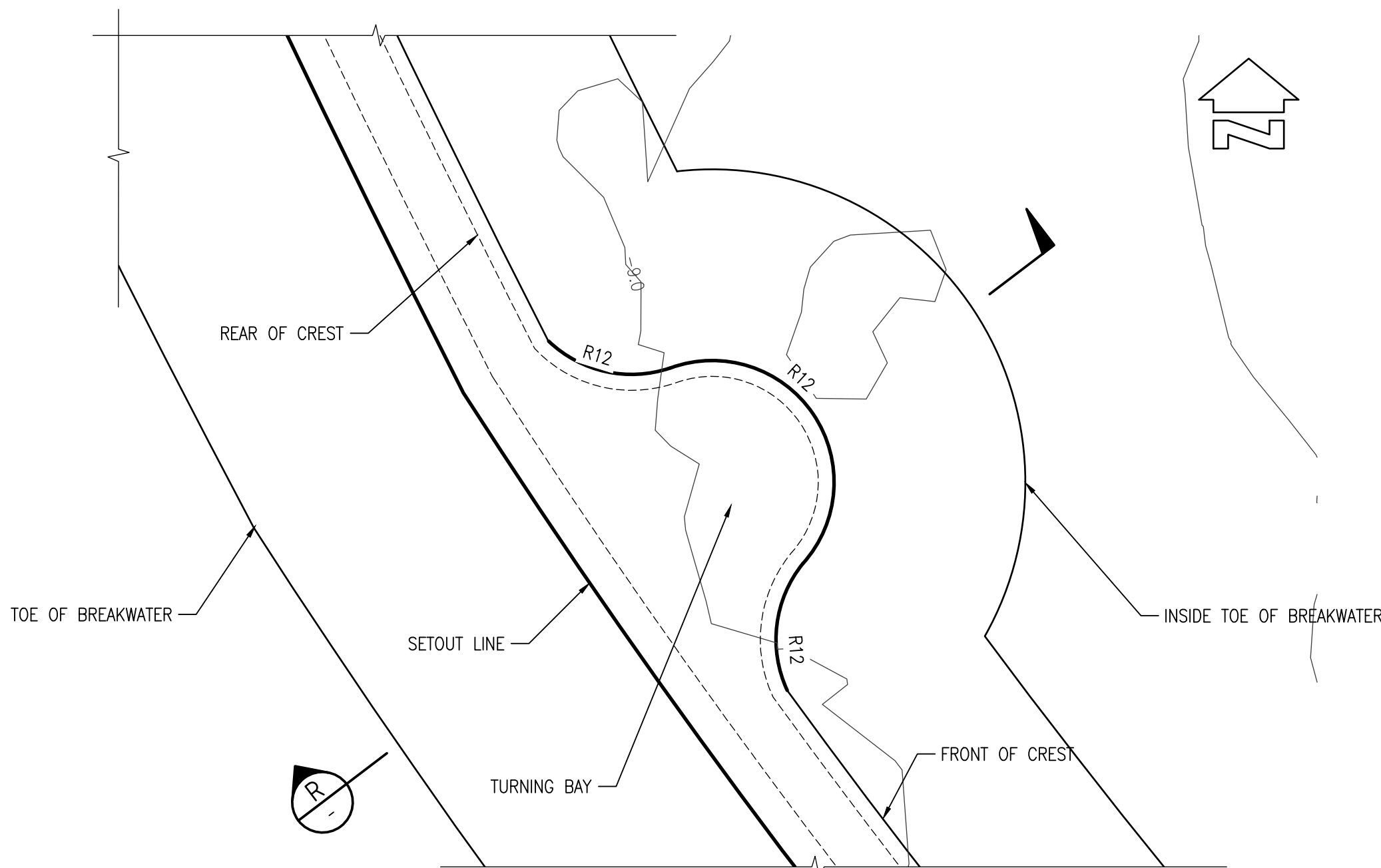
CAD:D16570402[A]

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								m p rogers & associates pl coastal and port engineers				DRAWING NUMBER			
								Suite 1, 128 Main Street Osborne Park 6017 Western Australia				D1657-04-02			
								t: +61 8 9254 6600 f: +61 8 9254 6699 admin@coastsandports.com.au				REV			
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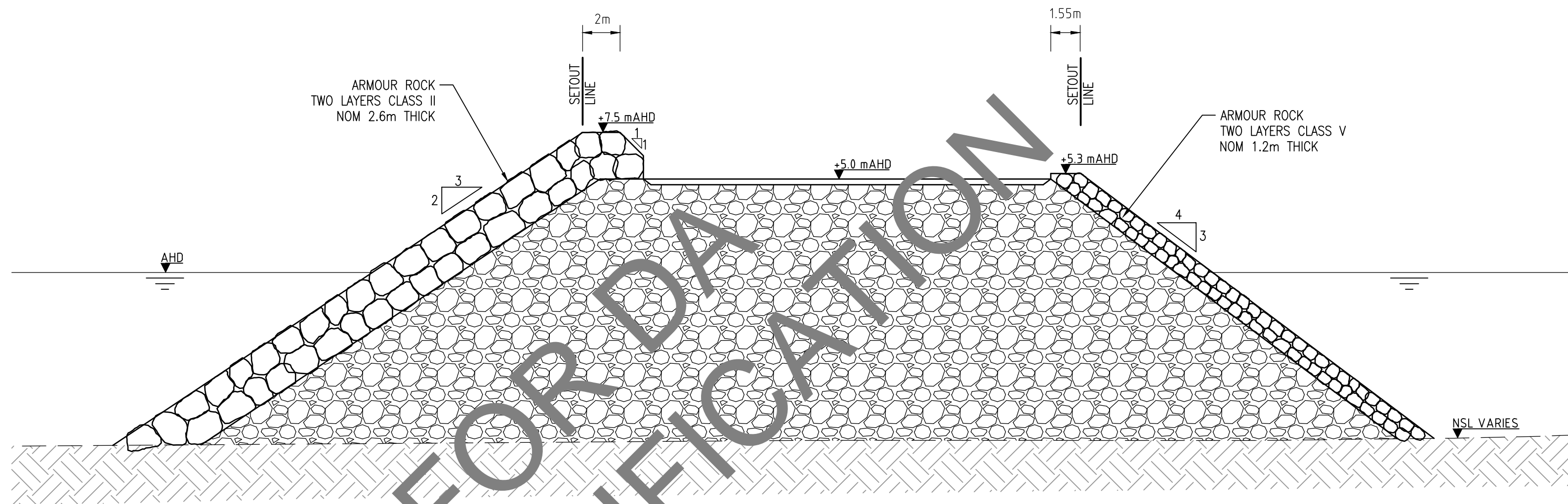


DEPARTMENT OF PLANNING, LANDS AND HERITAGE	
DATE 11-Mar-2020	FILE 34-50191-2

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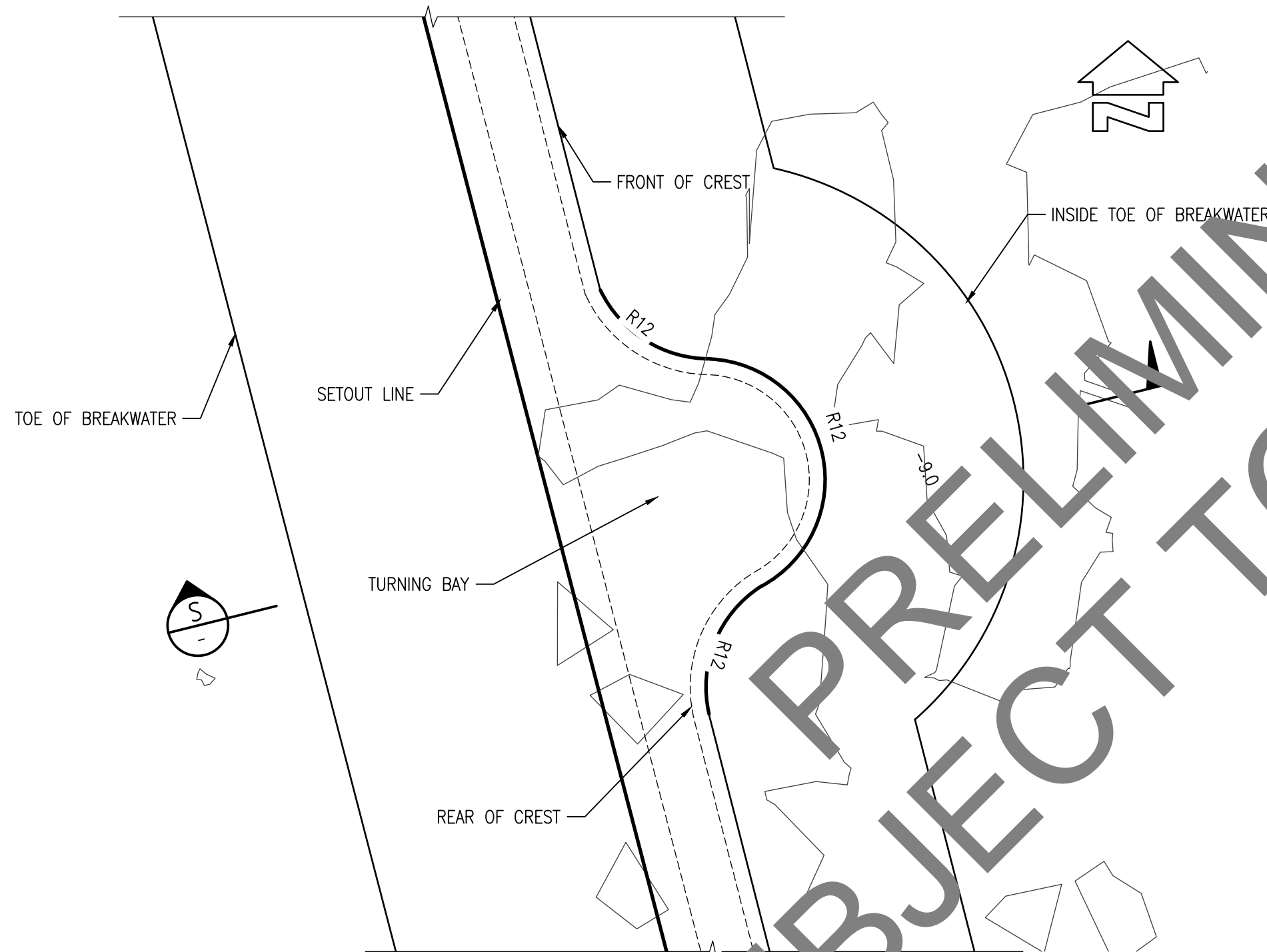


DETAIL 1
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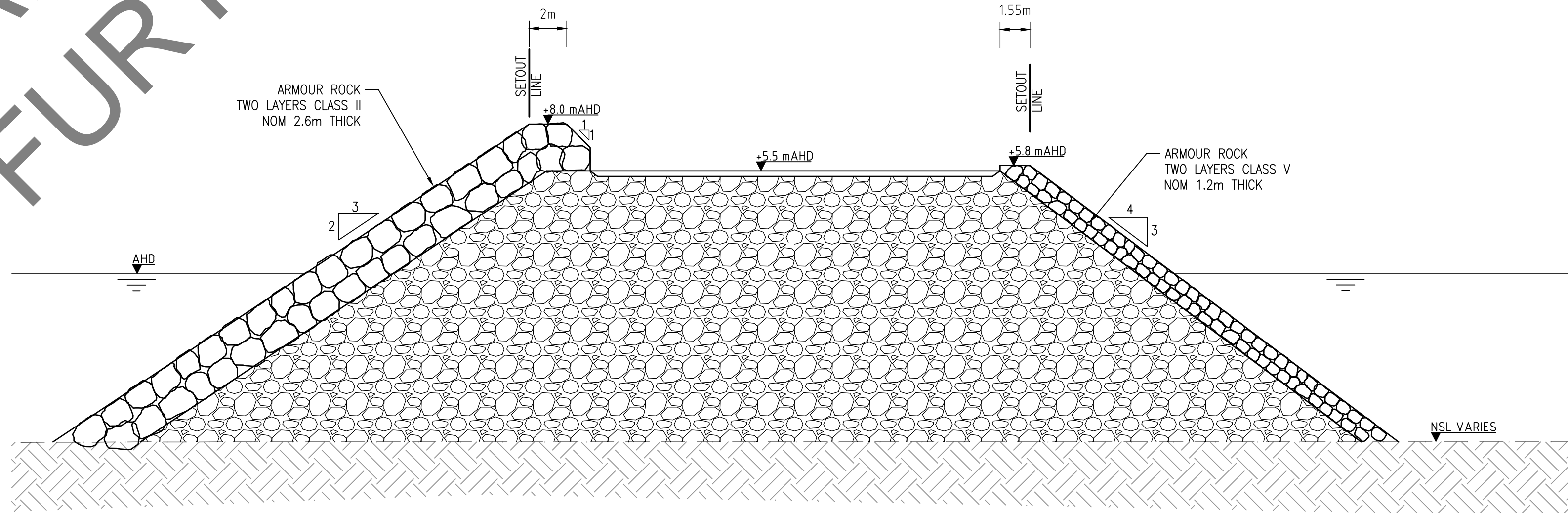


SECTION R
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ARMOUR ROCK GRADING REQUIREMENTS		
MATERIAL	CLASS	GRADING
GRANITE	I	6.0t - 10.0t, 50% > 8.0t
GRANITE	II	4.0t - 8.0t, 50% > 6.0t
GRANITE	III	2.0t - 6.0t, 50% > 4.0t
GRANITE	IV	1.0t - 3.0t, 50% > 2.0t
LIMESTONE	V	0.5t - 1.5t, 50% > 0.8t



DETAIL 2
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DEPARTMENT OF PLANNING, LANDS AND HERITAGE	
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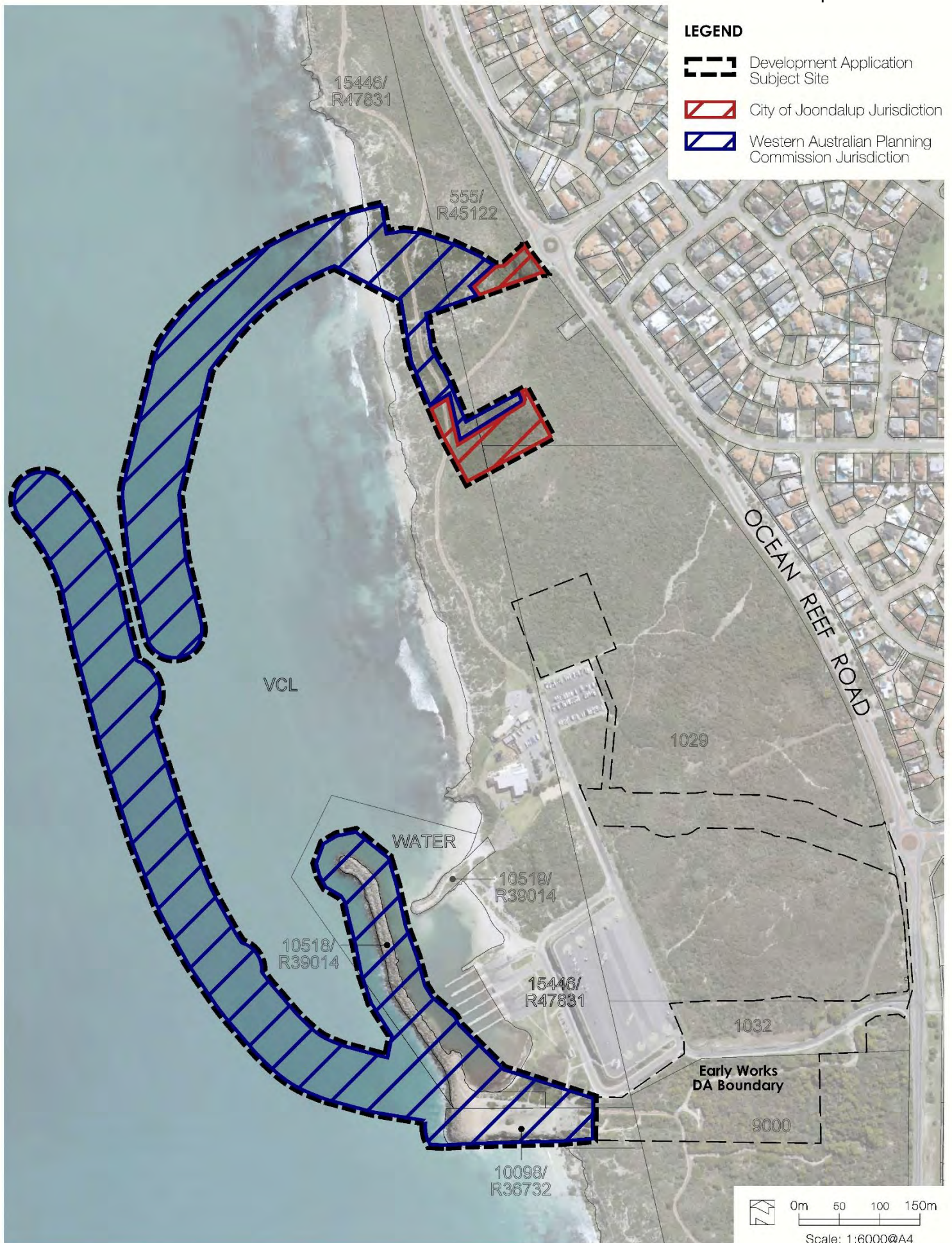


Figure 1 Subject Site

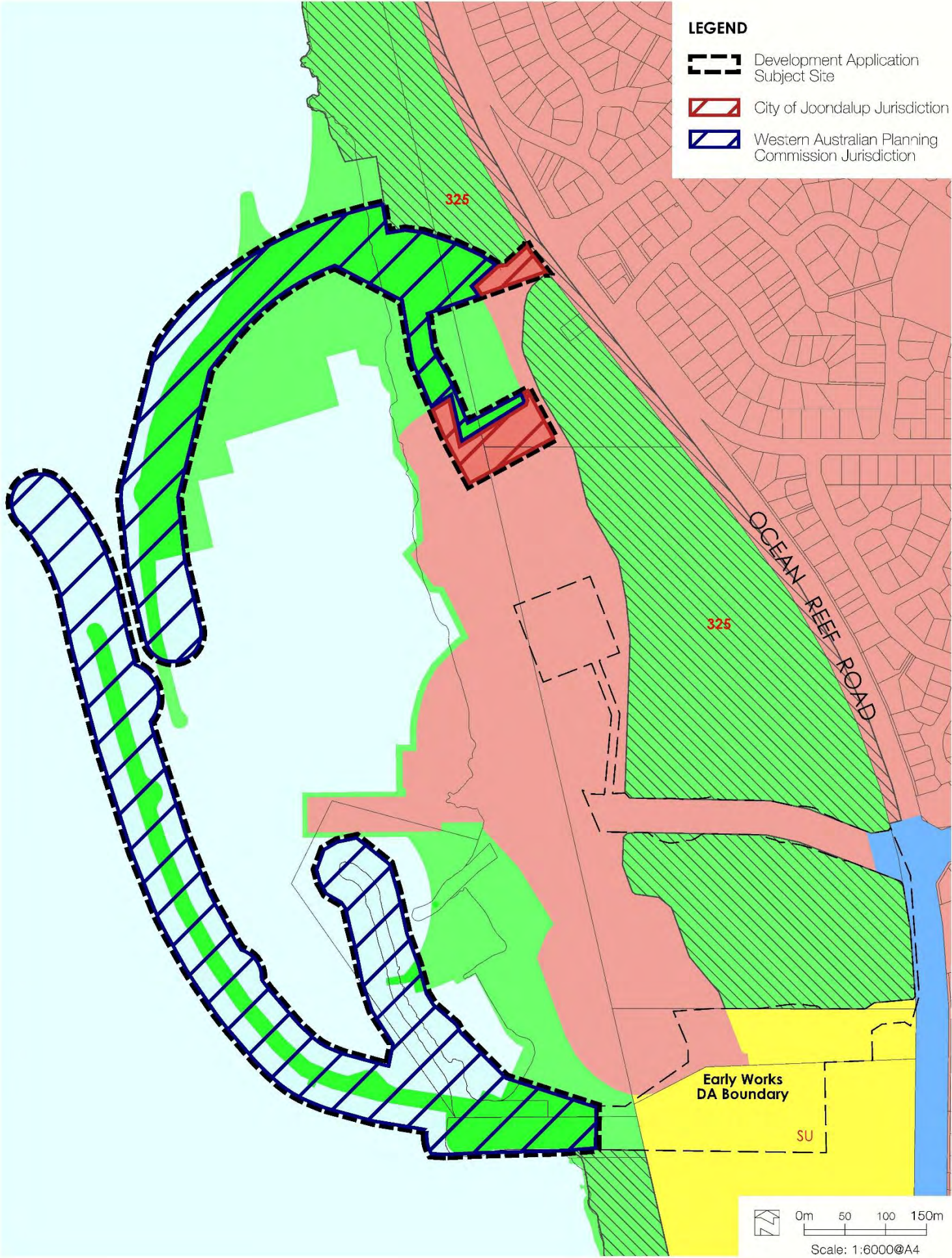
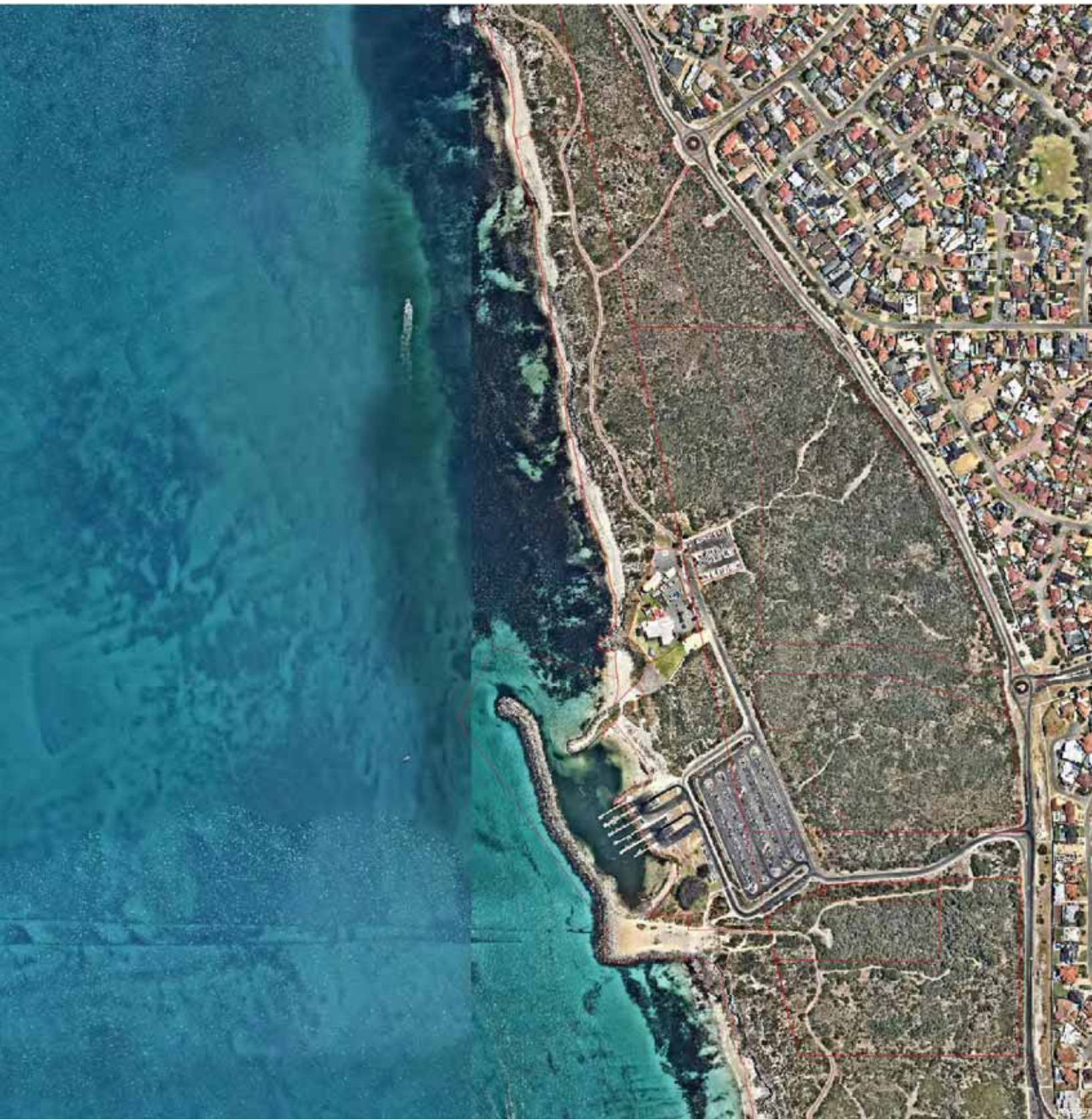


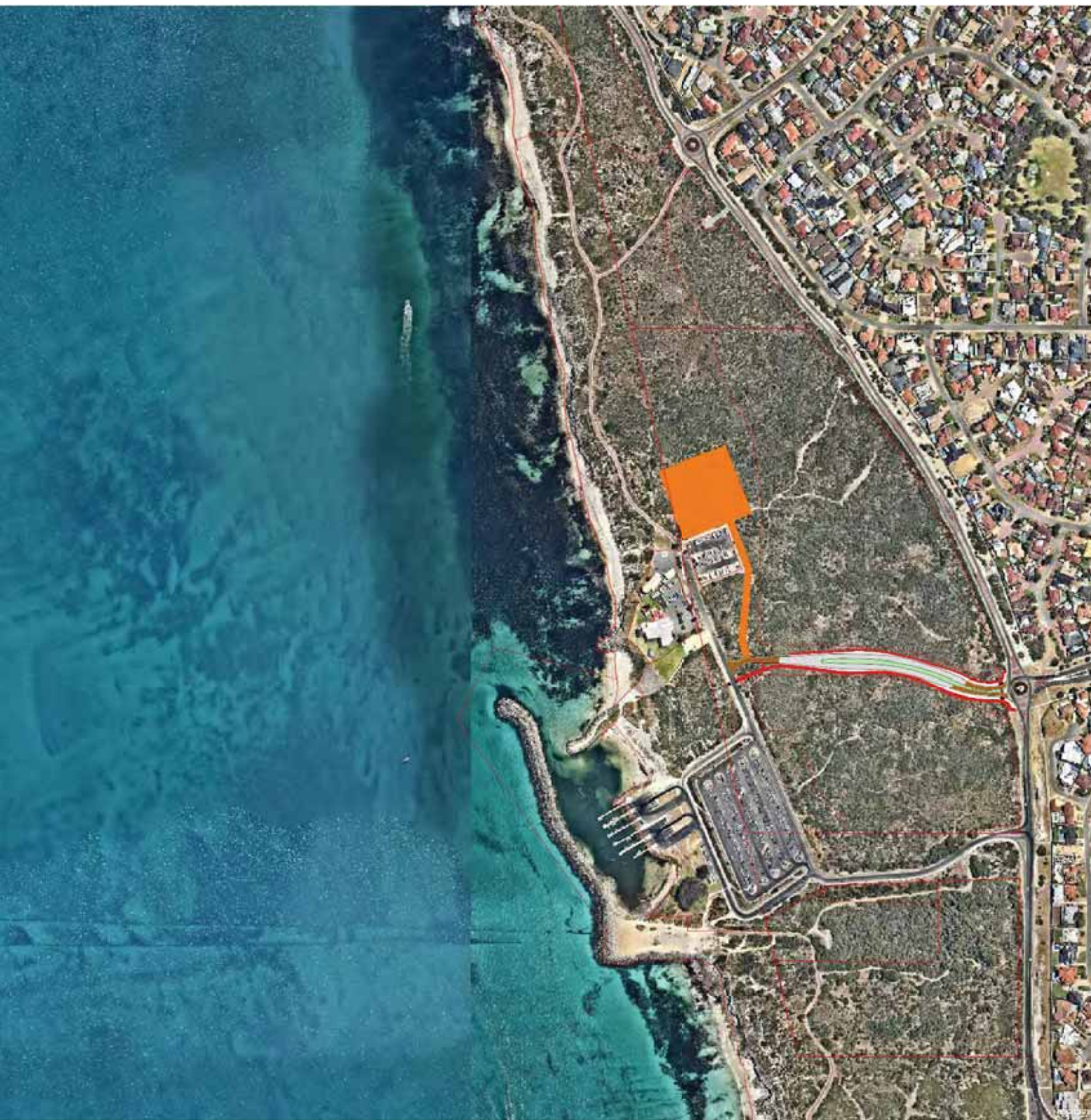
Figure 4 Metropolitan Region Scheme Extract



Figure 2 Context Plan



Ocean Reef Marina



Early works

Hodges Drive Extension, commences April 2020.



Early Works

PSP deviation & lay down, commences May 2020.



Early Works

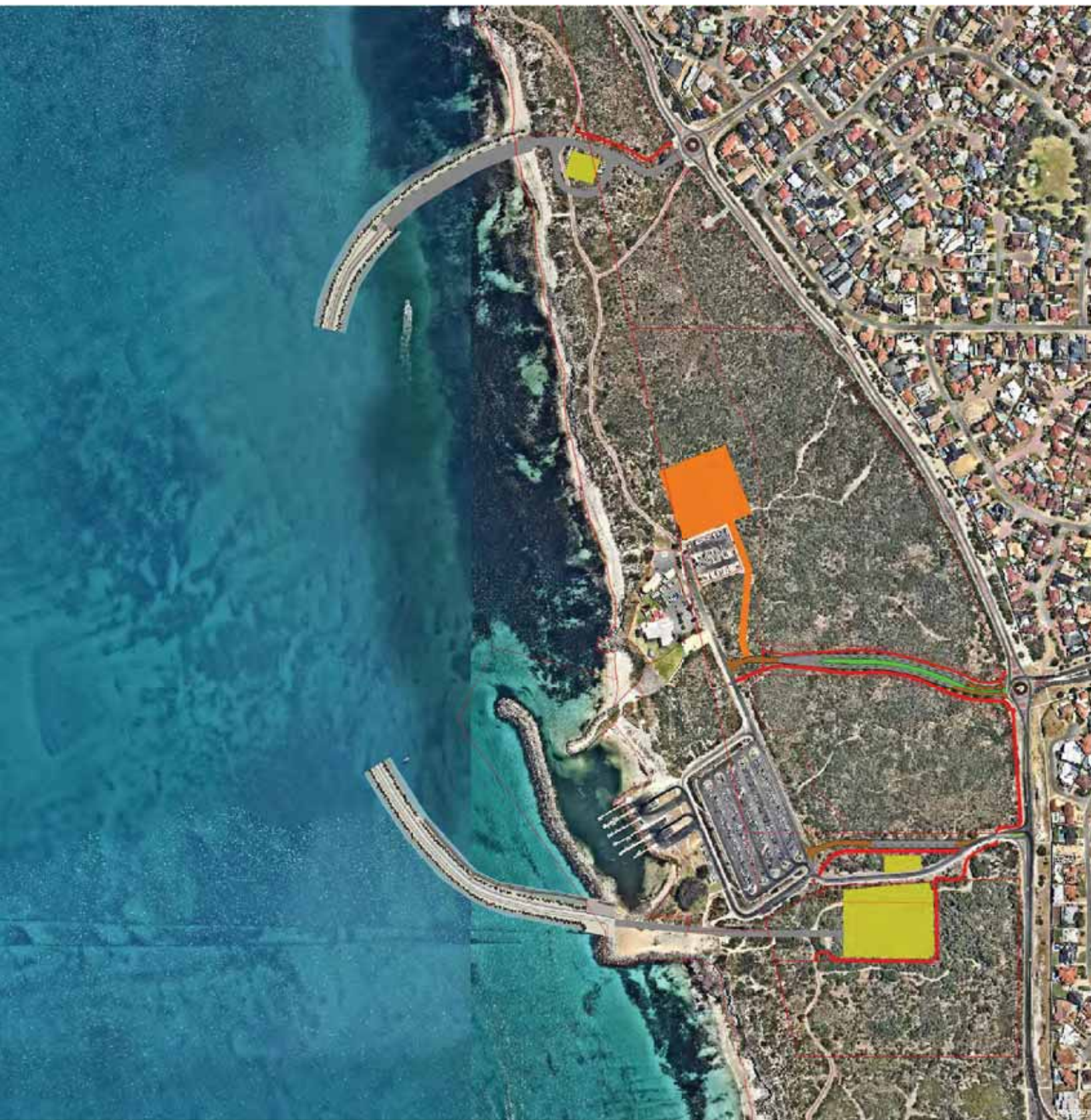
Boat Harbour Quays deviation & Hodges Drive extension, complete July 2020.



North & south haul road construction, October 2020.



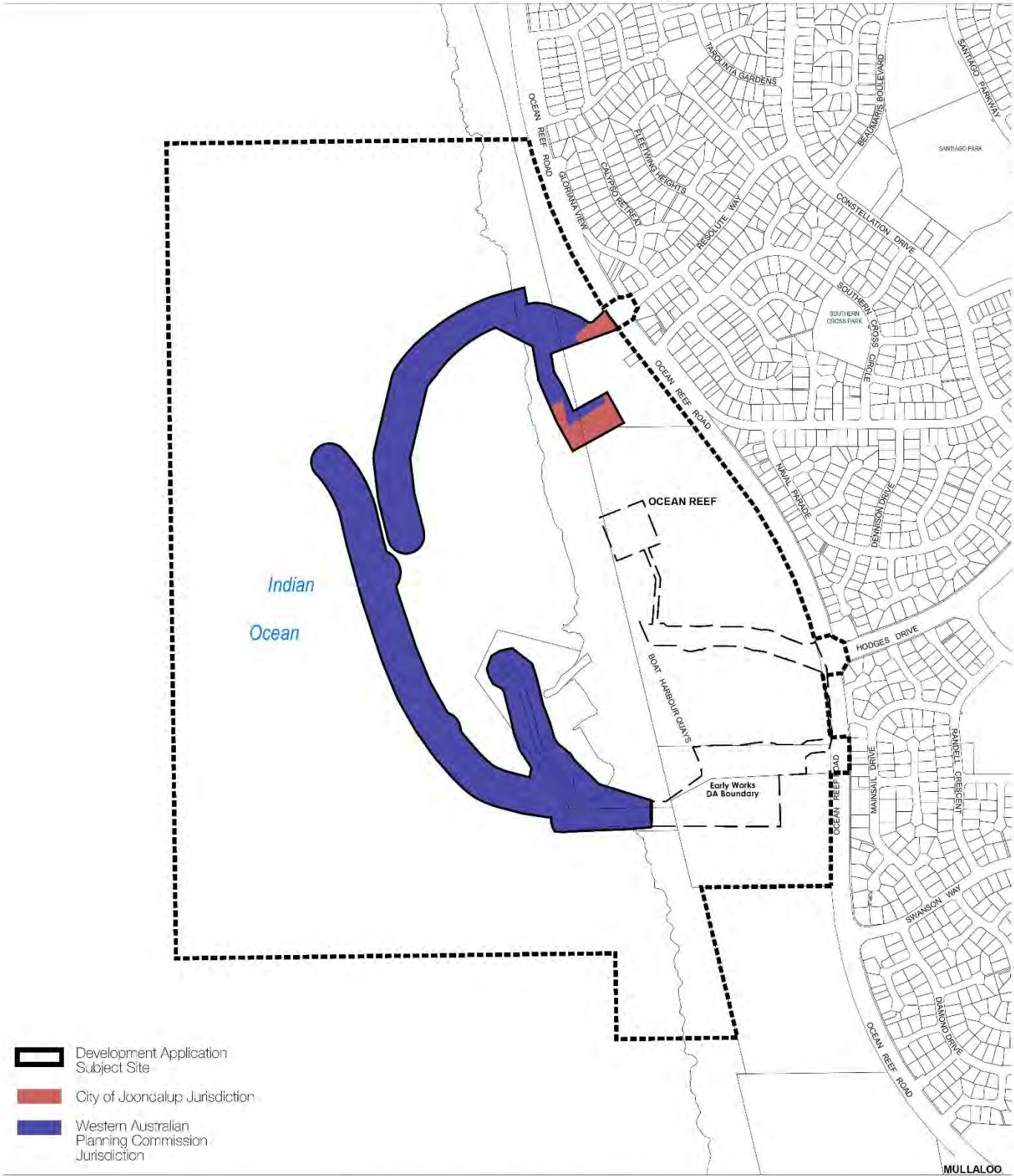
Breakwater construction, commences January 2021.



Breakwater construction ongoing, April 2021.



Figure 3 Draft Preferred Concept Plan





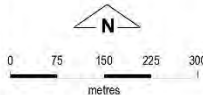
Improvement plan No. 51		IMPROVEMENT PLAN NO. 51 - OCEAN REEF MARINA			
 Improvement Plan	Project Manager: J. Gildenhuys		Plan Number:	File number: 819/02/34/0001	
	Geospatial Officer: A. Power			Plan reference: Metropolitan Region Scheme 1:25000 sheets 7 & 11	
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	Date:				

Figure 5 Improvement Plan No. 51 and location of Development Application Subject Site