

LORD HOWE ISLAND BOARD

Development Application

Section 4.12, Environmental Planning and Assessment Act 1979

Date Received:

Development Application No.: Date Lodged:

Use this form to apply for development consent to:

- Erect, alter or demolish a building or structure;
- Change the use of land or a building;
- Subdivide land;
- Display an advertisement;
- Any other development that requires consent from the Lord Howe Island Board.

To minimise delay in receiving a decision about your application, please ensure you submit all relevant information. To complete the form, please place a cross in the boxes and fill out the sections provided as appropriate. When your application has been assessed, you will receive a Notice of Determination. If you need help please phone or call the Board's office and discuss your queries with a development officer.

APPLICANT DETAILS

Mr Mrs Ms Other:

Name: AARON AND LISA RALPH

Organisation: DIVE LORD HOWE ABN: [REDACTED]

Postal Address: [REDACTED]

Telephone: [REDACTED] Fax: N/A

Email: [REDACTED]

OWNER CONSENT

Has Owner Consent been issued? Yes No Owner Consent No.: OC2023.4.1

IDENTIFY THE LAND YOU PROPOSE TO DEVELOP

Portion/Lot No.: 277 Deposited Plan No.: 48477

Lease No.: 1990/2

Address: "FERNLEIGH" LAGOON RD LORD HOWE ISLAND NSW 2898

PROPOSED DEVELOPMENT

Describe the proposed development; give a detailed outline of what you are going to do. If it involves a building, indicated what it will be used for. <u>we propose to build a dwelling as well as erect a commercial shed, following the subdivision of the lot.</u>
Building Material: <u>Timber + Fibre Cement</u> Roofing Material: <u>Colorbond Trimdek</u>

PAST/PRESENT LAND USES

State the past known uses of the site: Cattle

State the present known uses of the site: Sheep

STAGED DEVELOPMENT

You can apply for development consent for only part of your proposal now, and for the remaining part/s at a later time.

Are you applying for development consent in stages? Yes No

If yes please attach:

- Information which describes the stages of your development;
- A copy of any development consents you already have which relate to your development.

PLANS OF THE LAND AND DEVELOPMENT

You need to provide a number of different plans that show what you intend to do. Step 4 of the Development Application Guide sets out which plans to provide and the details to include. Please submit 1 copy of the plans with the application. Please attach:

- A site plan of the land, drawn to scale;
- Plans or drawings of the proposal, drawn to scale and, where relevant;
- An A4 size plan of the proposed building and other structures on the site;
- A plan of any existing buildings (and uses), drawn to scale.

ENVIRONMENTAL EFFECTS OF YOUR DEVELOPMENT

To assess your proposal, we need to understand the impacts it will have. Depending upon the nature and scale of your proposal, you need to provide one or more of the statements listed below to explain the environmental effects of your proposal.

Is your proposal likely to cause a major environmental impact (e.g. designated development)?

- Yes Please attach an environmental impact statement.
- No Please attach a statement of environmental effects (SEE).

Is your proposal likely to cause have significant effect on threatened species, populations, ecological communities or their habitats?

- Yes Please attach a species impact statement.
- No

SUPPORTING INFORMATION

You can support your application with additional material such as photographs (including aerial photographs), slides and models to illustrate your proposal.

Please list what you have attached.

- Plans
- Photo montage
- BASIX
- NATHERS
- Test of Significance
- Master site plan
- Waste water management plan
- Landscaping plan
- Concept road and drainage design
- SEE
- OLS Report

NOTE: It will be necessary for you to place pegs showing the location of all building extremities and height of buildings within seven days of lodging your development application. These pegs will allows inspection by Board staff at an early stage of your development assessment.

APPLICATION FEE

For development that involves a building or other work, the fee for your application is based on the estimated cost of the development. If your development needs to be advertised to the public you may also need to include an advertising fee. Clauses 246 to 263 of the Environmental Planning and Assessment Regulation 2000 provide a schedule of fees.

NOTE: Fees will be calculated in accordance with Cordell's Building estimates and will form the basis for the fee. To save time and any delays in processing your application, please contact us if you need help to calculate the fee for your application.

Estimated cost of the development: \$1,045,000 (Excluding GST)
Total fees lodged: \$731 Date: 19-10-24 Receipt No.:

APPLICANT/S OR APPLICANT'S AGENT DECLARATION

Have you or any associated persons with a financial interest in this application in the last two years made any political donations or given any gifts to any local Board Member or Board employee? Yes No

If you ticked yes please fill out a Political Donations and Gift Disclosure Statement.

IMPORTANT NOTICE: It is an offence under the EP&A Act 1979 if you fail to disclose reportable donations and gifts.

LEASEHOLDER AUTHORISATION – All leaseholder/s of the land must sign this application.

As the leaseholder/s consent to this application,

Signature: [Redacted] Signature:
Name: Ian Fitzgerald Name:
Date: 19th October 2024 Date:

APPLICANT AUTHORISATION – The applicant/s or the applicant's agent must sign the application.

I apply for consent to carry out the development described in this application. I declare that all the information given is true and correct. I also understand that, if incomplete, the application may be delayed or rejected and more information may be requested with

Signature: [Redacted] Signature: [Redacted]
Name: Aaron Ralph Name: Lisa Ralph
Date: 19th October 2024 Date: 19th October 2024

State the capacity in which you are signing if you are not the applicant: -

PRIVACY POLICY

The information you provide in this application will enable us, and any relevant state agency, to assess your application under the Environmental Planning and Assessment Act 1979 and other applicable state legislation. If the information is not provided, your application may not be accepted.

If your application is for designated development or advertised development, it will be available for public inspection and copying during a submission period. Your application, and any attached plans will be published on the Lord Howe Island Board website. Written notification of the application will also be provided to the neighbourhood. You have the right to access and have corrected information provided in your application. Please ensure that the information is accurate and advise us of any changes.

Documentation provided with an application may also be accessed in accordance with the requirements of the Government Information Access (GIPA) Act 2009.

LODGEMENT

Before submitting your application, please ensure you have attached all the information the consent authority needs to assess your proposal. You can use the following checklist. Please place a cross in the box next to any items you have attached:

Plans

- A site plan of the land — **all applications**
- Plans or drawings of the proposal showing all dimensions — **all applications**
- An A4 size plan of the proposed building and other structures on the site - **all applications**
- A plan which is drawn to scale of all existing buildings.

Environmental effects

- An environmental impact statement for a designated development proposal and an electronic version of the executive summary
- A statement of environmental effects — **required for all applications** that are not designated development
- An environmental report — **if required under clause 42 of the LHI LEP 2010**. Contact the Board to see if you need to prepare an environmental report.
- A species impact statement
- A Basix Certificate – The Building Sustainability Index (BASIX) applies to all residential dwelling types and is part of the development application process in NSW. A BASIX certificate **MUST** be obtained for “**BASIX affected development**”. For further information please refer to www.basix.nsw.gov.au
- Electrical supply form must be completed (for new / alteration / addition to existing supply).

Staged development

- Information which describes the stages of the development
- A copy of any consents already granted for part of the development

Supporting information

- Other material to support your application, such as photos, slides and models. *Please ensure any items listed as an Advisory Note as part of the Owner Consent approval have been addressed.*

Application fee

- Your application fee — **required for all applications.**

Where to lodge your application

You can lodge your completed application form, together with attachments and fees at the Lord Howe Island Board's office.

CONTACT DETAILS FOR YOUR INFORMATION

Lord Howe Island Board

Bowker Avenue
(PO Box 5)

LORD HOWE ISLAND NSW 2898

Phone: 02 6563 2066

Fax: 02 6563 2127

Email: administration@lhib.nsw.gov.au

Website: www.lhib.nsw.gov.au

Lord Howe Island Marine Park Authority

Phone: 02 6563 2359

Fax: 02 6563 2367

Email: lordhowe.marinepark@npws.nsw.gov.au

Website: www.mpa.nsw.gov.au

Department of Infrastructure, Planning and Natural Resources – General Enquiries

Phone: 02 9228 6111

Email: infocentre@dipnr.nsw.gov.au

Website: www.dipnr.nsw.gov.au

Department of Infrastructure, Planning and Natural Resources – North Coast Office

49 Victoria Street

(PO Box 6)

GRAFTON NSW 2460

Phone: 02 6642 0622

Email: northcoast@dipnr.nsw.gov.au

Website: www.dipnr.nsw.gov.au

BASIX Certificate: www.basix.nsw.gov.au

Planning | Development | Management | Engineering

Statement of Environmental Effects

Two (2) lot subdivision, erection of a new dwelling
house and shed for commercial use, installation
of a new wastewater system, ancillary works
in three (3) stages

Local Development

345 Lagoon Road Lord Howe Island
(Lot 277 DP 48477)



FILE: P100450
October 2024



PRECISE PLANNING

Planning | Development | Management | Engineering

This Statement of Environmental Effects has been prepared exclusively for submission to the Lord Howe Island Board as an accompaniment to a Local Development Application, which seeks approval to a two (2) lot subdivision, erection of a new dwelling house and shed (and its use as commercial premises), installation of a new onsite wastewater system and ancillary civil and stormwater works in three (3) stages at 345 Lagoon Road Lord Howe Island.

The information contained in this Report has been compiled from both primary and secondary information sources.

Precise Planning gives no warranty that these information sources are current and accepts no responsibility for any errors or damage or loss, however caused, suffered by any individual or corporation.

Report Author: Jeff Bulfin
Report Compilation Date: October 2024
Report Reference P100450_REV_00
Contact:



Client: Aaron and Lisa Ralph

DOCUMENT ID	STATUS	DATE	AUTHOR	SIGNED	REVIEWER	SIGNED
P100450_REV_00	FINAL	Oct 24	Jeff Bulfin		Jeff Bulfin	

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Executive Summary

This Statement of Environmental Effects (**'SEE'**) accompanies a local development application (**'the Application'**) made under s 4.12 of the *Environmental Planning & Assessment Act 1979* (**'EPA Act'**), which seeks consent from the Lord Howe Island Board (**'LHIB'**), as the relevant consent authority, for a two (2) lot subdivision, erection of a new dwelling house and shed (and its use as commercial premises), installation of a new onsite wastewater system and ancillary civil, stormwater and landscaping works, in three (3) stages, (**'the Proposal'**) at 345 Lagoon Road Lord Howe Island (**'Subject Site'**).

The proposed staging is as follows:

Stage	Description
1	Two (2) lot Torrens title subdivision
2	Ancillary civil and stormwater works (driveway construction, earthworks for proposed shed and dwelling house), erection of dwelling house, installation of wastewater system (including pipework and effluent irrigation area)
3	Erection of shed and use as commercial premises, landscaping

Table 1 - Details of proposed stages

1. Application Details

Applicant and Proponent	Aaron Ralph
Main Proposal	<ul style="list-style-type: none"> Two (2) lot subdivision Erection of a new shed (and its use for commercial premises) Erection of a new dwelling house Installation of a new onsite wastewater system
Ancillary works	Construction of a new driveway (including installation of stormwater pipes)
Subject Site	345 Lagoon Road Lord Howe Island (Lot 277 DP 48477)
Owner	Crown (owner); Ian Fitzgerald (lessee)
Development Cost	\$1,149,500 (incl GST)
Consent Authority	Lord Howe Island Board

2. Relevant Statutes

Environmental Planning and Assessment Act 1979	S 4.12(1) and (2)	This Application is made pursuant to these sections
	S 4.14(1)(a)	The Proposal is capable of compliance with Planning for Bushfire Protection 2019.
	S 4.15(1)	The Proposal is satisfactory when considered in respect of mandatory matters
	S 4.46(1)	The Proposal does not trigger any of the thresholds for Integrated Development
Environmental Planning and Assessment Regulation 2021	CI 49(3)	Consent provided on behalf of the Crown

3. Lord Howe Island LEP 2010

Zone	Zone 2 Settlement		
Use and Definition	Proposed shed to be used as commercial premises.		
Permissibility	CI 14(2) and (3) - Except for home businesses and vegetation restoration, any other development is permitted in Zone 2 Settlement with consent.		
Development Standards	CI 21(2)(a) Minimum subdivision lot size	3,000m ²	Complies
	CI 22(1)(a) Maximum area occupied by buildings comprising commercial premises	15% of the area exceeding 3,000m ² Proposed lot 11 - 3,798m ² 3,798 - 3,000 = 798m ² 798 x 15% = 119.7m ² , rounded to 120m² Proposed shed 15m x 8m - 120m²	Complies
	CI 23(1)(a) Maximum gross floor area of proposed dwelling house	300m ² GFA of proposed dwelling house - 299.075m ²	Complies
	CI 23(1)(b) Total area of allotment is at least minimum dwelling area, where <i>minimum dwelling area</i> = 3,000m ² for any proposed or existing dwelling	Proposed Lot 11 - 5,000m ² Proposed Lot 12 - 3,798m ²	Complies
	CI 23(1)(d) Minimum landscaped area 50% and 35% native to the Island	Proposed Lot 11 - 5,000m ² <u>Landscaped area</u> (50%) - 2,500m ² required, 4,820m ² provided; <u>SNV</u> (35%) - 1,750m ² required, 2,264m ² provided. Proposed Lot 12 - 3,798m ²	Complies

		<p><u>Landscaped area</u> (50%) - 1,899m² required, 3,060m² provided; <u>SNV</u> (35%) - 1,329.3m² required, 1,446m² provided.</p>	
	CI 26(2) Approval of maximum 25 dwellings between 29 October 2005 and 28 October 2025	Rely on LHIB records	Assumed to comply
	CI 29(1) Maximum height of building 7.5m from natural ground level	Dwelling maximum height - 6.1m Shed maximum height - 6m approx.	Complies
	Clause 32(2)(a) Front setback minimum 10m; Side setback minimum 5m	<p><u>Shed</u> Front setback - 28m approx. Side setback - 9.5m</p> <p><u>Dwelling house</u> Front setback - exceeds 90m Side setback - 2m</p>	<p>Complies Complies</p> <p>Complies Variation requested - refer to section 4.2.2 (Table 7) of this SEE</p>
LHILEP Maps	Land Zoning Map	Zone 2 Settlement	
	Significant Native Vegetation Map	Significant native vegetation	
Non-EPI Maps	State Heritage Register Curtilage Map	Lord Howe Island Group	
LEP variations sought	CI 32(2)(a) minimum side setback. Standard - 5m, proposed - 2m. The Proposal seeks support to vary this development standard.		

3. SEPPs

Precise Planning

*Two (2) lot subdivision, erection of a new dwelling house and shed (for commercial use),
new wastewater system and ancillary works in three (3) stages
345 Lagoon Road Lord Howe Island*

SEPP (Sustainable Buildings) 2022	Chapter 2 Standards for Residential Development - BASIX - cl 2.1	BASIX certificate provided
SEPP (Sustainable Buildings) 2022 Maps	Climate zones for BASIX Buildings Map	Class 11
	Climate zones for BASIX alterations Map	Class 2
	Water Use Map	Class - 40%
4. LHI DCP 2005		
Relevant Chapters	All chapters apply	The Proposal generally achieves the relevant objectives and guidelines. Some guidelines require a merit assessment by the LHIB. However, these are considered to be satisfactory (see Annexure A to this SEE).
5. External Referral/Concurrence		
Agencies	No agency referrals required	
6. Other Matters		
The Application and/or Proposal does not raise any other matters of relevance		

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new wastewater system and ancillary works in three (3) stages
345 Lagoon Road Lord Howe Island

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1 Introduction

1.1 General

This Statement of Environmental Effects ('SEE') accompanies a local development application ('the Application') made under s 4.12 of the *Environmental Planning & Assessment Act 1979* ('EPA Act'), which seeks consent from the Lord Howe Island Board ('LHIB'), as the relevant consent authority, for a two (2) lot subdivision, erection of a new dwelling house and shed (and its use as commercial premises), installation of a new onsite wastewater system and ancillary civil, stormwater and landscaping works, in three (3) stages, ('the Proposal') at 345 Lagoon Road Lord Howe Island ('Subject Site'). The details of the proposed staging is outlined at Table 1 of this SEE.

Main Proposal:

- Two (2) lot Torrens title subdivision
- Erection of a new dwelling house on Lot 11 created by the subdivision
- Erection of new shed on Lot 11 created by the subdivision (and its use as commercial premises)
- Installation of a new onsite wastewater system, including effluent irrigation area

Ancillary works:

- Construction of a driveway and vehicle manoeuvring areas, with associated stormwater works
- Minor landscaping

The SEE has been prepared in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* ('EPA Act') and the *Environmental Planning and Assessment Regulation 2021* ('EPA Reg'). The SEE meets the mandatory requirements set out on the Approved Form¹ and addresses all matters necessary to enable the Lord Howe Island Board ('LHIB') to make a determination of the Application.

Subject to consent being granted by the LHIB for the Application, the Proposal will

¹ See cl 24(1)(b)(i) EPA Reg.

require a Construction Certificate to be issued by an appropriately accredited certifier, as well as an approval under s 68 of the *Local Government Act 1993* for the onsite wastewater system and a certificate under s 138 *Roads Act 1993* for the proposed driveway access works within the Lagoon Road reserve.

This Proposal was the subject of an informal pre-DA discussion with LHIB representatives on 31 July 2024. The Proposal for which the Application seeks consent is generally consistent with the proposal as discussed at the meeting.

On balance, it is considered that the Application seeks consent to a satisfactory proposal. It will result in a satisfactory environmental outcome, with positive social or economic outcomes in the locality. It is requested that the LHIB approve the Application and issue development consent in due course.

1.2 Documents accompanying the Application

Document	Author	Reference
Architectural plan set	Stephen O'Connor Architecture	Project No 2407, Issue C dated 30 Oct 2024 (23 sheets)
BASIX certificate	Bonnefin Consulting Pty Ltd	Certificate No 1767826S dated 8 Oct 2024
Civil and Stormwater Concept Plan	Civplan Consulting	Job-Drawing No 24057 Rev 0 dated 14 Oct 2024 (15 sheets)
Contour and level plan	BR Development Consulting	Plan No 14401_DTM 18-09-2024 dated 18 Sept 2024
Cost report	RealEst Quantity Surveyors	Dated 10 Oct 2024
Ecological test of significance	Bower Bush	Dated 30 Sept 2024
Landscaped area calculation plan	Precise Planning and Civplan	Job-Drawing No 24057-GA-1020, Rev 0 dated 10 Oct 2024
Landscape plan	Aaron Ralph	DA, Rev A dated 7 September 2024
NatHERS Certificate	Certified Energy	Dated 4 Oct 2024
Onsite wastewater management plan	Lord Howe Island Services	Dated 28 Aug 2024
Photomontage	Stephen O'Connor Architecture	Project No 2407, Issue B dated 25 Oct 2024, Drawing No DA-00.1
Plan of proposed subdivision	Surveyor Murray John Dalton	Ref 14401 LAGOON dated 22 Aug 2024

Two (2) lot subdivision, erection of a new dwelling house and shed (for commercial use),
new wastewater system and ancillary works in three (3) stages
345 Lagoon Road Lord Howe Island

Document	Author	Reference
Site plan	BR Development Consulting	Plan No 14401_Site Plan dated 18 Sept 2024
Statement of environmental effects	Precise Planning	Document 100450_REV_00 dated Oct 2024
Storage, handling and disposal of liquids and waste	Proponent	

Table 2 - Documents accompanying this Application

1.3 Consent to lodge Application

Land on Lord Howe Island is vested in the Crown, in accordance with the *Lord Howe Island Act 1953*. Residents occupy land under a perpetual lease. A perpetual lease over the Subject Site has been granted to Ian Fitzgerald. Mr Fitzgerald has provided written consent to the lodgement of the Application.

Under Clause 23(6) of the *Environmental Planning and Assessment Regulation 2021* 'A lessee of Crown land may make a development application relating to Crown land only with the consent of the Crown'.

In the case of Lord Howe Island, the Crown is considered to be Minister responsible for the Lord Howe Island Act, being the NSW Minister for the Environment.

The Minister has authorised the Board, Chief Executive Officer (CEO), and Chairperson to grant Owner Consent in certain circumstances, subject to conditions.

This Application is accompanied by Crown landowner's consent.

2 The Subject Site

2.1 Description and location

The Subject Site is [REDACTED] Lord Howe Island and is legally described as Lot 227 in DP 48477. The Subject Site is roughly rectangular in shape, with a frontage to the northeast side of Lagoon Road of 62.51 metres, a depth ranging from 135 metres to 153 metres (approximately) and an area of 8,798m². Lagoon Road has a bitumen-sealed surface with grass verges, table drains and has a single lane in each direction.



Figure 1 - Subject Site

2.2 Existing improvements and characteristics

2.2.1 Existing improvements

Erected on the Subject Site is an existing dwelling adjacent to the northwest boundary.

2.2.2 Existing vegetation

Part of the Subject Site is covered with trees and the remainder generally cleared with grass vegetative cover. A dense tree cover continues on the lots adjoining to the northwest and northeast. The lot immediately adjoining to the southeast is generally cleared of trees. The Subject Site is mapped with Significant Native Vegetation ('SNV') - refer to Figure 4 of this SEE.

The ecological report submitted with the Application describes the existing vegetation as follows:

The vegetation on the subject site largely comprises previously cleared land dominated by the exotic pasture grass Kikuyu *Pennisetum clandestinum* and various other exotic pasture grasses with some scattered regrowth patches of Bullybush *Cassinia tenuifolia*, a planted Banyan and exotic shrubs. Ground Asparagus *Asparagus aethiopicus* is present on site, mainly along the edge of native vegetation. The removal of exotic plants and conversion of some areas of Kikuyu to native landscaping will enhance the viability and ecological function of the native vegetation on site. (Refer to Photos 2 - 5 -native and exotic vegetation from Lot 227).

The subject site abuts native vegetation comprising Kentia/Thatch Palm *Howea forsterana*, Blackbutt *Cryptocarya triplinervis*, Maulwood *Olea paniculata*, Greybark *Drypetes deplanchei* with *Lagunaria patersonia* subsp. *patersonia*.

2.2.3 Topography

Topographically, the Subject Site is relatively flat for the majority of the depth of the lot, rising toward the rear. A drainage flow path appears to exist in the central part of the Subject Site. However, there are no mapped watercourses traversing the Subject Site.

2.2.4 Services

The existing dwelling is serviced with reticulated water, electricity and telephone. Wastewater is managed onsite.

2.2.5 Access

The Subject Site is accessed from a single driveway point along the Lagoon Road frontage at the southwest corner. The driveway within the Subject Site winds through the existing vegetation to the existing dwelling.

2.3 Local context

2.3.1 Locality in context

The Subject Site is located within a residential cluster of similarly-sized lots in the central area of the island, adjacent to the Lord Howe Island runway (see Figure 2). It is overlooked by Transit Hill, the top being about 270 metres north of the Subject Site at an elevation of around 120 metres.



Figure 2 - Subject Site in local context

2.3.2 Adjoining development

The Subject Site adjoins two lots along its northwest boundary, being 341 Lagoon Road (Lot 2 DP 1118575) and Lot 107 DP 757515, which has no street address. An existing dwelling is erected on 341 Lagoon Road, nestled into its northwest corner. A thick tree cover separates the dwelling from the Subject Site. Lot 107 DP 757515 is vacant.

Along its southeast and northeast boundaries, the Subject Site adjoins Lot 110 DP 757515, a vacant lot which also has no street address.

Opposite the Subject Site is the runway for the Lord Howe Island airport.

2.4 LHILEP 2010 Mapping

The Subject Site is identified on the following LHILEP 2010 maps, where relevant to the Proposal:

- **Land Zoning Map**



Figure 3 - LHILEP 2010 Land Zone Map

Two (2) lot subdivision, erection of a new dwelling house and shed (for commercial use),
new wastewater system and ancillary works in three (3) stages
345 Lagoon Road Lord Howe Island

- **Significant Native Vegetation Map**



Figure 4 - LHILEP 2010 Significant Native Vegetation Map

2.5 Non-LHILEP Mapping

- **State Heritage Register Curtilage Map**

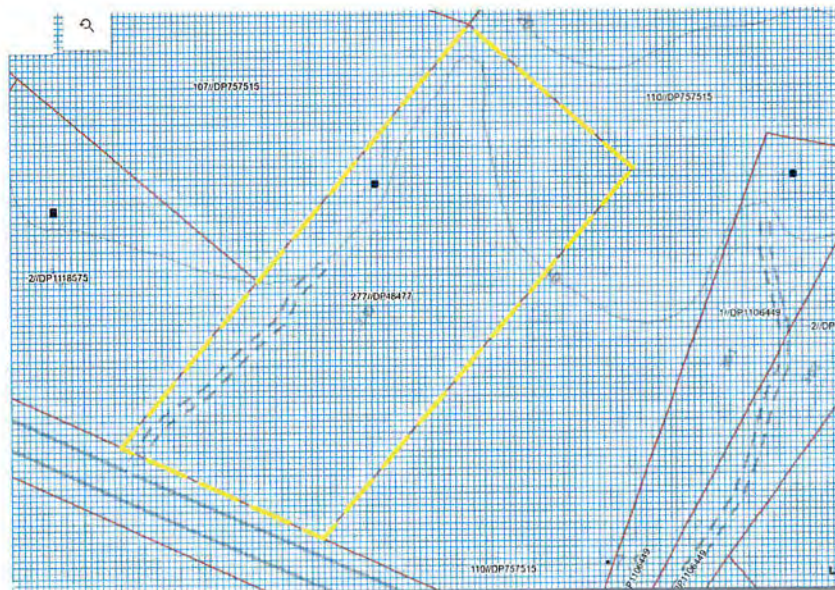


Figure 5 - State Heritage Register Curtilage (Lord Howe Island Group)

Two (2) lot subdivision, erection of a new dwelling house and shed (for commercial use),
new wastewater system and ancillary works in three (3) stages
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2.6 SEPP (Sustainable Buildings) 2022 Mapping

- **Climate Zones for BASIX Buildings Map**



Figure 6 - SEPP (Sustainable Buildings) 2022 Climate Zones for BASIX Buildings Map

- **Water Use Map**

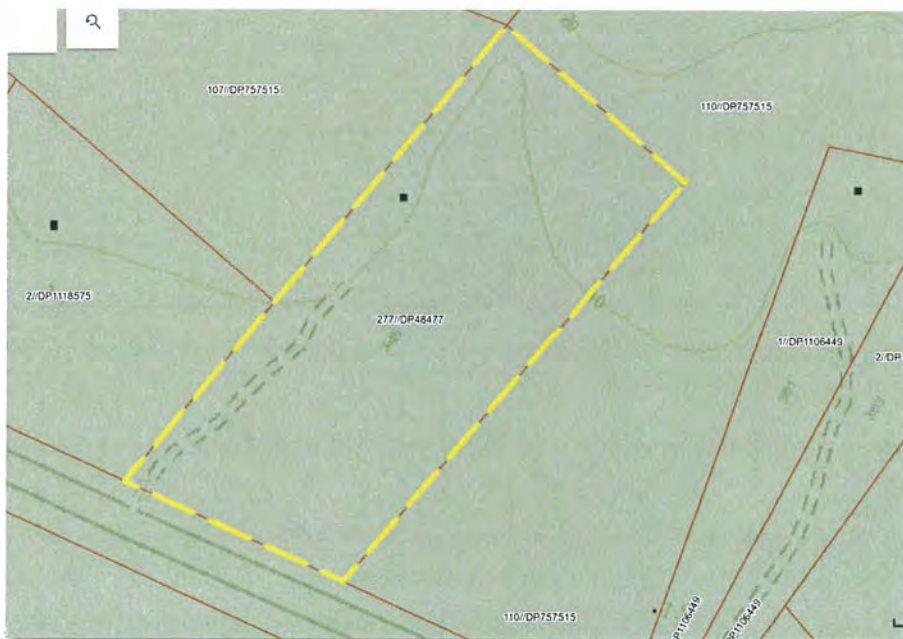


Figure 7 - SEPP (Sustainable Buildings) 2022 Water Use Map (40%)

3 The Proposal

3.1 Stage 1

3.1.1 Two (2) lot Torrens title subdivision

The Application seeks consent to a two (2) lot Torrens title subdivision, generally in accordance with the plan of proposed subdivision submitted with the Application documentation.

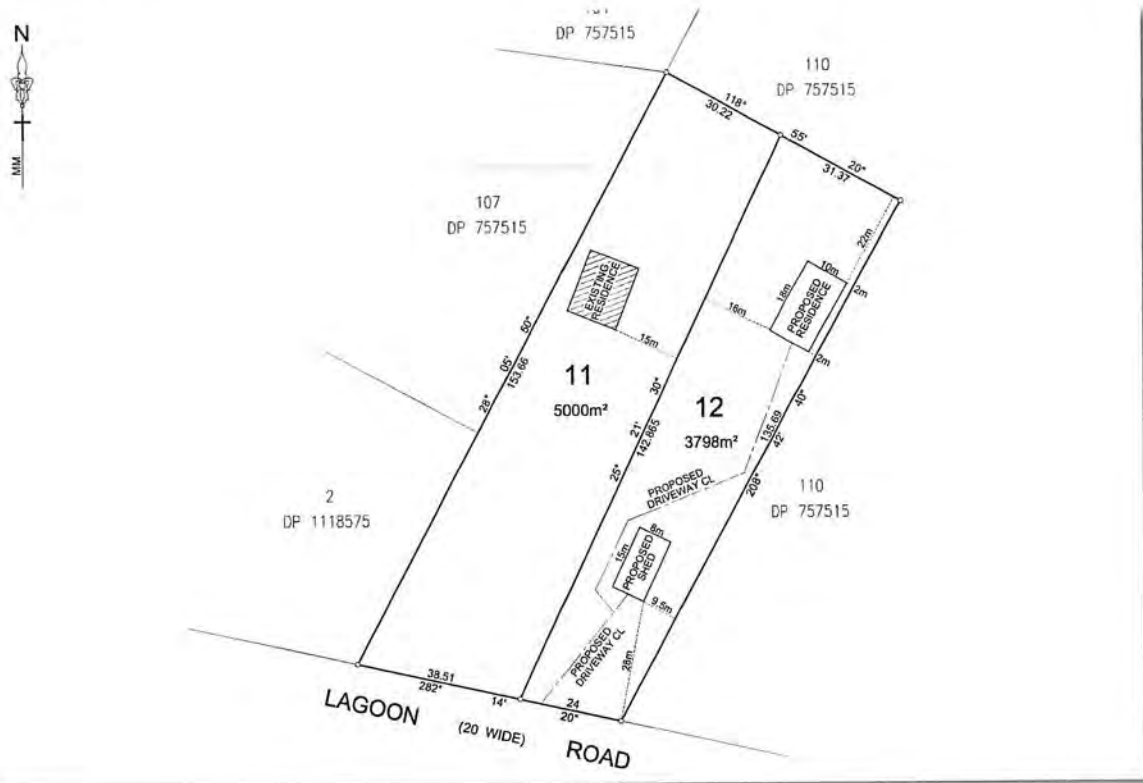


Figure 8 - Plan of proposed subdivision

Each proposed lot complies with the minimum lot size of 3,000m² as per cl 21(2)(a) LHILEP 2010:

- Proposed Lot 11 - 5,000m² (existing dwelling)
- Proposed Lot 12 - 3,798m² (proposed new dwelling, shed, wastewater system and driveway)

3.2 Stage 2

3.2.1 Civil and stormwater work

3.2.1.1 Driveway

The Application seeks consent to the construction of a driveway and associated stormwater management structures, as detailed on the concept civil and stormwater plans by Civplan.

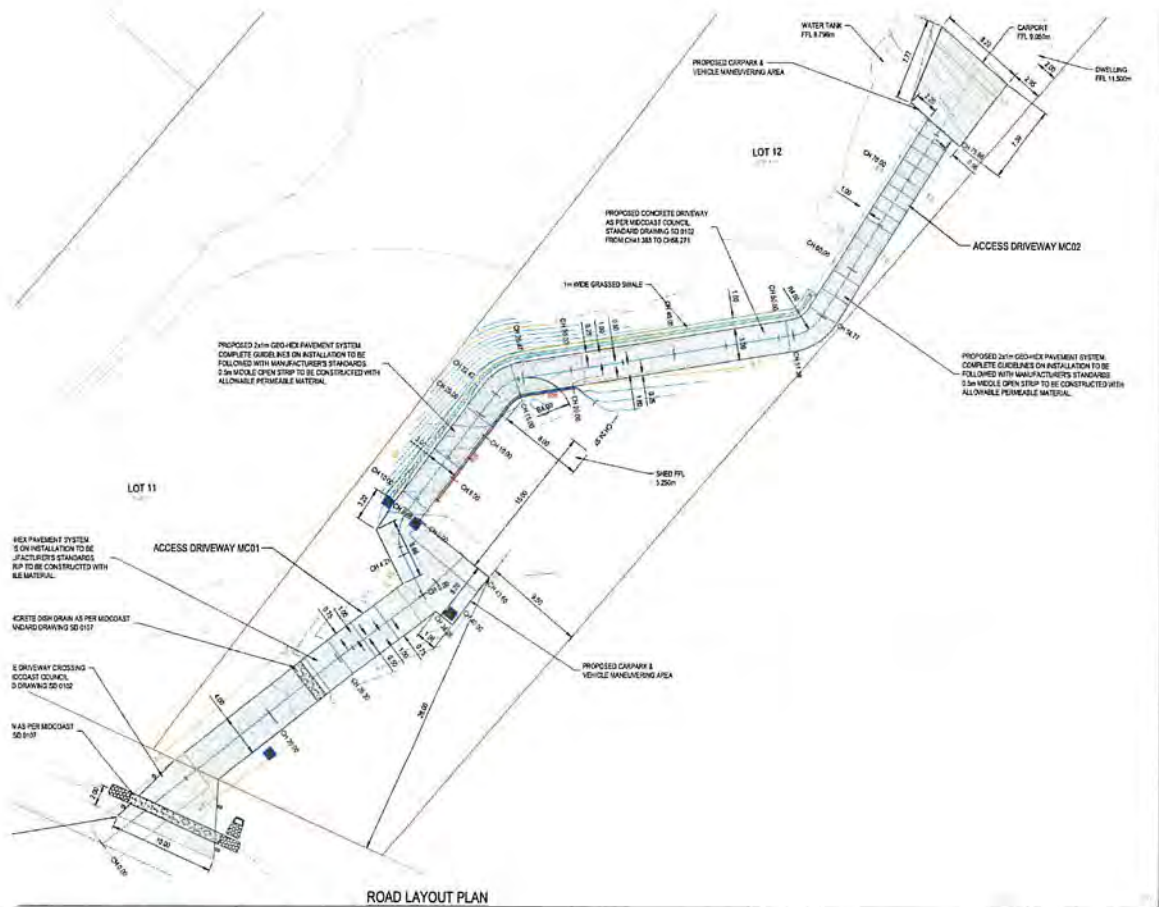


Figure 9 - Proposed driveway

It is proposed that the driveway utilise 2 x 1m "Geo-Hex" pavement system with a 0.5m centre open strip using permeable material. A section of the driveway is proposed to be concrete in order to permit overtopping of stormwater in a 1% AEP rainfall event. The initial section between the front boundary and the proposed shed is 4m wide and the remainder to the dwelling house is 3m wide.

Two (2) lot subdivision, erection of a new dwelling house and shed (for commercial use),
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A pit and pipe system is proposed to manage stormwater between the proposed shed and the front boundary, discharging to the existing table drain in Lagoon Road. A swale drain is proposed adjacent to the driveway for a specified section.

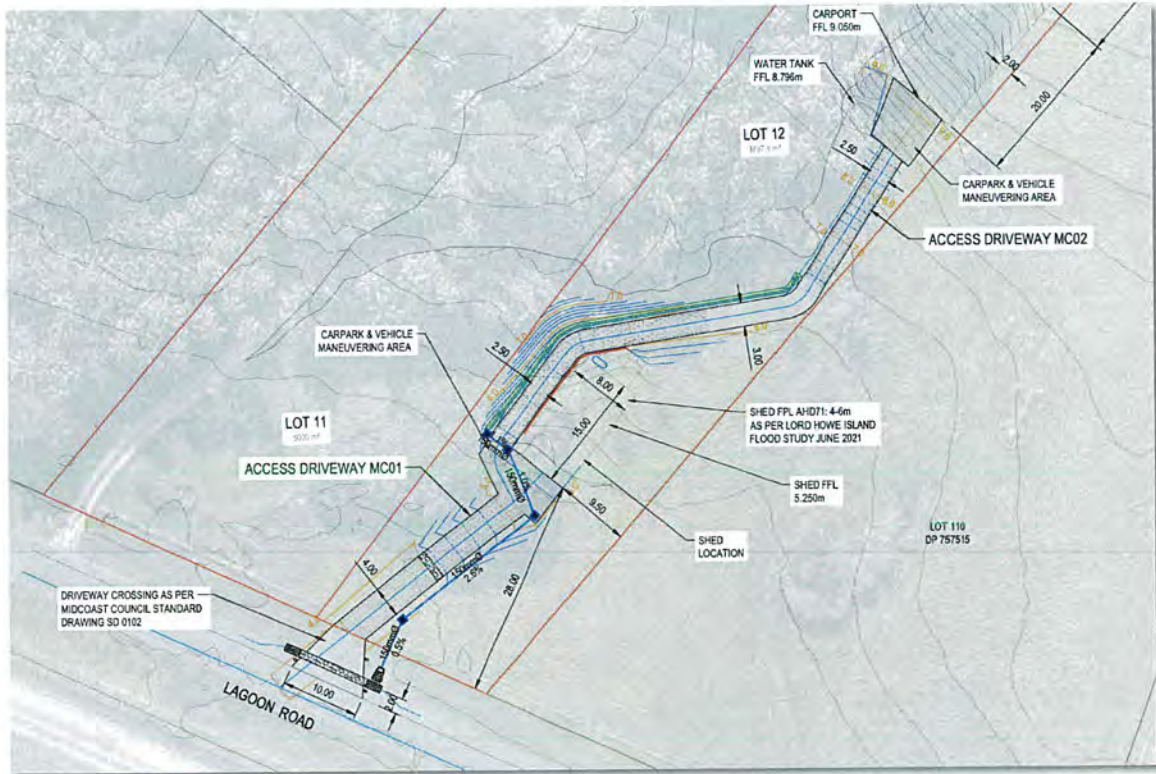


Figure 10 - Proposed stormwater management structures

3.2.1.2 Earthworks

The Application seeks consent for bulk earthworks for the proposed shed, dwelling house and driveway, as depicted on the bulk earthworks plan by Civplan.

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Figure 11 - Proposed bulk earthworks

3.2.2 Dwelling house

The Application seeks consent to the erection of a new, three (3) bedroom dwelling over two levels, as detailed on the architectural plan set submitted with the Application documentation.

The new dwelling house has been designed and located to nestle into the landscape and minimise the extent of vegetation removal and visual impact. The lower level comprises three (3) bedrooms, laundry, bathrooms and an office/media room with a gross floor area ('GFA') of 176.4m². The upper level comprises a kitchen, bathroom and outdoor areas with a GFA of 122.67m². The total GFA of the proposed dwelling house is 299.07m².

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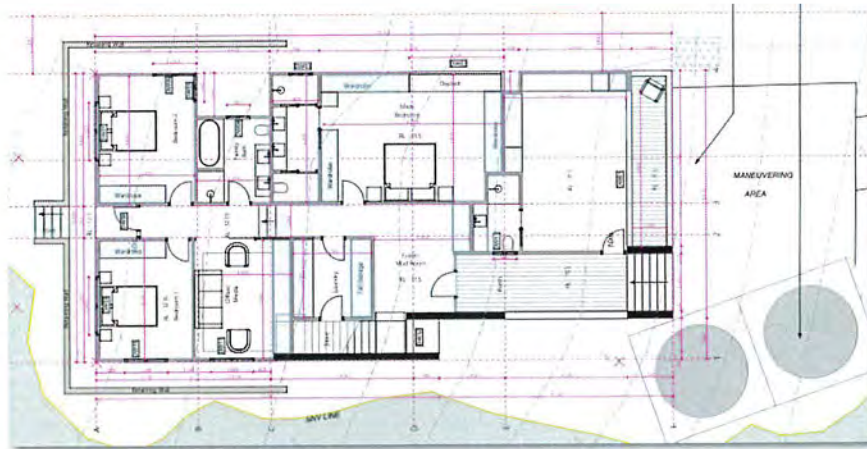


Figure 12 - New dwelling house (lower level)

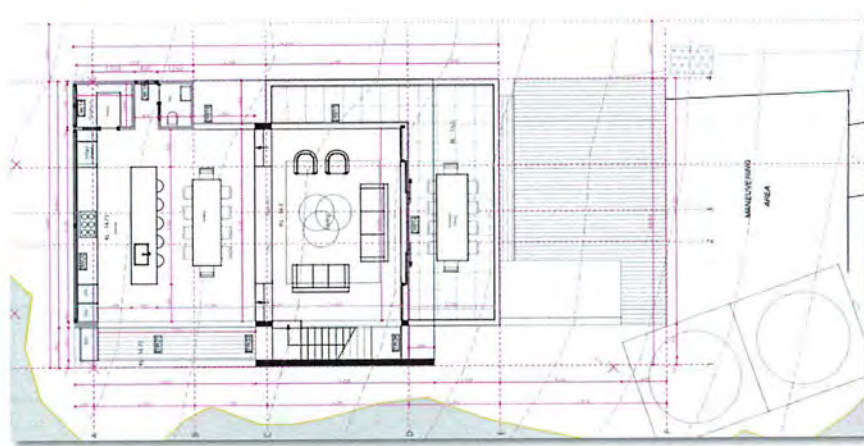


Figure 13 - New dwelling house (upper level)

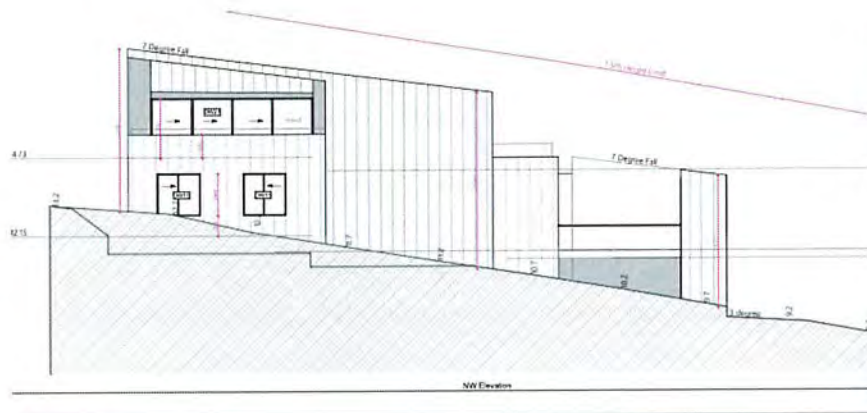


Figure 14 - New dwelling house (NW elevation)

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Figure 15 - New dwelling house (SE elevation)

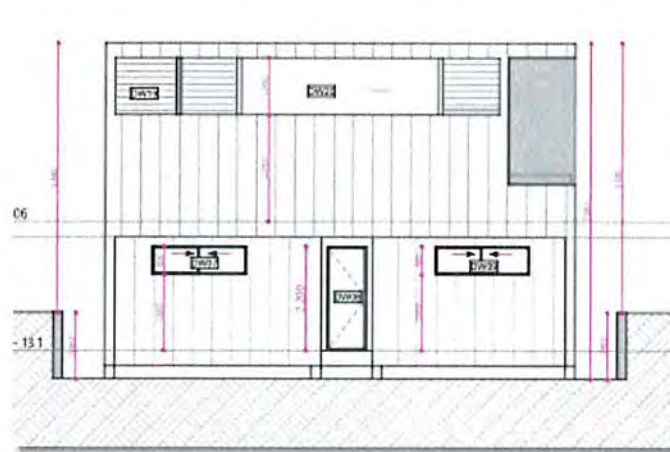


Figure 16 - New dwelling house (NE elevation)



Figure 17 - New dwelling house (SW elevation)

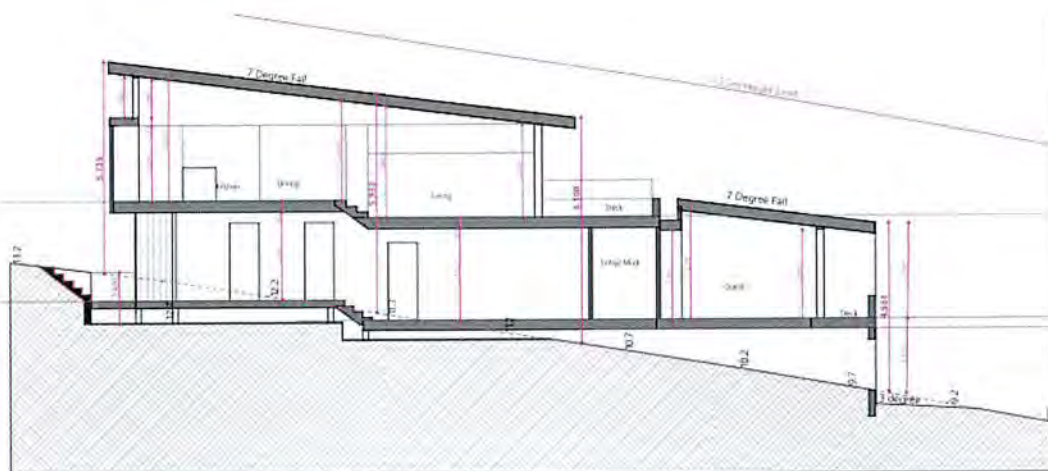


Figure 18 - New dwelling house (section)

3.2.2.1 Water tanks and retaining wall

Two (2) above-ground water tanks are also proposed to be located at the front corner of the dwelling house and a retaining wall is proposed adjacent to the rear and part of each side, as shown on the lower level floor plan (refer to Figure 12).

3.2.3 Onsite wastewater system

The Application seeks consent for the installation of a new wastewater treatment system at the Subject Site, including pipework and effluent irrigation areas.

The proposed system consists of a sewer treatment system at the rear of the shed location, which will receive effluent from the proposed dwelling house and shed. Once primary treatment has occurred, the effluent will be transferred to the irrigation fields.

The wastewater report prepared by Lord Howe Island Services provides comprehensive details of the proposed system. The report also details why the majority of the irrigation areas are proposed within the SNV.

Two (2) irrigation areas are proposed, as identified on the accompanying plans, either side of an overland flow path. The irrigation pipes are laid on the ground surface, thereby avoiding the removal or damage of any native vegetation.

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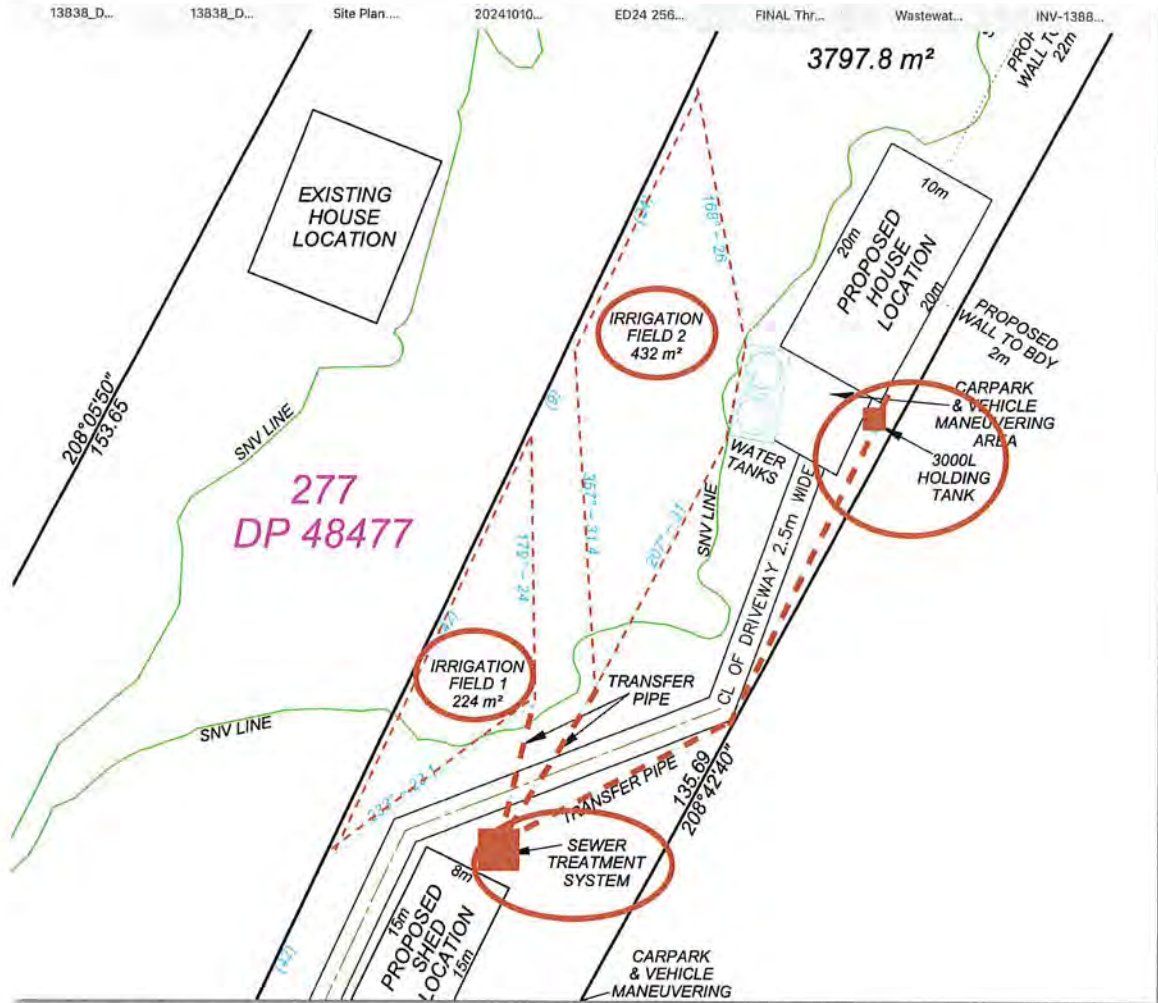


Figure 19 - Proposed location of sewer treatment system, holding tank, irrigation fields and transfer pipes

3.3 Stage 3

3.3.1 Erection of shed

The Application seeks consent to the erection of a new shed, to be located toward the front of the Subject Site.

The proposed shed will measure 15 metres x 8 metres, thereby having a floor area of 120m² and will contain a small bathroom at the rear.

Two (2) lot subdivision, erection of a new dwelling house and shed (for commercial use),
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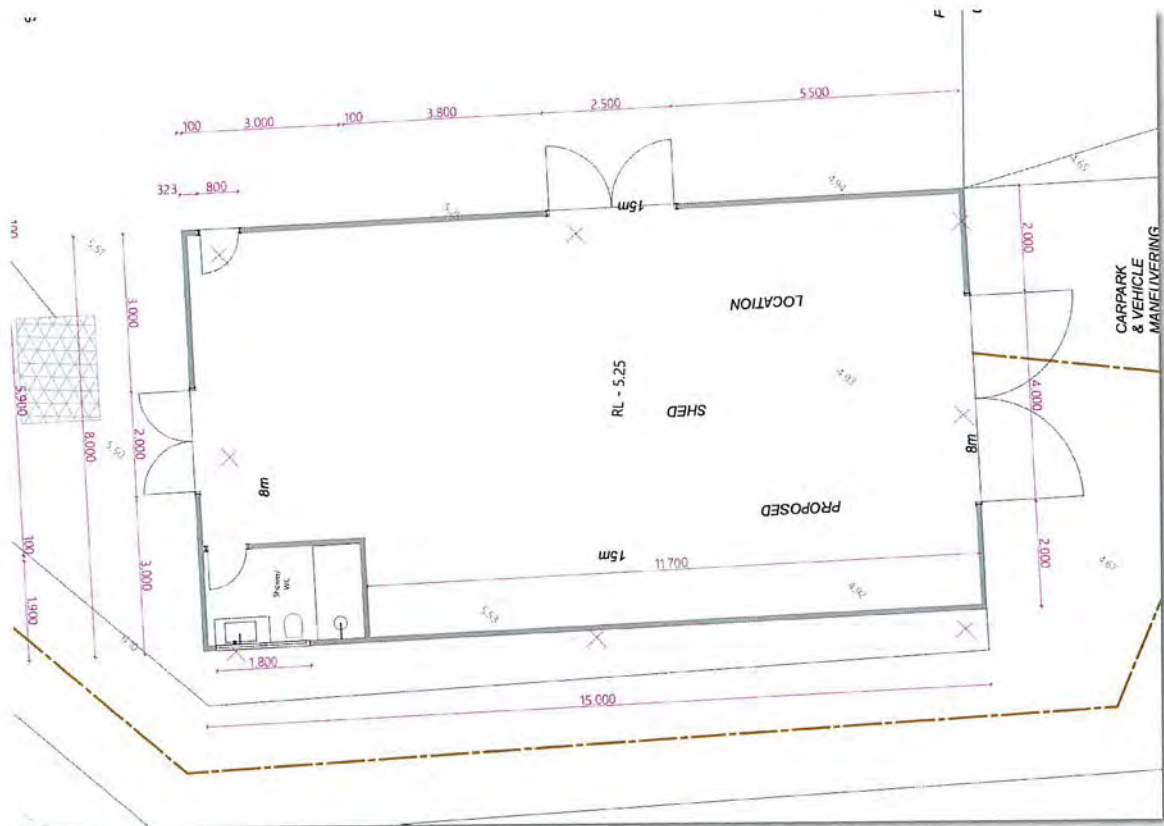


Figure 20 - Proposed shed (floor plan)



Figure 21 - Proposed shed (SE elevation)

Precise Planning

Two (2) lot subdivision, erection of a new dwelling house and shed (for commercial use),
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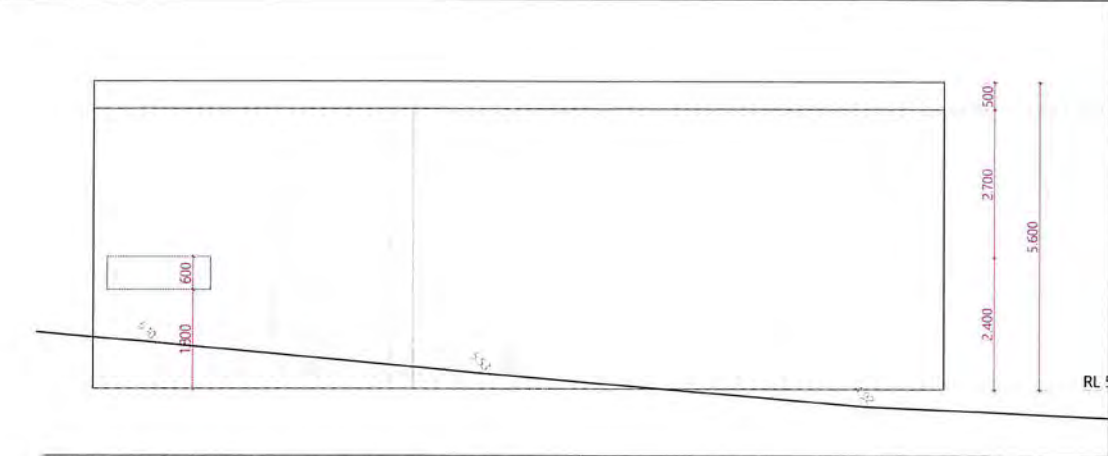


Figure 22 - Proposed shed (NW elevation)

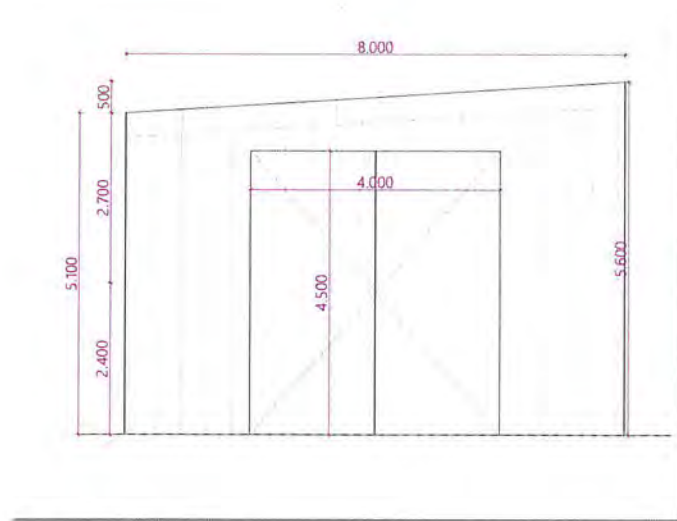


Figure 23 - Proposed shed (SW elevation)

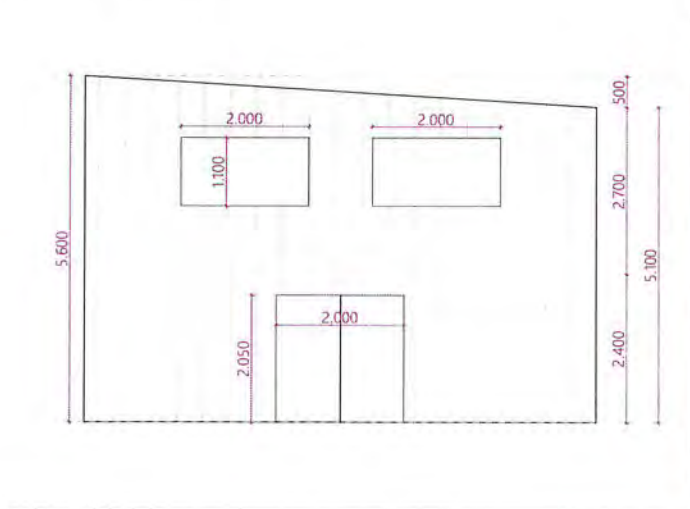


Figure 24 - Proposed shed (NE elevation)

3.3.2 Use of shed as commercial premises

3.3.2.1 General

The Proponent owns and operates Dive Lord Howe, a tourist-related business on the island. The Application seeks consent to the use of the shed as commercial premises, specifically for the repair and maintenance of boats and equipment owned by Dive Lord Howe, as well as repairs and maintenance for other boats and watercraft not associated with Dive Lord Howe.

The Proponent provides the following description of the proposed use of the shed.

- **Primary use**

The primary use for the proposed shed is to service outboard engines and have a space out of the weather to weld aluminium boats.

- **Noise**

The noise associated with the proposed activities is negligible, as all servicing of engines is undertaken using powered and non-powered hand tools. Welding does not generate excessive noise. The activity most likely to generate noise is grinding to prepare the aluminium to weld. However, this is sporadic only, with the majority of the servicing of vessels and compressors require non-powered hand tools only. The grinder used to prepare the aluminium for welding has the following noise emission ratings - Sound Power Level (LWA) 97 dB(A) Sound Pressure Level (LpA) 89 dB(A) Noise Uncertainty (K Factor) 3 dB(A). Mitigation measures include ensuring doors and windows are closed when grinding and only grinding during daylight hours.

- **Removal of antifoul**

The proposed activities do not include removal of antifoul from the vessels.

- **Engine servicing**

Engine oil change - An engine oil change on an outboard motor requires a bung to be removed on the side of the engine. All oil from the engine block can be caught in an oil pan tray and then transferred by hand to a sealed container for transport to the Lord

Howe Island Waste Transfer Facility. To ensure that an oil spill is avoided an additional spill tray is positioned under the engines, as well as a drop sheet. Next is the removal of the oil filter (which by this stage is empty of oil). The oil filter is placed on a specific lug in the oil pan to drain any residual oil into the pan. Finally, the new oil filter is fitted and the engine is filled with genuine engine oil as specified by the manufacturer. Generally, this engine oil is 10w-40 semi synthetic engine oil. This would also be done with the spill tray and drop sheet in place. This removes the need for a bunted area for the shed. This would be conducted every 100 engine hours which is generally every 2 months during the dive season which runs from 1st of September to the 31st of May yearly.

Gear oil change - Gear oil procedure is similar to the engine oil, but without an oil filter. Gear oil is drained into an oil pan and new oil is added to the gear box from the bottom until it is visible from the hole at the top. The top bung is then replaced and the filling tube is removed from the bottom of the gearbox. It is at this point that some oil could escape. This is caught in the oil pan, however the spill tray and drop sheet are still in position for additional security. The gear oil is generally SAE90 hypoid gear oil. This would be conducted every 100 engine hours which is generally every 2 months during the dive season which runs from 1st of September to the 31st of May yearly.

Spark plugs - Removal and replacement of spark plugs do not require any additional measures to contain contaminants. The oil spark plugs are removed with a socket set and replaced with new ones. The spark plugs are disposed of at the Lord Howe Island Waste Transfer Facility. This would be conducted every 200 engine hours which is generally every 3-4 months during the dive season which runs from 1st of September to the 31st of May yearly.

Water pumps - The impeller and wear plates are removed and replaced. No additional measures are necessary to contain any potential contaminants. This would be conducted every 200 engine hours which is generally every 3-4 months during the dive season which runs from 1st of September to the 31st of May yearly.

Hydraulic steering - Bleeding air from hydraulic steering units required pulling oil through the hydraulic lines from the helm to the ram at the back of the system. The ram has two bleeding points and the procedure involves installing a clear plastic tube onto the bleeding point and draining the fluid through the tube into a container while a second person fills from the helm. This has the potential for a spill so the spill tray and drop sheet are positioned to avoid any potential spill spreading. If the procedure goes to plan, all hydraulic fluid is caught in the secondary container and can be reused if there is not contamination. If the fluid is contaminated it is transferred to a sealed container for

disposal at the Lord Howe Island Waste Transfer Facility. This would only be required if there was an issue with the steering.

Other works - Other works on the engine involve changing anodes, replacing faulty sensors and parts, greasing engine nipples and removing and greasing propellers. None of the additional works require special considerations for containing contaminants.

- **Body works**

Another use for the commercial shed would be to undertake welding and body works on the vessels. Broken handrails, ladders and corrosion are common issues for all the aluminium commercial vessels on Lord Howe Island. Welding aluminium requires an argon shield to protect the arc as the weld is being undertaken. This is a challenge on Lord Howe Island as there is no designated shed that is large enough to fit the boats in and conduct this work. Noise would be generated only if there was preparatory work required for a weld. This may require cleaning the area needing to be worked on with a grinder or polishing wheel to remove any imperfections and achieve a clean weld. The welding itself would not require any specific considerations for containing contaminants. Any metal shavings or dust would be swept up and disposed of at the Lord Howe Island waste transfer facility.

- **Painting**

Neither of the Dive Lord Howe vessels are painted with 2 Pac paint and as such this would not be a requirement for the shed. The requirement for a spray bay within the shed is not envisaged. Only one (1) of Dive Lord Howe's vessels has antifoul paint on the bottom of the hull. If this was required to be removed it would be scraped from the hull and the swept up after removal. It would then be transferred to a sealed container and disposed of at the Lord Howe Island Waste Management Facility. No vessel would be cleaned with a high-pressure washer in the shed and therefore would not require special bunting to deal with the contaminated water or loose antifoul paint. Reapplication of antifoul paint may take place in the shed and will be applied with a paint roller. In this instance a drop sheet will be laid out to catch any drips during the painting process.

- **Compressor servicing**

Dive Lord Howe has two air compressors that are used to fill the SCUBA bottles in the dive shed. Every two years they require a major overhaul and it is proposed to undertake this activity in the commercial shed. These works involve removal of old lubricant oil,

replacement of seals, rings and rings was well as replacement of filtration. All used lubricant oils would be transferred to a sealed container and disposed of at the Lord Howe Island Waste Transfer Facility. Any other used parts or equipment would also be disposed of at the Lord Howe Island Waste Transfer Facility. The majority of the works would involve the use of hand tools and would not generate any additional noise. Once the compressors have been serviced, they are required to be run for diagnostics. This would create some noise. However, the noise is not considered to be excessive and would only be conducted during the daylight period.

- **Car servicing**

Dive Lord Howe owns one Ford Ranger that requires periodic maintenance and servicing. This would involve oil changes of the engine and transmission. Replacement of air filters and oil filters. All potential contaminants would be contained by a spill tray and drop sheet. For clarity, only the Dive Lord Howe vehicle would be serviced at the shed. The Application does not seek approval to a vehicle repair station.

3.3.2.2 Operational details

Operational element	Detail
Hours of operation	Generally, 7am to 6pm Monday to Saturday, although these hours may vary according to demand for works to be undertaken on vessels or dive air compressors. Due to this variability, it is requested that the development consent not specify approved hours of operation, given the repairs and maintenance work will be undertaken within the shed and will therefore not create amenity impacts for neighbouring residents.
Staffing	Two (2) staff members during scheduled maintenance of the equipment
Signage	No signage is proposed
Public access	No members of the public will attend the premises.
Vehicles accessing the premises	<p>The largest vehicle likely to access the premises would be a Hino 300 Series flatbed truck, as well as a Ford Ranger 3.2 utility with triaxle trailer carrying a 3.2 tonne vessel.</p> <p>Vehicular movements into and out of the premises will be based on demand. However, total vehicle movements will not be excessive and will not adversely impact traffic movements along Lagoon Road or create adverse amenity impacts for neighbouring residents.</p> <p>Vessels requiring servicing or maintenance will be delivered to the premises by trailer and stored in the shed whilst work is being carried out.</p>

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Operational element	Detail
	Deliveries of parts and other items are envisaged to be fortnightly.
Fuel and oil storage	No fuel will be stored at the premises. Refer to document entitled Storage, handling and disposal of liquids and wastes, submitted with the Application documentation.
Typical activities	Repair and maintenance of vessels Cleaning of vessels (no antifouling) Servicing and repair of dive equipment
Waste management	Food waste will be disposed of in sealed food scrap bins. General waste will be placed in bins (to be located along the western wall of the proposed shed, between the shed and the driveway) and taken as required to the island’s waste transfer facility. See document entitled Storage, handling and disposal of liquids and waste, submitted with the Application documentation.

Table 3 - Operational details of proposed commercial premises

3.3.3 Proposed landscaping

The Application seeks consent for additional landscaping, as detailed on the Landscape Plan prepared by the Proponent. The landscape plan proposes some screen planting within the adjoining Lot 110 DP 757515 and includes a letter from the leaseholder Mavis Fitzgerald consenting to the planting.



Figure 25 - Proposed additional landscaping

3.4 Removal of vegetation

The Proposal has been designed to avoid clearing of native vegetation, being located predominantly on existing cleared areas.

The Proposal will result in the removal of two (2) large exotic Pohutukawa *Metrosideros kermadecensis*, as well as a stand of exotic Oleander *Nerium oleander* and a planted native Banyan *Ficus macrophylla* subsp. *columnaris*.

Exotic plant species do not require consent for removal.

4 Statutory Assessment

4.1 Acts and Regulation

4.1.1 Environmental Planning and Assessment Act 1979

Reference	Requirement	Response
Environmental Planning and Assessment Act 1979		
S 4.12(1) Application	A person may, subject to the regulations, apply to a consent authority for consent to carry out development	This SEE accompanies an application to LHIB, as the consent authority, for consent to carry out the proposed development as described in the SEE and accompanying documentation.
S 4.14(1)	Development on bushfire prone land must comply with Planning for Bushfire Protection 2019	The Subject Site is not mapped as bushfire prone land.
S 4.15(1) Matters for consideration - general	(a)(i) Environmental planning instruments	Consistent, except for side setback control at cl 32(2)(a) LHILEP 2010 - see Section 4.2, Tables 6 and 7.
	(ii) draft instruments	N/A
	(iii) development control plans	Generally compliant - see Annexure A of this SEE. Some matters identified in the table at Annexure A require a merit assessment.
	(iiia) planning agreements	N/A

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Reference	Requirement	Response
	(iv) the regulations	Consistent - see below
	(b) Likely impacts	Acceptable - see s 4.5 of this SEE
	(c) Suitability of the site	Based on compliance with the relevant controls and standards contained in the applicable EPIs and DCP, as well as the consideration of likely impacts at s 4.5 of this SEE, the Subject Site is suitable for the Proposal. The Proposal seeks a variation to the minimum side boundary setback control at cl 32(2)(a) of LHILEP 2010 and the merit assessment of some guidelines contained in LHIDCP 2005.
	(d) Submissions	A matter for consideration by the LHIB. The proponent will address any issues raised in public submissions if requested by the LHIB.
	(e) Public interest	A public interest benefit is derived from undertaking a development which generally complies with the relevant provisions of the applicable SEPPs, LEP and DCP. The final development will result in one (1) additional lot, one (1) additional dwelling house and one (1) additional commercial premise on the island. The Proposal is generally consistent with the various controls and guidelines contained in the relevant SEPPs, LHILEP 2010 (except the side setback control at cl 32(2)(a)) and LHIDCP 2005 (merit assessment required for some guidelines), with manageable impact to the natural or built environment, positive economic and social impacts and negligible increased demands on public infrastructure.
S 4.46(1)	Integrated development triggers	The Proposal does not trigger the need for any approvals listed in this section. The Application is lodged as Local Development.

Table 4 - Assessment in accordance with Environmental Planning and Assessment Act 1979

4.1.2 Environmental Planning and Assessment Regulation 2021

Reference	Requirement	Response				
Environmental Planning and Assessment Regulation 2021						
	Part 3 Development applications, cl 23 - cl 36	<table border="1"> <tr> <td>CI 23</td> <td>Crown owner's consent is submitted with development application</td> </tr> <tr> <td>CI 24</td> <td>Information required by the approved form, EPA Act and Regulation has been provided. The Application will be lodged via the Planning Portal</td> </tr> </table>	CI 23	Crown owner's consent is submitted with development application	CI 24	Information required by the approved form, EPA Act and Regulation has been provided. The Application will be lodged via the Planning Portal
CI 23	Crown owner's consent is submitted with development application					
CI 24	Information required by the approved form, EPA Act and Regulation has been provided. The Application will be lodged via the Planning Portal					

Reference	Requirement	Response
		CI 25 No external concurrence or approvals required
		CI 26 N/A to this Proposal
		CI 27 The Proposal is BASIX development. A BASIX certificate is submitted with the Application documentation
		CI 28 The Proposal does not trigger the <i>Biodiversity Conservation Act 2016</i>
		CI 29 N/A to this Proposal
		CI 30 N/A to this Proposal
		CI 30A N/A to this Proposal
		CI 30B N/A to this Proposal
		CI 31 N/A to this Proposal
		CI 32 The required information is provided
		CI 33 N/A to this Proposal
		CI 34 N/A to this Proposal
		CI 35 N/A to this Proposal
		CI 35A N/A to this Proposal
		CI 35B The Application proposes development that contravenes a development standard imposed by an EPI. The 'relevant EPI provision' under the LHILEP 2010 is found at cl 32(3).
		CI 35BA N/A to this Proposal
		CI 35C N/A to this Proposal

Reference	Requirement	Response	
		CI 35D	N/A to this Proposal
		CI 36	Noted
	Part 4 Determination of development applications	CI 69(1)	For the purposes of this prescribed condition, it is intended that the Proposal be capable of compliance with the relevant provisions of the Building Code of Australia

Table 5 - Assessment in accordance with Environmental Planning and Assessment Regulation 2021

4.1.3 Lord Howe Island Act 1953

Section 15A authorises the LHIB to act as consent authority for the purposes of the EPA Act.

4.1.4 Lord Howe Island Regulation 2014

No relevant provisions.

4.1.5 Biodiversity Conservation Act 2016

Section 7.3 sets out the test for determining whether proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats.

In response, a 'test of significance' assessment has been undertaken and a report prepared by Bower Bush. The executive summary confirms that the Proposal will not result in a significant impact on threatened species or ecological communities, or their habitats.

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4.2 Environmental Planning Instruments

4.2.1 State environmental planning policies

Reference	Requirement	Response
State Environmental Planning Policy (Sustainable Buildings) 2022		
Chapter 2 Standards for residential development - BASIX		
CI 2.1 Standards for BASIX development	The proposed dwelling house is a BASIX building and therefore the standards of Schedule 1 apply.	The Application is accompanied by a BASIX certificate which addresses the standards outlined in Schedule 1.

Table 6 - Assessment in accordance with relevant State Environmental Planning Policies

4.2.2 Local Environmental Plan

LHI Local Environmental Plan 2010		
CI 2(2) Aims	(a) to conserve the world heritage values of Lord Howe Island and to restore or enhance lost or disturbed natural resources of the Island; (b) to conserve and facilitate the management of the marine environment of the island and the resources of that environment; (c) to protect threatened species, populations and ecological communities, and their habitats; (d) to encourage the ecologically sustainable use of resources; (e) to encourage community appreciation of the World Heritage values of the Island;	The Proposal is either consistent with, or else does not hinder the attainment of, the aims of the LHILEP 2010.

LHI Local Environmental Plan 2010		
	<p>(f) to enhance the wellbeing and welfare of individuals and the Island's community by pursuing economic development that safeguards the welfare of future generations;</p> <p>(g) to facilitate the proper management, development and conservation of the Island's World Heritage natural environment, the Island's cultural heritage and the Island lifestyle;</p> <p>(h) to identify suitable land for the provision of housing and community services for the Island's population while acknowledging suitable land for these purposes is limited;</p> <p>(i) to enable, on the limited land available for agriculture, sustainable agriculture (that is, Agriculture that contributes to the island's economy and also protects the biological and physical resource base on which it depends);</p> <p>(j) to ensure that public utility undertakings are carried out on the Island in a manner that minimises any environmental impact on the Island of those undertakings;</p> <p>(k) to acknowledge the importance of tourism to the Island economy and permit future development of tourism within limits;</p> <p>(l) to ensure tourism on the Island does not adversely affect the lifestyle of residents, or the World Heritage environmental qualities of the Island, but enables visitors and residents to enjoy the Island;</p> <p>(m) to ensure the conservation of relics, specified heritage items and the heritage significance of those relics and heritage items (including the settings of those heritage items); and</p> <p>(n) to protect and promote the use and development of land for arts and cultural activity, including music and other performance arts</p>	
CI 2(3) Strategies	<p>(a) to apply general land use controls to land within each zone and special provisions for particular kinds of development or for development on particular land;</p> <p>(b) to identify suitable land for future housing opportunities and limit the total number of future dwellings;</p> <p>(c) to identify significant native vegetation by a map and to ensure that development does not result in its removal;</p> <p>(d) to require the advertising of any development application for development that, in the consent authority's opinion, is likely to have a significantly adverse impact on the environment;</p>	<p>The Proposal is permissible with consent in the relevant zone.</p> <p>The Proposal identifies a location for development which utilises existing serviced land, avoids the removal of significant native vegetation and results in a positive economic and social impact.</p>

LHI Local Environmental Plan 2010

	(e) to require consideration of possible adverse environmental, economic or social impacts in advance of development.	
CI 11 Matters that must be satisfied before development consent granted	(a) the proposed development is consistent with the aims of this Plan and the objectives of any zone, as set out in this Plan, within which the development is proposed to be carried out	The proposal is consistent with the aims of this Plan (refer above) and is consistent with the objectives of the Zone 2 Settlement objectives (refer below)
	(b) there is an adequate area available for the disposal or treatment of any effluent arising from the proposed development by an appropriate effluent treatment or disposal system and any such system will not have any adverse effect on groundwater quality	Refer to the details contained in the wastewater report, submitted with the Application documentation
	(c) no part of the proposed development: (i) will result in any damage to, or the removal of, significant native vegetation, or (ii) will have a significantly adverse impact on the habitat of any plants, or animals, that are native to the Island.	Refer to the details contained in the ecological report, submitted with the Application documentation
	(d) access is, or will be, available to the site of the proposed development and the provision of any such access will not: (i) result in any damage to, or the removal of, significant native vegetation, or (ii) have a significantly adverse impact on the habitat of any plants, or animals, that are native to the Island	Refer to the details contained in the ecological report submitted with the Application documentation
	(e) any proposed landscaping will provide various species of plants that are native to the Island and common in the locality to enhance any significant native vegetation	Refer to the details on the landscape plan submitted with the Application documentation
	(f) the proposed development will not be adversely affected by any landform limitations, including flooding, landslip, unstable soils and steep slopes	Flooding - The Subject Site is mapped by the Lord Howe Island Flood Study 2021 as subject to flooding. However, the flood inundation is mainly categorised H1 and is considered to be satisfactorily addressed in the concept civil and stormwater plan and throughout this SEE. Landslip - the Subject Site is not constrained by landslip Unstable soils - the Subject Site is not constrained by unstable soils Steep slopes - the slope of the Subject Site is considered satisfactory for the Proposal

LHI Local Environmental Plan 2010

	(g) adequate services in respect of the proposed development can be provided without significant additional cost to the Board or the community of the Island	All services required by the Proposal are already available and adequate for the Proposal. Where any upgrading may be required, it will be at the cost of the Proponent.
	(h) the appearance of the proposed development (when considered by itself or in conjunction with existing buildings and works) will not have any significant adverse impact on the locality	The Proposed dwelling house has been designed to nestle into the landform. The proposed dwelling house and shed are proposed to be constructed in colours that are recessive in the landscape and blend with their surroundings (refer to the photomontage at Figure 30 of this SEE)
	(i) the proposed development will not cause any significant overshadowing of adjoining land	The Proposal will not result in significant overshadowing of adjoining land
	(j) the proposed development will not cause any significant reduction in the privacy of occupiers of adjoining land	The Proposal will not result in a significant reduction in privacy of occupiers of adjoining land - refer to section 4.5 of this SEE.
Cl 14 Zone 2 Settlement	<p>(1) Objectives of Zone 2 Settlement:</p> <p>(a) to provide opportunities for limited residential and commercial development that maintains the dispersed housing pattern of the settlement area and is in sympathy with existing development in relation to the following:</p> <p>(i) setbacks;</p> <p>(ii) building mass and style;</p> <p>(iii) visual amenity;</p> <p>(iv) landscaped character</p>	<p>The Proposal seeks to utilise the opportunity for both residential and commercial development. The Proposal is consistent with the dispersed pattern of the settlement area and achieves compliance with the minimum lot size controls.</p> <p>(i) Setbacks - The Application seeks a variation to the minimum side boundary setback control contained in cl 32(2)(a) of the LHILEP 2010 (see below). Nevertheless, the Proposal does not result in unacceptable adverse impacts on existing development, notwithstanding the reduction in the side setback for the proposed dwelling house.</p> <p>(ii) Building mass and style - The proposed dwelling house achieves compliance with the maximum floor area control contained in cl 23(1)(a) of the LHI LEP 2010. Whilst two-storey, the design intent is to reduce bulk through articulation on the street elevation and lowering the overall building height by nestling the structure into the landscape. The proposed dwelling house location is toward the rear of the Subject Site, further reducing bulk from the public realm. The proposed shed is a</p>

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		<p>conventional shape and size. The colour palette for both structures emphasises a recessive element, which helps to mitigate building mass.</p> <p>The architectural style of the dwelling house is contemporary. Its design and the proposed materials and colours are recessive rather than bold and is compatible with existing development in the locality.</p> <p>(iii) Visual amenity - The photomontage included with the architectural plan set (see also Figure 30 of this SEE) demonstrates minimal visual impact from the proposed built structures on the public realm and the LHI airport opposite. In terms of amenity to adjoining properties, the land to the southeast and northeast is a Special Lease and does not permit the erection of a dwelling. The dwelling house erected on the land to the southwest is obstructed visually from the Proposal by existing SNV.</p> <p>(iv) Landscaped character - The Proposal occupies an area of the Subject Site which is predominantly clear of trees and other native vegetation. Some minor landscaping is proposed, which will enhance the existing landscaped character of the locality.</p>
	<p>(b) to ensure that any development is only permitted in locations where, in the consent authority's opinion:</p> <p>(i) the development will not involve unacceptable infrastructure costs for the Board or the community of the Island;</p> <p>(ii) there is adequate area available for the treatment or disposal of any effluent arising from the proposed development by an appropriate effluent treatment or disposal system;</p> <p>(iii) the land is capable of supporting the proposed development and is suitable in terms of the land's physical constraints (such as vulnerability to erosion, slip or flooding);</p> <p>(iv) the development (including any effluent treatment or disposal system referred to in subparagraph (ii)) will not adversely affect groundwater quality</p>	<p>(i) The Proposal will not incur unacceptable infrastructure costs for the Board or the community of the Island. The Subject Site is serviced with electricity and water. Any infrastructure costs incurred as a result of the Proposal will be met by the Proponent.</p> <p>(ii) There is adequate area available for the treatment and disposal of effluent (refer to the wastewater report submitted with the Application documentation).</p> <p>(iii) The Subject Site is not constrained by erosion or landslip. Some minor flooding occurs in a 1% AEP rainfall event, however both the proposed dwelling house and shed floor levels are above or within the prescribed range for the Flood Planning Level for the Subject Site.</p>

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		(iv) It is envisaged that the wastewater system will have no adverse effect on groundwater quality.
CI 21 Subdivision	(2) the consent authority must not consent to the subdivision of land within Zone 2 Settlement unless: (a) the area of each proposed allotment (except for an allotment referred to in paragraph (b) or (c) is at least 3,000m ² , or (b) if there are one or more existing dwellings (but no existing tourist accommodation, staff accommodation or commercial premises) on a proposed lot - the total area of the allotment is at least the minimum dwelling area, or (c) N/A	The area of each proposed lot exceeds 3,000m ² .
CI 22 Tourist accommodation, staff accommodation and commercial premises	(1) The consent authority must not consent to the erection, enlargement or extension of any building comprising, or ancillary to, tourist accommodation, staff accommodation or commercial premises on an allotment unless: (a) the total area of the allotment occupied by any existing or proposed buildings comprising, or ancillary to, the accommodation or premises is no more than 15% of the balance of the area of the allotment remaining after the minimum dwelling area is deducted from the total area of the allotment.	Commercial premises proposed on Lot 12 . 15% of the area exceeding 3,000m ² Proposed lot 12 - 3,798m ² 3,798 - 3,000 = 798m ² 798 x 15% = 119.7m ² , rounded to 120m² Proposed shed 15m x 8m - 120m²
	(b) it is proposed that at least 50% of the total area of the allotment be comprised of landscaped areas and that various species of plants that are native to the Island and common to the locality be retained or planted on at least 35% of the total area of the allotment	Proposed Lot 12 - 3,798m ² Landscaped area (50%) - 1,899m ² required, 3,060m ² provided; SNV (35%) - 1,329.3m ² required, 1,446m ² provided.
	(c) the proposed development is carried out on a part of the allotment that does not have any significant native vegetation	The proposed shed in which the commercial use is proposed is clear of the mapped SNV
	(d) the consent authority is satisfied that there is a demonstrated business need for the development	Due to the lack of adequate facilities on the Island, there is a demonstrated business need for a shed in which commercial operators can work on their vessels. The majority of commercial vessels on the island are constructed from aluminium and, without a shed to work in, welding repairs are very difficult. This is primarily due to the fact that the argon gas that is required as a welding shield gets blown away in the

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		wind when working outside. Additionally, the areas where operators are currently able to work on their vessels is not a secure facility. There have been incidents in the past of criminal vandalism of commercial vessels when they are removed from the water for servicing. Finally, having the required tools in one location would expedite servicing, specifically of the Dive Lord Howe fleet, during the season, as the person working on the vessels would not need to go back to the storage facility to retrieve a specific tool or piece of equipment. It would also assist with the difficulty of working on the vessels in adverse weather conditions and mud.
CI 23 Erection of dwellings	(1) The consent authority must not consent to the erection of one or more dwellings on an allotment unless:	New dwelling house proposed on Lot 12 Maximum permitted = 300m ² GFA of proposed dwelling house - 299.075m ²
	(a) the gross floor area of each proposed dwelling is no more than 300m ²	
	(b) the total area of the allotment is at least the minimum dwelling area	Proposed Lot 12 - 3,798m ²
	(c) the total area of the allotment occupied by any existing or proposed buildings comprising, or ancillary to, tourist accommodation, staff accommodation or commercial premises is no more than 15% of the balance of the area of the allotment remaining after the minimum dwelling area is deducted from the total area of the allotment	15% of the area exceeding 3,000m ² Proposed lot 12 - 3,798m ² 3,798 - 3,000 = 798m ² 798 x 15% = 119.7m ² , rounded to 120m² Proposed shed 15m x 8m - 120m²
	(d) it is proposed that at least 50% of the total area of the allotment be comprised of landscaped areas and that various species of plants that are native to the Island and common to the locality be retained or planted on at least 35% of the total area of the allotment	Proposed Lot 11 - 5,000m ² <u>Landscaped area</u> (50%) - 2,500m ² required, 4,820m ² provided; <u>SNV</u> (35%) - 1,750m ² required, 2,264m ² provided. Proposed Lot 12 - 3,798m ² <u>Landscaped area</u> (50%) - 1,899m ² required, 3,060m ² provided; <u>SNV</u> (35%) - 1,329.3m ² required, 1,446m ² provided.
(e) the proposed dwelling or dwellings are erected on a part of the allotment that does not have any significant native vegetation	The plans submitted with the Application documentation identify that the proposed dwelling is clear of the mapped SNV	

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Cl 26 Limit on number of dwellings to which consent may be given	(1) In any period, consent may be granted for the erection of no more than the total number of dwellings determined by the Board and approved by the Director-General in respect of that period for the purposes of this clause	The LHI B issued a letter to Lisa Ralph dated 9 April 2024 advising that on 13 March 2024 the Minister approved the following: <i>Approve the issue Owners Consent to lodge development applications for the creation of four new dwellings as per the eligible applications of the 2023 Dwelling Allocation Ballot</i>
	(2) Regardless of the total number of dwellings determined for the purposes of subclause (1), consent may be granted for the erection of no more than a total of 25 dwellings during a period of 20 years commencing on 28 October 2005	The LHI B records are relied on in relation to compliance with this clause
Cl 29 Maximum height of buildings	(1) Despite anything to the contrary in Part 2 or any other provisions of this Part, the erection of a building that has a height or more than 7.5 metres above natural ground level is prohibited	The architectural plan set demonstrates compliance with this control
Cl 32 Setbacks of buildings in Zone 1, 2 or 5	(2) Any building proposed to be erected on an allotment of land to which this clause applies must comply with the following requirements: (a) if the allotment has one boundary adjoining a road - the building must be erected at least 10 metres from that boundary and at least 5 metres from any other boundary of the allotment	Both the shed and the dwelling house are proposed to be greater than 10m from the Lagoon Road boundary. However, the proposed dwelling house is proposed to be 2m from the adjacent side boundary, which does not comply with the 5m control
	(3) Despite subclause (2), a proposed building (including any alterations to, or any enlargement or extension of, an existing building) that does not comply with the requirements set out in subclause (2) may be erected with the consent of the consent authority on land to which this clause applies if, in the consent authority's opinion, compliance with the requirements would be unreasonable (for example, because of the physical constraints of the land) or unnecessary.	<p><u>The Proponent contends that strict compliance with the 5m side setback control in this circumstance is both unreasonable and unnecessary for the following reasons:</u></p> <p>1. The reduced side setback is proposed in order to avoid the mapped limit of the SNV. The proposed dwelling house is 10m wide and is located less than 1m clear of the mapped SNV. Strict compliance would require the proposed dwelling house to be 7m wide, which is neither functional nor cost-effective. The reduced side setback allows a relatively modest dwelling house footprint which is a reasonable distance clear of the mapped SNV line.</p>

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	<p>2. The adjoining land along the southeast boundary of the Subject Site, which is the closest land to the reduced setback, is Lot 110 DP 757515. A Special Lease has been granted over this allotment and it does not have an entitlement for the erection of a dwelling. Therefore, the potential impact of the reduced side setback is limited, insofar as the nearest neighbouring dwelling is over 50m from the location of the proposed dwelling house, being 361 Lagoon Road (Lot 1 DP 1106449).</p> <p>3. The lease holder of the adjoining land (Lot 110 DP 757515), Mavis Fitzgerald, has provided a letter in conjunction with this Application, confirming she does not oppose the placement of the proposed dwelling house. The letter acknowledges the proposed variation to the side boundary setback.</p> <p>4. Whilst there is a wider area of proposed Lot 12 unconstrained by the SNV towards the front, it was considered that the proposed shed and associated commercial use should be located toward the front of the site to minimise amenity conflicts. The selected dwelling house location allows for compatibility with the landscaped character of the area and the predominant settlement pattern, noting that the existing dwellings on 345, 361 and 363 Lagoon Road are all positioned toward the rear of their respective allotments (see Figure 26 of this SEE).</p> <p>5. The reduced setback will not create privacy, noise or other amenity impacts on adjoining land.</p> <p>6. There are numerous examples of where the side setback control has been varied by the LHIB. Some examples are:</p> <ul style="list-style-type: none"> • 19 Muttonbird Drive (Lot 1 DP 1118574) • 17 TC Douglass Drive (Lot 19 DP 757515) and adjoining lots

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		<ul style="list-style-type: none"> • 37 Ocean View Drive (Lot 284 DP 48687) • 11 Neds Beach Road (Lot 199 DP 39755) • 33 Skyline Drive (Lot 10 DP 1131288) • 46 Skyline Drive (Lot 287 DP 48690) <p>There are numerous other examples. The above list is just a sample.</p> <p>A number of the above cited examples (as well as those not listed), may have been approved prior to the making of the current LHILEP, which was 2010. However, <i>importantly</i>, the same side setback control was included in the two previous EPI's, being LHIREP 2005 (see clause 30) and LHIREP 1986 (see clause 11). This demonstrates that all examples of side setbacks approved closer than 5m to a side boundary, since at least 1986, were approved as a result of a variation to the same development standard.</p> <p>Whilst it is acknowledged that each Application is determined on its merits, it is evident that this control has been varied many times by the LHIB since 1986.</p> <p>7. The reduced side setback is not contrary to the public interest.</p> <p>On the basis of the foregoing, the Proponent considers there are sufficient environmental planning grounds to justify the proposed variation and seeks the Board's support to a variation as proposed.</p>
<p>CI 33 Landscaping to be carried out in Zone 2</p>	<p>The consent authority must not consent to the carrying out of any development on land within Zone 2 Settlement unless it is satisfied that there will be no significantly adverse impact on the existing landscaped character and dispersed pattern of housing in that zone.</p>	<p>The Proposal completely avoids the SNV and requires the removal of only exotic species. The site layout arrangement is consistent with the location of existing dwellings on either side. The colour and materials proposed for the buildings have been selected so that they are a recessive element in the landscape. The Subject Site is located in a small cluster of residential dwellings and is therefore consistent with the dispersed</p>

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pattern of housing.

Table 7 - Assessment in accordance with LHILEP 2010



Figure 26 - Existing pattern of dwelling house locations

4.3 Applicable Draft Environmental Planning Instruments

There are no provisions within any draft EPI's which are relevant to the assessment of this Application.

4.4 Applicable Development Control Plan(s)

4.4.1 Lord Howe Island Development Control Plan (2005)

Refer to Annexure A to this SEE.

4.5 Likely Impacts

Impacts were identified through a combination of:

- Feedback from consultants
- Discussions with proponents
- Consideration of statutory and local requirements
- Consideration of existing surrounding development
- Consideration of existing stormwater infrastructure
- Consideration of existing vegetation on the Subject Site and adjoining land
- Consideration of the existing landscaped character and visual impact
- Consideration of ecological impacts
- Consideration of proper waste protocols

Potential impact	Response
Bushfire	<p>The NSW Rural Fire Service prepared a Bush Fire Risk Management Plan for Lord Howe Island in 2019 ('BFRMP') https://www.rfs.nsw.gov.au/_data/assets/pdf_file/0012/105321/Lord-Howe-Island-BFRMP.PDF</p> <p>The BFRMP notes at section 1.3.4 that "(T)he main source of ignitions in the Lord Howe Island BFMC area is escaped BBQ fires, camp fires and pile burns". The Proposal does not involve these activities, nor the surrounding land uses. At p17, the BFRMP notes the following:</p> <p style="padding-left: 40px;"><i>"No part of the Lord Howe Island BFMC Area is currently mapped BFPL, therefore the provisions of Planning for Bushfire Protection do not currently apply on the Island."</i></p>

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Potential impact	Response	
	<p><i>"The Lord Howe Island Local Environmental Plan 2010 contains no provisions excluding development in extreme bush fire risk areas. No part of the Lord Howe Island BFMC is mapped BFPL."</i></p> <p>In the absence of specific controls, bush fire safety is predominantly a matter of safe practices, constant maintenance and the accessibility of a water source to assist in the defence of assets.</p> <p>It is noted that the BFRMP identifies four (4) assets in the vicinity of the Subject Site, numbered 1, 9, 11 and 14 - see Figure 27. Considering the nature of the Proposal, the history of bush fires on the Island and the risk management overview provided in the BFRMP, the bush fire risk in relation to the Proposal is consistent with other residential areas on the Island.</p>	
Contamination	The Subject Site is unlikely to be contaminated.	
Economic	The Proposal will result in positive economic impacts during construction, through the employment of tradespeople and suppliers, together with additional custom for suppliers of goods to satisfy the daily needs of the workers. In the long-term, the proposed commercial use of the shed will sustain local employment and provide growth opportunities for Dive Lord Howe, which is an existing business operating on the Island.	
Ecology	<p>A test of significance assessment has been undertaken and a report prepared by Bower Bush. The report covered the location of the proposed dwelling, shed, driveway and wastewater irrigation system. A vegetation survey was also undertaken, including an assessment of habitats and other ecological attributes of the Subject Site.</p> <p>The test of significance assessment assesses the direct and indirect impacts of the Proposal and concludes that the Proposal will not result in a significant impact on threatened species or ecological communities, or their habitats.</p>	
Flooding	<p>The Subject Site is mapped as being marginally impacted by flooding, based on the Lord Howe Island Flood Study June 2021 - see Figure 28. From the modelling provided by the LHIB, the peak 1% AEP flood level in the mainstream impact area at the front of the Subject Site (not overland flow) is RL 4.22m. Therefore, the majority of the driveway is designed to be above the 1% AEP. However, as Lagoon Road is at RL 4.00m, it is not possible for the entirety of the driveway to be flood-free. However, the majority of the impact area is categorised H1, which is defined as <i>"generally safe for people, vehicles and buildings"</i>. A short section commencing about 15m inside the front boundary is categorised H2, which is defined as <i>"unsafe for small vehicles"</i>. To mitigate this hazard, the proposed driveway is designed to be above the 1% AEP at this location.</p> <p>For overland flow, each of the building pads (dwelling house and shed) are designed to be within the RL range provided by the flood report. The habitable floor level of the proposed dwelling is RL 11.5m and therefore clear of the FPL. The floor level of the proposed shed is mid-range (finished floor level 5.25m - FPL range = 4-6m).</p>	
Heritage	European	The Subject Site does not contain any items of local heritage significance, nor is it located within a heritage conservation area. The Subject Site is mapped within the State Heritage Register Curtilage - Lord Howe Island Group. This general listing covers the entire island.
	Aboriginal	An AHIMS search undertaken on 16 October 2024 showed that no Aboriginal sites are recorded at or near the Subject Site (200m) and no Aboriginal places have been declared at or near the Subject Site (within 200m) - see Figure 29.

Potential impact	Response
	The AHIMS web report advises that this search can form part of the due diligence process and remains valid for 12 months.
Noise	All repair and maintenance work will be undertaken inside the shed. The existing dwelling at 341 Lagoon Road is distant approximately 90 metres from the location of the proposed shed and is separated by dense vegetation. The existing dwelling at 361 Lagoon Road is distant approximately 130 metres from the location of the proposed shed. The activity likely to generate the most noise is the occasional use of a power tool, as detailed in subsection 3.3.2.1 of this SEE. However, this is sporadic only, with the majority of the servicing of vessels and compressors require non-powered hand tools only. The grinder used to prepare the aluminium for welding has the following noise emission ratings - <i>Sound Power Level (LWA) 97 dB(A) Sound Pressure Level (LpA) 89 dB(A) Noise Uncertainty (K Factor) 3 dB(A)</i> . Mitigation measures include ensuring doors and windows are closed when grinding and only grinding during daylight hours.
Services	Electricity, water and telecommunications are all available to the Subject Site and will be extended/augmented as required to satisfactorily service the proposed development. Wastewater will be managed on site in accordance with the wastewater report.
Social	The Proposed is a low-scale development with minimal adverse environmental impact. As the Proposal will create economic activity, it has a social benefit. Adverse amenity impacts on the surrounding area are considered unlikely.
Stormwater	The civil and stormwater concept plan demonstrates appropriate stormwater management for this Proposal.
Streetscape and visual impact	<p>The Proposal seeks consent for a new dwelling and shed, with commercial use of the shed.</p> <p>The main line of sight for the new structures is from the airport, which is opposite the Subject Site. This is an important consideration, as it will be one of the first visual impressions for people arriving to the island by plane.</p> <p>The landscape plan contains summary of the lines of sight and also includes a photomontage, which is replicated at Figure 30 of this SEE.</p> <p>The Proposal will have an acceptable visual impact, for the following reasons:</p> <ol style="list-style-type: none"> 1. The architectural design of the dwelling is articulated and nestled into the topography, which helps mitigate the built form in the landscape; 2. The colours chosen for the external walls are earthy and muted and result in the structures being recessive elements when viewed from both the airport and Lagoon Road; 3. The proposed landscaping will, over time, provide partial screening of the built structures; 4. The backdrop of Transit Hill emphasises a scale difference between the natural topographic environment and the built structures. Due to the significant difference, the eye of a casual observer is more likely to take in the natural environment, with the built structures being peripheral only. <p>On balance, it is considered that the visual impact of the Proposal is acceptable.</p>
Surrounding development	The Subject Site adjoins two lots along its northwest boundary, being 341 Lagoon Road (Lot 2 DP 1118575) and Lot 107 DP 757515, which has no street address. An existing dwelling is erected on 341 Lagoon Road, nestled into its northwest corner. A thick tree cover separates the dwelling from the Subject Site. Lot 107 DP 757515 is vacant.

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Potential impact	Response
	<p>Along its southeast and northeast boundaries, the Subject Site adjoins Lot 110 DP 757515, a vacant lot which also has no street address and is the subject of a Special Lease. No dwelling house will be erected on this lot.</p> <p>Opposite the Subject Site is the runway for the Lord Howe Island airport.</p> <p>The Proposal is unlikely to adversely impact surrounding development.</p>
Traffic	The Proposal will result in negligible additional traffic movements.
Wastewater	The onsite wastewater report has designed a system to accommodate effluent from the new dwelling (4 bedroom (5EP) = 600 litres per day) and the new shed toilet and sink (100 litres per day). This equates to a total anticipated flowrate of 700 litres/day. For the reasons set out in subsection 3.3.2.1 of this SEE, no additional flows are envisaged as a result of the proposed commercial use of the shed, other than the 100 litres/day allowed for in relation to the toilet and sink.
Waste management	<p>Construction waste management will be managed using skip bins for general construction waste and recycling. The ongoing waste management will be serviced by the proponent, as the Island does not have a waste collection service. The proponent will be responsible for delivering waste to the Island's waste management facility. Food waste will be disposed of in sealed food scrap bins. General waste will be placed in bins (to be located along the western wall of the proposed shed, between the shed and the driveway) and taken as required to the island's waste transfer facility.</p> <p>See document entitled Storage, handling and disposal of liquids and waste, submitted with the Application documentation.</p>

Table 8 - Summary of potential impacts and responses

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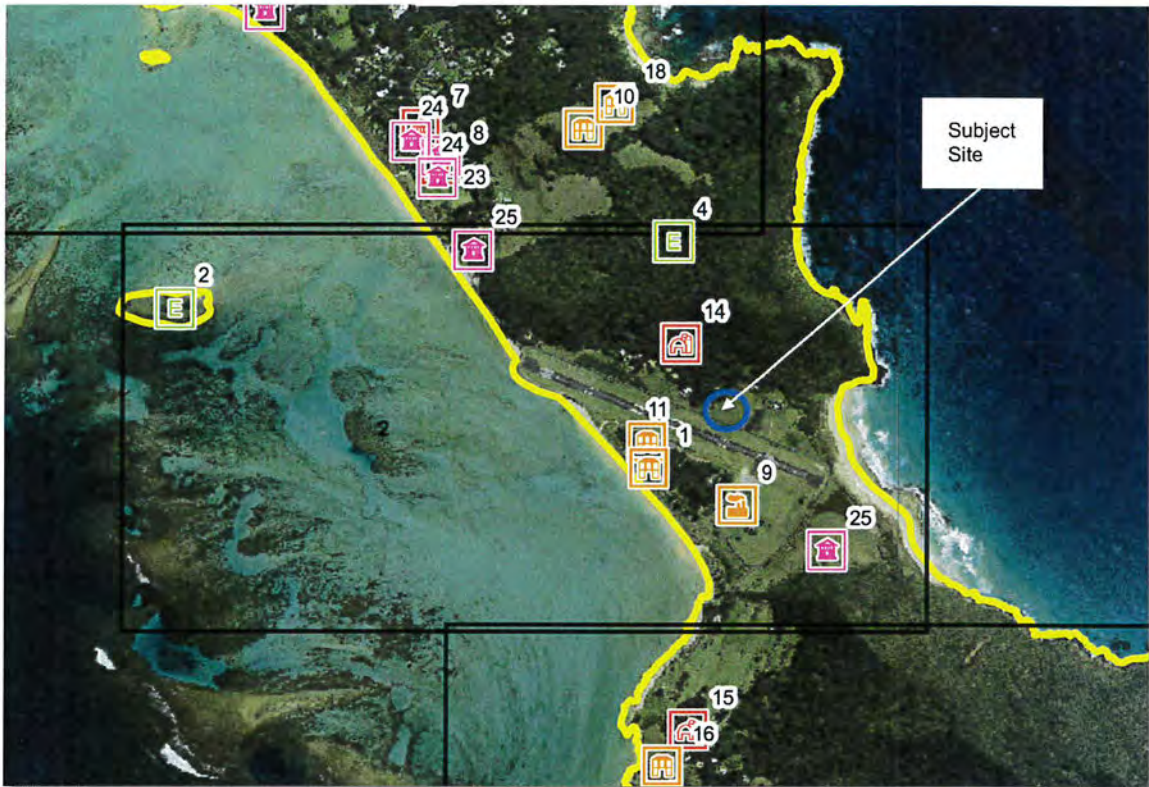


Figure 27 - Excerpt from Lord Howe Island Bush Fire Risk Management Plan

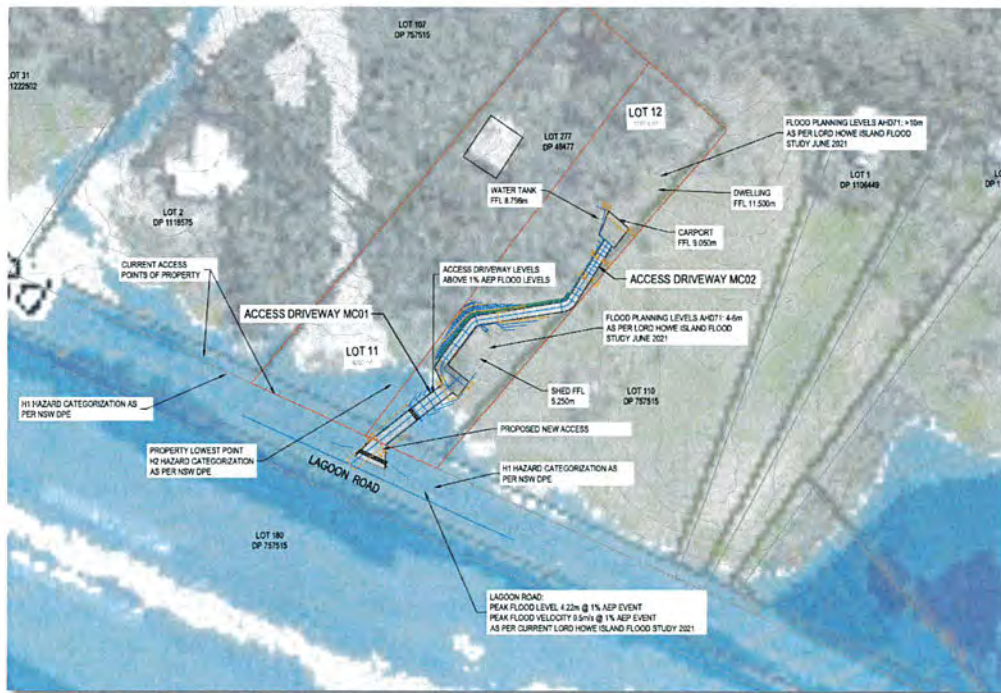


Figure 28 - Flood impacts as per Lord Howe Island Flood Study June 2021

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AHIMS Web Service search for the following area at Address : 345 LAGOON ROAD LORD HOWE ISLAND 2898 with a Buffer of 200 meters, conducted by Jeffrey Bulfin on 16 October 2024.

The context area of your search is shown in the map below. Please note that the map does not accurately display the exact boundaries of the search as defined in the paragraph above. The map is to be used for general reference purposes only.



A search of Heritage NSW AHIMS Web Services (Aboriginal Heritage Information Management System) has shown that:

0	Aboriginal sites are recorded in or near the above location.
0	Aboriginal places have been declared in or near the above location. *

Figure 29 - Result of AHIMS basic search at 16 October 2024



Figure 30 - Photomontage of Proposal when viewed from airport

4.6 Suitability of the Site for the Proposed Development

Based on the detailed assessment undertaken as part of this SEE it is concluded that the Subject Site is capable of accommodating the proposed development. The Proposal complies in all respects with the relevant controls, except the side setback control contained in cl 32(2)(a) of the LHILEP 2010. However, pursuant to cl 32(3), the Proponent contends that strict compliance with this control, in this circumstance, is both unreasonable and unnecessary. Potential impacts are considered to be acceptable. On balance, it is considered that the Subject Site is suitable for the Proposal.

4.7 Community Consultation and Public Submissions

Community consultation is to be undertaken by the LHIB through the public exhibition of the development application at the time of lodgement. Public submissions made during the exhibition period are to be taken into consideration by the LHIB as part of the evaluation process under s. 4.15 of the EPA Act. Should the LHIB require a response to public submission by the proponent, one can be prepared and submitted as additional information at a later date.

4.8 Public Interest

A public interest benefit is derived from undertaking a development which generally complies with the relevant provisions of the applicable LEP and DCP. In terms of this Proposal, it achieves compliance with all applicable planning controls, except for the side setback distance contained in cl 32(2)(a) of the LHILEP 2010. However, pursuant to cl 32(3), the Proponent contends that strict compliance with this control, in this circumstance, is both unreasonable and unnecessary. The Proposal is generally compatible with the form and pattern of existing development at the locality, with negligible or positive environmental, social and economic impact in the locality. The Proposal will not place any significant increased demands on public infrastructure. As such, the Proposal is considered to be in the public interest.

5 Conclusion

This Statement of Environmental Effects (**'SEE'**) accompanies a local development application (**'the Application'**) made under s 4.12 of the *Environmental Planning & Assessment Act 1979* (**'EPA Act'**), which seeks consent from the Lord Howe Island Board (**'LHIB'**), as the relevant consent authority, for a two (2) lot subdivision, erection of a new dwelling house and shed (and its use as commercial premises), installation of a new onsite wastewater system and ancillary civil, stormwater and landscaping works, in three (3) stages, (**'the Proposal'**) at 345 Lagoon Road Lord Howe Island (**'Subject Site'**).

The SEE has been prepared in accordance with the requirements of the *Environmental Planning and Assessment Act 1979* (**'EPA Act'**) and the *Environmental Planning and Assessment Regulation 2021* (**'EPA Reg'**). The SEE meets the mandatory requirements set out on the Approved Form² and addresses all matters necessary to enable the LHIB to make a determination of the Application.

The Proposal generally complies with the planning requirements relevant to the Proposal and the Subject Site, in terms of the relevant SEPP, LHILEP 2010 and LHIDCP 2005, except where identified in this SEE. The Proposal will not create unreasonable or unmanageable adverse impacts on either the natural or built environment and its economic and social impact is likely to be positive. The Proposal is considered to be in the public interest.

On merit it is considered that the Application be approved subject to conditions.

PRECISE PLANNING

October 2024

² See cl 24(1)(b)(i) EPA Reg.

Precise Planning

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6 ANNEXURE A - LHI DCP 2005 Compliance assessment

The Proposal is assessed against the relevant provisions of the *Lord Howe Island Development Control Plan 2005 (LHIDCP 2005)* in the following tables.

Reference	Component	Compliance	Comment
CHAPTER 1 - Introduction, aims and objectives			
1.2 Objectives of the Plan	<p><i>(a) to encourage quality design of residential and non-residential development;</i></p> <p><i>(b) to assist in achieving the aims and strategies of the REP;</i></p> <p><i>(c) to provide guidelines on appropriate, sustainable building designs and locations;</i></p> <p><i>(d) to promote design solutions which respect the Island character and minimise loss of amenity for neighbours;</i></p> <p><i>(e) to ensure that the scale and appearance of new development is compatible with the Island character;</i></p> <p><i>(f) to protect and/or re-establish environmental integrity;</i></p>	✓	<p>Achieved</p> <p>(a) The proposed dwelling house and shed are considered to represent quality design. The designs were developed and drawn by Stephen O'Connor, a registered architect.</p> <p>(b) The Lord Howe Island REP 2005 is now repealed.</p> <p>(c) The Proposal is consistent with the guidelines, as demonstrated below.</p> <p>(d) The architectural style of the proposed dwelling house is contemporary, which is considered appropriate for the locality and the topography. It is two-storey and incorporates a split-level design, due to the topography of the house site. The Proposal is generally screened from the neighbours on the northwest side. The land on the northeast and southeast sides is vacant.</p> <p>(e) The photomontage submitted on the architectural plan set demonstrates that the scale and appearance of the Proposal is compatible with the Island character.</p> <p>(f) The Proposal has been arranged so that it avoids SNV, thus protecting the environmental integrity of the locality.</p> <p>(g) A BASIX certificate is submitted with the Application, which demonstrates energy and water efficiency.</p>

Reference	Component	Compliance	Comment
	<p>(g) to encourage energy and water efficient designs;</p> <p>(h) to require and maintain high quality landscaped areas;</p> <p>(i) to promote a high level of protection from natural hazards in design for both current and future residents; and</p> <p>(j) to protect the community's interests.</p>		<p>(h) Proposed landscaping is detailed on the landscape plan submitted with the Application documentation.</p> <p>(i) There are no major hazards that would prevent the approval of the Proposal. The Subject Site is mapped as being flood-prone near the front boundary. However, the hazard categorisation is predominantly H1, which is generally safe. It is noted that Lagoon Road at this location is also mapped as flood-prone.</p> <p>(j) On balance, it is considered that approval of the Application is in the public interest.</p>
CHAPTER 2 - Design principles			
2.2 Objectives	<p>(a) to encourage good design of subdivision layout and buildings which respect the special landscape character of the Island;</p> <p>(b) to encourage subdivision that considers future development opportunities appropriately;</p> <p>(c) to encourage the maintenance of the existing scale of Island buildings;</p> <p>(d) to encourage design of buildings in such a way that physical impacts on the site are minimised;</p>	✓	<p>(a) The proposed subdivision layout is consistent with the pattern of subdivision in the immediate vicinity, allowing sufficient area on proposed lot 12 to accommodate the new dwelling and shed and the commercial use of the shed.</p> <p>(b) The proposed subdivision has considered the planning controls relating to the erection of a dwelling house and the commercial use of the proposed shed. Whilst no other future uses are contemplated at this time, each lot is of sufficient size for alternative uses in the future.</p> <p>(c) The proposed dwelling house complies with the maximum gross floor area permitted under the LHILEP 2010.</p> <p>(d) The proposed dwelling house has been designed to nestle into the landscape to minimise visual impact. Some excavation is required to achieve this objective. However, the required excavation will not adversely impact the Subject Site.</p> <p>(e) The Proposal is generally consistent with this objective.</p>

Reference	Component	Compliance	Comment
	<p>(e) to provide information on appropriate construction methods and materials and efficient use of resources recognising the special characteristics of the Island; and</p> <p>(f) To encourage the energy efficient design of buildings</p>		<p>(f) The proposed dwelling house meets the target requirements for BASIX.</p>
2.3 Design context	<p>A building should be designed to sit comfortably within the existing natural and built environment. The design should:</p> <p>(a) reflect the existing dispersed development character of the settlement area;</p> <p>(b) be responsive to the site's constraints and opportunities; and</p> <p>(c) be environmentally sensitive and sustainable.</p>	✓	<p>(a) The Proposal reflects the existing dispersed development character of the settlement area by maintaining separation distances between dwelling houses that are consistent with the surrounding area. The proposed allotments are at least the minimum area, being 3,000m².</p> <p>(b) The location of the proposed dwelling is consistent with the street setback of the nearest dwellings on either side, taking advantage of a gentle rise in the topography to enhance views. The SNV constraint has been respected as set out in this SEE.</p> <p>(c) The Proposal is considered to be environmentally sensitive and sustainable, as set out in this SEE.</p>
2.3.1 Slope and soil stability	<p>Avoid difficult or unsuitable terrain, unstable soil conditions, erosion hazards and difficult access</p>	✓	<p>The proposed dwelling site slopes at approximately 16%. Each floor incorporates a split level to minimise cut. The maximum cut is at the rear of the building, where a cut of 1.4m is proposed. However, part of this cut is battered to accommodate stairs (refer to the section in the architectural plan set). Considering other constraints such as the SNV and the visual impact potential, the scope of the proposed cut is considered appropriate.</p>

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Reference	Component	Compliance	Comment
2.3.2 Orientation	<i>Living areas, verandahs and terraces should be orientated generally toward the NE - NW quadrant.</i>	✓	Living areas are located on the upper level and have large sliding doors and a verandah facing north- northwest.
2.3.3 Climate	<i>Analyse areas exposed to strong winds, use ridgelines and landscaping for protection.</i>	✓	The design accounts for strong westerly winds by positioning the existing SNV to the west. The upper floor living layout provides solid walls along parts of the northwest elevation.
2.3.4 Visual amenity	<i>Provide building sites which are not visually prominent from other locations on the Island; Blend with the settlement area character, avoid the highest point of the allotment, install screen planting as required, consider bulk and scale. View the site from key vantage points. Choose colours and materials to complement the backdrop. Generally, darker colours blend better with a backdrop of trees.</i>	✓	The photomontage provided with the architectural plan set demonstrates that the Proposal blends appropriately with the treed backdrop, as suggested by the guidelines. The intent of the darker colours is to help the buildings to be a recessive element in the landscape and the backdrop of Transit Hill and the dense tree cover achieves this objective. Some vegetative screening is also proposed as detailed in the landscape plan submitted with the Application documentation.
2.4 Bulk and scale	<i>Maintain the predominantly low scale, single storey character of the existing buildings on the Island. Avoid excessive elevation of floor levels on visually prominent, steeper slopes - buildings are</i>	✓	The proposed new dwelling house complies with the maximum GFA and maximum building height specified in the LHILEP 2010. Whilst the dwelling house is two-storey, each floor incorporates a split level in order to minimise bulk and excessive elevation of floor levels. The Proposal is considered to be compatible with the locality and achieves an appropriate bulk and scale.

Reference	Component	Compliance	Comment
	<i>better planned to step down slopes where possible.</i>		
2.5 Building forms			
2.5.1 Roofs	<i>Simple gable and hipped roofs using traditional roof pitches in the range of 22.5 degrees to 45 degrees are preferable. Long uninterrupted roof planes should be avoided</i>	Merit assessment	<p>The proposed dwelling house has adopted a single skillion roof with a 7-degree pitch. Whilst this is not the roof profile preferred by this guideline, it can be demonstrated that skillion roofs have been supported and approved at a number of locations on the Island. Some examples are:</p> <ul style="list-style-type: none"> • Capella Lodge (both butterfly skillion and straight skillion roofs); • Island House (skillion roof on manager's residence); • Arajilla Retreat (a number of skillion roofs); • Bowker beachhouse (butterfly skillion) <p>The proposed roof profile is considered to be compatible when assessed holistically, in conjunction with the architectural articulation, colours and materials and setback from both the public realm and existing adjoining dwellings. Whilst taken in isolation the proposed roof profile is not that which is preferred by this guideline, it is nevertheless considered to be appropriate in its context and not without precedent on the Island.</p>
2.5.2 Verandahs and overhangs	<i>Include verandahs at design stage, particularly north-facing elevations.</i>	✓	The layout includes a verandah facing north, accessed from the living area on the upper level.
2.6 Building materials and colours	<i>Materials and colours should complement the natural surroundings. Avoid reflective surfaces such as high gloss finishes, solar tinted reflective glass and uncoated</i>	✓	The materials and colours are depicted on the photomontage, being dark recessive colours that complement the vegetated backdrop.

Reference	Component	Compliance	Comment
	<i>zincalume sheets unless they can be effectively screened</i>		
2.7 Energy and water efficiency	<i>Various guidelines</i>	✓	The proposed dwelling house is BASIX compliant, which is the relevant state-wide standard for energy and water efficiency. The BASIX commitment table is contained in the architectural plan set.
2.8 Landscaping design			
2.8.1 Site vegetation	<i>Work with existing vegetation. Avoid conflict between buildings and existing vegetation, including during construction phase</i>	✓	SNV has been avoided. Only three (3) existing trees require removal. The SNV will be protected by temporary construction fencing during the construction phase.
2.8.2 Visibility and screening	<i>Consider tree planting along sight lines to minimise potential visual exposure, particularly from important vantage points</i>	✓	The most significant sight lines to the proposed dwelling house are from Lagoon Road and the airport terminal building. Screen planting and landscape embellishment is proposed as detailed on the landscape plan submitted with the Application documentation.
2.8.3 Planting and establishment	<i>Guidelines for acceptable and recommended species and necessary maintenance to ensure survival of planting</i>	✓	Refer to the details provided in the landscape plan.
2.9 Site access and parking	<i>Plan for access roads which curve through existing landscape screening. Consider environmental impacts and avoid long access roads or which require significant cut and fill</i>	✓	The proposed driveway access weaves around the proposed shed, then angles across the site to provide access to the proposed dwelling house. The access has been designed to minimise cut and fill, as shown on the longitudinal section contained in the concept civil and stormwater plan set submitted with the Application documentation.

Reference	Component	Compliance	Comment
CHAPTER 3 - Development control policy			
3.1 Subdivision			
3.1.1 Objectives	<p>(a) To provide guidelines for the design of subdivisions ensuring environmental impacts are minimised and efficient use of land is achieved;</p> <p>(b) To ensure lots are designed to respond to the physical characteristics of the area such as slope, significant native vegetation, fauna and drainage; and</p> <p>(c) To ensure lots maintain the existing settlement pattern and reflect the current dispersed, low density character of the Island.</p>	✓	<p>The proposed subdivision follows the existing settlement pattern at the locality and ensures the new lot has adequate area for its intended purpose which is clear of the SNV.</p> <p>The proposed subdivision is consistent with the dispersed, low density character of the Island, because it achieves the minimum lot size of 3,000m² and accommodates a new house site which maintains typical separation distances from adjoining or nearby dwellings.</p>
3.1.2 Design requirements	Lots in settlement area minimum area 3000m ²	✓	Both proposed lots exceed 3,000m ²
3.1.3 Design principles	Subdivision planning should take into account the likely future development of that land.	✓	Noted. See analysis below and throughout this SEE.

Reference	Component	Compliance	Comment
	An analysis should be provided to demonstrate there is a suitable site for the Proposal.		
	<p>The subdivision should have regard for:</p> <p>(a) whether sufficient land is suitable for the proposed development in terms of:</p> <p>(i) soil stability and slope, natural drainage patterns and erosion control; (ii) visual exposure and privacy; (iii) exposure to strong winds; (iv) orientation of the lots in respect to solar access; (v) access in terms of slope, contours, relationship to existing public roads; (vi) location of endangered fauna habitats; and (vii) location and type of existing vegetation including significant native vegetation</p>	✓	<p>(i) The proposed subdivision does not interfere with natural drainage patterns. The proposed dwelling house site is satisfactory in terms of slope. Soil stability has not been investigated at this time.</p> <p>(ii) Visual impacts have been considered in the design of the Proposal and addressed in this SEE;</p> <p>(iii) The SNV offers some protection to the proposed dwelling house site from strong westerly winds;</p> <p>(iv) The proposed subdivision allows for a dwelling house design that permits appropriate solar access from the north;</p> <p>(v) The proposed access is considered to be satisfactory;</p> <p>(vi) The test of significance indicates that the Proposal will not significantly impact endangered fauna habitats;</p> <p>(vii) The proposed subdivision permits the dwelling and shed whilst retaining the SNV.</p>
	<p>The subdivision should have regard for:</p> <p>(b) whether the lots can be designed to ensure they are of a shape and size that meets the requirements of the DCP in respect of:</p> <p>(i) Setbacks from boundaries;</p>	Merit assessment	<p>(i) As noted and addressed in this SEE, the Application seeks a variation to the side boundary setback control.</p> <p>(ii) Landscaped area provision is compliant with the LHILEP 2010 control.</p> <p>(iii) These matters are addressed in the landscape plan and in this SEE.</p> <p>(iv) There is no site coverage control of which we are aware. Nevertheless, the Proposal is compliant with the relevant maximum GFA controls.</p>

Reference	Component	Compliance	Comment
	<p>(ii) Landscaped area provision;</p> <p>(iii) potential for visual and climatic screening employing additional planting;</p> <p>(iv) site coverage by buildings</p> <p>(v) effects on the potential for sustainable agriculture</p> <p>A subdivision will best meet the design requirements of the DCP if it is able to locate land suitable development which:</p> <p>(a) Is toward the centre of the lot;</p> <p>(b) Avoids visual exposure;</p> <p>(c) Does not involve negative impacts on SNV;</p> <p>(d) Does not require a long access road or substantial cut and fill</p>		<p>(v) The Subject Site is not in a rural zone. The Proposal will not inhibit the potential for sustainable agriculture on any nearby land.</p>
		Merit assessment	<p>(a) Land is available towards the front of the proposed lot 12 which allows the shed to be centred. However, due to the extent of the SNV, the proposed dwelling house site is located off-centre, towards the side boundary.</p> <p>(b) The potential for visual exposure, as well as mitigation measures, has been discussed in this SEE.</p> <p>(c) The proposed buildings and driveway are clear of the SNV.</p> <p>(d) The access road weaves around the proposed shed, then approaches the proposed dwelling house site diagonally, to mitigate potential visual impacts. Cut and fill has been minimised.</p>
3.2 Single dwellings			
3.2.1 Objectives	<p>Ensure development</p> <p>(a) Avoids environmental damage and protects the special landscape qualities of Lord Howe Island in terms of land</p>	Merit assessment	These matters have been comprehensively addressed in this SEE.

Reference	Component	Compliance	Comment
	<p>capabilities, setbacks, building mass and style, visual amenity and landscaping;</p> <p>(b) is located so as to avoid any SNV in the settlement areas;</p> <p>(c) ensures minimum intervention in terms of construction of accessways, site formation, ancillary structures and sewerage and wastewater treatment and disposal.</p>		
3.2.2 Development requirements	<ul style="list-style-type: none"> • Minimum site area of 3,000m² for a new dwelling; • Maximum gross floor area is 300m²; • Minimum setback from road is 10m and 5m from side boundary; • Maximum building height is 7.5m above natural ground level; • 50% of the allotment must be landscaped and 35% of the allotment planted with a variety of endemic species; • Erection of a dwelling must not require the removal of SNV from the site 	Merit assessment	The Proposal is fully compliant with these controls, except the side boundary setback, which has been addressed in this SEE.
3.2.3 Design principles	A DA for a new dwelling to meet the design principles in Chapter 2	Merit assessment	As per comments at Chapter 2, the Proposal is generally compliant. It proposes a different roof profile to the profile preferred by the relevant DCP guideline.

Reference	Component	Compliance	Comment
3.2.4 Site and building plans	Refer to DA guide	✓	Noted. The documentation provided with the Application is considered to be satisfactory.
CHAPTER 4 - Development applications			
4.1 Introduction	<p><i>Matters for consideration include:</i></p> <p><i>(a) Visual appearance of the development;</i></p> <p><i>(b) The relationship of the development to the special visual and landscape qualities of the Island;</i></p> <p><i>(c) Site access, location of building and structures;</i></p> <p><i>(d) Impacts on neighbouring development, including effects on views, privacy and overshadowing;</i></p> <p><i>(e) Environmental impacts, including protection of fauna;</i></p> <p><i>(f) Means of treatment and disposal of sewerage, wastewater and garbage;</i></p> <p><i>(g) Impacts on the landform, including excavation, filling and clearing; and</i></p>	✓	All the matters listed have been addressed throughout this SEE and in the accompanying documentation.

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Reference	Component	Compliance	Comment
	(h) Landscaping		

Table 9 - Lord Howe Island DCP 2005 Compliance table

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7 ANNEXURE B - Approved form

Reference / Requirement	Response
1.1 Information required for development applications	
a. the name and address of the applicant	Aaron Ralph c/- Dive Lord Howe, Shed 2, Lagoon Road, Lord Howe Island, 2898
b. a description of the development to be carried out	See s 3 of this SEE
c. the address and formal particulars of title of the land on which the development is to be carried out	See s 2.1 of this SEE
d. an indication as to whether the land is, or is part of, critical habitat	The Subject Site is not critical habitat
e. an indication as to whether the development is likely to significantly affect threatened species, populations or ecological communities, or their habitats, unless the development is taken to be development that is not likely to have such an effect because it is biodiversity compliant development	The Proposal is unlikely to significantly affect threatened species, populations or ecological communities or their habitats
f. the estimated cost of the development	\$1,149,500 (incl GST)
g. evidence that the owner of the land on which the development is to be carried out consents to the application, but only if the application is made by a person other than the owner and the owner's consent is required by the Regulation	Crown Landowner's consent document is submitted as part of the Application documentation
h. a list of the documents accompanying the application	See s 1.2 Table 1 of this SEE
i. a statement of environmental effects	This document
j. a site plan of the land	See Application documentation
k. drawings of the development	See Application documentation
Table 1 requirements (as relevant)	

Reference / Requirement		Response
Circumstance	Requirements	Response
Arrangements before consent can be granted under an environmental planning instrument	a. Documentary evidence that such arrangements have been made	No arrangements are required
Building work to alter, expand or rebuild an existing building	b. A scaled plan of the existing building	N/A
Change of use of a building (other than a dwelling house or a building or structure that is ancillary to a dwelling house and other than a temporary structure)	c. A list of the Category 1 fire safety provisions that currently apply to the existing building. d. A list of the Category 1 fire safety provisions that are to apply to the building following its change of use	N/A
Concurrence	e. A list of any authorities from which concurrence must be obtained before the development may lawfully be carried out or from which concurrence would have been required but for section 4.13(2A) or 4.41 of the Act f. A statement by the applicant that the relevant matters in the Development referrals guide have been considered	No concurrences required
Development involving mining for coal (within the meaning of section 380AA of the <i>Mining Act 1992</i>)	g. Documentary evidence that the applicant holds an authority under the <i>Mining Act 1992</i> in respect of coal and the land concerned, or has the written consent of the holder of such an authority to make the development application	N/A
Development referred to in State Environmental Planning Policy (Housing) 2021, clause 45(1)	h. Evidence or information demonstrating whether the development is likely to result in the loss of low-rental dwellings on the land to which the application relates during the relevant period, within the meaning of State Environmental Planning Policy (Housing) 2021, Chapter 2, Part 3	
Development permitted under State Environmental Planning Policy (Housing) 2021, Chapter 2, Part 2, Division 1 or 2	i. The name of the registered community housing provider who will be managing the boarding house	
Development for a boarding house or co-living house	j. A plan of management	

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Reference / Requirement	Response	
Entertainment venues, function centres, pubs, registered clubs or restaurants	k. A statement that specifies the maximum number of persons proposed to occupy, at any one time, that part of the building to which the use applies	
Erection of a building	l. An A4 plan of the building that indicates its height and external configuration, as erected, in relation to its site	Plans provided in architectural plan set
Integrated development	m. A list of any approvals of the kind referred to in section 4.46(1) of the Act that must be obtained before the development may lawfully be carried out n. A statement by the applicant that the relevant matters in the Development referrals guide have been considered	The Proposal is not integrated development
Land that is, or is part of, critical habitat or development that is likely to significantly affect threatened species, populations or ecological communities, or their habitats	o. A species impact statement	N/A
Land that is in a wilderness area and is the subject of a wilderness protection agreement or conservation agreement within the meaning of the <i>Wilderness Act 1987</i>	p. A copy of the consent of the Minister for Energy and Environment to the carrying out of the development.	
Manor houses or multi-dwelling houses (terraces) to which State Environmental Planning Policy (Housing) 2021, Chapter 2, Part 2, Division 1 applies	q. A statement, in the form approved by the Planning Secretary, by a qualified designer or a person accredited as a building designer by the Building Designers Association of Australia that— <ul style="list-style-type: none"> o verifies that the designer or person designed, or directed the design of, the development o addresses how the design is consistent with the relevant design criteria set out in the Low Rise Housing Diversity Design Guide 	
Subdivision	r. Preliminary engineering drawings of the work to be carried out	Provided
Temporary structure	s. Documentation that specifies the live and dead loads the temporary structure is designed to meet t. A list of any proposed fire safety measures to be provided in connection with the use of the temporary structure	N/A

Reference / Requirement	Response
<p>u. In the case of a temporary structure proposed to be used as an entertainment venue—a statement as to how the performance requirements of Part B1 and NSW Part H102 of Volume One of the Building Code of Australia are to be complied with (if a performance solution, to meet the performance requirements, is to be used)</p> <p>v. Documentation describing any accredited building product or system sought to be relied on for the purposes of section 4.15(4) of the Act</p> <p>w. Copies of any compliance certificates to be relied on</p>	

1.2 Requirements for a statement of environmental effects

Reference/Requirement	Response
a. The environmental impacts of the development	See s 4.5 of this SEE
b. How the environmental impacts of the development have been identified	See s 4.5 of this SEE
c. The steps to be taken to protect the environment or to lessen the expected harm to the environment	See s 4.5 of this SEE
d. Any matters required to be indicated by any guidelines issued by the Planning Secretary	None, other than the Approved Form
e. Drawings of the proposed development in the context of surrounding development, including the streetscape	See Figures in this SEE
f. Development compliance with building heights, building height planes, setbacks and building envelope controls (if applicable) marked on plans, sections and elevations	
g. Drawings of the proposed landscape area, including species selected and materials to be used, presented in the context of the proposed building or buildings, and the surrounding development and its context	
h. If the proposed development is within an area in which the built form is changing, statements of the existing and likely future contexts	
i. Photomontages of the proposed development in the context of surrounding development	
j. A sample board of the proposed materials and colours of the façade	

Reference / Requirement	Response
k. Detailed sections of the facades	
l. If appropriate, a model that includes the context	

1.3 Requirements for a Site Plan

a. Location, boundary dimensions, site area and north point of the land	See architectural plan set
b. Existing vegetation and trees on the land	
c. Location and uses of existing buildings on the land	
d. Existing levels of the land in relation to buildings and roads	
e. Location and uses of building on sites adjoining the land	

1.4 Requirements for Drawings

a. Location of any proposed buildings or works (including extensions or additions to existing buildings or works) in relation to the land's boundaries and adjoining development	Refer to architectural plan set and concept civil and stormwater plan set
b. Floor plans of any proposed buildings showing layout, partitioning, room sizes and intended uses of each part of the building	
c. Elevations and sections showing proposed external finishes and heights of any proposed buildings (other than temporary structures)	
d. Elevations and sections showing heights of any proposed temporary structures and the materials of which any such structures are proposed to be made (using the abbreviations set out in s 5 of the Reg)	
e. Proposed finished levels of the land in relation to existing and proposed buildings and roads	Refer to concept civil and stormwater plan set
f. Proposed parking arrangements, entry and exit points for vehicles, and provision for movement of vehicles within the site (including dimensions where appropriate)	
g. Proposed landscaping and treatment of the land (indicating plant types and their height at maturity)	Refer to landscape plan
h. Proposed methods of draining the land	Refer to concept civil and stormwater plan set

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i. In the case of development that requires a BASIX certificate, such other matters as any BASIX certificate for the development requires to be included on the drawings	Provided
j. In the case of BASIX optional development - if the application is accompanied by a BASIX certificate or BASIX certificates, such other matters as any BASIX certificate for the development requires to be included on the drawings	N/A
1.5 Other requirements	No additional requirements

Table 10 - Approved form requirements checklist

345 Lagoon Road, LORD HOWE ISLAND

DEVELOPMENT APPLICATION



Drawing No.	Drawing Name
09.1	Alternate Bedroom Layout
DA-00-02	BASIX
DA-00.1	Register, Location Map, Legend
DA-02.1	Existing Site Plan - 1:500
DA-02.2	Proposed Ground Floor Plan
DA-02.3	Proposed First Floor
DA-02.4	Proposed Roof Plan
DA-03.1	NW Elevation
DA-03.2	SE Elevation
DA-03.3	NE & SW Elevations
DA-04.1	Proposed Section
DA-05.1	Shed Plan
DA-05.2	Shed Roof Plan
DA-05.3	Shed Elevations
DA-06.1	Proposed GFA
DA-07.1	Window Schedule 01
DA-07.2	Window Schedule 02
DA-07.3	Window Schedule 03
DA-07.4	Window Schedule 04
DA-07.5	Window Schedule 05
DA-07.6	Window Schedule 06
DA-07.7	Window Schedule 07
DA-07.8	Window Schedule 08
DA-07.9	Window Schedule 09

STEPHEN O'CONNOR ARCHITECTURE

Studio SD-1, 19A Boundary Street, Rushcutters Bay 2011
 t +61 411 138 771 | stephen@stephenocconnorarchitecture.com
 Nominated Architect - Stephen O'Connor / Registration number 11115

NOT FOR CONSTRUCTION

Verification

To verify this certificate, scan the QR code or visit hstar.com.au/QR/Generate?p=JssaYvra. When using either link, ensure you are visiting hstar.com.au



Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Register, Location Map, Legend
Project Number	2407
Drawing No.	DA-00.1

Commitments Table

Project Details		Proposed:		Address:	
Proposed:		Single Dwelling		345 Lagoon Road Lord Howe Island NSW 2893	
Lot Number:		11		DP NUMBER: 48477	
BASIX Certificate Number: 17678265					
Water	Fixtures	Specification			
	Shower head rating	4 star (x 4) but <= 2.5 Litres/min			
	Toilet rating	3 star			
Alternative water details	Kitchen taps rating	3 star			
	Bathroom taps rating	3 star			
	Watermeter table type	Individual	A/B/C/D		
Committed to:	Garden and lawn areas	Yes			
	All toilets	Yes			
	Laundry	Yes			
HERA 10036					
NATHERS Certificate Number: 0000796442					
Thermal Comfort	External walls	Requirements			
	Flank cavity direct fix Brick veneer	Medium colour	R2.7	Bulk + Anti-glare foil	
	Internal walls	Medium colour	R2.7	Bulk + Anti-glare foil	
	Cavity wall, direct fix plasterboard	No insulation			
	Ceiling				
	External ceiling - Timber	R2.5 Bulk Insulation			
	Internal ceiling - Plasterboard	R5.0 Bulk Insulation			
	Plasterboard	R3.5 Bulk Insulation			
	Roof				
	Corrugated iron	Medium Colour (Solar absorbance 0.475-0.7)			
	Waterproofing membrane	R2.5 Bulk + Reflective side down, No air gap above (Minimum 95, 100mm)			
	Waterproofing membrane	Medium Colour (Solar absorbance 0.475-0.7)			
	Waterproofing membrane	No insulation			
	Waterproofing membrane	Medium Colour (Solar absorbance 0.475-0.7)			
	Waterproofing membrane	R2.5 Bulk + Reflective side down, No air gap above (Minimum 100RH, 100mm)			
Floors					
Suspended timber	R1.5 Bulk Insulation				
Suspended timber	R2.0 Bulk Insulation				
Windows	(NSW BASIX Thermal) Probable value for > 10% tolerance of SHGC Value & U Value <= than which provides APHERS Certificate)				
HFWD03-043	UPVC Fixed Window DG U-value 1.8 SHGC 0.42				
HFWD02-041	UPVC Hinged Door DG U-value 2.2 SHGC 0.42				
DEC-002-008	UPVC Tilt & Turn Window DG U-value 2.0 SHGC 0.40				
DEC-003-050	UPVC Sliding Window DG U-value 1.9 SHGC 0.40				
DEC-003-058	UPVC Sliding Window DG U-value 1.9 SHGC 0.40				
DEC-003-006	UPVC Awning Window DG U-value 2.0 SHGC 0.41				
Ceiling Penetrations	Dwelling is rated with Assumed daylight as per NATHERS Tech Note "Ceiling Penetrations 9.4 to 9.8"				
Lighting specification	Ceiling fans of 1400mm must be installed in the rooms mentioned in the NATHERS report				
Ceiling fans	Adjoining units calculated into model calculations				
Overshadowing details	Adjoining units calculated into model calculations				
Site	As shown on plans				
Orientation of nominal north elevation	As shown on plans				
* Approved freestial downlights (except BAVE) been specified, which can be fully covered by insulation. Ceiling penetrations for exhaust dampers have been allowed (ie all bathrooms, ensuite and internal laundry) at the rate of 0.04 meters squared per exhaust fan penetration.					
Energy	Hot water	Specification		Rating	
	Instantaneous system	Gas instantaneous		6 star	
	Ventilation				
	Bathroom exhaust	Individual fan, ducted to facade or roof			
	Control switch	Manual switch on/off			
	Kitchen exhaust	Individual fan, ducted to facade or roof			
	Control switch	Manual switch on/off			
	Laundry	Individual fan, ducted to facade or roof			
	Control switch	Manual switch on/off			
	Cooling				
	Individual systems - living areas	N/A			
	Individual systems - bedroom areas	N/A			
	Heating				
	Individual systems - living areas	N/A			
	Individual systems - bedroom areas	N/A			
Lighting	Refer to NATHERS Certificate				
Lighting	Light-emitting diode (LED)				
Appliances					
Cooktop/oven	Gas cooktop & gas oven				
Private outdoor clothes drying line	Yes				
Private indoor or sheltered clothes drying line	No				
Zoned Air conditioning	No				
Alternative Energy	Peak kW				
Photovoltaic System (Minimum)	N/A				

STEPHEN O'CONNOR ARCHITECTURE

Studio 204 19A Boardwalk Street, Rusty Waters Bay 2011
 t +61 411 138 771 stephen@stephenoc.com.au info@stephenoc.com.au
 Registered Architect - Stephen O'Connor / Registration number 11116

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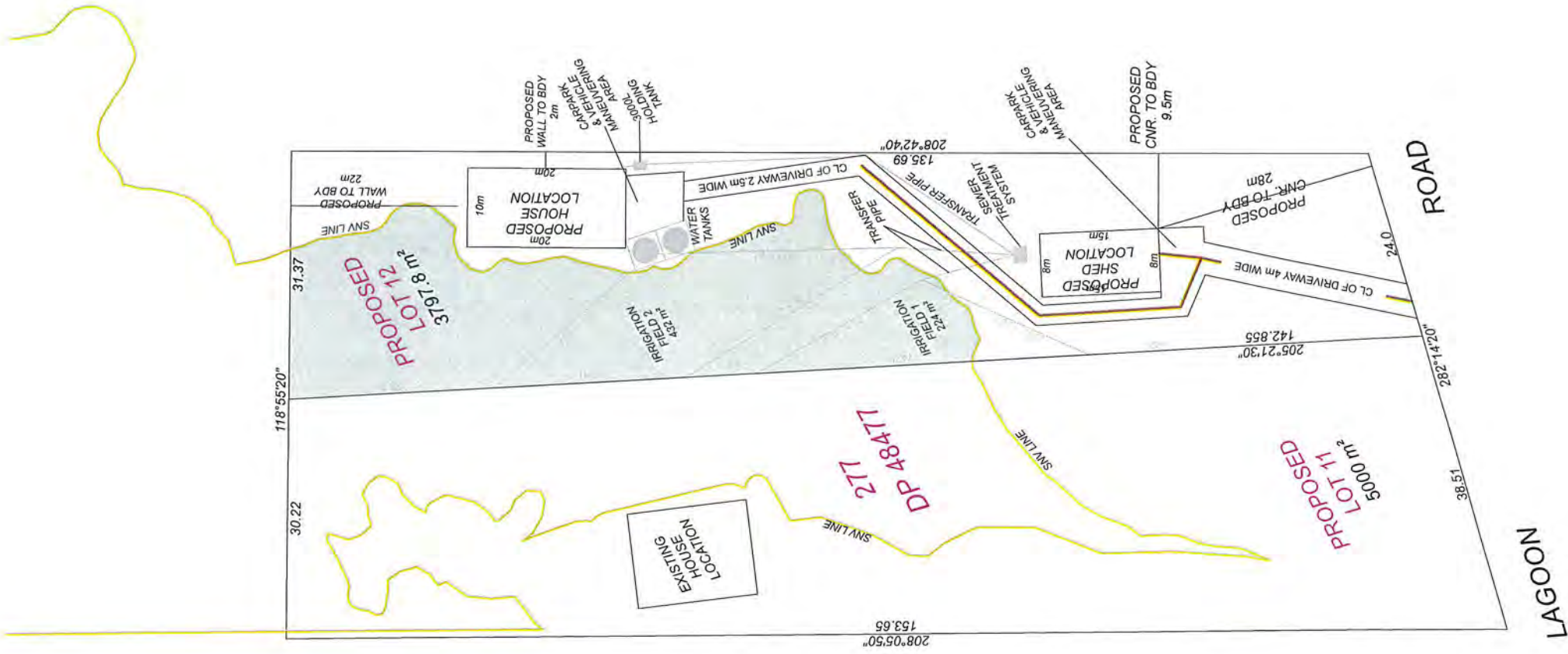
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	BASIX
Project Number	2407
Drawing No	DA-00-02



STEPHEN O'CONNOR ARCHITECTURE

Studio 50-1 19A Boundary Street, Rushcutters Bay 2011
 T +61 411 718 771 (register@stephenocconnorarchitecture.com)
 Professional Architect - Member of Council of Registrars / Registration number 10139



Scale
 1:500 @ A3

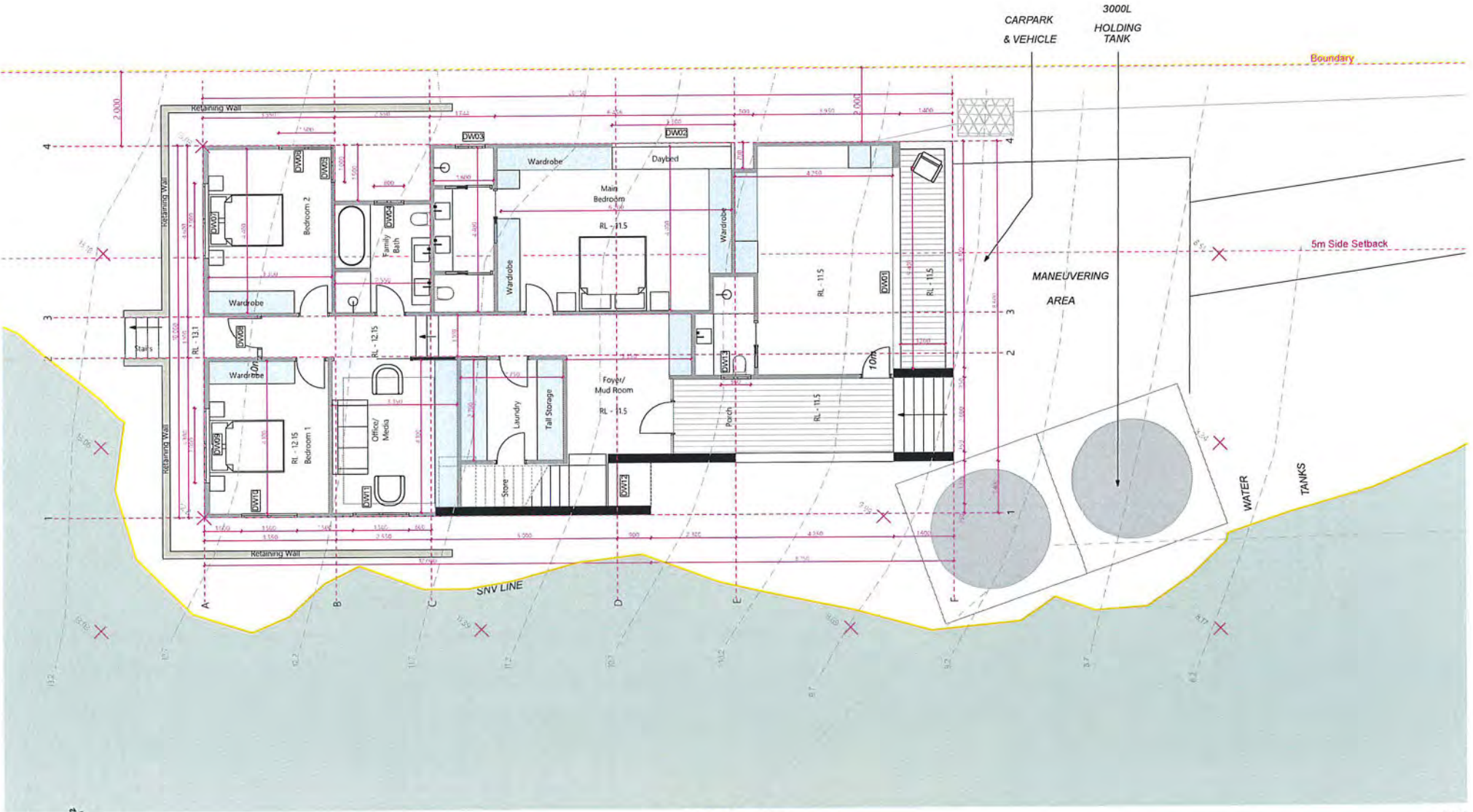
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Existing Site Plan - 1:500
Project Number	2407
Drawing No.	DA-02.1



Proposed Lower Level

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 504 19A Boundary Street, Rushcutters Bay 2011
 t +61 431 18 771 stephen@stephenocconnorarchitecture.com
 Nominated Architect - Stephen O'Connor / Registration number 11115



Scale
 1:100 @ A3



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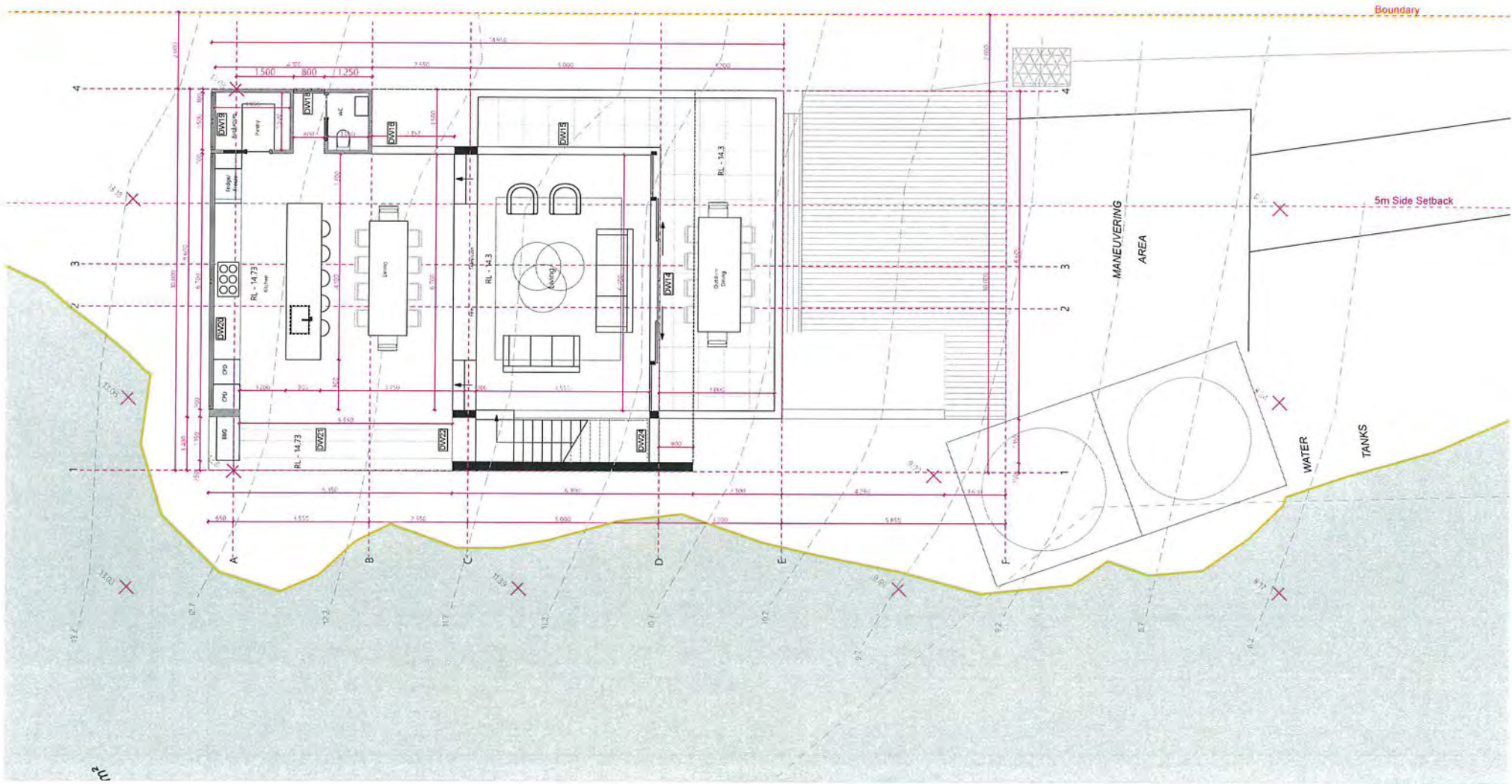
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C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue
Issue	Date	Description

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Proposed Ground Floor Plan
Project Number	2407
Drawing No	DA-02.2



Proposed Upper Level

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio S04, 19A Boundary Street, Rushcutters Bay 2011
 T +61 411 138 771 stephen@stephenocorarchitecture.com
 Homebased Architect - Stephen O'Connor / Registration number 11139



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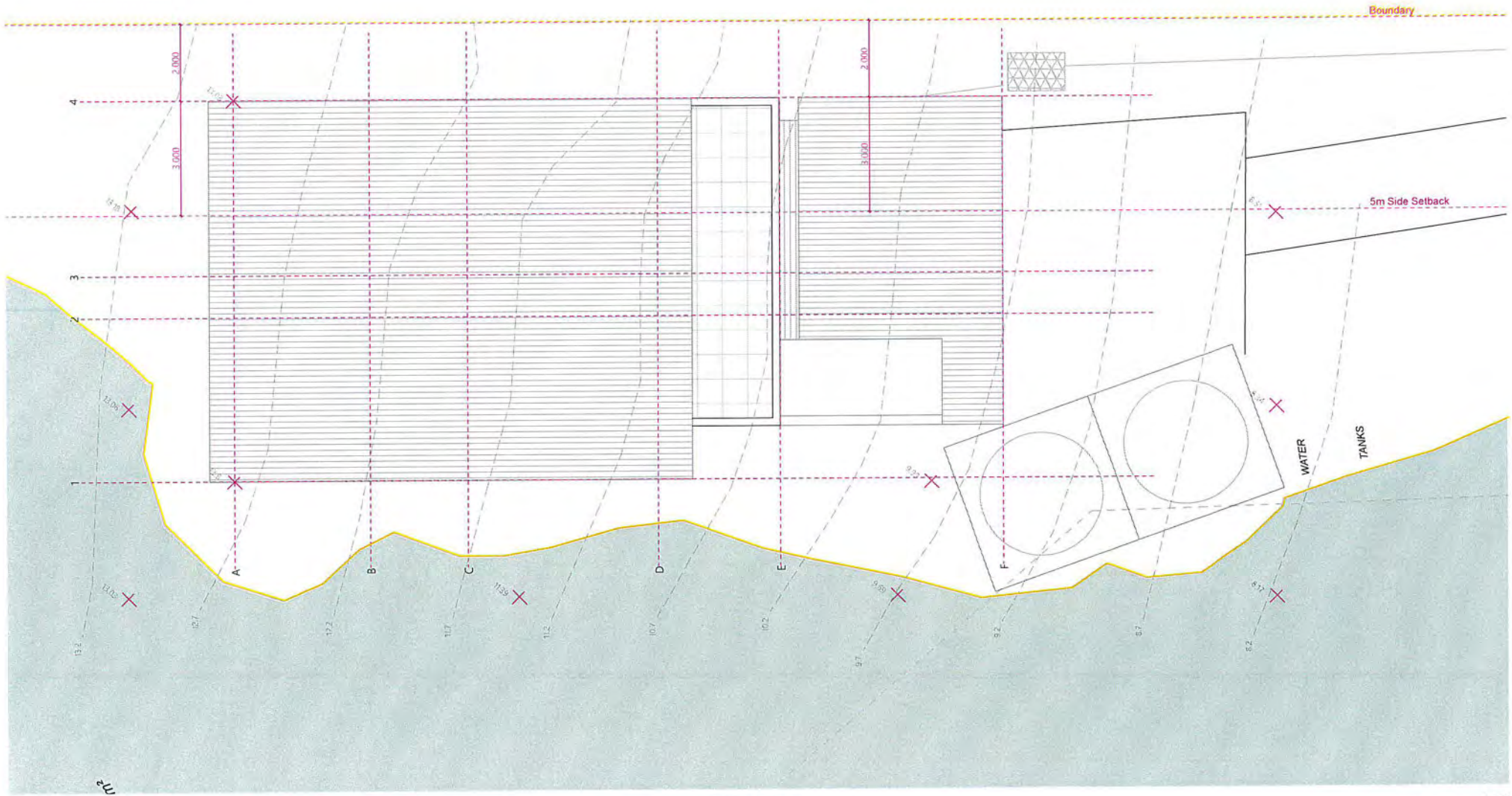
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Proposed First Floor
Project Number	2407
Drawing No	DA-02.3

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Proposed Roof Plan

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rushcutters Bay 2031
 t +61 411 138 771 stephen@stephenconnorarchitecture.com
 Nominated Architect - Stephen O'Connor / Registration number 11119



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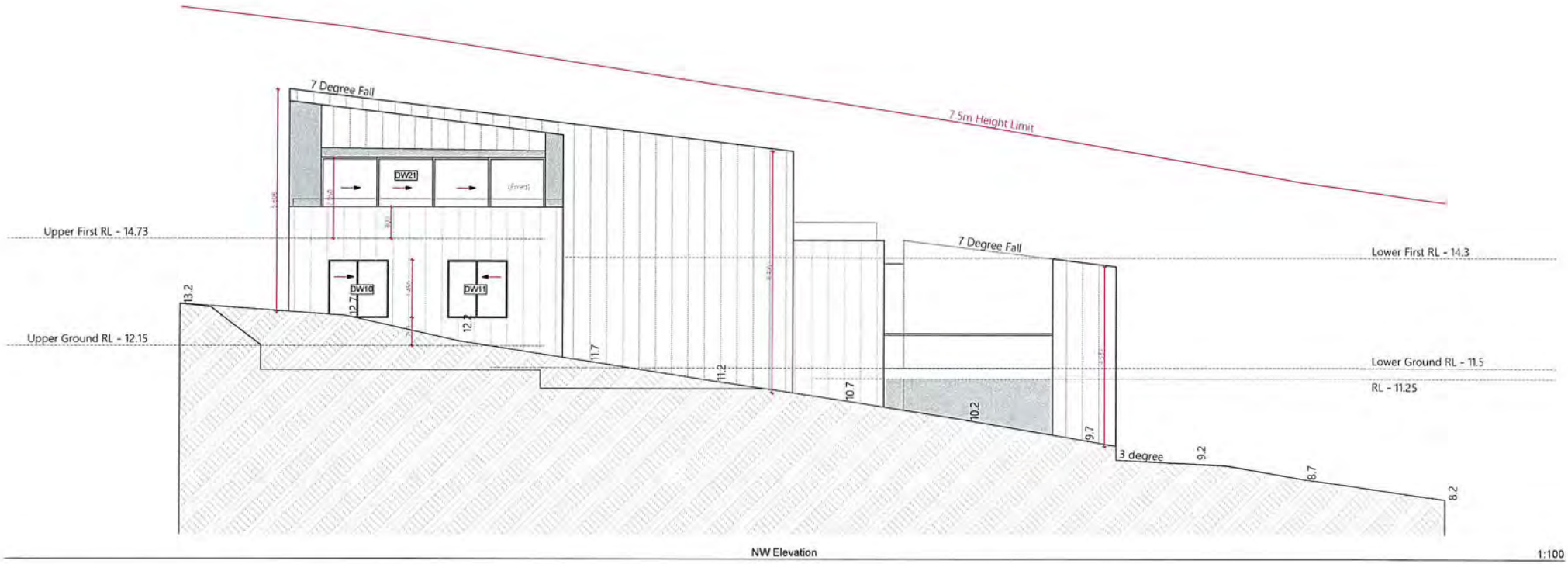
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C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue
Issue	Date	Description

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Proposed Roof Plan
Project Number	2407
Drawing No	DA-02.4

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NW Elevation

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rushcutters Bay 2011
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 Nominated Architect - Stephen O'Connor / Registration number 11119

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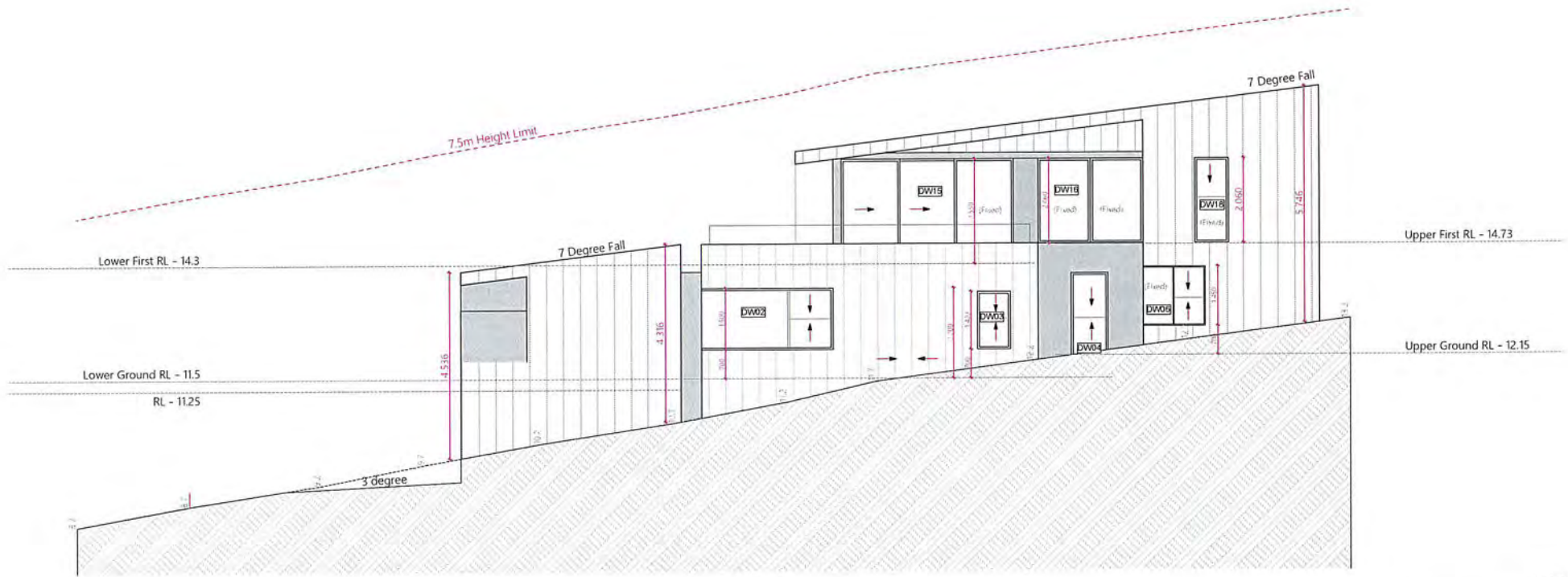
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C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	NW Elevation
Project Number	2407
Drawing No	DA-03.1

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SE Elevation

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STEPHEN O'CONNOR ARCHITECTURE

Studio 504 19A Boundary Street, Rushcutters Bay 2011
 t +61 411 148 771 stephen@stephenocconnorarchitecture.com
 Managing Architect - Stephen O'Connor / Registration number 18119

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B	25/10/2024	DA Revision
A	25/09/2024	DA Issue
Issue	Date	Description

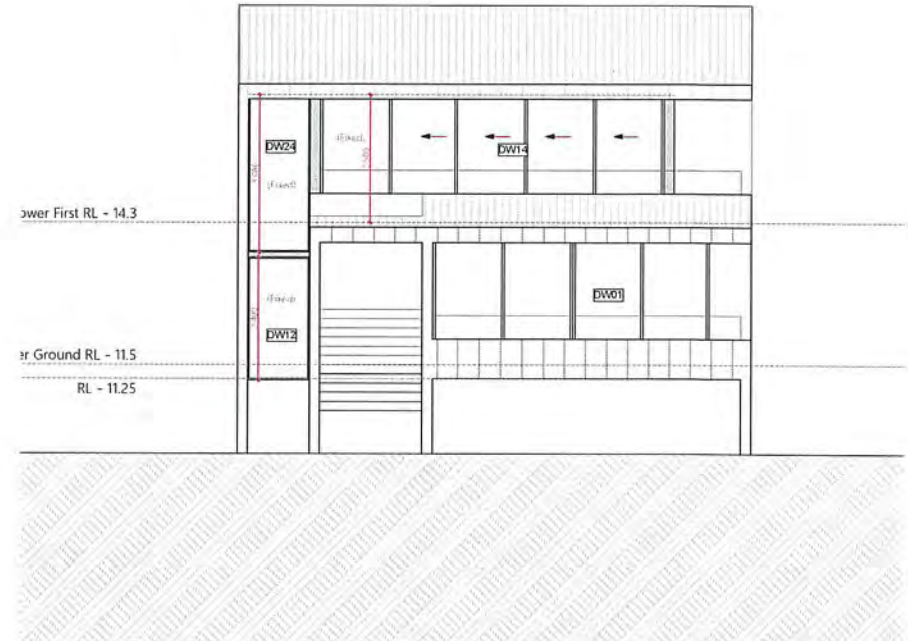
Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	SE Elevation
Project Number	2407
Drawing No	DA-03.2

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NE Elevation

1:100



SW Elevation

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 524, 19A Boundary Street, Rushcutters Bay, 2011
 t +61 411 58 771 stephen@stephenocconnorarchitecture.com
 Max-martin@architect - Stephen O'Connor / Registration number 11159

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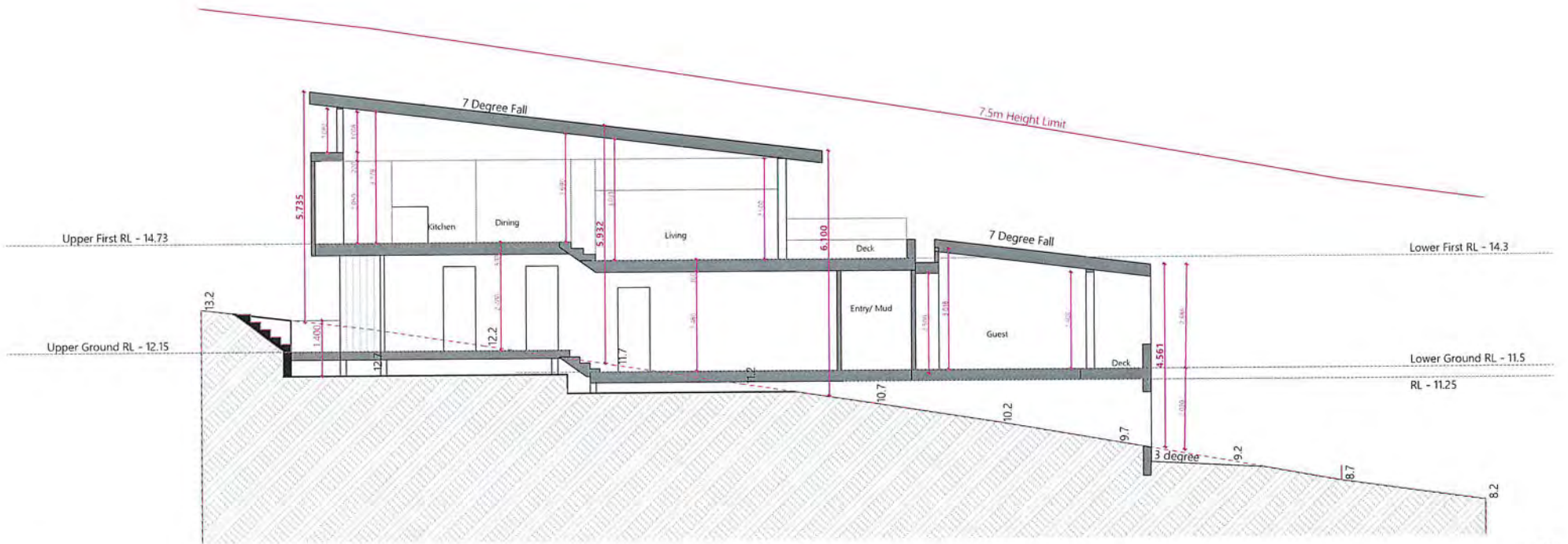
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	NE & SW Elevations
Project Number	2407
Drawing No.	DA-03.3

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Proposed Section

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rushcutters Bay 2011
 T +61 411 138 771 stephen@stephenoconnorarchitecture.com
 Name: Stephen O'Connor / Registration number: 18119

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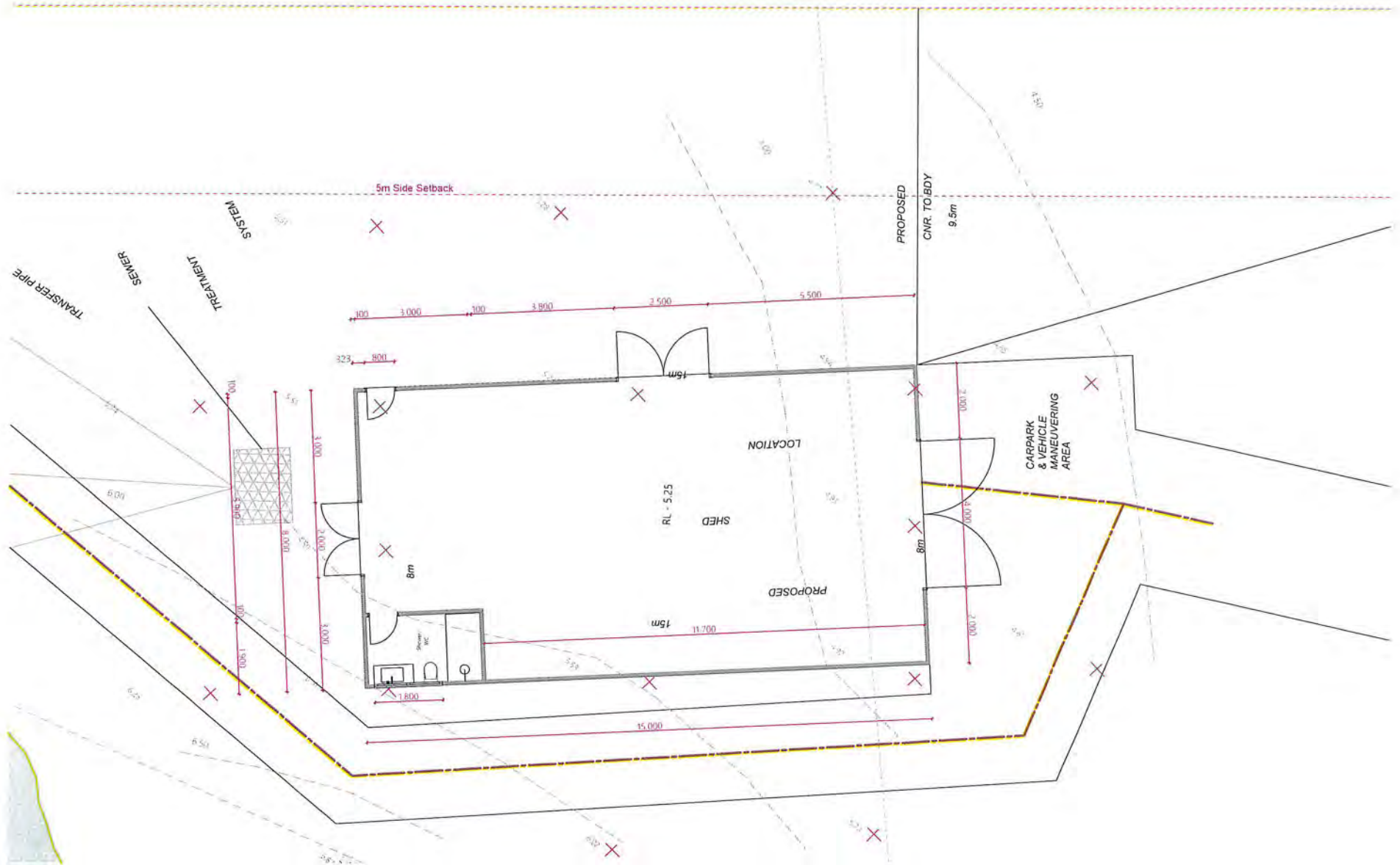
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Proposed Section
Project Number	2407
Drawing No	DA-04.1

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Shed Plan

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 204 19A Boundary Street, Rushcutters Bay 2011
 T +61 411 158 771 stephen@stephenocconnorarchitecture.com
 Nominated Architect - Stephen O'Connor / Registration number 11119



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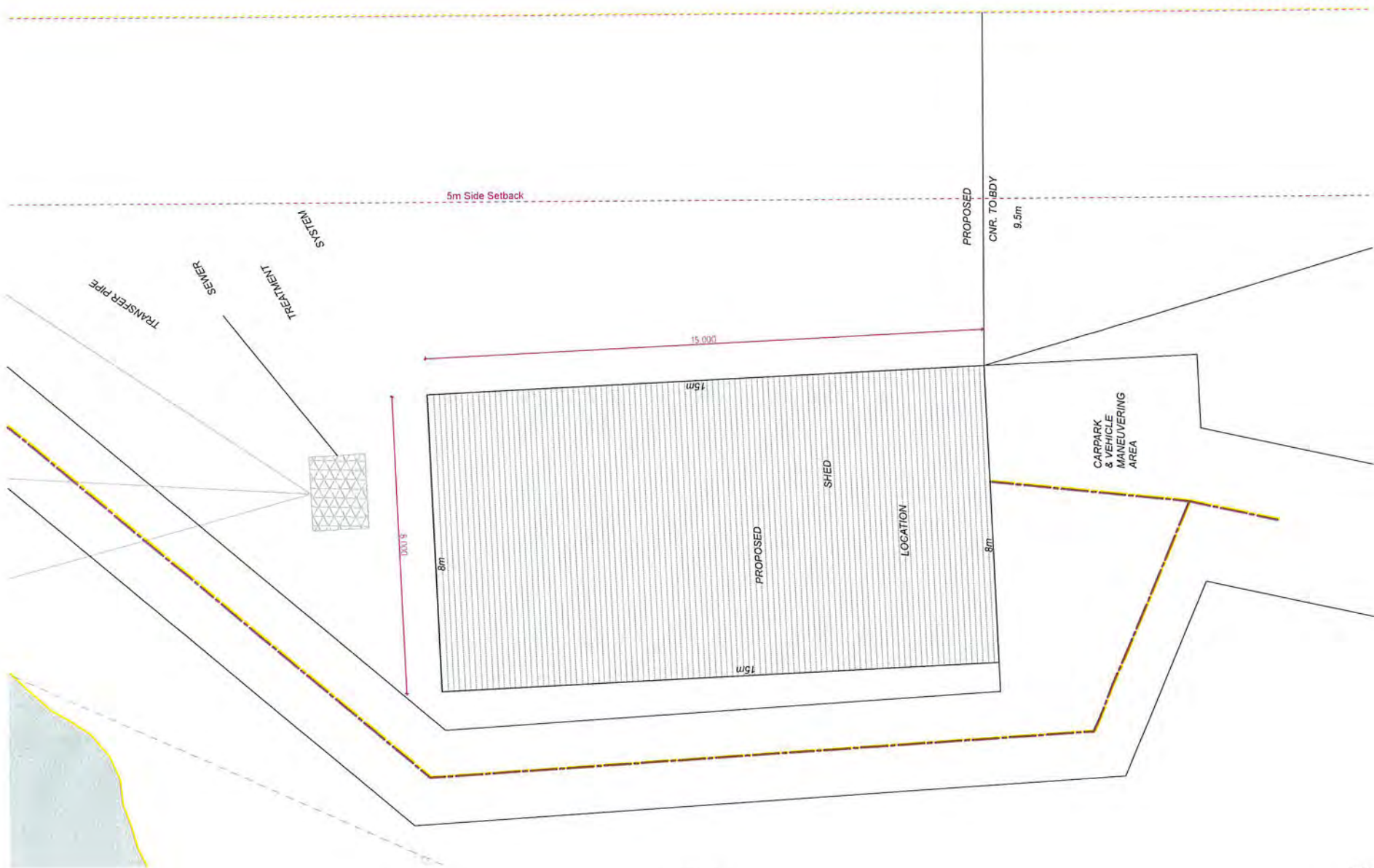
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Shed Plan
Project Number	2407
Drawing No.	DA-05.1



Shed Roof

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 11A Boundary Street, Rushcutters Bay 2011
 T +61 (0) 138 771 stephen@stephenocconnorarchitecture.com
 Nominating Architect - Stephen O'Connor / Registration number 11119



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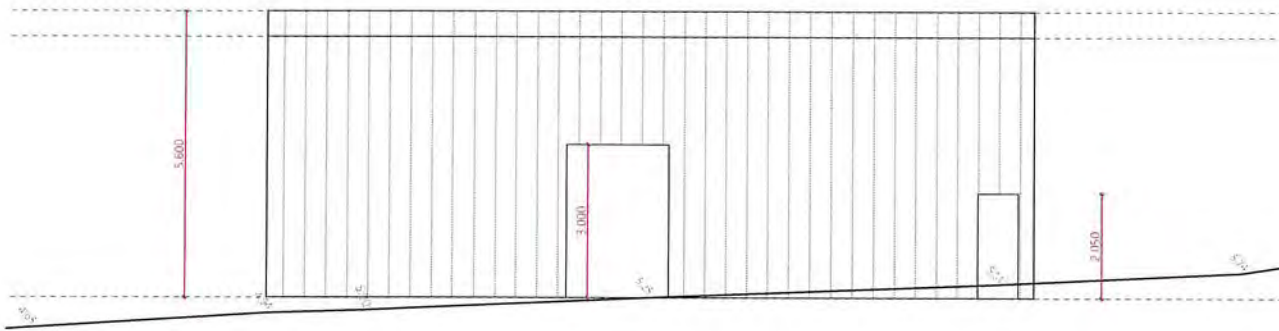
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

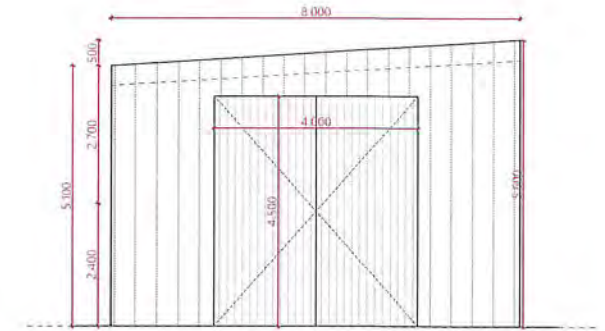
Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Shed Roof Plan
Project Number	2407
Drawing No	DA-05.2

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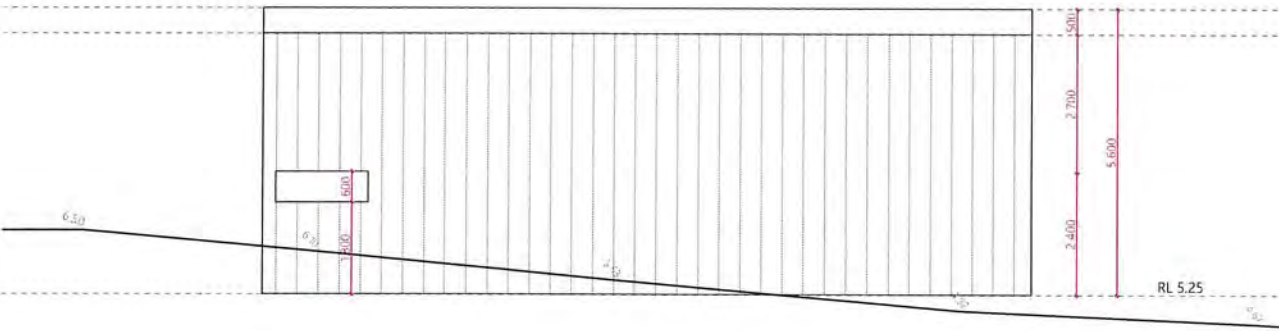
Shed SE Elevation

1:100



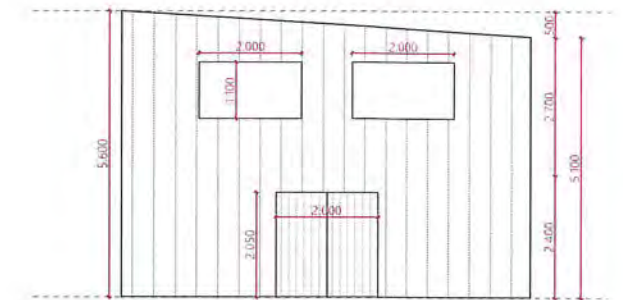
Shed SW Elevation

1:100



Shed NW Elevation

1:100



Shed NE Elevation

1:100

STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rusheswater Bay 2011
 T +61 411 138 771 | steph@oconnorarchitecture.com
 Nominated Architect - Stephen O'Connor / Registration number 11159

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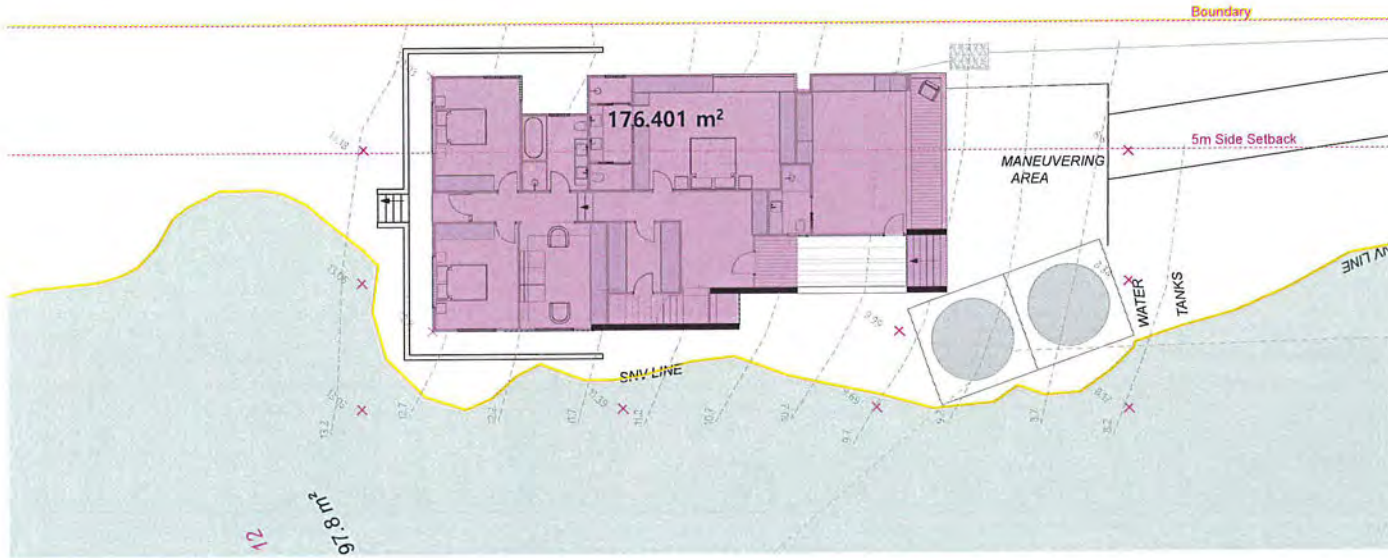
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

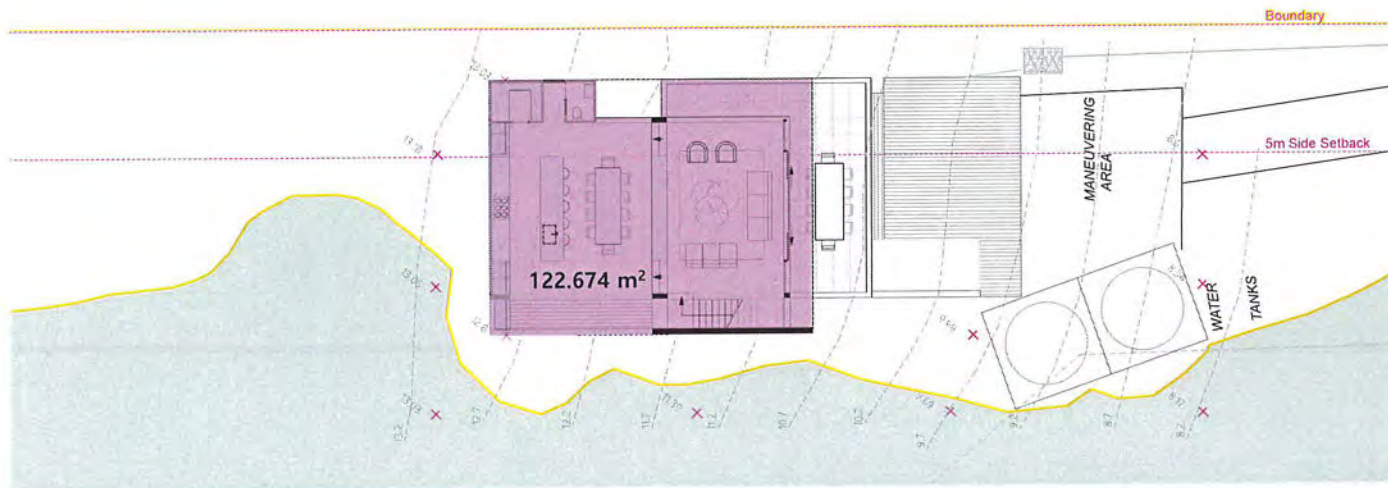
Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Shed Elevations
Project Number	2407
Drawing No.	DA-05.3

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Permissible GFA = 300m2

Proposed GFA = 299m2



STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 99A Boundary Street, Rushcutters Bay 2011
 t +61 411 138 771 | stephen@stephenconnorarchitecture.com
 Nominated Architect - Stephen O'Connor / Registration number 11119



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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Proposed GFA
Project Number	2407
Drawing No	DA-06_1

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W01 South / West

W13 North/ West

GUEST ROOM

FFL 11.3



Item	Item	W01	W02
Operation		Sliding	Aneeta two panel sashless window
Frame	Jambs / Head	NA	NA
	Sill	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above
Leaf/Casement	Type	NA	NA
	Thickness	NA	NA
	Finish Externally	NA	NA
	Finish Internally	NA	NA
	Seals	NA	NA
Trim	Architrave	NA	NA
	Finish	NA	NA
Glazing	Type		
	Hardware		
Hardware	Handle	NA	DURALLOY 'Black Satin'
	Security	NA	Standard with unit
	Hinges	NA	NA
	Other	NA	NA

NOTE:

1. Do not scale from this drawing. Use figured dimensions only. Check measurements on site.
2. Unless noted otherwise, all windows & glazed doors are viewed from their external side
3. For all door handing refer to fittings and fixtures schedule
4. All glazing types & sizes are to be determined in accordance with the relevant Australian Standards, BCA and BASIX
5. All glazed doors are to be provided with stile widths capable of accepting hardware specified in the Door & Door Hardware Schedule
6. Confirm all opening sizes, including existing openings on site prior to commencement of fabrication & installation
7. Refer to door detail for door framing
8. Unless otherwise all dimensions refer to structural opening dimensions
9. Final glass specification to be agreed with architect
10. Refer to structural drawings for details about windload for windows
11. Refer to construction certificate drawings for window numbering related to the BASIX certificate
12. Wind loading and sizing to be confirmed with window manufacturing and engineer prior to manufacture

STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rushcutters Bay 2011
 T +61 411 533 771 | stephen@stephenocconnorarchitecture.com
 Name: Stephen O'Connell - Stephen O'Connell (Registration number 11119)

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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 01
Project Number	2407
Drawing No	DA-07.1

W02 South / East

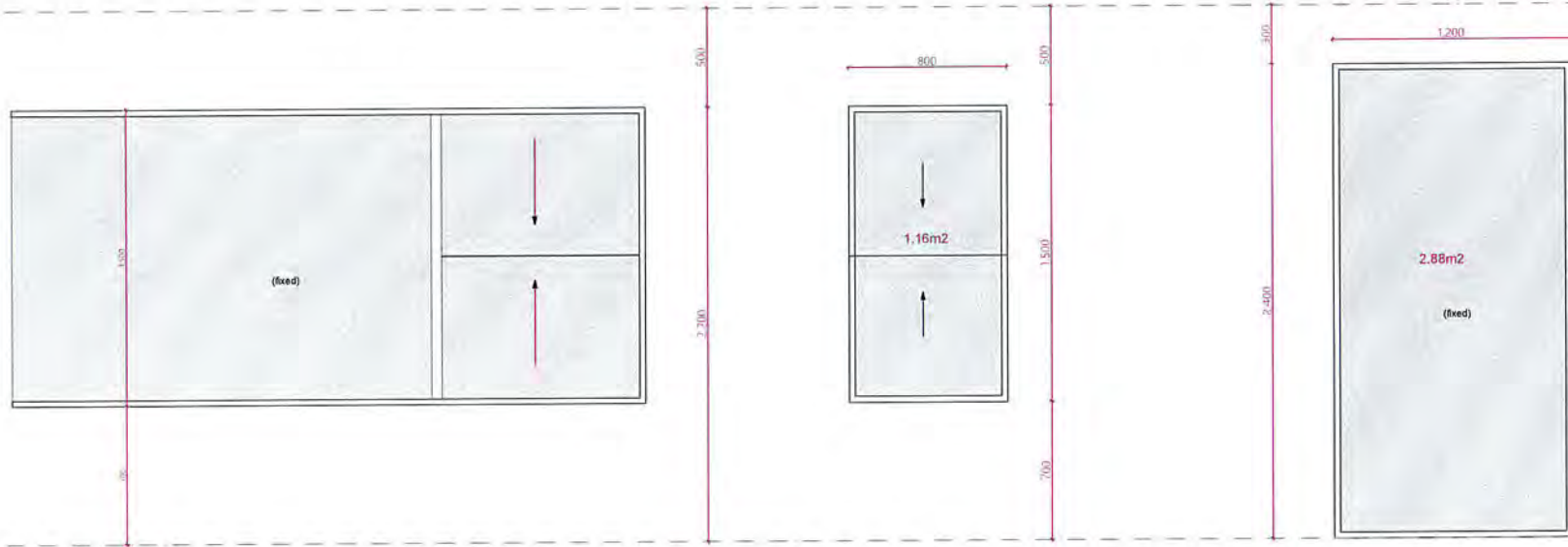
W03 South / East

W12 South / West

FCL 15.1

LOWER
GROUND
FLOOR

FFL 12.4



Item	Item	W02	W04	W12
Operation		Aneeta two panel sashless window & Fixed	Aneeta two panel sashless window	Fixed
Frame	Jams / Head	NA	NA	NA
	Sill	NA	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above	Refer to elevation above
Leaf/Casement	Type	NA	NA	NA
	Thickness	NA	NA	NA
	Finish Externally	NA	NA	NA
	Finish Internally	NA	NA	NA
	Seals	NA	NA	NA
Trim	Architrave	NA	NA	NA
	Finish	NA	NA	NA
Glazing	Type			
Hardware	Handle	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	NA
	Security	Standard with unit	Standard with unit	NA
	Hinges	NA	NA	NA
	Other	NA	NA	NA

NOTE:

- Do not scale from this drawing. Use figured dimensions only. Check measurements on site.
- Unless noted otherwise, all windows & glazed doors are viewed from their external side
- For all door handing refer to fittings and fixtures schedule
- All glazing types & sizes are to be determined in accordance with the relevant Australian Standards, BCA and BASIX
- All glazed doors are to be provided with stile widths capable of accepting hardware specified in the Door & Door Hardware Schedule
- Confirm all opening sizes, including existing openings on site prior to commencement of fabrication & installation
- Refer to door detail for door framing
- Unless otherwise all dimensions refer to structural opening dimensions
- Final glass specification to be agreed with architect
- Refer to structural drawings for details about windload for windows
- Refer to construction certificate drawings for window numbering related to the BASIX certificate
- Wind loading and sizing to be confirmed with window manufacturing and engineer prior to manufacture

STEPHEN O'CONNOR ARCHITECTURE

Studio 521, 19A Boundary Street, Ruyter's Bay 2011
 t +61 411 133 771 stephen@stephenocorner.com.au
 Name: Stephen O'Connell - Stephen O'Connell / Registration number 11119

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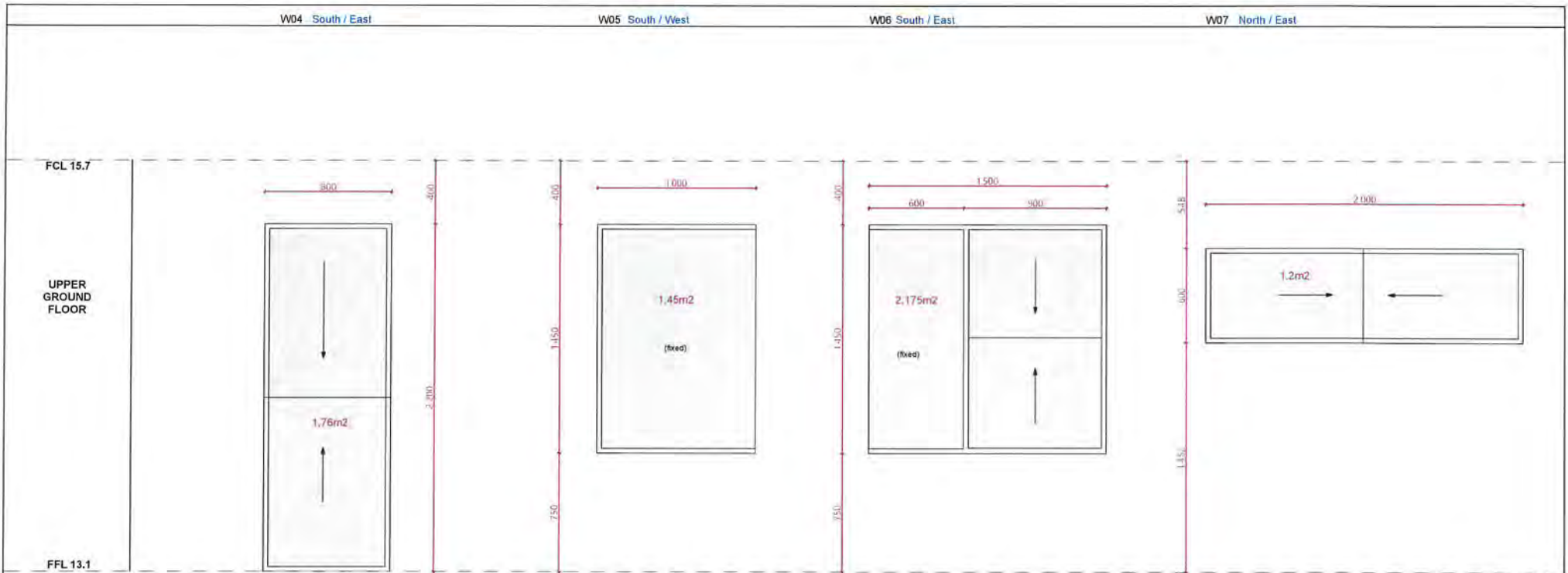
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 02
Project Number	2407
Drawing No	DA-07.2

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Item	Item	W04	W05	W06
Operation		Aneeta two panel sashless window	Fixed	Fixed & Aneeta two panel sashless window
Frame	Jambs / Head	NA	NA	NA
	Sill	NA	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above	Refer to elevation above
Leaf/Casement	Type	NA	NA	NA
	Thickness	NA	NA	NA
	Finish Externally	NA	NA	NA
	Finish Internally	NA	NA	NA
	Seals	NA	NA	NA
Trim	Architrave	NA	NA	NA
	Finish	NA	NA	NA
Glazing	Type		REFER TO NATHERS CERTIFICATE	
Hardware	Handle	DURALLOY 'Black Satin'	NA	DURALLOY 'Black Satin'
	Security	Standard with unit	NA	Standard with unit
	Hinges	NA	NA	NA
	Other	NA	NA	NA

- NOTE:**
- Do not scale from this drawing. Use figured dimensions only. Check measurements on site.
 - Unless noted otherwise, all windows & glazed doors are viewed from their external side.
 - For all door handing refer to fittings and fixtures schedule.
 - All glazing types & sizes are to be determined in accordance with the relevant Australian Standards, DCR and BASIX.
 - All glazed doors are to be provided with stile widths capable of accepting hardware specified in the Door & Door Hardware Schedule.
 - Confirm all opening sizes, including existing openings on site prior to commencement of fabrication & installation.
 - Refer to door detail for door framing.
 - Unless otherwise all dimensions refer to structural opening dimensions.
 - Final glass specification to be agreed with architect.
 - Refer to structural drawings for details about windload for windows.
 - Refer to construction certificate drawings for window numbering related to the BASIX certificate.
 - Wind loading and sizing to be confirmed with window manufacturing and engineer prior to manufacture.

STEPHEN O'CONNOR ARCHITECTURE

Studio 201 19A Boundary Street, Potts Point NSW 2011
 T +61 411 58771 stephen@stephenconnorarchitecture.com
 20m2019 Architect - Stephen O'Connor | Registration number 11119

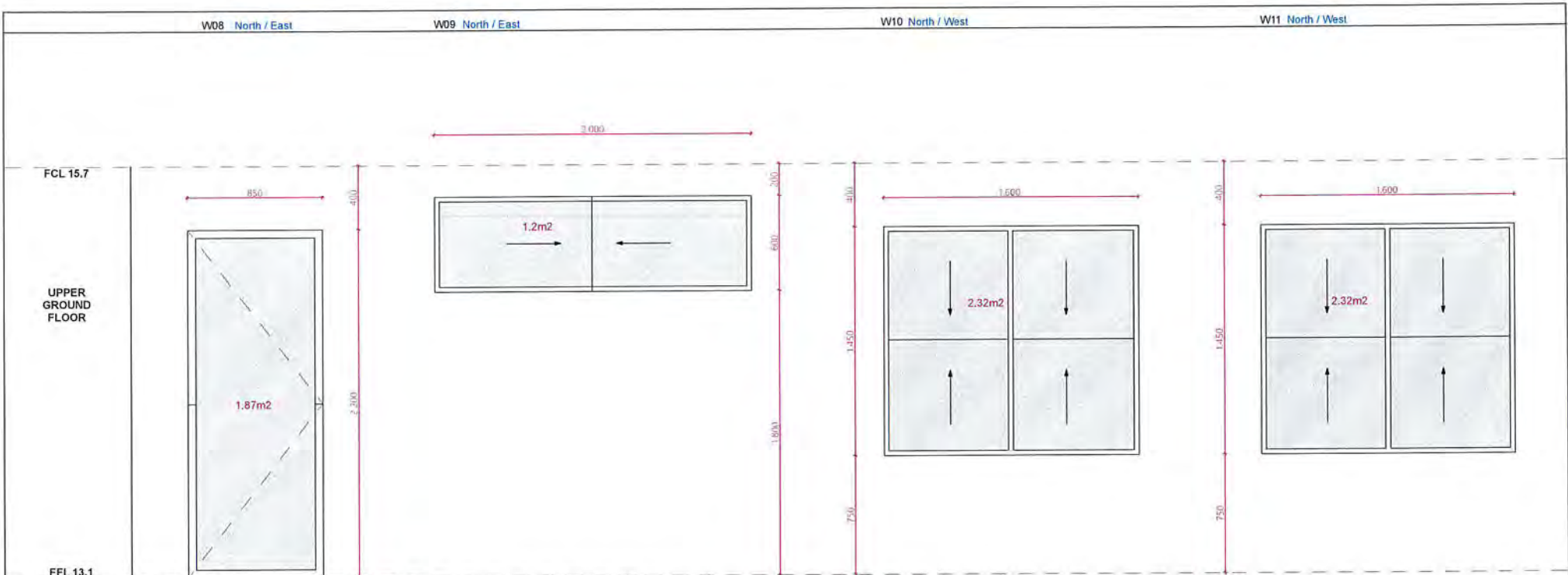
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 03
Project Number	2407
Drawing No.	DA-07.3



Item	Item	W08	W09	W10	W11
Operation		Hinged Door	Aneeta two panel sashless window	Aneeta two panel sashless window	Aneeta two panel sashless window
Frame	Jamb / Head	NA	NA	NA	NA
	Sill	NA	NA	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above	Refer to elevation above	Refer to elevation above
Leaf/Casement	Type	NA	NA	NA	NA
	Thickness	NA	NA	NA	NA
	Finish Externally	NA	NA	NA	NA
	Finish Internally	NA	NA	NA	NA
	Seals	NA	NA	NA	NA
Trim	Architrave	NA	NA	NA	NA
	Finish	NA	NA	NA	NA
Glazing	Type				
Hardware	Handle	NA	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Security	NA	Standard with unit	Standard with unit	Standard with unit
	Hinges	NA	NA	NA	NA
	Other	NA	NA	NA	NA

- NOTE:**
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 3. For all door handing refer to fittings and fixtures schedule.
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 6. Confirm all opening sizes, including existing openings on site prior to commencement of fabrication & installation.
 7. Refer to door detail for door framing.
 8. Unless otherwise all dimensions refer to structural opening dimensions.
 9. Final glass specification to be agreed with architect.
 10. Refer to structural drawings for details about windload for windows.
 11. Refer to construction certificate drawings for window numbering related to the BASIX certificate.
 12. Wind loading and sizing to be confirmed with window manufacturing and engineer prior to manufacture.

STEPHEN O'CONNOR ARCHITECTURE

Studio 201 19A Boundary Street, Rushcutters Bay 2011
 t +61 411 133 771 stephen@stephenocor.com.au
 Registrations Architect - Stephen O'Connor / Registrations number 3199

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Verification
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 04
Project Number	2407
Drawing No	DA-07.4

W14 South / West

6.700

2.600

LOWER
FIRST FLOOR

(fixed)

17.4m²

FFL 15.52

Item	Item	W14
Operation		Sliding
Frame	Jambs / Head	NA
	Sill	NA
	Finish Externally	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above
Leaf/Casement	Type	NA
	Thickness	NA
	Finish Externally	NA
	Finish Internally	NA
	Seals	NA
Trim	Architrave	NA
	Finish	NA
Glazing	Type	
Hardware	Handle	NA
	Security	NA
	Hinges	NA
	Other	NA

NOTE:

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12. Wind loading and sizing to be confirmed with window manufacturing and engineer prior to manufacture

STEPHEN O'CONNOR ARCHITECTURE

Studio 501, 19A Boundary Street, Rushcutters Bay, 2011
 T +61 411 133 771 | stephen@stephenocconnorarchitecture.com
 Non-resident Architect - Stephen O'Connor / Registration number 11119

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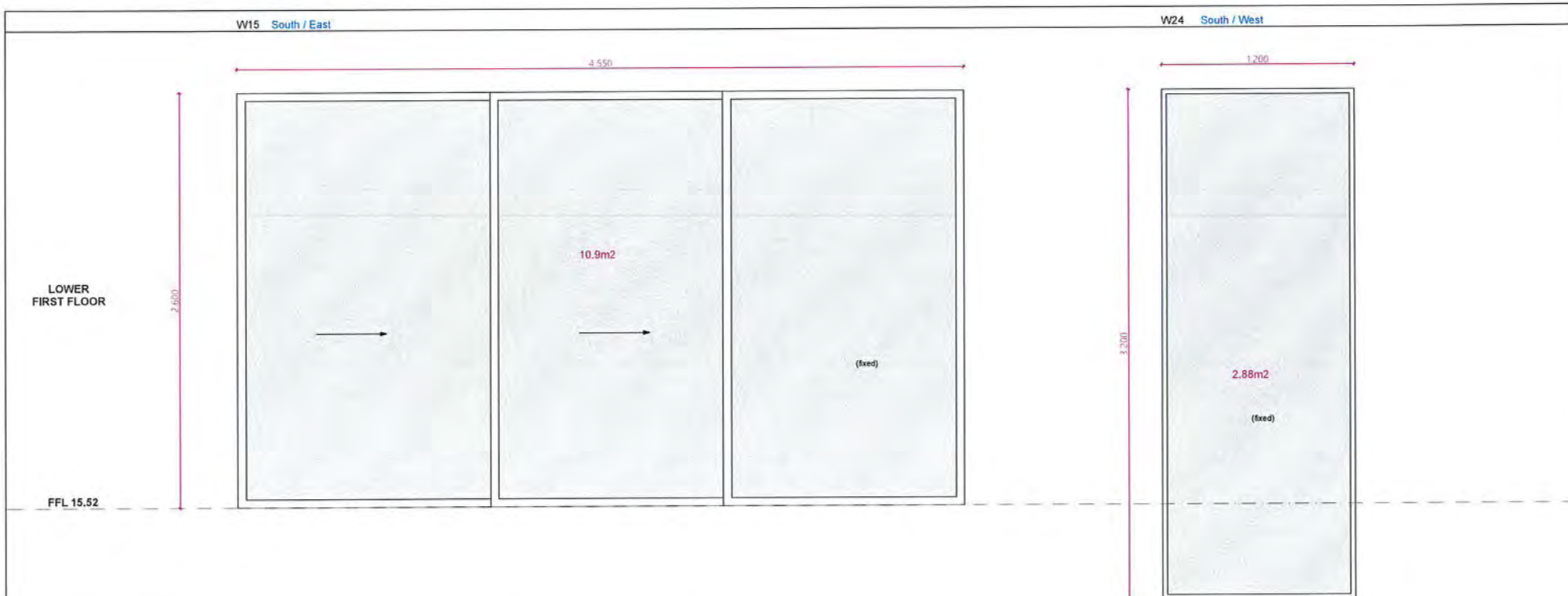
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 05
Project Number	2407
Drawing No.	DA-07.5



Item	Item	W15	W15
Operation		Sliding	Fixed
Frame	Jams / Head	NA	NA
	Sill	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above
Leaf/Casement	Type	NA	NA
	Thickness	NA	NA
	Finish Externally	NA	NA
	Finish Internally	NA	NA
	Seals	NA	NA
Trim	Architrave	NA	NA
	Finish	NA	NA
Glazing	Type		
	Hardware		
	Handle	NA	NA
	Security	NA	NA
	Hinges	NA	NA
	Other	NA	NA

NOTE:

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12. Wind loading and sizing to be confirmed with window manufacturing and engineer prior to manufacture

STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rushcutters Bay, 2011
 t +61 411 138 771 stephen@stephenoconnorarchitecture.com
 Nominated Architect - Stephen O'Connor / Registration number 1119

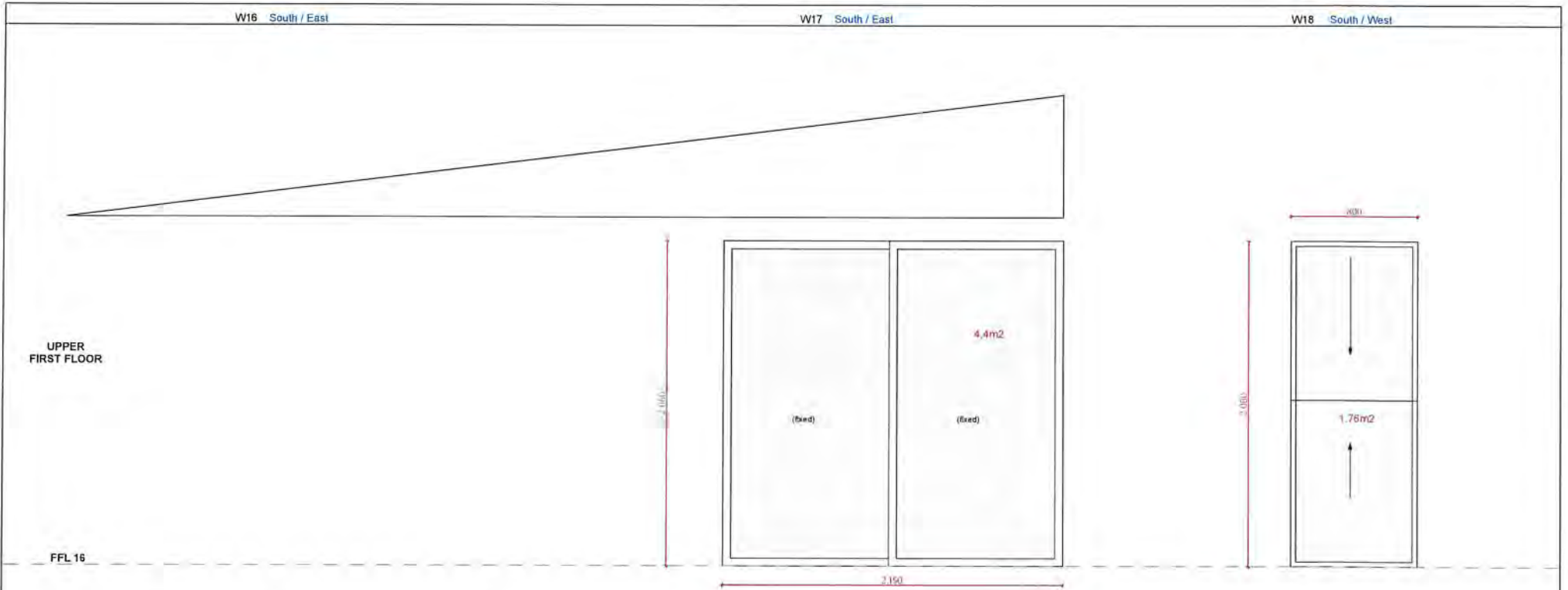
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 05
Project Number	2407
Drawing No	DA-07.6



Item	Item	W16	W17	W18
Operation		Sliding	Fixed	Aneeta two panel sashless window
Frame	Jambs / Head	NA	NA	NA
	Sill	NA	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above	Refer to elevation above
Leaf/Casement	Type	NA	NA	NA
	Thickness	NA	NA	NA
	Finish Externally	NA	NA	NA
	Finish Internally	NA	NA	NA
	Seals	NA	NA	NA
Trim	Architrave	NA	NA	NA
	Finish	NA	NA	NA
Glazing	Type			
Hardware	Handle	NA	NA	DURALLOY 'Black Satin'
	Security	NA	NA	Standard with unit
	Hinges	NA	NA	NA
	Other	NA	NA	NA

NOTE:

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10. Refer to structural drawings for details about window load for windows.
11. Refer to construction certificate drawings for window numbering related to the BASIX certificate.
12. Wind loading and sizing to be confirmed with window manufacturing and engineer prior to manufacture.

STEPHEN O'CONNOR ARCHITECTURE

Studio 204 IPA Boundary Street, Rushcutters Bay NSW
 T +61 411 948 771 stephen@stephenocconnorarchitecture.com
 Business Architect - Stephen O'Connor (Registration number 1995)

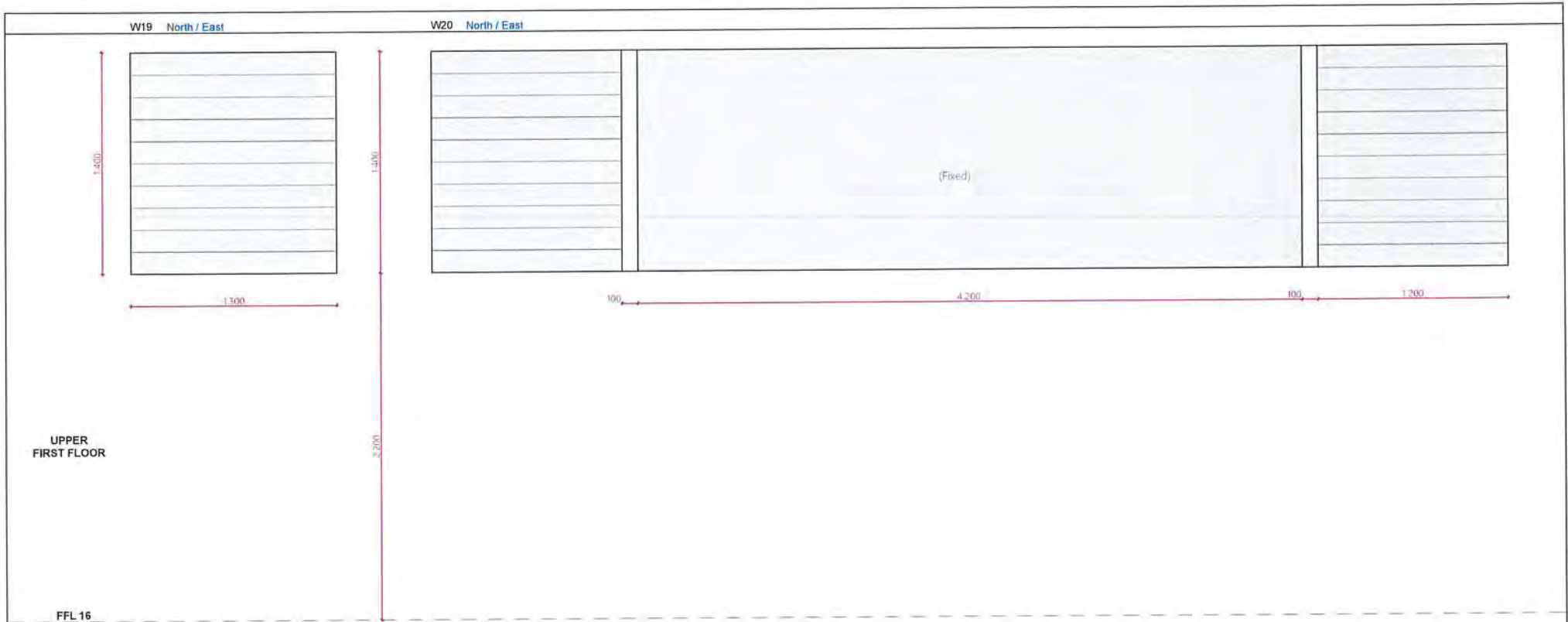
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C	30/10/2024	DA Revision	Project	345 Lagoon Road, LORD HOWE ISLAND
B	25/10/2024	DA Revision	Drawing Name	Window Schedule 07
A	25/09/2024	DA Issue	Project Number	2407
Issue	Date	Description	Drawing No	DA-07.7



Operation		W19	W20
Frame	Item	Louvers	Fixed & Louvers
	Jams / Head	NA	NA
	Sill	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
Leaf/Casement	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above
	Type	NA	NA
	Thickness	NA	NA
	Finish Externally	NA	NA
Trim	Finish Internally	NA	NA
	Seals	NA	NA
Glazing	Architrave	NA	NA
Hardware	Finish	NA	NA
	Type		
	Handle	NA	NA
	Security	NA	NA
	Hinges	NA	NA

NOTE:

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STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rushcutters Bay 2011
 t +61 417 33 771 stephen@stephenocconnor.com.au
 Nominated Architect / Stephen O'Connor / Registration Number 11119

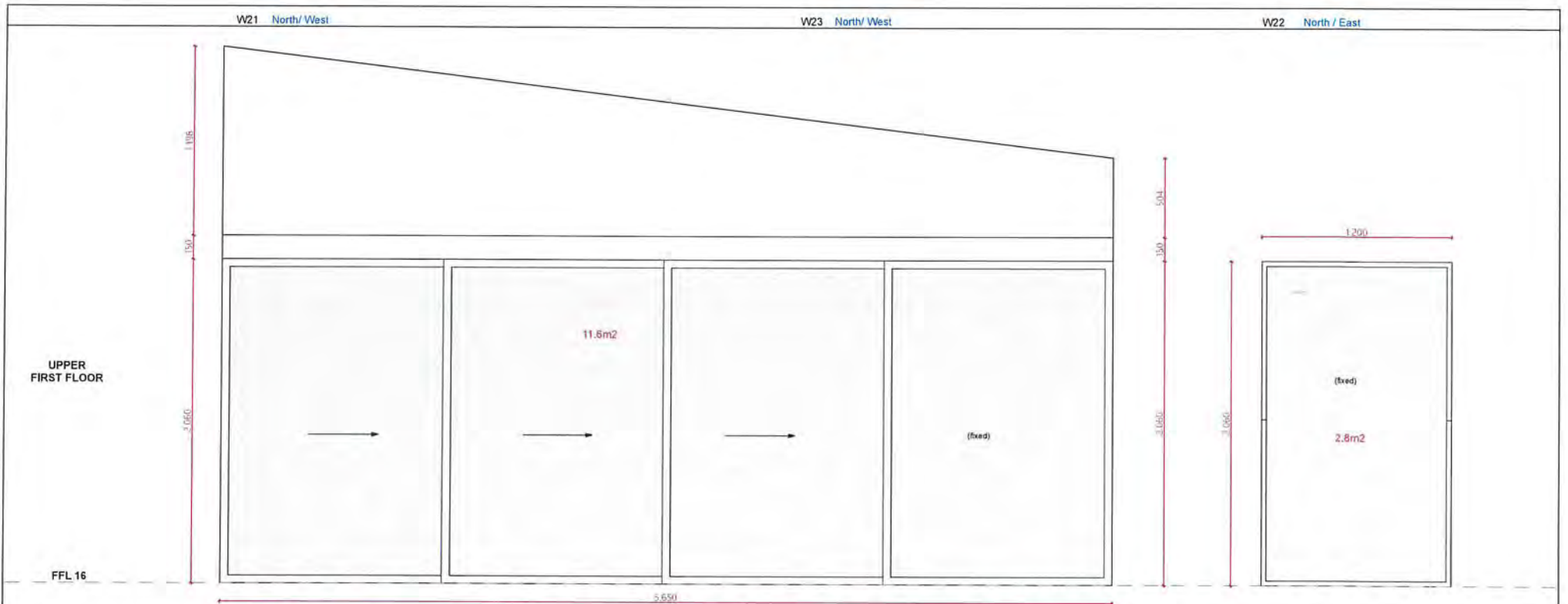
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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 08
Project Number	2407
Drawing No	DA-07.8



Item	Item	W21	W23	W22
Operation		Sliding	Fixed	Fixed
Frame	Jambs / Head	NA	NA	NA
	Sill	NA	NA	NA
	Finish Externally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Finish Internally	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'	DURALLOY 'Black Satin'
	Dimensions	Refer to elevation above	Refer to elevation above	Refer to elevation above
Leaf/Casement	Type	NA	NA	NA
	Thickness	NA	NA	NA
	Finish Externally	NA	NA	NA
	Finish Internally	NA	NA	NA
	Seals	NA	NA	NA
Trim	Architrave	NA	NA	NA
	Finish	NA	NA	NA
Glazing	Type			
Hardware	Handle	NA	NA	NA
	Security	NA	NA	NA
	Hinges	NA	NA	NA
	Other	NA	NA	NA

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STEPHEN O'CONNOR ARCHITECTURE

Studio 504, 19A Boundary Street, Rushcutters Bay, 2011
 t +61 411 53 771 | stephen@stephensoconnorarchitecture.com
 Nominate Architect - Stephen O'Connell / Registration Number 10079

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Issue	Date	Description
C	30/10/2024	DA Revision
B	25/10/2024	DA Revision
A	25/09/2024	DA Issue

Project	345 Lagoon Road, LORD HOWE ISLAND
Drawing Name	Window Schedule 09
Project Number	2407
Drawing No.	DA-07.9

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345 LAGOON ROAD, LORD HOWE ISLAND, NSW

LOT 277, DP 48477

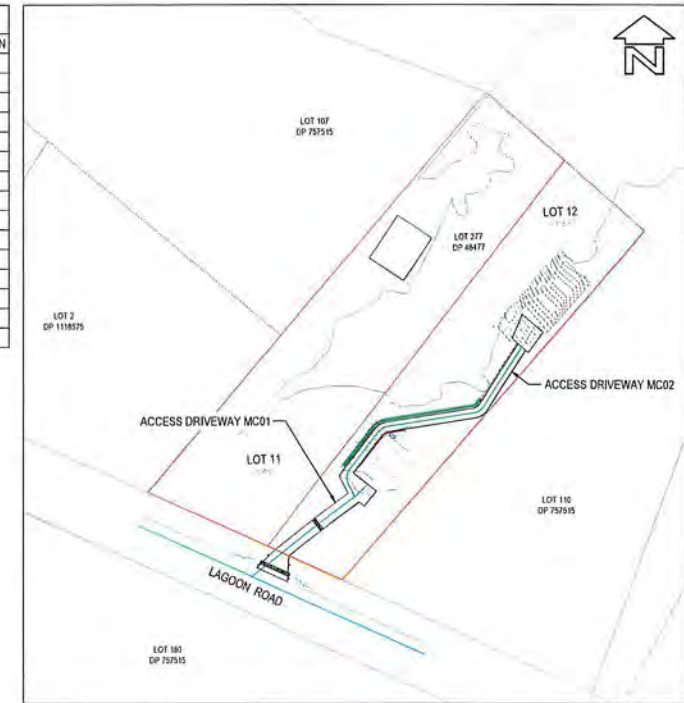
2 LOTS RESIDENTIAL SUBDIVISION CIVIL ENGINEERING CONCEPT DESIGN

LORD HOWE ISLAND BOARD DEVELOPMENT APPLICATION

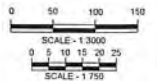


SITE LOCALITY PLAN
1:300 @ A1

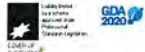
DRAWING SCHEDULE INDEX		
SHEET	TITLE	REVISION
24057-GA-1000	COVER AND INDEX	0
24057-GA-1005	GENERAL ARRANGEMENT PLAN	0
24057-GA-1010	EXISTING AND SITE PREPARATION PLAN	0
24057-GS-1100	SOIL AND WATER MANAGEMENT LAYOUT PLAN	0
24057-GS-1101	SOIL AND WATER MANAGEMENT DETAILS	0
24057-GV-1150	BULK EARTHWORKS PLAN	0
24057-RD-1200	ROAD LAYOUT PLAN	0
24057-RD-1230	MC01, MC02 & RW LONGITUDINAL AND TYPICAL SECTIONS	0
24057-RD-1280	ROAD TYPICAL DETAILS	0
24057-RD-1285	VEHICLE TURNING PATHS 1 OF 2	0
24057-RD-1286	VEHICLE TURNING PATHS 2 OF 2	0
24057-RD-1290	SIGNAGE, LINE MARKING AND TRAFFIC FURNITURE PLAN	0
24057-SD-2000	DRAINAGE LAYOUT PLAN	0
24057-SD-2040	DRAINAGE TYPICAL DETAILS	0
24057-SD-2050	HAZARD CATEGORIZATION PLAN	0



GENERAL OVERVIEW
1:750 @ A1



WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVIDED ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



SCALE: AS NOTED

SIZE: A1

DATE OF SURVEY: 18 SEPT 2024

DATUM: MGA1994, AHD

SURVEY	SKR	REV	DESCRIPTION	DATE
DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24
DRAWN	AD			
CHECKED	SG			
APPROVED	JW			

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JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION
LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW
LOT 277, DP 48477

CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING
DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN
DRAWING: COVER AND INDEX

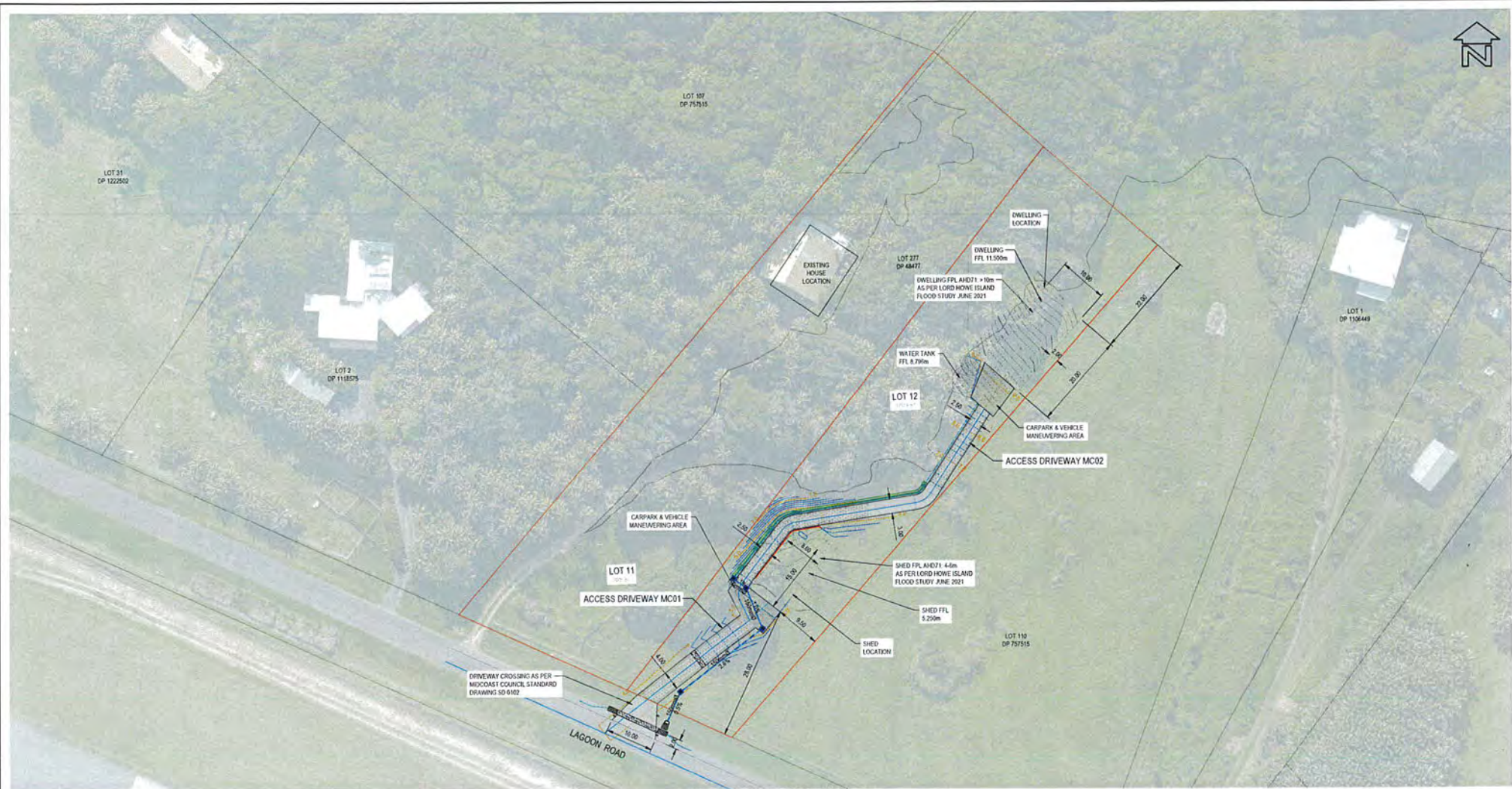
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RELEASE DATE: 14 OCTOBER 2024

JOB-DRAWING NUMBER

24057-GA-1000

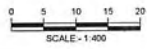
REV
0



GENERAL ARRANGEMENT PLAN
1:400 @ A1

SHEET LEGEND

DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL
BARRIER KERB 'KG'		KERB / PEDESTRIAN RAMP		SUB-SOIL AND FLUSH POINTS		STORMWATER LOCATION (EXISTING)		EXISTING WATER MAIN		EXISTING SEWER MAIN	
ROLL KERB 'RK'		NOMINAL CONTROL LINE		KERB ADAPTOR / OUTLET		SEWER LOCATION (EXISTING)		PROPOSED WATER MAIN		PROPOSED SEWER MAIN	
EDGE STRIP 'ES'		ROAD PAVEMENT		LIMIT OF WORKS		WATER LOCATION (EXISTING)		PROPOSED HYDRANT		PROPOSED SEWER MANHOLE	
KERB ONLY 'KO'		PATH PAVING (CONCRETE)		PROPOSED LOT BOUNDARIES		TELSTRA LOCATION (EXISTING)		PROPOSED STOP VALVE		PROPOSED THRUST CONNECTOR	
MOUNTABLE SF TYPE KERB 'SF'		CONTOURS (MAJOR)		TREE AND LANDSCAPING		FIBRE OPTICS LOCATION (EXISTING)		PROPOSED THRUST CONNECTOR		PROPOSED SCOUR VALVE ASSEMBLY	
DISH DRAIN 'DD'		CONTOURS (MINOR)		DRAINAGE PIT - 1.8m PIT WITH LINTEL		ELECTRICAL LOCATION (EXISTING)		PROPOSED WATER SERVICEMETER		PROPOSED SEWER JUNCTION (S.O.)	
VEHICULAR CROSSING		RETAINING WALL STRUCTURES		DRAINAGE PIT - 2.4m SAG WITH LINTEL		GAS LOCATION (EXISTING)		PROPOSED THRUST BLOCK		PROPOSED THRUST BLOCK	



WARNING
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SIZE: A1
DATE OF SURVEY: 18 SEPT 2024
DATUM: MGA1994, AHD

SURVEY	SKR	REV	DESCRIPTION	DATE
DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24
DRAWN	AD			
CHECKED	SG			
APPROVED	JW			

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SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, BOMADERRY NSW 2543
SYDNEY OFFICE: 151 SALVOUS BAY ROAD, NORTHBRIDGE NSW 2063
T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au

JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION
LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW
LOT 277, DP 48477
CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING
DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN
DRAWING: GENERAL ARRANGEMENT PLAN

FOR CONCEPT APPROVAL
NOT TO BE USED FOR CONSTRUCTION PURPOSES
RELEASE DATE: 14 OCTOBER 2024
JOB-DRAWING NUMBER: 24057-GA-1005
REV: 0



EXISTING AND SITE PREPARATION PLAN

1:400 @ A1

SHEET LEGEND	
DESCRIPTION	DETAIL
TREES TO BE REMOVED	
DEMOLITION WORKS	
TREE TO BE RETAIN	
TELSTRA CABLE (DBYD)	
WATER MAIN (DBYD)	
SEWER MAIN (DBYD)	
STORMWATER (DBYD)	
ELECTRICAL (DBYD)	
TREE PROTECTION	

WARNING
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THE LOCATION OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.



DEMOLITION AND SUBSEQUENT LAND REMEDIATION (IF REQUIRED) TO BE UNDERTAKEN IN ACCORDANCE WITH THE DA CONSENT, AUSTRALIAN STANDARDS, SAFework NSW CODES OF PRACTICE AND EPA GUIDELINES

ALL CLEARING IS TO BE CONDUCTED AS APPROVED BY COUNCIL AND UNDER SUPERVISION OF AN ECOLOGIST IN ACCORDANCE WITH THE ECOLOGICAL MANAGEMENT PLAN (EMP).

ALL INTERNAL SERVICES TO BE ADJUSTED/ISOLATED AND RELEVANT INSPECTIONS COMPLETED PRIOR TO COMMENCEMENT OF DEMOLITION WORKS.



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SIZE: A1	DESIGN AD 0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24			CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING	JOB-DRAWING NUMBER
DATE OF SURVEY: 18 SEPT 2024	DRAWN AD					DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN	REV
DATUM: MGA1994, AHD	CHECKED SG					DRAWING: EXISTING AND SITE PREPARATION PLAN	24057-GA-1010
	APPROVED JW						0



SOIL AND WATER MANAGEMENT LAYOUT PLAN
1:400 @ A1

SOIL AND WATER MANAGEMENT CONTROL NOTES:

1. ALL EROSION AND SEDIMENTATION CONTROLS, TREATMENT AND TESTING ARE TO BE IN ACCORDANCE WITH THE LANDSCAPING URBAN STORMWATER SOILS AND CONSTRUCTION VOLUME 1 (14TH EDITION 2004) KNOWN AS THE "BLUE BOOK".
2. ANY ALTERATIONS AND/OR REMOVAL OF CONTROLS ARE TO BE REVIEWED AND APPROVED BY THE SUPERINTENDENT PRIOR TO ANY CHANGE, INCLUDING AT THE PROJECT'S CONCLUSION.
3. DISTURBANCE IS TO BE KEPT TO A MINIMUM.
4. STOCKPILES ARE TO BE STABILISED WITHIN 10 DAYS.
5. AFTER EACH RAIN EVENT ALL EROSION AND SEDIMENTATION CONTROLS ARE TO BE INSPECTED, CLEARED OF SILT AND REINSTATED INTO WORKING ORDER.
6. EROSION AND SEDIMENTATION CONTROLS ARE TO BE MAINTAINED ON A REGULAR BASIS AND ARE TO REMAIN IN WORKING ORDER FOR THE LIFE OF THE PROJECT.
7. DISTURBED AREAS THAT ARE NOT UNDERGOING WORKS ARE TO BE STABILISED WITHIN 10 DAYS, FINISHED WORKS WITHIN 20 DAYS.
8. DISTURBED AREAS THAT ARE NOT UNDERGOING BUILDING WORK OR SOFT LANDSCAPING ARE TO BE STABILISED WITH A MINIMUM OF 100MM TOPSOIL AND SEEDED WITH AN APPROPRIATE MIX FOR THE AREA AND CLIMATE.
9. DUST CONTROLS (STABILISATION, WATERCART, SPRINKLERS ETC) ARE TO BE MAINTAINED THROUGHOUT THE LIFE OF THE PROJECT, IN PARTICULAR DURING DRY AND WINDY PERIODS.



WARNING
BEWARE OF UNDERGROUND SERVICES
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SHEET LEGEND							
DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL
MAJOR DESIGN CONTOURS		GRAVEL INLET FILTER		STRAW BALE FILTER		TOPSOIL STOCKPILES WITH DOWNSTREAM SILT FENCING	
MINOR DESIGN CONTOURS							
SILT FENCE		STABILISED ACCESS/GRIP & WHEEL WASH		GEOTEXTILE COVER		TEMPORARY SEDIMENT BASIN	
CLEAN WATER DIVERSION							

SCALE: AS NOTED
SIZE: A1
DATE OF SURVEY: 18 SEPT 2024
DATUM: MGA1994, AHD

SURVEY	SKR	REV	DESCRIPTION	DATE
DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24
DRAWN	AD			
CHECKED	SG			
APPROVED	JW			

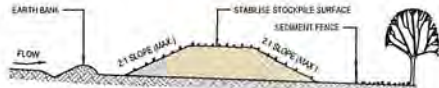
DESCRIPTION: SUBMISSION TO COUNCIL FOR DA APPROVAL
DATE: 14 OCT 24

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SOUTH COAST OFFICE: 350 PRINCES HIGHWAY, BONADERRY NSW 2541
SYDNEY OFFICE: 152 SAILORS BAY ROAD, NORTHBRIDGE NSW 2063
T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au

JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION
LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW
LOT 277, DP 48477
CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING
DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN
DRAWING: SOIL AND WATER MANAGEMENT LAYOUT PLAN

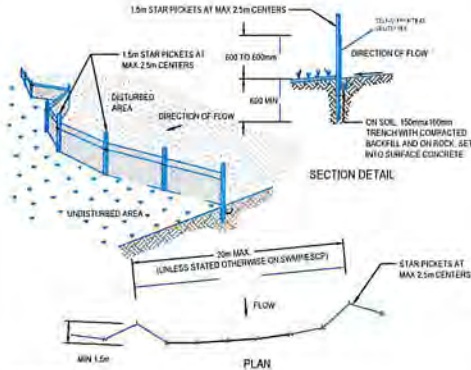
FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	
RELEASE DATE: 14 OCTOBER 2024	REV
JOB-DRAWING NUMBER	0
24057-GS-1100	



CONSTRUCTION NOTES

1. PLACE STOCKPILES MORE THAN 2m (PREFERABLY 5m) FROM EXISTING VEGETATION, CONCENTRATED WATER FLOW, ROADS AND HAZARD AREAS.
2. CONSTRUCT ON THE CONTOUR AS LOW FLAT (ELONGATED MOUNDS).
3. WHERE THERE IS SUFFICIENT AREA, TOPSOIL STOCKPILES SHALL BE LESS THAN 2m HIGH/DIET.
4. WHERE THEY ARE TO BE IN PLACE FOR MORE THAN 10 DAYS, STABILISE FOLLOWING THE APPROVED ESSOP OR SWAMP TO REDUCE THE C-FACTOR TO LESS THAN 1.0.
5. CONSTRUCT EARTH BANKS (STANDARD DRAWING 5-3) ON THE UPSLOPE SIDE TO DIVERT WATER AROUND STOCKPILES AND SEDIMENT FENCES (STANDARD DRAWING 6-1) TO 2m DOWNSLOPE.

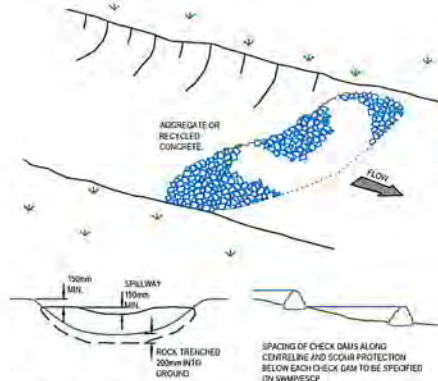
STOCKPILES (SD 4-1)



CONSTRUCTION NOTES

1. CONSTRUCT SEDIMENT FENCES AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE, BUT WITH SMALL REVERSALS AS SHOWN IN THE DRAWING TO LIMIT THE CATCHMENT AREA OF ANY ONE SECTION. THE CATCHMENT AREA SHOULD BE SMALL ENOUGH TO LIMIT WATER FLOW CONCENTRATED AT ONE POINT TO 50 LITRES PER SECOND IN THE DESIGN STORM EVENT, USUALLY THE 10-YEAR EVENT.
2. CUT A 100mm DEEP TRENCH ALONG THE UPSLOPE LINE OF THE FENCE FOR THE BOTTOM OF THE FABRIC TO BE EXTENDED.
3. DRIVE 1.5 METRE LONG STAR PICKETS INTO GROUND AT 2.5 METRE INTERVALS (MAX) AT THE DOWNSLOPE EDGE OF THE TRENCH. ENSURE ANY STAR PICKETS ARE FITTED WITH SAFETY CAPS.
4. PIN SELF-SUPPORTING GEOTEXTILE TO THE UPSLOPE SIDE OF THE POSTS ENSURING IT GOES TO THE BASE OF THE TRENCH. FIX THE GEOTEXTILE WITH WIRE TIES OR AS RECOMMENDED BY THE MANUFACTURER. ONLY USE GEOTEXTILE SPECIFICALLY PRODUCED FOR SEDIMENT FENCING. THE USE OF SHARE CLOTH FOR THIS PURPOSE IS NOT SATISFACTORY.
5. JOIN SECTIONS OF FABRIC AT A SUPPORT POST WITH A 150mm OVERLAP.
6. BACKFILL THE TRENCH OVER THE BASE OF THE FABRIC AND COMPACT IT THOROUGHLY OVER THE GEOTEXTILE.

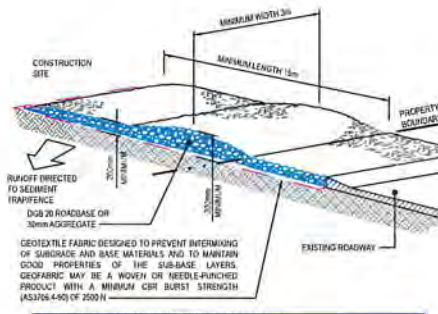
SEDIMENT FENCE (SD 6-8)



CONSTRUCTION NOTES

1. CHECK DAMS CAN BE BUILT WITH VARIOUS MATERIALS, INCLUDING ROCKS, LOGS, SANDBAGS AND STRAW BALES. THE MAINTENANCE PROGRAM SHOULD ENSURE THEIR INTEGRITY IS RETAINED, ESPECIALLY WHERE CONSTRUCTED WITH STRAW BALES. IN THE CASE OF BALES, THIS MIGHT REQUIRE THEIR REPLACEMENT EVERY TWO TO FOUR MONTHS.
2. TRENCH THE CHECK DAM 200mm INTO THE GROUND ACROSS ITS WHOLE WIDTH, WHERE ROCK IS USED, FILL THE TRENCHES TO AT LEAST 100mm ABOVE THE GROUND SURFACE TO REDUCE THE RISK OF UNDERCUTTING.
3. NORMALLY, THEIR MAXIMUM HEIGHT SHOULD NOT EXCEED 600mm ABOVE THE GULLY FLOOR. THE CENTRE SHOULD ACT AS A SPILLWAY, BEING AT LEAST 100mm LOWER THAN THE OUTER EDGES.
4. SPACE THE DAMS SO THE TOE OF THE UPSTREAM DAM IS LEVEL WITH THE SPILLWAY OF THE NEXT DOWNSTREAM DAM.

ROCK CHECK DAM (SD 5-4) SES. A



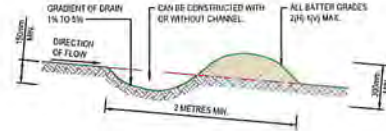
ALTERNATIVE OPTION - VIBRATING ACCESS GRID

FOR THE PREFERENCE OF THE HOBBASIT MAINTENANCE CONTRACTOR A VIBRATING ACCESS GRID CAN ALSO BE UTILISED DURING CONSTRUCTION. FOR FURTHER DETAILS PLEASE REFER TO THE CATCHMENTS (AND CHECKS) MANUAL CONSTRUCTION EMIS - VIBRATION GRIDS - SEDIMENT CONTROL, TECHNIQUE 2 - REFER. 2019

CONSTRUCTION NOTES

1. STRIP THE TOPSOIL, LEVEL THE SITE AND COMPACT THE SUBGRADE.
2. COVER THE AREA WITH NEEDLE-PUNCHED GEOTEXTILE.
3. CONSTRUCT A 200mm THICK PAD OVER THE GEOTEXTILE USING ROAD BASE OR 30mm AGGREGATE.
4. ENSURE THE STRUCTURE IS AT LEAST 1.5 METRES LONG OR TO BUILDING ALIGNMENT AND AT LEAST 3 METRES WIDE.
5. WHERE A SEDIMENT FENCE JOINS ONTO THE STABILISED ACCESS, CONSTRUCT A HUMP IN THE STABILISED ACCESS TO DIVERT WATER TO THE SEDIMENT FENCE.

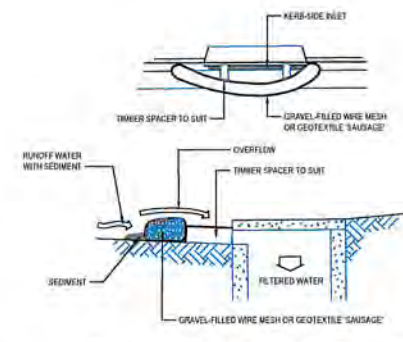
STABILISED SITE ACCESS (SD 6-14)



CONSTRUCTION NOTES

1. BUILD WITH GRADIENTS BETWEEN 1 AND 5 PERCENT.
2. AVOID REMAINING TREES AND SHRUBS IF POSSIBLE - WORK AROUND THEM.
3. ENSURE THE STRUCTURES ARE FREE OF PROJECTIONS OR OTHER IRREGULARITIES THAT COULD IMPED WATER FLOW.
4. BUILD THE DRAINS WITH CIRCULAR, PARABOLIC OR TRAPEZOIDAL CROSS SECTIONS, NOT V-SHAPED.
5. ENSURE THE BANKS ARE PROPERLY COMPACTED TO PREVENT FAILURE.
6. COMPLETE PERMANENT OR TEMPORARY STABILISATION WITHIN 10 DAYS OF CONSTRUCTION.

**NOTE: ONLY TO BE USED AS TEMPORARY BANK WHERE MAXIMUM SLOPE LENGTH IS 20 METRES
EARTH BANK - LOW FLOW (SD 5-5)**

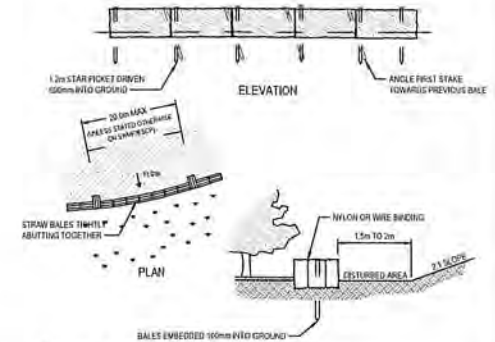


NOTE: THIS PRACTICE ONLY TO BE USED WHERE SPECIFIED IN APPROVED SWMP/ESP.

CONSTRUCTION NOTES

1. INSTALL FILTERS TO KERB INLETS ONLY AT SAG POINTS.
2. FABRICATE A SLEEVE MADE FROM GEOTEXTILE OR WIRE MESH LONGER THAN THE LENGTH OF THE INLET PIT AND FILL IT WITH 25mm TO 50mm GRAVEL.
3. FORM AN ELLIPTICAL CROSS-SECTION ABOUT 150mm HIGH x 400mm WIDE.
4. PLACE THE FILTER AT THE OPENING LEAVING AT LEAST A 100mm SPACE BETWEEN IT AND THE KERB INLET. MAINTAIN THE OPENING WITH SPACER BLOCKS.
5. FORM A SEAL WITH THE KERB TO PREVENT SEDIMENT BYPASSING THE FILTER.
6. SANDBAGS FILLED WITH GRAVEL CAN SUBSTITUTE FOR THE MESH OR GEOTEXTILE PROVIDED THEY ARE PLACED SO THAT THEY FIRMLY ABUT EACH OTHER AND SEDIMENT-LADEN WATERS CANNOT PASS BETWEEN.

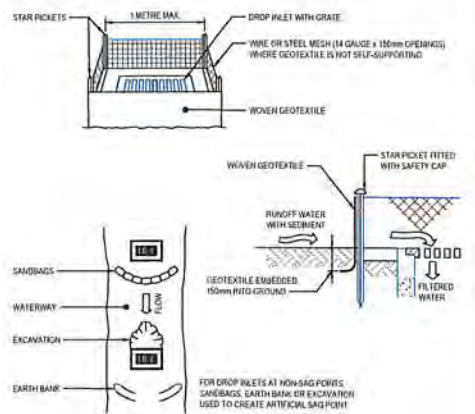
MESH AND GRAVEL INLET FILTER (SD 6-11)



CONSTRUCTION NOTES

1. CONSTRUCT THE STRAW BALE FILTER AS CLOSE AS POSSIBLE TO BEING PARALLEL TO THE CONTOURS OF THE SITE.
2. PLACE BALES LENGTHWISE IN A ROW WITH ENDS TIGHTLY ABUTTING. USE STRAW TO FILL ANY GAPS BETWEEN BALES. STRAW IS TO BE PLACED PARALLEL TO GROUND.
3. ENSURE THAT THE MAXIMUM HEIGHT OF THE FILTER IS ONE BALE.
4. EDGE EACH BALE IN THE GROUND 150mm TO 100mm AND ANCHOR WITH TWO 1.2 METRE STAR PICKETS OR STAKES. ANGLE THE FIRST STAR PICKET OR STAKE IN EACH BALE TOWARDS THE PREVIOUSLY Laid BALE. DRIVE THEM 600mm INTO THE GROUND AND, IF POSSIBLE, FLUSH WITH THE TOP OF THE BALES. WHERE STAR PICKETS ARE USED AND THEY PROTRUDE ABOVE THE BALES, ENSURE THEY ARE FITTED WITH SAFETY CAPS.
5. WHERE A STRAW BALE FILTER IS CONSTRUCTED DOWNSLOPE FROM A DISTURBED BATTER, ENSURE THE BALES ARE PLACED 1 TO 2 METRES DOWNSLOPE FROM THE TOE.
6. ESTABLISH A MAINTENANCE PROGRAM THAT ENSURES THE INTEGRITY OF THE BALES IS RETAINED - THEY COULD REQUIRE REPLACEMENT EACH TWO TO FOUR MONTHS.

STRAW BALE FILTER (SD 6-7)

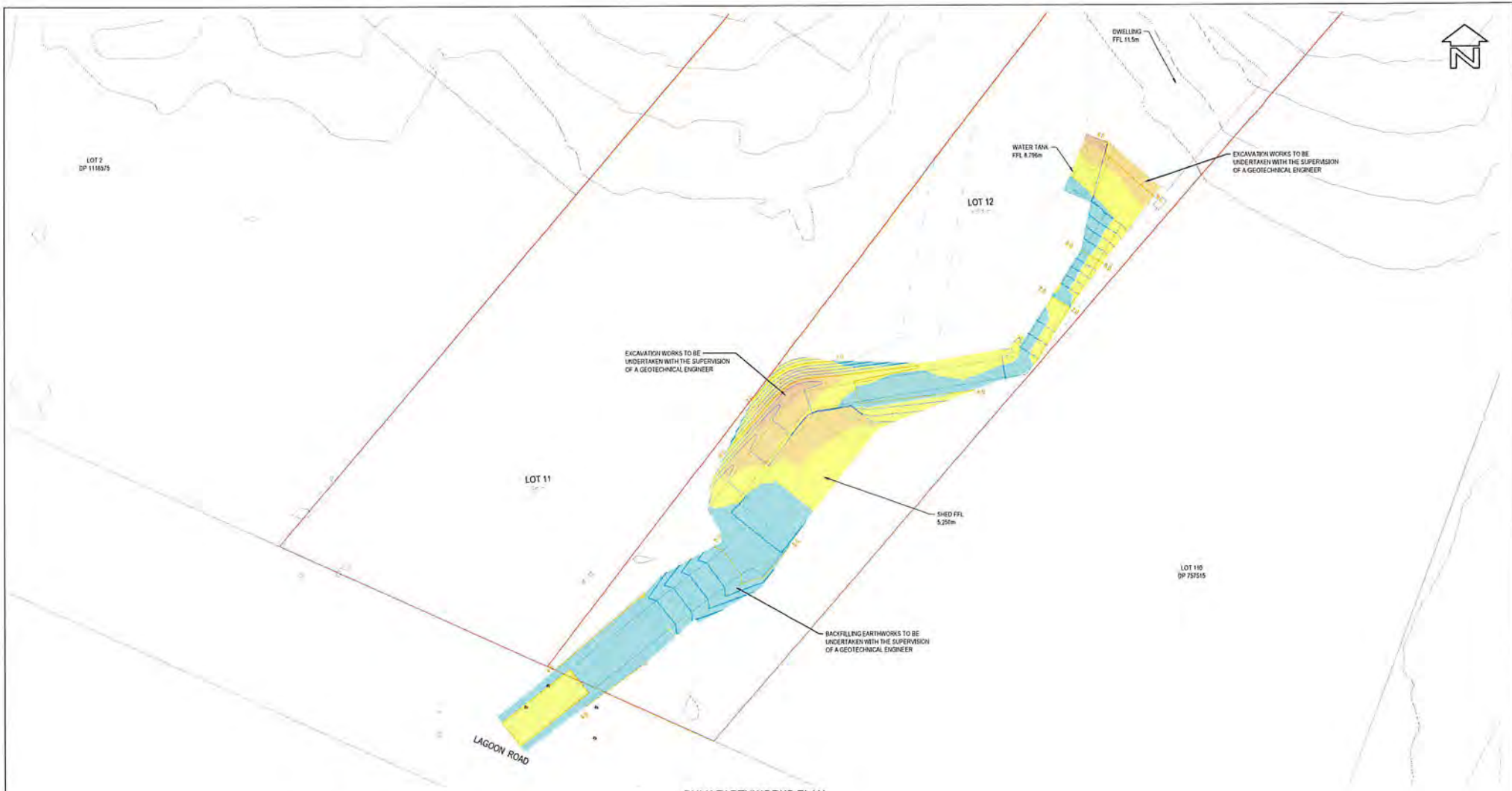


CONSTRUCTION NOTES

1. FABRICATE A SEDIMENT BARRIER MADE FROM GEOTEXTILE OR STRAW BALES.
2. FOLLOW STANDARD DRAWING 6-7 AND STANDARD DRAWING 6-8 FOR INSTALLATION PROCEDURES FOR THE STRAW BALES ON GEOTEXTILE. REDUCE THE PICKET SPACING TO 1 METRE CENTRES.
3. IN WATERWAYS, ARTIFICIAL SAG POINTS CAN BE CREATED WITH SANDBAGS OR EARTH BANKS AS SHOWN IN THE DRAWING.
4. DO NOT COVER THE INLET WITH GEOTEXTILE UNLESS THE DESIGN IS ADEQUATE TO ALLOW FOR ALL WATERS TO BYPASS IT.

GEOTEXTILE INLET FILTER (SD 6-12)

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SIZE: A1	DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 2024	RELEASE DATE: 14 OCTOBER 2024							
DATE OF SURVEY: 18 SEPT 2024	DRAWN	AD				JOB-DRAWING NUMBER							
DATUM: MGA1994_AHD	CHECKED	SG				24057-GS-1101							
	APPROVED	JW				REV							

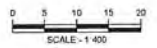


BULK EARTHWORKS PLAN
1:400 @ A1

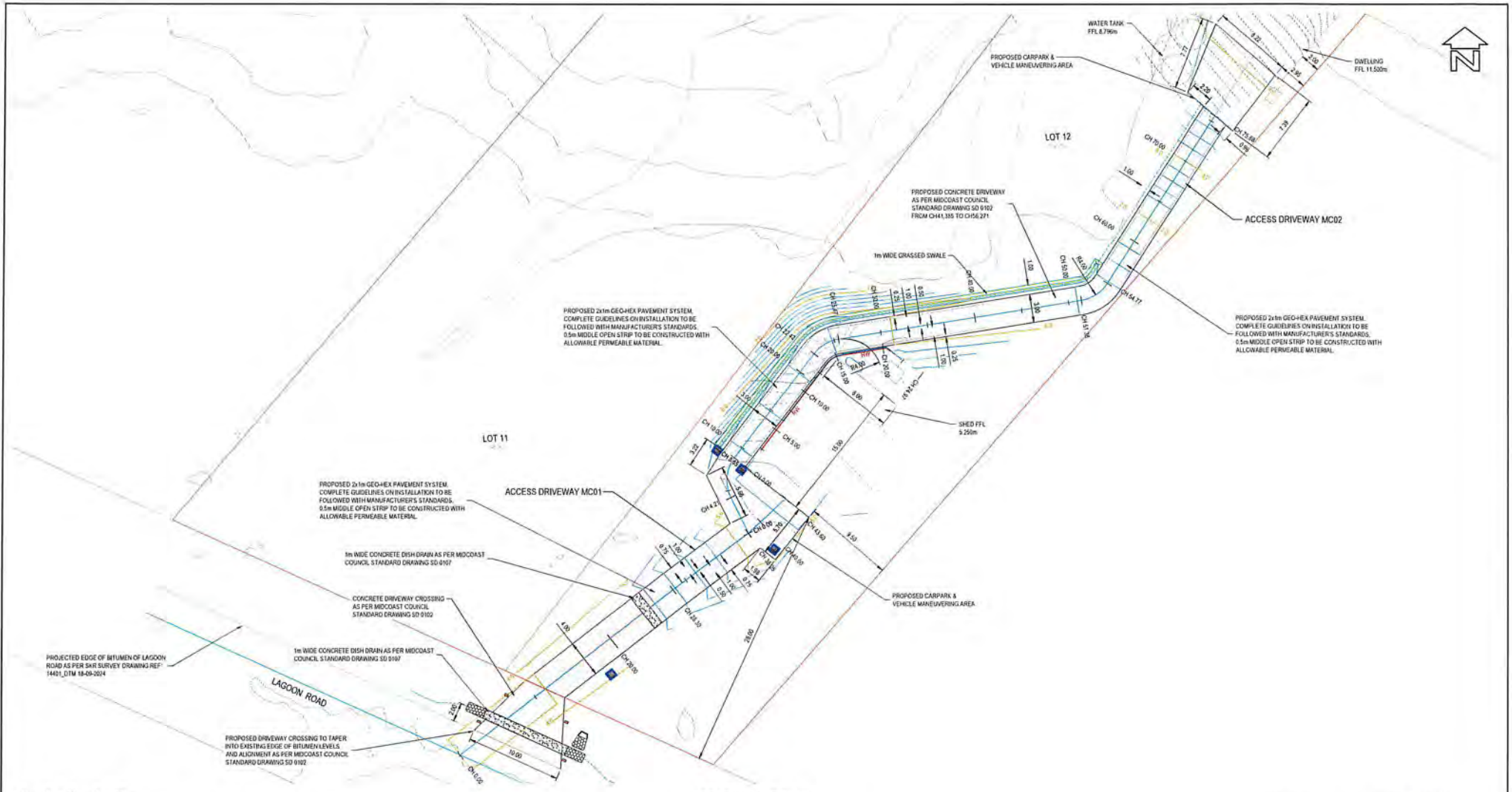
DEPTHS TABLE	
ELEVATION	COLOUR
5.00 to 4.00	Light Blue
4.00 to 3.00	Light Green
3.00 to 2.00	Light Yellow
2.00 to 1.00	Yellow
1.00 to 0.50	Orange
0.50 to 0.00	Light Orange
0.00 to -0.50	Yellow-Orange
-0.50 to -1.00	Yellow
-1.00 to -2.00	Light Green
-2.00 to -3.00	Light Blue
-3.00 to -4.00	Light Blue
-4.00 to -5.00	Light Blue

VOLUME SUMMARY TABLE	
ITEM	AMOUNT
TOTAL CUT	178m ³
TOTAL FILL	55m ³
NET VOLUME (CUT)	123m ³
TOTAL CUT AREA	432m ²
TOTAL FILL AREA	477m ²
TOTAL WORKS AREA	930m ²

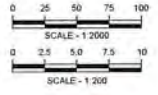
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	DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24				CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING	RELEASE DATE: 14 OCTOBER 2024
	DRAWN	AD						DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN	24057-GV-1150	0
	CHECKED	SG						DRAWING: BULK EARTHWORKS PLAN		
	APPROVED	JW								



ROAD LAYOUT PLAN
1:200 @ A1



SHEET LEGEND

DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL
BARRIER KERB Y/G		KERB / PEDESTRIAN RAMP		SUB-SOIL AND FLUSH POINTS		STORMWATER LOCATION (EXISTING)		EXISTING WATER MAIN	
ROLL KERB BK		NORMAL CONTROL LINE		KERB ADAPTOR / OUTLET		SEWER LOCATION (EXISTING)		PROPOSED WATER MAIN	
EDGE STRIP 'E'S		ROAD PAVEMENT		LIMIT OF WORKS		WATER LOCATION (EXISTING)		PROPOSED HYDRANT	
KERB ONLY 'K'		PATH PAVING (CONCRETE)		PROPOSED LOT BOUNDARIES		TELESTRA LOCATION (EXISTING)		PROPOSED STOP VALVE	
MOUNTABLE SF TYPE KERB SF		CONTOURS (MAJOR)		TREE AND LANDSCAPING		FIBRE OPTICS LOCATION (EXISTING)		PROPOSED THRUST CONNECTOR	
DISH DRAIN 'D'		CONTOURS (MINOR)		DRAINAGE PFT - 1.8m PFT WITH LINTEL		ELECTRICAL LOCATION (EXISTING)		PROPOSED SCOUR VALVE ASSEMBLY	
VEHICULAR CROSSING		RETAINING WALL STRUCTURES		DRAINAGE PFT - 2.4m SAG WITH LINTEL		PROPOSED WATER SERVICEMETER		PROPOSED SEWER JUNCTION (J.O.)	
						PROPOSED THRUST BLOCK		PROPOSED THRUST BLOCK	

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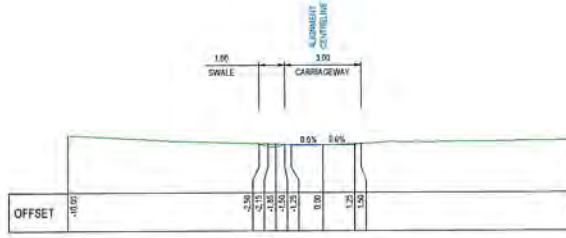
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CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING
DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN
DRAWING: ROAD LAYOUT PLAN

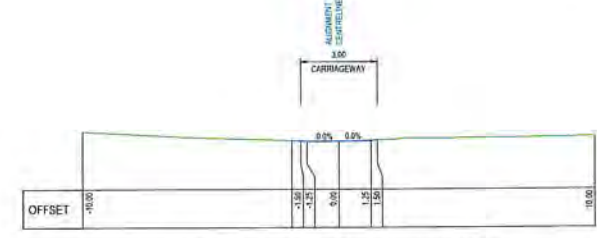
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NOT TO BE USED FOR CONSTRUCTION PURPOSES
RELEASE DATE: 14 OCTOBER 2024
JOB-DRAWING NUMBER: 24057-RD-1200
REV: 0



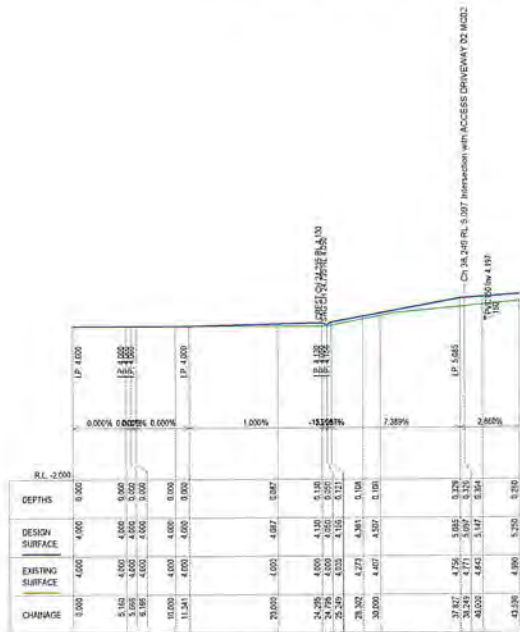
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CHAINAGE 0.00 TO 37.826
HORIZONTAL 1:100 VERTICAL 1:100 @ A1



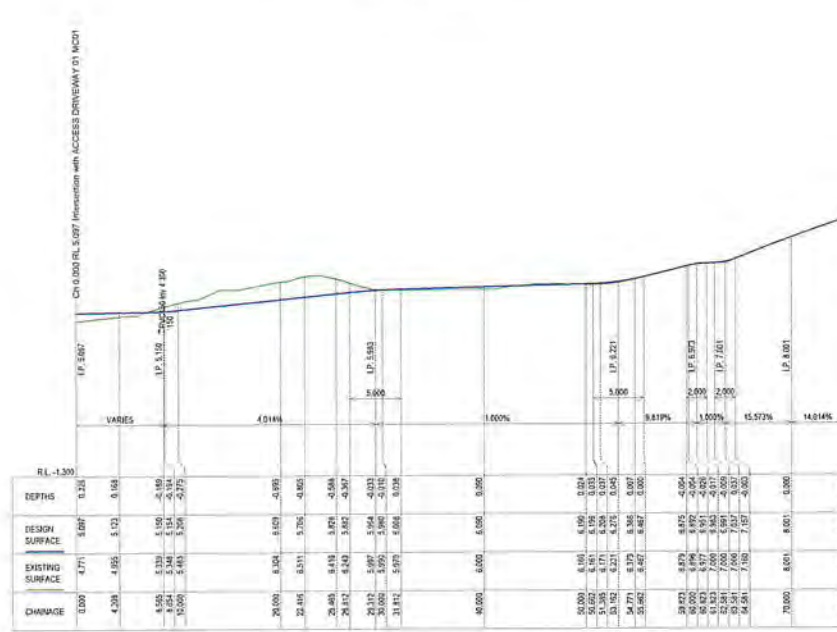
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CHAINAGE 0.00 TO 56.271
HORIZONTAL 1:100 VERTICAL 1:100 @ A1



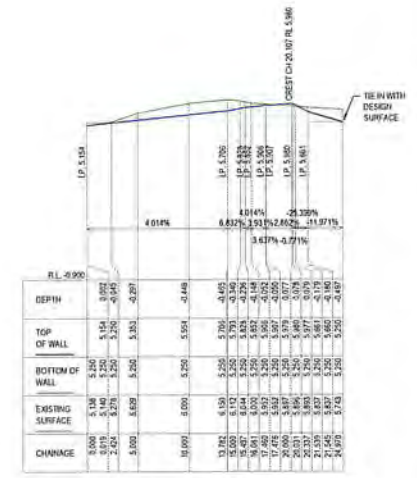
TYPICAL SECTION - ACCESS DRIVEWAY MC02
CHAINAGE 56.271 TO 75.676
HORIZONTAL 1:100 VERTICAL 1:100 @ A1



LONGITUDINAL SECTION - ACCESS DRIVEWAY MC01
CHAINAGE 0.00 TO 43.396
HORIZONTAL 1:250 VERTICAL 1:100 @ A1

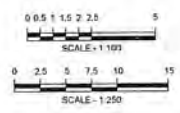


LONGITUDINAL SECTION - ACCESS DRIVEWAY MC02
CHAINAGE 0.000 TO 75.676
HORIZONTAL 1:250 VERTICAL 1:100 @ A1



LONGITUDINAL SECTION - RETAINING WALL RW
CHAINAGE 0.000 TO 24.970
HORIZONTAL 1:250 VERTICAL 1:100 @ A1

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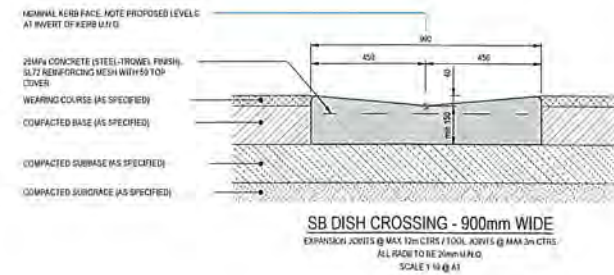
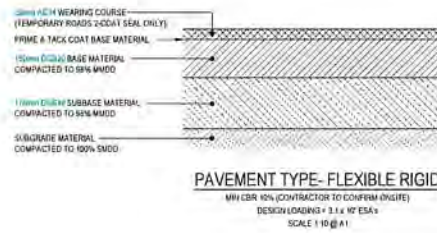
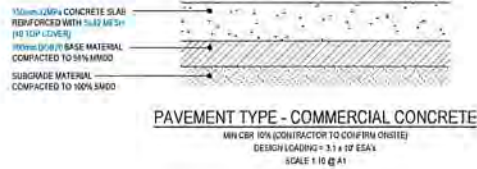
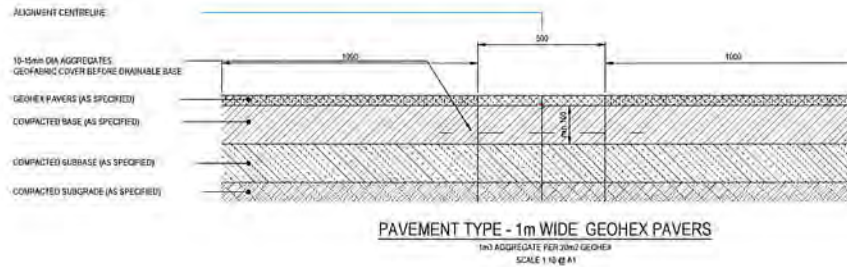
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DRAWING: MC01, MC02 & RW LONGITUDINAL AND TYPICAL SECTIONS

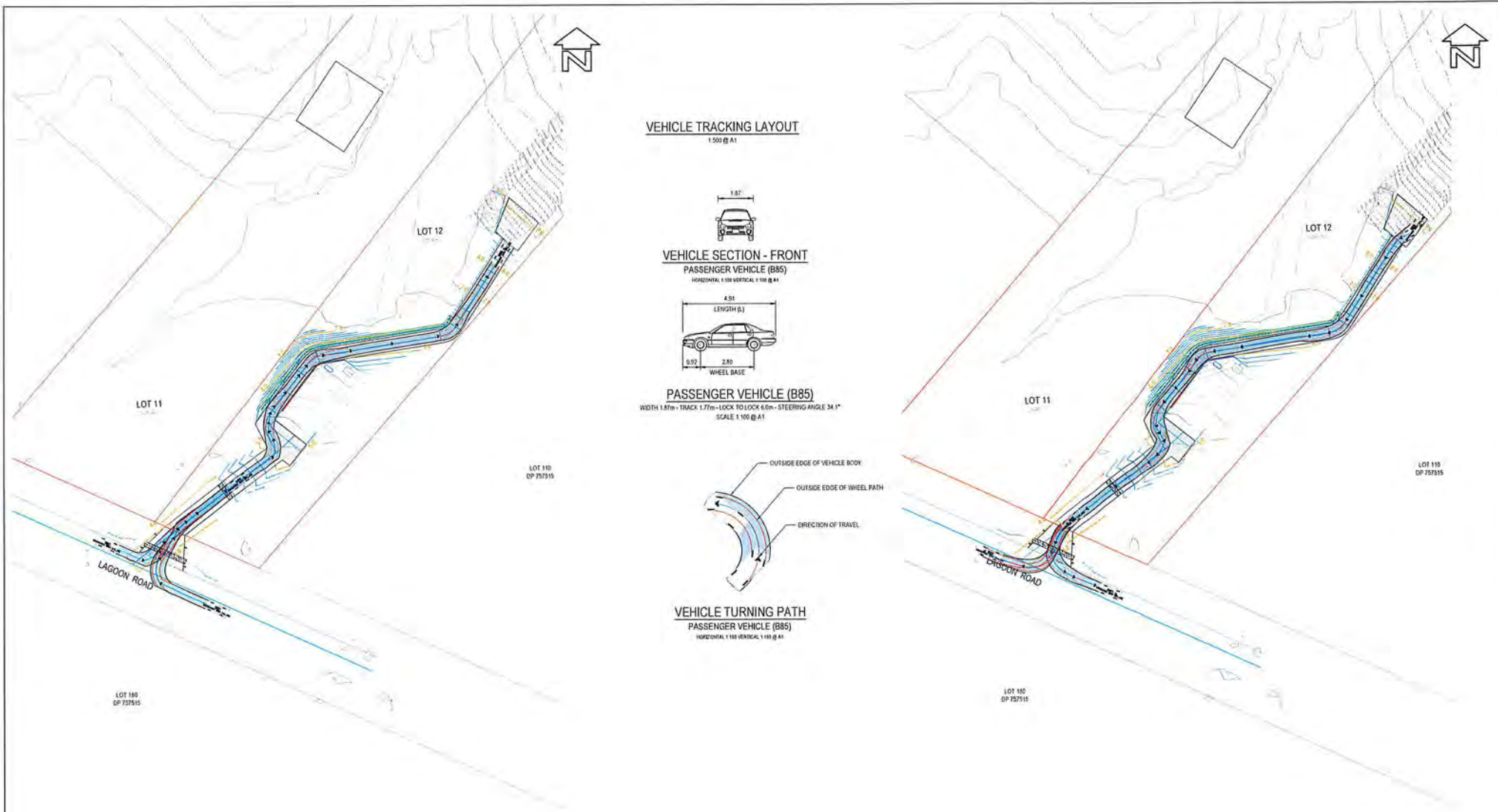
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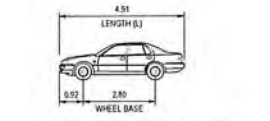
SCALE: AS NOTED	SURVEY	SKR	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	<p>DEVELOPMENT & INFRASTRUCTURE CONSULTING</p> <p>CIVPLAN PTY LTD ABN: 59 620955 114 CIVPLAN CONSULTING PTF LTD ABN: 79 157 731 912</p> <p>SOUTH COAST OFFICE: 300 PRICES HIGHWAY, BOMADERRA NSW 2541</p> <p>SYDNEY OFFICE: 152 SANDERS BAY ROAD, NORTHBRIDGE NSW 2063</p> <p>T: 1800 238 002 E: info@civplan.com.au W: www.civplan.com.au</p>	JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW LOT 277, DP 48477	FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	
SIZE: A1	DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24			CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING	RELEASE DATE: 14 OCTOBER 2024	
DATE OF SURVEY: 18 SEPT 2024	DRAWN	AD						DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN	JOB-DRAWING NUMBER	REV
DATUM: MGA1994, AHD	CHECKED	SG						DRAWING: ROAD TYPICAL DETAILS	24057-RD-1280	0
	APPROVED	JW								



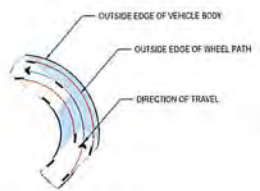
VEHICLE TRACKING LAYOUT
1:500 @ A1



VEHICLE SECTION - FRONT
PASSENGER VEHICLE (B85)
HORIZONTAL: 1:100 VERTICAL: 1:100 @ A1



PASSENGER VEHICLE (B85)
WIDTH 1.87m - TRACK 1.77m - LOCK TO LOCK 4.6m - STEERING ANGLE 34.1°
SCALE 1:100 @ A1

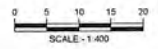


VEHICLE TURNING PATH
PASSENGER VEHICLE (B85)
HORIZONTAL: 1:100 VERTICAL: 1:100 @ A1

VEHICLE TRACKING LAYOUT - B85 INGRESS LAGOON ROAD
1:400 @ A1

VEHICLE TRACKING LAYOUT - B85 EGRESS LAGOON ROAD
1:400 @ A1

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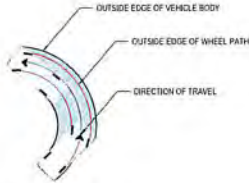
SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 18 SEPT 2024 DATUM: MGA1994, AHD	SURVEY	SKR	REV	DESCRIPTION	DATE	CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.	 CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 731 912 SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, ROMADSBURY NSW 2541 SURVEY OFFICE: 153 SAUNDERS BAY ROAD, NORRHESIDE NSW 2063 T: 1800 318 072 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW LOT 277, DP 48477	FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES RELEASE DATE: 14 OCTOBER 2024	
	DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24			CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING	JOB DRAWING NUMBER	REV
	DRAWN	AD						DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN	24057-RV-1285	0
	CHECKED	SG						DRAWING: VEHICLE TURNING PATH 1 OF 2		
	APPROVED	JW								



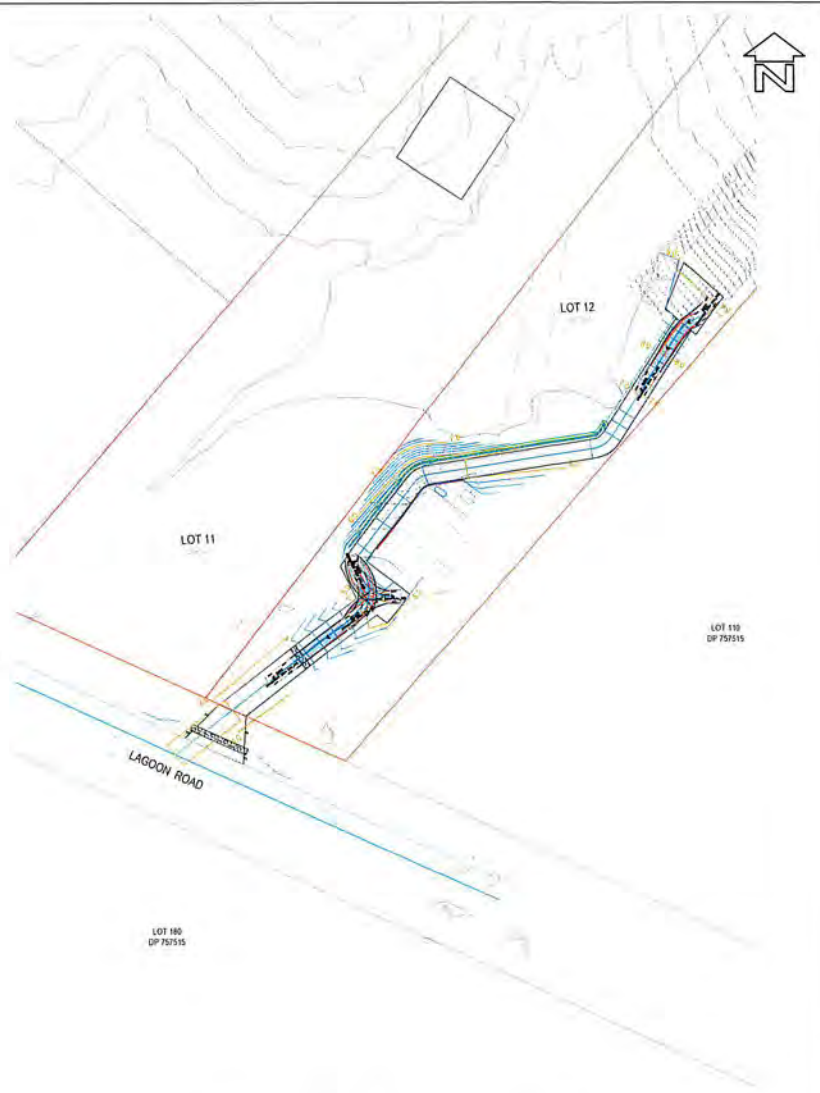
VEHICLE TRACKING LAYOUT
1:500 @ A1



PASSENGER VEHICLE (B85)
WIDTH 1.87m - TRACK 1.77m - LOCK TO LOCK 6.0m - STEERING ANGLE 34.1°
SCALE 1:100 @ A1



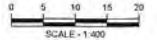
VEHICLE TURNING PATH
PASSENGER VEHICLE (B85)
HORIZONTAL 1:100 VERTICAL 1:100 @ A1



VEHICLE TRACKING LAYOUT - B85 EGRESS CARPARK 1 & 2
1:400 @ A1

VEHICLE TRACKING LAYOUT - B85 INGRESS CARPARK 1 & 2
1:400 @ A1

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DATE OF SURVEY: 18 SEPT 2024	DRAWN	AD						DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN		24057-RV-1286	0
DATUM: MGA1994, AHD	CHECKED	SG						DRAWING: VEHICLE TURNING PATH 2 OF 2			
	APPROVED	JW									

LINE MARKING SCHEDULE:

- T1 - ONE WAY LINE
- B1 - BARRIER LINE
- T2 - DRIVEWAY LINE
- C1 - NO STOPPING LINE

NOTE: LINEMARKING TO BE THERMOPLASTIC WITH REFLECTORS IN ACCORDANCE WITH TRANSPORT FOR NEW SOUTH WALES REQUIREMENTS & AUSTRALIAN STANDARDS

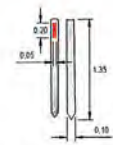
GENERAL NOTES:

1. LINE MARKING AND PROVISION OF BOLLARDS TO ACCESSIBLE PARKING SPACES SHALL BE IN ACCORDANCE WITH A.S. 2890.4
2. LINE MARKING SHALL BE 85-100mm WIDE IN ACCORDANCE WITH AS 2890.
3. SIGNAGE INDICATED SHALL BE SUPPLIED & INSTALLED IN ACCORDANCE WITH AUSTRALIAN STANDARDS AS 1742.1 (1742.1) / 1742.2 / 1742.11 AND 1743 AND REFERENCED DOCUMENTS.
4. ALL SIGNAGE TO BE FIXED TO GALV. STEEL POSTS, BOLT AND/OR SPIGOT SLEEVE FIXED INTO CONCRETE PAVEMENTS / PAD FOOTING AND/OR WALL MOUNTED WHERE APPLICABLE.

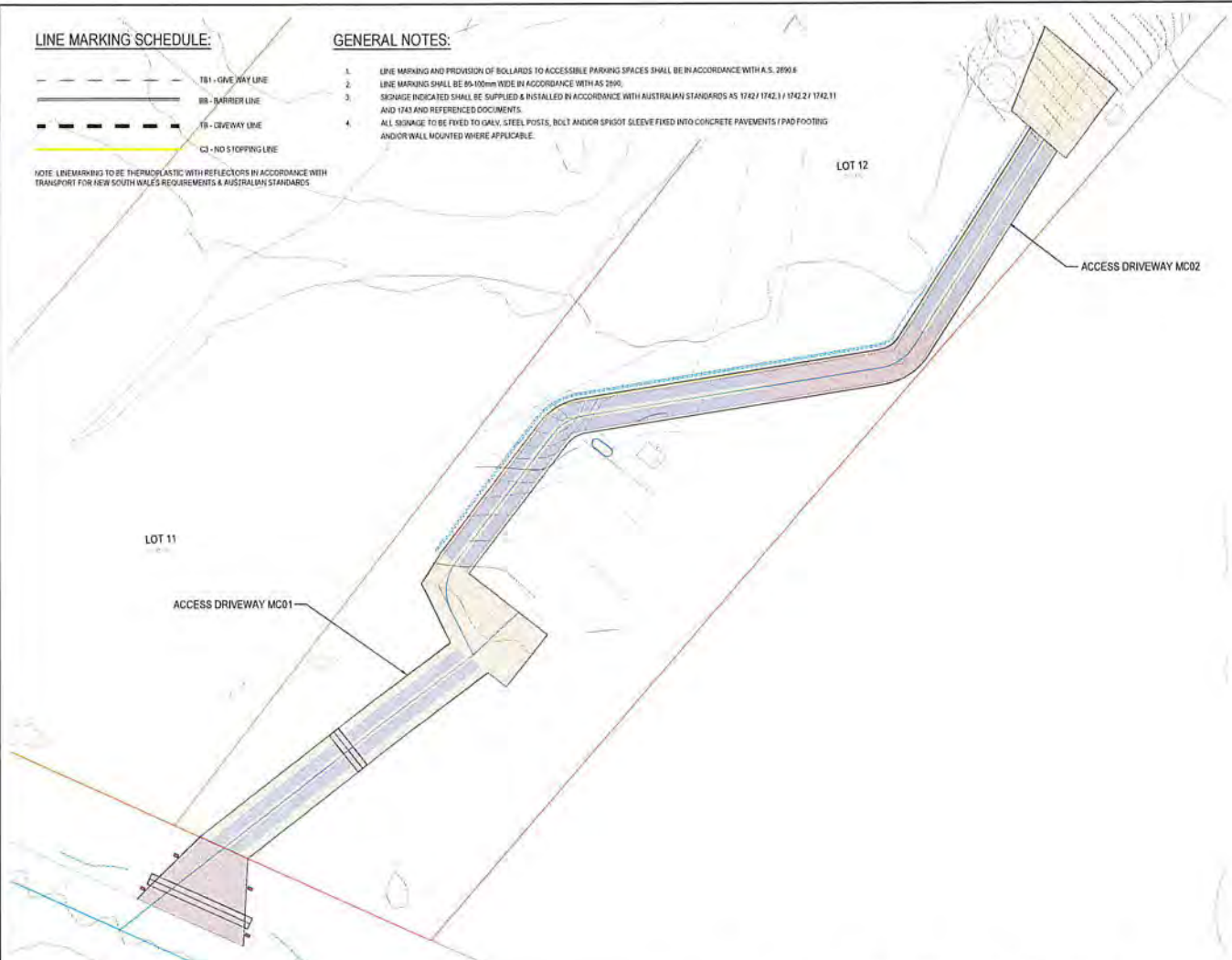


PAVEMENT LEGEND:

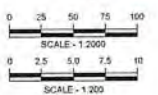
- PAVEMENT 01 - ROADS AS PER MIDCAST SD 0102 AND TYPICAL DETAILS SHEET 21024-RD-1280
- PAVEMENT 02 - CONCRETE AS PER MIDCAST SD 0102 AND TYPICAL DETAILS SHEET 21024-RD-1280
- PAVEMENT 03 - GEHEX PAVERS. SEE MANUFACTURER'S SPECIFICATIONS AND INSTALLATION GUIDE
- GUIDE POST - SPECIFICATIONS AS PER NSW STANDARDS



TYPICAL DETAILS - PVC GUIDE POST



ROAD PAVEMENT DESIGN		
CHAINAGE	DRIVEWAY MC01	DRIVEWAY MC02
DESIGN ESA	3.0 x 10 ⁵	3.0 x 10 ⁵
DESIGN SUBGRADE CBR	5.0 %	5.0 %
SUB-BASE DGS40	150mm	150mm
BASE-COURSE DGB20	175mm	100mm
WEARING COURSE	10mm SINGLE COAT BITUMEN SEAL	10mm DRAINABLE AGGREGATES
	40mm AC10	42mm GEHEX PAVERS
TOTAL	375mm	302mm



SIGNAGE, LINEMARKING AND TRAFFIC FURNITURE PLAN

1:200 @ A1

SHEET LEGEND

DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL
BARRIER KERB 'KG'		KERB / PEDESTRIAN RAMP		SUB-SOL AND FLUSH POINTS		STORMWATER LOCATION (EXISTING)		EXISTING WATER MAIN		EXISTING SEWER MAIN	
RULL KERB 'HK'		ACORNIAL CONTROL LINE		KERB ADAPTOR / OUTLET		SEWER LOCATION (EXISTING)		PROPOSED WATER MAIN		PROPOSED SEWER MAIN	
EDGE STRIP 'ES'		ROAD PAVEMENT		LIMIT OF WORKS		WATER LOCATION (EXISTING)		PROPOSED HYDRANT		PROPOSED SEWER MANHOLE	
KERB ONLY 'KO'		PATH PAVING (CONCRETE)		PROPOSED LOT BOUNDARIES		TILSTRA LOCATION (EXISTING)		PROPOSED STOP VALVE		PROPOSED THRUST CONNECTOR	
MOUNTABLE SF TYPE KERB 'SP'		CONTOURS (MAJOR)		TREE AND LANDSCAPING		FBRE OPTICS LOCATION (EXISTING)		PROPOSED THRUST CONNECTOR		PROPOSED SCOUR VALVE ASSEMBLY	
GUSH DRAIN 'DD'		CONTOURS (MINOR)		DRAINAGE PIT - 1.8m PIT WITH LINTEL		ELECTRICAL LOCATION (EXISTING)		PROPOSED WATER SERVICEMETER		PROPOSED SEWER JUNCTION (S.O.)	
VEHICULAR CROSSING		RETAINING WALL STRUCTURES		DRAINAGE PIT - 2.4m SAG WITH LINTEL		GAS LOCATION (EXISTING)		PROPOSED THRUST BLOCK		PROPOSED THRUST BLOCK	



LOCALITY OVERVIEW
1:2000 @ A1

SCALE: AS NOTED
SIZE: A1
DATE OF SURVEY: 18 SEPT 2024
DATUM: MGA1994, AHD

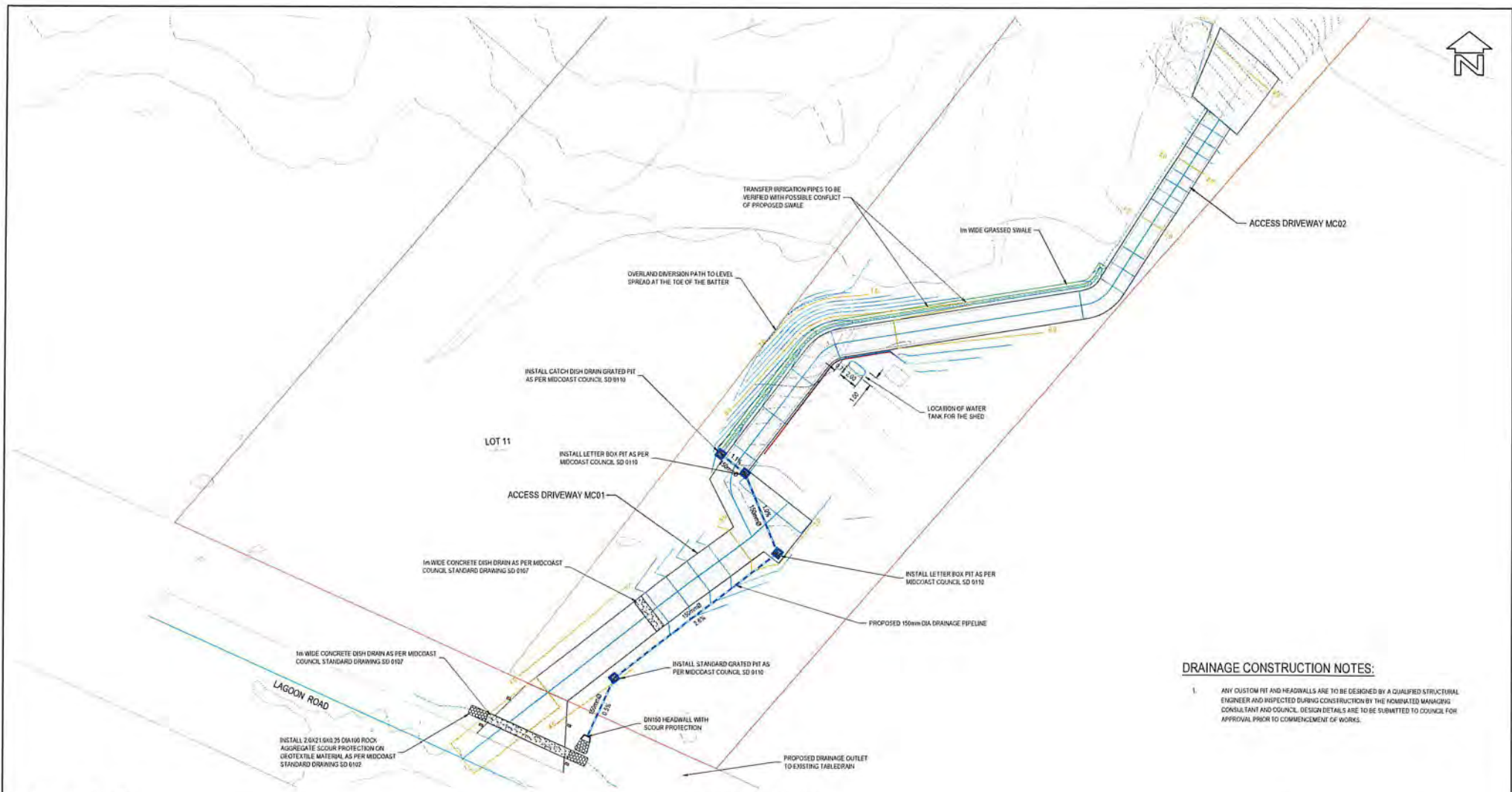
SURVEY	SKR	REV	DESCRIPTION	DATE
DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24
DRAWN	AD			
CHECKED	SG			
APPROVED	JW			

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CIVPLAN
DEVELOPMENT & INFRASTRUCTURE CONSULTING
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SOUTH COAST OFFICE: 390 PRINCES HIGHWAY, ROMADILEY NSW 2541
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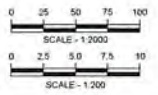
JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION
LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW LOT 277, DP 48477
CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING
DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN
DRAWING: SIGNAGE, LINE MARKING & TRAFFIC FURNITURE PLAN

FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	
RELEASE DATE: 14 OCTOBER 2024	
JOB-DRAWING NUMBER	REV
24057-RV-1290	0



DRAINAGE CONSTRUCTION NOTES:

- ANY CUSTOM FIT AND HEADWALLS ARE TO BE DESIGNED BY A QUALIFIED STRUCTURAL ENGINEER AND INSPECTED DURING CONSTRUCTION BY THE NOMINATED MANAGING CONSULTANT AND COUNCIL. DESIGN DETAILS ARE TO BE SUBMITTED TO COUNCIL FOR APPROVAL PRIOR TO COMMENCEMENT OF WORKS.



DRAINAGE LAYOUT PLAN
1:200 @ A1

SHEET LEGEND

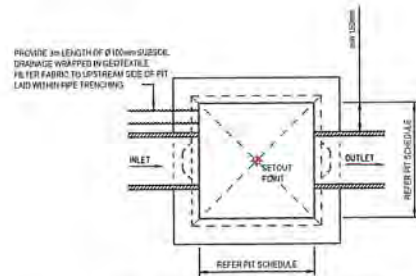
DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL	DESCRIPTION	DETAIL
BARRIER KERB 'KG'	KG	KERB / PEDESTRIAN RAMP	KG	SUB-SOIL AND FLUSH POINTS	KG	STORMWATER LOCATION (EXISTING)	KG	EXISTING WATER MAIN	KG
ROLL KERB 'RK'	RK	MINIMAL CONTROL LINE	KG	KERB ADAPTOR / OUTLET	KG	SEWER LOCATION (EXISTING)	KG	PROPOSED WATER MAIN	KG
EDGE STRIP 'ES'	ES	ROAD PAVEMENT	KG	LIMIT OF WORKS	KG	WATER LOCATION (EXISTING)	KG	PROPOSED SEWER MAIN	KG
KERB ONLY 'KO'	KO	PATH PAVING (CONCRETE)	KG	PROPOSED LOT BOUNDARIES	KG	TELSTRA LOCATION (EXISTING)	KG	PROPOSED SEWER MANHOLE	KG
MOUNTABLE SF TYPE KERB 'SF'	SF	CONTOURS (MAJOR)	KG	TREE AND LANDSCAPING	KG	FIBRE OPTICS LOCATION (EXISTING)	KG	PROPOSED STOP VALVE	KG
DESH DRAIN 'DD'	DD	CONTOURS (MINOR)	KG	DRAINAGE PIT - 1.8m PIT WITH LITTEL	KG	ELECTRICAL LOCATION (EXISTING)	KG	PROPOSED THRUST CONNECTOR	KG
VEHICULAR CROSSINGS	KG	RETAINING WALL STRUCTURES	KG	DRAINAGE PIT - 2.4m SAG WITH LITTEL	KG	GAS LOCATION (EXISTING)	KG	PROPOSED WATER SERVICE/SEWER	KG
								PROPOSED THRUST BLOCK	KG
								PROPOSED THRUST BLOCK	KG



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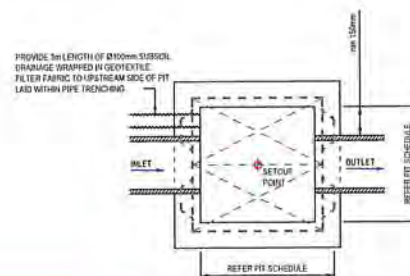


SCALE: AS NOTED SIZE: A1 DATE OF SURVEY: 18 SEPT 2024 DATUM: MGA1994, AHD	<table border="1"> <tr><th>SURVEY</th><th>SKR</th><th>REV</th><th>DESCRIPTION</th><th>DATE</th></tr> <tr><td>DESIGN</td><td>AD</td><td>0</td><td>SUBMISSION TO COUNCIL FOR DA APPROVAL</td><td>14 OCT 24</td></tr> <tr><td>DRAWN</td><td>AD</td><td></td><td></td><td></td></tr> <tr><td>CHECKED</td><td>SG</td><td></td><td></td><td></td></tr> <tr><td>APPROVED</td><td>JW</td><td></td><td></td><td></td></tr> </table>	SURVEY	SKR	REV	DESCRIPTION	DATE	DESIGN	AD	0	SUBMISSION TO COUNCIL FOR DA APPROVAL	14 OCT 24	DRAWN	AD				CHECKED	SG				APPROVED	JW				<p>CIVPLAN PTY LIMITED ALL RIGHTS RESERVED. THIS DOCUMENT IS PRODUCED BY CIVPLAN PTY LTD SOLELY FOR THE BENEFIT OF AND USE BY THE CLIENT IN ACCORDANCE WITH THE TERMS OF THE RETAINER. CIVPLAN PTY LTD DOES NOT AND SHALL NOT ASSUME ANY RESPONSIBILITY OR LIABILITY WHATSOEVER TO ANY THIRD PARTY ARISING OUT OF ANY USE OF RELIANCE BY THIRD PARTY ON THE CONTENT OF THIS DOCUMENT.</p>	 DEVELOPMENT & SURVEY ENGINEERING CIVPLAN PTY LTD ABN: 49 620 926 114 CIVPLAN CONSULTING PTY LTD ABN: 79 157 731 612 SOUTH COAST OFFICE: 100 PRINCESS HIGHWAY, BOMADERRY NSW 2541 SYDNEY OFFICE: 152 SALICUS BAY ROAD, NORTHBRIDGE NSW 2063 T: 1800 318 052 E: info@civplan.com.au W: www.civplan.com.au	JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW LOT 277, DP 48477 CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN DRAWING: DRAINAGE LAYOUT PLAN	<p>FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES</p> <p>RELEASE DATE: 14 OCTOBER 2024</p> <table border="1"> <tr><th>JOB-DRAWING NUMBER</th><th>REV</th></tr> <tr><td>24057-SD-2000</td><td>0</td></tr> </table>	JOB-DRAWING NUMBER	REV	24057-SD-2000	0
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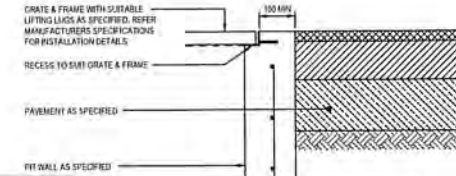
PLAN VIEW - SURFACE INLET 'SIP' / JUNCTION PIT 'JP'

FIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH). REFER FIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT
SCALE 1:10 @ A1



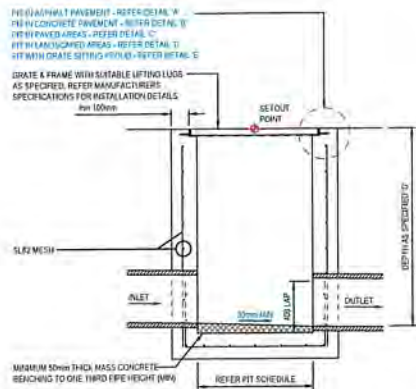
PLAN VIEW - DISH DRAIN / 'V' GRATE PIT

FIT STRUCTURE TO BE 200mm THICK UNLESS SHOWN OTHERWISE. DRILL AND EPOXY PLASTIC PROPRIETARY STEP IRONS IN ACCORDANCE WITH AUSTRALIAN STANDARDS AND MANUFACTURERS SPECIFICATIONS (PITS > 1000mm DEPTH). REFER FIT INTERFACE DETAIL 'F' FOR CORNER REINFORCEMENT
SCALE 1:10 @ A1



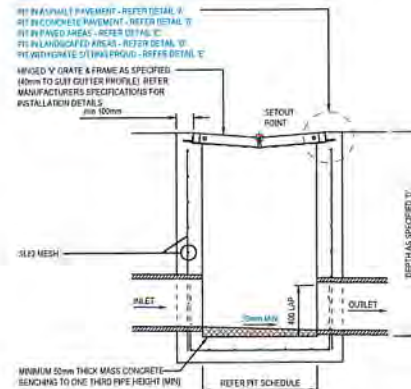
SECTION VIEW - PIT INTERFACE DETAIL 'A'

REFER TO STORMWATER FIT SCHEDULE FOR GRATE DETAILS
SCALE 1:10 @ A1



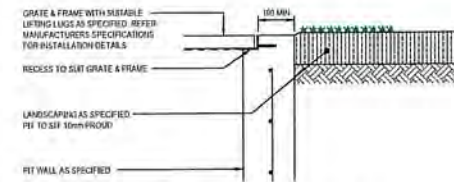
SECTION VIEW - SURFACE INLET 'SIP' / JUNCTION PIT 'JP'

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SCALE 1:10 @ A1



SECTION VIEW - DISH DRAIN / 'V' GRATE PIT

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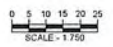
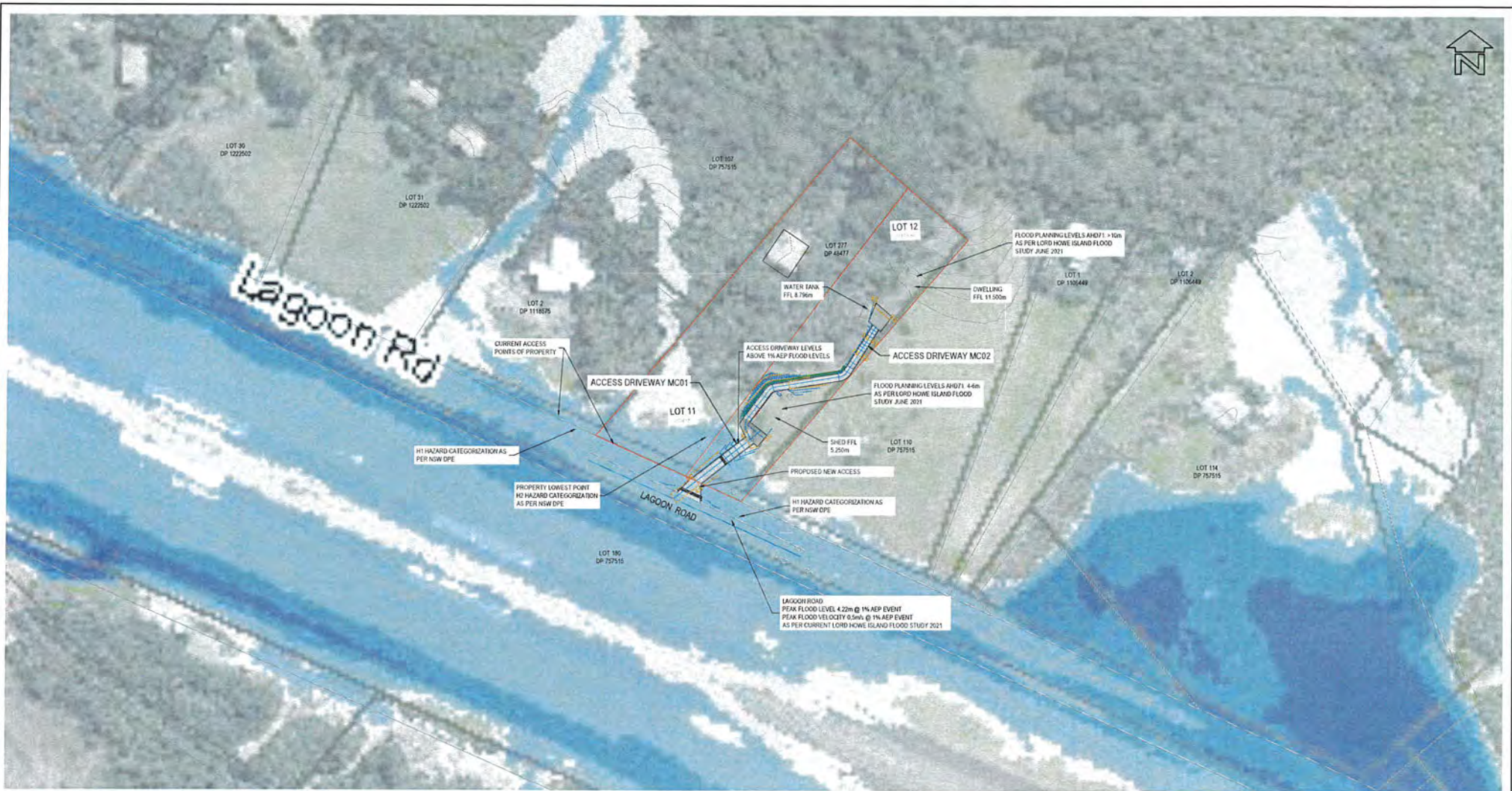
SECTION VIEW - PIT INTERFACE DETAIL 'C'

REFER TO STORMWATER FIT SCHEDULE FOR GRATE DETAILS
SCALE 1:10 @ A1

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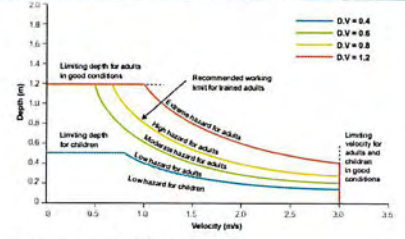


Figure 2 Thresholds for the stability of people in floods
Notes: 1. Source: Figure 8 ADR 2517b, modified after Cox, Shand and Blacka (2019)
2. D:V = Depth x velocity

HAZARD CATEGORIZATION PLAN
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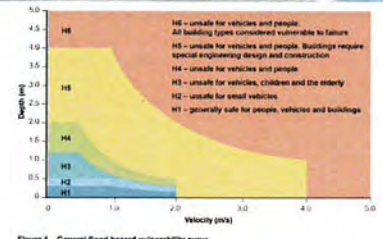
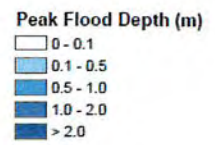


Figure 1 General flood hazard vulnerability curve
Source: Figure 6 ADR 2517b

PEAK FLOOD LEVELS (1% AEP EVENT):



SCALE: AS NOTED
SIZE: A1
DATE OF SURVEY: 18 SEPT 2024
DATUM: MGA1994, AHD

SURVEY	SKR	REV	DESCRIPTION	DATE
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JOB NAME: 2 LOT RESIDENTIAL SUBDIVISION
LOCATION: 345 LAGOON ROAD, LORD HOWE ISLAND, NSW
LOT 277, DP 48477
CLIENT: DIVE LORD HOWE PTY LTD C/- PRECISE PLANNING
DESCRIPTION: CIVIL ENGINEERING CONCEPT DESIGN
DRAWING: HAZARD CATEGORIZATION PLAN

FOR CONCEPT APPROVAL NOT TO BE USED FOR CONSTRUCTION PURPOSES	
RELEASE DATE: 14 OCTOBER 2024	REV
JOB-DRAWING NUMBER	
24057-SD-2050	0

Application of the test of significance to determine potential impact to threatened species or ecological communities, or their habitats.

In relation to the proposed construction of a dwelling, shed and driveway on land cleared of native vegetation and the placement of wastewater irrigation pipes into adjacent Significant Native Vegetation.

Lot 227 of DP48477, 345 Lagoon Road, Lord Howe Island.

30 September 2024

Report prepared for Aaron and Lisa Ralph

Prepared by Bower Bush



The subject site - Lot 227 of DP48477, 345 Lagoon Road, Lord Howe Island, NSW 2898

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Executive Summary

Aaron and Lisa Ralph are seeking development consent to construct a dwelling, shed and driveway on land cleared of native vegetation and to place wastewater irrigation pipes into adjacent Significant Native Vegetation at Lot 227 of DP48477, 345 Lagoon Road, Lord Howe Island. This report provides an ecological assessment of the proposal.

A site inspection was conducted with the proponent on 30 November 2023 and traversed the site to inspect the location of the proposed dwelling, shed, driveway and wastewater irrigation system. A vegetation survey was undertaken including an assessment of habitats and other ecological attributes of the site.

A test of significance in accordance with the *NSW Biodiversity Conservation Act 2016* was carried out to assesses the direct and indirect impacts of the proposal. It also assessed the potential impacts of the proposed development to Significant Native Vegetation (SNV) and modelled LHI *Placostylus bivaricosus* habitat according to the Lord Howe Island Local Environmental Plan 2010.

A test of significance was prepared for all subject species and found that the activity **will not result** in a significant impact, on the threatened species or listed ecological communities of LHI.

Background

Determining the effect of development actions on threatened species is an integral part of environmental impact assessment.

Under the *NSW Biodiversity Conservation Act 2016*, proponents of Part 5 activities must apply the test of significance (under s.7.3) to determine whether the proposed activity is likely to significantly affect threatened species or ecological communities, or their habitats. If the activity is likely to have a significant impact or will be carried out in a declared area of Outstanding Biodiversity Value, the proponent must either apply the Biodiversity Offsets Scheme or prepare a species impact statement (SIS).

The proposed activity is not being carried out in a declared area of Outstanding Biodiversity Value.

The functions of this environment assessment (*Application of the test to assess the significance of the environmental impact*) for the construction of a dwelling, shed and driveway on land cleared of native vegetation and the placement of wastewater irrigation pipes into adjacent Significant Native Vegetation at Lot 227 of DP48477, 345 Lagoon Road, Lord Howe Island will:

- identify what threatened species, populations, ecological communities or associated habitat on LHI may be affected by the proposed action; and ,
- evaluate the significance, using the seven-part test, of the proposed action on those species, populations, ecological communities or relevant habitat, to determine if a *species impact statement* (SIS) is required.

Section 7.3 of the Biodiversity Conservation Act 2016 requires that:

- (1) The following is to be taken into account for the purposes of determining whether a proposed development or activity is likely to significantly affect threatened species or ecological communities, or their habitats:
 - (a) *in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction,*
 - (b) *in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:*
 - (i) *is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or*
 - (ii) *is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction,*
 - (c) *in relation to the habitat of a threatened species or ecological community:*
 - (i) *the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and*
 - (ii) *whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and*
 - (iii) *the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality,*
 - (d) *whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly),*
 - (e) *whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process.*

Definitions

The definitions given below are used in this impact assessment:

- **affected species** means subject species that may be affected by the proposal.
- **conservation status** is regarded as the degree of representation of a species or community in formal conservation reserves; it also takes into account the degree and type of threatening process affecting the species or community, and its range and abundance both within and outside reserves.
- **direct impacts** are those that directly affect the habitat of species and ecological communities and of individuals using the study area. They include, but are not limited to, death through predation, trampling, poisoning of the animal/plant itself and the removal of suitable habitat.
- **endemic species** is a native species restricted to a particular locality.
- **indirect impacts** occur when project-related activities affect species or ecological communities in a manner other than direct loss within the subject site. Indirect impacts may sterilise or reduce the habitability of adjacent or connected habitats. They can include loss of individuals through starvation, exposure, predation by domestic and/or feral animals, loss of breeding opportunities, loss of shade/shelter, reduction in viability of adjacent habitat due to edge effects, deleterious hydrological changes, increased soil salinity, erosion, inhibition of nitrogen fixation, weed invasion, noise, light spill, fertiliser drift, or increased human activity within or directly adjacent to sensitive habitat areas.
- **native plant** has the same meaning as in the *National Parks and Wildlife Act 1974* (NP&W Act).
- **LHI** means Lord Howe Island.
- **LHIB** refers to the Lord Howe Island Board.
- **LHG** refers to the Lord Howe Group, comprising Lord Howe Island and associated islands and islets.
- **OEH** refers to the *Office of Environment and Heritage (NSW)*
- **proponent** is the Lord Howe Island Board.
- **protected fauna** has the same meaning as in the NP&W Act and the Fisheries Management Act 1994 (FM Act).
- **study area** means the subject site and any additional areas which are likely to be affected by the proposal, either directly or indirectly.
- **subject site** means the area directly affected by the proposal.
- **subject species** means those *threatened* species known or considered likely to occur in the study area at the time.
- **threatened species** has the same meaning as in the BC Act.
- **threatening process** has the same meaning as in the BC Act; the definition is not limited to key threatening processes.

The Lord Howe Group

The Subject Site occurs within the settlement of Lord Howe Island, located on 345 Lagoon Drive, in proximity to the Lord Howe Island aerodrome. The entirety of Lord Howe Island is recognised as a World Heritage Site referred to as the Lord Howe Group.

The Lord Howe Group (LHG; 31°31'S, 159°03'E) is located 760 kilometres north east of Sydney. It comprises the main island (LHI; 1,455 ha) and 27 smaller islets and rocks.

Location of the LHG and subject site are shown below in Figures 1 & 2.

The main island is 12 km long, 1–2.8 km wide and formed in the shape of a crescent with a coral reef enclosing a lagoon on the western side. Mount Gower (875 m), Mount Lidgbird (777 m) and Intermediate Hill (250 m) form the southern two-thirds of the island which is extremely rugged. LHI was first permanently settled in 1833, and the resident population is now about 350. LHI is the only island within the LHG on which settlement has occurred. The settlement is restricted to the central lowlands and covers about 15% of the island. North of the settlement the land rises gradually to about 200 m at the top of the sheer sea cliffs that fringe the northern end of the island.

The LHG falls under the ultimate jurisdiction of the New South Wales (NSW) State Government. The LHIB is responsible for the care, control and management of the LHG in accordance with the LHI Act 1953. Approximately 75% of the main island plus all outlying islands, islets and rocks within the LHG are protected under the Permanent Park Preserve (PPP), which has similar status to that of a national park. The LHG has been placed on the Register of the National Estate and was listed as a World Heritage Area in 1982 (DSEWPC 2013c).

The LHI Marine Park is a marine protected area extending from the main island out to a distance of 12 nautical miles. The area out to 3 nautical miles covers approximately 46,000 ha and falls under NSW jurisdiction; the area from 3 to 12 nautical miles covers approximately 300,500 ha and falls under Commonwealth authority.

Tourism is the island's major source of income. About 16,000 tourists visit the island each year, but numbers are regulated, with a maximum of 400 allowed on the island at any one time.

LHI has a diverse range of flora and fauna and a high degree of endemism; 44% of native plants and more than 50% of native invertebrates are endemic. Many of these species are threatened. Thirty-five species of land fauna (invertebrates and vertebrates), two fish species, eight species of flora and three ecological communities are listed as threatened under New South Wales legislation (DECC 2007a). Fifteen species of fauna and one flora species are listed as threatened under Australian Commonwealth Government legislation.

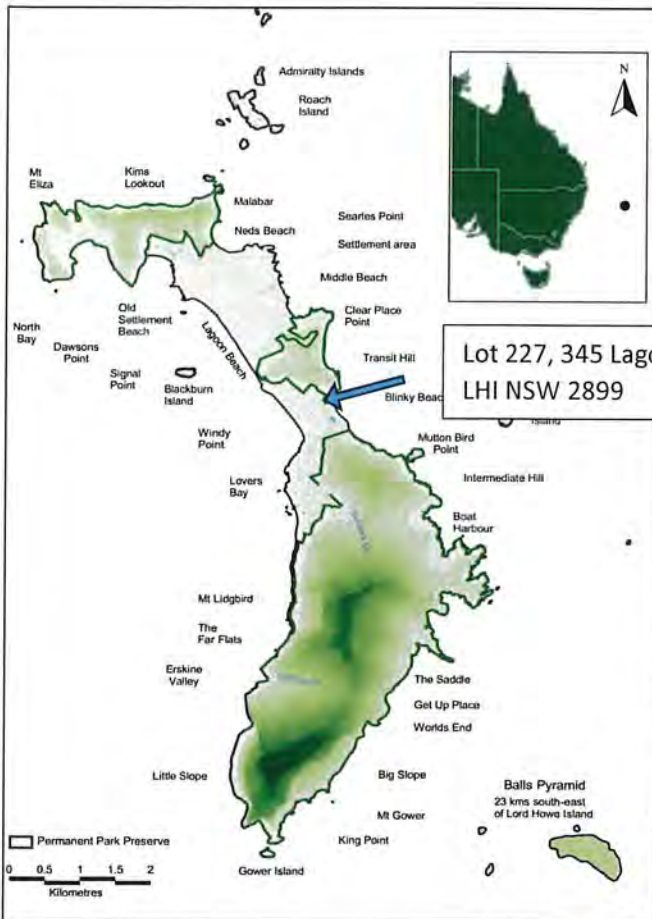


Figure 1: Lord Howe Group (DECC 2007).

Figure 2: Aerial Image (Google Earth 30.09.24)

Vegetation

Overview of the vegetation on LHI.

A wide variety of vegetation types has been described for the island group, with the diversity corresponding with the range of habitats, viz. lowland, montane, valleys, ridges, and areas exposed to the maritime influence (DSEWPC 2013a).

There are 241 native species of vascular plants on the island, including 105 endemics (DSEWPC 2013a). Sixteen of these are considered rare, endangered or vulnerable. There are four endemic palm species in three endemic genera. There are also two other endemic genera in the families Asteraceae and Gesneriaceae. Other endemic species are widely scattered among families. Endemism is particularly noticeable among ferns and in the families Asteraceae, Myrsinaceae, Myrtaceae and Rubiaceae. There are 48 species of indigenous pteridophytes (including 19 endemic ferns) belonging to 32 genera, and 180 species of angiosperms (56 endemics) in 149 genera. A further four species are represented by endemic subspecies or varieties; there are no gymnosperms apart from the introduced Norfolk Island Pine *Araucaria heterophylla*. Many species are threatened or have restricted distribution on the island; there is only one known plant of non-endemic *Pandanus pedunculatus*, and *Chionochloa conspicua* ssp. *nov.* (Poaceae) is an endemic known only from one clump on Mount Lidgbird (DSEWPC 2013a).

There are over 600 exotic plants recorded from LHI of which about 270 are naturalised (DEC 2007a); many of these are found in the lowland settlement area.

Twenty-five vegetation associations in twenty alliances have been identified (Pickard, 1983), whilst (Sheringham et al 2016) identified and mapped 26 native vegetation communities and 13 non-native vegetation or non-vegetation units. Fourteen of these associations have endemic species as their dominant components. The slopes of the northern hills are dominated mostly by *Drypetes/Cryptocaria* rainforest, with *Howea forsterana* palm forest on the flats behind North Bay and *H. belmoreana* palm forest in the narrower gullies running down towards Old Settlement Beach.

Melaleuca/Cassinia scrubs and *Cyperus* and *Poa* grasslands occur on the exposed slopes of Mount Eliza and along the crest of the sea cliffs on the northern coast. The southern mountains are covered with a more variable suite of rainforest and palm associations, often with *Pandanus* along drainage lines, and with scrub and cliff associations in the more exposed parts and along the coastline. Mutton Bird Point (on the east coast) and King Point (at the southern tip) have small occurrences of *Poa* grassland. The upper slopes of mounts Gower and Lidgbird include areas of forest dominated by another of the endemic palms, *Hedyscepe canterburyana*. The very humid summit plateau on Gower and the summit ridge on Lidgbird consist of structurally distinct gnarled mossy forest (DSEWPC 2013a).

Fauna

Overview of the fauna on LHI.

Native mammals

A small population of the Large Forest Bat *Vespadelus darlingtoni* occurs on the island and relies on tree hollows and cavities for roosting and breeding habitat. No other indigenous native terrestrial mammals are known. Introduced species, however, were the House Mouse *Mus musculus* and Ship Rat *Rattus rattus* (DSEWPC 2013a), which have both been declared successfully eradicated in 2023. Historically feral Cat *Felis catus*, Pig *Sus scrofa* and Goat *Capra hircus* were also established on Lord Howe Island, but have all now been successfully eradicated.

Native land and seabirds

There are at least 129 native and introduced bird species, mostly vagrants, with 27 breeding regularly (DSEWPC 2013a). LHI is the principal breeding ground for Providence Petrel *Pterodroma solandri*, it also probably breeds on Balls Pyramid as well as on Phillip Island (the Norfolk Group) approximately 900 km distant. Flesh-footed Shearwater *Ardenna carneipes* breeds in substantial numbers on Lord Howe, with possibly half the world's population present (DSEWPC 2013a). Other important species breeding within the LHIG include Kermadec Petrel *Pterodroma neglecta* (currently restricted to Balls Pyramid but historically bred in the southern mountains), Black-winged Petrel *Pterodroma nigripennis*, Wedge-tailed Shearwater *Ardenna pacificus*, Little Shearwater *Puffinus assimilis*, White-bellied Storm-petrel *Fregetta grallaria*, Masked Booby *Sula dactylatra* and Red-tailed Tropicbird *Phaeton rubricauda*; the tropicbird in greater concentrations than probably anywhere else in the world. Also present are Sooty Tern *Onychoprion fuscatus*, Common Noddy *Anous stolidus*, Black Noddy *A. minutus*, White Tern *Gygis alba* and Grey Ternlet *Procelsterna cerulea* (DSEWPC 2013a). Several migratory wader species are regular visitors to the island, including 12 species listed as threatened species. Four endemic landbirds are present Lord Howe Silvereye *Zosterops lateralis tephroleura*, Lord

Howe Golden Whistler *Pachycephala pectoralis contempta*, Lord Howe Island Currawong *Strepera graculina* and LH Woodhen *Hypotaenidia sylvestris*. The Lord Howe Woodhen was reduced to some 26 individuals in 1975 and was initially bred successfully in captivity to stimulate the populations recovery to between 200-250 individuals pre rodent eradication (Dr Terry O'Dwyer pers. comm.). Since the successful eradication of rodents their population now numbers above 1100 (Dr Terry O'Dwyer pers. comm.). In the years following the successful eradication of rodents from the island the Little Grassbird *Megalurus timoriensis* have established on the island with several breeding events observed (Jack Shick pers. comm.).

Native Reptiles

The islands support two native species of terrestrial reptile, Lord Howe Skink *Oligosoma lichenigera* and Lord Howe Gecko *Christinus guentheri*, which are listed as vulnerable threatened species. Both species were predated by rodents and have slow reproductive rates so it will take some time to gauge their recovery post rodent eradication.

Terrestrial Invertebrates

The LHI is characterised by a large number of terrestrial invertebrate species, many of which are found nowhere else in the world (DECC 2007a). More than 1,600 species have been recorded, including 464 beetles, 183 spiders, 157 land and freshwater snails, 27 ants and 21 earthworms. Since the settlement of LHI at least one endemic ant species and ten endemic beetle species may have become extinct; and six endemic ants, nine endemic spiders and 38 endemic beetles are at risk of extinction (DECC 2007a). Other invertebrates thought to be extinct or at risk include several endemic snails, the endemic LHI Wood-feeding Cockroach *Panesthia lata*, the endemic Lord Howe Island Earthworm *Pericryptodrilus nanus* and the endemic Lord Howe Island Phasmid *Dryococelus australis*.

The feral African-Big-headed Ant *Pheidole megacephala* is a serious pest to the island ecology, particularly terrestrial invertebrates. This species persists on Lord Howe Island despite ongoing eradication measures. Ongoing efforts to eradicate this invasive ant are essential to protect the islands unique fauna.

Predation by rodents was regarded as a significant threat to many of the invertebrates on LHI (DECC 2007a) and was listed as a Key Threatening Process by the NSW Scientific Committee in 2000.). Since the successful eradication of rodents, the recovery of many species of invertebrates has been anecdotally and scientifically recorded.

Examples include population recovery of several threatened snails, the detection of LHI Wood-feeding Cockroach at New Gulch and many other species being recorded at numbers and/or found in locations they had not been recorded for up to 100 years.

Marine Species

The waters around LHI provide an unusual mixture of temperate and tropical organisms; 477 fish species having been recorded in 107 families of which 4% are unrecorded elsewhere other than in Norfolk Island-Middleton Reef waters.

Marine species are not assessed for this proposal.

Description Of Proposal

The proposal aims to construct a dwelling, shed and driveway on land cleared of native vegetation and to place wastewater irrigation pipes into adjacent Significant Native Vegetation at Lot 227 of DP48477, 345 Lagoon Road, Lord Howe Island (refer to planning report for more detail).

The construction is designed to nestle into the landscape and minimise the extent of vegetation removal and visual impact (Photo 1 and Figure 3 & 4).



Photo 1. Concept photo of shed & house and position in the landscape.

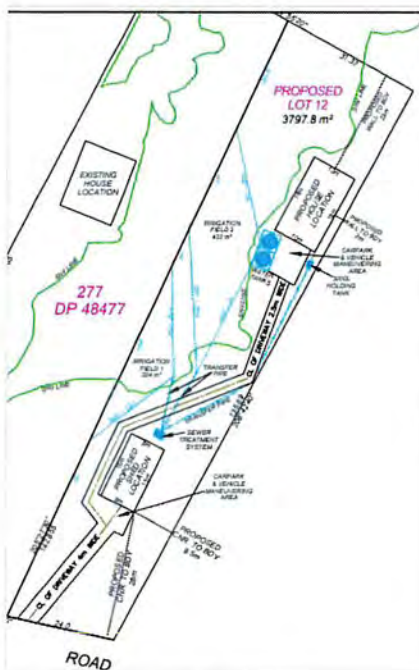


Figure 3. Plan design.



Figure 4. Plan design on aerial image.

Figure 3 provides the plan design showing location of buildings, driveway and wastewater system with location of Significant Native Vegetation. Figure 4 provides

the project concept design overlain against the extent of vegetation on site (both native & exotic). Source: Google Earth.

The proposal will largely be undertaken on cleared land and does not require the removal of native vegetation. The placement of wastewater irrigation pipes into the adjacent Significant Native Vegetation will lay irrigation pipes on the ground surface and will not remove or damage any native vegetation. This activity has the potential to interface with LHI *Placostylus* during installation. Whilst this species has not been recorded from the site, this activity is assessed in the test of significance. The closest record for this species is in bushland at north Blinky Beach headland on calcarentite soils.

The proposal will remove two large exotic Pohutukawa *Metrosideros kermadecensis*, a stand of exotic Oleander *Nerium oleander* and a planted native Banyan *Ficus macrophylla* subsp. *columnaris*. The Banyan has been assessed by the Lord Howe Island Board as an established garden plant as it was planted by the leaseholder (Ian Fitzgerald *pers. comm.*) (see Photos 2, 3 & 4).

The removal of native vegetation from Lord Howe Island requires approval from the Board under Clause 59, Part 5 of the *LHI Regulation 2014*. This clause does not prevent the maintenance of an established garden, lawn or nature strip. Exotic plant species do not require consent for removal.



Photo 2. Pohutukawa and Oleander to be removed.



Photo 3. Oleander to be removed.



Photo 4. Pohutukawa and Banyan trees to be removed, which are considered as established gardens, as they were planted as ornamental screen plants.

Vegetation of Subject Site

The vegetation on the subject site largely comprises previously cleared land dominated by the exotic pasture grass Kikuyu *Pennisetum clandestinum* and various other exotic pasture grasses with some scattered regrowth patches of Bullybush *Cassinia tenuifolia*, a planted Banyan and exotic shrubs. Ground Asparagus *Asparagus aethiopicus* is present on site, mainly along the edge of native vegetation. The removal of exotic plants and conversion of some areas of Kikuyu to native landscaping will enhance the viability and ecological function of the native vegetation on site. (Refer to Photos 2 – 5 -native and exotic vegetation from Lot 227).

The subject site abuts native vegetation comprising Kentia/Thatch Palm *Howea forsterana*, Blackbutt *Cryptocarya triplinervis*, Maulwood *Olea paniculata*, Greybark *Drypetes deplanchei* with *Lagunaria patersonia* subsp. *patersonia*.

Two main native vegetation communities are described for the site, including:

- **Community 12b** Banyan – Kentia Palm forest on coral sand and calcarenite.
- **Community 17a** Greybark *Drypetes deplanchei* -Blackbutt *Cryptocarya triplinervis* rainforest.

Source: Floristic Classification and High-Resolution Map of LHI (LHIB 2016).

The area of vegetation where the wastewater irrigation pipe is intended to be installed is mapped as Significant Native Vegetation, mostly comprising communities 12b & 17a, supporting a diversity of native species in the canopy with a diversity of native vines and shrubs in the lower strata. Up to 50 native plant species have been recorded from Lot 227 (see Appendix 1).

The native vegetation on Lot 227 comprises important floral and habitat attributes which can support a wide range of species, mostly common species but also six threatened fauna species.

Threatened species that have been identified as having known or potential habitat are considered Subject Species for this assessment (see below).

Threatened Flora

Bionet has recorded eleven threatened flora species as occurring on LHI, although there are no records listed for Phillip-Island Wheat Grass *Anthosachne kingiana subsp. kingiana*. No threatened flora was observed during the site assessment. The subject site is not considered to have potential or known habitat for any of the threatened flora species.

Philip-island Wheat Grass (Critically Endangered – EPBC & BC Act) and Sand Spurge *Euphorbia psammogeton* (Endangered BC Act) are known to occur on Blinky Beach and/or Blinky Point. However, suitable habitat for these species is not present at the subject site.

Refer to Appendix 2 for list of threatened flora LHI.



Photo 5. Kentia/Thatch Palm dominated forest adjacent to the proposed development site. The removal of exotic grass (foreground), Oleander (right) and Ground Asparagus will enhance the viability of local surrounding plant communities.

Fauna of Subject Site

The cleared land at the subject site does not provide important habitat attributes for native fauna, although many fauna species will traverse or utilise cleared lands periodically, including threatened species such as the LHI Silvereye, LHI Golden Whistler, LHI Currawong and LH Woodhen.

The area of Significant Native Vegetation where wastewater irrigation pipes are intended to be laid provides a wide range of habitat attributes for a diversity of fauna and is the core habitat for threatened species at the subject site. This area provides important habitat for foraging, roosting and nesting as well as important connectivity habitat to adjacent areas of native bushland to enable fauna species to move across the landscape.

This area is considered potential habitat for the LHI *Placostylus* and there is a record of this species from the northern headland of Blinky Beach on calcarenite soils and it is possible that the species may be detected when the pipes are laid. If LHI *Placostylus* are detected during the activity of laying wastewater irrigation pipes it is recommended that they be moved 5m outside of the irrigation area to reduce risk of trampling during installation and placed under natural thatch/mulch. It is important to place them out of reach of predators such as Woodhen and Currawong (recommend bury them under thatch/mulch).

Threatened Fauna

The Study area supports over 43 terrestrial threatened fauna species, which includes land birds, seabirds that breed on island, marine species, vagrant migratory wading birds, reptiles and invertebrates. This includes 4 species of vagrant wader that have only been recorded once and includes the exotic Masked Owl *Tyto novaehollandiae*, which is now possibly eradicated from the island coincident with the rodent eradication.

Refer to Appendix 2 for list of threatened fauna.

Identifying Subject Species

Background to identifying Subject Species

Under the Threatened Species Test of Significance Guidelines (OEH 2018) a species does not have to be considered as part of the assessment of significance (i.e., a *subject species*) if adequate surveys or studies have been carried out that clearly show that the species:

- does not occur in the study area, or
- will not use on-site habitats on occasion, or
- will not be influenced by off-site impacts of the proposal.

Otherwise, all species likely to occur in the study area (based on general species distribution information), and known to use that type of habitat, should be considered in the rationale that determines the list of threatened species, populations and ecological communities for the assessment of significance (DECC 2007b).

A search of NSW Bionet for the Lord Howe Island map sheet recorded over 43 terrestrial fauna species and 11 flora species listed as threatened under NSW or Commonwealth legislation (excluding marine species) (see **Appendix 2**). An additional threatened flora species, the Phillip Island Wheat Grass is known from Lord Howe Island but there are no records lodged on Bionet so it has been added to the list of species for consideration in this assessment.

Four threatened fauna species were observed during the site assessment on 30 November 2023, being the LHI Silvereye, LHI Golden Whistler, LHI Currawong and LH Woodhen. The subject site is considered to have known or potential habitat for two other threatened fauna species, being LHI Gecko and LHI Placostylus.

Threatened species considered subject species for this proposal

A list of threatened species with known or potential habitat has been derived based on a site assessment conducted on 30th November 2023, the authors having over 15 years comprehensive local knowledge of the islands ecology and threatened species, and in context of the small scale of the proposal, the placement of the dwelling, shed and driveway on cleared land and that the wastewater irrigation pipes will be laid on the ground without removing or disturbing native vegetation.

This assessment determined that six species are considered to have 'known' or 'potential' habitat at the subject site and are considered subject species (refer to Table 1), and the test of significance has been applied to these species.

Table 1 - The subject site provides known or potential habitat for six threatened species.

Common Name	Scientific Name	EPBC Act 1994	BC Act 1996
LHI Currawong	<i>Strepera graculina crissalis</i>	V	V
LHI Golden Whistler	<i>Pachycephala pectoralis contempta</i>	-	V
LHI Silvereye	<i>Zosterops lateralis tephroleura</i>	-	V
LHI Woodhen	<i>Hypotaenidia sylvestris</i>	E	E
LHI Gecko	<i>Christinus guentheri</i>	V	V
LHI Placostylus	<i>Placostylus bivaricosus</i>	E	E

Fauna species that are considered threatened marine species have not been considered for this assessment as the proposal is restricted to terrestrial habitats and will not impact on marine environments. This includes marine mammals, fish and seabirds that do not use terrestrial habitats on Lord Howe Island (e.g. seals, whales, albatross, giant petrel etc).

Nesting seabirds listed as threatened species such as Red-tailed Tropicbird, White-bellied Storm Petrel, Sooty Tern, Little Shearwater, Black-winged Petrel, Flesh-footed Shearwater, Grey Ternlet, White Tern Masked Booby and Providence Petrel do not nest on site and therefore have not been considered as subject species as they will not be impacted by the proposal.

Further, threatened species that are migratory waders that use wetlands or vagrants (e.g. Swift Parrot *Lathamus discolor*), have not been considered as subject species as they do not use habitats that are to be impacted and will not be impacted by the proposal.

On the main island, the LHI Skink is known to persist in frontal and back dunes at North Bay with historical records from the foreshore at Windy Point and a record from the foreshore of Neds Beach. The area of the proposal to be impacted is largely cleared land which is not used by the LHI Skink so this species has not been considered as subject species as it will not be impacted by the proposal.

Given that the proposal is being undertaken on land cleared of native vegetation it is unlikely that any of the known or potential species will have known or suitable habitat impacted.

The test of significance has been undertaken for species that are considered to have 'known' habitat on site and has included the LHI Placostylus and LHI Gecko as both species are considered to have potential habitat at the subject site.

Endangered Ecological Communities (EEC)

The *EPBC Act* 1994 does not list any *threatened* ecological communities in the area. The *BC Act* 2016 lists three *threatened* ecological communities on the LHIG. In summary there are no EEC occurring on the subject site, however the relevance of these threatened ecological communities to the proposal are described below.

1) The *Lagunaria* Swamp Forest (Sally Wood Swamp Forest)

Conservation status: Listed as a *critically endangered ecological community* (NSW Scientific Committee 2003).

Lagunaria Swamp Forest is confined to LHI where it is restricted to the lowland area, which has largely been cleared for settlement (NSW Scientific Committee 2003). Height of the forest is 10 -15 m tall. The major canopy dominant, Sallywood is confined to LHI and Norfolk Island. Other canopy trees include Coast Hibiscus *Hibiscus tileaceus* and Juniper *Myoporum insulare*. Shrubs are generally sparse and may include Mangrove *Aegiceras corniculatum*, Blackbutt and Cottonwood *Celtis conferta* subsp. *amblyphylla* (NSW Scientific Committee 2003). The groundcover may include Cutt Grass *Cyperus lucidus*, *Commelina cyanea* and *Hydrocotyle hirta*, and is generally sparse where the tree canopy is intact, but may be denser on edges and where the tree canopy has been disturbed.

The distribution of the community is restricted to low-lying swampy areas at altitudes below 20 m. This distribution was mapped by Pickard (1983), who estimated that its original distribution may have covered as little as 6 ha, distributed across five restricted locations on the island. The community has undergone a very large reduction in geographical distribution with greater than 95% of the community estimated to have been lost (Pickard 1983, Auld and Hutton 2002). None of the locations are protected within the LHI Permanent Park Preserve. Lagunaria Swamp Forest falls entirely within the jurisdiction of the LHIB. Individual plants of Sallywood may be scattered through the forests from sea level to about 600m on LHI, but such locations do not form a part of the Lagunaria Swamp Forest (NSW Scientific Committee 2003).

Lagunaria Swamp Forest has been seriously depleted by land clearing. The remaining fragments are only a few square metres in area, are degraded by edge effects, weed invasion, alteration to water regimes, and from cattle grazing. The remnants are likely to include only a sample of the original flora and at least some appear to be transitional assemblages with other vegetation communities. However there have been a number of restoration activities undertaken by the LHIB to begin to restore this community. Actions have involved habitat plantings and fencing of remnants, or in some cases previously occupied habitat, in order to exclude cattle (NSW Scientific Committee 2003).

Lagunaria Swamp Forest is not found at the subject site and is therefore not considered a subject entity.

However, it is possible that Lagunaria Swamp Forest historically occurred on the low-lying areas of the property adjacent to Lagoon Road prior to clearing for the airstrip.

Revegetation using species native to this plant community will improve habitat for a wide range of native species and compliment revegetation programs to reconstruct this ecological community elsewhere on LHI (e.g. Pinetree's back paddock, Old Settlement and Soldiers Creek).

2) Gnarled Mossy Cloud Forest on Lord Howe Island

Conservation status: Listed as a *critically endangered ecological community* (NSW Scientific Committee 2011).

Gnarled Mossy Cloud Forest on LHI is restricted to the summit plateau of Mt Gower (some 27 ha) and in a greatly reduced form and extent on the narrow summit ridge of Mt Lidgbird (NSW Scientific Committee 2011).

Gnarled Mossy Cloud Forest is not found at the subject site and is therefore not considered a subject entity.

3) Coastal Saltmarsh in the NSW North Coast, Sydney Basin and South East Corner bioregions

Conservation status: Listed as an *endangered ecological community* in NSW under the TSC Act 1995. Consequently this includes the saltmarsh on LHI (MPA 2010).

On LHI this community is located on the fringes of estuaries. Dominant plants include *Sporobolus virginicus* and Saltwater Couch *Triglochin striatum*, the reed *Phragmites australis*, a Beardgrass *Polypogon monspeliensis* and the herb *Sacocornia quinqueflora* (MPA 2010).

Coastal Saltmarsh is not found at the subject site and is therefore not considered a subject entity.

Threatened Species Assessed as Subject Species

Terrestrial invertebrates

Lord Howe Placostylus *Placostylus bivaricosus*

Conservation Status

Listed as *endangered* under the BC Act.

Listed as *endangered* under the EPBC Act.

The Lord Howe Placostylus is a large land snail; the shell of a mature specimen can be up to 8 cm long. It is endemic to LHI but has close relatives in New Zealand (*P. ambagiosus*, *P. bollonsi* and *P. hongii*). Other members of the genus occur in the Solomon Islands, Fiji and New Caledonia. The Lord Howe Placostylus was once abundant and widespread on the island, inhabiting the leaf litter of rainforest areas. The decline of the species was first noted in the 1940s (NSW NPWS 2001).

Three recent sub-species of the Lord Howe Placostylus are recognised:

- 1) *Placostylus bivaricosus bivaricosus* is *endangered*, having declined in extent and number. It was formerly common over the northern end of LHI from sea level to the top of Malabar Hill (approximately 200 m). The current stronghold for this sub-species is the Settlement but other sites where the snail has been recorded since the 1970s are North Bay, near Transit Hill and the vicinity of the airport (NSW NPWS 2001).
- 2) *Placostylus bivaricosus etheridgei* occurred in the mountains at the southern end of the Island up to an altitude of 350 m. It is probably extinct (Ponder 1997, Beesley *et al.* 1998) although it is still hoped that this sub-species exists as isolated local populations on Little Slope and Big Slope (NSW NPWS 2001).
- 3) *Placostylus bivaricosus cuniculinsulae* was restricted to Blackburn Island. It is now believed to be extinct due to the loss of the original forest cover from this island as a result of grazing/browsing by introduced mammals (NSW NPWS 2001) and tree cutting to provide firewood.

Habitat

Observations of Placostylus in the 19th Century indicate that this snail prefers shady, damp situations, preferably on scrubby calcarenite hillsides (NSW NPWS 2001). Ponder and Chapman (1999) found Placostylus "sheltering under well-developed, moisture-retaining leaf litter in forests" often in the vicinity of Banyan trees, and mostly on calcarenite-derived soils and sandy soils. All recent records have been made in evergreen closed forests dominated by either Kentia Palm or Greybark *Drypetes australasica*/Blackbutt *Cryptocarya triplinervis* association (or ecotones between the two) (NSW NPWS 2001). Placostylus are considered to potentially occur on site.

Habitat Protection

Areas providing habitat for the Lord Howe Placostylus are protected in the Permanent Park Preserve and Environment Protection areas, the latter as delineated in the LHI Local Environmental Plan 2010.

Ecology

Lifespan for the Lord Howe Placostylus is unknown but its close relatives in New Zealand may live for 20 years, with maturity reached after three to five years (NSW NPWS 2001). Eggs are laid in the soil under leaf litter. Fallen dead leaves from broadleaf trees are thought to be its food source (NSW NPWS 2001).

Threats (NSW NPWS 2001)

- Loss of habitat through clearing of lowland forest. Forty-four per cent of the prime habitat for this snail has been cleared since settlement. Presently only 128 ha remains.
- The Ship Rat is a significant threat to the *Placostylus*, being a major predator of the species. Since the successful eradication of rodents this key threat has been removed and it is likely that LHI *Placostylus* will naturally recovery and move back into habitats it was excluded from due to rodent predation.
- The introduced Song Thrush and Common Blackbird prey on the Lord Howe *Placostylus*, and may be a significant threat to it. The Song Thrush population was heavily impacted by secondary poisoning during the rodent eradication program so its threat has been reduced.
- The invasion of snail habitat by introduced plants is likely to diminish the quality of the habitat for the snail. The effect on the snail of the use of herbicides to control these weeds is unknown.
- The use of snail bait around gardens in the Settlement Area to control the introduced garden snail is likely to threaten the Lord Howe *Placostylus*.
- Free-ranging chooks *Gallus gallus domesticus* feed on snail eggs and hatchlings.
- Habitat fragmentation and roads increase edge effects and solar radiation to lower stratum where Lord Howe *Placostylus* shelter. Open habitats, hardened surfaces and substrate devoid of leaf litter reduce the suitability for sheltering, feeding and movement.

Risk Posed by the Project.

The Lord Howe *Placostylus* is predicted to potentially occur at the site and is consequently considered a subject species. *Placostylus* are mainly active at night during wet weather. They are unlikely to be encountered during daytime when the activity of laying wastewater irrigation pipes will take place. The activity will not remove leaf litter so will not impact on the species capacity to move across its habitat. The installation of wastewater irrigation pipes elsewhere on LHI has not found to impact LHI *Placostylus*. The additional moisture from the irrigation of wastewater is likely to reduce stress during drought periods.

To mitigate any impacts on *Placostylus*, any animals found during the activity of laying wastewater irrigation pipes will be moved 5m outside of the irrigation area to reduce risk of trampling during installation and placed under natural thatch/mulch. It is important to place them out of reach of predators such as Woodhen and Currawong (recommend bury them under thatch/mulch).

Terrestrial reptiles

The Lord Howe Gecko *Christinus guentheri*

Listed as *Vulnerable* under the BC Act.

Listed as *Vulnerable* in the EPBC Act.

Distribution and Ecology

This gecko is found only on the LHG and on Norfolk Island although recent research (Bray, unpublished) suggests that the species are not the same. On the LHG it is present on the main island, Balls Pyramid, Blackburn Island, Muttonbird Island and Roach Island (DECC 2007a). It may be present on other islets (ibid). The species was abundant on LHI until the mid-1930s when its numbers declined dramatically (ibid). The timing of the decline and the fact that it is still common on rat-free Blackburn and Roach islands suggest that predation by the rat was the cause for the population collapse.

A wide range of vegetation communities, ranging from lowland rainforest to montane rainforest as well as grasslands on the islets appear to be acceptable to the gecko provided there are abundant rocks to provide shelter for it. This species often lays its eggs in crevices of calcarenite rock outcrops.

It feeds on beetles, spiders, ants and other invertebrates amongst the leaf litter and is thought to also take nectar (DECC 2007a).

Threats

- Predation by introduced rodents;
- Habitat disturbance due to weed invasion, clearing and trampling;
- Habitat fragmentation;
- Possible competition for food with the introduced skink *Lampropholis delicata*.

Risk Posed by the Project

The gecko is likely to be found in bushland at several of the subject sites and is therefore considered as a subject species. This proposal is confined to land cleared of native vegetation so is unlikely to impact the species. Any calcarenite rocks located on cleared land that are likely to be impacted should be moved to the edge of the native vegetation where they will improve breeding habitat for this species.

Birds

Lord Howe Currawong *Strepera graculina crissalis*

Conservation status

Listed as *vulnerable* under both the EPBC and BC acts.

This bird is a sub-species of the mainland Pied Currawong and is endemic to the LHI Group. The entire population of the Lord Howe Currawong is restricted to LHI and the nearby islets (Mayre and Greenway 1962; Schodde and Mason 1999). The current population is 215 ± 11 birds (DECC 2007a) and appears to be stable as there is no empirical evidence of an historical decline (DEWHA 2009a).

The Lord Howe Currawong is widespread on LHI, occurring in lowland, hill and mountain regions. It mainly inhabits tall rainforests and palm forests, especially those beside creeks or in gullies, but it also occurs around human habitation, and forages amongst colonies of seabirds on offshore islets (DEWHA 2009a). Its breeding sites are located in gullies, close to water, in undisturbed forests on the slopes of hills and mountains (Garnett and Crowley 2000; Hindwood 1940; Hutton 1991; McFarland 1994). Highest densities of nests are on the slopes of Mt Gower and in Erskine Valley (Garnett and Crowley 2000).

The currawong occurs singly, in pairs and family groups and, in the non-breeding season, in small flocks of up to 15 birds (DEWHA 2009a). It has been recorded breeding from October to December although breeding may commence in September (McAllan *et al.* 2004). During the breeding season pairs or small family groups establish and defend territories; in autumn and winter currawongs form flocks of up to 15 birds and can be found in the settlement area (Knight 1987; DEWHA 2009a). Data from a recent mark-recapture programme undertaken by OEH suggests that not all currawongs are able to establish a breeding territory due to the lack of appropriate habitat (Carlile and Priddel 2007).

No information is available on the ages of sexual maturity or life expectancy, but it is probably capable of surviving to more than 20 years of age (Higgins *et al.* 2006). Breeding success appears to be relatively low; the only available, though limited, data

suggests that less than 42% of nests produce fledglings (Carlile and Priddel 2007).

The Lord Howe Currawong is omnivorous; it eats fruits and seeds, snails, insects, rodents and the chicks of other bird species (Garnett and Crowley 2000; Hull 1910; Hutton 1991; McFarland 1994).

Threats

- The small size of the population makes it highly vulnerable to threatening processes.
- Historically subject to secondary poisoning by brodifacoum used to control rodents;
- Two potential threats have been formally identified: namely the introduction of an exotic predator, and persecution by humans attempting to protect other bird species and/or domestic fowls (Garnett and Crowley 2000; Hutton 1991).

Risk Posed by the Project

The Lord Howe Currawong is known from the subject site where it favours densely vegetated habitats and is therefore considered a subject species. The proposal is located on land cleared of native vegetation so will not remove any of its habitat. Landscaping using native plant species will enhance this species habitat.

Lord Howe Golden Whistler *Pachycephala pectoralis contempta*

Conservation status

Listed as *vulnerable* in the BC Act.

This sub-species, endemic to LHI, is widely distributed in the forests of the main island, ranging from sea level to mountain tops. It is often seen feeding, typically on spiders, insects and their larvae, around homes in the settlement area.

Breeding season: from September to January.

Population size: 100 – 1,000 pairs (Fullagar *et al.* 1974).

Threats:

- Previously predation by rodents;
- Clearing of lowland forests;
 - Possible competition for food resources from the introduced Common Blackbird and Song Thrush;
- Risk of extinction due to small population size and restricted distribution; and
 - Invasion of habitat by introduced plants.

Risk Posed by the Project

The Lord Howe Whistler is known from across LHI where it favours densely vegetated habitats. It is therefore considered a subject species. The proposal is located on land cleared of native vegetation so will not remove any of its habitat. Landscaping using native plant species will enhance this species habitat.

Lord Howe Silvereye *Zosterops lateralis tephroleura*

Conservation status

This sub-species, endemic to LHI, is listed as *vulnerable* under the BC Act.

It is widely distributed on the main island, occurring in all habitats except open fields. Its diet consists of insects, fruit and nectar.

Breeding season: from spring to summer.

Population size: 100 – 1,000 pairs (Fullagar *et al.* 1974).

Threats

- Previously predation by introduced rodents;
- Predation by the Lord Howe Currawong, Australian Kestrel, Masked Owl (previously) and Sacred Kingfisher; and
- Risk of extinction due to small population size and restricted distribution.

Risk Posed by the Project

The Silvereye is known from the general vicinity where it favours densely vegetated habitats. It is therefore considered a subject species. The proposal is located on land cleared of native vegetation so will not remove any of its habitat. Landscaping using native plant species will enhance this species habitat.

Lord Howe Woodhen *Hypotaenidia sylvestris*

Conservation status

Listed on Schedule 1 of the BC Act as an *endangered* species.
Listed as *vulnerable* in the EPBC Act.

The Lord Howe Woodhen is a flightless bird endemic to LHI (NSW NPWS 2002). The population estimate for 2018 was least 250 individuals (LHIB unpublished data) with the last count post rodent eradication recording over 1100 (Dr Terry O'Dwyer pers. comm.).

Historically, the population of woodhen has remained relatively static over much of LHI (DECC 2007a) with the exception of those birds in the settlement where numbers more than tripled (47 in 2002 (NSW NPWS 2002) to 153 in 2012 (LHIB unpublished data)), possibly in response to the provision of supplementary feed and water to settlement birds by the islanders.

Woodhen usually lay eggs from August until January or February and continue raising young until April (NSW NPWS 2002). However, the start and finish dates of breeding can vary between years and there are breeding records for much of the year (Miller and Mulette 1985). Pairs have multiple broods during the breeding season (Gillespie 1993). Juveniles can breed at nine months of age (Marchant and Higgins 1993) but juveniles that do not establish a territory by the breeding season immediately following their own hatching generally do not survive to reach adulthood (Harden and Robertshaw 1988, 1989). About 60% of juveniles die in their first year (Harden and Robertshaw 1989) possibly due to limited high-quality habitat (NSW NPWS 2002). Breeding success is greater in the settlement area than in the southern mountains (Marchant and Higgins 1993, Harden and Robertshaw 1988).

Habitat

The woodhen occurs predominately in three vegetation types:

- 1) Gnarled Mossy-Forest, which covers 2% of the island;
- 2) Megaphyllous Broad Sclerophyll Forest (mainly palms), which covers 19% of the island; and
- 3) Gardens around houses. Historically about 40% of the population lived in the settlement area of the island (NPWS 2002) although since the successful eradication of rodents their population has significantly increased and they now occupy habitats and areas previously thought to be unsuitable.

Diet

Over 80% of the woodhen's diet is comprised of earthworms (Miller and Mulette

1985). The bulk of the remaining 20% is made up of grubs, typically found in rotting logs. Snails, arthropods, seabird chicks, rodents, plant shoots, lichen and fungi are also eaten (NSW NPWS 2002).

Threats (NSW NPWS 2002)

- Roadkill;
- Loss of preferred habitat through clearing for agriculture or development, or the encroachment of weed species;
- Vulnerable to disease and natural disaster due to its limited distribution;
- Competition for food in the settlement area from Common Blackbirds, Song Thrushes, Buff-banded Rails and Purple Swamphens;
- Historically the consumption of rodent bait; and
- Domestic dogs.

Risk Posed by the Project

Woodhen are known from the general across the island and utilise habitats at the subject site where it favours densely vegetated habitats. It is therefore considered a subject species. The proposal is located on land cleared of native vegetation so will not remove any of its habitat. Landscaping using native plant species will enhance this species habitat in providing shelter and nesting habitat.

Threatened Species Assessment - Background

Threatened species assessment is an integral part of environmental impact assessment. The objective of section 7.3 of the Biodiversity Conservation Act 2016 (BC Act), the test of significance, is to provide standardised and transparent consideration of threatened species and ecological communities, and their habitats, through the development assessment process.

Section 7.2 of the BC Act provides that development under the Environmental Planning and Assessment Act 1979 (EP&A) is likely to significantly affect threatened species if: (a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or (b) the development exceeds the biodiversity offsets scheme threshold if the biodiversity offsets scheme applies to the impacts of the development on biodiversity values, or (c) it is carried out in a declared area of outstanding biodiversity value.

For an activity under Part 5 of the EP&A Act clause (b) does not apply, so an activity will only be likely to significantly affect a threatened species if: (a) it is likely to significantly affect threatened species or ecological communities, or their habitats, according to the test in section 7.3, or (b) it is carried out in a declared area of outstanding biodiversity value.

The Threatened Species Test of Significance Guidelines (2018)

(<https://www.environment.nsw.gov.au/-/media/OEH/Corporate-Site/Documents/Animals-and-plants/Threatened-species/threatened-species-test-significance-guidelines-170634.pdf>) provide guidance to interpret and apply the factors in the test in section 7.3 of the BC Act. They also provide guidance for consent authorities to encourage a consistent method of assessment for applications that may have an impact on threatened species and ecological communities or their habitats.

Threatened Species Test of Significant Effect

Factors of assessment applied to the activity

(a) in the case of a threatened species, whether the proposed development or activity is likely to have an adverse effect on the life cycle of the species such that a viable local population of the species is likely to be placed at risk of extinction;

The activity will not result in the removal of any native vegetation or important habitat features for any of the species assessed as subject species as the proposal is being undertaken on land that is cleared of native vegetation or where wastewater irrigation pipes are to be installed, they will be placed on the surface and have natural thatch/mulch placed over them which will not impact habitat for the LHI Placostylus. Should any LHI Placostylus be found during wastewater pipe installation the animals should be moved 5m from the work site and placed under natural thatch/mulch out of reach of predators such as Lord Howe Woodhen or LHI Currawong.

The activity is not likely to have an adverse effect on the life cycle of any of the subject species due to the construction of the dwelling, shed and driveway being conducted on land cleared of native vegetation that does not support important habitat features for these species, and by not removing any vegetation when laying wastewater irrigation pipes in potential habitat of LHI Placostylus. Should any LHI Placostylus be found during wastewater pipe installation the animals should be moved 5m from the work site and placed under natural thatch/mulch out of reach of predators such as Lord Howe Woodhen or LHI Currawong.

Where the proposal needs to remove calcarenite rocks with numerous crevices it is recommended to move these rocks to the edge of native vegetation to provide habitat for LHI Geckos to lay their eggs in and to seek shelter from predators.

The activity will not impact on the habitats of any of the threatened species to the extent that it will result in an adverse effect on the life cycle such that a viable population of the species is likely to be placed at risk of extinction.

(b) in the case of an endangered ecological community or critically endangered ecological community, whether the proposed development or activity:

(i) is likely to have an adverse effect on the extent of the ecological community such that its local occurrence is likely to be placed at risk of extinction, or

(ii) is likely to substantially and adversely modify the composition of the ecological community such that its local occurrence is likely to be placed at risk of extinction;

There are three Endangered Ecological Communities listed for Lord Howe Island; being Sallywood Closed Swamp Forest, which occurs on flood prone flats and Gnarled Mossy Cloud Forest on Lord Howe Island which is confined to the plateaus of the southern mountains. Saltmarsh in the North Coast bioregion is listed as an EEC, although it is uncertain whether this listing applies to LHI. However, this plant community only occurs as very small patches in the Islands estuaries and is considered as part of this proposal as an EEC.

The proposal will not impact any of these EEC's as they are not present at the subject site so is unlikely to have an adverse effect on their extent or be likely to place them at risk of extinction.

- (c) in relation to the habitat of a threatened species or ecological community:***
- (i) the extent to which habitat is likely to be removed or modified as a result of the proposed development or activity, and***
 - (ii) whether an area of habitat is likely to become fragmented or isolated from other areas of habitat as a result of the proposed development or activity, and***
 - (iii) the importance of the habitat to be removed, modified, fragmented or isolated to the long-term survival of the species or ecological community in the locality;***

The proposal to construct the dwelling, shed and driveway will not remove or modify any habitat and will not fragment or isolate any habitats as the proposal occurs on land cleared of native vegetation. The proposal to install wastewater irrigation pipes in adjacent Significant Native Vegetation will not remove or modify or fragment or isolate any habitat as it will lay the pipes on the ground surface and cover with natural thatch/mulch.

The activity will not affect the long-term survival of any of the subject species or ecological communities.

- (d) whether the proposed development or activity is likely to have an adverse effect on any declared area of outstanding biodiversity value (either directly or indirectly);***

There are no declared areas of outstanding biodiversity value gazetted under the BC Act on Lord Howe Island.

- (e) whether the proposed development or activity is or is part of a key threatening process or is likely to increase the impact of a key threatening process;***

- The proposal will not trigger any listed Key Threatening Process. The proposal does not constitute Clearing of Native Vegetation as defined by the Final Determination, which, refers to the destruction of a sufficient proportion of one or more strata (layers) within a stand or stands of native vegetation. Resulting in numerous impacts including:
- destruction of habitat causing a loss of biological diversity, and may result in total extinction of species or loss of local genotypes;
 - fragmentation of populations resulting in limited gene flow between small isolated populations, reduced potential to adapt to environmental change and loss or severe modification of the interactions between species;
 - riparian zone degradation, such as bank erosion leading to sedimentation that affects aquatic communities;
 - disturbed habitat which may permit the establishment and spread of exotic species which may displace native species; and
 - loss of leaf litter, removing habitat for a wide variety of vertebrates and invertebrates.

The proposal will not result in the destruction of native vegetation or habitat, habitat fragmentation, induce riparian degradation, enable incursions by exotic species or remove leaf litter. The activity will enhance vegetation condition and habitat attributes for native species through using native plant species in landscaping and screening.

Conclusion

The project will not result in a significant impact, as defined by the seven-part test of significance, on the threatened species or listed ecological communities of LHI.

Importantly, it is very unlikely that such disruption will be significant at the population level. Therefore, as the project does not put any species at risk of extinction, I conclude that the production of a Species Impact Statement is not warranted.

ADDITIONAL INFORMATION

Contact details and declarations

The proponents of the proposal are Aaron and Lisa Ralph.

Contact details:
Aaron and Lisa Ralph



We, Aaron and Lisa Ralph, declare that, to the best of our knowledge, the information contained in this environmental assessment, namely the *Application of the test to assess the significance of the environmental impact of construction of a dwelling, shed and driveway on land cleared of native vegetation and the placement of wastewater irrigation pipes into adjacent Significant Native Vegetation at Lot 227 of DP48477, 345 Lagoon Road, Lord Howe Island is likely to significantly affect threatened species or ecological communities, or their habitats* is complete, current and correct.



29 September 2024

(signature and date)

Author of the proposal, and declaration

The proposal was written by Hank Bower who was formerly the Manager Environment/World Heritage for the LHIB from 2007 to 2022 and has over 25 years' experience in conducting threatened species assessments and management and has knowledge on the ecology of threatened species from LHI.

Contact details:

Hank Bower

Bower Bush



I, Hank Bower, declare that, to the best of my knowledge, the information contained in this environmental assessment, namely the *Application of the test to assess the significance of the environmental impact of construction of a dwelling, shed and driveway on land cleared of native vegetation and the placement of wastewater irrigation pipes into adjacent Significant Native Vegetation at Lot 227 of DP48477, 345 Lagoon Road, Lord Howe Island is likely to significantly affect threatened species or ecological communities, or their habitats* is complete, current and correct.



29 September 2024

(signature and date)

Appendix 1 – Native Vegetation of Lot 227 Lagoon Road LHI

Family Name	Botanical Name	Common Name	Status
Orchid/Lillies			
Asphodelaceae	<i>Dianella intermedia</i>	Flax Lily	Endemic
Orchidaceae	<i>Dendrobium gracilicaule var. howeanum</i>	Bush Orchid	Endemic
Vines/creepers			
Apocynaceae	<i>Alyxia squamulosa syn.lindii</i>	Alyxia - mountain	Endemic
Apocynaceae	<i>Parsonsia howeana</i>	Silkpod	Endemic
Bignoniaceae	<i>Pandorea pandorana ssp. austrocaledonica</i>	Boatvine	
Commelinaceae	<i>Commelina cyanea</i>	Commelina	
Fabaceae	<i>Canavalia rosea</i>	Coastal Jack Bean	
Flagellariaceae	<i>Flagellaria indica</i>	Whip Vine	
Luzuriaceae	<i>Geitonoplesium cymosum</i>	Scrambling Lily	
Moraceae	<i>Trophis scandens subsp. megacarpa</i>	Burny Vine	Endemic
Oleaceae	<i>Jasminum simplicifolium ssp. Australiense</i>	Jasmine - Native	
Polygonaceae	<i>Muehlenbeckia complexa</i>	Wire Vine	
Similacaceae	<i>Smilax australis</i>	Native Sarsparilla	
Herbs/Grasses			
Campanulaceae	<i>Lobelia anceps</i>	Native Lobelia	
Poaceae	<i>Microlaena stipoides</i>	Weeping Grass	
Ferns			
Aspleniaceae	<i>Asplenium milnei</i>	Ground Fern	Endemic
Cyatheaceae	<i>Cyathea robusta</i>	Tree Fern	Endemic
Lomariopsidaceae	<i>Nephrolepis cordifolia</i>	Fishbone - Herringbone Fern	
Polypodiaceae	<i>Microsorium pustulatum subsp. howense</i>	Fishbone - Microsorium Fern	Endemic
Polypodiaceae	<i>Platynerium bifurcatum</i>	Elkhorn Fern	
Thelypteridaceae	<i>Christella dentata</i>	Binung	
Shrubs			
Apocynaceae	<i>Alyxia ruscifolia</i>	Prickly Alyxia	
Asteraceae	<i>Cassinia tenuifolia</i>	Bully Bush	Endemic
Sapindaceae	<i>Dodonaea viscosa subsp. burmanniana</i>	Hopwood	
Piperaceae	<i>Piper excelsum subsp. Psittacorum</i>	Kava - mostly lowlands	Endemic
Myrtaceae	<i>Melaleuca howeana</i>	Tea Tree	Endemic
Scrophulariaceae	<i>Myoporum insulare</i>	Juniper / Boobiolla	
Primulaceae	<i>Myrsine platystigma</i>	Myrsine - lowlands	Endemic
Apocynaceae	<i>Ochrosia elliptica</i>	Berrywood	Endemic
Trees			
Araliaceae	<i>Polyscias cissodendron</i>	Island Pine	Endemic
Cannabaceae	<i>Celtis conferta subsp. amblyphylla</i>	Cottonwood	Endemic
Euphorbiaceae	<i>Homalanthus populifolius</i>	Dog Wood / Bleeding Heart	
Fabaceae	<i>Sophora howinsula</i>	Lignum Vitae	Endemic
Lauraceae	<i>Cryptocarya triplinervis</i>	Blackbutt / Three-Veined Laurel	
Malvaceae	<i>Lagunaria patersonia</i>	Sallywood / Norfolk Island H	Endemic
Moraceae	<i>Ficus macrophylla f. columnaris</i>	Banyan	Endemic
Myrtaceae	<i>Metrosideros sclerocarpa</i>	Hill - Mountain Rose	Endemic
Myrtaceae	<i>Syzygium fullagarii</i>	Scalybark	Endemic
Nyctaginaceae	<i>Pisonia brunoniana</i>	Punkwood / Pump-wood	
Oleaceae	<i>Olea paniculata</i>	Maul Wood / Native Olive	
Pandanaceae	<i>Pandanus forsteri</i>	Forked Tree / Pandanus	Endemic
Putranjivaceae	<i>Drypetes deplanchei</i>	Greybark / Yellow Tulip	Endemic
Rubiaceae	<i>Coprosma putida</i>	Stinkwood	Endemic
Rubiaceae	<i>Atractocarpus stipularis</i>	Green Plum	Endemic
Salicaceae	<i>Xylosma maidenii</i>	Xylosma	Endemic
Sapindaceae	<i>Guioa coriacea</i>	Island Cedar	Endemic
Sapotaceae	<i>Planchonella myrsinifolia subsp. Howeana</i>	Axe-handle Wood	Endemic
Winteraceae	<i>Bubbia howeana</i>	Hot Bark	Endemic
Palms			
Arecaceae	<i>Howea belmoreana</i>	Curly Palm	Endemic
Arecaceae	<i>Howea forsteriana</i>	Kentia/Thatch Palm	Endemic

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Appendix 2 – NSW Bionet Threatened Flora & Fauna records from Lord Howe Island 29/09/2024

Common Name	Scientific Name	NSW status	Comm. status	Known/Potential Subject Species	Notes
Green Turtle	<i>Chelonia mydas</i>	V	V		marine reptile species - excluded from assessment
Lord Howe Island Southern Gecko	<i>Christinus guentheri</i>	V	V	Potential	
Lord Howe Island Skink	<i>Oligosoma lichenigera</i>	V	V		not known from subject site - excluded from assessment
Red-tailed Tropicbird	<i>Phaethon rubricauda</i>	V			breeds on sea cliffs and offshore islands - excluded from assessment
White-throated Needletail	<i>Hirundapus caudacutus</i>	V	V		breeds in northern hemisphere, feeds aerially above canopy - excluded from assessment
White-bellied Storm-Petrel	<i>Fregetta grallaria</i>	V	V		breeds on sea cliffs and offshore islands - excluded from assessment
Wandering Albatross	<i>Diomedea exulans</i>	E	V		marine bird species - excluded from assessment
Black-browed Albatross	<i>Thalassarche melanophris</i>	V	V		marine bird species - excluded from assessment
Flesh-footed Shearwater	<i>Ardenna carneipes</i>	V			not known from subject site, breeds on calcarenite soils - excluded from assessment
Southern Giant Petrel	<i>Macronectes giganteus</i>	E	E		marine bird species - excluded from assessment
Gould's Petrel	<i>Pterodroma leucoptera leucoptera</i>	V	E		marine bird species at LHI - excluded from assessment
Kermadec Petrel (west Pacific subspecies)	<i>Pterodroma neglecta neglecta</i>	V	V		breeds on Balls Pyramid - excluded from assessment
Black-winged Petrel	<i>Pterodroma nigripennis</i>	V			breeds on sea cliffs, lagoon foreshore and offshore islands - excluded from assessment

Common Name	Scientific Name	NSW status	Comm. status	Known/Potential Subject Species	Notes
Providence Petrel	<i>Pterodroma solandri</i>	V			breeds in southern mountains and Balls Pyramid - excluded from assessment
Little Shearwater	<i>Puffinus assimilis</i>	V			breeds on sea cliffs and offshore islands - excluded from assessment
Masked Booby	<i>Sula dactylatra</i>	V			breeds on sea cliffs and offshore islands - excluded from assessment
Australasian Bittern	<i>Botaurus poiciloptilus</i>	E	E		1 historical vagrant record to LHI - excluded from assessment
Lord Howe Woodhen	<i>Hypotaenidia sylvestris</i>	E	E	Known	
Sooty Oystercatcher	<i>Haematopus fuliginosus</i>	V			1 historical vagrant record to LHI - excluded from assessment
Pied Oystercatcher	<i>Haematopus longirostris</i>	E			vagrant wader that uses beaches and estuaries - few LHI records - excluded from assessment
Greater Sand-plover	<i>Charadrius leschenaultii</i>	V	V		migratory wader that uses wetlands and estuaries - excluded from assessment
Lesser Sand-plover	<i>Charadrius mongolus</i>	V	E		migratory wader that uses wetlands and estuaries - excluded from assessment
Australian Painted Snipe	<i>Rostratula australis</i>	E	E		vagrant wader with 1 record for LHI - excluded from assessment
Red Knot	<i>Calidris canutus</i>		E		migratory wader that uses wetlands and estuaries - excluded from assessment
Curlew Sandpiper	<i>Calidris ferruginea</i>	E	CE		migratory wader that uses wetlands and estuaries - excluded from assessment
Great Knot	<i>Calidris tenuirostris</i>	V	V		migratory wader that uses wetlands and estuaries - excluded from assessment
Latham's Snipe	<i>Gallinago hardwickii</i>	V	V		migratory wader that uses wetlands - excluded from assessment

Common Name	Scientific Name	NSW status	Comm. status	Known/Potential Subject Species	Notes
Black-tailed Godwit	<i>Limosa limosa</i>	V	E		migratory wader that uses wetlands and estuaries - excluded from assessment
Eastern Curlew	<i>Numenius madagascariensis</i>		CE		migratory wader that uses wetlands and estuaries - excluded from assessment
Terek Sandpiper	<i>Xenus cinereus</i>	V	V		migratory wader that uses wetlands and estuaries - excluded from assessment
White Tern	<i>Gygis alba</i>	V			primarily nest in Norfolk Island Pine and native trees on lagoon foreshore and from Neds Beach to Middle Beach - excluded from assessment
Sooty Tern	<i>Onychoprion fuscata</i>	V			breeds on sea cliffs, foreshore, Mosely Park, Neds Beach Common and offshore islands - excluded from assessment
Grey Ternlet	<i>Procelsterna cerulea</i>	V			breeds on sea cliffs - excluded from assessment
Little Tern	<i>Sternula albifrons</i>	E			few vagrant records & breeds on mainland Australia - excluded from assessment
Swift Parrot	<i>Lathamus discolor</i>	E	CE		few vagrant records - excluded from assessment
Masked Owl	<i>Tyto novaehollandiae</i>	V			Introduced species possibly eradicated from island coincident with rodent eradication - excluded from assessment
Golden Whistler (Lord Howe Is. subsp.)	<i>Pachycephala pectoralis contempta</i>	V		Known	
Pied Currawong (Lord Howe Is. subsp.)	<i>Strepera graculina crissalis</i>	V	V	Known	
Silvereeye (Lord Howe Is. subsp.)	<i>Zosterops lateralis tephroleurus</i>			Known	

Common Name	Scientific Name	NSW status	Comm. status	Known/Potential Subject Species	Notes
New Zealand Fur-seal	<i>Arctocephalus forsteri</i>	V			marine mammal - excluded from assessment
Lord Howe Island Phasmid	<i>Dryococelus australis</i>	E	CE		only wild population occurs on Balls Pyramid – excluded from assessment
Lord Howe Placostylus	<i>Placostylus bivaricosus</i>	E	E	Potential	
Masters Charopid Land Snail	<i>Mystivagor mastersi</i>	E	CE		confined to southern mountains - excluded from assessment
Mount Lidgbird Charopid Land Snail	<i>Pseudocharopa ledgbirdi</i>	E	CE		confined to southern mountains - excluded from assessment
Whitelegge's Land Snail	<i>Pseudocharopa whiteleggei</i>	E	CE		confined to southern mountains - excluded from assessment
Little Mountain Palm	<i>Lepidorrhachis mooreana</i>	E	CE		confined to southern mountains - excluded from assessment
Lord Howe Island Morning Glory	<i>Calytstegia affinis</i>	E	CE		known from Old Settlement - excluded from assessment
	<i>Hypolepis elegans</i>	E			historical record from LHI Soldiers Creek - excluded from assessment
Rock Shield Fern	<i>Polystichum moorei</i>	E	E		confined to southern mountains and Erskine Valley sea cliffs - excluded from assessment
Sand Spurge	<i>Chamaesyce psammogeton</i>	E			confined to Blinky Beach dunes - excluded from assessment
Knicker Nut	<i>Caesalpinia bonduc</i>	E			a maritime species confined to Neds Beach, Old Settlement and Lagoon Beach - excluded from assessment
Lord Howe Island Broom	<i>Carmichaelia exsul</i>	E			confined to southern mountains - excluded from assessment
Mountain Xylosma	<i>Xylosma parvifolia</i>	E	E		confined to southern mountains - excluded from assessment

Hutton's Geniostoma	<i>Geniostoma huttonii</i>	E	E		confined to southern mountains - excluded from assessment
Common Name	Scientific Name	NSW status	Comm. status	Known/Potential Subject Species	Notes
Small-leaved Currant Bush	<i>Coprosma inopinata</i>	E			confined to southern mountains on steep ridgeline terrain - excluded from assessment
Phillip-Island Wheat Grass	<i>Anthosachne kingiana</i> subsp. <i>kingiana</i>	CE	CE		restricted to coastal headlands and cliffs - excluded from assessment. Not recorded on Bionet. however this species has been subject to Saving our Species translocation program etc.
Coast Euodia	<i>Melicope vitiflora</i>	E			1 historical record from LHI - excluded from assessment



Landscaping **Plan**

345 Lagoon Rd Lord Howe Island 2898

This report outlines the proposed landscaping for the development application for 345 Lagoon Rd Lord Howe Island.

By Aaron Ralph

Overview

The proposed development has been designed to ensure there will be no significantly adverse impact on the existing landscaped character and dispersed pattern of housing in that zone.' (LHILEP2010)

To ensure that the development can blend into its surroundings, considerations have been made to incorporate effective screening.

Screening vegetation

Due to the proximity of the development to the boundary it has been necessary to seek permission from the neighbouring special lease (lot 110) to plant screening vegetation in the special lease for effective screening. This vegetation will be a mixture native species including, but not limited to, Goatwood, Sallywood, Melaleuca, Maulwood, Blackbutt, Greybark, Bullybush, Berrywood Banyan Fig and Kenita Palms. These trees will be planted as seedlings. This screening will be approximately 2m wide and tracking the length required to effectively screen the development from the main vantage points of the Airport and Lagoon Rd. The planned locations of this habitat creation will be in areas already dominated by Bully Bush. These locations are highlighted on the landscaping plan.

Driveway

The driveway has been designed to adhere to the Lord Howe Island Development Control Plan (2005) stipulations of ensuring the access roads and paths wind through an area of landscaped screening. See landscaping plan.

Water tanks

The development will require the instillation of two 5000 Gallon plastic water tanks. These will be screened by SNV and landscaped screening.

Tree removal

The development will require the removal of three individual native trees and one bush. These will include the following species;

- ▶ Banyan
- ▶ Kentia Palm
- ▶ Bully Bush

The Banyan has been assessed by the members of the Lord Howe Island Board and has been designated as established garden. The location of the Banyan and is on the landscaping plan attached.

The two Kentia Palms required to be removed are not part of SNV and their removal will not exceed the maximum allowable removal of natives from the lot. The removal of the Bully Bush will be restricted to one tree which is situated on the path of the driveway.

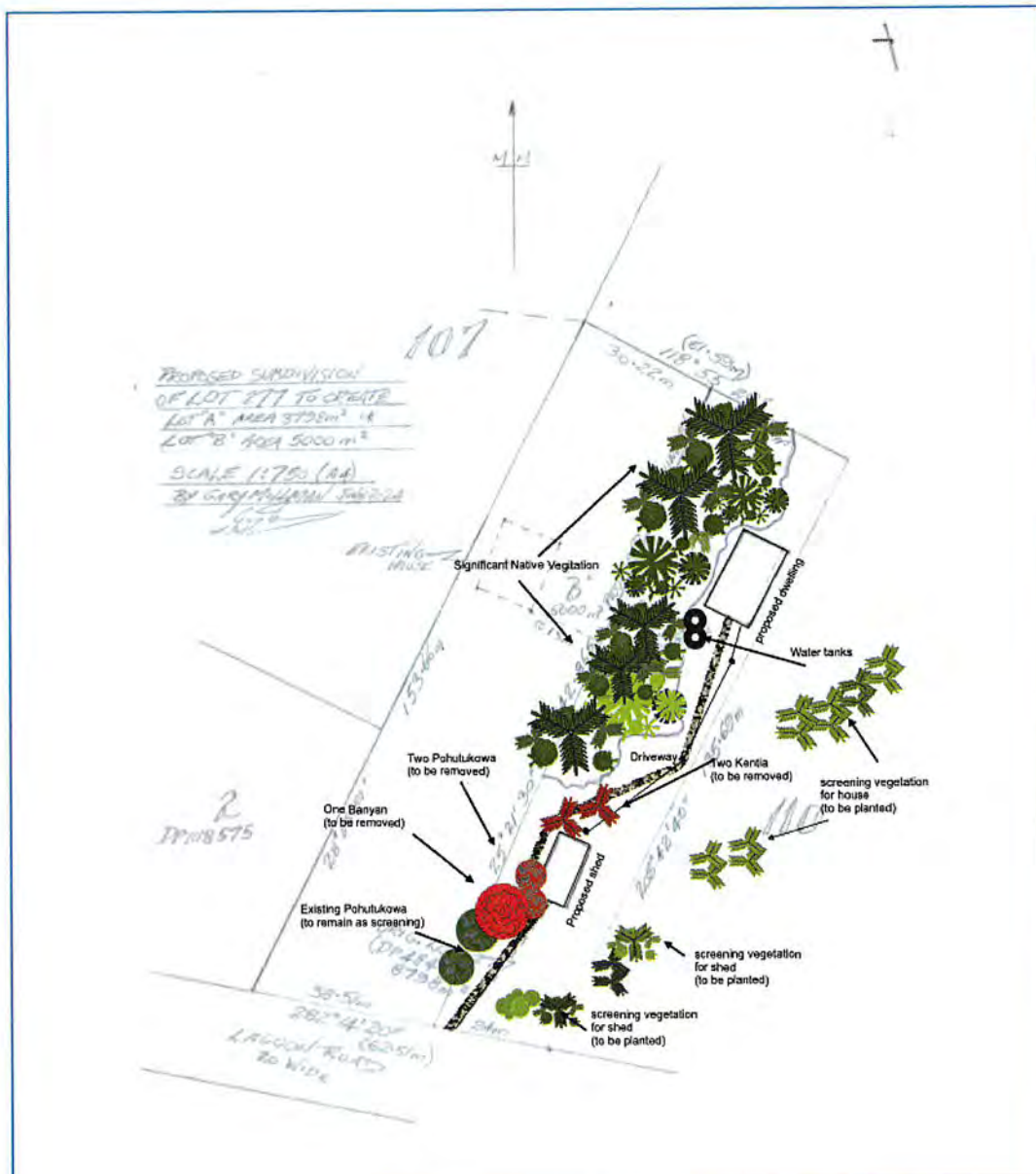
Note

All other areas that are not stipulated will be grassed areas.

All other impacts and works are covered in their relevant reports.



Appendix

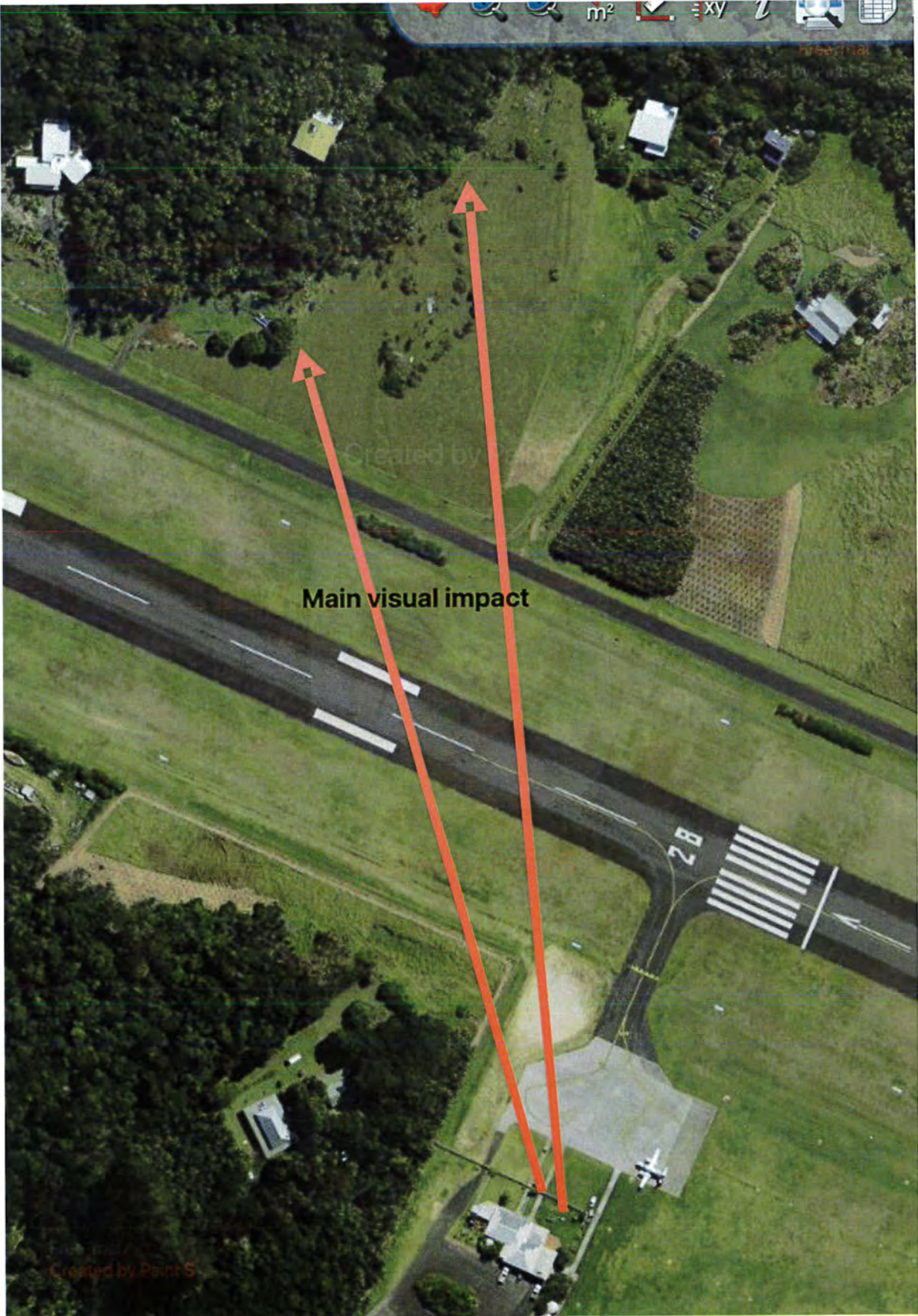


Site: Lot 227 Lord Howe Island	Drawing: 1	Project: DA	Drawn: Aaron Ralph	Noted:
Title: Landscape plan	Scale: 1:750	Date: 07/09/2024	Rev: A	



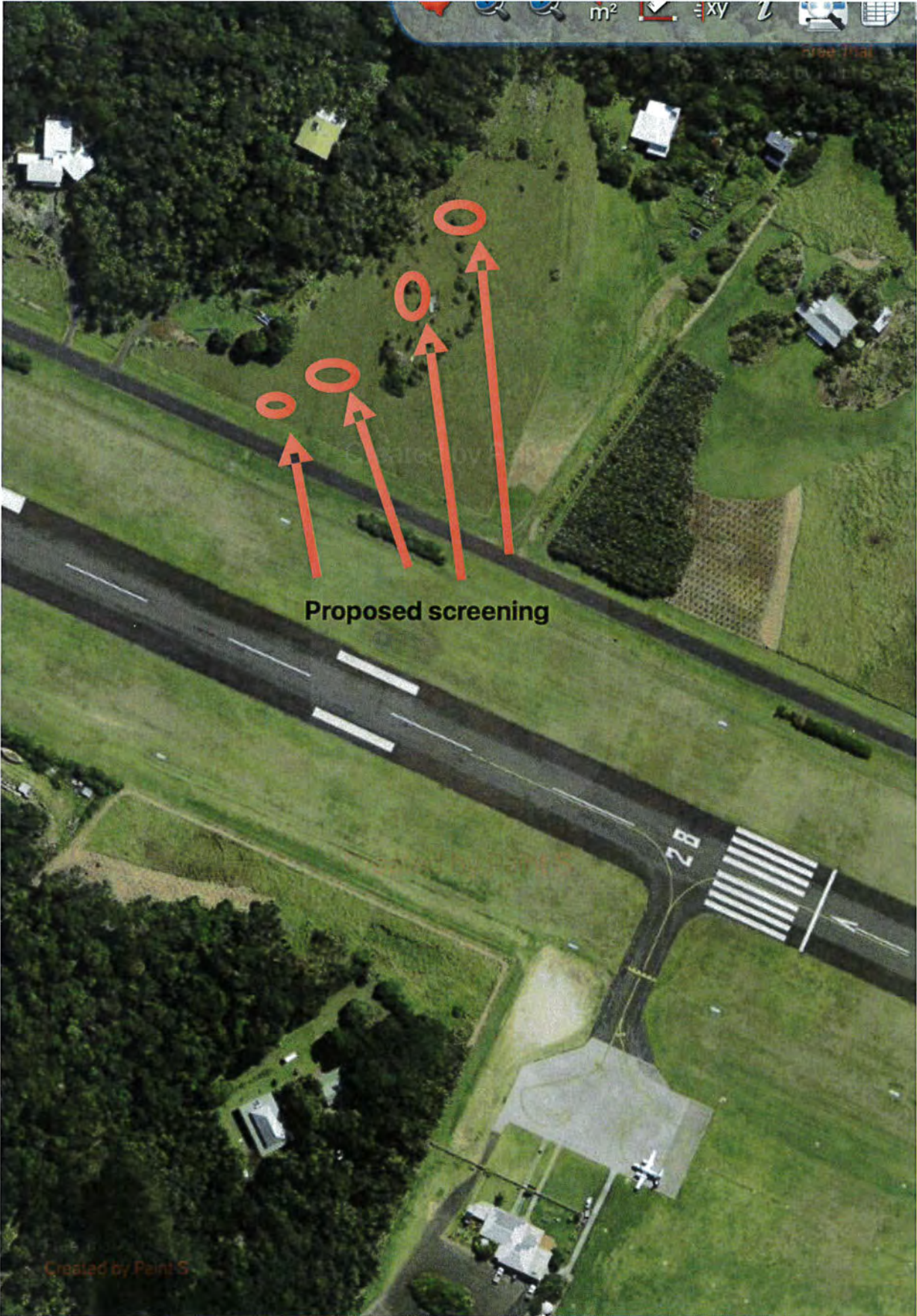
Artists impression

Note: Planned landscaping would more comprehensively screen the house and shed than artists impression indicates. There would be a mixture of species and would incorporate 'broad canopied trees' (DCP2005) in addition to Kentia Palms shown for diversity of habitat and effective screening.



Main visual impact

Created by Point 5



Proposed screening

MAVIS FITZGERALD

Lot 110 Lord Howe Island | 6563 2057

13.10.24

Lord Howe Island Board Administration Office
Bowker Avenue/PO Box 5
Lord Howe Island NSW 2898

Dear Lord Howe Island Board:

I, Mavis Fitzgerald, the current lease holders of lot 110 DP 2757515, hereby confirm that I support the planting of landscaped screening in the special lease as indicated on the landscaping plan. I understand this is necessary to maintain the character of the area.

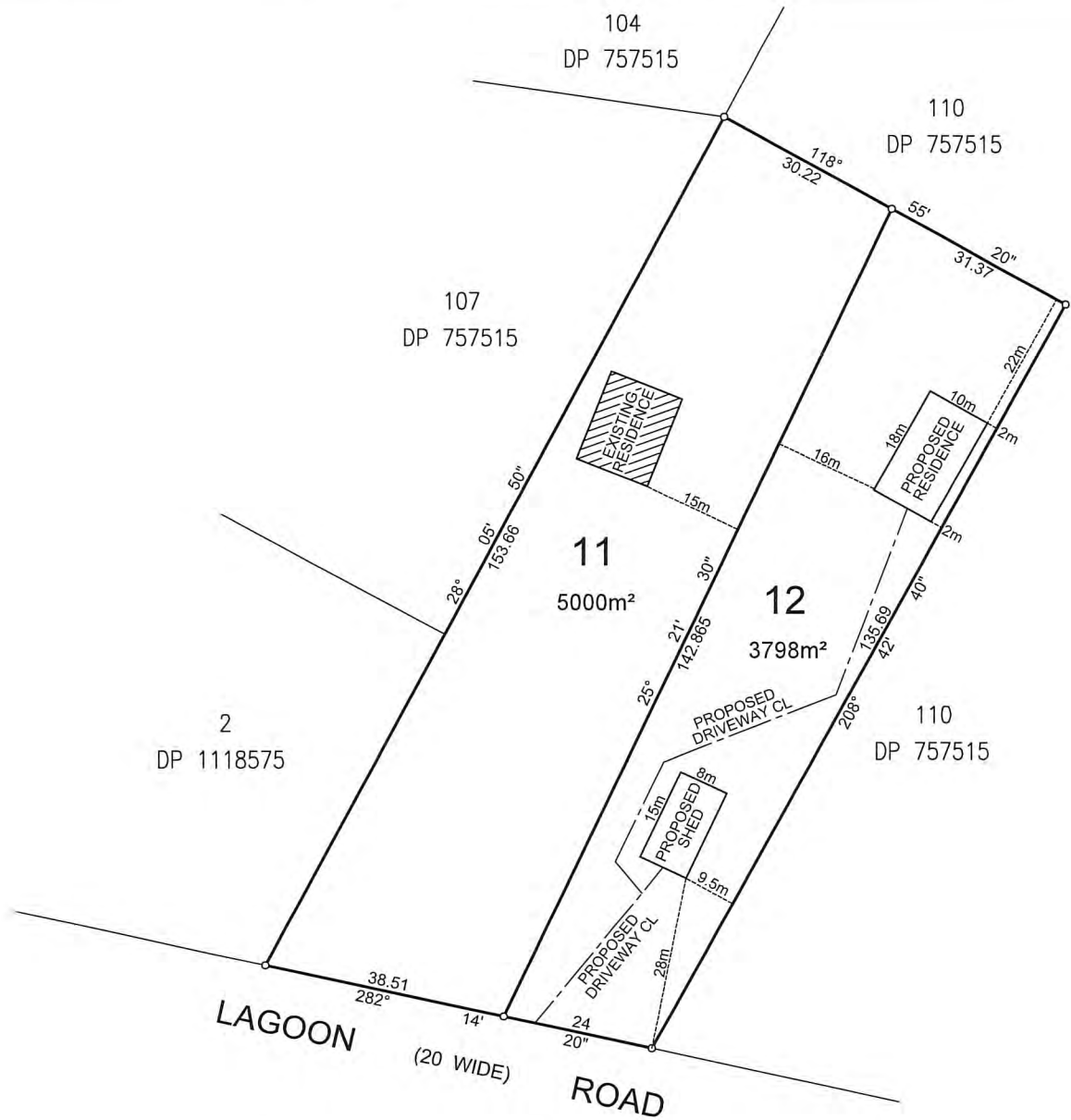
Sincerely,

A black rectangular redaction box covering the signature of Mavis Fitzgerald.

Mavis Fitzgerald

Commitments Table

Project Details	Proposed: Single Dwelling Lot Number: 11	Address: 345 Lagoon Road Lord Howe Island NSW 2898 DP NUMBER: 48477
Water	BASIX Certificate Number: 1767826S	
Fixtures	Specification	
Shower head rating	4 star (> 6 but <= 7.5 L/min)	
Toilet rating	3 star	
Kitchen taps rating	3 star	
Bathroom taps rating	3 star	
Alternative water details		
Rainwater tank size	Individual	44000L
Connected to:	Garden and lawn areas	Yes
	All toilets	Yes
	Laundry	Yes
Thermal Comfort	Accreditation Number: HERA 10056	NATHERS Certificate Number: 0009796442
External walls	Requirements	
Fibro cavity panel direct fix	Medium colour	R2.7 Bulk + Anti-glare foil
Brick veneer	Medium colour	R2.7 Bulk + Anti-glare foil
Internal walls		
Cavity wall, direct fix plasterboard	No insulation	
Ceiling		
External ceiling - Timber	R2.5 Bulk insulation	
Internal ceiling - Plasterboard	R5.0 Bulk insulation	
Plasterboard	R3.5 Bulk insulation	
Roof		
Corrugated iron	Medium Colour (solar absorptance 0.475-0.7)	
Waterproofing membrane	R2.3 Bulk + Reflective side down, No air gap above (Anticon 95, 100mm)	
Waterproofing membrane	Medium Colour (solar absorptance 0.475-0.7)	
Waterproofing membrane	No insulation	
Waterproofing membrane	Medium Colour (solar absorptance 0.475-0.7)	
Waterproofing membrane	R2.5 Bulk + Reflective side down, No air gap above (Anticon 100HP, 100mm)	
Floors		
Suspended timber	R4.5 Bulk insulation	
Suspended timber	R2.0 Bulk insulation	
Windows	<i>(NSW BASIX Thermal Protocol allows for ± 10% tolerance of SHGC Value & U Value =< than which overrides NATHERS Certificate)</i>	
HPFWD-020-041	uPVC Fixed Window DG U-value 1.8 SHGC 0.42	
HPHDD-025-041	uPVC Hinged Door DG U-value 2.2 SHGC 0.42	
DEC-002-008	uPVC Tilt & Turn Window DG U-value 2.0 SHGC 0.40	
DEC-003-060	uPVC Sliding Window DG U-value 1.9 SHGC 0.40	
DEC-003-059	uPVC Sliding Window DG U-value 1.9 SHGC 0.40	
DEC-001-008	uPVC Awning Window DG U-value 2.0 SHGC 0.41	
Ceiling Penetrations		
Lighting specification	Dwelling is rated with Assumed downlight as per NATHERS Tech Note "Ceiling Penetrations 9.4 to 9.8"	
Ceiling fans	Ceiling fans of 1400mm must be installed in the rooms mentioned in the NATHERS report	
Overshadowing details	Adjoining units calculated into model calculations	
Site		
Orientation of nominal north elevation	As shown on plans	
	* Approved fireproof downlight covers HAVE been specified, which can be fully covered by insulation. Ceiling penetrations for exhaust dampers have been allowed (to all bathrooms, ensuites and internal laundry's) at the rate of 0.04 meters squared per exhaust fan penetration.	
Energy		
Hot water	Specification	Rating
Individual system	Gas instantaneous	6 star
Ventilation		
Bathroom exhaust	Individual fan, ducted to façade or roof	
Control switch	Manual switch on/off	
Kitchen exhaust	Individual fan, ducted to façade or roof	
Control switch	Manual switch on/off	
Laundry	Individual fan, ducted to façade or roof	
Control switch	Manual switch on/off	
Cooling		
Individual systems - living areas	N/A	
Individual systems - bedroom areas	N/A	
Heating		
Individual systems - living areas	N/A	
Individual systems - bedroom areas	N/A	
Lighting		
Refer to NATHERS Certificate	Light-emitting diode (LED)	
Appliances		
Cooktop/oven	Gas cooktop & gas oven	
Private outdoor clothes drying line	Yes	
Private indoor or sheltered clothes drying line	No	
Zoned Air-conditioning	No	
Alternative Energy	Peak kW	
Photovoltaic System (Minimum)	N/A	



SURVEYOR
 Name : MURRAY JOHN DALTON
 Date : 22-08-2024
 Reference : 14401 LAGOON

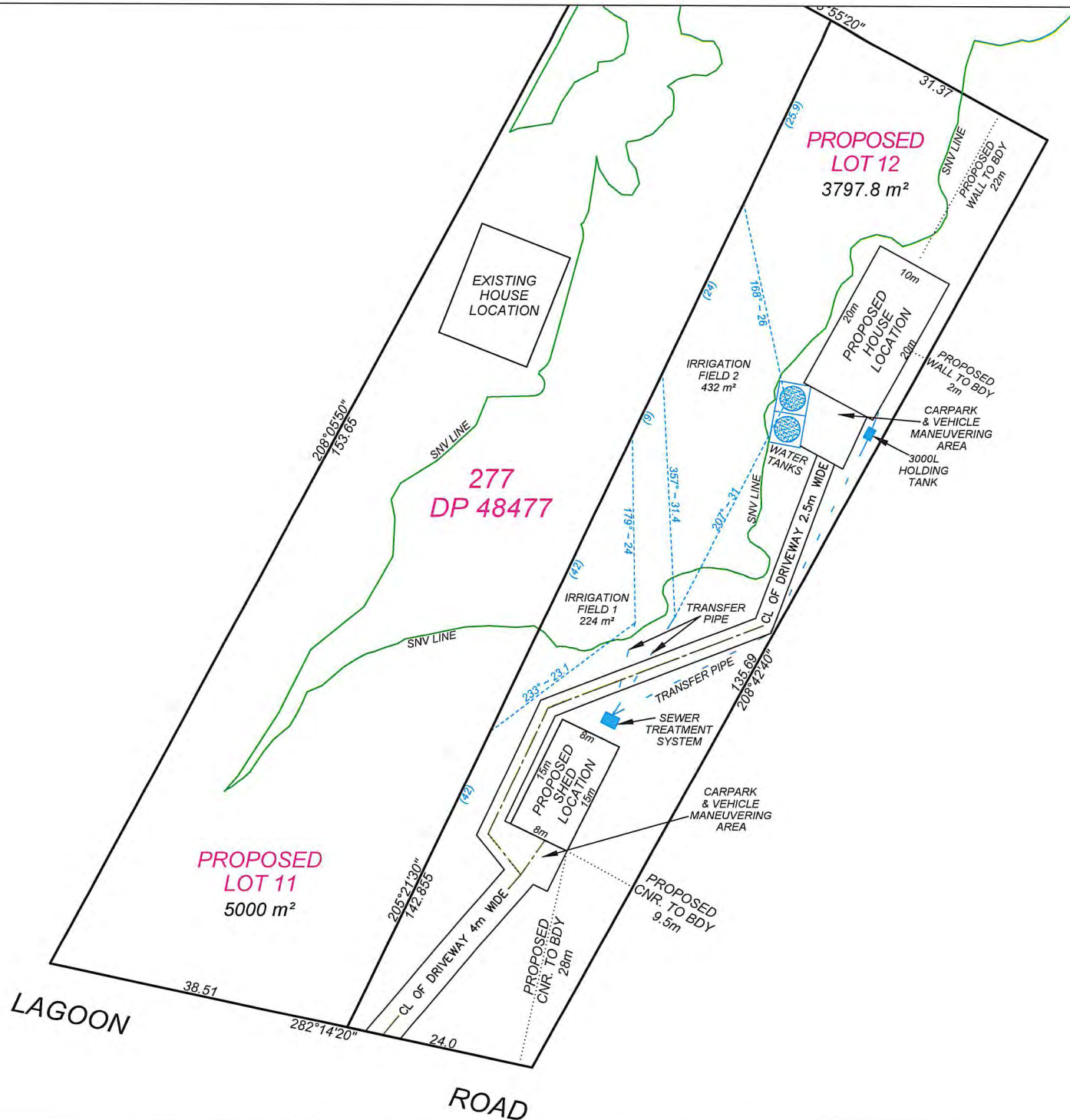
PLAN HEADING
**SUBDIVISION OF
 LOT 277 IN DP 48477**

L.G.A. : LORD HOWE
 Locality : LORD HOWE ISLAND
 Reduction Ratio : 1:750
 Lengths are in metres

REGISTERED

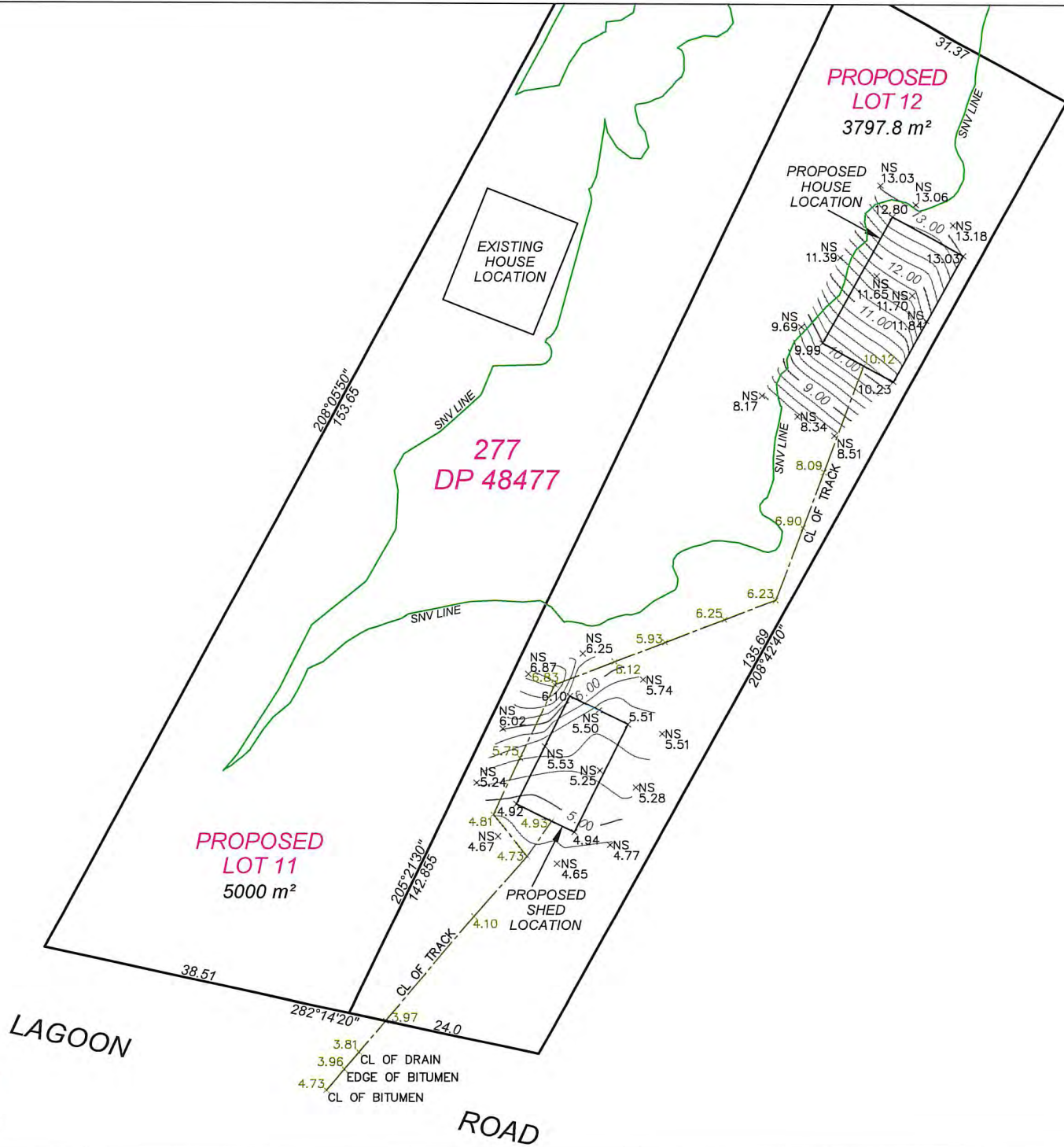
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CLIENT	AARON RALPH																																																																													
PROJECT	SITE PLAN FOR LOT 277 on DP 48477 345 LAGOON ROAD LORD HOWE ISLAND																																																																													
NOTES	<p>The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey.</p> <p>Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon.</p> <p>Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.</p>																																																																													
LINework & CODE LEGEND	<table border="1"> <thead> <tr> <th>LineStyle</th> <th>Description</th> </tr> </thead> <tbody> <tr> <td>--- (dashed)</td> <td>BOTTOM OF BANK</td> </tr> <tr> <td>--- (dotted)</td> <td>DRAIN</td> </tr> <tr> <td>--- (solid)</td> <td>EDGE OF BITUMEN</td> </tr> <tr> <td>--- (dashed)</td> <td>EDGE OF TREES</td> </tr> <tr> <td>--- (dotted)</td> <td>ELEC. CABLE UG</td> </tr> <tr> <td>--- (solid)</td> <td>FENCE</td> </tr> <tr> <td>--- (dashed)</td> <td>STORMWATER PIPE</td> </tr> <tr> <td>--- (dotted)</td> <td>SEWER PIPE</td> </tr> <tr> <td>--- (solid)</td> <td>TOP OF BANK</td> </tr> <tr> <td>--- (dashed)</td> <td>WATER MAIN</td> </tr> </tbody> </table> <table border="1"> <thead> <tr> <th>Code</th> <th>Description</th> <th>Symbol</th> </tr> </thead> <tbody> <tr> <td>BM</td> <td>BENCH MARK</td> <td>▲</td> </tr> <tr> <td>BOL</td> <td>BOLLARD</td> <td>○</td> </tr> <tr> <td>EBX</td> <td>ELECTRICAL BOX</td> <td>□</td> </tr> <tr> <td>EPIT</td> <td>ELECTRICAL PIT</td> <td>⊗</td> </tr> <tr> <td>ELP</td> <td>ELEC. LIGHTPOLE</td> <td>⊕</td> </tr> <tr> <td>HYD</td> <td>HYDRANT</td> <td>⊗</td> </tr> <tr> <td>NS</td> <td>NATURAL SURFACE</td> <td>×</td> </tr> <tr> <td>PALM</td> <td>PALM</td> <td>☉</td> </tr> <tr> <td>PP</td> <td>POWER POLE</td> <td>⊕</td> </tr> <tr> <td>RWJ</td> <td>ROOF WATER JUNCTION</td> <td>⊗</td> </tr> <tr> <td>SJO</td> <td>SEWER JUNCTION</td> <td>⊕</td> </tr> <tr> <td>SMH</td> <td>SEWER MAN HOLE</td> <td>⊗</td> </tr> <tr> <td>SV</td> <td>STOP VALVE</td> <td>⊕</td> </tr> <tr> <td>TE</td> <td>TELSTRA PIT</td> <td>⊗</td> </tr> <tr> <td>TREE</td> <td>TREE</td> <td>☉</td> </tr> <tr> <td>TRL</td> <td>TRAFFIC LIGHT</td> <td>⊕</td> </tr> <tr> <td>WM</td> <td>WATER METER</td> <td>⊕</td> </tr> </tbody> </table>		LineStyle	Description	--- (dashed)	BOTTOM OF BANK	--- (dotted)	DRAIN	--- (solid)	EDGE OF BITUMEN	--- (dashed)	EDGE OF TREES	--- (dotted)	ELEC. CABLE UG	--- (solid)	FENCE	--- (dashed)	STORMWATER PIPE	--- (dotted)	SEWER PIPE	--- (solid)	TOP OF BANK	--- (dashed)	WATER MAIN	Code	Description	Symbol	BM	BENCH MARK	▲	BOL	BOLLARD	○	EBX	ELECTRICAL BOX	□	EPIT	ELECTRICAL PIT	⊗	ELP	ELEC. LIGHTPOLE	⊕	HYD	HYDRANT	⊗	NS	NATURAL SURFACE	×	PALM	PALM	☉	PP	POWER POLE	⊕	RWJ	ROOF WATER JUNCTION	⊗	SJO	SEWER JUNCTION	⊕	SMH	SEWER MAN HOLE	⊗	SV	STOP VALVE	⊕	TE	TELSTRA PIT	⊗	TREE	TREE	☉	TRL	TRAFFIC LIGHT	⊕	WM	WATER METER	⊕
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--- (solid)	FENCE																																																																													
--- (dashed)	STORMWATER PIPE																																																																													
--- (dotted)	SEWER PIPE																																																																													
--- (solid)	TOP OF BANK																																																																													
--- (dashed)	WATER MAIN																																																																													
Code	Description	Symbol																																																																												
BM	BENCH MARK	▲																																																																												
BOL	BOLLARD	○																																																																												
EBX	ELECTRICAL BOX	□																																																																												
EPIT	ELECTRICAL PIT	⊗																																																																												
ELP	ELEC. LIGHTPOLE	⊕																																																																												
HYD	HYDRANT	⊗																																																																												
NS	NATURAL SURFACE	×																																																																												
PALM	PALM	☉																																																																												
PP	POWER POLE	⊕																																																																												
RWJ	ROOF WATER JUNCTION	⊗																																																																												
SJO	SEWER JUNCTION	⊕																																																																												
SMH	SEWER MAN HOLE	⊗																																																																												
SV	STOP VALVE	⊕																																																																												
TE	TELSTRA PIT	⊗																																																																												
TREE	TREE	☉																																																																												
TRL	TRAFFIC LIGHT	⊕																																																																												
WM	WATER METER	⊕																																																																												
<p>B.R. Development Consulting <small>Surveying • Civil & Structural Engineering • Planning</small> <small>Postal Address: PO Box 1016 Port Moresby 1024 <small>☎ 052 2142 2142 ✉ info@brdc.com.pg</small></small></p>																																																																														
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CLIENT
AARON RALPH

PROJECT
PARTIAL
DETAIL & CONTOUR
SURVEY
OF
LOT 277 on DP 48477
345 LAGOON ROAD
LORD HOWE ISLAND

NOTES
The title boundaries shown hereon were not marked at the time of survey and have been determined by plan dimensions only and not by field survey. Services shown hereon have been located where possible by field survey. If not able to be so located, services have been plotted from the records of relevant authorities where available and have been noted accordingly on the plan. Where such records do not exist or are inadequate a notation has been made hereon. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

LINWORK & CODE LEGEND

LineStyle	Description
	BOTTOM OF BANK
	DRAIN
	EDGE OF BITUMEN
	EDGE OF TREES
	ELEC. CABLE UG
	FENCE
	STORMWATER PIPE
	SEWER PIPE
	TOP OF BANK
	WATER MAIN

Code	Description	Symbol
BM	BENCH MARK	
BOL	BOLLARD	
EBX	ELECTRICAL BOX	
EPIT	ELECTRICAL PIT	
ELP	ELEC. LIGHTPOLE	
HYD	HYDRANT	
NS	NATURAL SURFACE	
PALM	PALM	
PP	POWER POLE	
RWJ	ROOF WATER JUNCTION	
SJO	SEWER JUNCTION	
SMH	SEWER MAN HOLE	
SV	STOP VALVE	
TE	TELSTRA PIT	
TREE	TREE	
TRL	TRAFFIC LIGHT	
WM	WATER METER	

B.R. Development Consulting
 Surveying • Civil & Structural Engineering • Planning
 Postal Address: PO Box 1078 Pigeon Beach NSW 2444
 08 6880 2722 | 08 6880 2723

HEIGHT DATUM APPROX. AHD	LOCAL AUTHORITY LORD HOWE ISLAND BOARD
HEIGHT ORIGIN N/A	COUNCIL REFERENCE N/A
MERIDIAN DP 48477 - MAGNETIC	SURVEYOR SKR
CO-ORD SYSTEM LOCAL ASSUMED	SURVEY DATE AUGUST 2024
SCALE 1 : 500 @ A3	DRAWN SKR
CONTOUR INTERVAL MAJOR : 1.0m MINOR : 0.2m	DATE 18-09-2024
PLAN NUMBER 14401_DTM 18-09-2024	CHECKED SKR
	DATE 18-09-2024
	SHEET 1 OF 1 SHEETS



Lord Howe Island Services

ABN 90 572 394 327

On-site Wastewater Treatment Proposal Aaron and Lisa Ralph, Lot 227, Lord Howe Island

P/L No: 227

System Install Overview

It is proposed to install a NSW Health accredited FujiClean ACE1200EX Aerated Wastewater Treatment System to service the wastewater needs of the proposed property located at Lot 227.

The FujiClean system will be installed adjacent and to the north of the proposed shed near the roadside of the property. The system comes with its own visual alarm to alert of system malfunctions such as high water, aeration pump failure and will be visible on approach to the dwelling.

A primary catch tank will be installed adjacent and to the south of the proposed new dwelling and the raw effluent will be transferred via gravity to the wastewater system. All pipework connecting this 'catch tank' to the FujiClean system, will be in areas that aren't mapped as Significant Native Vegetation (SNV).

The treated effluent will be disinfected with chlorine prior to discharge to the irrigation fields throughout existing exotic and native vegetation on the property (see attached site plan). The irrigation fields will have small diameter (12mm) drip pipe laid in a grid pattern and potentially split into two fields. All pipework connecting the FujiClean system to the irrigation fields, located within areas mapped as SNV, will be laid on the surface.

The daily hydraulic load of effluent to be treated is 700lt. This is calculated by the following flow rates:

Source	Number	Lt/day	Total Lt/day
New dwelling	4 x bed = 5EP	600	600
Shed Bathroom	2 people	100	100
Total Daily Flow			700

Lord Howe Island Services {Wastewater Division} PO Box 99 Lord Howe Island NSW 2898
Ph: 02 6563 2452

EFT Banking Details: Name: Lord Howe Island Services Bank: CBA BSB 062-592 Account 1092 9937
Please leave invoice number as a reference so payment maybe allocated correctly Thank you!

Lord Howe Island Services

ABN 90 572 394 327

The proposed effluent irrigation area is to be situated on Lot 227 of DP 48477. The soil type in the proposed irrigation field on lot 227 is predominantly bioturbated sandy soil. A soil sample has been provided to the Board for confirmation.

Why SNV

A proportion of the proposed irrigation field for the irrigation of wastewater is located within significant native vegetation (SNV). The rationale behind this location for the irrigation fields is outlined below.

The proposed house site is situated in the clearing area on the northeast corner of the block. The footprint for the house is 180m². Once a 3000-litre holding tank and two 22000-litre water tanks are included there is no room for irrigation in the immediate area surrounding the dwelling. The area to the north of the house is reserved for an additional water tank. As such this area will not provide enough space for an irrigation field once the water tanks are installed, (see site plan).

The bottom of the block, up to about 20m in from boundary, is considered flood zone in a 1% AEP event. This rules out this area for irrigation.

The proposed shed site is 8.5 m from the western boundary and is 8m wide by 15m long. To the east of the shed is a cleared area, however this area is at the base of a drainage gully and as such would experience significant storm water flow if there was to be a large rain event. This precludes this area from being utilised for the purposes of surface irrigation. This area in question does also hold significant moisture and additional irrigation to already moist substrata would not allow for effective effluent absorption and could create pooling. This could also effect the quality of ground water which is located to the south east of this potential site.

The opposite lot is special lease and houses sheep. To utilise this lease for the purposes of irrigation would require significant trench works to keep the irrigation pipes away from the potential damage livestock could inflict on the irrigation pipes. Additionally, the current lease holders do not support the discharge of effluent on the special lease.

As such, the only viable area for irrigation of the wastewater is located on either side on the drainage gully to the northwest of the treatment system. This area is mapped as SNV and as such all lines and pipes would be located on the

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surface as per the requirements of the LEP and Wastewater Management System.

Irrigation site.

The irrigation sites are in the SNV portion of lot 227 on either side of a drainage gully. The proposed location of the irrigation drip pipe is 10m either side of the drainage gully. This will allow stormwater from above to transit between the irrigation fields rather than over or through them. Irrigation field site 1 measures 213 m² and irrigation site 2 measures 444m².

Note: Site 2 would be utilised to a maximum irrigation field measuring no more than 400m².

This gives the irrigation field total combined area of 613m². With a hydraulic load of 700L onto bioturbated sandy soils it is calculated that this will be sufficient area to irrigate the treated effluent.

Any queries regarding the proposal feel free to contact our representative Cameron Kirkpatrick.

Company Representative *Cameron Kirkpatrick*

Signature 

Date *3/11/24*

Lord Howe Island Services {Wastewater Division} PO Box 99 Lord Howe Island NSW 2898
Ph: 02 6563 2452

EFT Banking Details: Name: Lord Howe Island Services Bank: CBA BSB 062-592 Account 1092 9937
Please leave invoice number as a reference so payment maybe allocated correctly Thank you!

Nominated Area Water Balance & Storage Calculations

Site Address: **Lot 227, Lord Howe Island**

INPUT DATA	Design Wastewater Flow	Q	630	L/day
Daily Design Percolation Rate	DPR	5.0	mm/day	
Nominated Land Application Area	L	522	m ²	
Crop Factor	C	0.7-0.8	unitless	
Effective Rainfall/Runoff Coefficient	R _c	0.8	unitless	
Rainfall Data	Lord Howe Island Aero BoM 200839			
Evaporation Data	Norfolk Island BoM 200288			

OCCUPANCY			
Flow Allowance	120	L/p/d	
No. of bedrooms	4		
Occupancy	5	Beds + 1	
Design Flow	700	L/d	

Equivalent to litres per m² per day - based on LHI Strategy for secondary effluent

Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type
 Proportion of rainfall that remains onsite and infiltrates; function of slope/cover, allowing for any runoff
 Mean Monthly Data
 Mean Monthly Data

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R		mm/month	117.5	116.2	134.9	134.2	157.7	173.1	141.0	107.7	110.7	106.1	110.3	102.4	1,512
Evaporation	E		mm/month	187.4	148.4	151.9	120	102.3	90	93	105.4	117	139.5	153	170.5	1,558
Daily Evaporation			mm/day	5.4	5.3	4.9	4.0	3.3	3.0	3.0	3.4	3.9	4.5	5.1	5.5	
Crop Factor	C		unitless	0.80	0.80	0.80	0.70	0.70	0.70	0.70	0.70	0.70	0.80	0.80	0.80	0.80
OUTPUTS																
Evapotranspiration	ET	EXC	mm/month	133.9	118.7	121.5	84.0	71.6	63.0	65.1	73.8	81.9	111.6	122.4	136.4	1184.0
Percolation	B	(DPR/7)xD	mm/month	155.0	140	150.0	150.0	155.0	150.0	155.0	150.0	150.0	150.0	150.0	155.0	1825.0
Outputs		ET+B	mm/month	288.9	258.72	276.5	234.0	226.6	213.0	220.1	228.8	231.9	266.6	272.4	291.4	3009.0
INPUTS																
Retained Rainfall	RR	R _c	mm/month	94	92.96	107.92	107.36	126.16	138.48	112.8	86.16	88.56	84.88	88.24	81.92	1209.4
Effluent Irrigation	W	(QxD)/L	mm/month	37.4	33.8	37.4	36.2	37.4	36.2	37.4	37.4	36.2	37.4	36.2	37.4	440.5
Inputs		RR+W	mm/month	131.4	126.8	145.3	143.6	163.6	174.7	150.2	123.6	124.8	122.3	124.4	119.3	1650.0
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-157.5	-132.0	-131.2	-90.4	-63.0	-38.3	-69.9	-105.2	-107.1	-144.3	-148.0	-172.1	
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Storage for Nominated Area	N		mm	0.00	0											
	V	NxL	L													
LAND AREA REQUIRED FOR ZERO STORAGE			m ²	100	106	116	149	194	254	182	137	132	107	103	93	
MINIMUM AREA REQUIRED FOR ZERO STORAGE:			m ²	254												

Nutrient Balance

Site Address: **Lot 227 - Aaron Ralph**

Please read the attached notes before using this spreadsheet.

SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON THE MOST LIMITING BALANCE =

522 m²

INPUT DATA ^[1]					
Wastewater Loading			Nutrient Crop Uptake		
Hydraulic Load	700	L/Day	Crop N Uptake	200	kg/ha/yr which equals 55 mg/m ² /day
Effluent N Concentration	14.79	mg/L	Crop P Uptake	20	kg/ha/yr which equals 5 mg/m ² /day
% Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal	Phosphorus Sorption		
Total N Loss to Soil	2,071	mg/day	P-sorption result	170	mg/kg which equals 3,060 kg/ha
Remaining N Load after soil loss	8,282	mg/day	Bulk Density	1.8	g/cm ³
Effluent P Concentration	10.33	mg/L	Depth of Soil	1	m
Design Life of System	50	yrs	% of Predicted P-sorp. ^[2]	0.5	Decimal

METHOD 1: NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES					
Minimum Area required with zero buffer		Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)			
Nitrogen	151	m ²	Nominated LAA Size	522	m ²
Phosphorus	522	m ²	Predicted N Export from LAA	-7.42	kg/year
			Predicted P Export from LAA	0.00	kg/year
			Phosphorus Longevity for LAA	50	Years
			Minimum Buffer Required for excess nutrient	0	m ²

PHOSPHORUS BALANCE					
STEP 1: Using the nominated LAA Size					
Nominated LAA Size	522	m ²	→ Phosphorus generated over life of system	131.96575	kg
Daily P Load	0.00723	kg/day	→ Phosphorus vegetative uptake for life of system	0.100	kg/m ²
Daily Uptake	0.00286	kg/day	→ Phosphorus adsorbed in 50 years	0.153	kg/m ²
Measured p-sorption capacity	0.306	kg/m ²	→ Desired Annual P Application Rate	2.641	kg/year
Assumed p-sorption capacity	0.153	kg/m ²	which equals	0.00724	kg/day
Site P-sorption capacity	79.87	kg			
P-load to be sorbed	1.60	kg/year			

NOTES

PROPOSED PROCEDURES FOR STORAGE, HANDLING AND DISPOSAL OF LIQUIDS AND WASTES AT COMMERCIAL PREMISES - 345 LAGOON ROAD LORD HOWE ISLAND

1. GENERAL

This document outlines the proposed procedures for storing and handling liquids which are potentially hazardous if spilled relating to the commercial use of a proposed shed at 345 Lagoon Road Lord Howe Island. The document also addresses proposed protocols for management of potentially hazardous waste at the premises.

2. DESCRIPTION OF PROPOSED COMMERCIAL USE

The commercial use of the proposed shed will be undertaken predominantly by Dive Lord Howe, an established business on Lord Howe Island.

The primary commercial use for the proposed shed is the servicing of outboard engines for watercraft, as well as welding and maintenance of aluminium boats.

3. PROPOSED WORK PROCESSES

The proponent has provided the following details of the proposed work processes:

3.1 Engine servicing

Engine oil change - An engine oil change on an outboard motor requires a bung to be removed on the side of the engine. All oil from the engine block can be caught in an oil pan tray and then transferred by hand to a sealed container for transport to the Lord Howe Island Waste Transfer Facility. To ensure that an oil spill is avoided an additional spill tray is positioned under the engines, as well as a drop sheet. Next is the removal of the oil filter (which by this stage is empty of oil). The oil filter is placed on a specific lug in the oil pan to drain any residual oil into the pan. Finally, the new oil filter is fitted and the engine is filled with genuine engine oil as specified by the manufacturer. Generally, this engine oil is 10w-40 semi synthetic engine oil. This would also be done with the spill tray and drop sheet in place. This removes the need for a bunted area for the shed. This would be conducted every 100 engine hours which is generally every 2 months during the dive season which runs from 1st of September to the 31st of May yearly.

Gear oil change - Gear oil procedure is similar to the engine oil, but without an oil filter. Gear oil is drained into an oil pan and new oil is added to the gear box from the bottom until it is visible from the hole at the top. The top bung is then replaced and the filling tube is removed from the bottom of the gearbox. It is at this point that some oil could escape. This is caught in the oil pan, however the spill tray and drop sheet are still in position for additional security. The gear oil is generally SAE90 hypoid gear oil. This would be conducted every 100 engine hours which is generally every 2 months during the dive season which runs from 1st of September to the 31st of May yearly.

Spark plugs - Removal and replacement of spark plugs do not require any additional measures to contain contaminants. The oil spark plugs are removed with a socket set and replaced with new ones. The spark plugs are disposed of at the Lord Howe Island Waste Transfer Facility. This would be conducted every 200 engine hours which is generally every 3-4 months during the dive season which runs from 1st of September to the 31st of May yearly.

Water pumps - The impeller and wear plates are removed and replaced. No additional measures are necessary to contain any potential contaminants. This would be conducted every 200 engine hours which is generally every 3-4 months during the dive season which runs from 1st of September to the 31st of May yearly.

Hydraulic steering - Bleeding air from hydraulic steering units required pulling oil through the hydraulic lines from the helm to the ram at the back of the system. The ram has two bleeding points and the procedure involves installing a clear plastic tube onto the bleeding point and draining the fluid through the tube into a container while a second person fills from the helm. This has the potential for a spill so the spill tray and drop sheet are positioned to avoid any potential spill spreading. If the procedure goes to plan, all hydraulic fluid is caught in the secondary container and can be reused if there is not contamination. If the fluid is contaminated it is transferred to a sealed container for disposal at the Lord Howe Island Waste Transfer Facility. This would only be required if there was an issue with the steering.

Other works - Other works on the engine involve changing anodes, replacing faulty sensors and parts, greasing engine nipples and removing and greasing propellers. None of the additional works require special considerations for containing contaminants.

3.2 Body works

Another use for the commercial shed would be to undertake welding and body works on the

vessels. Broken handrails, ladders and corrosion are common issues for all the aluminium commercial vessels on Lord Howe Island. Welding aluminium requires an argon shield to protect the arc as the weld is being undertaken. This is a challenge on Lord Howe Island as there is no designated shed that is large enough to fit the boats in and conduct this work. Noise would be generated only if there was preparatory work required for a weld. This may require cleaning the area needing to be worked on with a grinder or polishing wheel to remove any imperfections and achieve a clean weld. The welding itself would not require any specific considerations for containing contaminants. Any metal shavings or dust would be swept up and disposed of at the Lord Howe Island waste transfer facility.

3.3 Painting

Neither of the Dive Lord Howe vessels are painted with 2 Pac paint and as such this would not be a requirement for the shed. The requirement for a spray bay within the shed is not envisaged. Only one (1) of Dive Lord Howe's vessels has antifoul paint on the bottom of the hull. If this was required to be removed it would be scraped from the hull and the swept up after removal. It would then be transferred to a sealed container and disposed of at the Lord Howe Island Waste Management Facility. No vessel would be cleaned with a high-pressure washer in the shed and therefore would not require special bunting to deal with the contaminated water or loose antifoul paint. Reapplication of antifoul paint may take place in the shed and will be applied with a paint roller. In this instance a drop sheet will be laid out to catch any drips during the painting process.

3.4 Compressor servicing

Dive Lord Howe has two air compressors that are used to fill the SCUBA bottles in the dive shed. Every two years they require a major overhaul and it is proposed to undertake this activity in the commercial shed. These works involve removal of old lubricant oil, replacement of seals, rings and rings as well as replacement of filtration. All used lubricant oils would be transferred to a sealed container and disposed of at the Lord Howe Island Waste Transfer Facility. Any other used parts or equipment would also be disposed of at the Lord Howe Island Waste Transfer Facility. The majority of the works would involve the use of hand tools and would not generate any additional noise. Once the compressors have been serviced, they are required to be run for diagnostics. This would create some noise. However, the noise is not considered to be excessive and would only be conducted during the daylight period.

3.5 Car servicing

Dive Lord Howe owns one Ford Ranger that requires periodic maintenance and servicing. This would involve oil changes of the engine and transmission. Replacement of air filters and oil filters. All potential contaminants would be contained by a spill tray and drop sheet. For clarity, only the Dive Lord Howe vehicle would be serviced at the shed.

4. RISK ASSESSMENT

4.1 General

In this context, risk assessment is the process of systematically identifying and quantifying the risks of a pollution event occurring. Risk is a combination of both the severity of an event (hazard) as well as the probability (likelihood) that it will occur. It is expressed in the following formula:

Risk = hazard x likelihood

4.2 Inventory of potentially hazardous liquids and substances

The following potentially hazardous liquids are proposed to be stored, used and generated at the premises in undertaking the proposed work processes.

- Engine oil
- Gear oil
- Hydraulic oil
- Lubricant

For abundant clarity, the proposed work processes at the premises will not include antifouling or hull cleaning. Consequently, the following potentially hazardous substances will not be stored, used or generated at the premises:

- Detergents
- Degreasers
- Brush-cleaning fluids

- Solvents
- Acidic or alkaline solutions

4.3 Delivery, storage and use of new and used oil

4.3.1 Delivery

New oil will be delivered to the premises on a small commercial vehicle in maximum 200 litre sealed drums. The drums will be unloaded by hand and placed on bunds as detailed below. No more than 300 litres of oil (of any kind) will be stored at the premises at any one time.

4.3.2 Storage and bunding

New and used oil will be stored at the premises on a proprietary bunded spill pallet, similar to the pallet shown in Figure 1 below:



Figure 1 - Proprietary bunded spill pallet

Large-scale storage of potentially hazardous liquids is not proposed.

4.3.3 Oil change process

The oil change process is described in section 3.1 of this document.

4.4 Antifoul paint

Neither of the Dive Lord Howe vessels is painted with 2Pac paint and only one of the two vessels has antifoul paint on the bottom of the hull.

Reapplication of antifoul paint may take place in the shed and will be applied with a paint roller. In this instance a drop sheet will be laid out to catch any drips during the painting process. If the antifoul paint on the bottom of the hull was required to be removed, it would be scraped (not water blasted) and the shavings swept, collected and placed in a sealed container, then transported to the Lord Howe Island Waste Management Facility. If antifoul painting of the hull is required, it will be applied with a roller only (no spray gun). The roller sleeves are disposable and would be wrapped and transported with other waste to the island's waste management facility.

Antifoul paint will not be typically stored at the premises, due to very low demand and usage. The paint will be obtained on a needs basis only.

4.5 Spill kit

A spill kit will be kept at the premises, enabling easy and quick movement to the location of any spill.



Figure 2 - Example of a spill kit

In the event of a spill on the concrete floor of the shed, the spill kit is to be used to contain and absorb the spill. Any absorbent material will be wrapped and promptly disposed of at the Lord Howe Island Waste Management Facility.

4.6 Waste management

Periodically, as required, the sealed drums containing the used oil and any other waste will be loaded by hand onto a small commercial vehicle and transported to the Lord Howe Island Waste Management Facility for appropriate disposal.