NOTICE OF PROPOSED DEVELOPMENT

Notice is hereby given that an application has been made for planning approval for the following development:

SITE: 2 Sea Eagle Road, Primrose Sands

PROPOSED DEVELOPMENT:
DWELLING

The relevant plans and documents can be inspected at the Council Offices at 47 Cole Street, Sorell during normal office hours, or the plans may be viewed on Council's website at www.sorell.tas.gov.au until **Tuesday 28th January 2025.**

Any person may make representation in relation to the proposal by letter or electronic mail (sorell.council@sorell.tas.gov.au) addressed to the General Manager. Representations must be received no later than **Tuesday 28th January 2025.**

APPLICANT: **J S Henricks**

APPLICATION NO: **DA 2024 / 229 - 1**
DATE: **09 January 2025**

Part B: Please note that Part B of this form is publicly exhibited.

Full description of Proposal:	*Use:* DWELLING
	Development: NEW BUILD
	Large or complex proposals should be described in a letter or planning report.
Design and construction cost of proposal:	$ .....
Is all, or some the work already constructed:	No: ☑ Yes: ☐
Location of proposed works:	Street address: 2 SEA EAGLE RD Suburb: PRIMROSE SANDS Postcode: 7173 Certificate of Title(s) Volume: 9447 Folio: 26
Current Use of Site	LAND ONLY
Current Owner/s:	Name(s) JODIE HENRICKS

Is the Property on the Tasmanian Heritage Register?	No: ☑ Yes: ☐	*If yes, please provide written advice from Heritage Tasmania*
Is the proposal to be carried out in more than one stage?	No: ☑ Yes: ☐	*If yes, please clearly describe in plans*
Have any potentially contaminating uses been undertaken on the site?	No: ☑ Yes: ☐	*If yes, please complete the Additional Information for Non-Residential Use*
Is any vegetation proposed to be removed?	No: ☑ Yes: ☐	*If yes, please ensure plans clearly show area to be impacted*
Does the proposal involve land administered or owned by either the Crown or Council?	No: ☑ Yes: ☐	*If yes, please complete the Council or Crown land section on page 3*
If a new or upgraded vehicular crossing is required from Council to the front boundary please complete the Vehicular Crossing (and Associated Works) application form https://www.sorell.tas.gov.au/services/engineering/		

Part B continued: Please note that Part B of this form is publicly exhibited

Declarations and acknowledgements
• I/we confirm that the application does not contradict any easement, covenant or restriction specified in the Certificate of Title, Schedule of Easements or Part 5 Agreement for the land. • I/we consent to Council employees or consultants entering the site and have arranged permission and/or access for Council's representatives to enter the land at any time during normal business hours. • I/we authorise the provision of a copy of any documents relating to this application to any person for the purposes of assessment or public consultation and have permission of the copyright owner for such copies. • I/we declare that, in accordance with s52(1) of the *Land Use Planning and Approvals Act 1993*, that I have notified the owner(s) of the intention to make this application. • I/we declare that the information in this application is true and correct. *Details of how the Council manages personal information and how you can request access or corrections to it is outlined in Council's Privacy Policy available on the Council website.*
• I/we acknowledge that the documentation submitted in support of my application will become a public record held by Council and may be reproduced by Council in both electronic and hard copy format in order to facilitate the assessment process, for display purposes during public exhibition, and to fulfil its statutory obligations. I further acknowledge that following determination of my application, Council will store documentation relating to my application in electronic format only.
• Where the General Manager's consent is also required under s.14 of the *Urban Drainage Act 2013*, by making this application I/we also apply for that consent.

Applicant Signature:	Signature: J. Hems Date: 21/9/2024

Crown or General Manager Land Owner Consent
If the land that is the subject of this application is owned or administered by either the Crown or Sorell Council, the consent of the relevant Minister or the Council General Manager whichever is applicable, must be included here. This consent should be completed and signed by either the General Manager, the Minister, or a delegate (as specified in s52 (1D-1G) of the *Land Use Planning and Approvals Act 1993*). Please note: • If General Manager consent if required, please first complete the General Manager consent application form available on our website www.sorell.tas.gov.au • If the application involves Crown land you will also need a letter of consent. • Any consent is for the purposes of making this application only and is not consent to undertaken work or take any other action with respect to the proposed use or development.
I _____ being responsible for the administration of land at _____ declare that I have given permission for the making of this application for _____

Signature of General Manager, Minister or Delegate:	Signature: ..... Date: .....

Prime Design
your build, your way

19 November 2024

Sorell Council
47 Cole Street,
Tasmania

Dear Planner,

Re: Proposed new single dwelling at 2 Sea Eagle Road, Primrose Sands

The lot at 2 Sea Eagle Road consists of 626m gently sloping land within the Low Density residential zone of the Tasmanian Planning scheme, Sorell Council Local Provisions. The property also includes a flood prone area overlay, which has been independently addressed by sub-consultant reports, inclusive of on-site wastewater and stormwater design by others. The property is narrow in nature for the lot size and quite small considering setback restraints. The development is for a single dwelling, inclusive of all services as documented, please find attached herein, justification for the development against the provisions of the planning scheme.

10.4.2 Building Height

A1 Complies – building height is less than 8.5m.

10.4.3. Setback

A1 Complies – Refer site plan
A2 Does not comply – Setback to side boundaries is less than 5m

P1 The existing property is narrow in nature, at only 18m. Lending itself to losing approximately 55% of it's width if to comply with the requirements of the planning scheme for the zone. The topography of the site is gently sloping from west to east at a consistent 11% grade.

ABN 63 111 803 948
10 Goodman Court
Invermay, Launceston
Shop 9, 105-111 Main Road
Moonah, TAS
p+(l) 03 6332 3790
p+(l) 03 6228 4575
info@primedesigntas.com.au
primedesigntas.com.au

There is not presently any development either side of 2 sea eagle road as viewed from the aerial images on 'The LIST map' accessed on November 19, 2024.

Figure 1, Aerial of neighbouring properties accessed via the LIST map, 19th November, 2024.

The proposed height of the development has been kept modest in relation to the topography, in that it follows largely the slope in nature, with a maximum height of 5.7m above ground at it's highest point. The proposal is for a single storey dwelling with a modest deck on the eastern side, observations of neighbouring properties through google street view, indicate that existing nearby development is consistent with the existing character of similar single storey developments along Sea Eagle Road. Examples given to, 13 Sea Eagle Road, and number 5 Sea Eagle Road.

Figure 2, 13 Sea Eagle Road. Accessed via google streetview on 19th November, 2024

Figure 3, 5 Sea Eagle Road. Accessed via google streetview on 19th November, 2024

There are also no present or existing structures on the property and it is believed that due to being on the western side of the neighbouring property to the east, at an elevated position, there will be not a significant impact to amenity to the property at 4 Falcon Ct. As evidenced in the provided sun shadow diagrams.

10.4.4. Site coverage

A1 Complies

C2.6.2 Design and layout of parking areas

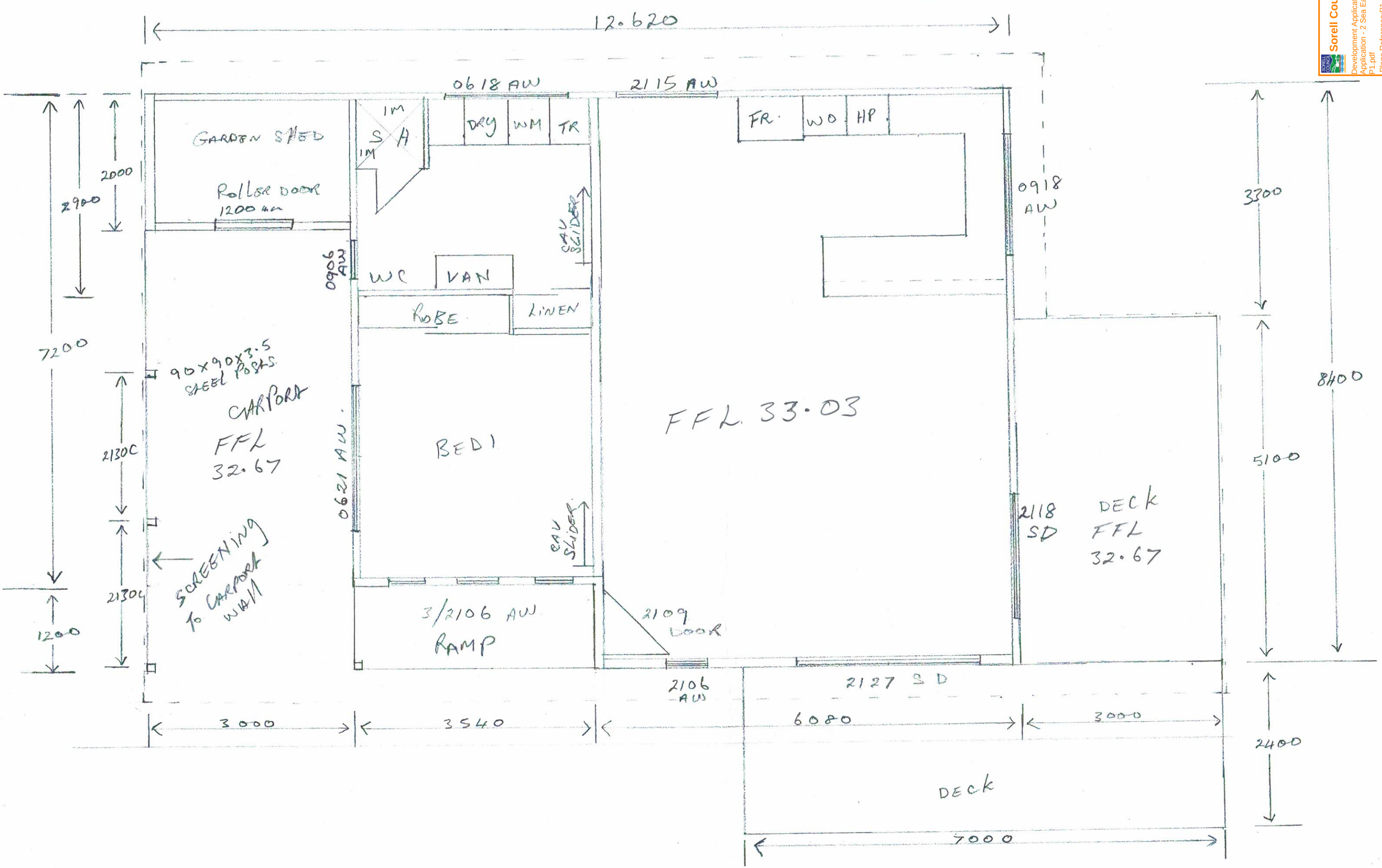
A1 (iv) Complies, parking width increased to 3.2m for P1 to accommodate a 4.8m aisle width. Please also refer to the site turning movements sheet for compliant vehicle manoeuvres. These include 300mm clearances either side.

If council requires additional information to appropriately assess the development application, please do not hesitate to contact the undersigned,

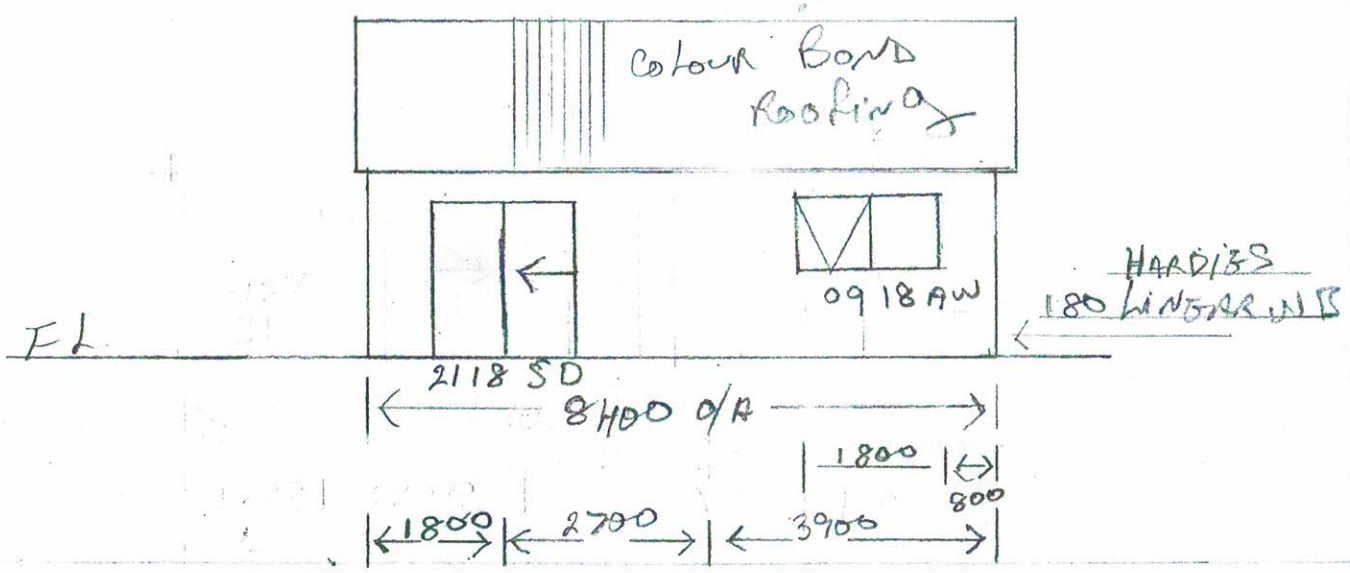
Kind regards

Mitch Roberts

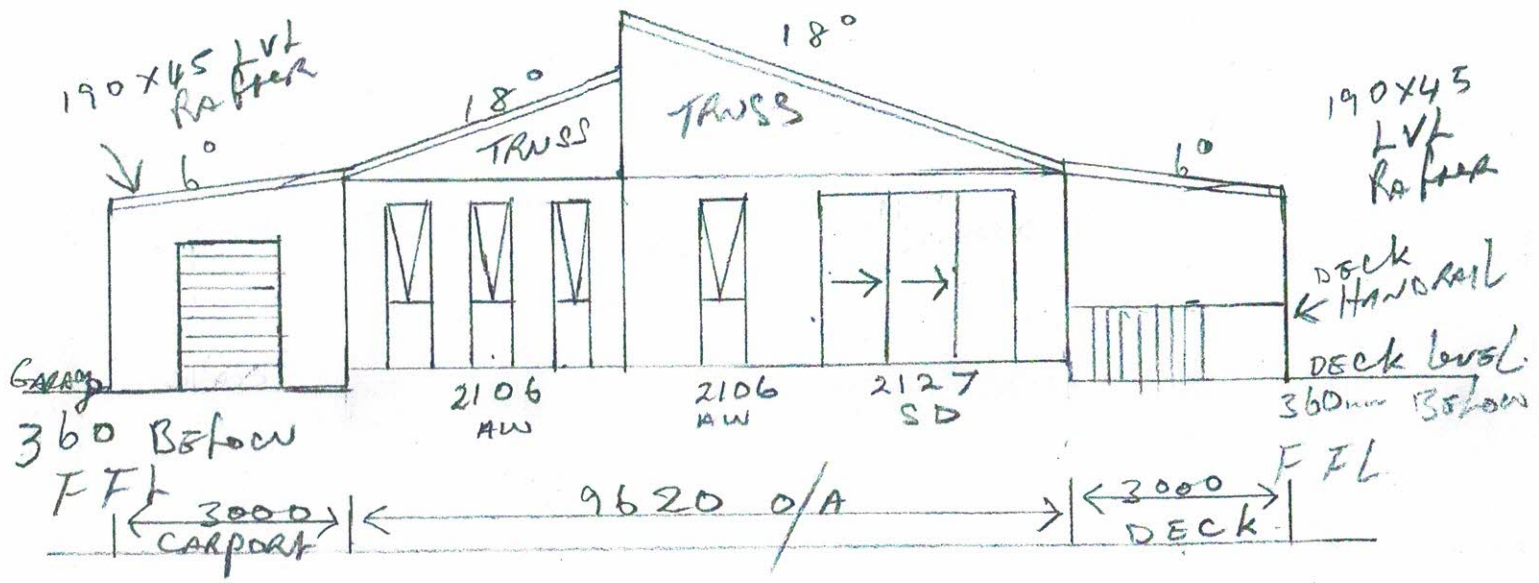
SCALE 1:50 JODIE HENRICKS 2 SEA EAGLE RD PRIMROSE SANDS.



E 1

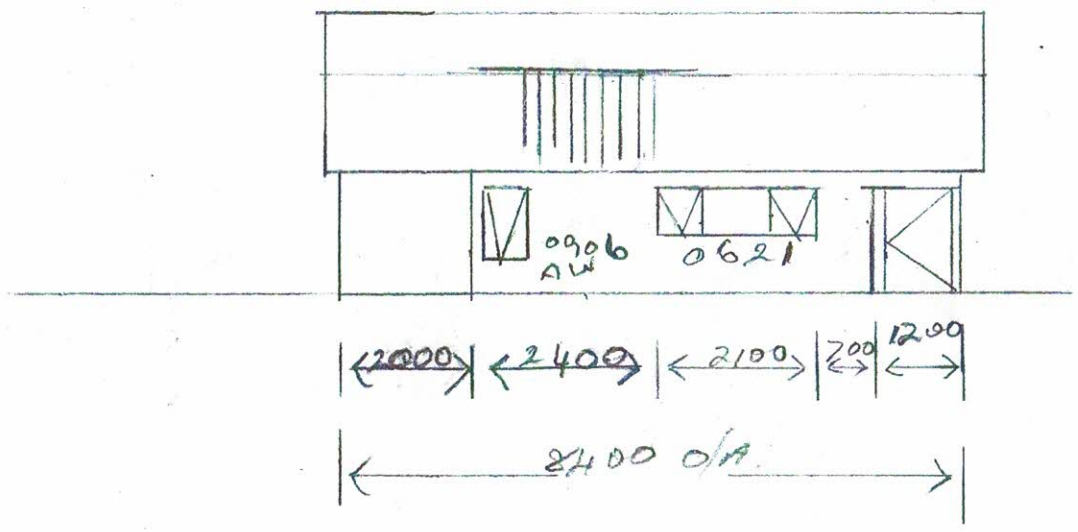


E 2

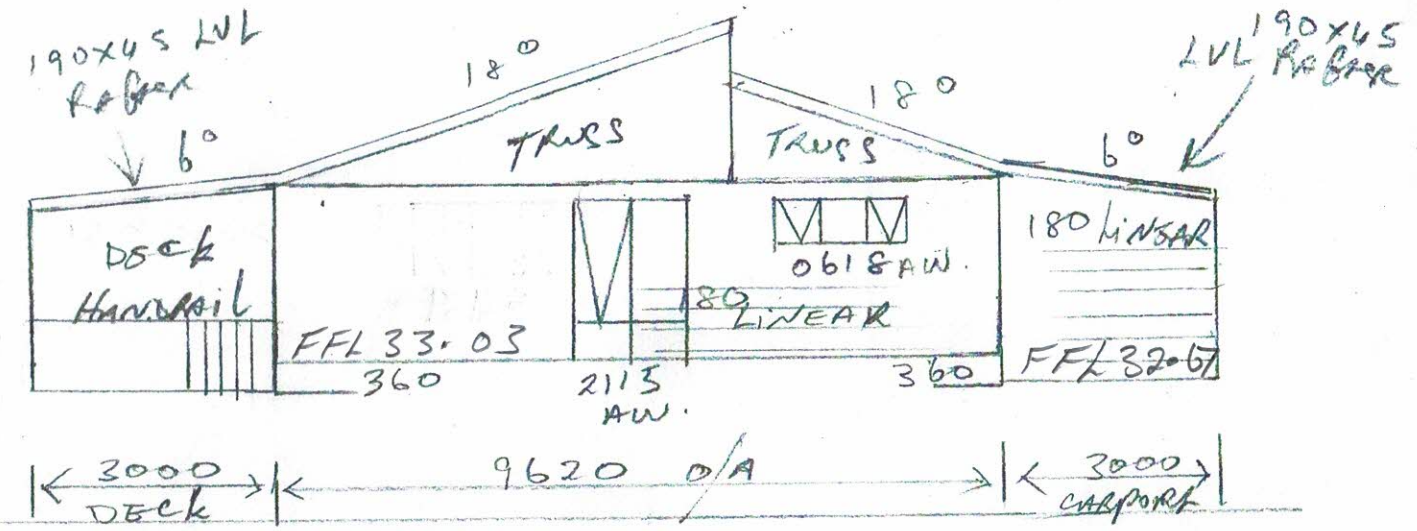


Note - FRAMING BETWEEN FOUNDATION POSTS AND CHD TO CONTINUE TO GROUND LEVEL

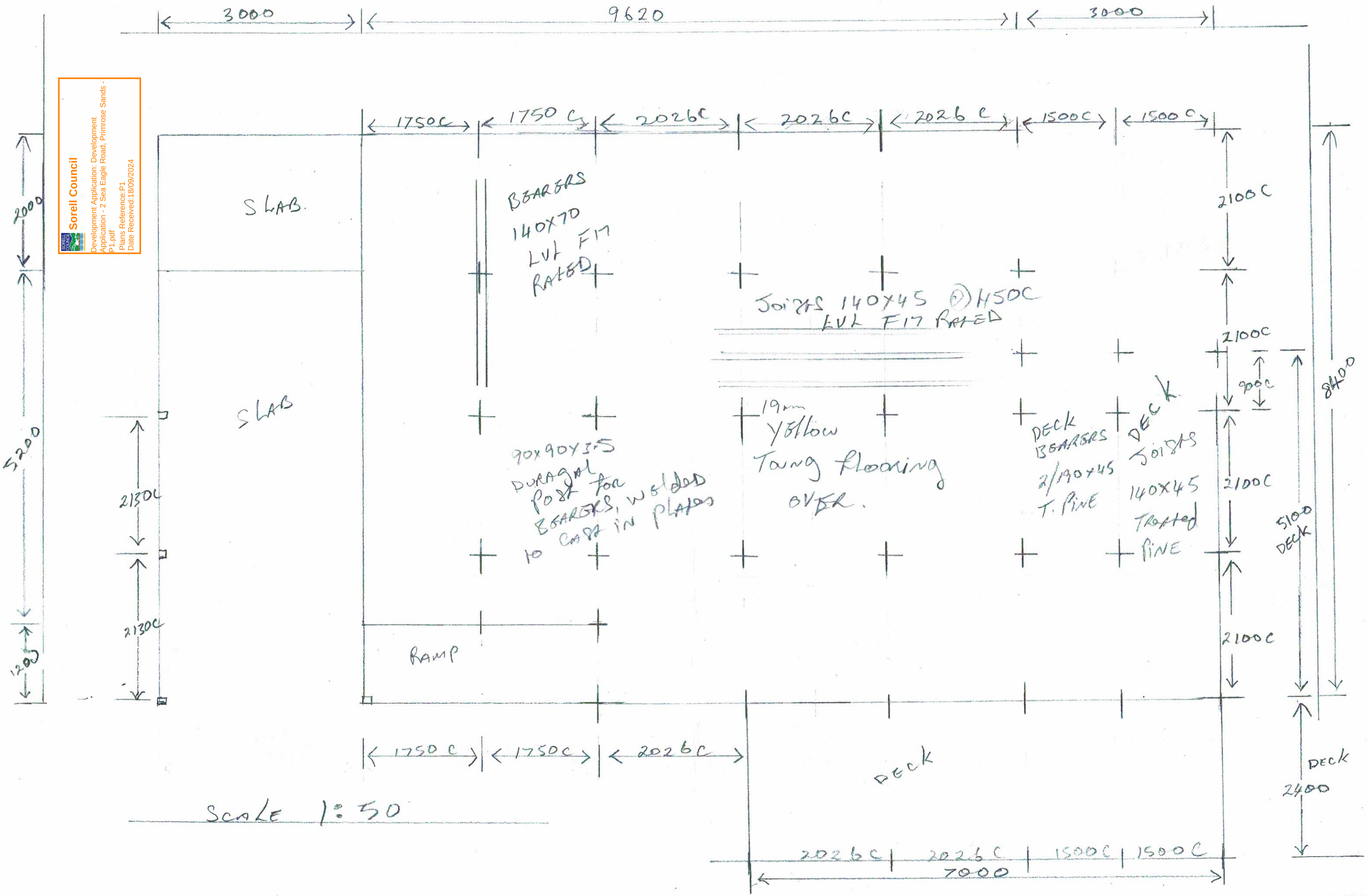
E 3



E4



SCALE 1:100 APPROX



SCALE 1:50

Page 4

PHOTO 1 - 2 Sea Eagle Road, Primrose Sands

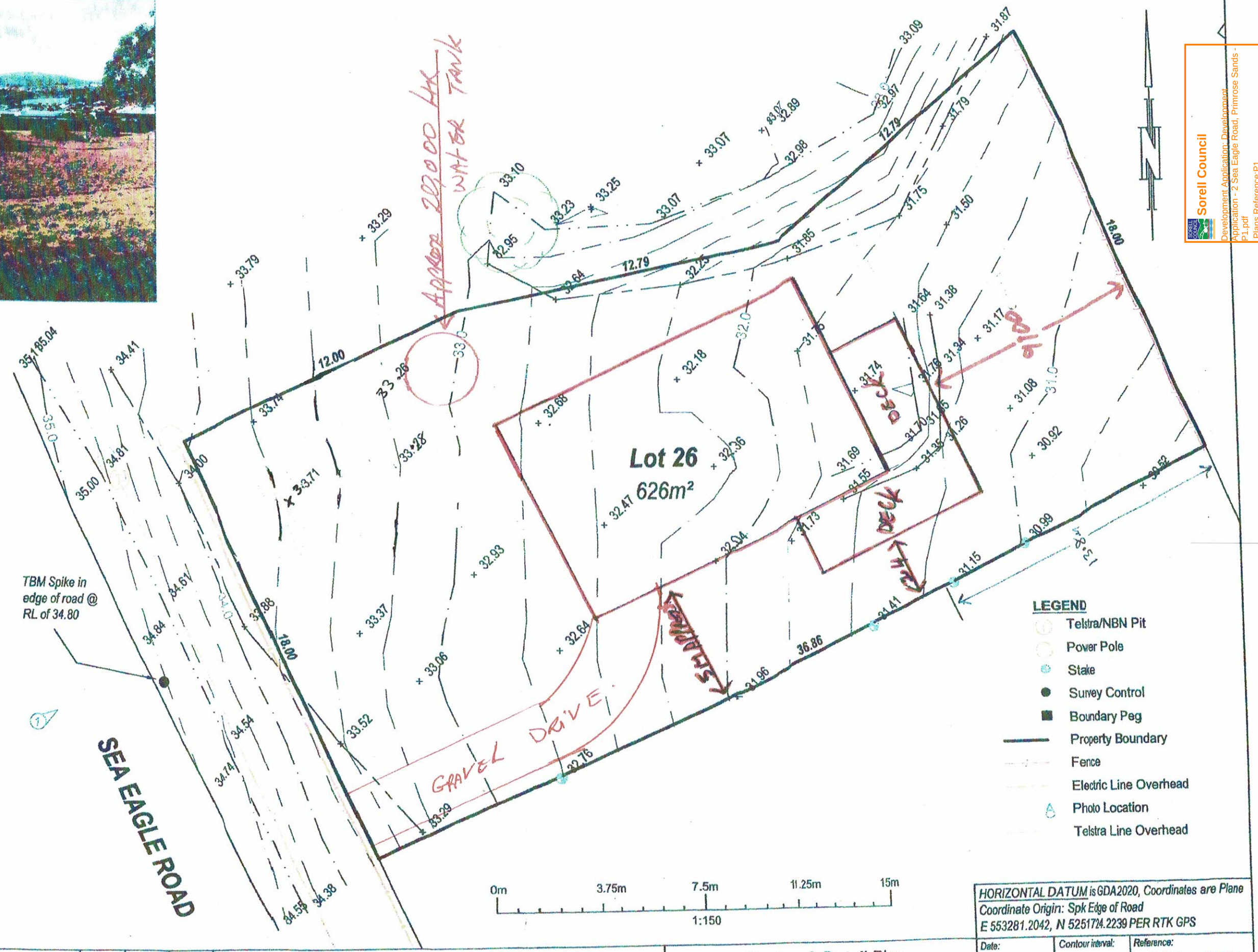
NOTES:

This plan and associated digital model is prepared for Christopher Leskie from a combination of field survey and existing records for the purpose of designing new constructions on the land and should not be used for any other purpose.

The title boundaries as shown on this plan were not marked at the time of the survey and have been determined by plan dimensions only and not by field survey. No measurements or offsets are to be derived between the features on this plan and the boundary layer. The relationship between the features in this model and the boundary layers cannot be used for any set out purposes or to confirm the position of the title boundaries on site.

Services shown have been located where visible by field survey. Services denoted as being "Per DBYD only" are approximate and for illustrative purposes only. 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.

This note forms an integral part of the Plan/Data. Any reproduction of this plan/model without this note attached will render the information shown invalid.



HORIZONTAL DATUM is GDA2020, Coordinates are Plane
Coordinate Origin: Spk Edge of Road
E 553281.2042, N 5251724.2239 PER RTK GPS

REV	AMENDMENTS	DRAWN	DATE	APPR.
E				
D				
C				
B				
A				

ROGERSON & BIRCH SURVEYORS
UNIT 1, 2 KENNEDY DRIVE
CAMBRIDGE 7170
PHONE: (03)6248 5898
EMAIL: admin@rbsurveyors.com
WEB: www.rbsurveyors.com

Contour & Detail Plan

FOR: Christopher Leskie

LOCATION: 2 Sea Eagle Road, Primrose Sands

Date:	Contour interval:	Reference:
23/07/2021	0.25m	LESKC01 1364901
Drawn:	Scale:	Bearing Datum: MGA2020 per
CF	1:150 (A3)	GPS RTK
Approved:	C.T. Reference:	Vertical Datum:
AB	9447/26	AHD83 per GPS RTK

GEOTECH 24-084

ROCK SOLID GEOTECHNICS PTY LTD
Peter Hofto
163 Orielton Road
Orielton
TAS 7172

0417 960 769
peter@rocksolidgeotechnics.com.au

19/6/2024

Geotechnical Assessment / Classification for Proposed Residential Development

2 Sea Eagle Road, Primrose Sands.

CLIENT: Jodie Henricks 0418681077 florider72@hotmail.com

CONTENTS

SUMMARY

A residential development is proposed by Jodie Henricks at 2 Sea Eagle Road, Primrose Sands (Figure 1). The site is underlain by deep sand with some clay.

The site is classified as Class 'S' in accordance with AS2870.

Suitable upslope site drainage should be installed prior to the commencement of construction.

The following Wind Load Classifications (AS4055-2012: Wind Loads for Housing) are appropriate.

• Terrain Category Classification	TC2.5	Terrain with a few obstructions
• Shielding Classification	PS	Partial Shielding
• Topographic Classification	T2	
• Wind Load Classification	N3	

INVESTIGATION

The Tasmanian Geological Survey 1:50000 Geological Atlas 'Sorell' indicates that the site is underlain by Quaternary aged windblown sands.

Site investigations were completed in 2018, and more recently on Friday 31 May, 2024. This included the augering of three test holes to assess the site for foundation conditions, and onsite wastewater (4WD mounted SAMPLA25 mechanical auger with 100mm diameter solid flight augers). The locations of the holes are marked on Figure 1.

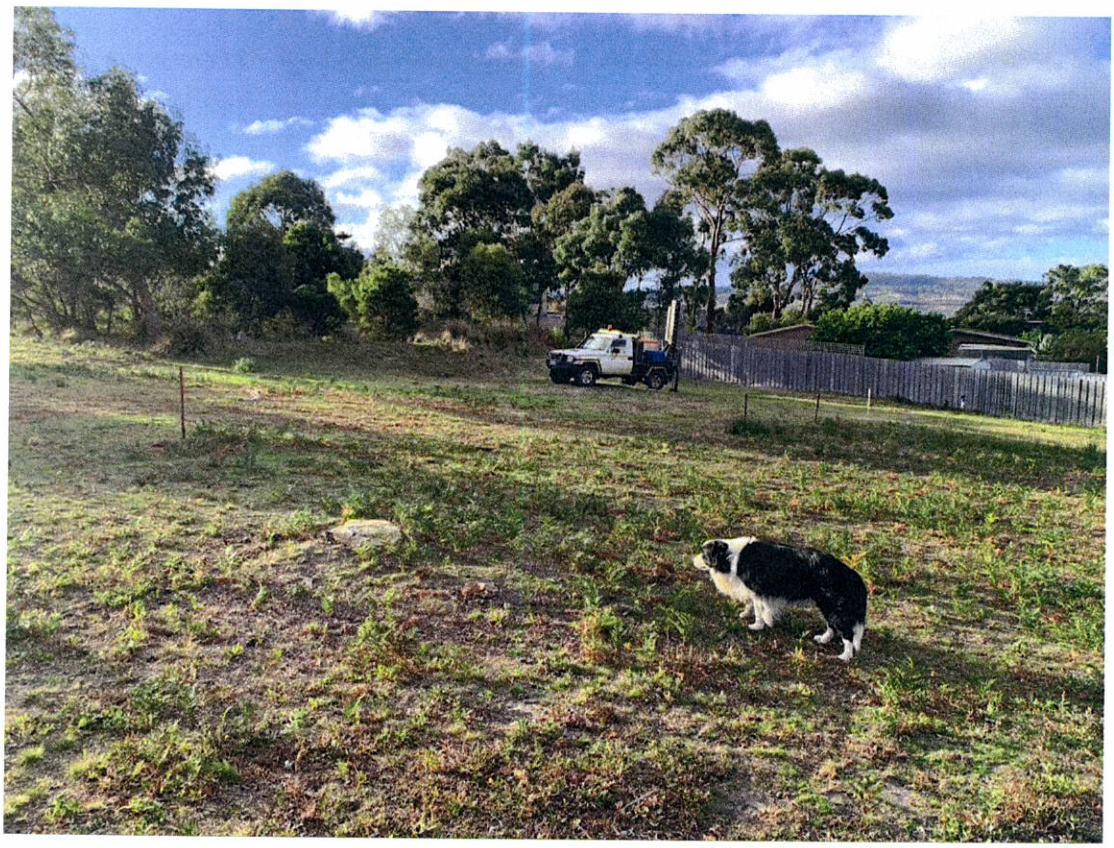
The block lies on the eastern or down-slope side of Sea Eagle Road (Plate 1). The site is covered in grass, ferns and minor reeds, and is devoid of trees. The block generally slopes to the southeast at between 4 and 6 degrees.

The profiles encountered in Test Holes #2 & #3 consisted of:

0.00 – 0.25m	SAND: fine grained, dark brown, rootlets – TOPSOIL
0.25 – 0.95m	SAND: fine grained, light grey / grey, dry
0.95 - 2.10m	SAND: fine to medium grained, grey, some clay, moist
2.10m+	Hole terminated at required depth – 2.10m depth.

Groundwater was not encountered in either test hole.

Plate 1 – Looking across-slope to the north at the block (Test Hole #1).



CONDITIONS OF INVESTIGATION

This report remains the property of Rock Solid Geotechnics Pty. Ltd. (RSG). It must not be reproduced in part or full, or used for any other purpose without written permission of this company. The investigations have been conducted, & the report prepared, for the sole use of the client or agent mentioned on the cover page. Where the report is to be used for any other purpose RSG accepts no responsibility for such other use. The Forms 55 and 35 are not transferable to another body without consultation (reissue) from RSG. The information in this report is current and suitable for use for a period of two years from the date of production of the report, after which time it cannot be used for Building or Development Application.

This report should not be used for submission for Building or Development Application until RSG has been paid in full for its production. RSG accepts no liability for the contents of this report until full payment has been received.

The results & interpretation of conditions presented in this report are current at the time of the investigation only. The investigation has been conducted in accordance with the specific client's requirements &/or with their servants or agent's instructions.

This report contains observations & interpretations based often on limited subsurface evaluation. Where interpretative information or evaluation has been reported, this information has been identified accordingly & is presented based on

professional judgement. RSG does not accept responsibility for variations between interpreted conditions & those that may be subsequently revealed by whatever means.

Due to the possibility of variation in subsurface conditions & materials, the characteristics of materials can vary between sample & observation sites. RSG takes no responsibility for changed or unexpected variations in ground conditions that may affect any aspect of the project. The classifications in this report are based on samples taken from specific sites. The information is not transferable to different sites, no matter how close (ie. if the development site is moved from the original assessment site an additional assessment will be required). It is recommended to notify the author should it be revealed that the sub-surface conditions differ from those presented in this report, so additional assessment & advice may be provided.

Investigations are conducted to standards outlined in Australian Standards:

- AS1726-1993: Geotechnical Site Investigations
- AS2870-2011: Residential Slabs and Footings
- AS4055-2012: Wind Loads for Housing
- AS1547-2012: Onsite Domestic Wastewater Management

& as specified in 'Guidelines for Geotechnical Assessment of Subdivisions and Recommended Code of Practise for Site Classification to AS2870 in Tasmania' - Institute of Engineers, Tasmanian Division.

All new developments should subject to strict site maintenance. Attention is drawn to the enclosed information reproduced with the permission from Standards Australia:

- CSIRO Information Sheet No. BTF18 – 'Guide to home-owners on foundation maintenance & footing performance'.

Any assessment that has included an onsite wastewater system design will require a further site visit / inspection once the system has been installed. After the inspection to verify that the system has been installed as per RSG's design a statement will be provided. An additional fee applies for the site visit & issuing the certificate.

RSG is not responsible for the correct installation of wastewater systems. Any wastewater installation is the sole responsibility of the owner/agent and certified plumber. Any variation to the wastewater design must be approved by RSG, and an amended Special Plumbing Permit obtained from the relevant council. The registered plumber must obtain a copy and carefully follow the details in the council issued Special Plumbing Permit. A "Certificate of Completion" will be based on surface visual inspection only, to verify the location of the system. All underground plumbing works are the responsibility of the certified plumber.

PETER HOFTO
ROCK SOLID GEOTECHNICS PTY LTD


Sorell Council
Development Application Development Application - 2 Silk Eagle Road, Primrose Sands - P1.pdf
Plans Reference: P1
Date Received 18/09/2024

In issuing this certificate the following matters are relevant –

Documents:	
Relevant calculations:	AS2870 AS4055
References:	

Substance of Certificate: *(what it is that is being certified)*

Scope and/or Limitations

I certify the matters described in this certificate.

	Signed:	*Certificate No:*	*Date:*
Qualified person:		GEOTECH 24-084	19/6/2024

APPENDIX 3

ONSITE WASTEWATER ASSESSMENT / SYSTEM DESIGN – 2 Sea Eagle Road, Primrose Sands

Below find the assessment to determine of the type and size of wastewater treatment system, and the allocation of a Land Application Area (LAA) for a proposed 1-bedroom residence at 2 Sea Eagle Road, Primrose Sands. This assessment should be read in conjunction with Site & Soil Evaluation Report (GEOTECH 24-084) - enclosed.

The block lies on the eastern or down-slope side of Sea Eagle Road (Plate 1). The site is covered in grass, ferns and minor reeds, and is devoid of trees. The block generally slopes to the southeast at 4 degrees.

The profile encountered in Test Hole #1 consisted of:

0.00 – 0.20m	SAND: fine grained, dark brown, rootlets – TOPSOIL
0.20 – 0.60m	SAND: fine grained, light grey / grey, dry
0.60 – 1.35m	clayey SAND: fine to medium grained, brown / brownish grey, to 20% clay, moist
1.35 - 2.10m	SAND: fine to medium grained, grey, some clay, moist
2.10m+	Hole terminated at required depth – 2.10m depth.

Groundwater was not encountered in either test hole.

The site is classified as a Class 2 (sandy LOAM) site with an Indicative Permeability of 1.5m/day. A Design Loading Rate of 25mm/day is appropriate (secondary quality effluent).

It is proposed to install a septic tank discharging to an in-ground Advanced Enviro-Septic (AES) bed, sited upslope from the eastern property boundary.

There is suitable area available for a reserve LAA if required in the future.

COMPLIANCE WITH THE 2016 DIRECTOR'S GUIDELINES FOR ONSITE WASTEWATER

Compliance Table	Directors Guidelines for OSWM	
Acceptable Solutions	Performance Criteria	Compliance achieved by
5.1 To ensure sufficient land is available for sustainable onsite wastewater management for buildings.		
A1 A new dwelling must be provided with a LAA that complies with Table 3.	P1 A new dwelling must be provided with a LAA that meets all of the following: a) The LAA is sized in accordance with the requirements of AS/NZS 1547; and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	Complies with A1 60m^2 of LAA required for this development
7. Standards for Wastewater Land Application Areas		
A1 Horizontal separation distance from a building to a LAA must comply with one of the following: a) be no less than 6m; b) be no less than: (i) 3m from an upslope boundary or level building; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building.	P1 The LAA is located so that the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.	Complies with A1 LAA > 3m from upslope residence. LAA approx. from upslope deck.
A2 Horizontal separation distance from downslope surface water to a LAA must comply with (a) or (b) (a) be no less than 100m; or (b) be no less than the following: (i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or (ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water.	P2 Horizontal separation distance from downslope surface water to a LAA must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	Complies with A2 LAA >100m from downslope surface water.
A3 Horizontal separation distance from a property boundary to a LAA must comply with either of the following: (a) be no less than 40m from a property boundary; or (b) be no less than: (i) 1.5m from an upslope or level property boundary; & (ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or (iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.	P3 Horizontal separation distance from a property boundary to a LAA must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	Complies with P3 LAA > 1.5m from upslope and side-slope property boundaries. 4° slope. Setback from lower slope property boundary 2.5m. See risk Assessment.

A4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable.	Complies with A4 No known potable bores in the immediate vicinity.
A5 Vertical separation distance between groundwater & a LAA must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a LAA must comply with the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable.	Complies with A5 Groundwater not encountered.
A6 Vertical separation distance between a limiting layer & a LAA must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent.	P6 Vertical setback must be consistent with AS/NZS1547 Appendix R.	Complies with A6 Limiting layer not encountered.

RISK ASSESSMENT

Each identified environmental aspect is subject to a qualitative risk analysis based on likelihood and consequences of environmental impact. The risk analysis matrix is as follows:

LIKELIHOOD	***CONSEQUENCES***				
	Catastrophic 1	Major 2	Moderate 3	Minor 4	Insignificant 5
A (almost certain)	Extreme	Extreme	High	High	Medium
B (likely)	Extreme	Extreme	High	High	Medium
C (possible)	Extreme	Extreme	High	Medium	Low
D (unlikely)	Extreme	High	Medium	Low	Low
E (rare)	High	Medium	Low	Low	Low

Criteria for the five categories of likelihood:

Almost certain: An environmental health impact is expected to occur in most circumstances.

Likely: An environmental health impact will probably occur in most circumstances

Possible: An environmental health impact could occur.
Unlikely: An environmental health impact could occur but is not expected.

Rare: An environmental health impact would occur only in exceptional circumstances.

Criteria for determining consequence to environmental health from an on-site wastewater management issue:

Catastrophic: Widespread, irreparable environmental damage; loss of human life or long-term human health effects; serious litigation; over $1 million to manage consequences.

Major: Widespread, medium to long term impact; moderate human health impacts requiring medical treatment; major breach of legal requirements (prosecution); $50,000 to $1 million to manage consequences.

Moderate: Localised medium to long term impact; minor and reversible human health impacts treatable with first aid; moderate breach of legal requirements with fine (EIN/prosecution); $5,000 to $50,000 to manage consequences.

Minor: Localised short to medium term impact; no injury to people; minor breach of legal requirements (eg. legal notice, EIN); $1000 to $5,000 to manage consequences.
Insignificant: Limited impact to a local area but no long-term effects; concern or complaints from neighbours; no injury to people; minor technical nonconformity but no legal nonconformity; less than $1000 cost to manage consequences.

Conducting a risk analysis results in the allocating of a risk level of *extreme*, *high*, *moderate* or *low* for each environmental aspect. Environmental health aspects with an *extreme* or *high* risk are considered to be *significant*, that is, they have or can have a significant environmental impact.

Defined risk is:

- Boundary setback distance.

The defined site constraint items of specific concern (as defined in Table R1 of AS/NZS 1547:2021) FOR THE ABOVE DEFINED RISK is:

- A, D, J

A Microbial quality of effluent.

- Effluent to be secondary quality – AES Bed – low risk level.

D Slope.

- Risk is off-site export of effluent. Effluent to be disposed of into an AES bed – low risk level for this site.

J Application method.

- Secondary treated quality effluent into an AES bed in deep sand – lowest possible risk level for this site.

ONSITE WASTEWATER SYSTEM DESIGN

A new, 3250 litre (minimum) septic tank will be installed. The effluent leaving the septic tank will gravity feed an Advanced Enviro-Septic (AES) bed, sited across the slope, upslope from the eastern property boundary. The septic tank should not be fitted with an outlet filter.

The following calculations determine the size of the AES Bed designed to service the 1-bedroom residence.

1-bedroom residence	2 persons
Tank water	120 litres / person / day
Wastewater Flow Rate	2 x 120 = 240 litres / day
Design Loading Rate (DLR)	25mm/day
DLR	25 litres / m^2 / day
Basal Area of Land Application Area	240 / 25 = 9.6m^2

The Advanced Enviro Septic (AES) system utilizes a modular distribution layout consisting of pipework laid in "system sand".

This module consists of 2 runs of 2 x 300mm diameter AES pipes, 150mm apart, with 300mm side-wall clearance on each side - total width 1350mm.

Distribution unit length	=	AES pipe length + (0.3m x 2)
		6m + 0.6m = 6.6m
Width of 3-pipe wide AES unit	=	1.35m
A System Extension is required for this site.		6.6m long x 0.10m wide = 0.7m^2
Area of AES	=	6.6m x 1.45m = 9.6m^2

The AES system should be installed by a plumber who has been accredited by Chankar Environmental Proprietary Limited to install Advanced Enviro Septic systems, and who has appropriate experience.

Site Preparation

- Rope off the site to prevent damage to the area during other construction activity on the lot.
- Vehicular traffic over the area must be prohibited to avoid compaction.
- Excavate the existing soil surface, parallel with the contour (cross slope) to a depth of 750mm over the selected wastewater land application area.
- Rake/scarify the exposed soil surface.
- Install and connect the septic tank and AES bed in accordance with the AES site instructions (see below) and the design plans attached.
- The AES pipe must be laid in a bed of approved "system sand". This is a coarse sand meeting the specifications as listed below.

AES System Sand Specifications

- Percentage Restrictions - 35% or less of the total sand may be gravel. 40%-90% of the total sand is to be coarse and very coarse sand.
- Gravel Quality Restrictions - No gravel is to exceed 9mm in diameter. No gravel is smaller than 2mm in diameter.
- Coarse Sand Quality Restrictions - No coarse sand is smaller than 0.5mm in diameter.
- Fines Quality Restrictions - No more than 2% of the total sand may pass through a 75µ m sieve.

Venting – AES system and septic tank

- Ensure that roof vent comprises a minimum of single 80mm diameter pipe or 2 x 40mm diameter vent pipes.
- Roof vent to be a minimum of 3m above ground vent.
- Venting of the septic tank is to be consistent with NCC Pt 3 Tas F101.2.

Low vent as per AES pipe layout plan (Low vent at end of pipework).

Advanced Enviro-septic Design Calculator V9.0 ©

ADVANCED ENVIRO-SEPTIC™ "Always The First Option"

AES The World Leader in Passive Solutions ©

Site Address	2 Sea Eagle Road, Primrose Sands		State TAS	Post Code	
Client Name	Jodie Henricks			Date of Site Visit	31/5/24
Designers Name	Peter Hofto, Rock Solid Geotechnics Pty Ltd	Designers Ph Number	0417 960 769	Designer Lic (e.gQBCC)	CC6159I
Lic Plumber	To be announced	Plumber Ph Number		Plumb / Drainer Lic Number	TBA
Council Area	Sorell	Designers AES Cert Number	1463	Date	19/6/24

This Calculator is a guide only, receiving soil classification, surface water, water tables and all other site constraints addressed by the qualified designer.

System Designers site and soil calculation data entry		IMPORTANT NOTES
Enter AES L/m loading rate, "30" for ADV Secondary or "38" Secondary	38	*>> This design is for a SECONDARY system.*
Is this a new installation Y or N	Y	**>> Minimun single vent size is 80mm or 2 x 50mm house vents**
Number of Bedrooms	1	**>> This is not used in ANY Calculation. If not known use N/A or 0.**
Number of persons	2	**>> A septic tank outlet filter is NOT RECOMMENDED**
Daily Design Flow Allowance Litre/Person/Day	120	
Number of rows required to suit site constraints	2	**>> The maximum length of a single AES pipe run is 30m or 10 PIPES**
Infiltration Soil Category from site/soil evaluation. CATEGORY	1	
Design Loading Rate based on site & soil evaluation DLR (mm/day)	25	
Bore log depth below system Basal area	1.5m	**>> Min depth 1.5m. Check water table/restrictive layer**
Is this design a GRAVITY system with no outlet filter? Y or N	y	**>> GRAVITY. A House Vent & LOW VENT required on this system**

PLEASE CHECK YOU HAVE FALL FROM TANK TO AES SYSTEM PIPES

COMMENTS :- *" The outcome must be important to everyone. "*

- Designers need to be familar with special requirements of Local Authorities. ie - Minimum falls from Septic tank outlets to Land application areas etc

- Plumbers are reminded to practice good construction techniques as per AS 1547 & as provided on AES installation instructions supplied with components.

AES System Calculator Outcomes		
Total System load - litres / day (Q).	**240**	l/d
Min Length of AES pipe rows to treat loading	**3.25**	**lm**
Number of FULL AES Pipe lengths per row	**2**	lths
Total Capacity of AES System pipe in Litres	**848**	ltr.

AES dimensions	AES System	System Extension
Length:(L)	6.60m	6.60m
Width:(W)	1.35m	0.10m
Sand Depth :	0.75m	0.15m
Area m2	8.9 m^2	0.7 m^2

USE CUT LENGTHS OF PIPE IN THIS DESIGN? (ENTER Y)	n				
IF YOU WISH TO USE A TRENCH EXTENSION DESIGN OPTION ENTER "Y"				Enter Custom Width in metre	
AES INFILTRATION FOOT PRINT AREA - L = Q / (DLR x W)	**Length**		**Width**	**Minimum AES foot print required**	
for this Basic Serial design is	**6.600m**	x	**1.45m**	= **9.6**	m2 total

AES pipes are best centered in the trench parallel to the site slope

Code	AES System Bill of Materials.		
AES-PIPE	AES 3 metre Lengths required	4	lths
AESC	AES Couplings required	2	ea
AESO	AES Offset adaptors	4	ea
AESODV	AES Oxygen demand vent	1	ea
AES-IPB	AES 100mm Inspection point base	2	ea
TD Kit 4	4 Hole Distribution Box Kit		ea
TD Kit 7	7 Hole Distribution Box Kit		ea
VS43-4	Sweet Air Filter VS43-4		ea
AES DESO	Double Offset Adaptors		ea
	TOTAL SYSTEM SAND REQUIRED (Estimate Only)	8	m3

Chankar Environmental Use Only

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf

Plans Reference:P1

Date Received:18/09/2024

Please email your AES Calculator (EXCEL FORMAT), Site Layout & AES Design to

designreview@enviro-septic.com.au

designreview@enviro-septic.com.au

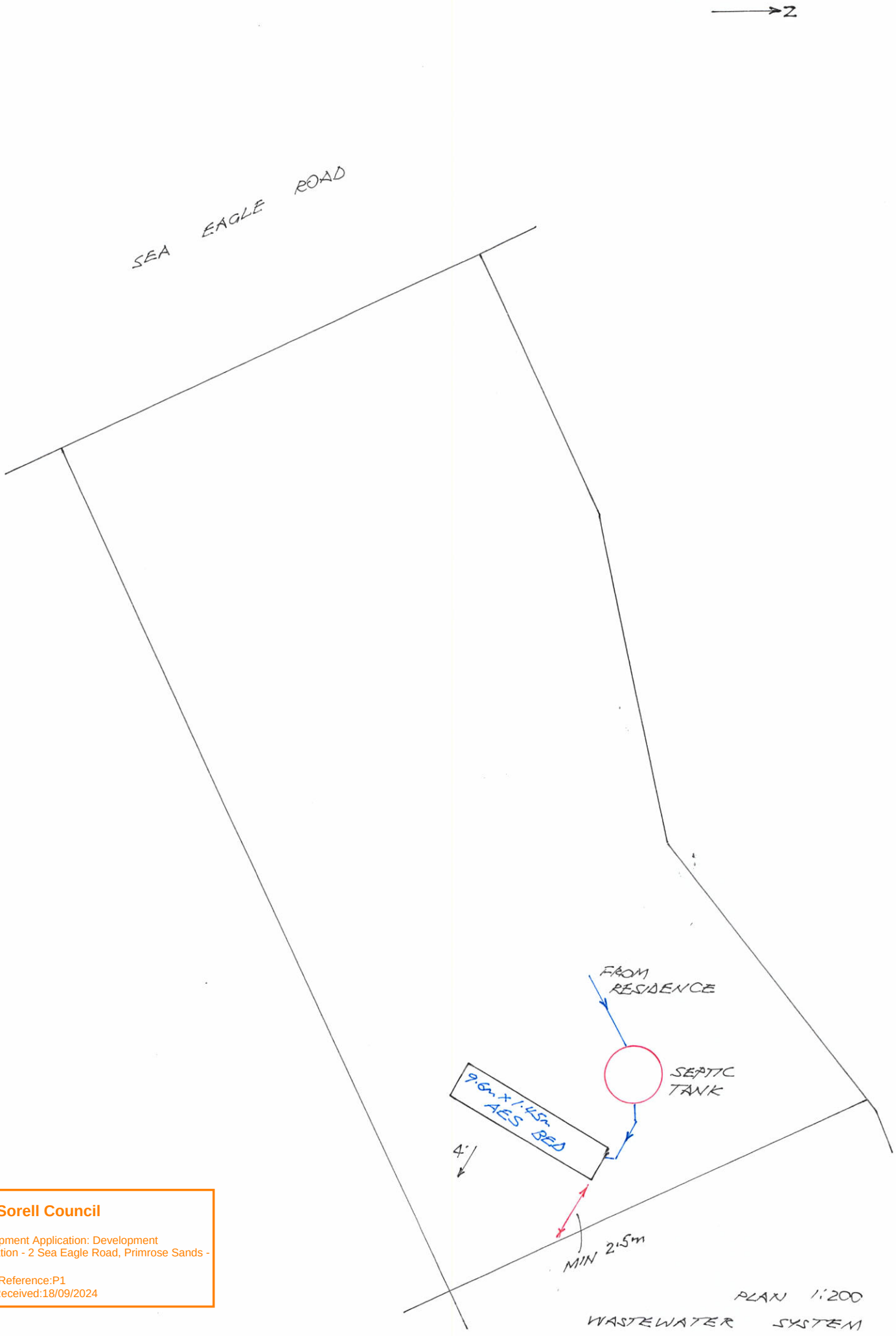
> The AES Calculator is a design aid to allow checking of the AES components, configuration and is a guide only. Site and soil conditions referencing AS1547 are calculated and designed by a Qualified Wastewater Designer.

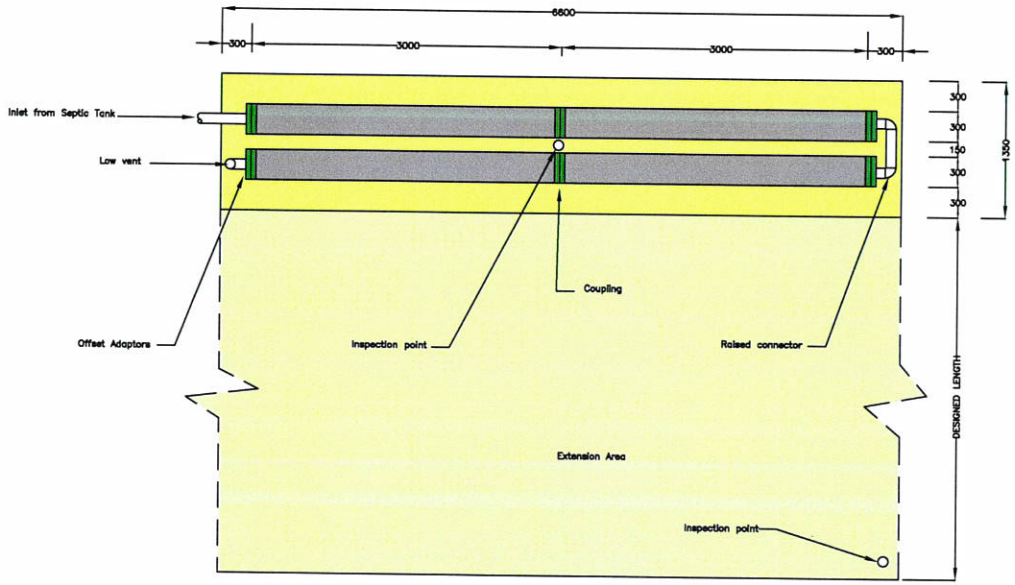
> Chankar Environmental accepts no responsibility for the soil evaluation, loading calculations or DLR entered by the designer for this calculator.

> AES pipes can be cut to length on site. They are supplied in 3 meter lengths only.

> AES ONLY supply AES components as detailed in the Bill of Materials.

> SEPTIC Tank & other components including SAND will need to be sourced from other suppliers. Refer to our WEBSITE www.enviro-septic.com.au OR 07 5474 4055





AES PIPE LAYOUT DETAILS

SCALE

10

30

ADVANCED ENVIRO - SEPTIC

OWNER / ENGAGED BY

LOT AND PLAN

N

AMENDMENTS

ISSUE	DATE	SUBJECT	AUTHORISED
A	02/022018	REVISION A	R.CRISP

CHANKAR ENVIRONMENTAL PTY LTD
T/A

QBCC LICENCE NUMBER
150 238 31

Phone: +61 7 5474 4055
Fax: +61 7 5335 1691
Email : designreview@enviro-septic.com.au
www.enviro-septic.com.au

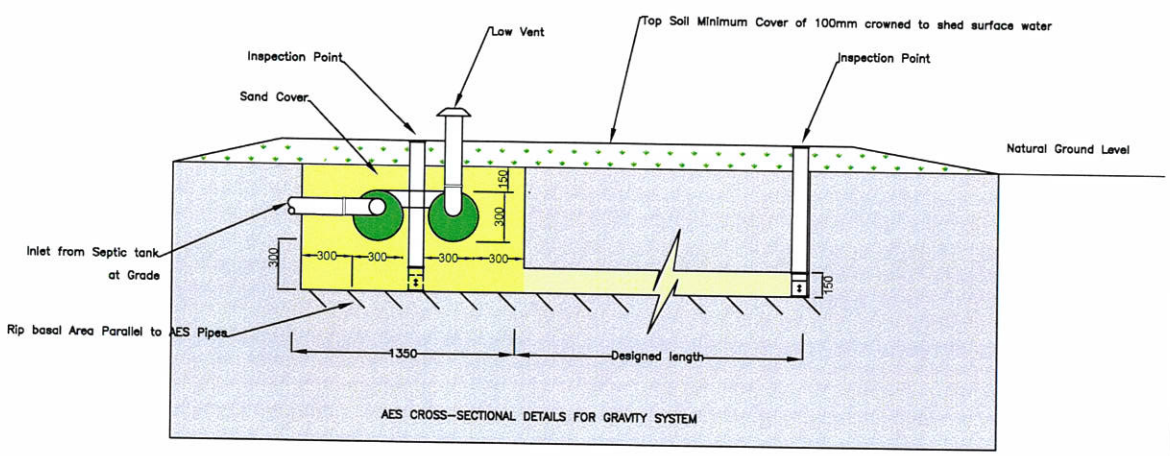
T.SHERPA
DESIGNER

DATE

ADVANCED ENVIRO-SEPTIC PIPE LAYOUT DETAILS FOR TWO ROWS TWO PIPES

SCALE
1:50 (A4)

PROJECT JOB NUMBER	REVISION	SHEET NO
AES - CHK	A	SL1



AES CROSS–SECTIONAL DETAILS FOR GRAVITY SYSTEM

SCALE

10

30

ADVANCED ENVIRO - SEPTIC

OWNER / ENGAGED BY

LOT AND PLAN

N

AMENDMENTS

ISSUE	DATE	SUBJECT	AUTHORISED
A	24/01/2018	REVISION A	R.CRISP

CHANKAR ENVIRONMENTAL PTY LTD
T/A
ADVANCED ENVIRO-SEPTIC
QBCC LICENCE NUMBER
150 238 31

Phone: +61 7 5474 4055
Fax: +61 7 5335 1691
Email : designreview@enviro-septic.com.au
www.enviro-septic.com.au

T.SHERPA
DESIGNER DATE

ADVANCED ENVIRO-SEPTIC CROSS SECTIONAL DETAILS FOR TWO ROWS GRAVITY SYSTEM

SCALE
1:30 (A4)

PROJECT JOB NUMBER	REVISION	SHEET NO
AES - CHK	A	SL1

SITE AND SOIL EVALUATION REPORT

Soil Category:

	Modified Emerson Test Required	No
1,…2,…3,…4,…5,…6	If Yes, Emerson Class No. …… ……	
Measured or Estimated Soil Permeability (m/d):	1.5m/d	
Design Loading Rate (DLR)	25 mm/day	
Geology:	Quaternary sediments	

Slope:	4 degrees
Drainage lines / water courses:	Nil
Vegetation:	Grass, ferns, minor reeds
Site History: (land use)	Vacant block
Aspect:	Southeast
Pre-dominant wind direction:	Northwest to southwest
Site Stability: Will on-site wastewater disposal affect site stability?	No
Is geological advice required?	No
Drainage/Groundwater:	Not Encountered
Depth to seasonal groundwater (m):	Not Encountered
Are surface or sub-surface drains required upslope of the land application area?	No – house drains will suffice
Date of Site Evaluation:	31/5/2024
Weather Conditions:	Fine

ADVANCED ENVIRO-SEPTIC™
"Always The First Option"

Advanced Enviro-Septic™ Installation Instructions

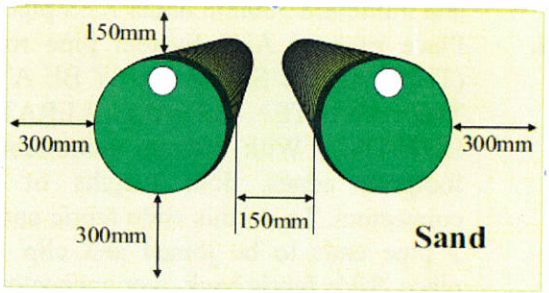
1. SET OUT

i. Set out should be in accordance with the design approved by Council.

ii. The length of each run of AES System pipe must be horizontal

iii. AES calculator footprint dimensions are based upon the DLR of the receiving soil and are the minimum foot print area.

iv. Any system extension must be to the down slope side unless the infiltration footprint is level.



AES Sand Coverage Minimums

2. EXCAVATION – (track machinery causes less compaction of the soil.)

i. Excavate as required leaving the base of excavation loose to aid infiltration. Strip and separate top soil for covering installation as per AS 1547:2012.
DO NOT damage infiltration area by driving equipment or walking on excavation prior to placement of sand layer. Refer to Appendix L Sec L7 of AS1547: 2012. Construction Techniques. Rip or scarify the infiltration area to a depth of 150 to 200mm minimum parallel to the AES pipe on all systems especially systems in Cat 4,5,6 soil with high clay content. (Refer to the design and report for this onsite installation)

"L7.1 Good construction technique AS 1547:2010
The following excavation techniques shall be observed so as to minimise the risk of damage to the soil:
(a) Plan to excavate only when the weather is fine;
(b) Avoid excavation when the soil has a moisture content above the plastic limit. This can be tested by seeing if the soil forms a 'wire' when rolled between the palms;
(c) During wet seasons or when construction cannot be delayed until the weather becomes fine, smeared soil surfaces may be raked to reinstate a more natural soil surface, taking care to use fine tines and only at the surface;
(d) When excavating by machine, fit the bucket with 'raker teeth' if possible, and excavate in small 'bites' to minimise compaction; and
(e) Avoid compaction by keeping people off the finished trench or bed floor.
In particular for trenches and beds:
(f) If rain is forecast then cover any open trenches, to protect them from rain damage;
(g) Excavate perpendicular to the line of fall or parallel to the contour of sloping ground; and
(h) Ensure that the inverts are horizontal.

CL7.1
Damage can be done by:
(a) Smearing, where the soil surface is smoothed, filling cracks and pores;
(b) Compacting, where the soil porosity is reduced; and
(c) Puddling, where washed clay settles on the base of the trench to form a relatively impermeable layer.
In particular, cohesive soils, or soils containing a significant quantity of clay, are susceptible to damage by excavation equipment during construction.

ii. If using a raised bed configuration ensure you have sufficient soil to cover entire mound or bring in enough sand to fill out batters prior to covering with topsoil etc. as per AS 1547:2012.

3. SYSTEM SAND – Course washed sand with less than 2mm silt (ASTM C-33)

i. Place minimum150mm system sand to extension area and minimum 300mm under AES pipe footprint area.

ii. Place runs of AES System pipe roughly in position (THE FABRIC SEAM MUST BE AT THE TOP AND THE WHITE BIO-ACCELERATOR AT THE BOTTOM.) With 300mm minimum clearance to all footprint edges. Join lengths of AES with AES connectors. To do this slide fabric and fibre back on the 2 pipe ends to be joined and clip AES connector in place. Slide fabric back over connector.

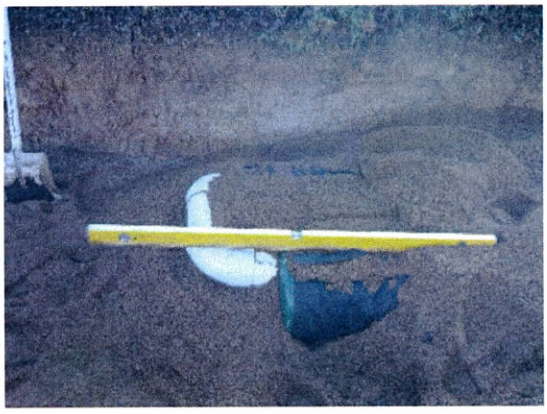
iii. Place offset adaptors on each run with the 100mm hole at the top.

iv. Ensure minimum 150mm between AES system pipes. This can be done with pegs, short pieces of 150mm pvc or reusable AES Spacer Plates. One side provides the 300m spacing required for minimum system sand. The opposite side must have a minimum of 300mm of system sand beyond the edge of the AES System pipe.

v. Place system sand around AES pipes ensuring they stay level and in position. Remove and progressively position spacer plates or PVC pipe until all system pipes are surrounded by system sand to the top. **Walk sand between rows to aid compaction.**

vi. EXTENSION SAND depth is a minimum of 150mm.

4. CONNECTING ROWS



i. Connect rows with 100mm pipe as required with a maximum 100mm extending into the AES system pipe. (Raised connection – After placing raised connection pipes the top of the PVC pipe must be level with the top of the AES pipe. Lift and pack with sand.) This ensures airflow is not restricted and buffer capacity is maximised.

5. VENTING

i. Ensure the system has a High Vent and a low vent. As per design. Low vent is a minimum 150mm above ground. Vents can be located any distance from the system provide they have no water traps that can block oxygen flow through the system. The High Vent must be 3 meters higher than the low vent.

ii. Pressurised or steep gravity systems will require a **Velosity Diffuser**

6. BACK FILLING

i. Ensure a minimum of150mm System sand covers the AES pipes and PVC pipe work.

ii. Refer to the Onsite design and Council approval and ensure that all diversions drains or site specific requirements are correctly installed.

iii. Back fill with natural soil and compact. System extensions may require compaction in a couple of layers depending on the depth.

iv. On mounds and down slopes strip vegetation and place fill evenly and level to all sides to avoid breakout from low points during high seasonal loadings.

v. Cover excavation area with topsoil creating a finished surface level 50 to 100mm higher than the natural surface level ensuring that water sheds off the land application area and does not pond, compact lightly and seed or grass when completed.

For Installation support phone 0754744055

ROCK SOLID GEOTECHNICS PTY LTD
Peter Hofto
163 Orielton Rd
Orielton
TAS 7172
0417960769
peter@rocksolidgeotechnics.com.au

Jodie Henricks
florider72@hotmail.com

19/6/2024

Loading Certificate for Onsite Wastewater System

2 Sea Eagle Road, Primrose Sands

1 System Capacity:

- (medium/long term) — 1-bedroom residence, 2 persons, 240 litres/day

2 Design Criteria Summary:

- Primary Treated Effluent — 3250 litre Dual-purpose septic tank.
- Soil Category — Class 2 sandy LOAM
- Land Application System — 6.6m long x 1.45m wide AES Bed

3 Reserve Area:

- Reserve LAA available if required.

4 Variation from design flows etc:

- The system should successfully assimilate additional peak loadings which may result from occasional social gatherings provided that this does not exceed use by more than 6 persons in a 24-hour period or more than 2 temporary resident visitors (ie. up to 4 persons total) for a period not exceeding 4 days. Visitors should be advised of the requirement to minimise time spent in showers, not running taps whilst cleaning teeth, and other common sense water conservation measures.

5 Consequences of overloading the system:

- Long term use by more than 2 residents or equivalent may result in overloading of the system, surfacing of effluent, public and environmental health nuisances, pollution of surface water etc.

6 Consequences of under-loading the system:

- Nil.

7 Consequences of lack of operation, maintenance and monitoring attention:

- The septic tank should be pumped at least every 3 years.

Peter Hofto
Rock Solid Geotechnics Pty Ltd

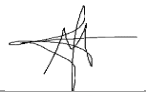
HYDRAULIC DESIGN REPORT

FE-24064 PERFORMANCE SOLUTION REPORT

Document Information

Title	Client	Document Number	Project Manager
2 Sea Eagle Road, Primrose Sands TAS 7173 Performance Solution Report	**Jodie Henricks**	FE_24064	**Manuri Alwis** *BEng (Hons)* *Civil Engineer*

Document Initial Revision

REVISION 00	Staff Name	Signature	Date
Prepared by	Manuri Alwis ***Civil Engineer***		15/08/2024
Reviewed by	Ash Perera ***Senior Hydraulic Engineer***		28/08/2024
Authorised by	Max W. Möller ***Principal Hydraulic Engineer***		28/08/2024

Document Revision History

Rev No.	Description	Reviewed by	Authorised by	Date

Flüssig Engineers – Level 4, 116 Bathurst Street, Hobart 7000, TASMANIA – Ph 03 6288 7704

INTRODUCTION

This report details the stormwater management strategies for the proposed development at **2 Sea Eagle Road, Primrose Sands TAS 7173.** The objective of the report is to demonstrate how stormwater runoff would be captured and conveyed from the subject site safely to the receiving drainage network while considering stormwater quantity management and the incorporation of dispersion trench and stormwater tank elements.

EXISTING CONDITIONS AND ASSUMPTIONS

The site covers an area of approximately 626 m², with proposed total impervious area of 165 m².

Stormwater from the site would be routed through the proposed conventional underground drainage system comprising of Grated Sumps and PVC Pipes, coupled with dispersion trench elements for on-site detention.

The stormwater management report is prepared in accordance with the design criteria listed below:

- The stormwater drainage system is designed using Bureau of Meteorology (BOM) published rainfall Intensity Frequency Duration (IFD) data as a minor / major system to accommodate the 5% AEP / 20 min storm events.
- The flow rate of stormwater leaving the site shall be designed so that it does not exceed the pre-developed flow rate for both the minor and major rain events.
- The total site discharges are modelled as described in *Storm Drainage Design in Small Urban Catchments,* a handbook for Australian practice by *Australian Rainfall and Runoff (ARR2019)*, Book 9 – Runoff in Urban Areas.

DETENTION COMPUTATIONS

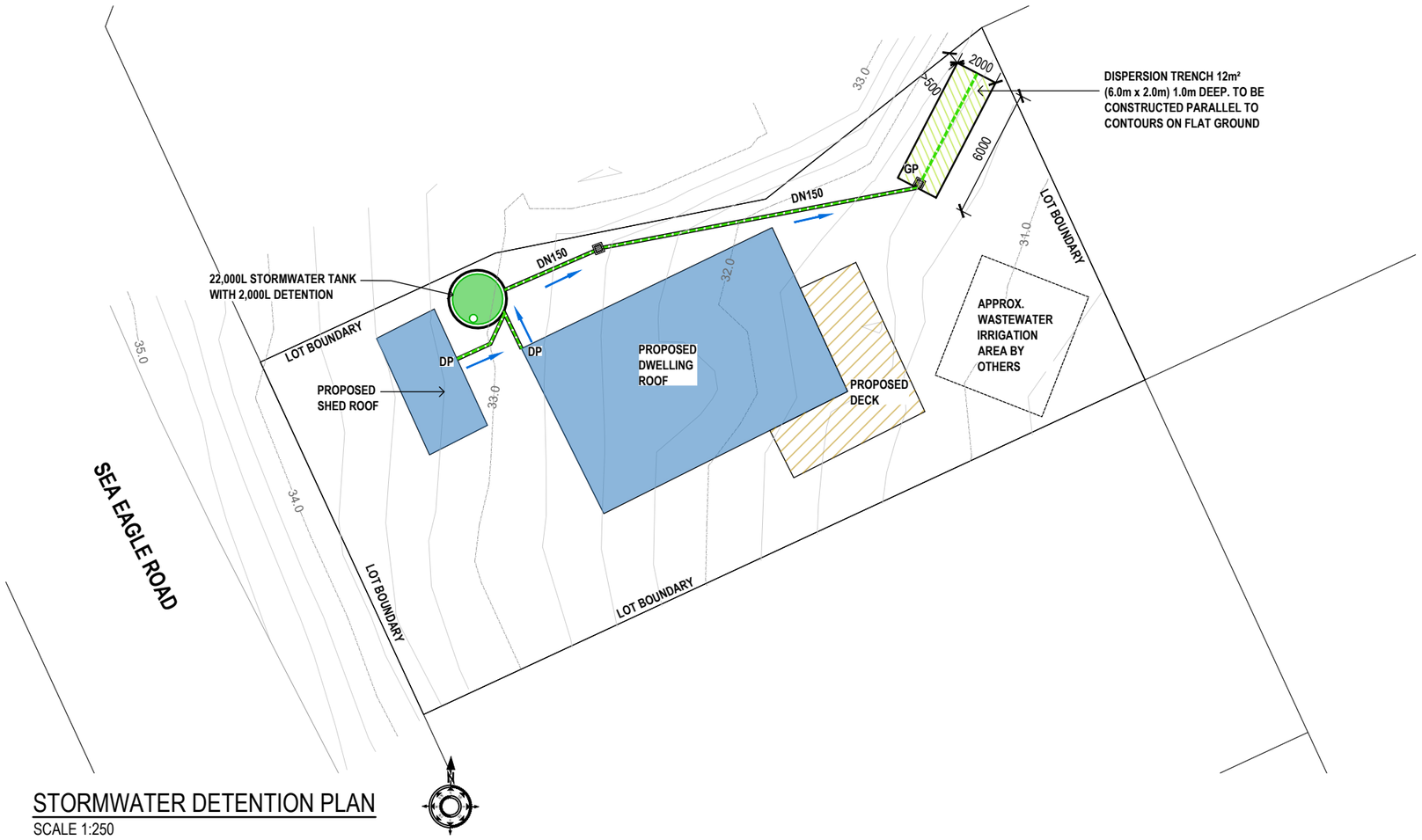
Detention calculations are provided in **Appendix B**

SUMMARY AND CONCLUSIONS

- The proposed 22,000L stormwater tank with 2,000L detention has been sized over a 20-minute storm duration for proposed roof area, and the tank overflow will be dispersed in a 12m² base (6m x 2m), 1.0m deep dispersion trench over a 20-minute storm duration. The detention required by deck are compensated within the roof detention calculation.
- A DN100 slotted PVC pipe with geotextile covering on top of aggregate is to be installed within the dispersion trench.
- The performance solution drawing is schematic only and must be read in conjunction with construction plans provided by others.
- The coefficient of timber/gravel is considered half impervious (C=0.5) and the total of 33m² timber decking area is included in the gravel category in the software (Structural toolkit) detention calculation.

APPENDIX A

STORMWATER CONCEPT DRAWING



STORMWATER DETENTION PLAN

SCALE 1:250

NEW SERVICES

- STORMWATER PIPE
- STORMWATER FLOW DIRECTION
- GRATED STORMWATER PIT. 450X450 CLASS A
  ACO GALVANISED HEELGUARD OR SIMILAR ENGINEER APPROVED
- 22,000L STORMWATER TANK

STORMWATER SERVICES NOTES:

1. ALL SITE SAFETY & MANAGEMENT PROCEDURES SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF STATE GROWTH SPECIFICATIONS:
   SECTION 168 OCCUPATIONAL HEALTH AND SAFETY
   & SECTION 176 ENVIRONMENTAL MANAGEMENT.
2. ALL PIPES UNDER TRAFFIC ABLE AREAS ARE TO BE BACK FILLED FULL DEPTH WITH 20 F.C.R. AND FULLY COMPACTED.
3. ALL STORM WATER PIPES TO BE PVC-U-SWJ CLASS "SN8" TO AS 1254 UNO.
4. ALL DRAIN AND TRENCH CONSTRUCTION SHALL COMPLY WITH THE LGAT STANDARD DRG TSD G01.
5. ANY EXCAVATED TRENCHES IN EXCESS OF 1.5M IN DEPTH ARE TO BE ADEQUATELY SHORED TO PREVENT COLLAPSE DURING WORKS.

PERFORMANCE SOLUTION COMPLIANCE NOTES:

AS 3500.3 - CL 7.10

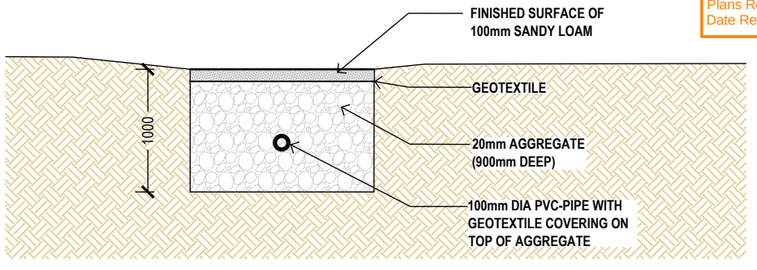
- 7.10.1 - OVERFLOW IS SAFE AND DOES NOT COMPROMISE FREEBOARD TO HABITABLE SPACES.

GENERAL

- AS/NZS 3500.3: PART 3 STORMWATER DRAINAGE AUSTRALIAN RAINFALL AND RUN-OFF VOLUME 8: URBAN STORMWATER MANAGEMENT
- AUSTRALIAN RUNOFF QUALITY - A GUIDE TO WATER SENSITIVE URBAN DESIGN
- STORM DRAINAGE DESIGN IN SMALL URBAN CATCHMENTS: A HANDBOOK FOR AUSTRALIAN PRACTICE
- WATER SENSITIVE URBAN DESIGN (WSUD) ENGINEERING PROCEDURE: STORMWATER
- WATER SERVICES ASSOCIATION OF AUSTRALIA CODE (WSAA).

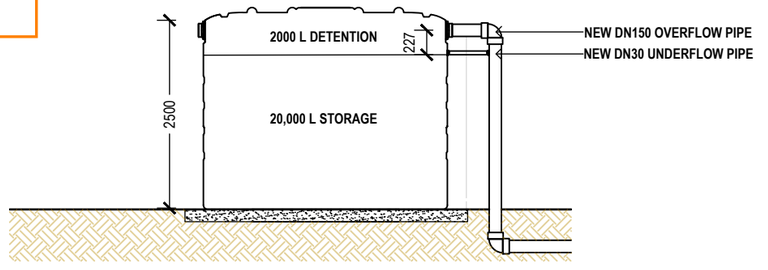
SITE AREA=626m²

- IMPERVIOUS ROOF AREA 132m²
- IMPERVIOUS DECK AREA 33m²



DISPERISON TRENCH CROSS SECTION TYPICAL

SCALE 1:50



STORAGE & DETENTION TANK CROSS SECTION TYPICAL

NTS

NOTE:

REPORT AND DESIGN TO BE READ IN CONJUNCTION WITH CONSTRUCTION PLANS BY OTHERS

REV:	DESCRIPTION:	BY:	DATE:

STATUS: CONSTRUCTION

flussig ENGINEERS
e: admin@flussig.com.au
p: (03) 6288 7704
w: www.flussig.com.au
a: 116 Bathurst St, Level 4 Hobart, 7000, TASMANIA

CLIENT: JODIE HENRICKS

PROJECT: PROPOSED NEW DWELLING

SITE: 2 SEA EAGLE ROAD, PRIMROSE SANDS TAS 7173

TITLE: PERFORMANCE SOLUTION DESIGN

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
AS SHOWN	16.08.2024	MA	MM

PROJECT NO:	DRAWING NO:	REVISION:
FE-24064	C-100	00

APPENDIX B

DETENTION COMPUTATIONS

STORMWATER DETENTION V5.05

Flussig Engineers

Location: **Primrose Sands TAS**
Site: **165m² with tc = 20 and tcs = 15 mins.**
PSD: **AEP of 5%, Above ground PSD = 0.62L/s**
Storage: **AEP of 5%, Above ground volume = 1.68m³**

Design Criteria

(Custom AEP IFD data used)

Location = Primrose Sands TAS
Method = E (A)RI 2001,A(E)P 2019

PSD annual exceedance probabiliy (APE) = 5 %
Storage annual exceedance probabiliy (APE) = 5 %

Storage method = A (A)bove,(P)ipe,(U)nderground,(C)ustom

Site Geometry

Site area (As) = 165 m² = 0.0165 Ha
Pre-development coefficient (Cp) = 0.30
Post development coefficient (Cw) = 0.90

Total catchment (tc) = 20 minutes
Upstream catchment to site (tcs) = 15 minutes

Coefficient Calculations

Pre-development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	0	1.00	0
Gravel	0	0.50	0
Garden	165	0.30	50
Total	165 m²		50

Cp = ΣArea*C/Total = 0.300

Post development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	132	1.00	132
Gravel	33	0.50	17
Garden	0	0.30	0
Total	165 m²		149

Cw = ΣArea*C/Total = 0.900

Permissible Site Discharge (PSD) (AEP of 5%)

PSD Intensity (I) = 43.1 mm/hr For catchment tc = 20 mins.
Pre-development (Qp = Cp*I*As/0.36) = 0.59 L/s
Peak post development (Qa = 2*Cw*I*As/0.36) = 3.56 L/s =(0.083 x I) Eq. 2.24

Storage method = A (A)bove,(P)ipe,(U)nderground,(C)ustom
Permissible site discharge (Qu = PSD) = 0.616 L/s

Above ground - Eq 3.8

$0 = PSD^2 - 2*Qa/tc*(0.667*tc*Qp/Qa + 0.75*tc+0.25*tcs)*PSD + 2*Qa*Qp$
Taking x as = PSD and solving
a = 1.0 b = -7.5 c = 4.2
PSD = $-b \pm \sqrt{(b^2-4ac)}/(2a)$
PSD = 0.616 L/s

Below ground pipe - Eq 3.3

$Qp = PSD*[1.6*tcs/\{tc*(1-2*PSD/(3*Qa))\}-0.6*tcs^{2.67}/\{tc*(1-2*PSDp/(3*Qa))\}^{2.67}]$
= 0.59
PSD = 0.611 L/s

Below ground rectangular tank - Eq 3.4

$t = tcs/(tc*(1-2*PSD/(3*Qa)))$ = 0.844
$Qp = PSD*[0.005-0.455*t+5.228*t^2-1.045*t^3-7.199*t^4+4.519*t^5]$
= 0.59
PSD = 0.593 L/s

Sorell Council
Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf
Plans Reference:P1
Date Received:18/09/2024

Design Storage Capacity (AEP of 5%)

Above ground (Vs) = $[0.5*Qa*td-[(0.875*PSD*td)(1-0.917*PSD/Qa)+(0.427*td*PSD^2/Qa)]]*60/10^3$ m^3 Eq 4.23

Below ground pipe (Vs) = $[(0.5*Qa-0.637*PSD+0.089*PSD^2/Qa)*td]*60/10^3$ m^3 Eq 4.8

Below ground rect. tank (Vs) = $[(0.5*Qa-0.572*PSD+0.048*PSD^2/Qa)*td]*60/10^3$ m^3 Eq 4.13

td (mins)	I (mm/hr)	Qa (L/s)	Above Vs (m^3)	Pipe Vs (m^3)	B/G Vs (m^3)
5	84.2	6.9	0.89		
16	49.0	4.0	1.46		
22	40.8	3.4	1.56		
28	35.3	2.9	1.62		
34	31.4	2.6	1.66		
39	29.0	2.4	1.67		
45	26.6	2.2	1.68		
51	24.7	2.0	1.68		
56	23.4	1.9	1.68		
62	22.1	1.8	1.67		

Table 1 - Storage as function of time for AEP of 5%

Type	td (mins)	I (mm/hr)	Qa (L/s)	Vs (m^3)
Above	49.7	25.1	2.1	**1.68**
Pipe				
B/ground				

Table 2 - Storage requirements for AEP of 5%

Frequency of operation of Above Ground storage

Qop2 = 0.75 Cl 2.4.5.1

Qp2 =Qop2*Qp1 (where Qp1=PSD) = 0.46 L/s at which time above ground storage occurs

I = $360*Qp2/(2*Cw*As*10^3)$ = 5.6 mm/h Eq 4.24

Period of Storage

Time to Fill:

Above ground (tf) = td*(1-0.92*PSD/Qa) Eq 4.27

Below ground pipe (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2

Below ground rect. tank (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2

Time to empty:

Above ground (te) = $(Vs+0.33*PSD^2*td/Qa*60/10^3)*(1.14/PSD)*(10^3/60)$ Eq 4.28

Below ground pipe (te) = $1.464/PSD*(Vs+0.333*PSD^2*td/Qa*60/10^3)*(10^3/60)$ Eq 4.32

Below ground rect. tank (te) = $2.653/PSD*(Vs+0.333*PSD^2*td/Qa*60/10^3)*(10^3/60)$ Eq 4.36

Storage period (Ps = tf + te) Eq 4.26

Type	td (mins)	Qa (L/s)	Vs (L/s)	tf (mins)	te (mins)	Ps (mins)
Above	49.7	2.1	1.7	36.1	57.5	93.6
Pipe						
B/ground						

Table 3 - Period of Storage requirements for AEP of 5%

Orifice

Permissible site discharge (Qu=PSD) = 0.62 L/s (Above ground storage)

Orifice coefficient (CD) = 0.61 For sharp circular orifice

Gravitational acceration (g) = 9.81 m/s^2

Maximum storage depth above orifice (H) = 227 mm

Orifice flow (Q) = CD*Ao*√(2*g*H)

Therefore:

Orifice area (Ao) = 479 mm^2

Orifice diameter (D = √(4*Ao/π)) = 24.7 mm

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf
Plans Reference:P1
Date Received:18/09/2024

Dispersion Trench

Hydrology		
A = total impervious area collected	165	sqm
C = coefficient	0.9	
ARI = Annual Reccurence Interval	20	yr

Ground Conditions		
Hydraulic conductivity K (absorption rate)	1.0417	mm/min
Adjusted rate (15% clogging factor)	0.8854	mm/min

Trench Design		
Length, L	6	m
Width, B	2	m
Depth, h	1	m
Base area, BA	12	sqm
Void space	35%	
Trench Storage	4.2	cum
	4200.00	L

Detention tank data		
Tank storage	2.00	cum
Tank Underflow	0.62	L/s
Tank Underflow	37.20	L/m
Total Available storage	6.2	cum
	6200	L

Final Check			
Criteria	**Requirement (L)**	**Design(L)**	**Check**
Detention	1,680	6200	**OK**
Trench capacity for underflow	532	4200	**OK**

Checking storms

	Duration (min)	Intensity (mm/hr)	Vol in System(L)	Vol in Trench (L)	Vol out Trench (L)	Storage total System (L)	Storage Trench (L)	Hours to empty Trench
5Mins	5	84.2	1042	186	53	**989**	**133**	0
6Mins	6	79.94	1187	223	64	**1123**	**159**	0
10Mins	10	62.9	1557	372	106	**1451**	**266**	1
20Mins	20	43.1	2133	744	213	**1921**	**532**	1
30Mins	30	33.9	2517	1116	319	**2198**	**797**	2
1Hr	60	22.5	3341	1341	638	**2704**	**704**	2
2Hrs	120	15.5	4604	2604	1275	**3329**	**1329**	4
3Hrs	180	12.8	5702	3702	1913	**3790**	**1790**	6
6Hrs	360	9.45	8420	6420	3825	**4595**	**2595**	10
12Hrs	720	6.97	12421	10421	7650	**4771**	**2771**	16
24Hrs	1440	4.83	17214	15214	15300	**1914**	**-86**	24
48Hrs	2880	2.99	21313	19313	30600	**-9287**	**-11287**	30
72Hrs	4320	2.12	22667	20667	45900	**-23233**	**-25233**	32

Prepared for

Jodie Henricks

2 Sea Eagle Road
Primrose Sands

FLOOD HAZARD REPORT

FE_24064

28th August 2024

flüssig Engineers

L4/ 116 BATHURST ST

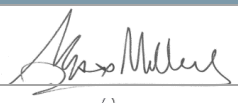
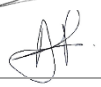
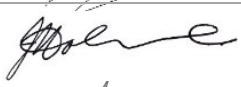
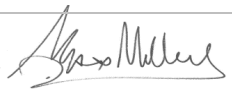
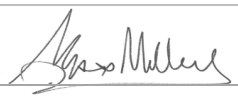
HOBART TASMANIA 7000

ABN: 16 639 276 181

Document Information

Title	*Client*	*Document Number*	*Project Manager*
2 Sea Eagle Road, Primrose Sands, Flood Hazard Report	**Jodie Henricks**	FE_24064	Max W. Möller *Principal Hydraulic Engineer*

Document Initial Revision

REVISION 00	Staff Name	Signature	Date
Prepared by	Max W. Moller ***Principal Hydraulic Engineer***		16/08/2024
Prepared by	Ash Perera ***Hydraulic Engineer***		16/08/2024
Prepared by	Christine Keane ***Senior Water Resources Analyst***		16/08/2024
GIS Mapping	Damon Heather ***GIS Specialist***		23/08/2024
Reviewed by	John Holmes ***Senior Engineer***		26/08/2024
Reviewed by	Max W. Möller ***Principal Hydraulic Engineer***		28/08/2024
Authorised by	Max W. Moller ***Principal Hydraulic Engineer***		28/08/2024

Rev No.	Description	Prepared by	Authorised by	Date

Contents

List of Tables

List of Figures

1. Introduction

Flüssig Engineers has been engaged by **Jodie Henricks** to undertake a site-specific Flood Hazard Report for the development at 2 Sea Eagle Road, Primrose Sands in the **Sorell Council** municipality. The purpose of this report is to determine the flood characteristics on the existing and post-development hazard scenarios for the 1% AEP plus climate change, for the purpose of development.

1.1 Development

The proposed development consists of a residential dwelling, a shed and a gravel driveway. The proposed dwelling covers approximately 112 m^2 of the lot, while the shed covers approximately 20 m^2 of the lot. The 626 m^2 site is currently vacant.

1.2 Objectives and Scope

This report is to assess the proposed development at 2 Sea Eagle Road, Primrose Sands under C12.0 Flood Prone Areas Hazard Code of the Tasmanian Planning Scheme 2021- Sorell (TPS 2021). The objectives of this study are:

- Provide an assessment of the site's flood characteristics under the combined 1% AEP plus climate change (CC) scenario.
- Provide comparison of flooding for post-development against acceptable solution and performance criteria.
- Provide flood mitigation recommendations for a potential future development, where appropriate.

1.3 Limitations

This study is limited to the objectives of the engagement by the clients, the availability and reliability of data, and including the following:

- The flood model is limited to a 1% AEP + CC worst case temporal design storm.
- All parameters have been derived from best practice manuals and available relevant studies (if applicable) in the area.
- All provided data by the client or government bodies for the purpose of this study is deemed fit for purpose and has not been checked for accuracy.
- The study is to determine the effects of the new development on flooding behaviour and should not be used as a full flood study outside the specified area without further assessment.

1.4 Relevant Planning Scheme Requirements

This report addresses the Tasmanian Planning Scheme codes C12.5.1 and C12.6.1 of the Flood Prone Areas Hazard Code of which the objective is to ensure that risk from riverine, watercourse or inland flooding is appropriately managed and takes into account the use of the buildings. Specific details of this code and how this report addresses these requirements is shown in Table 7 and Table 8.

2. Model Build

2.1 Overview of Catchment

The contributing catchment for 2 Sea Eagle Road, Primrose Sands is approximately 4.5 ha stretching from the local top 400 m west of the site to the development site with an average slope of 10-12%.

The land use of the catchment is Low Density Residential and Rural with the specific site being listed as Low Density Residential. Figure 1 below outlines the approximate contributing catchment for the site at 2 Sea Eagle Road, Primrose Sands.

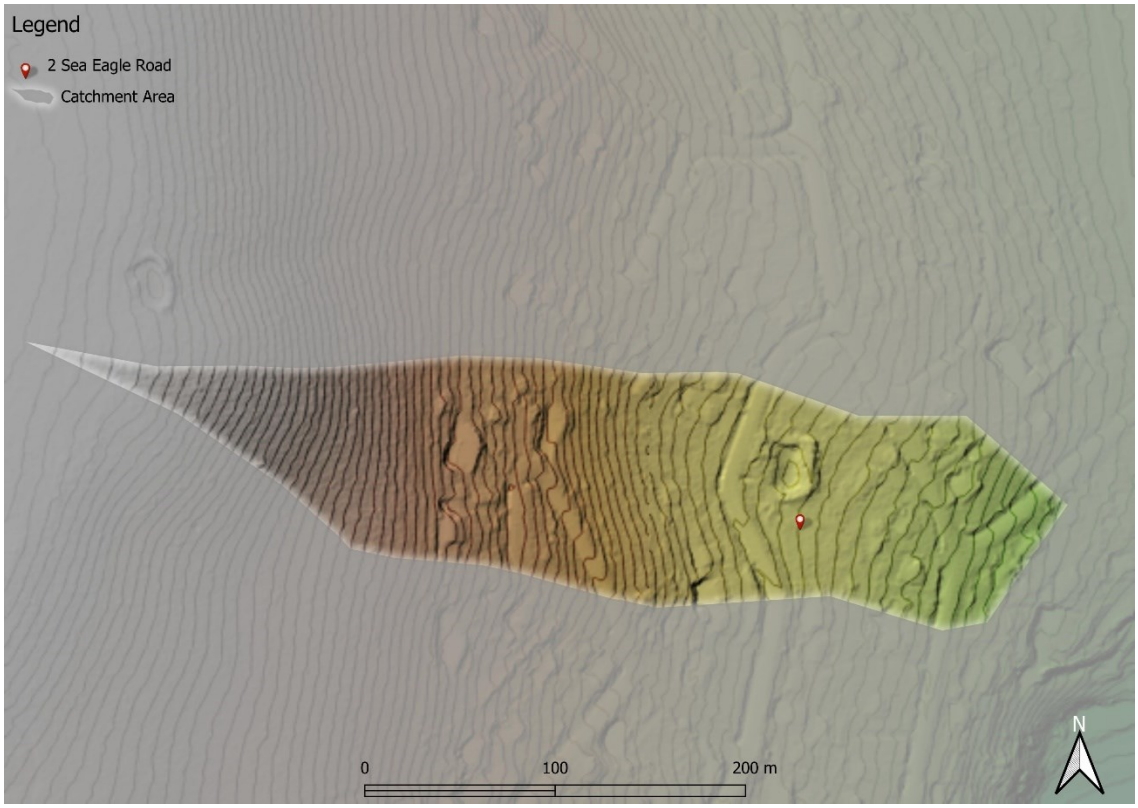


Figure 1. Contributing Catchment, 2 Sea Eagle Road, Primrose Sands

2.2 Hydrology

The following Table 1 states the adopted hydrological parameters for the RAFTS catchment, as per best practice guidelines.

Table 1. Parameters for RAFTS catchment

Catchment Area (ha)	Initial Loss Perv/imp (mm)	Continuing Loss Perv/imp (mm/hr)	Manning's N pervious	Manning's N impervious	Non-linearity factor
4.5	29/1	3.7/0.0	0.045	0.02	-0.285

2.2.1 Design Rainfall Events

Figure 2 shows the box and whisker output of the model run. The model shows that the 1% AEP 10-min storm temporal pattern 8 was the worst-case median storm. Therefore, this storm event was used within the hydraulic model.

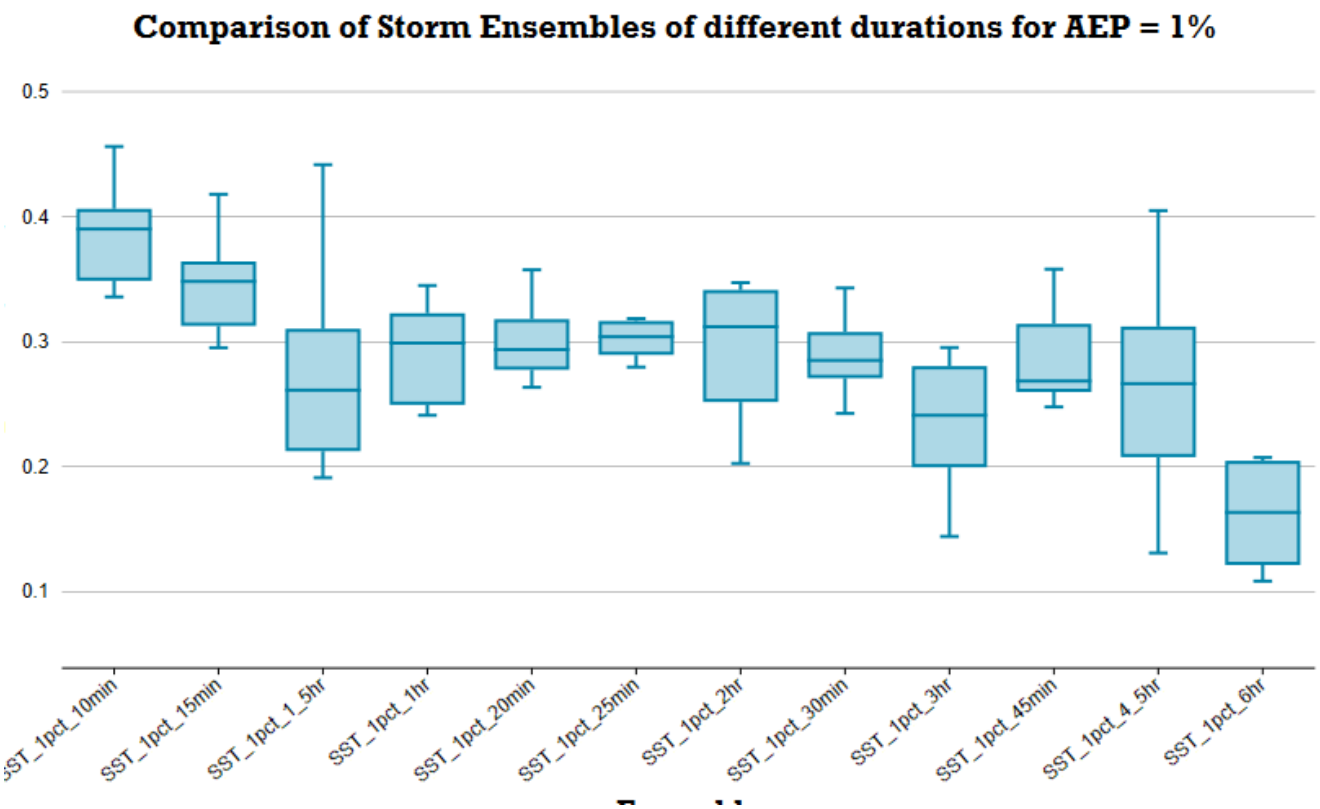


Figure 2. 1% AEP Flood Event Model, Box and Whisker Plot

2.2.2 Climate Change

As per ARR 2019 Guidelines, for an increase in rainfall due to climate change at 2100, it is recommended the use of RCP 8.5. However, ARR 2019 recommends that this figure be used in lieu of more local data being available.

The base scenario of the Climate Futures Tasmania (2010) study was revised following the ARR 2019 Australasia Climate Change study (undertaken by the University of Tasmania), resulting in the original increase in rainfall being reduced to 14.6% in cooler climates (Southern Tasmania). Table 2 shows the ARR 8.5 increase of 16.3% that has been adopted by Sorell Council and therefore used within the model.

Table 2. Climate Change Increases

Catchment	CFT increase @ 2100	ARR 8.5 increase @ 2100
South East Tasmania	14.6%	16.3%

2.2.3 Calibration/Validation

This catchment has no stream gauge to calibrate the model against a real-world storm event. Similarly, there is little historical information available, and limited available past flood analysis undertaken to validate against the flows obtained in the model.

2.3 Hydraulics

2.3.1 Survey

The 2D surface model was taken from a combination of Greater Hobart LiDAR 2013 (Geoscience Australia). For the purposes of this report, 1m cells are enough to capture accurate flow paths. The DEM with hill shading can be seen below (Figure 3).

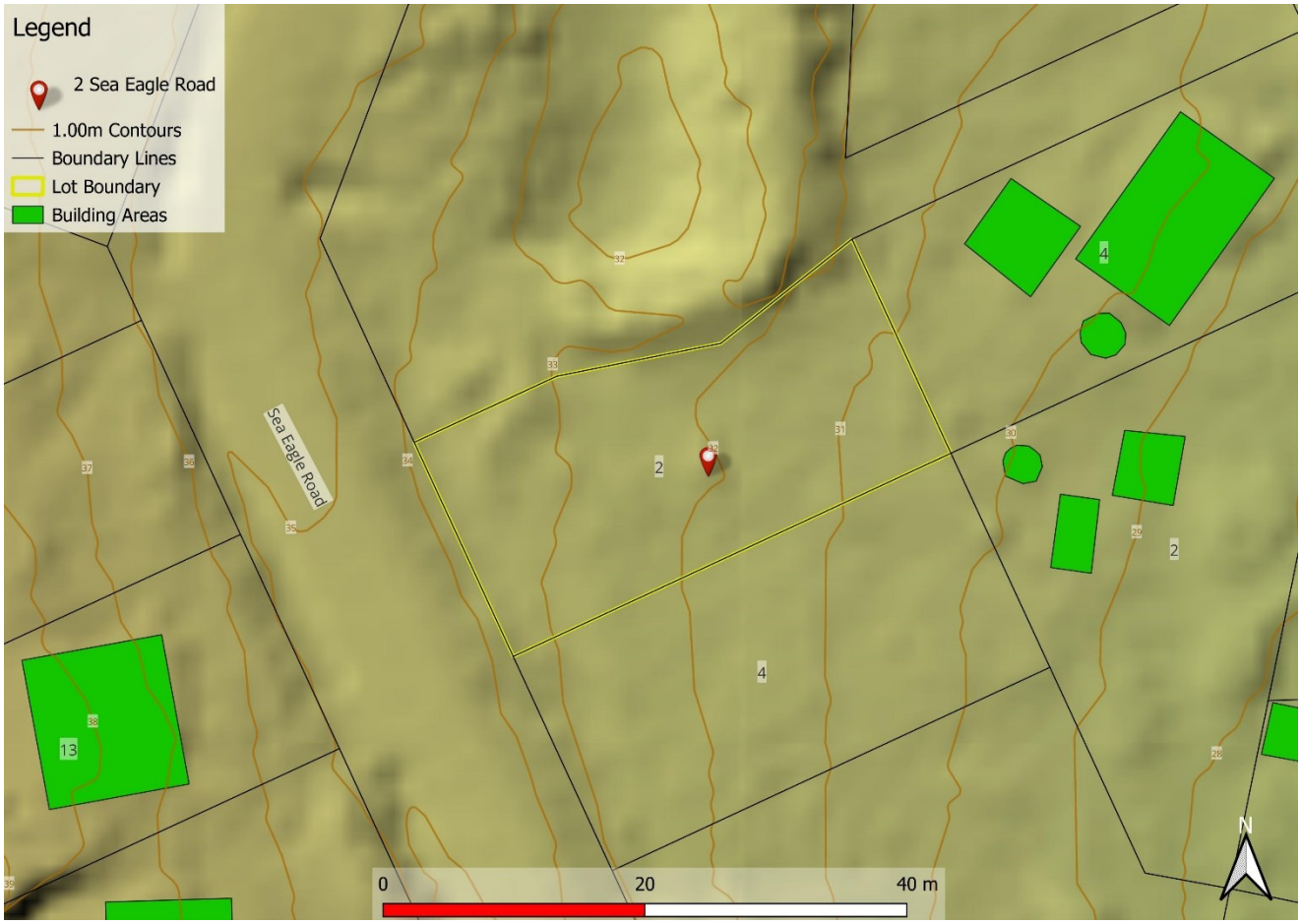


Figure 3. 1m DEM (Hill shade) of Lot Area

2.3.2 Roughness (Manning's n)

Roughness values for this model were derived from the ARR 2019 Guidelines. The Manning's values are listed in Table 3.

Table 3. Manning's Coefficients (ARR 2019)

Land Use	Roads	Open Channel	Rural	Residential	Parks	Buildings	Piped Infrastructure
Manning's n	0.018	0.035	0.04	0.045	0.05	0.3	0.013

2.3.3 Buildings

Buildings were represented as mesh polygons with a high Manning's n value within the model. Buildings with unknown floor levels were set with a minimum 300mm above ground.

2.4 Development Runoff

Stormwater runoff from the development site has been assessed under pre- and post-development models to determine the potential impact the development at 2 Sea Eagle Road, Primrose Sands has on the immediate local flows. As per planning guidelines it is a requirement that this does not have a negative impact from pre to post development.

Site Characteristics for the pre- and post-development model are summarised in Table 4.

Table 4. Site Characteristics

	Pre-Development		Post-Development	
Land Use	**Area (m²)**	**% of total**	**Area (m²)**	**% of total**
Total Impervious	0	0	132	21
Total Pervious	626	100	494	79

3. Model Results

The result of 1% AEP + CC were run through the pre-development and post-development model scenarios to compare the changes to flooding onsite and to surrounding properties. It can be seen from the pre-development model runs (Figure 4), that there is a shallow overland flood path flowing from the northern lot boundary with maximum flood depths of 0.07 m observed at the cross -sectional results line. The maximum depth in the pre-development scenario within the lot is 0.09 m observed at the centre of the lot.

Figure 5 shows the effect that the inclusion of the proposed development has on the overland flood flow. While there is no significant increase in flood depth overall, a slight increase of up to 0.1 m has been observed at the centre of the lot. This minor depth increase is localized and occurs adjacent to the proposed dwelling along the northern boundary of the lot. Importantly, the overland flow path remains consistent with the pre-development scenario from this point onward.

The maximum flood depth observed at the proposed dwelling is 100 mm at 32.37 mAHD.

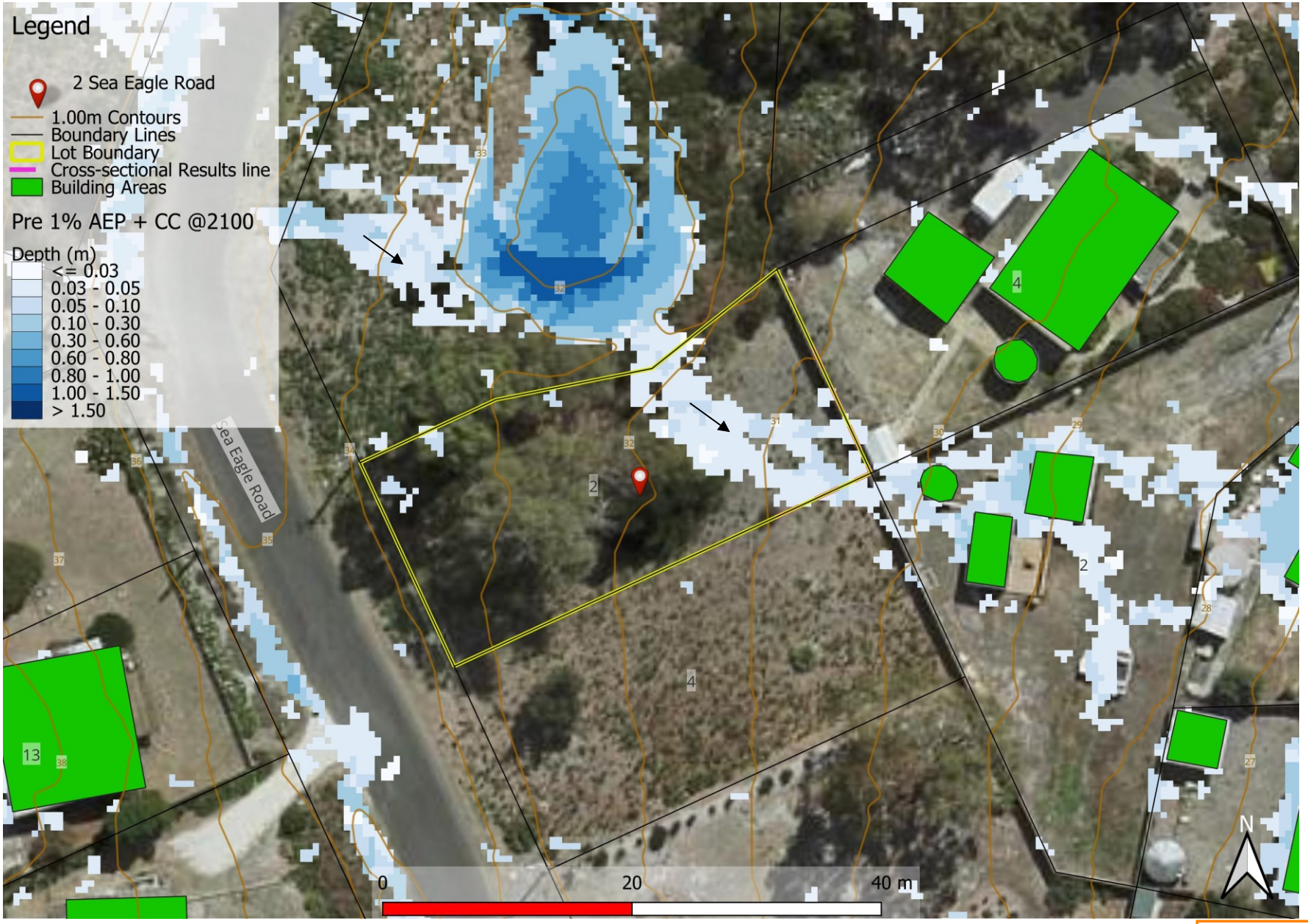


Figure 4. Pre-Development 1% AEP + CC Depth

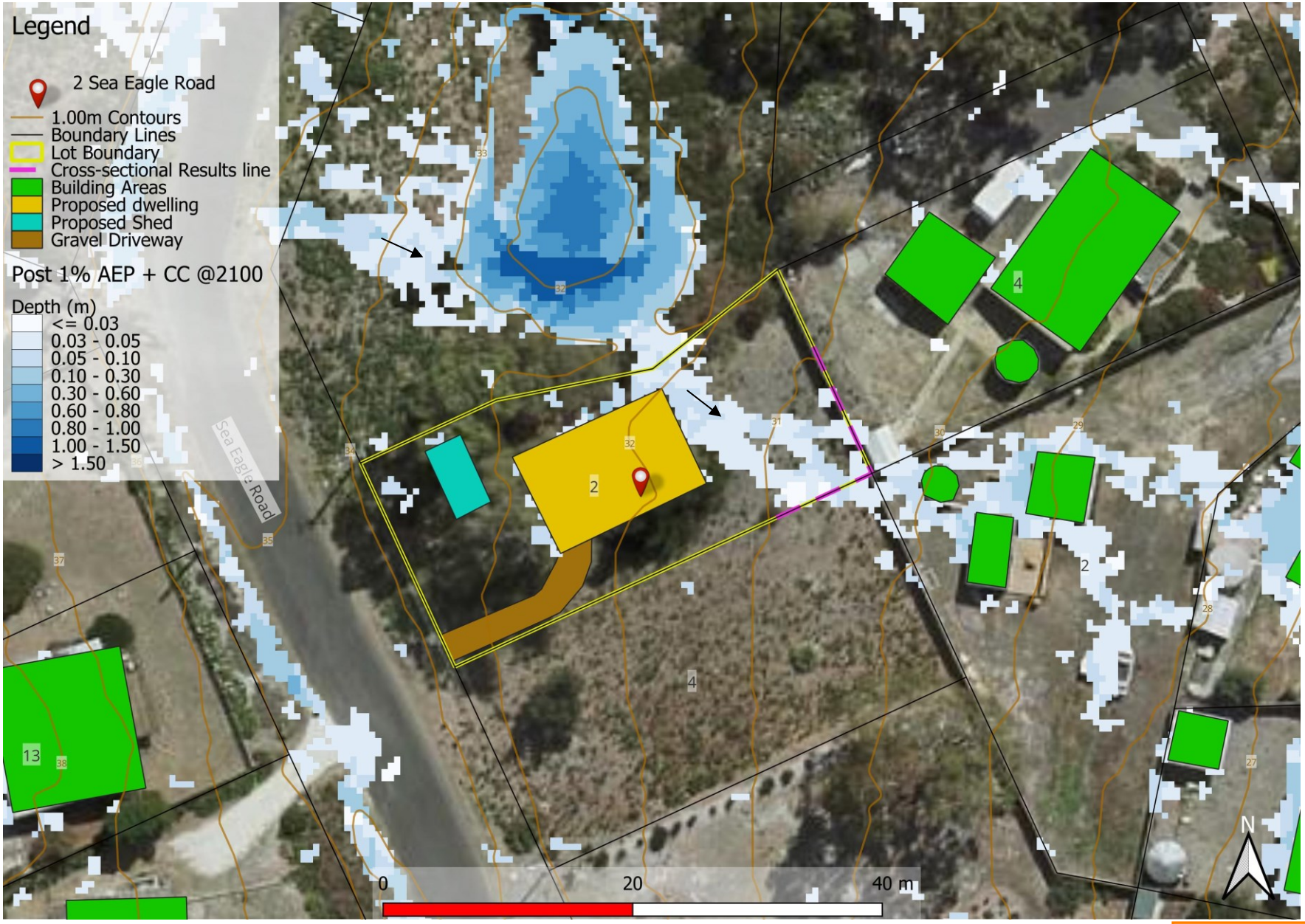


Figure 5. Post-Development 1% AEP + CC including Depth

3.1 Displacement of Overland Flow on Third Party Property

Post-development flows in Figure 5 show that when compared against pre-development in Figure 4, there is no increase in flood depths on adjacent properties to the south and east of the development lot, with the overland flow continuing towards the natural overland flow path. The lots to the south and east are already affected by this overland flood path, with no observed increase in flood depths from the proposed development.

Therefore, it can be stated that the development does not have any measurable effect on flooding on third party property.

3.2 Development Effects on Flooding

The proposed dwelling is within the natural overland flow path but has no adverse effect on flooding during a 1% AEP storm event, both within the lot and on surrounding areas. Velocities and depths in the post-development scenario are within the lowest hazard band, and therefore the post development models show that there is no increase to the risk rating on surrounding properties or infrastructure.

3.3 Development Effects on Stormwater Discharge

Figure 6 below shows the discharge hydrograph from the property boundary for the overland flow through the development area. The graph was captured in the model for both pre- and post-development runs and combined in graph format to demonstrate the change in net discharge. It demonstrates the discharge showing no change from the pre-development to post-development scenarios, while velocity shows an increase of 0.01 m/s from 0.40 m/s to 0.41 m/s.

The minor increases do not contribute to an increase in the hazard rating within the lot and to surrounding properties. As both the discharge and velocity in the pre-development scenario is relatively low, the slight increase in velocity is likely due to model sensitivity and has no real impact on discharge from the lot following development.

It is therefore deemed that the post development model does not increase net discharge.

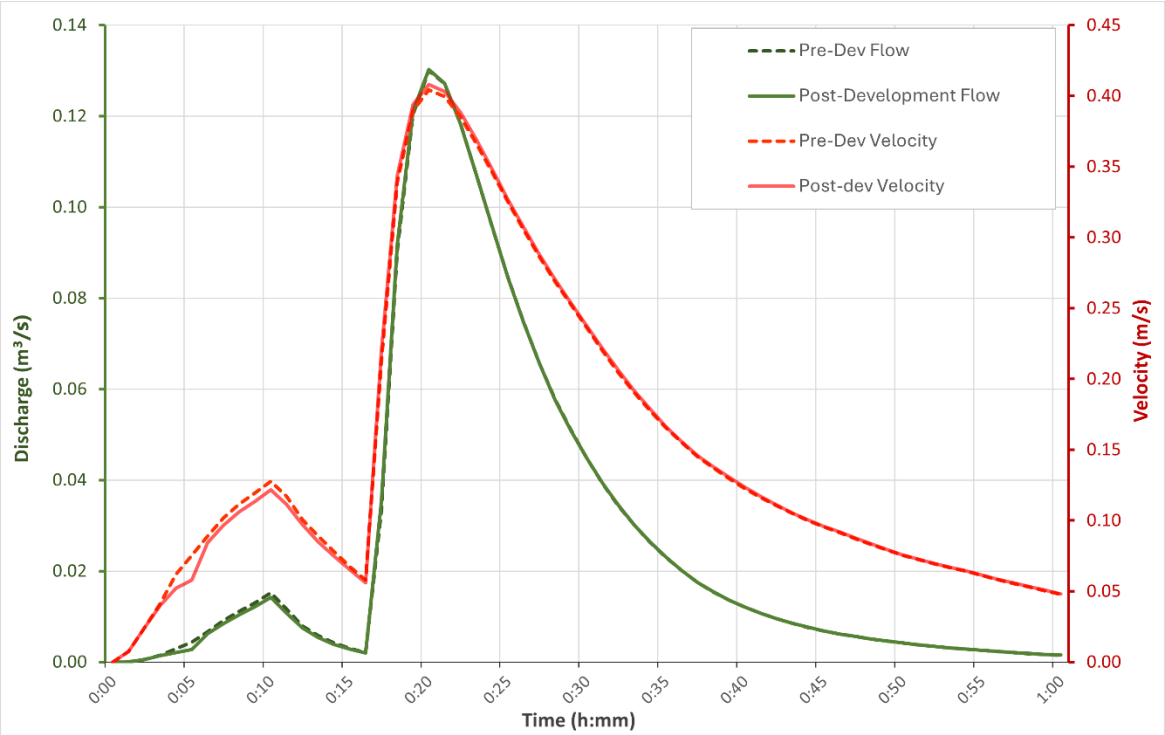


Figure 6. Pre and Post development net discharge and velocity 1% AEP + CC

3.4 New Habitable Building

To meet the performance criteria of the Building Regulations S.54, the construction of a new habitable building is required to have a habitable floor level >300mm above the >1% AEP + CC flood level. The new development at 2 Sea Eagle Road, Primrose Sands must meet this regulation as shown in Table 5. (The floor level >1% AEP + CC flood level + 300mm does not apply for non-habitable areas).

Table 5. Habitable Floor Construction Levels

2 Sea Eagle Road	1% AEP +CC flood level (mAHD)	Minimum Floor Level required (mAHD)
Habitable floor	32.37	32.67

As shown above, the finished floor level must be at 32.67 mAHD to meet the requirements of the Building Regulations S.54.

3.5 Model Summary

Table 6. Pre-development and post-development at the cross-sectional line

	Pre-development	Post-development	Net Change
Depth (m)	0.07	0.07	-
Velocity (m/s)	0.40	0.41	+0.01
Discharge (m^3/s)	0.13	0.13	-

4. Flood Hazard

Under existing conditions prior to development, the proposed location of the building is subject to be inundated to < 0.07 m flood depth and < 0.40 m/s velocity. This places the hazard rating as adopted by Australian Flood Resilience and Design Handbook as a maximum H1 – *Generally safe for people, vehicles and buildings* as shown in Appendix A – Hazard maps.

The post-development scenario sees the depth at the lot boundary showing no change from the pre-development level and the velocity showing a slight increase of 0.01 m/s which has no effect on the hazard rating that remains within the lowest hazard band of H1 for the lot and surrounding properties.

As this study does not extend to the public access roads we cannot comment on the accessibility to the site, only within the site. Therefore, this report would advise that residents and visitors remain inside in the event of a flood unless instructed by emergency services.

A summary of the hazard ratings is shown in Figure 7.

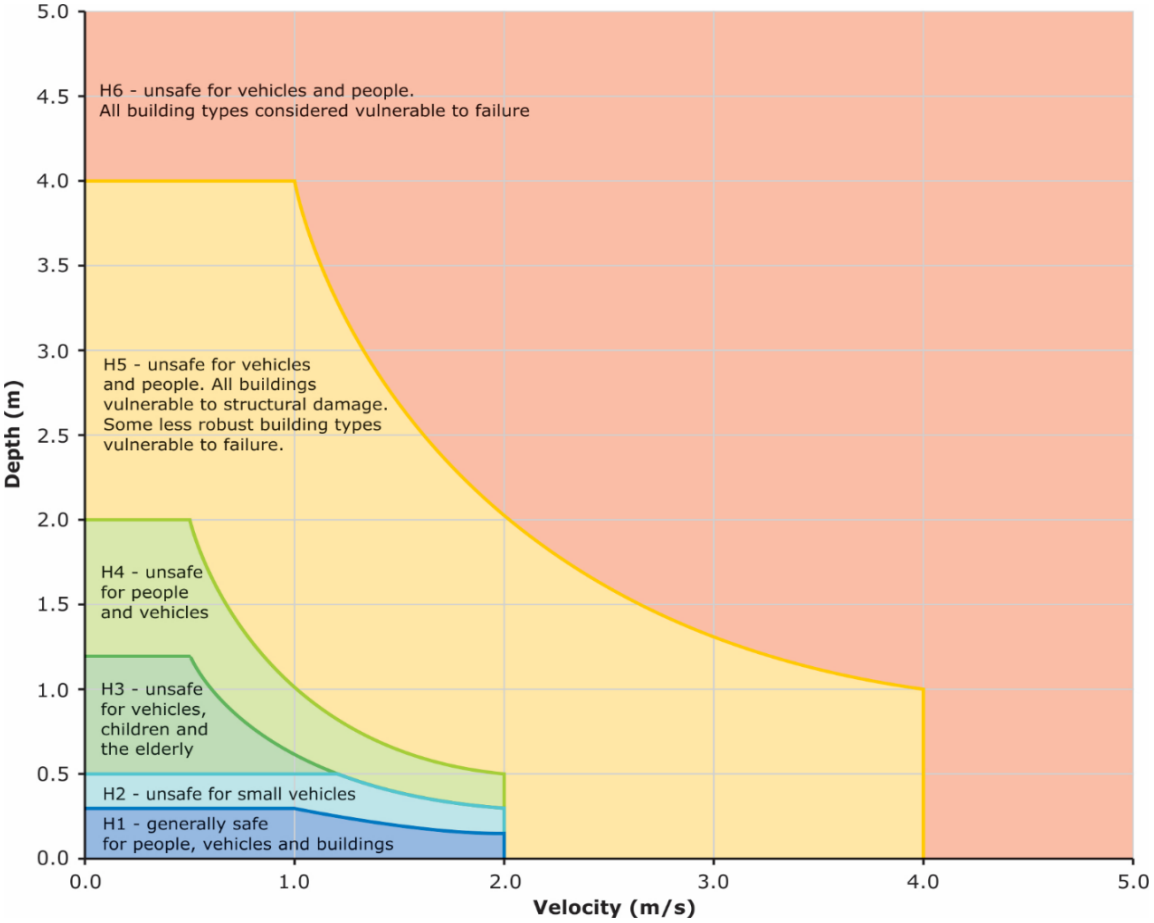


Figure 7. Hazard Categories Australian Disaster and Resilience Handbook

4.1 Tolerable Risk

The lot at 2 Sea Eagle Road, Primrose Sands is susceptible to a shallow, slow-moving flood plain flow, with the majority of the immediate surrounding region classified low (H1) hazard rating in the 1% AEP + climate change event. The hazard remains at H1 in both the pre development and the post development scenario.

Even at minor velocity and depths during a storm event, erosion and debris movement nevertheless pose a threat. If the recommendations in this report are implemented, the proposed structure, which is intended to be a habitable class 1a structure with a 50-year asset life (BCA2022), can achieve a tolerable risk of flooding over its asset life.

Table 7. Tasmanian Planning Scheme – Sorell summary C12.5.1

C12.5.1 Uses within a flood prone hazard area			
Objectives: That a habitable building can achieve and maintain a tolerable risk from flood			
Performance Criteria			
P1.1		**P1.1**	
A change of use that, converts a non-habitable building to a habitable building, or a use involving a new habitable room within an existing building, within a flood-prone hazard area must have a tolerable risk, having regard to:		Response from flood report	
(a)	the location of the building;	(a)	Proposed dwelling in a lot that lays within a shallow, relatively slow-moving flood inundation area.
(b)	the advice in a flood hazard report;	(b)	Assuming recommendations of this report are implemented, no additional flood protection measures required for the life expectancy of the building.
(c)	any advice from a state authority, regulated entity or a council;	(c)	N/A
P1.2		**P1.2**	
A flood hazard report also demonstrates that:		Response from flood report	
(a)	any increase in the level of risk from flood does not require any specific hazard reduction or protection measures;	(a)	No increase in level of risk from pre-development scenario.
(b)	the use can achieve and maintain a tolerable risk from a 1% annual exceedance probability flood event for the intended life of the use without requiring any flood protection measures	(b)	Maximum hazard rating at the proposed development is H1 in both pre-development and post-development scenarios.

Table 8. Tasmanian Planning Scheme – Sorell summary C12.6.1

C12.6.1 Building and works within a flood prone area			
Objective: (a) building and works within a flood-prone hazard area can achieve and maintain a tolerable risk from flood; and, (b) buildings and works do not increase the risk from flood to adjacent land and public infrastructure.			
Performance Criteria			
P1.1		**P1.1**	
Buildings and works within a flood-prone hazard area must achieve and maintain a tolerable risk from a flood, having regard to:		Response from flood report	
(a)	the type, form, scale and intended duration of the development;	(a)	Proposed dwelling
(b)	whether any increase in the level of risk from flood requires any specific hazard reduction or protection measures;	(b)	Assuming recommendations of this report are implemented along with the recommended finished floor levels, no additional flood protection measures required for the life expectancy of a habitable building.
(c)	any advice from a State authority, regulated entity or a council; and	(c)	N/A
(d)	the advice contained in a flood hazard report.	(d)	Flood report and recommendations provided within.
Performance Criteria			
P1.2		**P1.2**	
A flood hazard report also demonstrates that the building and works:		Response from Flood Report	
(a)	do not cause or contribute to flood on the site, on adjacent land or public infrastructure; and	(a)	No significant increase to flow and velocity from proposed dwelling.
(b)	can achieve and maintain a tolerable risk from a 1% annual exceedance probability flood event for the intended life of the use without requiring any flood protection measures.	(b)	Assuming recommendations of this report the proposed site and dwellings can achieve a tolerable risk to the 1% AEP storm event for the life expectancy of the building.

5. Conclusion

The Flood Hazard Report for 2 Sea Eagle Road, Primrose Sands development site has reviewed the potential development flood scenario.

The following conclusions were derived in this report:

1. A comparison of the post-development peak flows for the 1% AEP at 2100 were undertaken against C12.0 of the Tasmanian Planning Scheme – Sorell Flood Prone Areas code.
2. Building Regulations S.54 requires a habitable floor level of no less than the levels outlined in Table 5.
3. No increase in depth at the property boundary at the cross-sectional result line.
4. Peak discharge sees no change from both pre-development to post-development riverine flood scenario.
5. Velocity shows a minor increase of 0.01 m/s between pre- and post-development riverine flood scenarios.
6. Hazard from flooding within the lot remain at the majority category of H1 for both pre and post development riverine scenarios, including on neighbouring properties.

6. Recommendations

Flüssig Engineers therefore recommends the following engineering design be adopted for the development and future use to ensure the works meets the Inundation Code:

1. The new dwelling to have a minimum floor level as per Table 5. (minimum **FFL = 32.670** mAHD or higher).
2. A minimum vertical height difference of 400 mm to be maintained between all entrances to the dwelling and the natural ground level.
3. Building pad, if any, must be constructed to fall away at a minimum grade of 2.5% away from the habitable building and have adequate stormwater drainage within the pad extents.
4. Proposed structures, located in the inundation area, are to be designed to resist flood forces including debris.
5. Any change in external building layout or addition of other solid structures will require further flood assessment.
6. The proposed dwelling must be designed to resist flood forces including debris for the given flood conditions.
7. All future proposed structures within the flood extent not shown within this report will require a separate design and report addressing their impacts.

Under the requirements of this Flood Hazard Report, the proposed development will meet current acceptable solutions and performance criteria under the Tasmanian Planning Scheme 2021.

7. Limitations

Flüssig Engineers were engaged by **Jodie Henricks**, for the purpose of a site-specific Flood Hazard Report for 2 Sea Eagle Road, Primrose Sands as per C12.0 of the Tasmanian Planning Scheme - Sorell 2021. This study is deemed suitable for purpose at the time of undertaking the study. If the conditions of the site should change, the report will need to be reviewed against all changes.

It should be noted that this flood report does not account for the potential impacts of a dam breach at the adjacent property located at 2 Sea Eagle Road, where a natural waterhole/dam exists. Consequently, any flood risk associated with such a scenario is not considered in this analysis. Further detailed assessment would be required to evaluate the implications of a dam failure on the flood dynamics within the study area.

This report is to be used in full and may not be used in part to support any other objective other than what has been outlined within, unless specific written approval to do otherwise is granted by Flüssig Engineers.

Flüssig Engineers accepts no responsibility for the accuracy of third-party documents supplied for the purpose of this Flood Hazard Report.

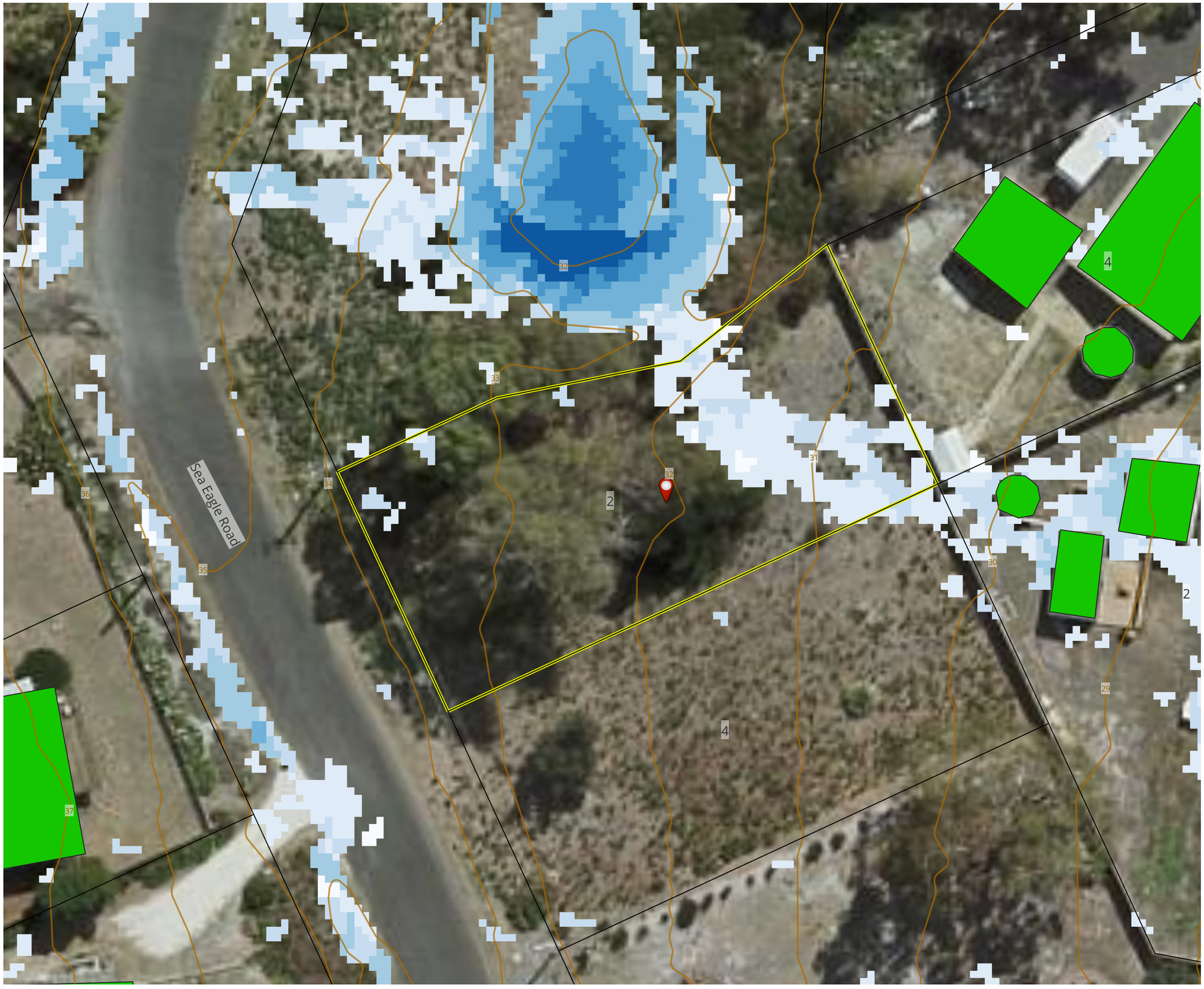
8. References

- Australian Disaster Resilience Guideline 7-3: Technical flood risk management guideline: Flood hazard, 2014, Australian Institute for Disaster Resilience CC BY-NC
- Ball J, Babister M, Nathan R, Weeks W, Weinmann E, Retallick M, Testoni I, (Editors), 2019, Australian Rainfall and Runoff: A Guide to Flood Estimation, Commonwealth of Australia
- Grose, M. R., Barnes-Keoghan, I., Corney, S. P., White, C. J., Holz, G. K., Bennett, J. & Bindoff, N. L. (2010). Climate Futures for Tasmania: General Climate Impacts Technical Report.
- T.A. Remenyi, N. Earl, P.T. Love, D.A. Rollins, R.M.B. Harris, 2020, Climate Change Information for Decision Making –Climate Futures Programme, Discipline of Geography & Spatial Sciences, University of Tasmania.

Appendices

Appendix A Flood Study Maps

PRE 1% AEP + CC @2100



Legend

2 Sea Eagle Road
Boundary Lines
1.00m Contours
Lot Boundary
Building Areas

Pre 1% AEP + CC @2100

Depth (m)
- <= 0.03
- 0.03 - 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.60
- 0.60 - 0.80
- 0.80 - 1.00
- 1.00 - 1.50
- > 1.50

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf
Plans Reference:P1
Date Received:18/09/2024

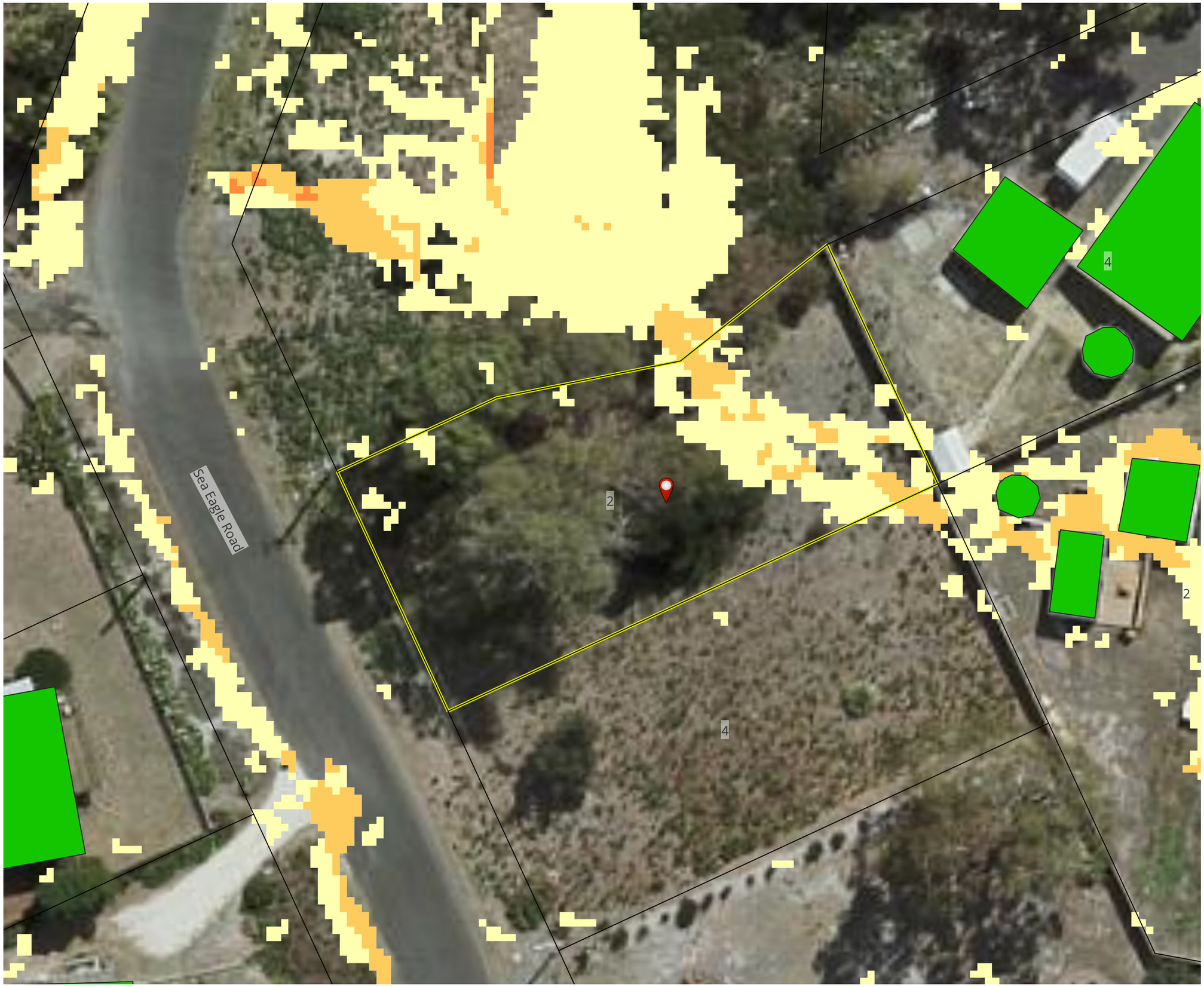
0 8 16 m
meters

N

flüssig Engineers
admin@flussig.com.au
(03) 6288 7704
www.flussig.com.au
116 Bathurst St, Level 4
Hobart, 7000, TASMANIA

- 22-08-2024 - Flussig Engineers Map CRS: GDA94 / MGA zone 55 EPSG:28355

PRE 1% AEP + CC @2100



Legend

2 Sea Eagle Road

Boundary Lines

Lot Boundary

Building Areas

Pre 1% AEP + CC @2100

Velocity (m/s)

- <= 0.50
- 0.50 - 1.00
- 1.00 - 1.50
- 1.50 - 2.00
- > 2.00

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf

Plans Reference:P1

Date Received:18/09/2024

0 8 16 m

meters

N

flüssig Engineers

admin@flussig.com.au

(03) 6288 7704

www.flussig.com.au

116 Bathurst St, Level 4

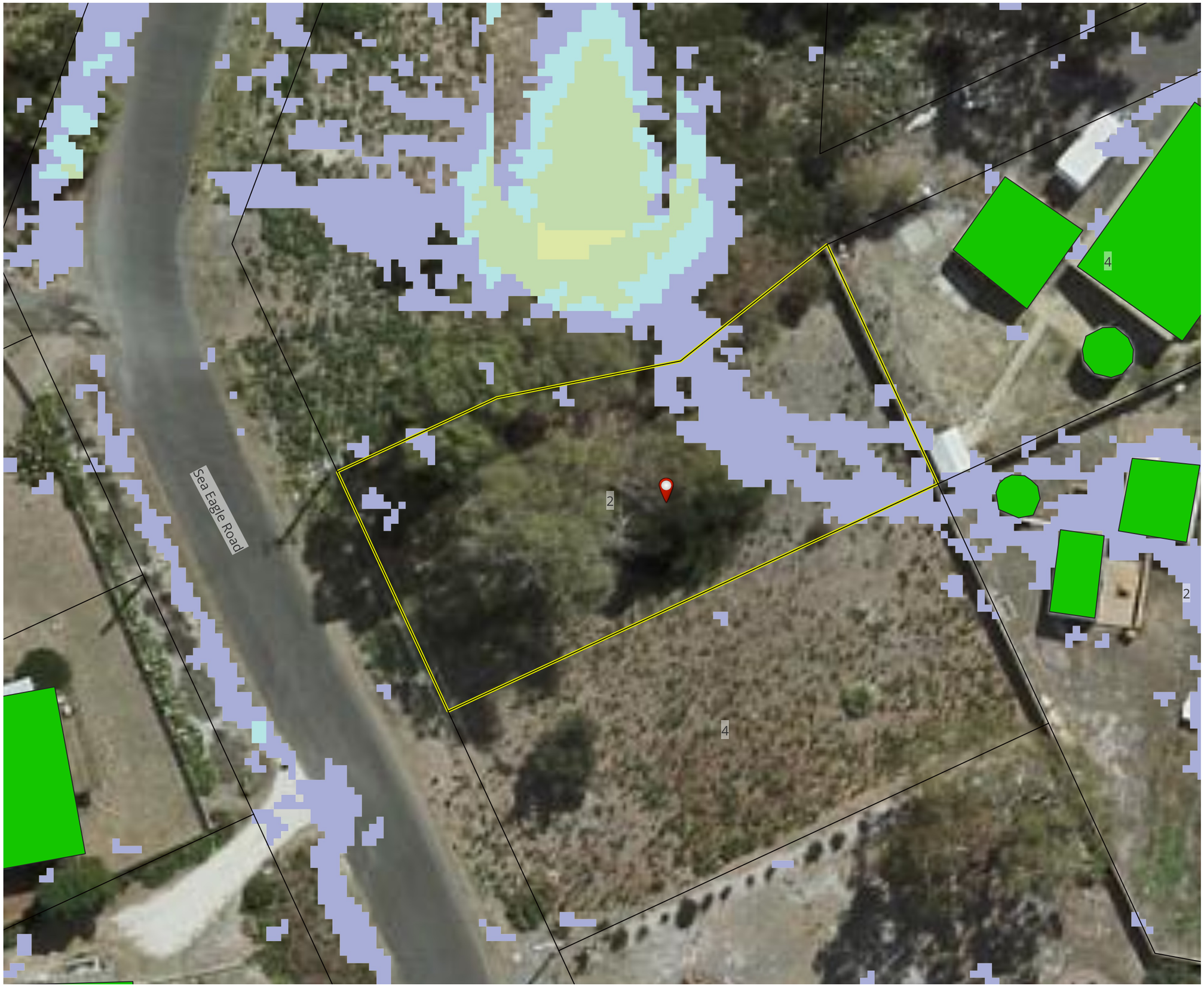
Hobart, 7000, TASMANIA

- 22-08-2024 - Flussig Engineers

Map CRS: GDA94 / MGA zone 55

EPSG:28355

PRE 1% AEP + CC @2100



Legend

2 Sea Eagle Road

Boundary Lines

Lot Boundary

Building Areas

Pre 1% AEP + CC @2100

Hazard

- H1
- H2
- H3
- H4
- H5
- H6

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf

Plans Reference:P1

Date Received:18/09/2024

0 8 16 m

meters

N

flüssig Engineers

admin@flussig.com.au

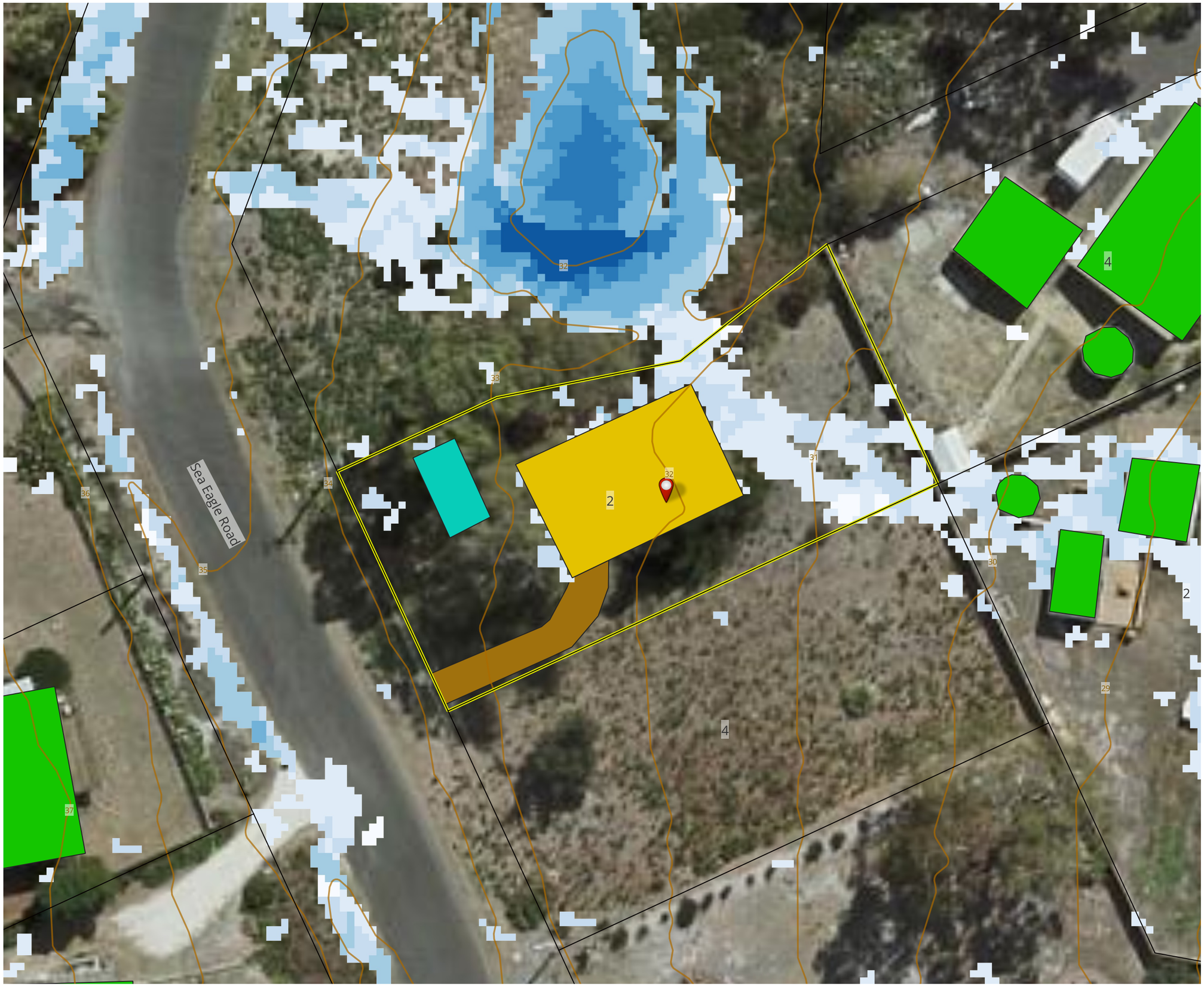
(03) 6288 7704

www.flussig.com.au

116 Bathurst St, Level 4

Hobart, 7000, TASMANIA

PRE 1% AEP + CC @2100



Legend

- 2 Sea Eagle Road
- 1.00m Contours
- Boundary Lines
- Lot Boundary
- Building Areas
- Proposed dwelling
- Gravel Driveway
- Proposed Shed

Post 1% AEP + CC @2100

Depth (m)

- <= 0.03
- 0.03 - 0.05
- 0.05 - 0.10
- 0.10 - 0.30
- 0.30 - 0.60
- 0.60 - 0.80
- 0.80 - 1.00
- 1.00 - 1.50
- > 1.50

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf
Plans Reference:P1
Date Received:18/09/2024

0 8 16 m

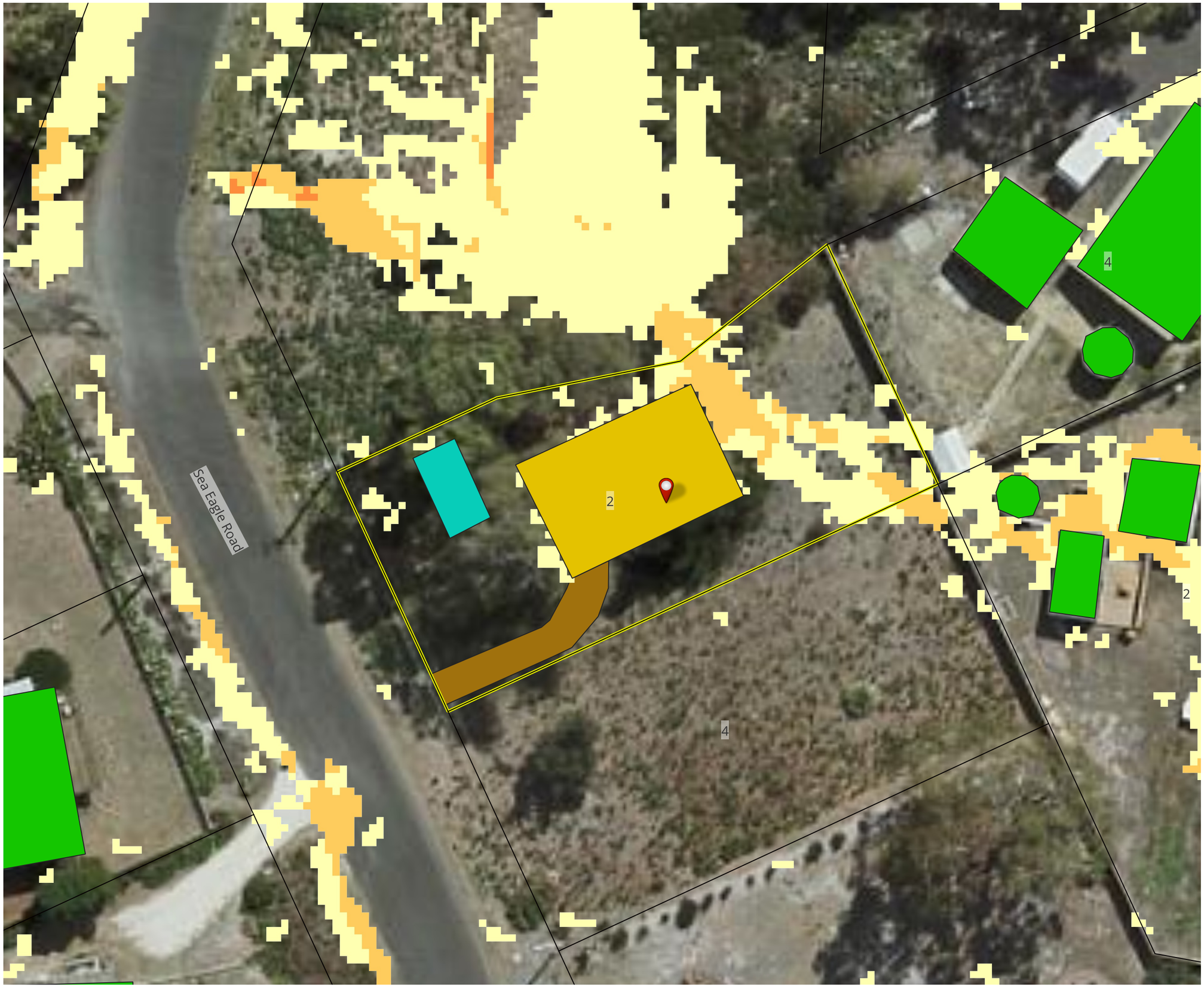
meters

N

flüssig Engineers
admin@flussig.com.au
(03) 6288 7704
www.flussig.com.au
116 Bathurst St, Level 4
Hobart, 7000, TASMANIA

- 22-08-2024 - Flussig Engineers Map CRS: GDA94 / MGA zone 55 EPSG:28355

PRE 1% AEP + CC @2100



Legend

2 Sea Eagle Road

Boundary Lines
Lot Boundary
Building Areas
Proposed dwelling
Gravel Driveway
Proposed Shed

Post 1% AEP + CC @2100

Velocity (m/s)
<= 0.50
0.50 - 1.00
1.00 - 1.50
1.50 - 2.00
> 2.00

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf

Plans Reference:P1
Date Received:18/09/2024

0 8 16 m

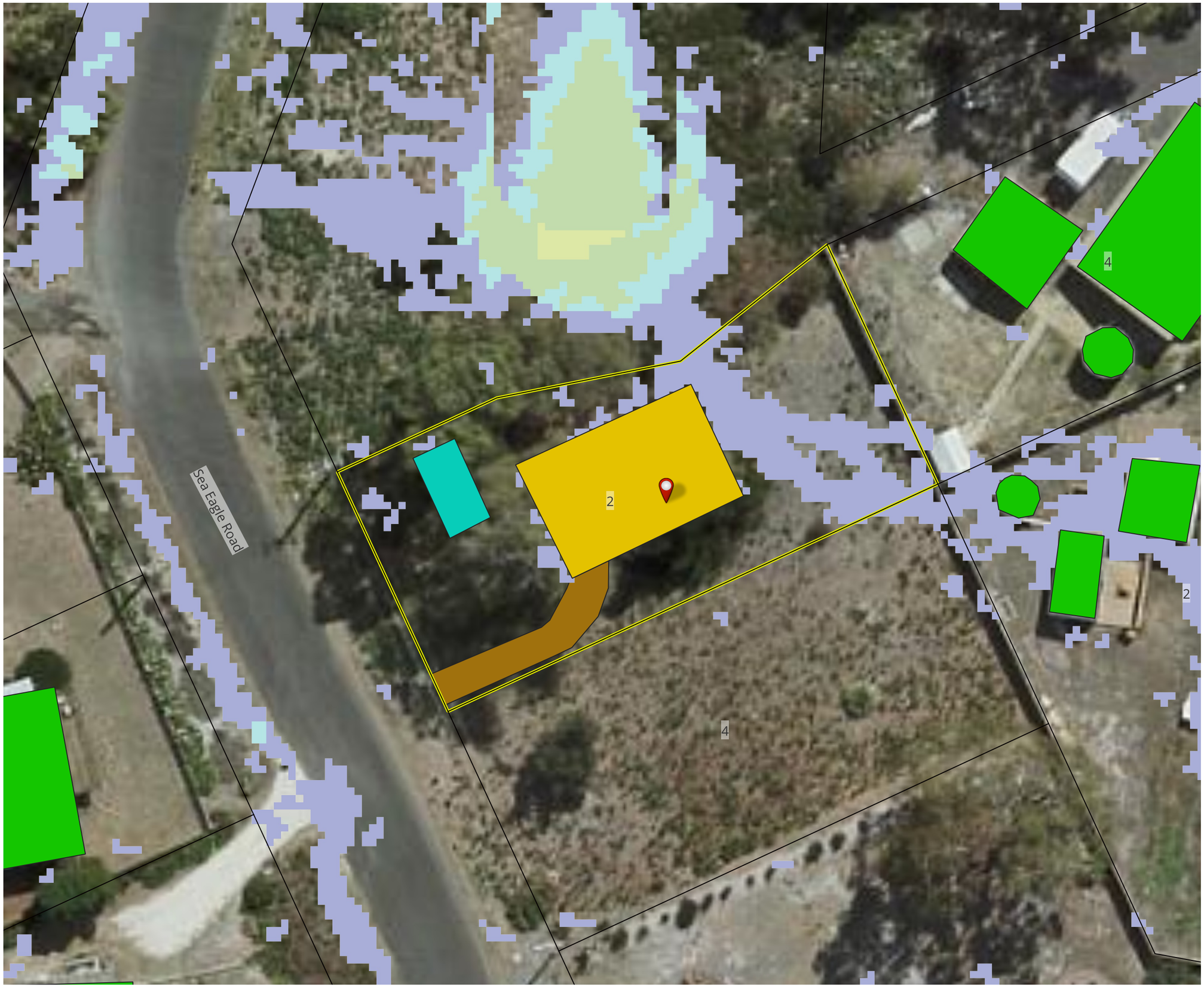
meters

N

flüssig Engineers
admin@flussig.com.au
(03) 6288 7704
www.flussig.com.au
116 Bathurst St, Level 4
Hobart, 7000, TASMANIA

- 22-08-2024 - Flussig Engineers Map CRS: GDA94 / MGA zone 55 EPSG:28355

PRE 1% AEP + CC @2100



Legend

2 Sea Eagle Road

Boundary Lines
Lot Boundary
Building Areas
Proposed dwelling
Gravel Driveway
Proposed Shed

Post 1% AEP + CC @2100

Hazard
H1
H2
H3
H4
H5
H6

Sorell Council

Development Application: Development Application - 2 Sea Eagle Road, Primrose Sands - P1.pdf
Plans Reference:P1
Date Received:18/09/2024

0 8 16 m
meters

N

flüssig Engineers
admin@flussig.com.au
(03) 6288 7704
www.flussig.com.au
116 Bathurst St, Level 4
Hobart, 7000, TASMANIA

Contact Project Manager: **Max Moller**

P: 03 6288 7704
M: 0431 080 279
E: max@flussig.com.au
W: www.flussig.com.au
A: Level 4, 116 Bathurst Street
Hobart TAS 7000

GEOTECH 24-084a

6/12/2024

ROCK SOLID GEOTECHNICS PTY LTD
Peter Hofto
163 Orielton Road
Orielton
TAS 7172

0417 960 769
peter@rocksolidgeotechnics.com.au

Jodie Henricks 0418681077
florider72@hotmail.com

Potential Inundation Mapping – 2 Sea Eagle Road, Primrose Sands

Additional information has been provided regarding potential inundation on the site.

Figure 1 shows the mapping as defined by 'Prime Design' and the locations of the onsite wastewater system and stormwater absorption trench.

The onsite wastewater system cannot be located in an inundation zone without site modification and provisions for protecting the system against inundation.

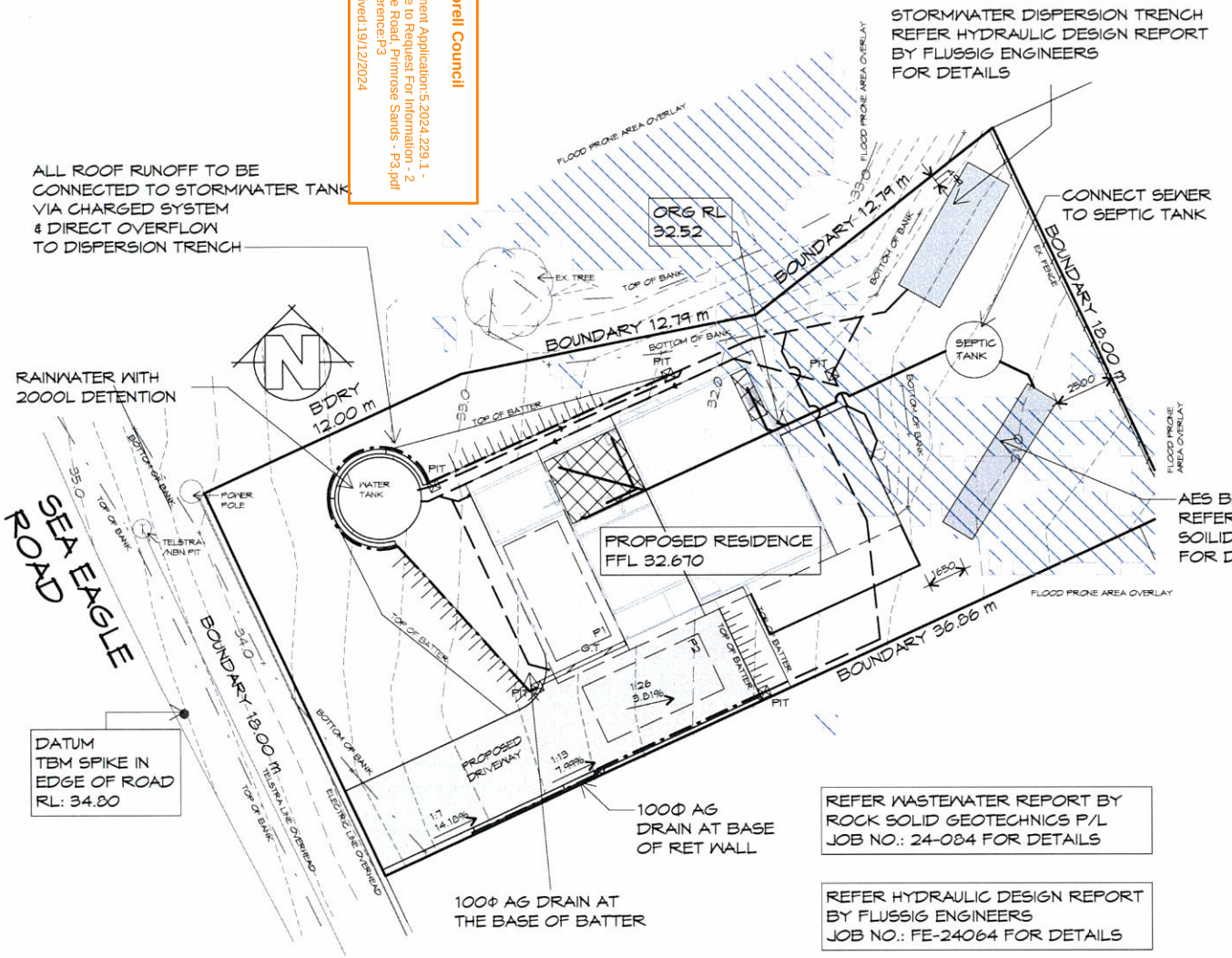
Figure 2 is a copy of the Sorell Council's Inundation Mapping.

Figure 3 is a revised site plan showing the relocated septic tank and AES bed (6.6m long and 1.45m wide) – now both outside the inundation zone. The revised plan is based on the 'Prime Design' provided Inundation Mapping.

The SW trench has been relocated downslope from the AES bed (it can be in the area defied as potentially being inundated (and it is best to have the SW trench downslope from the AES bed).

Regards

Peter Hofto
Rock Solid Geotechnics Pty Ltd



SITE DRAINAGE PLAN

1 : 200

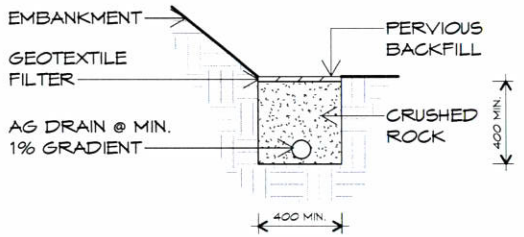
LEGEND

- PIT — 450X 450 SURFACE DRAINAGE PIT
- WET AREAS
- SEWER LINE
- STORMWATER LINE
- 100Φ AG DRAIN
- G.T. — 150W GRATED TRENCH

PLUMBING NOTES:
ALL DRAINAGE WORK SHOWN IS PROVISIONAL ONLY AND IS SUBJECT TO AMENDMENT TO COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITIES.
ALL WORK IS TO COMPLY WITH THE REQUIREMENTS OF AS 3500.2021 & THE TASMANIAN PLUMBING CODE. AND MUST BE CARRIED OUT BY A LICENCED TRADESMAN ONLY.

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS



TYPICAL AG DRAIN DETAIL

NTS

Prime Design
10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Drawing:
SITE DRAINAGE PLAN

Client name:
J.S. HENRICKS

Drafted by: S.P.
Approved by: M.R.

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Date: 19.11.2024
Scale: As indicated

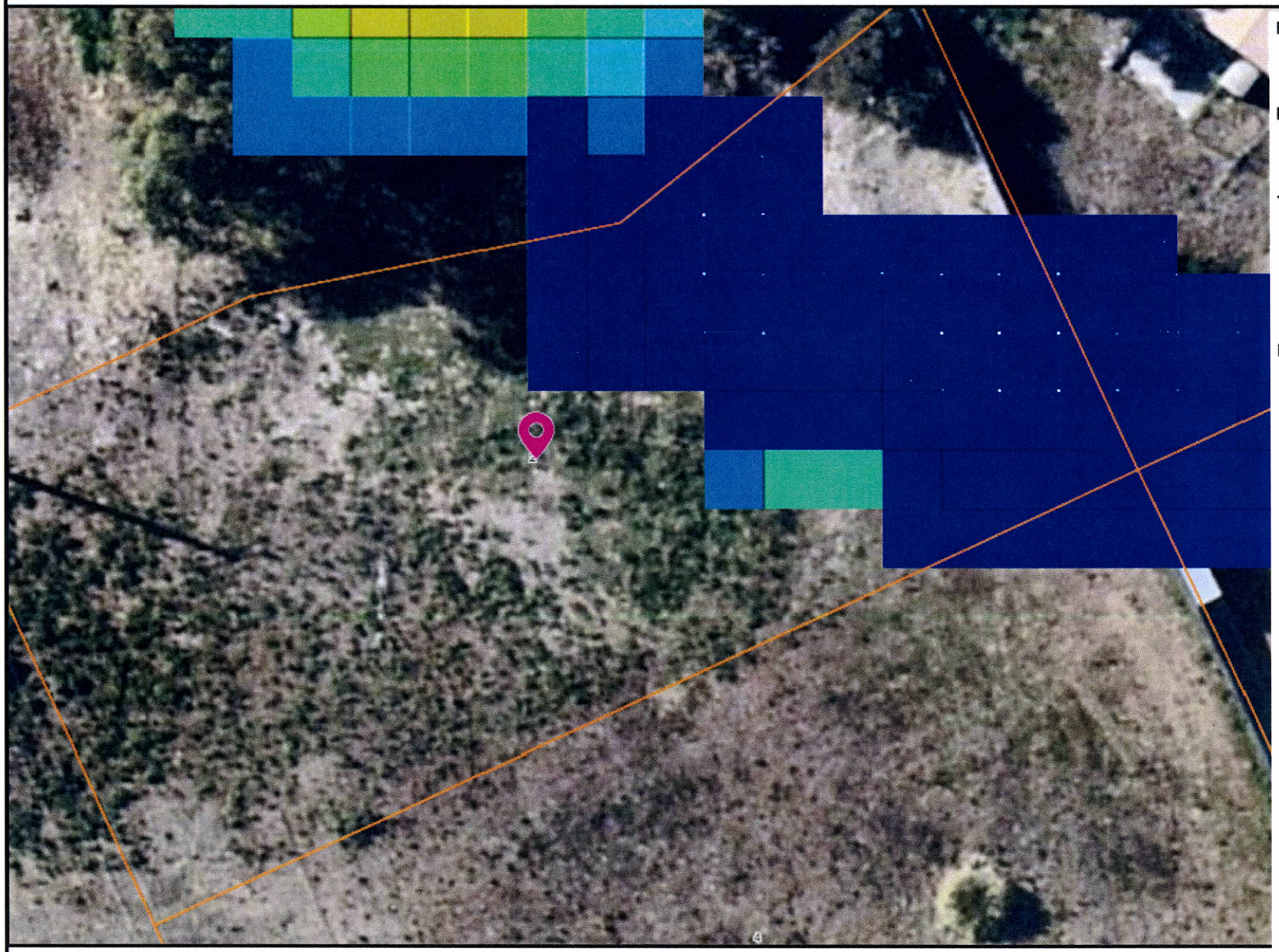
Project/Drawng no: PD24252 -02
Revision: 01

Accredited building practitioner: Frank Geskus -No CC246A

(1)

2 Sea Eagle Road

21-Nov-2024



Roads
- DSG Roads
- Council Roads

Property
- Property
- Titles

Transport
- Roads

Sorell Council
Development Application:5.2024.229.1 - Reposnse to Request For Information - 2 Sea Eagle Road, Primrose Sands - P3.pdf
Plan Reference:P3
Date received:19/12/2024

Flood Hazard

1pct AEP Event Depth (m)
- 0.02
- 0.1
- 0.2
- 0.3
- 0.5
- 0.75
- 4.0

1pct AEP Event Velocity (mps)
- 0.0
- 0.75
- 1.5
- 2.5
- 3.0

Pipe Capacity
- <63% AEP (1 EY)
- <39% AEP
- <18% AEP
- <10% AEP
- <5% AEP
- <2% AEP
- <1% AEP
- >1%AEP

(2)

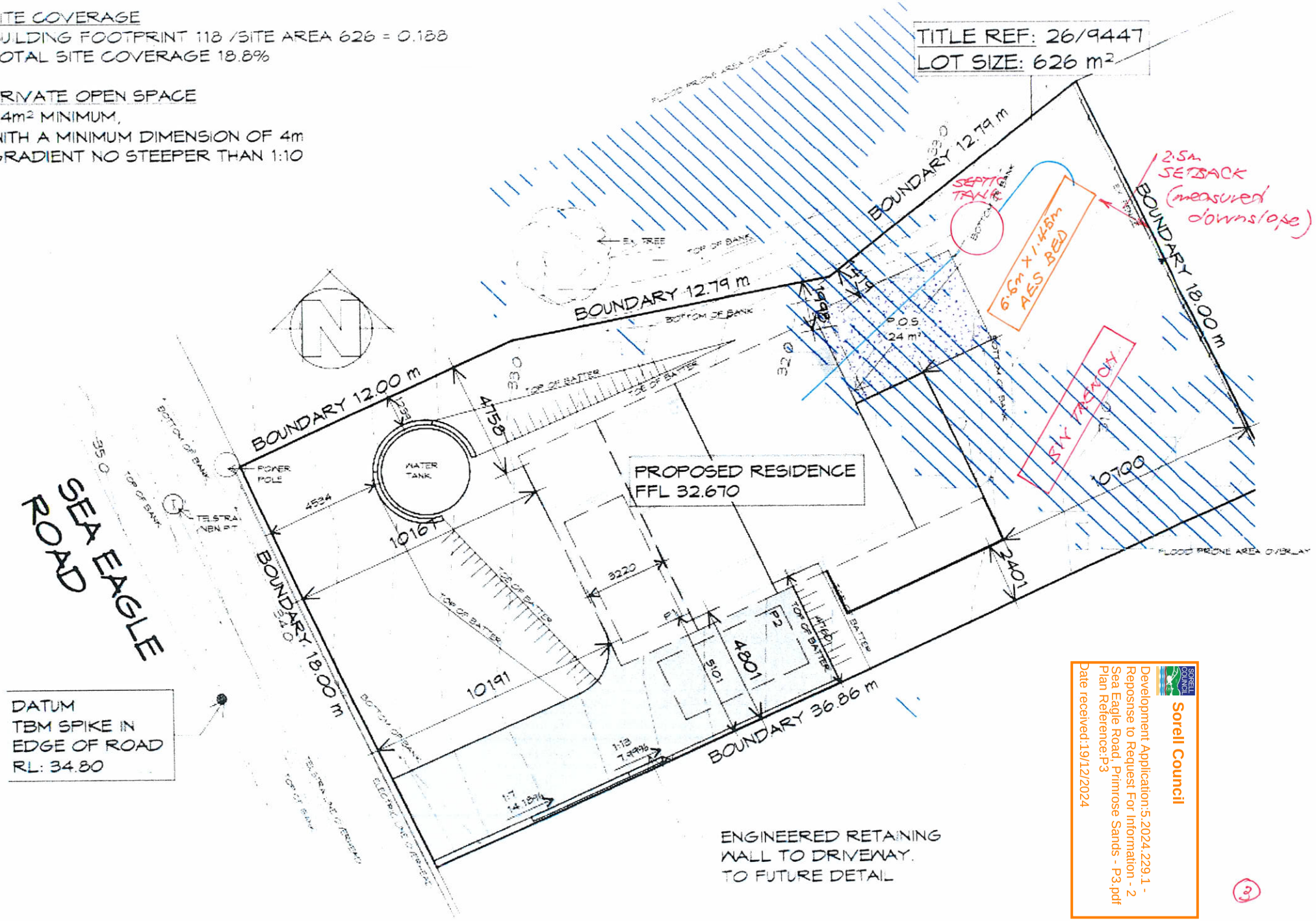
SORELL COUNCIL

Disclaimer

Any information extracted from this document (from the face of the document or by scale) should be verified on site. Council takes no responsibility for the accuracy of any information contained or presented in the document. While every care has been taken to ensure the accuracy of this information, Council makes no representations or warranties about the accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and liability.

SITE COVERAGE
BUILDING FOOTPRINT 118 /SITE AREA 626 = 0.188
TOTAL SITE COVERAGE 18.8%

PRIVATE OPEN SPACE
24m² MINIMUM,
WITH A MINIMUM DIMENSION OF 4m
GRADIENT NO STEEPER THAN 1:10



(3)

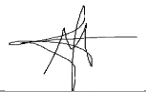
HYDRAULIC DESIGN REPORT

FE-24064 PERFORMANCE SOLUTION REPORT

Document Information

Title	Client	Document Number	Project Manager
2 Sea Eagle Road, Primrose Sands TAS 7173 Performance Solution Report	**Jodie Henricks**	FE_24064	**Manuri Alwis** *BEng (Hons)* *Civil Engineer*

Document Initial Revision

REVISION 00	Staff Name	Signature	Date
Prepared by	Manuri Alwis ***Civil Engineer***		15/08/2024
Reviewed by	Ash Perera ***Senior Hydraulic Engineer***		28/08/2024
Authorised by	Max W. Möller ***Principal Hydraulic Engineer***		28/08/2024

Document Revision History

Rev No.	Description	Reviewed by	Authorised by	Date
01	Dispersion trench relocation	Ash Perera	Max W. Moller	19/12/2024

INTRODUCTION

This report details the stormwater management strategies for the proposed development at **2 Sea Eagle Road, Primrose Sands TAS 7173.** The objective of the report is to demonstrate how stormwater runoff would be captured and conveyed from the subject site safely to the receiving drainage network while considering stormwater quantity management and the incorporation of dispersion trench and stormwater tank elements.

EXISTING CONDITIONS AND ASSUMPTIONS

The site covers an area of approximately 626 m², with proposed total impervious area of 165 m².

Stormwater from the site would be routed through the proposed conventional underground drainage system comprising of Grated Sumps and PVC Pipes, coupled with dispersion trench elements for on-site detention.

The stormwater management report is prepared in accordance with the design criteria listed below:

- The stormwater drainage system is designed using Bureau of Meteorology (BOM) published rainfall Intensity Frequency Duration (IFD) data as a minor / major system to accommodate the 5% AEP / 20 min storm events.
- The flow rate of stormwater leaving the site shall be designed so that it does not exceed the pre-developed flow rate for both the minor and major rain events.
- The total site discharges are modelled as described in *Storm Drainage Design in Small Urban Catchments,* a handbook for Australian practice by *Australian Rainfall and Runoff (ARR2019)*, Book 9 – Runoff in Urban Areas.

DETENTION COMPUTATIONS

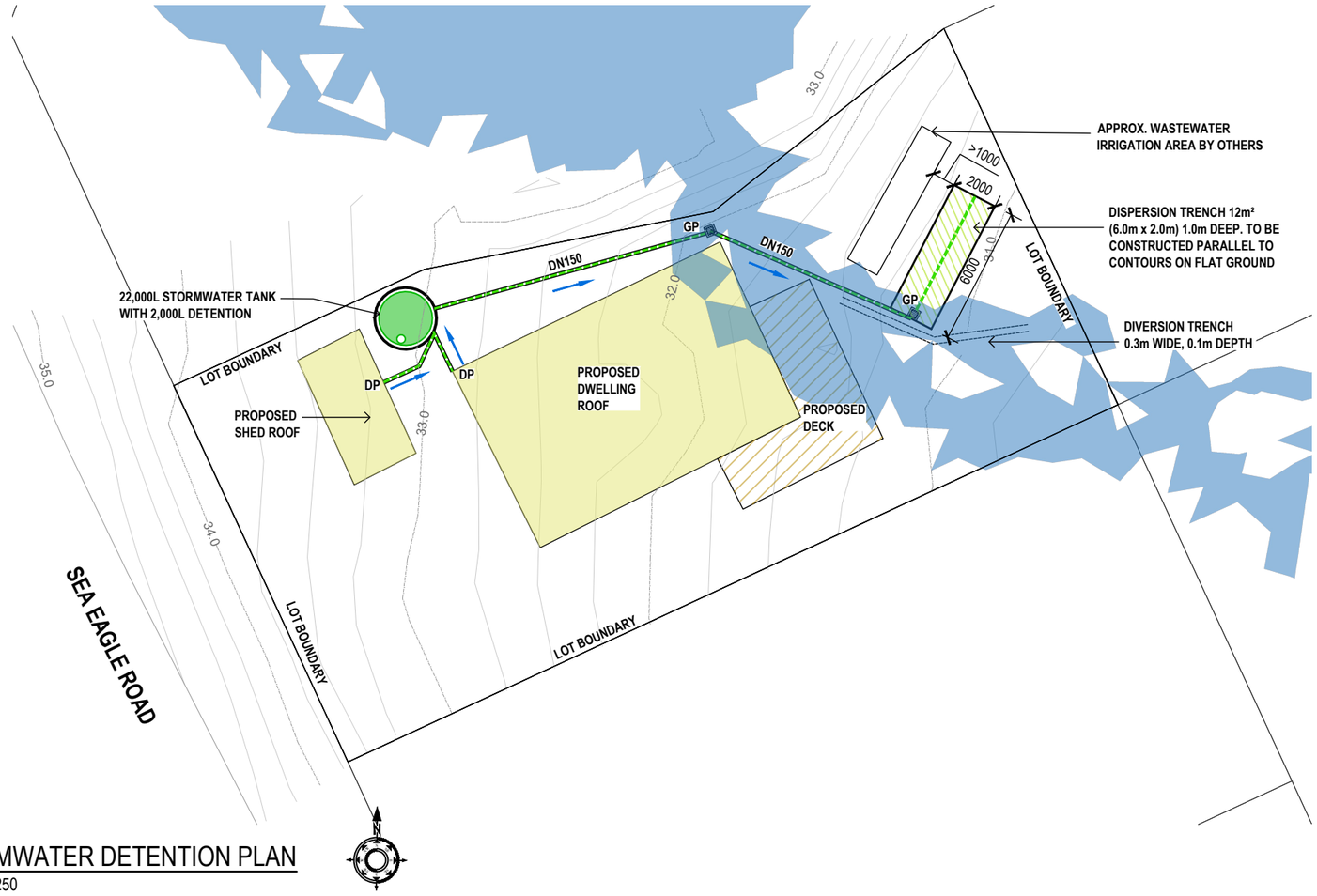
Detention calculations are provided in **Appendix B**

SUMMARY AND CONCLUSIONS

- The proposed 22,000L stormwater tank with 2,000L detention has been sized over a 20-minute storm duration for proposed roof area, and the tank overflow will be dispersed in a 12m² base (6m x 2m), 1.0m deep dispersion trench over a 20-minute storm duration. The detention required by deck are compensated within the roof detention calculation.
- A DN100 slotted PVC pipe with geotextile covering on top of aggregate is to be installed within the dispersion trench.
- The performance solution drawing is schematic only and must be read in conjunction with construction plans provided by others.
- The coefficient of timber/gravel is considered half impervious (C=0.5) and the total of 33m² timber decking area is included in the gravel category in the software (Structural toolkit) detention calculation.

APPENDIX A

STORMWATER CONCEPT DRAWING



STORMWATER DETENTION PLAN
SCALE 1:250

NEW SERVICES

- STORMWATER PIPE
- STORMWATER FLOW DIRECTION
- GRATED STORMWATER PIT. 450X450 CLASS A
  ACO GALVANISED HEELGUARD OR SIMILAR ENGINEER APPROVED
- 22,000L STORMWATER TANK
- 1% AEP OVERLAND FLOW PATH

STORMWATER SERVICES NOTES:

1. ALL SITE SAFETY & MANAGEMENT PROCEDURES SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF STATE GROWTH SPECIFICATIONS:
   SECTION 168 OCCUPATIONAL HEALTH AND SAFETY
   & SECTION 176 ENVIRONMENTAL MANAGEMENT.
2. ALL PIPES UNDER TRAFFIC ABLE AREAS ARE TO BE BACK FILLED FULL DEPTH WITH 20 F.C.R. AND FULLY COMPACTED.
3. ALL STORM WATER PIPES TO BE PVC-U-SWJ CLASS "SN8" TO AS 1254 UNO.
4. ALL DRAIN AND TRENCH CONSTRUCTION SHALL COMPLY WITH THE LGAT STANDARD DRG TSD G01.
5. ANY EXCAVATED TRENCHES IN EXCESS OF 1.5M IN DEPTH ARE TO BE ADEQUATELY SHORED TO PREVENT COLLAPSE DURING WORKS.

PERFORMANCE SOLUTION COMPLIANCE NOTES:

AS 3500.3 - CL 7.10

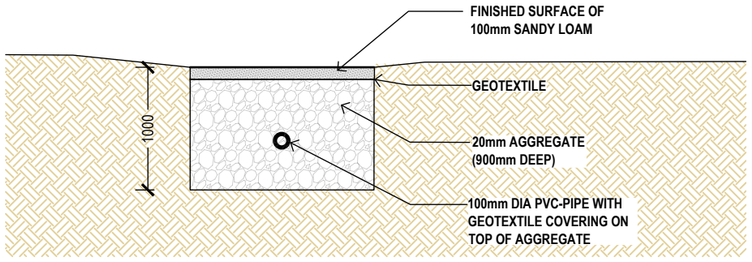
- 7.10.1 - OVERFLOW IS SAFE AND DOES NOT COMPROMISE FREEBOARD TO HABITABLE SPACES.

GENERAL

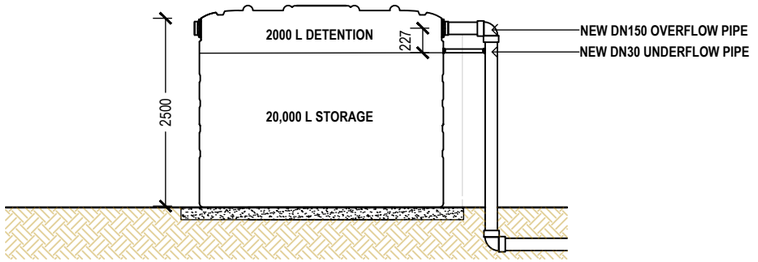
- AS/NZS 3500.3: PART 3 STORMWATER DRAINAGE AUSTRALIAN RAINFALL AND RUN-OFF VOLUME 8: URBAN STORMWATER MANAGEMENT
- AUSTRALIAN RUNOFF QUALITY - A GUIDE TO WATER SENSITIVE URBAN DESIGN
- STORM DRAINAGE DESIGN IN SMALL URBAN CATCHMENTS: A HANDBOOK FOR AUSTRALIAN PRACTICE
- WATER SENSITIVE URBAN DESIGN (WSUD) ENGINEERING PROCEDURE: STORMWATER
- WATER SERVICES ASSOCIATION OF AUSTRALIA CODE (WSAA).

SITE AREA=626m²

- IMPERVIOUS ROOF AREA 132m²
- IMPERVIOUS DECK AREA 33m²



DISPERISON TRENCH CROSS SECTION TYPICAL
SCALE 1:50



STORAGE & DETENTION TANK CROSS SECTION TYPICAL
NTS

NOTE:

REPORT AND DESIGN TO BE READ IN CONJUNCTION WITH CONSTRUCTION PLANS BY OTHERS

REV:	DESCRIPTION:	BY:	DATE:
01	TRENCH RELOCATION	MA	19.12.24

STATUS: CONSTRUCTION

flussig ENGINEERS
e: admin@flussig.com.au
p: (03) 6288 7704
w: www.flussig.com.au
a: 116 Bathurst St, Level 4 Hobart, 7000, TASMANIA

CLIENT: JODIE HENRICKS

PROJECT: PROPOSED NEW DWELLING

SITE: 2 SEA EAGLE ROAD, PRIMROSE SANDS TAS 7173

TITLE: PERFORMANCE SOLUTION DESIGN

SCALE AT A3:	DATE:	DRAWN:	CHECKED:
AS SHOWN	16.08.2024	MA	MM

PROJECT NO:	DRAWING NO:	REVISION:
FE-24064	C-100	01

APPENDIX B
DETENTION COMPUTATIONS

STORMWATER DETENTION V5.05

Flussig Engineers

Location: **Primrose Sands TAS**
Site: **165m² with tc = 20 and tcs = 15 mins.**
PSD: **AEP of 5%, Above ground PSD = 0.62L/s**
Storage: **AEP of 5%, Above ground volume = 1.68m³**

Design Criteria

(Custom AEP IFD data used)

Location = Primrose Sands TAS
Method = E (A)RI 2001,A(E)P 2019

PSD annual exceedance probabiliy (APE) = 5 %
Storage annual exceedance probabiliy (APE) = 5 %

Storage method = A (A)bove,(P)ipe,(U)nderground,(C)ustom

Site Geometry

Site area (As) = 165 m² = 0.0165 Ha
Pre-development coefficient (Cp) = 0.30
Post development coefficient (Cw) = 0.90

Total catchment (tc) = 20 minutes
Upstream catchment to site (tcs) = 15 minutes

Coefficient Calculations

Pre-development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	0	1.00	0
Gravel	0	0.50	0
Garden	165	0.30	50
Total	165 m²		50

Cp = ΣArea*C/Total = 0.300

Post development

Zone	Area (m²)	C	Area * C
Concrete	0	0.90	0
Roof	132	1.00	132
Gravel	33	0.50	17
Garden	0	0.30	0
Total	165 m²		149

Cw = ΣArea*C/Total = 0.900

Permissible Site Discharge (PSD) (AEP of 5%)

PSD Intensity (I) = 43.1 mm/hr For catchment tc = 20 mins.
Pre-development (Qp = Cp*I*As/0.36) = 0.59 L/s
Peak post development (Qa = 2*Cw*I*As/0.36) = 3.56 L/s =(0.083 x I) Eq. 2.24

Storage method = A (A)bove,(P)ipe,(U)nderground,(C)ustom
Permissible site discharge (Qu = PSD) = 0.616 L/s

Above ground - Eq 3.8

$0 = PSD^2 - 2*Qa/tc*(0.667*tc*Qp/Qa + 0.75*tc+0.25*tcs)*PSD + 2*Qa*Qp$
Taking x as = PSD and solving
a = 1.0 b = -7.5 c = 4.2
$PSD = -b \pm \sqrt{(b^2-4ac)}/(2a)$
PSD = 0.616 L/s

Below ground pipe - Eq 3.3

$Qp = PSD*[1.6*tcs/\{tc*(1-2*PSD/(3*Qa))\}-0.6*tcs^{2.67}/\{tc*(1-2*PSDp/(3*Qa))\}^{2.67}]$
= 0.59
PSD = 0.611 L/s

Below ground rectangular tank - Eq 3.4

$t = tcs/(tc*(1-2*PSD/(3*Qa))) =$ 0.844
$Qp = PSD*[0.005-0.455*t+5.228*t^2-1.045*t^3-7.199*t^4+4.519*t^5]$
= 0.59
PSD = 0.593 L/s

Design Storage Capacity (AEP of 5%)

Above ground (Vs) = $[0.5*Qa*td-[(0.875*PSD*td)(1-0.917*PSD/Qa)+(0.427*td*PSD^2/Qa)]]*60/10^3$ m³ Eq 4.23

Below ground pipe (Vs) = $[(0.5*Qa-0.637*PSD+0.089*PSD^2/Qa)*td]*60/10^3$ m³ Eq 4.8

Below ground rect. tank (Vs) = $[(0.5*Qa-0.572*PSD+0.048*PSD^2/Qa)*td]*60/10^3$ m³ Eq 4.13

td (mins)	I (mm/hr)	Qa (L/s)	Above Vs (m³)	Pipe Vs (m³)	B/G Vs (m³)
5	84.2	6.9	0.89		
16	49.0	4.0	1.46		
22	40.8	3.4	1.56		
28	35.3	2.9	1.62		
34	31.4	2.6	1.66		
39	29.0	2.4	1.67		
45	26.6	2.2	1.68		
51	24.7	2.0	1.68		
56	23.4	1.9	1.68		
62	22.1	1.8	1.67		

Table 1 - Storage as function of time for AEP of 5%

Type	td (mins)	I (mm/hr)	Qa (L/s)	Vs (m³)
Above	49.7	25.1	2.1	**1.68**
Pipe				
B/ground				

Table 2 - Storage requirements for AEP of 5%

Frequency of operation of Above Ground storage

Qop2 = 0.75 Cl 2.4.5.1

Qp2 =Qop2*Qp1 (where Qp1=PSD) = 0.46 L/s at which time above ground storage occurs

$I = 360*Qp2/(2*Cw*As*10^3)$ = 5.6 mm/h Eq 4.24

Period of Storage

Time to Fill:

Above ground (tf) = td*(1-0.92*PSD/Qa) Eq 4.27

Below ground pipe (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2

Below ground rect. tank (tf) = td*(1-2*PSD/(3*Qa)) Eq 3.2

Time to empty:

Above ground (te) = $(Vs+0.33*PSD^2*td/Qa*60/10^3)*(1.14/PSD)*(10^3/60)$ Eq 4.28

Below ground pipe (te) = $1.464/PSD*(Vs+0.333*PSD^2*td/Qa*60/10^3)*(10^3/60)$ Eq 4.32

Below ground rect. tank (te) = $2.653/PSD*(Vs+0.333*PSD^2*td/Qa*60/10^3)*(10^3/60)$ Eq 4.36

Storage period (Ps = tf + te) Eq 4.26

Type	td (mins)	Qa (L/s)	Vs (L/s)	tf (mins)	te (mins)	Ps (mins)
Above	49.7	2.1	1.7	36.1	57.5	93.6
Pipe						
B/ground						

Table 3 - Period of Storage requirements for AEP of 5%

Orifice

Permissible site discharge (Qu=PSD) = 0.62 L/s (Above ground storage)

Orifice coefficient (CD) = 0.61 For sharp circular orifice

Gravitational acceration (g) = 9.81 m/s²

Maximum storage depth above orifice (H) = 227 mm

Orifice flow (Q) = CD*Ao*√(2*g*H)

Therefore:

Orifice area (Ao) = 479 mm²

Orifice diameter (D = √(4*Ao/π)) = 24.7 mm

Dispersion Trench

Hydrology		
A = total impervious area collected	165	sqm
C = coefficient	0.9	
ARI = Annual Reccurence Interval	20	yr

Ground Conditions		
Hydraulic conductivity K (absorption rate)	1.0417	mm/min
Adjusted rate (15% clogging factor)	0.8854	mm/min

Trench Design		
Length, L	6	m
Width, B	2	m
Depth, h	1	m
Base area, BA	12	sqm
Void space	35%	
Trench Storage	4.2	cum
	4200.00	L

Detention tank data		
Tank storage	2.00	cum
Tank Underflow	0.62	L/s
Tank Underflow	37.20	L/m
Total Available storage	6.2	cum
	6200	L

Final Check			
Criteria	**Requirement (L)**	**Design(L)**	**Check**
Detention	1,680	6200	**OK**
Trench capacity for underflow	532	4200	**OK**

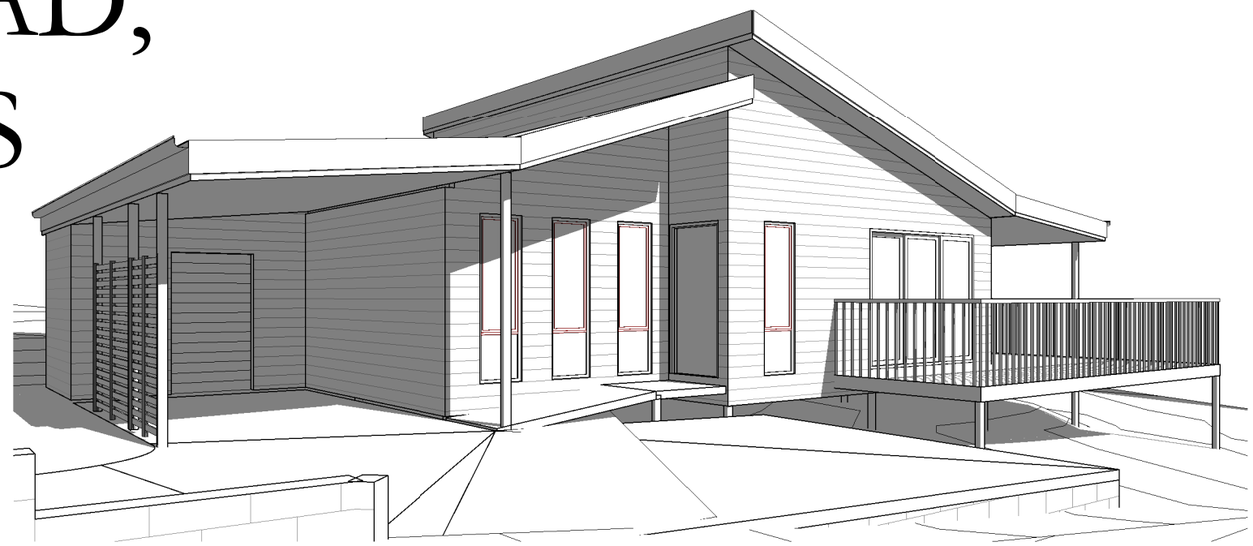
Checking storms

	Duration (min)	Intensity (mm/hr)	Vol in System(L)	Vol in Trench (L)	Vol out Trench (L)	Storage total System (L)	Storage Trench (L)	Hours to empty Trench
5Mins	5	84.2	1042	186	53	**989**	**133**	0
6Mins	6	79.94	1187	223	64	**1123**	**159**	0
10Mins	10	62.9	1557	372	106	**1451**	**266**	1
20Mins	20	43.1	2133	744	213	**1921**	**532**	1
30Mins	30	33.9	2517	1116	319	**2198**	**797**	2
1Hr	60	22.5	3341	1341	638	**2704**	**704**	2
2Hrs	120	15.5	4604	2604	1275	**3329**	**1329**	4
3Hrs	180	12.8	5702	3702	1913	**3790**	**1790**	6
6Hrs	360	9.45	8420	6420	3825	**4595**	**2595**	10
12Hrs	720	6.97	12421	10421	7650	**4771**	**2771**	16
24Hrs	1440	4.83	17214	15214	15300	**1914**	**-86**	24
48Hrs	2880	2.99	21313	19313	30600	**-9287**	**-11287**	30
72Hrs	4320	2.12	22667	20667	45900	**-23233**	**-25233**	32

PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD, PRIMROSE SANDS

J.S. HENRICKS

PD24252



PLANNING

BUILDING DRAWINGS

No	DRAWING
01	SITE PLAN
02	SITE DRAINAGE PLAN
03	LOCALITY PLAN
04	FLOOR PLAN
05	ELEVATIONS
06	ELEVATIONS
07	ROOF PLAN
08	SUN SHADOW DIAGRAMS
09	SITE TURNING MOVEMENTS

DECK AREA	32.32	m2	(3.48	SQUARES)
FLOOR AREA	77.24	m2	(8.31	SQUARES)
GARDEN SHED AREA	8.48	m2	(0.91	SQUARES)
TOTAL AREA	118.04		12.71	

GENERAL PROJECT INFORMATION
TITLE REFERENCE: 26/9447
SITE AREA: 626 m²
DESIGN WIND SPEED: N3
SOIL CLASSIFICATION: S
CLIMATE ZONE: 7
ALPINE AREA: NO
CORROSIVE ENVIRONMENT:HIGH/SEVERE
BAL RATING: N/A
OTHER KNOWN HAZARDS: FLOOD-PRONE AREAS, AIRPORT OBSTACLE LIMITATION AREA

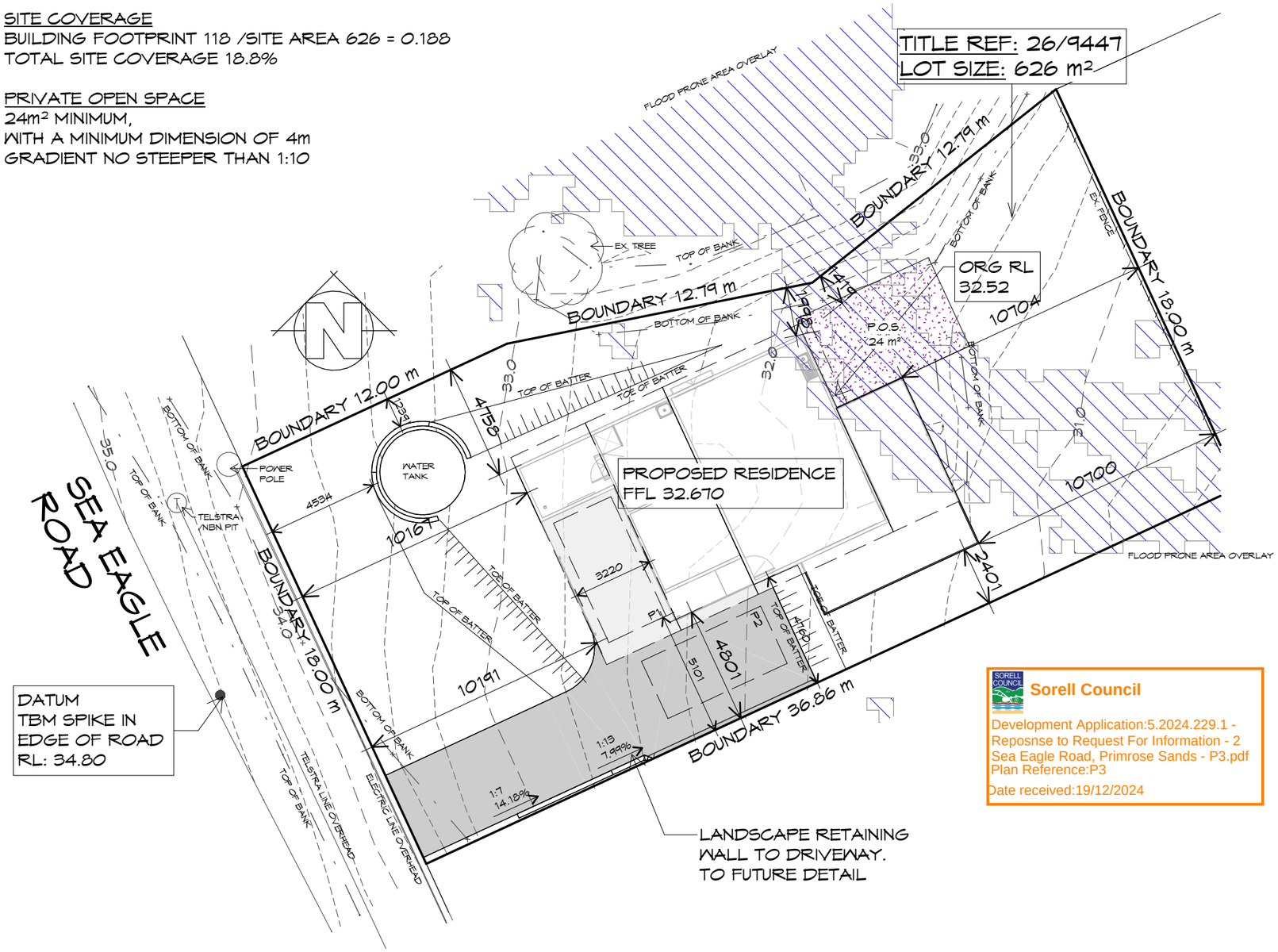
Prime Design
your build, your way
10 Goodman Court , Invermay Launceston 7248
p(l) +03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+03 6228 4575
info@ primedesigntas.com.au primedesigntas.com.au
Accredited Building Practitioner: Frank Geskus -No CC246A

DECEMBER 2024

SETBACKS
REFER TO DIMENSIONS AND ELEVATIONS FOR FURTHER DETAILS.

SITE COVERAGE
BUILDING FOOTPRINT 118 /SITE AREA 626 = 0.188
TOTAL SITE COVERAGE 18.8%

PRIVATE OPEN SPACE
24m² MINIMUM,
WITH A MINIMUM DIMENSION OF 4m
GRADIENT NO STEEPER THAN 1:10



Sorell Council

Development Application:5.2024.229.1 - Reposnse to Request For Information - 2 Sea Eagle Road, Primrose Sands - P3.pdf
Plan Reference:P3
Date received:19/12/2024

GENERAL NOTES
- CHECK & VERIFY ALL DIMENSIONS & LEVELS ON SITE
- WRITTEN DIMENSIONS TO TAKE PREFERENCE OVER SCALED
- ALL WORK TO BE STRICTLY IN ACCORDANCE WITH NCC 2022, ALL S.A.A.. CODES & LOCAL AUTHORITY BY-LAWS
- ALL DIMENSIONS INDICATED ARE FRAME TO FRAME AND DO NOT ALLOW FOR WALL LININGS
- CONFIRM ALL FLOOR AREAS
- ALL PLUMBING WORKS TO BE STRICTLY IN ACCORDANCE WITH A.S. 3500, NCC 2022 & APPROVED BY COUNCIL INSPECTOR
- BUILDER/PLUMBER TO ENSURE ADEQUATE FALL TO SITE CONNECTION POINTS IN ACCORDANCE WITH A.S. 3500 FOR STORMWATER AND SEWER BEFORE CONSTRUCTION COMMENCES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE ENGINEER'S STRUCTURAL DRAWINGS
- ALL WINDOWS AND GLAZING TO COMPLY WITH A.S. 1288 & A.S. 2047
- ALL SET OUT OF BUILDINGS & STRUCTURES TO BE CARRIED OUT BY A REGISTERED LAND SURVEYOR AND CHECKED PRIOR TO CONSTRUCTION
- IF CONSTRUCTION OF THE DESIGN IN THIS SET OF DRAWINGS DIFFER FROM THE DESIGN AND DETAIL IN THESE AND ANY ASSOCIATED DOCUMENTS BUILDER AND OWNER ARE TO NOTIFY DESIGNER
- BUILDER'S RESPONSIBILITY TO COMPLY WITH ALL PLANNING CONDITIONS
- BUILDER TO HAVE STAMPED BUILDING APPROVAL DRAWINGS AND PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION
- DRAWINGS ARE REQUIRED TO BE VIEWED OR PRINTED IN COLOUR.

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

SURVEYOR'S NOTES:
- CONTOUR INTERVAL: 0.250m
- THIS PLAN AND ASSOCIATED DIGITAL MODEL IS PREPARED FOR CHRISTOPHER LESKIE FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS ON THE LAND AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.
- THE TITLE BOUNDARIES AS SHOWN ON THIS PLAN WERE NOT MARKED AT THE TIME OF THE SURVEY AND HAVE BEEN DETERMINED BY PLAN DIMENSIONS ONLY AND NOT BY FIELD SURVEY. NO MEASUREMENTS OR OFFSETS ARE TO BE DERIVED BETWEEN THE FEATURES ON THIS PLAN AND THE BOUNDARY LAYER. THE RELATIONSHIP BETWEEN THE FEATURES IN THIS MODEL AND THE BOUNDARY LAYERS CANNOT BE USED FOR ANY SET OUT PURPOSES OR TO CONFIRM THE POSITION OF THE TITLE BOUNDARIES ON SITE.
- SERVICES SHOWN HAVE BEEN LOCATED WHERE VISIBLE BY FIELD SURVEY. SERVICES DENOTED AS BEING "PER DBYD ONLY" ARE APPROXIMATE AND FOR ILLUSTRATIVE PURPOSES ONLY. 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.
- THIS NOTE FORMS AN INTEGRAL PART OF THE PLAN/DATA. ANY REPRODUCTION OF THIS PLAN/MODEL WITHOUT THIS NOTE ATTACHED WILL RENDER THE INFORMATION SHOWN INVALID.

SITE PLAN
1 : 200

NOTE: DIMENSIONED BOUNDARY OFFSETS TO THE PROPOSED BUILDING ARE TO THE EXTERNAL CLADDING U.N.O.

DRIVEWAY GRADIENT
MAXIMUM GRADIENT 1:4 (25%)
TO AS 2890

CAR PARKING GRADIENT
PARALLEL TO PARKING ANGLE 1:20 (5%)
CROSSFALL 1:16 (6.25%)

Prime Design
10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Drawing:
SITE PLAN

Client name:
J.S. HENRICKS

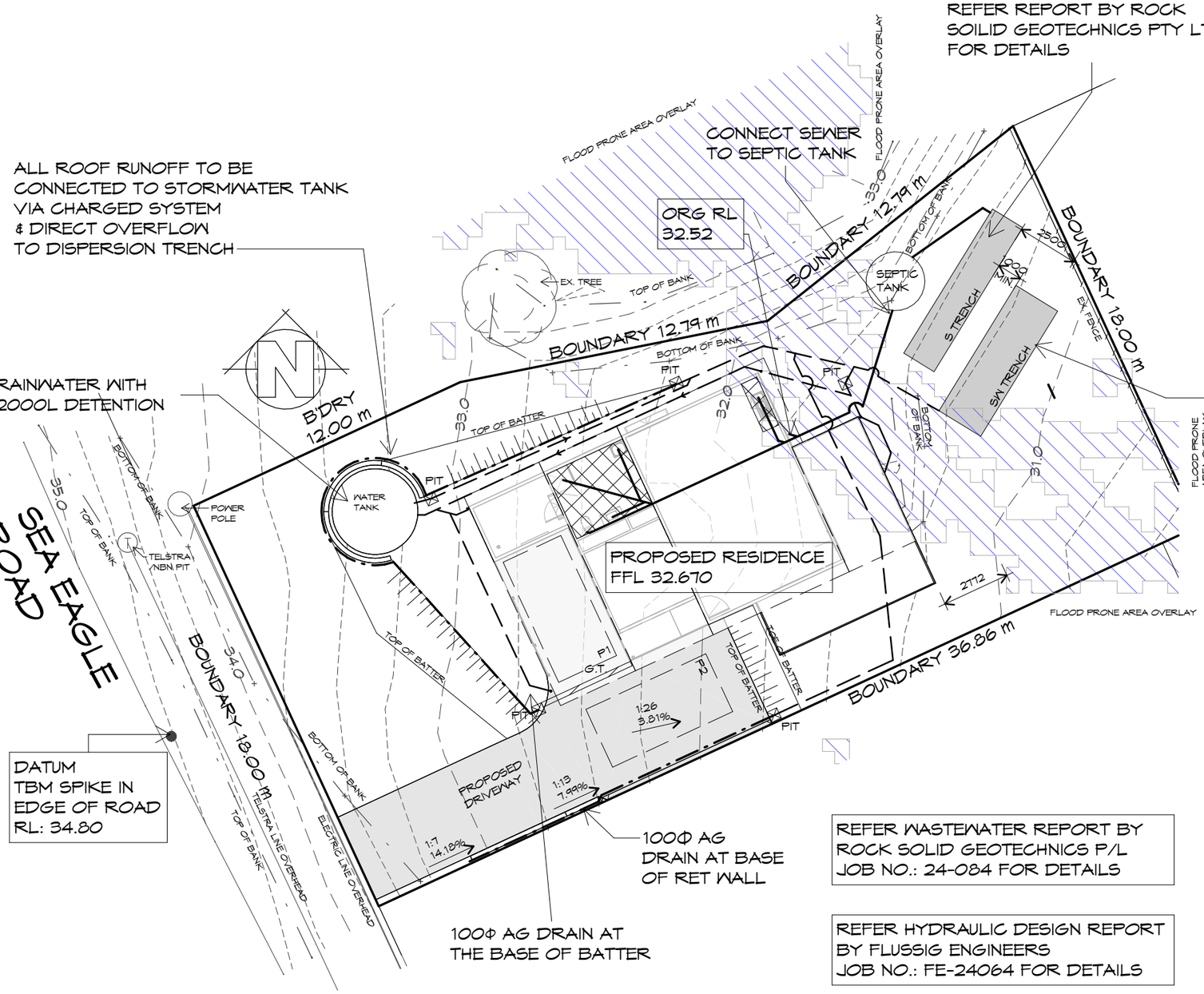
Date: 18.12.2024
Scale: 1 : 200

Drafted by: S.P.
Approved by: M.R.

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Project/Drawing no: PD24252 -01
Revision: 02

Accredited building practitioner: Frank Geskus -No CC246A



SITE DRAINAGE PLAN

1 : 200

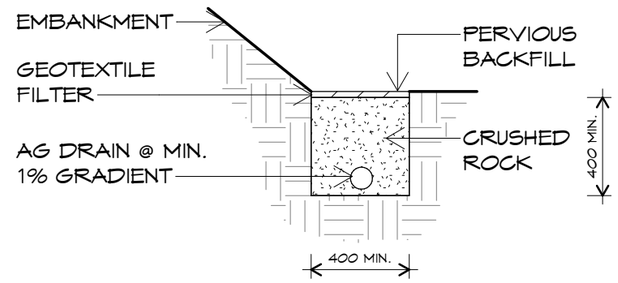
LEGEND

- PIT — 450X 450 SURFACE DRAINAGE PIT
- WET AREAS
- SEWER LINE
- STORMWATER LINE
- 100Φ AG DRAIN
- G.T. — 150W GRATED TRENCH

PLUMBING NOTES:
ALL DRAINAGE WORK SHOWN IS PROVISIONAL ONLY AND IS SUBJECT TO AMENDMENT TO COMPLY WITH THE REQUIREMENTS OF THE LOCAL AUTHORITIES.
ALL WORK IS TO COMPLY WITH THE REQUIREMENTS OF AS 3500.2021 & THE TASMANIAN PLUMBING CODE. AND MUST BE CARRIED OUT BY A LICENCED TRADESMAN ONLY.

REFER WASTEWATER REPORT BY ROCK SOLID GEOTECHNICS P/L JOB NO.: 24-084 FOR DETAILS

REFER HYDRAULIC DESIGN REPORT BY FLUSSIG ENGINEERS JOB NO.: FE-24064 FOR DETAILS



TYPICAL AG DRAIN DETAIL

NTS

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Sorell Council

Development Application:5.2024.229.1 - Reposnse to Request For Information - 2 Sea Eagle Road, Primrose Sands - P3.pdf
Plan Reference:P3

Date received:19/12/2024

Prime Design
10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Drawing:
SITE DRAINAGE PLAN

Client name:
J.S. HENRICKS

Date:
18.12.2024

Scale:
As indicated

Drafted by:
S.P.

Approved by:
M.R.

Project/Drawing no:
PD24252 -02

Revision:
02

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A

LOCALITY PLAN

1 : 2000

THIS SITE IS ZONED **LOW DENSITY RESIDENTIAL** AND **DOES NOT** FALL WITHIN A BUSHFIRE PRONE AREAS OVERLAY, THEREFORE **DOES NOT REQUIRE** A BUSHFIRE ASSESSMENT.

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Prime Design

10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Client name:
J.S. HENRICKS

Drawing:
LOCALITY PLAN

Drafted by:	Approved by:
S.P.	M.R.
Date:	Scale:
18.12.2024	1 : 2000
Project/Drawing no:	Revision:
PD24252 -03	02

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

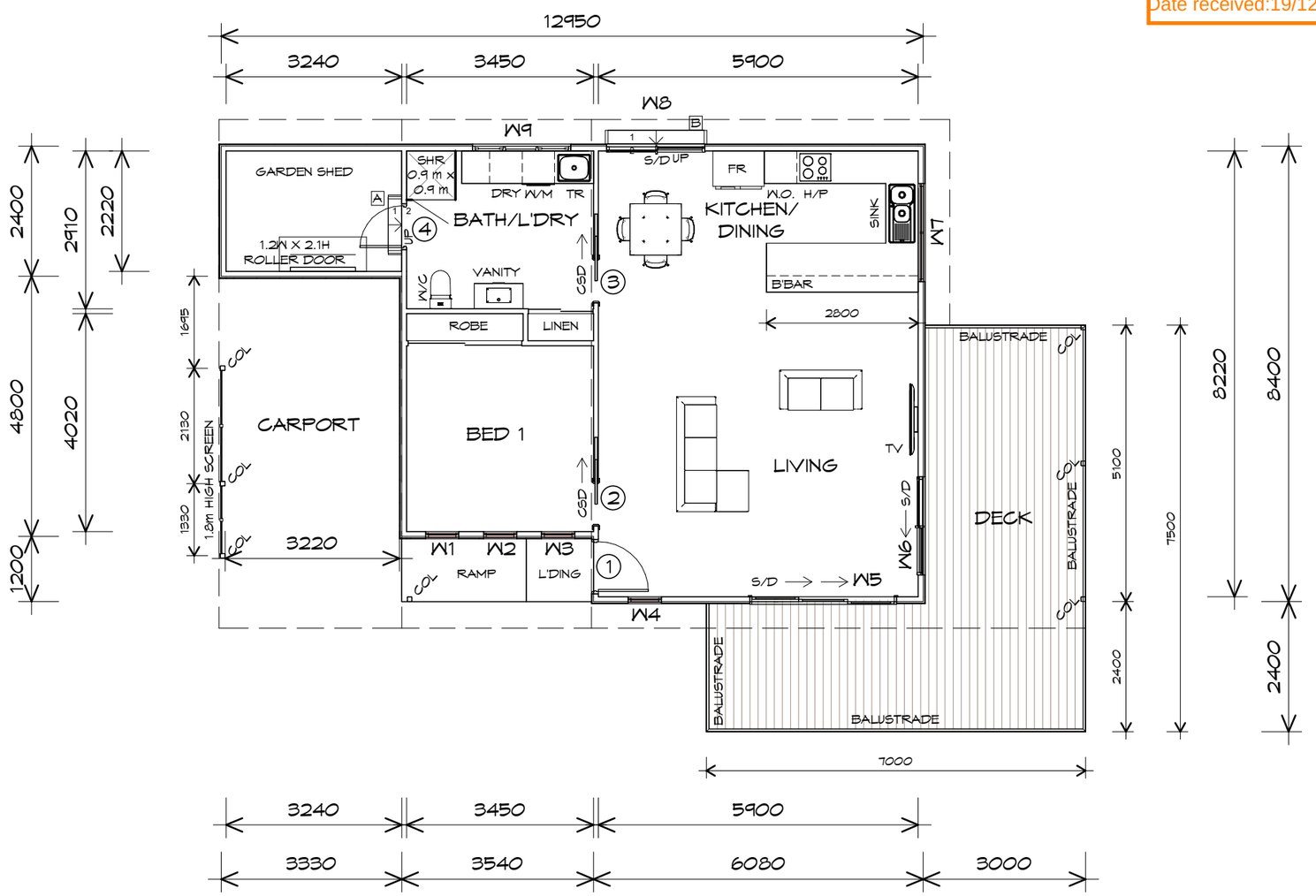
Accredited building practitioner: Frank Geskus -No CC246A

LEGEND

- CSD CAVITY SLIDING DOOR
- S/D SLIDING DOOR
- COL COLUMN
- G.S. GLASS SCREEN
- W.O. WALL OVEN TO CLIENT'S SPECS.

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS



STAIRS

STAIR	NO RISERS	RISER H'T	TREAD DEPTH
A	2	175	250
B	2	175	250

NON SLIP TO COMPLY NCC 2022

DOOR SCHEDULE

MARK	WIDTH	TYPE	REMARKS
1	920	EXTERNAL SOLID DOOR	
2	820	CAVITY SLIDING DOOR	
3	820	CAVITY SLIDING DOOR	
4	770	INTERNAL TIMBER DOOR	

WINDOW SCHEDULE

MARK	HEIGHT	WIDTH	TYPE	REMARKS
W1	2100	610	AWNING WINDOW	
W2	2100	610	AWNING WINDOW	
W3	2100	610	AWNING WINDOW	
W4	2100	610	AWNING WINDOW	
W5	2100	2710	STACKING SLIDING DOOR	
W6	2100	1810	SLIDING DOOR	
W7	900	1810	AWNING WINDOW	
W8	2100	1810	SLIDING DOOR	
W9	600	1810	AWNING WINDOW	

FLOOR PLAN

1 : 100

DECK AREA	32.32	m2	(3.48	SQUARES)
FLOOR AREA	77.24	m2	(8.31	SQUARES)
GARDEN SHED AREA	8.48	m2	(0.91	SQUARES)
TOTAL AREA	118.04		12.71	

NOTE:
FLOOR AREAS INCLUDE TO EXTERNAL FACE OF BUILDING AND GARAGE, UNLESS OTHERWISE STATED. DECKS AND OUTDOOR AREAS ARE CALCULATED SEPARATELY.

ALUMINIUM WINDOWS **DOUBLE GLAZING** COMPLETE WITH FLY SCREENS.
ALL WINDOW MEASUREMENTS TO BE VERIFIED ON SITE PRIOR TO ORDERING

Prime Design
10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Drawing:
FLOOR PLAN

Client name:
J.S. HENRICKS

Date:
18.12.2024

Scale:
1 : 100

Drafted by:
S.P.

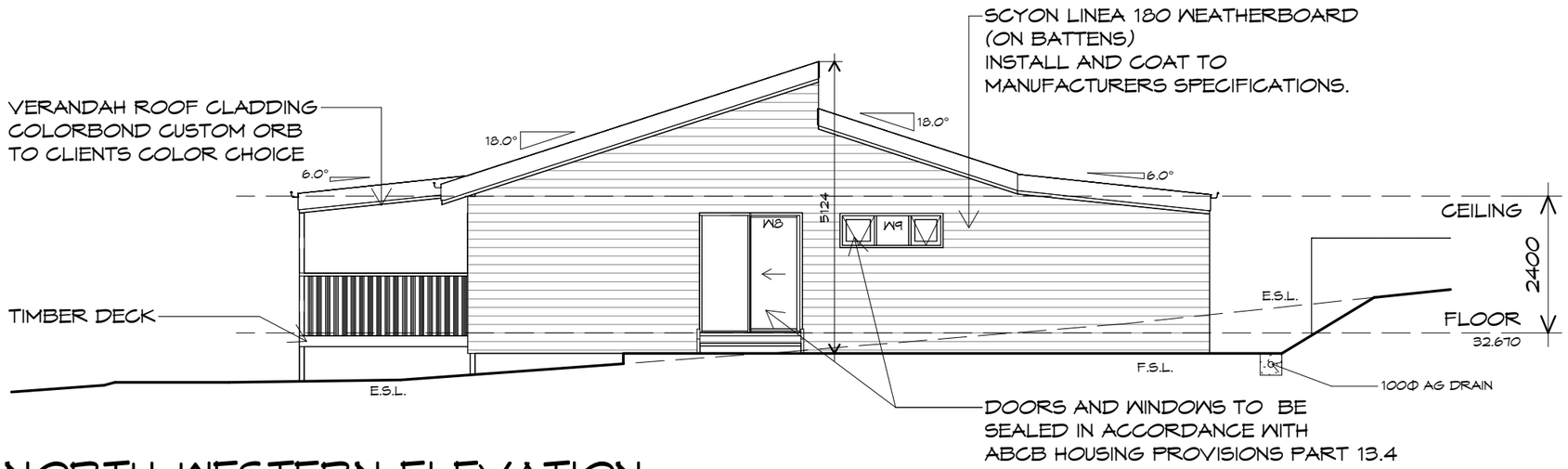
Approved by:
M.R.

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Project/Drawing no:
PD24252 -04

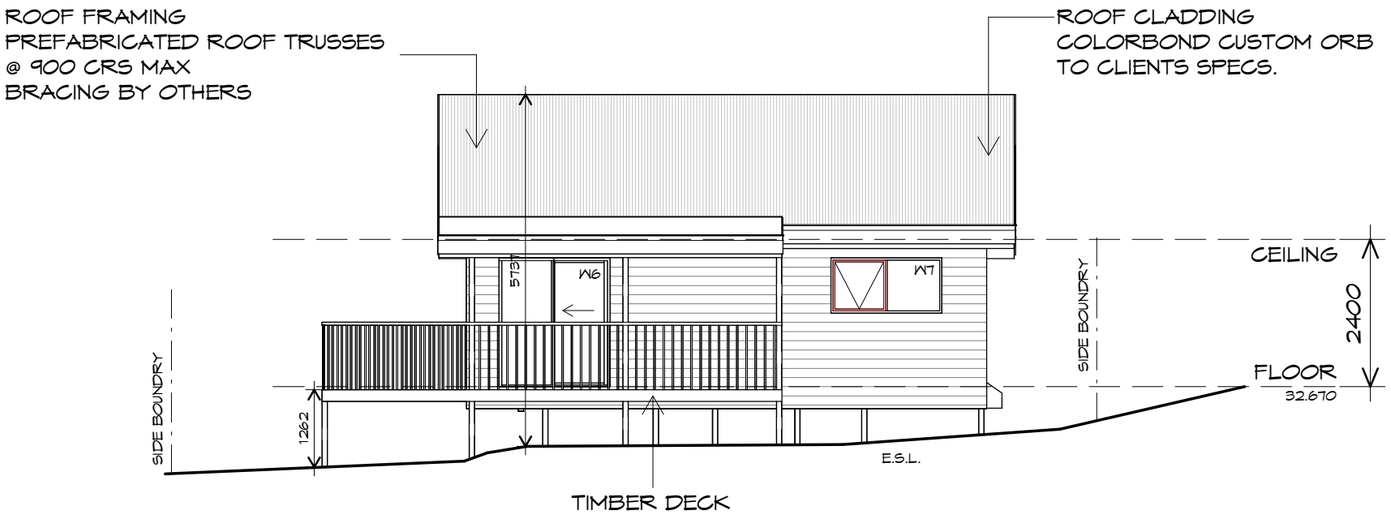
Revision:
02

Accredited building practitioner: Frank Geskus -No CC246A



NORTH-WESTERN ELEVATION

1 : 100



NORTH-EASTERN ELEVATION

1 : 100

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Sorell Council

Development Application:5.2024.229.1 - Reposnse to Request For Information - 2 Sea Eagle Road, Primrose Sands - P3.pdf
Plan Reference:P3

Date received:19/12/2024

Prime Design

10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

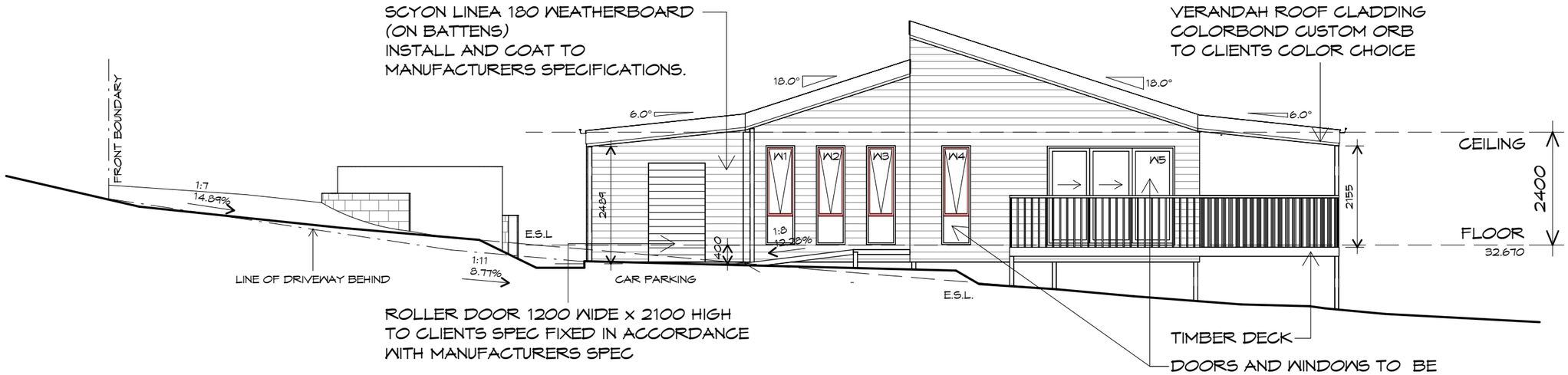
Client name:
J.S. HENRICKS

Drawing:
ELEVATIONS

Drafted by:	Approved by:
S.P.	M.R.
Date:	Scale:
18.12.2024	1 : 100
Project/Drawing no:	Revision:
PD24252 -05	02

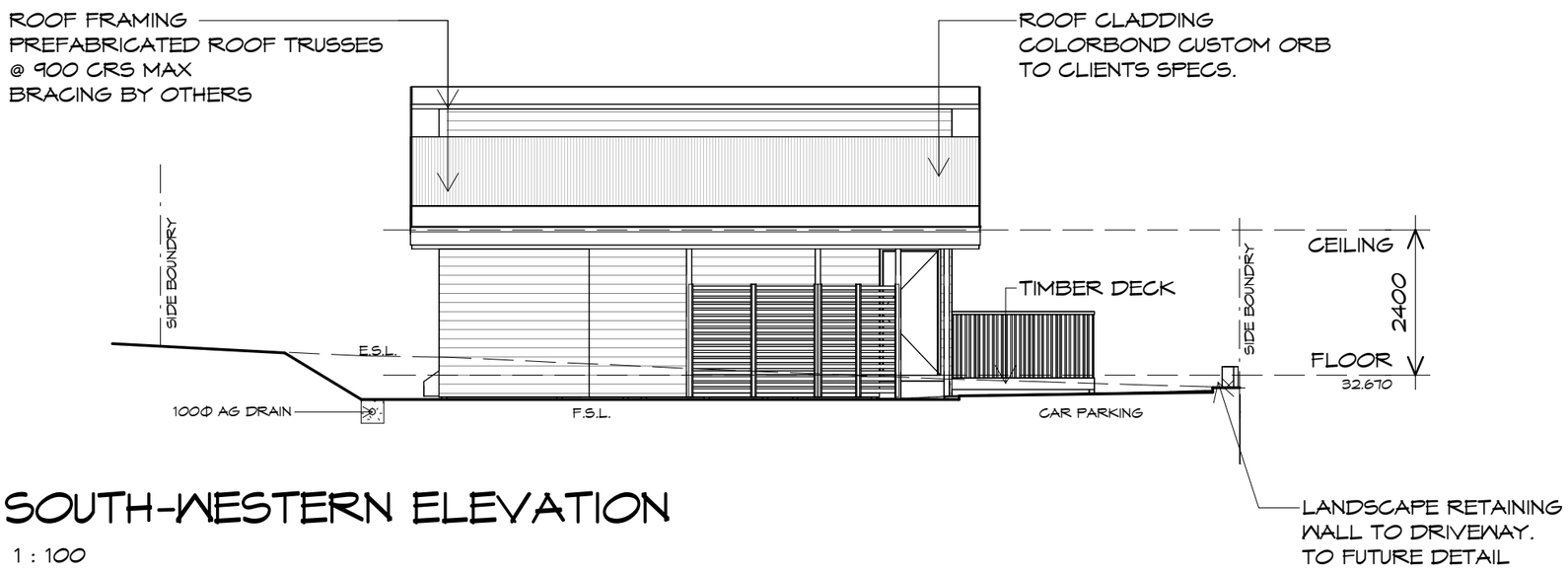
BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A



SOUTH-EASTERN ELEVATION

1 : 100



SOUTH-WESTERN ELEVATION

1 : 100

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Prime Design
10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

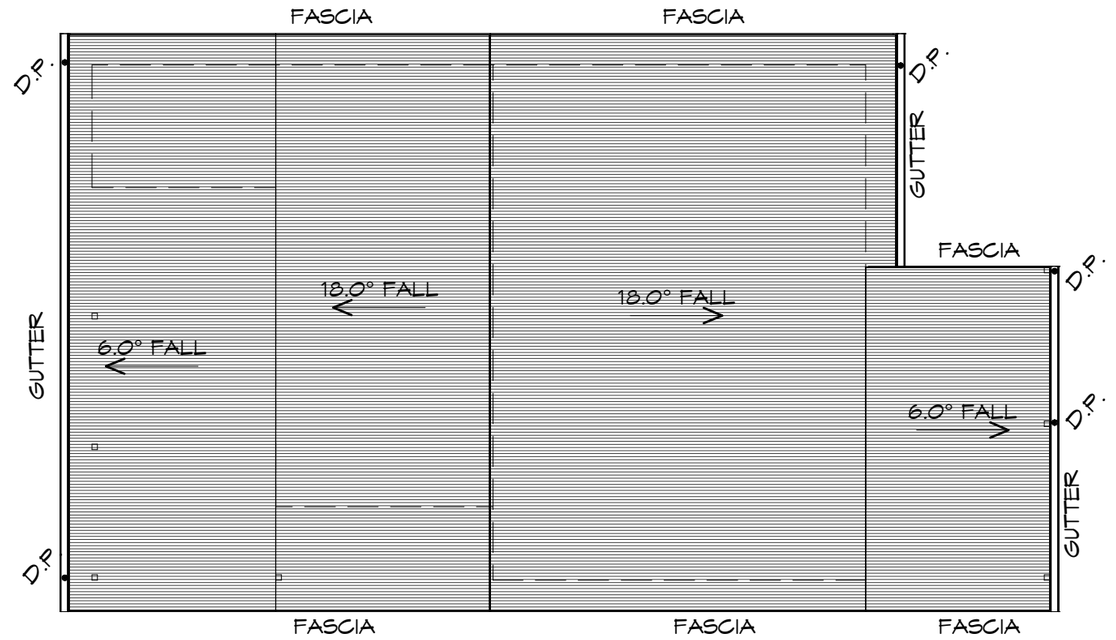
Client name:
J.S. HENRICKS

Drawing:
ELEVATIONS

Drafted by:	Approved by:
S.P.	M.R.
Date:	Scale:
18.12.2024	1 : 100
Project/Drawing no:	Revision:
PD24252 -06	02

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A



ROOF PLAN

1 : 100

ADDITIONAL ROOF LOAD
NO SOLAR P.V. SYSTEM HAS BEEN ALLOWED FOR,
NO SOLAR HOT WATER HAS BEEN ALLOWED FOR.

NOTE: DOWNPIPES CONNECTED TO POTABLE WATER TANK ON SITE. CHARGED DOWNPIPES AND INSTALLATION OF WATER TANK TO COMPLY WITH AS3500.3 AND CBOS DIRECTOR GUIDELINES

ROOF PLUMBING NOTES:

GUTTER INSTALLATION
TO BE IN ACCORDANCE WITH
ABCB HOUSING PROVISIONS PART 7.4.4
WITH FALL NO LESS THAN
1:500 FOR EAVES GUTTER
BOX GUTTERS IN ACCORDANCE WITH
AS33500.3:2021

UNLESS FIXED TO METAL FASCIA
EAVES GUTTER TO BE FIXED
@ 1200 CRS MAX.

VALLEY GUTTERS ON A ROOF WITH A PITCH:
A) MORE THAN 12.5° DEGREES - MUST HAVE A WIDTH OF NOT LESS THAN 400mm AND ROOF OVERHANG OF NOT LESS THAN 150mm EACH SIDE OFVALLEY GUTTER.
B) LESS THAN 12.5° DEGREES, MUST BE DESIGNED AS A BOX GUTTER.

LAP GUTTERS 75mm IN THE DIRECTION OF FLOW, RIVET & SEAL WITH AN APPROVED SILICONE SEALANT.

DOWNPIPE POSITIONS SHOWN ON THIS PLAN ARE NOMINAL ONLY.
EXACT LOCATION & NUMBER OF D.P'S REQUIRED ARE TO BE IN ACCORDANCE WITH ABCB HOUSING PROVISIONS PART 7.4.5 REQUIREMENTS.
SPACING BETWEEN DOWNPIPES MUST NOT BE MORE THAN 12m & LOCATED AS CLOSE AS POSSIBLE TO VALLEY GUTTERS

METAL ROOF
METAL SHEETING ROOF TO BE INSTALLED IN ACCORDANCE WITH ABCB HOUSING PROVISIONS PART 7.2. REFER TO TABLE 7.2.2a FOR ACCEPTABLE CORROSION PROTECTION FOR SHEET ROOFING, REFER TO TABLE 7.2.2b-7.2.2e FOR ACCEPTABILITY OF CONTACT BETWEEN DIFFERENT ROOFING MATERIALS. FOR FIXING, SHEET LAYING SEQUENCE, FASTENER FREQUENCY FOR TRANVERSE FLASHINGS AND CAPPINGS, ANTI CAPILLARY BREAKS, FLASHING DETAILS REFER TO ABCB HOUSING PROVISIONS PART 7.2.5- 7.2.7. ROOF PENETRATION FLASHING DETAILS. REFER TO TO ABCB HOUSING PROVISIONS PART 7.2.5- 7.2.7. ROOF SHEETING MUST OVERHANG MIN 35mm AS PER ABCB HOUSING PROVISIONS PART 7.2.8

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Prime Design

10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Drawing:
ROOF PLAN

Client name:
J.S. HENRICKS

Date: 18.12.2024
Scale: 1 : 100

Drafted by: S.P.
Approved by: M.R.

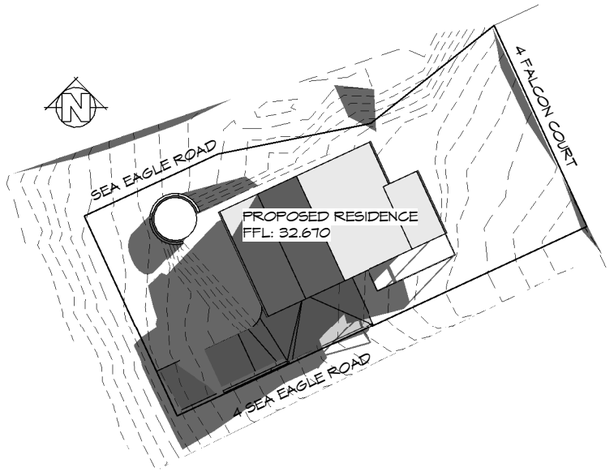
BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Project/Drawing no: PD24252 -07
Revision: 02

Accredited building practitioner: Frank Geskus -No CC246A

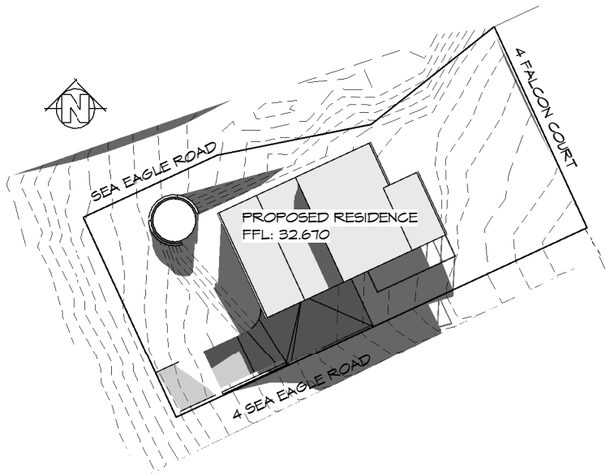
PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS



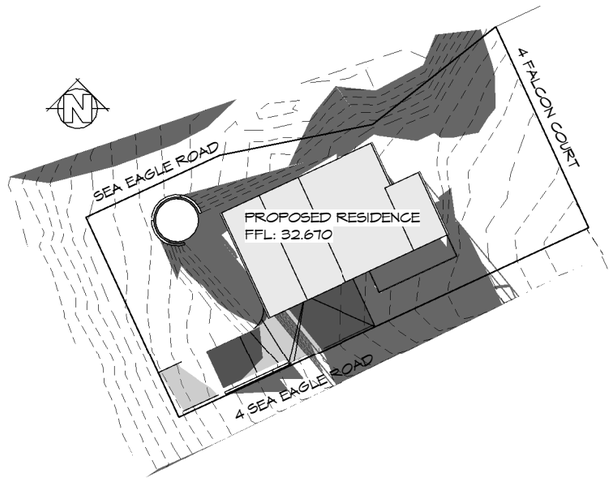
SUN SHADOW DIAGRAM 9AM

1 : 500



SUN SHADOW DIAGRAM 12PM

1 : 500



SUN SHADOW DIAGRAM 3PM

1 : 500

GENERAL INFORMATION
NORTH: TRUE NORTH
DAY LIGHT SAVINGS: OFF
DATE: JUNE 21st
TIME: AS INDICATED

Sorell Council

Development Application:5.2024.229.1 - Reposnse to Request For Information - 2 Sea Eagle Road, Primrose Sands - P3.pdf
Plan Reference:P3
Date received:19/12/2024

Prime Design

10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Drawing:
SUN SHADOW DIAGRAMS

Client name:
J.S. HENRICKS

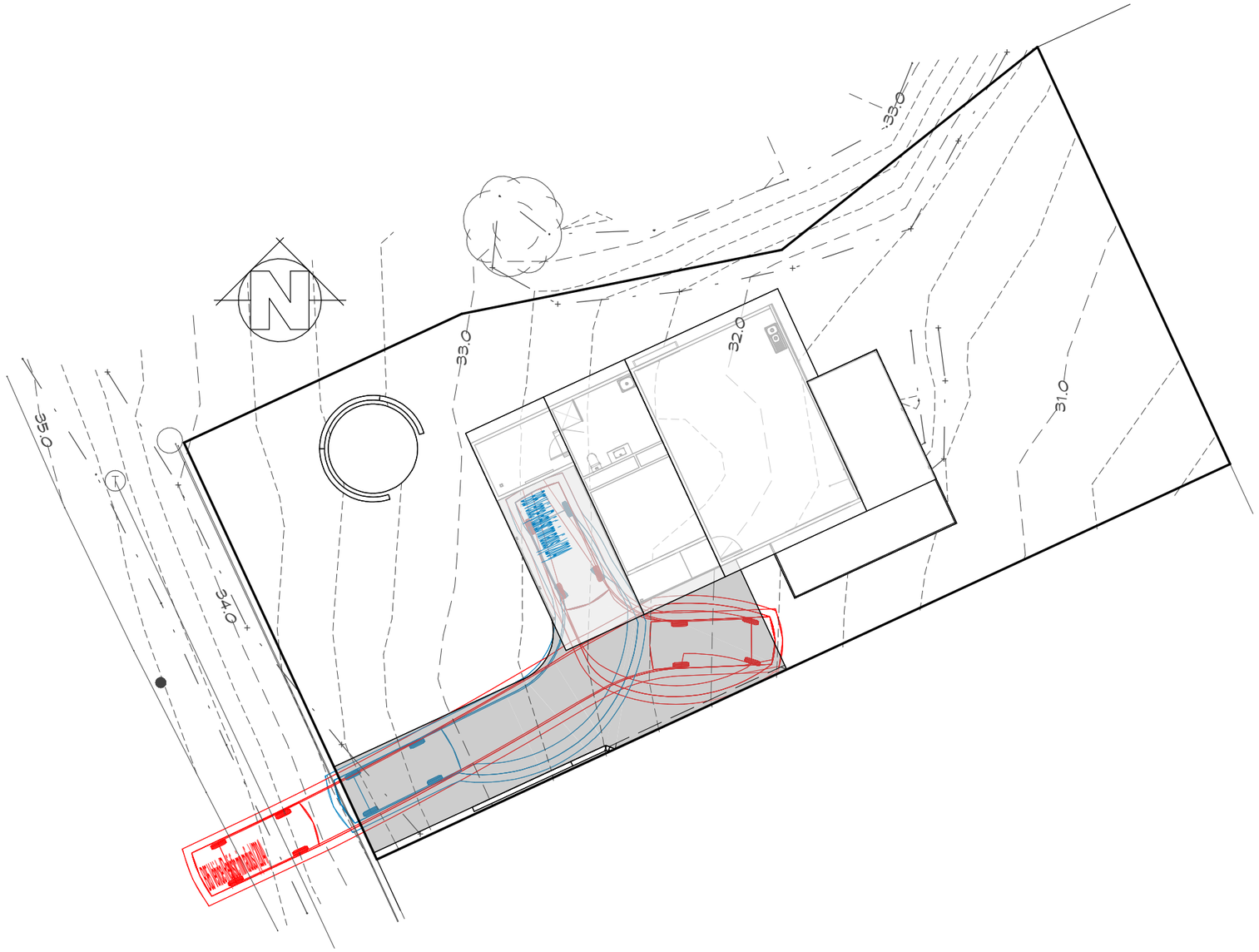
Date: 18.12.2024
Scale: 1 : 500

Drafted by: Author
Approved by: Approver

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Project/Drawing no: PD24252 -08
Revision: 02

Accredited building practitioner: Frank Geskus -No CC246A



SITE TURNING DIAGRAM

1 : 200

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

LEGEND

- INWARDS - MOVEMENT
- OUTWARDS - MOVEMENT

NOTE:
TURNING CIRCLES AS PER AUSTROADS 2013/AS2890
FORWARD DESIGN SPEED: 5KM/HR
REVERSE DESIGN SPEED: 2.5KM/HR

Prime Design

10 Goodman Court, Invermay Tasmania 7248,
p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+ 03 6228 4575
info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
2 SEA EAGLE ROAD,
PRIMROSE SANDS

Drawing:
SITE TURNING MOVEMENTS

Client name:
J.S. HENRICKS

Date:
18.12.2024

Scale:
As indicated

Drafted by:
Author

Approved by:
Approver

Project/Drawing no:
PD24252 -09

Revision:
02

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A