

Murrindindi
Shire Council

NOTICE OF AN APPLICATION FOR PLANNING PERMIT

<i>The land affected by the application is located at:</i>	471 Taylor Bay-Right Arm Road TAYLOR BAY, (Lot: 45 LP: 44119)
<i>The application is for a permit to:</i>	Development of land for alterations to existing dwelling and construction of replacement outbuilding and removal of native vegetation
<i>The applicant for the permit is:</i>	L R Coviello
<i>The application reference number is:</i>	2024/59
<i>You may look at the application and any documents that support the application by visiting our website via the following web address:</i>	www.murrindindi.vic.gov.au/Planning Comment

Any person who may be affected by the granting of the permit may object or make other submissions to the responsible authority.

An objection must be sent to the responsible authority in writing, with the full name and postal address of the objector and include the reasons for the objection, and state how the objector would be affected.

The responsible authority must make a copy of every objection available at its office for any person to inspect during office hours free of charge until the end of the period during which an application may be made for review of a decision on the application.

<i>The responsible authority will not decide on the application before:</i>	04 June 2024
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If you object, the responsible authority will tell you its decision.

The planning unit can be contacted on (03) 5772 0333 or planning@murrindindi.vic.gov.au.



Planning Enquiries
Phone: (03) 5772 0317
Email: planning@murrindindi.vic.gov.au
Web: www.murrindindi.vic.gov.au

VicSmart? YES NO

Specify class of VicSmart application:

Application No.: _____ Date Lodged: / /

Application for a Planning Permit

If you need help to complete this form, read MORE INFORMATION at the back of this form.

⚠ Any material submitted with this application, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987*. If you have any concerns, please contact Council's planning department.

⚠ Questions marked with an asterisk (*) must be completed.

⚠ If the space provided on the form is insufficient, attach a separate sheet.

i Click for further information.

Clear Form

Application Type

Is this a VicSmart application?*

No Yes

If yes, please specify which

VicSmart class or classes:.....

⚠ If the application falls into one of the classes listed under Clause 92 or the schedule to Clause 94, it is a VicSmart application.

Pre-application Meeting

Has there been a pre-application meeting with a Council planning officer?

No Yes

If 'Yes', with whom?:

Date:

day / month ▲year

The Land **i**

Address of the land. Complete the Street Address and one of the Formal Land Descriptions.

Street Address *

Unit No.:	St. No.: 471	St. Name: Taylor Bay Right Arm Road
Suburb/Locality: Taylor Bay		Postcode: 3713

Formal Land Description *

Complete either A or B.

⚠ This information can be found on the certificate of title.


If this application relates to more than one address, attach a separate sheet setting out any additional property details.


A Lodged Plan Title Plan Plan of Subdivision

OR


B

The Proposal

-  You must give full details of your proposal and attach the information required to assess the application. Insufficient or unclear information will delay your application.


-  For what use, development or other matter do you require a permit? *

Construction of alterations and additions to an existing dwelling, construction of replacement shed and removal of native vegetation.

-  Provide additional information about the proposal, including: plans and elevations; any information required by the planning scheme, requested by Council or outlined in a Council planning permit checklist; and if required, a description of the likely effect of the proposal.

-  Estimated cost of any development for which the permit is required *

Cost \$ 580,000

-  You may be required to verify this estimate. Insert '0' if no development is proposed.


If the application is for land within **metropolitan Melbourne** (as defined in section 3 of the *Planning and Environment Act 1987*) and the estimated cost of the development exceeds \$1 million (adjusted annually by CPI) the Metropolitan Planning Levy **must** be paid to the State Revenue Office and a current levy certificate **must** be submitted with the application. Visit www.sro.vic.gov.au for information.

Existing Conditions

Describe how the land is used and developed now *

For example, vacant, three dwellings, medical centre with two practitioners, licensed restaurant with 80 seats, grazing.

Existing dwelling, shed and open-sided undercover area


-  Provide a plan of the existing conditions. Photos are also helpful.

Title Information

Encumbrances on title *

Does the proposal breach, in any way, an encumbrance on title such as a restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope?

- Yes (If 'yes' contact Council for advice on how to proceed before continuing with this application.)
- No
- Not applicable (no such encumbrance applies).

-  Provide a full, current copy of the title for each individual parcel of land forming the subject site. The title includes: the covering 'register search statement', the title diagram and the associated title documents, known as 'instruments', for example, restrictive covenants.

Applicant and Owner Details

Provide details of the applicant and the owner of the land.

Applicant *

The person who wants the permit.

Name:	
Title:	First Name: Liza Surname: Coviello
Organisation (if applicable):	
Postal Address:	If it is a P.O. Box, enter the details here:
[Redacted]	

Please provide at least one contact phone number *

Contact information for applicant OR contact person below
[Redacted]

Where the preferred contact person for the application is different from the applicant, provide the details of that person.

Contact person's details*	Same as applicant <input type="checkbox"/>
Name:	
Title: Ms	First Name: Angelina Surname: Bell
Organisation (if applicable): Bell Legal & Planning	
Postal Address:	If it is a P.O. Box, enter the details here:
[Redacted]	

Owner *

The person or organisation who owns the land

Where the owner is different from the applicant, provide the details of that person or organisation.

Name:		Same as applicant <input type="checkbox"/>
Title:	First Name: Liza Surname: Coviello	
Organisation (if applicable):		
Postal Address:	If it is a P.O. Box, enter the details here:	
[Redacted]		

Information requirements


Contact Council's planning department to discuss the specific requirements for this application and obtain a planning permit checklist.

Is the required information provided?

Yes No

Declaration

This form must be signed by the applicant *

 Remember it is against the law to provide false or misleading information, which could result in a heavy fine and cancellation of the permit.

I declare that I am the applicant; and that all the information in this application is true and correct; and the owner (if not myself) has been notified of the permit application.
[Redacted]

**REGISTER SEARCH STATEMENT (Title Search) Transfer of
Land Act 1958**

Page 1 of 1

VOLUME 08329 FOLIO 677

Security no : 124114738205N
Produced 07/05/2024 01:52 AM

LAND DESCRIPTION

Lot 45 on Plan of Subdivision 044119.
PARENT TITLE Volume 08235 Folio 414
Created by instrument B239305 07/07/1961

REGISTERED PROPRIETOR

Estate Fee Simple
Sole Proprietor
LIZA REBECCA COVIELLO of 1000 NILLUMBIK FARM DRIVE KANGAROO GROUND VIC 3097
AX543136X 11/12/2023

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DIAGRAM LOCATION

SEE LP044119 FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 471 TAYLOR BAY RIGHT ARM ROAD TAYLOR BAY VIC 3713

ADMINISTRATIVE NOTICES

NIL

eCT Control 18237Q HICKS OAKLEY CHESSELL WILLIAMS
Effective from 11/12/2023

DOCUMENT END



Imaged Document Cover Sheet

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OF PART OF CROWN ALLOTMENTS 20, 27, 28 & 29 SECTION B

PARISH OF EILDON
COUNTY OF ANGLESEY

EDITION 5
PLAN MAY BE LODGED 18/12/58

COLOUR CODE

E-1 = BLUE
R1 & E-2 = BROWN

THE LAND COLOURED BROWN AND BLUE IS APPROPRIATED OR SET APART FOR EASEMENTS OF WAY AND DRAINAGE

MEASUREMENTS ARE IN LINKS

VOL.6833 FOL.462

3647 281

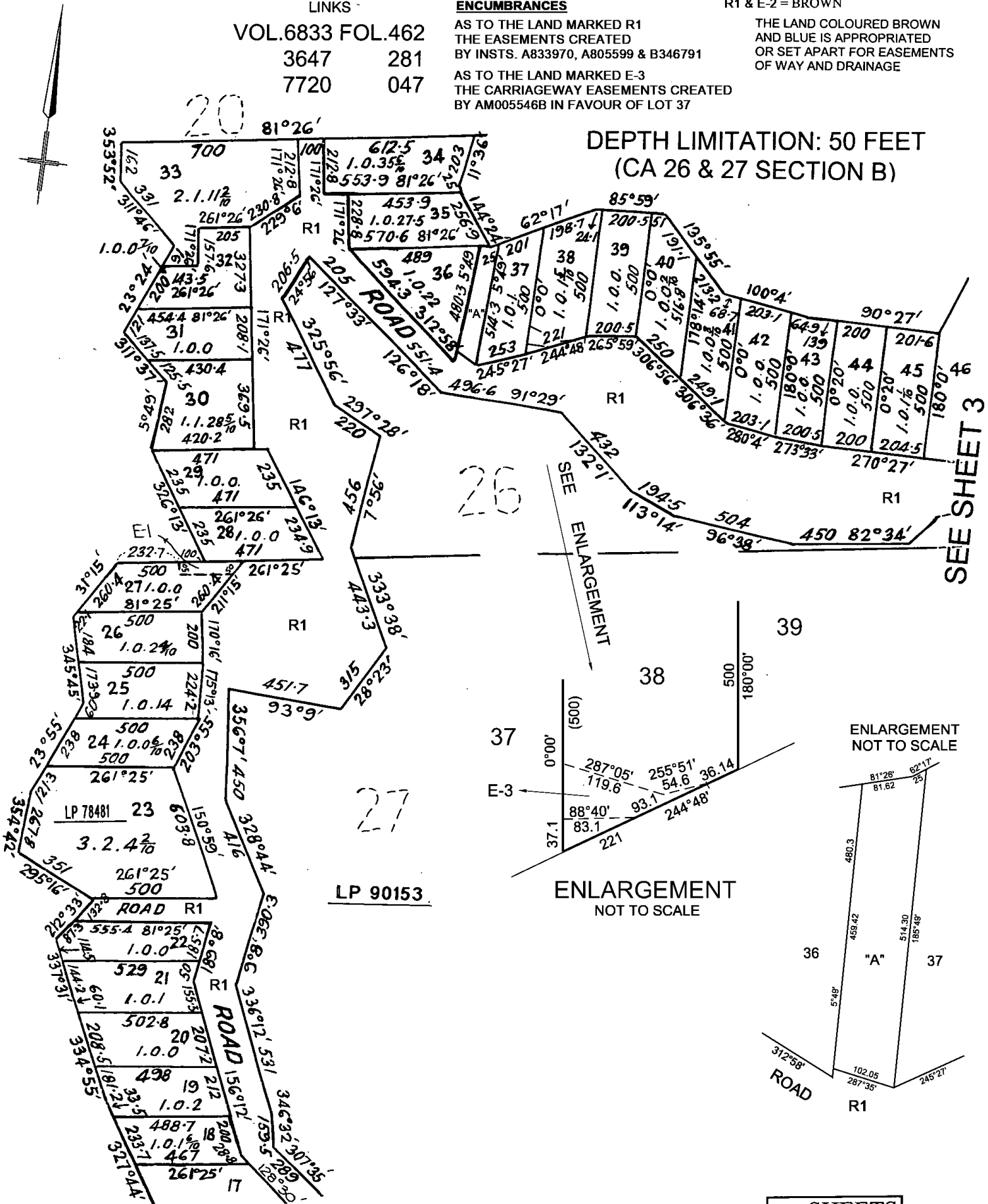
7720 047

ENCUMBRANCES

AS TO THE LAND MARKED R1
THE EASEMENTS CREATED
BY INSTS. A833970, A805599 & B346791

AS TO THE LAND MARKED E-3
THE CARRIAGEWAY EASEMENTS CREATED
BY AM005546B IN FAVOUR OF LOT 37

DEPTH LIMITATION: 50 FEET
(CA 26 & 27 SECTION B)



SEE SHEET 3

ENLARGEMENT NOT TO SCALE

ENLARGEMENT NOT TO SCALE

3 SHEETS
SHEET 1

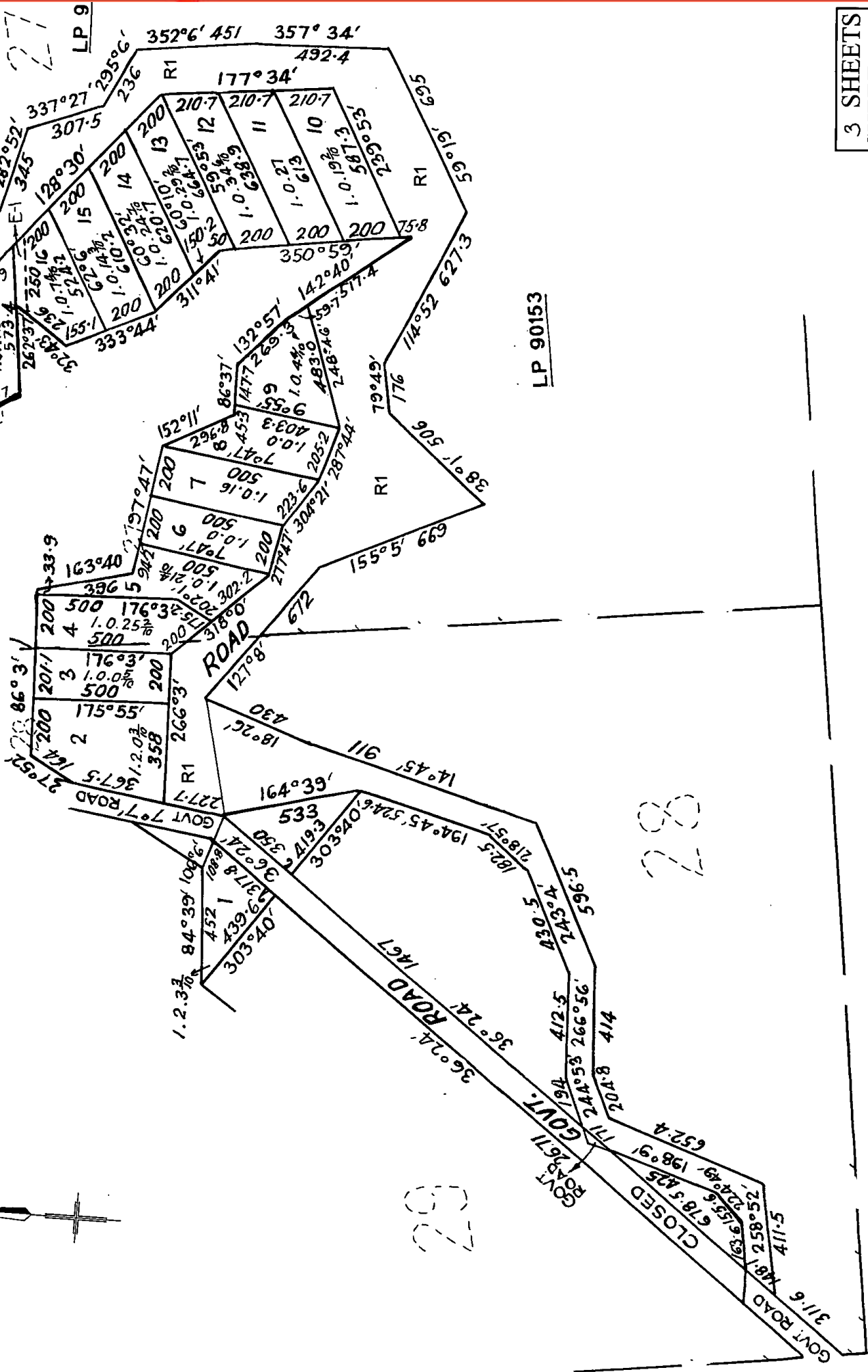
SEE SHEET 2

LP 90153

SEE SHEET 1

LP 4411

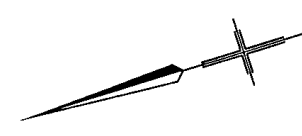
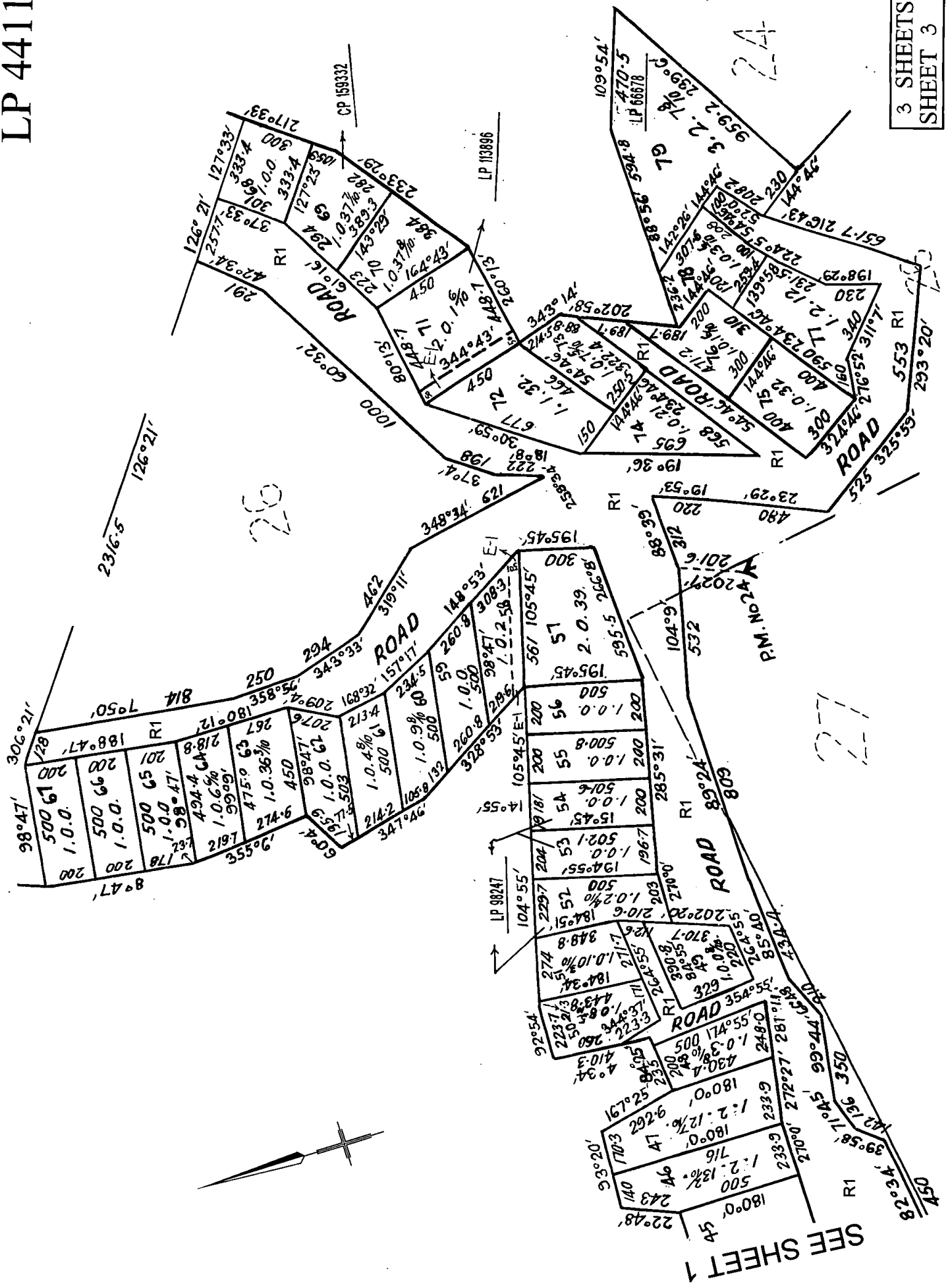
3 SHEETS
SHEET 2



28

LP 4411

3 SHEETS
SHEET 3



SEE SHEET 1

2A

20

21

Planning Permit Application
for
Alterations & additions to a dwelling &
Construction of a shed
in a
Bushfire Management Overlay
at
471 Taylor Bay Right Arm Road
Taylor Bay 3713
March 2024

Prepared for:	Liza & Daniel Coviello
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Prepared by:	Dean Putting, Yarra Valley BAL Assessments PO Box 292, Yarra Glen, 3775 0409 330 458 dean@yval.com.au
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VERSION	DATE	DETAILS
	14.03.2024	Initial Site Visit / Inspection
A	23.03.2024	Final for client approval

Assessing Fire Safety Officer – Please cc dean@yvbal.com.au in emails relating to this document

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1. INTRODUCTION

Clause 44.06 – Bushfire Management Overlay (BMO) applies to the land on which this proposed development is located.

The purpose of the BMO is:

- To implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.
- To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.
- To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.
- To ensure development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.

The proposal is for two projects:

- Alterations & additions to a building used for a dwelling that are greater than 50% of the gross floor area of the existing building, and
- Construction of a shed, a non-habitable outbuilding, with a gross floor area greater than 100m².

Both are subject to Clause 44.06-2 Permit Requirement.

Clause 53.02 – Bushfire Planning sets out the planning requirements for applications under Clause 44.06 – Bushfire Management Overlay.

This document has been prepared in accordance with the requirements of Clause 53.02.

Locality Map



2. PROPOSED DEVELOPMENT

The proposal is for alterations and additions to a dwelling and construction of a shed with a gross floor area >100m² for Liza and Daniel Coviello at 471 Taylor Bay Right Arm Road, Taylor Bay

The land is identified as Lot 45 on LP44119 and is within the Murrindindi Shire Council's area of responsibility.

The property is located within a Rural Conservation Zone (RCZ).

Three Planning Overlays apply to the Lot:

- Bushfire Management Overlay (BMO)
- Floodway Overlay (FO) – northeast corner
- Significant Landscape Overlay-Schedule 2 (SLO2)

No encumbrances are noted on the Title. No easements are identified on the Title Plan

APPLICATION PATHWAYS

Pathway One - Dwellings In Existing Settlements

Clause 53.02-3 applies to an application to construct a single dwelling or construct or carry out works associated with a single dwelling if all of the following requirements are met:

- The land is zoned Neighbourhood Residential Zone, General Residential Zone, Residential Growth Zone, Urban Growth Zone, Low Density Residential Zone, Township Zone or Rural Living Zone.
- There is only one dwelling on the lot.
- The application meets all of the approved measures contained in Clause 53.02-3

Clause 53.02-4 applies to all other applications

Pathway Two - All Other Buildings and Works

Clause 53.02-4 applies to all other buildings and works, including an application that does not meet all the approved measures in Clause 53.02-3

Pathway Three - Subdivisions

Clause 53.02-4.4 contains requirements for subdivisions.

The proposal is for works to a dwelling in a Rural Conservation Zone therefore the pathway for this application is **Pathway Two – All Other Buildings and Works**

Pathway One	Pathway Two		Pathway Three
53.02-3	53.02-4		53.02-4.4
Dwellings In Existing Settlements	Dwellings, Small Second Dwelling, Industry, Office or Retail Premises	Other - Child Care, Education Centre, Hospital, Leisure & Recreation or Place of Assembly	Subdivisions
APPROVED MEASURES			
AM 1.1	AM 2.1	AM 2.1	AM 5.1
AM 1.2	AM 2.2	AM 2.2	AM 5.2
AM 1.3	AM 2.3	AM 2.3	AM 5.3
	AM 3.1	AM 3.2	AM 5.4
	AM 4.1	AM 4.2	
ALTERNATIVE MEASURES			
Not Permitted	AltM 3.3	AltM 3.6	AltM 5.5
	AltM 3.4		
	AltM 3.5		

3. BUSHFIRE HAZARD SITE ASSESSMENT

The Bushfire Hazard Site Assessment describes the bushfire hazard within 150m of the proposed development and provides an analysis of the site.

Site Description

- The subject land is a near rectangular shaped parcel located on the north side of Taylor Bay Right Arm Road. It has a frontage of 41.14m, side boundaries of 100.58m and a north boundary of 40.56m. The overall size of the lot is 4409m². The main axis of the land is 8° east of north, the aspect is generally north and the land falls from the road to the lake with a slope of around 7°.
- The land has been developed and contains a single weatherboard clad dwelling built on an elevated platform with an open carport area beneath the north section. Other buildings include a steel shed to south and a roofed caravan storage area to east of the dwelling. A concrete crossover provides a connection from the road to the gravel driveway which enters near midway along the frontage before leading downslope to the dwelling.
- Vegetation has been modified in the vicinity of the dwelling and buildings and to a lesser extent upslope away from the developed area towards the road where it becomes forest. There is no clear demarcation line between the modified and forest but more of a gradual transition.
- Despite being zoned Rural Conservation, land along the lake shore has been subdivided into large lots more suited to residential development. Most if not all of these have been developed with construction of a dwelling usually with an associated outbuilding or two. Adjacent land to west and east fall into this category. The lake capacity is currently high with water in close proximity to the high water mark however is not always the case with water being hundreds of metres from here in not too distant years.
- Vegetation surrounding the residential development has been significantly modified with generally open understoreys and areas of bare ground or gravel surfaces where vehicles regularly access the area. This grades to forest upslope towards the road and away from the areas of greater human activity. Forest extends upslope beyond the road across the steep land where shallow rocky soils result in forests of low productivity. Exposed aspects have a minimal shrub layer except along drainage lines where it increases in the damper shaded gullies.
- Reticulated water is not available in Taylor Bay. Water for domestic use including firefighting water supplies are stored in tanks on site. Some static water supply tanks for firefighting have been placed in strategic locations through the area by Murrindindi Council however these are few and far between. Water supplies established on private properties will be relied on to assist ground based firefighting operations in the district and the nearby waters of the Lake utilised for aerial based suppression activity.
- Taylor Bay Right Arm Road is a sealed single access road however it is narrow with limited passing and turning bays. These conditions limit travel speeds and egress times. The south end of the road connects to Skyline Road which leads southeast into Eildon township. The route from the subject land to Eildon traverses timbered country and travel on the road could be restricted or unavailable during bushfire activity
- A Neighbourhood Safer Place has been established at the Eildon Basketball Courts, 9.0km travel from the subject land. This facility is a Place of Last Resort and should only be used as such when other plans fail or become unviable. *Avoiding visiting, or leaving the district early on days of elevated fire danger is always the safest option*

The existing dwelling viewed from lake edge



View to north



View to east from dwelling



Adjacent land to east beyond boundary vegetation



View to south – driveway on left side



View of dwelling on adjacent land to west through boundary vegetation



Area below dwelling on adjacent land to west



Site of proposed shed



View along driveway towards road



Aerial view of site – subject dwelling near centre of image



Hazard Assessment

The assessment is prepared using the process set out in Planning Permit Applications BMO Technical Guide, which integrates relevant parts of AS 3959:2018 *Construction of buildings in bushfire prone areas*.

a. Vegetation Classification

AS 3959:2018 2.2.3 Vegetation and CFA Vegetation Classes: Victorian Bushfire Management Overlay (Feb 2014) were used to determine the vegetation type

	N	E	S	W
Vegetation Type	Low Threat	Modified	Forest	Modified

b. Exclusions – Low threat vegetation and non-vegetated areas

AS 3959:2018 2.2.3.2 Exclusions apart from (a)

	N	E	S	W
Exclusions	(e)	-	(e)	-

c. Distance to classifiable vegetation

AS 3959:2018 2.2.4 Distance of the site from classifiable vegetation

	N	E	S	W
Distance of building from vegetation	n/a	n/a	~18m	n/a

d. Effective Slope

AS 3959:2018 2.2.5 Effective slope of land under the classified vegetation

	N	E	S	W
Effective Slope	n/a	n/a	Upslope	n/a

4. DEFENDABLE SPACE & CONSTRUCTION REQUIREMENTS

The process for determining the achievable defensible space and associated BAL rating for the building construction requirements is informed by the Bushfire Hazard Site Assessment in the previous section.

Vegetation type, exclusions, distances of the building to the classified vegetation and effective slopes are all facts that contribute to the existing bushfire hazard and potential defensible space achievable on the site.

Given the pathway ascertained in Section 2. Proposed Development, **Table 2 Defendable space and construction** of Clause 53.02-5 will be used to determine the requirements

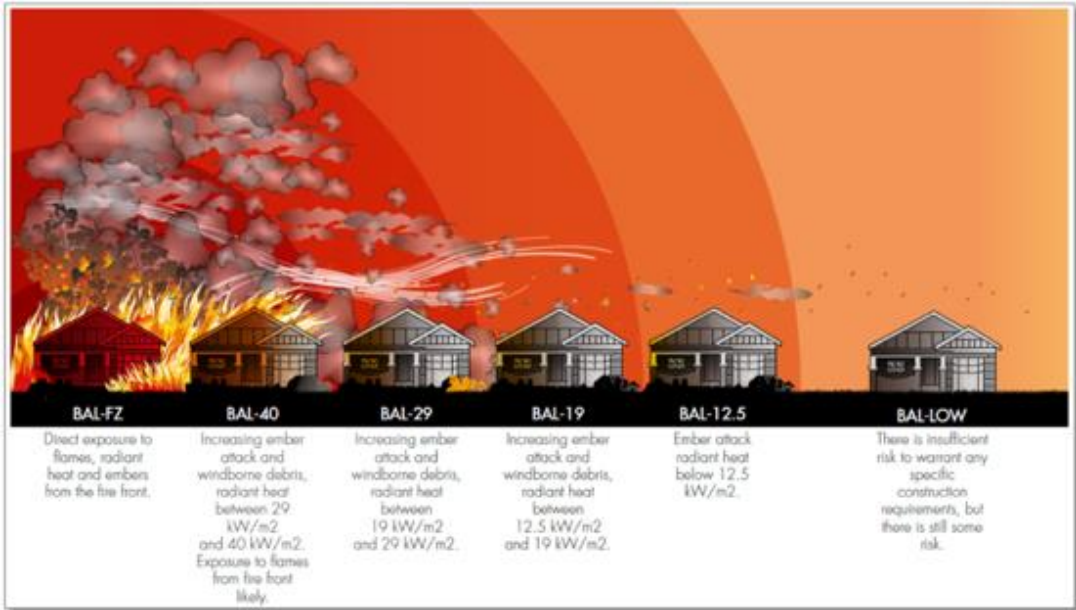
Construction requirements and defensible space distances achievable within the title boundaries based on the Bushfire Hazard Site Assessment

	N	E	S	W
Vegetation Classification	Forest & Modified			
BAL Rating	BAL 40			
Defendable Space	PB	PB	25m	PB

PB = Defendable space to be provided to the property boundary.

The Bushfire Attack Level for this site is **BAL 29**

- There is an increased risk of ember attack and burning debris ignited by wind borne embers and a likelihood of exposure to an increased level of radiant heat.
- The construction elements are expected to be exposed to a heat flux not greater than 29 kW/m².



5. BUSHFIRE HAZARD LANDSCAPE ASSESSMENT

The Bushfire Hazard Landscape Assessment describes the bushfire hazard of the general locality more than 150m from the site

Regional Bushfire Planning Assessment

This area is noted in the RBPA Hume Region – Murrindindi Shire section.

Area Code: 55-008

Location: Taylor Bay

Description: Cluster of small rural-residential lots surrounded by vegetation associated with the Lake Eildon National Park. Dwellings also have direct interfaces with riparian and scattered vegetation. Existing vegetation includes areas of vegetation of high and very high conservation significance.

Bushfire Hazard

a. Fuel (vegetation)

- Large areas of native forest vegetation remain in the district. These are generally of dry forest types growing on steep slopes of shallow rocky soils of low fertility and contain a mix of box and stringybark eucalypts. Ribbon barked eucalypts are less represented. Stringybarks have potential of generating vast amounts of embers that contribute to spot fire ignitions ahead of the main fire front. Extensive spotting activity is expected to be associated with wildfire in the area.

b. Weather

- Subject to weather patterns typical of southern Victoria
- Wind patterns from N-NW associated with elevated fire danger – hot dry continental winds with increasing velocity over a number of days culminating in a W-SW change ahead of a cold front. Gusty conditions ahead of, during and after passage of front followed by cooler and moist maritime south west airstream.

c. Topography

- Terrain of rolling to steep hills rising from the impounded water of Lake Eildon.
- Diurnal lake breezes and night land breezes reinforcing anabatic and katabatic wind velocities
- Topographic influences include; increased uphill rates of spread, top of slope acceleration, lee slope turbulence, channeling of winds along valleys, anabatic and katabatic winds.

Potential Fire Runs

N-NW:

- Limited fire run potential from north due to extent of water. Possible spot ignitions on and around subject land under extreme conditions. Managed and modified vegetation limiting fire development. Uphill spread away from the site.
- Potential fire run from northwest limited due to disruption to fuel continuity created by arms of the lake. Fire impacts on subject land would rely heavily on downwind spotting reaching the site. Uphill run away from the site from any ignitions on the subject land.

W-SW:

- Post wind change fire run potential dependent on extent and location of pre change fire perimeter, especially the eastern flank. Potential ignitions under winds from these directions on the wind change can also result in rapid fire development and spread.
- Potential fire run through forests from west with overall downhill spread from the Skyline Road ridge across gullies and crests of spurs falling to the lake. Taylor Bay interrupting continuous fire spread and spotting across the bay needed to initiate fore spread on Right Arm area. Modified vegetation across properties to west limiting fire spread.
- Potential fire run through forest from the southwest along the lower slopes of Taylor Bay right Arm. Flank extension up exposed west slopes. Accelerated uphill runs with downwind spotting from ridges aiding fire spread with ignitions across subject land and surrounding properties. Downhill run from ridge towards site meeting uphill run from lower slope ignitions. Fire activity restricting access and egress options.

Fire History & Prevention Works

The information supplied here is based on publicly available records, which primarily relate to larger fires in the landscape and planned burns on public land. Whilst this does not reflect the frequency of ignitions that are controlled by first attack crews, before developing to a significant size, it does include the more notable fires in the district within the past 30 years and also reflects the level of preventative burning on public land undertaken by FFMV and their predecessors.

Significant bushfires have been long absent from the area surrounding Eildon however that cannot be taken as an assumption that it will stay that way in the future. Recent fires in not too distant areas with little recent fire history highlight the possibility of accidental ignitions resulting from various human activities.

Whilst planned burning around Eildon is generally conducted in parcels of forest vegetation on public land to the southeast and east of Eildon, some has been undertaken on nearby land to the south of the subject in the Eildon Bushland Reserve in 2016. The fuel treatment was primarily designed as a protection strategy for development to east and the Eildon township to south. Time since treatment will limit effectiveness of the burn in moderating fire spread.

Broader Landscape Type

The subject site is located in a Broader Landscape Type Three. The characteristics include:

- The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to the site.
- Bushfire can approach from more than one aspect.
- The site is located in an area that is not managed in a minimal fuel condition
- Access to an appropriate place that provides shelter from bushfire is not certain.

6. BUSHFIRE MANAGEMENT STATEMENT

53.02-4 Bushfire Protection Objectives

53.02-4.1 Landscape, Siting and Design Objectives

Development is appropriate having regard to the nature of bushfire risk arising from the surrounding landscape.

Development is sited to minimize the risk from bushfire.

Development is sited to provide safe access for vehicles, including emergency vehicles.

Building design minimizes the vulnerability to bushfire attack.

APPROVED MEASURES

AM 2.1: Broader Landscape

Requirement

The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.

Response

The subject land is located on the shores of Lake Eildon. The water body of the lake creates a substantial fuel break to the north and northwest of the site. Any ignitions on the land would tend to burn uphill away from the dwelling. Highly modified vegetation on the adjoining properties along the lake edge will tend to limit fire spread and intensities nearer to the dwellings. The steep slopes to south will limit rates of fire spread towards the subject land. Construction of the dwelling to BAL 29 standard is expected to provide an appropriate level of resilience and protection for its occupants in the event of them needing to shelter in place. As this is a holiday house, it is hoped that any visitors will avoid exposure to bushfire conditions by returning to their place of residence or not visiting the site on days of elevated fire danger.

Application of bushfire protection measures in accordance with Clause 53.02 requirements will ensure that the risk is mitigated to an acceptable level.

AM 2.2: Siting

Requirement

A building is sited to ensure the site best achieves the following:

- The maximum separation distance between the building and the bushfire hazard.
- The building is in close proximity to a public road.
- Access can be provided to the building for emergency service vehicles.

Response

-
- The dwelling is located towards the water body of the lake with limited vegetation below it. Establishment of defensible space around it, especially to the south, will create separation from bushfire fuels.
 - The existing dwelling is located around 80m from the road boundary. The additions reduce that distance.
 - The existing gravel driveway has a trafficable surface and side clearances less than those required for emergency service vehicles. It will need to be upgraded to meet required standards. This will include removal of trees near to the edge and leaning over the driveway.
-

AM 2.3: Building Design

Requirement

A building is designed to be responsive to the landscape risk and reduce the impact of bushfire on the building.

Response

The proposed works include alterations to the existing dwelling as well as additions to the south. The proximity of the north boundary limits extending the dwelling in that direction. Alterations include extending the east wall of the dwelling to incorporate the floor area of the verandah as part of the living space. The additions to the south are wider than the existing building which results in one reentrant corner at ground level. Unlike the existing dwelling which is elevated above ground level on steel posts and open, the subfloor area of the addition will be enclosed to restrict ember entry and avoid potential ignitions beneath the building. The addition is higher with its north wall rising above the roof of the existing building creating an area where debris could accumulate. The northern deck is another location possibly subject to debris accumulation. There is less vegetation to the north of the dwelling from which litter and leaves will fall and stronger northerly winds would likely dislodge material and fire spread potential from the north is limited. Given the height of the roof above ground level, fitting of non-combustible ember guards to spouting is recommended to reduce frequency of access required to remove accumulated debris in the spouting. An annual pre-season inspection and clean would be the recommended minimum. Application of BAL construction standards will improve the overall fire resistance of the existing building. These requirements will ensure that entry of embers is denied, areas where debris might accumulate will be constructed of resilient materials and exposed elements will have an appropriate level of protection from the passage of a bushfire.

53.02-4.2

Defendable Space and Construction Objective

Defendable space and building construction mitigate the effect of flame contact, radiant heat and embers on buildings.

APPROVED MEASURES

AM 3.1: Defendable Space for a Dwelling, Small Second Dwelling, Industry, Office or Retail

Requirement

A building used for a dwelling (including an extension or alteration to a dwelling), small second dwelling, industry, office or retail premises is provided with defendable space in accordance with:

- Table 2 Columns A, B or C and Table 6 to Clause 53.02-5 wholly within the title boundaries of the land; or
- If there is significant siting constraints, Table 2 Column D and Table 6 to Clause 53.02-5.

The building is constructed to the bushfire attack level that corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5.

Response

Dwelling

- Defendable space will be provided in accordance with Table 2 Column C and Table 6 to Clause 53.02-5
- Construction requirements of BAL 29 will be applied to the building, consistent with Table 2 Column C defendable space

Shed

- Defendable space of 10m in all directions, or to the property boundary whichever is the lesser, will be provided around the shed.

The proposed shed is within 10m of the dwelling. In addition to the defendable space, the following construction requirements are applicable:

The proposed outbuilding is separated from the adjacent building by a wall that extends to the underside of a non-combustible roof covering and:

- Has a FRL of not less than 60/60/60 for load bearing walls and -/60/60 for non-load bearing walls when tested from the attached structure side, or
- Is of masonry, earth wall or masonry-veneer construction with the masonry leaf of not less than 90 millimetres in thickness

Any openings in the wall shall be protected in accordance with the following:

- Doorways – by FRL -/60/30 self-closing fire doors
- Windows – by FRL -/60/- fire windows permanently fixed in the closed position
- Other openings – by construction with FRL of not less than -/60/-

Note: Control and construction joints, subfloor vents, weep holes and penetrations for pipes and conduits need not comply with Item iii.



ALTERNATIVE MEASURES

AltM 3.3: Defendable Space on Adjoining Land

Requirement

Adjoining land may be included as defendable space where there is a reasonable assurance that the land will remain or continue to be managed in that condition as part of the defendable space.

Response

Defendable space requirements will be met on the subject land.

AltM 3.4: Defendable Space Calculated using Method 2 of AS 3959

Requirement

Defendable space and the bushfire attack level is determined using Method 2 of AS 3959:2009 *Construction of buildings in bushfire prone areas* (Standards Australia) subject to any guidance published by the relevant fire authority.

Response

This method not utilized.

53.02-4.3

Water Supply and Access Objectives

A static water supply is provided to assist in protecting property

Vehicle access is designed and constructed to enhance safety in the event of a bushfire

APPROVED MEASURES

AM 4.1: Water Supply and Access – Dwellings, DPUs, Industry, Office & Retail

Requirement

A building used for a dwelling (including an extension or alteration to a dwelling), a small second dwelling, industry, office or retail premises is provided with:

- A static water supply for firefighting and property protection purposes specified in Table 4 to Clause 53.02-5
- Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02-5.

The water supply may be in the same tank as other water supplies provided that a separate outlet is reserved for firefighting water supplies.

Response

Water supply

The size of the land is greater than 1000m².

10,000 litres of effective water supply for firefighting purposes must be provided which meets the following requirements:

- Is stored in an above ground tank constructed of concrete or metal
- All fixed above ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal.
- Include a separate outlet for occupant use
The water supply must also-
- Incorporate a separate ball or gate valve (65 millimetre BSP) and coupling (64mm CFA

3 threads per inch male fitting)

- Be located within 60 metres of the outer edge of the approved building
- The outlet/s of the water tank must be within 4m of the accessway and be unobstructed
- Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority.
- Any pipework and fittings must be a minimum of 65 millimetres (excluding CFA coupling)

Access

The length of the driveway from the road to the dwelling is >100m.

Access for firefighting purposes must be provided which meets the following requirements:

- Access must have a load limit of at least 15 tonnes
- Curves must have a minimum inner radius of 10 metres.
- The average grade must be no more than 1 in 7 (14.4 percent) (8.1°) with a maximum of no more than 1 in 5 (20 percent) (11.3°) for no more than 50 metres
- Have a minimum trafficable width of 3.5m of all-weather construction.
- Be clear of encroachments for at least 0.5 metres on each side and 4m above the accessway
- Dips must have no more than a 1 in 8 (12.5 percent) (7.1°) entry and exit angle.
- Incorporate a turning area for fire fighting vehicles close to the building by one of the following:
 - A turning circle with a minimum radius of eight metres.
 - A driveway encircling the dwelling.
 - The provision of other vehicle turning heads – such as a T or Y head – which meets the specification of Austroad Design for an 8.8 metre Service Vehicle

7. OTHER PLANNING PROVISIONS

Zones

Clause 35.06 *Rural Conservation Zone* also includes a requirement for bushfire protection measures.

35.03-6 *Use of land for a dwelling or small second dwelling* includes (in part)

A lot used for a dwelling or small second dwelling must meet the following requirements:

- Access to the dwelling or small second dwelling must be provided via an all-weather road with dimensions adequate to accommodate emergency vehicles
- The dwelling or small second dwelling must be connected to a reticulated potable water supply or have an alternative potable water supply with adequate storage for domestic as well as for firefighting purposes

Exemptions

Clause 52.12-5 – *Exemption to create defensible space for a dwelling under Clause 44.06 of this planning scheme*

Any requirement of a planning permit, including any condition, which has the effect of prohibiting the removal, destruction or lopping of vegetation, or any requirement of this planning scheme to obtain a planning permit, or any provision of this planning scheme that prohibits the removal, destruction or lopping of vegetation or requires the removal, destruction or lopping of vegetation to be carried out in a particular manner, does not apply to the removal, destruction or lopping of vegetation to enable the construction of a dwelling, or

the alteration or extension of an existing dwelling and create its defensible space if all the following requirements are met:

- Land is in a Bushfire Management Overlay
- Land is in the General Residential Zone, Residential Growth Zone, Neighbourhood Residential Zone, Urban Growth Zone, Low Density Residential Zone, Township Zone, Rural Living Zone, Farming Zone or Rural Activity Zone.
- The removal, destruction or lopping of vegetation:
 - Does not exceed the distance specified in Table 1 to Clause 53.02-5 of this planning scheme, based on the bushfire attack level determined by a relevant building surveyor in deciding an application for a building permit under the Building Act 1993 for a dwelling or alteration or extension to the dwelling; or
 - Is required to be undertaken by a condition in a planning permit issued after 31 July 2014 under Clause 44.06 of this scheme for a dwelling or an alteration or extension to the dwelling.

The proposal is for works to a dwelling in a Rural Conservation Zone therefore the above exemption is not applicable

Vegetation Management

Clause 42.03 – Significant Landscape Overlay-Schedule 2 (SLO2) has been applied to the land. A permit is not required for:

- (Removal of) any dead vegetation, exotic vegetation or native vegetation if that vegetation is seedlings or regrowth less than 10 years old and if the land is being re-established or maintained for cultivation or pasture.
- Any buildings, works or removal, destruction or lopping of any vegetation by any government department, public authority or Murrindindi Shire Council for the purposes of any public or local government utility, service, works or facility.

Vegetation modification by removal and possibly lopping will be required to establish defensible space on the subject land.

It is recommended that an arborist be engaged to determine the best course of action to achieve the defensible space 5m canopy separation requirement based on tree age, structure, health, significance or habitat value

8. CONCLUSIONS

The proposal is for alterations and additions to a dwelling and construction of a shed with a gross floor area >100m².

It is located in an area where modified and forest vegetation create the bushfire hazard

The proposed dwelling will be built to the construction requirements of BAL 29.

Defensible space can be achieved and will be established and managed to minimize the spread and intensity of bushfire.

The proposed measures can be practically implemented and maintained in conjunction with the ongoing use of the land.

The proposed development meets Bushfire Protection Objectives of Clause 53.02-4.

9. RECOMMENDATIONS

Given that:

- **The risk to human life, property and community infrastructure from bushfire is prioritised and will be reduced to an acceptable level.**
- **Bushfire protection measures, including the siting, design and construction of the building, vegetation management, water supply and access will be implemented and maintained within the property.**
- **The risk to existing residents, property and community infrastructure from bushfire will not be increased.**

It is recommended that consideration be given to granting approval to this application

10. REFERENCES

CFA Vegetation Classes: Victorian Bushfire Management Overlay (Feb 2014)

CFA Guideline for remote outlets on water tanks in the Bushfire Management Overlay (Version 2 September 2017)

DTP Planning Permit Applications - Bushfire Management Overlay – Technical Guide (September 2017)

DTP Victorian Planning Provisions

Forest Fire Management Victoria - Joint Fuel Management Program Plan 2023/24 – 2025/26

High Fire Risk Project – Landscape and terrain feature mapping

Standards Australia AS 3959:2018 Construction of buildings in bushfire prone areas

11. APPENDICES

Title Plan
Bushfire Hazard Site Plan
Bushfire Hazard Landscape Plan
2005 EVC's
Land Cover
Fire History
Bushfire Management Plan

TITLE PLAN

471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY

PLAN OF SUBDIVISION
OF PART OF CROWN ALLOTMENTS 26, 27, 28 & 29 SECTION B
PARISH OF EILDON
COUNTY OF ANGLESEY

LP 44119

EDITION 5
PLAN MAY BE LODGED 18/12/58

COLOUR CODE

E-1 = BLUE
R1 & E-2 = BROWN

THE LAND COLOURED BROWN AND BLUE IS APPROPRIATED OR SET APART FOR EASEMENTS OF WAY AND DRAINAGE

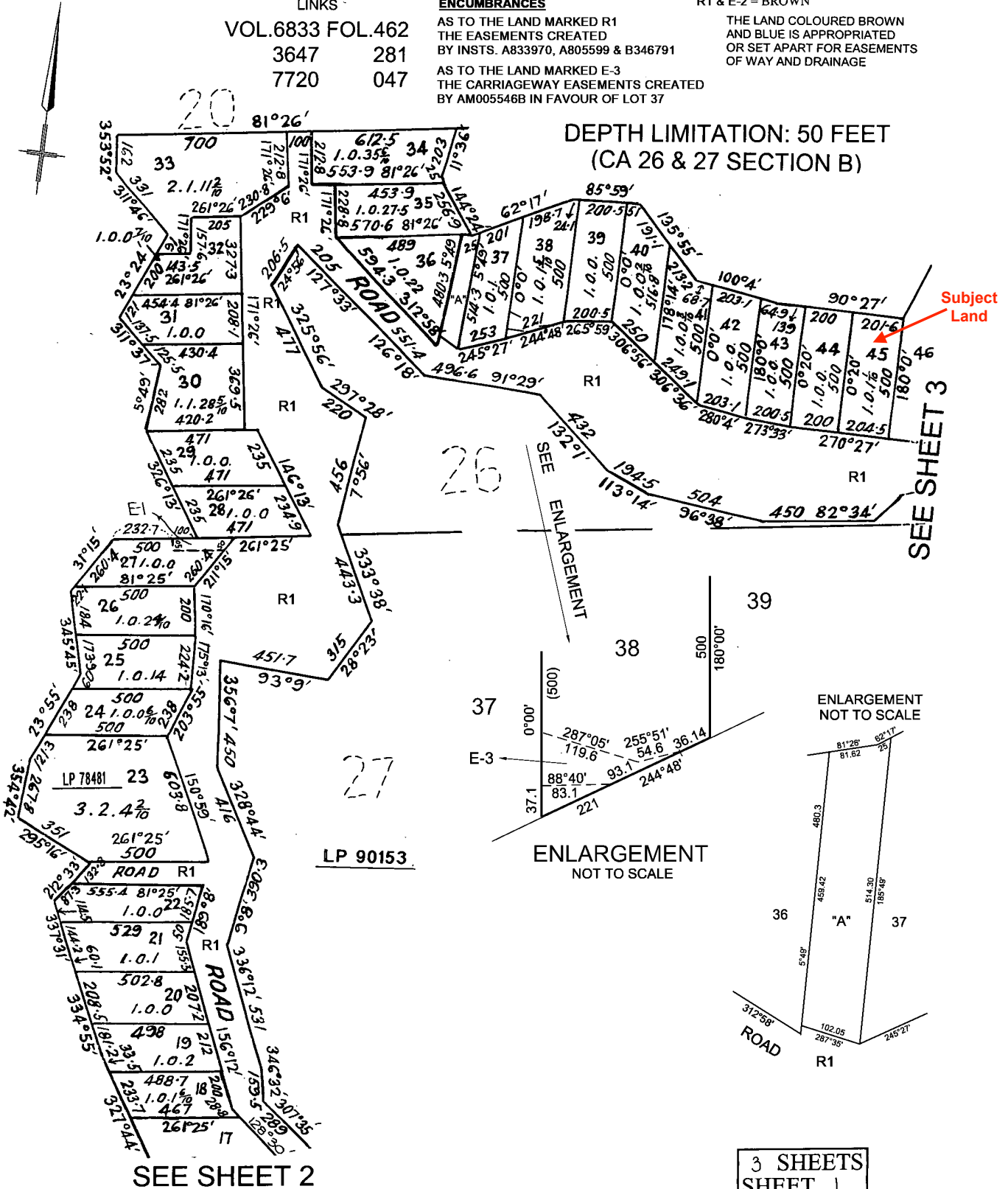
MEASUREMENTS ARE IN LINKS

VOL.6833 FOL.462
3647 281
7720 047

ENCUMBRANCES

AS TO THE LAND MARKED R1
THE EASEMENTS CREATED
BY INSTS. A833970, A805599 & B346791
AS TO THE LAND MARKED E-3
THE CARRIAGEWAY EASEMENTS CREATED
BY AM005546B IN FAVOUR OF LOT 37

DEPTH LIMITATION: 50 FEET
(CA 26 & 27 SECTION B)










3 SHEETS
SHEET 1

BUSHFIRE HAZARD SITE PLAN

471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY

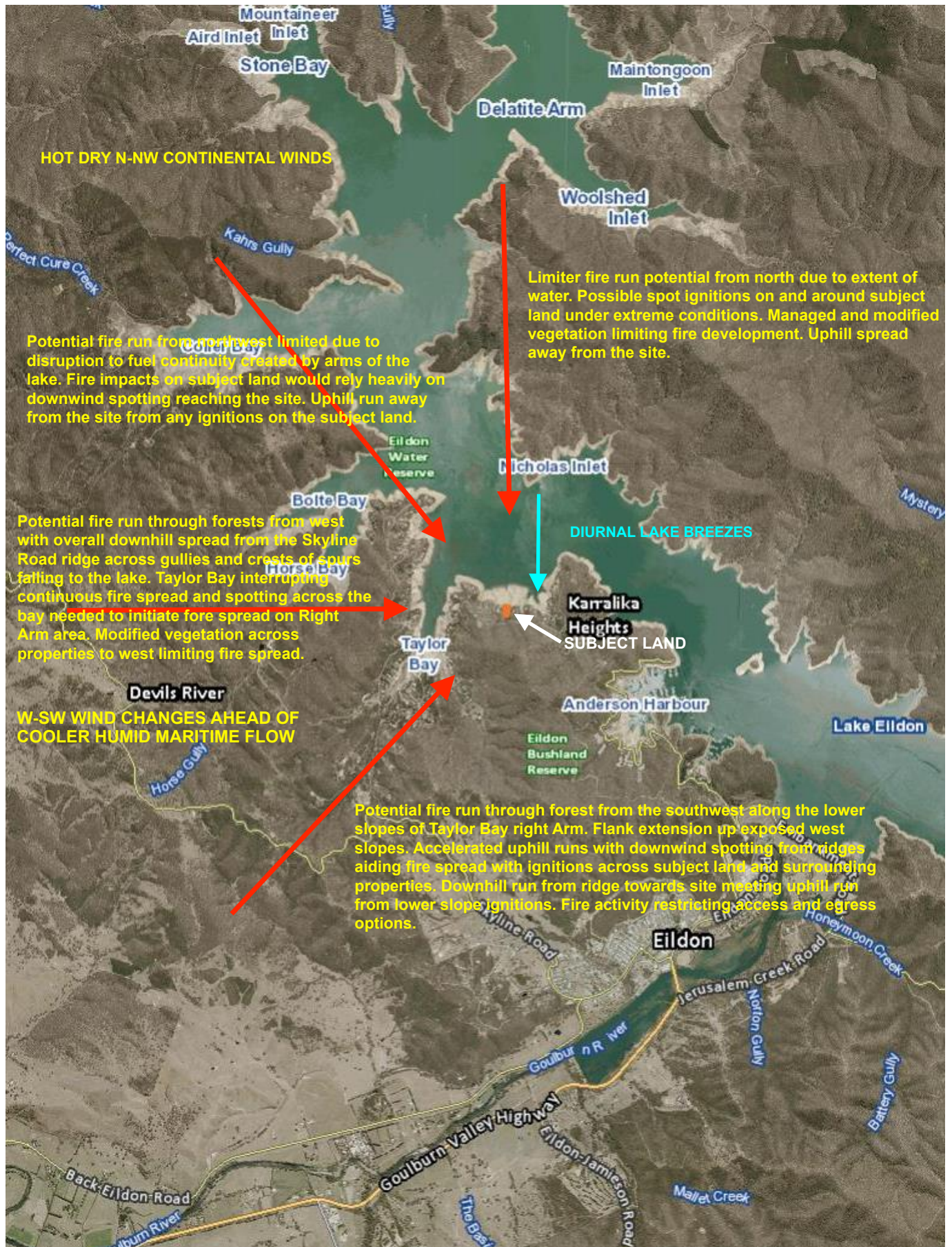


LEGEND	
	EXISTING DWELLING
	PROPOSED ADDITIONS
	PROPOSED SHED
	TITLE BOUNDARIES
	FOREST VEGETATION
	CONTOUR – INTERVAL 20m
	ASSESSMENT AREA – 150m RADIUS

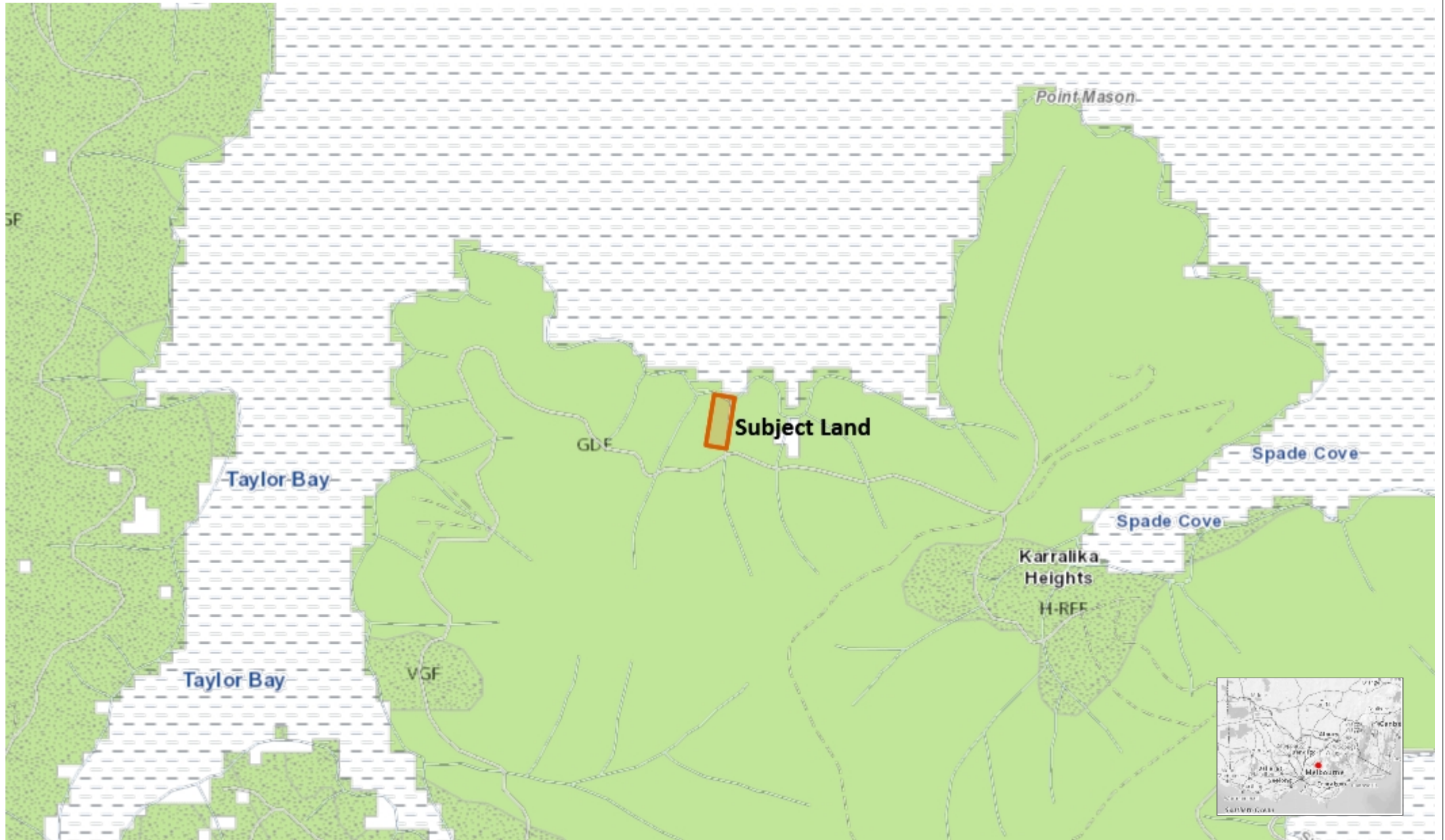
SCALE 1: 2,000

BUSHFIRE HAZARD LANDSCAPE PLAN

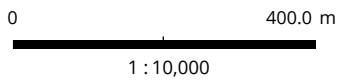
471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY



2005 EVCS - 471 Taylor Bay Right Arm Road, Taylor Bay



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Created on 08/03/24



Environment,
Land, Water
and Planning

Legend for 2005 EVCs - 471 Taylor Bay Right Arm Road, Taylor Bay

□ 2005 EVCs Outlines

2005 EVCs by Subgroup

Lowland Forests

Dry Forests (exposed/lower altitude)

Dry Forests (sheltered/higher altitude)

Damp Forests

Wet Forests

Montane Woodlands

Montane Shrub/Grasslands

Sub-alpine Woodlands

Sub-alpine Shrub/Grasslands

Herb-rich Woodlands (damp sands)

Herb-rich Woodlands(alluvial terraces/creeklines)

Mallee (siliceous sands)

Mallee (calcareous dunefields)

Mallee (clay plains)

Mallee (sandstone ridges and rises)

Riparian Scrubs or Swampy Scrubs and Woodlands

Riparian Forests or Woodlands

Coastal Scrubs, Gras and Woodlands

Riverine Grassy Woodlands/Forests (creekline, swampy)

Riverine Grassy Woodlands/Forests (broader plain)

Wetlands (fresh water)

Wetlands (brackish/estuarine)

Box Ironbark Forests or Dry/Lower Fertility Woodlands

Lower Slopes/Hills Woodlands (seasonally inundated, shrubby)

Lower Slopes/Hills Woodlands (herb-rich)

Lower Slopes/Hills Woodlands (grassy)

Heathy Woodlands (damp/less well-drained)

Heathlands (sandy/well-drained)

Heathlands (not well-drained)

Heathlands (sub-alpine)

Plains Woodlands/Forests (freely-draining)

Plains Woodlands/Forests (lunettes, ridges)

Plains Woodlands/Forests (poorly-draining)

Plains Woodlands/Forests (semi-arid non-Eucalypt)

Plains Grasslands and Chenopod Shrublands (clay soils)

Salt-tolerant/Succulent Shrublands

Rocky Outcrop or Escarpment Scrubs

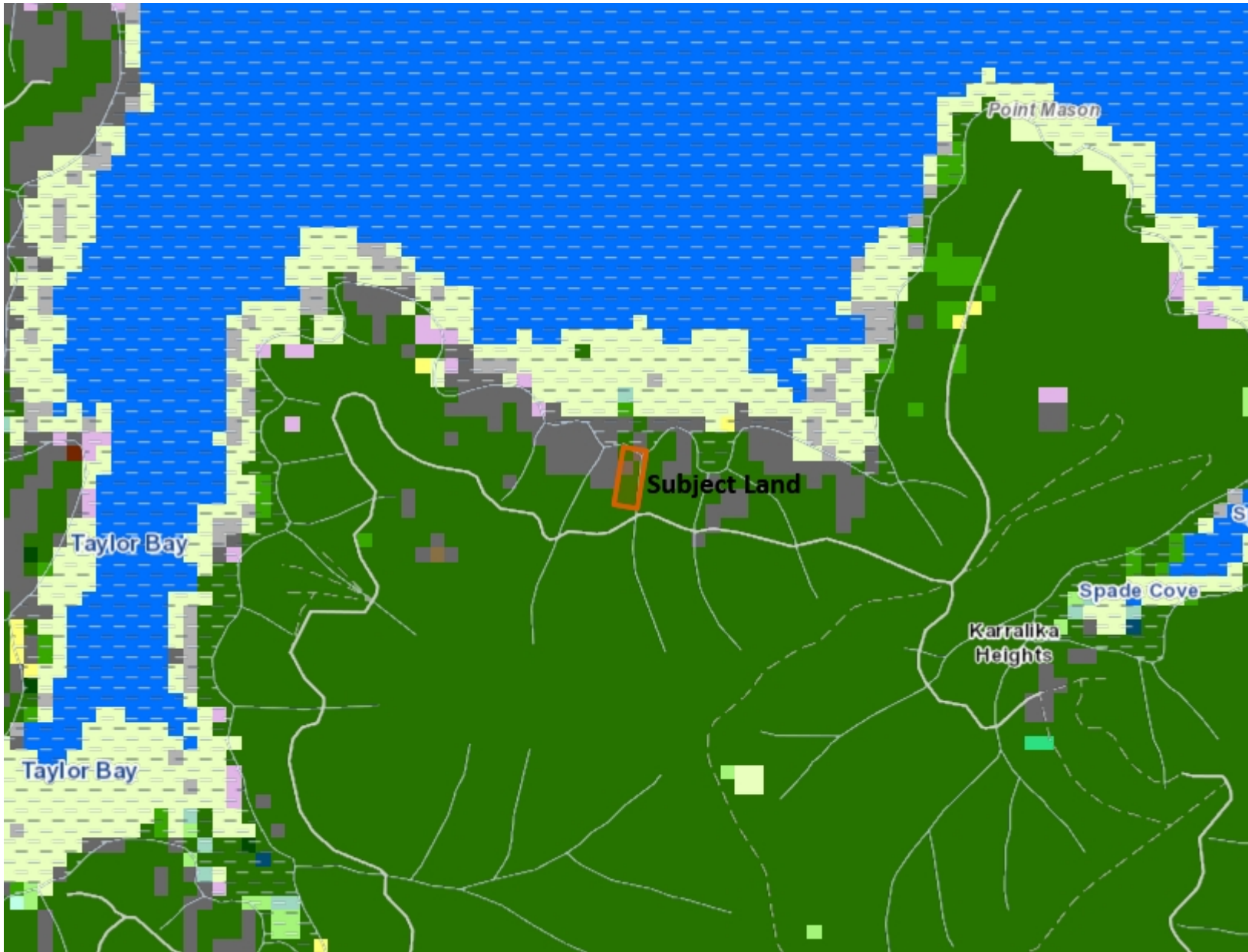
Rainforests

Land Cover - 471 Taylor Bay Right Arm Road, Taylor Bay

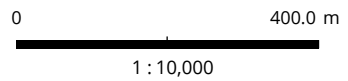


Legend

- Landcover 2015 - 2019
- Built environment
 - Urban area
 - Disturbed ground
 - Exotic pasture / grassland
 - Dryland cropping
 - Other exotic tree cover
 - Hardwood plantation
 - Horticulture / irrigated pasture
 - Mangrove vegetation
 - Native pasture / grassland
 - Native scrubland
 - Treed native vegetation
 - Scattered native trees
 - Natural low cover
 - Conifer plantation
 - Saltmarsh vegetation
 - Water
 - Wetland - seasonal
 - Wetland - perennial



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Created on 08/03/24



Fire History - 471 Taylor Bay Right Arm Road, Taylor Bay



Legend

Wildfire History

- 1970 - 1979
- 1980 - 1989
- 1990 - 1999
- 2000 - 2009
- 2010 - 2014
- 2015 - 2017
- 2018 - 2019
- 2020 - 2021
- 2022 - 2023

Planned Burn History

- 1970 - 1989
- 1990 - 1999
- 2000 - 2004
- 2005 - 2009
- 2010 - 2014
- 2015 - 2019
- 2020 - 2021
- 2022 - 2023

1: 100,000

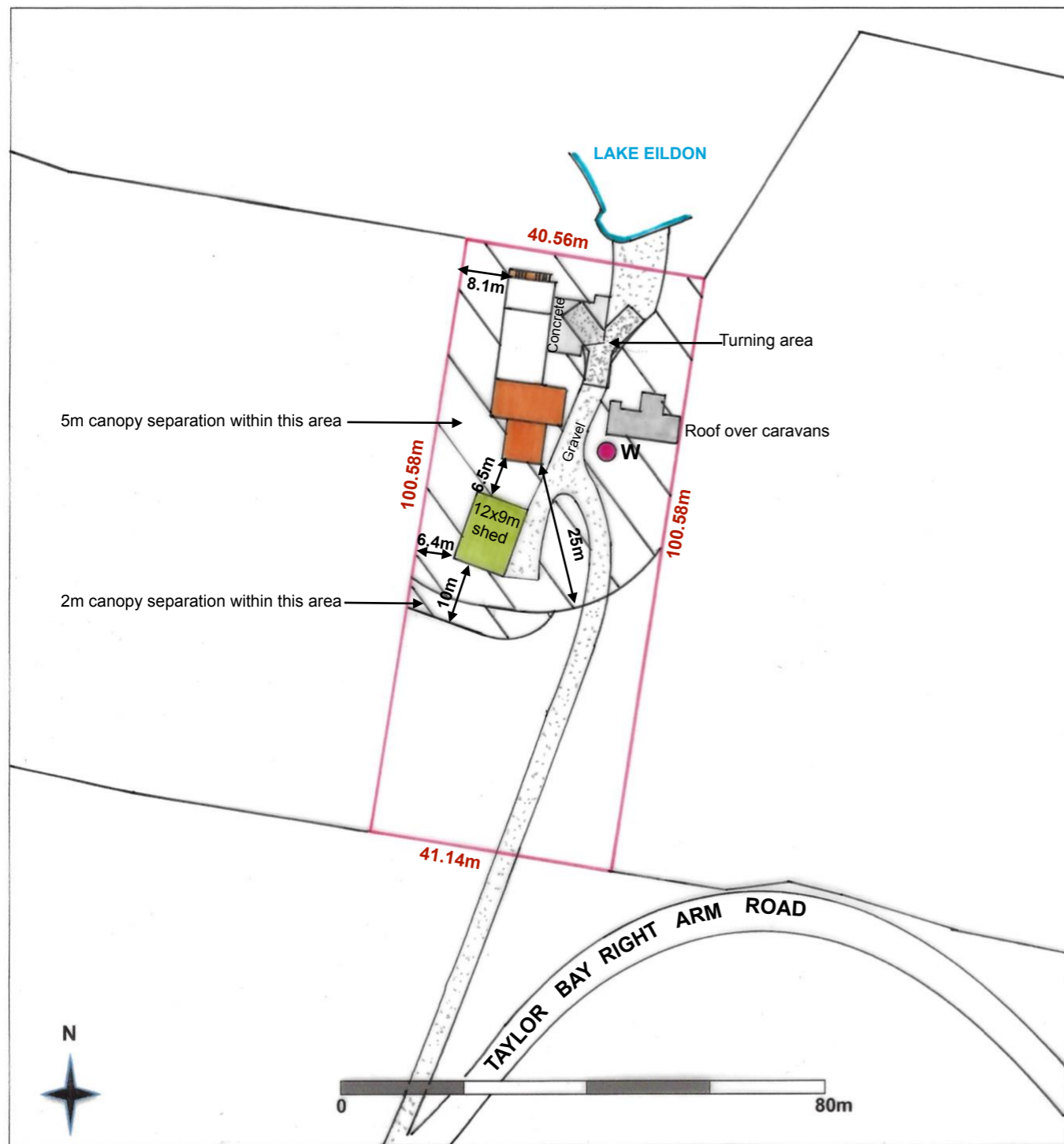


Map Created on 08-Mar-2024

BUSHFIRE MANAGEMENT PLAN

471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY

VERSION A
23 March 2024



LEGEND		CONSTRUCTION STANDARD: BAL 29	
	EXISTING DWELLING		DEFENDABLE SPACE
	PROPOSED ADDITIONS		WATER SUPPLY (nominated location)
	PROPOSED SHED		TITLE BOUNDARIES

SCALE 1:1000

BUSHFIRE PROTECTION MEASURES

DEFENDABLE SPACE (Table 6 Vegetation management requirements)
Defendable space for a distance of 50 metres around the proposed **dwelling** (or to the property boundary, whichever is the lesser distance) must be provided where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared Fire Danger Period
- All leaves and vegetation debris must be removed at regular intervals during the declared Fire Danger Period
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3 metres of a window or glass feature of the building.
- Shrubs must not be located under canopy trees.
- Individual and clumps of shrubs must not exceed 5 square metres in area and must be separated by at least 5 metres.
- Trees must not overhang or touch any elements of the building.
- The canopy of trees must be separated by at least 5m.
- There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Shed
Defendable space for a distance of 10 metres around the proposed **shed** (or to the property boundary, whichever is the lesser distance) must be provided where vegetation (and other flammable materials) will be modified and managed in accordance with the above requirements excepting that the canopy of trees must be separated by at least 2m.

CONSTRUCTION STANDARD
The **dwelling** must be constructed to a minimum Bushfire Attack Level of 29 (BAL 29)
The proposed **outbuilding/shed** is separated from the adjacent building by a wall that extends to the underside of a non-combustible roof covering and:

- Has a FRL of not less than 60/60/60 for load bearing walls and -/60/60 for non-load bearing walls when tested from the attached structure side, or
- Is of masonry, earth wall or masonry-veneer construction with the masonry leaf of not less than 90 millimetres in thickness

Any openings in the wall shall be protected in accordance with the following:

- i. Doorways – by FRL -/60/30 self-closing fire doors
- ii. Windows – by FRL -/60/- fire windows permanently fixed in the closed position.
- iii. Other openings – by construction with FRL of not less than -/60/-

Note: Control and construction joints, subfloor vents, weep holes and penetrations for pipes and conduits need not comply with Item iii.

WATER SUPPLY (Table 4 Water supply requirements)
10,000 litres of effective water supply for firefighting purposes must be provided which meets the following requirements:

- Is stored in an above ground tank constructed of concrete or metal.
- All fixed above ground water pipes and fittings required for firefighting purposes made of corrosive resistant metal.
- Include a separate outlet for occupant use.
The water supply must also-
- Incorporate a separate ball or gate valve (65millimetre BSP) and coupling (64mm CFA 3 threads per inch male fitting)
- Be located within 60 metres of the outer edge of the approved building.
- The outlet/s of the water tank must be within 4m of the accessway and be unobstructed.
- Be readily identifiable from the building or appropriate identification signage to the satisfaction of the relevant fire authority.
- Any pipework and fittings must be a minimum of 65 millimetres (excluding CFA coupling)

ACCESS (Table 5 Vehicle access design and construction)
Access for firefighting purposes must be provided which meets the following requirements:

- Access must have a load limit of at least 15 tonnes.
- Curves must have a minimum inner radius of 10 metres.
- The average grade must be no more than 1 in 7 (14.4 percent) (8.1°) with a maximum of no more than 1 in 5 (20 percent) (11.3°) for no more than 50 metres.
- Have a minimum trafficable width of 3.5m of all-weather construction.
- Be clear of encroachments for at least 0.5 metres on each side and 4m above the accessway.
- Dips must have no more than a 1 in 8 (12.5 percent) (7.1°) entry and exit angle.
- Incorporate a turning area for fire fighting vehicles close to the building by one of the following:
 - A turning circle with a minimum radius of eight metres.
 - A driveway encircling the dwelling.
 - The provision of other vehicle turning heads – such as a T or Y head – which meets the specification of Austroad Design for an 8.8 metre Service Vehicle

Prepared by: Dean Putting, Yarra Valley BAL Assessments
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0409 330 458. dean@yvbal.com.au

LIZA COVIELLO

**LAND CAPABILITY ASSESSMENT
FOR
ON-SITE WASTEWATER MANAGEMENT
AT
471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY**

REPORT No. A231106

JANUARY 2024

By

Paul Williams, B.App.Sc.

Paul Williams & Associates Pty Ltd
CONSULTANTS IN THE EARTH SCIENCES

IMPORTANT NOTE

The land capability assessment report consists of this cover sheet, two written sections, three drawings and four appendices.

The report elements are not to be read or interpreted in isolation.

(i)

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(iii) Executive Summary

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Cut-off Drain Detail

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(MURRINDINDI SHIRE DOMESTIC WASTEWATER MANAGEMENT PLAN)

APPENDIX D
Management Plan

ASSESSOR'S ACADEMIC & PROFESSIONAL QUALIFICATIONS

Paul Williams is the Director and principal earth scientist at Paul Williams & Associates Pty Ltd. He has a Bachelors Degree in Applied Science (Geology and Land Use) (awarded in 1978) and has since specialised in vadose zone hydrology, soil science and engineering geology.

All fieldwork and analyses are undertaken by, or directly supervised by Paul Williams.

ASSESSOR'S PROFESSIONAL INDEMNITY INSURANCE

Policy Number:	NPP-13384
Period of Cover:	14/2/2024 – 14/2/2025
Geographical Coverage:	Worldwide (excluding U.S.A.)
Retro-active Date:	Unlimited
Limit of Indemnity:	\$4,000,000
Underwriting Company:	Certain Underwriters at Lloyd's

EXECUTIVE SUMMARY

The proposed development at 471 Taylor Bay Right Arm Road, Taylor Bay, is suitable for sustainable on-site effluent disposal.

The site of 0.4109 hectares is in the Rural Conservation zone and is in Lake Eildon (Environs) Special Water Supply Catchment.

An existing 2-bedroom residence is to be renovated and extended to contain 4-bedrooms.

The existing residence is serviced by a septic tank and trench system (of unknown location) and probable direct discharge of grey water to Lake Eildon.

The site is not sewered. For design purposes, mains water (equivalent) is assumed.

Table 1
Description of Development

Parameter	Site specific element
SPI Number	45\LP44119
Property Address	471 Taylor Bay Right Arm Road, Taylor Bay
Owner	Liza Coviello
Contact	Liza Coviello [REDACTED]
Locality	Taylor Bay
Zoning and Overlays	Rural Conservation and SLO (Lake Eildon and Surrounds).
Area	0.4109 hectares.
Usable Lot Area	At least 2 LAA requirement (via rhizopods).
Soil Texture	Category 4/5 (light clay/clay loam).
Soil Depth	1.4m+.
Soil Structure	Moderately-well structured.
Soil Constraints	Requires minor amendment.
Permeability	0.06m/day (<i>insitu</i> clays).
Slope	14%.
Distance to Surface Waters	70m to full supply level.
Water Supply	Mains equivalent (assumed for design purposes).
Wastewater Load	Up to 750 litres.
Availability of Sewer	Not available

The assessment has been made in the context of prioritising public and environmental health with a design compromise between rational wastewater reuse and sustainable wastewater disposal.

Our field testing which included soil profile logging and sampling, rock profile logging, a differential level survey, *insitu* permeability testing and subsequent reporting including water and nutrient balance modelling and risk assessment has revealed that on-site effluent disposal is rational and sustainable.

Effluent shall be treated to at least the 20/30 standard and distributed via pressure compensated subsurface irrigation utilising the processes of evapotranspiration and deep seepage.

The land application area has been determined for the 9th decile wet year and satisfies the requirements of the *Environment Protection Act, 2017 (as amended)* in that the effluent irrigation system cannot have any detrimental impact on the beneficial use of surface waters or groundwater.

For the proposed development the available area is not limiting and increases in effluent volume above 750 litres/day may be possible.

Regarding density of development and cumulative risk the assessment has considered risk associated with subsurface flows and surface flows.

Regarding subsurface flows, provided the on-site system is adequately designed, constructed, operated, and maintained the risk to surface and ground waters is negligible. Once the effluent is placed

underground, the extraordinary long travel times via ground water to surface waters ensures adequate nutrient attenuation.

Regarding surface flows, provided the on-site system is adequately designed, constructed, operated, and maintained, the risk to surface and ground waters is no greater than for a sewered development.

The Land Capability Hazard/Risk (DWMP A1.1) is **2.5 (Medium Risk)** with limiting factors for trenches (Requires analysis via Edis algorithm).

The site has a combined risk number of **6.0 (High Risk)** with limiting factors for trenches.^a

The results of the land capability assessment and risk analysis indicate that primary effluent and trench systems are not appropriate for this site.

Where risk is defined as the product of consequences and frequency, the risk can be reduced to negligible levels if effluent is treated to a secondary level and disposed via subsurface irrigation, as described in Section 2 of the land capability assessment.

Residential use requires AWTS with load balancing facility/function.

Intermittent use requires AWTS (with intermittent flow function).

The LCA recommends a conservative, scientifically based, well founded wastewater management system with inherent multiple barriers of safety.

Cumulative risk from the development is extremely low. The risk of serious or irreversible damage is extremely low.

Replacing the existing effluent disposal system with the proposed new onsite effluent treatment system represents a significant environmental gain.

All requirements of *the Environment Protection Act, 2017 (as amended)* can be met.

^a Source: *Approaches for Risk Analysis of Development with On-site Wastewater Disposal in Open, Potable Water Catchments* (Dr Robert Edis April 2014)

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LAND CAPABILITY ASSESSMENT LAND USE MAPPING TERRAIN MODELLING HYDROGEOLOGY GEOLOGY HYDROLOGY SOIL SCIENCE LAND-SOIL RISK ASSESSMENT

A231106 – FEBRUARY 2024

LAND CAPABILITY ASSESSMENT FOR ON-SITE WASTEWATER MANAGEMENT AT 471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY

SECTION 1. SITE INVESTIGATION

1.1 INTRODUCTION

On instruction from the land owner, an investigation was undertaken to assess land capability for on-site effluent disposal at 471 Taylor Bay Right Arm Road, Taylor Bay.

The site of 0.4109 hectares is in the Rural Conservation zone and is in Lake Eildon (Environs) Special Water Supply Catchment.

An existing 2-bedroom residence is to be renovated and extended to contain 4-bedrooms.

The existing residence is serviced by a septic tank and trench system (of unknown location) and probable direct discharge of grey water to Lake Eildon.

The site is not sewered. For design purposes, mains water (equivalent) is assumed.

The assessment has been made in the context of prioritising public and environmental health with a design compromise between rational wastewater reuse and sustainable wastewater disposal.

The proposed new onsite effluent treatment system represents a significant environmental gain.

1.2 INVESTIGATION METHOD

The site investigation was carried out in accordance with the *Environment Protection Act, 2017* (as amended), and *ancillary documents*. This report is in accordance with *Code of Practice - Onsite Wastewater Management, E.P.A. Publication 891.4, July 2016*, and the *Murrindindi Shire Domestic Wastewater Management Plan*. Guidance has been sought from *Approaches for Risk Analysis of Development with On-site Wastewater Disposal in Open, Potable Water Catchments*, Dr Robert Edis, April 2014. *AS/NZS 1547:2012, Guidelines for Wastewater Irrigation*, E.P.A. Publication 168, April 1991, *Wastewater Subsurface Drip Distribution*, Tennessee Valley Authority, March, 2004, *AS 2223, AS 1726, AS 1289, AS 2870* and *Australian Laboratory Handbook of Soil and Water Chemical Methods*.

Our capability assessment involved the mapping of unique land-soil unit(s) which were defined in terms of significant attributes including; climate, slope, aspect, vegetation, soil profile characteristics (including colloid stability, soil reaction trend and electrical conductivity), depth to rock, proximity to surface waters and escarpments, transient soil moisture characteristics and hydraulic conductivity.

Existing exposures were inspected, logged, and sampled along with exploratory push-tube sampling.

Water and nutrient balance analyses were based on the 9th decile wet year calculated from the mean monthly rainfall data, 9th decile annual rainfall and mean evaporation data for Lake Eildon (G-M Water) and were undertaken in accordance with *Guidelines for Wastewater Irrigation, E.P.A. Publication 168, April 1991 (Part), AS/NZS 1547:2012* and in-house methods.

Redistribution of monthly rainfall was adjusted in proportion to the deviation of means from the minimum mean (see Appendix B, part 2).

The rainfall and evaporation data were obtained from the National Climate Centre, Bureau of Meteorology. The data was subsequently analysed and applied to our water and nutrient balance analyses.

The results of the water and nutrient balance analyses are given in Appendix B, to this report.

The results of the investigation and *in situ* and laboratory testing are given in Section 1.3, below, and in Appendix A, to this report.

1.3 CAPABILITY ASSESSMENT

We have used the attributes determined by the investigation to define one (1) land-soil unit, as follows:-

1.3.1 Land-Soil Unit A. This land-soil unit consists of moderately sloping terrain, (colluvial fan deposit associated with surface drainage), as shown in Drawings 1 and 2 and Figures 1 and 2.

The salient land-soil attributes and constraints are summarised in Appendix C.

1.3.1.1 Climate. The general area receives a mean annual rainfall of 850mm, a 9th decile annual rainfall of around 1094mm and a mean annual evaporation of 949mm. Mean evaporation exceeds the 9th decile rainfall in November through March.

Rainfall and evaporation data are presented in Appendix B, to this report.

1.3.1.2 Slope and Aspect. The unit (land application area) slopes to the north at 14%, as shown in Drawing 2.

The unit is somewhat protected from the prevailing winds and is subject to partial shade, as shown in Drawing 2.

1.3.1.3 Vegetation and Land Use. The unit is vegetated with grasses and (mainly) *Eucalyptus*, *Pinus*, and *Acacia* species (mature and regrowth), as shown in Figures 1 and 2.

The land is currently used for domestic purposes.

For use in the water and nutrient balance we have used water and nitrogen uptake estimates representative of dense grass equivalent to a rye clover mix, as shown in Appendix B.

The partial shading from adjacent trees will be (at least) counteracted by increased transpiration by the trees.

1.3.1.4. Slope Stability. For the encountered subsurface conditions, slope degree and geometry and for the proposed range of hydraulic loadings, the stability of the ground slopes will not be compromised.

1.3.1.5 Subsurface Profile. The following interpretation of the general subsurface profile assumes conditions like those encountered in the boreholes are typical of the investigation area.

Note: If subsurface conditions substantially different from those encountered in the investigation are encountered during soil renovation works, all work should cease, and this office notified immediately.

The unit is underlain by colluvial (fan deposit and re-entrant infill) materials of Quaternary Age, overlying metasedimentary rocks of Devonian Age.

The general subsurface profile consists of:-

- A topsoil (A₁ horizon) of grey-brown, moist, medium dense gravelly-silty sand with some clay of low plasticity (loam), with a soil reaction trend of 5.8 to 6.1 pH and electrical conductivity of 0.18 to 0.22 dS/m, to depths of 0.2 to 0.3m, overlying,

- A colluvial (B₁ horizon) layer of light orange-brown, moist to wet, medium dense, moderately well-structured clayey-gravelly sand (sandy loam), with a soil reaction trend of 5.8 to 6.1pH, and electrical conductivity of 0.15 to 0.28 dS/m, to depths of 1.0 to 1.4m, overlying,
- Extremely to highly and highly weathered, highly fractured sandstone and siltstone.

The encountered soil profile exhibits the typical characteristics of a moderately well-drained gradational soil.

Note: The metasedimentary rocks in this area consist of variably dipping, alternating hard and soft layers. Variable composition and rock mass defect character coupled with the vagaries of time and weathering often result in highly variable vertical and areal thickness of residual materials.

1.3.1.6 Soil Permeability. The *in-situ* permeability tests were scheduled for 9th February 2024.

The occurrence of transient free water at the surface and in the colluvial materials prevented the acquisition of sufficient hydraulic data for determination of the geometric mean of saturated hydraulic conductivity.

Note: The relatively high soil moisture content at the time of testing was due to recent heavy and persistent rainfalls. This transient high soil moisture impacts on the test method only and does not reflect in any way on the suitability of the site for the sustainable onsite attenuation of waste water – see AS/NZS1547:2012, Appendix G.

A conservative estimate of permeability has been deduced as follows (see Code 3.6.1):-

Profile analysis in accordance with AS/NZS 1547:2012 and our laboratory determined swell potential (including the *Mansfield Shire Onsite Domestic Wastewater Plan* Lake Eildon and Environs data base) shows the residual soils are moderately structured, non-dispersive, gravelly light clays/clay loams (Category 4/5 soil) with saturated hydraulic conductivity between 0.06 and 0.12m/day.

For the limiting clayey soils, we have adopted an estimated design saturated hydraulic conductivity of 0.06m/day.

Peak deep seepage is conservatively estimated at 5.5mm/day (after renovation).

1.3.1.7 Basement Rock Permeability. From the literature and from examination of sediments and rock profiles and rock mass defect character in the vicinity, the hydraulic conductivity of the basement rocks would be more than 0.05m/day (adopt 1m/day for buffer design).

1.3.1.8 Colloid Stability. The results of the Emerson Crumb and dispersion index tests and observations of any discolouration of water in the boreholes suggest that the materials are non-dispersive.

The colluvial and extremely weathered materials have an Emerson Class of 5 and a dispersion index of zero.

The colluvial soils show a low slaking potential and have a zero shrink-swell potential.

The salting potential has been assessed by inspection of the ground surface for salt tolerant and/or salt affected vegetation and the electrical conductivity determined for the A and B horizons using a 1:5 soil/water extract and converted to EC (saturation extract).

The determined electrical conductivity (EC_{se}) ranged from 0.10 dS/m to 0.18 dS/m for all materials.

Assuming design, construction, operation, and maintenance of the on-site effluent systems are in accordance with the recommendations contained in this report, we can conclude that there is a low salting potential.

1.3.1.9 AS1547:2012 Soil Classification. In accordance with AS/NZS1547:2012 the colluvial materials can be classified as Category 4/5 soils (light clays/clay loams).

1.3.1.10 Surface Drainage. Site surface drainage is to the north, generally, as shown in Drawing 2.

Note: The contours and drainage features depicted in mapshare do not reflect reality – the east-west location of the valley shown coincident with the 471/475 boundary on mapshare is shown offset to the east by at least 20m, as proved by the Drawing 2 survey. Furthermore, site regrading to accommodate access roads and buildings has significantly altered the local drainage regime, as shown in Drawing 2.

Rare surface flows from the upper catchment are piped under Taylor Bay Right Arm Road approximately central to, and approximately 20m upslope of the southern allotment boundary. There are no formed channel or erosion features-see Figures 1 and 2.

The existing land application area is to be replaced by pressure compensated subsurface irrigation, located approximately 70m from full supply level, as shown in Drawing 2.

The new land application area will be protected by a cut-off drain and bund, as shown in Drawings 2 and 3

1.3.1.11 Groundwater. No potentiometric groundwater was encountered in any of the boreholes.

The Victorian groundwater data base indicates groundwater is deeper than 10 metres of the surface.

Regionally the groundwater is contained in fractured metasedimentary rocks and is of low yield and high quality (Less than 500 mg/litre TDS) with beneficial use including domestic.

1.3.1.12 Nutrient Attenuation. Clayey soils can fix large amounts of phosphorous. Phosphate-rich effluent seeping through these soils will lose most of the phosphorous within a few metres.

The limiting nutrient for this site is nitrogen. No phosphorous balance is required.

Nitrogen, contained in organic compounds and ammonia, forms nitrate-N and small amounts of nitrite-N when processed in an aerated treatment plant. Several processes affect nitrogen levels within soil after irrigation. Alternate periods of wetting and drying with the presence of organic matter promote reduction to nitrogen gas (denitrification). Plant roots absorb nitrates at varying rates depending on the plant species (see Appendix B), however nitrate is highly mobile, readily leached, and can enter groundwater via deep seepage and surface waters via overland flow and near-surface lateral flow.

Based on the water and nutrient balance (see Appendix B), and assuming 30mg/litre N in the effluent (general case) and 20mg/litre P, a denitrification rate of 20%, with N uptake of 220 kg/ha/year for an appropriate grass cover equivalent to a rye/clover mix) and sequential zoned dosing of the irrigation area, a conservative estimate can be made of the nitrogen content in the deep seepage and lateral flow.

For the general case, and without considering further expected denitrification below the root zone and in the groundwater (reported to be in the vicinity of 80%), denitrification in the lateral flow (external to the irrigation area but within the curtilage of the allotment) and plant uptake in the lateral flow, the irrigation area would need to be 300m² for 750 litres/day of effluent for complete attenuation.

The hydraulic component of the water and nutrient balance has shown that an irrigation area of 370m² would be required to limit surface surcharges to episodic rain events.

1.4 RISK MANAGEMENT & MITIGATION

The *Environment Protection Act, 2017* (as amended), requires that the site be assessed on a risk-weighted basis and that cumulative impacts be considered.

Current DPCD Guidelines require that density of onsite systems and cumulative effects^b be considered. In accordance with the risk assessment analysis contained in Appendix C, to this report.^c

^b There can be no cumulative effect if the provisions of *the Environment Protection Regulations 2021* are met.

The risk has been assessed within the framework of the *Murrindindi Shire Domestic Wastewater Management Plan* considering the surficial and subsurface physical, chemical, and biochemical conditions of the site and surrounds and climatic conditions affecting the site along with the sensitivity and proximity of the receiving environment.

The Land Capability Hazard/Risk (DWMP A1.1) is **2.5 (Medium Risk)**, as per Section 2, below.

The combined risk number (Edis) for this site is **6.0 (High Risk)** with limiting constraints for trenches.

The Guidelines (significantly) do not differentiate between pressure compensated subsurface irrigation of 20/30 standard effluent and trench disposal of septic effluent (nor do they differentiate between senescent and failed systems and new systems). While multiple septic trench systems can simultaneously fail (i.e., produce contaminated surface flows due to exceeding trench storage capacity) typically during periods of prolonged high and/or episodic rainfall, the same is not true of subsurface irrigation systems (see 1.4.8, below).

While it may be reasonable to accept the onsite system-density requirement of DPCD Guidelines of less than 1/40 hectares for septic trench systems, it is not logical to include subsurface irrigation systems.

Insertion of properly designed, constructed and (reasonably) maintained^d subsurface irrigation systems would reduce the risk to the integrity of the Lake Eildon water supply to negligible levels.

For potable water supply catchments, a multiple barrier approach is recommended by the ADWQG (2006). The *Environment Protection Act, 2017* (as amended), as amended requires that the proposal be assessed on a risk-weighted basis.

A multiple risk reduction approach is used in assessing this development, with components listed below:

1.4.1 Water Usage. With respect to daily effluent production, the system is oversized. Current best practice allows for a (maximum) daily effluent flow of 750 litres (load balanced). Design usage estimates are as per *Code of Practice - Onsite Wastewater Management, E.P.A.* Publication 891.4, July 2016.

1.4.2 Secondary Treatment. The LCA recommends AWTs. These systems generate a much higher quality of effluent than septic systems.

1.4.3 Block Size. Many under-performing effluent fields are placed on blocks where area is limited. Limited area can lead to inadequately sized or inappropriately placed effluent fields and a lack of options should the daily effluent volumes increase. In the subject site, size is at constraining factor.

1.4.4 Management Plan. Historically, inadequate maintenance has played a major part in the failure of onsite effluent disposal systems. There is a management plan within the LCA (see Appendix C). This plan gives guidance on the implementation of mandatory operation, maintenance, and inspection procedures.

1.4.5 Sizing of Treatment Systems. No specific proprietary treatment plant is recommended, however treatment plants or sand filters must have current JAS/ANZ accreditation or EPA interim accreditation, which match effluent volumes with plant capacity.

1.4.6 Load Balancing. Surge flows are likely and the systems may become overwhelmed for a period. This potential problem can be eliminated by installing a plant with a load balancing facility (or equivalent function) which enables short-term storage and sustainable flows to the distribution area over extended time. The load balancing facility also provides temporary storage should the plant fail or if there is a power outage.

^c Source: *Approaches for Risk Analysis of Development with On-site Wastewater Disposal in Open, Potable Water Catchments* (Dr Robert Edis April 2014)

^d Except for gross negligence, rudimentary maintenance would ensure that "failure" would be restricted to transient reductions in quality of effluent which would continue to be transferred to the subsoil. Potentially "dangerous" contaminated surface flow cannot occur (see 1.4.8, below) while amelioration of contaminants (and this is also true for septic effluent) will continue over the extraordinarily large flow paths and travel times controlled by the regional/local hydraulic gradients (see 1.4.11, below).

1.4.7 Zoned Dosing. The LCA stipulates that the effluent area is (automatically) irrigated sequentially by zones or time to promote the creation of transient aerobic and anaerobic soil conditions.

The effluent field is sized conservatively for nitrogen attenuation, using pasture grass (rye/clover eq mix), which has a nitrogen uptake of 220 kg/ha/year. Zoned dosing will increase the efficiency of the field for removing nitrogen from the soil.

Undersized effluent fields are at risk of becoming anaerobic for long periods, with the risk of microbial build-up. This leads to secretion of microbial polysaccharides, which coat soil particles and restrict the ability of the soil to adsorb nutrients and attenuate pathogens. Polysaccharides can also coat the interior of pipes and block drainage holes if drainage is slow due to the field being overloaded with effluent. This can lead to effluent surcharge from the ends of the drainage pipes, forming preferential flow paths through overlying soil and draining overland to nearby surface waters.

The alternating aerobic and anaerobic conditions created by zoned dosing prevent the build-up of microbial polysaccharides, and ensures efficient renovation of effluent.

1.4.8 Pressure Compensated Subsurface Disposal. Conservatively sized irrigation areas with pressure compensated subsurface disposal and zoned dosing deliver effluent directly into the soil. Under saturated conditions, water flow is downwards in the direction of maximum hydraulic gradient. For a surface flow containing effluent to occur, the effluent would have to rise, *against gravity*, through at least 150mm of soil. Under unsaturated conditions, water flow is multi-directional due to capillary forces and matrix suction. The atmosphere provides a capillary break with capillary forces and matrix suction reducing to zero at the air/soil interface. Gravitational forces outweigh the capillary forces and matrix suction long before the surface is reached. Hence, any surface flow from the effluent area cannot contain any effluent, regardless of the intensity and duration of rain events. Surface flow can only ever consist of **rainfall** more than soil storage capacity and hydraulic conductivity.

Except for the instance of a broken/damaged drip line or distribution line, surface flow cannot contain any effluent.

Note: For a pressure compensated distribution network to function properly, lines must be placed parallel to contours and/or horizontal for even effluent distribution.

1.4.9 Effluent Areas. Design effluent areas are oversized. They have been designed for a deep seepage less than 10% of hydraulic conductivity.

1.4.10 Reserve Areas. Although reserve areas are not required for subsurface irrigation (*Code of Practice*, 2016), there is sufficient area available for duplication of the irrigation area via rhizopods. The reserve area is a spare effluent field, which is left undeveloped, but can be constructed in the case of increase in daily effluent production due to contingencies through the chain of ownership.

1.4.11 Buffer Distances. Buffer distances are set out in the *Code of Practice* to allow for attenuation of pathogens and nutrients, should an effluent surcharge occur, either overland or subsurface.

All land application areas are located at least 70m from potable surface waters.

The time taken for groundwater to reach the nearest potable surface waters can be estimated by using the Darcy equation (which states that velocity is the product of the hydraulic conductivity and the hydraulic gradient). From the literature, the regional gradient is about 0.005.

Flow times can be estimated for groundwater to flow the 70m (minimum) to the nearest surface waters at this site.

For a conservative basement hydraulic conductivity of 1m/day^e with a hydraulic gradient of 0.005, the time taken for groundwater to flow 70m is about 35 years.

Even for an unrealistically steeper groundwater gradient of, say, 0.01, the time taken for groundwater to flow 70m is about 20 years.

^e This is a conservatively high figure to demonstrate maximum possible flow rates. A conservatively low figure was used for calculation of effluent application rates (see recommendations) to demonstrate irrigation sustainability.

For a surface discharge, and for the prevailing subsurface conditions, the distance travelled before reabsorption is less than 2m.

Note: The existing and proposed dwelling and a proposed shed are located between the land application area and full supply level.

1.4.12 System Failure. A properly designed and constructed onsite effluent system consisting of the treatment plant and the irrigation area can suffer degrees of failure. Failure can take the form of mechanical (plant), accidental (toilet blockages, damaged irrigation lines, high BOD influent), operational (power outage, overloading) and maintenance (failure to check filters, failure to participate in maintenance programme).

1.4.12.1 Mechanical Breakdown. Mechanical plant breakdown typically involves compressor and pump malfunction causing no aeration and high-water levels, respectively. Both situations are alarmed (both audible and visual). The proposed plants will benefit from a service contract providing 24-hour repair cycles. If the alarms were ignored (or malfunctioned) and the household continued to produce waste until the load balancing tank and plant capacities were exceeded (at least 3 days), a mixture of septic and raw effluent would back up to the interior of the units and/or surcharge through the plant hatches. It is difficult to imagine how this outcome could be allowed to manifest. In addition, a plant malfunction with the residents absent could not cause an effluent surcharge because no influent would be produced during this period.

1.4.12.2 Accidents. Toilet blockages and accidentally damaged irrigation lines could allow localised surface surcharge of treated effluent. This is why minimum buffers to surface waters have been maintained. High BOD influent (e.g., dairy, or orange juice) can realise a lesser quality than 20/30 standard for some weeks. Provided the high BOD influent is not continuous, the soils/subgrade will continue to satisfactorily renovate the effluent.

1.4.12.3 Operational Breakdown. Operational failures including power outages and transient hydraulic overloading are accommodated by the load balancing facility, as described in Section 1.4.6, above.

1.4.12.4 Maintenance Breakdown. Maintenance breakdowns such as failure to clean line filters can lead to expensive pump repairs and in extreme cases leakage (of 20/30 standard effluent) from the outlet pipe. This leakage would occur in proximity to the dwelling and would be noticed and acted on.

Refusal to participate in the management programme would be acted on by the responsible authority within one maintenance cycle.

AWTS and pumped systems have mechanical components which can malfunction and will age. The management plan including the maintenance and monitoring programmes are essential to ensure safe onsite effluent disposal.

1.4.13 Risk Summary. About density of development and cumulative risk the assessment has considered risk associated with subsurface flows and surface flows.

Regarding subsurface flows, provided the on-site system is adequately designed, constructed, operated, and maintained (see items 1.4.1 through 1.4.12.4), the risk to surface and ground waters is negligible. Once the effluent is placed underground, the extraordinary long travel times via ground water to surface waters ensures adequate nutrient attenuation.

Regarding surface flows, provided the on-site system is adequately designed, constructed, operated, and maintained (see items 1.4.1 through 1.4.12.4), the risk to surface and ground waters is no greater than for a sewered development. Indeed, it could be considered that the risk is less than for a sewered development because there can be no mains failure (because there is no mains).

The LCA recommends a conservative, scientifically based, well founded wastewater management system with inherent multiple barriers of safety. Cumulative risk from the development is also extremely low. The risk of serious or irreversible damage is extremely low.

All requirements of the *Environment Protection Act, 2017* (as amended) have been met.



Figure 1: Land-soil unit A (proposed land application area) viewed from north to south (upslope).



Figure : Land-soil unit A (proposed land application area) viewed from south to north (downslope).

SECTION 2. RECOMMENDATIONS

2.1 APPLICATION

The following recommendations are based on the results of our assessment, and are made in accordance with the *Environment Protection Act, 2017* (as amended), the *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, July 2016, AS 1726, and AS/NZS 1547:2012.

They are based on the mean saturated hydraulic conductivity of the limiting colluvial materials and are designed to demonstrate the viability of on-site effluent disposal for a residence and a daily effluent production of up to 750 litres and are conservative.

2.2 SUBSURFACE IRRIGATION

2.2.1 General. Based on the results of the water balance analysis and considering the prevailing surficial and subsurface conditions including soil profile thickness^f and slope and on condition that adequate site drainage is provided (as described in Section 2.4, below), on-site irrigation systems are appropriate for effluent disposal for land-soil unit A.

2.2.2 Effluent. Effluent will be generated from a residence and will include black and grey water (all wastes).

2.2.2.1 Effluent Quality. Effluent shall be treated by AWTS or sand filter to a standard that meets or exceeds the water quality requirements of the 20/30 standard for BOD/SS.

2.2.2.2 Effluent Quantity. The daily effluent volume of 750 litres has been calculated from *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, July 2016, Table 4 and assumes mains water (equivalent), out-sourced laundry and WELS-rated water-reduction fixtures and fittings – minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances.

2.2.2.3 Load Balancing. Transient hydraulic loads more than the expected daily load may occur. In addition, and in the case of power outages and/or mechanical breakdown, the load balancing tank/function can act as a temporary storage.

We recommend that the effluent treatment system be fitted with a load balancing facility or equivalent function to allow transient high hydraulic loads to be retained and distributed to the irrigation area during periods of low load.

2.2.3 Application Rates and Irrigation Areas. An irrigation area and application rate has been determined from the results of the water and nutrient balance analyses and AS/NZS 1547:2012, *Appendix M*.

2.2.3.1 Hydraulic Loading. To satisfy the requirement for no surface discharge in the 9th decile wet year, effluent shall be applied at an application rate not exceeding 2.0mm/day.

2.2.3.2 Nutrient Loading. The requirements of *the Environment Protection Act, 2017 (as amended)* would be satisfied with effluent applied at an application rate not exceeding 2.5mm/day.

2.2.3.3 Design Loading. To satisfy the requirement for no surface discharge in the 9th decile wet year and on-site attenuation of nutrients, the effluent shall be applied at a rate not exceeding **2mm/day** (370m² land application area).

2.2.4 General Requirements. For subsurface irrigation, it is assumed that the design, construction, operation, and maintenance are carried out in accordance with AS/NZS1547:2012 and a “system specific” JAS/ANZ accreditation, as appropriate.

The irrigation area is to be a dedicated area. To prevent stock and vehicular movements over the area, the effluent area shall be “fenced.”

^f Minimum 1400mm required for evapotranspiration-absorption trenches.

2.2.5 Subsurface Distribution System. A distribution network design like that shown in *AS/NZS1547:2012, Figure M1* is appropriate.

2.2.5.1 Ground Preparation and Excavations. Preparation of the ground is to include the redistribution of topsoil to form a free draining, smooth surface. Pipe excavations shall only be undertaken in drier periods when soil moisture contents are relatively low and when heavy rainfall and storms are not normally expected (see also, Section 2.2.8, below).

2.2.5.2 Pump System and Pipe works. Uniform delivery pressure of the effluent throughout the distribution system is essential. Percolation or drip rates shall not vary by more than 10% from the design rate over the whole of the system (i.e., pressure compensated).

The distribution pipes shall be placed coincident with slope contours. The dripper system is to provide an effective even distribution of effluent over the whole of the design area. Line spacing shall be no closer than 1000mm.

2.2.6 Sequential Zoned Irrigation. The efficiency of irrigation effluent disposal systems can be highly variable. We recommend that as part of the daily irrigation process, the effluent area be irrigated sequentially by zones or time to promote the creation of transient aerobic and anaerobic soil conditions.

The inspection regime described in Section 2.2.7, below, is to be strictly adhered to.

2.2.7 Inspections and Monitoring. We recommend that the mandatory testing and reporting as described in the *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, July 2016, include an annual (post spring) report on the functioning and integrity of the distribution system and on the functioning and integrity of the cut-off drains and outfall areas.

It is expected that the frequency of inspections and monitoring will intensify as systems age.

2.2.8 Soil Renovation. To maintain water-stable peds (under irrigation with saline effluent), soil renovation in the form of gypsum application is recommended. Prior to construction of the distribution pipe network, gypsum shall be broadcast over the effluent area at the rate of 0.25kg/m².

Gypsum is to be fine ground "Grade 1" agricultural quality.

At commissioning, 1 litres of a proprietary "liquid" gypsum (typically CaCl + polyacrylamide + wetting agent + water) is to be applied through the irrigation network.

Gypsum shall be broadcast over the land application area at the rate of 0.25kg/m² every 3 years.

Alternatively, 1 litre of a proprietary "liquid" gypsum can be applied through the irrigation network every 3 years.

2.2.9 AWTS. It is assumed that the design, construction, operation, and maintenance of all treatment elements are carried out in accordance with *AS/NZS1547:2012* and a current JAS-ANZ accreditation.

The AWTS is to be sized to successfully treat a daily hydraulic load of 750 litres and a nutrient load of 300 grams BOD.

2.2.10 Effects of Irrigation on Existing Trees. A studyⁱ by Dr Nick O'Brien (Melbourne University) regarding impacts of 20/30 standard irrigation on remnant *Eucalyptus* forest at Ringwood North has shown that trees would not be adversely affected by subsurface 20/30 standard irrigation provided the distribution slots did not exceed about 150mm in depth.

2.3 RESERVE AREA

The expected design life of fifteen years may vary due to construction and maintenance vagaries and possible effluent volume increases through the chain of ownership.

There is sufficient available area on the allotment for duplication of the effluent area via rhizopods.

2.4 SITE DRAINAGE.

Our recommendations for on-site effluent disposal have allowed for incident rainfall only and are conditional on the installation of a cut-off drain and bund, which shall be placed upslope of the disposal area, as shown in Drawing 2.

Care shall be taken to ensure that the intercepted and diverted surface waters are discharged well away and down slope of the disposal field.

Locations of the cut-off drain and a drain detail are shown in Drawings 2 and 3.

The owner shall also ensure that any upslope site works do not divert and/or concentrate surface water flows onto the disposal area.

2.5 BUFFER DISTANCES

The water balance analysis has shown that potential surface (rain water) flows from the effluent area would be restricted to episodic events.

The estimated hydraulic properties of the upper soil materials and hydraulic gradient have been used to evaluate (via Darcy's Law) the buffer distances with respect to subsurface flows.

Our analysis and evaluation have shown that the default setback distances given in *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, July 2016, Table 5 and *Approaches for Risk Analysis of Development with On-site Wastewater Disposal in Open, Potable Water Catchments*, Dr Robert Edis, April 2014 are conservative and can be applied with amendment.

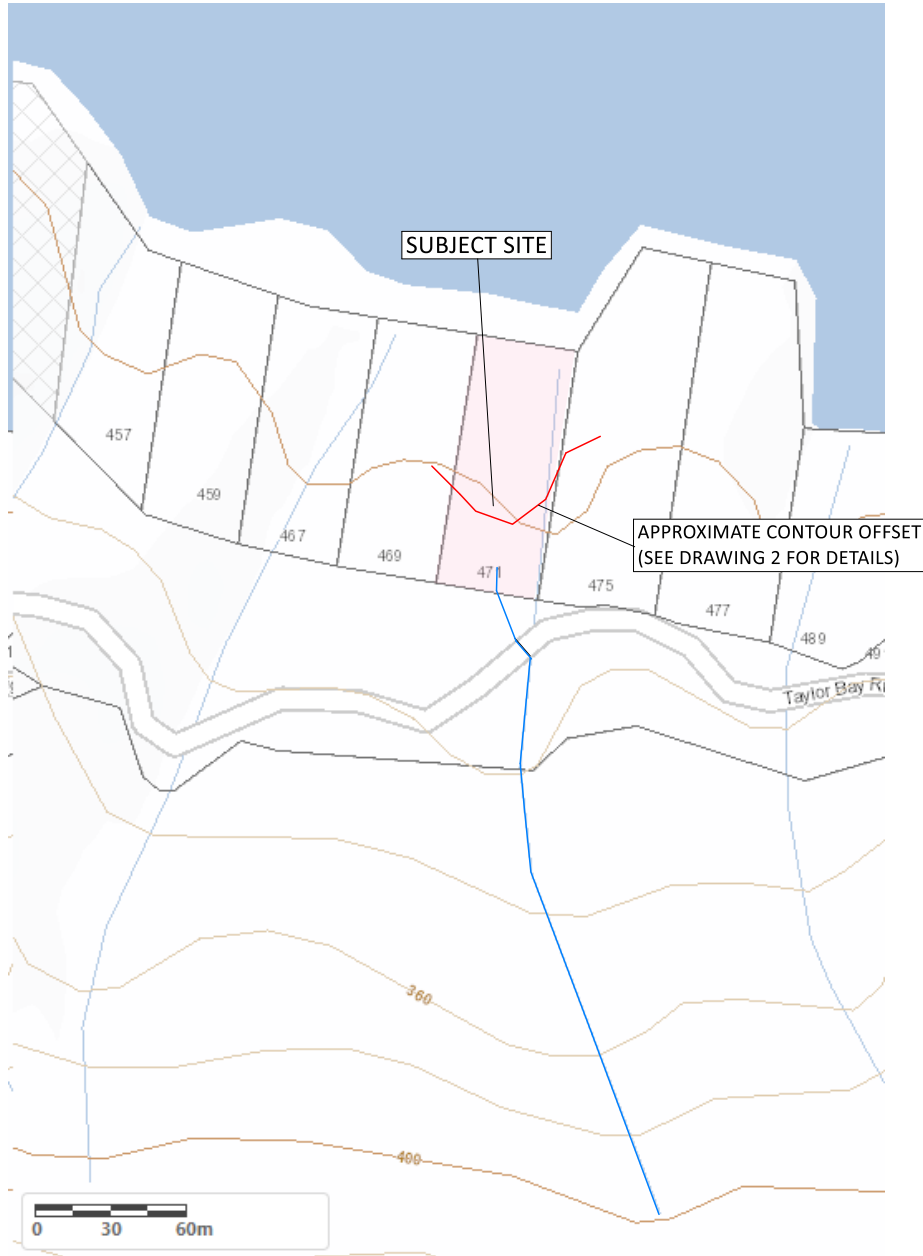
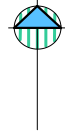
For a building located downslope of an effluent field, your engineer shall evaluate the integrity of building foundations with respect to the assigned buffer distance.

2.6 SUMMARY OF RECOMMENDATIONS

Our capability assessment has shown that at least one rational and sustainable on-site effluent disposal method (20/30 standard subsurface irrigation) is appropriate for the proposed development, subject to specific design criteria, described above.

A management plan is presented in Appendix D to this report.

Paul R. WILLIAMS B.App.Sc.
PRINCIPAL HYDROGEOLOGIST
& ENGINEERING GEOLOGIST



LOCATION OF SITE SHOWING CONTOURS & APROXIMATE CONTOUR OFFSET

471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY

LIZA COVIELLO

Scale: 1:30,000

Drawn: P.R.W.

Report Number: A231106

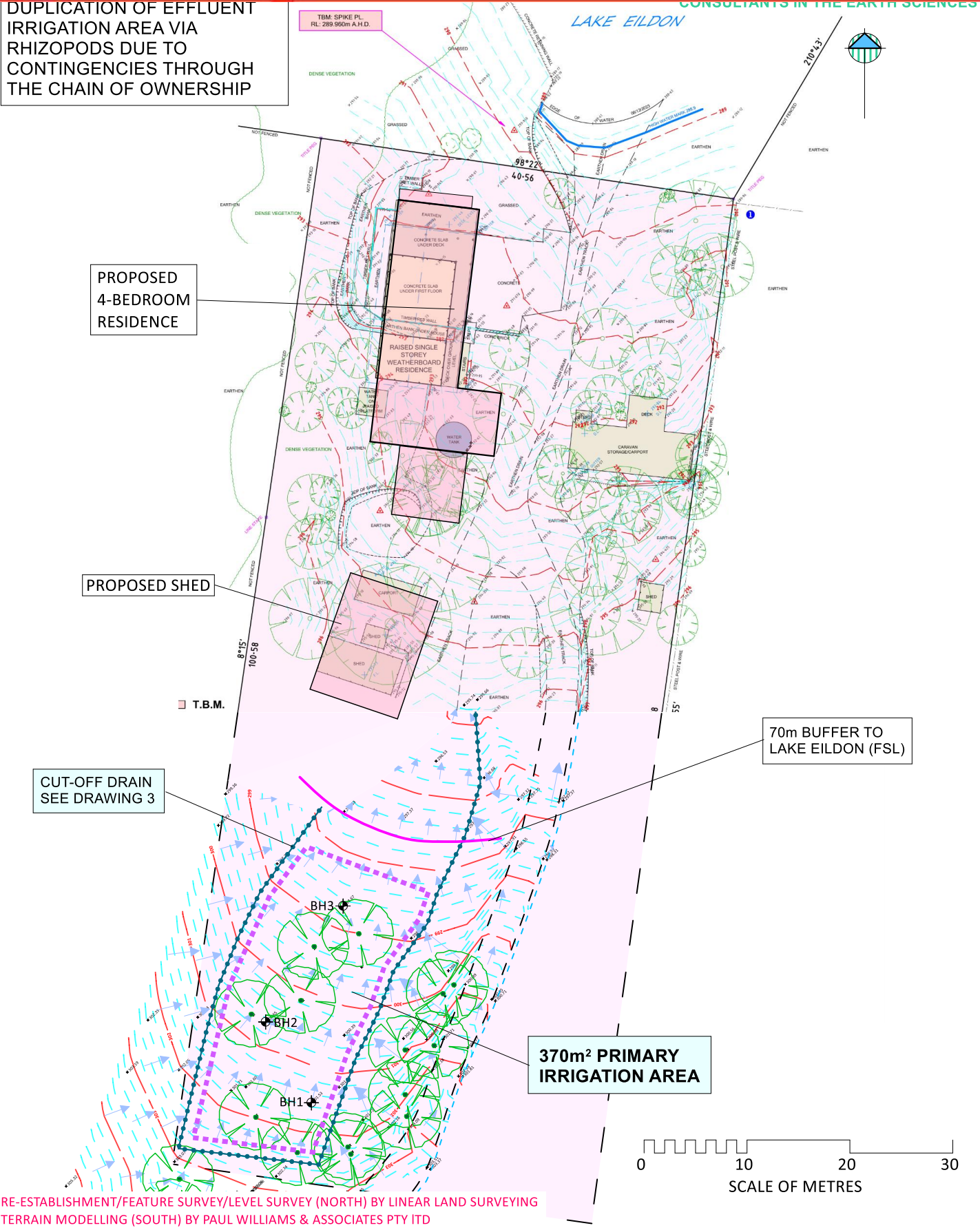
Contour Interval: 10m

Date: February 2024

Drawing Number: 1

DUPLICATION OF EFFLUENT IRRIGATION AREA VIA RHIZOPODS DUE TO CONTINGENCIES THROUGH THE CHAIN OF OWNERSHIP

CONSULTANTS IN THE EARTH SCIENCES

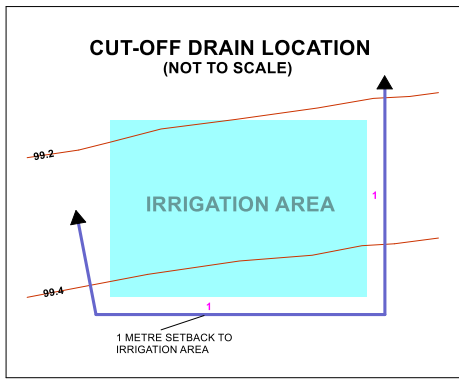


LOCATION OF PROPOSED DEVELOPMENT SHOWING CONTOURS & SURFACE FLOW VECTORS

471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY

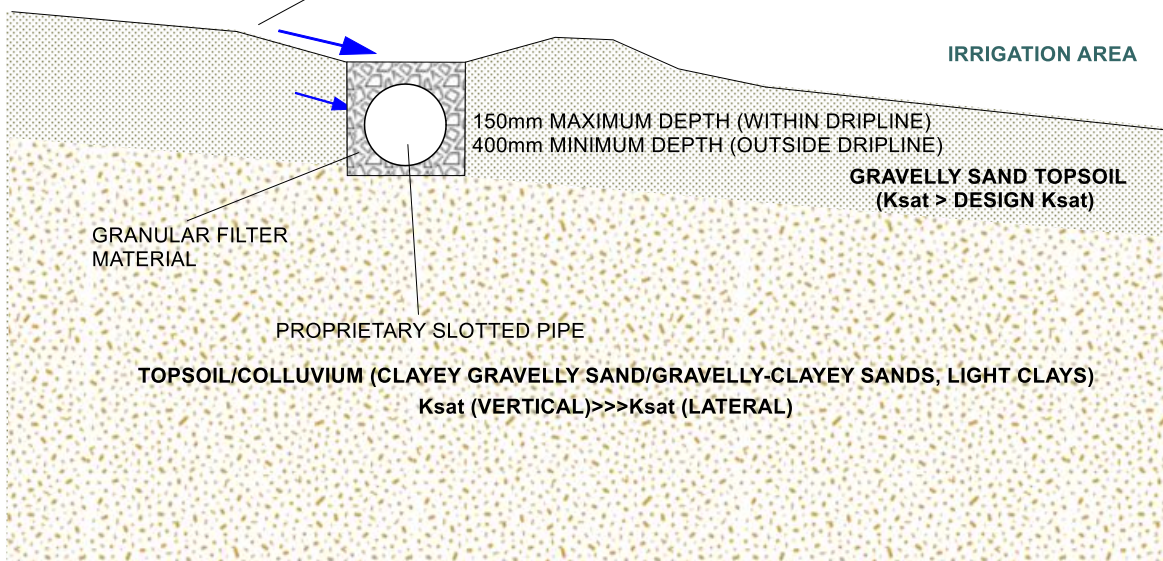
LIZA COVIELLO

Scale: 1:500	Drawn: P.R.W.	Report Number: A231106
Contour Interval: 0.2m	Date: February 2024	Drawing Number: 2



NOTE: CUT-OFF DRAIN LOCATION IS SCHEMATIC ONLY. FINAL LOCATION TO BE DETERMINED BY DESIGN ENGINEER AS PART OF SITE DRAINAGE DESIGN.

SURFACE REGRADED BY CUTTING TO FACILITATE COLLECTION OF SURFACE FLOWS - DEGREE OF CUT SLOPE LIMITED BY REQUIREMENTS FOR SAFE & EFFICIENT MOWING/MAINTENANCE



NOTES:

1. DRAIN TO BE DESIGNED, CONSTRUCTED & MAINTAINED TO ENSURE THAT NO SURFACE & PERCHED GROUNDWATER FLOWS ENTER THE IRRIGATION AREA.
2. DRAIN TO BE LOCATED ON ALL UPSLOPE SIDES OF IRRIGATION AREA (NO CLOSER THAN 1m FROM NEAREST SUBSURFACE DISTRIBUTION LINE).
3. DRAIN TO HAVE UNSPECIFIED FALL.
4. MAXIMUM DEPTH IS 150mm (WITHIN DRIPLINE), MINIMUM DEPTH IS 400mm (OUTSIDE DRIPLINE).
5. DRAIN CROSS SECTIONAL AREA DESIGNED MAINLY FOR SURFACE FLOWS (VERTICAL $K_{sat} \gg \gg$ LATERAL K_{sat}).
6. OFF-SITE DRAIN OUTFALL TO LEGAL POINT OF DISCHARGE SUBJECT TO LOCAL AUTHORITY REQUIREMENTS.
7. ON-SITE DRAIN OUTFALL TO INCLUDE APPROPRIATE ENERGY DISSIPATION TO AVOID EROSION.
8. ALL DRAINS AND OUTFALL AREAS SUBJECT TO POST-SPRING INSPECTION.

NOTE: DRAWING NOT TO BE USED FOR SET-OUT PURPOSES

CUT-OFF DRAIN/BUND DETAIL FOR 20/30 STANDARD EFFLUENT IRRIGATION FIELDS

GRADATIONAL/DUPLEX SOIL PROFILES - GENTLE TO MODERATE FORESTED SLOPES

LIZA COVIELLO

Scale: 1:10 (Approximately)

Drawn: P.R.W.

Report Number: SPEC 021

Contour Interval: N/A

Date: February 2024

Drawing Number: 3

APPENDICES

**APPENDIX A1
SOIL PERMEABILITY**

The *in-situ* permeability tests were scheduled for 9th February 2024.

The occurrence of transient free water at the surface and in the colluvial materials prevented the acquisition of sufficient hydraulic data for determination of the geometric mean of saturated hydraulic conductivity.

Note: The relatively high soil moisture content at the time of testing was due to recent heavy and persistent rainfalls. This transient high soil moisture impacts on the test method only and does not reflect in any way on the suitability of the site for the sustainable onsite attenuation of waste water – see AS/NZS1547:2012, Appendix G.

A conservative estimate of permeability has been deduced as follows (see Code 3.6.1):-

Profile analysis in accordance with AS/NZS 1547:2012 and our laboratory determined swell potential (including the *Mansfield Shire Onsite Domestic Wastewater Plan* Lake Eildon and Environs data base) shows the residual soils are moderately structured, non-dispersive, gravelly light clays/clay loams (Category 4/5 soil) with saturated hydraulic conductivity between 0.06 and 0.12m/day.

For the limiting clayey soils, we have adopted an estimated design saturated hydraulic conductivity of 0.06m/day.

Peak deep seepage is conservatively estimated at 5.5mm/day (after renovation).

From the literature and from examination of exposures in the vicinity, the hydraulic conductivity of the basement rocks would be more than 0.05m/day (adopt 1m/day for buffer design).

APPENDIX A2
SOIL PROFILE PHOTOGRAPHS



Borehole BH1



Borehole BH2



Borehole BH3

APPENDIX B

Paul Williams & Associates Pty Ltd

A231106

WATER/NITROGEN BALANCE (20/30 irrigation): No wet month storage/surcharge.

Rainfall Station: Lake Eildon (G-M Water)/ Evaporation Station: Lake Eildon (G-M Water)

Location: Taylor Bay
 Date: February, 2024
 Client: Liza Coviello

ITEM	UNIT	#	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Evaporation (Mean)	mm	A	164	140	109	57	28	15	19	28	40	84	114	152	949
Rainfall (9th Decile wet year adjusted)	mm	B1	50	41	59	73	105	130	130	139	110	105	85	66	1094
Effective rainfall	mm	B2	37	31	44	55	79	97	98	104	82	79	64	50	821
Seepage Loss ¹	mm	B3	171	154	171	165	171	165	171	171	165	171	165	171	2008
Evapotranspiration(IXA)	mm	C1	74	63	49	26	13	7	9	13	18	38	51	68	428
Waste Loading(C1+B3-B2)	mm	C2	207	186	175	136	104	74	81	79	101	129	152	189	1614
Net evaporation from lagoons (10(0.8A-B1)xlagoon area(ha))	L	D	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of Wastewater	L	E	23250	21000	23250	22500	23250	22500	23250	23250	22500	23250	22500	23250	273750
Total Irrigation Water(E-D)/G	mm	F	76	69	76	74	76	74	76	76	74	76	74	76	898
Irrigation Area(E/C2)annual.	m ²	G													305
Storage	mm	H	-131	-117	-99	-62	-28	-1	-5	-3	-27	-53	-79	-113	
Direct Crop Coefficient:		I	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	Shade:
Rainfall Retained:	75 %	K	1. Seepage loss equals deep seepage plus lateral flow of 5.5mm/day												
Lagoon Area:	0 ha	L	CROP FACTOR												
Wastewater(daily):	750 L	M	0.7	0.7	0.7	0.6	0.5	0.45	0.4	0.45	0.55	0.65	0.7	0.7	Pasture:
Seepage Loss:	5.5 mm	N	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	0.45	Shade:
Irrig'n Area(Incl storage):	170 m ²	P1	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	Fescue:
Irrig'n Area(No storage):	305 m ²	P2	1	1	1	0.7	0.55	0.55	0.55	0.55	0.7	1	1	1	Park:
Application Rate:	2.5 mm	Q	NITROGEN UPTAKE:												
Nitrogen in Effluent:	30 mg/L	R	Species: Kg/ha.yr pH			Species: Kg/ha.yr pH			Species: Kg/ha.yr pH			Species: Kg/ha.yr pH			
Denitrification Rate:	20 %	S	Ryegrass	200	5.6-8.5	Bent grass	170	5.6-6.9						200	6.1-7.9
Plant Uptake:	220 kg/ha/y	T	Eucalyptus	90	5.6-6.9	Couch grass	280	6.1-6.9	Lemons	90	6.1-6.9				
Annual N load:	6.57 kg/yr	V	Lucerne	220	6.1-7.9	Clover	180	6.1-6.9	C cunn'a	220	6.1-7.9				
Area for N uptake:	299 m ²	W	Tall fescue	150-320	6.1-6.9	Oats	60	5.0-7.9	P radiata	150	5.6-6.9				
Application Rate:	2.5 mm	X	Rye/clover	220		Sorghum	90	5.6-6.9	Poplars	115	5.6-8.5				
Irrig'n Area adjusted for slope:	366 m ²	Z	1.2 x hydraulic area (slopes 10% to 20%)												
Application Rate:	2.0 mm	Z1													

PART 2

RAINFALL DATA & 9TH DECILE REDISTRIBUTION

REDISTRIBUTION OF RAINFALL															
Rainfall to be redistributed (9th decile) =	1094 mm/yr														
Minimum mean rainfall =	40.9 mm														
9th decile (annual) - mean rainfall (annual) =	246.2 mm														
	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	TOTAL		
Mean rainfall (mm)	46	41	52	60	79	94	94	99	82	79	67	56	847.9		
Deviation from minimum mean (mm)	5	0	11	19	38	53	53	58	41	38	26	15	357		
Redistributed rainfall (mm) (1)	50	41	59	73	105	130	130	139	110	105	85	66	1094		

1. The distribution is adjusted in proportion to the deviation of means from the minimum mean.

Site name: LAKE EILDON

Site number: 88023

Commenced: 1887

Latitude: 37.23° S

Longitude: 145.91° E

Elevation: 230 m

Operational status: Open

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	46.1	40.9	51.7	60.0	79.0	93.5	93.8	99.0	81.8	79.0	67.2	55.9	850.3
Lowest	0.0	0.0	2.0	0.0	0.0	1.8	27.4	6.4	11.5	4.8	4.1	0.0	404.8
5th %ile	3.3	0.5	5.6	10.6	21.4	30.7	34.0	32.7	29.9	17.7	12.1	9.0	578.9
10th %ile	8.8	2.3	10.7	14.2	27.4	38.4	44.2	44.9	37.2	27.4	20.0	13.1	634.7
Median	39.7	31.2	41.9	49.6	75.9	87.8	91.4	97.2	80.6	76.6	60.8	45.4	855.0
90th %ile	98.4	86.1	112.5	111.5	140.7	149.9	140.0	158.0	123.9	140.2	116.9	109.2	1094.1
95th %ile	114.7	107.2	139.8	139.7	160.6	177.2	158.3	172.6	151.4	146.0	135.3	132.5	1191.2
Highest	181.1	229.3	189.8	205.9	204.9	240.3	189.0	222.8	180.2	167.0	199.6	180.8	1401.3

APPENDIX C1

LAND CAPABILITY ASSESSMENT TABLE
(Potable water supply catchments)

LAND FEATURE	LAND CAPABILITY				AMELIORATIVE MEASURE & RISK REDUCTION
	LOW	MEDIUM	HIGH	LIMITING	
Available land for LAA	Exceeds LAA and duplicate LAA requirements	Meets LAA and duplicate LAA requirements	Meets LAA and partial duplicate LAA requirements	Insufficient LAA area	Limiting for trenches & beds. Non-limiting for irrigation: Partial reserve area available
Aspect	North, north-east and north-west	East, west, south-east, south-west	South	South, full shade	North aspect.
Exposure	Full sun and/or high wind or minimal shading	Dappled light (partial shade)	Limited light, little wind to heavily shaded all day	Perpetual shade	Partial shade from nearby trees and terrain.
Slope Form	Convex or divergent side slopes	Straight sided slopes	Concave or convergent side slopes	Locally depressed	After minor regrading.
Slope gradient:					
Trenches and beds	<5%	5% to 10%	10% to 15%	>15%	14%: High risk for trenches.
Subsurface irrigation	<10%	10% to 30%	30% to 40%	>40%	14%: Non-limiting for irrigation.
Site drainage: runoff/run-on	LAA backs onto crest or ridge	Moderate likelihood	High likelihood	Cut-off drain not possible	Cut-off drain and bund required.
Landslip ⁷	Potential	Potential	Potential	Existing	Unremarkable
Erosion potential	Low	Moderate	High	No practical amelioration	If undisturbed. All regraded areas to be stabilised with vegetation.
Flood/inundation	Never		<1%AEP	>5% AEP	Unremarkable
Distance to surface waters (m)	Buffer distance complies with Code requirements		Buffer distance does not comply with Code requirements	Reduced buffer distance not acceptable	LAA located at least 60m from surface waters, proxy buffer with residence between surface waters and land application area.
Distance to groundwater bores (m)	No bores on site or within a significant distance	Buffer distances comply with Code	Buffer distances do not comply with Code	No suitable treatment method	No bores within a significant distance.
Vegetation	Plentiful/healthy vegetation	Moderate vegetation	Sparse or no vegetation	Propagation not possible	Oversowing with rye/clover mix required.
Depth to water table (potentiometric) (m)	>2	2 to 1.5	<1.5	Surface	Water table 10+m.
Depth to water table (seasonal perched) (m)	>1.5	<0.5	0.5 to 1.5	Surface	Perching possible. (Install cut-off drain).
Rainfall ⁸ (9 th decile) (mm)	<500	500-750	750-1000	>1000	Limiting for trench systems. Non-limiting for subsurface irrigation.
Pan evaporation (mean) (mm)	1250 to 1500	1000 to 1250	750 to 1000	<750	Design by water balance.
SOIL PROFILE CHARACTERISTICS					
Structure	High or moderately structured	Weakly structured	Structureless, massive or hardpan		Maintain structure by gypsum application.
Fill materials	Nil or mapped good quality topsoil	Mapped variable depth and quality materials	Variable quality and/or uncontrolled filling	Uncontrolled poor quality/unsuitable filling	No fill present.
Thickness: (m)					
Trenches and beds	>1.4		<1.4	<1.2	Non-limiting for trench systems.
Subsurface irrigation	1.5+	1.0 to 1.5	0.75 to 1.0	<0.75	Non-limiting for irrigation systems.
Permeability ⁹ (limiting horizon) (m/day)	0.15-0.3	0.03-0.15 0.3-0.6	0.01-0.03 0.6-3.0	>3.0 <0.03	After renovation; design by water balance
Permeability ¹⁰ (buffer evaluation) (m/day)	<0.3	0.3-3	3 to 5	>5.0	Evaluate flow times via Darcy's Law (assume 1m/day for metasediments)
Stoniness (%)	<10	10 to 20	>20		Unremarkable (not relevant).
Emerson number	4, 5, 6, 8	7	2, 3	1	Non-dispersive clay fraction. Apply gypsum to maintain stable peds.
Dispersion Index	0	1-8	8-15	>15	Non-dispersive clay fraction. Apply gypsum to maintain stable peds.
Reaction trend (pH)	5.5 to 8	4.5 to 5.5	<4.5>8		Ideal range for grasses.
E.C. (dS/m)	<0.8	0.8 to 2	2-4	>4.0	Non-limiting.
Free swell (%)	<30	30-80	80-120	>120	Zero-swelling clay fraction.

There are high risk and limiting factors for primary effluent trench systems (proximity to reservoir, slope, rainfall, available area).

There are no limiting factors for irrigation systems.

⁷ Landslip assessment based on proposed hydraulic loading, slope, profile characteristics and past and present land use.

⁸ 9th decile monthly rainfalls used in water balance analyses.

⁹ Saturated hydraulic conductivity from insitu testing and data base.

¹⁰ Saturated hydraulic conductivity estimated from AS/NZS1547:2012 and data base.

APPENDIX C2

MAJOR FACTORS INFLUENCING THE LIKELIHOOD OF CONSEQUENTIAL IMPACTS OF PRIMARY ON-SITE WASTEWATER MANAGEMENT SYSTEM¹¹

LAND	RISK RATING				REMARKS
FEATURE	LOW	MEDIUM	HIGH	RISK RATING	
Distance to reservoir (km)	>15	2-15	<2	3	70m to Lake Eildon FSL.
Soil type rating (from Appendix C1)	1	2	3	2	Non-dispersive, gravelly light clay/clay loam
Distance to river (m)	>80	40-80	<40	2	70m to River.
Distance to stream (m)	>80	40-80	<40	2	60m to watercourse.
Distance to drain (m)	>40	10-40	<10	2	20m to drain outfall.
Lot size (ha)	>10	2-10	0.2-2	3	0.4109 hectares.
Density (houses/km ²)	<20	20-40	>40	1	Less than 20 potential dwellings per km ² of sub catchment.
LCA rating (from Appendix C1)	1 (LOW)	2 (MEDIUM)	3 (HIGH)	3	See Appendix C1, above.
System fail rate (%)	<5	5-10	>10	3	Well-connected to reservoir system.

APPENDIX C3

CALCULATED COMBINED RISK NUMBER

As part of the development of the Mansfield Shire WWMP Pilot Study, Dr Robert Edis identified major factors which influence the level of risk posed by an on-site system. These factors have a differing level of importance, or weighting, when considered relative to other factors and that the interaction between factors must also be considered.

The individual factors can be rated as **low risk** ($R_n < 2.5$) which reflects the range in which there is no expected consequential impact on water quality, **medium risk** ($R_n 2.5-5$) which reflects the range in which the factor may influence the risk to water quality, though as a minor component of the overall risk, and **high risk** ($R_n > 5$) which represents a significant influence on the risk to water quality.

The Edis risk algorithm weights the major factors appropriately in the context of protecting the integrity of the potable water supply, as shown below:

$$R_n = ((R_{Res} + R_{Soil}) \times (R_{Riv} + R_{Str} + R_{Drain} + R_{Lot}) + (2 \times R_{LCA}) + (3 \times R_{Fail} \times R_{Den}))/10$$

where

R_n = Combined Risk Number,

R_{Res} = Distance to reservoir risk rating

R_{Soil} = Soil (or Land-Soil) risk rating

R_{Riv} = Distance to river risk rating

R_{Dstr} = Distance to stream risk rating

R_{Drain} = Distance to drain risk rating

R_{Lot} = Lot size risk rating

R_{LCA} = Land capability assessment risk rating (from Appendix C1)

R_{Fail} = System fail rate risk rating

R_{Dens} = Density of development risk rating

The combined risk number for this site is **6 (High Risk) with limiting factors for trenches**.

The results of the land capability assessment and risk analysis indicate that primary effluent and trench and irrigation systems are not appropriate for this site (particularly with respect to soil limitations).

The risk can be reduced to negligible levels if effluent is treated to a secondary level and disposed via pressure compensated subsurface irrigation, as described in Section 2 of the land capability assessment.

¹¹ Source: *Approaches for Risk Analysis of Development with On-site Wastewater Disposal in Open, Potable Water Catchments* (Dr Robert Edis April 2014)

APPENDIX C4

LAND CAPABILITY HAZARD/RISK (MURRINDINDI SHIRE DOMESTIC WASTEWATER MANAGEMENT PLAN)

SOIL HAZARD

HAZARD TYPE	SCORE	FACTOR	HAZARD	REMARKS
DEPTH HAZARD	2	1.5	3	0.8 to 1.5m profile thickness.
HYDRAULIC HAZARD	2	1	2	Moderately structured gravelly clays (Category 4/5 soils).
POLLUTION HAZARD	2	0.5	1	High P sorption capacity, high organic topsoil, non and sodic.
HAZARD CLASS:			2.00	Sum hazards/3
WEIGHTED AVERAGE HAZARD CLASS:			2	High soil hazard

LCA HAZARD SUBCRITERIA

CRITERIA	SCORE	FACTOR	HAZARD	REMARKS
SLOPE	2	0.4	0.8	14% slope.
SOIL	2	0.3	0.6	Moderately structured gravelly clays (Category 4/5 soils).
CLIMATE	2	0.2	0.4	7 months RF>PET
DRAINAGE CLASS	2	0.1	0.2	Lower slope soils.
LCA HAZARD SCORE:			2	Sum hazards.
LCA HAZARD SCORE (HEAD CRITERIA):			2	High risk (risk reduced by bund/cut-off and reduced DIR)

LCA CAPABILITY HAZARD

HEAD CRITERIA	SCORE	FACTOR	HAZARD	REMARKS
LCA HAZARD	2	0.5	1	High risk (risk reduced by bund/cut-off and reduced DIR)
RECEIVING ENV PROXIMITY	3	0.25	0.75	Surface waters intersect property.
RECEIVING ENV SENSITIVITY	3	0.25	0.75	Lake Eildon
LAND CAPABILITY HAZARD			2.5	Medium Risk.

APPENDIX D

MANAGEMENT PLAN

Paul Williams & Associates Pty. Ltd.

ABN 80 006 412 862

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LAND CAPABILITY ASSESSMENT LAND USE MAPPING TERRAIN MODELLING HYDROGEOLOGY GEOLOGY HYDROLOGY SOIL SCIENCE LAND-SOIL RISK ASSESSMENT

A231106-FEBRUARY 2024

MANAGEMENT PLAN FOR ON-SITE EFFLUENT DISPOSAL VIA SUBSURFACE IRRIGATION AT 471 TAYLOR BAY RIGHT ARM ROAD, TAYLOR BAY

1. INTRODUCTION

This document identifies the significant land-soil unit constraints (as identified in A231106) and their management and day-to-day operation and management of the on-site effluent system.

2. SIGNIFICANT LAND-SOIL UNIT CONSTRAINTS

2.1 Allotment Size. The day-to-day operation and management of on-site effluent systems, as described below, is not constrained by lot size or geometry.

Although all requirements of the *Environment Protection Act, 2017* (as amended) have been met or exceeded through conservative design, prudence dictates that individual lot owners assiduously follow the management programme given in Section 4, below.

2.2 Nitrogen Attenuation. To reduce nitrates to insignificant levels, the effluent should not contain more than 30mg/litre total nitrogen.

Provided the irrigation areas are at least as large as those required to satisfy the nitrogen loading, as described in A231106 Sections 1.3.1.13, 1.3.2.13 and 2.2.3.2, and that the (specified) grass is cut and (periodically) harvested, nitrogen will be attenuated on-site.

2.3 Hydraulic Conductivity. The hydraulic conductivity of the basement rock is estimated at 1m/day (sourced from the literature).

2.4 Site Drainage. Our recommendations for on-site effluent disposal have allowed for incident rainfall (not surface flow or lateral subsurface flow) and are conditional on the installation of a cut-off drain and bund, which should be placed upslope of the disposal area. Care should be taken to ensure that the intercepted and diverted surface waters and any perched groundwater is discharged well away and down slope of the disposal field (see Drawings 2 and 3).

The owner should also ensure that any upslope works do not divert and/or concentrate surface water flows onto the disposal area.

2.5 Vegetation. The effluent disposal areas have been sized via water balance analyses utilising crop factors for pasture (rye/clover mix).

3. THE ONSITE EFFLUENT SYSTEM

The onsite effluent system consists of the influent (toilets, kitchens, bathroom, laundry), a load balancing tank/facility, the treatment plant (a device to treat the effluent to at least the 20/30 standard), the irrigation network including effluent distribution system (delivery pipes and drippers), prescribed vegetation, associated infrastructure (cut-off drains, outfall areas, fencing), a service and maintenance programme and on-going management.

4. MANAGEMENT

The owner is required to understand (and ensure that users understand) that sustainable operation of the onsite effluent system is not automatic. Sustainable operation requires on-going management, as outlined below.

4.1 Effluent. Effluent will be generated from a residence and will include black and grey water (all wastes).

4.1.2 Effluent Quality. Effluent should be treated to a standard that meets or exceeds the water quality requirements of the 20/30 standard.

4.1.3 Effluent Quantity. The daily effluent volume of 750 litres has been calculated from *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, July 2016, Table 4 and assumes mains water supply (equivalent) and WELS-rated water-reduction fixtures and fittings – minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances.

4.2 Treatment Plant. It is assumed that the design, construction, operation, and maintenance are carried out in accordance with *AS/NZS1547:2012* and a current JAS-ANZ accreditation.

4.3 Irrigation Area. The disposal area has been determined from the results of the water and nutrient balance analyses and *AS/NZS 1547:2012, Appendix N*.

4.3.1 Effluent Area Requirement. For a daily effluent flow of 750 litres and to satisfy the requirement for no surface rainwater flow in the 9th decile wet year and on-site attenuation of nutrients, the effluent should be applied to an irrigation area of 440m², as described in Section 2 of the report.

In case of an increase in effluent production through the chain of ownership, there is sufficient area available for duplicating the irrigation areas via rhizopods.

Any landscaping and/or planting proposals require endorsement from the Murrindindi Shire.

4.3.2 Distribution System. The distribution system must achieve controlled and uniform dosing over the distribution area. A small volume of treated effluent should be dosed at predetermined time intervals throughout the day via a pressurised piping network that achieves uniform distribution over the entire distribution area.

Uniform delivery pressure of the effluent throughout the distribution system is essential. Drip rates should not vary by more than 10% from the design rate over the whole of the system.

To minimise uneven post-dripper seepage, the distribution pipes must be placed parallel and level.

Line spacing shall be no closer than 1000mm under any circumstances.

4.3.3 Soil Renovation. To maintain water-stable peds (under irrigation with saline effluent), soil renovation in the form of gypsum application is recommended. Prior to construction of the distribution pipe network, gypsum shall be broadcast over the effluent area at the rate of 0.25kg/m².

Gypsum is to be fine ground "Grade 1" agricultural quality.

At commissioning, 1.0 litres of a proprietary "liquid" gypsum (typically CaCl + polyacrylamide + wetting agent + water) is to be applied through the irrigation network.

Gypsum shall be broadcast over the land application area at the rate of 0.25kg/m² every 3 years.

Alternatively, 1.0 litre of a proprietary "liquid" gypsum can be applied through the irrigation network every 3 years.

4.3.4 Buffer Distances. The water balance analysis has shown that potential surface rainwater flows from the effluent area would be restricted to episodic events.

The estimated hydraulic properties of the topsoil, residual soil and fractured metasediment materials and hydraulic gradient (equivalent to the ground slope and regional gradients) have been used to evaluate (via Darcy's Law) the buffer distances with respect to subsurface flows.

Our analysis and evaluation have shown that the default setback distances given in *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, July 2016, Table 5 are conservative and can be applied with amendment, as detailed in Section 1.4.11 (page 6), above.

Buffer distances are to be applied exclusive of the irrigation area.

4.3.5 Buffer Planting. All downslope (Title inclusive) buffers may be required to filter and renovate abnormal surface discharges. Hence, they are to be maintained with existing or equivalent groundcover vegetation.

4.3.6 Buffer Trafficking. On all allotments, buffer trafficking should be minimised to avoid damage to vegetation and/or rutting of the surface soils.

Traffic should be restricted to 'turf' wheeled mowing equipment and to maintenance, monitoring, and inspections by pedestrians, where possible.

4.4 Vegetation. The system design for on-site disposal includes the planting and maintenance of suitable vegetation, as specified in A231106 and/or similar documents.

Specifically, this irrigation area has been sized (in part) utilising crop factors and annual nitrogen uptake for a rye/clover eq mix.

The grass needs to be harvested (mown and periodically removed from the irrigation area).

Where a variation to recommended grass species is proposed, it must be demonstrated that the nitrogen uptake and crop factors (as specified in A231106 Appendix B – water balance) are met or exceeded.

4.5 Verification. The Council is to be satisfied that the effluent system has been constructed as designed.

4.6 Associated Infrastructure. The following items are an integral part of the onsite effluent system.

4.6.1 Cut-off drains and Bunds. Cut-off drains and bunds are designed to prevent surface and near-surface water flows from entering the effluent area. They should be constructed and placed around the effluent area, as detailed in Drawings 2 and 3.

4.6.2 Outfall areas. All pipe outfalls should be at grade and designed to eliminate scour and erosion.

A grassed outfall would normally be adequate. However, should monitoring and inspections reveal rill or scour formation, the outfall will need to be constructed so that energy is satisfactorily dissipated.

Should this situation occur, professional advice is to be sought.

4.6.3 Fencing. The disposal area is to be a dedicated area. Adequate fencing must be provided to prevent stock, excessive pedestrian, and vehicular movements over the area.

4.7 Service and Maintenance Programme. The minimum requirements for servicing and maintenance are set out in the relevant JAS-ANZ accreditation and the manufacturer's recommendations.

4.7.1 Treatment Plant. Aerated treatment plants and sand filters should be serviced at least one time per year (or as recommended in the JAS-ANZ or EPA interim accreditation and the effluent should be sampled and analysed as required by the JAS-ANZ. The local authority is to ensure compliance.


The manufacturer's recommendations are to be followed. Generally, low phosphorous and low sodium (liquid) detergents should be used. Plastics and other non-degradable items should not be placed into the tanks. Paints, hydrocarbons, poisons etc should not be disposed of in sinks or toilets. Advice from a plumber should be obtained

prior to using drain cleaners, chemicals, and conditioners. It is important to ensure that grease does not accumulate in the tanks or pipes. Grease and similar products should be disposed of by methods other than via the on-site effluent system.

4.7.2 Monitoring and Inspections. We recommend that the mandatory testing and reporting as described in the *Code of Practice - Onsite Wastewater Management*, E.P.A. Publication 891.4, July 2016, include an annual (post spring) and post periods of heavy and/or prolonged rainfall report on the functioning and integrity of the distribution system and on the functioning and integrity of the cut-off drains, outfall areas and soil media.

The effluent areas should be regularly inspected for excessively wet areas and vegetation integrity.

The inspection regime described in A231106, Section 2.2.7, should be strictly adhered to.

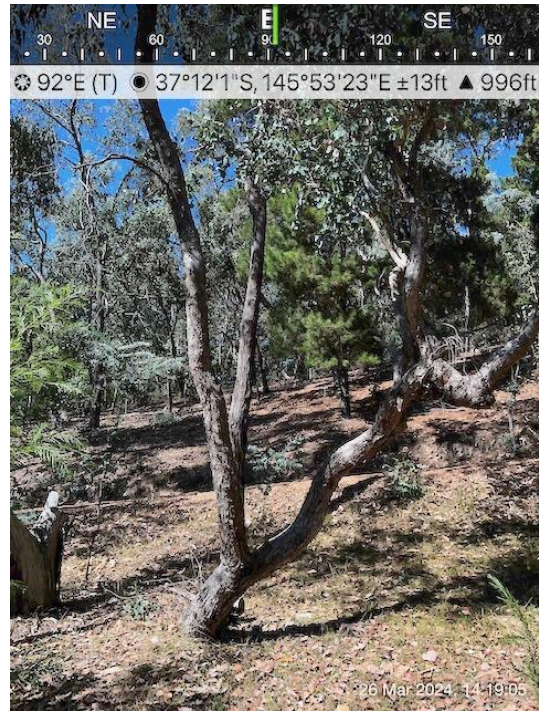
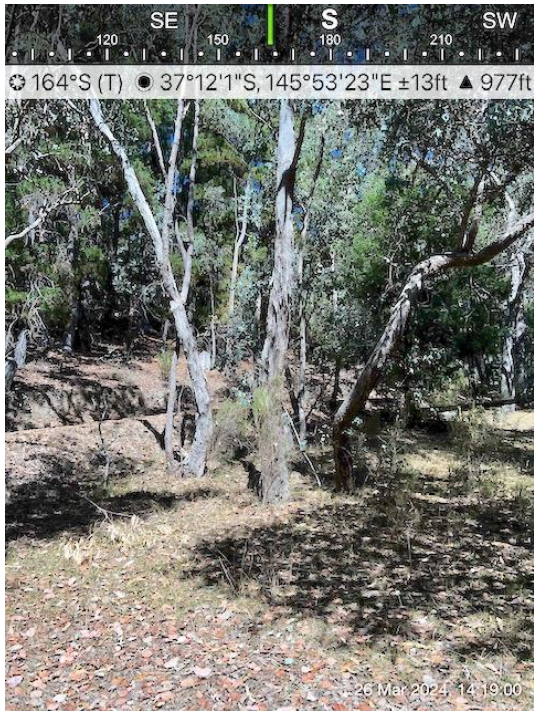


Paul R. WILLIAMS B.App.Sc.
PRINCIPAL HYDROGEOLOGIST
& ENGINEERING GEOLOGIST

ⁱ Dr Nick O'Brien (Research Fellow, School of Botany, University of Melbourne, 2000: *Comment on the irrigation of remnant native vegetation with municipal effluent associated with the proposed subdivision at the rear of 111 Hall Road, North Ringwood.*

Native Vegetation Removal Report – Application Requirement 3

Patch 1:

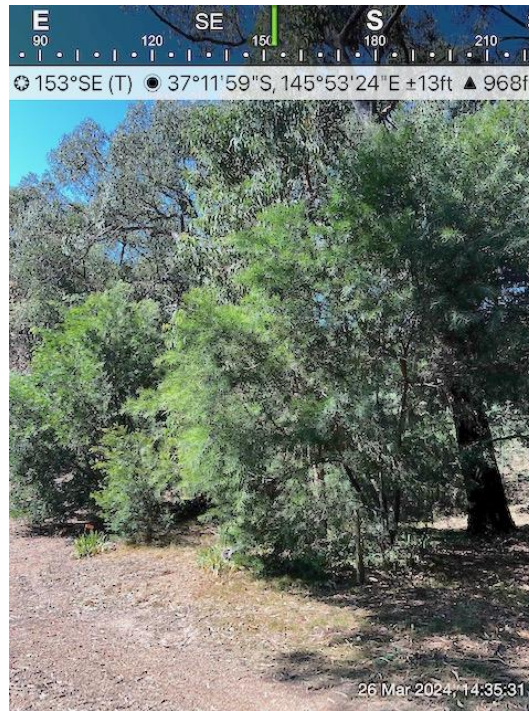


Vegetation on western side of driveway in Patch 1.



Vegetation on eastern side of driveway in Patch 1. NB: large tree to be retained.

Patch 2:



Vegetation in Patch 2. NB: Large tree to be retained.

NVRR ID: 355_20240507_MUT

This report provides information to support an application to remove, destroy or lop native vegetation in accordance with the [Guidelines for the removal, destruction or lopping of native vegetation](#) (the Guidelines). This report **is not an assessment by DEECA** of the proposed native vegetation removal. Offset requirements have been calculated using modelled condition scores.

Report details

Date created: 07/05/2024

Local Government Area: MURRINDINDI SHIRE

Registered Aboriginal Party: Taungurung

Coordinates: 145.89008, -37.20037

Address: 471 TAYLOR BAY RIGHT ARM ROAD TAYLOR BAY 3713

Summary of native vegetation to be removed

Assessment pathway	Basic Assessment Pathway		
Location category	Location 1 The native vegetation extent map indicates that this area is not typically characterised as supporting native vegetation. It does not meet the criteria to be classified as Location Category 2 or 3. The removal of less than 0.5 hectares of native vegetation in this area will not require a Species Offset.		
Total extent including past and proposed removal (ha) <i>Includes endangered EVCs (ha): 0</i>	0.026	<i>Extent of past removal (ha)</i>	0
		<i>Extent of proposed removal - Patches (ha)</i>	0.026
		<i>Extent of proposed removal - Scattered Trees (ha)</i>	0.000
No. Large Trees proposed to be removed	0	<i>No. Large Patch Trees</i>	0
		<i>No. Large Scattered Trees</i>	0
No. Small Scattered Trees	0		

Offset requirements if approval is granted

Any approval granted will include a condition to secure an offset, before the removal of native vegetation, that meets the following requirements:

General Offset amount ¹	0.013 General Habitat Units
Minimum strategic biodiversity value score ²	0.512
Large Trees	0
Vicinity	Goulburn Broken CMA or MURRINDINDI SHIRE LGA

NB: values within tables in this document may not add to the totals shown above due to rounding

The availability of third-party offset credits can be checked using the Native Vegetation Credit Register (NVCR) Search Tool - <https://nvcr.delwp.vic.gov.au>

1. The General Offset amount required is the sum of all General Habitat Units in Appendix 1.

2. Minimum strategic biodiversity value score is 80 per cent of the weighted average score across habitat zones where a General Offset is required. Page 2

Application requirements

Applications to remove, destroy or lop native vegetation must include all the below information. If an appropriate response has not been provided the application is not complete.

Application Requirement 1 - Native vegetation removal information

If the native vegetation removal is mapped correctly, the information presented in this Native Vegetation Removal Report addresses Application Requirement 1.

Application Requirement 2 - Topographical and land information

This statement describes the topographical and land features in the vicinity of the proposed works, including the location and extent of any ridges, hilltops, wetlands and waterways, slopes of more than 20% gradient, low-lying areas, saline discharge areas or areas of erosion.

The Subject Land slopes down from Taylor Bay Right Arm Road on the southern boundary to Lake Eildon on the northern boundary. The Subject Land contains an existing dwelling close to the northern boundary, a carport and garage on the southern side of the dwelling and an open-sided building to the east of the dwelling. The vegetation on the Subject Land has been modified around these buildings and the access driveway.

Application Requirement 3 - Photographs of the native vegetation to be removed

Application Requirement 3 is not addressed in this Native Vegetation Removal Report. All applications must include recent, timestamped photos of each Patch, Large Patch Tree and Scattered Tree which has been mapped in this report.

Application Requirement 4 - Past removal

If past removal has been considered correctly, the information presented in this Native Vegetation Removal Report addresses Application Requirement 4.

Application Requirement 5 - Avoid and minimise statement

This statement describes what has been done to avoid and minimise impacts on native vegetation and associated biodiversity values.

The proposed extension to the dwelling is located on the southern side of the dwelling, away from the water's edge. The proposed extension has avoided and minimised the vegetation to be removed by limiting the removal to only that necessary to meet the defensible space requirements. Most of the vegetation to be modified to meet the defensible space requirements is currently exempt from planning permit requirements pursuant to Clause 52.17 and Clause 52.12 of the Scheme due to the existing dwelling and buildings (ie. trees within 10m and vegetation other than trees within 50m from the buildings), only the vegetation that requires a permit for removal has been included in the assessment

Application Requirement 6 - Property Vegetation Plan

This requirement only applies if an approved Property Vegetation Plan (PVP) applies to the property
Does a PVP apply to the proposal?

No

Application Requirement 7 - Defendable space statement

Where the removal of native vegetation is to create defendable space, this statement:

- Describes the bushfire threat; and
- Describes how other bushfire risk mitigation measures were considered to reduce the amount of native vegetation proposed for removal (this can also be part of the avoid and minimise statement).

This statement is not required if, the proposed defendable space is within the Bushfire Management Overlay (BMO), and in accordance with the 'Exemption to create defendable space for a dwelling under Clause 44.06 of local planning schemes' in Clause 52.12-5.

Refer to the Bushfire Management Statement prepared for the Subject Land.

Application Requirement 8 - Native Vegetation Precinct Plan

This requirement is only applicable if you are removing native vegetation from within an area covered by a Native Vegetation Precinct Plan (NVPP), and the proposed removal is not identified as 'to be removed' within the NVPP.

Does an NVPP apply to the proposal?

No

Application Requirement 9 - Offset statement

This statement demonstrates that an offset is available and describes how the required offset will be secured. The Applicant's Guide provides information relating to this requirement.

The offset requirement will be met by purchasing the offset from an existing native vegetation credit site. Refer to the attached report of available vegetation credits.

Next steps

Applications to remove, destroy or lop native vegetation must address all the application requirements specified in the Guidelines. If you wish to remove the mapped native vegetation you are required to apply for approval from the responsible authority (e.g. local Council). This Native vegetation removal report must be submitted with your application and meets most of the application requirements. The following requirements need to be addressed, as applicable.

Application Requirement 3 - Photographs of the native vegetation to be removed

Recent, dated photographs of the native vegetation to be removed **must be provided** with the application. All photographs must be clear, show whether the vegetation is a Patch of native vegetation, Patch Tree or Scattered Tree, and identify any Large Trees. If the area of native vegetation to be removed is large, provide photos that are indicative of the native vegetation.

Ensure photographs are attached to the application. If appropriate photographs have not been provided the application is not complete.

Application Requirement 6 - Property Vegetation Plan

If a PVP is applicable, it must be provided with the application.

Appendix 1: Description of native vegetation to be removed

General Habitat Units for each zone (Patch, Scattered Tree or Patch Tree) are calculated by the following equation in accordance with the Guidelines.

General Habitat Units = extent without overlap x condition score x general landscape factor x 1.5, where the general landscape factor = 0.5 + (strategic biodiversity value score/2)

The General Offset amount required is the sum of all General Habitat Units per zone.

Native vegetation to be removed

Information provided by or on behalf of the applicant			Information calculated by NVR Map							
Zone	Type	DBH (cm)	EVC code (modelled)	Bioregional conservation status	Large Tree(s)	Condition score (modelled)	Polygon extent (ha)	Extent without overlap (ha)	SBV score	General Habitat Units
1	Patch	-	CVU_0022	Depleted	-	0.390	0.021	0.021	0.640	0.010
2	Patch	-	CVU_0022	Depleted	-	0.390	0.005	0.005	0.640	0.002

Appendix 2: Images of mapped native vegetation

1. Property in context



- Proposed Removal
- Property Boundaries



200 m

2. Aerial photograph showing mapped native vegetation







□ Proposed Removal

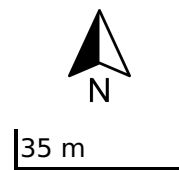


35 m

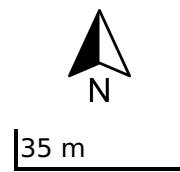
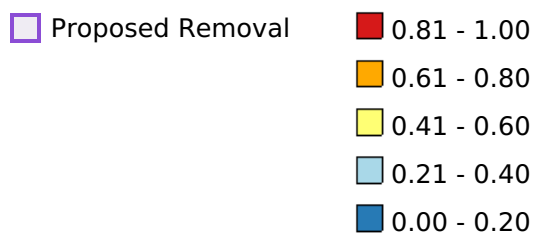
3. Location Risk Map



-  Proposed Removal
-  Location 1
-  Location 2
-  Location 3



4. Strategic Biodiversity Value Score Map



5. Condition Score Map



□ Proposed Removal

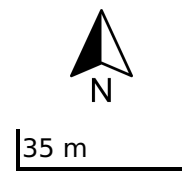
■ 0.81 - 1.00

■ 0.61 - 0.80

■ 0.41 - 0.60

■ 0.21 - 0.40

■ 0.00 - 0.20



6. Endangered EVCs

Not Applicable

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APPLICATION FOR PLANNING PERMIT

Alterations and additions to existing dwelling and replacement shed

471 Taylor Bay Right Arm Road, Taylor Bay



Figure 1 – Aerial photograph of the Subject Land and surrounds.

Introduction

A planning permit is sought for alterations and additions to an existing dwelling at 471 Taylor Bay Right Arm Road, Taylor Bay (**Subject Land**), and the construction of a replacement shed. The Subject Land is located in the Murrindindi Shire and is governed by the Murrindindi Planning Scheme (**Scheme**).

Site description

The Subject Land is located on a southern bank of Lake Eildon, and on the southern side of Taylor Bay. The Subject Land is described as Lot 45 LP44119 and is contained in certificate of title volume 8329 folio 677.

Please refer to the attached certificate of title.

The Subject Land has an approximate area of 4072 square metres (0.407 ha) and contains an existing dwelling, carport, garage and open-sided undercover area. The Subject Land is rectangular in shape and has frontage to Taylor Bay Right Arm Road along its southern boundary and Lake Eildon on its

northern boundary. The access to the Subject Land is gained directly from Taylor Bay Right Arm Road with the existing driveway running generally along the eastern side of the lot.

The Subject Land generally slopes down from the southern boundary to the northern boundary where it meets Lake Eildon. The existing dwelling is located within proximity to the northern boundary to take advantage of the views and access to the lake, as is typical of all dwellings along this section of Taylor Bay Right Arm Road. The existing dwelling is a single level elevated building with parking underneath, and contains two bedrooms, kitchen, living, dining room, bathroom and a deck on the northern side of the dwelling.

As is typical of the landholdings in this area of Taylor Bay, the Subject Land contains scattered vegetation across the land, with modified areas of vegetation close to the dwelling and shed and along the driveway.

The surrounding properties contain single dwellings, ancillary outbuildings and scattered vegetation. All the lots in the nearby area are developed with dwellings located predominantly close to the lake's high-water mark.

The Subject Land is in the Rural Conservation Zone (**RCZ**) and is subject to the Significant Landscape Overlay (Schedule 2) (**SLO2**), the Bushfire Management Overlay (**BMO**) and a very small part of the Subject Land at the northern boundary is subject to the Floodway Overlay (**FO**). The surrounding land is also within the RCZ and Lake Eildon to the north is in the Public Use Zone Schedule 1. Except for the lake, the surrounding area is also subject to the SLO2 and BMO. Refer to the zoning map at Figure 2 and the Overlay maps in Figures 3 to 5 below.

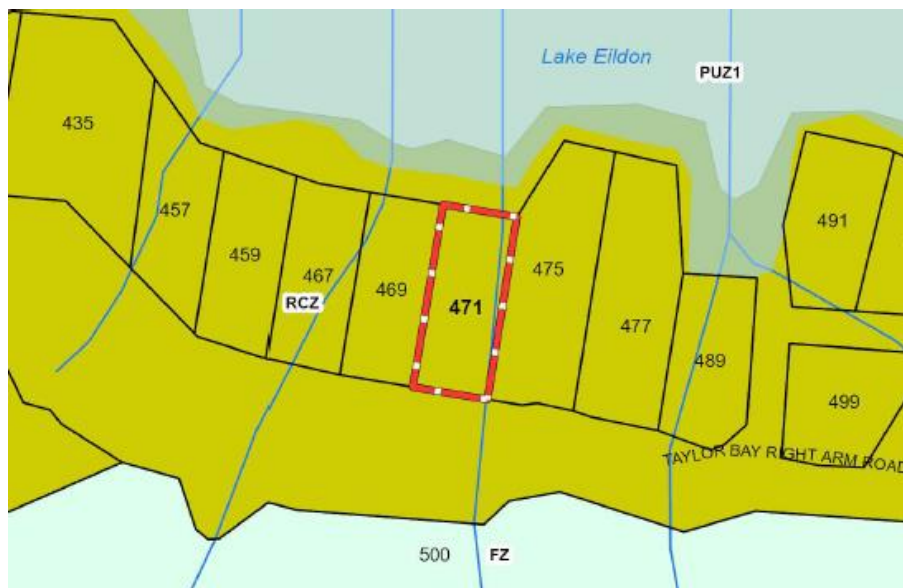


Figure 2 – Zoning of Subject Land and surrounding area.



Figure 3 – Significant Landscape Overlay.



Figure 4 – Bushfire Management Overlay.

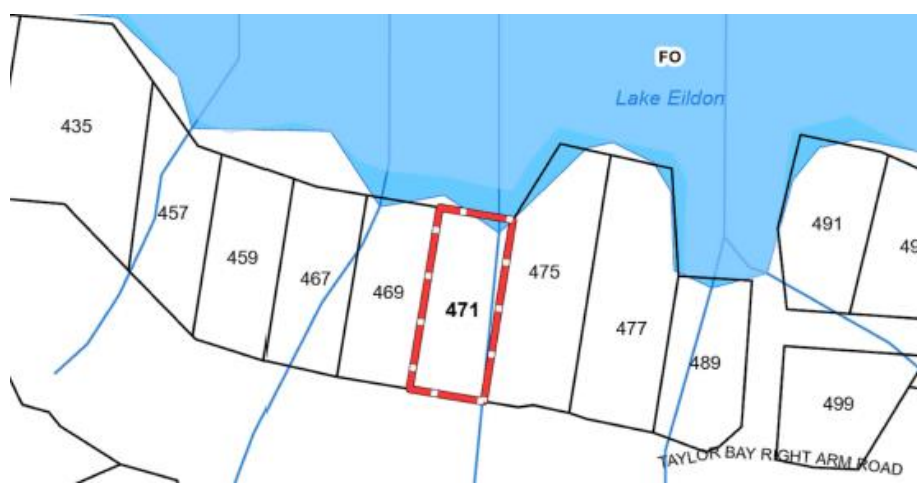


Figure 5 – Floodway Overlay

Proposal

The proposal is for the alteration and additions to the existing dwelling, the construction of a replacement shed, and the removal of native vegetation to meet the vegetation management requirements of the Bushfire Management Overlay. The proposed alterations and additions to the dwelling will result in the dwelling extending to the south of the existing building to include an additional two bedrooms with an ensuite to the main bedroom, and a new carport. The new shed will replace the existing steel clad shed, and will be 9 metres by 12 metres and be constructed of corrugated steel cladding.

Please refer to the attached set of plans.

The existing wastewater treatment system installed on the land is dated and as such, a new system will be installed in compliance with the relevant EPA Code of Practice. To this end, a Land Capability Assessment has been prepared for the site. The proposed development is suitable for sustainable on-site effluent disposal.

Please refer to the attached *Land Capability Assessment*, Report No. A231106, dated January 2024, prepared by Paul Williams & Associates Pty Ltd.

Water supply is in the form of rainwater harvested from the roof areas and stored in existing rainwater tanks on the Subject Land. New tanks will be installed on the Subject Land and will include 10,000 litres of water reserved for fire-fighting purposes held in a dedicated tank with the required CFA fittings, located adjacent to the driveway.

The existing dwelling is connected to the reticulated electricity supply available along Taylor Bay Right Arm Road.

An assessment of the vegetation removal has been undertaken. As there is an existing dwelling on the Subject Land, certain native vegetation removal is exempt from planning permit requirements pursuant to Clause 52.12 and Clause 52.17 of the Scheme. The exemptions include trees within 10 metres of the dwelling, vegetation other than trees within 50 metres of the dwelling, vegetation along a fenceline, and exotic vegetation. The exempt vegetation has not been included in the native vegetation removal assessment, and it is anticipated that some of this exempt vegetation will be required to be removed to comply with the defensible space provisions.

Please refer to the attached *Native Vegetation Removal Report* and the report of available native vegetation credits.

The Subject Land is in an area of high bushfire risk and in accordance with the requirements of the BMO a Bushfire Management Report and Bushfire Management Plan have been prepared.

Please refer to the attached Bushfire Management Statement, dated March 2024, prepared by Yarra Valley BAL Assessments.



Photograph 1 – The existing dwelling on the land to be extended to the south of the building (to the left of the building as shown in the photo).

Permit Triggers

The following planning permit triggers apply to this application:

- Clause 35.06 Rural Conservation
 - a permit is required for buildings or works associated with a use in Section 2.
- Clause 42.03 Significant Landscape Overlay
 - a permit is required for alterations and additions to an existing dwelling where the proposed floor area is greater than 50% of the existing floor area.
- Clause 44.06 Bushfire Management Overlay
 - a permit is required for an alteration or extension to an existing dwelling that is not less than 50% of the gross floor area of the existing building.
- Clause 52.17 Native Vegetation
 - A permit is required to remove, destroy or lop native vegetation, subject to the table of exemptions and the exemptions in Clause 52.12.

Zoning

Clause 35.06 Rural Conservation Zone

The purpose of the Rural Conservation Zone (**RCZ**) is:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*

- To conserve the values specified in a schedule to this zone.
- To protect and enhance the natural environment and natural processes for their historic, archaeological and scientific interest, landscape, faunal habitat and cultural values.
- To protect and enhance natural resources and the biodiversity of the area.
- To encourage development and use of land which is consistent with sustainable land management and land capability practices, and which takes into account the conservation values and environmental sensitivity of the locality.
- To provide for agricultural use consistent with the conservation of environmental and landscape values of the area.
- To conserve and enhance the cultural significance and character of open rural and scenic non urban landscapes.

The conservation values specified in the schedule to the RCZ state as follows:

Preserve the water quality and visual amenity of Lake Eildon.

Protect the quality and amenity of small isolated parcels of private land surrounded by publicly owned land.

The proposed extension to the existing dwelling complies with the purpose of the Rural Conservation Zone and the values specified in the schedule. The land enjoys existing use rights for a dwelling and the proposed additions are on the side of the dwelling furthest from the lake. The alterations include an additional two bedrooms and is supported by a Land Capability Assessment which demonstrates the land is suitable for on-site wastewater treatment. Due to the additional bedrooms proposed, and the age of the existing wastewater system, a new waste treatment system will be installed to continue to preserve the water quality of the lake, with the disposal field located at the southern end of the lot.

The vegetation management of the area around the dwelling will ensure that the site is still vegetated thereby minimising any amenity impact from the lake. The existing dwelling use is consistent with the surrounding land uses and development, where the all lots contain a dwelling, ancillary outbuildings, and scattered vegetation.

Decision guidelines

Clause 35.06-6 Decision guidelines - a response to the relevant guidelines is provided as follows:

Guideline	Response
Environmental issues	
An assessment of the likely environmental impact on the biodiversity and in particular the flora and fauna of the area.	An assessment of the impacts on the native vegetation has been undertaken. See the attached report. As the proposal is for an extension to an existing dwelling the impacts are limited to the removal of vegetation in proximity to the existing dwelling and creating a defensible space around the dwelling.

The location of on site effluent disposal areas to minimise the impact of nutrient loads on waterways and native vegetation.	As shown in the LCA, the site is suitable for on-site effluent disposal and an appropriate system has been recommended to support the proposed extension to the dwelling.
<i>Dwelling issues</i>	
Whether the dwelling will result in the loss or fragmentation of productive agricultural land.	The Subject land is not used for agriculture.
<i>Design and siting issues</i>	
The need to minimise any adverse impacts of siting, design, height, bulk, and colours and materials to be used, on landscape features, major roads and vistas.	The proposal is for an extension to an existing dwelling and as such, there will be no adverse impacts on landscape features or vistas.
The need to minimise adverse impacts on the character and appearance of the area or features or archaeological, historic or scientific significance or of natural scenic beauty or importance.	The proposed extension to the dwelling will not have an adverse impact on the character of the area nor on the views from Lake Eildon, as the proposed dwelling extension is behind the dwelling as viewed from the lake and will be constructed in muted tones and non-reflective materials.

Overlays

Clause 42.03 Significant Landscape Overlay

The purpose of the SLO is:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To identify significant landscapes.*
- *To conserve and enhance the character of significant landscapes.*

The Subject Land is included in Schedule 2 of the SLO which signifies Lake Eildon and surrounds.

The statement of the nature and key elements of the landscape in the schedule is:

Lake Eildon is a significant water storage that is located within the Lake Eildon National Park. The lake is surrounded by prominent vegetated hills and ranges that form part of the Central Highlands.

The Subject Land contains an existing dwelling, shed and open-sided undercover area and as such there will not be any further impact on the character of any significant landscapes in the area as a result of the proposal. The proposed alterations and additions include new exterior cladding to the whole of the building. All external cladding is in muted tones and non-reflective materials. The design and finish of the dwelling is sympathetic to the landscape character of the general area.

Clause 44.06 Bushfire Management Overlay

The purpose of the BMO includes:

- *To implement the Municipal Planning Strategy and the Planning Policy Framework.*
- *To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.*
- *To identify areas where the bushfire hazard warrants bushfire protection measures to be implemented.*
- *To ensure the development is only permitted where the risk to life and property from bushfire can be reduced to an acceptable level.*

In accordance with the application requirements of Clause 44.06-3, a **Bushfire Hazard Site Assessment** has been prepared in accordance with AS3959:2018 *Construction of buildings in bushfire prone areas (Standards Australia)*, a **Bushfire Hazard Landscape Assessment** has been prepared for the general locality, a **Bushfire Management Statement** has been prepared in response to the requirements of Clause 53.02 of the Scheme, and a **Bushfire Management Plan** has been prepared for the site.

Please refer to the attached Bushfire Management Statement including a Bushfire Management Plan prepared by Yarra Valley BAL Assessments dated March 2024.

The proposed development satisfies the requirements of the BMO and Clause 53.02 and must comply with the construction requirements for BAL 29.

Particular provisions

Clause 52.17 Native vegetation

Purpose

- *To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation. This is achieved by applying the following three step approach in accordance with the Guidelines for the removal, destruction or lopping of native vegetation (Department of Environment, Land, Water and Planning, 2017) (the Guidelines):*
 1. *Avoid the removal, destruction or lopping of native vegetation.*
 2. *Minimise impacts from the removal, destruction or lopping of native vegetation that cannot be avoided.*
 3. *Provide an offset to compensate for the biodiversity impact if a permit is granted to remove, destroy or lop native vegetation.*
- *To manage the removal, destruction or lopping of native vegetation to minimise land and water degradation.*

In accordance with clause 52.17-2 of the scheme, an application to remove, destroy or lop native vegetation must comply with the application requirements specified in the Guidelines.

An assessment of the native vegetation impacts has been undertaken. Please refer to the attached *Native Vegetation Removal Report*. Please note that only the minimum amount of vegetation is to be removed to comply with the defensible space requirements. A significant amount of vegetation on the Subject Land will remain untouched.

Municipal Planning Strategy

The relevant sections of the Municipal Planning Strategy are addressed as follows:

Clause 02.03 Strategic directions

Settlement

The established townships and settlements offer a significant opportunity to expand in locations with infrastructure and leisure facilities, where natural environment is protected and where a high level of community safety is facilitated.

There are a number of other smaller townships and settlements in the municipality, all offering alternative lifestyle choices for residents. These smaller townships and settlements include...Taylor Bay.

Environmental and landscape values

Lake Eildon and the Goulburn, Yea and Acheron Rivers and tributaries are important natural features and water resources, providing a large proportion of the water supply in the Goulburn Broken catchment. Lake Eildon is a significant water, natural environment and tourism resource.

Environmental risks and amenity

Natural environmental hazards present risks and constraints for land use and settlement in the municipality. Murrindindi Shire is subject to significant bushfire hazard, particularly in the southern section. This hazard is due to the nature and extent of vegetation, topography, potential for extreme fire behaviour arising from drought and climate change, the dispersed and ad-hoc nature of development and lack of infrastructure and access in some locations.

Planning Policy Framework

The relevant sections of the Planning Policy Framework are addressed as follows:

Clause 12.01-2S Native vegetation management

Objective

- *To ensure that there is no net loss to biodiversity as a result of the removal, destruction or lopping of native vegetation.*

An assessment of the proposed native vegetation removal on the Subject Land has been assessed using the three-step approach in accordance with the Guidelines. The vegetation required to be removed to adhere to the defensible space requirements will avoid all large trees.

Clause 12.03-1S River corridors, waterways, lakes and wetlands

Objective

- *To protect and enhance river corridors, waterways, lakes and wetlands.*

The proposed addition to the dwelling and the new effluent disposal system have been designed to address the constraints of the land. The design and finish of the proposed development is such that it will not impact on the views, not draw attention from the any significant views from the adjoining lake.

Clauses 13.02-1S and 13.02-1L Bushfire Planning

Objective

- *To strengthen the resilience of settlements and communities to bushfire through risk-based planning that prioritises the protection of human life.*

The strategies in Clause 13.02-1L include:

- locate, design and manage the use and development of land to reduce the risk to human life, property and community infrastructure from bushfire to an acceptable level; and
- provide necessary bushfire protection measures, including through the design and constructions of buildings, the creation of defensible space, the provision of a dedicated fire-fighting water supply and the need for fire authority access to and on the land.

The application has addressed the bushfire landscape hazard and site hazards and can meet the requirements in relation to the provision of a water supply for firefighting, appropriate access for firefighting vehicles, a defensible space around the dwelling and the construction requirements for a BAL 29. As the Subject Land has already been developed, the vegetation around the existing dwelling has been modified and the minimum amount of vegetation is proposed to be removed.

Clause 15.01-2S Building Design

Objective:

- *To achieve building design outcomes that contribute positively to the local context and enhance the public realm.*

The proposed extension to the dwelling responds and contributes to the context of its location. It will not have a detrimental impact on any neighbouring properties, nor will it impact the public realm or the natural environment. The form, scale and appearance of the proposed additions will not detract from the significant public views into the site from Lake Eildon with the use of sympathetic materials for the cladding and muted tones.

General Provisions

Clause 65 Decision Guidelines

Clause 65.01 Approval of an application or plan

Guideline	Assessment
The matters set out in s60 of the <i>Planning and Environment Act 1987</i> .	The proposed extension to the dwelling is consistent with the objectives of the Scheme and satisfies the Scheme's requirements.
The Municipal Planning Strategy and the Planning Policy Framework.	The MPS and PPF have been addressed above.
The purpose of the zone, overlay or other provision.	The proposed extension to the dwelling is consistent with the purposes of the RCZ, SLO and BMO.
Any matter required to be considered in the zone, overlay or other provisions.	All matters have been considered and the proposal satisfies the requirements of the zone, overlays and particular provisions.
The orderly planning of the area.	The proposal will not impact on the surrounding land uses and development and is in keeping with the planning of the area.
The effect on the amenity of the area.	The proposal will not have a detrimental impact on the amenity of the area.
The proximity of the land to any public land.	The Subject Land abuts Lake Eildon on its northern boundary. The proposed development will not have an impact on the public land.
Factors likely to cause or contribute to land degradation, salinity or reduce water quality.	Unsatisfactory effluent disposal is a factor that may contribute to a reduction in water quality. This has been addressed by the provision of a new secondary treatment wastewater system located at the southern end of the Subject Land.
Whether the proposed development is designed to maintain or improve the quality of stormwater within and exiting the site.	The proposal will have no impact on stormwater.
The extent and character of native vegetation and the likelihood of its destruction.	The impacts on native vegetation have been addressed in the attached report.
Whether native vegetation is to be or can be protected, planted or allowed to regenerate.	Native vegetation impacts have been addressed in the attached report.
The degree of flood, erosion or fire hazard associated with the location of the land and the use, development or management of the land so as to minimise any such hazard.	The potential fire hazard has been addressed for the proposed use and development in the attached Bushfire Management Statement.
The adequacy of loading and unloading facilities and any associated amenity, traffic flow and road safety impacts.	Not applicable.

Conclusion

The proposal for the alterations and additions to the existing dwelling and replacement shed is consistent with the provisions of the Scheme. The proposal is in keeping with the surrounding and nearby land uses and development and ensures the lake is protected from any potential off-site impacts. We therefore respectfully request that a planning permit for the alterations and additions to the existing dwelling, construction of a replacement shed and removal of native vegetation is issued at your earliest convenience.

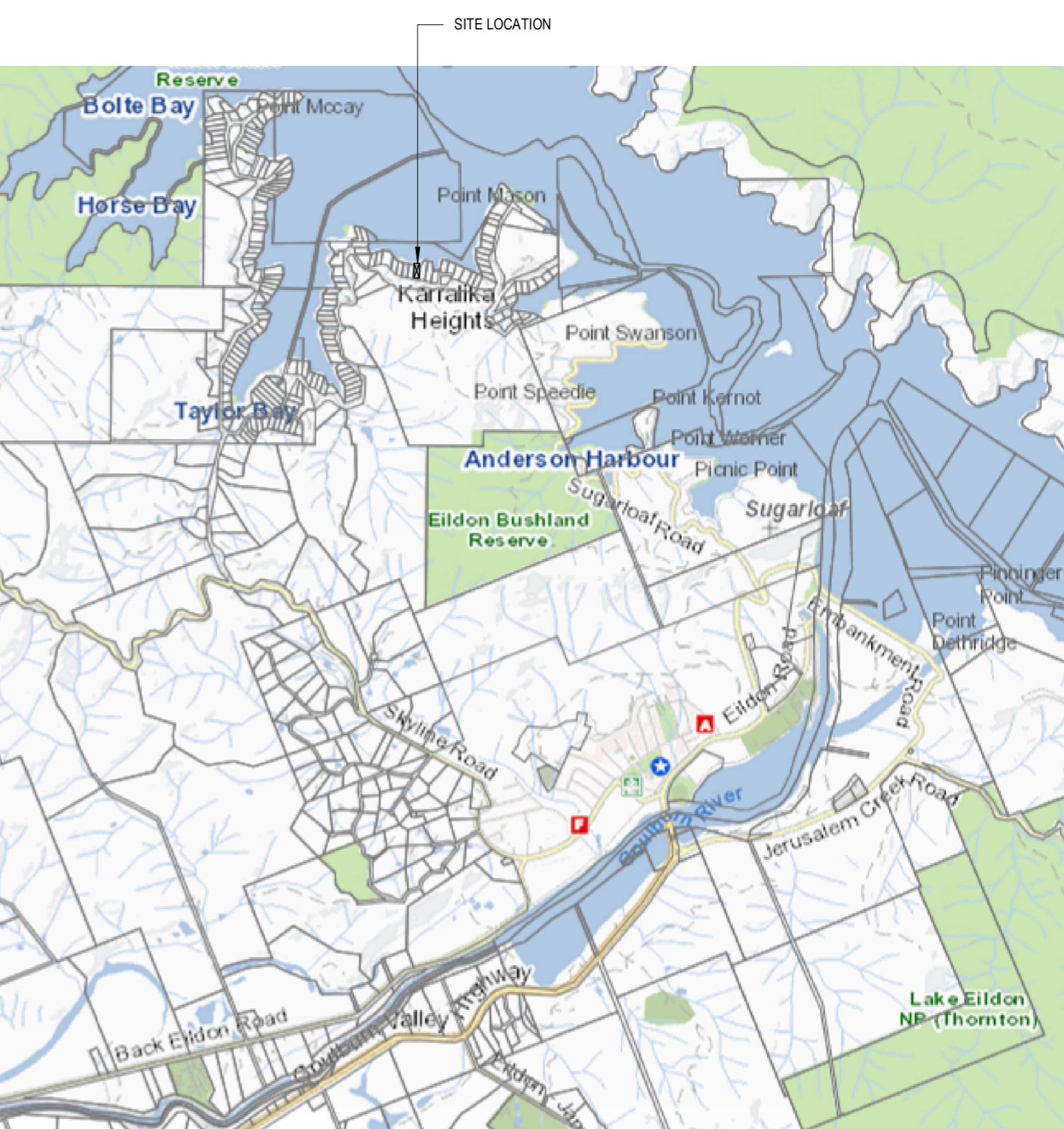
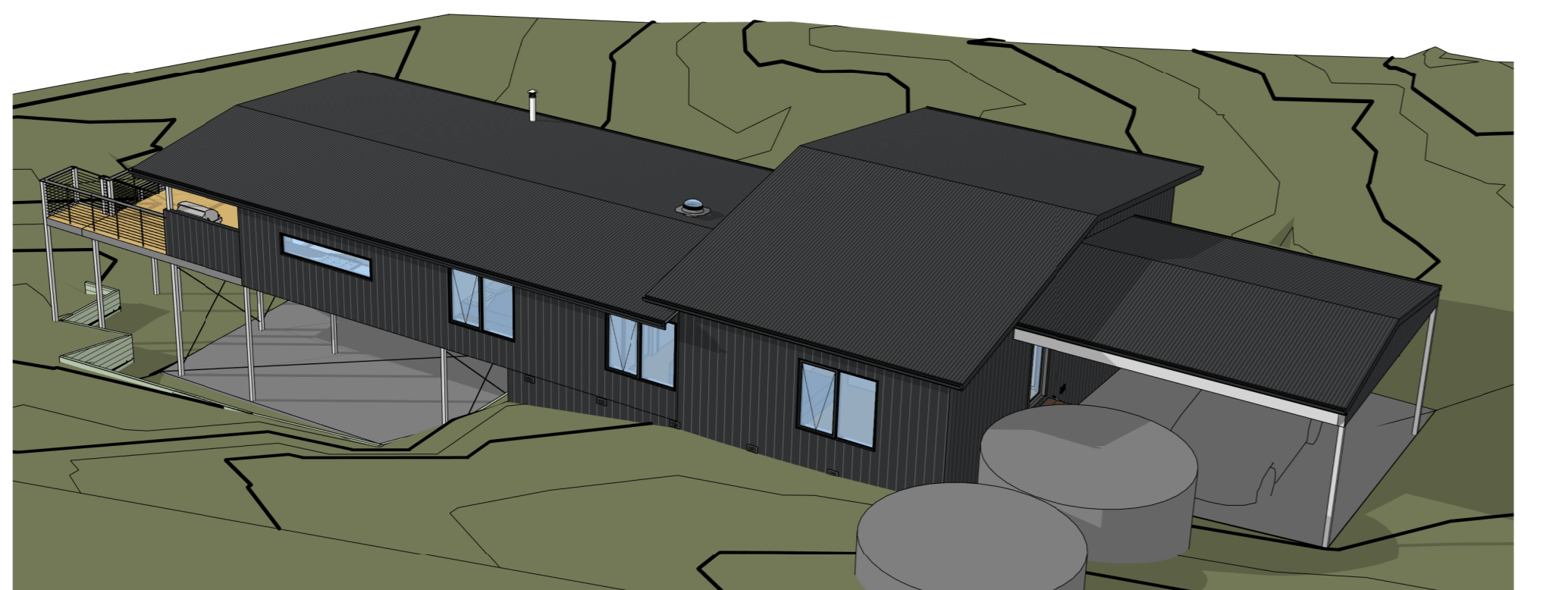
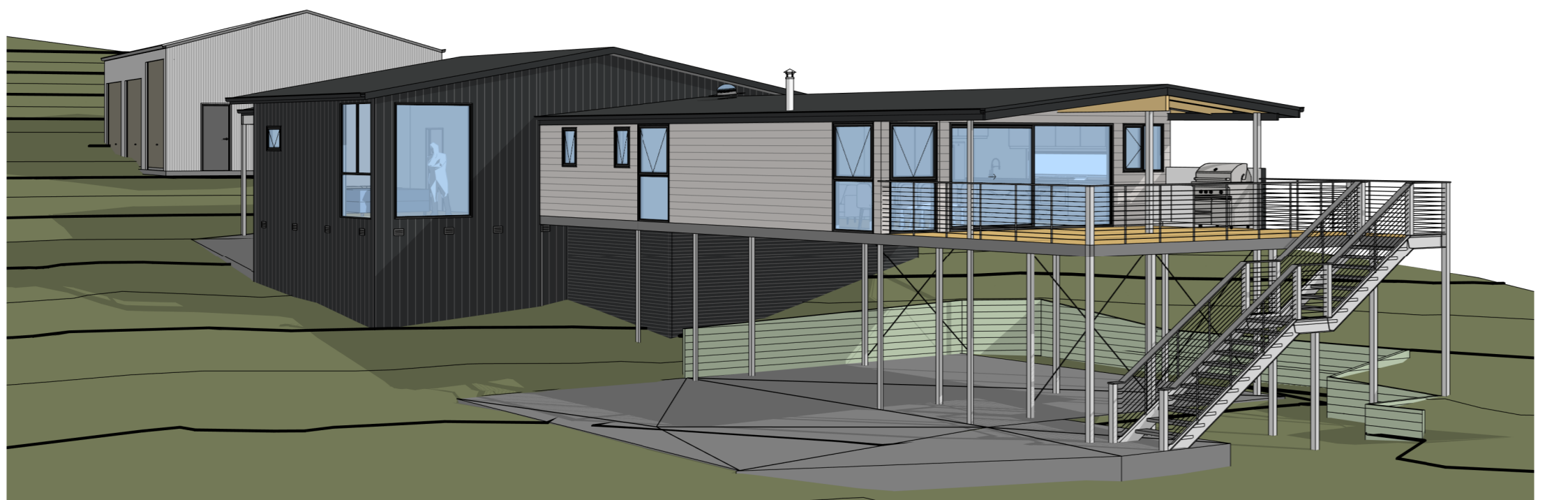
Angelina Bell
Principal Solicitor
Bell Legal & Planning

7 May 2024

PROPOSED ALTERATION & ADDITION TO EXISTING DWELLING

471 TAYLOR BAY RIGHT ARM, TAYLOR BAY

DRAWINGS INDEX		
Sheet No:	Sheet Name	Current Revision
A00	FRONT PAGE	P1
A01	EXISTING SITE PLAN	P1
A02	PROPOSED SITE PLAN	P1
A03	EXISTING LAYOUT	P1
A04	DEMOLITION PLAN	P1
A05	PROPOSED FLOOR PLANS	P1
A06	PROPOSED ROOF & CEILING PLANS	P1
A07	ELEVATIONS	P1
A08	SECTIONS	P1



LOCATION PLAN

REVISION SCHEDULE:		
Rev	Description:	Date:
P1	PRELIMINARY	07.03.2024

IMPORTANT NOTE:
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AGC DESIGN DRAFTING
 HOUSE DESIGN | RENOVATIONS | TOWN PLANNING

E: angelo@agcdesigndrafting.com
 M: 0437 274 333
 Building Practitioners No: DP-AD-398

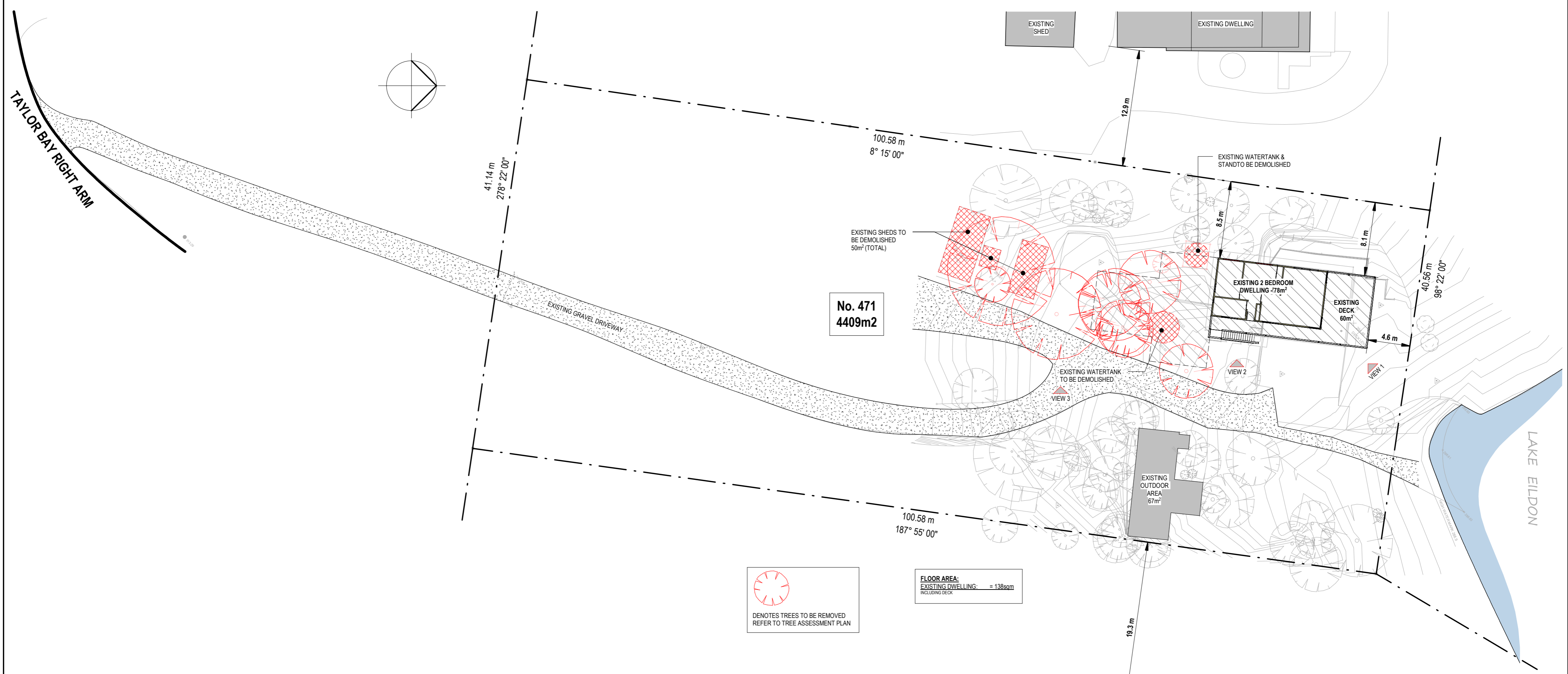
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CLIENT:
 LIZA & DANIEL COVIELLO

PROJECT:
 PROPOSED ALTERATION & ADDITION
 471 TAYLOR BAY RIGHT ARM, TAYLOR BAY


DRAWING TITLE:
 FRONT PAGE

PRELIMINARY		
DRAWN:	DRAWING No:	REVISION:
AG	A00	P1
SCALE @ A2:		



No. 471
4409m²

FLOOR AREA:
EXISTING DWELLING: = 138sqm
INCLUDING DECK


DENOTES TREES TO BE REMOVED
REFER TO TREE ASSESSMENT PLAN

ALL BOUNDARY DIMENSIONS ARE APPROXIMATE AND TO BE VERIFIED WITH A CLEAR COPY OF TITLE
SITE LEVELS & FINISHED FLOOR LEVELS TO BE VERIFIED PRIOR TO ANY WORKS COMMENCING



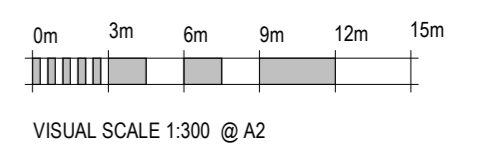
VIEW 1



VIEW 2

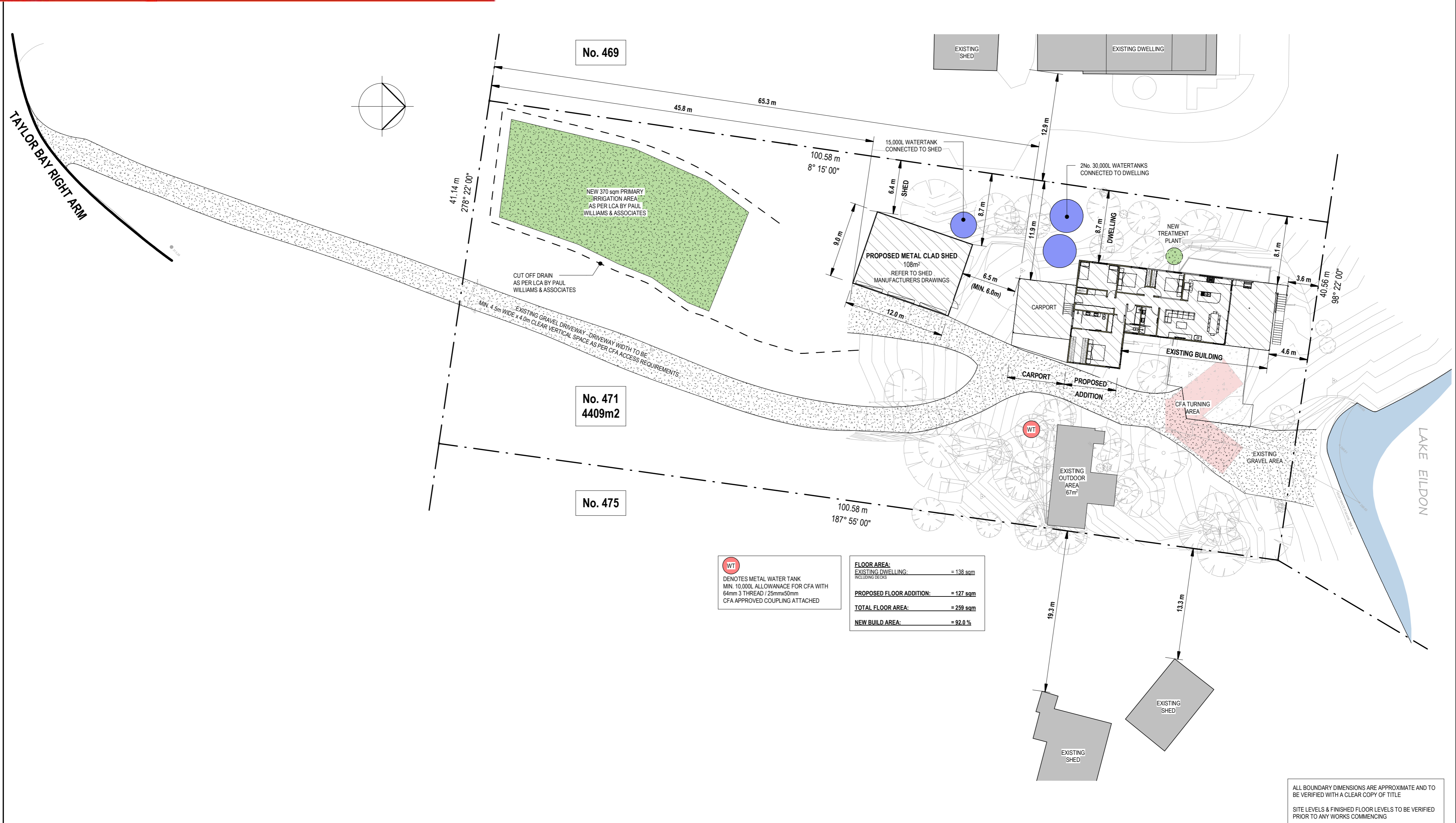


VIEW 3



REVISION SCHEDULE:			IMPORTANT NOTE:			AGC DESIGN DRAFTING			CLIENT:			PROJECT:			DRAWING TITLE:			PRELIMINARY					
Rev	Description:	Date:	A full site measure is to be carried out prior to any construction commencing on site. All site measurements are to be checked against drawings. Any changes are to be made by designer to drawings prior to commencement on site. All dimensions are to be checked on site before commencement of work or manufacturing of any items. These drawings are the property of AGC Pty Ltd. and must not be reproduced or copied wholly or in part without the permission of AGC Pty Ltd. Use figured dimensions in reference to scale.						E: angelo@agcdesigndrafting.com M: 0437 274 333 Building Practitioners No: DP-AD-398			LIZA & DANIEL COVIELLO			PROPOSED ALTERATION & ADDITION 471 TAYLOR BAY RIGHT ARM, TAYLOR BAY			EXISTING SITE PLAN			DRAWN: AG		
P1	PRELIMINARY	07.03.2024																			SCALE @ A2: 1 : 300		

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P1	PRELIMINARY	07.03.2024

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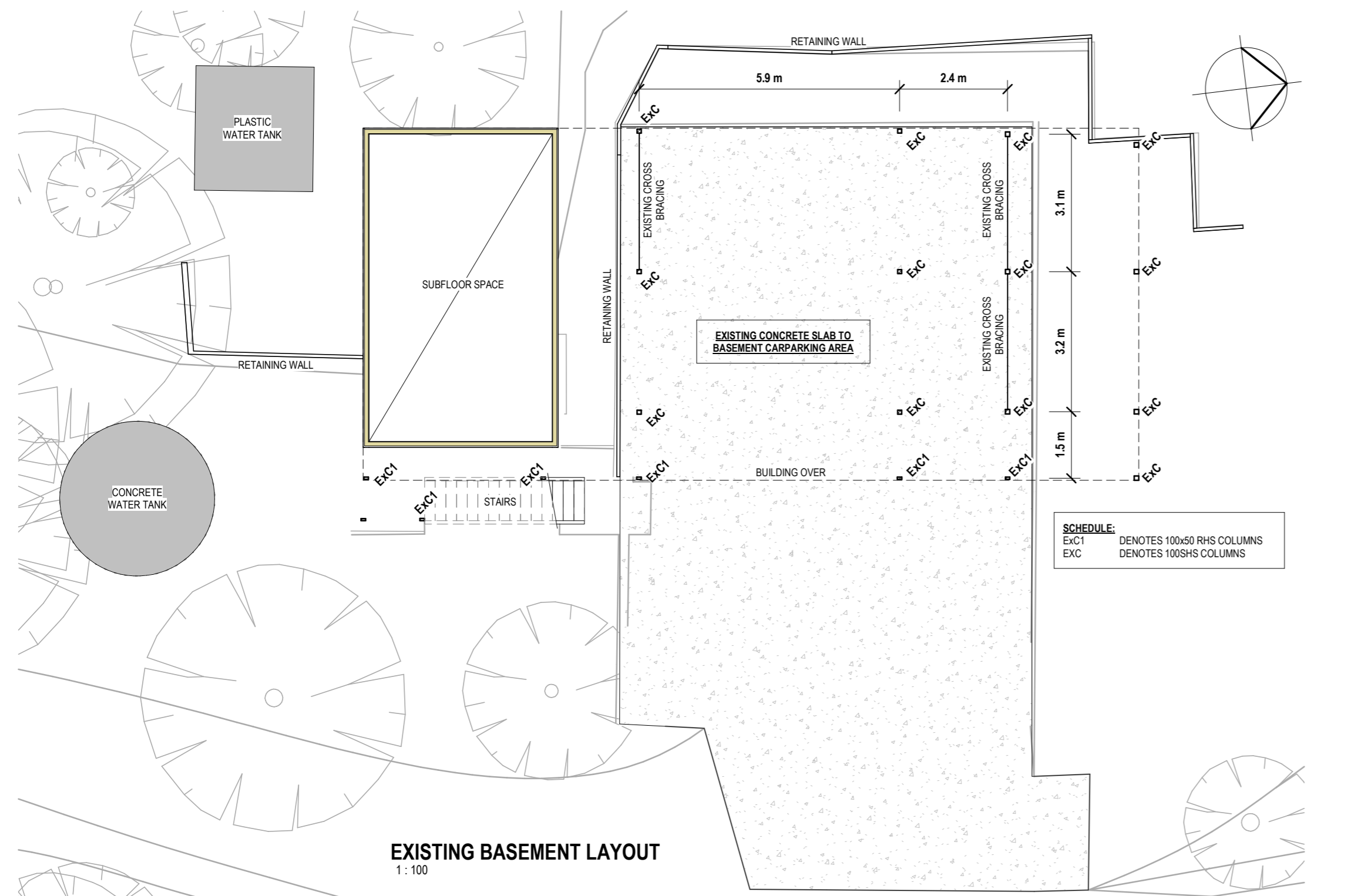
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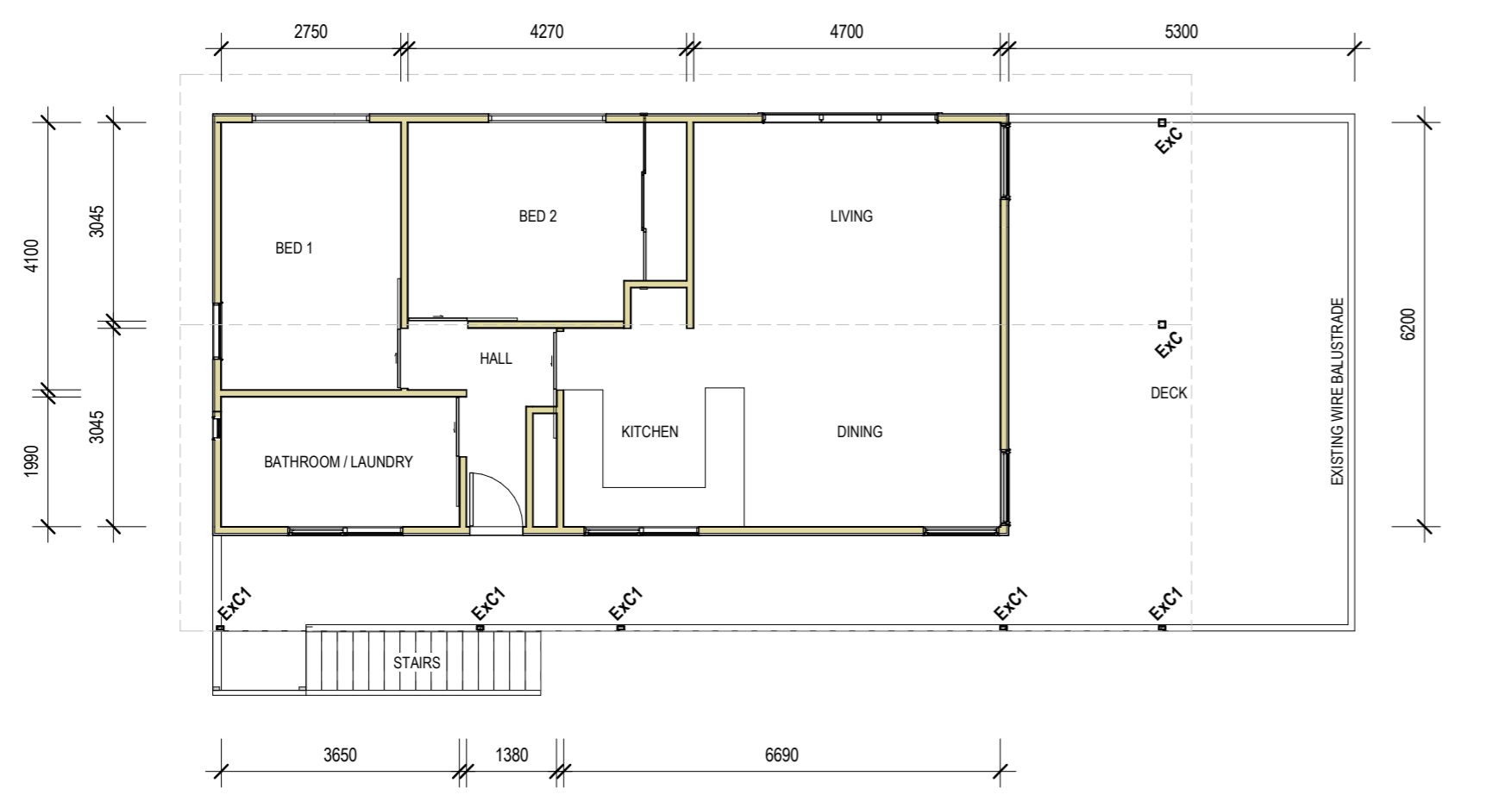
PROJECT:
PROPOSED ALTERATION & ADDITION
471 TAYLOR BAY RIGHT ARM, TAYLOR BAY

DRAWING TITLE:
PROPOSED SITE PLAN

PRELIMINARY		
DRAWN:	DRAWING No:	REVISION:
AG	A02	P1
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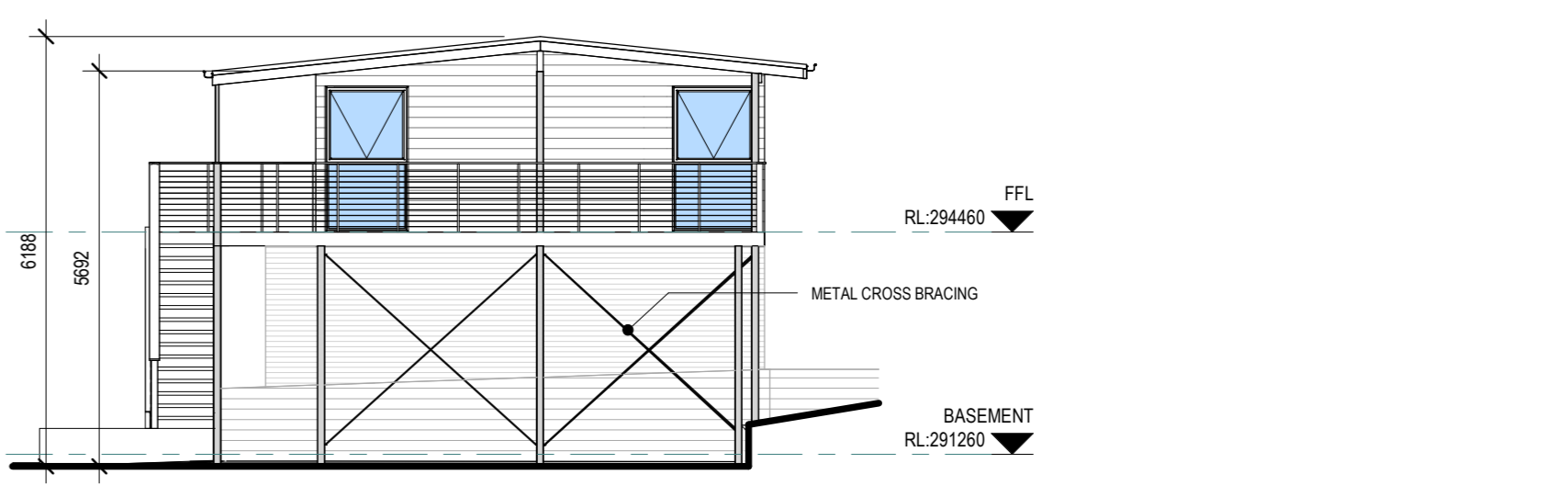


EXISTING BASEMENT LAYOUT
1:100

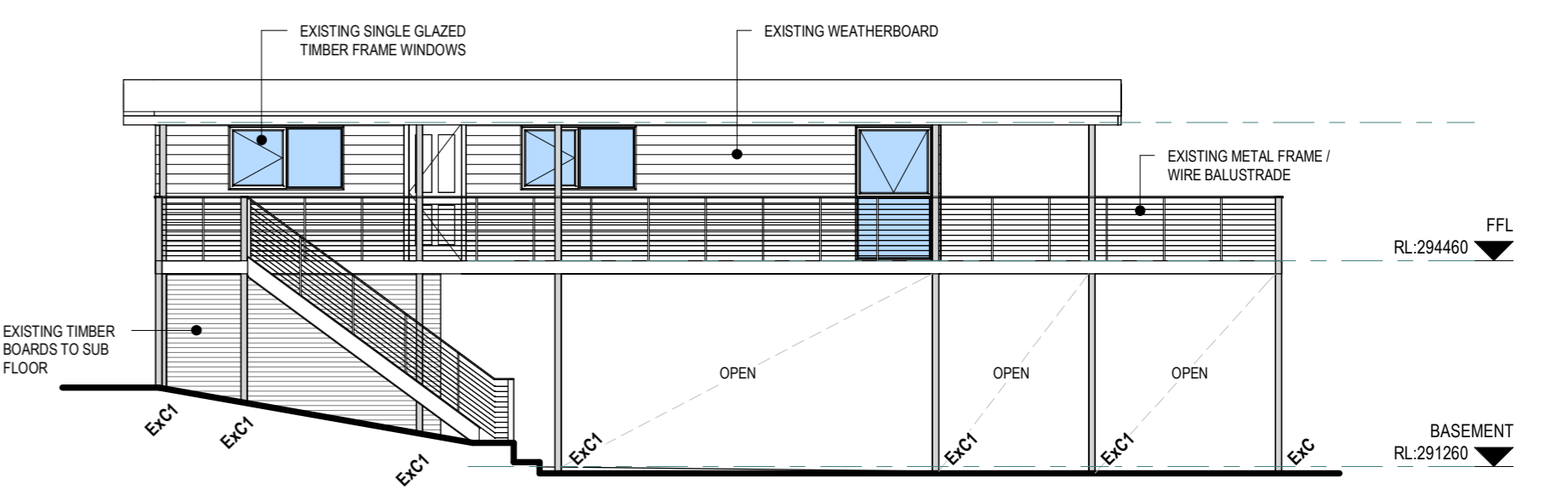


EXISTING FLOOR AREA = 138m²
EXISTING FLOOR PLAN
1:100

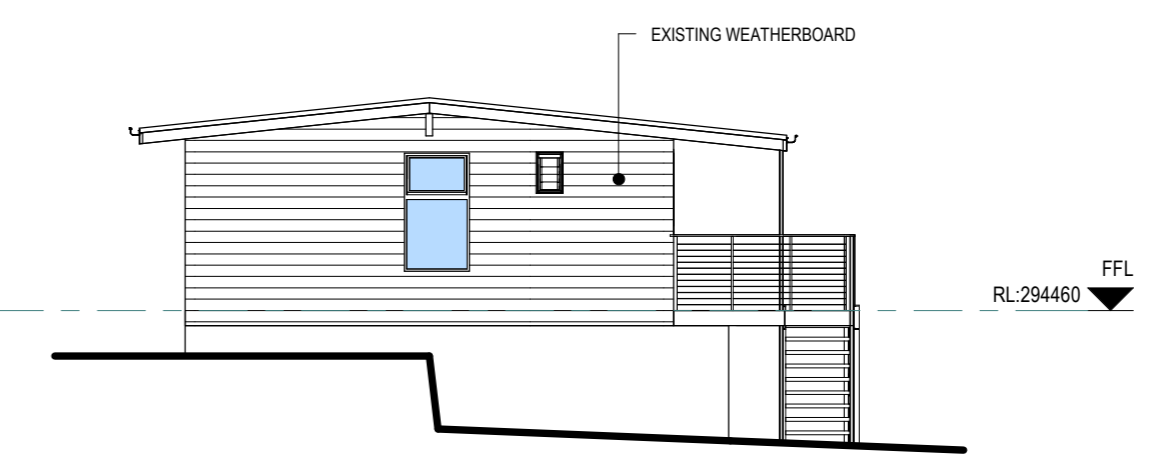
SCHEDULE:
EXC1 DENOTES 100x50 RHS COLUMNS
EXC DENOTES 100SHS COLUMNS



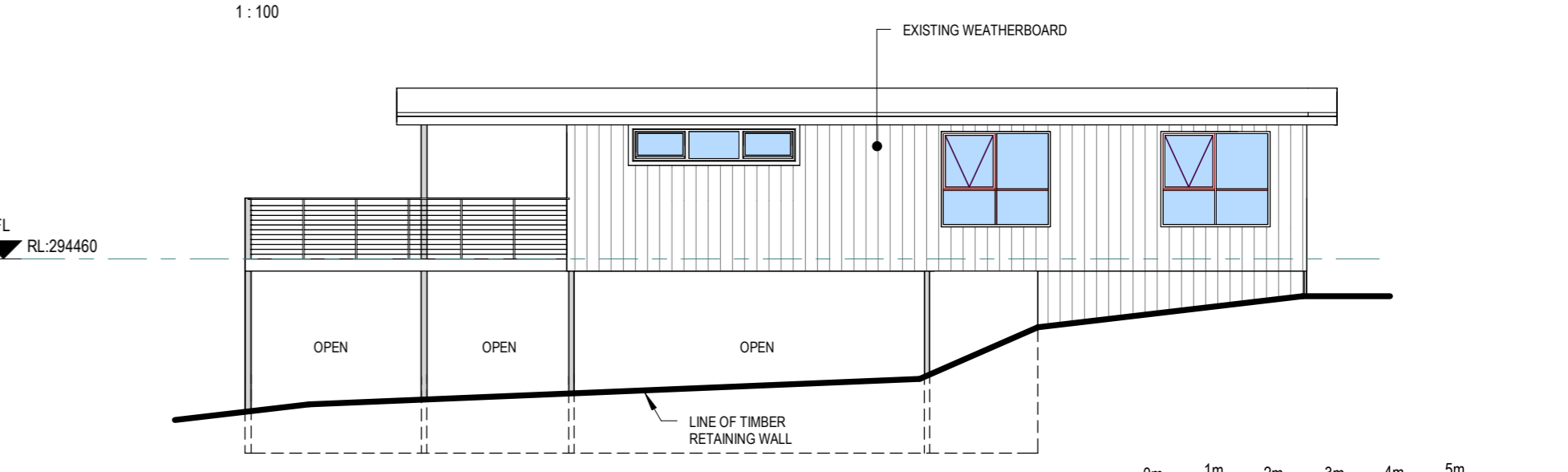
EXISTING NORTH ELEVATION
1:100



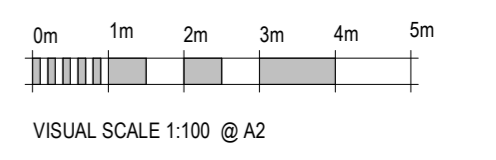
EXISTING EAST ELEVATION
1:100



EXISTING SOUTH ELEVATION
1:100



EXISTING WEST ELEVATION
1:100



REVISION SCHEDULE:		
Rev	Description:	Date:
P1	PRELIMINARY	07.03.2024

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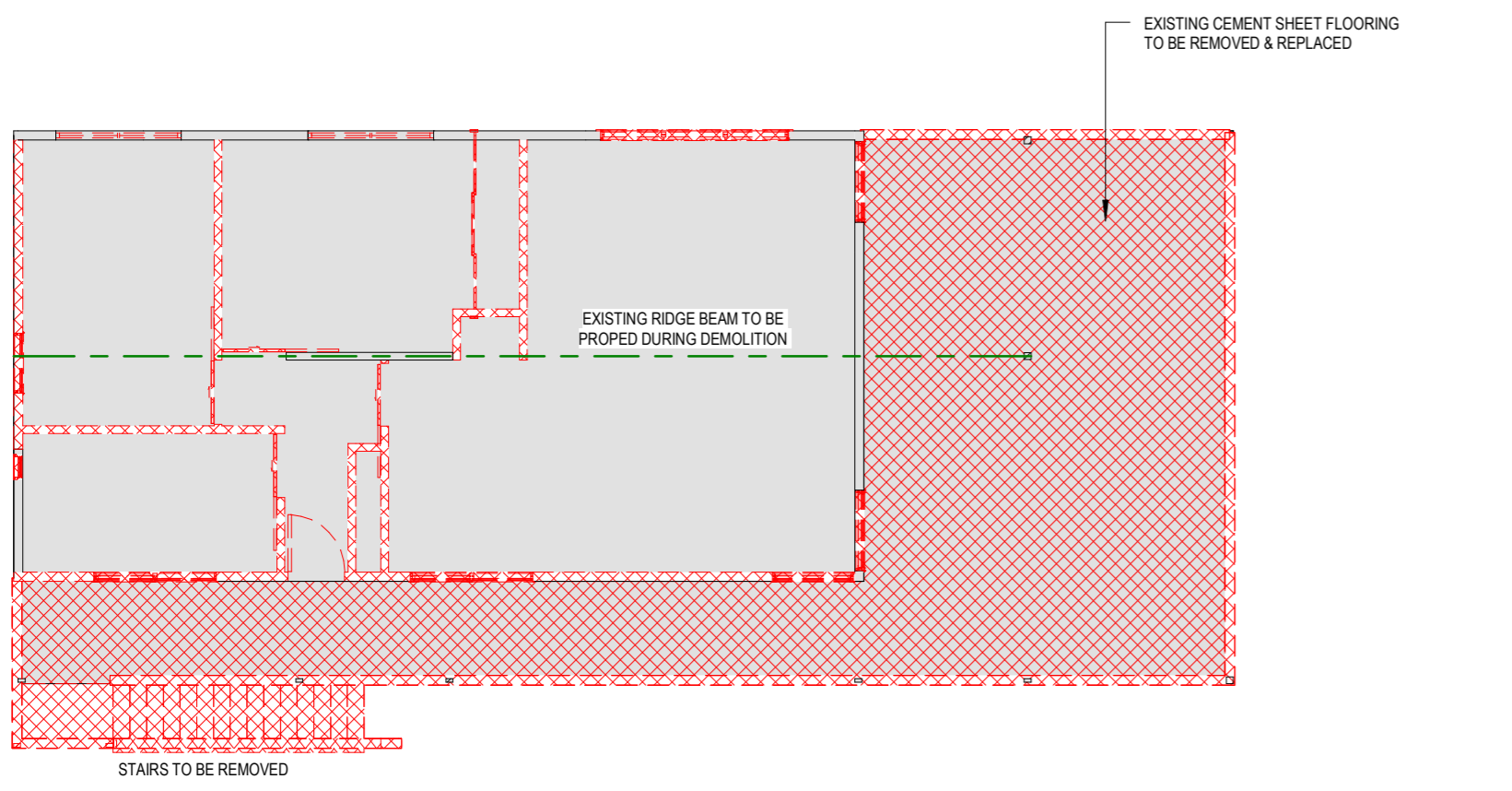
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CLIENT:
LIZA & DANIEL COVIELLO

PROJECT:
PROPOSED ALTERATION & ADDITION
471 TAYLOR BAY RIGHT ARM, TAYLOR BAY

DRAWING TITLE:
EXISTING LAYOUT

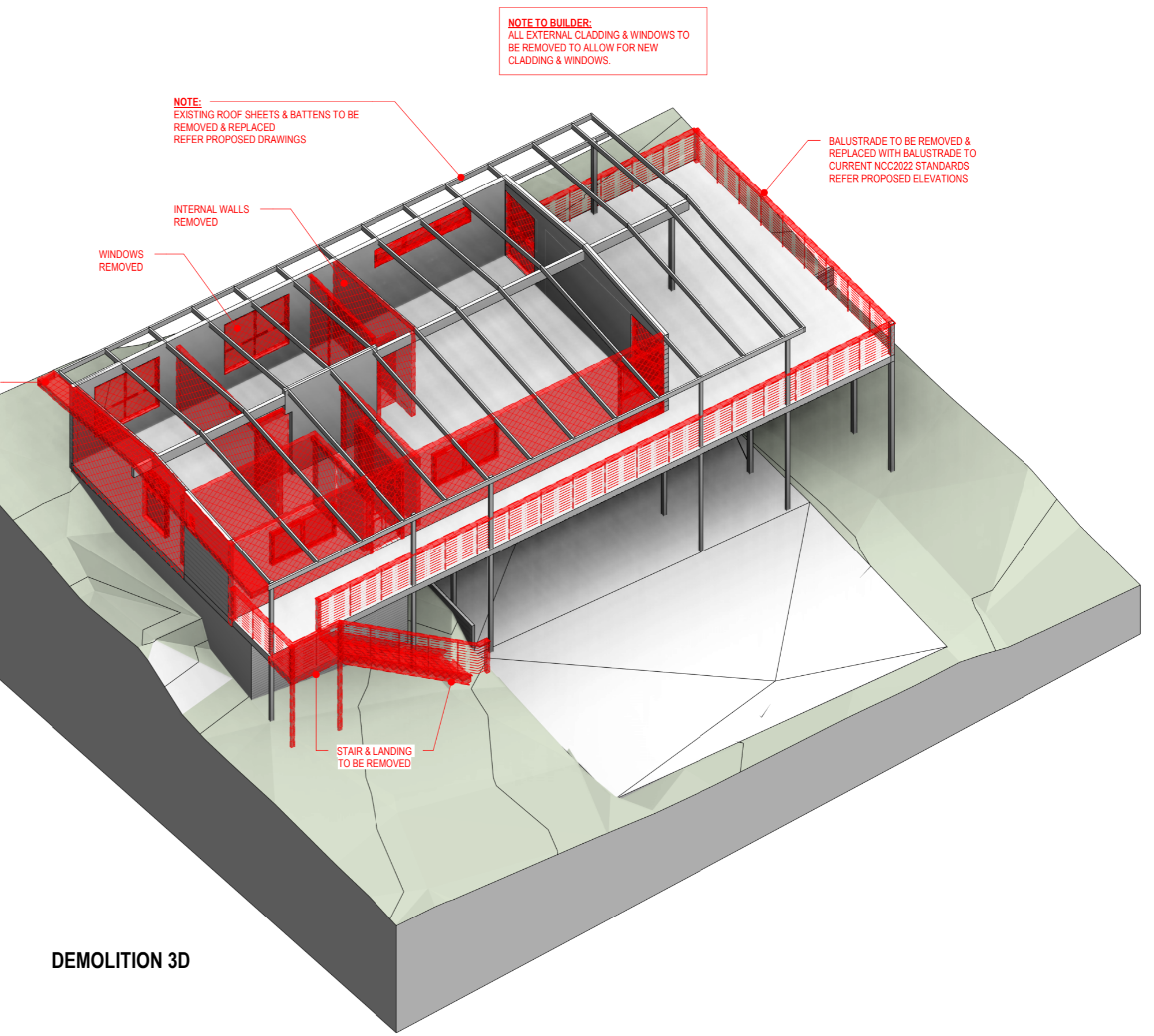
PRELIMINARY		
DRAWN:	DRAWING No:	REVISION:
AG	A03	P1
SCALE @ A2: 1:100		



DEMOLITION FLOOR PLAN
1 : 100

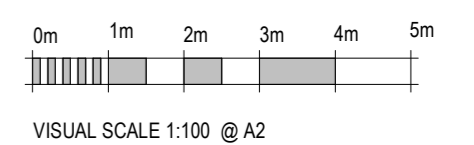
DEMOLITION NOTES:
ALL DEMOLITION WORK TO COMPLY WITH A.S. 2601-2001 (THE DEMOLITION OF STRUCTURES). DEMOLITION WORK ALSO TO COMPLY WITH THE REQUIREMENTS OF APPLICABLE BUILDING REQUIREMENTS AND LOCAL COUNCIL BY-LAWS.

BUILDER TO PROVIDE MEASURES REQUIRED BY MUNICIPAL AND STATE ORDINARIES LAWS AND REGULATIONS FOR THE PROTECTION OF SURROUNDING PROPERTY, FOOTPATHS, STREETS, CURBS AND THE PUBLIC. OCCUPANTS AND WORKERS DURING DEMOLITION OPERATIONS, CARRYING OUT MEASURES INCLUDE BARRICADES, FENCES, WARNING LIGHTS AND SIGNS RUBBISH CHUTES ETC.



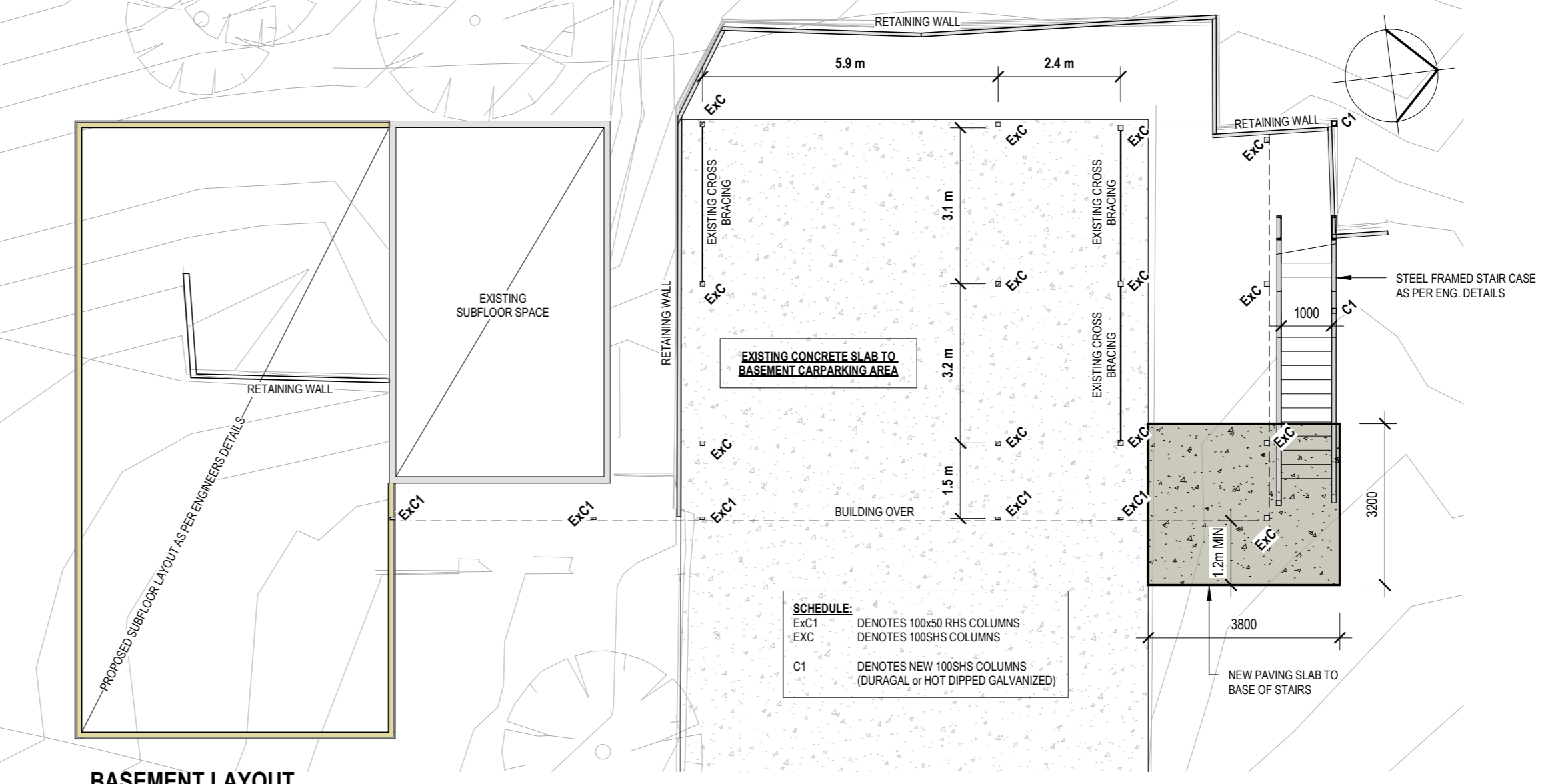
NOTE TO BUILDER:
ALL EXTERNAL CLADDING & WINDOWS TO BE REMOVED TO ALLOW FOR NEW CLADDING & WINDOWS.

DEMOLITION 3D



REVISION SCHEDULE:			IMPORTANT NOTE:			CLIENT:		PROJECT:		DRAWING TITLE:		PRELIMINARY		
Rev	Description:	Date:	A full site measure is to be carried out prior to any construction commencing on site. All site measurements are to be checked against drawings. Any changes are to be made by designer to drawings prior to commencement on site. All dimensions are to be checked on site before commencement of work or manufacturing of any items. These drawings are the property of AGC Pty Ltd. and must not be reproduced or copied wholly or in part without the permission of AGC Pty Ltd. Use figured dimensions in reference to scale.			LIZA & DANIEL COVIELLO		PROPOSED ALTERATION & ADDITION 471 TAYLOR BAY RIGHT ARM, TAYLOR BAY		DEMOLITION PLAN		DRAWN: AG	DRAWING No:	REVISION:
P1	PRELIMINARY	07.03.2024				AGC DESIGN DRAFTING HOUSE DESIGN RENOVATIONS TOWN PLANNING		E: angelo@agcdesigndrafting.com M: 0437 274 333 Building Practitioners No: DP-AD-398						SCALE @ A2: 1 : 100
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PROPOSED ROOM SCHEDULE			
Name	Area	Sq's	Floor Finish
ALFRESCO	42 m ²	4.52	TILED
BATH	6 m ²	0.69	TILED
BED 1	20 m ²	2.15	CARPET
BED 2	11 m ²	1.17	CARPET
BED 3	11 m ²	1.17	CARPET
CARPORT	44 m ²	4.76	CRUSHED ROCK
ENSUITE	8 m ²	0.90	TILED
HALL	35 m ²	3.80	FLOATING TIMBER
LAUNDRY	4 m ²	0.39	TILED
LIVING	54 m ²	5.83	FLOATING TIMBER
WC	2 m ²	0.18	TILED
WIR	8 m ²	0.88	CARPET
	246 m ²	26.43	

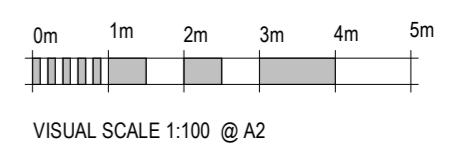


BASEMENT LAYOUT
1: 100

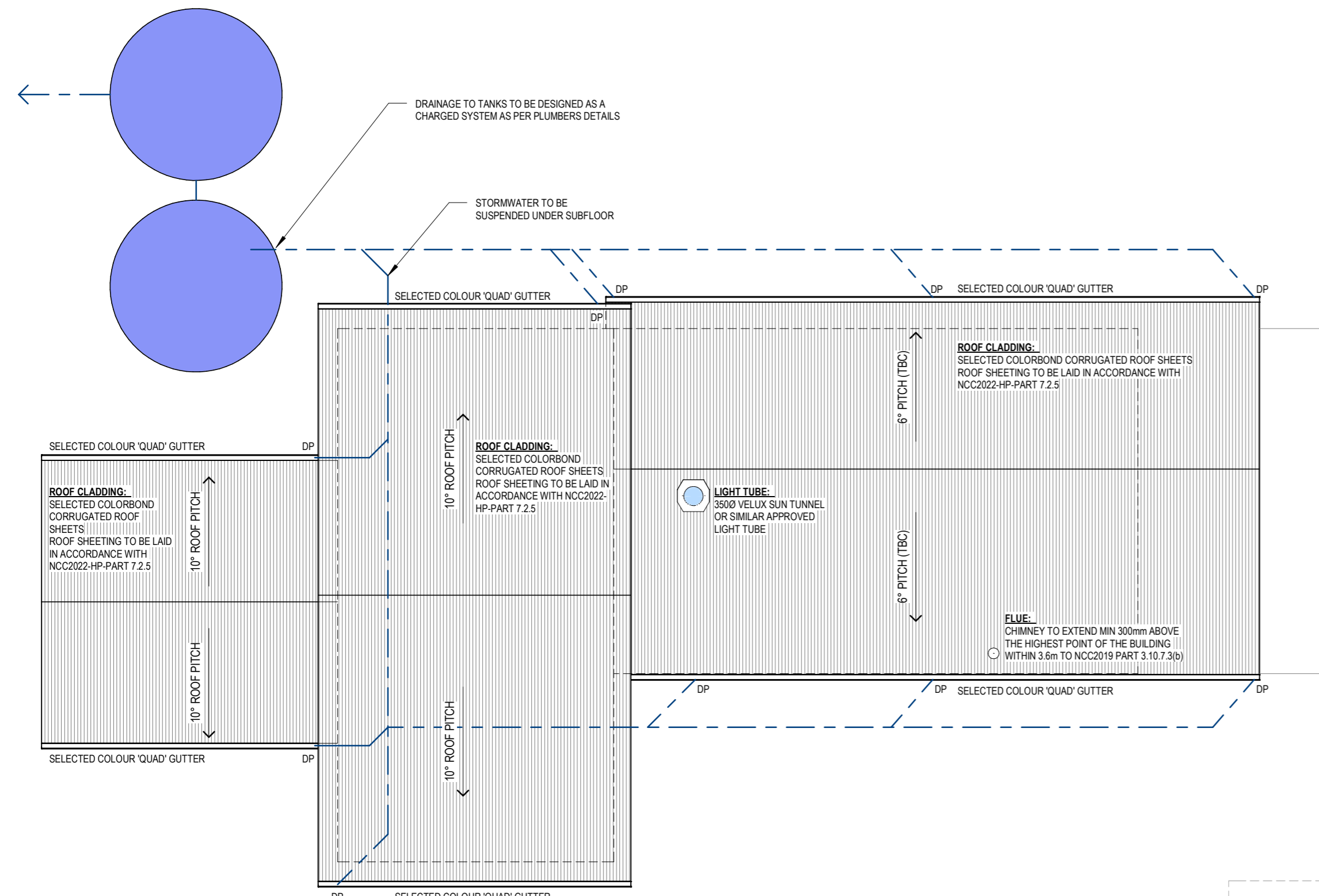


FLOOR AREA:	
EXISTING DWELLING: (INCLUDING DECK)	= 138 sqm
PROPOSED FLOOR ADDITION:	= 127 sqm
TOTAL FLOOR AREA:	= 259 sqm
NEW BUILD AREA:	= 92.0 %

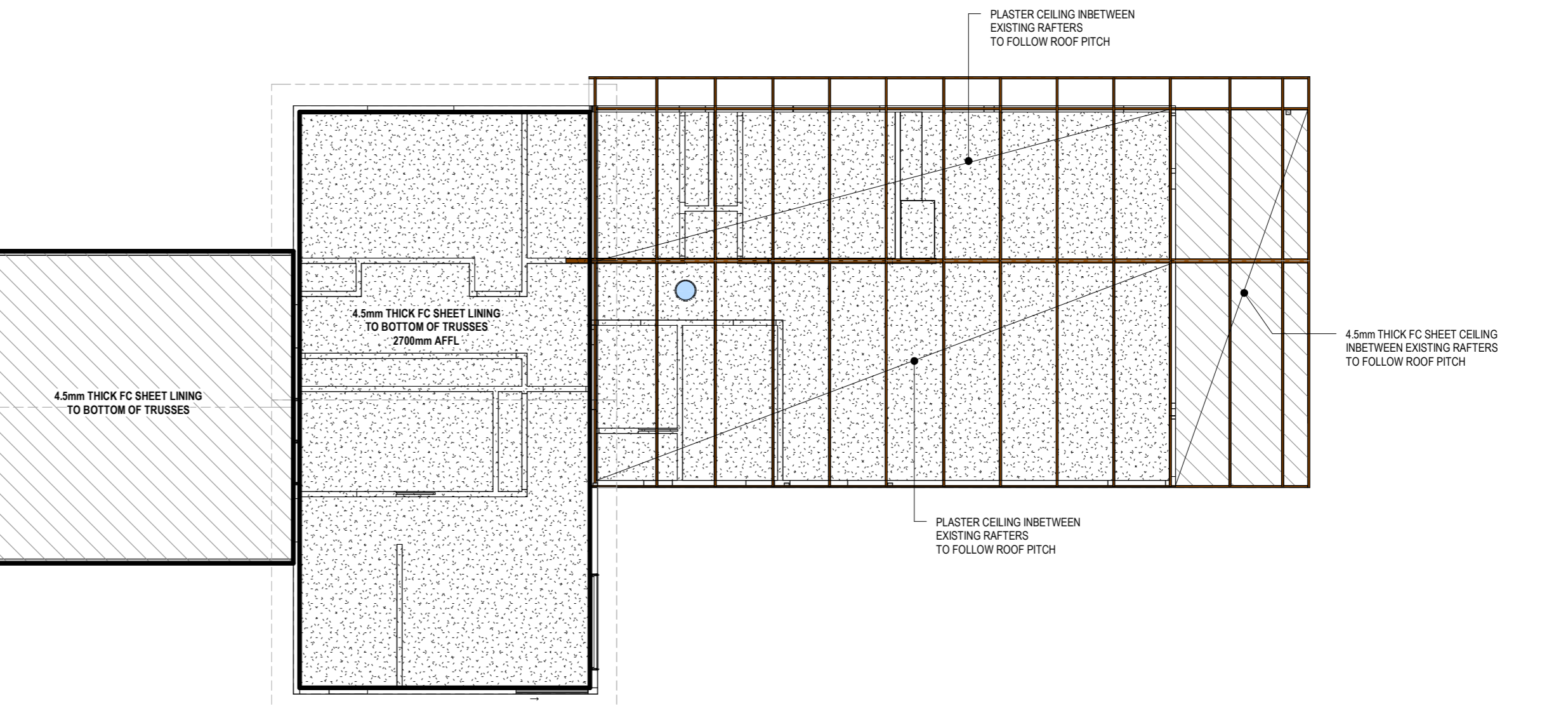
FLOOR LAYOUT
1: 100



REVISION SCHEDULE:		IMPORTANT NOTE:		AGC DESIGN DRAFTING HOUSE DESIGN RENOVATIONS TOWN PLANNING ALL DIMENSIONS ARE IN MILLIMETRES. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORKS. DO NOT SCALE OFF DRAWING. COPYRIGHT REMAINS THE PROPERTY OF THIS OFFICE.	CLIENT: LIZA & DANIEL COVIELLO	PROJECT: PROPOSED ALTERATION & ADDITION 471 TAYLOR BAY RIGHT ARM, TAYLOR BAY	DRAWING TITLE: PROPOSED FLOOR PLANS	PRELIMINARY		
Rev	Description:	Date:	A full site measure is to be carried out prior to any construction commencing on site. All site measurements are to be checked against drawings. Any changes are to be made by designer to drawings prior to commencement on site. All dimensions are to be checked on site before commencement of work or manufacturing of any items. These drawings are the property of AGC Pty Ltd. and must not be reproduced or copied wholly or in part without the permission of AGC Pty Ltd. Use figured dimensions in reference to scale.					DRAWN: AG	DRAWING No: A05	REVISION: P1
P1	PRELIMINARY	07.03.2024						SCALE @ A2: 1: 100		



ROOF LAYOUT
1:100



CEILING LAYOUT
1:100

BUSHPRE CONSTRUCTION NOTES: BAL 29
MINIMUM CONSTRUCTION REQUIREMENTS SHALL COMPLY WITH AS3959-2018
SECTION 3: CONSTRUCTION GENERAL
SECTION 7: CONSTRUCTION REQ. FOR BAL29

ALL JOINTS TO THE EXTERNAL SURFACE MATERIAL OF WALLS/ROOFS SHALL BE COVERED, SEALED, OVERLAPPED, BACKED OR BUTT-JOINTED

ALL EXTERNAL VENTS / WEEPHOLES SHALL BE SCREENED WITH A MESH MADE OF CORROSION-REISTANT STEEL, BRONZE OR ALUMINIUM WITH MIN ALLOWABLE APERTURE SIZE TO BE 2mm

ROOF SARKING/BLANKET:
BRADFORD ANTICON R1.8 ROOF BLANKET (OR SIMILAR FOIL FACED EARTHWOOL / GLASSWOOL COMPLIANT ROOF BLANKET) INSTALLED TO THE ENTIRE ROOF AREA OVER THE TOP OF BATTENS

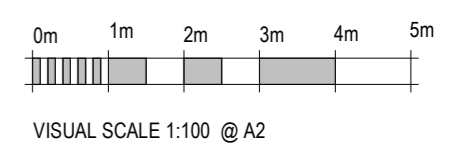
EXTEND SARKING 50mm BEYOND FASCIA INTO GUTTER/VALLEY GUTTER

ALL JOINS SHALL BE COVERED, SEALED, OVERLAPPED (MIN 150mm), BACKED OR BUTT-JOINTED & TAPED

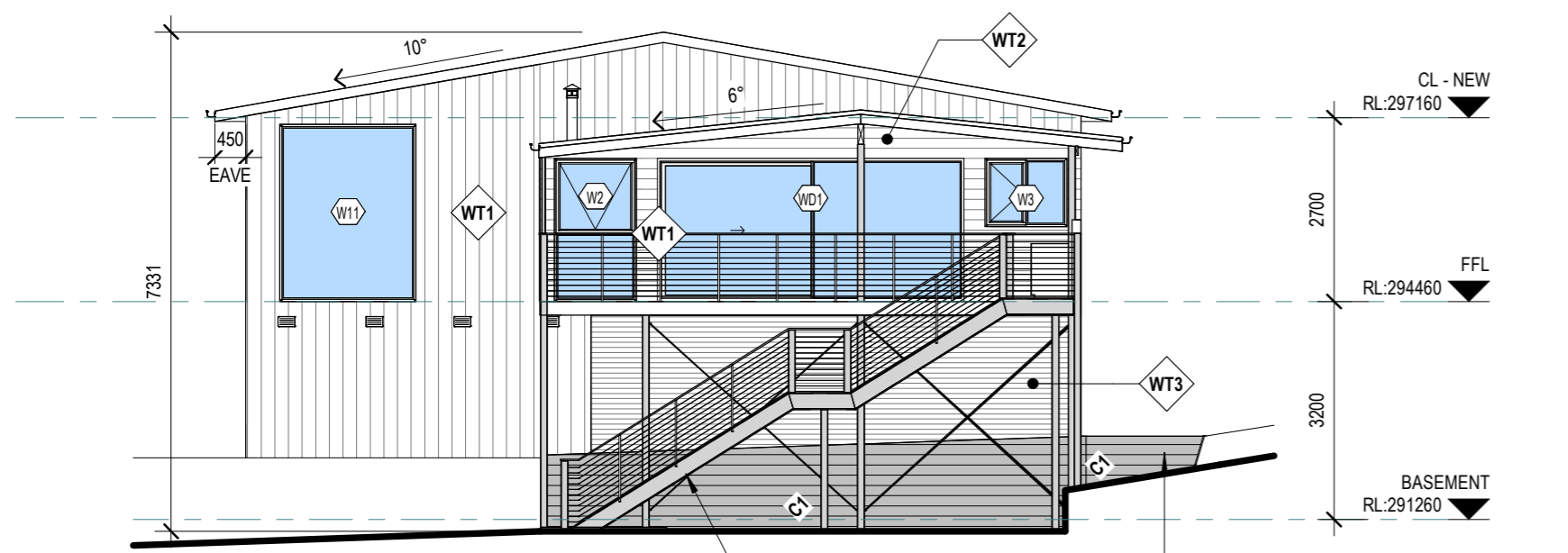
EAVE LININGS:
ALL EAVE LINING (UNO) TO BE 4.5mm FC SHEET LINING PLASTIC JOINING STRIPS OR TIMBER STORM MOULDS TO CLIENTS REQUIREMENTS

BUILDER:
BUILDER TO CHECK ALL DIMENSIONS PRIOR TO SETTING OUT / ORDERING ANY MATERIALS

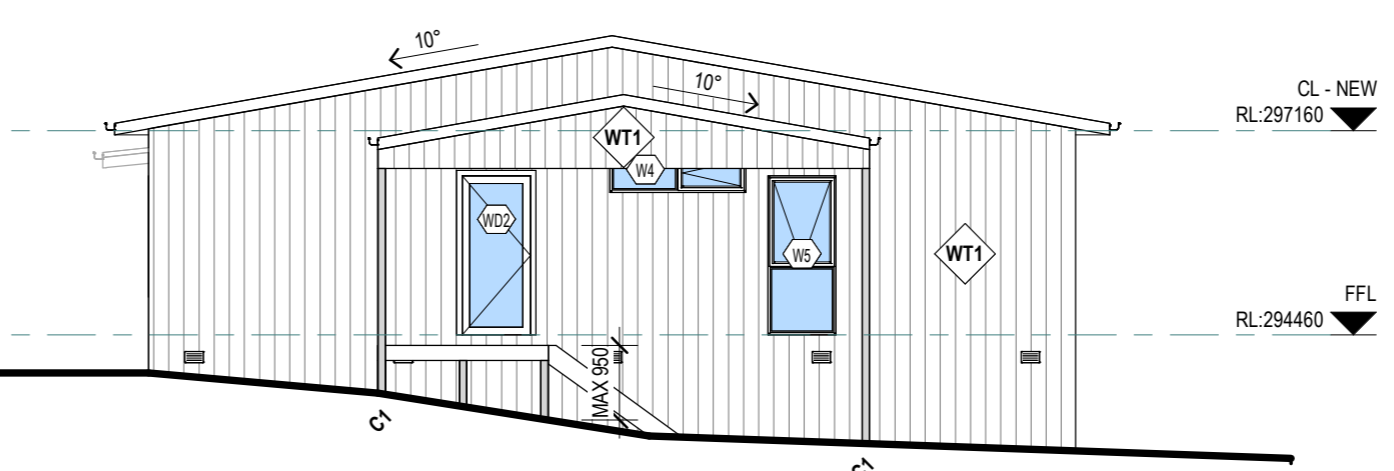
ALL DRAWINGS SHALL BE READ IN CONJUNCTION WITH:
• STRUCTURAL ENGINEER'S DRAWINGS
• ENERGY RATER'S DOCUMENTATION



REVISION SCHEDULE:			IMPORTANT NOTE:			CLIENT:			PROJECT:			DRAWING TITLE:			PRELIMINARY					
Rev	Description:	Date:	A full site measure is to be carried out prior to any construction commencing on site. All site measurements are to be checked against drawings. Any changes are to be made by designer to drawings prior to commencement on site. All dimensions are to be checked on site before commencement of work or manufacturing of any items. These drawings are the property of AGC Pty Ltd. and must not be reproduced or copied wholly or in part without the permission of AGC Pty Ltd. Use figured dimensions in reference to scale.			AGC DESIGN DRAFTING HOUSE DESIGN RENOVATIONS TOWN PLANNING E: angelo@agcdesigndrafting.com M: 0437 274 333 Building Practitioners No: DP-AD-398			LIZA & DANIEL COVIELLO			PROPOSED ALTERATION & ADDITION 471 TAYLOR BAY RIGHT ARM, TAYLOR BAY			PROPOSED ROOF & CEILING PLANS			DRAWN: AG	DRAWING No:	REVISION:
P1	PRELIMINARY	07.03.2024																ALL DIMENSIONS ARE IN MILLIMETRES. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORKS. DO NOT SCALE OFF DRAWING. COPYRIGHT REMAINS THE PROPERTY OF THIS OFFICE.		

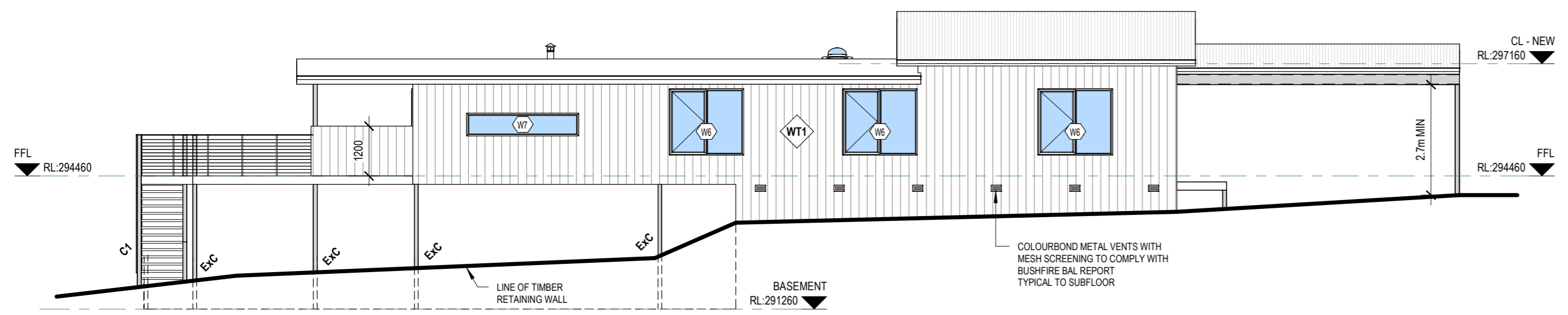


NORTH ELEVATION
1 : 100

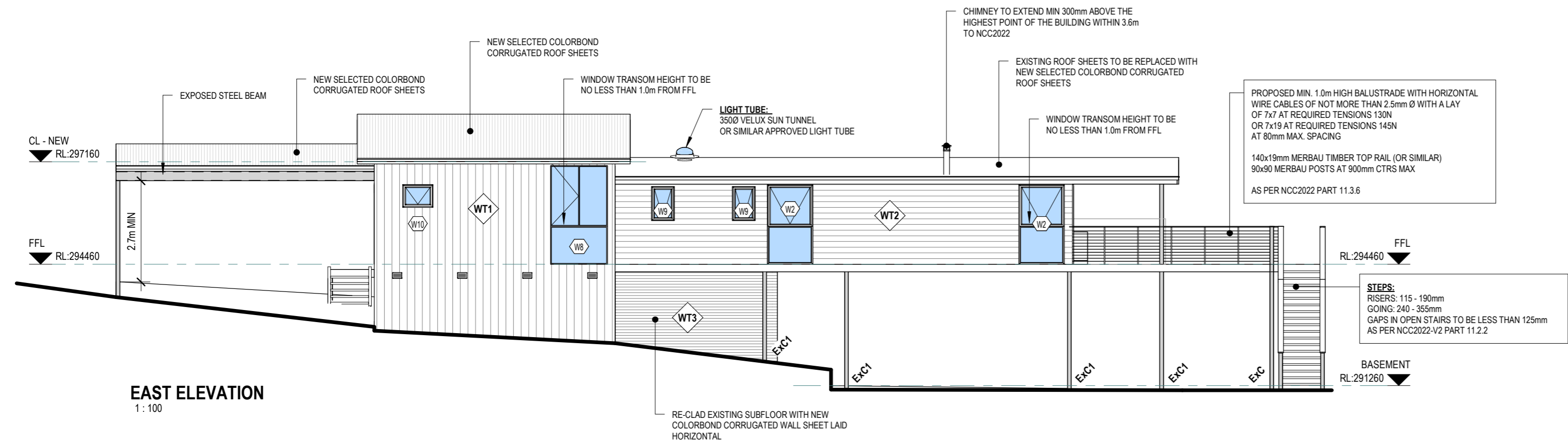


SOUTH ELEVATION
1 : 100

NOTE:
WINDOWS ABOVE 1.0m FROM GROUND LEVEL TO BE FITTED WITH A DEVICE TO LIMIT OPENING OR A SUITABLE SCREEN SO A 125mm SPHERE CANNOT PASS THROUGH AS PER NCC:2022 PART 11.3.7 & 11.3.8



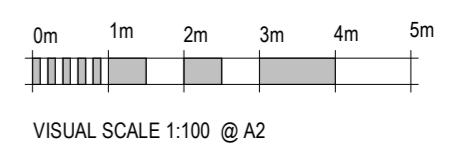
WEST ELEVATION
1 : 100



EAST ELEVATION
1 : 100

WALL CLADDING SCHEDULE		
MARK	CLADDING TYPE	AREA
WT1	Lysaght Longline 305®	189.2 m ²
WT2	JamesHardie™ Linea™ Weatherboard	27.9 m ²
WT3	Lysaght - Custom ORB®	30.4 m ²

WINDOW SCHEDULE					
Type Mark	Height	Width	Opening Type	Comments	Count
W2	2100	1200	AWNING	TRANSOME MIN. 1.0m FROM FFL	3
W3	1000	1200	SLIDING	SERVERY WINDOW	1
W4	500	1800	SLIDING	SHOWER HIGHLIGHT WINDOW	1
W5	2100	900	AWNING		1
W6	1600	1800	SLIDING		3
W7	550	2700	FIXED	KITCHEN WINDOW	1
W8	2600	1500	SLIDING	TRANSOME MIN. 1.0m FROM FFL	1
W9	900	600	AWNING		2
W10	600	800	AWNING		1
W11	2600	2000	FIXED		1
WD1	2100	4500	SLIDING	SLIDING DOOR	1
WD2	2100	900	HINGED	GLASS DOOR	1



REVISION SCHEDULE:		
Rev	Description:	Date:
P1	PRELIMINARY	07.03.2024

IMPORTANT NOTE:
A full site measure is to be carried out prior to any construction commencing on site. All site measurements are to be checked against drawings. Any changes are to be made by designer to drawings prior to commencement on site. All dimensions are to be checked on site before commencement of work or manufacturing of any items. These drawings are the property of AGC Pty Ltd. and must not be reproduced or copied wholly or in part without the permission of AGC Pty Ltd. Use figured dimensions in reference to scale.

AGC DESIGN DRAFTING
HOUSE DESIGN | RENOVATIONS | TOWN PLANNING

E: angelo@agcdesigndrafting.com
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Building Practitioners No: DP-AD-398

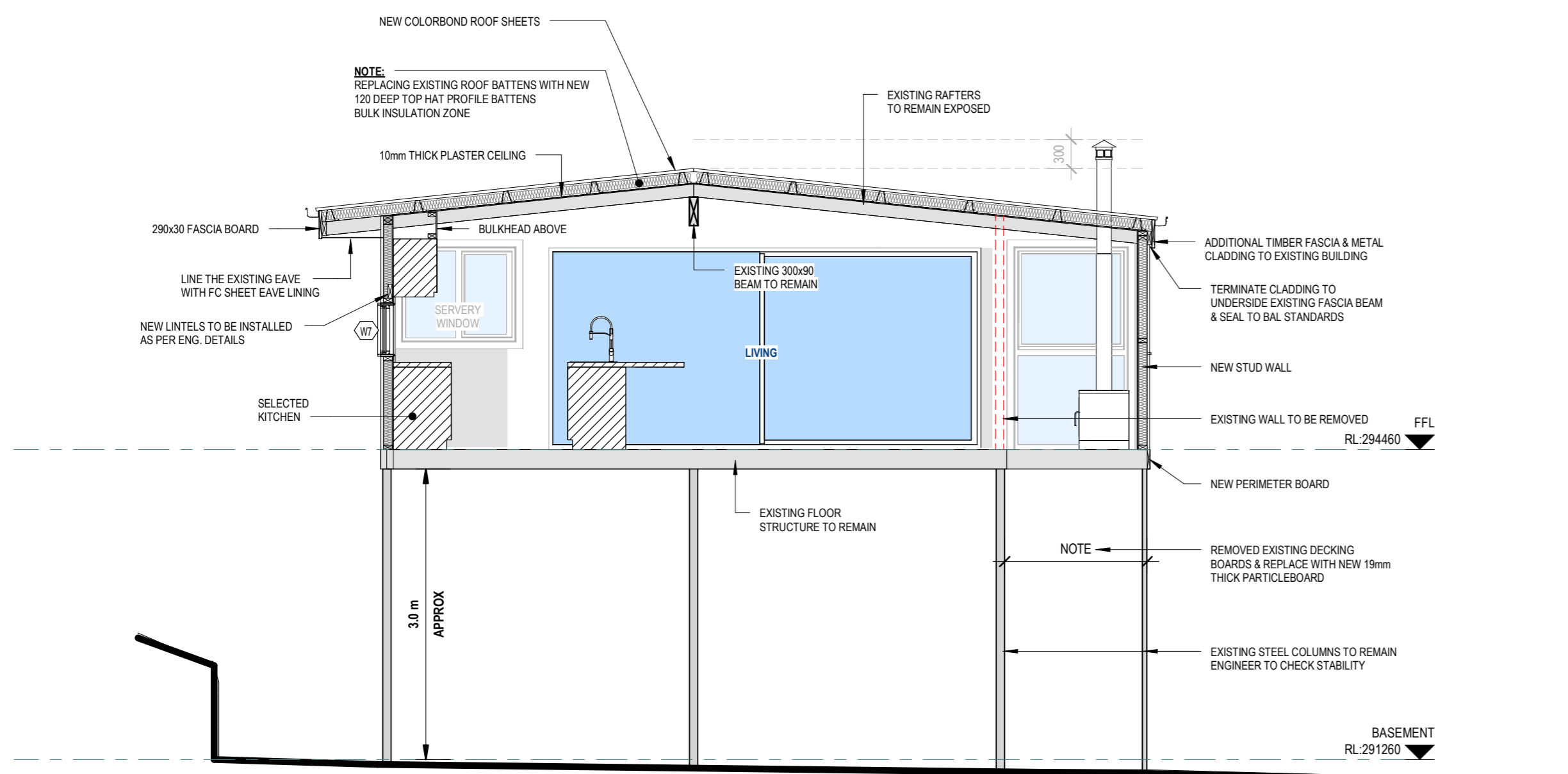
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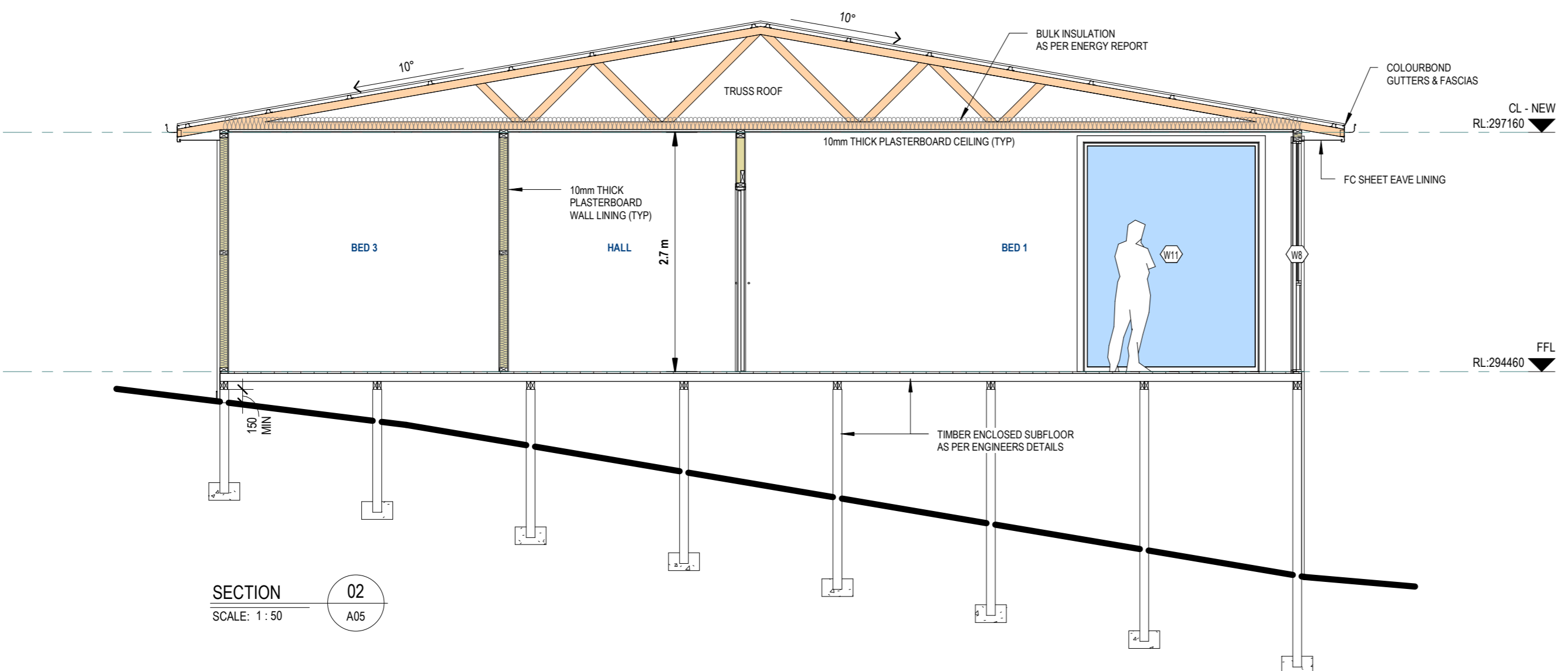
PROJECT:
PROPOSED ALTERATION & ADDITION
471 TAYLOR BAY RIGHT ARM, TAYLOR BAY

DRAWING TITLE:
ELEVATIONS

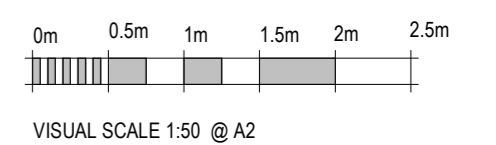
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DRAWN:	AG	DRAWING No:	REVISION:
SCALE @ A2:		A07	P1
	1 : 100		



SECTION 01
SCALE: 1 : 50



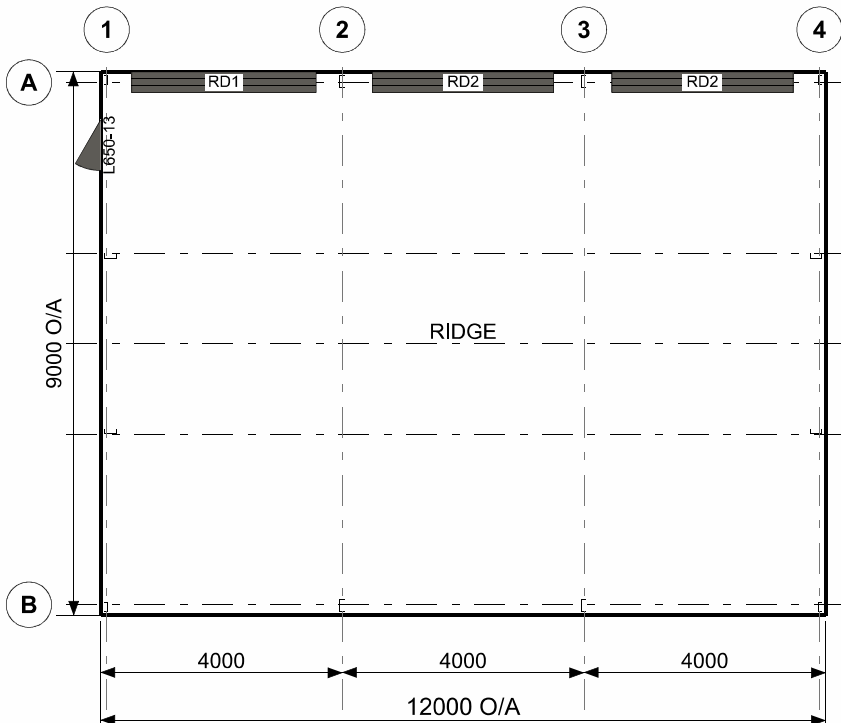
SECTION 02
SCALE: 1 : 50



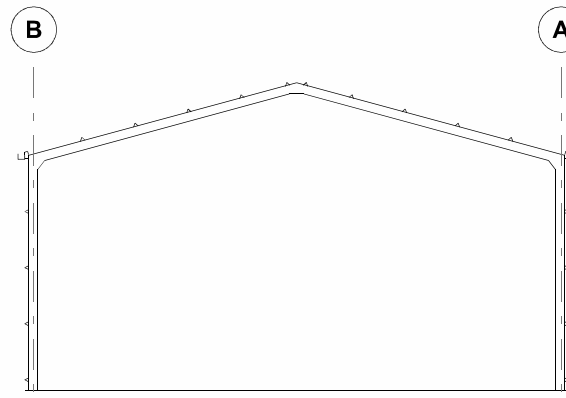
REVISION SCHEDULE:			IMPORTANT NOTE:			CLIENT:			PROJECT:			DRAWING TITLE:			PRELIMINARY											
Rev	Description:	Date:	A full site measure is to be carried out prior to any construction commencing on site. All site measurements are to be checked against drawings. Any changes are to be made by designer to drawings prior to commencement on site. All dimensions are to be checked on site before commencement of work or manufacturing of any items. These drawings are the property of AGC Pty Ltd. and must not be reproduced or copied wholly or in part without the permission of AGC Pty Ltd. Use figured dimensions in reference to scale.			AGC DESIGN DRAFTING HOUSE DESIGN RENOVATIONS TOWN PLANNING E: angelo@agcdesigndrafting.com M: 0437 274 333 Building Practitioners No: DP-AD-398 ALL DIMENSIONS ARE IN MILLIMETRES. VERIFY ALL DIMENSIONS ON SITE PRIOR TO COMMENCEMENT OF WORKS. DO NOT SCALE OFF DRAWING. COPYRIGHT REMAINS THE PROPERTY OF THIS OFFICE.			LIZA & DANIEL COVIELLO			PROPOSED ALTERATION & ADDITION 471 TAYLOR BAY RIGHT ARM, TAYLOR BAY			SECTIONS			DRAWN: AG	DRAWING No:	REVISION:						
P1	PRELIMINARY	07.03.2024																SCALE @ A2: 1 : 50			A08			P1		



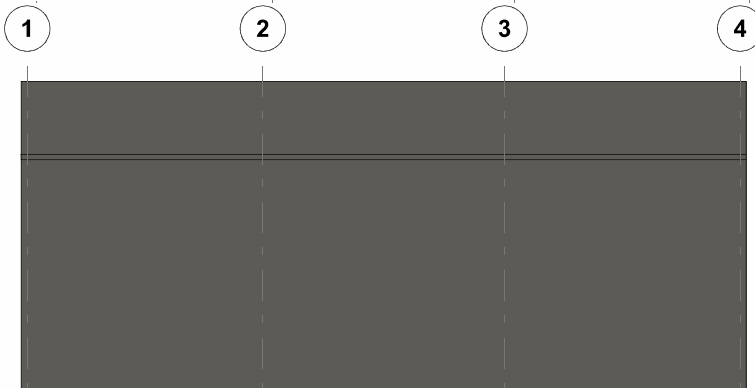
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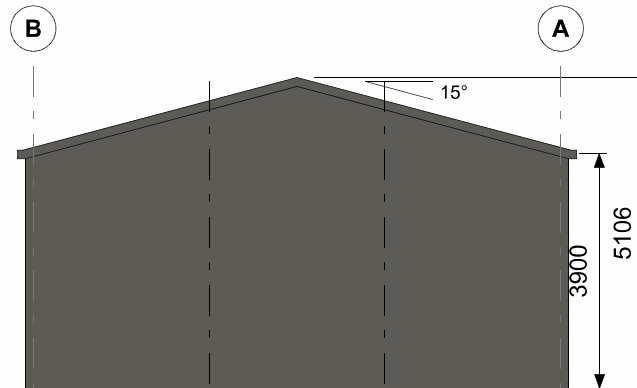
FRAME ROOF PLAN



SECTION GRID 2, 3



ELEVATION GRID B



ELEVATION GRID 4

CLADDING

ITEM	PROFILE (min)	FINISH	COLOUR
ROOF	CUSTOM ORB 0.42 BMT	CB	WG
WALLS	TRIMDEK 0.35 BMT	CB	WG
CORNERS	-	CB	WG
BARGE	-	CB	WG
GUTTER	HI-QUAD	CB	WG
DOWNPIPE	90x90	PV	WT

0.35bmt=0.40tct; 0.42bmt=0.47tct; 0.48bmt=0.53tct

ACCESSORY SCHEDULE & LEGEND

QTY	MARK	DESCRIPTION
1	RD1	B&D, Firmadoor, R.D, Indust. "R2F", 3325 high x 3050 wide Clear Opening C/B
2	RD2	B&D, Firmadoor, R.D, Residential "R1F", 2925 high x 3000 wide Clear Opening C/B
1	L650-13	Larnec Door & Frame Kit, 650/37, Std. 2040 x 820 C/Bond

ARCHITECTURAL DRAWING ONLY. NOT FOR CONSTRUCTION USE

CLIENT
liza Coviello

SITE
**471 right arm road
EILDON VIC 3713**

BUILDING
**SUNDOWN DELUXE
9000 SPAN x 3900 EAVE x 12000 LONG**

TITLE
FLOOR PLAN & ELEVATION

SCALE A4 SHEET 1:125	DRAWING NUMBER KILM06-2094	REV A	PAGE 1/2
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