Notice of Application for a Planning Permit

Cardinia

The land affected by the application is located at:	L17 LP132710 V9400 F356 98 Hope Street, Bunyip VIC 3815
The application is for a permit to:	Construction of a Replacement Dwelling, Shed and Associated Works, and Removal of Vegetation

A permit is required under the following clauses of the planning scheme:

35.05-5	Construct a building or construct or carry out works associated with a use in Section 2 (Dwelling)
42.01-2	Construct a building or construct or carry out works
42.01-2	Remove, destroy or lop vegetation.

APPLICATION DETAILS

The applicant for the permit is:	STUDIO THREE DESIGN & DRAFTING PTY LTD
Application number:	T250258

You may look at the application and any documents that support the application at the office of the Responsible Authority:

Cardinia Shire Council, 20 Siding Avenue, Officer 3809.

This can be done during office hours and is free of charge.

Documents can also be viewed on Council's website at cardinia.vic.gov.au/advertisedplans or by scanning the QR code.

HOW CAN I MAKE A SUBMISSION?

This application has not been decided. You can still make a submission before a decision has been made. The Responsible Authority will not decide on the application before:	30 September 2025

WHAT ARE MY OPTIONS?

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

If you object, the Responsible Authority will notify you of the decision when it is issued.

An objection must:

- be made to the Responsible Authority in writing;
- 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.

Application is here

1 Application lodged — 2 Council initial assessment — 3 Notice — 4 Consideration of submissions — 5 Assessment — 6 Decision

Cardinia ePlanning

Application Summary

Portal Reference	A22550TP

Basic Information

Proposed Use	Building and Works (Construction of a Replacement Dwelling), proposed outbuilding (shed) with associated earthworks and vegetation removal
Current Use	Existing dwelling with attached carport and shedding
Cost of Works	$900,000
Site Address	98 Hope Street Bunyip 3815

Covenant Disclaimer

Does the proposal breach, in any way, an encumbrance on title such as restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope?	No such encumbrances are breached

Note: During the application process you may be required to provide more information in relation to any encumbrances.

Contacts

Type	Name	Address	Contact Details
Applicant	[redacted] STUDIO THREE DESIGN & DRAFTING PTY LTD	37 BOUNDARY ROAD SOUTH, EUROA VIC 3666	W: 0413-122-391 M: 0413-122-391 E: ron@studiothreedesign.com.au
Owner	[redacted]		
Preferred Contact	[redacted] STUDIO THREE DESIGN & DRAFTING PTY LTD	37 BOUNDARY ROAD SOUTH, EUROA VIC 3666	W: 0413-122-391 M: 0413-122-391 E: ron@studiothreedesign.com.au

Fees

Regulation	Fee Condition	Amount	Modifier	Payable
9 - Class 5	More than $500,000 but not more than $1,000,000	$1,535.00	100%	$1,535.00
		Total		**$1,535.00**

Documents Uploaded

Date	Type	Filename
12-05-2025	A Copy of Title	LOT 17, #98 HOPE STREET BUNYIP - Vol Fol 9400 356 (12-05-2025).pdf
12-05-2025	Site plans	TP - LOT 17, #89 HOPE STREET BUNYIP 3814 (01-11-2024 REVISION C).pdf
12-05-2025	Additional Document	AIA_98 Hope St_20241106.pdf
12-05-2025	Additional Document	24C7597_98_HOPE_ST_BUNYIP_LCA_240402.pdf

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

Lodged By

Site User	[redacted] STUDIO THREE DESIGN & DRAFTING PTY LTD	37 BOUNDARY ROAD SOUTH, EUROA VIC 3666	W: 0413-122-391 M: 0413-122-391 E: ron@studiothreedesign.com.au
Submission Date	12 May 2025 - 07:30:AM		

Declaration

☑ By ticking this checkbox, I [redacted] declare that all the information in this application is true and correct; and the Applicant and/or Owner (if not myself) has been notified of the application.

Civic Centre
20 Siding Avenue, Officer, Victoria

Council's Operations Centre (Depot)
Purton Road, Pakenham, Victoria

Postal Address
Cardinia Shire Council
P.O. Box 7, Pakenham VIC, 3810

Email: mail@cardinia.vic.gov.au

Monday to Friday 8.30am–5pm
Phone: 1300 787 624
After Hours: 1300 787 624
Fax: 03 5941 3784

The Victorian Government acknowledges the Traditional Owners of Victoria and pays respects to their ongoing connection to their Country, History and Culture. The Victorian Government extends this respect to their Elders, past, present and emerging.

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

VOLUME 09400 FOLIO 356 Security no : 124124344472T
Produced 12/05/2025 07:15 AM

LAND DESCRIPTION

Lot 17 on Plan of Subdivision 132710.
PARENT TITLE Volume 08999 Folio 569
Created by instrument LP132710 19/11/1980

REGISTERED PROPRIETOR

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

[redacted]

COVENANT J718655 18/11/1981

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 LP132710 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: 98 HOPE STREET BUNYIP VIC 3815

ADMINISTRATIVE NOTICES

NIL

[redacted]

DOCUMENT END

AR022609N

Transfer of Land

Section 45 Transfer of Land Act 1958

Privacy Collection Statement
The information in this form is collected under statutory authority and used for the purpose of maintaining publicly searchable registers and indexes.

1. Land/s

Land Title

Volume 9400 Folio 356

2. Estate and Interest

FEE SIMPLE

3. Transferor/s

Transferor 1

Given Name/s [redacted]

Family Name

Transferor 2

Given Name/s [redacted]

Family Name

4. Transferee/s

FY

Transferee 1

Given Name/s [redacted]

Family Name

Transferee 2

Given Name/s [redacted]

Family Name

5. Manner of Holding

JOINT PROPRIETORS

6. Address/es of Transferee/s

Address of Transferee 1

Unit Street No 5

Street Name LINDLEY

Street Type TERRACE

Locality PAKENHAM

State VIC Postcode 3810

Address of Transferee 2

Same as Transferee 1

7. Consideration

$940,000.00

8. Signing

The transferor transfers to the transferee the estate and interest specified in the land described for the consideration expressed and subject to the encumbrances affecting the land including any created by dealings lodged for registration before the lodging of this transfer.

Transferor 1

Certifications

1. The Certifier has taken reasonable steps to verify the identity of the Transferor.

2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

3. The Certifier has retained the evidence supporting this Registry Instrument or Document.

4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of NICOLA DI NUNZIO

Signer Name [redacted]

Signer Organ

Signer Role

Signature

Execution Date 1 May 2018

AR022609N

Transfer of Land

Section 45 Transfer of Land Act 1958

Privacy Collection Statement
The information in this form is collected under statutory authority and used for the purpose of maintaining publicly searchable registers and indexes.

Transferor 2

Certifications

1. The Certifier has taken reasonable steps to verify the identity of the Transferor.

2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

3. The Certifier has retained the evidence supporting this Registry Instrument or Document.

4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed

Signer N

Signer O

Signer R

Signature

Execution Date

AR022609N

Transfer of Land

Section 45 Transfer of Land Act 1958

Privacy Collection Statement
The information in this form is collected under statutory authority and used for the purpose of maintaining publicly searchable registers and indexes.

Transferee 1

Certifications

1. The Certifier has taken reasonable steps to verify the identity of the Transferee.

2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

3. The Certifier has retained the evidence supporting this Registry Instrument or Document.

4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

Executed on behalf of DA PR

Signer Name RC

Signer Organisation CC RE

Signer Role LIC CO

Signature

Execution Date 2/5/18

Transferee 2

Certifications

1. The Certifier has taken reasonable steps to verify the identity of the Transferee.

2. The Certifier holds a properly completed Client Authorisation for the Conveyancing Transaction including this Registry Instrument or Document.

3. The Certifier has retained the evidence supporting this Registry Instrument or Document.

4. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.

[redacted]

Execution Date 2/5/18

9. Lodging Party

Customer Code ANZ Legal

Reference 1831A C

AR022609N

Transfer of Land

Section 45 Transfer of Land Act 1958

Privacy Collection Statement

The information in this form is collected under statutory authority and used for the purpose of maintaining publicly searchable registers and indexes.

Duty Use Only

AR022610E

Mortgage Form version 1.5

Lodger Details

Lodger Code	15314Q
Name	
Address	
Lodger Box	
Phone	
Email	
Reference	101729545

For Office Use Only

THE BACK OF THIS FORM MUST NOT BE USED

MORTGAGE

Jurisdiction VICTORIA

Privacy Collection Statement

The information in this form is collected under statutory authority and used for the purpose of maintaining publicly searchable registers and indexes.

Estate and/or interest being mortgaged

FEE SIMPLE

Land Title Reference	Part Land Affected?	Land Description
9400/356		

Mortgagor

Given Name(s) [redacted]
Family Name

Given Name(s)
Family Name

Mortgagee

Name	AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED
ACN	005357522
Australian Credit Licence	234527
Address	
Floor Type	LEVEL
Floor No.	4
Street No.	833
Street Name	COLLINS
Street Type	STREET
Locality	DOCKLANDS
State	VIC
Postcode	3008

The mortgagor mortgages the estate and/or interest in land specified in this mortgage to the mortgagee as security for the debt or liability described in the terms and conditions set out or referred to in this mortgage, and covenants with the mortgagee to comply with those terms and conditions.

Terms and Conditions of this Mortgage

(a) Document Reference AA3089

(b) Additional terms and conditions NIL

AR022610E
Mortgage Form version 1.5

Mortgagee Execution

1. The Certifier has retained the evidence supporting this Registry Instrument or Document.
2. The Certifier has taken reasonable steps to ensure that this Registry Instrument or Document is correct and compliant with relevant legislation and any Prescribed Requirement.
3. The Certifier, or the Certifier is reasonably satisfied that the mortgagee it represents,:
   (a) has taken reasonable steps to verify the identity of the mortgagor; and
   (b) holds a mortgage granted by the mortgagor on the same terms as this Registry Instrument or Document.

Executed on behalf of AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

Under power of attorn [redacted]

Signer Name [redacted]

Signer Organisation AUSTRALIA AND NEW ZEALAND BANKING GROUP LIMITED

Signer Role ATTORNEY

Signature [redacted]

Execution Date [redacted]

J718655 J718655

THE COMMERCIAL BANK OF AUSTRALIA LIMITED

M. DAVINE & CO. WARRAGUL.

9- 7 785414 NOV18-81 VICTORIA

REGD

TRANSFER OF LAND

GWYNNE BROS. NOMINEES PTY. LTD. of 71 Power Road, Bayswater being registered as the proprietors of an estate in fee simple in the land hereinafter described subject to the encumbrances notified hereunder in consideration of the sum of FIFTY THREE THOUSAND FIVE HUNDRED DOLLARS ($53,500.00) paid to it by GARRY GEORGE WITHERS shopkeeper of Hope Street, Bunyip HEREBY TRANSFER to the said GARRY GEORGE WITHERS all its estate and interest in all that piece of land being Lot 17 on Plan of Subdivision No. 132710 Parish of Bunyip County of Mornington and being the whole of the land more particularly described in Certificate of Title Volume 9400 Folio 356 and the said GARRY GEORGE WITHERS intends that the benefit of the covenant hereafter mentioned shall be attached to and run at law and in equity with each and every other Lot on the said Plan of Subdivision other than the said Lot 17 and that the burden of this Covenant shall be annexed to and run at law and in equity with the said Lot hereby transfered and be set out as an encumbrance at the foot of the Certificate of Title to be issued pursuant to this Transfer do hereby Covenant with the said GWYNNE BROS. NOMINEES PTY. LTD. and the registered proprietors for the time being of the land as constitutes the Lot on the said Plan of Subdivision other then the said Lot 17 that the said GARRY GEORGE WITHERS his Executors, Administrators and Transferees will not erect or allow to be erected upon the said land more than one main building being a dwelling house together with the usual outbuildings such main building to contain a floorarea of not less than 110 square meters within the outwalls excluding car-ports garages terraces pergolas and verandas.

DATED the 22nd day of September 1981.

SIGNED by the said GARRY GEORGE WITHERS in the presence of:) G. Withers

THE COMMON SEAL of GWYNNE BROS. NOMINEES PTY. LTD. was hereunto affixed according to its Articles of Association in the presence of:

..........Director

..........Secretary

Encumbrances Referred to: —

30 NOV 1981

A memorandum of the within instrument has been entered in the Register Book.

OFFICE OF TITLES M.T.R. VICTORIA

LP132710

EDITION 2
APPROVED 11/6/80

PLAN OF SUBDIVISION OF
PART OF CROWN ALLOTMENTS
29B & 29C
PARISH OF BUNYIP
COUNTY OF MORNINGTON
SCALE
50 25 0 50 100
LENGTHS ARE IN METRES

ENCUMBRANCES & NOTATIONS

THE LAND COLOURED PURPLE, PURPLE HATCHED & BROWN HATCHED IS VICTORIAN PIPELINES COMMISSION EASEMENT CREATED BY INSTRUMENT D 365010
R.M.s ARE 0·025 DIA. G.I. PIPES 0·50 LONG
THE LAND COLOURED GREEN HATCHED IS AN EASEMENT IN FAVOUR OF COUNCIL VIDE C 540771
LAND COLOURED YELLOW IS APPURTENANT EASEMENT FOR CARRIAGEWAY PURPOSES VIDE INSTRUMENT OF TRANSFER G 535978.

APPROPRIATIONS

LAND COLOURED BROWN & BROWN HATCHED IS APPROPRIATED OR SET APART FOR PURPOSES OF WAY & DRAINAGE
LAND COLOURED BLUE AND PURPLE HATCHED IS APPROPRIATED OR SET APART FOR DRAINAGE PURPOSES

VOL. 8999 FOL. 569

DEPTH LIMITATION: 15·24m
(CA. 29C)

PRINCES (GOVT.) HIGHWAY
RESERVE No.1 FOR MUNICIPAL & DRAINAGE PURPOSES E-6
PS507843W

PARISH/T'SHIP/CHART

COLOUR CONVERSION
BLUE = E-1
BROWN = E-2
PURPLE = E-3
PURPLE HATCHED = E-4
BROWN HATCHED = E-5
GREEN HATCHED = E-6
YELLOW = A-1

19 2·915 ha.
20 2·793 ha.
18 2·304 ha.
16 2·341 ha.
17 2·343 ha.

ROAD R1
POST & WIRE FENCE
NOT FENCED
MAGNETIC NORTH

2 SHEETS
SHEET 1

LP132710

PLAN OF SUBDIVISION OF
PART OF CROWN ALLOTMENTS
29ᴮ & 29ᶜ
PARISH OF BUNYIP
COUNTY OF MORNINGTON

LENGTHS ARE IN METRES

APPROPRIATIONS

LAND COLOURED BROWN & BROWN HATCHED IS APPROPRIATED OR SET APART FOR PURPOSES OF WAY & DRAINAGE
LAND COLOURED BLUE, AND PURPLE HATCHED IS APPROPRIATED OR SET APART FOR DRAINAGE PURPOSES

VOL. 8999 FOL. 569

PARISH/T'SHIP/CHART

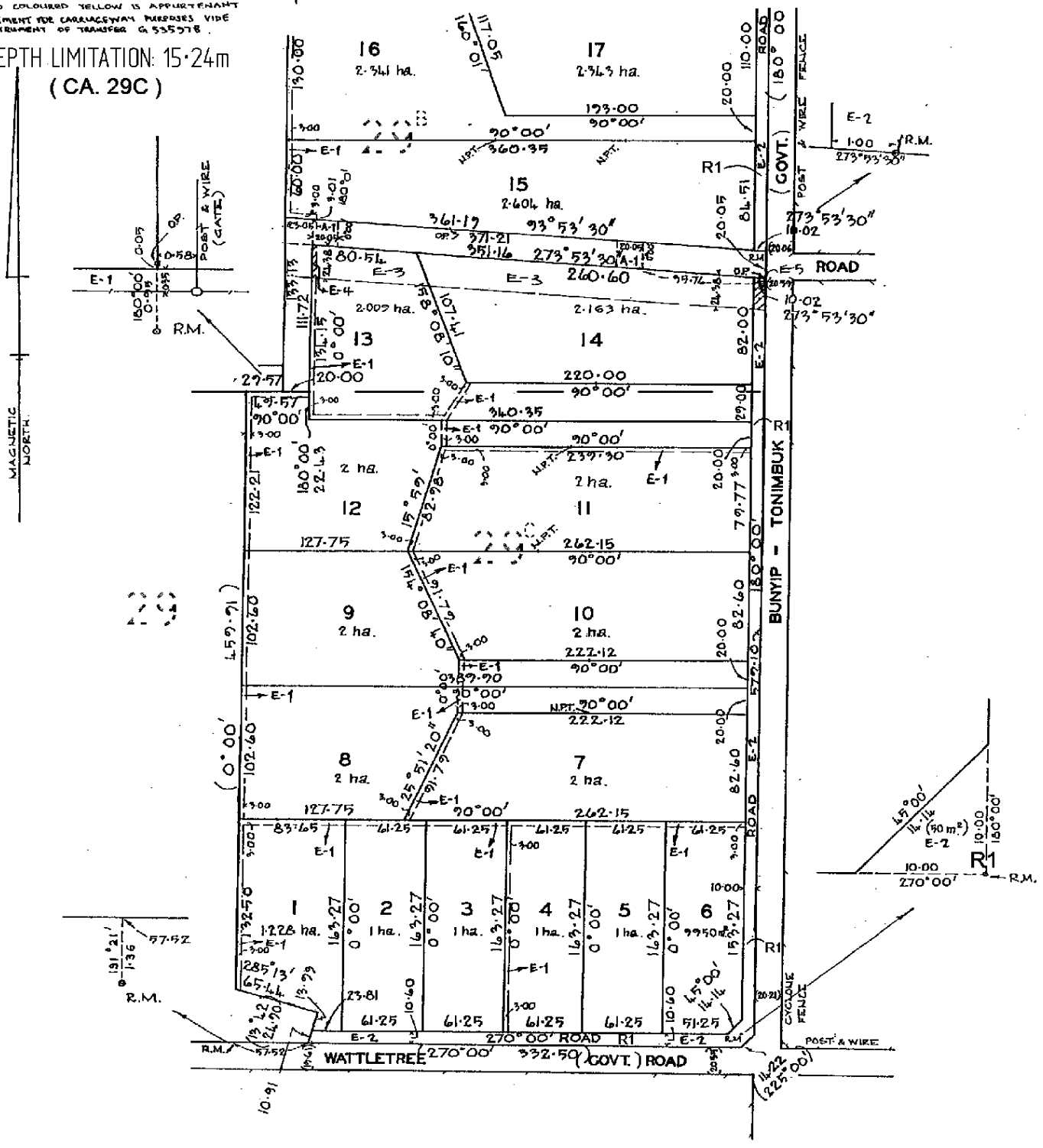
COLOUR CONVERSION
BLUE = E-1
BROWN = E-2
PURPLE = E-3
PURPLE HATCHED = E-4
BROWN HATCHED = E-5
GREEN HATCHED = E-6
YELLOW = A-1

ENCUMBRANCES & NOTATIONS

THE LAND COLOURED PURPLE, PURPLE HATCHED & BROWN HATCHED IS VICTORIAN PIPELINES COMMISSION EASEMENT CREATED BY INSTRUMENT D 369010
R.M¹ ARE 0·025 DIA. G.I. PIPES 0·50 LONG
THE LAND COLOURED GREEN HATCHED IS AN EASEMENT IN FAVOUR OF COUNCIL VIDE C 540771
LAND COLOURED YELLOW IS APPURTENANT EASEMENT FOR CARRIAGEWAY PURPOSES VIDE INSTRUMENT OF TRANSFER G 535578.

SEE SHEET 1

DEPTH LIMITATION: 15·24m
(CA. 29C)



2 SHEETS
SHEET 2

MODIFICATION TABLE

RECORD OF ALL ADDITIONS OR CHANGES TO THE PLAN

WARNING: THE IMAGE OF THIS PLAN/DOCUMENT HAS BEEN DIGITALLY AMENDED.
NO FURTHER AMENDMENTS ARE TO BE MADE TO THE ORIGINAL PLAN/DOCUMENT.

PLAN NUMBER

PS 507843W

AFFECTED LAND/PARCEL	LAND/PARCEL IDENTIFIER CREATED	MODIFICATION	DEALING NUMBER	DATE	TIME	EDITION NUMBER	ASSISTANT REGISTRAR OF TITLES
		REMOVAL OF RESERVE STATUS AS TO PART	PS507843W	17/6/03		2	REN

Land Capability Assessment Report

SITE ADDRESS: 98 Hope Street, BUNYIP VIC 3815

CLIENT: [redacted]
C/- Studio Three Design & Drafting
ron@studiothreedesign.com.au
0413 122 391

DATE: 02 April 2024

REFERENCE NUMBER: 24C7597

UPDATED:

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3. Site and Soil Assessment

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   3.3 Site Assessment Results
   3.4 Soil Key Features
   3.5 Soil Survey and Analysis
   3.6 Table 2: Risk Assessment of Soil Characteristics
   3.7 Overall Land Capability Rating

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   4.2 Effluent Management System
   4.3 Disposal System Description
   4.4 Sizing the Disposal System
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   9.2 Floor Plan
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1. Introduction

THE CONSULTANTS

Smolders Geotechnical Pty Ltd has been engaged to undertake a Land Capability Assessment (LCA) for a site at 98 Hope Street, BUNYIP VIC 3815.

The field investigation and report have been undertaken and prepared by suitably experienced staff.

I Richard Smart B.Sc (soils) PhD. undertook the site investigation and prepared this report.

Smolders Geotechnical Pty Ltd has appropriate professional indemnity insurance for this type of work.

REPORT SUMMARY

I understand that this report will accompany an application for a Septic Tank Permit to Install submitted to Strathbogie Shire Council for onsite wastewater management systems for a new 4-bedroom plus office residence on an approximately 2.34 ha plot at the above site.

This document provides information about the site and soil conditions. It also provides a detailed Land Capability Assessment for the site and includes conceptual designs for suitable onsite wastewater management systems, including recommendations for monitoring and management requirements. A number of options are provided for both the treatment system and Land Application Area (LAA).

However, the wastewater should be treated to either secondary level by a suitable EPA-approved treatment system and the effluent applied to land via pressure compensating sub-surface drip irrigation or primary treatment and effluent applied to land via conventional trench.

Council and/or Referral Authorities may require secondary treatment prior to disposal as policy regardless of the results of the Land Capability Assessment.

SITE OVERVIEW

The plot of interest on site are two grassed paddocks with slopes varying from 3.2 to7.2 degrees (up to 12.6%) in the proposed Land application Area (LAA). The site has no open water within 400 metres and the closest waterbore is over 500m distance. There is outcropping rock on site. The site is consistent with a green wedge A zone in a rural setting. The site is not within a designated water supply area (VVS)

There is sufficient land available for sustainable onsite effluent management that maintains the required buffers to protect any nearby surface waters and floodways.

I did not observe any sensitive environmental receptors within a 100m setback downslope from the recommended Land Application Area envelope.

2. Description of the Development

Site Address: 98 Hope Street, BUNYIP VIC 3815. A Land Channel Property Report provides a locality plan and indicates the location of the site of the proposed development (Appendix 9.8).

Client/Agent: Studio Three Design & Drafting

Postal Address: 1/25 Treloar Lane, Pakenham, VIC 3810

Contact: (03) 5941 1258

Council Area: Cardinia Shire Council.

Zoning: Green Wedge A Zone (GWAZ), Environmental Significance Overlay (ESO1).

Allotment Size: **2.34 ha**

Domestic Water Supply: Assume not available at site.

Anticipated Wastewater Load: Residence - Assume a residence with full water-reduction fixtures at maximum occupancy. Wastewater generation = 150 L/person/day. (source Table 4 of the EPA Code of Practice 891.4).

Availability of Sewer: The area is unsewered and highly unlikely to be sewered within the next 10-20 years, due to low development density in the area and the considerable distance from existing wastewater services.

3. Site and Soil Assessment

I undertook a site investigation on the 19th March 2024.

3.1 SITE KEY FEATURES

Table 1 summarises the key features of the site in relation to effluent management proposed for the site.

NOTE:

- The site is currently a number of grassed paddocks with existing residence and sheds;
- There is a creek approximately 450 metres to the north;
- There is no evidence of a shallow watertable or other significant constraints within the proposed LAA envelopes;
- There is outcropping rock on site;
- The site has a maximum slope of 12.6%;
- The risk of effluent transport offsite is low;
- The proposed residence and LAA are not affected by the flood overlay or land subject to inundation overlay.

Both aerial and site photographs are appended to provide current site context (Appendix ii).

3.2 Table 1: Risk Assessment of Site Characteristics

Feature	Description	Level of Constraint	Mitigation Measures
Buffer Distances	All relevant buffer distances in Table 5 of the EPA Code of Practice (2016) are achievable from the proposed effluent management area.	Minor	Locate Land Application Area appropriately.
Climate	Median annual rainfall 887.74mm (SILO Data), average annual evaporation 1236.45mm (SILO Data) (Appendix 9.5). Rainfall exceeds evaporation for April to September.	Major	Plant high evapotranspiration vegetation on LAA
Drainage	No visible signs or likelihood of dampness, even in wet season.	Minor	NN
Erosion & Landslip	No evidence of sheet or rill erosion; the erosion hazard is low. No evidence of landslip and landslip potential is low.	Nil	NN
Exposure & Aspect	Proposed Land Application Area clear with good all round aspect and good sun and wind exposure.	Minor	NN
Soil Drainage	Sandy Loam overlying Light Sandy Clay. Well drained. Water removed from the soil readily, excess flows downward. Some horizons may remain wet for several days after addition	Minor	NN

NN: Not needed

3.2 Table 1: Risk Assessment of Site Characteristics Continued:

Feature	Description	Level of Constraint	Mitigation Measures
Flooding	The proposed LAA envelope is located above the 1:100 year flood level (source WSC).	Minor	NN
Groundwater	No signs of shallow groundwater tables to 1.8m depth.	Minor	NN
Imported Fill	No imported fill material was observed anywhere on the site.	Nil	NN
Land Available for LAA	Considering all the constraints and buffers, the site has ample suitable land for land application of treated effluent.	Nil	NN
Landform	linear to convex slopes in proposed LAA's	Minor to Moderate	Lay drainage lines parrallel to contours
Rock Outcrops	<10% rock outcrops observed in paddock	Minor	Locate Land Application Area appropriately.
Run-on & Runoff	possibility of stormwater run-on depending on placement of LAA	Moderate	Incorporate cut-off drains/diversion berms upslope of irrigation field
Slope	The proposed effluent management areas have moderate slopes (maximum 12.4%).	Moderate	Reduce Drip irrigation Rate (DIR) by 20% Lay drainage lines parrallel to contours
Surface Waters	Nearest surface water is >450 metres horizontal distance from proposed LAA's.	Minor	NN
Ground Water Bore	No bore recorded within 500m of proposed Land Application Areas.	Nil	NN
Vegetation	Mixture of grasses on proposed Land Application Areas.	Nil	NN

NN: Not needed

3.3 SITE ASSESSMENT RESULTS

Based on the most constraining site features (climate, slope and Run-on) the overall land capability of the site to sustainably manage all effluent onsite is satisfactory. The proposed effluent management area is located above the 1:100 flood level and by using secondary treatment and subsurface drip irrigation there will be ample protection of surface waters and groundwater.

3.4 SOIL KEY FEATURES

The site's soils have been assessed for their suitability for onsite wastewater management by a combination of soil survey and desktop review of published soil survey information as outlined below.

The soils on site have been derived from the Tynong Granite (MapCode G239) which is the regional geological setting. Appended is a Geovic Map indicating the site location (Appendix iv).

3.5 SOIL SURVEY AND ANALYSIS

A soil survey was carried out at the site to determine suitability for application of treated effluent. Soil investigations were conducted at 4 locations in the vicinity of the proposed LAA, as shown in the Test Site Location Plan (Appendix 9.3, figure 1), using a 90mm mechanical hand auger to a maximum depth of 1.8m depth (3 x boreholes) and a hand dug pit to 700mm. This was sufficient to adequately characterise the soils as only minor variation would be expected throughout the areas of interest.

Two soil types were encountered in these investigations. Full profile descriptions are provided in the appended borelogs (Appendix vi). Samples of all discrete soil layers for each soil type were collected for subsequent laboratory analysis of pH, electrical conductivity and Emerson Aggregate Class. Table 2 describes the soil constraints in detail for each of the soils encountered.

Soils in the vicinity of the building envelope are characterised as weakly structured sandy loam topsoils overlying a strongly structured light sandy clay.

Considering the physical and chemical characteristics of the soils in these areas of the site, in my opinion either secondary treated effluent application via sub-surface drip irrigation ot primary treated effluent application via conventional trench are suitable and viable disposal systems for the proposed residence on this site

Full Laboratory data results are appended (Appendix vii).

Table 2 below provides an assessment of the physical and chemical characteristics of the soil types present.

3.6 TABLE 2: RISK ASSESSMENT OF SOIL CHARACTERISTICS

Feature	Assessment	Level of Constraint	Mitigation Measures
Cation Exchange Capacity (CEC)	4.2 – 11.0 MEQ%. No evidence of restricted plant growth. Calcium and Magnesium dominant ions on exchange sites	Minor	NN
Electrical Conductivity (ECe)	0.026 to 0.046 dS/m. No evidence of restricted plant growth on site.	Minor	NN
Emerson Aggregate Class	Topsoil: Slaking/some dispersion Class 2	Major	Soil amelioration recommended. Apply gypsum to base of any excavation. (Min 1Kg/m^2)
	Subsoil: Slaking/some dispersion Class 2	Major	Soil amelioration recommended. Apply gypsum to base of any excavation. (Min 1Kg/m^2)
pH	4.8 to 5.2 No evidence of restricted plant growth on site.	Nil	NN
Rock Fragments	Minor gravels in lower soil horizons	Minor	NN
Sodicity (ESP)	Topsoils sodic (10.1) Subsoil sodic (11.9)	Major	Soil amelioration recommended. Apply gypsum to base of any excavation. (Min 1Kg/m^2)
Sodium Absorption Ratio (SAR)	0.22 – 0.42. No evidence of restricted plant growth on site. Sodium concentrations lower than Calcium and Magnesium concentrations in tested samples.	Moderate	Soil amelioration recommended. Apply gypsum to base of any excavation. (Min 1Kg/m^2)
Soil Depth	Topsoil: Majority of proposed LAA has a minimum of 400mm depth.	Minor	NN
	Subsoil: Soil depths 1800mm (minimum). No hardpans occur. Refusal on rock in one location.	Minor	NN
Soil Permeability & Design Loading Rates	Topsoil: Sandy Loam; 5.0mm/day Drip Irrigation Rate (DIR) for sub-surface drip irrigation (Code, 2016). Reduced by 20% due to the moderate slopes (AS/NZS 1547:2012).	Minor	2ry Treatment Sub-surface Drip Irrigation
	Subsoil: Light Sandy Clay; DLR 5.0mm/day for conventional trench. Constant head permeameter tests gave Ksat readings of >0.6 m/day readings are typical of the permeability of weakly structured loam soils.	Minor	2ry Treatment Sub-surface Drip Irrigation
Soil Texture & Structure	Topsoil (400mm): Sandy Loam (Category 2a)	Minor	NN
	Subsoil (>1800mm): strongly structured light Clay (Category 5a) in accordance with AS/NZS/NZS 1547:2012	Major	2ry Treatment Sub-surface Drip Irrigation
Water table Depth	Groundwater not encountered. Deepest borehole terminated at 1.8m.	Minor	NN

NN: Not needed

3.7 OVERALL LAND CAPABILITY RATING

For the soil in the proposed land application area (Sandy Loam with underlying Light Clay), no features present a moderate or major constraint that cannot be mitigated.

Based on the results of the site and soil assessment tabled above and provided in the Appendices, the overall land capability of the proposed effluent management area is not constrained **as long as either disposal of secondary treated effluent by pressure compensating sub-surface drip irrigation or disposal of primary treated effluent via conventional trench is used.**

4. Waste Water Management System

The following sections provide an overview of a suitable onsite wastewater management system, with sizing and design considerations and justification for its selection. Detailed design for the system should be undertaken at the time of the building application and submitted to Council.

4.1 TREATMENT SYSTEM

The secondary effluent quality required is:

- BOD < 20 mg/L;
- SS < 30 mg/L;

Refer to the EPA website for the list of approved options that are available. Any of the secondary treatment system options are capable of achieving the desired level of performance. The property owner has the responsibility for the final selection of the secondary treatment system and must include the details of it in the Septic Tank Permit to Install application form for Council approval.

4.2 EFFLUENT MANAGEMENT SYSTEM

A range of possible land application systems have been considered, such as absorption trenches, evapotranspiration/absorption (ETA) beds, wick trenches, subsurface irrigation and mounds.

The nominated and preferred system is pressure compensating subsurface irrigation. Subsurface irrigation will provide even and widespread dispersal of the treated effluent within the root-zone of plants. This system will provide beneficial reuse of effluent, which is desirable given that the site is possibly not serviced by town water. It will also ensure that the risk of effluent being transported off-site will be negligible.

The use of a conventional trench will provide a smaller footprint and a more economical solution.

Gravitational flow of effluent to some areas on site is possible, however; the use of a pump system is recommended for both even spread of effluent to the system and regular dosing.

4.3 DESCRIPTION OF THE IRRIGATION SYSTEM

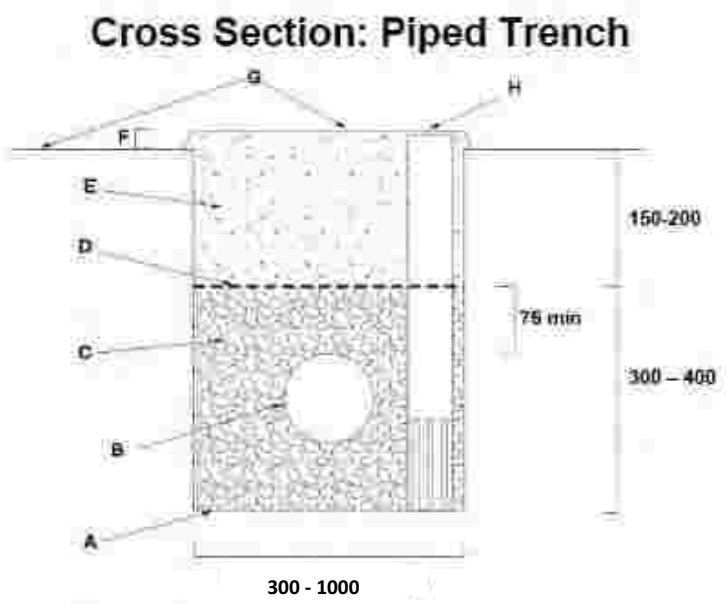
A detailed irrigation system design is beyond the scope of this report; however, a general description of subsurface irrigation is provided here for the information of the client and Council.

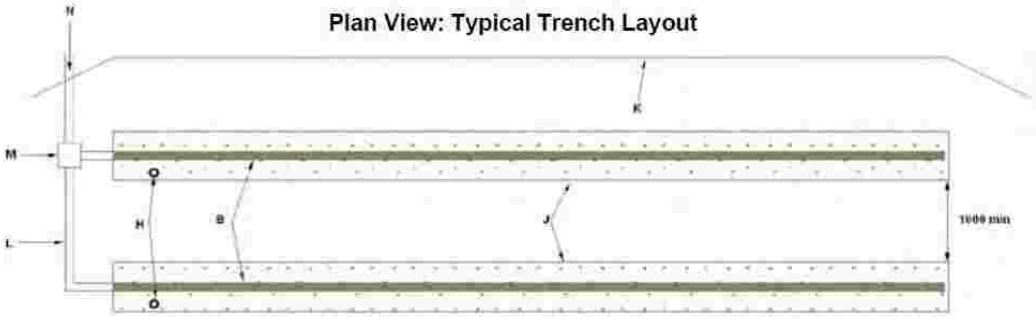
SUB-SURFACE DRIP IRRIGATION

Subsurface irrigation comprises a network of drip-irrigation lines that are specially designed for use with wastewater. The pipe contains pressure compensating emitters (drippers) that employ a biocide to prevent build-up of slimes and inhibit root penetration. The lateral pipes are usually 1.0m apart for Sandy loams, installed parallel along the contour. Installation depth is 150mm to 200mm in accordance with AS/NZS 1547:2012. It is critical that the irrigation pump be sized properly to ensure adequate pressure and delivery rate to the irrigation network.

A filter is installed in the main line to remove fine particulates that could block the emitters. This must be cleaned regularly (typically monthly) following manufacturer's instructions. Vacuum breakers should be installed at the high point/s in the system to prevent air and soil being sucked back into the drippers when the pump shuts off. Flushing valves are an important component and allow periodic flushing of the lines, which should be done at six monthly intervals. Flush water can be either returned to the treatment system, or should be released to a small dedicated gravel-based trench.

CONVENTIONAL TRENCH





Absorption Trench
A - The base of the trench **must be level** to ensure even distribution of effluent.
B - 90 – 100 mm slotted PVC pipe.
C - 20 – 40 mm distribution aggregate
D - Geotextile filter cloth
E - Clean local or imported topsoil (sandy loam to clay loam)
F - Allowance for settling after backfilling – soil over trenches should be mounded to encourage runoff of rainfall onto the trenches and minimise any rainfall infiltration into the trenches.
G - Grass must be established across the construction area asap. Trench surface must be slightly mounded
H - Inspection port on downhill side of trench. Made from 50 mm PVC pipe with perforations in the aggregate level of the trench
J - Trench dimensions are an example only. The basal area of the LAA must be determined according to the procedures set out in AS/NZS 1547:2012. The location and orientation of the area should be based on this site and soil assessment. It is essential that the effluent is distributed evenly to all trench units on a daily basis.
K - Upslope stormwater diversion drains
L - 90 – 100 mm PVC gravity dosing pipe
M - Gravity splitter box to distribute effluent evenly between two to four separate trenches. Should also be used to evenly dose multiple pipework within a single trench
N – Gravity of pump fed effluent from treatment system.

All trenching used to install the pipes must be backfilled properly to prevent preferential subsurface flows along trench lines. Irrigation areas must not be subject to high foot traffic movement, and vehicles and livestock must not have access to the area otherwise compaction around emitters can lead to premature system failure.

4.4 SIZING THE IRRIGATION SYSTEM

Residential Site

Secondary Treatment Via Pressure Compensating Sub-Surface Drip Irrigation

4-bedroom dwelling plus office – assume six possible occupants.

To determine the necessary size of the irrigation area, detailed water balance modelling has been considered using the Excel water balance tool in the Victorian Land Capability Assessment Framework (2014) and the EPA Code (2016). The final sizing of the irrigation system has been undertaken adopting a DIR from Table 9 of the EPA code (2016). We have used a DLR/DIR of 5mm/d

(Table 9. EPA 2016) reduced by 20% to take into account the Sandy Loam topsoils and moderate slopes within the proposed LAA. The minimum area required using the detailed water balance method is **480m²**. The spreadsheet calculations are shown below on p.14.

Primary Treatment Via Conventional Trench. 1-bedroom residence. Assume two residents.

To determine the necessary size of the irrigation area, detailed water balance modelling has been considered using the Excel water balance tool in the Victorian Land Capability Assessment Framework (2014) and the EPA Code (2016). The final sizing of the irrigation system has been undertaken adopting a DLR from Table 9 of the EPA code (2016). We have used a DLR of 5.0mm/d (Table 9. EPA 2016) to take into account the light sandy clay subsoils and sodic nature of the soils within the proposed LAA. The minimum area required using the detailed water balance method is **180m² of trench.** The spreadsheet calculations are shown below on p.15.

SILO climate data (rainfall and evaporation) has been used in the modelling. (See Appendix iii for complete data).

As well as water balance modelling a preliminary nutrient balance has been considered to check that the Land Application Area is of sufficient size to ensure nutrients are assimilated by the soils and vegetation. It is acknowledged that a proportion of nitrogen will be retained in the soil through processes such as mineralisation and volatilisation.

Reference: Victoria Land Capability Assessment Framework Jan 2014 (app 2).

NOTE: Soil has a high PRI (phosphorus retention index) in clayey soils. Phosphorus is readily removed under these circumstances from wastewater fixation in clayey soil by the action of adsorption. Phosphate in dispersed effluent is lost within a few centimetres of the soil.

This leaves nitrogen (N) as the limiting factor in this proposed development.

EPA performance criteria for Aerated Wastewater Treatment Systems (AWTS) is TKN 25mg/L. Adopt TKN 25mg/L as design criteria. Calculations shown on page 16.

Minimum area required for N uptake for a 12-bedroom dwelling 12 occupants = **299m² (say 300m²).**

Calculations shown on page 17.

Therefore, adopt either 480m² as minimal area required for sub-surface drip irrigation or 180m² as the minimal area for a conventional trench for a 4-bedroom residence with office with a possible 6 occupants.

The client should note that Council may consider a study or other utility room as a potential bedroom.

I am of the opinion that the area required for nitrogen assimilation and phosphorus can be met by the above sized Land Application Area.

Summary and Discussion

It is worth noting that modeling includes several significant factors of conservatism:

- Hydraulic load. This assumes a maximum occupancy of the residence at a rate of 150 Litres/person/day.

  It is likely that the actual occupancy and water usage will be less than this;

- From the nutrient balances, in the absence of site-specific data very conservative estimates of crop nutrient uptake rates and total nitrogen lost to soil processes are considered.

Victorian Land Capability Assessment Framework

Please read the attached notes before using this spreadsheet

Irrigation area sizing using Nominated Area Water Balance for Zero Storage

Site Address:	98 Hope Street, BUNYIP, VIC		
Date:		**Assessor:**	

INPUT DATA	DRIP IRRIGATION			
Design Wastewater Flow	Q	900	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013)
Design Irrigation Rate	DIR	4.0	mm/day	Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013)
Nominated Land Application Area	L	480	m^2	[1]
Crop Factor	C	0.6-0.8	unitless	Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type[2]
Rainfall Runoff Factor	RF	1.0	untiless	Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff
Mean Monthly Rainfall Data		SILO Data		BoM Station and number
Mean Monthly Pan Evaporation Data		SILO Data		BoM Station and number

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R		mm/month	57.66	47.04	54.56	76.8	93	85.5	66.65	89.9	85.5	85.56	78.3	67.27	**887.74**
Evaporation	E		mm/month	187.55	149.8	125.24	75.9	52.08	36.3	44.33	58.59	81.6	114.08	138	172.98	**1236.45**
Crop Factor	C		unitless	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	150	120	88	53	31	22	27	35	57	91	110	138	**922.626**
Percolation	B	DIRxD	mm/month	124.0	112	124.0	120.0	124.0	120.0	124.0	124.0	120.0	124.0	120.0	124.0	**1460.0**
Outputs		ET+B	mm/month	274.0	231.84	211.7	173.1	155.2	141.8	150.6	159.2	177.1	215.3	230.4	262.4	**2382.6**
INPUTS																
Retained Rainfall	RR	RxRF	mm/month	57.66	47.04	54.56	76.8	93	85.5	66.65	89.9	85.5	85.56	78.3	67.27	**887.74**
Applied Effluent	W	(QxD)/L	mm/month	58.1	52.5	58.1	56.3	58.1	56.3	58.1	58.1	56.3	58.1	56.3	58.1	**684.4**
Inputs		RR+W	mm/month	115.8	99.5	112.7	133.1	151.1	141.8	124.8	148.0	141.8	143.7	134.6	125.4	**1572.1**
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-158.3	-132.3	-99.0	-40.1	-4.1	0.0	-25.8	-11.1	-35.4	-71.6	-95.9	-137.0	
Cumulative Storage	M		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	
Maximum Storage for Nominated Area	N		mm	0.00												
	V	NxL	L	0												
LAND AREA REQUIRED FOR ZERO STORAGE			m^2	129	136	178	280	448	480	332	403	295	215	178	143	

MINIMUM AREA REQUIRED FOR ZERO STORAGE: 480.0 m^2

CELLS

	Please enter data in blue cells
XX	Red cells are automatically populated by the spreadsheet
XX	Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS

NOTES

[1] This value should be the largest of the following: land application area required based on the most limiting nutrient balance or minimum area required for zero storage

[2] Values selected are suitable for pasture grass in Victoria

Victorian Land Capability Assessment Framework

Trench & Bed Sizing

FORMULA FOR TRENCH AND BED SIZING				
L = Q/DLR x W			From AS/NZS 1547:2012	
Where:	Units			
L = Trench or bed length	m		Total trench or bed length required	
Q = Design Wastewater Flow	L/day		Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013)	
DLR = Design Loading Rate	mm/day		Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013)	
W = Trench or bed width	m		As selected by designer/installer	
INPUT DATA				
Design Wastewater Flow	Q	900	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013
Design Loading Rate	DLR	5.0	mm/day	Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013
Trench basal area required	B	180.0	m^2	
Selected trench or bed width	W	0.5	m	As selected by designer/installer
OUTPUT				
Required trench or bed lengt	L	360.0	m	
CELLS				
		Please enter data in blue cells		
	XX	Red cells are automatically populated by the spreadsheet		
	XX	Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS		

Victorian Land Capability Assessment Framework

Please read the attached notes before using this spreadsheet

Nitrogen Balance

Site Address:	**98 Hope Street, BUNYIP, VIC**

SUMMARY - LAND APPLICATION AREA REQUIRED BASED NITROGEN BALANCE	**299**	m^2

INPUT DATA[1]

Wastewater Loading			**Nutrient Crop Uptake**					
Hydraulic Load	900	L/day	Crop N Uptake	220	kg/ha/yr	which equals	60.27	$mg/m^2/day$
Effluent N Concentration	25	mg/L						
% N Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal						
Total N Loss to Soil	4500	mg/day						
Remaining N Load after soil loss	18000	mg/day						

NITROGEN BALANCE BASED ON ANNUAL CROP UPTAKE RATES

Minimum Area required with zero buffer			**Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)**		
Nitrogen	299	m^2	Nominated LAA Size	480	m^2
			Predicted N Export from LAA	-3.99	kg/year
			Minimum Buffer Required for excess nutrient	0	m^2

CELLS

	Please enter data in blue cells
XX	Red cells are automatically populated by the spreadsheet
XX	Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS

NOTES

[1] Model sensitivity to input parameters will affect the accuracy of the result obtained. Where possible site specific data should be used. Otherwise data should be obtained from a reliable source such as:

- *EPA Guidelines for Effluent Irrigation*
- *Appropriate Peer Reviewed Papers*
- *Environment and Health Protection Guidelines: Onsite Sewage Management for Single Households*
- *USEPA Onsite Systems Manual*

4.5 SITING AND CONFIGURATION OF THE LAND APPLICATION AREA

Considering the allotment's size there is ample space for the location of a subsurface drip irrigation system on the allotment.

Whilst there is ample area for application of effluent, it is important that buffer distances be adhered to. It is important to note that buffers are measured as the overland flow path for run-off water from the effluent disposal area.

As a result of our visit, I can confirm that either the sub-surface drip irrigation or conventional trench systems can be placed in the nominated LAA envelope delineated on the provided site plans.

The Test Site Location Plan (Appendix 9.3) and figure 1 (p. 18) show the area of land that has been investigated and is considered suitable for effluent management and maintains the relevant buffers.

Final placement and configuration of the irrigation system will be determined by the client and/or system installer, provided it remains within the allotment boundaries and satisfies the minimum area required according to the water balance.

It is recommended that the owner consult an irrigation expert familiar with effluent irrigation equipment to design the system, and an appropriately registered plumbing/drainage practitioner to install the system. The irrigation plan must ensure even application of effluent throughout the entire irrigation area.

Table summarizing LAA requirements for the recommended system.

SYSTEM TYPE	AREA REQUIRED M^2 (INCLUDING AREA BETWEEN LINES/TRENCHES)	MAXIMUM LENGTH OF INDIVIDUAL IRRIGATION LINES (METRES)	SPACING BETWEEN INDIVIDUAL TRENCH/BEDS (METRES)
SUB-SURFACE DRIP IRRIGATION	**4-bedroom residence + office** **480m^2**	**60***	**1**
CONVENTIONAL TRENCH	**4-bedroom residence + office** **330m^2** **(assuming 30 metre trenches of 0.5 metre width, with one metre spacing between trenches**)**	**30**	**1**

*Length of individual lateral lines may vary depending on the make and diameter of the line (read manufacturers guidelines), lines should be of equal length to ensure even distribution of effluent.

**Trench widths may vary dependent on installer.

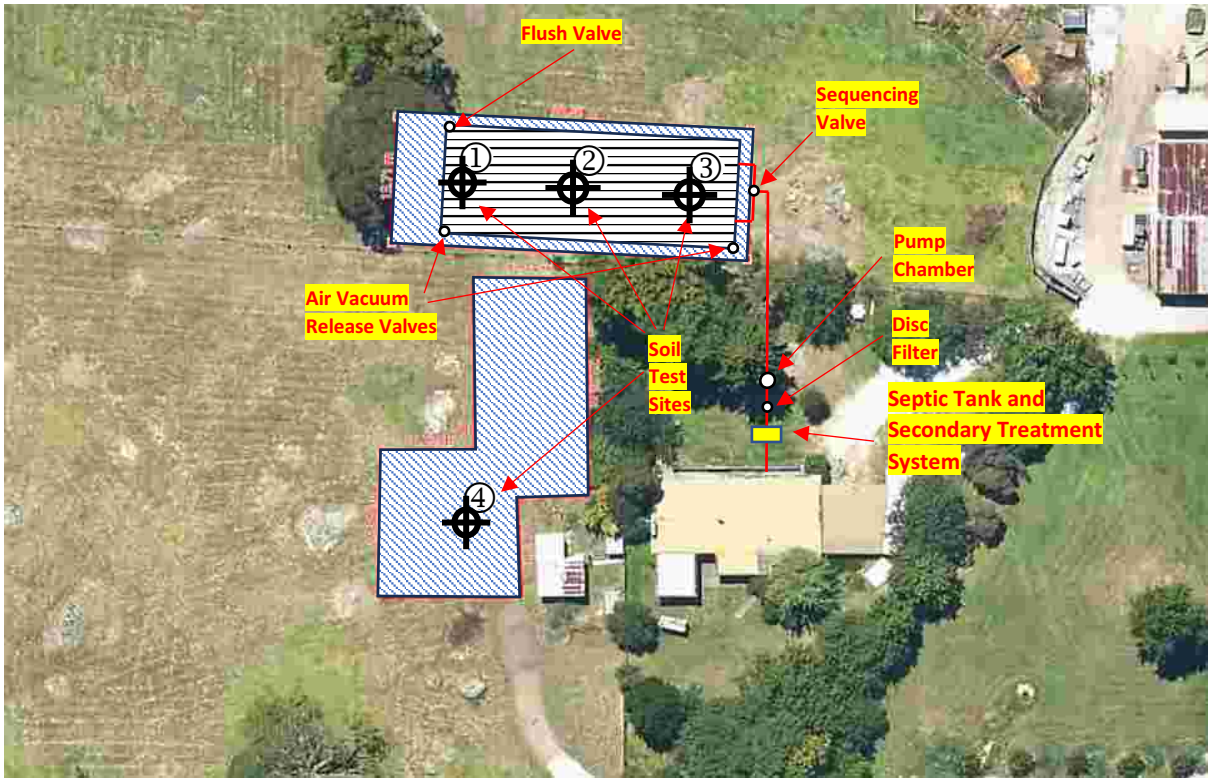


Figure 1. Test Site Location Plan for 4-bedroom residence plus office with 6 possible occupants, showing an example of the location of a sub-surface, pressure compensating, drip irrigation system with secondary treated effluent within the recommended irrigation area.

Example of Placement of Sub-surface Drip Irrigation system Within Recommended Irrigation Area

13 irrigation lines of 37m length and 1m apart, Parallel to contours, separated into two or more groups via a sequencing valve for secondary treated effluent.

1.5m Min buffer to upslope boundary, accommodation, or access track

3m Min buffer to downslope boundary, accommodation, or access track

30m Min buffer to non-potable surface waters and drainage lines

300m Min buffer to potable dams, lake or reservoir or 100m min to potable waterways

Recommended Irrigation Areas

Possible Land Application Area

4.6 DISPOSAL SYSTEM DESCRIPTION

Disposal design should be adopted from Irrigation System designs within AS/NZS 1547:2012.

4.7 BUFFER DISTANCES

Setback buffer distances from effluent land application areas and treatment systems are required to help prevent human contact, maintain public amenity and protect sensitive environments.

The relevant buffer distances for this site, taken from Table 5 of the Code (2016) are:

- 20 metres from groundwater bores.
- 30 metres from non-potable watercourses/dams/reservoirs.
- 100 metres from potable waterways
- 300 metres from any dam, lake or reservoir (potable water supply)
- 3 metres if area up-gradient and 1.5 metres if area down-gradient of property boundaries, swimming pools and buildings (conservative values for secondary effluent).

These are conservative values for secondary effluent.

All buffer distances are achievable.

4.8 INSTALLATION OF THE IRRIGATION SYSTEM

Installation of the irrigation systems must be carried out by a suitably qualified, licensed plumber or drainer experienced with effluent irrigation systems.

To ensure even distribution of effluent, it is essential that the pump capacity is adequate for the size and configuration of the irrigation system, taking into account head and friction losses due to changes in elevation, pipes, valves, fittings etc. An additional, and recommended, optional measure to achieve even coverage is to divide the irrigation area into two or more separate sub-zones of equal size; dosed alternately using an automatic indexing or sequencing valve.

The irrigation area and surrounding area must be vegetated or revegetated immediately following installation of the system, preferably with turf. The area should be fenced or otherwise isolated (such as by landscaping), to prevent vehicle and stock access; and signs should be erected to inform householders and visitors of the extent of the effluent irrigation area and to limit their access and impact on the area. The irrigation lines/trenches should be installed parallel to the contours and be approximately horizontal.

Stormwater may be considered to be of concern for the proposed LAA, depending on placement. Hence, upslope diversion berms or cut-off drains should be constructed during installation of the system. Stormwater from roofs and other impervious surfaces must not be disposed of into the wastewater treatment system or onto the effluent management system.

5. Monitoring, Operation and Maintenance

Maintenance is to be carried out in accordance with the EPA Certificate of Approval of the selected secondary treatment system and Council's permit conditions. The treatment system will only function adequately if appropriately and regularly maintained.

To ensure the treatment system functions adequately, residents must:

- Have a suitably qualified maintenance contractor service the secondary treatment system at the frequency required by Council under the permit to use;
- Use low phosporous household cleaning products that are suitable for septic tanks;
- Sink strainer to be used to catch food particles
- a front-loading washing machine be used when possible;
- scrape all dishes to remove grease and fats before washing;
- do not install a garbage grinder waste disposal system;
- do not allow sanitary napkins or hygiene products to enter the system;
- do not dispose of aggressive toxic cleaning agents in the system;
- do not dispose of any solvents or paints in the system;
- do not allow bleach, whiteners, nappy soakers, spot removers or disinfectants to enter the system;
- Keep as much fat and oil out of the system as possible; and
- Conserve water (AAA rated fixtures and appliances are recommended).

To ensure the land application system functions adequately, residents must:

- Regularly harvest (mow) vegetation within the LAA and remove this to maximise uptake of water and nutrients;
- Dose the system regularly and evenly
- Monitor and maintain the system following the manufacturer's recommendations, including flushing the irrigation lines;
- Regularly clean in-line filters;
- Not erect any structures and paths over the LAA;
- Avoid vehicle and livestock access to the LAA, to prevent compaction and damage; and
- All stormwater runoff from the proposed dwelling, driveway etc. must be drained to a legal point of discharge, and not be allowed to run onto the effluent field.

6. Stormwater Management

As mentioned above, stormwater run-on may be considered to be a concern in this case. The construction and maintenance of diversion berms or cut-off drains will provide a precaution against the possible flow of surface water on to the Land Application Area. Roof stormwater must not be disposed in the Land Application Area.

7. Conclusions

As a result of my investigations I conclude that sustainable onsite wastewater management is feasible with appropriate mitigation measures as outlined for a future residential development on this allotment.

Specifically, I recommend the following:

- Secondary treatment of wastewater by an EPA-accredited treatment system for use with a pressure compensating sub-surface drip irrigation or primary treatment for use with a conventional trench;
- Location of Land Application Area within the envelope nominated.
- Land application of treated effluent to a suitably sized subsurface drip irrigation area (which may be subdivided into two or more evenly sized zones using an indexing or sequencing valve) or conventional trench;
- Application of Gypsum to the base of all trenches prior to installation of the system, or application of 1 litre liquid gypsum to pump well biannually;
- Installation of water saving fixtures and appliances in the new residence to reduce the effluent load;
- Use of low phosphorus and low sodium (liquid) detergents to improve effluent quality and maintain soil properties for growing plants; and
- Operation and management of the treatment and disposal system in accordance with manufacturer's recommendations, the EPA Certificate of Approval, the EPA Code of Practice (2016) and the recommendations made in this report.

For and on behalf of SMOLDERS GEOTECHNCIAL PTY. LTD.

[redacted]

B.Sc. (Soils) PhD.

8. References

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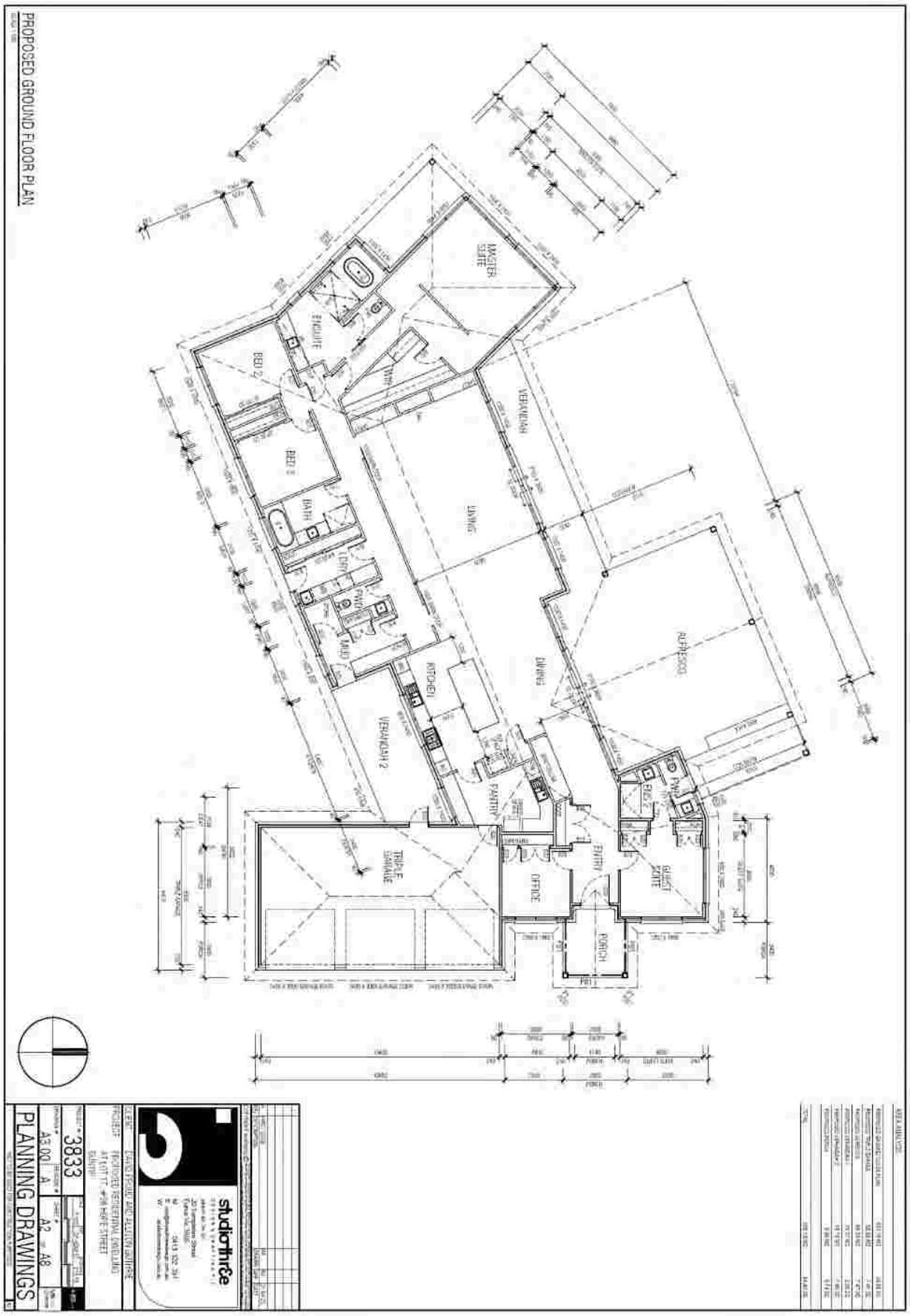
9. Appendices

9.1 Aerial and Site Photographs
9.2 Floor Plan
9.3 Test Site Location Plan
9.4 Borelog Descriptions
9.5 Bureau of Meteorology Climate Report
9.6 Analytical Laboratory Results
9.7 Geological Map
9.8 Land Channel Property Report

9.1 Aerial and Site Photographs

9.2 Floor Plan



9.3 Test Sites and LAA Location Plans

Red line indicates recommended irrigation areas

① **Soil Testing Locations**

9.4 Borelog Description

PROJECT ADDRESS: 98 Hope Street, BUNYIP, VIC
REFERENCE NUMBER: 24C7597

FIELD WORK DATE: 19/03/24
SUPERVISING GEOLOGIST: [redacted]

TEST SITE 1 EXCAVATION METHOD: HAND AUGER				TEST SITE 2 EXCAVATION METHOD: HAND DUG PIT				TEST SITE 3 EXCAVATION METHOD: HAND AUGER			
Depth mm	SOIL PROFILE	Fill	CAT	Depth mm	SOIL PROFILE	Fill	CAT	Depth mm	SOIL PROFILE	Fill	CAT
100	Sandy Loam (Sandy Silt): brown, becoming			100	Sandy Loam (Sandy Silt): brown, becoming			100	Sandy Loam (Sandy Silt): brown, becoming		
200	Paler with depth, dry, firm		2a	200	Paler with depth, dry, firm		2a	200	Paler with depth, dry, firm		2a
300	Weakly structured			300	Weakly structured			300	Weakly structured		
400	Ribbon Length 15mm			400	Ribbon Length 15mm			400	Ribbon Length 15mm		
00	Light Sandy Clay: brown/yellow, trace gravel,			500				500			
600	slightly moist, very stiff		5a	600	Light Sandy Clay: brown/yellow, trace gravel,			600			
700	Strongly structured			700	slightly moist, very stiff		5a	700	Light Sandy Clay: brown/yellow, trace gravel,		
800	Ribbon length = 75mm				Strongly structured			800	slightly moist, very stiff		5a
900					Ribbon length = 75mm			900	Strongly structured		
1000				1000	END OF HOLE NO REFUSAL			1000	Ribbon length = 75mm		
1100				1100				1100			
1200				1200				1200			
1300				1300				1300			
1400				1400				1400			
1500				1500				1500			
1600				1600				1600			
1700				1700				1700			
1800				1800				1800			
1900	END OF HOLE NO REFUSAL			1900				1900	END OF HOLE NO REFUSAL		
2000				2000				2000			
2100				2100				2100			
2200				2200				2200			
2300				2300				2300			
2400				2400				2400			
2500				2500				2500			
2600				2600				2600			
2700				2700				2700			
2800				2800				2800			
2900				2900				2900			
3000				3000				3000			

SMOLDERS GEOTECHNICAL

SMOLDERS GEOTECHNICAL PTY. LTD.

PROJECT ADDRESS: 98 Hope Street, BUNYIP, VIC
REFERENCE NUMBER: 24C7597

FIELD WORK DATE: 19/03/24
SUPERVISING GEOLOGIST: [redacted]

TEST SITE 4 EXCAVATION METHOD: HAND AUGER				**TEST SITE 5 EXCAVATION METHOD:**				**TEST SITE 6 EXCAVATION METHOD:**			
Depth mm	SOIL PROFILE	Fill	CAT	Depth mm	SOIL PROFILE	Fill	CAT	Depth mm	SOIL PROFILE	Fill	CAT
100	**Sandy Loam (Sandy Silt): brown, becoming**			100				100			
200	**Paler with depth, dry, firm**		**2a**	200				200			
300	**Weakly structured**			300				300			
400	**Ribbon Length 15mm**			400				400			
00	**Light Sandy Clay: brown/yellow, trace gravel,**			500				500			
600	**slightly moist, very stiff**		**5a**	600				600			
700	**Strongly structured**			700				700			
	Ribbon length = 75mm			800				800			
800	**END OF HOLE REFUSAL ON ROCK**			900				900			
1000				1000				1000			
1100				1100				1100			
1200				1200				1200			
1300				1300				1300			
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2700				2700				2700			
2800				2800				2800			
2900				2900				2900			
3000				3000				3000			

9.5 Bureau of Meteorology Climate Report

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	
	31	28	31	30	31	30	31	31	30	31	30	31	
SILO MEDIAN DAILY PPT	1.86	1.68	1.76	2.56	3	2.85	2.15	2.9	2.85	2.76	2.61	2.17	29.15
SILO MEDIAN MONTHLY PPT	57.66	47.04	54.56	76.8	93	85.5	66.65	89.9	85.5	85.56	78.3	67.27	887.74
SILO DAILY EVAPORATION	6.05	5.35	4.04	2.53	1.68	1.21	1.43	1.89	2.72	3.68	4.6	5.58	40.76
SILO MONTHLY EVAPORATION	187.55	149.8	125.24	75.9	52.08	36.3	44.33	58.59	81.6	114.08	138	172.98	1236.45

9.6 Laboratory Results

Groundswell Batch # : GS24151

Groundswell Laboratories
" A New Force in Analytical Testing"

CERTIFICATE OF ANALYSIS

Client Name :	Smolders Geotechnical Pty Ltd	Groundswell Batch # :	GS24151
Client Address :	PO Box 7299, Upper Ferntree Gully, VIC 3156	Project Name :	98 Hope Street, Bunyip VIC
Client Mobile # :	0488 773 060	Project # :	24C7597
		Date Samples Received :	21/03/2024
Project Manager :	[redacted]	Sample Matrix :	Soil
E-mail :		Sample # Submitted :	2
Project Sample Manager :		Groundswell Quote # :	Not Applicable
E-mail :		Date CofA Issued :	24/03/2024

[redacted]

paul@groundswelllabs.com.au

Reference AF56.Rev4 Date Issued : 19/5/2014

Groundswell Batch # : GS24151

Soil Analysis Results

Client Sample ID			Sample 1	Sample 2			
Laboratory Sample Number			GS24151-1	GS24151-2			
Date Sampled			19/03/2024	19/03/2024			
Analytes	Units	LOR					
pH	pH Units	0.1	4.8	5.2			
Electrical Conductivity @ 25°C	dS/m	0.005	0.026	0.046			
Exchangeable Calcium	mg/Kg	1	424	781			
Exchangeable Magnesium	mg/Kg	1	194	694			
Exchangeable Potassium	mg/Kg	1	33	40			
Exchangeable Sodium	mg/Kg	1	98	301			
CEC	MEQ%	0.1	4.2	11.0			
ESP	%	0.1	10.1	11.9			
Sodicity Rating	---	---	Sodic	Sodic			
SAR		0.01	0.22	0.42			

Reference AFS6.Rev4 Date Issued : 19/5/2014

Comments :

1- pH & electrical conductivity determined & reported on a 1:5 soil:water extraction

2- CEC determined by soil chemical method 15B1 'Exchangeable bases and cation exchange capacity - 1M amonium chloride at pH 7.0, no pre-treatment for soluble salts'

3- ESP, sodicity rating & SAR determined by calculation using the exchangeable cation results

Groundswell Laboratories Pty Ltd ABN 24 133 248 923
116 Moray Street, South Melbourne, Victoria, 3205 Ph (03) 8669 1450 Fax (03) 8669 1451 E-mail : paul@groundswelllabs.com.au

Groundswell Batch # : GS24151

Soil Analysis Results

Client Sample ID			Sample 1	Sample 1		Sample 2	Sample 2
Laboratory Sample Number			GS24151-1	GS24151-1		GS24151-2	GS24151-2
Date Sampled			19/03/2024	19/03/2024		19/03/2024	19/03/2024
Analytes	Units	LOR					
Sample Type	---	---	Air Dried Aggregates	Re-moulded Ped		Air Dried Aggregates	Re-moulded Ped
Emerson Aggregate Class - 2 Hours	---	---	No Slaking / No Swelling	Slaking / Some Dispersion		Slaking / Some Dispersion	Slaking / Some Dispersion
Emerson Class Number	---	---	Class 8	Class 2		Class 2	Class 2
Emerson Aggregate Class - 20 Hours	---	---	No Slaking / No Swelling	Slaking / Some Dispersion		Slaking / Some Dispersion	Slaking / Some Dispersion
Emerson Class Number	---	---	Class 8	Class 2		Class 2	Class 2
Addition of 1M HCl	---	---	---	---		---	---
1:5 Soil:Water 10 minute extraction	---	---	---	---		---	---
Emerson Class Number	---	---	---	---		---	---

Reference AFSE.Rev3 Date Issued : 19/5/2014

Comments :

1- Classification conducted in accordance with Emmerson 'A clasification of soil aggregates based on their coherence in water', 1967 & AS1289.C8.1-1980

Groundswell Laboratories Pty Ltd ABN 24 133 248 923
116 Moray Street, South Melbourne, Victoria, 3205 Ph (03) 8669 1450 Fax (03) 8669 1451 E-mail : paul@groundswelllabs.com.au

Groundswell Batch # : GS24151

Inorganics Quality Control Report

Client Sample ID							
Laboratory Sample Number							
QC Parameter			Method Blank		Laboratory Control Standard (LCS)		
			Method Blank	Within GSL Acceptance Criteria (<LOR) (Pass/Fail)	LCS (%R)	LCS (%R) Acceptance Criteria	Within GSL Acceptance Criteria (Pass/Fail)
Analyte	Units	LOR					
pH	pH units	0.1	NA	NA	9.89	10.00 ± 0.1 pH Unit	Pass
Conductivity	dS/m	0.005	<0.005	Pass	95%	80-120%	Pass
Exchangeable Calcium	mg/Kg	1	<1	Pass	101%	70-130%	Pass
Exchangeable Magnesium	mg/Kg	1	<1	Pass	102%	70-130%	Pass
Exchangeable Potassium	mg/Kg	1	<1	Pass	98%	70-130%	Pass
Exchangeable Sodium	mg/Kg	1	<1	Pass	102%	70-130%	Pass
CEC	MEQ%	0.1	NA	NA	NA	NA	NA
ESP	%	0.1	NA	NA	NA	NA	NA
SAR	---	0.01	NA	NA	NA	NA	NA

Reference AES6.Rev4 Date Issued : 3/11/2010

Comments :

1- Exchangeable cations LCS values based on independent water standards

2- NA = Not Applicable

Groundswell Laboratories Pty Ltd ABN 24 133 248 923
116 Moray Street, South Melbourne, Victoria, 3205 Ph (03) 8669 1450 Fax (03) 8669 1451 E-mail : admin@groundswelllabs.com.au

Smolders Geotechnical Pty. Ltd.
p: 0488 773 060
e: enquiries@smoldersgeotechnical.com.au
p: PO Box 7299, Upper Ferntree Gully, VIC 3156

DATE: 20 March 2024

To: Groundswell Laboratories
116 Moray Street
South Melbourne, VIC 3205

SITE: 98 Hope Street,
Bunyip, VIC

REF No.: 24C7597

Please perform the following soil tests:

i Emerson Aggregate Class
ii Cation Exchange Capacity
iii Electrical Conductivity (EC)
iv pH
v Sodicity – Exchangeable Sodium Percentage (ESP)
iv Sodium Absorption Ratio (SAR)

For the following Two (2) sample from One (1) location:

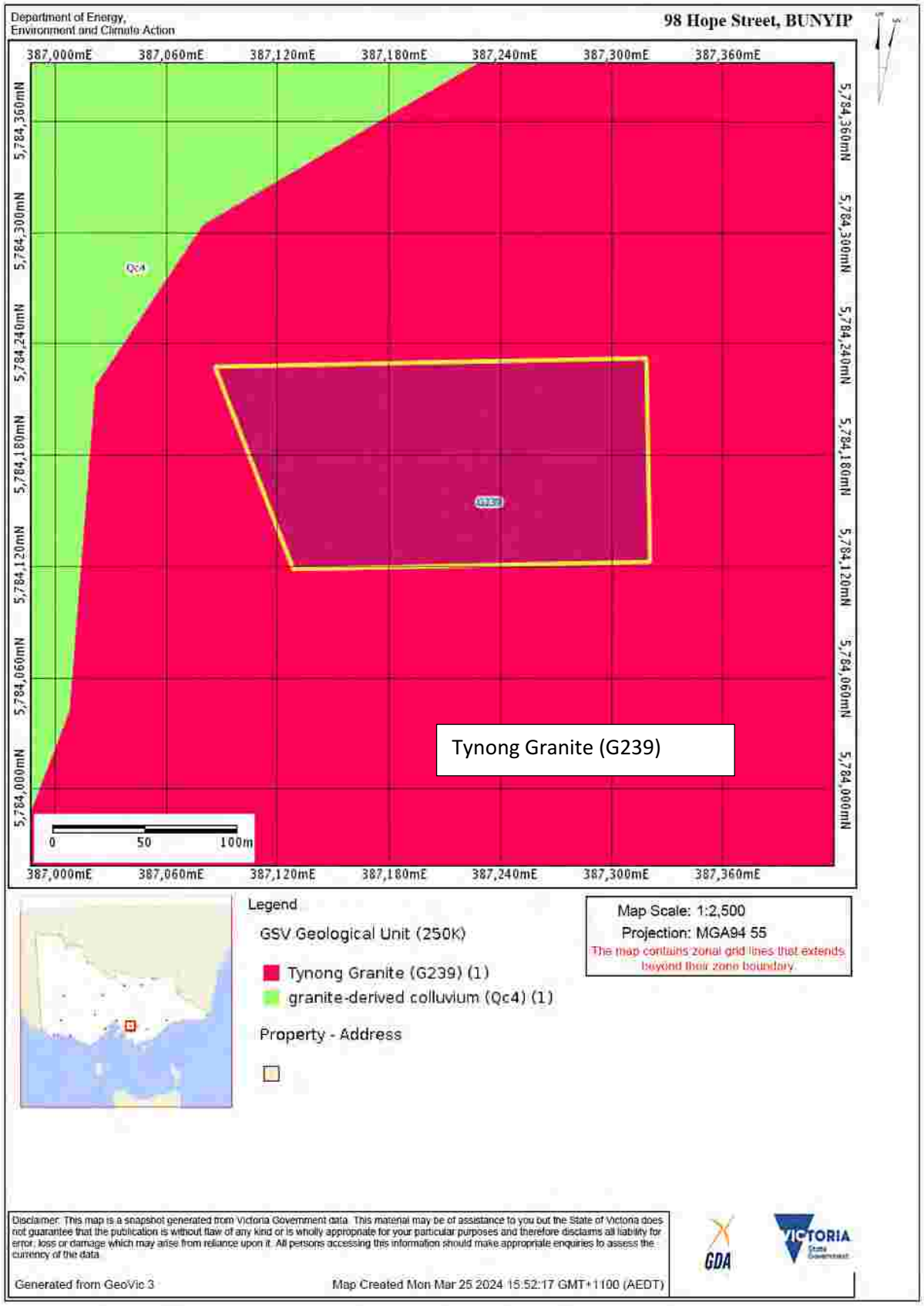
DATE	SAMPLE	TEST SITE	DEPTH (mm)	MATERIAL	LAB ID
19/03/2024	1	Pit 1	200-300 mm	SOIL	
19/03/2024	2	Pit 1	500-600 mm	SOIL	

We request that the sample be put through on the accelerated turnaround stream.

Yours sincerely
For and on behalf of SMOLDERS GEOTECHNCIAL PTY. LTD.

[redacted]

9.7 Geovic Map



9.8 Land Channel Property Report

PROPERTY REPORT

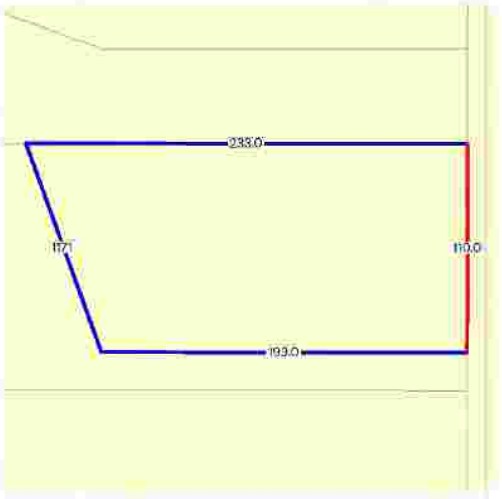
From www.land.vic.gov.au at 25 March 2024 03:42 PM

PROPERTY DETAILS

Address:	**98 HOPE STREET BUNYIP 3815**
Lot and Plan Number:	**Lot 17 LP132710**
Standard Parcel Identifier (SPI):	**17\LP132710**
Local Government Area (Council):	**CARDINIA** www.cardinia.vic.gov.au
Council Property Number:	**4403203400**
Directory Reference:	**Vicroads 718 F8**

SITE DIMENSIONS

All dimensions and areas are approximate. They may not agree with those shown on a title or plan.



Area: 23432 sq. m (2.34 ha)
Perimeter: 653 m
For this property:
— Site boundaries
— Road frontages

Dimensions for individual parcels require a separate search, but dimensions for individual units are generally not available.

Calculating the area from the dimensions shown may give a different value to the area shown above

For more accurate dimensions get copy of plan of Title and Property Certificates

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**South East Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**AUSNET**

STATE ELECTORATES

Legislative Council:	**EASTERN VICTORIA**
Legislative Assembly:	**NARRACAN**

PLANNING INFORMATION

Property Planning details have been removed from the Property Reports to avoid duplication with the Planning Property Reports from the Department of Transport and Planning which are the authoritative source for all Property Planning information.

The Planning Property Report for this property can found here - Planning Property Report

Planning Property Reports can be found via these two links
Vicplan https://mapshare.vic.gov.au/vicplan/
Property and parcel search https://www.land.vic.gov.au/property-and-parcel-search

PROPERTY REPORT

Energy, Environment and Climate Action

Area Map

PLANNING PROPERTY REPORT

From www.planning.vic.gov.au at 25 March 2024 03:42 PM

PROPERTY DETAILS

Address:	**98 HOPE STREET BUNYIP 3815**
Lot and Plan Number:	**Lot 17 LP132710**
Standard Parcel Identifier (SPI):	**17\LP132710**
Local Government Area (Council):	**CARDINIA** www.cardinia.vic.gov.au
Council Property Number:	**4403203400**
Planning Scheme:	**Cardinia** Planning Scheme - Cardinia
Directory Reference:	**Vicroads 718 F8**

UTILITIES

Rural Water Corporation:	**Southern Rural Water**
Melbourne Water Retailer:	**South East Water**
Melbourne Water:	**Inside drainage boundary**
Power Distributor:	**AUSNET**

View location in VicPlan

STATE ELECTORATES

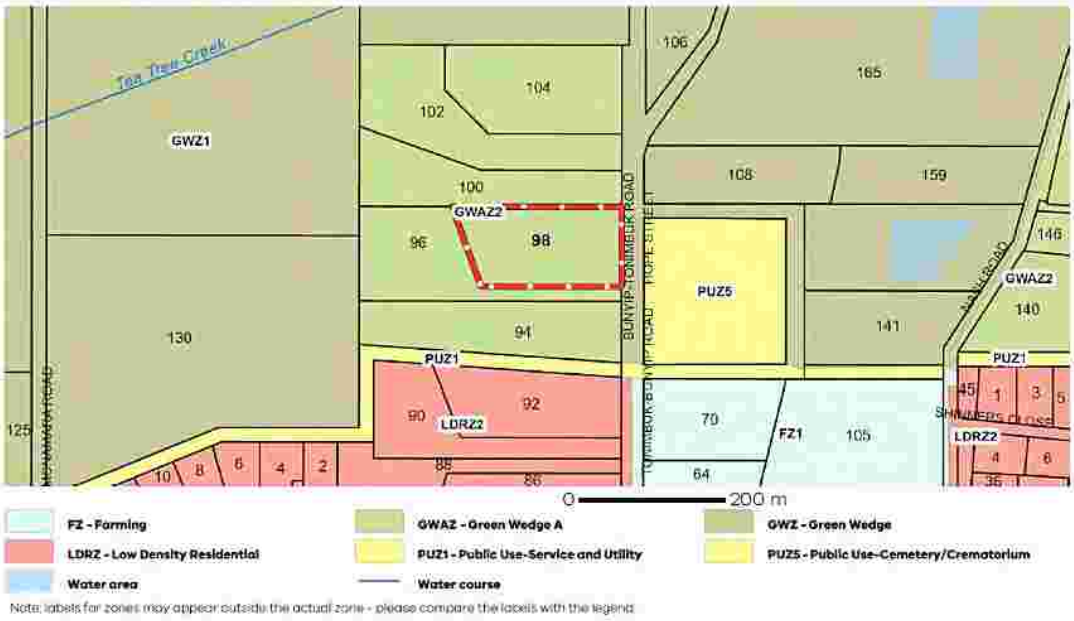
Legislative Council:	**EASTERN VICTORIA**
Legislative Assembly:	**NARRACAN**

OTHER

Registered Aboriginal Party: **Bunurong Land Council Aboriginal Corporation**

Planning Zones

GREEN WEDGE A ZONE (GWAZ)
GREEN WEDGE A ZONE - SCHEDULE 2 (GWAZ2)



Note: labels for zones may appear outside the actual zone - please compare the labels with the legend

PLANNING PROPERTY REPORT

VICTORIA State Government | Environment, Land, Water and Planning

Planning Overlays

ENVIRONMENTAL SIGNIFICANCE OVERLAY (ESO)

ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1 (ESO1)

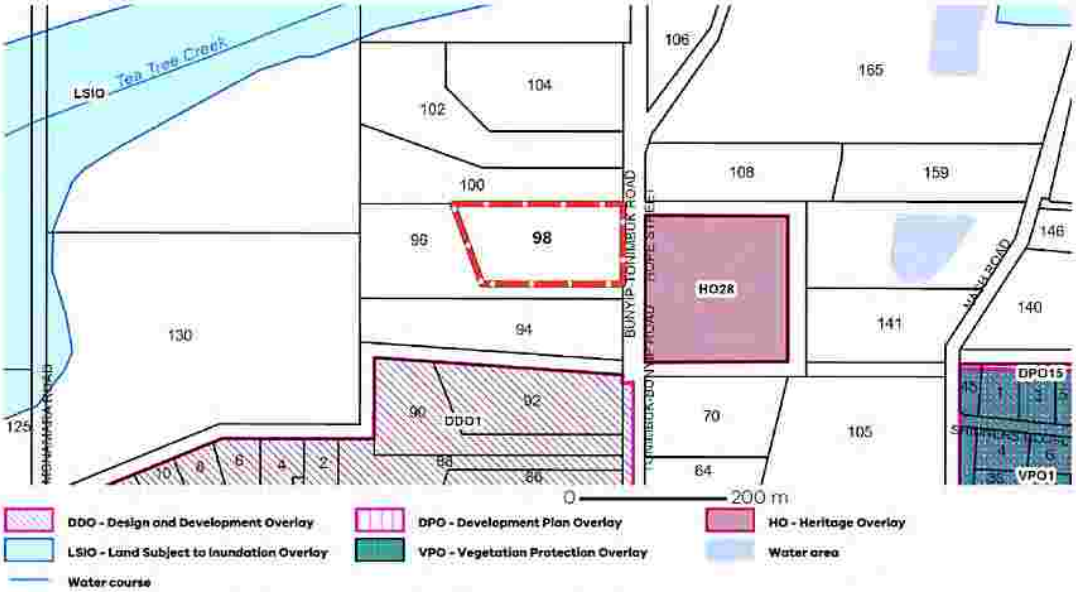
Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend.

PLANNING PROPERTY REPORT

OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

DESIGN AND DEVELOPMENT OVERLAY (DDO)
DEVELOPMENT PLAN OVERLAY (DPO)
HERITAGE OVERLAY (HO)
LAND SUBJECT TO INUNDATION OVERLAY (LSIO)
VEGETATION PROTECTION OVERLAY (VPO)



Note: due to overlaps, some overlays may not be visible, and some colours may not match those in the legend

Further Planning Information

Planning scheme data last updated on 7 December 2023

A **planning scheme** sets out policies and requirements for the use, development and protection of land. This report provides information about the zone and overlay provisions that apply to the selected land. Information about the State and local policy, particular, general and operational provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting https://www.planning.vic.gov.au

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the ***Planning and Environment Act 1987.*** It does not include information about exhibited planning scheme amendments, or zonings that may abut the land. To obtain a Planning Certificate go to Titles and Property Certificates at Landata - https://www.landata.vic.gov.au

For details of surrounding properties, use this service to get the Reports for properties of interest.

To view planning zones, overlay and heritage information in an interactive format visit https://mapshare.maps.vic.gov.au/vicplan

For other information about planning in Victoria visit https://www.planning.vic.gov.au

PLANNING PROPERTY REPORT

Environment, Land, Water and Planning

Designated Bushfire Prone Areas

This property is in a designated bushfire prone area. Special bushfire construction requirements apply to the part of the property mapped as a designated bushfire prone area (BPA). Planning provisions may apply.

Where part of the property is mapped as BPA, if no part of the building envelope or footprint falls within the BPA area, the BPA construction requirements do not apply.

Note: the relevant building surveyor determines the need for compliance with the bushfire construction requirements.

Designated BPA are determined by the Minister for Planning following a detailed review process. The Building Regulations 2018, through adoption of the Building Code of Australia, apply bushfire protection standards for building works in designated BPA.

Designated BPA maps can be viewed on VicPlan at https://mapshare.vic.gov.au/vicplan/ or at the relevant local council.

Create a BPA definition plan in VicPlan to measure the BPA.

Information for lot owners building in the BPA is available at https://www.planning.vic.gov.au.

Further information about the building control system and building in bushfire prone areas can be found on the Victorian Building Authority website https://www.vba.vic.gov.au. Copies of the Building Act and Building Regulations are available from http://www.legislation.vic.gov.au. For Planning Scheme Provisions in bushfire areas visit https://www.planning.vic.gov.au.

Native Vegetation

Native plants that are indigenous to the region and important for biodiversity might be present on this property. This could include trees, shrubs, herbs, grasses or aquatic plants. There are a range of regulations that may apply including need to obtain a planning permit under Clause 52.17 of the local planning scheme. For more information see Native Vegetation (Clause 52.17) with local variations in Native Vegetation (Clause 52.17) Schedule.

To help identify native vegetation on this property and the application of Clause 52.17 please visit the Native Vegetation Information Management system https://nvim.delwp.vic.gov.au/ and Native vegetation (environment.vic.gov.au) or please contact your relevant council.

You can find out more about the natural values on your property through NatureKit NatureKit (environment.vic.gov.au)

ARBORICULTURAL IMPACT ASSESSMENT

98 HOPE ST BUNYIP
VIC 3815

PREPARED BY:
[redacted]
CONSULTANT ARBORIST
B.APP. SCI(HORT) DIP HORT (ARB)

6 SEPTEMBER 2025

Treespace Solutions Pty Ltd
Email: contact@treespace.com.au
www.treespacesolutions.com.au

Document Control

Version	Author	Date
1	[redacted]	8 April 2024
2		6 November 2024
3		6 September 2025

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8.0 Impact Assessment 7

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1.0 INTRODUCTION

1.1.1 Studio Three Design & Drafting has engaged Treespace Solutions to provide an arboricultural impact assessment for the population of trees within and adjacent to the proposed development of 98 Hope St Bunyip in accordance with the Cardinia Shire RFI (Request For Information) for planning application T230455PA, condition 5 as follows:

1.1.2 The arboricultural report must clearly identify all trees on site and adjoining properties where buildings and works are proposed adjacent to and/or within TPZs or within 15 metres (whichever is the greater):

a) Genus and species.

b) Tree health and structure.

c) The Safe useful Life expectancy of the tree/s.

d) The Diameter of the tree trunk measured at Breast Height (DBH) which is 1.3 metres above natural ground level.

e) Tree Protection Zone (TPZ), this can be calculated by multiplying the trunk diameter by 12, indicate this radius on the site plan.

f) Structural Root Zone (SRZ).

g) The percentage encroachment into all Tree Protection Zones (TPZ) by the proposed development.

h) Explain the design and construction methods proposed to minimize impacts on all trees, where buildings and works encroach into TPZs.

i) Show how protected/retained tree/s will remain viable under the proposed plans and suggested remedial works to reduce any adverse impacts to any significant trees.

j) Recommend measures necessary to protect the trees throughout all demolition and construction stages.

k) A site map that clearly identifies the location of each tree numbered in the report.

1.1.3 The proposal includes the complete demolition of the existing dwelling and construction of a single level dwelling offset from the existing dwelling location. The proposal also includes a gravel internal driveway/accessway plus an effluent disposal area.

1.1.4 A total of 2 groups and 21 individual trees were assessed on Tuesday 26 March 2024 using a TruPulse 200 / B laser height meter, Avalon 8X32 Mini HD Binoculars and a Richter 10m Fibreglass Diameter Tape. Direct access was not available to all offsite trees in which case, these DBH measurements were estimated to the nearest 5cm.

1.1.5 Trees or shrubs under 3.0 metres in height were not assessed as they do not meet the criteria for a 'tree' under the Australian Standard AS 4970-2009 Protection of trees on development sites.

1.1.6 The inspection was carried out in accordance with steps one and two of the internationally recognised Visual Tree Assessment (VTA). This method for assessing trees was developed by Mattheck and Breloer (1994) and is included in standard arboricultural texts by Harris, Clarke, and Matheny (2004) and Lonsdale (1999).

2.0 PLANNING & ZONING

Local Government Authority	Cardinia Shire
Planning Scheme Zone	Green Wedge A ZONE – SCHEDULE 2 (GZAW2)
Vegetation Overlays or Local Law	ENVIRONMENTAL SIGNIFICANCE OVERLAY - SCHEDULE 1 (ESO1)

3.0 ENVIRONMENTAL SIGNIFICANCE OVERLAY – SCHEDULE 1 (VEGETATION)

3.1.1 In addition to the exemptions under Clause 52.12 (Bushfire protection exemptions), a permit is not required to remove, destroy or lop any vegetation if:

- The vegetation is a tree overhanging the roof of a building used for Accommodation. This exemption only allows the removal, destruction, or lopping of that part of the tree which is overhanging the building, and which is necessary for fire protection.
- The vegetation is dead as a result of natural circumstances or the spread of noxious weeds and which has been assessed as being suitable for removal by an authorised officer of the responsible authority. This exemption does not apply to standing dead trees with a trunk diameter of 40 centimetres or more at a height of 1.3 metres above ground level.
- It is the minimum extent necessary to maintain utility services for the transmission of water, sewage, gas, electricity, electronic communications or the like, provided that the removal, destruction or lopping is undertaken with the written consent of the responsible authority.
- It is necessary for maintenance by the Cardinia Shire Council of works including any road, drain, essential service or public facility.
- The vegetation is seedlings or regrowth less than 5 years old, the land has previously been lawfully cleared and the land is being maintained for cultivation or pasture.
- The vegetation is to be removed, destroyed or lopped by cutting only to obtain reasonable amounts of wood for personal use by the owner or occupier of the land. Personal use is wood used for firewood, the construction of fences on the same land and hobbies such as craft. This exemption does not apply to:
    - Standing living and dead trees with a trunk diameter of 40cm of more at a height of 1.3m above natural ground level.
    - Living native vegetation on contiguous land in the same ownership with an area less than 10 hectares.
- It is the removal of any vegetation from an existing dam wall where the vegetation may impact on the structural stability of the dam wall.
- It is within 6m of an existing dwelling on a lot less than 0.4 hectares.
- It is necessary for the works associated with the normal operation of Puffing Billy Tourist Railway as defined in the Schedule to the Public Use Zone under Clause 36.01 of this Planning Scheme.
- The vegetation is to be pruned or lopped (but not removed) as part of normal domestic or horticultural practice for the species.
- The vegetation is an environmental weed (contained in the table within ESO1 scheme); that is not listed under the Schedule to Clause 43.01 (Heritage Overlay) and there is no condition listed in the table – refer to ESO1 schedule for details.

4.0 SITE DETAILS

4.1.1 The subject study area includes those trees located within a 15.0m offset from the proposed footprint of the new dwelling and storage structure within the site boundaries.

4.1.2 The general site itself comprises of an existing single storey weatherboard dwelling with an attached metal garage serviced by a gravel driveway that connects with the Hope St service road to the east. The land surrounding the dwelling is bordered by a post & wire fence with all but the Group of Swane's Golden Cypress and Kurrajong specimens positioned within the fencing.

4.1.3 The assessed trees comprise of an assortment of Exotic and Australian native specimens in variable states of health but generally speaking, are in good health albeit with poor to good structural characteristics.

4.1.4 Topographically, the land sits upon a gentle north-facing slope with views extending well beyond the property to the Princess Highway and beyond.

5.0 TREE ASSESSMENTS

5.1.1 2 groups and 21 individual trees have been assessed as part of this study:

High value trees

5.1.2 Trees 10, 11, 17, 18 & 20 have been rated with a *High* arboricultural value.

5.1.3 These specimens are in good overall condition and have the potential to positively contribute to the landscape in the long-term if appropriately managed. These species are suited to the existing site conditions and are capable of tolerating certain changes in their immediate environment. Ideally, trees with a high retention value should be retained and incorporated into any development plans as they are worthy of retention wherever possible.

Medium value trees

5.1.4 Trees 1, 6, 9 & 12 have been rated with a Medium arboricultural value.

5.1.5 These are trees with some attributes that may benefit the site in relation to botanical, horticultural or local significance but may be limited to some degree by their current health condition or future growth in relation to existing or future site conditions and/or immediate/future maintenance requirements. These trees are likely to tolerate changes in their environment and will respond to arboricultural treatments. Trees classed as having a moderate retention value should be considered for retention if reasonably practicable. Arboricultural works may be required but should remain within reasonable limits. They may have a ULE of over 10 years if managed appropriately.

Low or No value trees

5.1.6 Trees 2 – 5, 7, 8, 13 – 16, 17, 19, & 21 - 23 have been assessed with a *Low* arboricultural rating primarily due to either their small size, poor health, fair/poor form, arboricultural insignificance or a combination of these factors.

Refer to 10.0 Tree Data Table for further detail.

6.0 SITE SURVEY & TREE LOCATIONS

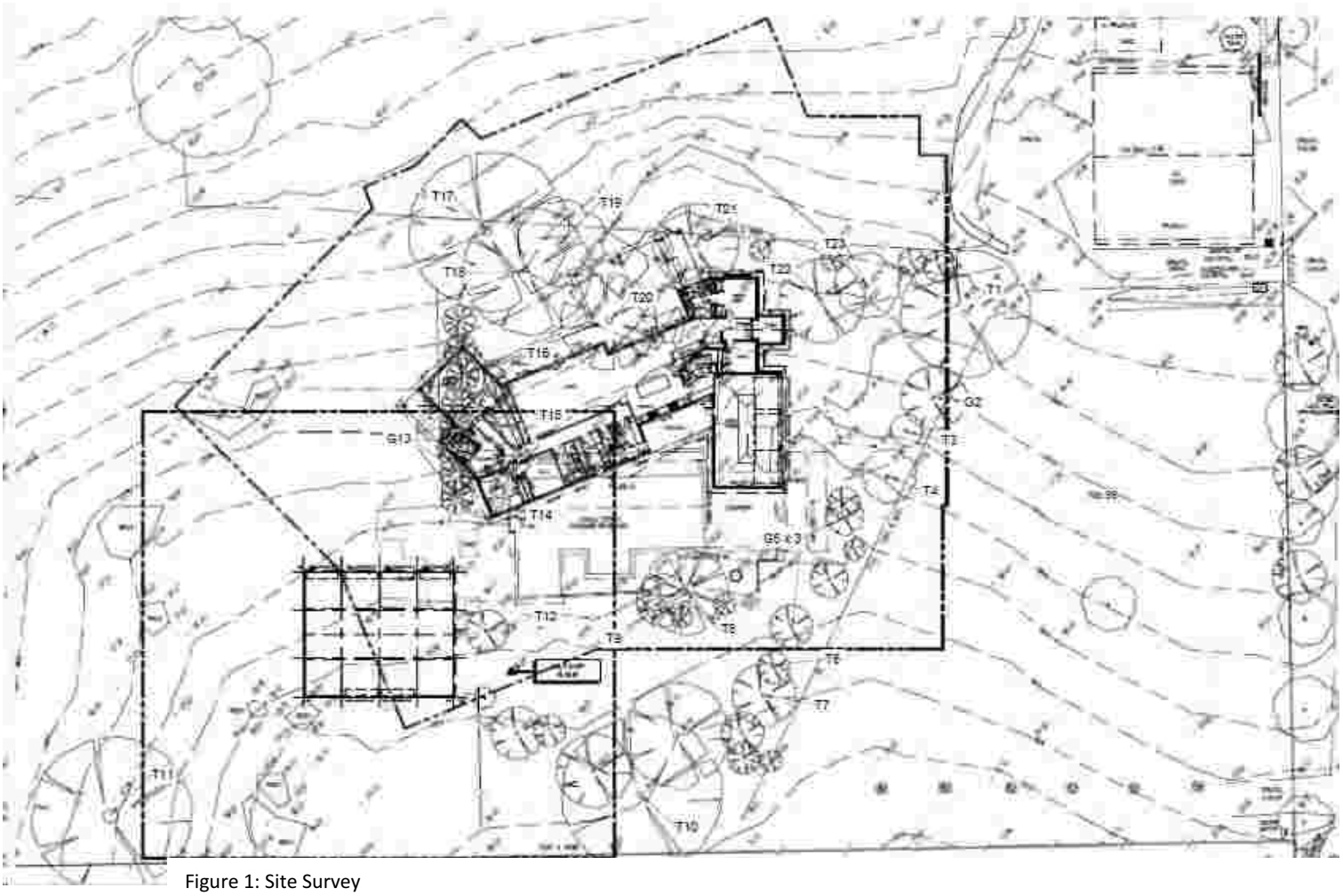
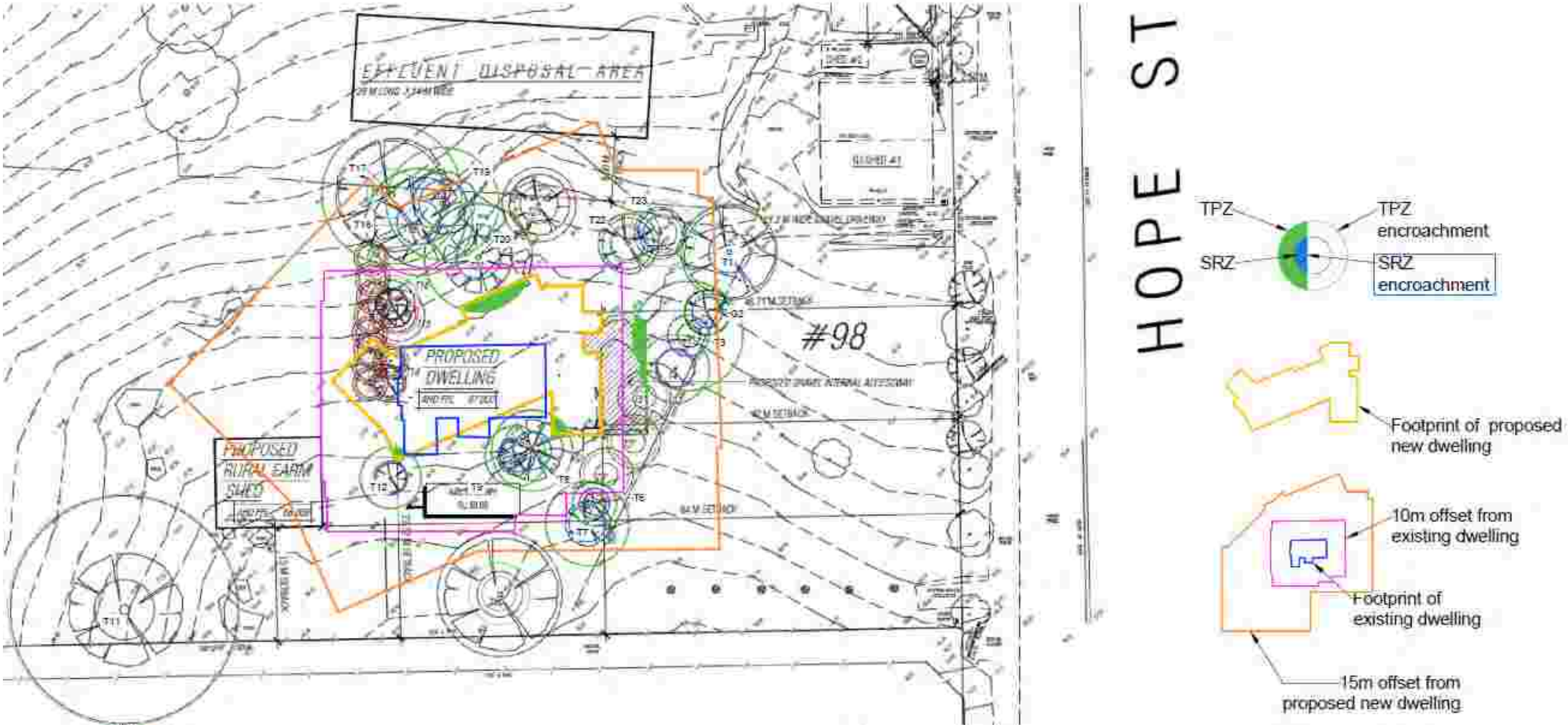


Figure 1: Site Survey

Figure 2: Trees 17 &18

Figure 3: Tree 20

7.0 DEVELOPMENT PROPOSAL



A2.01 Proposed Site Plan Revision B 25/08/2025

8.0 IMPACT ASSESSMENT

8.1.1 The following documents have been reviewed and referenced in the preparation of this report.

- Cardinia Shire Environmental Significance Overlay – Schedule 1
- 52.17 Native Vegetation **Fact Sheet: Vegetation Exemptions – Bushfire Protection**
- A2.01 Proposed Site Plan (Revision B) 25/08/2025
- Cardinia Shire RFI for TP application reference T230455 PA, 5 June 2025.

8.1.2 The proposal includes the complete demolition of the existing dwelling and construction of a single level dwelling offset from the existing dwelling location. The proposal also includes a gravel internal driveway/accessway plus an effluent disposal area.

8.1.3 PLEASE NOTE THAT THE FOLLOWING CHANGES TO THE PROPOSAL INCLUDE:

- The proposed construction of the accessway along the southern boundary has been removed.
- The proposed effluent disposal area had been moved to the north to eliminate encroachments upon the adjacent trees.

8.1.4 On this basis, the updated proposal has taken steps to reduce the encroachment upon trees that were assessed with a High or Moderate arboricultural value.

8.1.5 Tree removals – Groups 5, 13 & Trees 14, 15, 16 & 21

8.1.6 The removal of Trees 14, 15, 16, 21 and 4 x Group 13 specimens will need to be removed to accommodate the proposed new dwelling. Given the low value of Group 13, the balance of specimens should also be removed.

8.1.7 Furthermore, given the weed status of Group 5 (Desert Ash) and Tree 21 and exemption from the SLO1, their removal is recommended.

8.1.8 Trees 14, 15, 16, 21 and 4 Groups 5 and 13 are LOW or NO value specimens and their removal is warranted.

8.1.9 *Given the expanse of space throughout the property there are numerous opportunities for the replanting of trees to compensate the loss of vegetation associated with this proposal*.

8.1.10 No TPZ encroachment

8.1.11 There is no noted encroachment upon the TPZ of Trees 1, 2, 6, 7, 9, 10, 11, 17, 18, 19, 22, and 23 and provided their TPZs are appropriately managed throughout the development, it is anticipated that these trees will not be adversely impacted and will remain viable.

8.1.12 TPZ encroachment – dwelling

8.1.13 Trees 8, 12 & 20

8.1.14 An encroachment of 4.5m2 (5.1%), 2.2m2 (4.4%) and 15.0m2 (9.5%) upon the TPZ of Trees, 8, 12 and 20 has been noted by the proposed new dwelling footprint but with no SRZ encroachment.

8.1.15 With reference to *AS4970-2009 Protection of trees on development sites*, an encroachment less than 10% is considered minor and provided the recommendations are enforced, it's anticipated that these trees will not be adversely impacted.

8.1.16 TPZ encroachment – internal gravel accessway

8.1.17 Trees 3 & 4

8.1.18 An encroachment of 9.3m2 (5.7%) and 3.1m2 (4.9%) upon the TPZ of Trees 3 and 4 has been noted by the proposed new internal gravel accessway but with no SRZ encroachment.

8.1.19 With reference to *AS4970-2009 Protection of trees on development sites*, an encroachment less than 10% is considered minor and provided the recommendations are enforced, it's anticipated that these trees will not be adversely impacted.

9.0 RECOMMENDATIONS

9.1.1 **Groups 5, 13 & Trees 14, 15, 16 & 21** are LOW or NO value specimens and should be removed during the site's demolition.

9.1.2 The balance of trees to be retained are to be shown on all Site Plans as 'To be Retained &/or Protected' with TPZs and SRZs depicted to scale.

9.1.3 Where within the TPZ of Trees, 3, 4, 8, 12 and 20, the NGL (natural ground level) is maintained throughout unimpacted areas of the TPZ.

9.1.4 The portion of new gravel accessway within the TPZ of Trees 2, 3, 4 and 7 to be constructed at the same grade as the existing semi-circular gravel driveway.

9.1.5 Any excavation for the installation of utilities is redirected around the TPZ of retained trees. Alternatively, utilities may be installed via non-destructive digging (e.g. manual, hydro) conducted under the direct supervision by a suitably qualified arborist (minimum AQF Level 5), or via boring to a minimum depth of 800mm (top of bore).

10.0 TREE ASSESSMENT DATA

Tree	Taxon	Common Name	Origin	DBH (cm)	TPZ (m)	DAB (cm)	SRZ (m)	Height (m)	Canopy (m)	Age	ULE	Health	Structure	Form	Arboricultural Value	ESO1 Permit trigger	Comments
1	***Liquidambar styraciflua***	Liquidambar	Exotic	52	6.3	61	2.7	14	12	Mature	20+years	Good	Good	Symmetrical	Medium	YES	Positioned on entry beside gravel driveway Generally well-formed specimen
G2	***Photinia x fraseri***	Chinese Hawthorn	Exotic	5 & 25	2.0 & 3.0	29	2	4	2	Mature	20+years	Fair-good	Fair-good	Symmetrical	Low	YES	Variable Screening trees
3	***Corymbia ficifolia***	Red-flowering Gum	Australian Native	60	7.2	57	2.7	5	6	Mature	20+years	Good	Fair-good	Symmetrical	Low	YES	Stout specimen
4	***Corymbia ficifolia***	Red-flowering Gum	Australian Native	26,27	4.5	49	2.5	4	5	Mature	1-5 years	Fair-good	Poor	Asymmetrical	Low	YES	Decay in stems Multiple stems are failing- remove
G5	***Fraxinus angustifolia subsp. angustifolia***	Desert Ash x 3	Exotic	26, 29 & 22	2.6 - 3.5	0	1.5	6	6	Semi-mature	0	Fair-good	Fair-good	Symmetrical	None	Exempt	Self-seeded beside metal shed - remove
6	***Ginkgo biloba***	Ginkgo	Exotic	24	2.9	30	2	9	5	Semi-mature	20+years	Good	Fair-good	Symmetrical	Medium	YES	Slight asymmetry Retain if possible
7	***Pyrus ussuriensis***	Manchurian Flowering Pear	Exotic	28,36	5.5	46	2.4	8	9	Mature	20+years	Good	Fair	Asymmetrical	Low	YES	One large scaffold failure Included stem Union
8	***Cupressus funebris***	Funeral Cypress	Exotic	25,36	5.3	49	2.5	8	7	Semi-mature	20+years	Fair-good	Fair-good	Asymmetrical	Low	Exempt via 10/30 bushfire rule	Several failures on southern canopy
9	***Prunus subhirtella 'Pendula'***	Weeping Cherry	Exotic	33	4	32	2.1	2.5	6	Mature	20+years	Good	Fair-good	Asymmetrical	Medium	Exempt via 10/30 bushfire rule	Lopsided canopy from light suppression
10	***Quercus palustris***	Pin Oak	Exotic	68	8.2	79	3.0	15	15	Mature	20+years	Good	Good	Symmetrical	High	YES	Unique and well-formed specimen – behind large Cammellia japonica shrub
11	***Brachychiton populneus***	Kurrajong	Australian Native	145	15	155	3.95	14	16	Mature	20+years	Good	Good	Symmetrical	Very High	YES	Well-formed specimen – would benefit from arboricultural works to enhance health & longevity.
12	***Erythrina crista-galli***	Cock's Comb Coral Tree	Exotic	33	4	34	2.2	4.5	4	Mature	20+years	Good	Good	Symmetrical	Medium	Exempt via 10/30 bushfire rule	Stout specimen
G13	***Cupressus sempervirens 'Swanes Gold'***	Swanes Gold Pencil Pine x 8	Exotic	19	2.3	21	1.8	4	4	Semi-mature	6-10 years	Fair	Fair-poor	Asymmetrical	Low	Exempt via 10/30 bushfire rule	Remove
14	***Elaeocarpus reticulatis***	Blueberry Ash	Australian Native	13,14	2.3	26	1.9	5	4	Mature	20+years	Good	Fair-good	Suppressed	Low	Exempt via 10/30 bushfire rule	Stout form beside house
15	***Corymbia maculata***	Spotted Gum	Victoria	28	3.4	34	2.2	11.5	5	Semi-mature	20+years	Good	Fair-good	Symmetrical	Low	Exempt via 10/30 bushfire rule	Overhanging eaves
16	***Fraxinus angustifolia subsp. angustifolia***	Desert Ash	Exotic	15,21	3.1	31	2.1	7.5	7.5	Mature	0	Fair-good	Fair-good	Symmetrical	None	Exempt	Remove
17	***Quercus palustris***	Pin Oak	Exotic	76	9.2	89	3.2	19	12	Mature	20+years	Good	Fair-good	Symmetrical	High	YES	Large prominent tree with slight asymmetry from proximity to T16
18	***Quercus coccinea***	Scarlet Oak	Exotic	58	7	69	2.9	19	9	Mature	20+years	Good	Fair-good	Symmetrical	High	YES	Large prominent tree with slight asymmetry from proximity to T15
19	***Eucalyptus sp.***	Gum	Australian Native	26,38,40	7.4	85	3.1	9	9	Mature	20+years	Fair	Poor	Asymmetrical	Low	YES	Prostrate from failed stem
20	***Araucaria heterophylla***	Norfolk Island Pine	Exotic	59	7.1	70	2.9	17	10	Mature	20+years	Good	Good	Symmetrical	High	YES	Well-formed specimen centrally located in front northern lawn
21	***Fraxinus angustifolia subsp. angustifolia***	Desert Ash	Exotic	24,33	4.9	51	2.5	8	8	Over-mature	0	Fair	Fair-good	Symmetrical	None	Exempt	Self-seeded environmental weed
22	***Prunus dulcis***	Almond	Exotic	15,29	4	48	2.5	6	8	Mature	11-20 years	Fair-good	Fair-good	Symmetrical	Low	YES	Stout fruit tree adjacent to entry – limited life expectancy. Codominant canopy form with Tree 23
23	***Agonis flexuosa***	Willow Myrtle	Australian Native	11,12,19,25	4.3	50	2.5	7	7	Over-mature	20+years	Good	Fair-good	Asymmetrical	Low	YES	Codominant canopy form with Tree 22

11.0 DESCRIPTORS

Tree Protection Zone (TPZ) The principal means of protecting trees on development sites. The TPZ is a combination of the root arear and crown area requiring protection. It is an area isolated from construction disturbance, so that the tree remains viable.

Structural Root Zone (SRZ) The area required for tree stability. The SRZ is typically calculated when a major encroachment into a TPZ is proposed.

Taxon: Botanical name of tree.

Common Name: Accepted common name of taxon
Sources for Taxon and Common Names:
Flora of Victoria online (https://vicflora.rbg.vic.gov.au/)
Horticultural Flora of South-Eastern Australia (Vols. 1-5)

Origin:

Indigenous	Naturally occurring taxon within locale. Considered Native under planning scheme provisions
Victoria	Naturally occurring taxon within Victoria. Considered Native under planning scheme provisions
Australia	Australian native. Occurs naturally within Australia, but outside Victoria.
Exotic.	Introduced taxon to Australia.

DBH: Diameter at breast height (1.4m), in centimetres.

DAB: Diameter of trunk immediately above root buttress, in centimetres.

Height: Estimated height of tree, in metres.

Width: Estimated width of tree, in metres.

TPZ: Tree Protection Zone calculated in accordance with AS4970-2009 *Protection of Trees on Development Sites.*

SRZ: Structural Root Zone calculated in accordance with AS4970-2009 *Protection of Trees on Development Sites.*

Form Shape of tree crown

Age

Juvenile:	Young, recently planted tree.
Semi-mature:	Tree is developing and established.
Mature:	Specimen has reached expected size in current situation, limited extension growth.
Over-mature:	Specimen entering stage of decline, declining health.
Senescent	Tree is in advancing decline.

Health

Good: Optimal vigour for this taxon. Crown full with good density, foliage entire, with good colour, minimal or no pathogen damage. Good growth indicators, e.g. extension growth. No or minimal canopy dieback. Good wound-wood and callus formation.

Fair: Tree is exhibiting one or more of the following:
Tree has <30% deadwood. Or can have minor canopy dieback. Foliage generally with good colour, some discolouration may be present, minor pathogen damage present. Typical growth indicators, e.g. extension growth, leaf size, canopy density for species in location may be slightly abnormal.

Poor:	Tree has >30% deadwood. Canopy dieback present. Discoloured or distorted leaves and/or excessive epicormic re-growth. Pathogen is present and/or stress symptoms that could lead to or are contributing to the decline of tree.
Dead:	Tree is dead.

Structure

Good:	Optimal structure for this taxon. Sound branch attachment and/or no minor structural defects. Trunk and scaffold branches sound or only minor damage. Good trunk and scaffold branch taper. No branch over extension. No damage to structural roots, good buttressing present. No obvious root pests or diseases.
Fair:	Some minor structural defects and/or minimal damage to trunk. Bark missing. Cavities could be present. Minimal or no damage to structural roots. Typical structure for species.
Poor:	Major structural defects and/or trunk damaged and/or missing bark. Large cavities and/or girdling or damaged roots that are problematic.

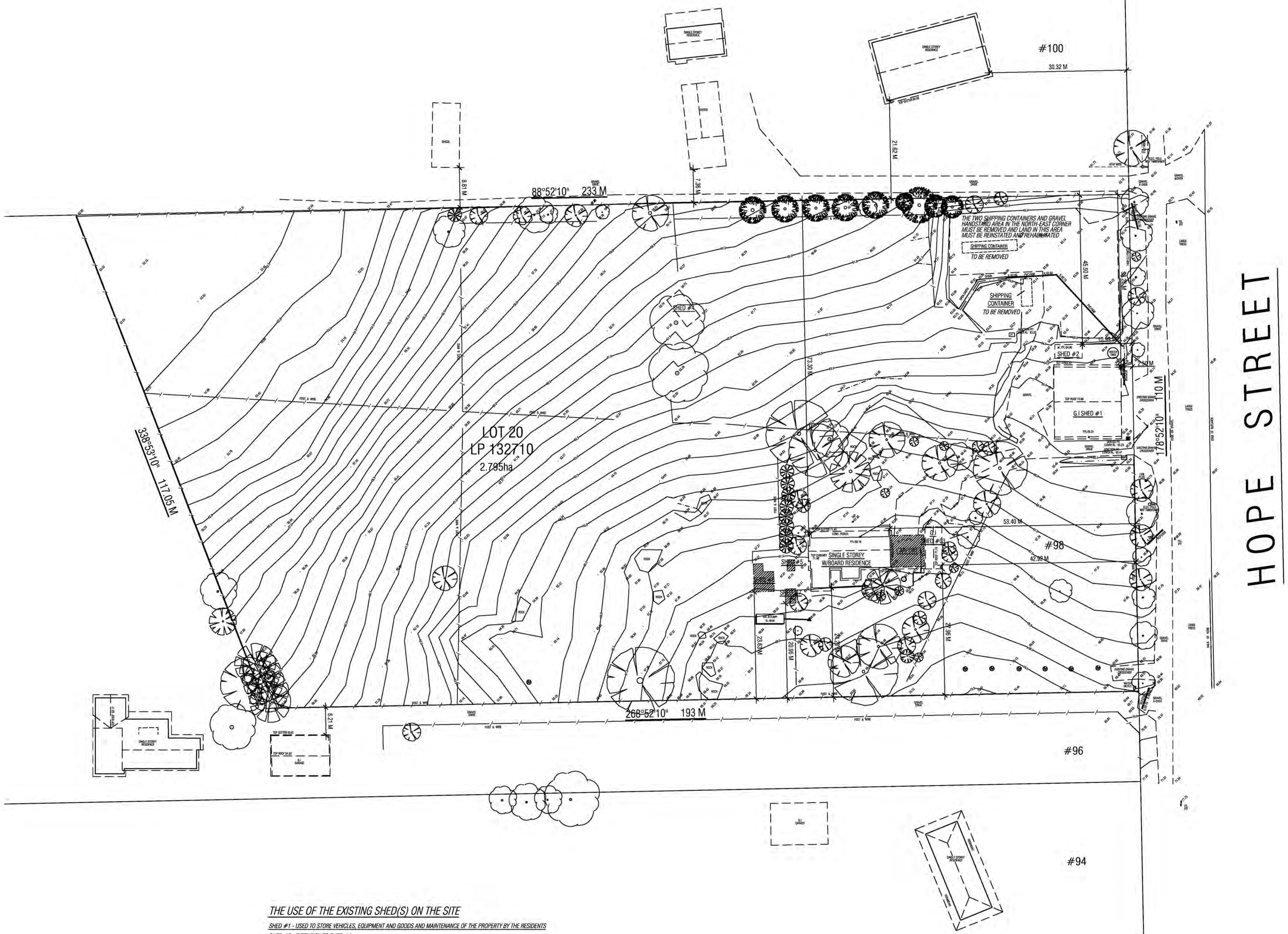
Useful Life Expectancy (ULE)

The length of time a tree can be maintained as a useful amenity specimen. Contingent on a number of factors including expected life-span of the taxon, health and structure, pest, and diseases, weed status.

Arboricultural Value

None	Tree with severe health and/or structural defects that cannot be rectified through reasonably practicable Arboricultural works; Tree may be inter dependent with surrounding trees and will be unable to be retained once adjacent shelter trees are removed; The tree is classed as a noxious or environmental weed species and is detrimental to the environment.
Low	A tree that offers little in terms of contributing to the of the future landscape for reasons of poor health, structural condition, and/or species suitability, including propensity to weediness; A tree that is not significant due to its size and/or age and can be easily replaced; Tree with a ULE of under 10 years; Trees classed as having a low retention value may be able to be retained in the mid to short term if they do not require a disproportionate expenditure of resources (i.e. design modification).
Medium	A tree with some attributes that may benefit the site in relation to botanical, horticultural, historical, or local significance but may be limited to some degree by their current health condition or future growth in relation to existing or future site conditions and/or immediate/future maintenance requirements. The tree is likely to tolerate changes in its environment and will respond to arboricultural treatments. Trees classed as having a moderate retention value should be considered for retention if reasonably practicable. Arboricultural works may be required but should remain within reasonable limits. Tree may have a ULE of over 10 years if managed appropriately.
High	A tree in good overall condition that has the potential to positively contribute to the landscape in the long-term if appropriately managed. Species is suited to its existing site conditions and can tolerate certain changes in its environment. Ideally, trees with a high retention value should be retained and incorporated into any development plans. The tree is worthy of retention wherever possible.

*Note irrespective of the assigned Arboricultural Value, off-site trees require retention and protection unless their removal is negotiated with the tree's owner.



THE USE OF THE EXISTING SHED(S) ON THE SITE

SHED #1 - USED TO STORE VEHICLES, EQUIPMENT AND GOODS AND MAINTENANCE OF THE PROPERTY BY THE RESIDENTS
SHED #2 - EXTENSION TO SHED #1
SHED #3 - USED TO STORE VEHICLES, EQUIPMENT AND GOODS AND MAINTENANCE OF THE PROPERTY BY THE RESIDENTS
SHED #4 - HAY SHED / SHELTER
SHED #5 - HAY SHED / SHELTER
SHED #6 - HAY SHED / SHELTER
SHED #7 - HAY SHED / SHELTER

THE USE OF THE EXISTING LAND

THE USE OF THE EXISTING LAND IS USED TO RUN A FEW COWS
THE OWNERS OF THE LAND RUN A DIESEL TANK AND MAINTENANCE BUSINESS
AS PART OF THE BUSINESS, THEY STORE ON THE PROPERTY VEHICLES INCLUDING:
FORD RANGER UTE
FORD TRANSIT VAN
FOUR TANDEM TRAILERS
A FORKLIFT

EXISTING FEATURE SURVEY PLAN

SCALE 1:500

REV	DESCRIPTION	DRAWN	APP	DATE
B	CARDINIA SHIRE COUNCIL PLANNING APPLICATION RFI	RA	RA	25.08.2025
A	FIRST ISSUE	RA	RA	12.05.2025

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PROJECT PROPOSED RESIDENTIAL DWELLING
AT LOT 17, #98 HOPE STREET
BUNYIP

PROJECT # 3833 | SCALE 1:500 | RBP DP-AD415 | VICROADS 718 F8

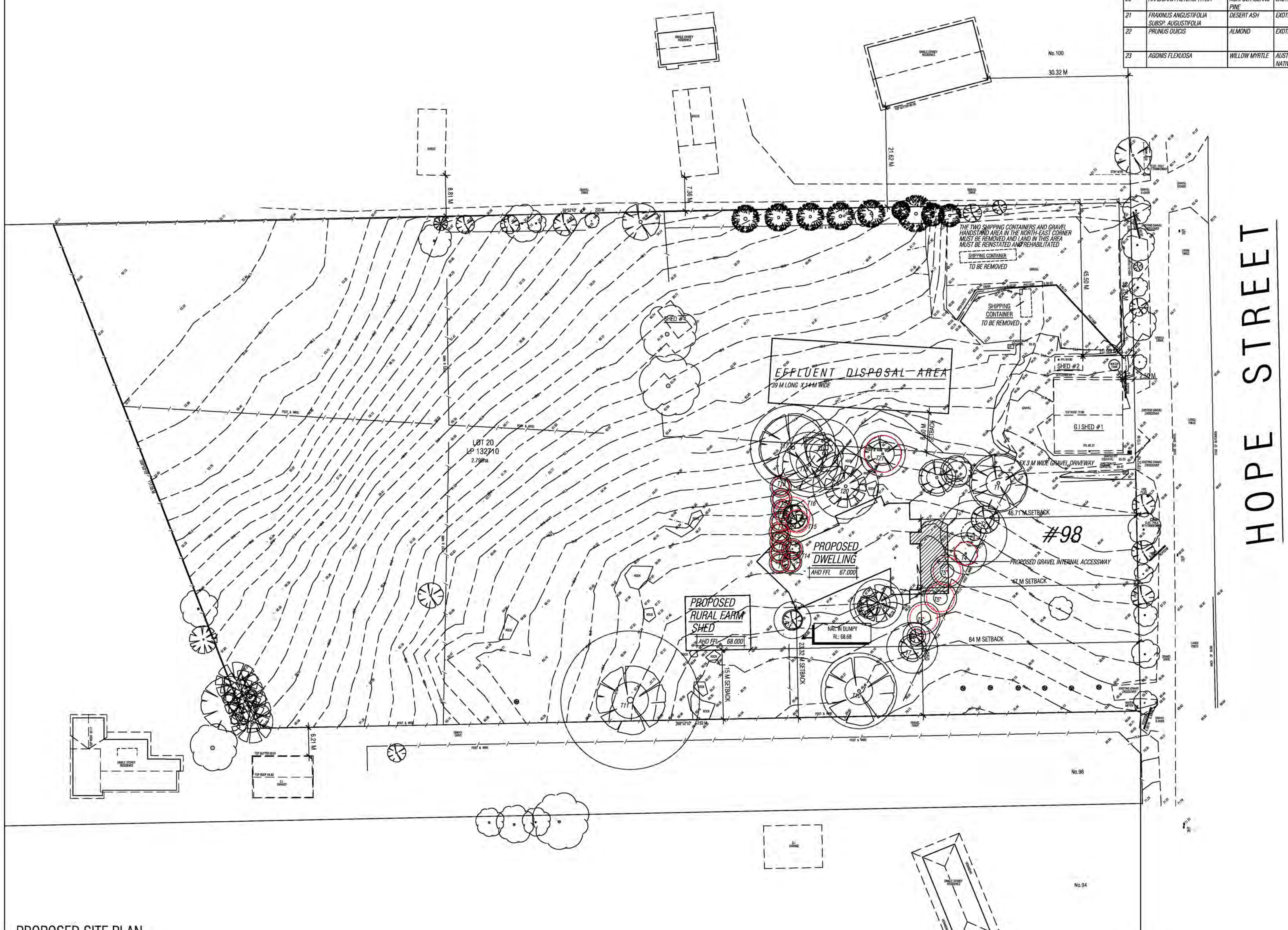
DRAWING # A2.00 | REVISION # B | SHEET # A1 OF A9

PLANNING DRAWINGS

NOT TO BE USED FOR CONSTRUCTION PURPOSES | A1

TREE DATA

TREE #	TAXON	COMMON NAME	ORIGIN	DBH (CM)	TPZ (M)	DAB (CM)	SRZ (M)	HEIGHT (M)	CANOPY (M)	AGE	ULE	HEALTH	STRUCTURE	FORM	ARBORICULTURAL VALUE	ESO1 PERMIT TRIGGER	COMMENTS	REMOVE, DESTROY, LOP OR RETAIN
01	LIQUIDAMBAR STYRACIFLUA	LIQUIDAMBAR	EXOTIC	52	6.3	61	2.7	14	12	MATURE	20+ YEARS	GOOD	GOOD	SYMMETRICAL	MEDIUM	YES	POSITIONED ON ENTRY BESIDE GRAVEL DRIVEWAY GENERALLY WELL-FORMED SPECIMEN	RETAIN
02	PHOTINIA X FRASERI	CHINESE HAWTHORN	EXOTIC	5 & 25	2.0 & 3.0	29	2	4	2	MATURE	20+ YEARS	FAIR-GOOD	FAIR-GOOD	SYMMETRICAL	LOW	YES	VARIABLE SCREENING TREES	RETAIN
03	CORYMBIA FICIFOLIA	RED-FLOWERING GUM	AUSTRALIAN NATIVE	60	7.2	57	2.7	5	6	MATURE	20+ YEARS	GOOD	FAIR-GOOD	SYMMETRICAL	LOW	YES	STOUT SPECIMEN	RETAIN
04	CORYMBIA FICIFOLIA	RED-FLOWERING GUM	AUSTRALIAN NATIVE	26, 27	4.5	49	2.5	4	5	MATURE	1-5 YEARS	FAIR-GOOD	POOR	ASYMMETRICAL	LOW	YES	DECAY IN STEMS MULTIPLE STEMS ARE FALLING-REMOVE	REMOVE
G5	FRAXINUS ANGUSTIFOLIA SUBSP. AUGUSTIFOLIA	DESERT ASH X 3 STRINGYBARK	EXOTIC	26, 29 & 22	2.6 - 3.5	0	1.5	6	6	SEMI-MATURE	0	FAIR-GOOD	FAIR-GOOD	SYMMETRICAL	NONE	EXEMPT	SELF-SEEDED BESIDE METAL SHED - REMOVE	REMOVE
06	GINKGO BILOBA	GINKGO	EXOTIC	24	2.9	30	2	9	5	SEMI-MATURE	20+ YEARS	GOOD	FAIR-GOOD	SYMMETRICAL	MEDIUM	YES	SLIGHT ASYMMETRY RETAIN IF POSSIBLE	RETAIN
07	PYRUS USSURIENSIS	MANCHURIAN FLOWERING PEAR	EXOTIC	28, 36	5.5	46	2.4	8	9	MATURE	20+ YEARS	GOOD	FAIR	ASYMMETRICAL	LOW	YES	ONE LARGE SCAFFOLD FAILURE INCLUDED STEM UNION	RETAIN
08	CUPRESSUS FUNEBRIS	FUNERAL CYPRESS	EXOTIC	25, 36	5.3	49	2.5	8	7	SEMI-MATURE	20+ YEARS	FAIR-GOOD	FAIR-GOOD	ASYMMETRICAL	LOW	EXEMPT VIA 10/30 BUSHFIRE RULE	SEVERAL FAILURES ON SOUTHERN CANOPY	RETAIN
09	PRUNUS SUBHIRTELLA 'PENDULA'	WEEPING CHERRY	EXOTIC	33	4	32	2.1	2.5	6	MATURE	20+ YEARS	GOOD	FAIR-GOOD	ASYMMETRICAL	MEDIUM	EXEMPT VIA 10/30 BUSHFIRE RULE	LOPSIDED CANOPY FROM LIGHT SUPPRESSION	RETAIN
10	QUERCUS PALUSTRIS	PIN OAK	EXOTIC	68	8.2	79	3.0	15	15	MATURE	20+ YEARS	GOOD	GOOD	SYMMETRICAL	HIGH	YES	UNIQUE AND WELL-FORMED SPECIMEN- BEHIND LARGE CAMMELLIA JAPONICA SHRUB	RETAIN
11	BRACHYCHITON POPULNEUS	KURRAJONG	AUSTRALIAN NATIVE	145	15	155	3.95	14	16	MATURE	20+ YEARS	GOOD	GOOD	SYMMETRICAL	VERY HIGH	YES	WELL-FORMED SPECIMEN - WOULD BENEFIT FROM ARBORICULTURAL WORKS TO ENHANCE HEALTH AND LONGEVITY	RETAIN
12	ERYTHRINA CRISTA-GALLI	COCK'S COMB CORAL TREE	EXOTIC	33	4	34	2.2	4.5	4	MATURE	20+ YEARS	GOOD	GOOD	SYMMETRICAL	MEDIUM	EXEMPT VIA 10/30 BUSHFIRE RULE	STOUT SPECIMEN	RETAIN
G13	CUPRESSUS SEMPERVIRENS 'SWANES GOLD'	SWANES GOLD PENCIL PINE X 8	EXOTIC	19	2.3	21	1.8	4	4	SEMI-MATURE	6-10 YEARS	FAIR	FAIR-POOR	ASYMMETRICAL	LOW	EXEMPT VIA 10/30 BUSHFIRE RULE	REMOVE	REMOVE
14	ELAEOCARPUS RETICULATIS	BLUEBERRY ASH STRINGYBARK	AUSTRALIAN NATIVE	13, 14	2.3	26	1.9	5	4	MATURE	20+ YEARS	GOOD	FAIR-GOOD	SUPPRESSED	LOW	EXEMPT VIA 10/30 BUSHFIRE RULE	STOUT FORM BESIDE HOUSE	REMOVE
15	CORYMBIA MACULATA	SPOTTED GUM	VICTORIA	28	3.4	34	2.2	11	5	SEMI-MATURE	20+ YEARS	GOOD	FAIR-GOOD	SYMMETRICAL	LOW	EXEMPT VIA 10/30 BUSHFIRE RULE	OVERHANGING EAVES	REMOVE
16	FRAXINUS ANGUSTIFOLIA SUBSP. AUGUSTIFOLIA	DESERT ASH	EXOTIC	15, 21	3.1	31	2.1	7.5	7.5	MATURE	0	FAIR-GOOD	FAIR-GOOD	SYMMETRICAL	NONE	EXEMPT	REMOVE	REMOVE
17	QUERCUS PALUSTRIS	PIN OAK	EXOTIC	76	9.2	89	3.2	19	12	MATURE	20+ YEARS	GOOD	FAIR-GOOD	SYMMETRICAL	HIGH	YES	LARGE PROMINENT TREE WITH SLIGHT ASYMMETRY FROM PROXIMITY TO T16	RETAIN
18	QUERCUS COCCINEA	SCARLET OAK	EXOTIC	58	7	69	2.9	19	9	MATURE	20+ YEARS	GOOD	FAIR-GOOD	SYMMETRICAL	HIGH	YES	LARGE PROMINENT TREE WITH SLIGHT ASYMMETRY FROM PROXIMITY TO T15	RETAIN
19	EUCALYPTUS SP.	GUM	AUSTRALIAN NATIVE	26, 38 & 40	7.4	85	3.1	9	9	MATURE	20+ YEARS	FAIR	POOR	ASYMMETRICAL	LOW	YES	PROSTRATE FROM FAILED STEM	RETAIN
20	ARAUCARIA HETEROPHYLIA	NORFOLK ISLAND PINE	EXOTIC	59	7.1	70	2.9	17	17	MATURE	20+ YEARS	GOOD	GOOD	SYMMETRICAL	HIGH	YES	WELL-FORMED SPECIMEN CENTRALLY LOCATED IN FRONT NORTHERN LAWN	RETAIN
21	FRAXINUS ANGUSTIFOLIA SUBSP. AUGUSTIFOLIA	DESERT ASH	EXOTIC	24, 33	4.9	51	2.5	8	8	OVER-MATURE	0	FAIR	FAIR-GOOD	SYMMETRICAL	NONE	EXEMPT	SELF-SEEDED ENVIRONMENTAL WEED	REMOVE
22	PRUNUS DUICIS	ALMOND	EXOTIC	15, 29	4	48	2.5	6	8	MATURE	11-20 YEARS	FAIR-GOOD	FAIR-GOOD	SYMMETRICAL	LOW	YES	STOUT FRUIT TREE ADJACENT TO ENTRY - LIMITED LIFE EXPECTANCY. CODOMINANT CANOPY FORM WITH TREE 23	RETAIN
23	AGONIS FLEXUOSA	WILLOW MYRTLE	AUSTRALIAN NATIVE	11, 12, 19 & 25	4.3	50	2.5	7	7	OVER-MATURE	20+ YEARS	GOOD	FAIR-GOOD	ASYMMETRICAL	LOW	YES	CODOMINANT CANOPY FORM WITH TREE 22	RETAIN



LEGEND

- TREE TO BE RETAINED
- TREE TO BE REMOVED
- STRUCTURAL ROOT ZONE (SRZ)
- TREE PROTECTION ZONE (TPZ)

REV	DESCRIPTION	DRAWN	APP	DATE
B	CARDINIA SHIRE COUNCIL PLANNING APPLICATION RFI	RA	RA	25.08.2025
A	FIRST ISSUE	RA	RA	12.05.2025

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PROJECT PROPOSED RESIDENTIAL DWELLING
AT LOT 17, #98 HOPE STREET
BUNYIP

PROJECT # 3833 | SCALE 1:500 | RBP DP-AD415 | VICROADS 718 F8

DRAWING # A2.01 | REVISION # B | SHEET # A2 OF A9

PLANNING DRAWINGS

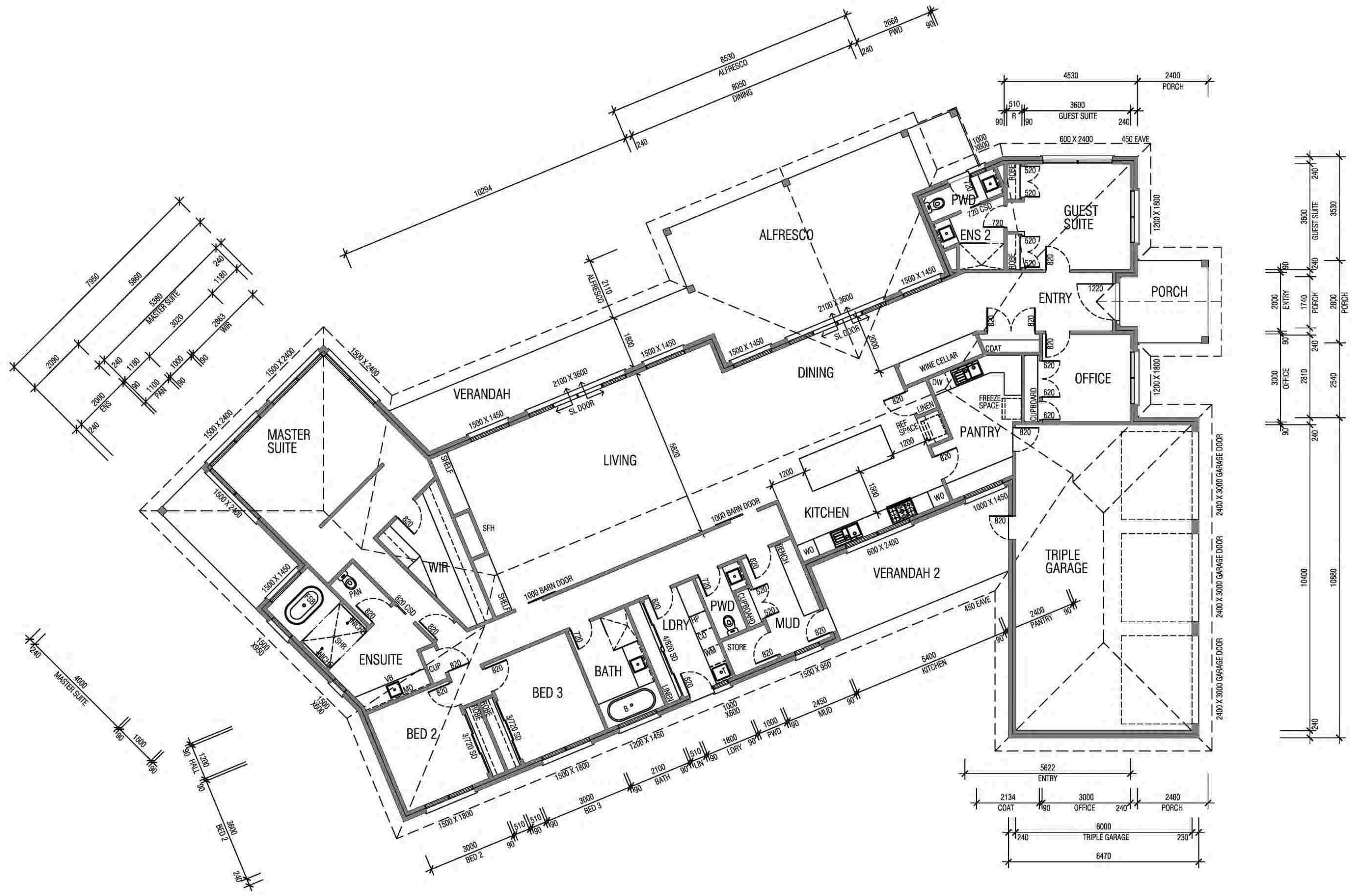
NOT TO BE USED FOR CONSTRUCTION PURPOSES | A1

PROPOSED SITE PLAN

SCALE 1:500

AREA ANALYSIS

PROPOSED GROUND FLOOR PLAN	323.76 M2	34.85 SQ
PROPOSED TRIPLE GARAGE	68.85 M2	7.41 SQ
PROPOSED ALFRESCO	46.37 M2	4.99 SQ
PROPOSED VERANDAH 1	19.07 M2	2.05 SQ
PROPOSED VERANDAH 2	18.18 M2	1.96 SQ
PROPOSED PORCH	6.85 M2	0.74 SQ
TOTAL	483.08 M2	52.00 SQ



PROPOSED GROUND FLOOR PLAN

SCALE 1:100

REV	DESCRIPTION	DRAWN	APP	DATE
A	FIRST ISSUE	RA	RA	12.05.2025

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PROJECT PROPOSED RESIDENTIAL DWELLING AT LOT 17, #98 HOPE STREET BUNYIP

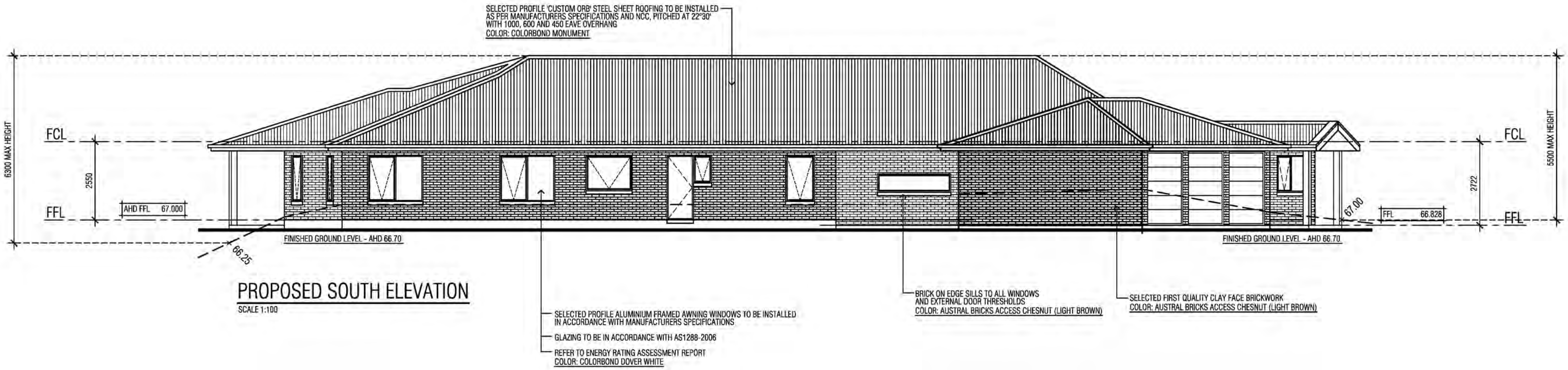
PROJECT # 3833 | SCALE 1:100 | BP DP-AD415 | MICROADS 718 F8

DRAWING # A3.00 | REVISION # A | SHEET # A3 OF A9

PLANNING DRAWINGS

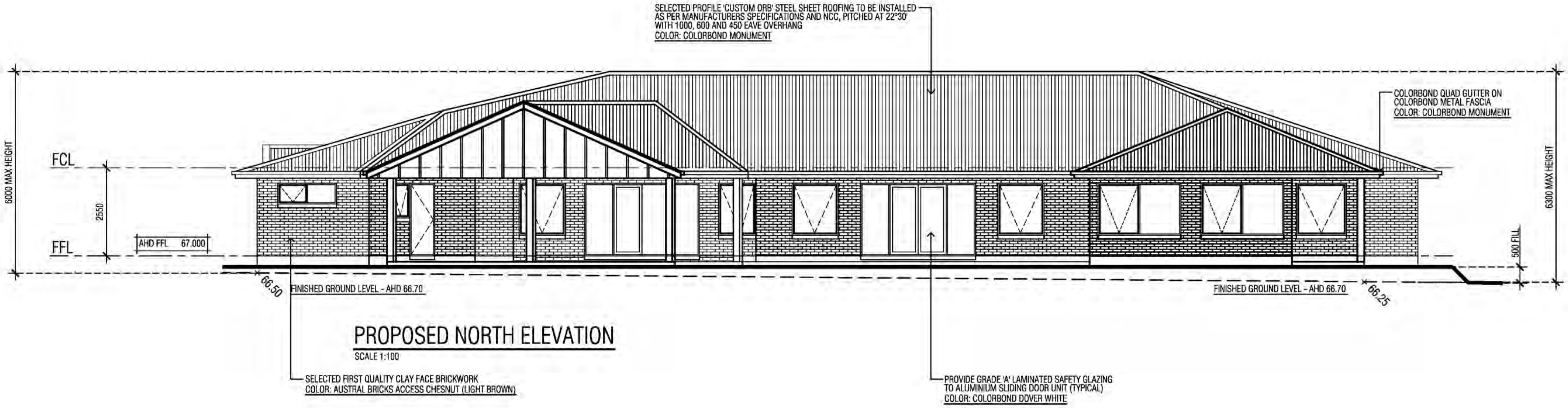
NOT TO BE USED FOR CONSTRUCTION PURPOSES

A2



PROPOSED SOUTH ELEVATION

SCALE 1:100



PROPOSED NORTH ELEVATION

SCALE 1:100

PROPOSED ELEVATIONS

SCALE 1:100

REV	DESCRIPTION	DRAWN	APP	DATE
B	CARDINIA SHIRE COUNCIL PLANNING APPLICATION RFI	RA	RA	25.08.2025
A	FIRST ISSUE	RA	RA	12.05.2025

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PROJECT PROPOSED RESIDENTIAL DWELLING AT LOT 17, #98 HOPE STREET BUNYIP

PROJECT # 3833

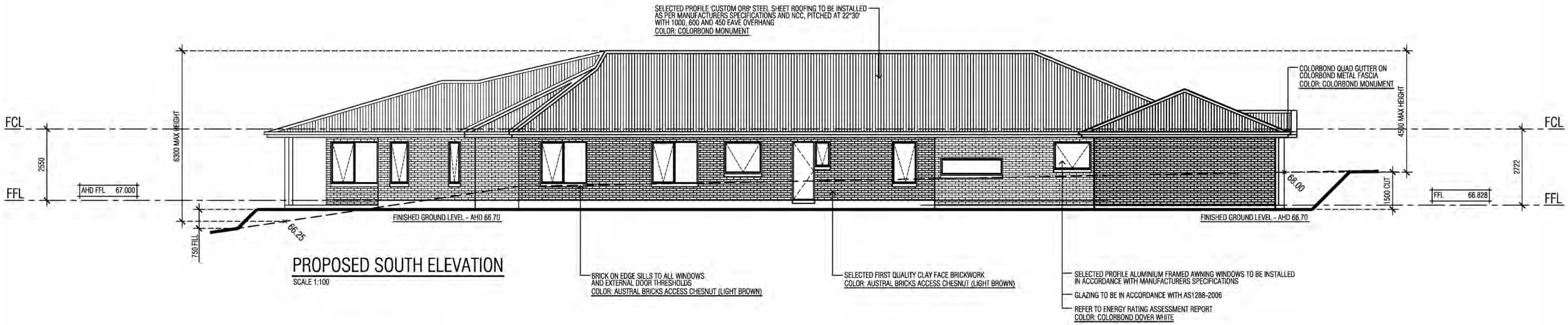
SCALE 1:100 | RBP DP-AD415 | VICROADS 718 F8

DRAWING # A4.00 | REVISION # B | SHEET # A4 OF A9

PLANNING DRAWINGS

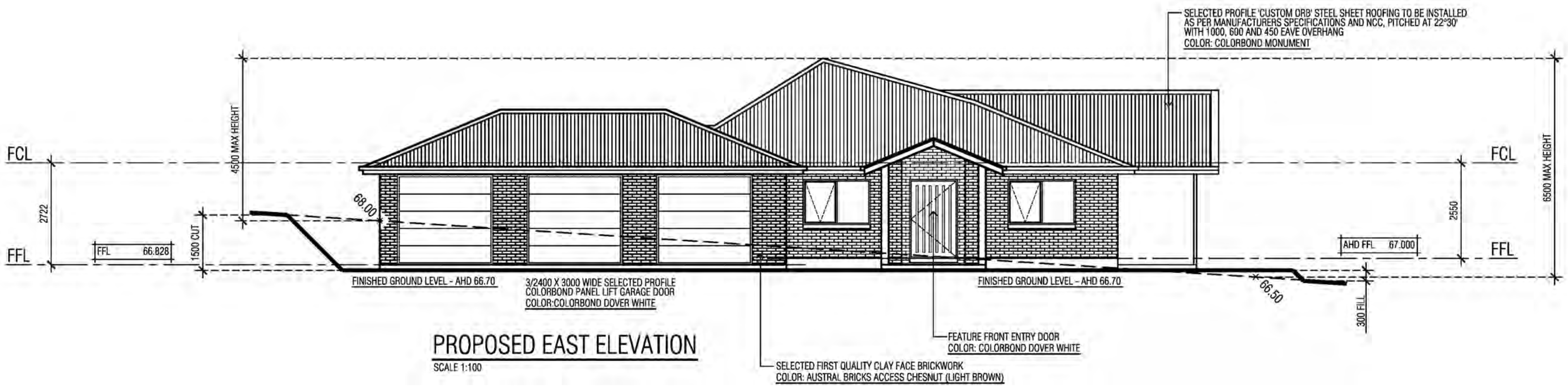
NOT TO BE USED FOR CONSTRUCTION PURPOSES

A2



PROPOSED SOUTH ELEVATION

SCALE 1:100



PROPOSED EAST ELEVATION

SCALE 1:100

PROPOSED ELEVATIONS

SCALE 1:100

REV	DESCRIPTION	DRAWN	APP	DATE
B	CARDINIA SHIRE COUNCIL PLANNING APPLICATION RFI	RA	RA	25.08.2025
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CLIENT [redacted]

PROJECT [redacted]
AT LOT 17, #98 HOPE STREET
BUNYIP

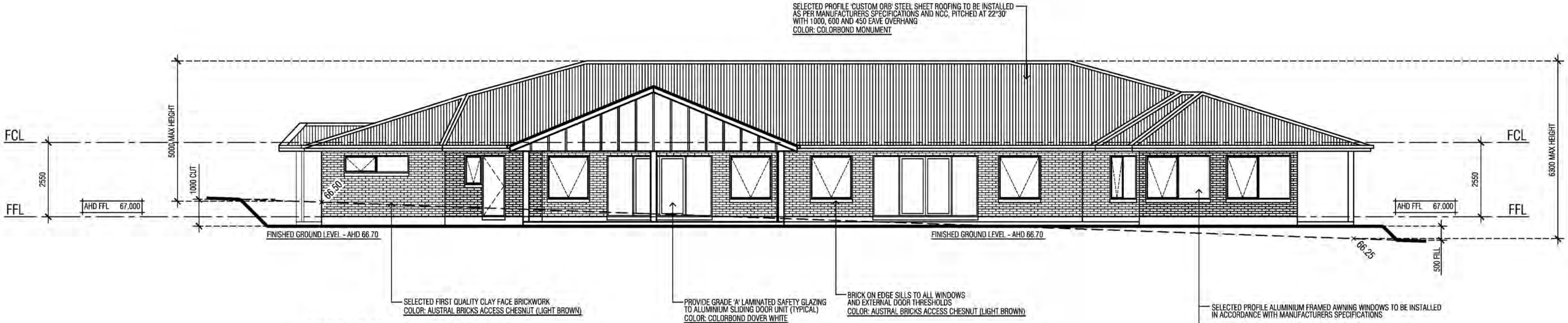
PROJECT # 3833

SCALE 1:100 | RBP DP-AD415 | VICROADS 718 F8

DRAWING # A4.10 | REVISION # B | SHEET # A5 OF A9

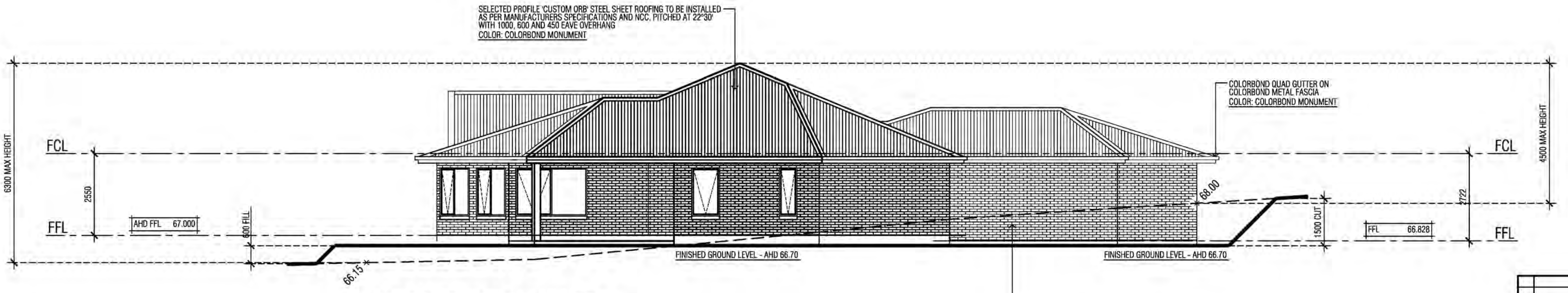
PLANNING DRAWINGS

NOT TO BE USED FOR CONSTRUCTION PURPOSES | A2



PROPOSED NORTH ELEVATION

SCALE 1:100



PROPOSED WEST ELEVATION

SCALE 1:100

SELECTED FIRST QUALITY CLAY FACE BRICKWORK
COLOR: AUSTRAL BRICKS ACCESS CHESNUT (LIGHT BROWN)

PROPOSED ELEVATIONS

SCALE 1:100

REV	DESCRIPTION	DRAWN	APP	DATE
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PROJECT PROPOSED RESIDENTIAL DWELLING AT LOT 17, #98 HOPE STREET BUNYIP

PROJECT # 3833

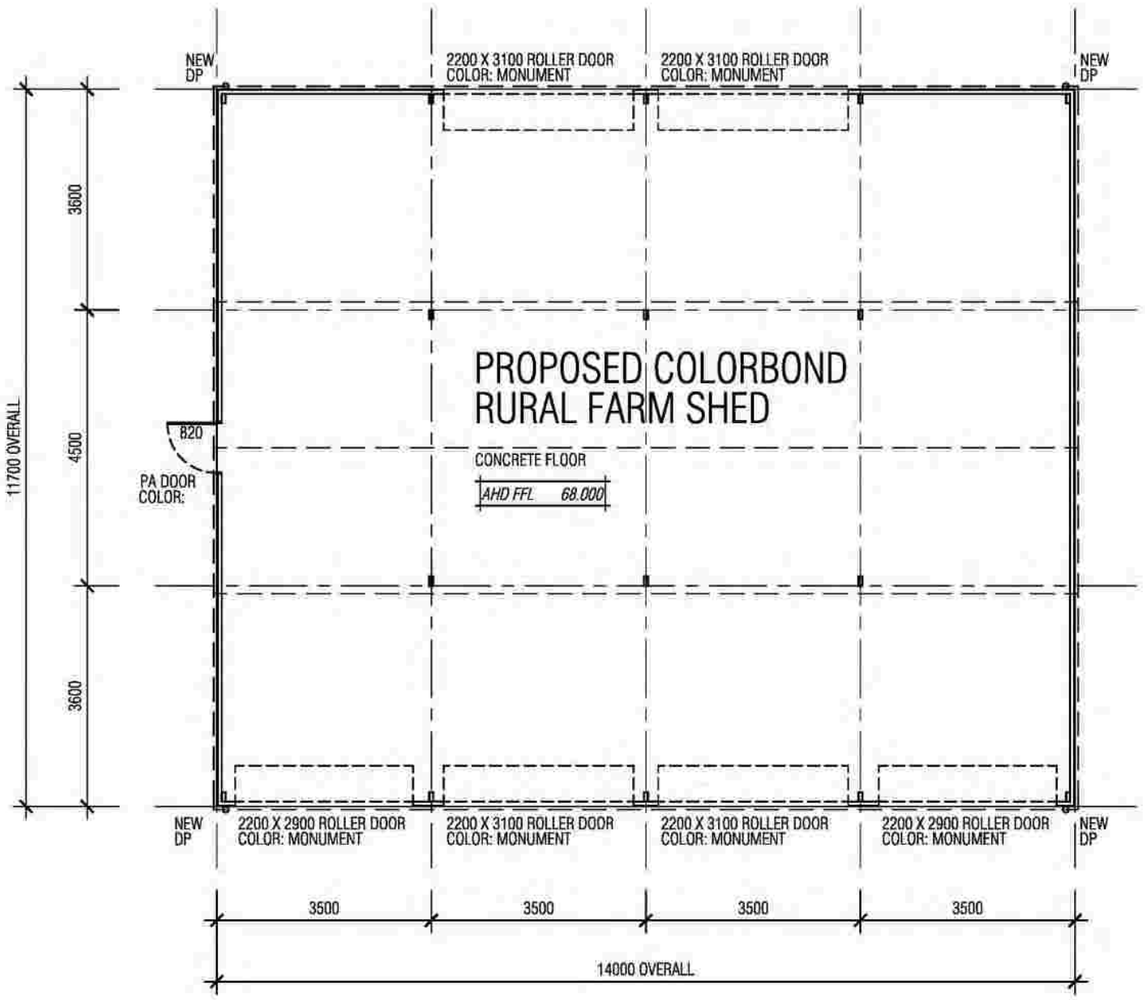
SCALE 1:100 | BBP DP-AD415 | MICROAGS 718 F8

DRAWING # A4.20 | REVISION # A | SHEET # A6 OF A9

PLANNING DRAWINGS

NOT TO BE USED FOR CONSTRUCTION PURPOSES

A2



NOTE:
THE PROPOSED USE OF THE BUILDING TO STORE A TRACTOR, BOAT, CARAVAN, LAWN MOWER, TOOLS AND STOCK FEED NOT TO BE USED FOR ANY COMMERCIAL OR BUSINESS ACTIVITY

PROPOSED SHED GROUND FLOOR PLAN

SCALE 1:100

REV	DESCRIPTION	DRAWN	APP	DATE
A	FIRST ISSUE	RA	RA	12.05.2025

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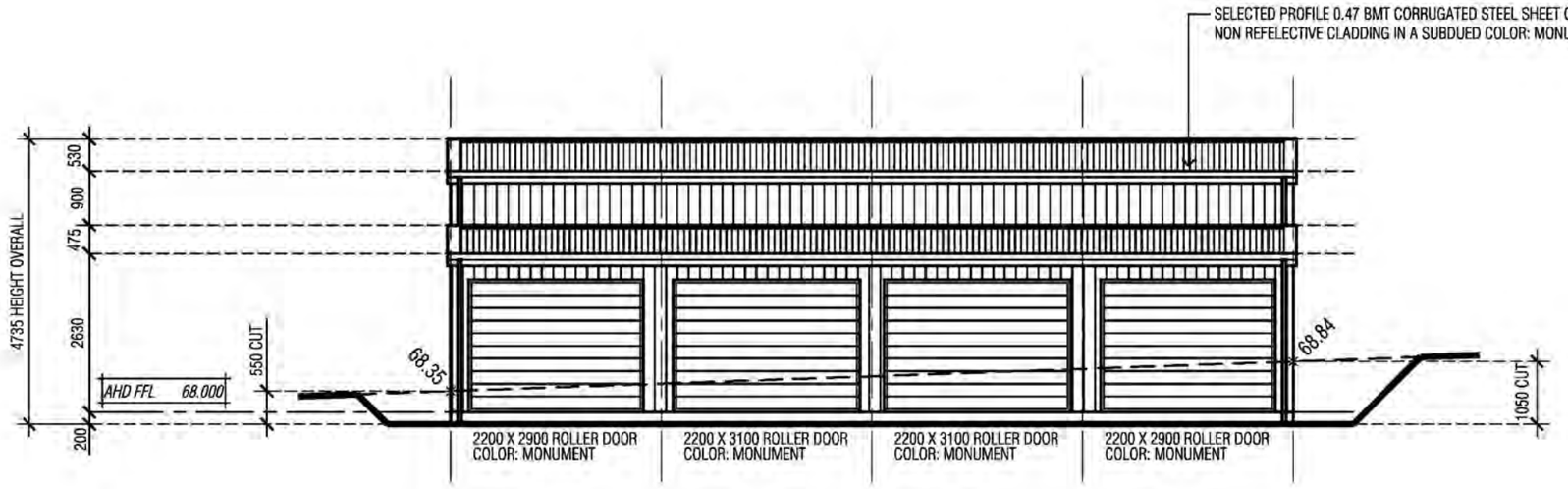
PROJECT PROPOSED RESIDENTIAL DWELLING
AT LOT 17, #98 HOPE STREET
BUNYIP

PROJECT # 3833
SCALE 1:100 | RBP DP-AD415 | VICROADS 718 F8
DRAWING # A5.00 | REVISION # A | SHEET # A7 OF A9

PLANNING DRAWINGS

NOT TO BE USED FOR CONSTRUCTION PURPOSES | A3



PROPOSED SOUTH ELEVATION

SCALE 1:100

NOTE:
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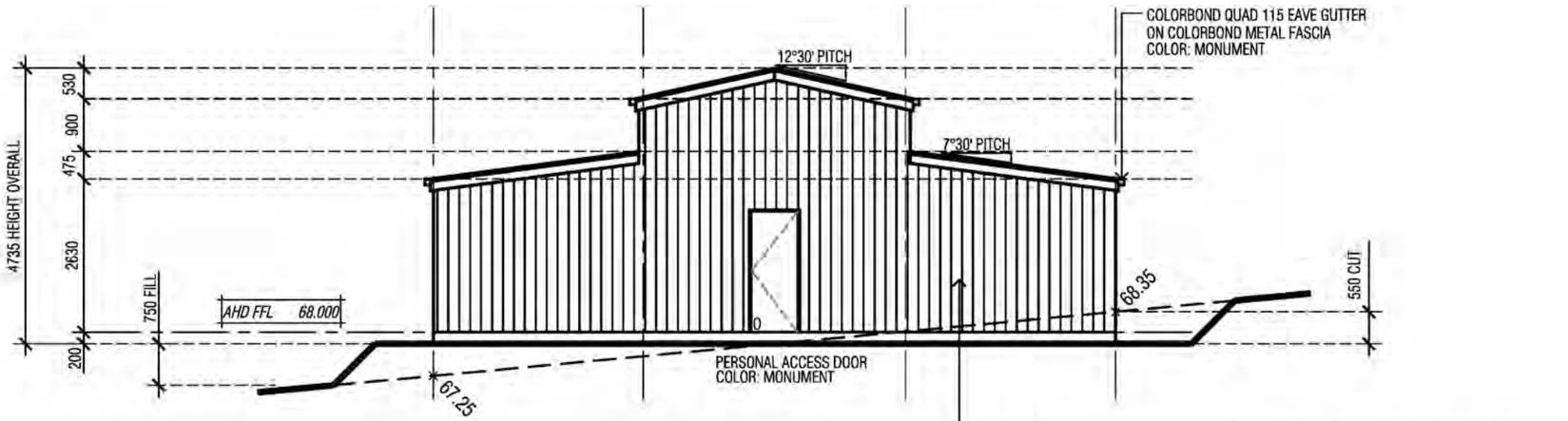

PROPOSED WEST ELEVATION

SCALE 1:100

PROPOSED SHED ELEVATIONS

SCALE 1:100

REV	DESCRIPTION	DRAWN	APP	DATE
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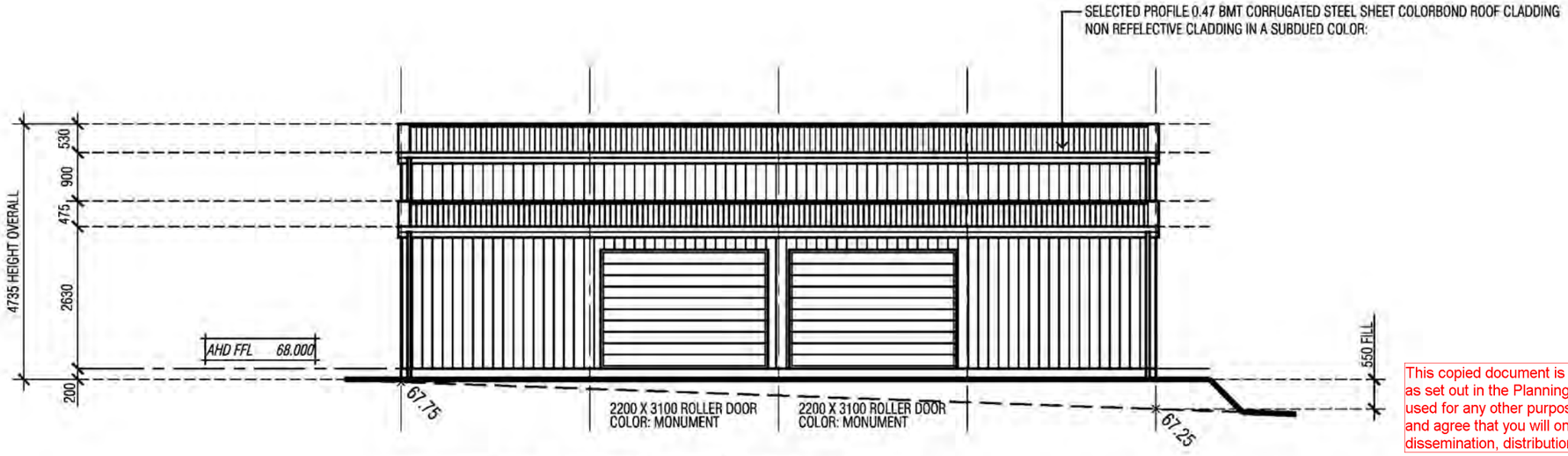
PROJECT PROPOSED RESIDENTIAL DWELLING
AT LOT 17, #98 HOPE STREET
BUNYIP

PROJECT #	SCALE	RBP	VICROADS
3833	1:100	DP-AD415	718 F8

DRAWING #	REVISION #	SHEET #
A6.00	A	A8 OF A9

PLANNING DRAWINGS

NOT TO BE USED FOR CONSTRUCTION PURPOSES | A3



PROPOSED NORTH ELEVATION

SCALE 1:100

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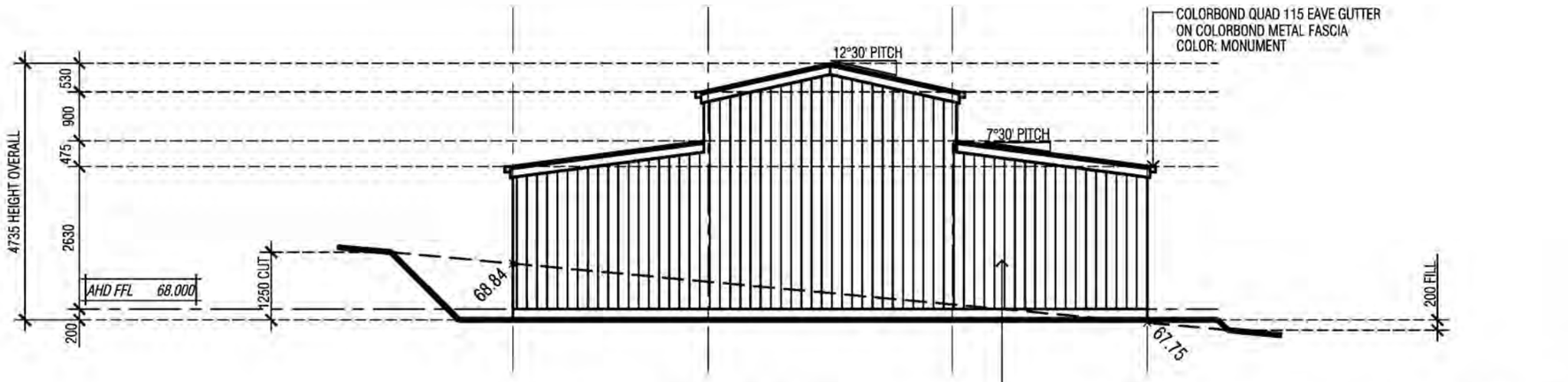

PROPOSED EAST ELEVATION

SCALE 1:100

PROPOSED SHED ELEVATIONS

SCALE 1:100

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PROJECT #	SCALE	RBP	VICROADS
3833	1:100	DP-AD415	718 F8

DRAWING #	REVISION #	SHEET #
A6.10	A	A9 OF A9

PLANNING DRAWINGS

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