Notice of Application for a Planning Permit

Cardinia

The land affected by the application is located at:	**CP169433** **7A Paternoster Road, Cockatoo VIC 3781**
The application is for a permit to:	**Buildings and works associated with a dwelling extension**
A permit is required under the following clauses of the planning scheme:	
44.06-2	Construct a building or construct or carry out works associated with a dwelling

APPLICATION DETAILS

The applicant for the permit is:	[redacted]
Application number:	**T240580**

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:	**06 June 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

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Cardinia ePlanning

Application Summary

Portal Reference	A424782G

Basic Information

Proposed Use	We are seeking to do an extension on the house. A master bedroom and laundry extension. See attached plans.
Current Use	Existing 2 bedroom house with a detached shed.
Cost of Works	$75,000
Site Address	7A Paternoster Road Cockatoo 3781

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]		
Owner	[redacted]		
Preferred Contact	[redacted]		

Fees

Regulation	Fee Condition	Amount	Modifier	Payable
9 - Class 8	VicSmart application more than $10, 000	$473.60	100%	$473.60
		Total		**$473.60**

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

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

Documents Uploaded [Please reupload invalid files before submission]

Date	Type	Filename
08-11-2024	A Copy of Title	TITLE MERGED.pdf
08-11-2024	Alteration statement	Permit explination.pdf - [Invalid upload]
08-11-2024	Site plans	nic214_dpd_15-12.pdf
08-11-2024	Existing floor plan	7a Paternoster Road FSRE.pdf
08-11-2024	Additional Document	Bushfire Management Assessment - 7A Paternoster Road Cockatoo - March 2023.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]
Submission Date	[redacted]

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
8.30amâ€"5pm
Phone: 1300 787 624
After Hours: 1300 787 624
Fax: 03 5941 3784

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

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

Cardinia Shire Council

Request to amend a current planning permit application

Cardinia

This form is used to request an amendment to an application for a planning permit that has already been lodged with Council, but which has not yet been decided. This form can be used for amendments made before any notice of the application is given (pursuant to sections 50 / 50A of the *Planning and Environment Act 1987*) or after notice is given (section 57A of the Act).

PERMIT APPLICATION DETAILS

Application No.:	T240580 PA
Address of the Land:	7a Paternoster Road Cockatoo

APPLICANT DETAILS

Name:	[redacted]
Organisation:	
Address:	
Phone:	
Email:	

AMENDMENT TYPE

Under which section of the Act is this amendment being made? (select one)	
Section 50 – Amendment to application at request of applicant **before** notice:	☐
Section 50A - Amendment to application at request of responsible authority **before** notice:	☑
Section 57A – Amendment to application **after** notice is given:	☐

AMENDMENT DETAILS

What is being amended? (select all that apply)		
What is being applied for ☑	Plans / other documents ☐	Applicant / owner details ☐
Land affected ☐	Other ☐	

Describe the changes. If you need more space, please attach a separate page.
Change of application from VicSmart as the application is not eligible for VicSmart.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Specify the estimated cost of any development for which the permit is required:		
Not applicable ☐	Unchanged ☑	New amount $

DECLARATION

I declare that all the information in this request is true and correct and the owner (if not myself) has been notified of this request to amend the application.

Name:	[redacted]
Signature:	
Date:	11/4/25.

LODGEMENT

Please submit this form, including all amended plans/documents, to mail@cardinia.vic.gov.au

You can also make amendments to your application via the Cardinia ePlanning Portal at https://eplanning.cardinia.vic.gov.au/

If you have any questions or need help to complete this form, please contact Council's Statutory Planning team on 1300 787 624.

IMPORTANT INFORMATION

It is strongly recommended that before submitting this form, you discuss the proposed amendment with the Council planning officer processing the application.

Please give full details of the nature of the proposed amendments and clearly highlight any changes to plans (where applicable). If you do not provide sufficient details or a full description of all the amendments proposed, the application may be delayed.

No application fee for s50/s50A requests unless the amendment results in changes to the relevant class of permit fee or introduces new classes of permit fees. The fee for a s57A request is 40% of the relevant class of permit fee, plus any other fees if the amendment results in changes to the relevant class (or classes) of permit fee or introduces new classes of permit fees. Refer to the *Planning and Environment (Fees) Regulations 2016* for more information.

The amendment may result in a request for more under section 54 of the Act and/or the application requiring notification (or re-notification). The costs associated with notification must be covered by the applicant.

Council may refuse to amend the application if it considers that the amendment is so substantial that a new application for a permit should be made.

Any material submitted with this request, including plans and personal information, will be made available for public viewing, including electronically, and copies may be made for interested parties for the purpose of enabling consideration and review as part of a planning process under the *Planning and Environment Act 1987*.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Copyright State of Victoria. No part of this publication may be reproduced except as permitted by the Copyright Act 1968 (Cth), to comply with a statutory requirement or pursuant to a written agreement. The information is only valid at the time and in the form obtained from the LANDATA REGD TM System. None of the State of Victoria, its agents or contractors, accepts responsibility for any subsequent publication or reproduction of the information.

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 09855 FOLIO 256

Security no : 124119164425E
Produced 19/10/2024 09:37 AM

LAND DESCRIPTION

Land in Plan of Consolidation 169433B.
PARENT TITLE Volume 04524 Folio 796
Created by instrument CP169433B 06/01/1989

REGISTERED PROPRIETOR

[redacted]

ENCUMBRANCES, CAVEATS AND NOTICES

[redacted]

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 TP457871D 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: 7A PATERNOSTER ROAD COCKATOO VIC 3781

ADMINISTRATIVE NOTICES

NIL

[redacted]

DOCUMENT END

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Imaged Document Cover Sheet

The document following this cover sheet is an imaged document supplied by LANDATA®, Secure Electronic Registries Victoria.

Document Type	**Plan**
Document Identification	**TP457871D**
Number of Pages (excluding this cover sheet)	**1**
Document Assembled	**19/10/2024 09:37**

Copyright and disclaimer notice:
© State of Victoria. This publication is copyright. No part may be reproduced by any process except in accordance with the provisions of the Copyright Act 1968 (Cth) and for the purposes of Section 32 of the Sale of Land Act 1962 or pursuant to a written agreement. The information is only valid at the time and in the form obtained from the LANDATA® System. None of the State of Victoria, LANDATA®, Secure Electronic Registries Victoria Pty Ltd (ABN 86 627 986 396) as trustee for the Secure Electronic Registries Victoria Trust (ABN 83 206 746 897) accept responsibility for any subsequent release, publication or reproduction of the information.

The document is invalid if this cover sheet is removed or altered.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Delivered by LANDATA®, timestamp 19/10/2024 09:37 Page 1 of 1

TITLE PLAN		EDITION 1	TP 457871D

Location of Land

Parish: GEMBROOK
Township:
Section
Crown Allotment:
Crown Portion:

Last Plan Reference: CP 169433B
Derived From: VOL 9855 FOL 256
Depth Limitation: NIL

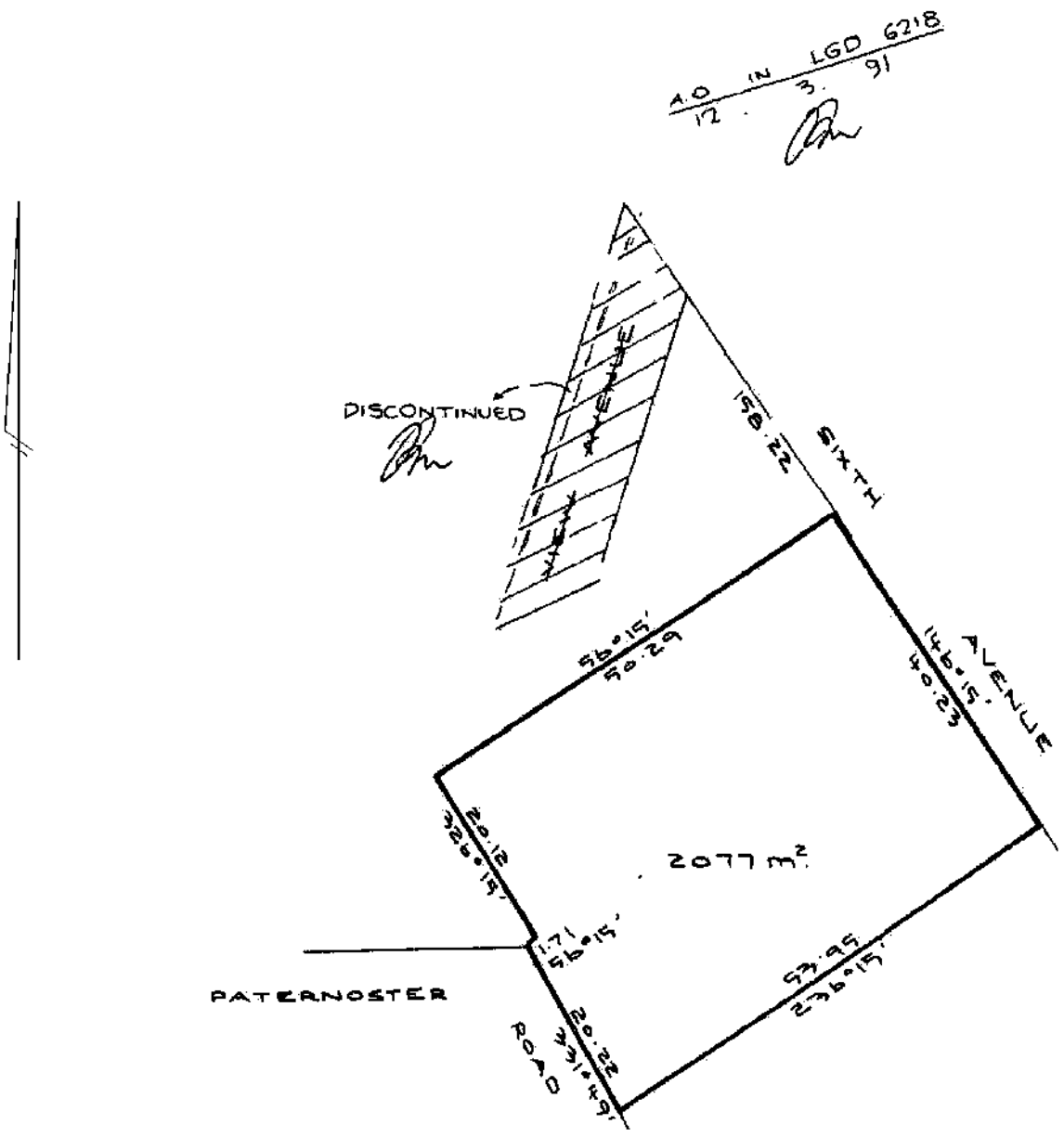
Notations

ANY REFERENCE TO MAP IN THE TEXT MEANS THE DIAGRAM SHOWN ON THIS TITLE PLAN

Description of Land / Easement Information

THIS PLAN HAS BEEN PREPARED FOR THE LAND REGISTRY, LAND VICTORIA, FOR TITLE DIAGRAM PURPOSES AS PART OF THE LAND TITLES AUTOMATION PROJECT
COMPILED: 22/08/2002
VERIFIED: BP

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.



LENGTHS ARE IN METRES	Metres = 0.3048 x Feet Metres = 0.201168 x Links		Sheet 1 of 1 sheets

M.J. REDDIE SURVEYS Pty. Ltd.

ABN 49 005 965 257

LICENSED SURVEYOR

ENGINEERING SURVEYOR

Office: 1 Horner St. Beaconsfield, 3807
Branch Office: 19 Evergreen Ave Inverloch, 3996
Email: luke@reddiesurveys.com.au

POSTAL ADDRESS:
P.O. BOX 268
BERWICK 3806
PHONE: 9707 4117
FAX: 9707 4428

11/04/2025

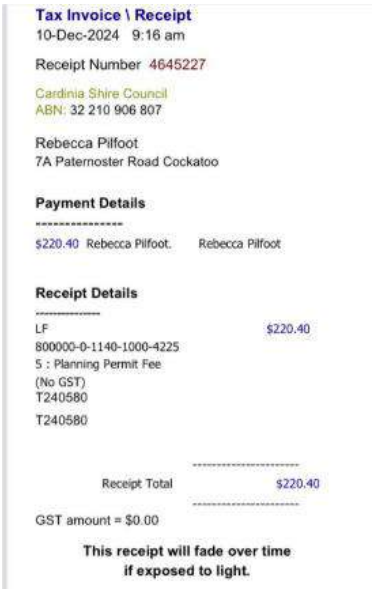
Address: **7a Paternoster Road, Cockatoo**
Proposal: **Dwelling Extension**

To whom it may concern,

We refer to your letter requesting further information under section 54 of the *Planning and Environment Act*, 1987.

We will respond to each item in your letter below.

1. The fees were paid on 10th of December. See attached receipt.



Tax Invoice \ Receipt
10-Dec-2024 9:16 am

Receipt Number 4645227

Cardinia Shire Council
ABN: 32 210 906 807

Rebecca Pilfoot
7A Paternoster Road Cockatoo

Payment Details

$220.40 Rebecca Pilfoot. Rebecca Pilfoot

Receipt Details

LF $220.40
800000-0-1140-1000-4225
5 : Planning Permit Fee
(No GST)
T240580
T240580

Receipt Total $220.40

GST amount = $0.00

This receipt will fade over time if exposed to light.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

2. See attached section 50 form.
3. See attached LCA report.
4. See new plans attached.
5. See the updated FSRE plan and associated tree identficiation document.
   It is noted that we do not wish to remove any trees. The cypresses on the western boundary and ferns on the eastern side of the existing house are the only trees that fall into defendable space clause. These trees are already within 2m of the boundary or within 10m of the existing house, so the new extension does not add any new grounds for removal. It is evident that the proposed

extension tries to minimise any impact on protected vegetation, especially the large eucalypt at the north of the property.

6. See updated plans supplied by Newground.

I trust that the information and documents provided satisfy Council's request for further information. Notwithstanding, should the above or enclosed be insufficient for Council to proceed to permit issuance, we respectfully request an extension of time to provide a response, in addition to written details regarding any additional information or further alterations required.

We look forward to your favourable consideration of this matter.

Please do not hesitate to contact our office should you have any questions regarding this matter.

Kind Regards

[redacted]

M.J. Reddie Surveys P/L
Email: ben@reddiesurveys.com.au

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

RANGES Environmental

Bushfire Management Assessment

Additions to an existing dwelling

7A Paternoster Road Cockatoo

April 2025

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Table of Contents

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Report:	**Bushfire Management Statement: 7a Paternoster Road, Cockatoo**
Report no:	23016
Author:	[redacted]
Contact:	
Date:	10 April 2025
Prepared for:	[redacted]

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

1 Introduction

This Bushfire Management Statement is prepared in accordance with clause 53.02 (Planning for Bushfire) outlined in the Cardinia Planning Scheme.

The proposal is for an extension to a dwelling and this report is a revision of the original report dated 27 March 2023 due to:

- A CFA Further Information Letter dated 4 December 2024
- A revision to the development dimensions based on the CFA recommendations.

Among other matters, the CFA required '*A revised response to ….. demonstrate how the proposed extension is located to maximise the separation distance between the building and the bushfire hazard'* and *'the position of the extension to the dwelling is less than 18 metres to the Northeast property boundary where forest vegetation is Page 2 of 2'*

The development has been re-design so that the edge of the extension is 19.59m from the northeast property boundary, which is an additional setback of 1.59m. It is important to note that options for increase setbacks are very limited due to:

- The existing location and orientation of the dwelling
- Extension to the south of the dwelling is very limited due to the position of the existing garage and the existing asphalt driveway that accommodates multiple vehicles associated with the current residents.

When considering the suitability of this proposal in accordance with clause 53.02 and supporting policies, the page 42 of the *Technical Guide Planning Permit Applications - Bushfire Management Overlay* should be considered as duplicated below:

> There is an opportunity to create more bushfire resilient communities through the replacement and extension to an existing building. These existing buildings may not have any or adequate bushfire protection measures. The Bushfire Management Overlay seeks to facilitate improvements to these properties through their redevelopment. Most applications for replacement or extensions to an existing building can implement the applicable approved measures. Where this is not possible, most likely due to the size of the lot or environmental constraints, applications should develop a site-specific response to the bushfire hazard.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Application Summary

Site Details	
Municipality:	Cardinia Shire Council
Subject Site:	7A Paternoster Road, Cockatoo
Site Area:	2058 m^2
Zoning:	Low Density Residential Zone – Schedule 2 (LDRZ2)
Overlays:	Bushfire Management Overlay (BMO) Design and Development Overlay – Schedule 1 (DDO1) Vegetation Protection Overlay – Schedule 1 (VPO1)
Site Dimensions:	Approx. 40m x 49m
Existing Buildings	Existing dwelling, garage and driveway

Summary of Proposal	
Development Plan:	Extension of existing dwelling and decking
Construction Standard:	Bushfire Attack Level of BAL 40
Defendable Space:	To the property boundary (as per Clause 53.02-5 Bushfire Planning)
Water Supply	A 10,000 litre static water supply tank with fire authority fittings

Application Requirements

This application must address objectives outlined in clause 44.06 Bushfire Management Overlay and Clause 53.02 Planning for Bushfire in a designated settlement area for 'Pathway 1' requirements including:

- A bushfire hazard site assessment including a plan that describes the bushfire hazard within 150 metres of the proposed development. The description of the hazard must be prepared in accordance with Sections 2.2.3 to 2.2.5 of AS3959:2009 Construction of buildings in bushfire prone areas (Standards Australia).
- A bushfire hazard landscape assessment including a plan that describes the bushfire hazard of the general locality more than 150 metres from the site. Photographs or other techniques may be used to assist in describing the bushfire hazard. This requirement does not apply to a dwelling that includes all the approved measures specified in Clause 53.02-1.
- A bushfire management statement describing how the proposed development responds to the requirements in this clause and Clause 44.06. If the application proposes an alternative measure, the bushfire management statement must explain how the alternative measure meets the objective.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

2 Bushfire Hazard Assessment

A site investigation was undertaken on 06 March 2023 to determine the vegetation types within 150 metres of the development site. Plan 1 of Appendix 1 shows the vegetation types within 150 metres of the property boundary. Classification of vegetation types are consistent with definitions in *AS-3959 Construction of buildings in bushfire prone areas.*

2.1 Assessment area

The table below provides a summary of hazard vegetation types and slopes within 150 metres from the proposed development (the assessment area) and the following page provides descriptions of these vegetation types.

Hazard (Refer to Plan 1)	**Hazard 1A**		**Hazard B**		**Hazard 2**		**Hazard 3**	
Direction	**East**		**West**		**Contiguous**		**Southwest**	
Vegetation Type	Low Threat	☐	Low Threat	☐	Low Threat	☐	Low Threat	☐
	Modified	☐	Modified	☐	Modified	☒	Modified	☐
	Forest	☒	Forest	☒	Forest	☐	Forest	☐
	Woodland	☐	Woodland	☐	Woodland	☐	Woodland	☐
	Scrub	☐	Scrub	☐	Scrub	☐	Scrub	☐
	Rainforest	☐	Rainforest	☐	Rainforest	☐	Rainforest	☐
	Grassland	☐	Grassland	☐	Grassland	☐	Grassland	☒
Effective Slope (under classified vegetation)	Upslope/Flat	☐	Upslope/Flat	☒	Upslope/Flat	☒	Upslope/Flat	☒
	Downslope		Downslope		Downslope		Downslope	
	>0 to 5 °	☐	>0 to 5 °	☐	>0 to 5 °	☐	>0 to 5 °	☐
	>5 to 10°	☐	>5 to 10°	☐	>5 to 10°	☒	>5 to 10°	☐
	>10° to 15°	☒	>10° to 15°	☐	>10° to 15°	☐	>10° to 15°	☐
	>15 to 20°	☐	>15 to 20°	☐	>15 to 20°	☐	>15 to 20°	☐
	>20°	☐	>20°	☐	>20°	☐	>20°	☐
Distance to threat	**41m**		**40m**		**20m**		**70m**	

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

2.2 Vegetation Classification

Vegetation classes occurring within the 150-metre assessment area are described below. The following page provides photos of the vegetation types to accompany these descriptions.

Forest

Hazard 1A

Significant forest vegetation occurs approximately 40 metres to the northeast of the proposed extensions to the dwelling. This vegetation is downhill from the subject site on a significantly steep grade from approximately 14-15º. Forest vegetation within hazard 1a presents with a continuous Eucalypt canopy and a dense understorey consisting of tree ferns, ground ferns and other shrubs with high fuel loads in an unmanaged condition. This is the highest bushfire threat hazard to the subject site.

Hazard 1B

A small patch (approx. 2900m²) of forest vegetation also occurs uphill approximately 40 metres to the west of the proposed development site. This hazard shows a comparable vegetation type, density and fuel load to hazard 1a. While spanning only a relatively small area its situation within modified vegetation and proximity to greater areas of forest vegetation identify this patch as significant enough to warrant consideration as a substantial hazard.

Modified

Hazard 2

The surrounding developed residential properties and respective dwellings to the northwest and southeast (along the ridgeline) tend to display a relatively high vegetation density. Site observations determined this vegetation type to be Modified with some continuous canopy and dense midstorey and understorey interspersed with managed areas (ie. Gardens and short-cropped lawns). Although there is significantly reduced fuel loads due to management and built form, the continuity to nearby forest vegetation increases the overall fire hazard.

Grassland

Hazard 3

Large areas of pastures and farmland were identified to the southwest of the subject site. These areas of grass, although likely grazed or otherwise managed, must be assumed to be grassland vegetation as maintenance or grazing cannot be guaranteed. Managed pasture typically burns at a low intensity, however, where undermanaged, a grassfire can travel across a landscape at significant speed.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

2.3 Photos

Figure 1. View of Hazard 1a to the northeast of Sixth Avenue, and Hazard 2 in the foreground

Figure 2. View of Hazard 1a displaying a dense understorey with high fuel loads

Figure 3. Hazard 2 – neighbouring properties show dense native and exotic vegetation coverage

Figure 4. Hazard 1b showing a small patch of forest surrounded by modified vegetation

Figure 5. Hazard 3 – extensive grassland to the southwest of the subject site

Figure 6. Hazard 3 – the grassland abutting forest vegetation further afield to the southwest

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

3 Bushfire Hazard Landscape Assessment

The Landscape Hazard Assessment describes potential bushfire risks beyond 150 metres including landscape typology, fire history, potential bushfire behaviour and evacuation options.

Plan 2 shows the broader landscape context including wildfire history, controlled burns and access to Neighbourhood Safer Places and emergency services.

3.1 Fire History

As shown in Map 2 there have been several fire events within 5km of the subject site since 1939. The 1939 Black Friday bushfires, although not directly impacting the property, devastated extensive areas of the surrounding landscape and the northern half of Cockatoo. The property was directly impacted by the 1983 Ash Wednesday fires that affected over 1000 hectares of land throughout Cockatoo.

Multiple prescribed burns have occurred in the Wright Forest Bushland Reserve area to the north of the property between 1996 and 2013. While these burns may have contributed to reducing fuel loads and potential fire danger in the area at the time of burning, it is unlikely that these burns will benefit the subject site at the present due to the elapsed time since burn and the high likelihood of an increase in fuel loads.

Further prescribed burns have been conducted in the vicinity of Cardinia Reservoir between 2009 and 2017, likely with a similar outcome as those of the Wright Forest Bushland Reserve.

3.2 Surrounding Landscape

Despite areas of township development and large managed pastural lands in Cockatoo, Emerald and Avonsleigh, large areas of forest persist throughout the landscape albeit with limited contiguity. These forest areas pose a high fire risk to the subject site, and although in some cases these areas have no contiguity to nearby forest there remains a high risk of ember attack to the property.

The forest vegetation to the northeast and north of the property spans approximately 233 hectares with narrow corridors to several other large, forested areas, such as those surrounding Cardinia Reservoir approximately 1km to the southwest and throughout undeveloped private properties approximately 2km to the northeast.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

3.3 Access to Refuge and Emergency Services

There are two Nearby Safer Places (NSPs) within 5km; Worrell Reserve Oval NSP, Emerald (4.4km by road) and Mountain Road Reserve NSP, Cockatoo (4.7km by road).

There are several regional CFA Fire Stations in the area with the nearest being the Cockatoo Fire Station CFA (3.2km by road). Others include Emerald Fire Station CFA (4.5km) and Gembrook Fire Station CFA (9.3km).

This demonstrates that while there are some nearby emergency services in effective range of the subject site there is no reasonable guarantee of support from these services. It is recommended that the occupants independently assess their own risk and develop a bushfire protection plan.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

3.4 Landscape Typology

The Technical Guide to Planning Permit Applications in the Bushfire Management Overlay (DELWP 2017) outlines 4 Landscape Types ranging from Landscape Type 1 (low risk) to Landscape Type 4 (extreme) as outlined below.

Landscape Type	Description
Type 1	– There is little vegetation beyond 150 metres of the site (except grasslands and low-threat vegetation). – Extreme bushfire behaviour is not possible. – The type and extent of vegetation is unlikely to result in neighbourhood scale destruction of property. – Immediate access is available to a place that provides shelter from bushfire.
Type 2	– The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site. – Bushfire can only approach from one aspect and the site is located in a suburban, township or urban area managed in a minimum fuel condition. – Access is readily available to a place that provides shelter from bushfire. This will often be the surrounding developed area.
Type 3	– The type and extent of vegetation located more than 150 metres from the site may result in neighbourhood-scale destruction as it interacts with the bushfire hazard on and close to a site. – Bushfire can approach from more than one aspect. – The site is located in an area that is not managed in a minimum fuel condition. – Access to an appropriate place that provides shelter from bushfire is not certain.
Type 4	– The broader landscape presents an extreme risk. – Evacuation options are limited or not available.

The local landscape character surrounding the proposed development is best described as Landscape Type 3. Fire could approach from more than one direction and may inflict ember attack on the property and forest, grasslands and modified conditions within 1km of the site suggests that the development may be subject to radiant heat or direct flame contact. In the event of emergency evacuations, access to areas of refuge remain reasonably certain within nearby townships or NSPs.

In summary, the landscape risks pose some threat to development on the property and an integrated plan to mitigate bushfire risks is required including:

- a suitable standard of construction for dwellings in accordance with Construction of buildings in bushfire prone areas (AS-3959),
- designated defendable space, and
- water supply.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

4 Bushfire Management Statement

This section describes how the proposed development responds to the requirements of *Planning for Bushfire* (Clause 53.02-1). The purpose of Bushfire Protection Objectives for dwellings in existing settlements is:

- To ensure that the development of land prioritises the protection of human life and strengthens community resilience to bushfire.
- To ensure that the location, design and construction of development appropriately responds to the bushfire hazard.
- To ensure development is only permitted where the risk to life, property and community infrastructure from bushfire can be reduced to an acceptable level.
- To specify location, design and construction measures for a single dwelling that reduces the bushfire risk to life and property to an acceptable level.

4.1 Definition of objectives and measures

Four key provisions are outlined in Clause 53.02 to fulfil the purpose of *Planning for Bushfire*:

Objectives. An objective describes the outcome that must be achieved for a completed development.

Approved measures (AM). An approved measure meets the objective.

Alternate measures (AltM). An alternative measure may be considered where the responsible authority is satisfied that the objective can be met. The responsible authority may consider other unspecified alternative measures.

Decision guidelines. The decision guidelines set out the matters that the responsible authority must consider before deciding on an application, including whether any proposed alternative measure is appropriate.

4.2 Bushfire Protection Measures

Landscape, Siting and Design Objectives

AM 1.1 The building is required to be located to ensure the site best achieves the following:	
- The maximum separation distance between the building and the bushfire hazard.	**Response:** The block is almost entirely cleared and bordered by established residential properties. Siting of the extension and new deck is restricted by the size of the property, the orientation of the existing dwelling and existing driveway and garage.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

- The building is in close proximity to a public road. - Access can be provided to the building for emergency service vehicles.	**Response**: The dwelling is approximately 60 metres from public road which allows reasonable opportunity for emergency vehicles to defend the property

4.3 Defendable Space and Construction Objective

Requirement
Approved Measure 1.2: A building provides the defendable space in accordance with Table 1 Columns A, B, C, D or E and Table 6 to Clause 53.02-5. Adjoining land may be included as defendable space where there is a reasonable assurance that the land will remain or continue to be managed in that condition as part of the defendable space.

Response: The following table shows the Defendable Space requirements from the proposed dwelling relative to BAL Construction Standards (based on table 1 of clause 53.02).

Identified threat	Hazard 1a	Hazard 1b	Hazard 2	Hazard 3
Direction from dwelling	Northeast	West	Surrounding	Southwest
Vegetation Type	Forest	Forest	Modified	Grassland
Slope	Downslope	Flat or Upslope	Flat or Upslope	Downslope
Degrees	14°	N/A	N/A	7-9°
BAL Options	**Required Defendable Space**[1]			
Defendable Space for BAL 12.5	82m	48m	50m or PB*	25m
Defendable Space for BAL 19	64mm	35m	50m or PB*	17m
Defendable Space for BAL 29	49	25m	50m or PB*	11m
Defendable Space for BAL 40	39m	19m	na	8m
Distance from the building to the threat	41 m	40m	20m	70m
Proposed Construction Standard			BAL 40	
Proposed Defendable Space			40m or to the property boundary	

[1] Green = Able to achieve the required defendable space distance from the threat for the relevant BAL rating.

Red = Not able to achieve defendable space for the relevant BAL rating

* PB - to the Property Boundary

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Although the distance to the building to the north eastern property boundary is limited to 21 metres, it is worth noting that forest does not occur for a further 20 metres and the unmade road reserve is managed as a firebreak by the Council. It is common for public authorities to manage firebreaks between the interface of forested areas and residential lands and this area is no exception as indicated in figures 7 and 8.

Figure 7. View of managed firebreak at the edge of the northeast property boundary

Figure 8. View further north of the managed firebreak

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

BAL recommendation

The recommended BAL rating for this development is BAL 40 given the current setback of the development to Hazard 1A is 41 metres.

A further response to page 42 of the Technical Guidelines is outlined below.

- Does the development increase the likely intensity of the occupation of the land	**Response:** The proposed development is not for the purpose of increasing the number of residents that will occupy the land. Rather, the extension is to provide a more practical and liveable space while also increasing bushfire resilience through the implementation of BAL 40 construction.
- Does the siting of buildings meet AM 2.2?	**Response**: AM 2.2 is met for the purpose of emergency access. As stated previously, options for increase setbacks from the bushfire hazards are very limited due to the existing location and orientation of the dwelling and the position of the existing garage and asphalt driveway that accommodates multiple vehicles associated with the current residents.

- Defendable space is provided to meet the approved measure, but on any aspects where this is not possible defendable space is provided to the property boundary	Protection from the northeastern aspect is limited and therefore defendable space extends to the property boundary. However, the existing firebreak provides additional re-assurance that land will be managed in accordance with the objectives of defendable space.
- Area water supply and site access arrangements appropriate under the approved measures?	Yes, the addition of 10,000L of water supply with fire authority fittings will enhance bushfire resilience of the property. The current driveway is suitable as emergency access.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Defendable Space Implementation

Plan 4 of Appendix 1 provides the Bushfire Management Plan that outlines standard vegetation management requirements to meet defendable space objectives along with the nominated construction standard and objectives for water supply and site access as outlined below.

Note that the defendable space requirements set out in the Bushfire Management Plan apply to existing vegetation and new vegetation. Any landscaping within the defendable space areas needs to comply with these standards.

4.4 Water Supply (AM 4.1)

Requirement:

Buildings are required to be provided with a static water supply for firefighting and property protection purposes as specified in Table 4 to Clause 53.02-3 (duplicated below).

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

Lot Size (m^2)	Hydrant Available	Capacity (litres)	Fire Authority Fittings and Access Required	Applicable requirements
Less than 500	Not Applicable	2,500	No	☐
500 – 1000*	Yes	5,000	No	☐
500 – 1000	No	10,000	Yes	☐
1001 and above	Not Applicable	10,000	Yes	☒

Response:

The site is greater than 1,000m^2, therefore a 10,000 litre water tank with fire authority fittings is required as a part of the new development. The Bushfire Management Plan includes a indicative location for the water tank, however this location is not definitive so long as fire authority vehicles can be stationed within 4 metres of the water supply outlet.

4.5 Access Requirements

Vehicle access is required to be designed and constructed as per Table 5 of Clause 53.02-3 as duplicated below.

Column A	Column B
A1 - Length of access is less than 30 metres	There are no design and construction requirements if fire authority access to water supply is not required under AM 4.1
A2 - Length of access is less than 30 metres	Where fire authority access to the water supply is required under AM4.1 fire authority vehicles must be able to get within 4 metres of the water supply outlet
A3 - Length of access is greater than 30 metres	The following design and construction requirements apply: – All weather construction – A load limit of at least 15 tonnes – Provide a minimum trafficable width of 3.5 metres – Be clear of encroachments for at least 0.5 metres on each side and at least 4 metres vertically – Curves must have a minimum inner radius of 10 metres – The average grade must be no more than 1 in 7 (14.4%) (8.1°) with a maximum grade of no more than 1in 5 (20%) (11.3°) for no more than 50 metres – Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle
A4 - Length of access is greater than 100 metres	The following additional design and construction requirements apply: A turning area for fire fighting vehicles must be provided close to the building by one of the following: – A turning circle with a minimum radius of 8 metres – A driveway encircling the dwelling – The provision of other vehicle turning heads – such as a T or Y head – which meets the specification of Austroad Design for an 8.8 metre Service Vehicle

Response:

The driveway access to the dwelling extension is 60 metres from Paternoster Road. Therefore A3 design and construction standards are required for emergency vehicle access., i.e. where fire authority access to the water supply is required under AM4.1 fire authority vehicles must be able to get within 4 metres of the water supply outlet.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

4.6 Conclusion

The site is in a relatively high fire risk location due to the steep forested vegetation within 150m, the topographical siting of the property, the relative lack of surrounding built form.

A BAL 40 construction for the additions to the dwelling is considered an appropriate development response to the surrounding bushfire risks given the close proximity of forest vegetation within a site that has limited availability for effective implementation of defendable space. A defendable space distance to the entire property boundary and construction standards of BAL 40 will meet the objectives stated in Clause 53.02 of the planning scheme by providing adequate protection from all hazards identified in the site assessment.

Although the existing buildings and proposed extension may not have ideal bushfire protection measures given its location, the proposal creates greater bushfire resilience than the current circumstances including:

- Defendable space applied to the entire property and the adjoining public land providing vegetation management as an additional fuel buffer.
- Construction to BAL 40 for the new elements of the build
- 10,000 litre Water supply suitable for emergency access.

The Bushfire Management Plan (Appendix 1- Plan 4) is intended to be the formal plan to be endorsed as a part of the permit. The plan includes all anticipated permit conditions in relation to the BAL construction standard, defendable space and water supply.

Hazard identification, defendable space distances and construction requirements have been determined in line with AS3959 and *Bushfire Planning* (Clause 53.02 of the planning scheme). The underlying modelling used to determine the defendable space distances for various construction standards are precautionary, however they still have limitations. Therefore, the recommended BAL rating and defendable space distances detailed within this report provide no guarantee of absolute protection under a bushfire attack. Rather, it provides the most appropriate recommendation for construction within the subject site. It is recommended that the occupants independently assess their own risk and develop a bushfire protection plan that is not solely reliant on the dwellings resilience to a bushfire.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

5 References

CFA (2014B) Standard Permit Conditions Bushfire Management Overlay. Country Fire Authority, Victoria.

CFA (2014b) Water Supply Requirements (Bushfire Management Overlay). Country Fire Authority, Victoria.

CFA (2014c) Access Requirements (Bushfire Management Overlay). Country Fire Authority, Victoria.

DELWP (2017). Technical Guide: Planning Permit Applications Bushfire Management Overlay. Department of Environment, Land, Water and Planning, Melbourne, Victoria.

DELWP (2018) Bushfire State Planning Policy Amendment VC140 - Practice Note 68. Department of Environment, Land, Water and Planning, Melbourne, Victoria.

Standards Australia (2018) Australian Standard – Construction of buildings in bushfire prone areas.

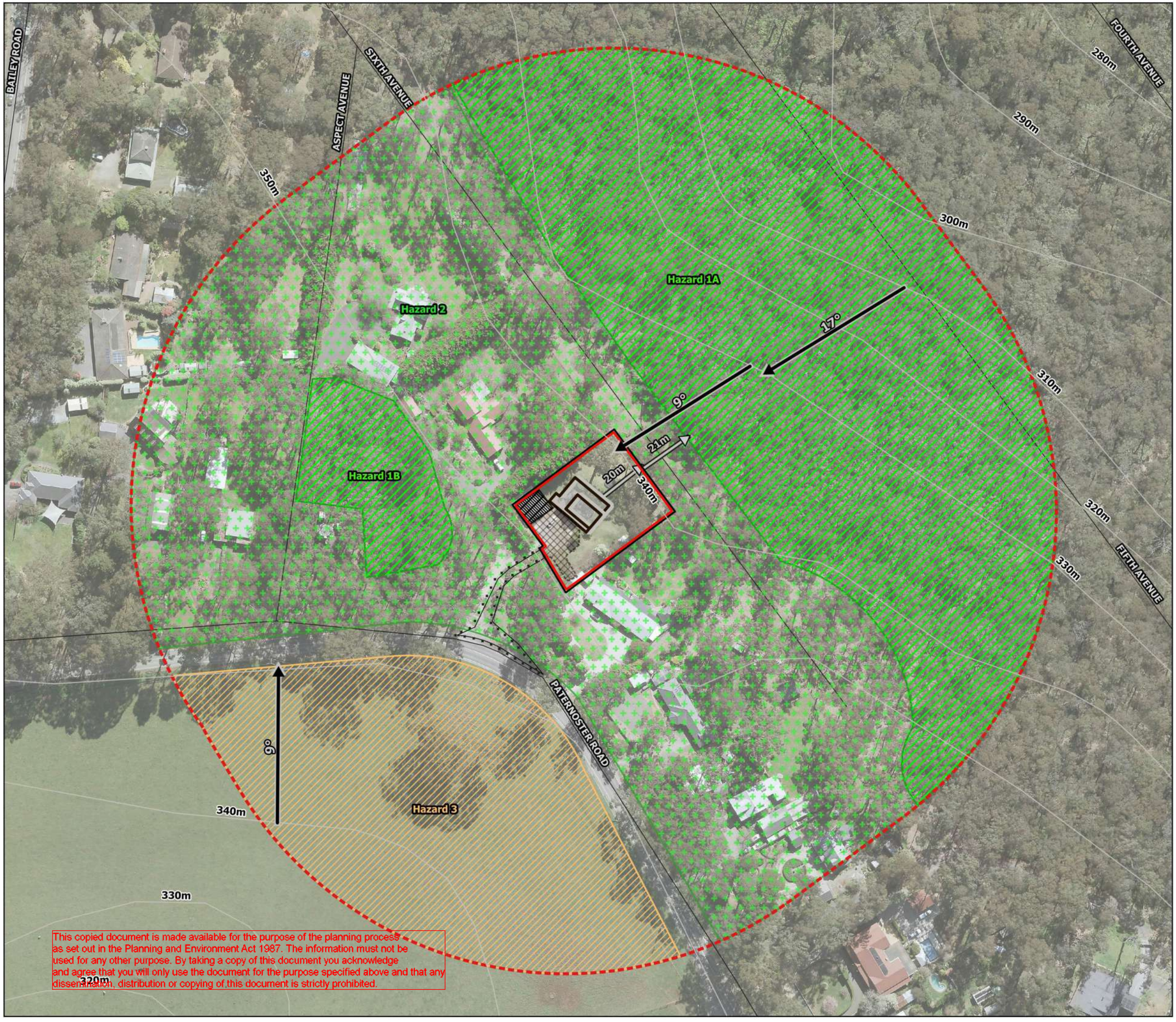
This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Appendix 1 - Plans 1-4

The following Plans were produced using Quantum GIS (QGIS 3.20) and were developed from various datasets including:

- Aerial photography available through Google Earth (Ausmap) and Nearmap
- VicPlan layers (Parcel, Roads, Waterways and Local Government Boundaries)
- Victorian Bushfire Layers (Fire History Layer and Neighbourhood Safer Places Register)
- Development Drawings provided by DS Building Design
- GPS based data collected in the field

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.



Plan 1 - Site Hazard Assessment

7A Paternoster Road Cockatoo

- Title Boundary
- 150m Assessment Area
- Dwelling and Proposed Additions
- Shed
- Driveway
- Road Access to Property

AS-3959 Vegetation Types

- Modified
- Forest
- Grassland
- Degrees (Arrows Point Upslope)
- Major Contour

Date: 10 April 2025
Created by [redacted]
Map Program: QGIS 3.22.8

1:1,400
Scale (A3)

N

0 20 40 m

RANGES Environmental
info@rangesconsulting.com

Plan 2 - Landscape Hazard Assessment

7A Paternoster Road Cockatoo

- Subject Site
- Locality Boundary

Fire History

- 1900-1970
- 1970-2000
- 2000-2020

Emergency Facilities

- Emergency coordination centre
- Fire station
- Neighbourhood safer place

This copied document is made available for the purpose of the planning process
as set out in the Planning and Environment Act 1987. The information must not be
used for any other purpose. By taking a copy of this document you acknowledge
and agree that you will only use the document for the purpose specified above and that any
dissemination, distribution or copying of this document is strictly prohibited.

Date: 06 March 2023
Created by: [redacted]
Map Program: QGIS 3.14

Scale (A3)

1:30,000

0 0.5 1 km

N

RANGES Environmental
info@rangesconsulting.com

Plan 3 - Defendable Space Assessment

7A Paternoster Road Cockatoo

Title Boundary

AS-3959 Vegetation Types

Modified

Forest

Measurements (Site)

Degrees (Arrows Point Upslope)

Distance

Development Layout

Existing Shed

Driveway

Dwelling including proposed additions

Road Access to Property

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Date: 10 April 2025

Created by: [redacted]

Map Program: QGIS 3.14

Scale (A3)

1:450

0 10 20 m

N

RANGES Environmental

info@rangesconsulting.com

Plan 4 - Bushfire Management Plan

7A Paternoster Road Cockatoo

Title Boundary

Development Layout

Defendable Space

Existing Shed

Dwelling including additions

Existing Driveway

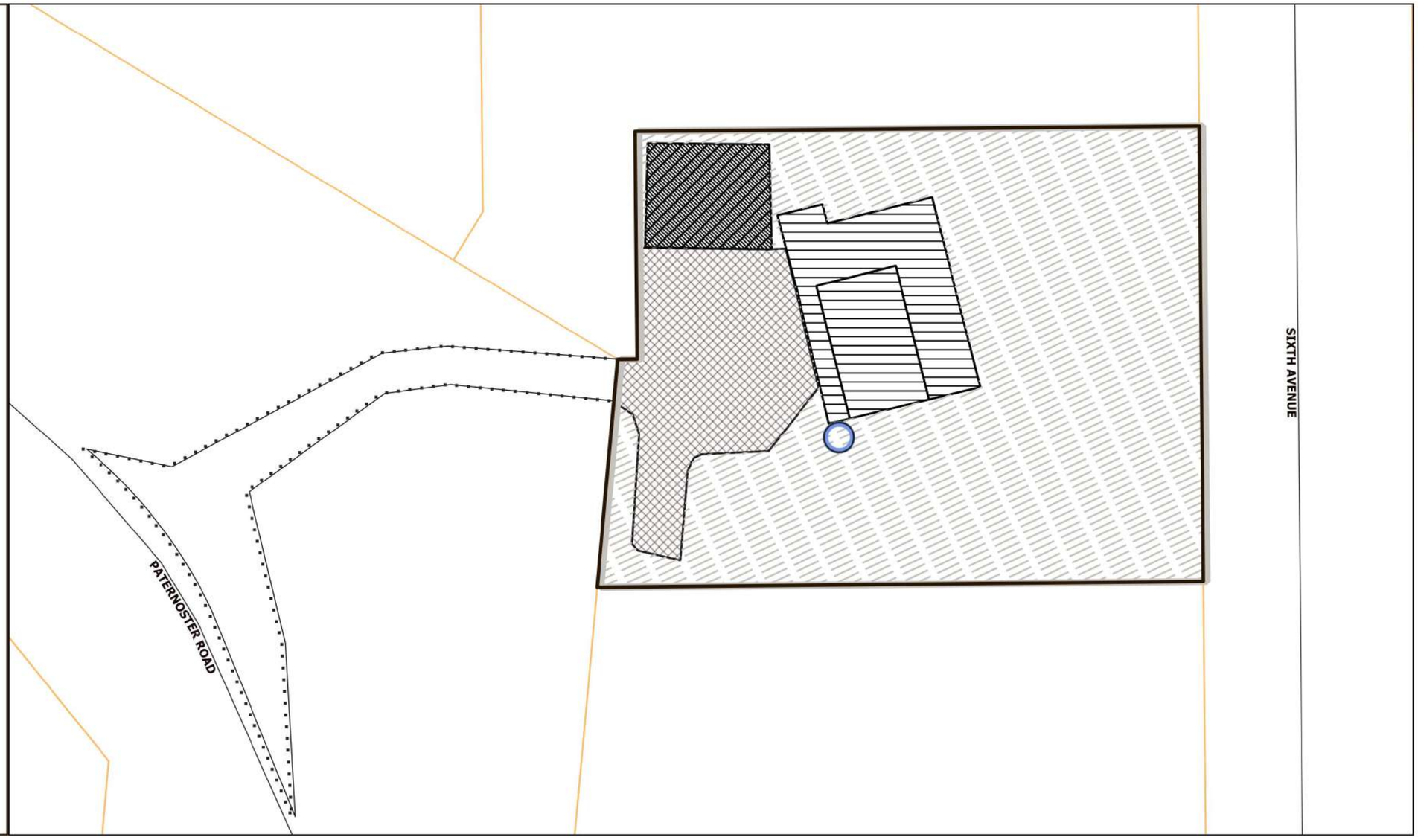
Road Access to Property

Water Tank (10,000 Lt)

Date: 10 April 2025
Created by: Stuart Coghill
Map Program: QGIS 3.120

0 10 2

Scale (A3): 1:400



Defendable Space

Defendable Space is to a distance of 40 metres from the dwelling or to the property boundary (whichever is less) where vegetation and other flammable materials must be managed in accordance with the following:
1.Grass must be short cropped and maintained during the declared fire danger period.
2.All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
3.Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
4.Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
5.Shrubs must not be located under the canopy of trees.
6.Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.
7.Trees must not overhang or touch any elements of the building.
8.The canopy of trees must be separated by at least 5 metres.
9.There must be a clearance of at least 2 metres between the lowest tree branches and ground level.

Access Requirements

The following design and construction requirements apply:
Where fire authority access to the water supply is required under AM4.1 fire authority vehicles should be able to get within 4 metres of the water supply outlet.

Construction Standard

Extension to the dwelling is to be designed and constructed to a minimum AS-3959 Bushfire Attack Level of BAL 40.

Water Supply Requirements

A 10,000 litre water supply tank is to be provided for the dwelling. The water supply is to:
1.Be stored in an above ground water tank constructed of concrete or metal
2.All fixed above-ground water pipes and fittings required for firefighting purposes must be made of corrosive resistant metal
3. Include a separate outlet for occupant use
4. Where a 10,000 litre water supply is required, fire authority fittings and access must be provided as follows:
- Be readily identifiable from the building or appropriate identification signs to the satisfaction of the relevant fire authority.
- Be located within 60 metres of the outer edge of the approved building.
- The outlet/s of the water tank must be within 4 metres of the accessway and unobstructed.
- Incorporate a separate ball or gate valve (British Standard Pipe (BSP 65 millimetre) and coupling (64 millimetre CFA 3 thread per inch male fitting).
- Any pipework and fittings must be a minimum of 65 millimetres (excluding the CFA coupling).

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

RANGES Environmental

Attachment 1 – Site Plans

Provided on the overleaf

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

[redacted]

LAND CAPABILITY ASSESSMENT
FOR
ON-SITE WASTEWATER MANAGEMENT
AT
7A PATERNOSTER ROAD, COCKATOO VIC 3781

REPORT No. LCA14022025 FEBRUARY/2025

By

[redacted]

Land Capability Assessment
CONSULTANTS IN THE AGRICULTURAL SCIENCES

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

IMPORTANT NOTE

The land capability assessment report consists of this cover sheet, two written sections, three drawings and four appendices.
The report elements are not to be read or interpreted in isolation.

© Copyright – Land Capability Assessment.
Any reproduction must be in full.

TABLE OF CONTENTS

(ii) **Assessor's Qualifications & Insurance**

(iii) **Executive Summary**

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

APPENDIX A1
Soil Permeability and Soil Test Results

APPENDIX A2
Soil Profile Photographs

APPENDIX A3
Logs of Boreholes

APPENDIX B
Water and Nutrient Balance and Rainfall Data

APPENDIX C
Land Capability Assessment Table

APPENDIX D
Management Plan

DRAWING 1
Location of Subject Site

DRAWING 2
Location of Existing and Proposed Development

DRAWING MP1
Cut-Off Drain Detail for Effluent Disposal Fields

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

ASSESSOR'S ACADEMIC & PROFESSIONAL QUALIFICATIONS

[redacted]s the principal Soil Scientist at Land Capability Assessment.
She has a Masters Degree in Applied Science (General Agriculture) (awarded in 2003).

All fieldwork and analyses are undertaken by, or directly supervised by [redacted].

ASSESSOR'S PROFESSIONAL INDEMNITY INSURANCE

Policy Number:	BZF2004488
Period of Cover:	09/08/2024 – 09/08/2025
Geographical Coverage:	Australia
Retro-active Date:	Unlimited
Limit of Indemnity:	$2,000,000

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

EXECUTIVE SUMMARY

The proposed development at 7A Paternoster Road, Cockatoo VIC is suitable for sustainable on-site effluent disposal.

The site of 2074m^2 is located in the Low Density Residential Zone and is not in a Special Water Supply Catchment.

The site is not sewered. It is proposed to extend the existing 2-bedroom house to a 3-bedroom residence. The existing residence is served by a septic tank (with the capacity of 3200 litres) and 0.60m wide absorption trenches.

Our field testing which included soil profile logging and sampling, laboratory testing and subsequent reporting including water and nutrient balance modelling has revealed that on-site effluent disposal is rational and sustainable.

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

Effluent shall be treated (via the existing septic tank) to at least the septic standard and distributed by the existing and newly added absorption trenches utilising the processes of evapotranspiration and deep seepage.

The trench lengths have been determined from the *EPA Victoria - Guideline for onsite wastewater management (May 2024*) Tables 4-8 and 4-9 and *AS/NZS 1547:2012, Appendix L.* and satisfies the requirements of *SEPPs (Waters of Victoria)* in that the effluent disposal system cannot have any detrimental impact on the beneficial use of surface waters or groundwater.

For the proposed development the available area is not limiting and continuous or long-term increases in effluent volume above 600 litres/day (3-bedroom residence) are possible.

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

In regard to subsurface flows, it is clear that provided the on-site system is adequately designed, constructed, operated and maintained the risk to surface and ground waters is negligible. Once the effluent is placed underground, the extraordinary long travel times via ground water to surface waters ensures adequate nutrient attenuation.

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

Proposed use requires a primary treatment system (the existing septic tank) and the existing and newly added absorption trenches.

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

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

All requirements of *SEPP (Waters of Victoria)* have been met.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Land Capability Assessment

53 Telford Drive, Berwick VIC 3806

Email: info@lcavictoria.com.au

CONSULTANTS IN THE AGRICULTURAL SCIENCES

LCA14022025 – FEBRUARY/2025

LAND CAPABILITY ASSESSMENT FOR ON-SITE WASTEWATER MANAGEMENT AT 7A PATERNOSTER ROAD, COCKATOO VIC 3781

1. SECTION 1. SITE INVESTIGATION

1.1. INTRODUCTION

On instruction from the landowner, an investigation was undertaken to assess land capability for on-site effluent disposal/reuse for a 3-bedroom residence at 7A Paternoster Road, Cockatoo VIC.

The site of 2074m^2 is in the Low Density Residential Zone and is not located in a Special Water Supply Catchment. It is proposed to extend the existing 2-bedroom house to a 3-bedroom residence. The existing residence is served by a septic tank (with the capacity of 3200 litres) and 0.60m wide absorption trenches.

The site is not sewered.

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

1.2. INVESTIGATION METHOD

The site investigation was carried out in accordance with *SEPPs (Waters of Victoria) and related documents. This report is in accordance with* current *SEPPs (Waters of Victoria), EPA Victoria - Guideline for onsite wastewater management (May 2024)* and *EPA Victoria - Guideline for onsite wastewater effluent dispersal and recycling systems (May 2024)*. Guidance has been sought from *AS/NZS 1547:2012*, *Guidelines for Wastewater Irrigation*, E.P.A. Publication 168, April 1991, *Wastewater Subsurface Drip Distribution*, Tennessee Valley Authority, March, 2004, *AS 2223, AS 1726, AS 1289, AS 2870* and *Australian Laboratory Handbook of Soil and Water Chemical Methods*.

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

Exploratory auger drilling was undertaken to enable profile characterization and sampling in conjunction with a series of constant head tests, which were prepared in accordance with AS/NZS 1547:2012 (Talsma-Hallam method).

Water balance analysis was based on the mean wet year calculated from the mean monthly rainfall data and mean annual rainfall data for Beaconsfield Upper and mean evaporation data for Scoresby Research Inst. and was undertaken in accordance with *Guidelines for Wastewater Irrigation, E.P.A.* Publication 168, April 1991 (Part), *AS/NZS 1547:2012* and in-house methods.

The rainfall and evaporation data were obtained from the National Climate Centre, Bureau of Meteorology. The data was subsequently analysed and applied to our water balance analysis. The results of the water balance analysis are given in Appendix B, to this report.

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

1.3. CAPABILITY ASSESSMENT

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

1.3.1. Land-Soil Unit A.

This land-soil unit consists of steeply sloping terrain, as shown in Figure 1.

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

1.3.1.1. Climate.

The general area receives a mean annual rainfall of 1009mm and a mean annual evaporation of 1197mm. Mean evaporation exceeds the mean rainfall in October through April.

1.3.1.2. Slope and Aspect.

The natural ground surface over the existing and proposed land application area slopes to the northeast between 15.5-17%, generally, as shown in Figure 1.

The unit is somewhat protected from the prevailing winds and is subject to partial shade from nearby trees.

1.3.1.3. Vegetation and Land Use.

The unit is vegetated with dense pasture grasses as shown in Figure 1. The land is currently used as an effluent field.

The land application area has been designed for pasture grass (rye/clover equivalent).

1.3.1.4. Slope Stability.

For the encountered subsurface conditions, slope degree and geometry and for the proposed range of hydraulic loadings, the stability of the ground slopes within the disposal areas are unlikely to be compromised.

1.3.1.5. Subsurface Profile.

The following interpretation of the general subsurface profile assumes conditions similar to those encountered in the boreholes are typical of the investigation area.

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

The unit is underlain by alluvial materials of Late Devonian Age.

The general subsurface profile consists of:

- A topsoil (A-horizon) layer of dark brown, wet, medium-dense loam, with a soil reaction trend of 6.1pH and electrical conductivity (EC_{SE}) of 0.10dS/m, containing a root zone, to a depth of 0.13m, overlying,
- An alluvial soil (B_1-horizon) layer of red-brown, moist, silty light clay of low plasticity, with a soil reaction trend of 5.2pH, electrical conductivity (EC_{SE}) of 0.09dS/m and a free swell[a] of 20%, to a depth of 0.75m, overlying,
- An alluvial soil (B_2-horizon) layer of red-brown, moist, silty light clay of low plasticity, with a soil reaction trend of 5.4pH, electrical conductivity (EC_{SE}) of 0.09dS/m and a free swell of 20%, to a depth of 1.00m, overlying,
- An alluvial soil (BC-horizon) layer of brown with red, moist, silty light clay of low plasticity, with a soil reaction trend of 5.3pH, electrical conductivity (EC_{SE}) of 0.09dS/m and a free swell of 10%, to a depth of at least 1.65m.

[a] After Holtz (measures swell potential of fraction passing 450 micron sieve)

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Soil test results, soil profile photographs and logs of boreholes are summarised in Appendix A. For location of boreholes refer Drawing 2.

1.3.1.6. Soil Permeability.

The in-situ permeability tests were attempted on 1st of February, 2025.

The occurrence of transient and seasonally occurring free water in the subsoil materials prevented the acquisition of sufficient hydraulic data for determination of the geometric mean of saturated hydraulic conductivity.

Note: The relatively high soil moisture content at the time of testing was due to seepage from the topsoil into the test holes and high moisture content from recent rainfalls. This transient high soil moisture impacts on the test method only and does not reflect in any way on the suitability of the site for the sustainable onsite attenuation of waste water – see AS/NZS 1547:2012, Appendix G.

A conservative estimate of permeability has been deduced as follows (from soil texture, structure and swell potential tests):-

Profile analysis in accordance with AS/NZS 1547:2012 and our laboratory determined dispersion and swell potential shows the alluvial soils to be strongly structured, non-dispersive silty light clays (Type 5a soils) with saturated hydraulic conductivity between 0.12m/day and 0.5m/day.

For the limiting silty light clay soils and after allowing for renovation to maintain stable colloids, we have adopted an estimated saturated hydraulic conductivity of 0.11m/day.

The alluvial clay soils will control effluent seepage rates with respect to determining the required disposal area and to restrict surface rain flows to episodic events.

1.3.1.7. Basement Rock Permeability.

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

1.3.1.8. Colloid Stability.

The results of the Emerson Crumb and Dispersion Index Tests indicate that the alluvial materials are non-dispersive. The alluvial clay soils have Emerson Classes of 8 and 4,5,6 and Dispersion Index of 0.

Sodicity has been assessed by inspection of the ground surface for salt tolerant and/or salt affected vegetation, the electrical conductivity has been determined for the A and B horizons using a 1:5 soil/water extract and converted to EC (saturation extract), and also soil reaction trend and shrink-swell potential has been determined.

The determined electrical conductivity (EC_{SE}) was 0.09dS/m and 0.10dS/m for all materials, soil reaction trend ranged from 5.2pH to 6.1pH and free swell potential was 10% and 20%.

We recommend amelioration in the form of gypsum application to maintain stable peds under saline disposal.

1.3.1.9. AS1547:2012 Soil Classification.

In accordance with *AS/NZS1547:2012* the alluvial materials can be classified as Type 5a soils (strongly structured, non-dispersive silty light clays).

1.3.1.10. Surface Drainage.

The proposed effluent area slopes to the northeast and drains to the nearest watercourse located at least 760m distant (measured normal to contours).

1.3.1.11. Groundwater.

No seepage was encountered in any of the boreholes. Subsurface flow direction will generally reflect natural surface flow direction (i.e. a northeastearly direction).

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

There are no groundwater bores within a significant distance of the site (within 100m distance).

The Visualising Victoria's Groundwater database indicates that there is no groundwater within 50 metres of the surface.

The groundwater is of high yield and good quality (less than 500mg/litre TDS) with beneficial use including domestic.

1.3.1.12. Nutrient Attenuation.

Clayey soils (as found on this site) can fix large amounts of phosphorous. Phosphate-rich effluent seeping through these soils will lose most of the phosphorous within a few metres.

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

Several processes affect nitrogen levels within soil after disposal. Alternate periods of wetting and drying with the presence of organic matter promote reduction to nitrogen gas (denitrification). Plant roots absorb nitrates at varying rates depending on the plant species, however nitrate is highly mobile, readily leached, and can enter groundwater via deep seepage and surface waters via overland flow and near-surface lateral flow.

Assuming 30mg/litre N in the effluent (general case) and 20mg/litre P, a denitrification rate of 20%, with N uptake of 220 kg/ha/year for an appropriate grass cover equivalent to a rye/clover mix, a conservative estimate can be made of the nitrogen content in the deep seepage and lateral flow.

For the general case, and without taking into account further expected denitrification below the root zone and in the groundwater (reported to be in the vicinity of 80%), denitrification in the lateral flow (external to the trenches) and plant uptake in the lateral flow, the effluent loading rate should not exceed 8mm/day.

On-site effluent disposal systems designed, constructed, operated and maintained in accordance with the following recommendations cannot adversely impact on the beneficial use of surface waters and groundwater in the area.

1.4. RISK MANAGEMENT & MITIGATION

SEPP (Waters of Victoria) requires that the proposal be assessed on a risk-weighted basis and that cumulative effects be considered.

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

1.4.1. Water Usage.

Current best practice allows for a (continuous) daily effluent flow of 600 litres/day (3-bedroom residence) as per *EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-1*.

The design flow is unlikely to be continuous and (at least) standard water reduction fixtures are a mandatory requirement under local building codes.

1.4.2. Primary Treatment.

The LCA recommends a primary treatment system (the existing septic tank) and the existing and newly added absorption trenches.

1.4.3. Block Size.

Many under-performing effluent fields are placed on blocks where area is limited. Limited area can lead to inadequately sized or inappropriately placed effluent fields and a lack of options should the daily effluent volumes increase.

In the subject site, size is not a constraining factor for a 3-bedroom residence.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

1.4.4. Management Plan.

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

1.4.5. Sizing of Treatment System.

The existing septic tank with the capacity of 3200 litres is suitable for the proposed 3-bedroom residence.

1.4.6. Load Balancing.

Load balancing capacity (temporary storage) is achieved within the trench system.

1.4.7. Oversized Effluent Area.

Design effluent area is based on conservative estimates of renovation and complete attenuation of nitrogen.

1.4.8. Reserve Area.

There is sufficient area available for a reserve area and/or expansion of the area should design flow increase. The reserve area is a spare effluent field, which is left undeveloped, but can be commissioned in the case of increase in daily effluent production due to contingencies through the chain of ownership or should the effluent field fail.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

1.4.9. Buffer Distances.

Buffer distances are set out in the *EPA Victoria - Guideline for onsite wastewater management (May 2024) Table 4-10* to allow for attenuation of pathogens and nutrients, should an effluent surcharge occur, either overland or subsurface.

The effluent area is located at least 760m from surface waters.

The time taken for groundwater to reach the nearest surface waters can be estimated by using the Darcy equation (which states that velocity is the product of the hydraulic conductivity and the hydraulic gradient). From the literature, the regional gradient is about 0.004.

Flow times can be estimated for groundwater to flow the 760m (minimum) to the nearest surface waters at this site.

For a conservative basement hydraulic conductivity of 1m/day[b] with a hydraulic gradient of 0.004, the time taken for groundwater to flow a distance of 760m is more than 520 years.

1.4.10. System Failure.

A properly designed and constructed onsite effluent system consisting of the septic tank and trenches can suffer degrees of failure.

Failure can take the form of mechanical (plant), accidental (toilet blockages, damaged trench lines, high BOD influent), operational (overloading) and maintenance (failure to check filters, failure to participate in maintenance programme).

1.4.10.1. Mechanical Breakdown.

This system is designed to use gravity. There are no mechanical components that can fail.

1.4.10.2. Accidents.

Toilet blockages and accidentally damaged trenches could allow localised surface surcharge of treated effluent. This is why minimum buffers to surface waters have been maintained.

---

[b] This is a conservatively high figure to demonstrate maximum possible flow rates. A conservatively low figure was used for calculation of effluent application rates (see recommendations) to demonstrate disposal sustainability.

1.4.10.3. Operational Breakdown.

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

1.4.10.4. Maintenance Breakdown.

Maintenance breakdowns such as failure to maintain the “fencing”, trench profile and vegetation can cause malfunction.

It is important that a suitable inspection, maintenance and pump-out regime is adhered to.

1.4.11. Risk Summary.

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

In regard to subsurface flows, it is clear that provided the on-site system is adequately designed, constructed, operated and maintained (see items 1.4.1 through 1.4.10.4), the risk to surface and ground waters is negligible. Once the effluent is placed underground, the extraordinary long travel times via ground water to surface waters ensures adequate nutrient attenuation.

In regard to surface flows, it is clear that provided the on-site system is adequately designed, constructed, operated and maintained (see items 1.4.1 through 1.4.10.4), the risk to surface and ground waters is no greater than for a sewered development. Indeed, it could be considered that the risk is less than for a sewered development because there can be no mains failure (because there is no mains).

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

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

All requirements of *SEPP (Waters of Victoria)* have been met.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Figure 1:. Land-soil unit A (existing and proposed effluent area) viewed from southeast to northwest.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

2. SECTION 2. RECOMMENDATIONS

2.1. APPLICATION

The following recommendations are based on the results of our assessment, and are made in accordance with *SEPPs (Waters of Victoria),* the *EPA Victoria - Guideline for onsite wastewater management (May 2024), EPA Victoria - Guideline for onsite wastewater effluent dispersal and recycling systems (May 2024)*, *AS 1726*, and *AS/NZS 1547:2012*.

They are based on the estimated hydraulic conductivity of the limiting clay materials and are designed to demonstrate the viability of on-site effluent disposal for a 3-bedroom residence and a daily effluent production of up to 600 litres/day and are considered to be conservative.

2.2. ABSORPTION

2.2.1. Disposal Strategy.

Considering the prevailing surficial and subsurface conditions including soil profile thickness and slope and on condition that adequate site drainage is provided (as described in Section 2.4, below), absorption systems are appropriate for effluent disposal for land-soil unit A.

2.2.2. Effluent.

Effluent will be generated from a 3-bedroom residence and will include black and grey water (all wastes).

2.2.2.1. Effluent Quality.

Effluent shall be treated to a standard (via the existing septic tank) that meets or exceeds the water quality requirements of the septic standard.

2.2.2.2. Effluent Quantity.

The daily effluent volume of 600 litres has been calculated from *EPA Victoria - Guideline for onsite wastewater management (May 2024)*, *Table 4-1* and assumes a 3-bedroom residence with mains water (equivalent) and WELS-rated water-reduction fixtures and fittings – minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances.

2.2.3. Trench Bottom Area and Trench Length.

Trench bottom areas have been determined from the *EPA Victoria - Guideline for onsite wastewater management (May 2024) Tables 4-8* and *4-9* and *AS/NZS 1547:2012, Appendix L.*

The new trenches are to be designed and constructed in accordance with *AS/NZS 1547:2012, Appendix L.* Critical dimensions include a width of 1.0m and a pond depth of 0.25m.

2.2.3.1. Hydraulic Loading.

To satisfy the requirement for no surface discharge in the mean wet year, a wetted area (trench basal area) of 75m^2 is required (DLR of 8mm/day).

2.2.3.2. Nutrient Loading.

The requirements of *SEPPs (Waters of Victoria)* would be satisfied with a wetted area, as given above.

2.2.3.3. Design Loading.

To satisfy the requirement for no surface discharge in the mean wet year and on-site attenuation of nutrients, the effluent should be applied to a trench basal area of 75m^2. The new trenches shall be placed coincident with contours and shall not exceed 20m in length and are to be spaced 2m apart, as required. The existing 0.60m wide trenches shall be widened to the width of 1.00m (except near the tree where the current width should be kept) and the new trenches should be constructed @ 1.00m wide. For existing and newly added trench design see Drawing 2.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

In case of an increase in effluent production through the chain of ownership, there is sufficient area available for duplicating/extending the absorption trenches.

2.2.4. Inspections.

We recommend that the mandatory inspection and reporting as described in the *EPA Victoria - Guideline for onsite wastewater management (May 2024) Section 6*, include an annual (post spring and post episodic event) report on the functioning and integrity of the distribution system and on the functioning and integrity of the cut-off drains, outfall areas and soil media.

2.2.5. Soil Renovation.

To improve soil structure and to maintain stable peds receiving saline effluent, soil renovation in the form of gypsum application is required.

Gypsum shall be broadcast over the soil surface at the rate of 0.5kg/m^2.

Gypsum requirement assumes the gypsum contains 19% Calcium and 15% Sulphur. Gypsum is to be fine ground “Grade 1” agricultural quality and shall be reapplied every 5 years at the rate of 0.5kg/m^2.

2.3. RESERVE AREA

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

There is sufficient available area for extension/duplication of the effluent area.

2.4. SITE DRAINAGE.

Our recommendations for on-site effluent disposal have allowed for incident rainfall only (not surface flow or lateral subsurface flow) and are conditional on the installation of a cut-off drain, which shall be placed upslope of the disposal area.

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

Locations of the cut-off drains and a drain detail are shown in Drawings 2 and MP1.

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

2.5. BUFFER DISTANCES

Potential surface (rain water) flows from the effluent area would be restricted to episodic events.

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

Our risk analysis and evaluation has shown that the default setback distances given in *EPA Victoria - Guideline for onsite wastewater management (May 2024)*, *Table 4-10* are conservative and can be applied without amendment.

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

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

2.6. SUMMARY OF RECOMMENDATIONS

Our capability assessment has shown that at least one rational and sustainable on-site effluent disposal method (existing septic tank and existing and newly added absorption trenches) is appropriate for the proposed development.

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

[redacted]

Land Capability Assessment
PRINCIPAL SOIL SCIENTIST

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

APPENDIX A1

SOIL PERMEABILITY

The occurrence of transient and seasonally occurring free water in the subsoil materials prevented the acquisition of sufficient hydraulic data for determination of the geometric mean of saturated hydraulic conductivity.

Note: The relatively high soil moisture content at the time of testing was due to seepage from the topsoil into the test holes and high moisture content from recent rainfalls. This transient high soil moisture impacts on the test method only and does not reflect in any way on the suitability of the site for the sustainable onsite attenuation of waste water – see AS/NZS 1547:2012, Appendix G.

A conservative estimate of permeability has been deduced as follows (from soil texture, structure and swell potential tests):-

Profile analysis in accordance with AS/NZS 1547:2012 and our laboratory-determined dispersion and swell potential shows the alluvial soils to be strongly structured, non-dispersive, low-swelling silty light clays (i.e. Type 5a soils) with saturated hydraulic conductivity of 0.12-0.5m/day.

The limiting stongly structured silty light clay soils require amelioration in the form of gypsum application at the rate of 0.5kg/m^2. For soil renovation see Section 4.3.3.

The application of gypsum creates water-stable peds (by replacing Sodium and Magnesium ions with Calcium ions) with a consequent higher hydraulic conductivity controlled by macro pores.

Peak deep seepage is conservatively estimated at 9mm/day. Average daily deep seepage rate is 1.2mm.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

SOIL TEST RESULTS

Project: Cockatoo			Date of sampling: 01/02/25			Date of Lab test:				BH: 1
horizon (cm)	pH	$EC_{1:5}$	EC_{SE}	disp 10 min	disp 2 hours	disp total	Emers 2 hours	Emers 20 hours	free swell %	texture
0-13	6.1	0.01	0.10	0	0	0	8	8		loam
13-75	5.2	0.01	0.09	0	0	0	4,5,6	4,5,6	20	silty light clay
75-100	5.4	0.01	0.09	0	0	0	4,5,6	4,5,6	20	silty light clay
100-165	5.3	0.01	0.09	0	0	0	8	8	10	silty light clay

Project: Cockatoo			Date of sampling: 01/02/25			Date of Lab test:				BH: 2
horizon (cm)	pH	$EC_{1:5}$	EC_{SE}	disp 10 min	disp 2 hours	disp total	Emers 2 hours	Emers 20 hours	free swell %	texture
0-10				0	0	0	8	8		loam
10-60				0	0	0	4,5,6	4,5,6		silty light clay
60-100				0	0	0	4,5,6	4,5,6		silty light clay
100-145				0	0	0	8	8		silty light clay

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

APPENDIX A2

SOIL PROFILE PHOTOGRAPHS

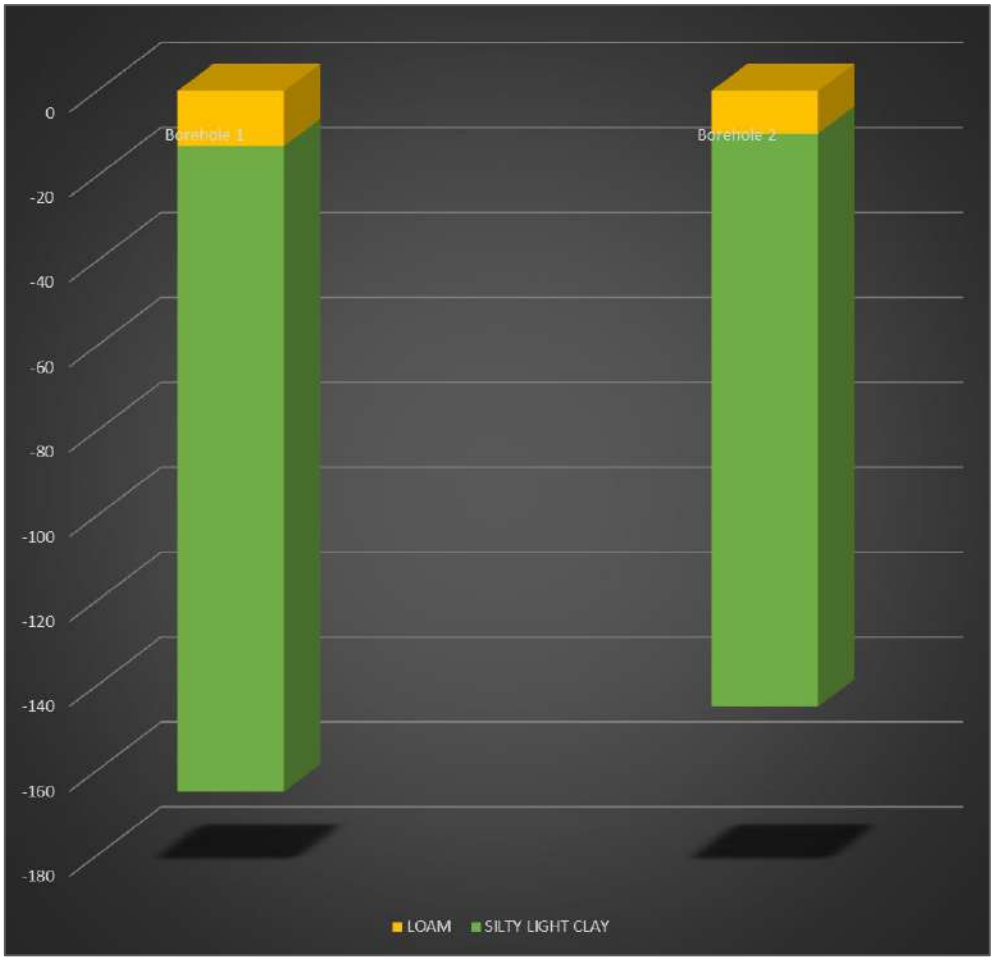
BOREHOLE 1

BOREHOLE 2

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

APPENDIX A3

LOGS OF BOREHOLES



For locations of boreholes refer Drawing 2.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

APPENDIX B

WATER AND NUTRIENT BALANCE

Land Capability Assessment Spreadsheet used with permission LCA14022025

WATER BALANCE (Absorption): With storage depth less than 250mm.

Rainfall Station: Beaconsfield Upper / Evaporation Station: Scoresby Research Inst.

Location: Cockatoo
Date: February, 2025
Client: Adam Nicholas

ITEM	UNIT	#	JAN	FEB	MAR	APR	MAY	JUN	JUL	AUG	SEP	OCT	NOV	DEC	YEAR
Evaporation (Mean)	mm	A	174	154	124	81	53	39	43	59	78	105	132	155	1197
Rainfall (mean)	mm	B1	67	61	70	81	89	89	88	97	98	98	92	80	1008.5
Effective rainfall	mm	B2	53	56	56	65	71	71	70	78	78	79	73	64	814
Peak Seepage Loss[1]	mm	B3	279	252	279	270	279	270	279	279	270	279	270	279	3285
Evapotranspiration(IXA)	mm	C1	78	69	56	36	21	16	17	24	35	47	59	70	529
Waste Loading(C1+B3-B2)	mm	C2	304	265	279	242	229	215	226	225	227	248	256	285	3000
Net evaporation from lagoons (10(0.8A-B1xlagoon area(ha)))	L	D	0	0	0	0	0	0	0	0	0	0	0	0	0
Volume of Wastewater	L	E	18600	16800	18600	18000	18600	18000	18600	18600	18000	18600	18000	18600	219000
Total Irrigation Water(E-D)/G	mm	F	248	224	248	240	248	240	248	248	240	248	240	248	2920
Wetted Area(E/C2)	m^2	G	61	63	67	74	81	84	82	83	79	75	70	65	**75**
Storage	mm	H	-56	-41	-31	-2	19	25	22	23	13	0	-16	-37	
Increase in depth of stored effluent(H/0.7)	mm	K	-186	-137	-102	-6	64	84	73	77	43	0	-53	-123	
Depth of effluent for month	mm	L	0	0	0	0	0	64	84	73	77	43	0	0	
Increase in depth of effluent	mm	M	-186	-137	-102	-6	64	148	157	151	120	43	-53	-123	
Computed depth of effluent	mm	N	0	0	0	0	64	213	**241**	224	197	86	0	0	
Actual seepage loss:	mm	SL	22	28	25	35	40	41	39	47	48	48	43	33	LAG
Direct Crop Coefficient		I	0.45	0.45	0.45	0.45	0.4	0.4	0.4	0.4	0.45	0.45	0.45	0.45	Shade:

1. Seepage loss equals deep seepage plus lateral flow, equals DLR of 9mm/day

Rainfall retention:	80	%	J	CROP FACTOR:											
Lagoon Area:	0	ha	O	0.7	0.7	0.7	0.6	0.5	0.45	0.4	0.45	0.55	0.65	0.7	0.7	Pasture:
Wastewater(daily):	600	L	P	0.45	0.45	0.45	0.45	0.4	0.4	0.4	0.4	0.45	0.45	0.45	0.45	Shade:
Peak deep seepage:	9	mm	Y	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	0.8	Fescue:
Wetted Area:	75	m^2	Z	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	0.6	Buffalo:
Length (1m wide) trench:	75	m	NE													
Average daily seepage loss:	1.2	mm	X													
Design Loading Rate:	8.0	mm	R													

RAINFALL DATA

Station: Beaconsfield Upper **Number:** 86261 **Opened:** 1968 **Now:** Open
Lat: 37.98° S **Lon:** 145.42° E **Elevation:** 196 m

Statistic	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Annual
Mean	66.8	60.8	70.2	80.7	89.2	88.5	88.0	97.1	97.5	98.2	91.8	79.7	1020.5
Lowest	2.5	0.0	13.7	20.1	15.8	17.4	27.3	34.8	44.0	33.2	0.0	0.0	589.1
5th %ile	13.5	7.6	18.4	29.3	25.3	32.3	34.6	38.6	48.0	39.3	30.7	5.1	714.1
10th %ile	27.1	8.0	28.4	33.4	30.6	46.8	41.8	52.0	51.9	47.4	43.4	19.5	805.7
Median	65.7	43.2	64.4	71.4	90.6	80.0	77.0	96.3	84.6	97.3	93.5	80.4	1030.2
90th %ile	116.3	155.8	110.9	145.4	148.6	126.3	137.2	143.4	159.1	159.4	135.2	125.9	1222.7
95th %ile	125.9	179.4	126.8	171.2	176.2	159.3	144.6	148.8	199.9	162.7	158.5	164.9	1253.0
Highest	151.7	237.4	234.4	191.6	190.5	179.8	200.0	161.9	208.6	213.9	201.1	205.6	1323.9

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

APPENDIX C

LAND CAPABILITY ASSESSMENT TABLE
(Non-Potable Water Supply Catchments)

LAND FEATURE	LAND CAPABILITY RISK RATING				AMELIORATIVE MEASURES & RISK REDUCTION
	LOW	MEDIUM	HIGH	LIMITING	
Available land for LAA	Exceeds LAA and duplicate LAA requirements	Meets LAA and duplicate LAA requirements	Meets LAA and partial duplicate LAA requirements	Insufficient LAA area	Non-limiting for trenches & beds: Full reserve area available.
Aspect	North, north-east and north-west	East, west, south-east, south-west	South	South, full shade	Northeastern aspect.
Exposure	Full sun and/or high wind or minimal shading	Dappled light (partial shade)	Limited light, little wind to heavily shaded all day	Perpetual shade	Partial shade from nearby trees.
Slope Form	Convex or divergent side slopes	Straight sided slopes	Concave or convergent side slopes	Locally depressed	Free draining.
Slope gradient:					
Trenches and beds	<5%	5% to 10%	10% to 20%	>20%	15.5%-17%: High risk factor for trenches.
Site drainage: runoff/run-on	LAA backs onto crest or ridge	Moderate likelihood	High likelihood	Cut-off drain not possible	Unremarkable. Cut-off drain required upslope.
Landslip[1]	Potential	Potential	Potential	Existing	Unremarkable.
Erosion potential	Low	Moderate	High	No practical amelioration	All runoff to be dispersed without concentrating flows. LAA stabilised with gypsum.
Flood/inundation	Never		<1%AEP	>5% AEP	Unremarkable.
Distance to surface waters (m)	Buffer distance complies with Guideline requirements		Buffer distance does not comply with Guideline requirements	Reduce buffer distance not acceptable	760 metres to watercourse.
Distance to groundwater bores (m)	No bores on site or within a significant distance	Buffer distances comply with Guideline	Buffer distances do not comply with Guideline	No suitable treatment method	No bores within a significant distance (100m).
Vegetation	Plentiful/healthy vegetation	Moderate vegetation	Sparse or no vegetation	Propagation not possible	Existing vegetation is suitable.
Depth to water table (potentiometric) (m)	>2	2 to 1.5	<1.5	Surface	Water table deeper than 50m.
Depth to water table (seasonal perched) (m)	>1.5	<0.5	0.5 to 1.5	Surface	Perching unlikely.
Rainfall (Mean)[2] (mm)	<500	500-750	750-1500	>1500	1009mm. Non-limiting for trenches and beds.
Pan evaporation (mean) (mm)	>1250	1000 to 1250	750 to 1000	<750	1197mm. Non-limiting for trenches and beds.
SOIL PROFILE CHARACTERISTICS					
Structure	High or moderately structured	Weakly structured	Structureless, massive or hardpan		Maintain structure by gypsum application.
Fill materials	Nil or mapped good quality topsoil	Mapped variable depth and quality materials	Variable quality and/or uncontrolled filling	Uncontrolled poor quality/unsuitable filling	No fill present.
Thickness: (m)					
Trenches and beds	>1.4		<1.4	<1.2	Non-limiting for trenches and beds.
Permeability[3] (limiting horizon) (m/day)	0.15-0.3	0.03-0.15 0.3-0.6	0.01-0.03 0.6-3.0	>3.0 <0.03	Non-limiting for trenches.
Permeability[4] (buffer evaluation) (m/day)	<0.3	0.3-3	3 to 5	>5.0	Evaluate flow times via Darcy's Law (assume 1m/day for alluvial materials).
Stoniness (%)	<10	10 to 20	>20		Unremarkable.
Emerson number	4, 5, 6, 8	7	2, 3	1	Non-dispersive topsoil, non-dispersive subsoil. Apply gypsum (at the rate of 0.5kg/m^2) to improve ksat and to maintain stable peds.
Dispersion Index	0	1-8	8-15	>15	Non-dispersive topsoil, non-dispersive subsoil. Apply gypsum (at the rate of 0.5kg/m^2) to improve ksat and to maintain stable peds.
Reaction trend (pH)	5.5 to 8	4.5 to 5.5	<4.5>8		6.1pH in topsoil. Ideal range for grasses.
E.C. (dS/m)	<0.8	0.8 to 2	>2	>2.0	Non-restrictive.
Sodicity (ESP) (%)	<6	6 to 8	>8	>14	Non-sodic (Inferred from Dispersion Index, Emerson and Free swell).
Free swell (%)	<30	30-80	80-120	>120	10%-20%. Low-swelling clay fraction.

There are high-risk factors for primary effluent trench systems (slope, rainfall).

Evaluation of buffer distances via Darcy's Law shows EPA default buffer distances to be adequate.

Hence, in terms of the design engineering and management inputs required for sustainable on-site effluent disposal are rational and easily achieved without significant impost on the landowner.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

[1] Landslip assessment based on proposed hydraulic loading, slope, profile characteristics and past and present land use.
[2] Mean monthly rainfalls used in water balance analyses.
[3] Saturated hydraulic conductivity from in-situ testing and laboratory tests.
[4] Saturated hydraulic conductivity estimated from AS/NZS1547:2012 and data base.

APPENDIX D

MANAGEMENT PLAN

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Land Capability Assessment
ABN 22800734479
[redacted]
CONSULTANTS IN THE AGRICULTURAL SCIENCES

53 Telford Drive, Berwick VIC 3806
Email: info@lcavictoria.com.au

LCA14022025 – FEBRUARY/2025

MANAGEMENT PLAN
FOR
ON-SITE EFFLUENT DISPOSAL VIA ABSORPTION TRENCHES
AT
7A PATERNOSTER ROAD, COCKATOO VIC 3781

1. INTRODUCTION

This document identifies the significant land-soil unit constraints (as identified in LCA14022025) and their management and day-to-day operation and management of the on-site effluent system.

This management plan is to be read in conjunction with our land capability assessment for this land-soil unit (LCA14022025).

2. SIGNIFICANT LAND-SOIL UNIT CONSTRAINTS

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

Although all requirements of *SEPPs* have been met or exceeded through conservative design, prudence dictates that property owners assiduously follow the management programme given in Section 4, below.

2.2 Nitrogen Attenuation. Provided the trench areas are at least as large as those required to satisfy the nitrogen loading, as described in LCA14022025 Sections 1.3.1.12 and 2.2.3.2, and that the (specified) vegetation is maintained and grass is cut and periodically harvested, nitrogen will be attenuated on-site.

2.3 Hydraulic Conductivity. The soils of this site are non-dispersive silty light clays with a low swelling potential and a moderate hydraulic conductivity. The hydraulic conductivity is significantly influenced by soil structure, soil colloid stability and swell characteristics. Breakdown or reduction of these soil parameters over time may manifest as reduced performance of the disposal system. The monitoring and inspection regime detailed in Section 4.7.2, below, should be adhered to.

2.4 Site Drainage. Our recommendations for on-site effluent disposal have allowed for incident rainfall only (not surface flow or lateral subsurface flow) and are conditional on the installation of a cut-off drain, which should be placed upslope of the disposal area. Care should be taken to ensure that the intercepted and diverted surface waters and any perched groundwater are discharged well away and down slope of the disposal field (see Drawings 2 and MP1).

This diverted water should also be discharged in a manner to avoid scouring and/or erosion. It may be appropriate to discharge the water onto a stone/rubble dissipation area.

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

2.5 Vegetation. Existing vegetation is suitable. The effluent disposal area has been sized via water and nutrient balance analyses utilising crop factors for pasture (rye/clover mix) under conditions of partial shade.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

3. THE ONSITE EFFLUENT SYSTEM

The onsite effluent system consists of the influent (black and greywater from a 3-bedroom residence), the existing septic tank, distribution pipes, the existing and newly added absorption trenches, prescribed vegetation, associated infrastructure (cut-off drains, outfall areas, fencing), a service and maintenance programme and on-going management.

4. MANAGEMENT

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

4.1 Effluent. Effluent will be generated from a 3-bedroom residence and will include black and grey water (all wastes).

4.1.2 Effluent Quality. Effluent should be treated (via the existing septic tank) to a standard that meets or exceeds the water quality requirements of the septic standard.

4.1.3 Effluent Quantity. The daily effluent volume of 600 litres has been calculated from *EPA Victoria - Guideline for onsite wastewater management (May 2024)*, *Table 4-1* and assumes a 3-bedroom residence with mains water (equivalent) and WELS-rated water-reduction fixtures and fittings – minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances.

4.2 Septic Tank. The existing septic tank with the capacity of 3200 litres is suitable for the proposed 3-bedroom residence.

4.3 Trench Lengths. The trench length has been determined from the *EPA Victoria - Guideline for onsite wastewater management (May 2024), Table 4-8 and 4-9* and *AS/NZS 1547:2012*.

4.3.1 Effluent Area Requirement. For the estimated daily effluent flows and to satisfy the requirement for no surface discharge in the mean wet year and on-site attenuation of nutrients, the effluent should be applied to a wetted area (trench basal area) of 75 m^2. The existing 0.60m wide trenches shall be widened to the width of 1.00m (except near the tree where the current width should be kept) and the new trenches should be constructed @ 1.00m wide. For existing and newly added trench design see Drawing 2.

Effluent distribution is as detailed in Section 4.3.2, below.

In case of an increase in effluent production through the chain of ownership, there is sufficient area available for duplicating/extending the absorption trenches.

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

4.3.2 Distribution System. The new absorption trenches are to be designed and constructed in accordance with *AS/NZS1547:2012* and LCA14022025.

4.3.3. Soil Renovation: To improve soil structure and to maintain stable peds receiving saline effluent, soil renovation in the form of gypsum application is required.

Gypsum shall be broadcast over the soil surface at a rate of 0.5kg/m^2.

Gypsum requirement assumes the gypsum contains 19% Calcium and 15% Sulphur. Gypsum is to be fine ground “Grade 1” agricultural quality and shall be reapplied every 5 years at the rate of 0.5kg/m^2.

4.3.4 Buffer Distances. Potential surface rainwater flows from the effluent area would be restricted to episodic events.

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

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Our analysis and evaluation have shown that the default setback distances given in *EPA Victoria - Guideline for onsite wastewater management (May 2024)*, *Table 4-10* are conservative and can be applied without amendment.

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

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

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

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

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

4.4 Vegetation. The system design for on-site disposal includes the planting and maintenance of suitable vegetation, as specified in LCA14022025 and/or similar documents.

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

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

Where a variation to recommended grass species is proposed, it must be demonstrated that the nitrogen uptake and crop factors are met or exceeded.

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

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

4.6.1 Cut-off drains. Cut-off drains are designed to prevent surface water flows from entering the effluent area. They should be constructed and placed around the effluent area, as shown in Drawings 2 and MP1.

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

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

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

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

Fencing may take any of the traditional forms or can be incorporated into landscape features or be dense planting, as appropriate.

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

4.7.1 Septic Tank. Septic Tanks should be inspected at least one time per year (or as recommended in the JAS/ANZ certification) and pumped out at least every two years.

The local authority is to ensure compliance.

The manufacturer's recommendations are to be followed. Generally, low phosphorous and low sodium (liquid) detergents should be used. Plastics and other non-degradable items should not be placed into the tanks. Paints, hydrocarbons, poisons etc should not be disposed of in sinks or toilets. Advice from a plumber should be obtained prior to using drain cleaners, chemicals and conditioners. It is important to ensure that grease does not accumulate in the tanks or pipes. Grease and similar products should be disposed of by methods other than via the on-site effluent system.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

4.7.2 Monitoring and Inspections. We recommend that the mandatory testing and reporting as described in the *EPA Victoria - Guideline for onsite wastewater management (May 2024) Section 6*, include an annual (post spring) and post periods of heavy and/or prolonged rainfall report on the functioning and integrity of the distribution system and on the functioning and integrity of the cut-off drains, outfall areas and soil media.

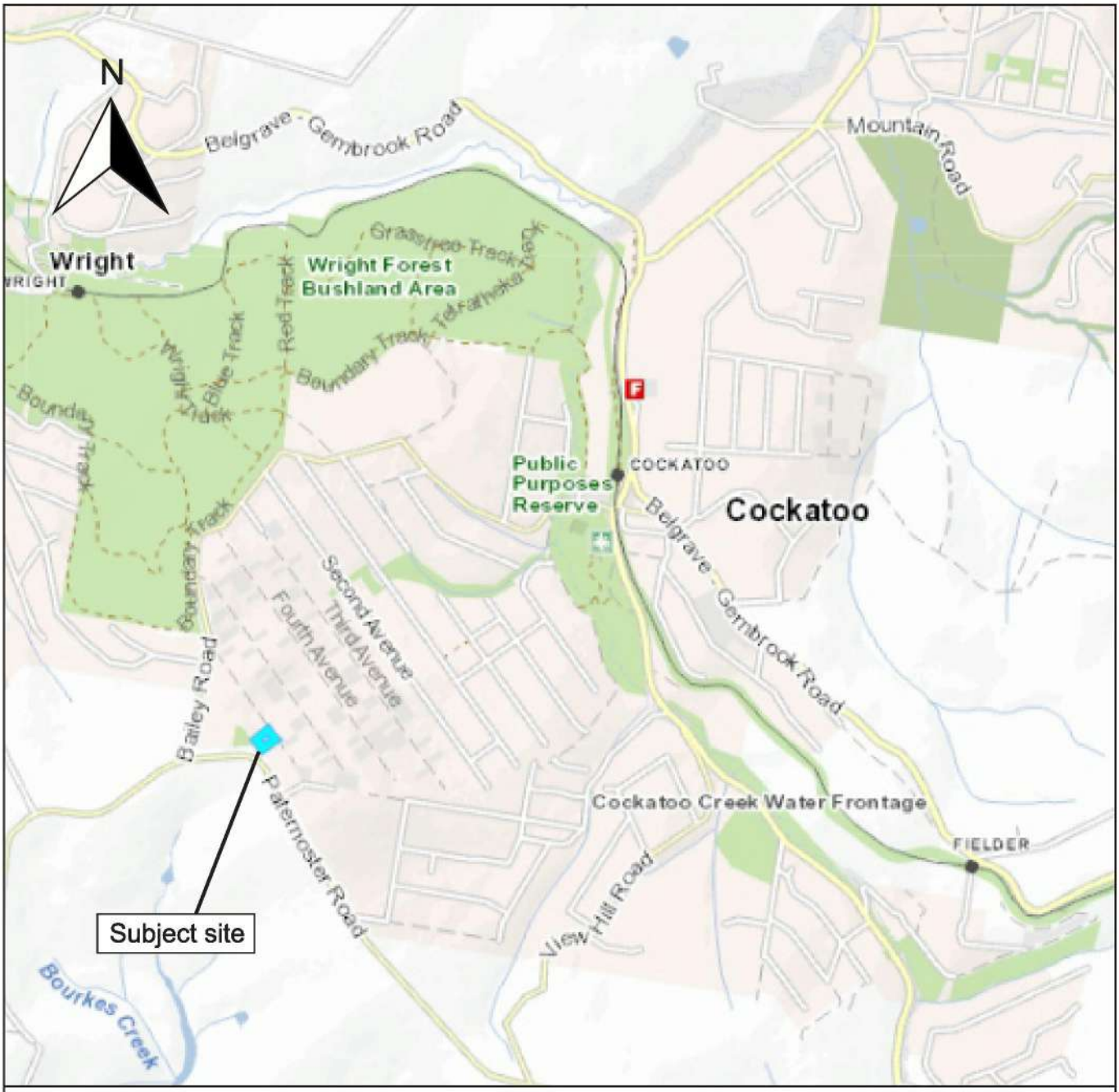
The effluent areas should be regularly inspected for excessively wet areas and vegetation integrity.

The inspection regime described in LCA14022025, Section 2.2.4, should be strictly adhered to.

[redacted]

Land Capability Assessment
PRINCIPAL SOIL SCIENTIST

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.



LOCATION OF SUBJECT SITE	
7A PATERNOSTER ROAD, COCKATOO VIC 3781	
[redacted]	
Draw[redacted]	Report number: LCA14022025
Date: February 2025.	Drawing number: 1

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

6m BUFFER FROM ALLOTMENT BOUNDARY

3m BUFFER FROM ALLOTMENT BOUNDARY AND BUILDING

EXISTING ABSORPTION TRENCHES TO BE WIDENED TO THE WIDTH OF 1m

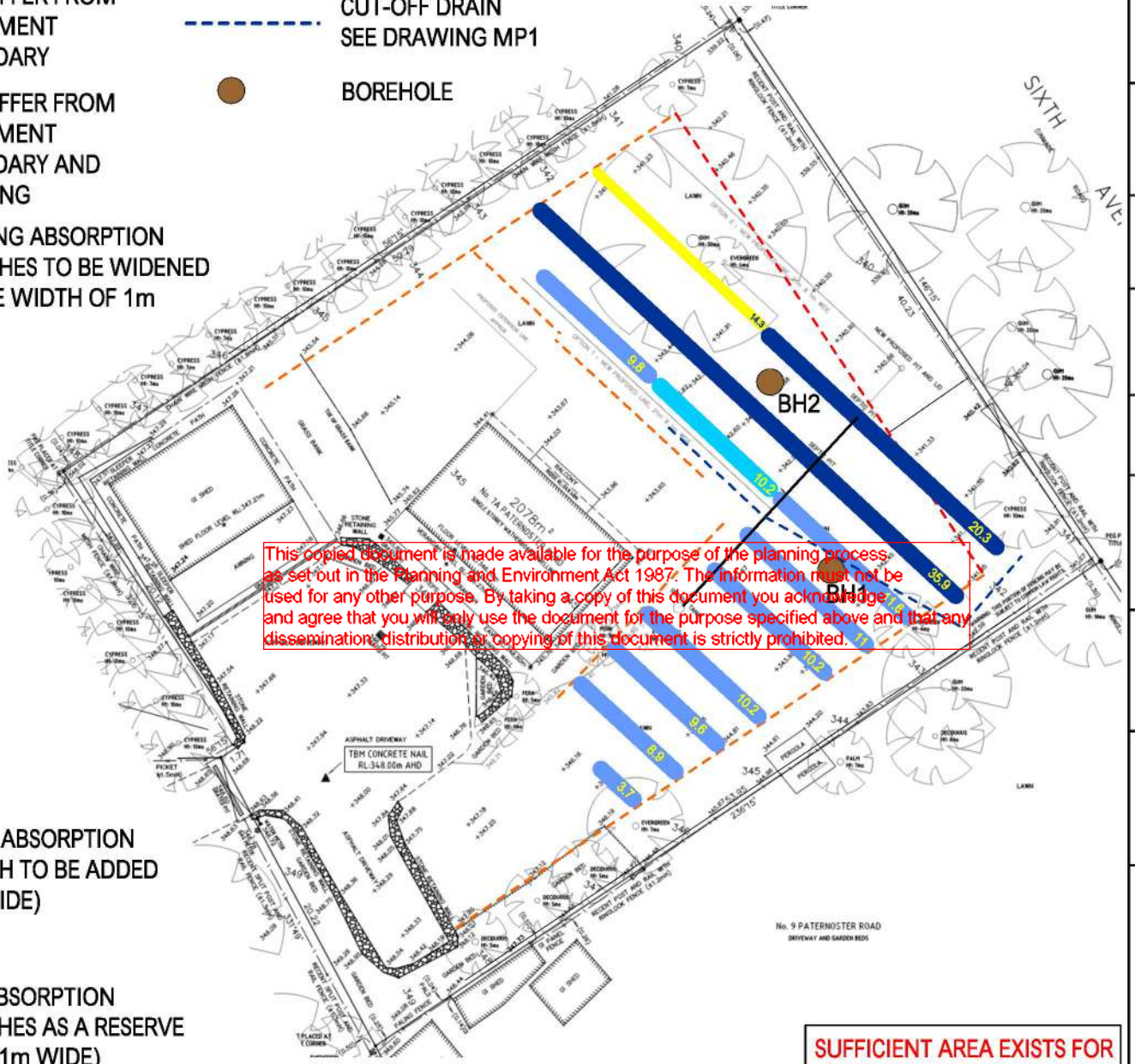
10.2m ABSORPTION TRENCH TO BE ADDED (1m WIDE)

75m ABSORPTION TRENCHES AS A RESERVE AREA (1m WIDE)

EXISTING ABSORPTION TRENCHES (0.6m WIDE) NOT TO BE WIDENED

CUT-OFF DRAIN SEE DRAWING MP1

BOREHOLE



This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

10 TRENCH LENGTH (m)

SUFFICIENT AREA EXISTS FOR DUPLICATION OF EFFLUENT DISPOSAL AREA DUE TO CONTINGENCIES THROUGH THE CHAIN OF OWNERSHIP

LOCATION OF EXISTING AND PROPOSED DEVELOPMENT

7A PATERNOSTER ROAD, COCKATOO VIC 3781

[redacted]

DRAWN: LAND CAPABILITY ASSESSMENT

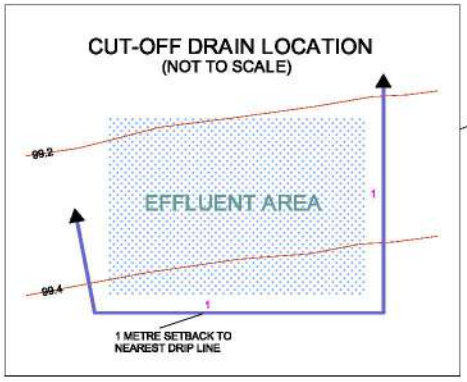
DATE: FEBR 2025

REPORT NUMBER: LCA14022025

DRAWING NUMBER: 2

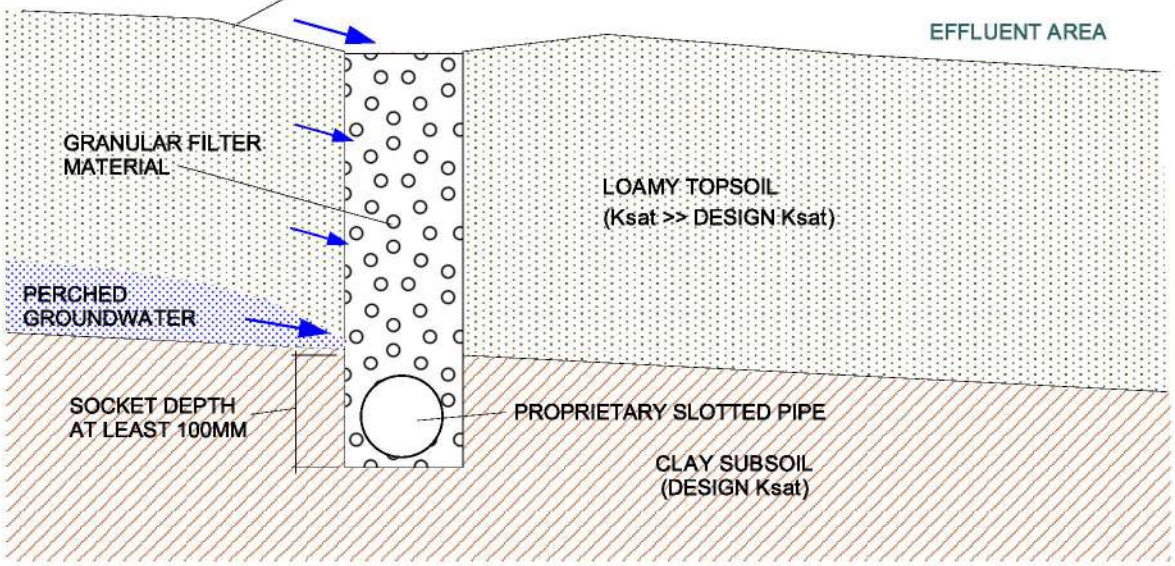
SCALE: 1:400

N



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

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



NOTES:
1. DRAIN TO BE DESIGNED, CONSTRUCTED & MAINTAINED TO ENSURE THAT NO SURFACE & PERCHED GROUNDWATER FLOWS ENTER THE IRRIGATION AREA.
2. DRAIN TO BE LOCATED ON ALL UPSLOPE SIDES OF IRRIGATION AREA (NO CLOSER THAN 1M FROM NEAREST SUBSURFACE DISTRIBUTION LINE).
3. DRAIN TO HAVE UNSPECIFIED FALL.
4. MINIMUM SOCKET DEPTH OF 100MM INTO CLAY SUBSOIL (WHERE ENCOUNTERED) OR AT LEAST 200MM DEEP.
5. DRAIN CROSS SECTIONAL AREA RELATED TO DESIGN FLOWS AS DETERMINED BY A SUITABLY QUALIFIED AND EXPERIENCED ENGINEER.
6. OFF-SITE DRAIN OUTFALL TO LEGAL POINT OF DISCHARGE SUBJECT TO LOCAL AUTHORITY REQUIREMENTS.
7. ON-SITE DRAIN OUTFALL TO INCLUDE APPROPRIATE ENERGY DISSIPATION TO AVOID EROSION.
8. ALL DRAINS AND OUTFALL AREAS SUBJECT TO POST-SPRING INSPECTION.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

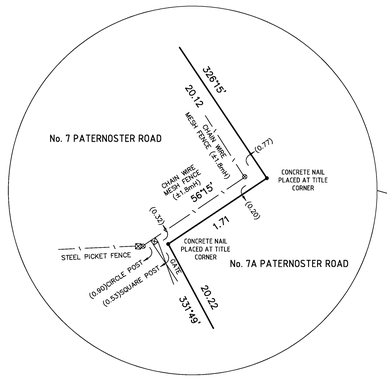
NOTE: DRAWING NOT TO BE USED FOR SET-OUT PURPOSES

CUT-OFF DRAIN DETAIL FOR EFFLUENT DISPOSAL FIELDS

7A PATERNOSTER ROAD, COCKATOO VIC 3781

[redacted]

Scale: 1:10 (Approximately)	Drawn: P.R.W.	Report Number: LCA14022025
Contour Interval: N/A	Date: February 2025	Drawing Number: MP1



ENLARGEMENT NOT TO SCALE

WARNING

Where fencing encroaches onto the subject land, no building should extend past that fencing without written agreement from any neighbour who may have possessory rights over the land under survey.

IMPORTANT NOTICE

This plan must be used only for the purpose for which it was intended.
Any uncertainty in this plan must be clarified with the author.

WARNING

Features and windows which were obstructed on the date of survey have not been located or shown on this plan. M.J.Reddie Surveys Pty Ltd take no responsibility for any damages caused as a result of this.

WARNING

This plan is prepared for **ADAM NICHOLAS** from a field survey for the purpose of designing new constructions on the land and should not be used for any other purpose.
Services shown hereon have been located by field survey. Prior to any demolition, excavation or construction on site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

WARNING

The position of the occupation, when in close proximity to title, has been altered for clarity of presentation. MORE PARTICULARLY owners or purchasers should be aware that if utilising or building to the boundary, the author of the plan or consulting surveyor of choice should be first contacted in case boundary location on this or adjoining lots carries higher than normal risk.
M J Reddie Surveys Pty Ltd
therefore can accept no responsibility for failure to use this plan within the limitations intended.

NOTATIONS

AHD heights have been computed from GNSS data using AUSGeoid2020. Data was provided by VRSNow CORS services on 10/10/2024. Heights have not been calibrated on to permanent marks.

Level datum: AHD
Levels shown thus: ×348.04
Contour interval: 0.2m
POSTAL ADDRESS: 7A PATERNOSTER ROAD COCKATOO 3781

Date of survey: 10/10/2024

HW: Habitable Window
NHW: Non-Habitable Window
W/D: Habitable window and door
2HW: Second floor habitable window
F: Frosted window
Window status an estimate of [redacted] Surveys, prior to detailed design internal inspections should be undertaken to confirm window status.

CERTIFICATION BY SURVEYOR

I [redacted] of 1 Horner Street, Beaconsfield certify that this plan has been prepared from a survey made under my direction and supervision in accordance with the Surveying Act 2004 and completed on 10/10/2024, that this plan is accurate and correctly represents the adopted boundaries and the survey accurately accords with that required from level land as defined in regulation 7(2) of the surveying (Cadastral Surveys) Regulations 2005.

Date: 19/10/2024

.....
Licensed Surveyor
Surveying Act 2004.

THE LAND IN THE SURVEY IS SHOWN ENCLOSED BY CONTINUOUS THICK LINES
TITLE REF: VOL 9855 FOL 256
LAST PLAN REF: LOT 1 ON TP457871D

PLAN OF SURVEY

SCALE 0 1.25 2.5 5 7.5
LENGTHS ARE IN METRES

ORIGINAL SCALE 1:125 SHEET SIZE A0

NUMBER OF SHEETS IN PLAN 1
NUMBER OF THIS SHEET 1
VICTORIA

SURVEYORS REF 7A PAT
VERSION 1
FILE: BN

M. J. Reddie Surveys Pty Ltd
ABN 49 005 965 257
1 Horner Street, Beaconsfield. 3807
P.O. Box 268, Berwick. 3806
Phone (03) 9707 4117 Fax (03) 9707 4428

LEGEND

- ELECTRICITY PIT
- ELECTRICITY POLE
- ELECTRICITY POLE AND LIGHT
- FIRE HYDRANT
- SEWER INSP. PT.
- GAS METER
- GAS VALVE
- LIGHT/LIGHT POLE
- SIGN
- SEWER PIT
- GRATED PIT
- PHOTO POINT
- T.B.M.
- INSTRUMENT POINT
- P.M.
- WATER METER
- TAP
- GATE
- TELSTRA PIT
- TREE

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

WARNING

Where fencing encroaches onto the subject land, no building should extend past that fencing without written agreement from any neighbour who may have possessory rights over the land under survey.

IMPORTANT NOTICE

This plan must be used only for the purpose for which it was intended.
Any uncertainty in this plan must be clarified with the author.

WARNING

Features and windows which were obstructed on the date of survey have not been located or shown on this plan. M.J.Reddie Surveys Pty Ltd take no responsibility for any damages caused as a result of this.

WARNING

This plan is prepared for **ADAM NICHOLAS** from a field survey for the purpose of designing new constructions on the land and should not be used for any other purpose.
Services shown hereon have been located by field survey. Prior to any demolition, excavation or construction on site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

WARNING

The position of the occupation, when in close proximity to title, has been altered for clarity of presentation. MORE PARTICULARLY owners or purchasers should be aware that if utilising or building to the boundary, the author of the plan or consulting surveyor of choice should be first contacted in case boundary location on this or adjoining lots carries higher than normal risk.
M.J Reddie Surveys Pty Ltd therefore can accept no responsibility for failure to use this plan within the limitations intended.

NOTATIONS

AHD heights have been computed from GNSS data using AUSGeoid2020. Data was provided by VRSNow CORS services on 10/10/2024. Heights have not been calibrated on to permanent marks.

Level datum: AHD
Levels shown thus: ×328.04
Contour interval: 0.2m
POSTAL ADDRESS: 7A PATERNOSTER ROAD COCKATOO 3781

Date of survey: 10/10/2024

HW: Habitable Window
NHW: Non-Habitable Window
W/D: Habitable window and door
2HW: Second floor habitable window
F: Frosted window
Window status an estimate of MJ Reddie Surveys, prior to detailed design internal inspections should be undertaken to confirm window status.

CERTIFICATION BY SURVEYOR

I [redacted] of 1 Horner Street, Beaconsfield certify that this plan has been prepared from a survey made under my direction and supervision in accordance with the Surveying Act 2004 and completed on 10/10/2024, that this plan is accurate and correctly represents the adopted boundaries and the survey accurately accords with that required from level land as defined in regulation 7(2) of the surveying (Cadastral Surveys) Regulations 2005.

Date: 19/10/2024

.....
Licensed Surveyor
Surveying Act 2004.

THE LAND IN THE SURVEY IS SHOWN ENCLOSED BY CONTINUOUS THICK LINES
TITLE REF: VOL 9855 FOL 256
LAST PLAN REF: LOT 1 ON TP457871D

PLAN OF SURVEY

SCALE 0 1.25 2.5 5 7.5 — LENGTHS ARE IN METRES

ORIGINAL SCALE 1:125 SHEET SIZE A0

NUMBER OF SHEETS IN PLAN 1
NUMBER OF THIS SHEET 1

SURVEYORS REF 7A PAT
VERSION 1
FILE: BN

VICTORIA

LEGEND

- ELECTRICITY PIT
- ELECTRICITY POLE
- ELECTRICITY POLE AND LIGHT
- FIRE HYDRANT
- SEWER INSP. PT.
- GAS METER
- GAS VALVE
- LIGHT/LIGHT POLE
- SIGN
- SEWER PIT
- GRATED PIT
- PHOTO POINT
- T.B.M.
- INSTRUMENT POINT
- P.M.
- WATER METER
- TAP
- GATE
- TELSTRA PIT
- TREE

M. J. Reddie Surveys Pty Ltd
ABN 49 005 965 257
1 Horner Street, Beaconsfield 3807
P.O. Box 268, Berwick. 3806
Phone (03) 9707 4117 Fax (03) 9707 4428

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

legend

existing trees (shown grey)

TPZ - tree protection zone (shown grey dashed)

extent of excavation

35.9m existing absorption trench location and length

Planning Property Information

Property Details

Address:	7A PATERNOSTER ROAD COCKATOO 3781
Lot and Plan Number:	Plan CP169433
Standard Parcel Identifier (SPI):	CP169433
Local Government Area (Council):	CARDINIA
Council Property Number:	2776700100
Planning Scheme:	Cardinia
Directory Reference:	Melway 311 D7

Planning Zones
LOW DENSITY RESIDENTIAL ZONE (LDRZ)
LOW DENSITY RESIDENTIAL ZONE - SCHEDULE 2 (LDRZ2)

Planning Overlays
BUSHFIRE MANAGEMENT OVERLAY (BMO)
DESIGN AND DEVELOPMENT OVERLAY (DDO)
DESIGN AND DEVELOPMENT OVERLAY - SCHEDULE 1 (DDO1)
VEGETATION PROTECTION OVERLAY (VPO)
VEGETATION PROTECTION OVERLAY - SCHEDULE 1 (VPO1)

area schedule

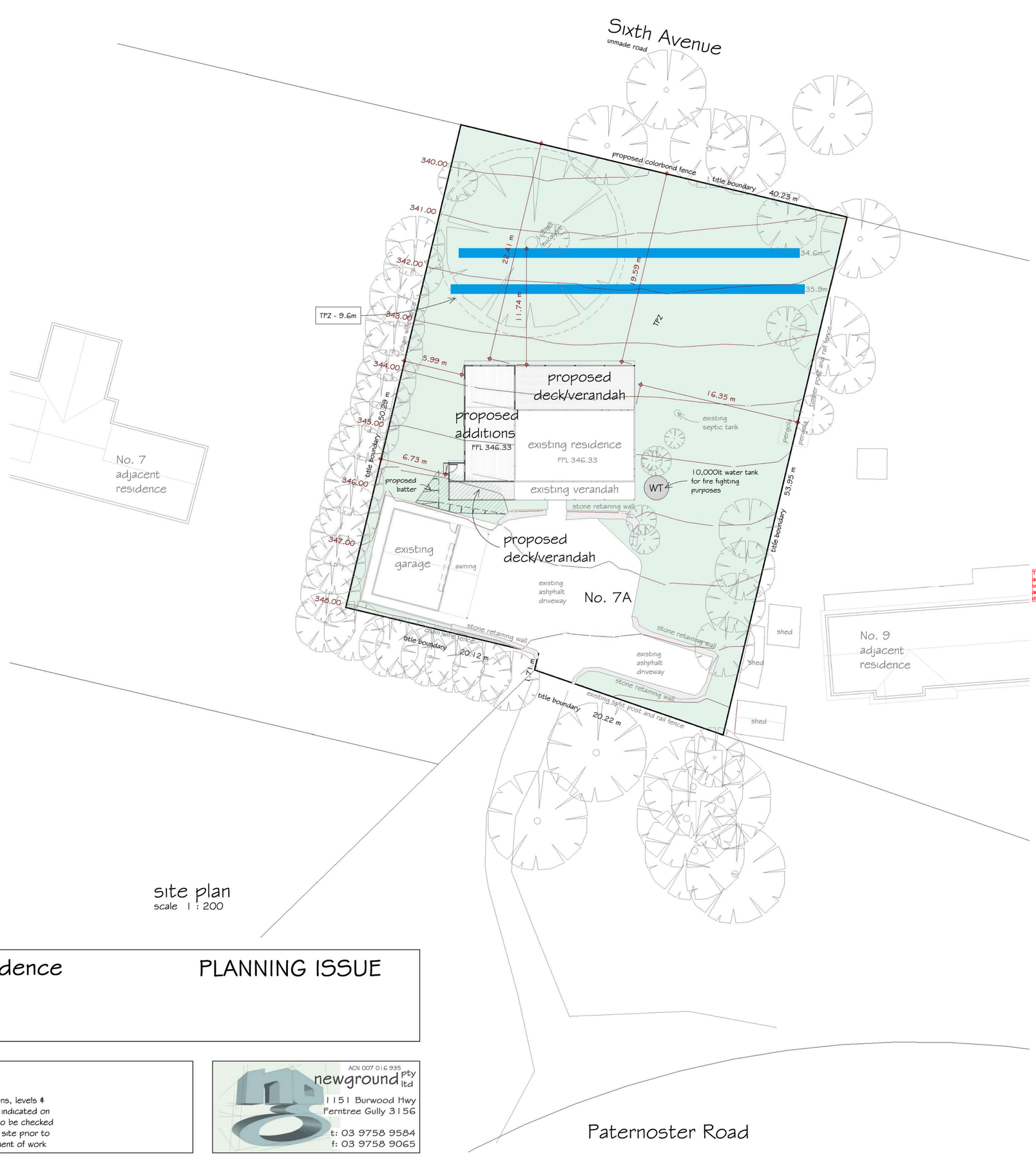
	area
1. existing residence	89.2 m²
2. existing verandah	22.5 m²
3. proposed additions	63.7 m²
4. proposed front deck/verandah	12.3 m²
5. proposed rear deck/verandah	54.7 m²
6. site coverage (buildings) 16%	332.9 m²
7. impervious site coverage 27%	570.1 m²
8. site	2076.9 m²

plans to be read in conjuction with accompanying plans/reports -

Bushfire Management Assessment
By: Ranges Environmental
Report No: 23016
Date: 27 March 2023

Plan of Survey
by: M. J. Reddie Surveys Pty Ltd

Land Capability Assessment
report no.: LCA14022025
Date: Feb 2025



site plan
scale 1 : 200

proposed additions to existing residence at 7A Paternoster Road, Cockatoo for [redacted]

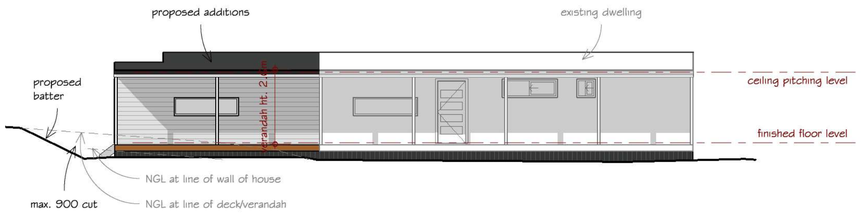
PLANNING ISSUE

project / sheet #:	22 214 a01
scale:	1 : 200@ A1
project date:	7/11/2022
date printed:	11/04/2025 12:08:45 PM
drawn by: N Gray	[redacted]

all dimensions, levels & components indicated on this drawing to be checked & verified on site prior to commencement of work

ACN 007 016 935
newground pty ltd
1151 Burwood Hwy
Ferntree Gully 3156
t: 03 9758 9584
f: 03 9758 9065

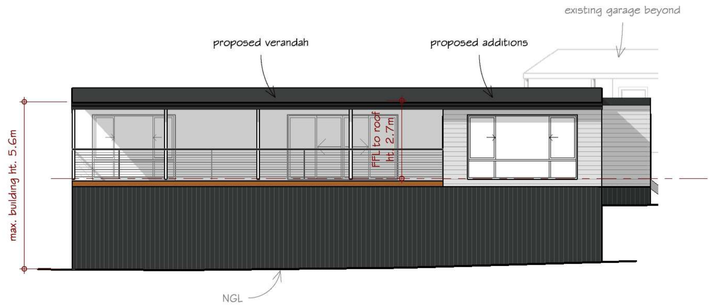
This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.



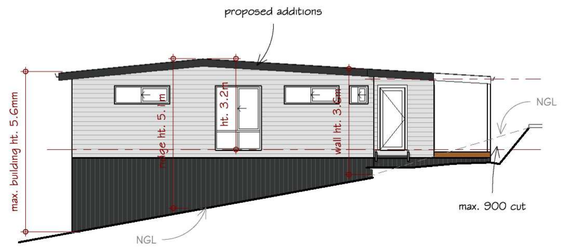
south - west elevation
scale 1 : 100

south - east elevation
scale 1 : 100

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.



north - east elevation
scale 1 : 100



north - west elevation
scale 1 : 100

external materials for BAL 40 compliance

the following is a summary of external materials for compliance with BAL 40 requirements
this list is not exhaustive and other requirements to seal and screen the building are also applicable

all works to comply with section 3 and 8 of AS3959-2018

sub floor to be enclosed with steel sheeting, such as corrugated colorbond or similar

wall cladding to be min 9mm thick fibre cement weatherboards, such as Hardie Linea™ Weatherboards or similar

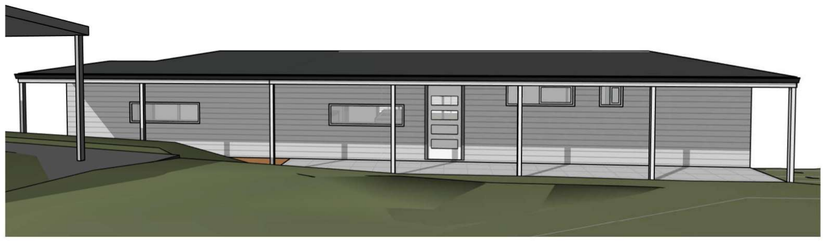
windows and doors
- windows to have metal frames, joinery and external hardware
- sliding doors to have metal frames and external hardware
- side-hung external doors to have metal frames, joinery and external hardware
- glazing shall be minimum 6mm thick toughened glass
- openable and fixed portions of the windows/doors shall be fitted with external compliant screens
- doors to be tight fitting to the door frame

roofs
- roof sheets and roof covering accessories to be non-combustible, such as corrugated colorbond and metal
- roof to be fully sarked
- verandah roof forming part of the main roof space shall meet all the requirements for the main roof
- all gutters, flashings and leaf guards to be non-combustible
- eaves linings to be min 6mm fibre cement sheet
- fascias and barge boards shall comply with AS1530.8.1

verandah posts to be steel

deck to be non-combustible with no gaps, such as BAL 40 compliant composite decking boards

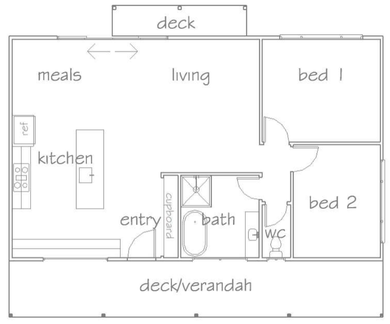
balustrade to be non-combustible, such as metal and wire



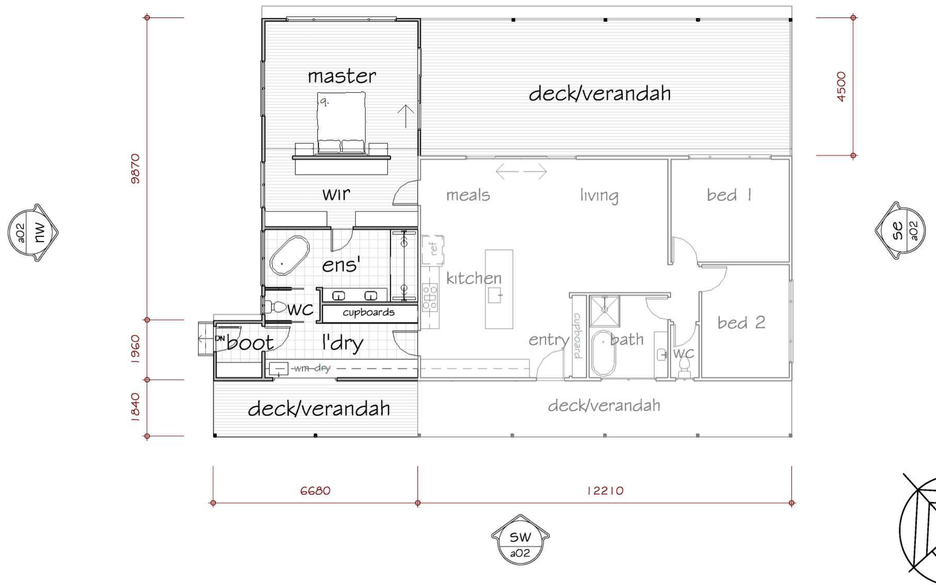
material colour schedule

roof - sheet	charcoal to match existing
fascia/gutter	charcoal to match existing
walls - weatherboards	light grey to match existing
window/door frames	white to match existing
enclosed sub-floor - metal sheet	charcoal

all colours and materials to be muted natural tones to the satisfaction of the relevant authority



existing ground floor plan
scale 1 : 100



proposed ground floor plan
scale 1 : 100

proposed additions to existing residence at 7A Paternoster Road, Cockatoo for [redacted]

PLANNING ISSUE

project / sheet #:	22 214 a02
scale:	1 : 100@ A1
project date:	7/11/2022
date printed:	11/04/2025 12:08:46 PM
drawn by:	N Gray [redacted]

all dimensions, levels & components indicated on this drawing to be checked & verified on site prior to commencement of work

ACN 007 016 935
newground Pty ltd
1151 Burwood Hwy
Ferntree Gully 3156
t: 03 9758 9584
f: 03 9758 9065

Tree Identification Sheet

Tree ID	Removed/ Retained	Distance to Development	Species	Diameter	TPZ	SRZ	Incursion
1	Retained	12.66m	Fern	0.20m	2.4m	1.68m	0
2	Retained	11.74m	Eucalyptus	0.80m	9.6m	3.01m	0
3	Retained	4.57m	Citrus sinensis	0.20m	2.4m	1.68m	0
4	Retained	5.30m	Fern	0.30m	3.6m	2m	0
5	Retained	5.50m	Fern	0.30m	3.6m	2m	0
Group 1	Retained	7.15m to 12.84m	Cypresses	All 0.30m	3.6m	2m	0

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Tree 1

Tree 2

Tree 3

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

This copied document is made available for the purpose of the planning process as set out in the Planning and Environment Act 1987. The information must not be used for any other purpose. By taking a copy of this document you acknowledge and agree that you will only use the document for the purpose specified above and that any dissemination, distribution or copying of this document is strictly prohibited.

Tree 4

Tree 5

Group 1