

PP186/2019-1

110 Silks Access CARLISLE RIVER

C/A: 31, C/A: 31B, C/A: 32, LIC: 510744

Re-Alignment of Title Boundaries

Rod Bright & Associates Pty Ltd

Officer - Ian Williams

EXHIBITION FILE

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Submissions to this planning application will be accepted until a decision is made on the application.

If you would like to make a submission relating to a planning permit application, you must do so in writing to the Planning Department

Supplied by Brett Quickensted
Submitted Date 08/08/2019

Application Details

Application Type Planning Permit for a Subdivision
Version 1

Applicant Reference Number 19-25

Application name or Estate name Fenton

Responsible Authority Name Colac Otway Shire

Responsible Authority Reference Number(s) (Not Supplied)

SPEAR Reference Number S145207V

Application Status Lodged with Responsible Authority

Planning Permit Issue Date NA

Planning Permit Expiry Date NA

The Land

Primary Parcel

110 SILKS ACCESS, CARLISLE RIVER VIC 3239
Volume 8099/Folio 527
SPI 31\PP3305
CPN 21410

Zone: 35.07 Farming
36.03 Public Conservation and Resource

Overlay: 44.06 Bushfire Management
44.01 Erosion Management
42.01 Environmental Significance
44.04 Land Subject to Inundation

Parcel 2

110 SILKS ACCESS, CARLISLE RIVER VIC 3239
Volume 8099/Folio 527
SPI 31B\PP3305
CPN 21410

Zone: 35.07 Farming
36.03 Public Conservation and Resource

Overlay: 44.06 Bushfire Management
44.01 Erosion Management
42.01 Environmental Significance
44.04 Land Subject to Inundation

Parcel 3

110 SILKS ACCESS, CARLISLE RIVER VIC 3239
Volume 8099/Folio 527
SPI 32\PP3305
CPN 21410

Zone: 35.07 Farming

Overlay:

- 36.03 Public Conservation and Resource
- 44.06 Bushfire Management
- 44.01 Erosion Management
- 42.01 Environmental Significance
- 44.04 Land Subject to Inundation

The Proposal

Plan Number (Not Supplied)
Number of lots 2
Proposal Description Two (2) Lot Subdivision, Realignment of Title Boundaries.
Estimated cost of the development for which a permit is required \$ 0

Existing Conditions

Existing Conditions Description Two existing dwellings, associated farm shedding, cleared grazing land and native bushland.
Title Information - Does the proposal breach an encumbrance on Title? The proposal does not breach an encumbrance on title, such as a restrictive covenant, section 173 agreement or other obligation such as an easement or building envelope.

Applicant Contact

Applicant Contact Mr Anthony Bright
Rod Bright and Associates Pty Ltd
26 Murray Street, Colac, VIC, 3250
Business Phone: 03 5231 4883
Email: rodbright@iprimus.com.au

Applicant

Applicant Bostock Pty. Ltd.
110 Silks Access, Carlisle River, VIC, 3239 Australia
Mobile Phone: 0428543201

Owner

Owner (Owner details as per Applicant)

Declaration

I, Brett Quickensted, declare that the owner (if not myself) has been notified about this application.
I, Brett Quickensted, declare that all the information supplied is true.

Authorised by Organisation Brett Quickensted
Rod Bright and Associates Pty Ltd

Tel. (03) 5231 4883
Fax. (03) 5231 4883

10th October 2019

REF: 19-27

Mr I. Williams,
Statutory Planner,
Colac Otway Shire,
P.O. Box 283,
COLAC ...VIC. 3250

Dear Sir,

**RE: PLAN OF SUBDIVISION PROPOSED SUBDIVISION
110 SILKS ACCESS, CARLISLE RIVER
PLANNING PERMIT No. PP186/2019
RE: BOSTOCK PTY. LTD.**

Further to your correspondence of the 29th August we advise:

1. CA31B was alienated from the Crown in 1898 with approximately 14.2ha, and no subsequent surveys in the interim. CA32 was alienated from the Crown in 1894 with approximately 87.8ha, and no subsequent surveys in the interim. Accordingly, we are unable to confirm that buildings are solely within either allotment without carrying out an on-site survey of the property to confirm title boundaries relative to existing infrastructure. This will not be carried out until such time as a planning permit is issued. For your information there is a machinery/shearing shed and a hay shed wholly contained within CA32 and an overlay of the title dimensions over an aerial image indicates that the two dwellings appear to be within CA31B as shown on the "Existing Conditions Diagram" provided in the submission.
2. A Geotechnical Assessment by 2020 Engineering Solutions, has been uploaded into SPEAR for your information and records. As advised in our application, the provision of this report confirms that the risk to life is "barely credible", bringing into question why council would mandate said reports in these instances. This application is not for works but rather the realignment of a title boundary created over 100 years ago and not defined on the ground, to instead accord with an existing fence line.
3. We note council's interpretation of Clause 44.06-3 "*an application must...*" and kindly request council read the full clause which finishes with the sentence "*If in the opinion of the responsible authority any part of these requirements is not relevant to the assessment of an application, the responsible authority may waive, vary or reduce the requirement.*" Notwithstanding the aforementioned, a Bushfire Attack Level – Pathway 3 Assessment has been attached via SPEAR, as prepared by 2020 Engineering Solutions.

We advise that the existing dwelling has a water tank with a CFA coupling


.....2/

2/.....

existing and available. Also, we advise that preparation of any reports on Bushfire Management for 52.7 ha of Cleared River Flats and Native Vegetated Land is extremely difficult given there is no infrastructure to be defended nor any likelihood of the CFA coming in the event of a bushfire. In the event that anyone should ever choose to build on the proposed Lot 2 (as is currently the case should they choose to build on CA32) an application for the dwelling would necessitate all these reports again, although in this instance said reports would be of more relevance given there would be a physical outcome to accompany these reports.

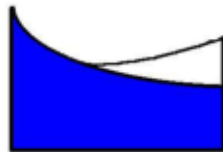
We trust that we have been of assistance in this matter and await receipt of the Planning Permit in due course.

Yours faithfully,

A handwritten signature in blue ink, appearing to read 'A.E. Bright', written over a horizontal dotted line.

A.E. Bright,
ROD BRIGHT & ASSOCIATES

encl.
copy: Bostock Pty. Ltd.



**2020
ENGINEERING
SOLUTIONS**

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GEOTECHNICAL ASSESSMENT

SITE; 110 Silks Access
Carlisle River, Victoria. 3239

DEVELOPER; Bostock Pty Ltd

REPORT NUMBER; ES19199

DATE; 23/09/2019

REPORTING TO; COLAC OTWAY SHIRE
Planning Scheme, Erosion Management
Overlay Procedures (EMO), 2013. Amendment C68

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Executive Summary

The assessed Maximum Annual probability of loss of life from geotechnical hazards is Barely Credible

This figure is below the advised acceptable limit

Property Risk would be Extremely Low.

Overall the risk to property is below the advised acceptable limit.

Succinct Recommendations

- a) The various aspects of the proposal be allowed as the calculated risk is within the acceptable ranges for Life and Property
- b) A Landslip Risk Assessment it is not required due to the type of proposal and low risk to Life and Property.

Preamble

Note; This document reports to Schedule One to the Erosion Management Overlay as in operation at the time of commissioning.

The Shire contains areas of land that are susceptible to landslip..... In areas susceptible to landslips, it is necessary to assess the potential impact of buildings, works and vegetation removal on the environment, in order to minimise risk to life and property. (EMO Policy Basis)

The proposal comprises title line position adjustment.

This report considers the geotechnical implications of the proposal.

1.0 Consultant

Michael Daniel Delahunty
'Culliamurra'
1745 Colac – Forrest Road
Colac Victoria Australia. 3249

1.1 Details of Qualifications, Experience and Expertise

Bachelor Degree in Mining Engineering University of Ballarat.

2001-2003 Civiltest, Geotechnical technologist

2006- to current 2020 Engineering Solutions P/L
Managing Director, Principal Engineer

Member Institute of Engineers Australia Member # 2274072

1.2 Specific Expertise

Over the past eighteen years I have personally conducted several hundred site and soil investigations across SW Victoria. This work, along with academic qualifications, has equipped me with an understanding of typical and atypical sub-soil conditions.

The author has valid professional indemnity insurance at the time of inspection and reporting. As part of a commitment to on-going professional development the author is undertaking the process of accreditation and attainment of chartered status.

1.3 Equipment

Kobelco 007 hydraulic mounted auger
100mm hand auger
GMC Digital spirit level
Manual measuring devices
Computer hardware and software

2.0 Date of Assessment

21th Sep 2019

2.1 Reporting Date

23th Sep 2019

3.0 Address

110 Silks Access,
Carlisle River, Victoria. 3239

3.1 Site Description

The subject property comprises a total of 76.37Ha portion of farmland, mostly bush but with cleared grazing and infrastructure zones.

River flats adjoining the Gellibrand River are flat and cleared, but the bush portion comprises moderate to steep deeply incised gully system on the south eastern side of a large ridgeline which tends NE to SW.

Currently the existing title line run thru some of the building envelopes off Silks Access, while the proposed relocated title line would enable more flexibility with regard to safe building envelopes.



Fig 1. Site and land use, (Subject land in blue outline). (VicPlan).

3.2 Existing Title Details (Planning Maps On line)

PLANNING PROPERTY REPORT

From www.planning.vic.gov.au on 16 May 2019 11:34 AM

PROPERTY DETAILS

Address: **110 SILKS ACCESS CARLISLE RIVER 3239**
Crown Description: **Allot. 31 PARISH OF NEWLINGROOK**
Standard Parcel Identifier (SPI): **31/PP3305**
Local Government Area (Council): **COLAC OTWAY** www.colacotway.vic.gov.au
Council Property Number: **21410**
Planning Scheme: **Colac Otway** planning-schemes.delwp.vic.gov.au/schemes/colacotway
Directory Reference: **VicRoads 100 H2**
This property has 3 parcels. For full parcel details get the free Basic Property report at: [Property Reports](#)

UTILITIES

Rural Water Corporation: **Southern Rural Water**
Urban Water Corporation: **Wannon Water**
Melbourne Water: **outside drainage boundary**
Power Distributor: **POWERCOR**

STATE ELECTORATES

Legislative Council: **WESTERN VICTORIA**
Legislative Assembly: **POLWARTH**

Planning Zones

[FARMING ZONE \(FZ\)](#)
[SCHEDULE TO THE FARMING ZONE \(FZ\)](#)

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0 1500m

Legend:

- FZ - Farming
- PCRZ - Public Conservation & Resource
- PPRZ - Public Park & Recreation
- PUZ1 - Public Use - Other Public Use
- RDZ1 - Road - Category 1
- TZ - Township

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

Fig 2. Location and planning details EMO (Planning Maps Online)

3.2.1 Overlays

BMO EMO(Part, existing entirely within EMO, proposed title line crosses EMO area/s) LSIO (Part, existing line not within LSIO, while proposed line is in small part crosses LSIO).

3.2.2 Property Owner /3.3 Developer

Bostock Pty Ltd

3.4 Responsible Authority

Colac Otway Shire Rae St Colac 3250

4.0 Site Assessment Plans

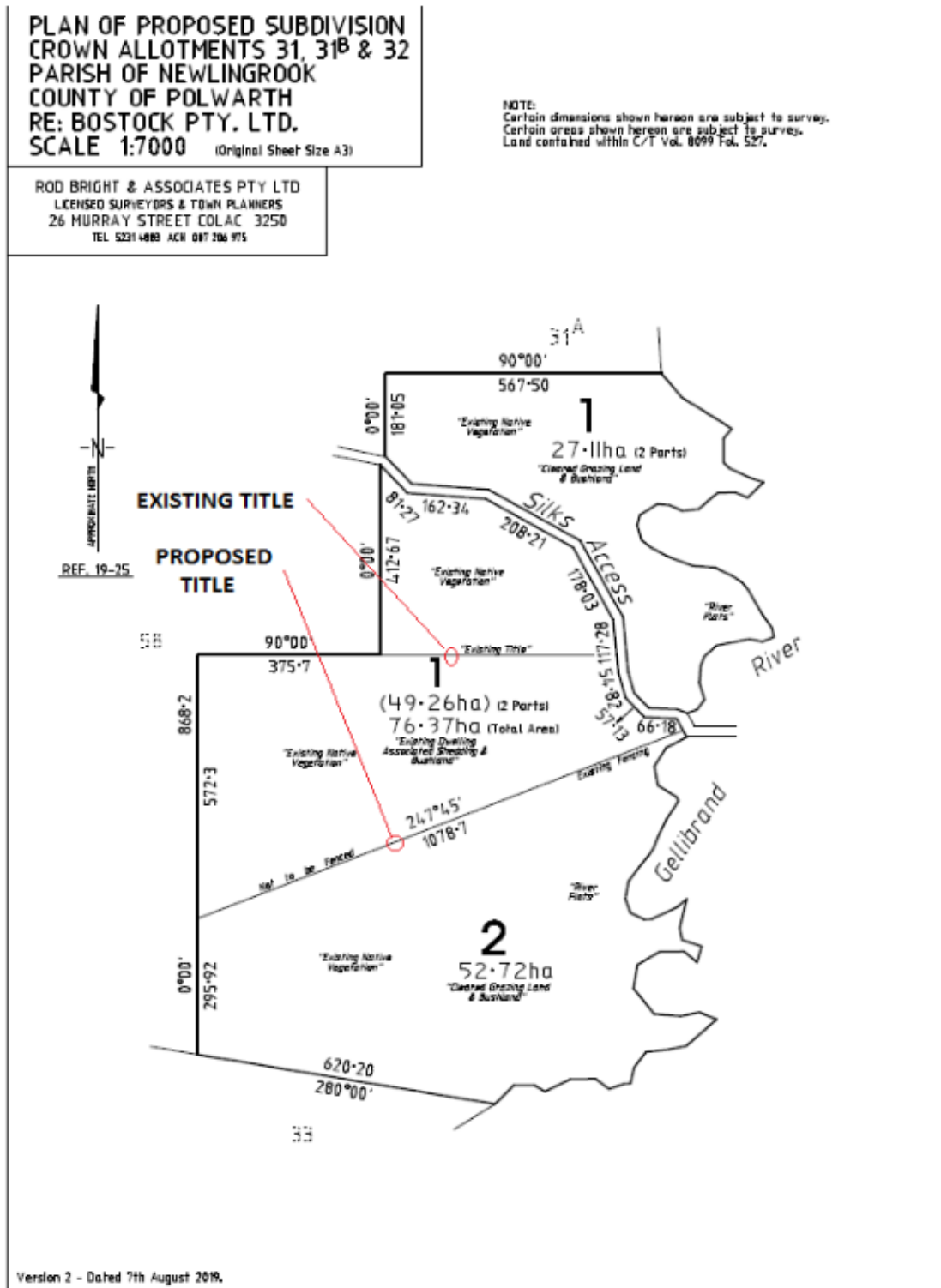


Fig. 3. Proposed re-alignment site plan. (Rod Bright & Ass.)

5.0 Geology

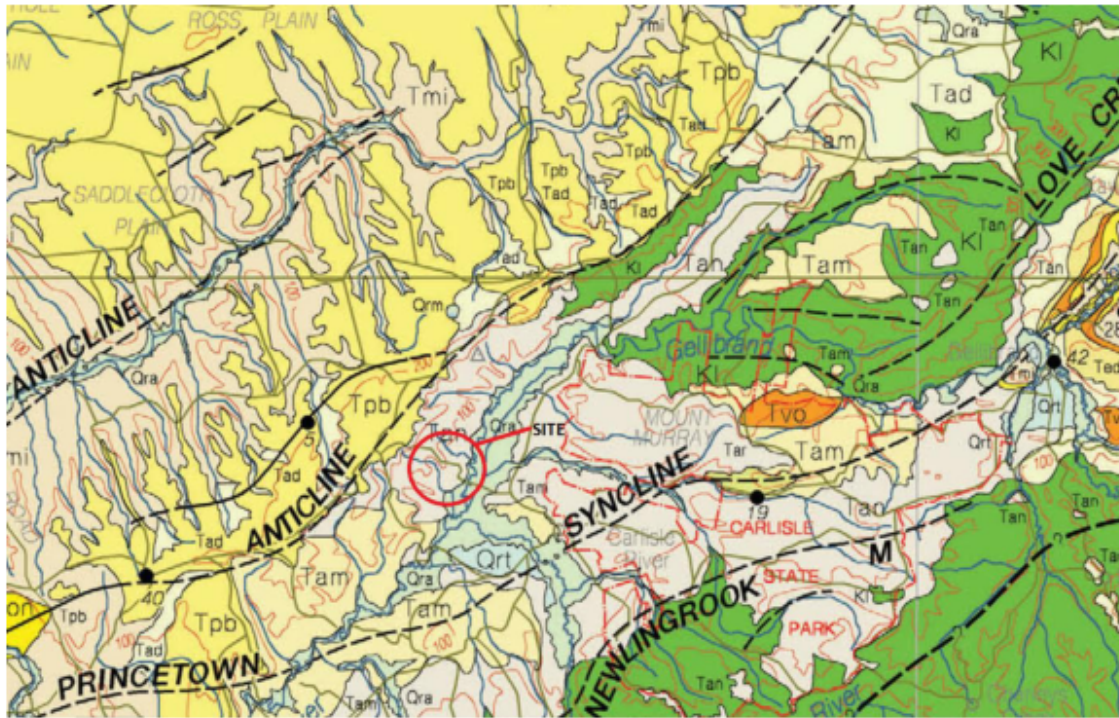


Fig.4. Regional and site geology.(GeoVic).

Published maps indicated subject land contains TERTIARY AGE Wiridjil Gravel Formation material, part of the Wangerrip Group, which is overlain by Hanson Plain Sand.

Ferguson Anticline is the principal structural feature of the region, which typically displays a fairly flat underlying strata.

5.1 Surface Conditions

As per land use image, the site contains a diverse range of surface conditions ranging from steep bush covered slopes to broad river flats.

5.1.1 Topography

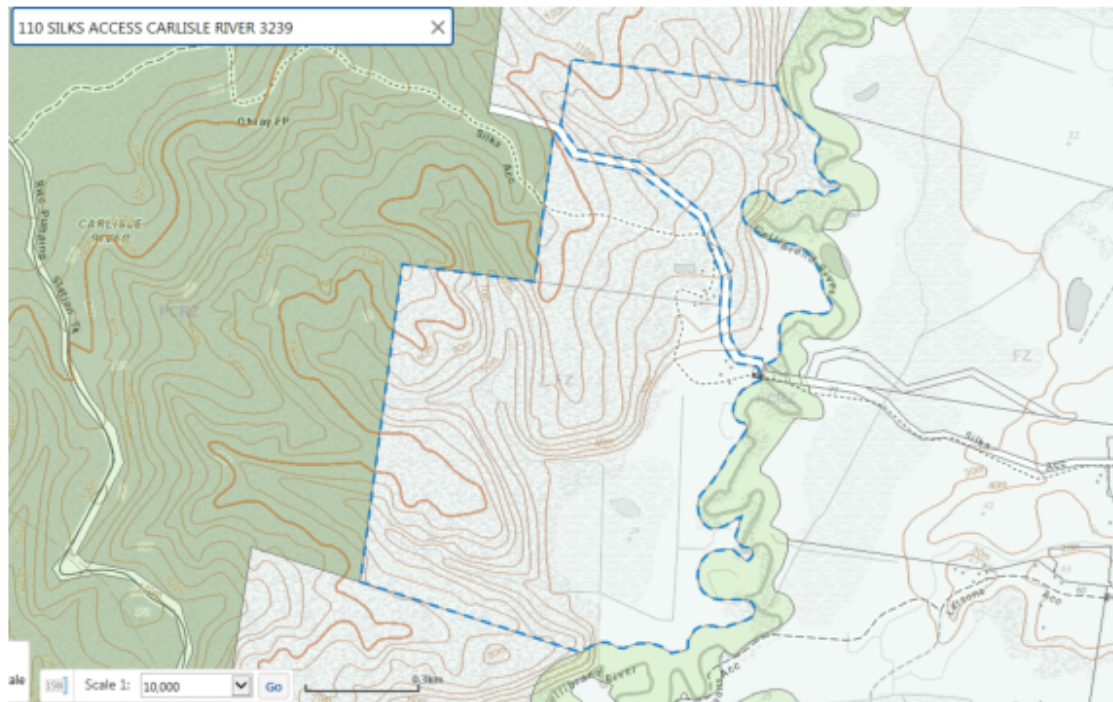


Fig 5. (VicPlan)The foregoing mapping shows the topography of the subject land and surrounds, indicating the principal ridgeline with deeply incised gullies tending to riverflats.

5.2 Subsurface Conditions

Due to the large extent of the property, subsurface conditions will vary considerably from deep alluvial soils to shallow soil over residual rock.

5.3 Groundwater

Like subsurface conditions, depth to groundwater will vary from shallow across the flats to very deep under the peak of the ridgeline.

5.4 Geomorphic Process

It appears that the principal landscape formation process involves erosion by flowing water generating regressing gullies along the large ridgeline. Minor landslides could be expected due to the environment but the geology would limit the volume and extent of mass soil movements.

6.0 Regional Instability

6.1 Mapped

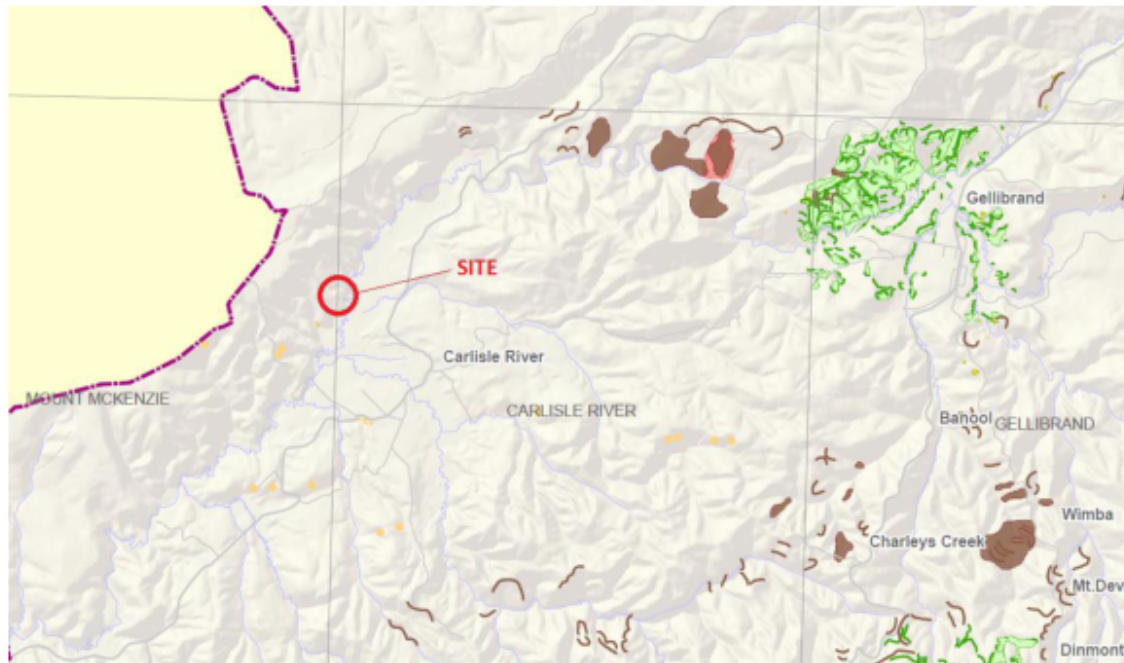


Fig. 6. COS Mapped landslides, shows no slip systems on or near the subject land.

6.2 Unmapped

No evidence of soil instability was noted during the limited site inspection principally due to the extent of vegetation.

The proposed title line location is across some open ground but principally across the eastern flank of the main ridge.

7.0 Assessment Methodology

The principal assessment methodology of instability analysis for this development was visual with observed soil profile providing input for the following slope model.

7.1 Slope Model

A slope model for a proposed title line that stretches over 1000m is not practical.

8.0 Plausible Failure Modes

There are no plausible failure modes with the potential to impact upon the proposed title line as the line will not be impacted by mass soil movement.

8.1 Elements at risk

As the proposal is for a realigned title line, Life would not be a risk element, property would be at extremely low risk, especially as the applicant advises the new title line will not be fenced.

8.2 Failure analysis

All modes of failure with remote possibility of impact upon the proposed alignment were deemed not plausible, therefore analysis not applicable.

9.0 Risk Analysis

Risk Analysis brings together Probability and Consequence.

9.1 Consequence Analysis

No anticipated impact upon Life or Property.

9.2 Probability Analysis

With the topography across which the title line crosses, mass land sliding is assessed as possible.

9.3 Vulnerability Analysis

Life; No vulnerability
Property; Very low.

9.4 Spatial Factor

Life; No Spatial Factor
Property; Unity

9.5 Risk analysis

Annual probability of loss of life, from the proposed title realignment is Barely Credible

This figure is below the advised acceptable limit

Property Risk would be Extremely Low.

This is also below the advised acceptable limit.

10.1 Footing structure and Foundation Materials

N/A

10.2 Cut and Fill Earthworks

None proposed

10.3 Soil Retention Structures

None proposed

10.4 Drainage

N/A

10.5 Building Design and Structural System

N/A

10.6 Vegetation

At the time of inspection the site contained a surface covering of grasses and bush. No trees on are proposed for removal.

10.7 Wastewater Management

N/A

10.8 On-going Maintenance and Mitigation Measures

This report does not recommend specific on-going erosion mitigation measures aside from good property maintenance practices.

10.9 Development Timeframe

There is no geotechnical timeline for this development.

10.10 Additional Geotechnical Requirements

The proposed development includes a title re-alignment, this proposal will have no additional geotechnical requirements.

By realigning the existing title line the existing infrastructure components will not have an increased risk exposure to mass soil movement, with existing, background risk unchanged.

Allotments created by the re-alignment will contain areas of land which, in the absence of detailed investigations, generally present as safe building envelopes.

11.0 Landslip Risk Assessment Statement

Landslip Risk Assessment is not required due to the proposal and annual risk to Life of Barely Credible is applicable to an acceptable level for an existing slope.

12.0 Report Recommendations

Proposal be approved as the proposal will not generate a geotechnical risk or hazard.

13.0 Report Restrictions

Should the final proposal differ substantially from the assessed proposal, the testing and resultant recommendations, may not be valid. It also assumes the 'as tested' conditions are consistent across the site. If this is not the case, the client would be advised to contact the author, should encountered conditions vary from those reported.

2020Engineering Solutions takes no responsibility for errors or omissions contained in sourced material. This report should be read in entirety and not selectively reproduced.

14. Professional Compliance Statement

The author has valid professional indemnity insurance at the time of inspection and reporting. As part of a commitment to on-going professional development the author is undertaking the process of accreditation and attainment of chartered status.

15 Controlling and Referenced Documents;

AS1726-1993 (incorporating amendments to #2-1994)

AS4360-2005 Risk Management Set

AS4200-2000 General Conditions of Contract for Engagement of Consultants

AS2870-2011 Residential Slabs and Footings

Colac Otway Shire

Planning Scheme, Erosion Management Overlay Procedures (EMO)

Schedule 1

Geographic Information System (GIS) Data base

Geological Survey of Victoria (GSV)

Colac 7621-3 Zone 54

1:50,000 Map Series

Tickell S.J. 1990.

Report 103 (Department of Agriculture, Energy and Minerals)

2020ES JSA 01.21.09.19

www.dse.vic.gov.au


16.0 Site Condition Photo

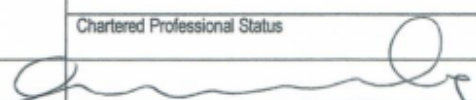


Fig 7. View to west across river flats to forest on ridge flanks, typical of land to be traversed by proposed title alignment.(Author).

17. Geotechnical Declaration

Page 1 of 2

FORM	A	Geotechnical Declaration and Verification Development Application	
Office Use Only			
<p>To be submitted with planning application. It must accompany the Geotechnical Assessment and/or Landslip Risk Assessment. This form is essential to verify that the Geotechnical Assessment and/or Landslip Risk Assessment has been prepared in accordance with CI 44.01 of the Colac Otway Planning Scheme and that the author of the Assessment/s is a geotechnical engineer or engineering geologist as defined by this clause.</p>			
Section 1		Related Application	
Planning Application Number (if known)	TO BE ADVISED		
Site Address	110 SILKS ACCESS, CARLISLE RIVER, VICTORIA. 3239		
Applicant	BOSTOCK PTY LTD		
Section 2		Geotechnical Assessment and /or Landslip Risk Assessment	
Details	Report Title: GEOTECHNICAL ASSESSMENT		
	Author's Company/ Organisation Name: 2020 ENGINEERING SOLUTIONS	Report Reference No: ES19199	
	Author: MR MICHAEL DELAHUNTY	Dated: 23/09/2019	
Section 3		Checklist	
		<small>A slope model for a proposed title line that crosses over 1000m is not practical.</small>	
Geotechnical Requirements (Tick as appropriate either Yes or No)	<p>The following checklist covers the minimum requirements to be addressed in a Geotechnical Assessment and/or Landslip Risk Assessment. The report must also cover any additional matters required by Clause 44.01. This checklist must accompany each report. Each item is to be cross-referenced to the section or page of the Geotechnical Assessment and/or Landslip Risk Assessment which addresses that item.</p>		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A review of readily available history of slope instability in the site or related land as per <SECTION 6 >		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	An assessment of the risk posed by all reasonably identifiable geotechnical hazards as per <SECTION 6.1 >		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Plans and sections of the site and related land as per <SECTIONS 17 >		
<input type="checkbox"/> Yes <input checked="" type="checkbox"/> No	Presentation of a geological model as per A SLOPE MODEL FOR A PROPOSED TITLE LINE OVER 1000METRES IS NOT PRACTICAL		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Photographs and/or drawings of the site as per < SECTION 16 >		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	A conclusion as to whether the site is suitable for the development proposed to be carried out either conditionally or unconditionally as per <SECTION 12 >		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	If any items above are ticked No, an explanation is to be included in the report to justify why < >		
Is the approval subject to recommendations and conditions relevant to:			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Selection and construction of footing systems.		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Earthworks.		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Surface and sub surface drainage.		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Recommendations for the selection of structural systems consistent with the geotechnical assessment of the risk.		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Any conditions that may be required for the ongoing mitigation and maintenance of the site and the proposal from a geotechnical-viewpoint.		
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Highlighting and detailing the inspection regime to provide the <PCA> and builder with adequate notification for all necessary inspections.		
State the Design Life of the Structure adopted in the Geotechnical Assessment and/or the Landslip Risk Assessment.			
<input checked="" type="checkbox"/> Yes <input type="checkbox"/> No	Are the risk mitigation measures as recommended in the Geotechnical Assessment and/or the Landslip Risk Assessment suitable for the design life of the structure?		
NOTE:		<Add Reference> - Add in the relevant section or page number of the listed Geotechnical Assessment and/or Landslip Risk Assessment which addresses each item	

FORM	A	Geotechnical Declaration and Verification Development Application			
Section 4		List of Drawings referenced in Geotechnical Assessment and/or Landslip Risk Assessment			
Design Documents	Description	Plan or Document No.	Revision or Version No.	Date	Author
	SITE PLAN	FIG 1.			VICPLAN
	LOCATION & PLANNING DETAILS	FIG 2.		PLANNING MAPS ON LINE	
	PROPOSED RE- ALIGNMENT OF BOUNDARY	FIG 3.	VERSION 2	07/08/2019	ROD BRIGHT & ASSOCIATES
	SITE GEOLOGY	FIG 4.			VICPLAN
	TOPOGRAPHY	FIG 5.			VICPLAN
	MAPPED SLIP SYSTEMS	FIG 6.			COS
Section 5		Declaration			
Declaration (Tick all that apply)		I am a geotechnical engineer or engineering geologist as defined by the Colac Otway Planning Scheme and on behalf of the company below:			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	I am aware that the Geotechnical Assessment and/or Landslip Risk Assessment I have either prepared or am technically verifying (referenced above) is to be submitted in support of a planning application for the proposed development site (referenced above) and its findings will be relied upon by the Colac Otway Shire Council in determining the planning application			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> N/A	I prepared the Geotechnical Assessment and/or Landslip Risk Assessment referenced above in accordance with the Colac Otway Planning Scheme and the AGS Guidelines 2007 as defined in the planning scheme.			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> N/A	I technically verify that the Geotechnical Assessment and/or Landslip Risk Assessment referenced above has been prepared in accordance with the Colac Otway Planning Scheme and the AGS Guidelines 2007 as appropriate.			
<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No	I technically verify that the Geotechnical Assessment prepared for the planning application for the site confirms the land can meet the acceptable risk criteria specified in the schedule to Clause 44.01 of the Colac Otway Planning Scheme taking into account the total development and site disturbance proposed.			
<input type="checkbox"/> Yes	<input type="checkbox"/> No <input checked="" type="checkbox"/> N/A	I technically verify that the Landslip Risk Assessment prepared for the planning application for the site confirms the land can meet the tolerable risk criteria specified in the schedule to Clause 44.01 of the Colac Otway Planning Scheme taking into account the total development and site disturbance proposed.			
Section 6		Geotechnical Engineer or Engineering Geologist Details			
Company/ Organisation Name		2020 ENGINEERING SOLUTIONS PTY LTD			
Name (Company Representative)		Surname: DELAHUNTY		Dr / Mr / Mrs / Ms / Miss	
		Given Name(s) MICHAEL			
		Chartered Professional Status		Registration Number	
Signature				Dated: 23/09/2019	

Reference: AGS Guidelines 2007c "Practice Note Guidelines for Landslide Risk Management", Australian Geomechanics Society, Australian Geomechanics. V42. N1 March 2007.

Note: N/A = Not Applicable

April 2013.

18. The Geotechnical Assessment

The initial level of assessment requires a report known as a “Geotechnical Assessment”. A primary purpose of the Geotechnical Assessment is the collection of base information about the site. This is to include:

- A detailed site description typically including aspects of the site geomorphology, site drainage and site physiography including slope and aspect.
- It is expected that the site description also includes other site features such as existing development, access roads, retaining walls and site excavations and/or fills.
- Site assessment plans and cross sections of the subject site and related lands that may contribute to or be affected by instability at the site. This should include contours and ground slopes drawn to scale and dimensioned from a survey and recent field measurements. The plan and section should be separate from any geological model or stability model provided as additional analysis/assessment information.
- A detailed assessment of subsurface conditions including both surface and subsurface geology. Such information is vital in developing a geological model for the site and should include any exposures or outcrops as well as groundwater discharges or seeps
- The above information should then be summarised in a description of a geological/ geotechnical model for the site
- Details of all site investigations and any other information used in developing the Geotechnical Assessment.

The purpose of the base information is to effectively describe key aspects of the site in detail so as to clearly establish a context for the site conditions prior to the proposed development.

The next aim of the Geotechnical Assessment is to establish relevant features of the slope stability conditions of the site. This should include:

- A statement indicating whether there are natural slopes on or immediately adjacent to the subject lot which exhibit evidence of possible or past slope instability such as landslide, rockfall or erosion.
- The Geotechnical Assessment should list all credible, potential modes of failure.

By combining an understanding of the site conditions and aspects of slope stability, a primary finding from the Geotechnical Assessment must be:

- A statement indicating risks for all slope stability hazards identified are of an ACCEPTABLE RISK level (as defined by the schedule) and that these risks will remain at an ACCEPTABLE RISK level over the design life of the development.

An ACCEPTABLE RISK level by necessity must be defined by COS, but is expected to be in line with risk levels recommended in the Australian Geomechanics Society's (AGS) Landslide Risk Management Guidelines (AGS 2007c and d). For a typical low rise residential development, ACCEPTABLE levels of risk as recommended by AGS are as follows:

Risk Type for low rise residential development	ACCEPTABLE RISK level (as per AGS 2007 c and d)
Risk to Property and Infrastructure (Qualitative Assessment)	LOW
Risk to Life for existing slopes and development (Quantitative Assessment)	1×10^{-5}
Risk to Life for new slopes and new development (Quantitative Assessment)	1×10^{-6}

Note other combinations of building importance and slope conditions can result in different levels of ACCEPTABLE risk (e.g. a hay shed has less stringent criteria whilst heavily used building such as schools or recreation centers will require more stringent criteria). The AGS guidelines offer detailed recommendations on this aspect of ACCEPTABLE RISK.

If the Geotechnical Assessment cannot make the statement regarding ACCEPTABLE RISK levels for all slope hazards, then the assessment must proceed to a second more detailed assessment known as a "Landslide Risk Assessment".

It is generally not expected that detailed risk calculations would be included in a Geotechnical Assessment however a consultant may choose to include some calculations if they feel the need to justify the required statement regarding ACCEPTABLE RISK levels.

Other recommendations regarding the development must also be included in the Geotechnical Assessment where they have influence on the final recommendation for approval. These include:

- Determination of appropriate founding depths
- Location and depth of cuts and fills,
- Construction of retention systems
- Details of surface and sub-surface drainage
- Vegetation retention
- Drainage and effluent disposal
- Need for ongoing mitigation measures
- Timeframes for completion of works
- Any other geotechnical approvals

Finally the Geotechnical Assessment must include a statement on whether or not the next level assessment i.e. a Landslip Risk Assessment is required.

The Landslip Risk Assessment

A Landslip Risk Assessment may be required in one of two ways:

1. Where the Geotechnical Assessment cannot make the statement regarding all potential slope hazards are at an ACCEPTABLE risk level and hence the call for a more detailed assessment or;
2. Where landform data indicates the natural slopes on or immediately adjacent to the subject lot exceed certain slope angle thresholds for various geologic units (as defined in the schedule). In the case of the spatially extensive Eumeralla Formation (Otway Group) this threshold angle is 14°.

The Landslip Risk Assessment must include the initial Geotechnical Assessment OR must include all information required in a Geotechnical Assessment where the initial level of assessment was bypassed by the slope threshold requirement.

The Landslide Risk Assessment then requires a full risk assessment in accordance with the requirements of the AGS2007 guidelines.

This includes an assessment for risks for all reasonably identified geotechnical hazards and must be undertaken for risks to life and risk to property/infrastructure. Qualitative and quantitative calculations must be included in this assessment.

The Landslip Risk Assessment must include a specific statement as follows:

- A statement that the subject lots are suitable or can be made suitable for the proposed development and that the subject lot or the proposed development can meet the TOLERABLE RISK criteria as defined in the schedule.

As before, a TOLERABLE RISK level will need to be defined by COS but is again expected to be in line with risk levels recommended in the Australian Geomechanics Society's Landslide Risk Management Guidelines (AGS 2007c and d). For a typical low rise residential development TOLERABLE levels of risk as recommended by AGS are as follows:

Risk Type for low rise residential development	TOLERABLE RISK level (as per AGS 2007 c and d)
Risk to Property and Infrastructure (Qualitative Assessment)	MODERATE
Risk to Life for existing slopes and development (Quantitative Assessment)	1 x 10 ⁻⁴
Risk to Life for new slopes and new development (Quantitative Assessment)	1 x 10 ⁻⁵

It is again noted that different combinations of building importance and slope conditions may result in different levels of tolerable risk.

19. Report Limitations

2020 Engineering Solutions Pty Ltd ("2020") Geotechnical Report Limitations

The report to which this document has been attached assesses risks arising from land slope instability and proposes risk minimisation solutions. Absolute risk avoidance cannot be assured, principally due to assessment cost factors. It is therefore necessary to rely on instructions and make assumptions.

Changed Conditions

The report may be invalidated by changed conditions including:-

1. topography.
2. soil moisture content.
3. above or below ground structures.
4. soil and substrate profiles.
5. location of site boundaries.

Causes of Changed Conditions

Changed conditions may occur due to:-

1. extreme conditions such as flood, drought, cold, heat or fire.
2. human activities.
3. natural processes.
4. planning or design requirements.

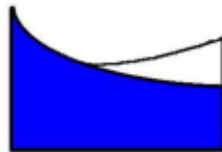
Client to inform 2020 of any changes

2020 will endeavour to identify any reasonably foreseeable risk factors on the site which may cause changed conditions. Samples are taken at reasonable intervals bearing in mind the cost to the client. In the absence of specific instructions or patent conditions it will be assumed that conditions observed in samples are consistent across the site.

This document is provided to inform the client that their responsibility for risk is shared with 2020. The client will be responsible for inaccurate instructions or failure to instruct in relation to changed conditions, events that may cause changed conditions or when it becomes evident that assumptions may be invalid. Failure to do so could result in substantial and costly damage and disputes.

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**2020
ENGINEERING
SOLUTIONS**

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www.2020es.com

BUSHFIRE ATTACK LEVEL (BAL)

PATHWAY 3 ASSESSMENT

SITE; 110 Silks Access
Carlisle River, VIC.

DEVELOPER; Bostock P/L

REPORT NUMBER; ES19212

DATE; 23 Sep 2019

REPORTING TO; AS 3959-2009, CONSTRUCTION OF
BUILDINGS IN BUSHFIRE PRONE AREAS
CFA BUILDING IN A WILDFIRE MANAGEMENT OVERLAY
Planning Provisions Clause 52.47-2.4

Executive Summary

The proposed title realignment complies with objective/s in that the risk to life and property is not increased by the proposal or any actions that may flow from the proposal.

REPORT CONTENTS

- 1.0 Proposal
 - 2.0 Responsible Authority
 - 2.1 Referral Authorities
 - 3.0 Controlling and Referenced Documents;
 - 4.0 Project Brief
 - 5.0. Preamble
 - 6.0 Methodology;
 - 7.0 Equipment
 - 8.0 Results;
 - 8.1 Geomorphology;
 - 8.2 Vegetation;
 - 8.3 Fire Danger Index (FDI)
 - 8.4 Vegetation Classification
 - 8.4.1 General
 - 8.4.2 Classified Vegetation Height
 - 8.4.3 Fuel Loads.
 - 8.4.4 Exclusions
 - 8.5 Effective Slope of Land under Classified Vegetation.
 - 8.5.1 Slope between Site and Classified Vegetation
 - 8.5.2 Distance to classified vegetation
 - 9.0 Determination of Bushfire Attack Level (BAL) Method Two.
 - 9.1 Step 1; Determine relevant FDI
 - 9.2 Step 2. Vegetation Classification
 - 9.3 Step 3. Effective Slope
 - 9.4 Step 4. Setback Slope
 - 9.5 Step 5. Bushfire Attack Level
 - 9.6 Step 6. Construction Requirements
 - 9.7 Comment
 - 10.0 Country Fire Authority Requirements
 - 11.0 Comment
 - 12.0 Report Recommendations
 - 13.0 Professional Compliance Statement
 - 14.0 Report Limitation.
- Site Condition Photos

Attachment One; Location Map showing Site.

Attachment Two; CFA Conditions

Attachment Three; Report Limitations

The following copied documents are made available for the sole purpose of enabling its consideration and review as part of a planning process under the Planning and Environment Act 1987. The document must not be used for any purpose which may breach any Copyright.

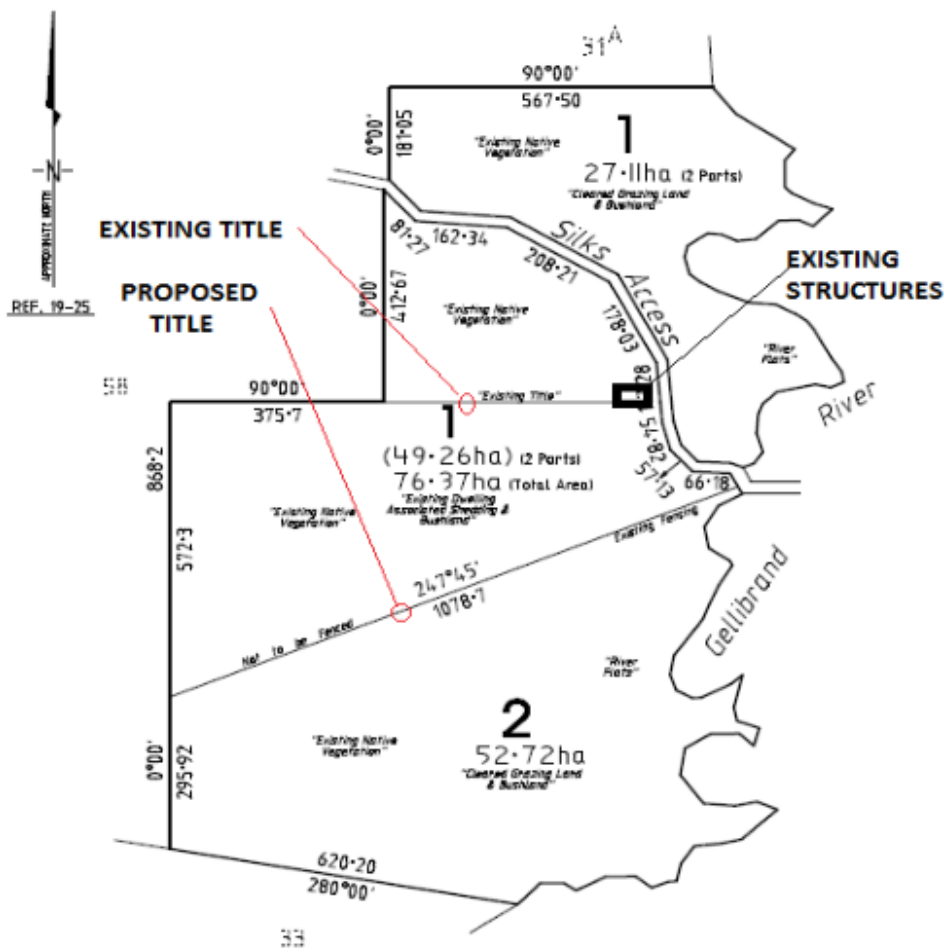
1.0 Proposal

Title realignment.

PLAN OF PROPOSED SUBDIVISION
CROWN ALLOTMENTS 31, 31^B & 32
PARISH OF NEWLINGROOK
COUNTY OF POLWARTH
RE: BOSTOCK PTY. LTD.
SCALE 1:7000 (Original Sheet Size A3)

NOTE:
Certain dimensions shown hereon are subject to survey.
Certain areas shown hereon are subject to survey.
Land contained within C/T Vol. 8099 Fol. 527.

ROD BRIGHT & ASSOCIATES PTY LTD
LICENSED SURVEYORS & TOWN PLANNERS
26 MURRAY STREET COLAC 3250
TEL 5231 4888 FAX 087 206 975

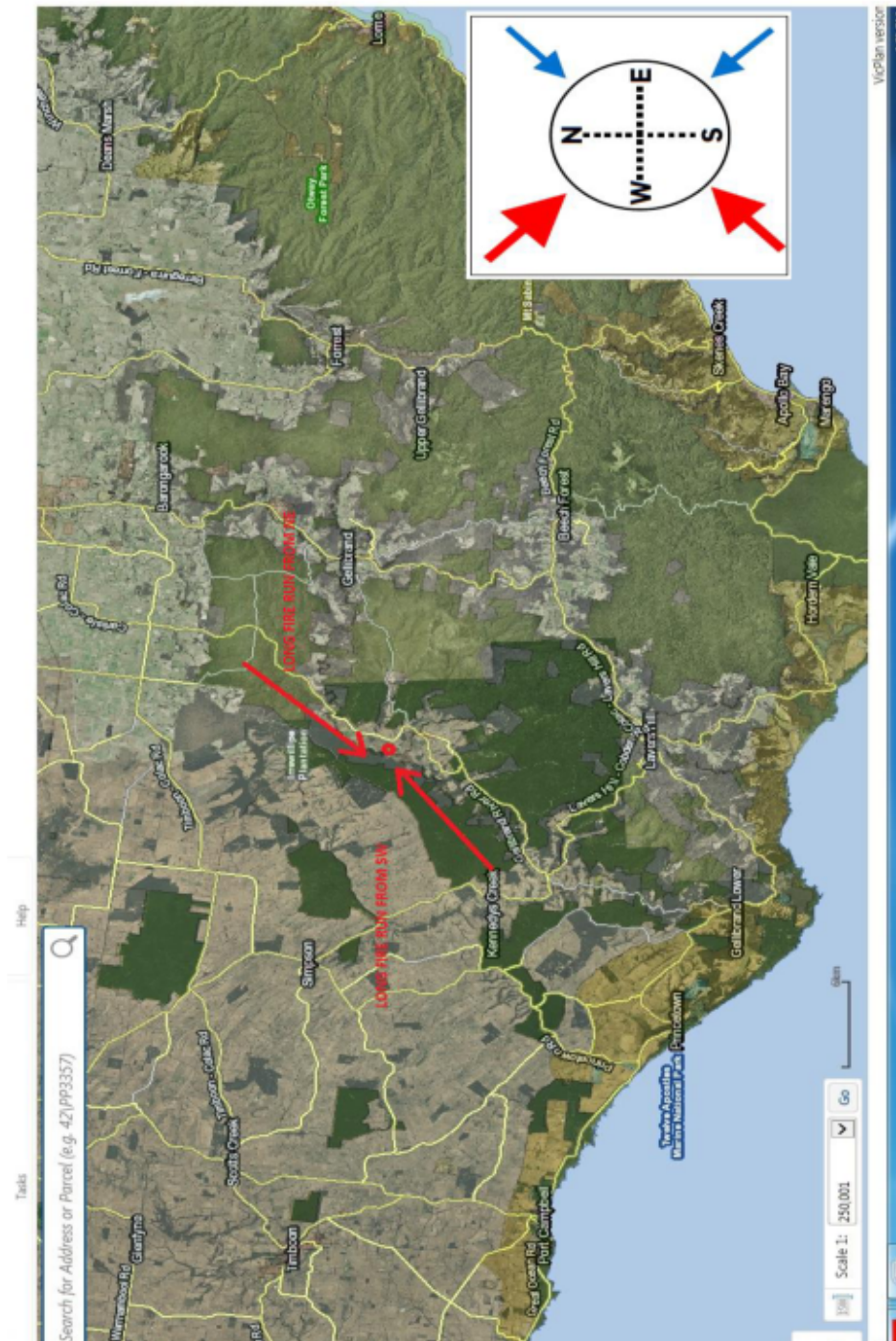


Version 2 - Dated 7th August 2019.

Proposed alignment (Rod Bright & Ass).

Subject land with existing structures and proposed title realignment.

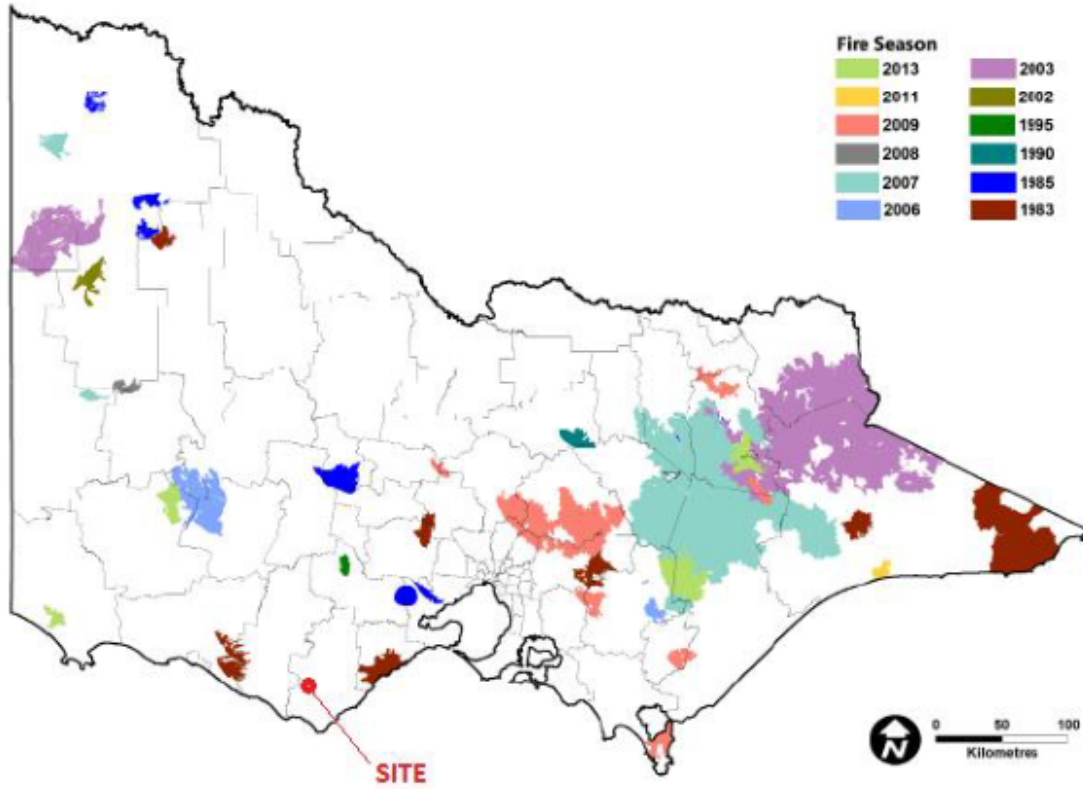
Bushfire Hazard Landscape Assessment.



From VicPlan.

Landscape Type 3, significant areas of bush near site but also areas of low threat, cleared farmland, riverflats, roadways, etc..

FIRE HISTORY MAP

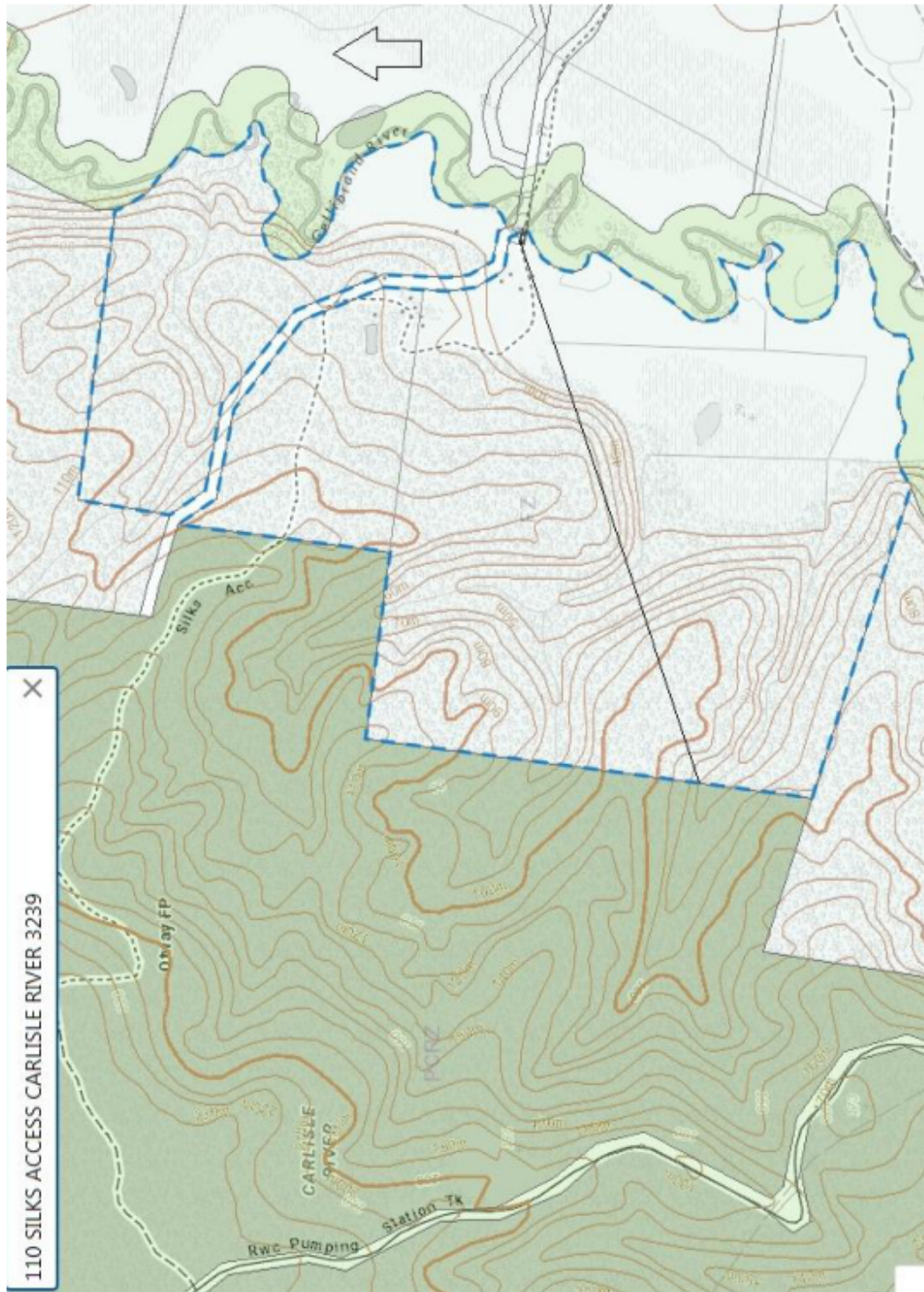


No significant fire history near subject land.

Bushfire Hazard Site Assessment



As per landscape assessment the subject land comprises extensive bush near cleared farmland, scale of property and proposed alignment dictates large scale image showing proposed allotments. It should be noted that each allotment contains sufficient cleared land to support defensible space requirements.



Most of the subject land is along the SE flank of a large ridge, and is therefore downslope of fires moving from the north or SW. Existing structures are all downslope from hazardous vegetation. Each allotment contains some flat ground removed from the hazardous vegetation.

Bushfire Management Statement

The proposed title re-alignment responds to the relevant requirement of 52.47 as per CFA publication Planning For Bushfire Victoria and Technical Guide Sep 2017.

Defendable Space provisions would be available under the new allotment/s

Access would remain as per existing arrangement/s

Good, safe access is provided to each allotment under proposed arrangements

Overall risk to life is reduced as currently defendable space for Lot 1 extends on to adjoining allotment, a situation mitigated by the proposal.

Overall risk to life is not increased as new Lot 2 has safe building envelope/s.

Defendable Space as per column A Table 2. (Complies with requirement for subdivisions of less than 10 lots.)

Water Supply as per BMP

Bushfire Management Plan



NOTE STANDARD CFA CONDITIONS ONLY SPECIFIC SITE CONDITIONS TAKE PRIORITY

Before the development starts, *[an amended bushfire management plan (or) a bushfire management plan]* must be submitted to and approved by the Responsible Authority. The plan must be endorsed to form part of the permit and show the following bushfire mitigation measures, unless otherwise agreed in writing by the CFA and the Responsible Authority:

Insert relevant mitigation measures (refer to the sub-set of conditions below under the sub-headings of defensible space, access, water supply, construction)

a) Defendable space

Show an area of defendable space *[for an distance of 48m around the proposed building/or to the property boundary]* where vegetation (and other flammable materials) will be modified and managed in accordance with the following requirements:

- Grass must be short cropped and maintained during the declared fire danger period.
- All leaves and vegetation debris must be removed at regular intervals during the declared fire danger period.
- Within 10 metres of a building, flammable objects must not be located close to the vulnerable parts of the building.
- Plants greater than 10 centimetres in height must not be placed within 3m of a window or glass feature of the building.
- Shrubs must not be located under the canopy of trees.
- Individual and clumps of shrubs must not exceed 5 sq. metres in area and must be separated by at least 5 metres.

- *Trees must not overhang or touch any elements of the building.*
- *The canopy of trees must be separated by at least 5 metres.*
- *There must be a clearance of at least 2 metres between the lowest tree branches and ground level.*

b) Construction standards

Nominate a minimum Bushfire Attack Level of [BAL 12.5] that the building will be designed and constructed.

c) Water supply

Conditions required for all applications

Show 10,000 litres] of effective water supply for fire fighting purposes which meets the following requirements:

- *Is stored in an above ground water tank constructed of concrete or metal*
- *All fixed above-ground water pipes and fittings required for fire fighting purposes must be made of corrosive resistant metal.*

Additional conditions to apply if CFA fittings and access is required (delete if N/A)

The water supply must also –

- *Incorporate a ball or gate valve (British Standard Pipe (BSP) 65mm) and coupling (64 mm CFA 3 thread per inch male fitting).*
- *The outlet/s of the water tank must be within 4m of the accessway and be unobstructed.*
- *Be readily identifiable from the building or appropriate identification signage to the satisfaction of CFA must be provided.*
- *Any pipework and fittings must be a minimum of 65 mm (excluding the CFA coupling).*

d) Access

Conditions where tailored access is required and driveway is less than 100m (delete if N/A)

Show the access for fire fighting purposes which meets the following requirements:

- *Curves must have a minimum inner radius of 10m.*
- *The average grade must be no more than 1 in 7 (14.4 per cent) (8.1 degrees) with a maximum of no more than 1 in 5 (20 per cent) (11.3 degrees) for no more than 50m.*
- *Have a minimum trafficable width of 3.5m of all weather construction.*
- *Be clear of encroachments for at least 0.5m on each side and 4m above the accessway.*
- *Dips must have no more than a 1 in 8 (12.5 per cent) (7.1 degrees) entry and exit angle.*

Additional conditions where tailored access is required and driveway is more than 100m (delete if N/A)

- *Incorporate a turning area for fire fighting vehicles close to the building*

Additional conditions where tailored access is required and driveway is more than 200m (delete if N/A)

- *Incorporate passing bays at least every 200m which must be at least 20m long and have a minimum trafficable width of 6m.*

13.0 Professional Compliance Statement

The author is a current volunteer member of the CFA and has 30 years fire fighting experience. The author has professional indemnity insurance at the time of inspection and reporting. As part of a commitment to on-going professional development the author is undertaking the process of accreditation and attainment of chartered status.

14.0 Report Limitation.

2020Engineering Solutions takes no responsibility for errors or omissions contained in, or derived from, sourced material.

This report should be read in entirety and not selectively reproduced.

Should additional information be required please contact the author.

Michael Delahunty
BEng MIEAust
2020Engineering Solutions



FSG LUP 0002 Land Use Planning

REQUIREMENTS FOR WATER SUPPLY & ACCESS IN A BUSHFIRE MANAGEMENT OVERLAY (BMO)

BACKGROUND

In October 2011, as part of implementing the 2009 Victorian Bushfires Royal Commission's (VBRC) Recommendations the Wildfire Management Overlay (WMO) under the Victoria Planning Provisions (VPP) was replaced by a new control, the Bushfire Management Overlay (BMO). The BMO and associated Clause 52.47 contain a number of clauses and standards for implementing bushfire protection measures. These protection measures include the provision of water supplies and access arrangements to the satisfaction of the 'relevant fire authority'.

CFA's current requirements for water supplies and access in the BMO are similar to those which were in place under the WMO. However, to implement suggestions of the VBRC there are a few minor changes. These include:

- A requirement for a static supply of water for all development (both reticulated and non-reticulated areas) subject to the BMO
- An explicit requirement for water tanks to be made from non-combustible material such as concrete or steel
- Greater emphasis on the use of perimeter roads in subdivision design for both facilitating fire fighting activities and augmenting defensible space

This document provides CFA's specific requirements for water supplies and access in the BMO. CFA also produce a number of guiding documents on these matters in areas outside of a BMO. These are available at www.cfa.vic.gov.au and include:

- Planning Guidelines for Subdivisions in Bushfire-prone Areas
- Requirements for Water Supplies and Access for Subdivisions in Residential 1 and 2 and Township Zones
- Preferred Requirements: Water supplies and access for subdivisions in Rural Zones

These documents will provide useful clarification on the requirements of this Fire Service Guideline.

To complement the new bushfire controls CFA and the Department of Planning and Community Development are producing a new document *Bushfire Planning Victoria* which will be released in draft as part of a community consultation process. The requirements for water supply and access in the draft *Bushfire Planning Victoria* will reflect these requirements and be part of the review process.

SCOPE

This Fire Service Guideline provides CFA's minimum requirements for water supplies and access for development subject to the BMO. Requirements for buildings and works, and subdivision are covered by this document.

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Online version should always be used to ensure the Fire Service Guideline is the latest version

Issue No: FSG LUP 0002 Requirements for water supply & access in a Bushfire Management Overlay (BMO) Community Safety Page 1 of 9
Dated: 30/11/2011 email: lup@cfa.vic.gov.au

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FSG LUP 0002 Land Use Planning

REQUIREMENTS

Subdivision Water Supplies

Objective

To ensure the provision and adequate supply of water to facilitate fire fighting and property protection both during and after the passage of a bushfire.

Standard

All development must be accompanied by water supply and access arrangements which meet the requirements of the relevant fire authority, including:-

A dedicated static water supply, such as a tank, must be provided and meet the following requirements:

- A minimum of 10,000 litres on-site static storage must be provided on the lot and be maintained solely for fire fighting;
- The static storage must be constructed of non-combustible material;
- The water supply must be located within 60 metres of the dwelling; and
- Fire brigade vehicles must be able to get to within 4 metres of the water supply outlet.

The water supply should be readily identifiable from the building and appropriate signage (Figure 1), approved by the relevant fire service, shall provide:

- An arrow pointing to the water supply;
- Have dimensions of 310mm high and 400mm long;
- Be red in colour, with a blue reflective marker attached; and
- Is labelled with a 'W' that is 15cm high and 3cm thick in size.

All below-ground water pipelines must be installed to the following depths:

- subject to vehicle traffic: 300 mm
- under dwellings or concrete slabs: 75 mm
- all other locations: 225 mm

All fixed above-ground water pipelines and fittings, including water supply, must be constructed of non-corrodible and non-combustible materials, or protected from the effects of radiant heat and flame.

Where the dedicated static water supply is above ground, the following additional provisions apply:

- All above-ground dedicated static water supplies must provide at least one 64 mm, 3 thread/25 mm x 50 mm nominal bore British Standard Pipe (BSP), round male coupling (see Figure 2);

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- All pipe work and valving between the water supply and the outlet must be no less than 50 mm nominal bore; and
- If less than 20 metres from the building, each outlet must face away from the building to allow access during emergencies.

Figure 1 Water supply identification

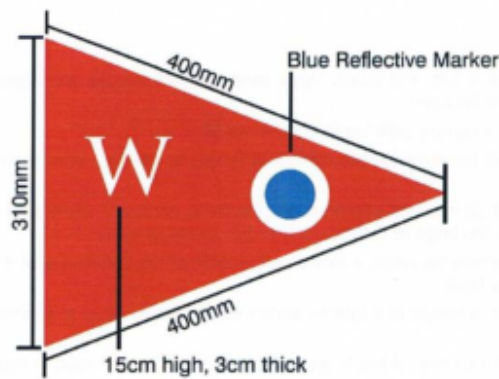
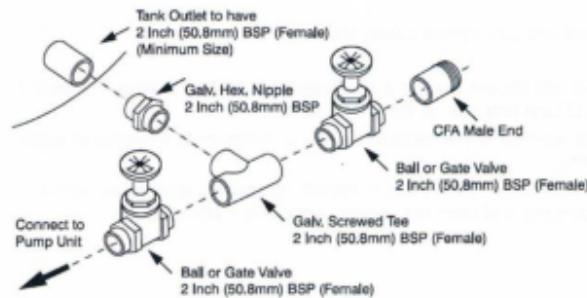


Figure 2 Requirements for fitting for above ground tanks.



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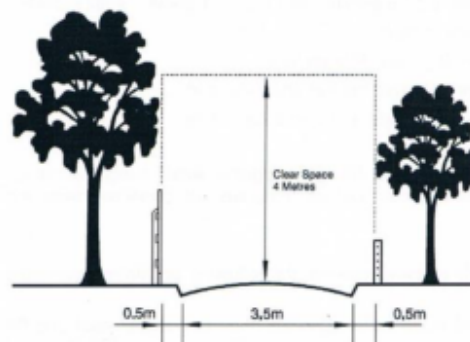
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- Access into and out of all properties shall be by direct access to a public road;
- Building envelopes shall ensure that dwellings are clustered and minimises the loss of vegetation for supporting mutually shared defensible space;
- Access through a subdivision or across a lot to an individual building site if less than 6 metres width must be provided with passing bays of a minimum of 20 metres in length every 200 metres. The combined width of the passing bay and accessway must be a minimum of 6 metres;
- Road access of at least 6 metres is required where access serves more than one lot;
- A second access within an allotment directed in an alternative direction where the primary access is greater than 200 metres from a public road; and
- Where required by a fire service, a fire trail shall be of minimum trafficable width of 4 metres, with a 1 metre slashed edge (making 5 metres in all) and have a maximum grade of 15 degrees at any point along its length.

Figure 3 Encroachment clearances



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FSG LUP 0002 Land Use Planning

Building & Works- Water Supplies

Objective

To ensure the provision and adequate supply of water to facilitate fire fighting and property protection during and after the passage of a bushfire.

Standard

All development must be accompanied by a water supply and access to this water supply which meets the requirements of the relevant fire authority, including:

A dedicated static water supply, must be provided and meet the following requirements:

- A minimum of 10,000 litres of on-site static storage must be provided on the lot and be maintained solely for fire fighting;
- The static storage must be constructed of non-combustible material;
- The water supply must be located within 60 metres of the dwelling; and
- Fire brigade vehicles must be able to get to within 4 metres of the water supply outlet as indicated on the Bushfire Management Plan.

The water supply should be readily identifiable from the building and appropriate signage, to be approved by the relevant fire service (see Figure 1 above), shall provide:

- An arrow pointing to the water supply;
- Have dimensions of 310mm high and 400mm long;
- Be red in colour, with a blue reflective marker attached; and
- Is labelled with a 'W' that is 15cm high and 3cm thick in size.

All fixed above-ground water pipelines and fittings, including water supply, must be constructed of non-corrosive and non-combustible materials, or protected from the effects of radiant heat and flame.

If the dedicated static water supply is above ground, the following additional provisions apply:

- All above-ground dedicated static water supplies must provide at least one 64 mm, 3 thread/25 mm x 50 mm nominal bore British Standard Pipe (BSP), round male coupling (see Figure 2 above);
- All pipe work and valving between the water supply and the outlet must be no less than 50 mm nominal bore; and
- If less than 20 metres from the building, each outlet must face away from the building to allow access during emergencies.

All below-ground water pipelines must be installed to the following depths:

- subject to vehicle traffic: 300 mm
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Community Safety
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FIRE SERVICE GUIDELINE



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- all other locations: 225 mm

Building & Works- Access

Objective

To ensure that safe access is provided to properties for emergency and other vehicles at all times.

Standard

All proposals should meet the following requirements:

- Access to the dwelling must be designed to allow emergency vehicle access. The minimum design requirements are as follows:
 - Curves in driveway 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 of no more than 1 in 5 (20%) (11.3°) for no more than 50 metres
 - Dips must have no more than a 1 in 8 (12.5%) (7.1°) entry and exit angle
- If the driveway from the road to the dwelling and water supply, including gates, bridges and culverts, is greater than 30m long, the driveway:
 - must be designed, constructed and maintained for a load limit of at least 15 tonnes, be of all weather construction;
 - and
 - must provide a minimum trafficable width of three and a half metres, and be clear of encroachments four metres vertically.
- If the driveway is longer than 100 metres, a turning area for fire fighting vehicles close to the dwelling must be provided, by either:
 - a turning circle with a minimum radius of eight metres, or;
 - the driveway encircling the dwelling, or;
 - a T head or Y head with a minimum formed surface of each leg being eight metres in length measured from the centre point of the head, and four metres trafficable width.
- If the length of the driveway is greater than 200 metres, passing bays must be provided. Passing bays must be 20 metres long and must be provided every 200 metres, with a trafficable width of six metres.

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Figure 3 Encroachment clearances

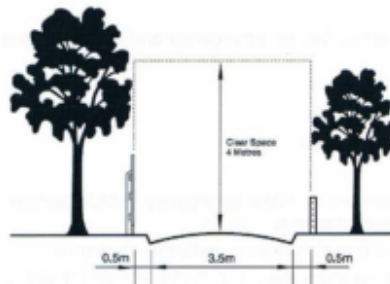


Figure 4 T-head and Y-head

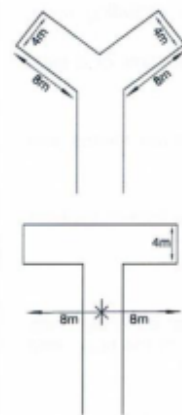
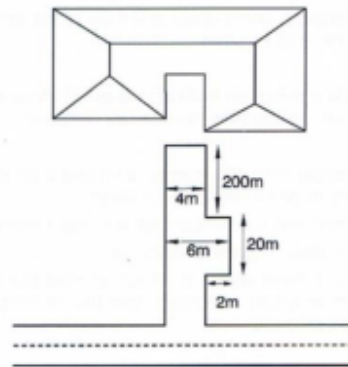


Figure 5 Driveways longer than 200m



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