

**PP158/2018-1**

**15 Tullamore Court ELLIMINYT**

**Lot: 20 PS: 322547 V/F: 10316/368**

**Two (2) Lot Subdivision**

**P B Neave & H M Neave**

**Officer - Vikram Kumar**

# **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** 18/07/2018

### Application Details

**Application Type** Planning Permit for a Subdivision  
Version 1  
**Applicant Reference Number** 18-17  
**Application name or Estate name** Neave  
**Responsible Authority Name** Colac Otway Shire  
**Responsible Authority Reference Number(s)** (Not Supplied)  
**SPEAR Reference Number** S126308A  
**Application Status** Submitted  
**Planning Permit Issue Date** NA  
**Planning Permit Expiry Date** NA

### The Land

**Primary Parcel** 15 TULLAMORE COURT, ELLIMINYT VIC 3250  
Lot 20/Plan PS322547  
Volume 10316/Folio 368  
SPI 20\PS322547  
CPN 22218  
**Zone:** 32.03 Low Density Residential  
**Overlay:** 42.03 Significant Landscape  
42.02 Vegetation Protection

### The Proposal

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

### Existing Conditions

**Existing Conditions Description** Existing dwelling, associated shedding and cleared grazing land.  
**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](mailto:rodbright@iprimus.com.au)

**Applicant**

**Applicant**

P.B. & H.M. Neave  
15 Tullamore Court, Elliminyt, VIC, 3250 Australia  
Mobile Phone: 0455195533

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---

**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

**ROD BRIGHT & ASSOCIATES PTY. LTD.**  
**LAND SURVEYORS & TOWN PLANNERS**  
A.C.N. 007 206 975 A.B.N. 50 007 206 975

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

18<sup>th</sup> July 2018.

REF: 18-17

Planning Coordinator,  
Colac Otway Shire,  
P.O. Box 283,  
**COLAC...VIC. 3250**

Dear Sir,

**RE: PLAN OF PROPOSED SUBDIVISION  
PART OF CROWN ALLOTMENTS 51 & 72  
PARISH OF ELLIMINYT  
15 TULLAMORE COURT, ELLIMINYT  
RE: P.B. & H.M. NEAVE**

Please find enclosed a summary page of the application for a Planning Permit of the Plan of Proposed Subdivision for the above property, which has been submitted to Colac Otway Shire using **SPEAR**.

The application comprises the following documents:

- Copy of Title;
- Plan of Proposed Subdivision;
- Existing Conditions Diagram;
- Site Description & Design Response;

We have attached our client's cheque and our cheque totaling \$1286.10 covering Planning Permit fees.

We kindly await receipt of the Planning Permit in due course.

Yours faithfully,



A.E. Bright,  
ROD BRIGHT & ASSOCIATES  
encl.  
copy: P.B. & H.M. Neave.

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26 Murray Street,  
Colac 3250  
P.O. Box 371

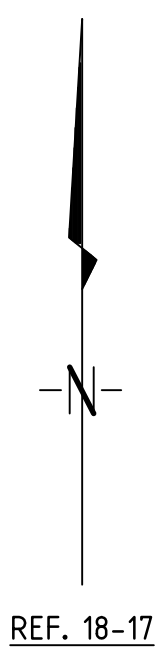
**PLAN OF PROPOSED SUBDIVISION  
PART OF CROWN ALLOTMENTS 51 & 72  
PARISH OF ELLIMINYT  
COUNTY OF POLWARTH  
RE: P.B. & H.M. NEAVE  
SCALE 1:1250** (Original Sheet Size A3)

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NOTE:  
Certain dimensions shown hereon are subject to survey.  
Certain areas shown hereon are subject to survey.  
Land contained within C/T Vol. 10316 Fol. 368.  
E-1 denotes drainage easement in favour of Shire of Colac (see copy of title for full easement descriptions).

ROD BRIGHT & ASSOCIATES PTY LTD  
LICENSED SURVEYORS & TOWN PLANNERS  
26 MURRAY STREET COLAC 3250  
TEL 5231 4883 ACN 007 206 975

Existing Conditions Diagram



REF. 18-17

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

VOLUME 10316 FOLIO 368

Security no : 124072959070R  
Produced 18/07/2018 01:52 pm

**LAND DESCRIPTION**

Lot 20 on Plan of Subdivision 322547F.  
PARENT TITLE Volume 10218 Folio 996  
Created by instrument PS322547F Stage 3 05/02/1997

**REGISTERED PROPRIETOR**

Estate Fee Simple  
Joint Proprietors  
PETER BRIAN NEAVE  
HELEN MAREE NEAVE both of 11 MORRISON ST. COLAC 3250  
V041192V 15/10/1997

**ENCUMBRANCES, CAVEATS AND NOTICES**

MORTGAGE AC642502E 03/02/2004  
MEMBERS EQUITY BANK PTY LTD  
TRANSFER OF MORTGAGE AH091077S 12/03/2010

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 set out under DIAGRAM LOCATION below.

**DIAGRAM LOCATION**

SEE PS322547F 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: 15 TULLAMORE COURT ELLIMINYT VIC 3250

DOCUMENT END



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Document Assembled	<b>18/07/2018 13:54</b>

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<b>PLAN OF SUBDIVISION</b>		STAGE NO.	LTO use only <b>EDITION 8</b>	Plan Number <b>PS 322547F</b>
<b>Location of Land</b> Parish: ELLIMINYT  Township: _____ Section: _____ Crown Allotment: 51, 52, 71 and 72 Crown Portion: _____  LTO Base Record: PARISH 1 (2586) Title Reference: C/T. Vol. 5897 Fol. 357  Last Plan Reference: _____ Postal Address: Woodrow Vale Road (at time of subdivision) ELLIMINYT 3249  AMG Co-ordinates      E 727 350      Zone: 54 (of approx. centre of land      N 5748 900 in plan)		<b>Council Certificate and Endorsement</b>		
		Council Name: SHIRE OF COLAC Council Resolution No. 639/L1/92 1. This plan is certified under section 6 of the Subdivision Act 1988. 2. <del>This plan is certified under section 11(7) of the Subdivision Act 1988.</del> <del>Date of original certification under section 6</del> 3. <del>This is a statement of compliance issued under section 21 of the Subdivision Act 1988.</del> OPEN SPACE (i) A requirement for public open space under section 18 of the Subdivision Act 1988 has/has not been made. (ii) <del>The requirement has been satisfied.</del> (iii) The requirement is to be satisfied in Stage..... 2 ..... Council delegate _____ <del>Council seal</del> Date 14 / 12 / 92 <del>Re-certified under section 11(7) of the Subdivision Act 1988</del> <del>Council Delegate</del> <del>Council Seal</del> Date _____ / _____ / _____		
<b>Vesting of Roads and/or Reserves</b>		<b>Notations</b>		
Identifier	Council/Body/Person	<b>Staging</b>		
ROAD R1	SHIRE OF COLAC	This is/ <del>is not</del> a staged subdivision		
ROAD R2	COLAC OTWAY SHIRE	Planning Permit No. 0789		
ROAD R3	" " "	<b>Depth Limitation</b>		
		Does not apply (both inclusive) have not been shown on this plan.		
		Land being subdivided is enclosed within thick continuous lines. Lots 7 to 16, & 37 to 40 have been omitted from this plan. Easement Variation: Variation of location of the easement created in dealing A844510 and shown on C/T. Vol. 5897 Fol. 357 to position shown by easement E-1 on this plan. Grounds for Variation: Planning permit No. 0789 Tangent points shown thus Survey This plan is/ <del>is not</del> based on survey This survey has been connected to permanent marks no(s) In Proclaimed Survey Area No.		
<b>Easement Information</b>				<b>LTO use only</b>
<b>Legend:</b> A - Appurtenant Easement    E - Encumbering Easement    R - Encumbering Easement (Road)				Statement of Compliance/ Exemption Statement
Easement Reference	Purpose	Width (Metres)	Origin	Land Benefited/In Favour Of
E-1, E-7, E-8 & E-9 E-10	Transmission of Electricity Drainage	36.58 5	C/E A844510 This plan	S. E. C. V. Colac Otway Shire
E-2, E-8	Drainage	5	This plan	Shire of Colac
E-3 & E-9	Way and Water Supply	40	This plan	Land in this plan
E-4	Water Supply	See diag.	This plan	Colac Region Water Authority
E-11	Powerline	See diag	This plan-section 88 of the Electricity Industry Act 2000	Powercor Australia Limited
R-1 & R-2 & R-3	Water Supply, Way, Drainage, Electricity, Telephone & Data Transmission	See diag	This plan	Land in this plan
ROD BRIGHT & ASSOCIATES PTY. LTD. LICENSED SURVEYORS 26 MURRAY STREET COLAC 3250 TEL. 052-314883      A.C.N. 007 206 975				LICENSED SURVEYOR (PRINT) <b>RODNEY ARTHUR BRIGHT</b> SIGNATURE..... DATE 20 / 10 / 92 REF 84080      VERSION 2
				Received <input checked="" type="checkbox"/> Date 12 / 7 / 93  THIS IS AN L.T.O. COMPILED PLAN  CHECKED 24/11/00  Assistant Registrar of Titles SHEET 1 OF 8 SHEETS
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**PLAN OF SUBDIVISION**

Stage No.

Plan Number

**PS 322547F**

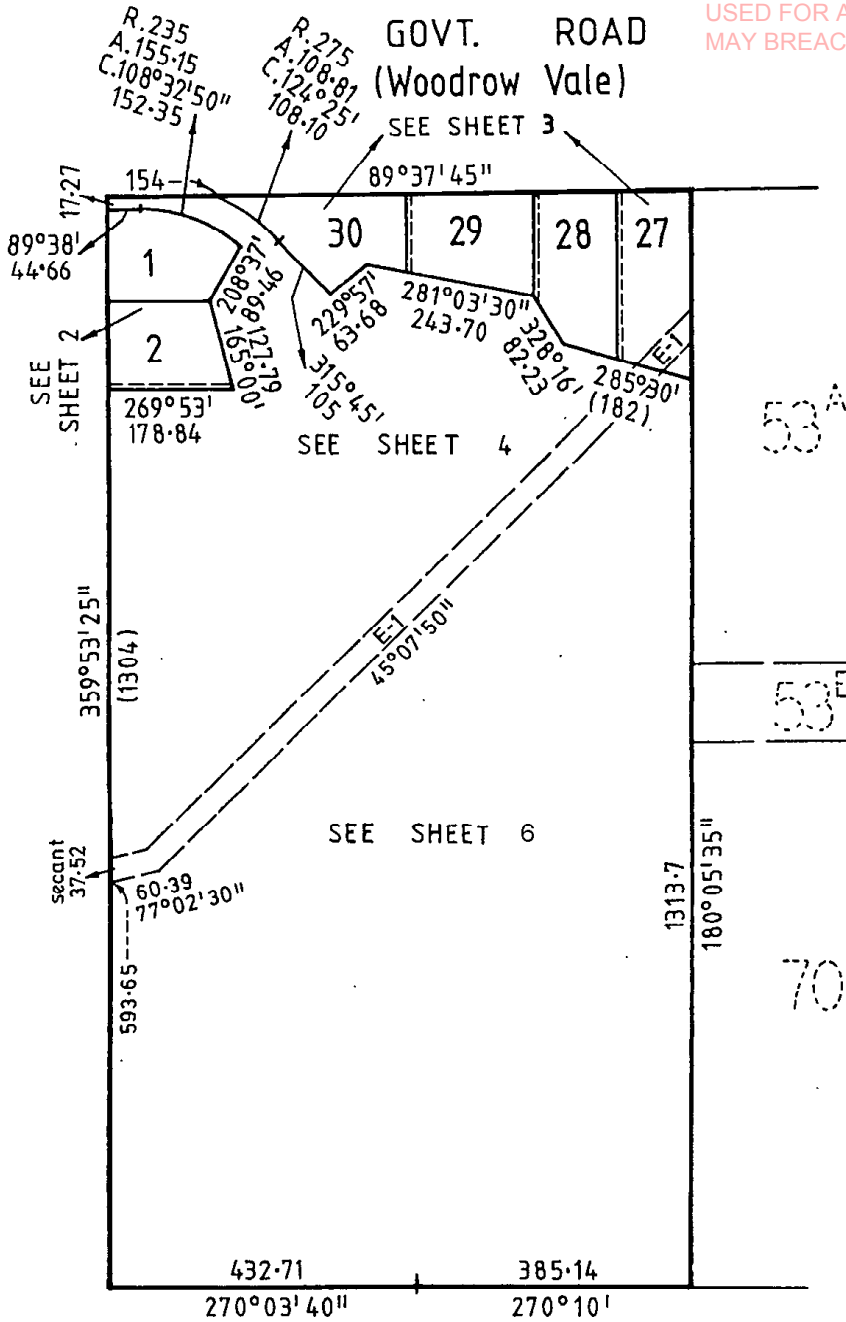
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GOVT. ROAD  
(Woodrow Vale)

GOVT. (Friends) ROAD



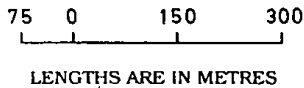
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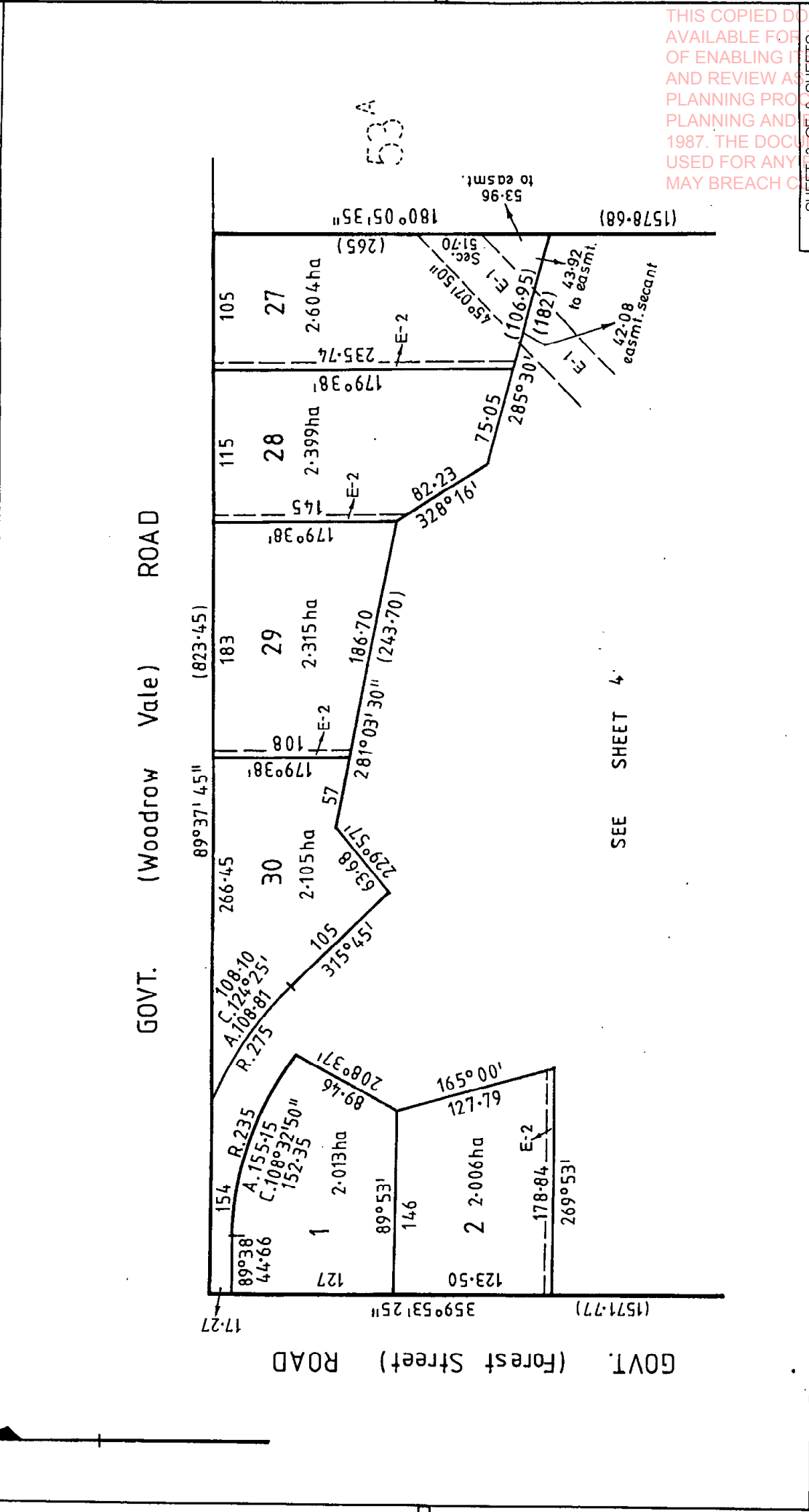
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**PLAN OF SUBDIVISION**

Stage No. **PS 322547F**



SEE SHEET 4

SHEET 3 OF 8 SHEETS

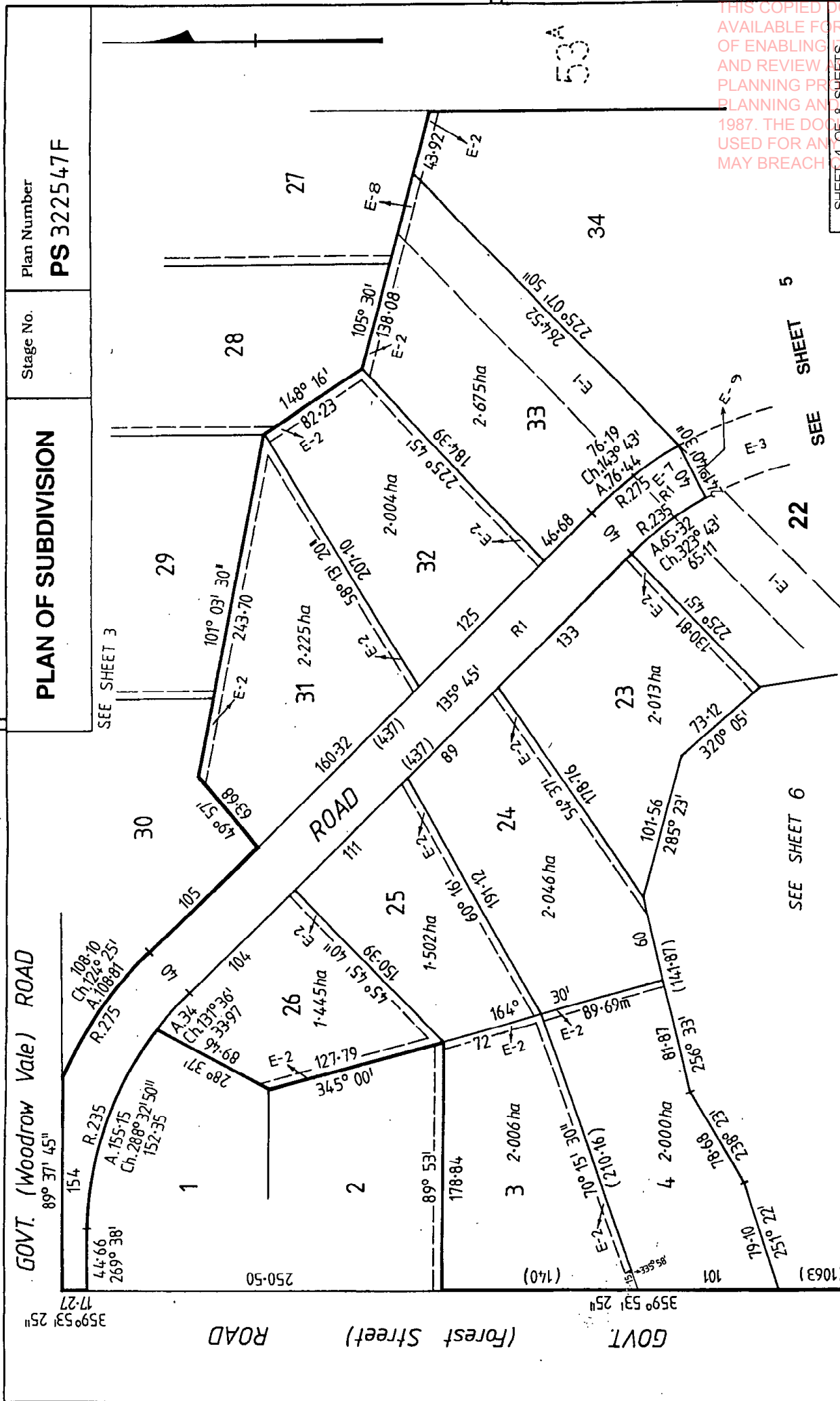
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PLAN OF SUBDIVISION

Stage No.

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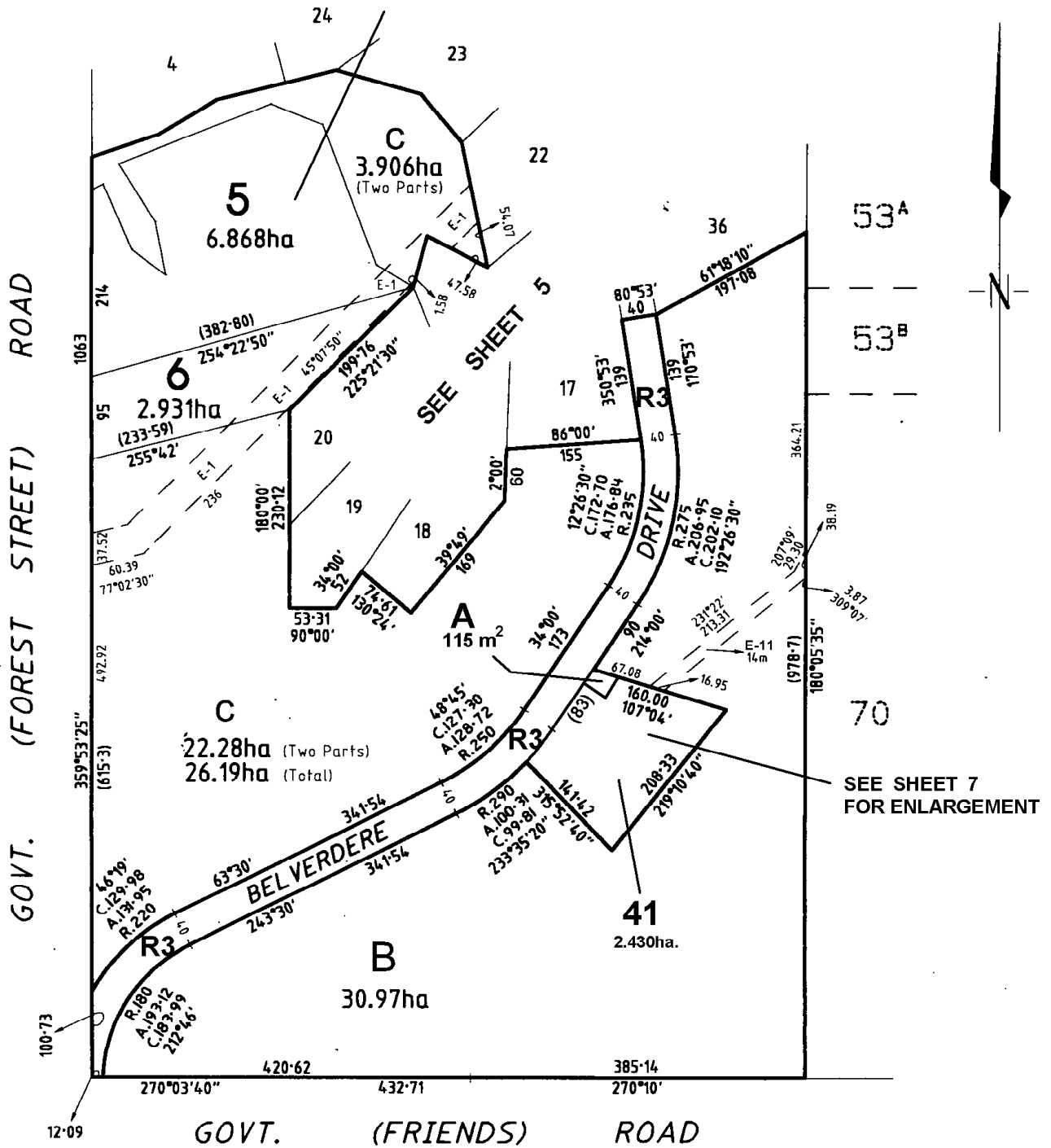
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VERSION

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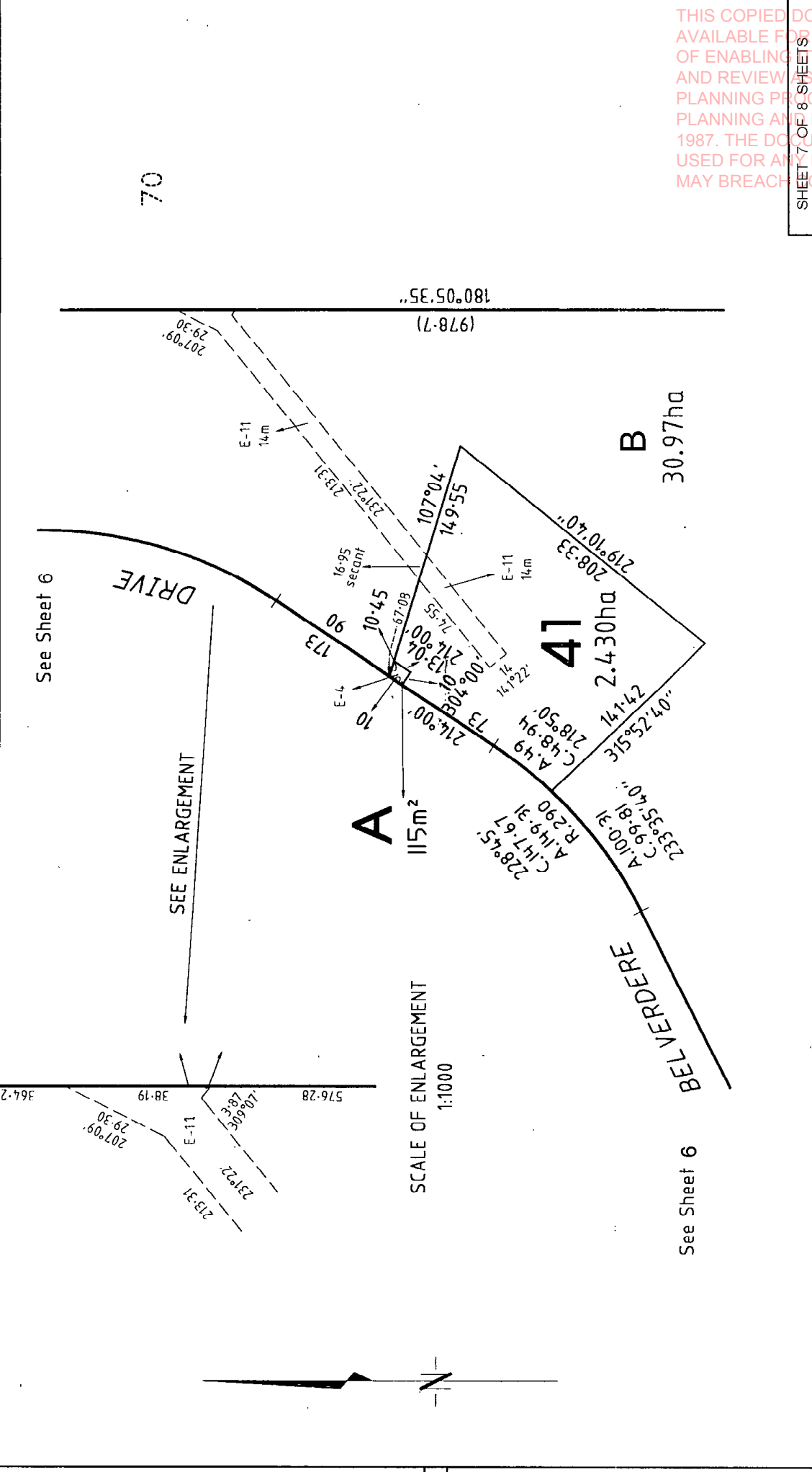
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**PLAN OF SUBDIVISION**



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LICENSED SURVEYORS  
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TEL 53314883 ACN 007206975





PLAN NUMBER  
**PS 322547F**

**MODIFICATION TABLE**  
 RECORD OF ALL ADDITIONS OR CHANGES  
 TO THE PLAN

MASTER PLAN REGISTERED DATE 22/7/93 TIME 8.15 am

LAND	MODIFICATION	DEALING REFERENCE	DATE AND TIME		NEW EDITION NUMBER	SIGNATURE OF ASSISTANT REGISTRAR OF TITLES
			DATE	TIME		
LOT S2	STAGE 2	T512524Q	27/2/95	2.45pm	2	AD
LOT S3	STAGE 3	U 373817Y	5/2/97	10.55am	3	
LOT S4	STAGE 4	U373818V	23/1/01	8 20am	4	
LOT 3	REMOVAL OF EASEMENT	PS441080P			5	pm.
LOT S5	STAGE 5	PS322547F / S5	13/5/02	6.32pm	6	GJN
	WARNING: THE IMAGE OF THIS PLAN/DOCUMENT HAS BEEN DIGITALLY AMENDED. NO FURTHER AMENDMENTS ARE TO BE MADE TO THE ORIGINAL PLAN/DOCUMENT.					
LOT S6	STAGE 6	PS322547F/S6	30/10/03		7	GMR
LOTS S7 AND S8	REMOVING LOTS FROM STAGING PROCESS VIDE 37(8) AND CREATING LOTS B AND C IN THEIR PLACE	PS626629J	20/5/2015		8	LC

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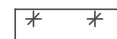
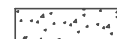


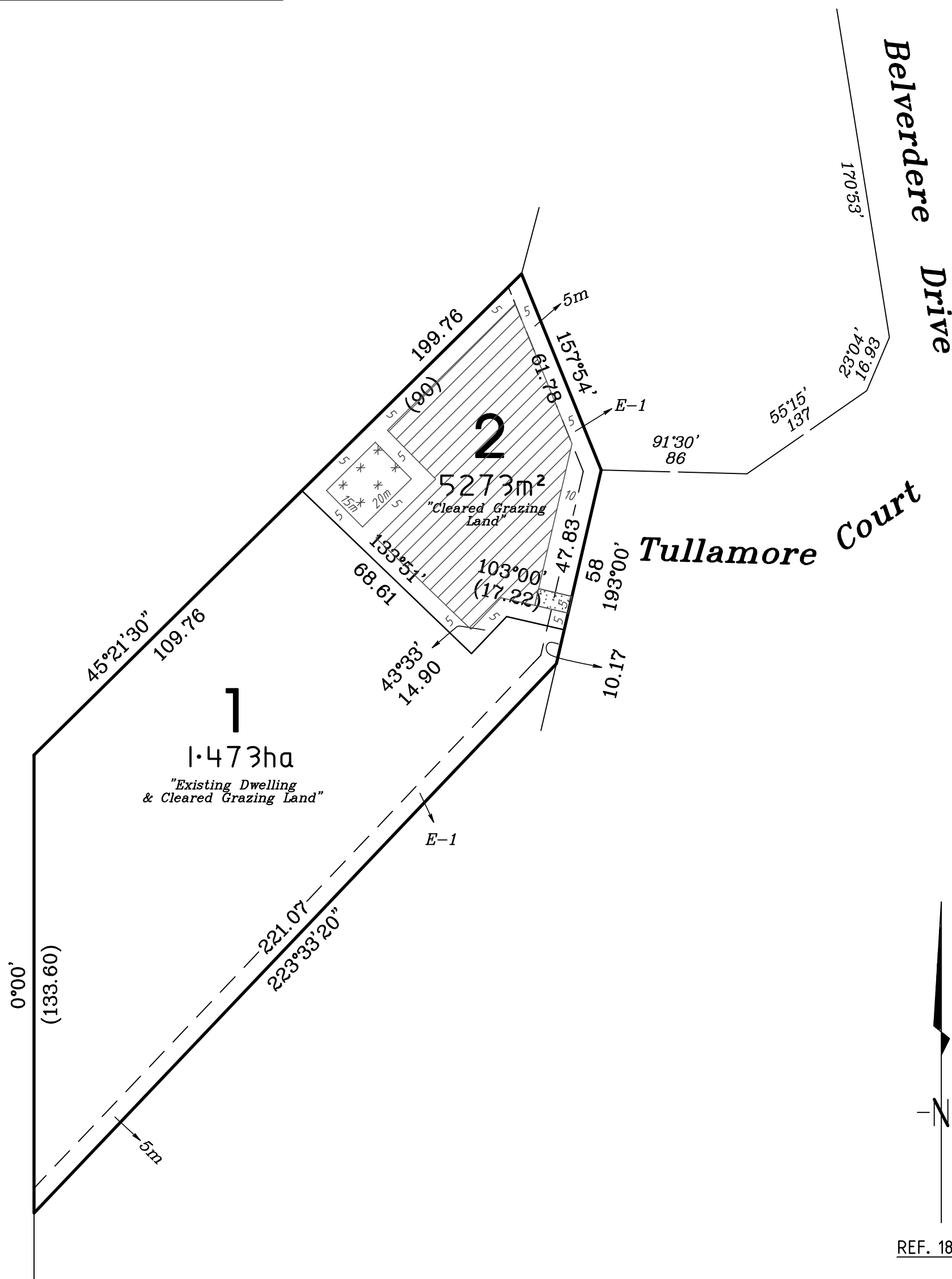
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NOTE:  
Certain dimensions shown hereon are subject to survey.  
Certain areas shown hereon are subject to survey.  
Land contained within C/T Vol. 10316 Fol. 368.  
E-1 denotes drainage easement in favour of Shire of Colac (see copy of title for full easement descriptions).

-  denotes possible building envelope.
-  denotes possible effluent envelope - 300m<sup>2</sup>
-  denotes possible driveway envelope.



REF. 18-17

## Site Description & Design Response

Proposed 2 Lot Subdivision

15 Tullamore Court, Elliminyt

P.B. & H.M. Neave

July 2018



**Rod Bright & Associates Pty Ltd**

*Licensed Land Surveyors and Planners*

26 Murray St Colac 3250

Ph (03) 5231 4883

rodbright@iprimus.com.au



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## 1.0 Subdivision site and context description

The following information is provided in accordance with clause 56.01-1 Colac Otway Planning Scheme – Neighbourhood site and context description.

The description should be read in conjunction with the accompanying Plan of Proposed Subdivision.

### 1.1 Title particulars and location

Address: 15 Tullamore Court, Elliminyt.

Comprising title: Vol. 10316 Fol. 368

There is an existing drainage easement along the eastern and southern most boundaries, as shown on title.

The land fronts Tullamore Court, Elliminyt.



Figure 1: Site context plan. (<https://maps.land.vic.gov.au/lassi/>)

### 1.2 Land use

The land currently contains an existing dwelling and associated shedding with existing native plantations on proposed Lot 1 and cleared grazing land.

### 1.3 Physical landform

Lot 1 comprises of the existing dwelling and associated shedding with open pasture. Lot 2 also comprises of open pasture. The site is located in an elevated area of Elliminyt and is gently undulating with a slight slope towards the north of the existing allotment.

There are no identifiable contaminated soils or filled areas on the site.

There are views of Colac, Lake Colac and as far as the Warrion hills and the surrounding farmland from the allotment.

Refer to the attached plans for dimensions and relevant site information.

#### 1.4 Surrounding land use.

Surrounding land is used for low density residential and farming, with lots sizes varying from approximately 2000m<sup>2</sup> to 2300m<sup>2</sup>.

The land is located approximately 3.6km from Colac Secondary College and Colac Library, 3.9km to Elliminyt Primary School and 3.9km from the nearest shop.

#### 1.5 Services

Power, telecommunications and reticulated water are available to the site.

Reticulated sewer and gas are not available.

#### 1.6 Significant vegetation

The site currently contains a pasture ground cover. There are existing plantations along the eastern and southern most boundaries. Based on the proposed subdivision design, the plantations would not require removal as part of the subdivision.

#### 1.7 Colac Otway Planning Scheme

The land is zoned Low Density Residential (LDRZ).

The minimum lot size for subdivision is 0.4 hectares for each lot for which reticulated sewer is not connected (Cl. 32.03-3).

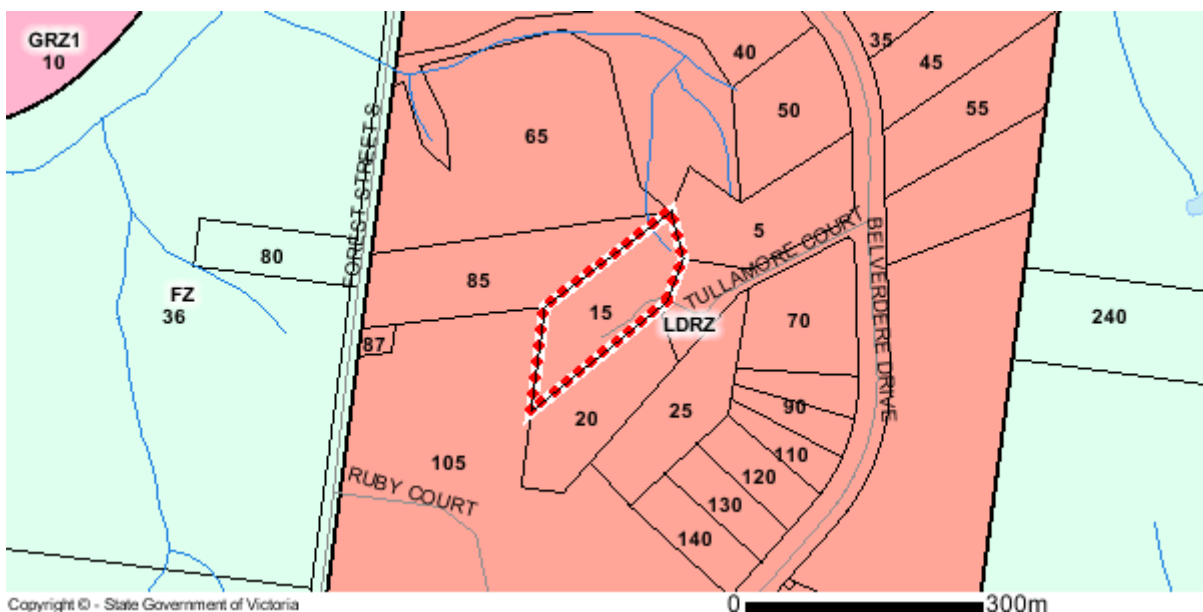


Figure 2: Planning Zone. (<http://services.land.vic.gov.au/landchannel/content/propertyReport>)

Relevant planning scheme policies are listed below and are referred to later within this document:

### 1.7.1 State Planning Policy Framework:

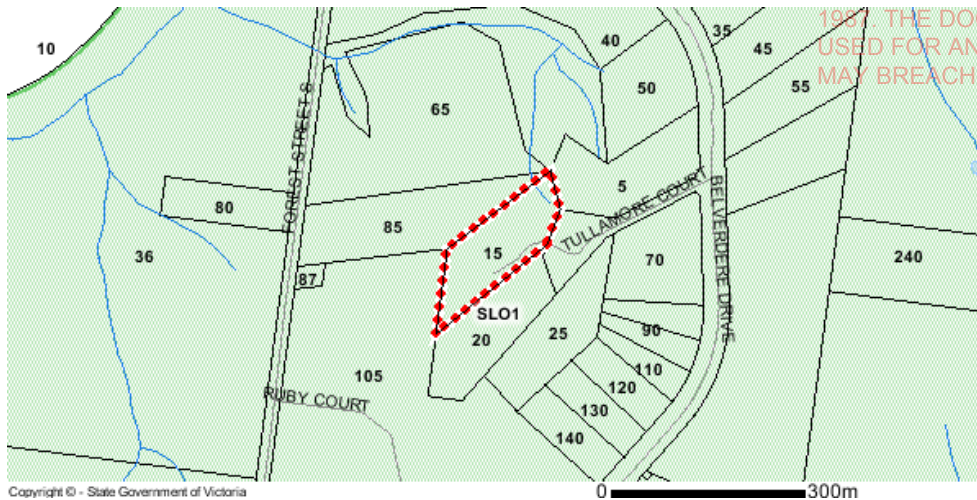
- Clause 11.02 *Urban Growth*
- 11.02-1 Supply of urban land
  - 11.02-2 Structure planning
- 11.04 *Open Space*
- 11.04-1 Open space planning
- 11.07 *Regional Victoria*
- 11.07-1 Regional planning
- 15.01 *Urban Design*
- 15.01-1 Urban design
  - 15.01-2 Urban design principles
  - 15.01-3 Neighbourhood and subdivision design
  - 15.01-4 Design for safety
  - 15.01-5 Cultural identity and neighbourhood character
- 15.02 *Sustainable development*
- 15.02-1 Energy and resource efficiency
  - 15.03-2 Aboriginal cultural heritage
- 16.01 *Residential Development*
- 16.01-2 Location of residential development
  - 16.01-4 Housing diversity
- 18.02 *Movement Network*
- 18.02-1 Sustainable personal transport
- 19.03 *Development Infrastructure*
- 19.03-2 Water supply, sewerage and drainage
  - 19.03-3 Storm water
  - 19.03-4 Telecommunications

### 1.7.2 Local Planning Policy Framework

- Clause 21.02 *Vision*
- 21.02-2 Land Use Vision
- 21.03 *Settlement*
- 21.03-2 Settlement – Colac
- 21.07 *References*
- Colac Structure Plan (2007)
  - Colac Otway Public Open Space Strategy (2011).

## 1.8 Overlays

### Significant Landscape Overlay (SLO1)



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Figure 3: Planning Overlay (SLO1). (<http://services.land.vic.gov.au/landchannel/content/propertyReport>)

The purpose of this overlay is to implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

- To identify significant landscapes.
- To conserve and enhance the character of significant landscapes.

A landscaping plan should be submitted with an application for buildings and works, or to remove, destroy or lop vegetation, utilizing appropriate species and demonstrating how the affected area will be remediated after development.

As there is no development or works planned as part of this subdivision, this proposal in no way affects this overlay.

### Vegetation Protection Overlay (VPO1)

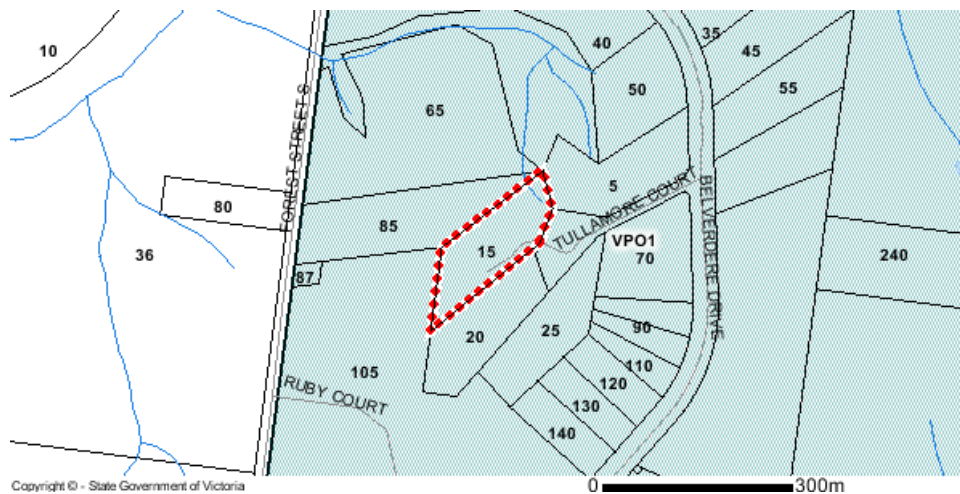


Figure 4: Planning Overlay (VPO1). (<http://services.land.vic.gov.au/landchannel/content/propertyReport>)

The purpose of this overlay is to implement the State Planning Policy Framework and the Local Planning Policy Framework, including the Municipal Strategic Statement and local planning policies.

- To protect areas of significant vegetation.
- To ensure that development minimises loss of vegetation.
- To preserve existing trees and other vegetation.
- To recognise vegetation protection areas as locations of special significance, natural beauty, interest and importance.
- To maintain and enhance habitat and habitat corridors for indigenous fauna.
- To encourage the regeneration of native vegetation.

A permit is required to remove, destroy or lop any vegetation specified in the schedule. As this application does not seek consent to remove, destroy or lop vegetation, a permit is not required under the provisions.

## 2.0 Residential Subdivision - Design Response (56.01-2)

### 2.1 Subdivision Design

The subdivision proposes the creation of 2 new allotments, both with separate access from Tullamore Court.

Proposed Lot 1 will comprise 1.473ha and contains the existing dwelling and associated shedding. Proposed Lot 2 will comprise 5273m<sup>2</sup> and is a cleared vacant allotment.

The design includes a possible building envelope, possible effluent envelope and possible driveway location, on proposed Lot 1, as required by the provisions of the LDRZ.

There are existing tree plantations surrounding the existing dwelling and driveway on proposed Lot 1.

A land capability assessment has been undertaken by (2020 Engineering Services) and has designated an appropriate land application area of 267m<sup>2</sup> and a suitable effluent treatment system.

Overflow drainage from any future buildings and water tanks will be generally dispersed within the property by overland flow and directed to the downslopes of Lot 1 & 2.

### 2.2 Design Response

Both lots are designed to cater for traditional residential development with single dwellings on each allotment and adequate private open space and solar access, consistent with community demand for family housing on larger allotments.

Compliance with the relevant objectives of Clause 56 is demonstrated below.



An application to subdivide land, other than an application to subdivide land into lots each containing an existing dwelling or car parking space, must meet the requirements of Clause 56 and:

- Must meet all of the objectives included in the clauses specified in the following table.
- Should meet all of the standards included in the clauses specified in the following table.

Class of subdivision	Objectives and standards to be met
60 or more lots	All except Clause 56.03-5.
16 – 59 lots	All except Clauses 56.03-1 to 56.03-3, 56.03-5, 56.06-1 and 56.06-3.
3 – 15 lots	All except Clauses 56.02-1, 56.03-1 to 56.03-4, 56.05-2, 56.06-1, 56.06-3 and 56.06-6.
2 lots	Clauses 56.03-5, 56.04-2, 56.04-3, 56.04-5, 56.06-8 to 56.09-2.

### 56.03-5 Neighbourhood Character:

56.03-5 Neighbourhood Character Objective

To design subdivisions that respond to neighbourhood character

#### Standard C6

Subdivision should:

- Respect the existing neighbourhood character or achieve a preferred neighbourhood character consistent with any relevant neighbourhood character objective, policy or statement set out in this scheme.
- Respond to and integrate with the surrounding urban environment.
- Protect significant vegetation and site features.

### Response

The proposed subdivision is consistent with the above objective by:

A preferred neighbourhood character is not identified for this area of Elliminyt. An absence of formal kerb & channel or footpath on Tullamore Court, along with the use of the surrounding land for grazing or pasture creates a rural aesthetic. Existing dwellings on Tullamore Court are single modern dwellings.

Neighbourhood character in the area is developing and will evolve in response to this new development.

### 56.04 LOT DESIGN

#### 56.04-2 Lot area and building envelopes objective

To provide lots with dimensions and areas that enable the appropriate siting and construction of a dwelling, solar access, private open space, vehicle access and parking, water management, easement and the retention of significant vegetation and site features.

#### Standard C8

Lots greater than 500m<sup>2</sup> should be able to contain a rectangle measuring 10m by 15m and may contain a building envelope.

A building envelope may specify or incorporate any relevant siting and design requirement. Any requirement should meet the relevant standards of Clause 54, unless:

- The objectives of the relevant standard are met, and
- The building envelope is shown as a restriction on a PS registered under the Subdivision Act 1988, or is specified as a covenant in an agreement under Section 173 of the Act.

Where a lot with a building envelope adjoins a lot that is not on the same plan of subdivision or is not subject to the same agreement relating to the relevant building envelope:

- The building envelope must meet Standards A10 and A11 of Clause 54 in relation to the adjoining lot, and
- The building envelope must not regulate siting matters covered by Standards A12 to A15 (inclusive) of Clause 54 in relation to the adjoining lot. This should be specified in the relevant PS or agreement.

Lot dimensions and building envelopes should protect:

- Solar access for future dwellings and support the siting and design of dwellings that achieve the energy rating requirement of the building regulations.
- Existing and proposed easement on lots.
- Significant vegetation and site features.

## Response

The proposed subdivision is consistent with the above objective by:

All lots are capable of containing a building envelope exceeding 10m by 15m.

A building envelope has been designated on the proposed Lot 2 as required by the LDRZ Zone. A larger envelope has been designated to enable flexibility in dwelling design and placement.

Lot 1 contains an existing dwelling; therefore, no building envelope is required on that lot.

---

### 56.04-3 Solar orientation of lots objective

To provide good solar orientation of lots and solar access for future dwellings.

#### Standard C9

Unless the site is constrained by topography or other site conditions, at least 70 percent of lots should have appropriate solar orientation.

Lots have appropriate solar orientation when:

- The long axis of lots are within the range north 20 degrees west to north 30 degrees east, or east 20 degrees north to east 30 degrees south.
- Dimensions of lots are adequate to protect solar access to the lot, taking into account likely dwelling size and the relationship of each lot to the street.

## Response:

The proposed subdivision is consistent with the above objective by:

- The long axes of the lots are within the range north 20 degrees west to north 30 degrees east.
- Lots will retain solar access due to their size and absence of large scale development.

---

### 56.04-5 Common area objectives

To identify common areas and the purpose for which the area is commonly held.

To ensure the provision for common area is appropriate and that necessary management arrangements are in place.

To maintain direct public access throughout the neighbourhood street network.

### Standard C11

An application to subdivide land that creates common land must be accompanied by a plan and a report identifying:

- The common area to be owned by the body corporate, including any streets and open space.
- The reasons why the area should be commonly held.
- Lots participating in the body corporate.
- The proposed management arrangements including maintenance standards for streets and open spaces to be commonly held.

#### Response:

Common areas are not proposed as part of this subdivision.

---

## 56.06 ACCESS & MOBILITY MANAGEMENT

### 56.06-8 Lot access objective

To provide for safe vehicle access between roads and lots

#### Standard C21

Vehicle access to lots abutting arterial roads should be provided from service roads, side or rear access lanes, access places or access streets where appropriate and in accordance with the access management requirements of the relevant roads authority.

Vehicle access to lots of 300 square metres or less in area and lots with a frontage of 7.5 metres or less should be provided via rear or side access lanes, places or streets.

The design and construction of a crossover should meet the requirements of the relevant road authority.

#### Response:

The design and construction of a new cross over for the Proposed Lot 2 will be in accordance with the requirements of Colac Otway Shire as specified by planning permit as conditions.

---

## 56.07 INTEGRATED WATER MANAGEMENT

### 56.07-1 Drinking Water Supply Objective

To reduce the use of drinking water.

To provide an adequate, cost-effective supply of drinking water.

#### Standard C22

The supply of drinking water must be:

Designed and constructed in accordance with the requirements and to the satisfaction of the relevant water authority.

Provided to the boundary of all lots in the subdivision to the satisfaction for the relevant water authority.

#### Response:

The supply of drinking water will be provided to the boundary of all the lots in the development in accordance with the requirements of Barwon Water as specified by planning permit conditions.

---

### **56.07-2 Reused and recycled water objective**

To provide for the substitution of drinking water for non-drinking purposes with reused and recycled water.

#### **Standard C23**

Reused and recycled water systems must be:

Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority, EPA and DHS.

Provided to the boundary of all lots in the subdivision where required by the relevant water authority.

#### **Response:**

Reused and recycled water systems will be provided and designed if required by Barwon Water as permit conditions.

---

### **56.07-3 Waste water management objective**

To provide a waste water system that is adequate for the maintenance of public health and the management of effluent in an environmentally friendly manner.

#### **Standard C24**

Waste water systems must be:

Designed, constructed and managed in accordance with the requirements and to the satisfaction of the relevant water authority and the EPA.

Consistent with any relevant approved domestic waste water management plan.

Reticulated waste water systems must be provided to the boundary of all lots in the subdivision where required by the relevant water authority.

#### **Response**

Waste water systems will be designed and constructed if required by Barwon Water as permit conditions.

---

### **56.07-4 Urban runoff management objectives**

To minimise damage to properties and inconvenience to residents from urban run-off.

To ensure that the street operates adequately during major storm events and provides for public safety

To minimise increases in stormwater run-off and protect the environmental values and physical characteristics of receiving waters from degradation by urban run-off.

#### **Standard C25**

The urban stormwater management system must be: designed and managed in accordance with the requirements and to the satisfaction of the relevant drainage authority.....and in accordance with standards and specifications detailed under this clause.

**Response:**

Suitable drainage will be fully designed and constructed to Council standards and to achieve the objectives of this clause at the time of any construction.

---

**56.08 SITE MANAGEMENT**

**56.08 Site Management objectives**

To protect drainage infrastructure and receiving waters from sedimentation and contamination.

To protect the site and surrounding area from environmental degradation or nuisance prior to and during construction of subdivision works.

To encourage the re-use of materials from the site and recycled materials in the construction of subdivision where practicable.....

**Standard C26**

A subdivision site must describe how the site will be managed prior to and during the construction period and may set out requirements for managing: erosion and sediment, dust, run-off, litter concrete and other construction wastes, chemical contamination, vegetation and natural features planned for retention.

**Response:**

A site management plan (including erosion management) will be submitted to Colac Otway Shire prior to commencement of works, should one be deemed necessary.

---

**56.09 UTILITIES**

**56.09-1 Shared Trenching Objective**

To maximise the opportunities for shared trenching

To minimise constraints on landscaping within street reserves.....

**Standard C27**

Reticulated services for water, gas, electricity and telecommunications should be provided in shared trenching to minimise construction costs and land allocation for underground services

**Response:**

Shared trenching will be utilised where possible at the time of any construction.

---

**56.09-2 Electricity, communications and gas objectives**

To provide public utilities to each lot in a timely, efficient and cost effective manner.

To reduce greenhouse gas emissions by supporting generation and use of electricity from renewable sources.

**Standard C28**

The electricity supply system must be designed in accordance with the requirements of the relevant electricity supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant electricity authority.

---

The telecommunications system must be designed in accordance with the requirements of the relevant telecommunications servicing agency.....and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant telecommunications servicing authority.

Where available, the reticulated gas supply system must be designed in accordance with the requirements of the relevant gas supply agency and be provided to the boundary of all lots in the subdivision to the satisfaction of the relevant gas supply agency.

### Response:

Electricity and telecommunications will be supplied to the lots in accordance with relevant permit requirements of the relevant infrastructure providers.

---

The proposal is consistent with relevant planning scheme policies and strategies, the purpose and decision guidelines of the relevant zone and applicable overlays, as described below.

The subdivision of the site provides the following outcomes responding to the above planning policies and strategies:

### State Planning Policy Framework

#### 11.02 Urban Growth

- Provides an opportunity for intensification of existing urban areas;
- Facilitates the orderly development of urban areas, as designated as appropriate by the Colac Structure Plan 2007.

#### 11.07 Regional Victoria

- Enables growth at a location where utility, transport, commercial and social infrastructure and services are available.
- The development is not located in areas with risk of natural hazards such as bushfire and flooding.

#### 15.01-1 Urban design

- The development takes into account the natural, cultural and strategic context of its location.
- Provides lot sizes to suit a variety of dwelling and household types to meet the needs and aspirations of different groups of people.

#### 15.02 Sustainable development

- The subdivision enables infill development in an existing low density residential area, thus contributing to efficiencies in infrastructure and service provision.
- Ensure that buildings and subdivision design improve efficiency in energy use through greater use of renewable energy.

#### 16.01 Residential development

- Contributes to the supply of land within the established urban area to reduce the pressure on fringe development.

- Provides an opportunity for increased residential density to help consolidate urban areas.

### 19.03 Development Infrastructure

- Stormwater design will incorporate water-sensitive urban design techniques where possible to: protect and enhance natural water systems, integrate stormwater treatment into the landscape, protect quality of water, reduce run-off and peak flows, and minimise drainage and infrastructure costs.

### 3.5.2 Local Planning Policy Framework

#### Clause 21.03-2 Settlement – Colac

The subdivision of the site provides the following outcomes responding to the above planning policies and strategies:

- Consolidation or land supply around the town centre and activity nodes taking into account heritage constraints.
- Creates opportunities for infill development which will be appropriate and compatible for the prevailing character of the area.

#### Clause 65 Colac Otway Planning Scheme

##### Subdivision Decision Guidelines

The design, development, subdivision and use of the site, as proposed, provide the following outcomes responding to the above decision guidelines, (if not referred to elsewhere in this document):

- The land is suitable for subdivision, with the development enabling infill development in an expanding area of Elliminyt.
- Engineering design will ensure that the stormwater drainage from the development will not detrimentally impact surrounding land or the existing stormwater system.
- The proposed subdivision pattern is consistent with traditional residential development. This is suitable in the proposed location, which is further from the CBD, where higher density development is encouraged through the Colac Structure Plan.
- The subdivision is not staged. No common property areas are proposed.
- Most services are available to the site: power, telecommunications and reticulated water. The appropriate connections will be made as part of the subdivision in accordance with the requirements of the relevant servicing authorities.

## 3.0 Summary

The proposal for a residential subdivision is a positive outcome for this area of Elliminyt, which otherwise is underutilised, despite being located in a central area of the community.

Overall, the proposal is consistent with relevant state and local planning policy.

# Planning Property Report

from [www.planning.vic.gov.au](http://www.planning.vic.gov.au) on 18 July 2018 02:39 PM

**Lot and Plan Number:** Lot 20 PS322547

**Address:** 15 TULLAMORE COURT ELLIMINYT 3250

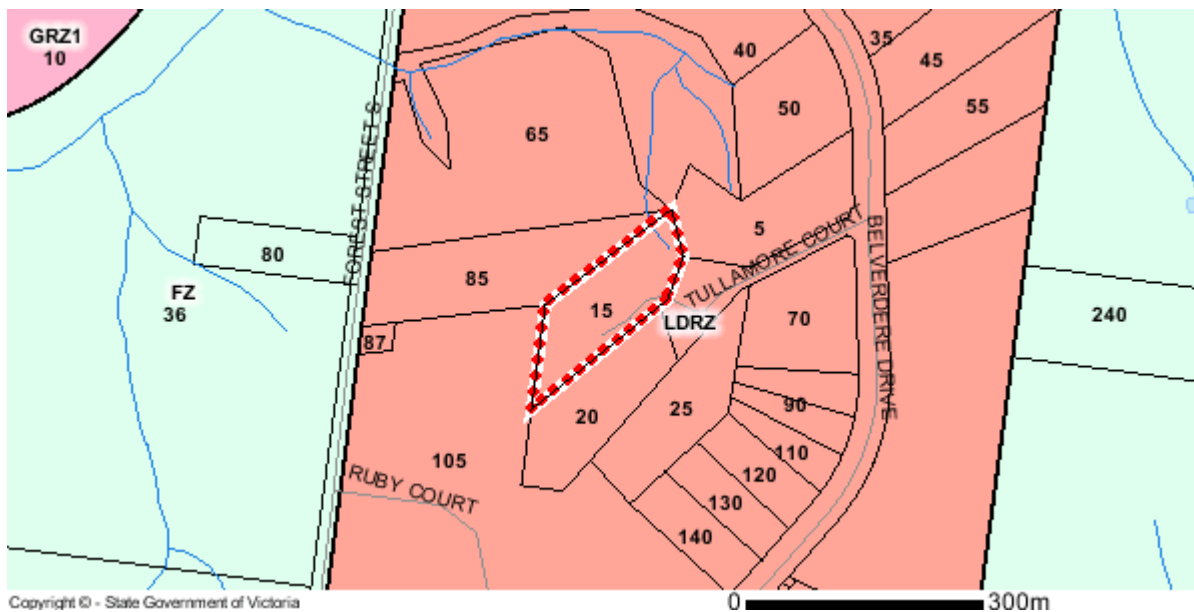
**Local Government (Council):** COLAC OTWAY **Council Property Number:** 22218

**Directory Reference:** VicRoads 92 B8

## Planning Zone

LOW DENSITY RESIDENTIAL ZONE (LDRZ)

SCHEDULE TO THE LOW DENSITY RESIDENTIAL ZONE (LDRZ)



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

### Zones Legend

ACZ - Activity Centre	IN1Z - Industrial 1	R1Z - General Residential
B1Z - Commercial 1	IN2Z - Industrial 2	R2Z - General Residential
B2Z - Commercial 1	IN3Z - Industrial 3	R3Z - General Residential
B3Z - Commercial 2	LDRZ - Low Density Residential	RAZ - Rural Activity
B4Z - Commercial 2	MUZ - Mixed Use	RCZ - Rural Conservation
B5Z - Commercial 1	NRZ - Neighbourhood Residential	RDZ1 - Road - Category 1
C1Z - Commercial 1	PCRZ - Public Conservation & Resource	RDZ2 - Road - Category 2
C2Z - Commercial 2	PDZ - Priority Development	RGZ - Residential Growth
CA - Commonwealth Land	PPRZ - Public Park & Recreation	RLZ - Rural Living
CCZ - Capital City	PUZ1 - Public Use - Service & Utility	RUZ - Rural
CDZ - Comprehensive Development	PUZ2 - Public Use - Education	SUZ - Special Use
DZ - Dockland	PUZ3 - Public Use - Health Community	TZ - Township
ERZ - Environmental Rural	PUZ4 - Public Use - Transport	UFZ - Urban Floodway
FZ - Farming	PUZ5 - Public Use - Cemetery/Crematorium	UGZ - Urban Growth
GRZ - General Residential	PUZ6 - Public Use - Local Government	Urban Growth Boundary
GWAZ - Green Wedge A	PUZ7 - Public Use - Other Public Use	
GWZ - Green Wedge	PZ - Port	

Railway   
 Tram   
 River, stream   
 Lake, waterbody

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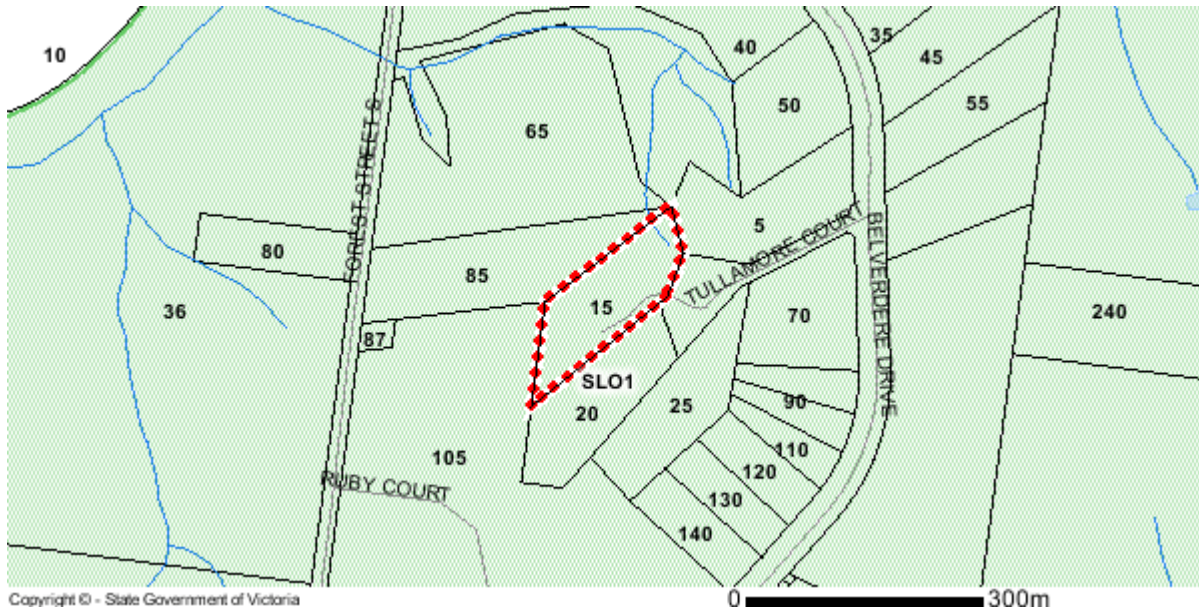
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## Planning Overlays

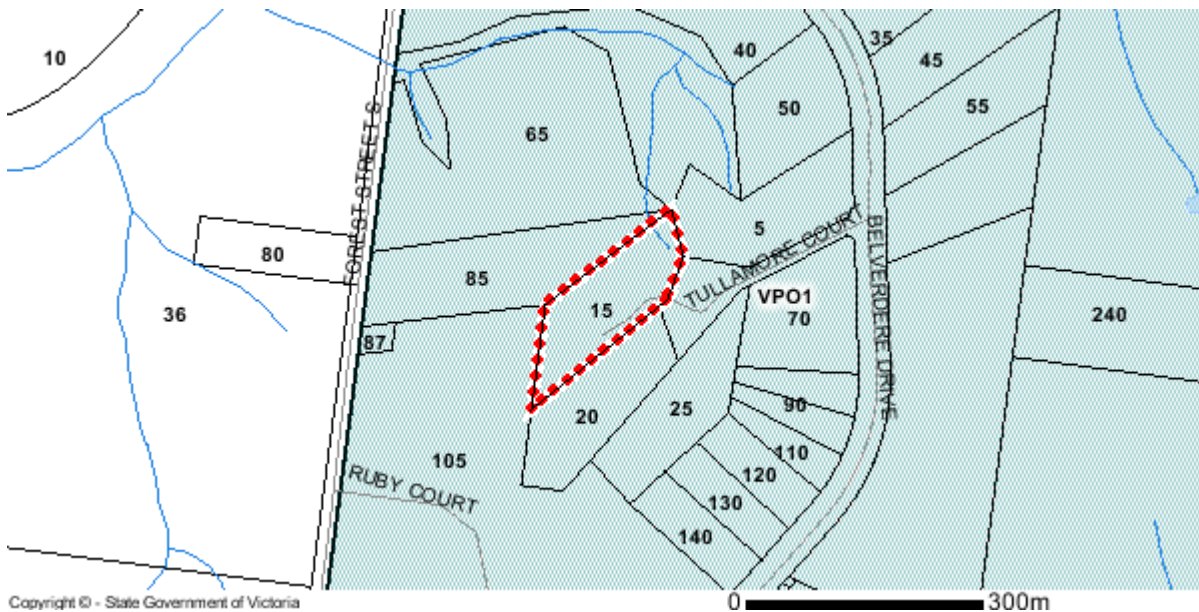
SIGNIFICANT LANDSCAPE OVERLAY (SLO)

SIGNIFICANT LANDSCAPE OVERLAY - SCHEDULE 1 (SLO1)



VEGETATION PROTECTION OVERLAY (VPO)

VEGETATION PROTECTION OVERLAY - SCHEDULE 1 (VPO1)



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## Planning Overlays

### OTHER OVERLAYS

Other overlays in the vicinity not directly affecting this land

[DESIGN AND DEVELOPMENT OVERLAY \(DDO\)](#)

[EROSION MANAGEMENT OVERLAY \(EMO\)](#)



### Overlays Legend

AEO - Airport Environs	IPO - Incorporated Plan
BMO - Bushfire Management	LSIO - Land Subject to Inundation
CLPO - City Link Project	MAE01 - Melbourne Airport Environs 1
DCPO - Development Contributions Plan	MAE02 - Melbourne Airport Environs 2
DDO - Design & Development	NCO - Neighbourhood Character
DDOPT - Design & Development Part	PO - Parking
DPO - Development Plan	PAO - Public Acquisition
EAO - Environmental Audit	RO - Restructure
EMO - Erosion Management	RCO - Road Closure
ESO - Environmental Significance	SBO - Special Building
FO - Floodway	SLD - Significant Landscape
HO - Heritage	SMO - Salinity Management
ICPO - Infrastructure Contributions Plan	SRD - State Resource
Railway	VPO - Vegetation Protection
Tram	River, stream
River, stream	Lake, waterbody

Note: due to overlaps some colours on the maps may not match those in the legend.

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## Further Planning Information

Planning scheme data last updated on 11 July 2018.

A **planning scheme** sets out policies and requirements for the use, development and protection of land.

This report provides information about the zone and overlay provisions that apply to the selected land.

Information about the State, local, particular and general provisions of the local planning scheme that may affect the use of this land can be obtained by contacting the local council or by visiting [Planning Schemes Online](#)

This report is NOT a **Planning Certificate** issued pursuant to Section 199 of the Planning & Environment Act 1987.

It does not include information about exhibited planning scheme amendments, or zonings that may affect the land.

To obtain a Planning Certificate go to [Titles and Property Certificates](#)

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

To view planning zones, overlay and heritage information in an interactive format visit [Planning Maps Online](#)

For other information about planning in Victoria visit [www.planning.vic.gov.au](http://www.planning.vic.gov.au)

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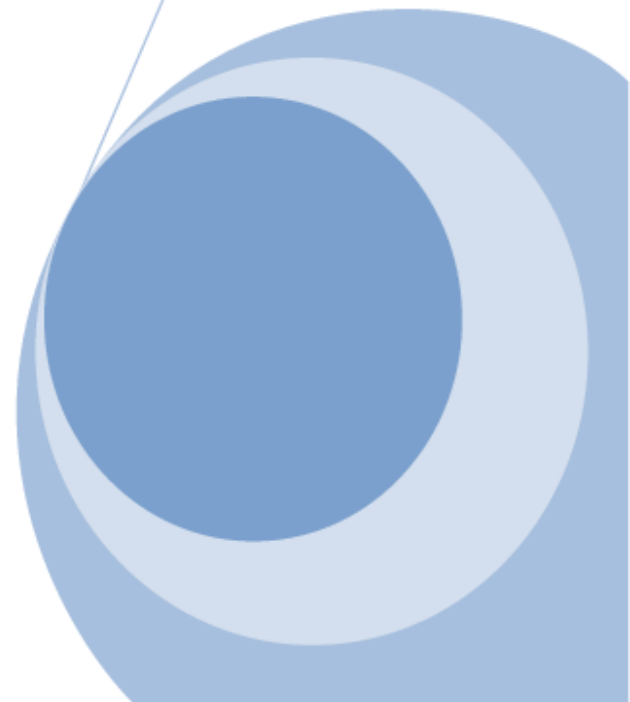
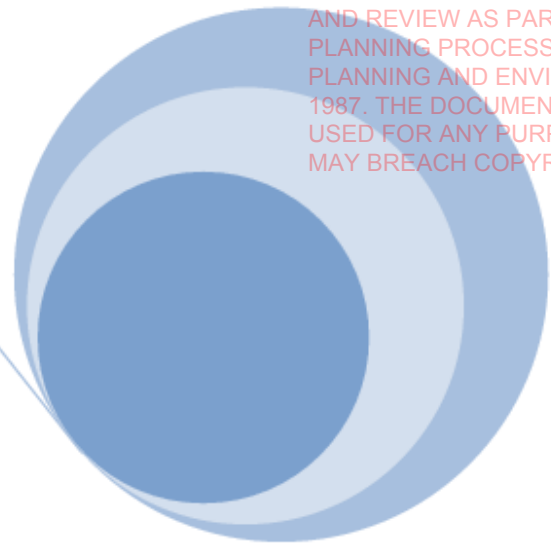
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# LAND CAPABILITY ASSESSMENT

15 Tullamore Court Elliminyt , VICTORIA

2020 Engineering Solutions  
3/19/2018



## Welcome to our new format LCA.

### **Section 1.**

Contains relevant information is presented in a concise, logical, trail following from regional perspective to site specific characteristics. Sample water balance calculations are Incorporated to inform the Land Application Area tables

### **Section 2.**

Contains the balance of information required under the DWMP, MAV and EPA 891.4

### **Section 3.**

Property Management Report.

## REPORT CONTENTS

### ABOUT YOUR REPORT

### REPORT SUMMARY/EXECUTIVE SUMMARY

### SECTION ONE

#### INTRODUCTION & BACKGROUND

#### PLANNING REPORTS

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- 2 DECLARED WATER CATCHMENT AREA
- 3 TOPOGRAPHY ( PLANNING MAPS ON LINE)
- 4 SITE INSPECTION & FIELD INVESTIGATIONS
- 5 BORELOG
- 6 AVAILABLE AREA & SETBACK DISTANCES
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### SECTION THREE

- SITE MANAGEMENT PLAN
- 9 CONCLUSION
- 12 INSURANCE DETAILS
- 13 DISCLAIMER

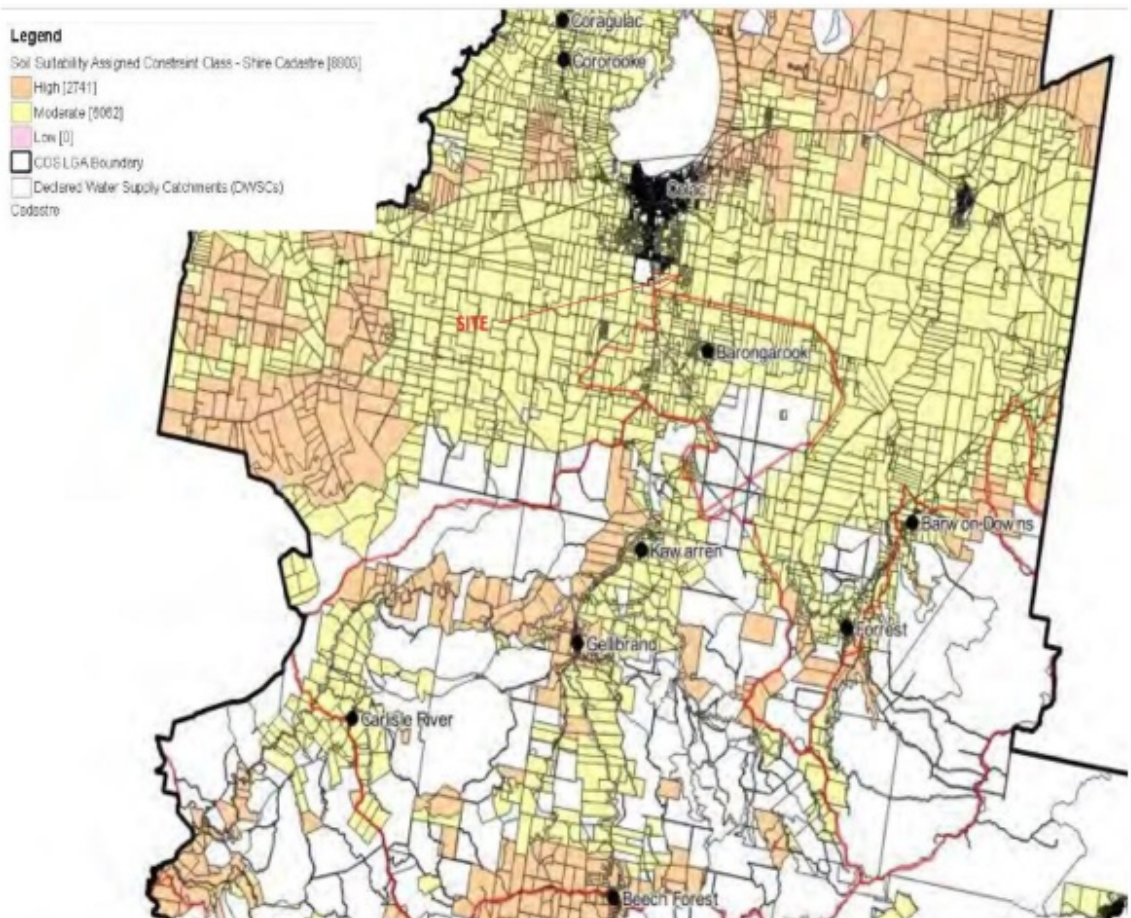
### REPORT SUMMARY/EXECUTIVE SUMMARY

This Report finds that the proposed allotment can sustainably manage wastewater within boundaries to EPA Requirements based upon water balance calculations and suitably sized Land Application Area, including set backs and reserve LAA.

## **SECTION ONE**

### **1 INTRODUCTION & BACKGROUND**

The proposal is to sub-divide an area of 6070m<sup>2</sup> (1.5Ac) off the existing allotment.



**Moderate Sensitivity (DWMP) Standard Report.(DWMP)**

2 PLANNING REPORT

Department of Environment, Land, Water and Planning

Planning Property Report

from [www.planning.vic.gov.au](http://www.planning.vic.gov.au) on 13 March 2018 09:51 PM

Address: 15 TULLAMORE COURT ELLIMINYT 3250

Lot and Plan Number: Lot 20 PS322547

Local Government (Council): COLAC OTWAY Council Property Number: 22218

Directory Reference: VicRoads 92 B8

Planning Zone

LOW DENSITY RESIDENTIAL ZONE (LDRZ)

SCHEDULE TO THE LOW DENSITY RESIDENTIAL ZONE (LDRZ)



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Zones Legend

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Department of Environment, Land, Water and Planning

### Planning Overlays

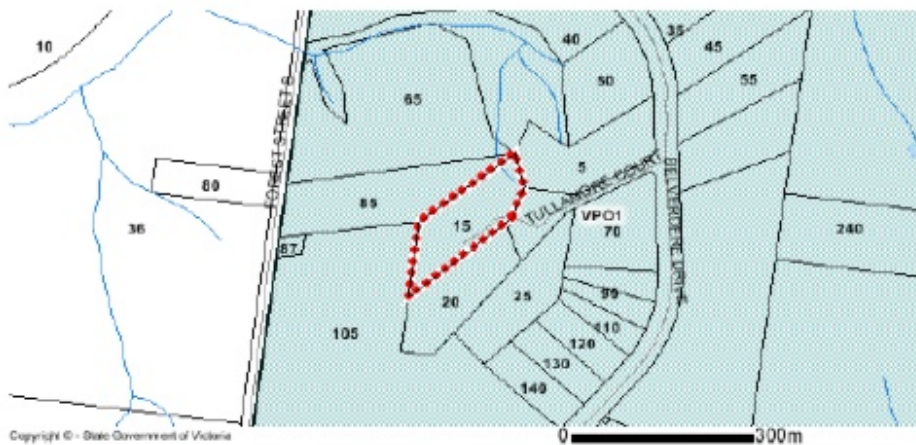
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SIGNIFICANT LANDSCAPE OVERLAY - SCHEDULE 1 (SLO1)



VEGETATION PROTECTION OVERLAY (VPO)

VEGETATION PROTECTION OVERLAY - SCHEDULE 1 (VPO1)



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Department of Environment, Land, Water and Planning

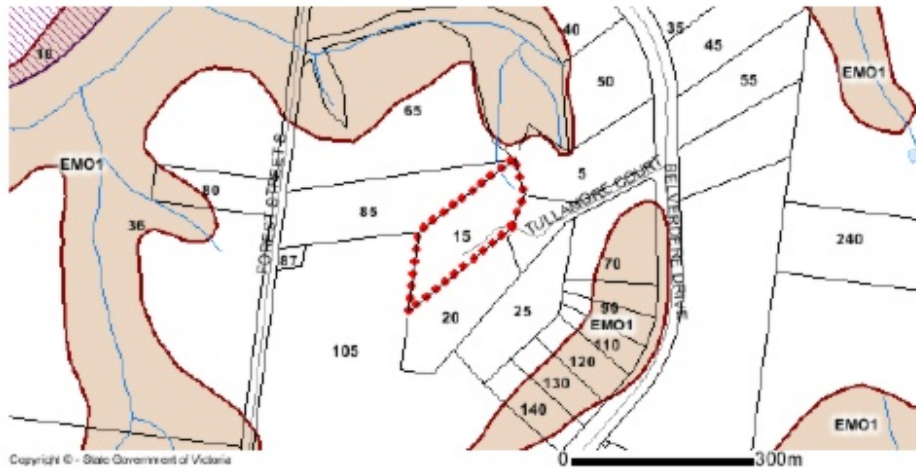
**Planning Overlays**

**OTHER OVERLAYS**

Other overlays in the vicinity not directly affecting this land

DESIGN AND DEVELOPMENT OVERLAY (DDO)

EROSION MANAGEMENT OVERLAY (EMO)



**Overlays Legend**

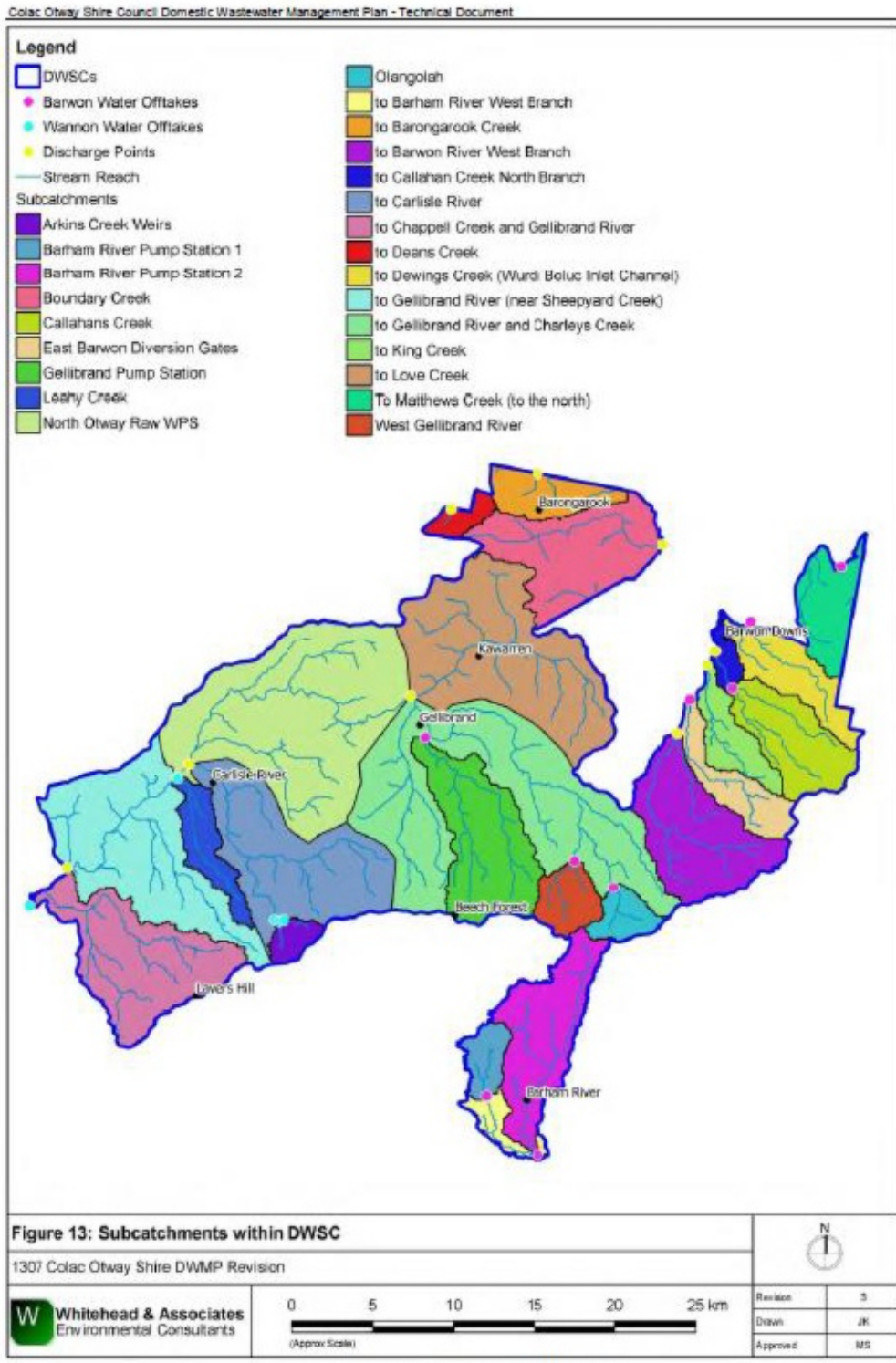
- |  |                                      |
|--|--------------------------------------|
| AEO - Airport Environs                   | IPO - Incorporated Plan              |
| BMO - Bushfire Management                | LSIO - Land Subject to Inundation    |
| CLPD - City Link Project                 | MAEO1 - Melbourne Airport Environs 1 |
| DCPD - Development Contributions Plan    | MAEO2 - Melbourne Airport Environs 2 |
| DDO - Design & Development               | NCO - Neighbourhood Character        |
| DDOPT - Design & Development Part        | PO - Parking                         |
| DPO - Development Plan                   | PAO - Public Acquisition             |
| EAO - Environmental Audit                | RO - Restructure                     |
| EMO - Erosion Management                 | RCCO - Road Closure                  |
| ESO - Environmental Significance         | SBO - Special Building               |
| FO - Floodway                            | SLD - Significant Landscape          |
| HO - Heritage                            | SMO - Salinity Management            |
| ICPO - Infrastructure Contributions Plan | SRO - State Resource                 |
| Railway                                  | YPO - Vegetation Protection          |
| Tram                                     | River, stream                        |
| Lake, waterbody                          |                                      |

Note: due to overlaps some colours on the maps may not match those in the legend.

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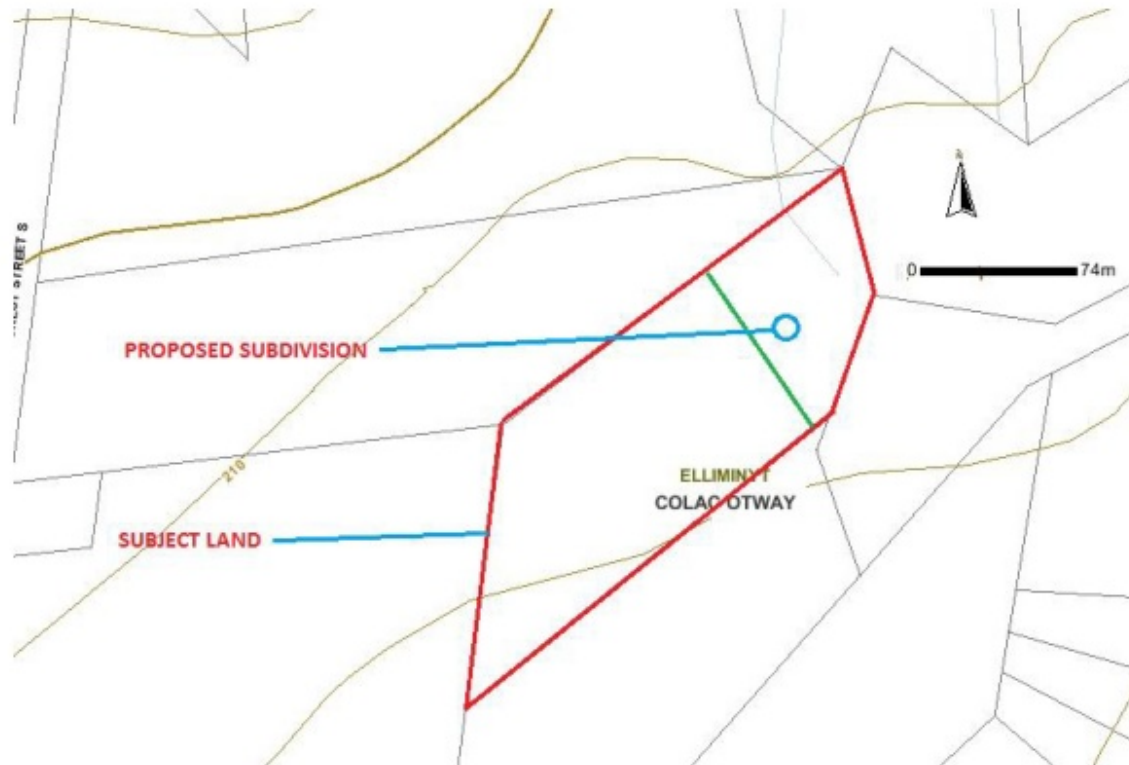
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4 DECLARED WATER CATCHMENT AREA/S



Site not within DWCA (DWMP).

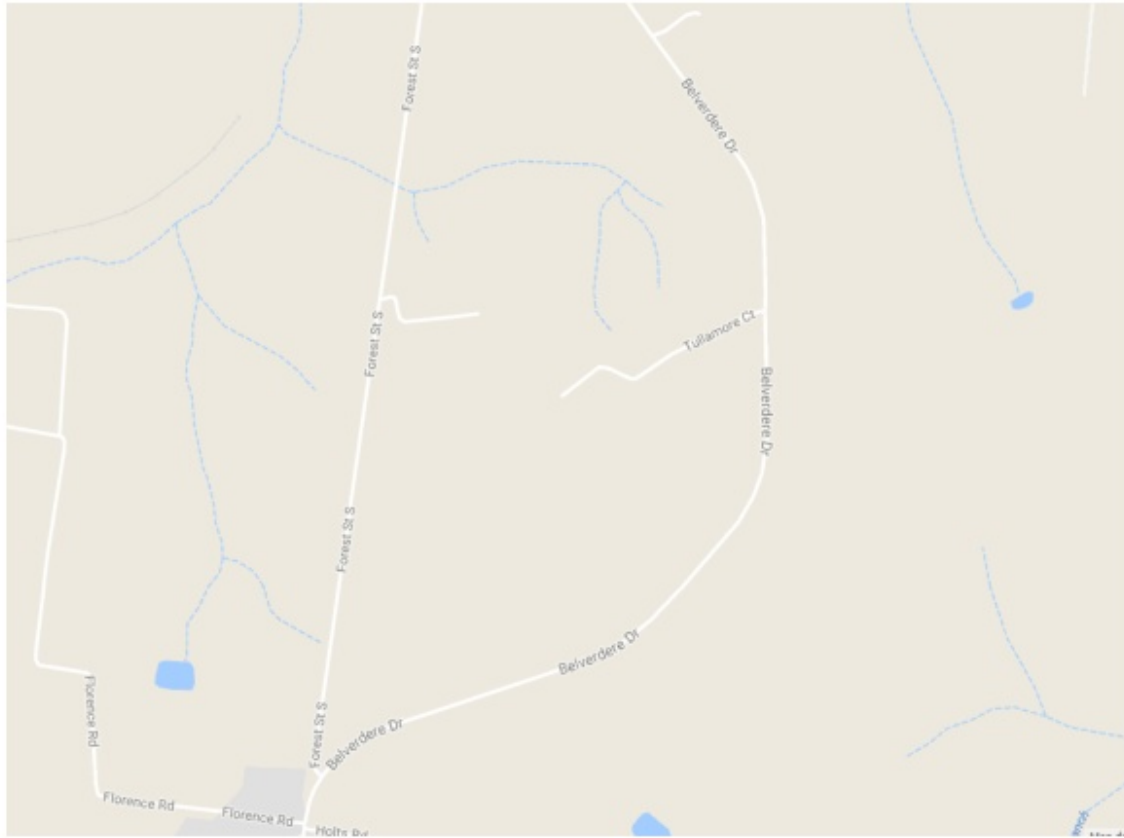
## 5 TOPOGRAPHY and SURFACE WATERS



TOPOGRAPHY and SURFACE WATERS (PLANNING MAPS ON LINE)

Above figure shows subject land almost flat, however the appears to be an anomaly with regard to the indicated water course,(thin blue line), in that no evidence of this water course was noted during the site inspection.

## 6 GROUNDWATER BORES (VVG)



Visualising Victorias Ground Water data base, no bores with in impact distance.

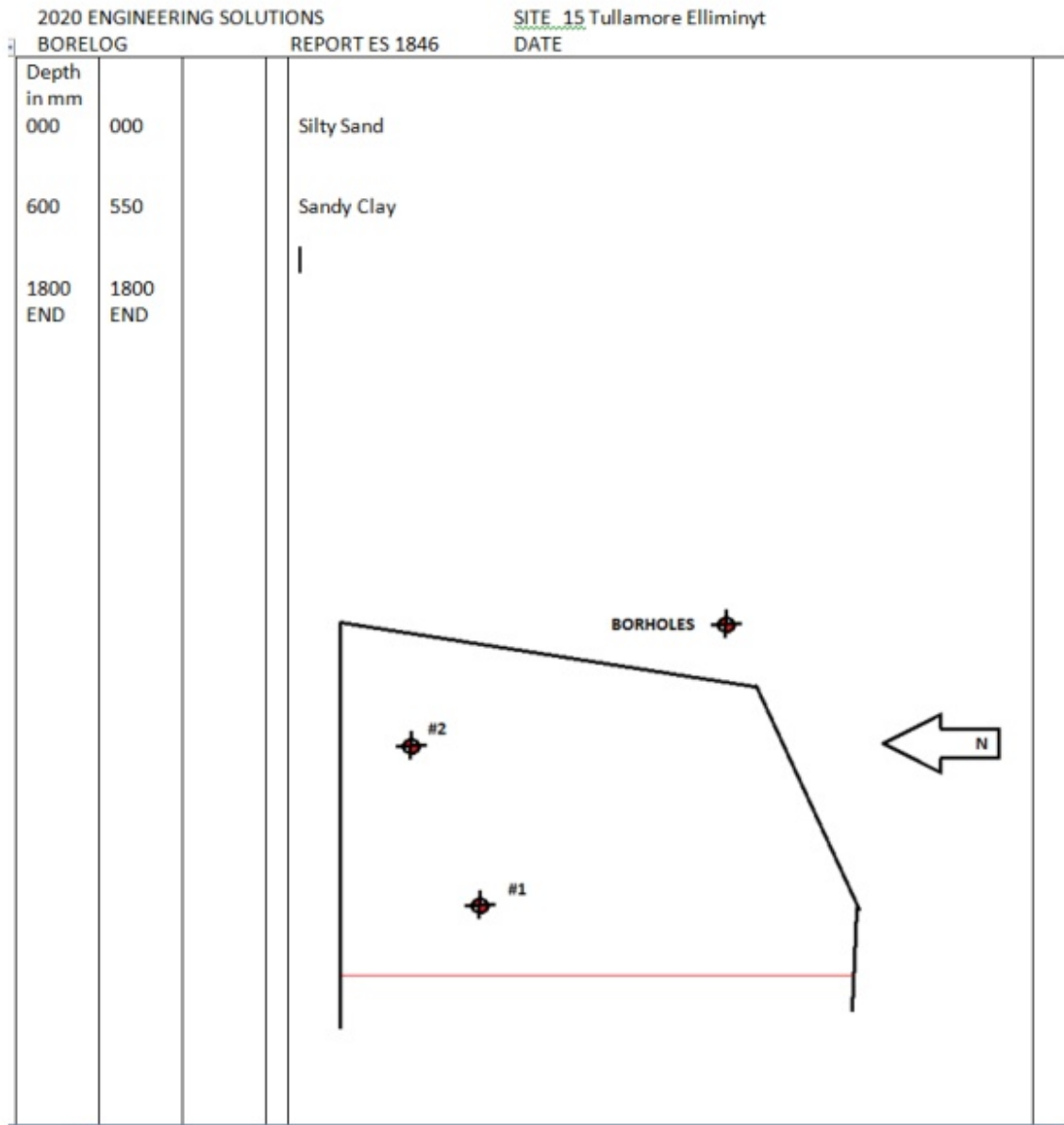
**Regional topography and land use**



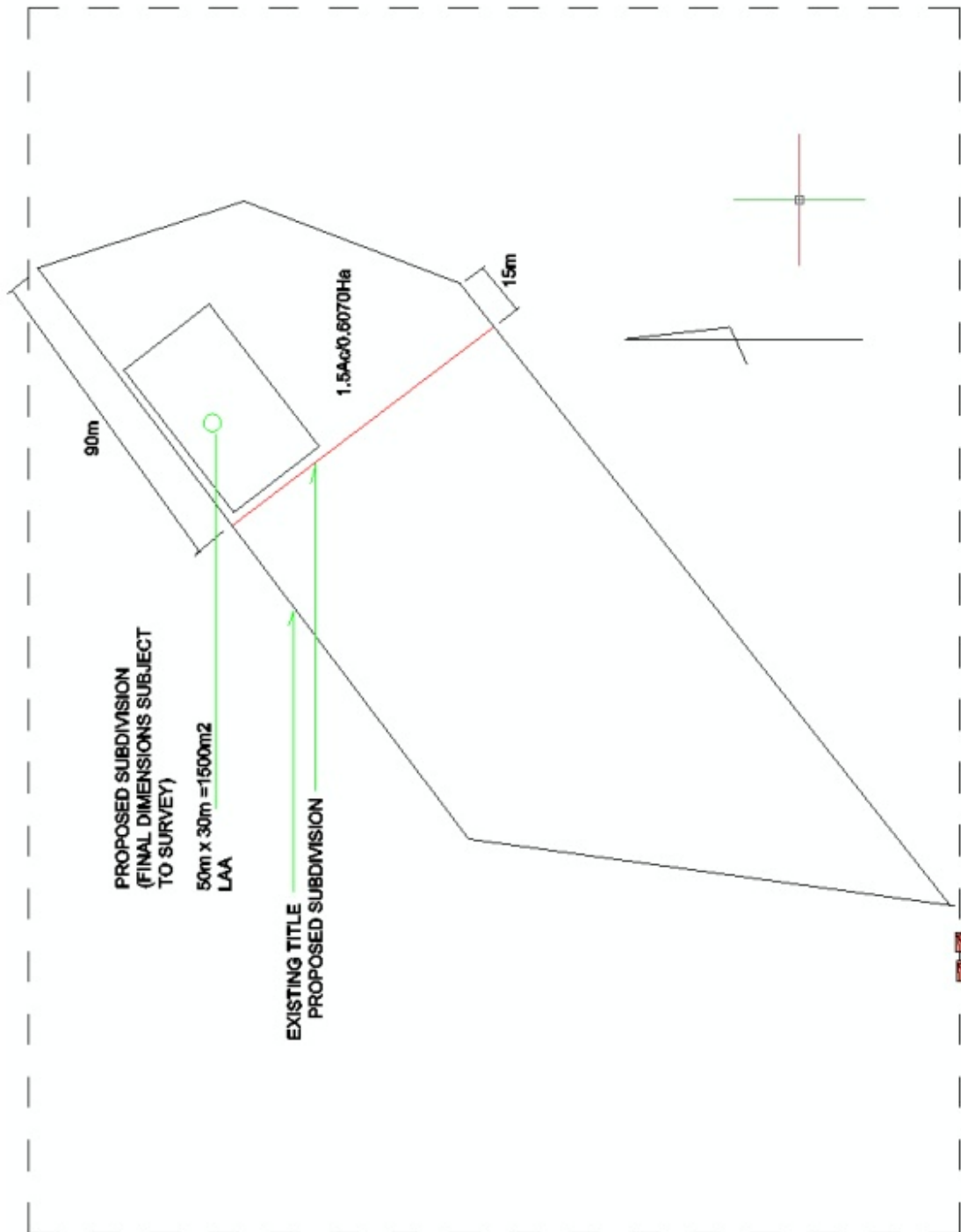
Regional topography and landuse (Planning maps online)

As noted above there is no evidence of the indicated water course.

**6 SITE INSPECTION & FIELD INVESTIGATIONS**



### 7 AVAILABLE AREA & SETBACK DISTANCES





SOIL ANALYSIS

Design selection EPA 891.4

Appendix A:  
Table 9: Soil Categories and Recommended Maximum Design Loading/Irrigation Rates (DLR/DIR) for Land Application Systems<sup>1, 2, 5</sup>

Soil texture	Soil structure	Soil category	Indicative permeability (Ksat) (m/d)	Design Loading Rates and Design Irrigation Rates (DLR / DIR) (mm/day)				
				Absorption trenches/beds and Wick Trench & Bed Systems 6 for primary effluent (see Table L1 in AS/NZS 1547:2012)	(ETA) Evapo-transpiration absorption beds and trenches (see Table L1 in AS/NZS 1547: 2012)	Secondary treated effluent applied to Wick Trench & Bed System 4	Sub-surface and surface irrigation (see Table M1 in AS/NZS 1547: 2012)	LPED (see Table M1 in AS/NZS 1547: 2012)
Gravels and sands	Structureless (massive)	1	>3.0	NA <sup>3</sup>	25	5 <sup>6</sup> (see Note 2 in Table M1)	NA <sup>3</sup>	24
		2a	>3.0	NA <sup>3</sup>	30	4	NA <sup>3</sup>	24
Sandy loams	Weakly structured	2b	1.4 - 3.0	15	30	4	4	24
		3a	1.5 - 3.0	15	30	4	3.5	24
Loams	High / moderate structured	3b	0.5 - 1.5	10	30	(see Note 1 in Table M1)	3.5	16
		4a	0.5 - 1.5	10	30	(see Note 1 in Table M1)	3	16
Clay loams	Weakly structured	4b	0.12 - 0.5	6	20	(see Note 1 in Table M1)	3	8
		4c	0.06 - 0.12	4	10	(see Note 1 in Table M1)	5	5 (see Note to Table M1)
Light clays	Strongly structured	5a	0.12 - 0.5	5	12	3	2.5	8
		5b	0.06 - 0.12	(see Notes 2 and 3 in Table L1)	10	(see Note 1 in Table M1)	Table M1	5 (see Note to Table M1)
Medium to heavy clays	Weakly structured or massive	5c	<0.06	5	8	2	NA	NA
		6a	0.06 - 0.5	(see Notes 2, 3 & 5 in Table L1)	5	(see Notes 2 and 3 in Table L1)	NA	NA
		6b	<0.06	(see Notes 2, 3 & 5 in Table L1)	5	(see Notes 2 and 3 in Table L1)	NA	NA
		6c	<0.06	(see Notes 2, 3 & 5 in Table L1)	5	(see Notes 2 and 3 in Table L1)	NA	NA

1. Adapted from Australian Standard AS/NZS 1547: 2012 - On-site domestic wastewater management  
 2. The DIR and DLR are recommended maximum application rates for treated effluent. A water balance may indicate that a reduced application rate is required for a specific site.  
 3. The exception is where the soil does not have a high perched or high seasonal (winter) watertable (see AS/NZS 1547).  
 4. See Appendix E for design, installation and maintenance details.  
 5. Lower application rates may be required for reduced soil permeability in sodic and dispersive soils, soils with a perched or seasonally high watertable or soils with a limiting layer.  
 6. The application rate may be increased in sandy soils with a high watertable where an advanced secondary treatment system with disinfection replaces a primary treatment system on an existing lot that is too small to accommodate the maximum DIR for category 1 to 2b soils.

Colac Otway Shire Council Domestic Wastewater Management Plan - Technical Document

Barongarook											
Drip and Spray Irrigation Systems* - Secondary Treated Effluent only											
Development Type	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)	Alternative Land Application System Required			
								DLR (mm)	Daily (L/day)		
5+ bedroom residence	1,080	588	400	831	1,350	N/A					
4 bedroom residence	900	500	663	1,125							
1-3 bedroom residence	720	258	400	554	900						
Note: * Irrigation system sizes are based on the assumption that the land application area is less than 10% slope. Reductions in DLR apply for slopes above 10% according to Table M2 of AS1547:2012. † not including spacing and setbacks.											
Conventional Absorption Trenches and Beds - Primary Treated Effluent											
Development Type	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Weak Loams & High/Med Clay Loams (3 & 4)	Light Clays (5)	Massive Clay Loams (4)	Medium to Heavy Clays (6)	Alternative Land Application System Required		
									DLR (mm)	Daily (L/day)	
5+ bedroom residence	1,080	62	97	145	115	168					
4 bedroom residence	900	52	73	121	58	168					
1-3 bedroom residence	720	42	58	97	77	133					
Note: * Gravels, sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high water table, including seasonal and broached water tables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012.											
Evapotranspiration-Absorption Trenches and Beds - Primary Treated Effluent (Category 1 to 6) and Secondary Treated Effluent only (Category 8)											
Development Type	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3a)	Weak/Massive Loams (3b)	High/Med Clay Loams (4a)	Light Clays (5a)	Weak Clay Loams (4b) & Strong Light Clays (5a)	Medium to Heavy Clays (6) - Effluent Only	Alternative Land Application System Required	
										DLR (mm)	Daily (L/day)
5+ bedroom residence	1,080	20*	20*	15	10	12	8	5			
4 bedroom residence	900	62	73	121	58	115	168	441			
1-3 bedroom residence	720	42	58	97	77	58	168	264			
Note: * Gravels, sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high water table, including seasonal and broached water tables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012.											
LFED Irrigation Systems - Primary or Secondary Treated Effluent											
Development Type	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Loams (3)	Clay Loams (4)	Light Clays (5)	Medium to Heavy Clays (6)	Alternative Land Application System Required			
								DLR (mm)	Daily (L/day)		
5+ bedroom residence	1,080	N/A	4	3.5	N/A	N/A					
4 bedroom residence	900	(Alternative Land Application System Required)	746	1,135	(Alternative Land Application System Required)						
1-3 bedroom residence	720	(Alternative Land Application System Required)	620	946	(Alternative Land Application System Required)						
† required for zero wet weather storage (m <sup>3</sup> ) not including spacing & setbacks											
Wick Trenches and Beds - Secondary Treated Effluent Only											
Development Type	Soil Category	Gravels & Sands (1)	Sandy Loams (2)	Weak Clay Loams (4)	Massive Clay Loams (4)	Strong Light Clays (5a)	Moderate Light Clays (5b)	Weak Light Clays (5c)	Medium to Heavy Clays (6)	Alternative Land Application System Required	
										DLR (mm)	Daily (L/day)
5+ bedroom residence	1,080	25	30	20	10	12	8	5			
4 bedroom residence	900	40	40	82	145	115	168	441			
1-3 bedroom residence	720	33	27	42	97	77	133	264			
Note: * Gravels, sands and sandy loams are unsuitable for conventional absorption trenches and beds if there is a high water table, including seasonal and broached water tables. Value based on average of conservative rate and maximum rate for Category 2b and 3a soils in AS1547:2012.											

Whitehead and Associates Environmental Consultants

Applicable treatment and disposal options DWMP indicating Evapotranspiration trenches as suitable disposal method.

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Please read the attached notes before using this spreadsheet

### Irrigation area sizing using Nominated Area Water Balance for Zero Storage

**Site Address:** \_\_\_\_\_ **Assessor:** \_\_\_\_\_

**Date:** \_\_\_\_\_

#### INPUT DATA

Design Wastewater Flow	Q	720	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013)
Design Irrigation Rate	DIR	8.0	mm/day	Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013)
Nominated Land Application Area	L	267	m <sup>2</sup>	
Crop Factor	C	0.6-0.8	unitless	Estimates evapotranspiration as a fraction of pan evaporation; varies with season and crop type <sup>2</sup>
Rainfall Runoff Factor	RF	0.9	unitless	Proportion of rainfall that remains onsite and infiltrates, allowing for any runoff
Mean Monthly Rainfall Data	BoM Station and number			
Mean Monthly Pan Evaporation Data	BoM Station and number			

Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D		days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R		mm/month	44	41	52	73	86	98	108	106	99	97	69	57	930
Evaporation	E		mm/month	133	110	91	54	34	22	26	37	55	81	98	121	862
Crop Factor	C		unitless	0.80	0.80	0.70	0.70	0.60	0.60	0.60	0.60	0.70	0.80	0.80	0.80	
<b>OUTPUTS</b>																
Evapotranspiration	ET	Exc	mm/month	106	88	64	38	20	13	16	22	39	65	78	97	645.8
Percolation	B	DIR*D	mm/month	248.0	224	248.0	240.0	248.0	240.0	248.0	248.0	240.0	248.0	240.0	248.0	2920.0
Outputs		ET+B	mm/month	354.4	312	311.7	277.8	268.4	253.2	263.6	270.2	278.5	312.8	318.4	344.8	3965.8
<b>INPUTS</b>																
Retained Rainfall	RR	RRF	mm/month	37.4	34.85	44.2	62.05	73.1	83.3	91.8	90.1	84.15	82.45	58.65	48.45	790.5
Applied Effluent	W	(QxD)/L	mm/month	83.6	75.5	83.6	80.9	83.6	80.9	83.6	83.6	80.9	83.6	80.9	83.6	984.3
Inputs		RR+W	mm/month	121.0	110.4	127.8	142.9	156.7	164.2	175.4	173.7	165.0	165.0	139.5	132.0	1774.8
<b>STORAGE CALCULATION</b>																
Storage remaining from previous month	S	(RR+W)-(ET+B)	mm/month	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Storage for the month	M		mm	-233.4	-201.6	-183.9	-134.9	-111.7	-89.2	-88.2	-96.5	-113.5	-146.8	-178.9	-212.8	
Cumulative Storage	N		mm	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
Maximum Storage for Nominated Area	V		L	0.00	0											
<b>LAND AREA REQUIRED FOR ZERO STORAGE</b>			m <sup>2</sup>	70	73	83	100	114	127	130	124	111	97	83	75	
<b>MINIMUM AREA REQUIRED FOR ZERO STORAGE:</b>			m <sup>2</sup>	<b>130.0</b>												
<b>CELLS</b>																
<b>NOTES</b>																

<sup>1</sup> This value should be the largest of the following: land application area required based on the mean limiting nutrient balance or minimum area required for zero storage

<sup>2</sup> Water Balance Nitrogen Balance Sheet1

**Example water balance calculations**

Victorian Land Capability Assessment Framework									
Please read the attached notes before using this spreadsheet									
<b>Nitrogen Balance</b>									
Site Address:		0							
SUMMARY - LAND APPLICATION AREA REQUIRED BASED NITROGEN BALANCE									
INPUT DATA <sup>1</sup>		Wastewater Loading		Nutrient Crop Uptake		Nutrient Crop Uptake			
Hydraulic Load	720	L/day	220	kg/ha/yr	which equals	60.27	mg/m <sup>2</sup> /day		
Effluent N Concentration	25	mg/L							
% N Lost to Soil Processes (Geary & Gardner 1996)	0.2	Decimal							
Total N Loss to Soil	36000	mg/day							
Remaining N Load after soil loss	144000	mg/day							
<b>NITROGEN BALANCE BASED ON ANNUAL CROP UPTAKE RATES</b>									
Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)									
Minimum Area required with zero buffer	239	m <sup>2</sup>							
Nitrogen	267	kg/year							
	-0.62	kg/year							
	0	m <sup>2</sup>							
CELLS									
Please enter data in blue cells									
Red cells are automatically populated by the spreadsheet									
Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS									
NOTES									
<sup>1</sup> Model sensitivity to input parameters will affect the accuracy of the result obtained. Where possible site specific data should be used. Otherwise data should be obtained from a reliable source such as:									
- EPA Guidelines for Effluent Irrigation									
- Appropriate Peer Reviewed Papers									
- Environment and Health Protection Guidelines: Onsite Sewage Management for Single Households									
- USEPA Onsite Systems Manual									

Victorian Land Capability Assessment Framework				
Trench & Bed Sizing				
<b>FORMULA FOR TRENCH AND BED SIZING</b>				
L = Q/DLR x W	From AS/NZS 1547:2012			
<b>Where:</b>	Units			
L = Trench or bed length	m			
Q = Design Wastewater Flow	L/day			
DLR = Design Loading Rate	mm/day			
W = Trench or bed width	m			
Total trench or bed length required Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013) Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013) As selected by designer/installer				
<b>INPUT DATA</b>				
Design Wastewater Flow	Q	720	L/day	Based on maximum potential occupancy and derived from Table 4 in the EPA Code of Practice (2013)
Design Loading Rate	DLR	8.0	mm/day	Based on soil texture class/permeability and derived from Table 9 in the EPA Code of Practice (2013)
Trench basal area required	B	90.0	m <sup>2</sup>	
Selected trench or bed width	W	0.6	m	As selected by designer/installer
<b>OUTPUT</b>				
Required trench or bed length	L	150.0	m	
<b>CELLS</b>				
				Please enter data in blue cells
	XX			Red cells are automatically populated by the spreadsheet
	XX			Data in yellow cells is calculated by the spreadsheet, DO NOT ALTER THESE CELLS

Trench size example calculations

**10 SIZING THE EFFLUENT DISPOSAL SYSTEM**

TABLE OF REQUIRED DISPOSAL AREA m2 (LAA)

B/R	WATER	PRIMARY	SECONDARY
2	360		65
3	540		98
4	720		130
5	900		163
6	1080		200

## TRENCH LENGTH

360	65
540	112
720	150
900	187
1080	224

## BASE AREA

360	45
540	68
720	90
900	112
1080	136

**Note; As trench based disposal LAA will require equal size reserve area.**

**Table 1 Applicable Setback Distances (from AS1547:2012)**

Landscape Feature / Structure	* Setback Distances (m)					
	Primary Treated Effluent	Secondary Sewage & Grey water Effluent	Advanced Secondary Grey water Effluent			
<b>BUILDING</b>						
Wastewater field up-slope of building	<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	3
Wastewater field down-slope of building	<input type="checkbox"/>	3	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	1.5
Wastewater field up-slope of cutting/escarpment	<input type="checkbox"/>	15	<input checked="" type="checkbox"/>	15	<input type="checkbox"/>	15
<b>ALLOTMENT BOUNDARY</b>						
Wastewater field up-slope of adjacent lot	<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	1
Wastewater field down-slope of adjacent lot	<input type="checkbox"/>	3	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	0.5
<b>SERVICES</b>						
Water supply pipe	<input type="checkbox"/>	3	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	1.5
Wastewater field up-slope of potable supply channel	<input type="checkbox"/>	300	<input checked="" type="checkbox"/>	150	<input type="checkbox"/>	150
Wastewater field down-slope of potable supply channel	<input type="checkbox"/>	20	<input checked="" type="checkbox"/>	10	<input type="checkbox"/>	10
Gas supply pipe	<input type="checkbox"/>	3	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	1.5
In-ground water tank	<input type="checkbox"/>	15	<input checked="" type="checkbox"/>	4	<input type="checkbox"/>	3
Stormwater drain	<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	2
<b>RECREATION AREAS</b>						
Children's grassed playground	<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	2
In-ground swimming pool	<input type="checkbox"/>	6	<input checked="" type="checkbox"/>	3	<input type="checkbox"/>	2
<b>SURFACE WATERS UP-SLOPE OF</b>						
Dam, lake or reservoir (potable water supply)	<input type="checkbox"/>	300	<input checked="" type="checkbox"/>	150	<input type="checkbox"/>	150
Waterways (potable water supply)	<input type="checkbox"/>	100	<input checked="" type="checkbox"/>	100	<input type="checkbox"/>	50
Waterways, wetlands (continuous or ephemeral, non-potable); estuaries, ocean beach at high-tide mark; dams, lakes or reservoirs (stock & domestic, non-potable)	<input type="checkbox"/>	60	<input checked="" type="checkbox"/>	30	<input type="checkbox"/>	30
<b>GROUNDWATER BORES</b>						
Category 1 & 2a soils	<input type="checkbox"/>	NA	<input type="checkbox"/>	50	<input type="checkbox"/>	20
Category 2b – 6 soils	<input type="checkbox"/>	20	<input checked="" type="checkbox"/>	20	<input type="checkbox"/>	20
<b>WATERTABLE</b>						
Vertical depth from base of trench to highest seasonal water table	<input type="checkbox"/>	1.5	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	1.5
	<input checked="" type="checkbox"/>					
Vertical depth from irrigation pipes to highest seasonal water table	<input type="checkbox"/>	NA	<input checked="" type="checkbox"/>	1.5	<input type="checkbox"/>	1.5

\* X indicates compliance

## 9 PLANNING AUTHORITY LAND CAPABILITY ASSESSMENT CONFIRMATION

Date Received:

1. Forwarded to Referral Authority:  Yes  No  
Authority Name: \_\_\_\_\_  
Date Forwarded: \_\_\_\_\_  
Response within Statutory Time Frame:  Yes  No  
Referral Authority Advice Conforming:  Yes  No  
Reason for Non-Conformance: \_\_\_\_\_

2. Forwarded to Referral Authority:  Yes  No  
Authority Name: \_\_\_\_\_  
Date Forwarded: \_\_\_\_\_  
Response within Statutory Time Frame:  Yes  No  
Referral Authority Advice Conforming:  Yes  No  
Reason for Non-Conformance: \_\_\_\_\_

Planning Authority Advice Conforming:  Yes  No

Date Assessed:

Responsible Planning Officer:



## **SECTION TWO**

### **SENSITIVITY CONSIDERATION**

<b>SPI Identification No.:</b>	See Section 1
<b>Property/Parcel Address:</b>	See Section 1
<b>Locality:</b>	See Section 1
<b>Zoning:</b>	See Section 1
<b>Area:</b>	See Section 1
<b>Soil Texture:</b>	See Section 1
<b>Soil Depth:</b>	See Section 1
<b>Soil Structure:</b>	See Section 1
<b>Soil Limitations:</b>	See Section 1
<b>Permeability (Ksat m/day):</b>	See Section 1
<b>Slope:</b>	See Section 1
<b>Presence of Surface Waters:</b>	See Section 1
<b>Useable Lot Area:</b>	See Section 1

# 1 INTRODUCTION & BACKGROUND

## Sensitivity Rating

Low     Moderate     High     Very High

## Reporting Level

Standard     Detailed     Comprehensive

## Property Zoning

See Section 1

## Relevant Sensitivity Overlays

<input type="checkbox"/>	Nil	<input type="checkbox"/>	Heritage
<input type="checkbox"/>	Bushfire Management	<input type="checkbox"/>	Land Subject to Inundation
<input checked="" type="checkbox"/>	Design & Development	<input type="checkbox"/>	Neighbourhood Character
<input type="checkbox"/>	Environmental Significance	<input type="checkbox"/>	Significant Landscape
<input type="checkbox"/>	Erosion Management S1	<input type="checkbox"/>	Vegetation Protection
<input type="checkbox"/>	Floodway		

Note See Section 1

## Current Land Use & Proposed Development

Current	Proposed
<input type="checkbox"/> Vacant land	<input type="checkbox"/> Domestic development
<input type="checkbox"/> Domestic development	<input type="checkbox"/> Non-domestic development
<input type="checkbox"/> Non-domestic development	<input type="checkbox"/> Commercial development
<input type="checkbox"/> Commercial development	<input checked="" type="checkbox"/> Subdivision
<input checked="" type="checkbox"/> Grazing land	
<input type="checkbox"/> No infrastructure	

## Land Capability Assessment Author Details

Mr Michael Delahunty, BEng  
 2020 Engineering Solutions  
 1745 Colac-Forrest Road  
 COLAC VIC 3249

Ph. 0428 141 441

17 years' experience in Land Capability Assessment investigation and reporting.

## Site Details

See Section 1

## Existing/Proposed Water Supply

<input type="checkbox"/>	Yes
<input type="checkbox"/>	Tank
<input checked="" type="checkbox"/>	Reticulated supply
<input type="checkbox"/>	Other

<input type="checkbox"/>	Proposed
<input type="checkbox"/>	Tank
<input checked="" type="checkbox"/>	Reticulated supply
<input type="checkbox"/>	Other

## Availability of Sewer

<input type="checkbox"/>	Yes
<input checked="" type="checkbox"/>	Not in foreseeable future

<input type="checkbox"/>	No
--------------------------	----

## Property Meets Minimum Lot Size Criteria

<input checked="" type="checkbox"/>	Yes – Low Constraint
-------------------------------------	----------------------

<input type="checkbox"/>	No
--------------------------	----

**Site Plan (showing 10m contours)**

**See Section 1**

**Floor Plan**

Not available at time of assessment.

**Responsible Authorities' Zones & Overlays**

Map Attached  
 Yes  No  
 Details: See Section 1

**Locality Characteristics**

Domestic Water Supply Catchment  
 Yes  No  
 Details See Section 1

**Site Inspection Date & Methodology**

Date: 16.03.2018  AM  PM  
 Visual  Auger  
 Soil Pits  Permeability Testing

**Site Assessment**

**Aspect**

North  East  
 South  West  
 Level of Constraint:  
 Nil  Moderate  
 Minor  Major  
 Mitigation Measures: None required

**Climate**

{Silo Data, COS Domestic Wastewater Management Plan}  
 Level of Constraint:  
 Nil  Moderate  
 Minor  Major  
 Mitigation Measures: None required

**Erosion & Landslip**

<input type="checkbox"/>	Existing	<input checked="" type="checkbox"/>	Unlikely
<input type="checkbox"/>	Potential		
Level of Constraint:			
<input type="checkbox"/>	Nil	<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Minor	<input type="checkbox"/>	Major
Mitigation Measures: None required			

**Fill (Imported)**

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Level of Constraint:			
<input checked="" type="checkbox"/>	Nil	<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Minor	<input type="checkbox"/>	Major
Mitigation Measures: See Section 1 None required			

**Flooding**

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Level of Constraint:			
<input checked="" type="checkbox"/>	Nil	<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Minor	<input type="checkbox"/>	Major
Mitigation Measures: None required			

**Groundwater**

Present in Test Hole			
<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Bores on Subject Land			
<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
Nearest Bore			
<input type="checkbox"/>	0 – 50 m	<input checked="" type="checkbox"/>	> 150 m
<input type="checkbox"/>	50 – 100 m		
Level of Constraint:			
<input checked="" type="checkbox"/>	Nil	<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Minor	<input type="checkbox"/>	Major
Mitigation Measures: See Section 1 None required			

**Land Suitability**

<input checked="" type="checkbox"/> Yes	<input type="checkbox"/> No
Level of Constraint:	
<input type="checkbox"/> Nil	<input type="checkbox"/> Moderate
<input type="checkbox"/> Minor	<input type="checkbox"/> Major
Mitigation Measures: See Section 1 None required	

**Landform**

<input type="checkbox"/> Waxing divergent	<input checked="" type="checkbox"/> Linear divergent	<input type="checkbox"/> Waning divergent
<input type="checkbox"/> Waxing planar	<input type="checkbox"/> Linear planar	<input type="checkbox"/> Waning planar
<input type="checkbox"/> Waxing convergent	<input type="checkbox"/> Linear convergent	<input type="checkbox"/> Waning convergent
Level of Constraint:		
<input checked="" type="checkbox"/> Nil	<input type="checkbox"/> Moderate	
<input type="checkbox"/> Minor	<input type="checkbox"/> Major	
Mitigation Measures: None required		

**Rock Outcrops**

<input type="checkbox"/> Yes	<input checked="" type="checkbox"/> No
Level of Constraint:	
<input checked="" type="checkbox"/> Nil <10%	<input type="checkbox"/> Moderate 10% - 20%
<input type="checkbox"/> Minor <10%	<input type="checkbox"/> Major >20%
Mitigation Measures: See Section 1 None required	

**Set Back Distances (see Table 1 Section 3)**

<input checked="" type="checkbox"/> Compliant	<input type="checkbox"/> Non-compliant
Level of Constraint:	
<input checked="" type="checkbox"/> Nil	<input type="checkbox"/> Moderate
<input type="checkbox"/> Minor	<input type="checkbox"/> Major
Mitigation Measures: See Section 1 None required	

**Site Drainage**

<input checked="" type="checkbox"/> Good	<input type="checkbox"/> Poor
Level of Constraint:	
<input type="checkbox"/> Nil	<input type="checkbox"/> Moderate
<input type="checkbox"/> Minor	<input type="checkbox"/> Major
Mitigation Measures: None required	

**Stormwater Run-on & Run-off**

Diversion Drain

Yes

No

Level of Constraint:

Nil

Moderate

Minor

Major

Mitigation Measures: Stormwater management from Tullamore Crs.

**Slope**

0 – 5° or 0 – 8 %

10° – 15° or 18% - 20 %

5° – 10° or 8% - 18 %

> 15° or > 28%

Level of Constraint:

Nil

Moderate

Minor

Major

Mitigation Measures: None Required

**Surface Waters**

Distance

0 – 60 m

> 100 m

60 m – 100 m

Level of Constraint:

Nil

Moderate

Minor

Major

Mitigation Measures: None required, Note; false indication of stream on some maps.

**Vegetation**

Grass

Heavily Timbered

Lightly Timbered

Level of Constraint:

Nil

Moderate

Minor

Major

Mitigation Measures: None required

**Soil Test Pits / Auger Holes**

Single Soil Type

2 test pits/auger holes

Multiple Soil Type

additional test pits/auger holes conducted for geology

Fill

NA as imported soil

Visual tactile interpretation/classification. Bore Log attached.

## Soil Assessment

### Cation Exchange Capacity

Assessment:

Level of Constraint:


Nil

Minor


Moderate

Major

Mitigation Measures: See Section 1

### Colour & Mottling

Assessment: Drilling

Level of Constraint:

x

Nil

Minor


Moderate

Major

Mitigation Measures: None required

### Electrical Conductivity (EC)

Assessment: ...dS/m

Level of Constraint: < 2.0 dS/m

x

Nil

Minor


Moderate

Major

Mitigation Measures: See Section 1 None required

### Emerson Aggregate Class

Assessment:

Level of Constraint:


Nil (4, 5, 6, 8)

Minor


Moderate

Major (1, 2, 3)

Mitigation Measures: See Section 1 None required

### Permeability & Design Loading Rate

Assessment: Not done

Level of Constraint:

X

Nil

Minor


Moderate

Major

Mitigation Measures: Indicative DIRas per table



**pH (Water)**

Assessment:

Level of Constraint:

x

Nil

Minor


Moderate

Major

Mitigation Measures: See Section 1 None required

**Rock Fragments**

Assessment: Drilling

Level of Constraint:

X

Nil 0%

Minor<10%


Moderate 10% - 20%

Major>20%

Mitigation Measures: See Section 1 None required

**Sodicity[Exchangeable Sodium Percentage(ESP)]**

Assessment:

Level of Constraint:<8%


Nil

Minor


Moderate

Major

Mitigation Measures: See Section 1 None required

**Sodium Absorption Ratio (SAR)**

Assessment:

Level of Constraint:


Nil

Minor


Moderate

Major

Mitigation Measures: See Section 1 None required

**Soil Depth**

Assessment: Drilling

Level of Constraint:

X

Nil>1.5 m

Minor>1.5 m


Moderate 1.5 m – 1.0 m

Major<1.0 m

Mitigation Measures: None required

**Soil Horizons (refer to attached Bore Log)**

<b>Top Soil Depth</b>			
<input type="checkbox"/>	0 – 100 mm	<input type="checkbox"/>	0 – 300 mm
<input type="checkbox"/>	0 – 200 mm	<input type="checkbox"/>	> 300 mm
<b>Sub-soil Depth</b>			
<input type="checkbox"/>	0 – 100 mm	<input type="checkbox"/>	0 – 300 mm
<input type="checkbox"/>	0 – 200 mm	<input type="checkbox"/>	> 300 mm
<b>Level of Constraint:</b>			
<input type="checkbox"/>	Nil	<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Minor	<input type="checkbox"/>	Major
Mitigation Measures: See Section 1    None required			

**Soil Categories (adapted from AS1547:2012)**

<b>Top Soil Texture</b>			
<input type="checkbox"/>	1	<input type="checkbox"/>	2b
<input type="checkbox"/>	2a	<input type="checkbox"/>	3b
<input type="checkbox"/>	3a	<input type="checkbox"/>	4b
<input type="checkbox"/>	4a	<input type="checkbox"/>	5b
<input type="checkbox"/>	5a	<input type="checkbox"/>	6b
<input type="checkbox"/>	6a	<input type="checkbox"/>	4c
		<input type="checkbox"/>	5c
		<input type="checkbox"/>	6c
<b>Sub-soil Texture</b>			
<input type="checkbox"/>	1	<input type="checkbox"/>	2b
<input type="checkbox"/>	2a	<input type="checkbox"/>	3b
<input type="checkbox"/>	3a	<input type="checkbox"/>	4b
<input type="checkbox"/>	4a	<input type="checkbox"/>	5b
<input type="checkbox"/>	5a	<input type="checkbox"/>	6b
<input type="checkbox"/>	6a	<input type="checkbox"/>	4c
		<input type="checkbox"/>	5c
		<input type="checkbox"/>	6c
<b>Level of Constraint:</b>			
<input checked="" type="checkbox"/>	Nil - 2b, 3b & 4a	<input type="checkbox"/>	Moderate - 4b, 4c & 5a
<input type="checkbox"/>	Minor - 2b, 3a, 3b & 4a	<input type="checkbox"/>	Major - 1, 2a, 5b, 5c, 6a, 6b & 6c
Mitigation Measures: See Section 1			

**Soil Structure (from Table E4 AS1547:2012)**

<input type="checkbox"/>	Massive	<input type="checkbox"/>	Moderate
<input type="checkbox"/>	Single grained	<input type="checkbox"/>	Strong
<input type="checkbox"/>	Weak		

See Section 1

**Soil Mottling**

<input type="checkbox"/>	Yes	<input checked="" type="checkbox"/>	No
--------------------------	-----	-------------------------------------	----

**Top Soil Primary Colour (MunsellGley2 Soil Chart)**

Value	2.5	3	4	5	6	7	8
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Chroma	1	2	3	4	6	8
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Sub-soil (MunsellGley2 Soil Chart)**

Value	2.5	3	4	5	6	7	8
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Chroma	1	2	3	4	6	8
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

**Clay (Munsell10YR Soil Chart)**

Value	2.5	3	4	5	6	7	8
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

Chroma	1	2	3	4	6	8
	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>	<input type="text"/>

See Section 1

**Watertable Depth**

Visualising Victoria's Groundwater: 20 m – 50 m

**Available Soil Information**

<input type="checkbox"/>	Site Classification *	<input type="checkbox"/>	Other
<input type="checkbox"/>	Landslip Risk Assessment *	<input type="checkbox"/>	None Known

\* Contact this office for copies of these documents

**AVAILABLE AREA & SETBACK DISTANCES**

**Effluent Management Area**

See section 1

**CUMULATIVE IMPACTS**

**Cumulative Detrimental Impacts**

Anticipated  
 Yes  No  
 Details:

**6 SYSTEM SELECTION & DESIGN**

**Wastewater Load Design**

See Section 1

**Existing System**

Yes  No  
 Primary Treatment System  Secondary Treatment System

**Target Effluent Treatment Quality**

Primary System Standard  Secondary System Standard

**Capacity of Land to Assimilate Wastewater**

Primary Treatment System  
 Complies  Non-compliant  
 Secondary Treatment System  
 Complies  Non-compliant

**Domestic Wastewater Management System**

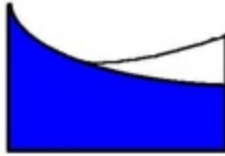
System Description  
 Attached  Developer to Supply  
 See Section Three

**7 MITIGATION MEASURES**

Required  
 Yes  No  
 Suggested Measure/s  
 Stormwater management  
 Soil amelioration  
 Vegetation establishment & management  
 Details: None required

**SECTION THREE****SITE MANAGEMENT PLAN**

Attached

 Yes No

**2020  
 ENGINEERING  
 SOLUTIONS**

2020 Engineering Solutions

1745 Colac-Forrest Road

COLAC VIC 3249

Ph: 0428 141 441 Fax: (03) 5233 4608

ABN 57 215 400 312 ACN 11 9460 865

**PROPERTY MANAGEMENT PLAN****SITE:** 15 Tullamore Crs Elliminyt**DEVELOPER:** Mr & Mrs Neave**REPORT NUMBER:** ES1846**DATE:** 20/03/2018**REPORTING TO:** AS 1547:2012

On-site domestic wastewater management

EPA Publication 891.4 July 2016

Code of Practice Onsite Wastewater Management

Barwon Water / Wannon Water

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## **1 PREAMBLE**

This Property Management Plan is intended for use by property owners in Barwon Water drinking water supply catchments. It is written for occupancies with onsite wastewater treatment systems, but also applies to other developments where management of risk to downstream water quality is required.

This document must not be considered a definitive plan or control for all properties and wastewater systems. The landowner property management plan is drafted with consideration to planning permit requirements, EPA Publication 891.3 "Code of Practice Onsite Wastewater Management", the Land Capability Assessment, and AS1547:2012 "On-site domestic wastewater management".

The plan must be maintained by the landowner and amended when required. Any increased loading on the property or system failure requires the review of the existing Land Capability Assessment and Waste Water Management System. Any amendment to the plan must be submitted to Barwon Water for endorsement.

The plan must be kept on site and be available for inspection by Council or other government agencies.

### **1.1 Property Owner Responsibilities**

Property owners and occupiers are responsible for reducing risks to downstream water quality that originate from their property. This includes:

- ensuring pipework & wastewater systems don't leak;
- keeping wastewater systems well maintained & in good repair;
- appropriately managing herbicides, pesticides & other chemicals;
- minimising erosion & sediment movement;
- maintaining buffers of native vegetation around watercourses;
- compliance with Council and EPA requirements; and
- implementing this Property Management Plan.

## 2 EMERGENCY CONTACT NUMBERS

PROPERTY MANGEMENT PLAN	
EMERGENCY OR ONSITE WASTEWATER MAINTENANCE CONTACT NUMBERS	
POLICE, AMBULANCE, FIRE	000
PLUMBER	To be advised
ELECTRICIAN	To be advised
COUNCIL ENVIRONMENTAL HEALTH OFFICER	COLAC OTWAY SHIRE 03 5232 9400
EPA	1300 372 842
SYSTEM SUPPLIER	COLAC CEMENT PRODUCTS 03 5231 5231
SYSTEM SERVICE AGENT	COLAC CEMENT PRODUCTS 03 5231 5231
SEPTIC PUMPOUT TANKER	RICHARDSON'S LIQUID WASTE 03 5234 6585
BARWON WATER	1300 656 007

If any of the following incidents, which could impact on downstream water quality, occur on site they should be reported to Barwon Water immediately:

Chemical spill      Fuel spill      Bushfire      Landslip

## 3 SITE PLAN

Site plans drawn to scale (attached) show dimensions and include the following details:

- the site address, including lot number & street number;
- title boundaries;
- direction of north;
- location of groundwater bores on the site & adjacent properties;
- contour lines (at 1 - 10 m intervals), or direction of slope & slope in percent;
- location of dams & waterways onsite & within 100m of the property;
- drainage lines & springs;
- stormwater cut-off drains adjacent to land application area & treatment system;
- location of actual & proposed buildings, sheds, driveways, paths & paddocks;
- location of actual & proposed infrastructure, especially drains;
- location & dimensions of the wastewater treatment plan; and
- location & dimensions of the land application area.

The site plan must be amended when any of the above details change (including on issue of as-constructed drawings), and the amended plan must be provided to Barwon Water.



#### **4 DETAILS OF THE WASTEWATER TREATMENT SYSTEM**

The plan requires the following details of the wastewater treatment system:

- manufacturer's manuals & spare parts list;
- as-installed drawings;
- copy of EPA Certificate of Approval;
- copy of Council wastewater system permit;
- description of the maintenance regime, to meet manufacturer's recommendations & the maintenance, monitoring & reporting requirements of the Council permit & the EPA certificate of approval; and
- in the case of a secondary treatment system, a copy of a current service contract with an accredited or experienced trained service technician to implement the maintenance regime.

All details relevant to the above will be available and submitted after issue of the permit as they are post developmental.

#### ***Sewage Treatment Plants***

##### **Envirosep SP2000 technology delivers low maintenance & operating costs**

Through a continual research and development program, Envirosep have designed and manufactured the SP2000. A unit that meets and exceeds consumer demands of an efficient, low maintenance wastewater treatment system.



## SP2000 Features and Benefits

### **Economical**

The efficiency of an aerated wastewater treatment system is measured by the transfer of air to the micro-organisms used in the biological process to remove waste.

### **Quiet Operation**

Smooth agitation to ensure there are no dead pockets where bio-solids can build up and timed aeration for minimal maintenance.

### **Easily Hidden**

Below ground multiple light weight tank construction makes for easier access to your site and provides more options for layout where space is restricted.

### **Maintenance**

Access service pit allows easier maintenance of system and large bio -solids storage tank reduces the frequency of bio-solids pump-outs.

### **Great for your garden**

The efficient fine bubble aeration combined with a unique Biotube design enhances the treatment. This will provide enough recycled water to irrigate a small to medium lawn area.

### Performance Guaranteed

Warranty is provided on all components from date of installation and two years on electrical components against defects in manufacture.

### Approved by the EPA – CA 125/14

Commercial models are also available with additional bio-media, back-up air pumps and water pumps for heavy duty domestic and/or trade use applications.

### Specifications

Capacity – Primary pre-treatment tank:	3,200 litres
Aeration chamber:	2,200 litres
Humus tank:	1,000 litres
Contact tank:	300 litres
Total capacity:	6,700 litres
Tank construction:	Concrete
Tank dimensions:	1750mm dia x 2300mm
Weight of tanks:	3 tonnes each
Weight of Pump Well	1.2 Tonnes

### Recommended for:

- Commercial installations
- EPA Approved, up to 5000 Litre daily
- System upgrades
- Existing homes
- Extensions
- New homes

### Warranty

The Envirosep SP 2000 is fully guaranteed against any defects in manufacture. Electrical components of the system are warranted against defects in manufacture for two years from date of installation.

### Service and Repairs

For more information about Envirosep service and repairs please contact:

### SSA – Septic Systems Australia

#### Postal Address:

P.O. Box 432,  
 Montrose, VIC, 3765  
 Australia

**Phone:** (03) 9509 6878

**Fax:** (03) 9509 6818

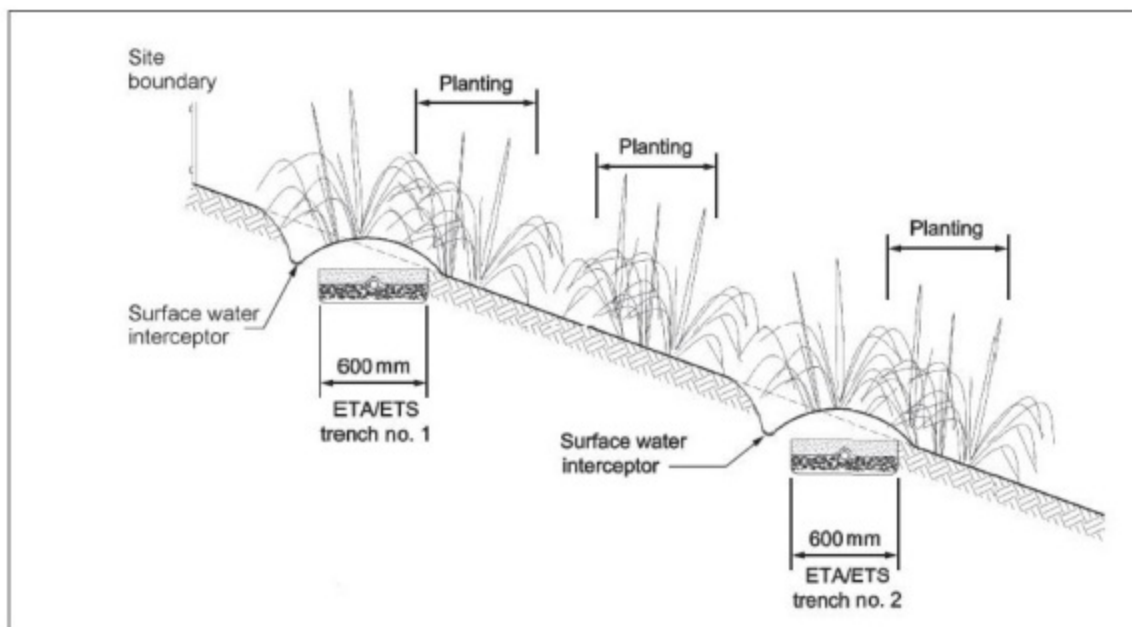
**Mobile:** 0438 118 445

**Email:** [lmorley@septicssystemsaustralia.com.au](mailto:lmorley@septicssystemsaustralia.com.au)

**NOTE:** Developer can supply following information post construction as most documentation relies upon approval to construct development and install a system. Included as example only. 2020Eng is independent and does not recommend particular systems.

## 5 DETAILS OF THE EFFLUENT DISPOSAL SYSTEM

FIGURE L6 ETA/ETS BED DETAILS



**NOTES:**

- 1 An LPED line can be used to dose load the ETA/ETS trenches.
- 2 Each ETA/ETS trench is constructed to disperse effluent into downslope topsoil so that plantings can provide assistance by evapotranspiration.

The plan requires the following details of the effluent disposal system:

- manufacturer's manuals & spare parts list for components including pumps, valves, and filters;
- as-installed drawings; and
- description of the maintenance regime, to meet manufacturer's recommendations & the maintenance, monitoring & reporting requirements of Council & the EPA. At a minimum, visual inspection of the land application area is required whenever the treatment system is inspected.

All details relevant to the above will be available and submitted after issue of the permit as they are post developmental.

## **6 WASTEWATER TREATMENT SYSTEM MAINTENANCE**

The waste water treatment system, including its pipework shall:

- be inspected & maintained as per the maintenance regime;
- be protected from vehicle, farm machinery or livestock damage;
- have any grease trap inspected at least quarterly & cleaned out regularly;
- have any vents kept clear & access covers in working order;
- be visually checked for damage especially after being pumped out - damage is to be repaired; and
- be replaced if not operating adequately.

Inspections of treatment units are to be recorded on the operation and maintenance log as well as any defects and repairs undertaken.

## **7 LAND APPLICATION AREA (Effluent Disposal) OPERATION & MAINTENANCE**

The following measures shall be implemented:

- the land application area & disposal system shall be inspected & maintained as per the maintenance regime;
- any evapotranspiration areas shall be designed to exclude vehicle, farm machinery, or stock access;
- surface water diversion drains shall be maintained upslope of & around the land application area & kept clean; and
- roof water drainage / hard stand drainage must be diverted away from the land application area.

Evapotranspiration and irrigation areas shall:

- have their grass mown & plants maintained to ensure these areas take up nutrients with maximum efficiency;
- be checked for wet spots, uneven grass colour & symptoms of emitter blockage (evidenced by under-irrigated dry areas or over-irrigated wet areas); and
- have blocked or damaged irrigation lines replaced.

Equipment shall be checked in the following manner:

- the manufacturer's instructions for maintaining & cleaning pumps, siphons & septic tank & outlet filters shall be followed;
- disc filters or filter screens on irrigation-dosing equipment shall be cleaned at least annually by rinsing back into the primary wastewater treatment unit; and
- irrigation lines shall be flushed at least annually to scour out any accumulated sediment.

Inspections are to be recorded on the Operations Log as well as any defects and repairs undertaken.

## **8 HOUSEHOLD MANAGEMENT OF WASTEWATER**

The following measures should be implemented for optimum performance of system.

### **8.1 Sludge Build Up Reduction**

- food waste including fats, grease & oils shall be disposed of in composting bin or worm farm
- no food waste disposal unit shall be installed
- sanitary napkins & hygiene products shall be disposed of in garbage

### **8.2 Encourage Bacteria**

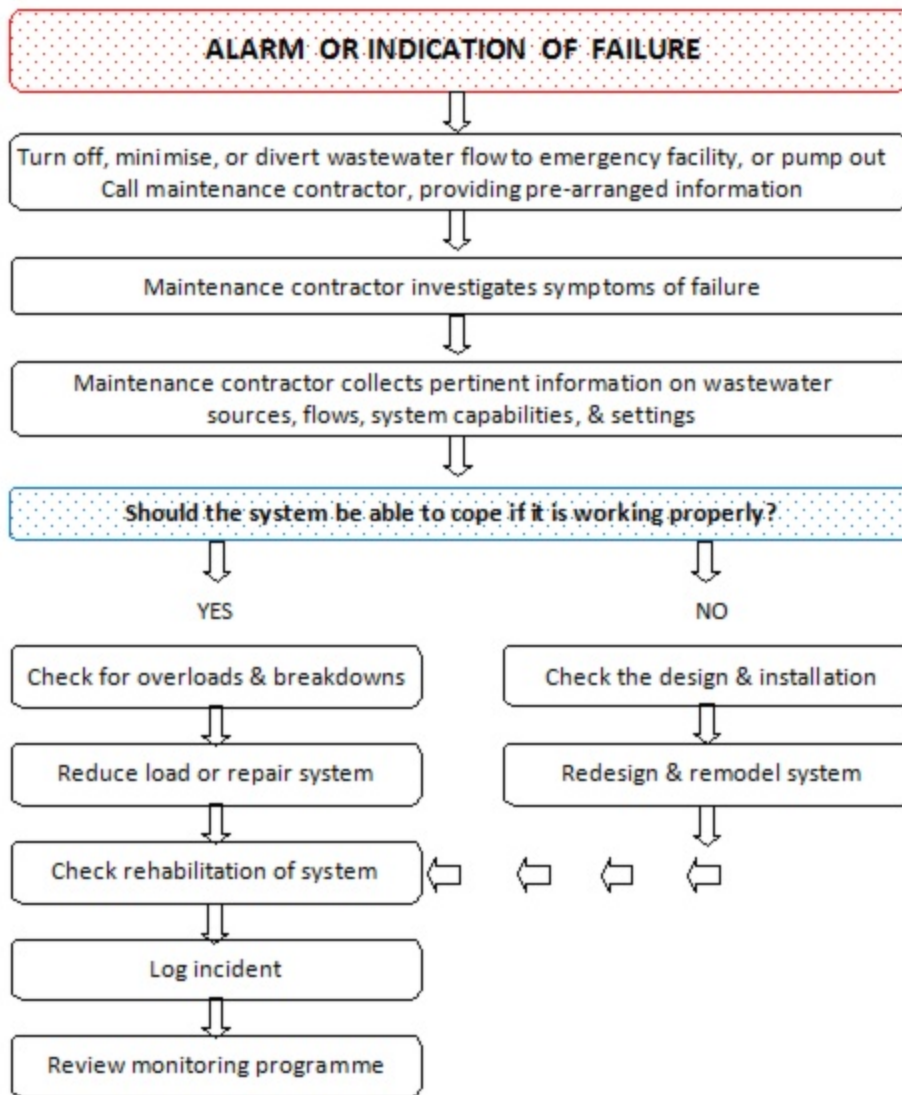
- use biodegradable soaps
- use low-phosphorus detergent
- use low-sodium detergent where soils are dispersive
- limit the use of cleaners such as bleaches, whiteners, nappy soakers & disinfectant, especially for toilet/shower cleaning
- do not put chemicals, thinners or paint down the drain or gulley trap

### **8.3 Reduce Effluent Volume Load**

- install & use water conserving fittings ie. shower heads & appliances
- wash full loads only in dishwasher & washing machine
- avoid system overload ie. 1 washing machine load per day & run washing machine & dishwasher at different times
- do not install a spa bath

## 9 CONTINGENCY PLAN

The plan below shall be followed for a sudden failure of the wastewater system. A generalised flow chart of actions to be taken is:



(Figure 6.3 from AS1547:2012)

## 10 SITE OPERATIONS & MAINTENANCE LOG

A site operation and maintenance log shall be kept for any wastewater system. This will assist in the determination of recurring problems/trends. The maintenance log is to show when scheduled maintenance is due. Matters to be recorded in the log include:

- pump out records;
- service records;

- inspections; and
- records of all irregular operation & response actions.

Copies of programmed maintenance and pump out (desludging) works performed by maintenance contractors, as required by the Council (septic tank) permit, are to be forwarded to the Council Environmental Health Officer. A copy of the latest maintenance certificate is to be retained with this property management plan and recorded on the maintenance log.

## **11 IDENTIFICATION, RISK ASSESSMENT & CONTROLS FOR OTHER POTENTIAL THREATS TO DOWNSTREAM WATER QUALITY**

The landholder is required to identify and assess the risk of other potential threats to downstream water quality, resulting from the development and use of the property ie.

- erosion risks; and
- risks from storage & application of chemicals.

Construction methods should be carried out in a manner which will minimise soil, sediment and nutrient movement from the property to water courses during development and use of the property. Potential sources of sediment movement to consider are:

- tracks & driveways;
- high traffic areas (vehicular, human, animal); and
- construction areas (occupancy, roads, fencing).

The design of stormwater run-off from the site should be described. Activities to encourage native vegetation retention and re-establishment within a 30 metre buffer zone along waterways, and to exclude stock from waterways, should be described. Activities to prevent the spread of noxious weeds should be described.

Chemicals such as herbicides and pesticides can be a risk to downstream water quality. The landowner should follow manufacturer's instructions and be familiar with the advice available from: <http://www.depi.vic.gov.au/agriculture-and-food/farm-management/chemical-use>. Procedures for chemical application and storage should be described in the Property Management Plan.

Businesses should contact Barwon Water to determine if a water quality monitoring program immediately up and down stream of works that pose a significant threat to water quality is required. This may include:

- analytical monitoring of turbidity following large-scale activities that could potentially result in sediment movement (e.g. cultivation, harvesting); and



- monitoring of the active ingredients within herbicides and pesticides following intensive and broad scale herbicide/pesticide applications.

**Appendix 1 Maintenance Log Template**

Treatment System Inspections, Maintenance & Repairs			
Due Date (if scheduled)	Actual Date of Activity	Name of Inspector/ Contractor	Description of Work, Observations & Comments

Effluent Disposal Area Inspections, Maintenance & Repairs			
Due Date (if scheduled)	Actual Date of Activity	Name of Inspector/ Contractor	Description of Work, Observations & Comments

## 11 INSURANCE CERTIFICATE OF CURRENCY



Integro Insurance Brokers Limited  
 2<sup>nd</sup> Floor • 100 Leaderhall Street • London  
 EC3A 3BP  
 Telephone: (0)20 7444 6000  
 Fax: (0)20 7444 6001  
 Website: www.integrouk.com

WEDNESDAY, 16 AUGUST 2017

### CERTIFICATE OF CURRENCY

**POLICY NUMBER:** IL1705880

**TYPE:** PROFESSIONAL INDEMNITY INSURANCE as may be more fully defined in the policy wording.

**INSURED:** 2020 Engineering Solutions

**ADDRESS:** 17/5 Colso-Forrest Road  
Colac VIC 3249  
Australia

**PERIOD OF INSURANCE:** From: 31<sup>st</sup> August 2017  
To: 31<sup>st</sup> August 2018

Both days at 16.00 Hours Local Standard Time at the Principal Address of the Insured

**LIMIT OF INDEMNITY:** AUD 2,000,000 any one Claim and in the aggregate including Costs and Expenses plus one reinstatement

**PLACED WITH:** 100% Certain Underwriters at Lloyd's

For and on behalf of Integro Insurance Brokers Limited

This certificate is a summary of the policy and is not intended to amend, extend, replace or override the policy terms and conditions. In the event of any consistency between this certificate and the policy, the policy prevails.

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Authorised and regulated by the Financial Conduct Authority under reference number 305496  
 Registered Office: 2<sup>nd</sup> Floor, 100 Leaderhall Street, London, EC3A 3BP  
 Registered Company No. 2957627

## **13 DISCLAIMER**

### **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.

#### Interpretation

The report must be considered in its entirety. Each part of the report may be dependent on other parts for meaningful interpretation. The report should also only be used by the client. It may not be relied upon by any other person without first conferring with 2020. The report should only be acted upon and interpreted by persons qualified and competent in the activities contemplated in the report.