

Form 2

**NOTICE OF AN APPLICATION FOR PLANNING PERMIT**

<b>The land affected by the application is located at:</b>	<b>237 Nicholson-Sarsfield Road NICHOLSON 3882 Lot: 23 PS: 303126</b>
<b>The application is for a permit to:</b>	<b>Use and development of a second dwelling</b>
<b>The applicant for the permit is:</b>	<b>C A Ryan</b>
<b>The application reference number is:</b>	<b>5.2024.146.1</b>

You may look at the application and any documents that support the application free of charge at: <https://www.eastgippsland.vic.gov.au/building-and-development/advertised-planning-permit-applications>

You may also call 5153 9500 to arrange a time to look at the application and any documents that support the application at the office of the responsible authority, East Gippsland Shire. This can be done during office hours and is free of charge.

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

**An objection must**

- ◆ **be made to the Responsible Authority in writing,**
- ◆ **include the reasons for the objection, and**
- ◆ **state how the objector would be affected.**

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

<b>The Responsible Authority will not decide on the application before:</b>	<b>Subject to applicant giving notice</b>
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If you object, the Responsible Authority will tell you its decision.

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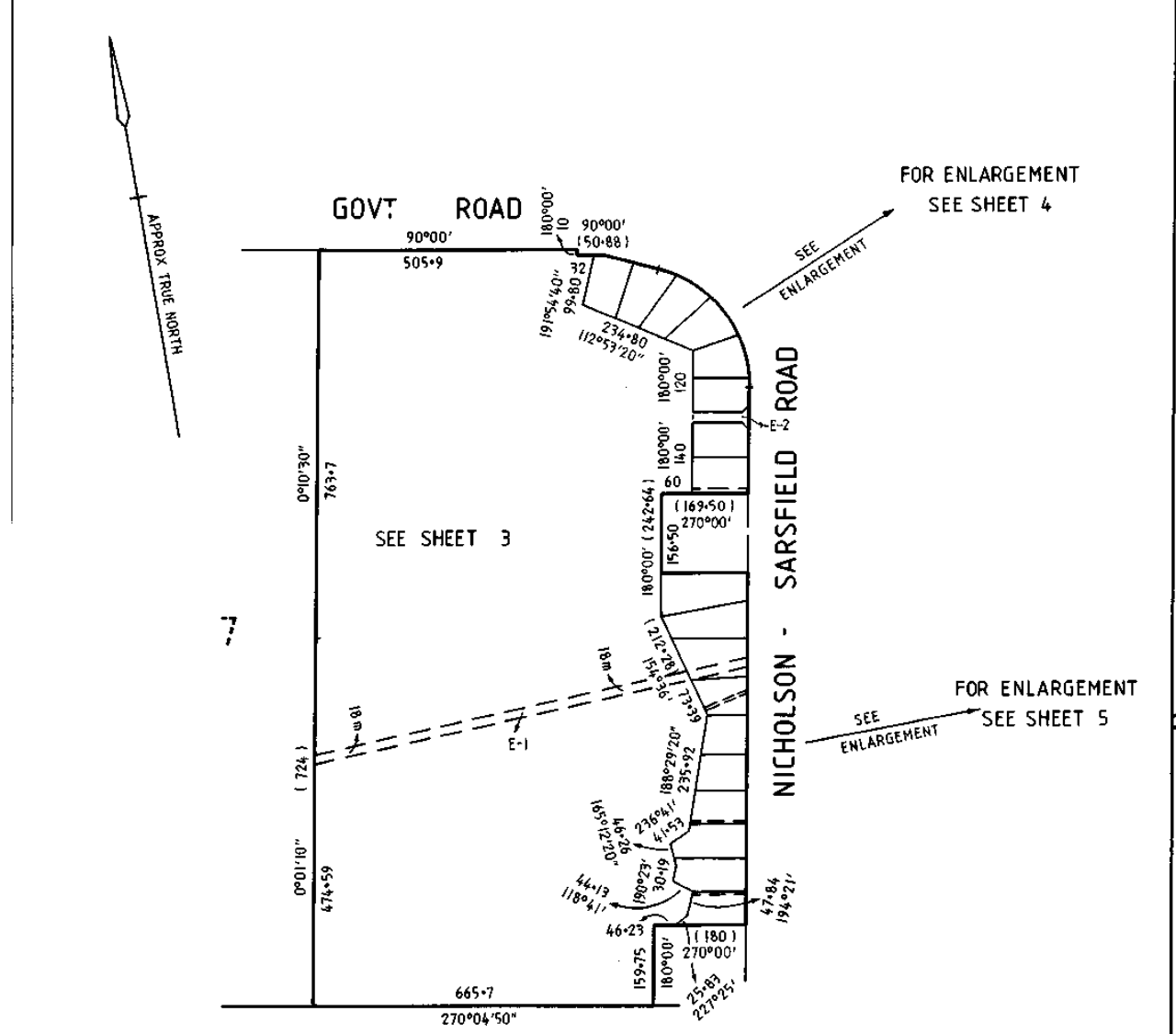
Delivered by LANDATA®. Land Registry timestamp 25/07/2006 09:51 Page 1 of 6  
© State of Victoria. This publication is copyright. No part may be reproduced by any process without the prior written permission of the State of Victoria pursuant to a written agreement. The information is only valid at the time and in the form obtained from the LANDATA® System. The State of Victoria accepts no responsibility for any subsequent release, publication or reproduction of the information.

<b>PLAN OF SUBDIVISION</b>		LTO use only <b>EDITION 5</b>	Plan Number <b>PS 303126 P</b>
<b>Location of Land</b> <b>Parish:</b> SARSFIELD <b>Township:</b> _____ <b>Section:</b> 2 <b>Crown Allotment:</b> ( PARTS ) 5 & 6 <b>Crown Portion:</b> <b>LTO Base Record:</b> PARISH <b>Title Reference:</b> VOL 9910 FOL 484 <b>Last Plan Reference:</b> LP 212816 LOT 2 <b>Postal Address:</b> NICHOLSON - SARSFIELD ROAD (at time of subdivision) NICHOLSON 3882 <b>AMG Co-ordinates</b> E 564 400 Zone: 55 (of approx. centre of land in plan) N 5815 900		<b>Council Certificate and Endorsement</b> Council Name: <i>SHIRE OF BAIRNSDALE</i> Ref: <i>80-90-0024</i> 1. This plan is certified under section 6 of the Subdivision Act 1988. <del>2. 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> <b>OPEN SPACE</b> (i) A requirement for public open space under section 18 of the Subdivision Act 1988 has/ <del>has not</del> been made. <del>(ii) The requirement has been satisfied.</del> <del>(iii) The requirement is to be satisfied in Stage _____</del> Council delegate Council seal Date <i>17 / 5 / 1990</i> <del>Re-certified under section 11(7) of the Subdivision Act 1988</del> Council Delegate Council Seal Date / /	
<b>Vesting of Roads and/or Reserves</b>		<b>Notations</b>	
Identifier	Council/Body/Person	<b>Staging</b>	This is/ <del>is not</del> a staged subdivision Planning Permit No. 77-90-0019
RESERVE N° 1	SHIRE OF BAIRNSDALE	<b>Depth Limitation</b>	DOES NOT APPLY
		LOT NUMBERS 4 TO 17 AND 24 TO 34 HAVE BEEN OMITTED FROM THIS PLAN	
		<b>Survey</b> 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	
		Received <input checked="" type="checkbox"/> Date <i>17 / 10 / 90</i>	
Easement Reference	Purpose	Width (Metres)	Origin
E-2	WAY & DRAINAGE	SEE DIAG	THIS PLAN
E-3	DRAINAGE	SEE DIAG	THIS PLAN
E-1	TRANSMISSION OF ELECTRICITY	18	SEC 103B STATE ELECTRICITY COMMISSION ACT 1958 & SEC 49 LANDS COMPENSATION ACT VIDE M880916T
		LOTS ON THIS PLAN SHIRE OF BAIRNSDALE SEC V	
		THIS IS AN L.T.O. COMPILED PLAN  CHECKED <i>31 / 12 / 91</i> <i>R.E. M...</i> Assistant Registrar of Titles	
		Sheet 1 of 5 Sheets	
<b>CROWTHER &amp; SADLER PTY. LTD.</b> Licensed Surveyors and Town Planners 152 Macleod Street, P.O. Box 722, BAIRNSDALE, 3875. Phone (051) 52 5011		LICENSED SURVEYOR (PRINT) <i>MICHAEL JOSEPH SADLER</i> SIGNATURE..... DATE / / REF 6575 VERSION	
		DATE / / COUNCIL DELEGATE SIGNATURE Original sheet size A3	

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**PLAN OF SUBDIVISION** Plan Number  
**PS 303126P**



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ORIGINAL SCALE 1:8000	SHEET SIZE A3	SCALE 60 0 100 200 300 400 LENGTHS ARE IN METRES
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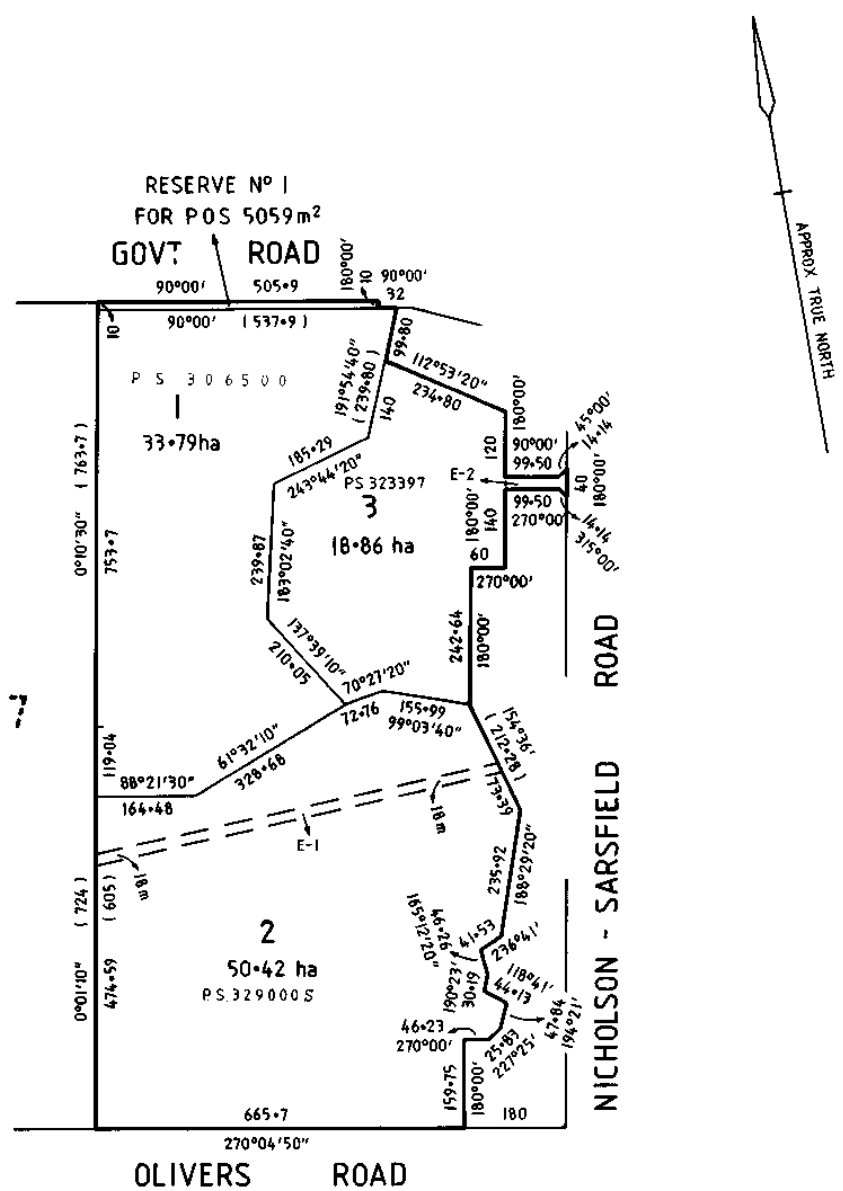
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DATE / /  
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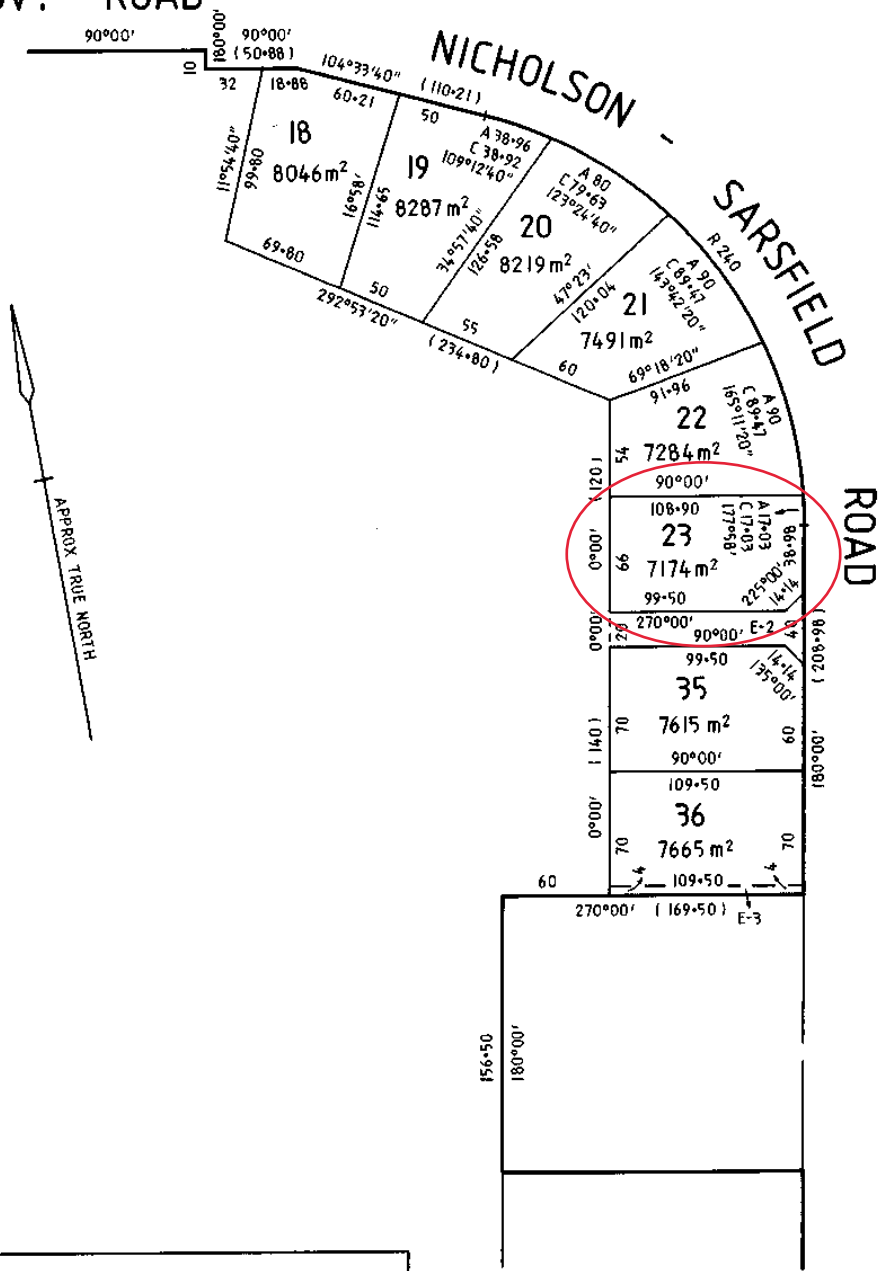
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**PLAN OF SUBDIVISION**

Plan Number  
**PS 303126 P**

GOVT ROAD



FOR CONTINUATION  
 SEE SHEET 5

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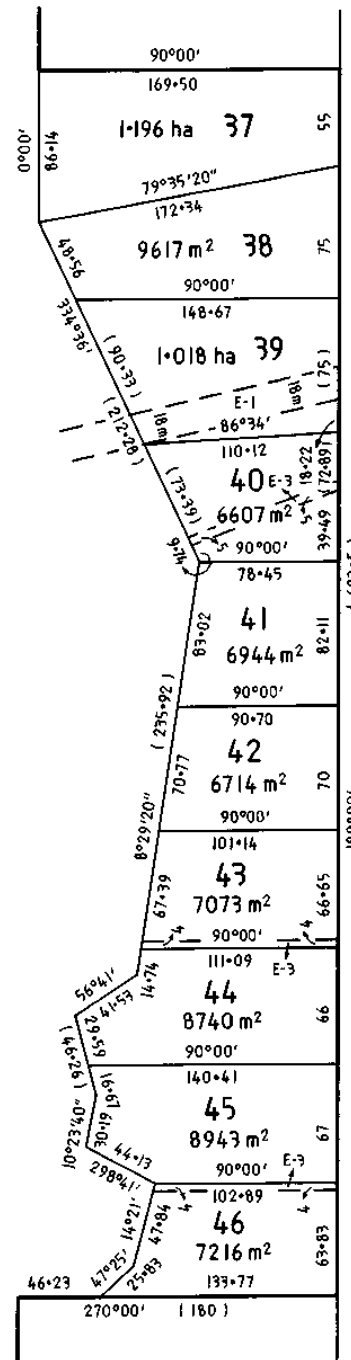
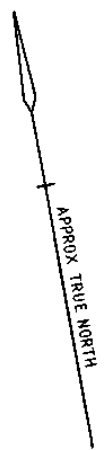
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<b>PLAN OF SUBDIVISION</b>	Plan Number <b>PS 303126 P</b>
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FOR CONTINUATION  
SEE SHEET 4



NICHOLSON - SARSFIELD ROAD

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ORIGINAL	SCALE
SCALE 1:2500	25 0 50 100
SHEET SIZE A3	LENGTHS ARE IN METRES

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DATE / /  
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PLAN NUMBER <b>PS 303126P</b>						
<b>MODIFICATION TABLE                      RECORD OF ALL ADDITIONS OR CHANGES                      TO THE PLAN</b>						
MASTER PLAN REGISTERED DATE: 30 / 10 / 90						
LAND	MODIFICATION	DEALING REFERENCE	DATE AND TIME ENTERED		NEW EDITION NUMBER	SIGNATURE OF ASSISTANT REGISTRAR OF TITLES
			DATE	TIME		
LOT S2	STAGE 2	R 625807 G	27/12/91	2:30 pm	2	<i>R.F. Wilson</i>
LOT 1	SUBDIVISION	PS 306500 A			2	<i>R.F. Wilson</i>
LOT 3	SUBDIVISION	PS 308754 F			2	<i>R.F. Wilson</i>
LOT 3	WITHDRAWN	PS 308754 F			3	<i>W.</i>
LOT 3	SUBDIVISION	PS 323397			4	<i>W.</i>
LOT 2	SUBDIVISION	PS 329000S			5	<i>R.F. Wilson</i>



# SIMON ANDERSON CONSULTANTS

27 Mar 2024

## SITE CLASSIFICATION AND SOIL REPORT

Craig Ryan

Proposed DPU Dwelling - 237 Nicholson-Sarsfield Rd, Nicholson

**SITE CLASSIFICATION:** P  
IN ACCORDANCE WITH AS2870-2011

**WIND CLASSIFICATION:** N1  
IN ACCORDANCE WITH AS4055-2012

**BAL RATING:** 12.5  
IN ACCORDANCE WITH AS3959 Sec 2.2 (Method 1) Sep 2011





**Craig Ryan, 237 Nicholson-Sarsfield Rd, Nicholson**

**GENERAL**

This Soil Investigation consists of the drilling of 2 boreholes on proposed site area using an auger. Disturbed soil samples collected have been subject to visual examination and classification.

**SITE DESCRIPTION**

This subject site has an existing single storey dwelling detached garage and large shed. The property displays manicured lawns, garden beds and numerous large trees throughout. The site displays a slight fall towards the southeast. Drainage is considered good. **NOTE: Any trees to be removed should have their root balls grubbed out. The resulting voids should be backfilled with cement-stabilised sand.**

**GEOLOGY**

Qa6 (Qp4); Quaternary Non-Marine (Alluvial) Deposits consisting of Fluvial: gravel, sand, silt.

**SITE CLASSIFICATION**

Samples from bores show the classification of the site to be **PROBLEM CLASS (P)** in accordance with **AS 2870 - 2011 "RESIDENTIAL SLABS AND FOOTINGS"**. This is due to the abnormal moisture conditions caused by the presence of nearby trees.

**NOTE:** These classifications are based on limited bores and should conditions vary after site excavation classification should be reassessed.

In the absence of the unusual moisture conditions described above, the site classification would be considered as **MODERATELY REACTIVE CLASS (M)** in accordance with **AS 2870-2011 "RESIDENTIAL SLABS AND FOOTINGS"**.

**RECOMMENDED FOUNDING MATERIAL (RFM) FOR FOOTINGS**

Stiff, Natural, Clay at approx.. 300mm Below existing surface. **Bearing Capacity 120kPa**

**RECOMMENDATIONS**

**Problem (P) Sites**

It is recommended that basic footings and slab details be designed by an experienced Structural Engineer.



BORE LOG B1

00	Grey/Brown Dry Silty	<b>TOPSOIL</b>
100	Grey/Brown Dry Very Dense	<b>SILT</b>
200	With Torrent Gravels	
300	Auger refusal – Quartz cobbles	
400		
500		
600		
700		
800		
900		
1000		
1100		
1200		

**Note:** Depths noted may vary if the site is cut and/or filled. All footings should penetrate the "Recommended Founding Material" by at least 100mm.



BORE LOG B2

00	Grey/Brown Moist Loamy	<b>TOPSOIL</b>
100	Grey/Brown Dry V Dense	<b>SILT</b>
200	with Torrent Gravels	
300	Yellow/Brown Moist Stiff	<b>CLAY</b>
400		
500	with Quartz Cobbles throughout	
600		
700		
800		
900		
1000		
1100		
1200		

Craig Ryan, 237 Nicholson-Sarsfield Rd, Nicholson

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### SITE PLAN

Not to scale

### MAINTENANCE

Changes in subsoil moisture can cause expansion and contraction in varying degrees to clays. It is important that the Owner take steps to maintain relatively constant moisture conditions in the subsoil. The Owner should be made aware of the following:

On clay sites trees and shrubs can cause substantial drying of the subsoil and possible shrinkage of the clay. Droughts or long dry spells in conjunction with trees and shrubs can cause damage. The planting of trees and shrubs at reasonable distances from the building can reduce the risk of damage. Trees should be avoided on reactive clay sites.

Plumbing and drainage lines should be maintained in good order on the site and should leaks occur prompt repairs are necessary to avoid saturation of the foundations. Also garden watering, in particular by fixed irrigation systems should be controlled. Proper garden maintenance should produce year round uniform subsoil moisture.

### SUBSOIL DRAINAGE

The installation of subsoil drainage systems on poorly drained reactive clays sites can stabilise moisture conditions.

### CRACKING

Minor cracking of brickwork will occur in a significant number of buildings on reactive clay sites. Footing systems that completely protect a building from cracking under all circumstances is both impossible and would be uneconomical to design.

### DETAILS

Various construction and architectural details can be adopted to reduce the effects of ground movement these are:

1. Articulation of brickwork.
2. Subsoil drainage.
3. Proper drainage of ground surface to avoid ponding of water against buildings.
4. Flexible plumbing connections.

### EXCAVATIONS

Any excavations required parallel to the footing shall be kept at a suitable distance to avoid undermining of the footing. Service trenches shall be filled with compacted natural site material to prevent the soil moisture moving into the trench backfill.

### NOTE

The owners attention is drawn to the "Foundation Maintenance and Footing Performance: A Homeowners Guide" by CSIRO publishing. Freecall 1800 645 051 or <http://www.publish.csiro.au/pid/7076.htm> to purchase.



Craig Ryan, 237 Nicholson-Sarsfield Rd, Nicholson

# BUSHFIRE ATTACK LEVEL (BAL)

## Section 2.2 Simplified Procedure (Method 1)

### 2.2.3.2 Exclusions – Low threat vegetation and non-vegetated areas

The Bushfire attack level shall be classified BAL-LOW where the vegetation is one or a combination of any of the following:

- (a) Vegetation of any type that is more than 100 m from the site.
- (b) Single areas of vegetation less than 1 ha in area and not within 100m of other areas of vegetation being classified.
- (c) Multiple areas of vegetation less than 0.25 ha in area and not within 20 m of the site or each other.
- (d) Strips of vegetation less than 20 m in width regardless of length and not within 20 m of the site or each other, or other areas of vegetation being classified.
- (e) Non vegetated areas, including waterways, **roads**, footpaths, **buildings** and rocky outcrops.
- (f) Low threat vegetation, including managed grassland, **maintained lawns**, golf courses, maintained public reserves and parklands, botanical gardens, vineyards, orchards, cultivated ornamental gardens, commercial nurseries, nature strips and wind breaks.
- (g) Unmanaged grassland, except in Tasmania

The subject site falls into the above exclusions, therefor the site is determined to be **BAL-LOW#** and no further assessment is required.

Clause 2.2.2: FDI is 100 as taken from table 2.3 Vic (b).

Clause 2.2.3: Vegetation has been determined to be Type.....

Clause 2.2.4: The distance of the site from the classified vegetation is ..... m.

Clause 2.2.5: The effective slope of the classified vegetation was determined using an inclinometer and is ..... deg up/down.

Clause 2.2.6: BAL was determined using Table 2.4.2 (see attached)  
BAL-..... is to be used to determine appropriate construction requirements.

Clause 2.2.7: Determine appropriate construction requirements using Figure 1.1 (see pg 2).  
Construction sections determined to be **section 3 and 5**.

#Notes: Under bushfire regulations released on the 8 September 2011 all new houses and alterations/additions in bushfire prone areas must meet a minimum Bushfire Attack Level (BAL) of 12.5  
The above BAL rating is based on condition of vegetation at time of assessment and is only valid if vegetation is maintained as such.



Simon Anderson BE (Civil)CPEng MIEAust No 930355  
Professional Engineer Registration No.: PE0003214

Date 27 Mar 2024

AS 3959—2009

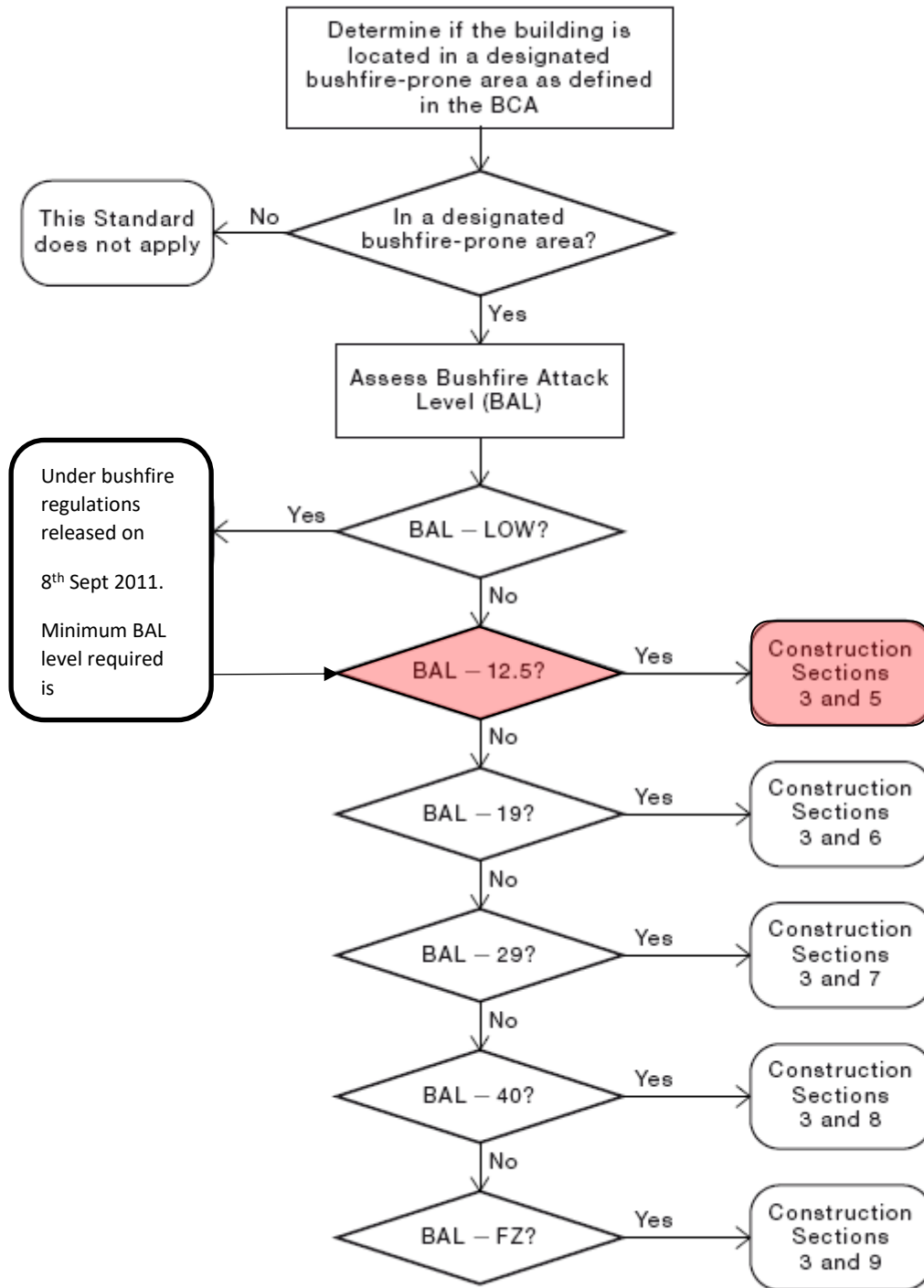



FIGURE 1.1 FLOW DIAGRAM SHOWING THE PROCESS FOR DETERMINING CONSTRUCTION REQUIREMENTS

 <p><b>Simon Anderson Consultants</b> CIVIL   STRUCTURAL   PROJECT ENGINEERS</p> <p>P.O. Box 1700 111 Main St Bairnsdale, Vic, 3875 ACN 073 392 266</p> <p>P.O. Box 566 191-193 Raymond St Sale, Vic, 3850 ACN 145 437 065</p>	<p><b>Job:</b> Proposed Dependent Persons Unit 237 Nicholson-Sarsfield Rd Nicholson</p>	<p><b>Date:</b> 27 March 2024</p>
	<p><b>Client:</b> Craig Ryan</p>	<p><b>Designed:</b> SJA</p>
<p><b>Checked:</b></p>	<p><b>Job No.:</b> 448283</p>	<p><b>Page No.:</b> 1 of 11</p>

# LAND CAPABILITY ASSESSMENT ON-SITE DOMESTIC WASTEWATER



**237 Nicholson-Sarsfield Rd, Nicholson**

## 1.0 INTRODUCTION

Simon Anderson Consultants were engaged to undertake a land capability assessment for the purpose of on-site domestic wastewater management of the Proposed DPU at 237 Nicholson-Sarsfield Rd, Nicholson. The field investigation and report have been undertaken by suitable experienced staff.

The assessment was completed in accordance with the EPA’s *Code of Practice – Onsite Wastewater Management* (EPA Publ. No. 891.4, July 2016), guidelines for *Land Capability Assessment For On-Site Wastewater Management* (EPA Publ. No. 746.1, March 2003), *On-Site Domestic Wastewater Management* (AS/NZS 1547:2012) and East Gippsland Shires *DWMP*.

Information and results are presented in table form for clear data presentation and ease of identification of key points. **Detailed recommendations presented on page 7 of the report. LCA is to be read in conjunction with Site Features Plan 448283-LC1.**


<b>Subject Land</b>	237 Nicholson-Sarsfield Rd, Nicholson
<b>Client</b>	Craig Ryan
<b>Email Address</b>	<a href="mailto:craigryan2022@gmail.com">craigryan2022@gmail.com</a>
<b>Contact</b>	Mobile: 0408 740 111
<b>Map Reference</b>	Vicroads 84 D6
<b>Municipality</b>	East Gippsland Shire Council
<b>Proposed Development</b>	2 Bedroom Residence (Potential Occupancy = No. of Bedrooms + 1) <sup>1</sup>
<b>Design Flow</b>	150 L/person/day <sup>2</sup> (for reticulated water supply and full water reduction fixtures)
<b>Anticipated Wastewater Load</b>	450 L/day
<b>Treatment System Required</b>	Secondary treated effluent to minimum 20/30 standard (ie. AWTS <sup>3</sup> or sand filter)
<b>Disposal System Required</b>	Sub-surface irrigation – Area of 230m <sup>2</sup>

<sup>1</sup> As identified in Victorian EPA Draft Code of Practice – Onsite Wastewater Management (publication 891.4, July 2016) Section 3.4.1

<sup>2</sup> As identified in Victorian EPA Draft Code of Practice – Onsite Wastewater Management (publication 891.4, July 2016) Table 4

<sup>3</sup> AWTS – Aerated Wastewater Treatment System (EPA approved)



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	<p><b>Client:</b> Craig Ryan</p>	<p><b>Designed:</b> SJA</p>
<p><b>Checked:</b></p>	<p><b>Job No.:</b> 448283</p>	<p><b>Page No.:</b> 2 of 11</p>

**2.0 PURPOSE/SCOPE OF ASSESSMENT**

<p><b>Purpose and Scope of Assessment</b></p>	<p>Broad-scale assessment for subdivisional purposes (often requires further lot-specific assessment at later date)</p>	<input type="checkbox"/>
	<p>Detailed investigation for lot-specific management requirements</p>	<input checked="" type="checkbox"/>

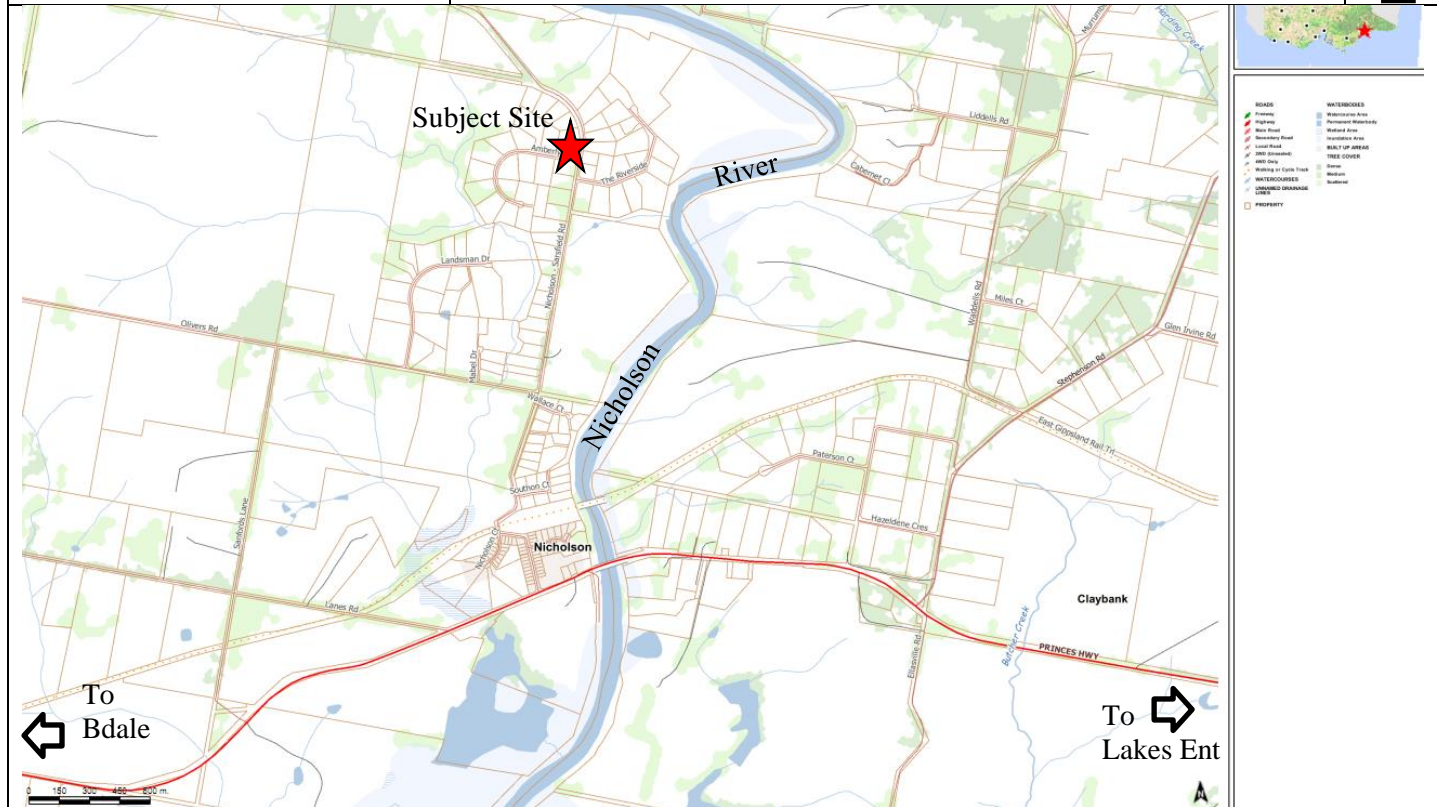



Figure 1: Locality Plan





Figure 2: Aerial view of subject site (approximate title boundaries shown)



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	<p><b>Client:</b> Craig Ryan</p>	<p><b>Job No.:</b> 448283</p>
<p><b>Checked:</b></p>	<p><b>Page No.:</b> 3 of 11</p>	

### 3.0 SITE KEY FEATURES

Criteria / Feature	Description	Implications for Wastewater Management
<b>Allotment/s</b>		
Title details	Lot 23, PS 303126	Council Property No: 1230
No. of Lots Proposed	1	
Lot size (EPA recommended minimum lot size = 1.0 ha)	7,174m <sup>2</sup>	Less than the EPA recommended 1.0 ha. Will require well managed and designed disposal system (refer to criteria outlined in Recommendations)
Dwelling Usage	Likely to be permanent	
Adjoining Lot sizes	0.7 – 1.0 ha in size.	Overall volume of wastewater being disposed to land in the local district is moderate.
Current Land Use	Existing 4 bedroom residence to the east of the proposed DPU development, currently utilizes a septic tank and ground absorption trenches for disposal of wastewater on-site.  Existing trenches 0.7m wide x 60m long (i.e. 1 x 40m run and 1 x 20m run)	The existing effluent disposal field shows evidence of failure. Likely due to the trenches not running along a level contour. Over time, effluent disposal build up has occurred at the low point of both trenches.    Installation of 2 x 30m runs of absorption trench, along a level contour would resolve the issue.
<b>Infrastructure</b>		
Zoning & Overlays	Low Density Residential Zone (LDRZ) Erosion Management Overlay (EMO)	
Nearest Reticulated Sewer	Township of Nicholson	Not feasible to connect to reticulated sewer.
Reticulated Water	Available on existing allotment	Increases the risk of excessive water usage.
Power	Available on existing allotment	Allows ready use of wastewater treatment plant
<b>Land Features</b>		
Geology	<b>Qa6 (Qp4)</b> Quaternary Non-Marine (Alluvial) deposits consisting of Fluvial: gravel, sand, silt.	Observed Soils dominated by gravelly silts, overlying stiff clays
Elevation	Approx 40m AHD	
Landscape Elements	The site is situated on a gently undulating plain	with a yellow duplex sedimentary landscape.
Fill	Natural soil profiles were observed throughout the site. No fill was observed.	No filling is proposed in the effluent management area.
Aspect	The site is generally flat, with only a slight fall towards the southeast	Increases sun exposure for improved efficiency of effluent disposal field
River/Stream Catchment	No creeks or waterways in allotment.	Risk is reduced
Dams/Surface Water	None	Risk is reduced
Rock Outcrop	None	Reduces limitations and maximises efficiency of effluent disposal fields
Erosion	No evidence of sheet or rill erosion.	The erosion hazard is low.
Vegetation	Manicured lawns & garden beds, with numerous well-established trees throughout.	Some vegetation clearing may be required for establishment of dwelling development
Climate	Temperate	Reduces variation in efficiency of effluent field
Solar Exposure	Moderate. Shading from the mature gums within the subject site may slightly reduce solar exposure.	Reduces efficiency of effluent disposal field
Recommended Buffer Distances	All buffer distances recommended in Table 5 of EPA Publication 891.4, (July 2016) are achievable and do not significantly limit siting of the LAA	
Available Land Application Area (LAA)	Considering all site constraints and the buffers mentioned above, the site has ample land that is suitable and available for land application of treated effluent.	By using a system that provides secondary treatment and pressurized sub-surface irrigation, there will be ample protection for surface and groundwater

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<p><b>Checked:</b></p>	<p><b>Job No.:</b> 448283</p>	<p><b>Page No.:</b> 4 of 11</p>

#### 4.0 SOIL ASSESSMENT & CONSTRAINTS

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

##### 4.1 Published Soils Information


Soils of the site have been mapped and described in Sustainable Soil Management “A reference manual to the major agricultural soils of the Bairnsdale and Dargo regions”, and are described as belonging to the Briagolong (Br) map unit. This unit occurs on alluvial sediments deposited in the Pleistocene period. The landform is a level to gently undulating plain, often dissected where it adjoins rivers and streams. All areas within the mapped area are cleared and used for grazing.

The surface soils are generally fine sandy loams, greyish brown to pale brown to about 200-400mm. The B Horizon soils are brown to yellowish brown medium to heavy clays to at least 1m. Occasionally small to medium pebbles (2 to 20mm) often occur throughout the soil profile. The soils are most likely to be classified as Yellow and Brown Sodosols using the Australian Soil Classification (Isbell, 1996).

##### 4.2 Soil Survey and Analysis

A Soil survey was carried out at the site to determine suitability for application of treated effluent. Subsoil investigations were conducted at two locations in the vicinity of the proposed building, as shown on the Site Features Plan, using a hand auger (B1-3). This was sufficient to adequately characterise the soils, as only minor variation would be expected throughout the area of interest.


Samples of all discrete soil layers for test bore 3 was collected for subsequent laboratory analysis of pH<sup>4</sup>, electrical conductivity<sup>5</sup> and Emerson Aggregate Class<sup>6</sup>. The soil profile of bore 2 is detailed below.

Depth (m)	Description	Horizon	
0.0	<b>TOPSOIL:</b> 10YR4/2 Dark Greyish Brown	<b>A1</b>	 <p style="text-align: right; color: yellow; font-weight: bold;">BORE 3</p>
0.1	Dry Silty Loam		
0.2	<b>SILT:</b> 10YR5/3 Brown Dry Dense Gravelly	<b>A2</b>	
0.3			
0.4	<b>CLAY:</b> 10YR4/6 Dk Yellowish Brown Dry Very Stiff	<b>B1</b>	
0.5			
0.6			
0.7			
0.8			
0.9			
1.0+			

<sup>4</sup> The pH of 1:5 soil/water suspensions was measured using a Merck pH strip


<sup>5</sup> EC (dS m<sup>-1</sup>) was calculated by measuring the electrical conductivity of 1:5 soil water suspension.

<sup>6</sup> Appendix C shows photographic results of Emerson Aggregate Test (Slaking/Dispersion)  
448283 LCA (Ryan)

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	<p><b>Checked:</b></p>	<p><b>Page No.:</b> 5 of 11</p>

Soil Features: TEST BORE B3			
Soil Horizon	A1	A2	B1
Depth (mm)	0-200	200-400	400+
Boundary Type		Gradual	Gradual
Field Texture Grade <sup>7</sup>	L	ZL	HC
Structure	Moderate	Weak	Massive
pH	7	7	6
EC (dS m <sup>-1</sup> )	0.00	0.00	0.01
Dominant Colour	10YR4/2 Dark Grey/Brown	10YR5/3 Brown	10YR4/6 Dakr Yellowish Brown
Mottles	None	None	None
Dispersion	8	5	1
Coarse Fragments (% Volume)	None	None	None
<b>Soil Category<sup>8</sup> (AS/NZ1547:2012)</b>	<b>3a</b>	<b>3b</b>	<b>6c</b>
Design Irrigation Rate <sup>9</sup> (DIR mm/day)	4	4	2
Design Loading Rate <sup>10</sup> (DLR mm/day)	15	10	NR

NA: Not Applicable      NR: Not Recommended

	Depth (m)	Description	Horizon	
	0.0	<b>TOPSOIL:</b> Dry Loam	<b>A1</b>	
	0.1	<b>SILT:</b> Dry Dense Gravely	<b>A2</b>	
	0.2			
	0.3			
	0.4	<b>CLAY:</b> Dry Very Stiff	<b>B1</b>	
	0.5			
	0.6			
	0.7			
	0.8			
	0.9			
	1.0			
	1.2			
	1.5+			


Soil Bore Log Profile

<sup>7</sup> Refer Appendix D for description details(all soil samples have been sieved to minus 2mm and air-dried before being analyzed)

<sup>8</sup> As identified in Victorian EPA Code of Practice – Onsite Wastewater Management (publication 891.4, July 2016) Appendix A, Table 9

<sup>9</sup> For sub-surface irrigation (Refer Table M1 of AS/NZS 1547:2012)

<sup>10</sup> For absorption trenches/beds

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	<p><b>Checked:</b></p>	
<p><b>Page No.:</b> 6 of 11</p>		

**5.0 LAND CAPABILITY ASSESSMENT MATRIX**


Land features	Land capability class rating				
	Very good (1)	Good (2)	Fair (3)	Poor (4)	Very Poor (5)
<b>General characteristics</b>					
Site drainage	No visible signs of dampness	Moist soil, but no water in pit		Visible signs of dampness	Water ponding on surface
Runoff	None	Low	Moderate	High - diversionary structures req'd	Very High - diversion not practical
Flood/inundation potential (yearly return exceedence)	Never		< 1 in 100	< 1 in 30	> 1 in 20
Proximity to watercourses	> 60m				< 60m
Slope (%)	0 - 2	2 - 8	8 - 12	12 - 20	> 20
Landslip	None Evident		Low potential for failure	High potential for failure	Present or past failure
Seasonal water table depth (m) (incl. perched water tables)	>5	5 - 2.5	2.5 - 2.0	2.0 - 1.5	< 1.5
Rock Outcrop (% of land surface containing rocks > 200mm)	0	< 10%	10-20%	20-50%	>50%
Vegetation Type	Turf or pasture				Dense forest with little understorey
Average Rainfall (mm/yr)	< 450	450 - 650	650 - 750	750 - 1000	> 1000
Pan Evaporation (mm/yr)	> 1500	1250 - 1500	1000 - 1250	-	< 1000
Fill	No Fill		Fill present		
<b>Soil profile characteristics*</b>					
Structure	High	Moderate	Weak	Massive	Single Grained
Profile depth (of limiting Horizon B1)	> 2.0m	1.5m - 2.0m	1.5m - 1.0m	1.0m - 0.5m	< 0.5m
Soil permeability category <sup>11</sup>	2 and 3	4		5	1 and 6
Presence of mottling	None		Some		Extensive
Coarse Fragments (% volume)	<10	10-20	20-40		>40
pH	6 - 8		4.5 - 6		<4.5, >8
Emerson Aggregate Test (dispersion/slaking)	4, 6, 8	5	7	2, 3	1
Salinity (dS/m) (Electrical Conductivity)	<0.3	0.3 - 0.8	0.8 - 2	2 - 4	>4
<b>Overall Site Rating<sup>12</sup></b>				<b>Poor</b>	<b>4</b>

\* relevant to the sites most restrictive soil layer(s)

<sup>11</sup> Refer Table 5.1 (Determination of Soil Category) of AS/NZS 1547:2012

<sup>12</sup> A description of each Land Capability Class Rating is provided in Appendix A. 448283 LCA (Ryan)



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	<b>Client:</b> Craig Ryan	<b>Checked:</b>
		<b>Page No.:</b> 7 of 11

## 6.0 CONCLUSION

This LCA has been prepared to accompany a development application to East Gippsland Shire Council for a Proposed Dependent Persons Unit and associated necessary wastewater management system. As such, this report provides recommendations for treatment and land application systems that are appropriate to the land capability.

The site has a number of limitations that result in the development being unsuitable for Primary treatment only (i.e. traditional septic tank and subsoil absorption trenches):

- Limiting Horizon B1 (Heavy Clays) have a very low permeability rate,
- Heavy Clays at very shallow depths (300mm),
- Massively structured (Category 6c) clay soils not suitable for disposal via absorption trenches.


The following section provides an overview of a suitable system, with sizing and design considerations. **Detailed design for the system is beyond the scope of this study, but should be undertaken at the time of building application and submitted to Council.**

## 7.0 RECOMMENDATIONS

It is recommended based on this LCA, that if the development of a Proposed Dependent Persons Unit on 237 Nicholson-Sarsfield Rd, at the location indicated on the Site Features Plan 448283 - LC1:

- Install a system that provides secondary treatment with disinfection to meet EPA requirements for irrigation. Indicative target effluent quality is a minimum EPA standard 20mg/L BOD and 30mg/L SS. Several suitable options are available, including aerated wastewater treatment systems (AWTS) and single pass sand filters. Either of these options is capable of achieving the desired level of performance and final selection is the responsibility of the property owner, who will forward details to Council for approval.
- On-site disposal of domestic wastewater should occur within the proposed Land Application Area (refer Site Features Plan 448283 - LC1).
- Calculation of Irrigation Area based on AS/NZ 1547 equation  $A=Q/DIR$ 
  - Q – 450 L/day;
  - DIR – 2 mm/day;
  - Irrigation Area – 225 m<sup>2</sup>
- To determine if the irrigation area recommended above is adequate, a water balance<sup>13</sup> modelling has been undertaken to achieve zero wet weather storage. The calculations are summarized below, with full details in Appendix B.
  - Average daily effluent load – 450 L
  - Design irrigation rate (DIR) – 2 mm/day;
  - Crop factor – 0.6 to 0.85; and
  - Retained Rainfall – 75%.
  - **Irrigation Area – 230m<sup>2</sup>**
  - Max Wet Weather Storage Depth – 0 mm (therefore area shown in bold to be adopted)
- Minimum setbacks and buffer distances must be obtained when establishing effluent disposal envelopes, as per *EPA Code of Practice – Onsite Wastewater Management, publication 891.4, (July 2016)*.
- The owner shall consult an irrigation expert familiar with wastewater irrigation equipment, to help design and install the irrigation system. The irrigation plan must ensure good, even application of effluent.

<sup>13</sup> Water Balance undertaken in accordance with EPA Publication 168 (1991), Guidelines for Wastewater Irrigation.  
448283 LCA (Ryan)

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<p><b>Checked:</b></p>	<p><b>Job No.:</b> 448283</p>	
<p><b>Page No.:</b> 8 of 11</p>		

## 8.0 MANAGEMENT PROGRAM

### 8.1 Installation Issues

To ensure the satisfactory installation and operation of the AWTS & sub-surface irrigation, the following measures are to be implemented:

- Construction of a shallow table or cut-off drain along the high sides of the effluent disposal area, extending to below the field;
- Overflow from any water storage tanks to be directed into a table drain, or equivalent, to discharge below the effluent disposal field in a manner to avoid scouring or washing away downstream of the discharge point;
- Stormwater flows from the roof must be discharged at a point well clear of the effluent disposal field and runoff from paved surfaces and driveways must be directed away from the disposal site.
- Installation of the sub-surface irrigation system to be undertaken when the soils are dry or moist, not when the ground is saturated;
- Sub-surface irrigation system to be designed to minimise root intrusion from trees;
- Sub-surface irrigation system to utilise pressure dosing to ensure effluent is applied uniformly throughout the effluent disposal area.

### 8.2 Ongoing Management & Maintenance Issues

To ensure the satisfactory ongoing performance of the proposed AWTS & sub-surface irrigation, the owners/occupiers will need to ensure that:

- No buildings or impermeable surfaces are constructed on or over the effluent disposal areas;
- Heavy equipment is kept away from effluent disposal areas whilst the soil is saturated;
- The effluent disposal field is maintained as a grassed area, or planted out with shrubs that tolerate wet conditions, have high evapo-transpiration capacity and can tolerate phosphorus levels typically found in treated effluent;
- Trees and/or thick shrubs **are not** to be planted out along the northern or western edges of the effluent disposal areas to prevent exposure to both wind and sun .

The installer of the AWTS & sub-surface irrigation is to ensure that the owners/occupants are aware of and fully understand their responsibilities in relation to operating the treatment system, maintenance requirements and what should be done in the event of any problems. The satisfactory ongoing performance and longevity of the AWTS & sub-surface irrigation can be enhanced by:


- Ensuring that maintenance requirements are undertaken regularly in accordance with the systems' requirements and that both they and future owners/occupiers are aware of the systems capabilities, limitations and ongoing requirements;
- Using biodegradable soaps, low phosphorous detergents and detergents that have low salt, sodium and chlorine levels;
- Limiting the use of germicides (such as strong detergents, disinfectants, toilet cleaners, whiteners and bleaches);
- Not flushing disposable nappies, sanitary napkins or other hygiene products into the systems;
- Not flushing chemicals, paint or similar substances into the systems.
- Fats, oils, milk, tea leaves, coffee grounds and other kitchen food liquids, particles and scraps should be composted in a compost bin. These organic wastes **SHOULD NOT** be disposed of into the onsite wastewater treatment system.

**NOTE:** This report and associated plan(s) does not constitute a Septic Tank Permit. Such a permit should be obtained separately from the Environmental Health Department of East Gippsland Shire Council after development approval is obtained and prior to plumbing works commencing.

## APPENDIX A

Capability Class	Degree of Limitation	General Description
Rating 1	None to Very Slight	The Proposed Dependent Persons Unit is suitable for on-site disposal of septic tank discharge. The limitations or environmental hazard from long-term use are considered very slight. Standard performance measures for design, installation and management should prove satisfactory.
Rating 2	Slight	The site has been identified as generally suitable for on-site effluent disposal but there is a slight associated environmental hazard expected. One or more land limitations are present, which may not be compatible with 'straight forward' conventional on-site disposal. The wastewater management program will require careful planning, adherence to specifications and adequate supervision.
Rating 3	Moderate	The site has only a fair capability for on-site effluent disposal with a moderate associated environmental risk always present. Very careful site selection, preparation and specialized design will be required to address the identified land constraints. A management program should be delivered to the responsible authority with the development application and prior to earthworks commencing. It is recommended that, in order to achieve BPEM, wastewater-processing systems which can attain a higher level of treatment with basic monitoring should be considered as an alternative to standard conventional trench disposal.
Rating 4	High	Areas have a poor capability rating with a high associated environmental risk. Considerable difficulties are expected during siting and installation of the wastewater treatment system and during routine operation. A very high Engineering input and close supervision would be needed to minimize the environmental impact. Alternative wastewater processing systems capable of consistently producing a high quality secondary effluent (such as aerated wastewater treatment plants) together with a close monitoring program should be seriously investigated and adopted.
Rating 5	Severe	Areas have a very poor capability and there is severe associated environmental risk. The areas are not generally considered suitable for disposal of septic tank effluent by trench systems. The high levels of Engineering input and management needed at all stages are unlikely to adequately address the identified land constraints and achieve a sustainable outcome. Reticulated sewerage is usually the only acceptable option.





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**Job:** Proposed Dependent Persons Unit  
237 Nicholson-Sarsfield Rd  
Nicholson

**Client:** Craig Ryan

**Checked:**

**Date:** 27 March 2024

**Designed:** SJA

**Job No.:** 448283

**Page No.:** 9 of 11

**APPENDIX B**

**Nicholson 84025**

Evap.data

**Bairnsdale 084100**

Mean

average Pan evaporation

Source: AS1547-1994 - Table G1

(Prepared by R.A. Patterson, Lanfax Labs. Armidale updated April 2006)


1	2	3	4	5	6	7	8	9		
Month	Days	daily pan per month (B.Met)	Pan Eo	Et +C*Eo	Rainfall P	Retained Rainfall Re=(1-r)P	LTAR*N	Disposal rate/month (Et-Re)+ LTAR*N	Effluent applied per month 450	Size of area (8)/(7)
		mm	mm	mm	mm	mm	mm	mm	L	m2
Jan	31	6.6	204.6	174	53.2	39.9	62	196.0	13950	71
Feb	28	6.1	170.8	145	44.2	33.2	56	168.0	12600	75
Mar	31	4.8	148.8	126	55.7	41.8	62	146.7	13950	95
Apr	30	3.7	111.0	67	52.4	39.3	60	87.3	13500	155
May	31	2.6	80.6	48	53.5	40.1	62	70.2	13950	199
Jun	30	2.4	72.0	43	59.1	44.3	60	58.9	13500	229
Jul	31	2.4	74.4	45	47.2	35.4	62	71.2	13950	196
Aug	31	3.0	93.0	56	45.3	34.0	62	83.8	13950	166
Sep	30	3.8	114.0	68	52.8	39.6	60	88.8	13500	152
Oct	31	4.7	145.7	124	64.6	48.5	62	137.4	13950	102
Nov	30	5.5	165.0	140	62.9	47.2	60	153.1	13500	88
Dec	31	6.3	195.3	166	63.2	47.4	62	180.6	13950	77
<b>Totals</b>		<b>1575.2</b>	<b>1203</b>	<b>1203</b>	<b>654.1</b>	<b>490.6</b>				

**TABLE G2 - Depth of stored effluent First trial - choose from col.9 table above**

1	2	3	4	5	6	7	8	9	10	11
month	first trial area (m2)	application rate (8)/(2) (mm)	Disposal rate (above) (mm)	(3)-(4) (mm)	Increase depth of stored effluent (5)/porosity (mm)	Starting depth for month	increase depth effluent +(6)	computed depth effluent (mm)	reset if Et deficit <0 (mm)	equivalent storage 10 x area (L)
Dec								0.0	0	
Jan	230	61	196	-135	-338	0	-338	-338	0	0
Feb		55	168	-113	-283	0	-283	-283	0	0
Mar		61	147	-86	-215	0	-215	-215	0	0
Apr		59	87	-29	-72	0	-72	-72	0	0
May		61	70	-10	-24	0	-24	-24	0	0
Jun		59	59	0	0	0	0	0	0	0
Jul		61	71	-11	-26	0	-26	-26	0	0
Aug		61	84	-23	-58	0	-58	-58	0	0
Sep		59	89	-30	-75	0	-75	-75	0	0
Oct		61	137	-77	-192	0	-192	-192	0	0
Nov		59	153	-94	-236	0	-236	-236	0	0
Dec		61	181	-120	-300	0	-300	-300	0	0
Jan		61	196	-135	-338	0	-338	-338	0	0
Feb		55	168	-113	-283	0	-283	-283	0	0
Mar		61	147	-86	-215	0	-215	-215	0	0
Apr		59	87	-29	-72	0	-72	-72	0	0
May		61	70	-10	-24	0	-24	-24	0	0

From calculations in tables above for optimised drainfield area, using Appendix G AS1547-1994

	<b>Porosity in disposal area</b>	<b>40%</b>	
<b>Variables Table</b>	<b>Runoff Coeff =</b>	<b>0.25</b>	percentage runoff
	<b>Summer Crop Factor =</b>	<b>0.85</b>	crop transpiration rate Oct-Mar
	<b>Winter Crop Factor =</b>	<b>0.6</b>	crop transpiration rate -Apr-Sep
Change as required	<b>LTAR =</b>	<b>2</b>	L/m2/day
	<b>FLAWS =</b>	<b>450</b>	L/day
	<b>Estimated area of effluent drainfield =</b>	<b>230</b>	square metres
	<b>Maximum depth of stored effluent =</b>	<b>0</b>	mm depth

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	<p><b>Client:</b> Craig Ryan</p>	
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**APPENDIX C**

RECORD OF FIELD TEXTURE DETERMINATION						
Soil	Grittiness	Stickiness	Plasticity	Stain	Ribbon (mm)	Grade
A1	None	Slight	Slight	None	25	L
A2	Slight	Moderate	Moderate	Slight	25	ZL
B1	None	Extremely	Extremely	Extremely	75+	HC


NONE                      SLIGHT                      MODERATE                      VERY                      EXTREMELY

**APPENDIX D**

Soil Category	Field Texture Grade		Behaviour of moist blobs	Ribbon length (mm)	Approx clay content %
1	<b>S</b>	Sand	coherence nil to very slight, cannot be moulded; sand grains of medium size; single sand grains stick to fingers	nil	< 5%
	<b>LS</b>	Loamy sand	slight coherence; sand grains of medium size; can be sheared between thumb and forefinger to give minimal ribbon of about 5mm	about 5	about 5%
2	<b>CS</b>	Clayey sand	slight coherence; sand grains of medium size; sticky when wet; many sand grains stick to fingers; discolours fingers with clay stain	5 - 15	5% to 10%
	<b>SL</b>	Sandy loam	bolus coherent but very sandy to touch; will form ribbon; dominant sand grains of medium size and readily visible	15 - 25	10% to 20%
3	<b>FSL</b>	Fine sandy loam	as for sandy loams, except that individual sand grains are not visible, although they can be heard and felt	15 - 25	10% to 20%
	<b>L</b>	Loam	bolus coherent and rather spongy; smooth feel when manipulated but with no obvious sandiness or "silkeness"; may be somewhat greasy to touch if much organic material present	25	about 25%
	<b>ZL</b>	Silty loam	coherent bolus, very smooth to silky when manipulated, will form a very thin ribbon and dries out rapidly	25	10% to 25%
4	<b>SCL</b>	Sandy clay loam	strongly coherent bolus, sandy to touch; medium size sand grains visible in finer matrix	25 - 40	20% to 30%
	<b>FSCL</b>	Fine sandy clay loam	as for sandy clay loam, except that individual sand grains are not visible although they can be heard and felt.	40 - 50	20% to 30%
	<b>CL</b>	Clay loam	coherent plastic bolus, smooth to manipulate	40 - 50	30% to 35%
	<b>ZCL</b>	Silty clay loam	as for clay loams but not spongy; very smooth and silky; dries out rapidly	40 - 50	30% to 35%
5	<b>SC</b>	Sandy clay	plastic bolus; fine to medium sand can be seen, felt or heard in clayey matrix	50 - 75	35% to 40%
	<b>SiC</b>	Silty clay	plastic bolus; smooth and silky to manipulate; long but very fragmentary ribbon; dries out rapidly	50 - 75	30% to 40%
	<b>LC</b>	Light clay	plastic bolus; smooth to touch; slight resistance to shearing between thumb and forefinger	50 - 75	35% to 40%
6	<b>LMC</b>	Light medium clay	plastic bolus; smooth to touch; slight to moderate resistance to ribboning shear	75	40% to 45%
	<b>MC</b>	Medium clay	smooth plastic bolus; handles like plasticine and can be moulded into rods without fracture; has moderate resistance to ribboning shear	> 75	45% to 55%
	<b>HC</b>	Heavy clay	smooth plastic bolus; handles like stiff plasticine; can be moulded into rods without fracture; has firm resistance to ribboning shear	> 75	50% +

*Soil Texture Grade Table (International System, soil sieved < 2mm) & Table E1 (Assessment of Soil Textures) pg 106 of AS/NZS 1547:2012*

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	<p><b>Client:</b> Craig Ryan</p>	<p><b>Designed:</b> SJA</p>
	<p><b>Checked:</b></p>	<p><b>Job No.:</b> 448283</p>
		<p><b>Page No.:</b> 11 of 11</p>

**9.0 REFERENCES**

Environment Protection Authority (July 2016). Publication No. 891.4, *Code of Practice – Onsite Wastewater Management*.

Environment Protection Authority (Mar 2013). Publication No. 746.1, *Land Capability Assessment For On-Site Wastewater Management*.

Environment Protection Authority (1991). Publication 168, *Guidelines for Wastewater Irrigation*.

McDonald, R.C., Isbell, R.F., Spreight, J.G., Walker, J and Hopkins, M.S. (1990). *Australian Soil and Land Survey: Field Handbook. Second Addition*. Inkata Press, Melbourne.

Standards Australia / Standards New Zealand (2012). AS/NZS 1547:2012 *On-Site Domestic Wastewater Management*.

Victorian Resources Online; <http://vro.depi.vic.gov.au/dpi/vro/vrosite.nsf/pages/vrohome>

Munsell Soil-Color Charts (2009 Year Revised / 2012 Production)

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NOTES:

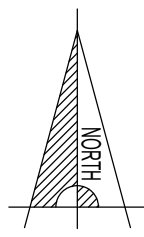
DENOTES NATURAL SURFACE LEVEL 10.23

DENOTES FLOOR LEVEL FL 12.00 APP.

ALL LENGTHS ARE IN METRES

DENOTES HABITABLE ROOM WINDOW  
DENOTES NON HABITABLE ROOM WINDOW  
(UPPER FLOOR & SILL R.L. WHERE NOTED)

HRW  
NHRW



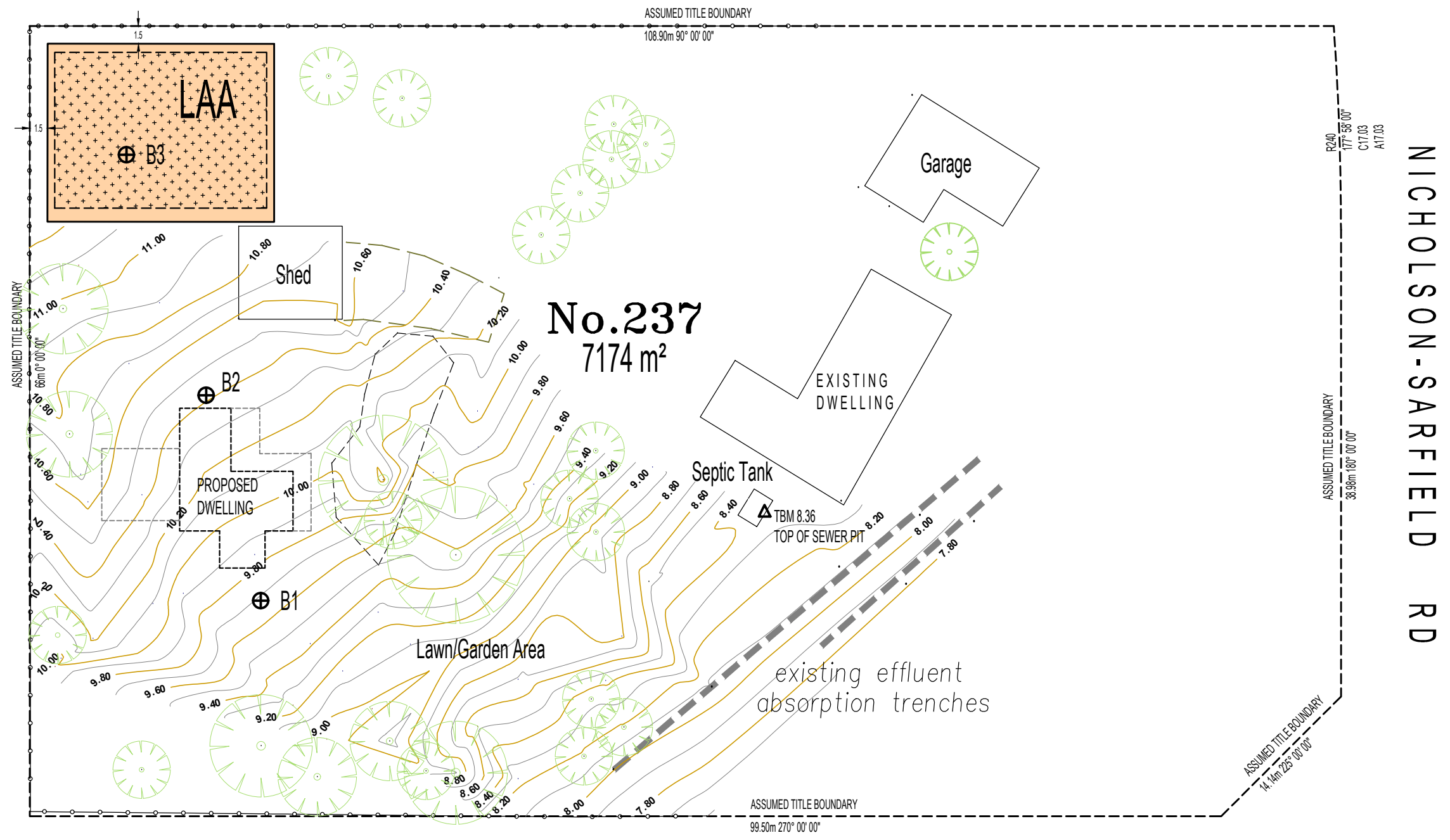
CONTOUR INTERVAL IS 0.10m

LEVELS ARE TO ARBITRARY DATUM

PLEASE NOTE:  
TITLES BOUNDARIES SHOWN MAY NOT REPRESENT EXACT TITLE POSITION.  
FOR EXACT TITLE POSITION IT IS RECOMMENDED THAT A TITLE RE ESTABLISHMENT SURVEY BE CARRIED OUT BY A LICENCED SURVEYOR



**ALL EXISTING SERVICES ARE TO BE LOCATED BY CONTRACTOR PRIOR TO COMMENCEMENT OF WORKS.**



legend

⊕ B1 TEST BORE LOCATION

SUITABLE LAND APPLICATION AREA (LAA - 280 m² available)

IRRIGATION AREA - 230 m² required (for a 2 bedroom dwelling)

**SITE FEATURES PLAN**

SCALE 1:400

AMBERLEY DRIVE

NICHOLSON-SARFIELD RD

REV	DESCRIPTION	CHKD	DATE
-	-	-	-

Design:	Project:
Drawn: JDP	<b>SITE ANALYSIS</b>
Checked: SJA	237 Nicholson-Sarfield Rd, Nicholson
Date: 27 Mar 2024	Client: Craig Ryan

Job No:	448283
Drawing No:	LC1
Revision No:	-

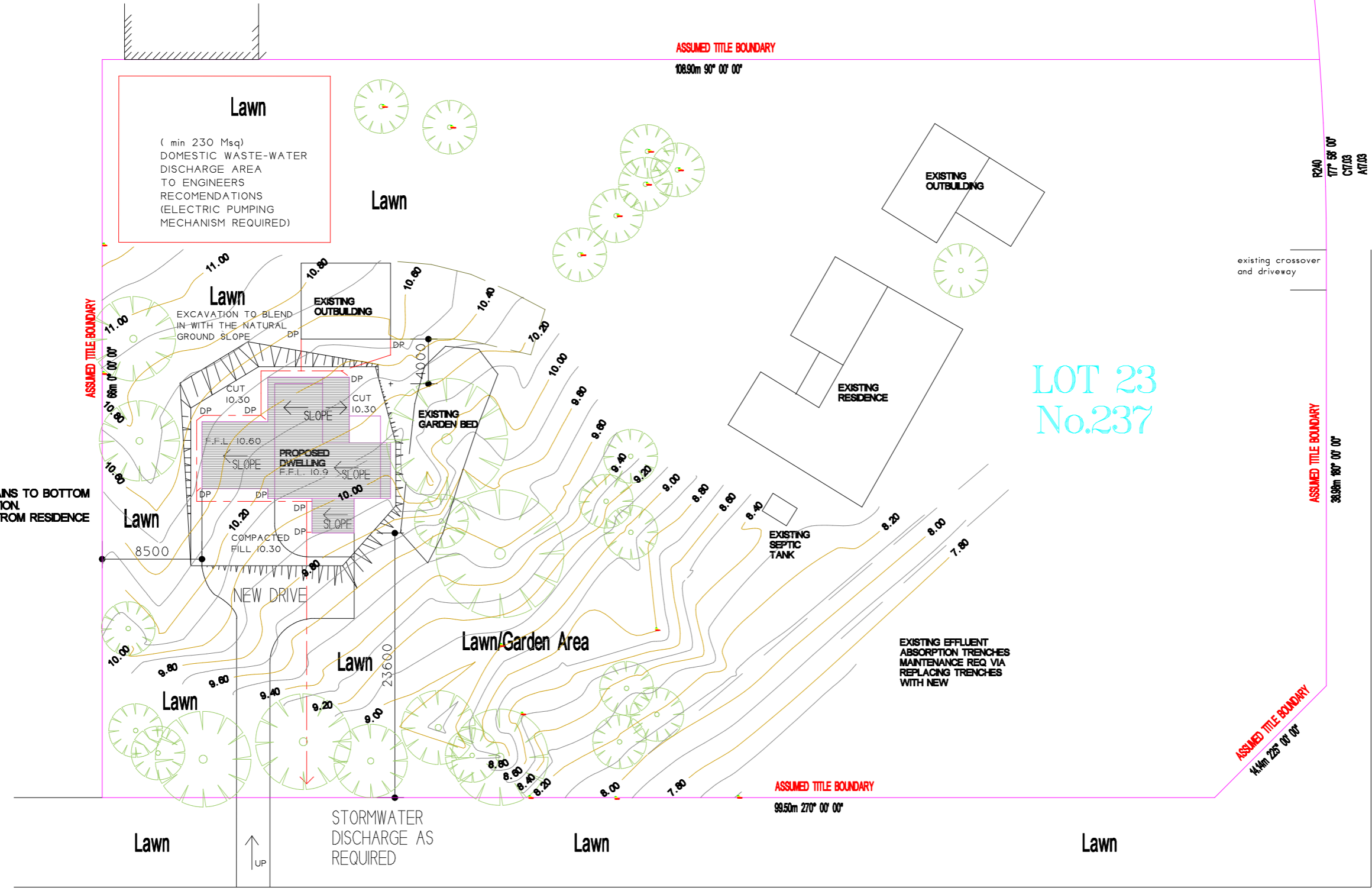


**Simon Anderson Consultants**  
CIVIL | STRUCTURAL | PROJECT ENGINEERS

P.O. Box 1700 111 Main St, Bairnsdale  
T: 03 5153 1500  
ACN 073 392 266  
bairnsdale@simonandersonconsultants.com.au



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NOTE:  
# PROVIDE SPOON DRAINS TO BOTTOM AND TOP OF EXCAVATION  
# GRADE CUT AWAY FROM RESIDENCE

**Lawn**  
( min 230 Msq)  
DOMESTIC WASTE-WATER DISCHARGE AREA TO ENGINEERS RECOMMENDATIONS (ELECTRIC PUMPING MECHANISM REQUIRED)

LOT 23  
No.237

NICHOLSON-SARFIELD ROAD

AMBERLEY DRIVE

SITE PLAN  
SCALE 1-400



NOTE-  
PLEASE ALSO REFER TO  
ENGINEERS DOCUMENTATION  
(BAL 12.5)

PROPOSED SECOND DWELLING FOR MR AND MRS RYAN  
ADDRESS- 237 NICHOLSON-SARFIELD ROAD NICHOLSON

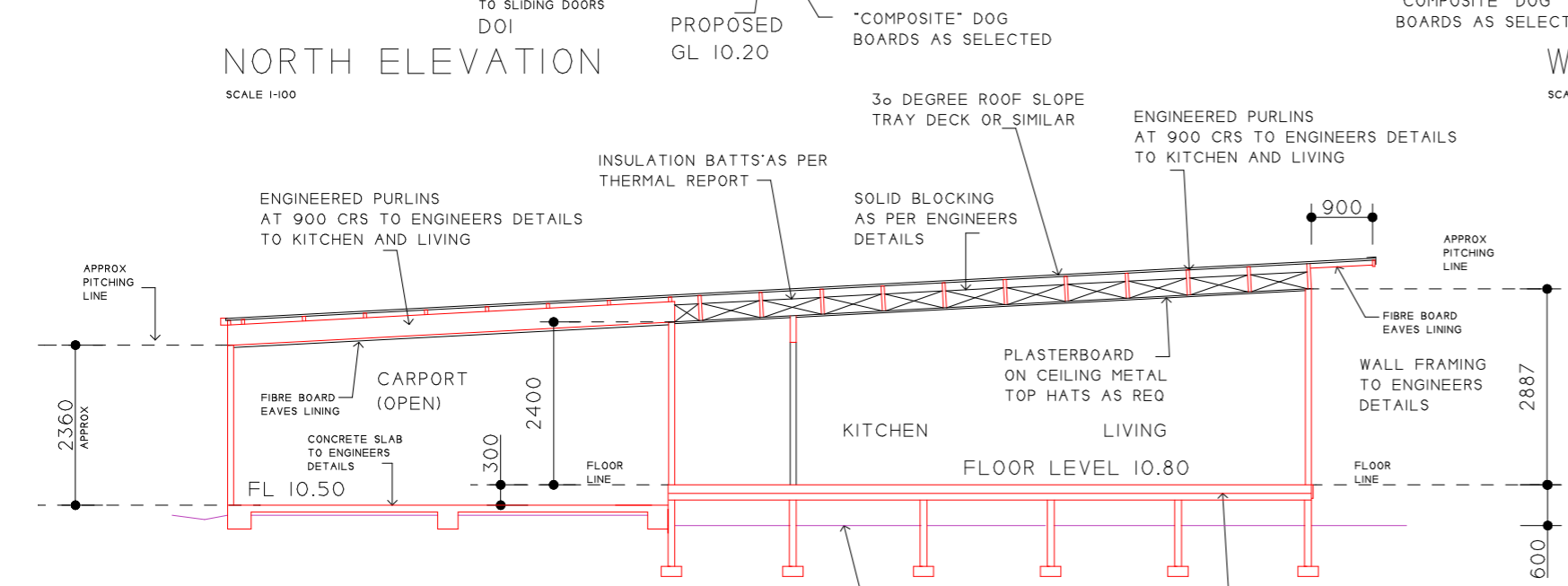
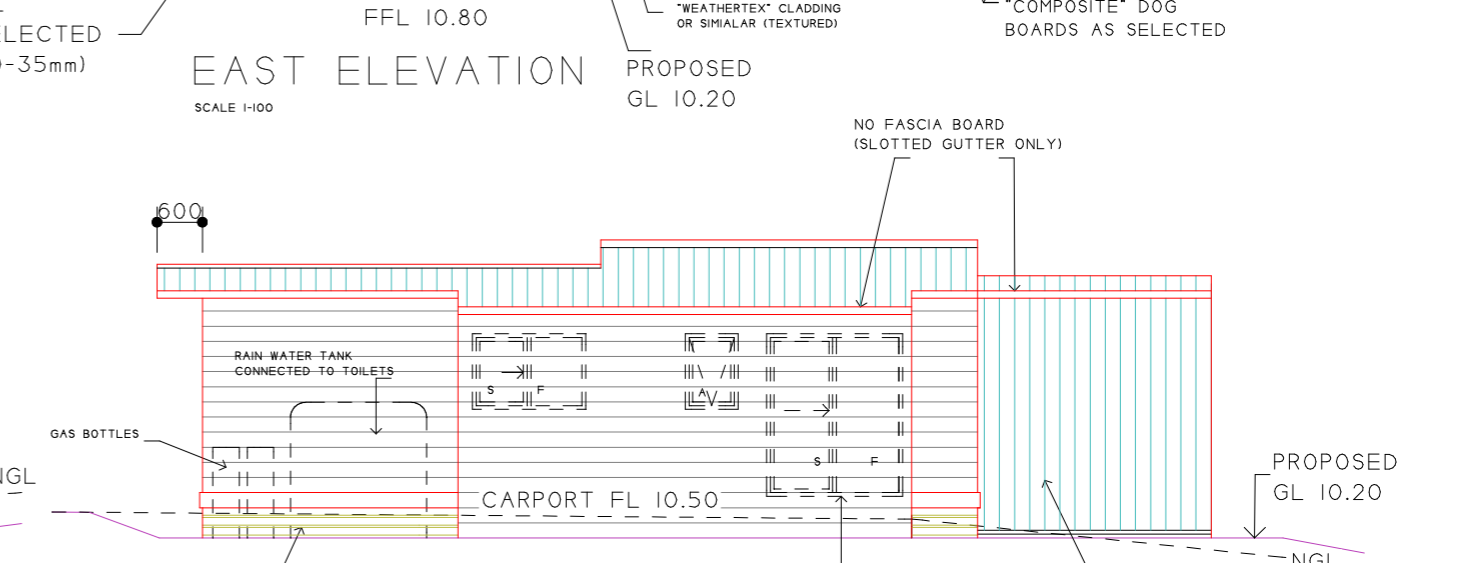
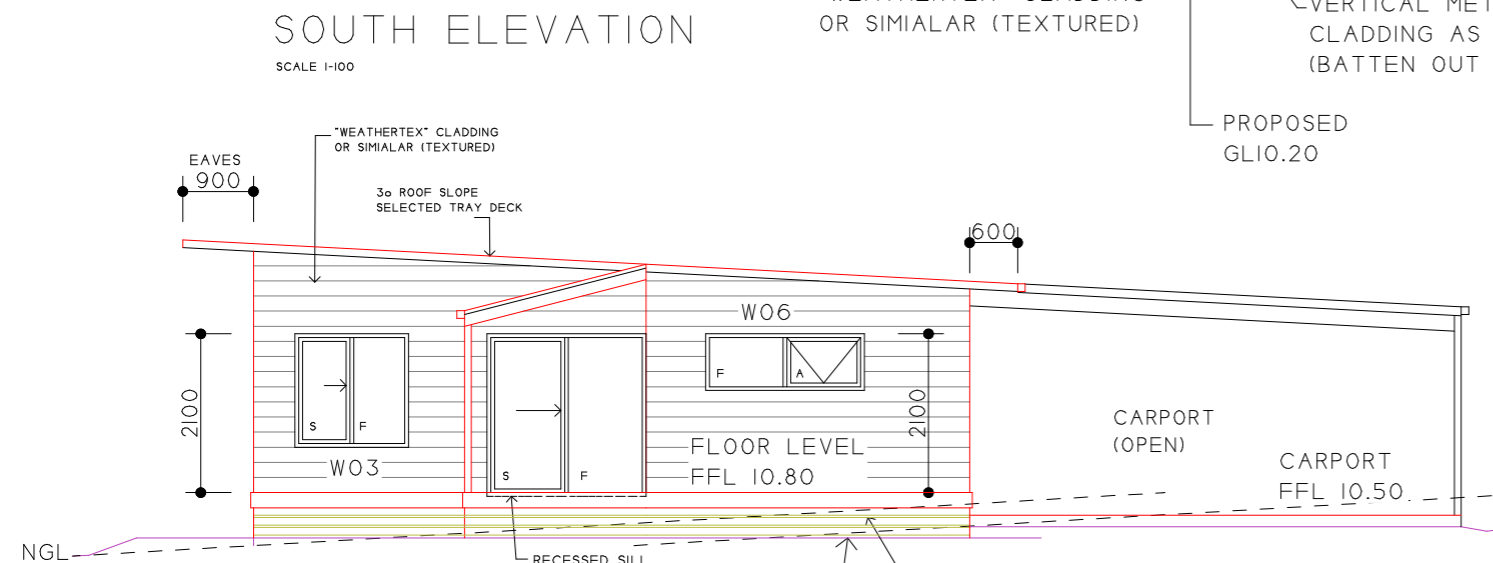
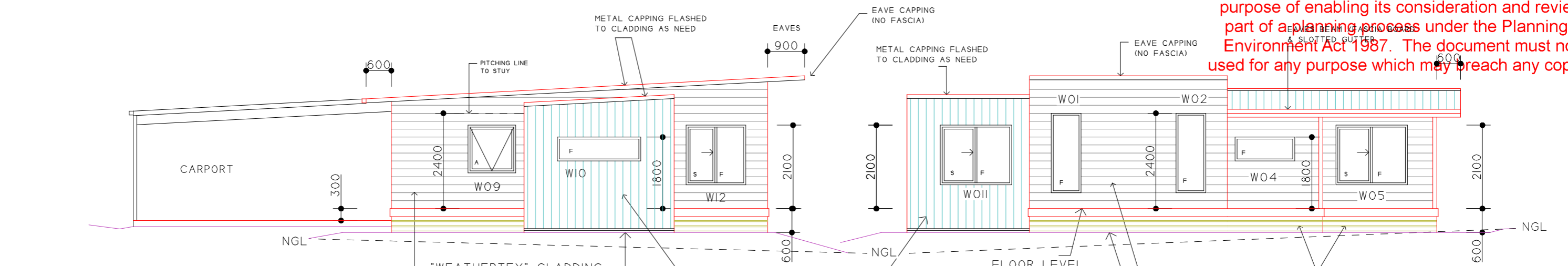
DATE: APRIL 2024  
CHANGES MADE- 7/4/2024

SHEET 1 OF 5  
Printed 19/06/2024  
Page 25 of 29





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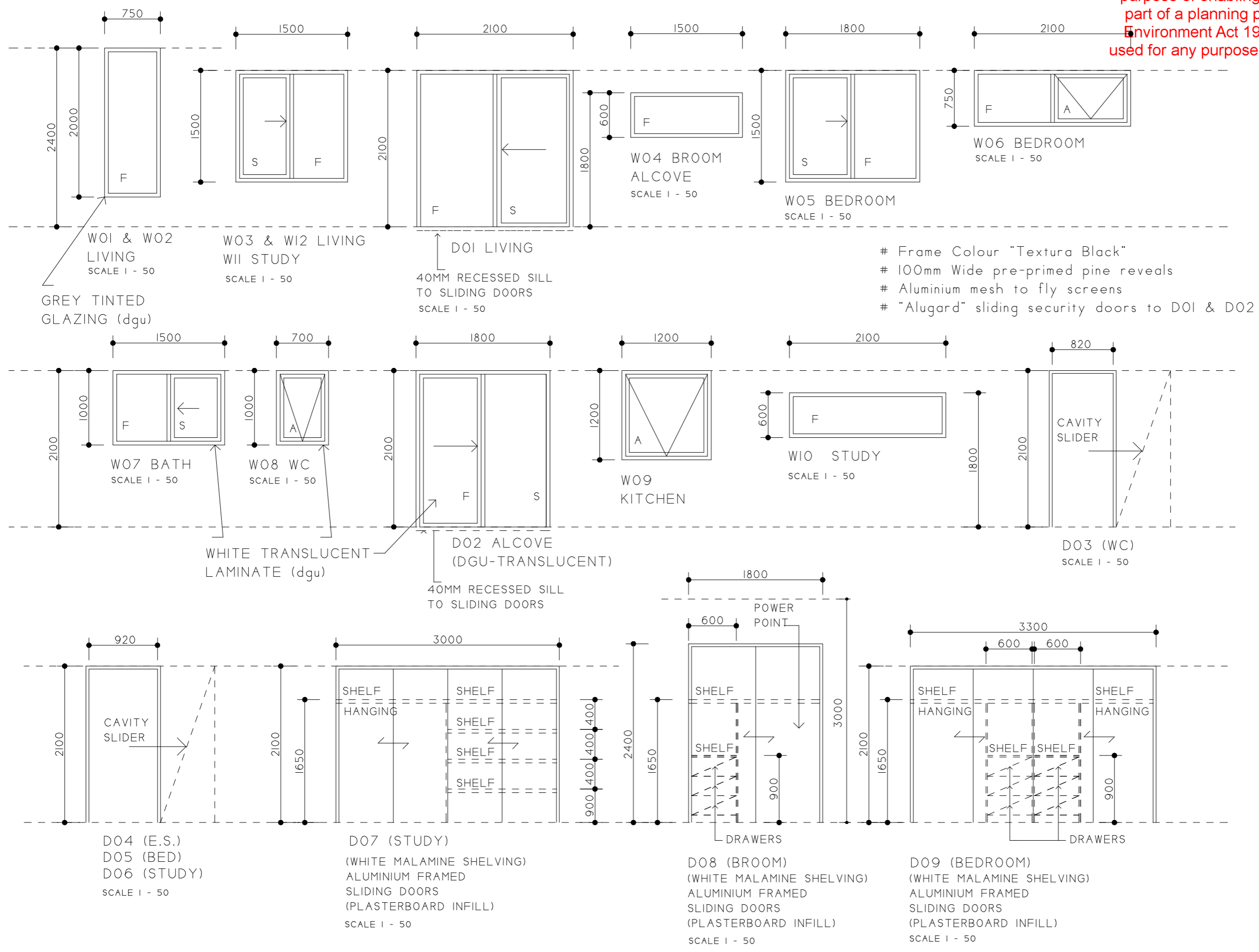


NOTE- ALL FINISHED SURFACES TO BE OF MUTED TONES AS SELECTED

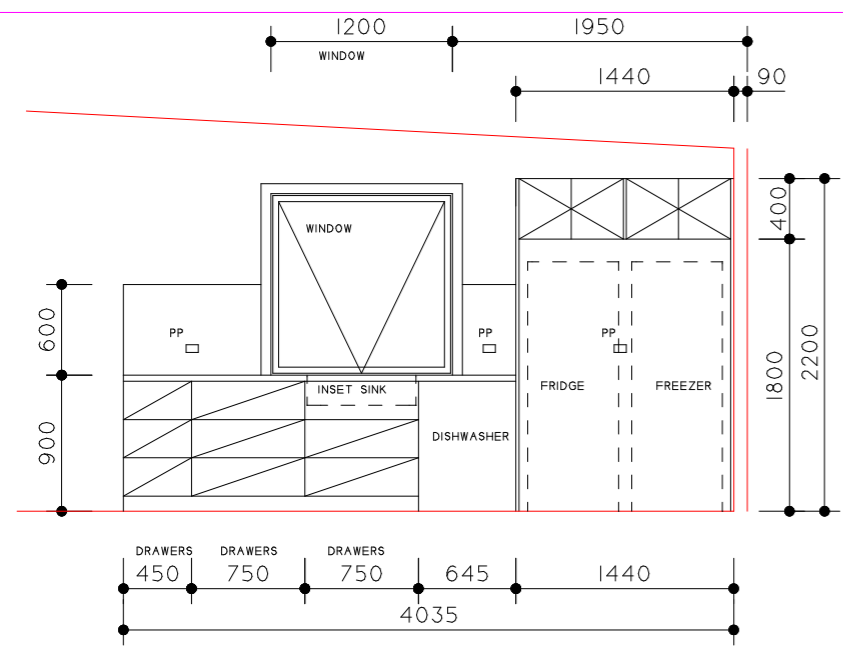
- INSULATION-
- # ALL ROOF AREAS - R4.0 BULK INSULATION BATTS (EXCEPT CARPORT)
  - # ANTICON 60 ROOF BLANKET (R1.3) SARKING INSTALLED TO MANUFACTURER'S SPECIFICATION (INCLUDE CARPORT)
  - # EXTERNAL WALLS - 2.7 BULK INSULATION BATTS WITH APPROVED PERMEABLE SARKING (I.E. ENVIROWRAP)
  - # UNDER FLOOR 90mm THICK MASTERFLOOR EXPANDED POLYSTYRENE INSULATION OR R VALUE EQUIVALENT

NOTE- PLEASE ALSO REFER TO ENGINEERS DOCUMENTATION (BAL 12.5)

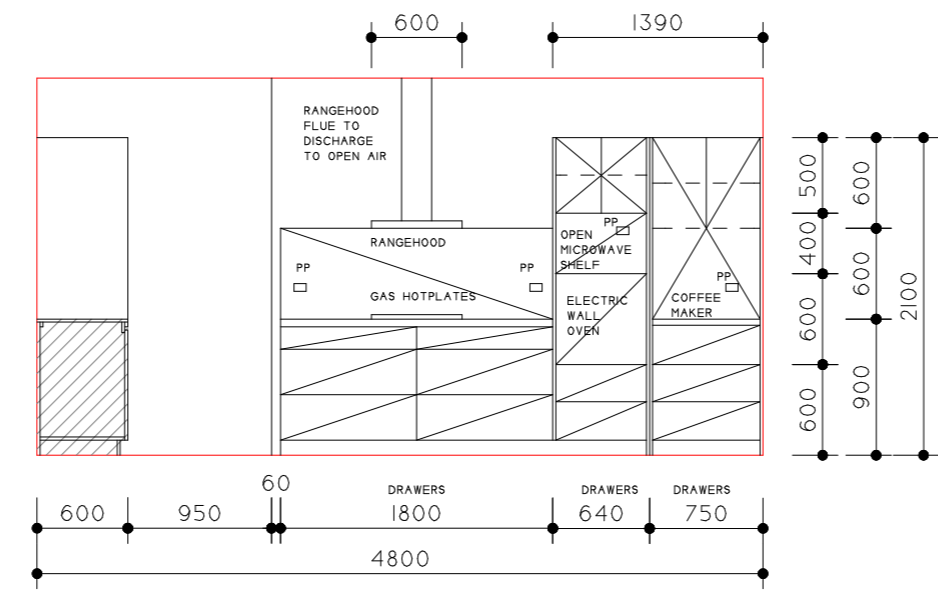
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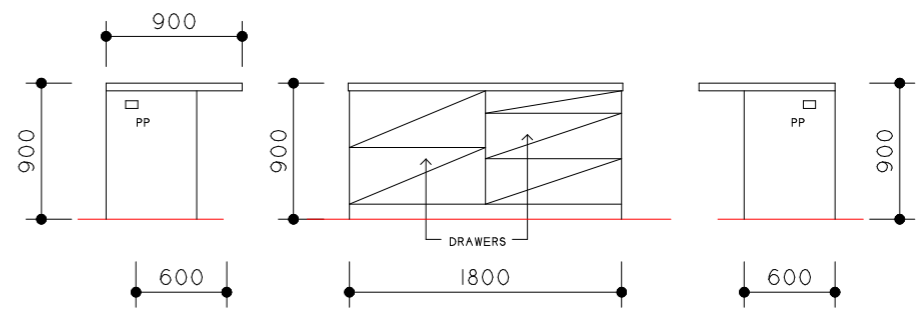
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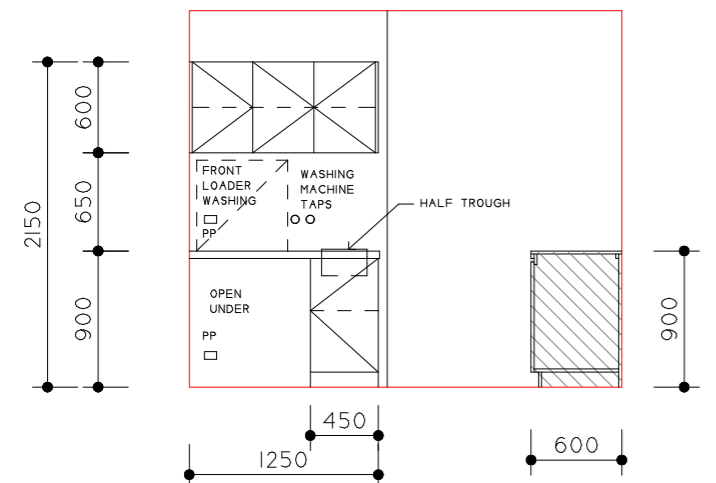
KITCHEN WINDOW WALL  
SCALE 1 - 50



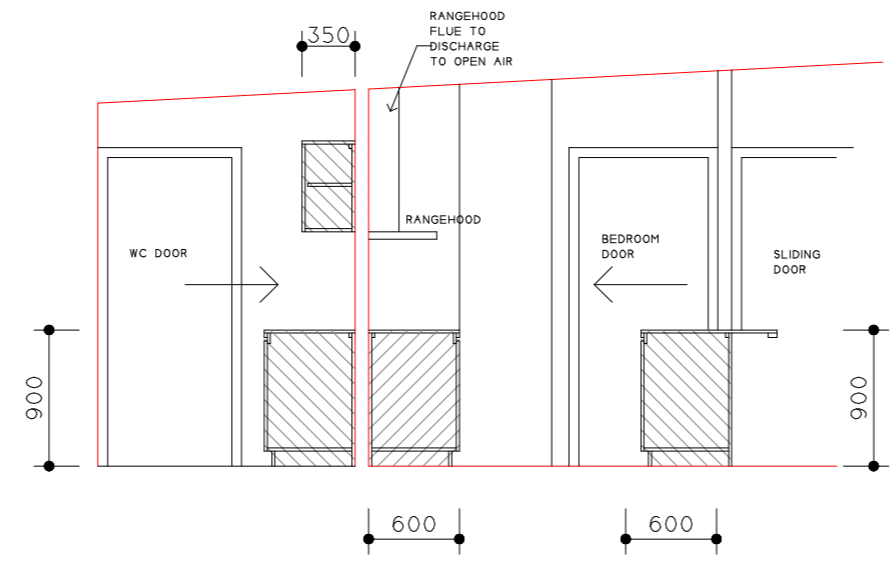
KITCHEN  
SCALE 1 - 50



KITCHEN ISLAND BENCH  
SCALE 1 - 50



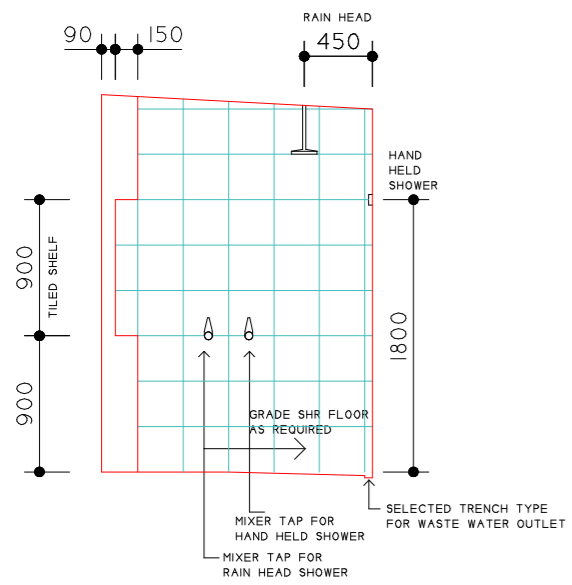
ALCOVE  
SCALE 1 - 50



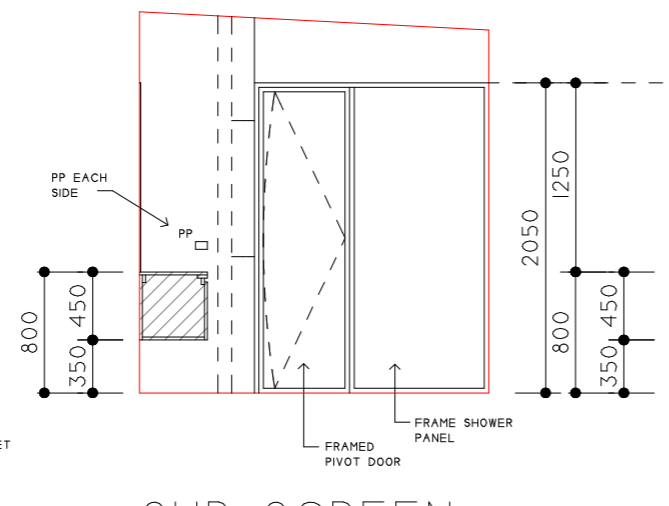
ALCOVE KITCHEN  
SCALE 1 - 50

NOTE::

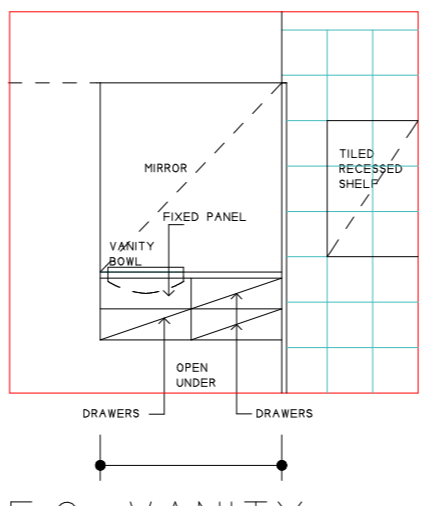
- # LAMINATE BENCH TOPS WITH ROUNDED EDGES
- # ALL INTERNAL SHELVING TO BE MALIMINE
- # ALL DRAWERS & DOORS TO HAVE SOFT CLOSERS
- # ALL INTERNAL DRAWERS TO BE WHITE MALIMINE
- # NO HANDLES / PUSH OPEN MECHANISM OR EDGE PULLS



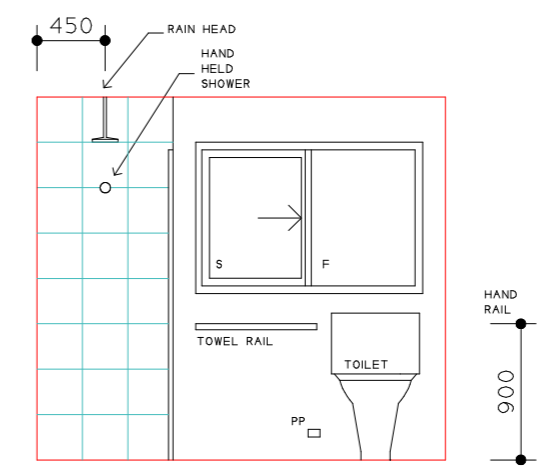
SHR WALL  
SCALE 1 - 50



SHR SCREEN  
SCALE 1 - 50



E.S. VANITY  
SCALE 1 - 50



E.S. TOILET