



Attachment to item number 5.1 -

Natural Values Assessment;
Wastewater Report;
Bushfire Assessment Report; and
Flood Hazard Report



Sorell Council

Development Application: Response to Request for
Information - 3 Gate Five Road, Carlton River - P6.pdf

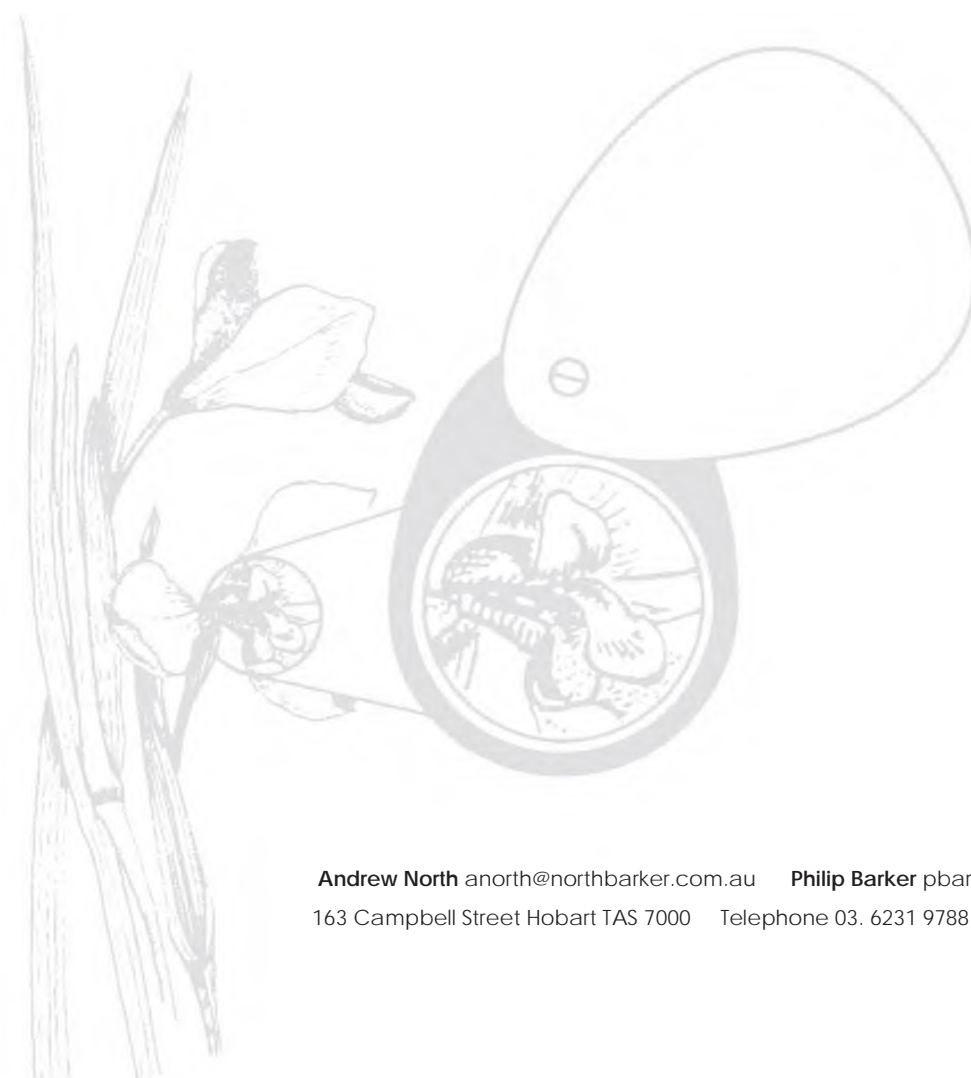
Date Received: 28/ 02 / 2023
Plans Referenced: P6



3 Gate Five Road, Carlton Natural Values Assessment

26th October 2022

For Rogerson and Birch (ROG016)



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Summary

A request for further information has been issued by the Sorell Council regarding the assessment of an area in the proposed subdivision at 3 Gate Five Road that is subject to the Waterways and Coastal Protection Code (the Code). The area was assessed and the waterway and surrounding area under the Code were found to be highly modified. No habitat for threatened significant flora or significant habitat for fauna species is present or apparent immediately downstream in the area. Given the paucity of native natural values, efforts to minimise impact beyond the implementation of an erosion and sediment control plan are not considered necessary. It is our interpretation that the proposed subdivision can meet the provisions and purpose of the Code. It is likely to comply with the Acceptable Solution for subdivision E11.8.1 A1.

Table of Contents

1.	BACKGROUND	3
2.	FINDINGS	4
3.	E11.0 WATERWAYS AND COASTAL PROTECTION CODE	9
4.	RECOMMENDATIONS	11
	APPENDIX A - SPECIES LIST	12
	APPENDIX B- NATURAL VALUES ATLAS THREATENED SPECIES	14

Date of Survey and Photos: 23rd of August 2022 (Will De Angelis)

Report: Will De Angelis

Review: Andrew North 26 October 2022

Project Management: Andrew North (anorth@northbarker.com.au)

1. Background

A request for further information (RFI) has been issued by the Sorell Council for a proposed subdivision at 3 Gate Five Road, Carlton¹. This report focuses on point 6 of the RFI, which requests a natural values assessment for the area of the proposed subdivision subject to the Waterways and Coastal Protection Code (the Code) under the *Sorell Interim Planning Scheme 2015*.

6. The property is subject to Code E11.0 Waterway & Coastal Protection Code of the *Sorell Interim Planning Scheme 2015*, therefore, please provide evidence by way of a Natural Values Assessment from a suitably qualified person to address any works associated with the subdivision in proximity to the waterway and any future development likely to be facilitated by subdivision is unlikely to lead to an unnecessary or unacceptable impact on natural values.

Clause E11.8.1 P1

Subdivision of a lot, all or part of which is within a Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area, must satisfy all of the following:

- (a) minimise impact on natural values;*
- (b) provide for any building area and any associated bushfire hazard management area to be either:*
 - (i) outside the Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area; or*
 - (ii) able to accommodate development capable of satisfying this code.*
- (c) if within a Potable Water Supply Area, be in accordance with the requirements of the water and sewer authority*

This assessment reports on the natural values of the study area under the Code in accordance with the Application Requirements of Section E11.5 (a).

Study area

The study area is located at 3 Gate Five Road, Carlton (Figure 1). The proposed subdivision includes 3 lots. Lot 1 (2309 m²) has no existing infrastructure, with a small vegetated no build area at the northern end of the lot. Lot 2 (2617 m²) contains an existing house, with a fenced garden area and garage to the east. The remainder of the proposed area is lot 3 (2436 m²). This is the entire eastern extent of the property and comprises modified land with no developments present. Lot 3 is the primary focus of this report as this area is subject to the Code (see the blue diagonal lines in Figure 1).

¹ Ref: SA 2002/00004-13034425 – letter dated 11 February 2022

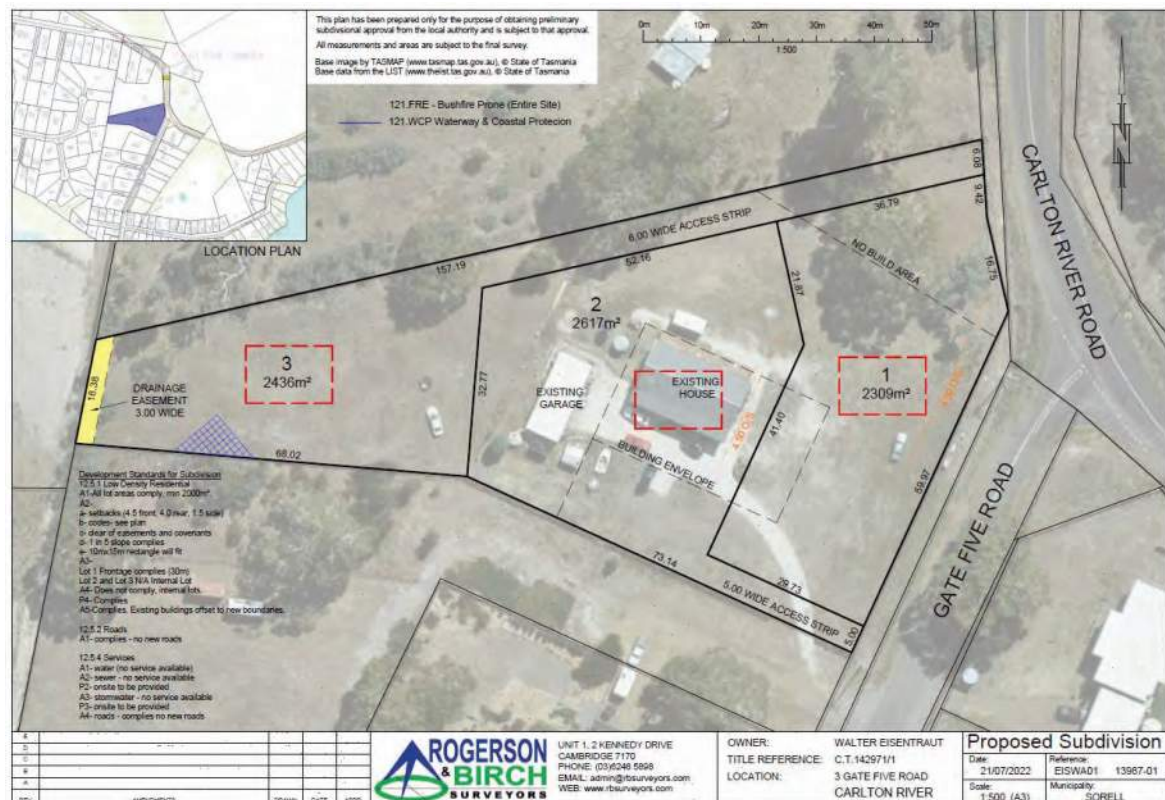


Figure 1: Proposed subdivision at 3 Gate Five Road, Carlton.

2. Findings

Vegetation

The vegetation of the study area is best described as modified land, which fits under the TASVEG mapping unit *Urban areas* (FUR). Many introduced plant species are present on the site: 14 of the 27 species of vascular plant identified in the study area are introduced. Three of these introduced species are listed as 'declared weeds' under the *Weed Management Act 1999*.

The mapped watercourse which intersects the property (Plate 1: Area mapped under the Waterway and Coastal Protection Code within the proposed subdivision at 3 Gate Five Road, Carlton.) is little more than a low-lying area subject to flooding. Based on aerial satellite images and ground observations, there is no indication that this contributes to any substantial creek or watercourse. *Centella cordifolia* is abundant in this area however, suggesting this parcel of land is subject to frequent inundation. Other common species within this patch included *Dactylis glomerata*, *Lepidosperma longitudinale*, *Acetosella vulgaris*, *Ficinia nodosa*, *Trifolium repens* and *Isolepis* sp. Given the abundance of introduced species and apparent lack of any permanent or semi-permanent waterway, this does not fit any of the native wetland TASVEG mapping units.

A full species list is available in Appendix A.



Plate 1: Area mapped under the Waterway and Coastal Protection Code within the proposed subdivision at 3 Gate Five Road, Carlton.

Threatened flora

Consultation of the *Natural Values Atlas*² found no threatened flora species within a 500 m radius of the study area.

No other threatened flora species were observed, and it is unlikely that any were overlooked.

A list of the threatened flora species recorded within 5 km can be seen in Appendix B.

Threatened fauna habitat

One terrestrial threatened fauna observation (Tasmanian devil *Sarcophilus harrisii*) has been recorded within 500 m of the study area according to the *Natural Values Atlas*¹. There is no denning habitat available for the Tasmanian devil within the study area, however this species may pass through the area on occasion while foraging.

There were multiple diggings scattered throughout the property. Potentially some of these could be caused by bandicoots. Alternatively, most and potentially all diggings could be from European rabbits *Oryctolagus cuniculus* (Plate 2 and Plate 3). However, there is potential for both the southern brown bandicoot (*Isodon obesulus*) and the listed eastern barred bandicoot (*Perameles gunnii*) to occur.

There are no records of the eastern barred bandicoot (*Perameles gunnii*) within 500 m of the site, however there are within 5 km¹. This species habitat range can sometimes extend into urban fringes where it can survive in large gardens and bushland reserves. It favours a mosaic of open grassy areas for foraging and thick vegetation cover for shelter and nesting. Although not listed under the Tasmanian *Threatened Species Protection Act 1995* it is included under the Commonwealth *Environment Protection and Biodiversity*

² Natural Values Report (nvr_1_23-Aug-2022) – NRE 2022

Conservation Act 1999 where it is listed as vulnerable. This status is reflective of its parlous state on mainland Australia where it is virtually extinct outside of securely predator free exclosures rather than its status in Tasmania. The greatest threat to the eastern barred bandicoot would come from the risk of the European fox ever establishing as it has been shown to be capable of persisting in Tasmanian per-urban environments where cats and dogs are present.



Plate 2: Diggings scattered throughout the property. The messy hole and quantity of excavated material is indicative of rabbit and not bandicoot.



Plate 3: Rabbit digging with evidence of oval rabbit scat – bandicoot scat is elongated.

A full list of threatened fauna observed within 5 km can be seen in Appendix B.

Weeds

Three weeds listed as 'declared' under the weed management act were observed within the survey area. Two of these only occurred along the northern boundary of Lot 3, which included blackberry (*Rubus fruticosus*) and boneseed (*Chrysanthemoides monilifera* subsp. *monilifera*). Blackberry was mostly contained to the other side of the property boundary, however some small seedlings occurred within the study area (Plate 4: Blackberry seedlings within the study area). Only one plant of boneseed was observed, just inside the fence boundary (: Singular plant of boneseed just inside the property boundary. The third weed, serrated tussock (*Nassella trichotoma*), was more widespread. This species was sparsely scattered throughout the property, but most occurrences were on the other side of the southern boundary to Lot 3 (Plate 6).



Plate 4: Blackberry seedlings within the study area



Plate 5: Singular plant of boneseed just inside the property boundary



Plate 6: Large infestation of serrated tussock (fine leaved green grass) on the bordering property to the south.
Occurring within the mapped Watercourse

3. E11.0 Waterways and Coastal Protection Code

The relevant parts of the Code are discussed below with regards to the findings of the natural values assessment.

E11.1 Purpose

E11.1.1 The purpose of this provision is to manage vegetation and soil disturbance in the vicinity of wetlands, watercourses and the coastline in order to:

(a) minimise impact on water quality, natural values including native riparian vegetation, river condition and the natural ecological function of watercourses, wetlands and lakes;

The mapped watercourse identified in the study area is subject to seasonal inundation, however it no longer appears to be a part of an existing watercourse. The mapped watercourse passes through multiple property boundaries, cutting through houses and garages in some areas. It appears that this has been replaced by an artificial watercourse which runs underground along the eastern fence boundary of the property. This then feeds into the pre-existing natural watercourse just before entering the Carlton River.

The highly modified nature of the watercourse (it is comprised primarily of introduced species and is heavily segmented) renders the watercourse of limited ecological value in terms of native natural values. However, the vegetation does serve an ecological function in moderating any potential flow to and in the area which would then feed into the Carlton River. Maintaining this ecological function is important. Through effective management of erosion and sediment it is expected that a potential development on Lot 3 could achieve this end. This would mitigate any potential impact to water quality and maintain the function of this environment.

Accordingly, based on the natural values present on the site it our understanding that with effective management of erosion and sediment through the implementation of an erosion and sediment control plan, the development of Lot 3 can meet this purpose of the Code.

(b) minimise impact on coastal and foreshore values, native littoral vegetation, natural coastal processes and the natural ecological function of the coast;

Due to the fragmentation and modification of this waterway, water runoff from the study area is unlikely to make its way to the coastline and cause any significant impacts to coastal and foreshore values. Additionally, consideration of any water runoff and the implementation of an erosion and sediment control plan will help to mediate any possible contaminants to the area.

(c) protect vulnerable coastal areas to enable natural processes to continue to occur, including the landward transgression of sand dunes, wetlands, saltmarshes and other sensitive coastal habitats due to sea-level rise.

As per section b.

(d) minimise impact on water quality in potable water supply catchment areas.

Not applicable to this report.

E11.8.1 Subdivision

The objective of Section E11.8.1 is to ensure that:

a) works associated with subdivision in proximity to a waterway, the coast, identified climate change refugia and potable water supply areas will not have an unnecessary or unacceptable impact on natural values;

If works associated with the subdivision are likely to have any impact on the sediment load to the watercourse or the erosion of the area, these should be managed through the implementation of an erosion and sediment control plan. With such a plan in place and given the highly transformed nature of the area under Waterway and Coastal Protection, including the waterway, no unnecessary or unacceptable impacts are anticipated to breach the objectives of this section of the Code.

b) future development likely to be facilitated by subdivision is unlikely to lead to an unnecessary or unacceptable impact on natural values.

Given the highly transformed nature of the area under the Code, including the waterway, and the recommended implementation of an erosion and sediment control plan, no future development of the lots are expected to have unnecessary or unacceptable impacts on natural values.

The question as to whether the site is used by one or other species of bandicoot is not relevant to the clause which does not distinguish between threatened and non-threatened species. Bandicoots (both species) constitute natural values capable of persisting in low density peri urban properties. The neighbouring properties to the north and south support better quality habitat for bandicoot with coarser vegetation for cover and larger undeveloped areas.

Acceptable Solutions

Due to the small footprint of Waterway and Coastal Protection Area (WCPA) which intersects the property, Acceptable Solutions A1 may be met as per sections c and d.

(c) no works, other than boundary fencing works, are within a Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area.

(d) the building area, bushfire hazard management area, services and vehicular access driveway are outside the Waterway and Coastal Protection Areas, Future Coastal Refugia Area or Potable Water Supply Area.

Due to the small incursion of the WCPA on the property, it could be easily ensured that no works are undertaken within the WCPA both during subdivision works and during any future developments.

If for some reason this is not feasible, then the Performance Criteria must be met.

Performance Criteria P1

Subdivision of a lot, all or part of which is within a Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area, must satisfy all of the following:

(a) minimise impact on natural values;

Due to the high level of introduced species within the area under the Code, impacts on the natural values within this area are not expected to be significant. The watercourse is highly transformed and any potential mitigatory measures in this regard are unlikely to have a meaningful ecological gain. The implementation of erosion and sediment control plan is considered sufficient to minimise any potential impact to the watercourse; this is especially relevant for potential downstream impacts.

The site (especially that tiny portion occupied by the Waterways and Coastal Protection overlay does not contribute important habitat for natural values. It does not introduce

novel disturbances (cats/dogs etc) as there is already a residence present. Consequently, the scale of impact to natural values is low and not practically able to be further minimised

- (b) *provide for any building area and any associated bushfire hazard management area to be either:*
- (i) *outside the Waterway and Coastal Protection Area, Future Coastal Refugia Area or Potable Water Supply Area; or*
- (ii) *able to accommodate development capable of satisfying this code.*

Performance criteria (b) could meet the requirements of section (i) provided that no works are undertaken within the Waterway and Coastal Protection Area. Section (ii) can also be met as the site is able to accommodate development capable of satisfying this code as demonstrated under **E11.1** and **E11.8.1** above: notably, this is contingent on the implementation of an erosion and sediment control plan that will mitigate any potential impact to the ecological function of the watercourse.

- (c) *if within a Potable Water Supply Area, be in accordance with the requirements of the water and sewer authority.*

Not applicable

In summary, based on the natural values present and the implementation of an erosion and sediment control plan, it is our understanding that the proposed subdivision does not conflict with the purpose or the provisions of the Waterways and Coastal Protection Code.

4. Recommendations

Based upon the findings of the survey the following recommendations have been made:

- Where developments on Lot 3 are expected, implement an erosion and sediment control plan to mitigate any potential impact to the ecological function of the watercourse.
- Boneseed and blackberry must be contained. These are classified as Zone B species within the Sorell Council and should be contained to avoid future spread of these declared weeds. Where possible, these can be removed/destroyed.
- Serrated tussock is a Zone A species within the Sorell municipality and an integrated control program for eradication of this species should be implemented to prevent the spread of the species and future occurrences.
- In the case of any future works within the subdivision, the following best practices weed hygiene guidelines should be followed:
 - o *Keeping it clean - A Tasmanian field hygiene manual to prevent the spread of freshwater pests and pathogens* (Allen and Gartenstein, 2010)
 - o *Weed and Disease Planning and Hygiene Guidelines - Preventing the spread of weeds and diseases in Tasmania* (DPIPWE, Stewart and Askey-Doran, 2015)

Appendix A - Species List

Status codes:

ORIGIN	NATIONAL SCHEDULE	STATE SCHEDULE
i - introduced	EPBC Act 1999	TSP Act 1995
d - declared weed WM Act	CR - critically endangered	e - endangered
en - endemic to Tasmania	EN - endangered	v - vulnerable
t - within Australia, occurs only in Tas.	VU - vulnerable	r - rare

Name	Common name	Status
DICOTYLEDONAE		
AIZOACEAE		
<i>Carpobrotus aequilaterus</i>	angled pigface	i#
APIACEAE		
<i>Centella cordifolia</i>	swampwort	
ASTERACEAE		
<i>Chrysanthemoides monilifera subsp. monilifera</i>	boneseed	d
<i>Helichrysum luteoalbum</i>	jersey cudweed	
<i>Hypochaeris glabra</i>	smooth catsear	i
<i>Hypochaeris radicata</i>	rough catsear	i
ERICACEAE		
<i>Styphelia humifusa</i>	native cranberry	
FABACEAE		
<i>Acacia dealbata subsp. dealbata</i>	silver wattle	
<i>Acacia longifolia</i>	coast wattle	
<i>Trifolium angustifolium</i>	narrowleaf clover	i
<i>Trifolium repens</i>	white clover	i
<i>Vicia sp.</i>	vetch, tare	i
GERANIACEAE		
<i>Erodium cicutarium</i>	common heronsbill	i
PLANTAGINACEAE		
<i>Plantago coronopus</i>	buckshorn plantain	i
<i>Plantago lanceolata</i>	ribwort plantain	i
POLYGONACEAE		
<i>Acetosella vulgaris</i>	sheep sorrel	i
ROSACEAE		
<i>Rubus fruticosus</i>	blackberry	d
THYMELAEACEAE		
<i>Pimelea humilis</i>	dwarf riceflower	

MONOCOTYLEDONAE

ASPARAGACEAE

Lomandra longifolia sagg

CYPERACEAE

Ficinia nodosa knobby clubsedge
Isolepis sp. club rush
Lepidosperma longitudinale spreading swordedge

JUNCACEAE

Juncus planifolius broadleaf rush

POACEAE

Aira caryophyllea silvery hairgrass i
Dactylis glomerata cocksfoot i
Nassella trichotoma serrated tussock d

PTERIDOPHYTA

DENNSTAEDTIACEAE

Pteridium esculentum subsp. esculentum bracken

Appendix B- Natural Values Atlas Threatened Species

Threatened flora within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Caladenia caudata</i>	tailed spider-orchid	v	VU	e	8	17-Sep-2016
<i>Caladenia saggicola</i>	sagg spider-orchid	e	CR	e	4	17-Sep-2016
<i>Cotula vulgaris</i> var. <i>australasica</i>	slender buttons	r		n	1	19-Nov-2003
<i>Cuscuta tasmanica</i>	golden dodder	r		n	5	31-Mar-2017
<i>Eryngium ovinum</i>	blue devil	v		n	20	01-Oct-2010
<i>Lepilaena preissii</i>	slender watermat	r		n	1	01-Oct-1978
<i>Limonium australe</i> var. <i>australe</i>	yellow sea-lavender	r		n	1	01-May-1978
<i>Ruppia megacarpa</i>	largefruit seatassel	r		n	7	24-Feb-2021
<i>Ruppia tuberosa</i>	tuberous seatassel	r		n	17	08-Dec-2020
<i>Stuckenia pectinata</i>	fennel pondweed	r		n	2	08-Dec-2020
<i>Vittadinia muelleri</i>	narrowleaf new-holland-daisy	r		n	70	26-Aug-2021

Threatened fauna within 500 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	1	16-Apr-2010
<i>Thymichthys politus</i>	red handfish	e	CR	e	1	30-Apr-2021

Threatened fauna within 5000 metres

Verified Records

Species	Common Name	SS	NS	Bio	Observation Count	Last Recorded
<i>Accipiter novaehollandiae</i>	grey goshawk	e		n	1	21-Sep-2017
<i>Aquila audax</i>	wedge-tailed eagle	pe	PEN	n	3	12-Jul-2014
<i>Aquila audax</i> subsp. <i>fleayi</i>	tasmanian wedge-tailed eagle	e	EN	e	6	20-Aug-2021
<i>Arctocephalus forsteri</i>	new zealand fur seal	r		n	2	04-Jul-2018
<i>Arctocephalus forsteri</i> subsp. <i>donneri</i>	new zealand fur seal	r		n	2	25-Jul-2005
<i>Arctocephalus tropicalis</i>	sub-antarctic fur seal	e	VU	n	1	05-Jun-2021
<i>Brachionichthys hirsutus</i>	spotted handfish	e	CR	e	3	03-Sep-2013
<i>Eagle</i> sp.	Eagle	e	EN	n	3	05-May-2022
<i>Eubalaena australis</i>	southern right whale	e	EN	m	35	26-Jun-2021
<i>Gazameda gunnii</i>	Gunn's screw shell	v		ae	8	05-Dec-2011
<i>Haliaeetus leucogaster</i>	white-bellied sea-eagle	v		n	16	10-Sep-2021
<i>Hirundapus caudacutus</i>	white-throated needletail		VU	n	2	12-Mar-2017
<i>Lathamus discolor</i>	swift parrot	e	CR	mbe	8	06-Jan-2018
<i>Litoria raniformis</i>	green and gold frog	v	VU	n	1	17-Sep-2007
<i>Megaptera novaeangliae</i>	humpback whale	e		m	26	27-Jun-2021
<i>Mirounga leonina</i> subsp. <i>macquariensis</i>	southern elephant seal	pe	PVU	n	3	05-Mar-2008
<i>Parvulastra vivipara</i>	live-bearing seastar	v	VU	e	11	16-Sep-2021
<i>Patiriella vivipara</i>	live-bearing seastar	pv	PVU	e	1	09-Jan-2001
<i>Perameles gunnii</i>	eastern barred bandicoot		VU	n	5	21-Jun-2019
<i>Pterodroma lessonii</i>	white-headed petrel	v		n	1	13-Nov-1984
<i>Sarcophilus harrisii</i>	tasmanian devil	e	EN	e	16	01-Feb-2018
<i>Sterna striata</i>	white-fronted tern	v		n	1	01-Jan-1900
<i>Thinornis cucullatus</i>	hooded plover		PVU	n	8	22-Dec-2017
<i>Thinornis rubricollis</i>	hooded plover		VU	n	2	19-May-2012
<i>Thymichthys politus</i>	red handfish	e	CR	e	1	30-Apr-2021
<i>Tyto novaehollandiae</i>	masked owl	pe	PVU	n	2	30-Dec-1985

GEOTECH 22-118

ROCK SOLID GEOTECHNICS PTY LTD

6/6/2022

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Geotechnical Assessment - Subdivision of Land at 3 Gate Five Road, Carlton River

This report assesses the onsite wastewater disposal potential of the land designated for a three-lot subdivision at 3 Gate Five Road, Carlton River ([Figure 1](#)). It is proposed to subdivide the 7362m² block into;

Lot 1 (2351m²) – vacant land, includes the onsite wastewater system for the current residence

Lot 2 (2575m²) – includes the current residence.

Lot 3 (2436m²) – vacant land.

It is the conclusion of this report that each of the proposed Lots can sustain an onsite wastewater system for a three-bedroom dwelling.

This assessment addresses an RFI from the Sorell Council, specifically:

Environmental Health:

1. Provide a Site & Soil Evaluation Report in accordance with AS/NZS 1547-2012 detailing the site & soil conditions and the suitability for onsite wastewater disposal. The Report should be prepared by a suitably qualified person such as an Engineer, Geologist, Environmental Health Officer or Soil Scientist.
2. Demonstrate Compliance with E23.0 – On-Site Wastewater management Code of the Sorell Interim Planning Scheme 2015 by providing a plan indicating the indicative location of a future wastewater land application area.
3. Indicate on the plan the location of the onsite wastewater management system including the land application area.

INVESTIGATION

A field survey was completed on Friday 20 May, 2022, encompassing field mapping of geological and geomorphological features and hazards to assess the site for onsite wastewater disposal potential. Test holes were completed on proposed Lots 2 & 3 (4WD mounted SAMPLA25 mechanical auger with 100mm diameter solid flight augers).

The Mines Department 1:50000 Geological Map 'Sorell' indicates that the site is underlain by Quaternary sediments.

The Sorell Council's Flood Mapping was obtained from Council's Mr Greg Robertson – Manager Regulatory Services (Figure 2).

LOT 1

Proposed Lot 1 is a 2351m², vacant block, with access directly from Gate Five Road. The Council's Flood Mapping indicates that the block is not subject to impact from a 1 in 100 year flood event. The trench portion of the current residence's onsite wastewater system is located on the upper, northern portion of Lot 1. This is a council approved system designed by the author in 2013 (plans attached).

The area is covered in grass and a couple of gum trees, and slopes to the southwest at 4 degrees.

Plate 1 – Lot 1 – looking to the north at the current LAA (adjacent to the trees).



As part of the 2013 assessment (completed in June 2013) multiple test holes were completed across the block (pre subdivision). Groundwater was encountered in the holes at the house site (between 1.1m & 1.3m depth – necessitating utilising the area on the northern portion of proposed Lot 1 for the wastewater trenches / Land Application Area (LAA). The northern portion of Lot 1 is underlain by sand to 2m depth – no groundwater table.

The upper portion of Lot 1 is a proven site for onsite wastewater disposal for a 3-bedroom residence. This area would continue to be available for onsite wastewater for a future development on Lot 1, and is of suitable size for a reserve LAA.

LOT 2

Proposed Lot 2 is a 2575m² block that houses the current residence, with access directly from Gate Five Road (Figure 1). The block generally slopes gently (2 degrees) to the southwest. The site is covered in grass, and is devoid of trees. The Council's Flood Mapping indicates that the block is potentially subject to minor impact from a 1 in 100 year flood event (Figure 2).

The current 3-bedroom residence is serviced with an onsite wastewater system (Figure 3) that consists of:

- A dual-purpose septic tank that accepts all the residential wastewater from the dwelling, plus wastewater effluent from a toilet and handbasin in an existing garage. The septic tank is located to the immediate north of the garage.
- Effluent discharging from the septic tank is collected in a sump tank fitted with a submersible pump.
- Effluent is pumped to a trench-based Land Application Area (LAA), sited on the upper or northern portion of proposed Lot 1.

As part of the subdivision proposal, it will be necessary to relocate the LAA to be contained on Lot 2.

A test hole was completed to assess the site for onsite wastewater disposal suitability. The location of the test hole is marked on Figure 4. The profile encountered in Test Hole #2A consisted of:

0.00 – 0.20m	SAND: fine grained, grey, rootlets - TOPSOIL
0.20 – 2.10m	SAND: fine grained, greyish brown, dry to 0.80m then moist
2.10m+	Hole terminated at required depth – 2.10m.

Groundwater was not encountered in the hole. The site is classified as CLASS 1 (SAND).

It is proposed to retain the current septic tank and pump system, and install a new Advanced Enviro-Septic (AES) trench, located to the immediate north of the residence.

A design of for the new AES trench is presented in GEOTECH 22-118a (attached).

The area designated for the new AES bed is defined in Council's Flood Mapping as potentially being subject to minor impact from a 1 in 100 year flood event (depth of inundation less than 0.1m). This inundation potential will be mitigated in the new AES bed design by installing an earth bund upslope from the bed. Note that the installation of the new driveway (6m wide) for access to proposed Lot 3 will also aid in diverting any low-level flood inundation waters away from the new LAA on Lot 2.

There is suitable available room for the proposed new AES bed plus a reserve area equal in size if required in the future.

Plate 2 – Lot 2 – looking to the southwest at **Test Hole #2A** and the location of the proposed new AES bed.



LOT 3

Proposed Lot 3 is a 2436m², internal block, with access directly from Carlton River Road ([Figure 1](#)). Although the block generally slopes gently (2 degrees) to the southwest, there is an area adjacent to the northern property boundary that is higher in elevation. The site is covered in grass, and is devoid of trees. The Council's Flood Mapping indicates that the block is potentially subject to impact from a 1 in 100 year flood event ([Figure 2](#)).

Two test holes were completed on the upper, northern portion of the site to assess the site for onsite wastewater disposal suitability (area not subjected to potential inundation). The locations of the test holes in the potential LAA are marked on [Figure 4](#).

The profiles encountered in **Test Holes #3A and #3B** consisted of:

0.00 – 0.20m	SAND: fine grained, grey, rootlets - TOPSOIL
0.20 – 2.10m	SAND: fine grained, greyish brown, dry to 0.90m then moist
2.10m+	Holes terminated at required depths – 2.10m.

Groundwater was not encountered in either hole. The site is classified as CLASS 1 (SAND).

The LAA tested is well suited to onsite wastewater disposal. It would be necessary to pump effluent up to some form of trench system sited within the LAA. It is likely that an AES bed (similar to that proposed for Lot 2) would be utilised in order to keep the size of the disposal area small. An AES bed 9.6m long and 2.5m wide would be required for a three-bedroom residence on Lot 3, if located in the location mentioned above. The use of an AES bed would also result in a suitable reserve LAA being available in the same area.

Plate 3 – Lot 3 – looking to the northeast at **Test Hole #3A** and the location of the proposed new LAA.





DISCUSSION OF RESULTS

The upper portion of proposed Lot 1 is a proven site for onsite wastewater disposal for a 3-bedroom residence. This area would continue to be available for onsite wastewater for a future development on Lot 1, and is of suitable size for a reserve LAA.

The current residence on proposed Lot 2 will require a new wastewater disposal system (to be wholly sited on Lot 2). Such a design has been provided, and is the subject of accompanying report [Geotech 22-118a](#).

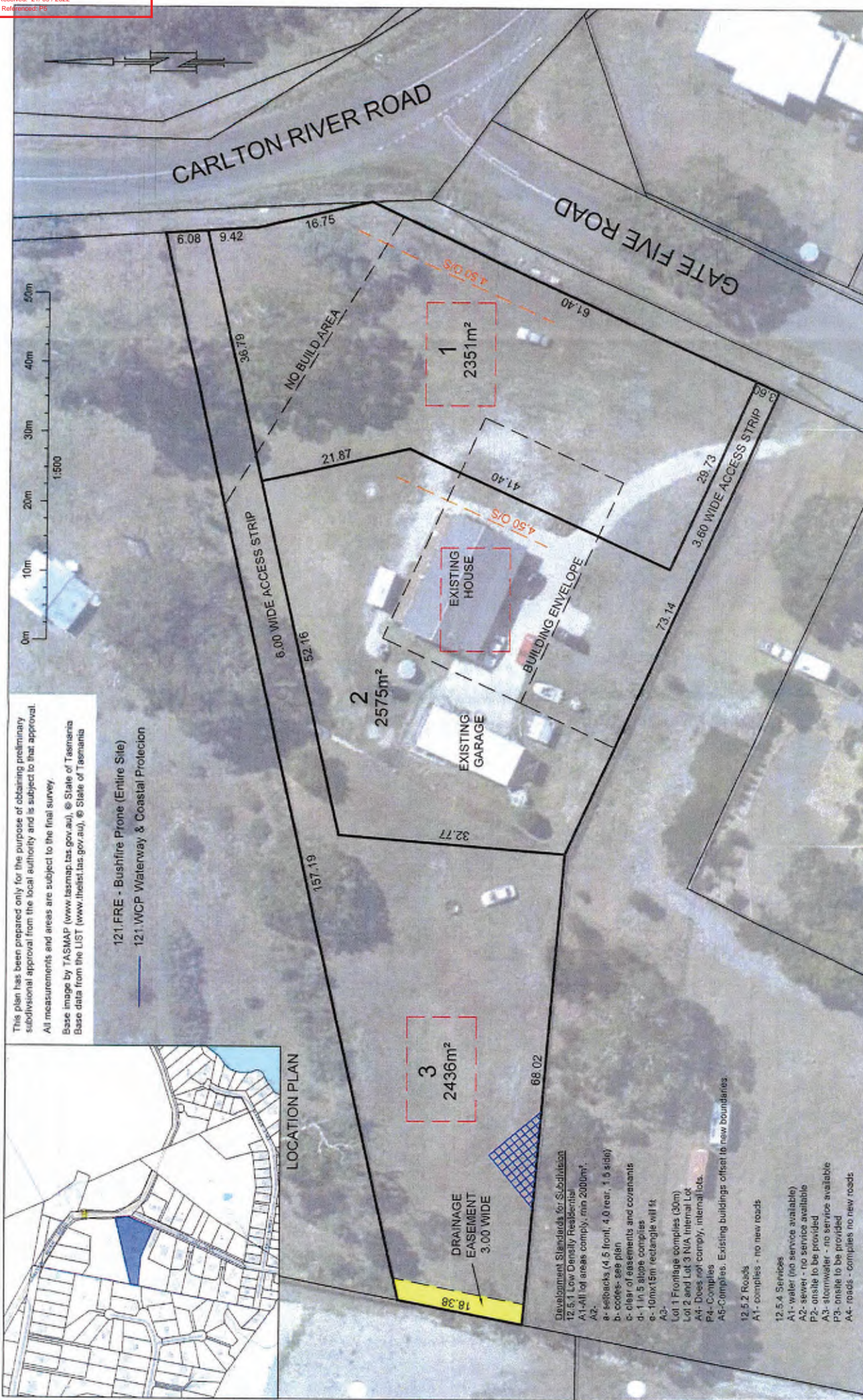
An individual site assessment will ultimately determine the type and position of the onsite wastewater system required for any proposed development on proposed Lot 3. However, it is recommended that the LAA and reserve LAA be sited on the upper, northern portion of the block.

RECOMMENDATIONS

It is the conclusion of this report that proposed Lot 2 can continue to sustain an onsite wastewater system for the current residence, and proposed Lots 1 and 3 can sustain an onsite wastewater system for a future three-bedroom dwellings.

Peter Hoffo

ROCK SOLID GEOTECHNICS P/L



REV	DESCRIPTION	DRAWN	DATE	APPR.
D				
C				
B				
A				

OWNER:	WALTER EISENTRAUT
TITLE REFERENCE:	C.T. 14297/1/1
LOCATION:	3 GATE FIVE ROAD CARLTON RIVER

UNIT 1, 2 KENNEDY DRIVE CAMBRIDGE 7170 PHONE: (03)6248 5898 EMAIL: admin@rbsurveyors.com WEB: www.rbsurveyors.com	Proposed Subdivision
	Date: 31-01-2022
	Reference: EISWA01
	Municipality: SORELL
	Scale: 1:500 (A3)

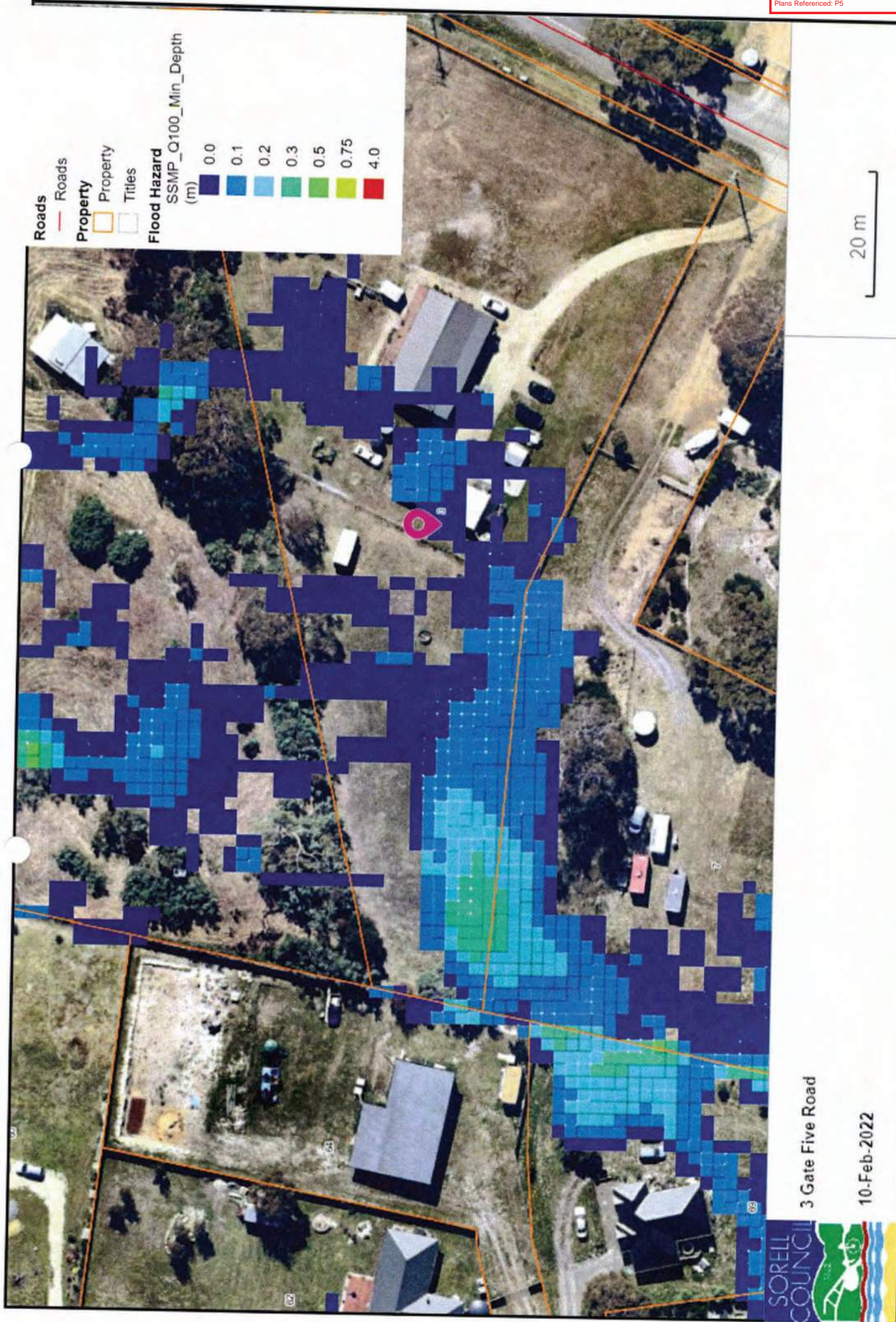
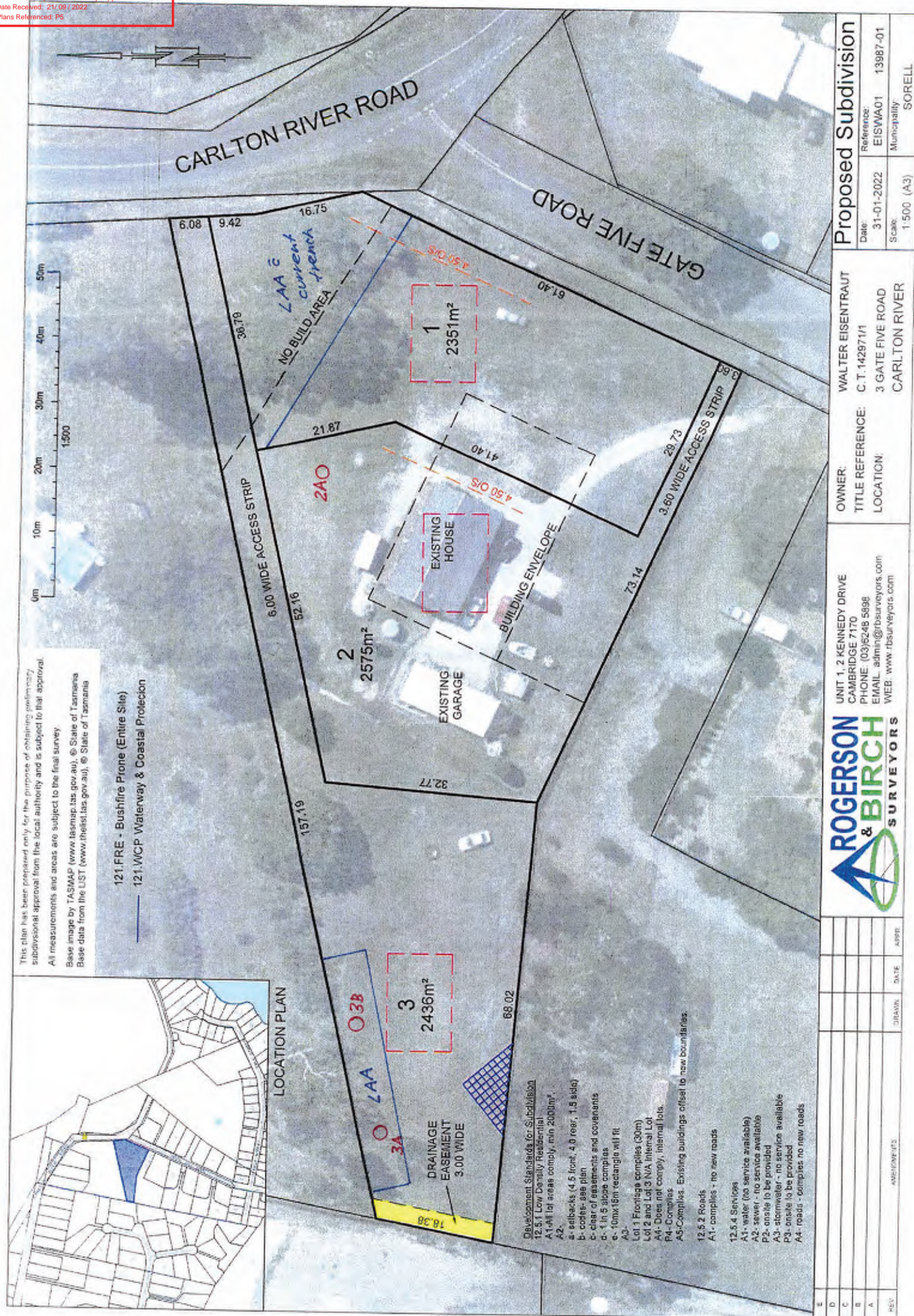


FIGURE 2



SITE AND SOIL EVALUATION REPORT

Soil Category:

(as stated in AS/NZS 1547-2000)

Modified Emerson Test Required

No

1,...2,...3,...4,...5,...6

If Yes, Emerson Class No.

Measured or Estimated Soil Permeability (m/d):

3.0m/d

Geology:

Quaternary sediments.

Slope:

4-5 degrees

Drainage lines / water courses:

Nil

Vegetation:

Grass, mature trees

Site History: (land use)

Large residential block

Aspect:

Southwest

Pre-dominant wind direction:

Northwest to southwest

Environmental Issues:

Nil

Location of sensitive vegetation, high water table, swamps, waterways etc.

Nil

Site Stability: Will on-site wastewater disposal affect site stability?

No

Is geological advice required?

No

Drainage/Groundwater:

See reports

Depth to seasonal groundwater (m):

See reports

☐

Tank Water

Date of Site Evaluation:

20/5/2022

Weather Conditions:

Fine

CONDITIONS OF INVESTIGATION

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This report contains observations & interpretations based often on limited subsurface evaluation. Where interpretative information or evaluation has been reported, this information has been identified accordingly & is presented based on professional judgement. RSG does not accept responsibility for variations between interpreted conditions & those that may be subsequently revealed by whatever means.

Due to the possibility of variation in subsurface conditions & materials, the characteristics of materials can vary between sample & observation sites. RSG takes no responsibility for changed or unexpected variations in ground conditions that may affect any aspect of the project. The classifications in this report are based on samples taken from specific sites. The information is not transferable to different sites, no matter how close (ie. if the development site is moved from the original assessment site an additional assessment will be required).

It is recommended to notify the author should it be revealed that the sub-surface conditions differ from those presented in this report, so additional assessment & advice may be provided.

Investigations are conducted to standards outlined in Australian Standards:

- **AS1726-1993:** **Geotechnical Site Investigations**
- **AS1547-2012:** **Onsite Domestic Wastewater Management**

& as specified in 'Guidelines for Geotechnical Assessment of Subdivisions and Recommended Code of Practise for Site Classification to AS2870 in Tasmania' - Institute of Engineers, Tasmanian Division.

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PETER HOFTO

ROCK SOLID GEOTECHNICS PTY LTD

GEOTECH 22-118a

6/6/2022

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ONSITE WASTEWATER SYSTEM DESIGN – Lot 2, 3 Gate Five Road, Carlton River

Proposed Lot 2 is a 2575m² block that houses the current residence, with access directly from Gate Five Road (Figure 1). The block generally slopes gently (2 degrees) to the southwest. The site is covered in grass, and is devoid of trees. The Council's Flood Mapping indicates that the block is potentially subject to minor impact from a 1 in 100 year flood event (Figure 2).

The current 3-bedroom residence is serviced with an onsite wastewater system (Figure 3) that consists of;

- A dual-purpose septic tank that accepts all the residential wastewater from the dwelling, plus wastewater effluent from a toilet and handbasin in an existing garage. The septic tank is located to the immediate north of the garage.
- Effluent discharging from the septic tank is collected in a sump tank fitted with a submersible pump.
- Effluent is pumped to a trench-based Land Application Area (LAA), sited on the upper or northern portion of proposed Lot 1.

As part of the subdivision proposal, it will be necessary to relocate the LAA to be contained on Lot 2.

A site assessment was completed on Wednesday 22 December, 2021, and included the augering of a test hole with a 4WD mounted SAMPLA25 mechanical auger with 100mm diameter solid flight augers. The location of the test hole is marked on Figure 4.

The profile encountered in Test Hole #2A consisted of:

0.00 – 0.20m SAND: fine grained, grey, rootlets - TOPSOIL

SAND: fine grained, greyish brown, dry to 0.80m then moist

Hole terminated at required depth – 2.10m.

Groundwater was not encountered in the hole. The site is classified as CLASS 1 (SAND) site with an Indicative Permeability of 3.0m/day and a Design Loading Rate (DLR) of 25mm/day (into an AES bed). It is proposed to retain the current septic tank and pump system, and install a new Advanced Enviro-Septic (AES) trench, located to the immediate north of the residence.

The area designated for the new AES bed is defined in Council's Flood Mapping as potentially being subject to minor impact from a 1 in 100 year flood event (depth of inundation less than 0.1m). This inundation potential will be mitigated in the new AES bed design by installing an earth bund upslope from the bed. Note that the installation of the new driveway (6m wide) for access to proposed Lot 3 will also aid in diverting any low-level flood inundation waters away from the new LAA on Lot 2.

There is suitable available room for the proposed new AES bed plus a reserve bed area equal in size if required in the future.

Plate 1 – Lot 2 – looking to the southwest at Test Hole #2A and the location of the proposed new AES bed.



COMPLIANCE WITH CODE 23 – ONSITE WASTEWATER

E23.10 Development Standards for Land Application Areas		
A1 Horizontal separation distance from a building to a LAA must comply with one of the following: (a) be no less than 6m; (b) be no less than; (i) 2m from an upslope or level building; (ii) if primary treated effluent be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) if secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a down slope building.	P1 Horizontal separation distance from a building to a LAA must satisfy all of the following: (a) effluent must be no less than secondary treated effluent standard and applied through a subsurface land application system; (b) be no less than 2m.	Complies with A1 2 ^o slope. Secondary treated effluent. Setback required from upslope building; $2m + (0.25m \times 2^o) = 2.5m$

<p>A2 Horizontal separation distance from downslope surface water to a LAA must comply with any of the following: (a) be no less than 100m; (b) if the site is within a high rainfall area or the site soil category is 4, 5 or 6, be no less than the following: (i) if primary treated effluent standard or surface application, 50m plus 7m for every degree of average gradient from downslope surface water; (ii) if secondary treated effluent standard and subsurface application, 50m plus 2m for every degree of average gradient from down slope surface water. (c) if the site is not within a high rainfall area or the site soil category is not 4, 5 or 6, be no less than the following: (i) if primary treated effluent 15m plus 7m for every degree of average gradient from downslope surface water; (ii) if secondary treated effluent & subsurface application, 15m plus 2m for every degree of average gradient from down slope surface water.</p>	<p>P2 Horizontal separation distance from downslope surface water for a LAA must satisfy all of the following: (a) effluent must be no less than secondary treated effluent standard & applied through a subsurface land application system; (b) be no less than 15m; (c) the surface water is not of high resource or environmental value; (d) the average gradient is no more than 16 degrees; (e) the site is not in a flood prone area with an ARI of no less than 20 years; (f) either of the following applies: (i) the site soil category is 1, 2 or 3; (ii) a raised bed is used.</p>	<p>Complies with A2 LAA > 100m from downslope surface water.</p>
<p>A3 Horizontal separation distance from a property boundary to a LAA must comply with either of the following: (a) be no less than 40m from a property boundary; (b) be no less than: (i) 1.5m from an upslope or level property boundary; & (ii) if primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or (iii) if secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.</p>	<p>P3 Horizontal separation distance from a property boundary to a LAA must satisfy all of the following: (a) effluent must be no less than secondary treated effluent standard & applied through a subsurface land application system; (b) be no less than 1.5m (c) the average gradient is no more than 16 degrees; (d) either of the following applies: (i) the vertical separation between the LAA & groundwater or any limiting layer is no less than 1.5m; (ii) a raised bed is used to achieve a minimum vertical separation of 1.5m between the LAA & groundwater or any limiting layer.</p>	<p>Complies with A3 2° slope. Secondary treated effluent. Setback required; $1.5m + (1m \times 2^\circ) = 3.5m$</p>
<p>A4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA must be no less than 50m.</p>	<p>P4 Horizontal separation distance from a downslope bore, well or similar water supply to a LAA must satisfy all of the following: (a) effluent must be no less than secondary treated effluent standard & applied through a subsurface land application system; (b) be no less than 15m; (c) the water is not high resource value water.</p>	<p>Complies with A4 No known potable bores in the vicinity of the site.</p>
<p>A5 Vertical separation distance between groundwater & a LAA must be no less than 1.5m.</p>	<p>P5 Vertical separation distance between groundwater & a LAA must satisfy all of the following: (a) effluent must be no less than secondary treated effluent standard & applied through a subsurface land application system; (b) vertical separation distance must be no less than 0.5m, (whether 'in ground' or by use of a raised bed).</p>	<p>Complies with A5 Groundwater not encountered.</p>

A6 Vertical separation distance between a limiting layer & a LAA must be no less than 1.5m.	P6 Vertical separation distance between a limiting layer & a LAA must satisfy all of the following: (a) effluent must be no less than secondary treated effluent standard & applied through a subsurface land application system; (b) vertical separation distance must be no less than 0.5m, (whether 'in ground' or by use of a raised bed).	Complies with A6 Limiting Layer not encountered.
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ONSITE WASTEWATER SYSTEM DESIGN

The current absorption trench system will be decommissioned.

The current dual purpose septic tank should be retro-fitted with an outlet filter if not already installed. The effluent will be pumped to an Advanced Enviro-Septic (AES) bed (sited to the north of the residence) utilising the current sump and submersible pump.

The following calculations determine the size of the AES Bed designed to service the 3-bedroom residence.

3-bedroom residence	5 persons
Tank water	120 litres / person / day
Wastewater Flow Rate	5 x 120 = 600 litres / day
Design Loading Rate (DLR)	25mm/day
DLR	25 litres / m ² / day
Basal Area of Land Application Area	600 / 25 = 24m ²

The Advanced Enviro Septic (AES) system utilizes a modular distribution layout consisting of pipework laid in "system sand". This module will consist of 2 rows each with 3 x 300mm diameter AES pipes, 150mm apart, with 300mm side-wall clearance on each side - total width 1350mm.

Distribution unit length	=	9.6m
Width of 2-pipe wide AES unit	=	1.35m
Area of AES pipework	=	9.6m x 1.35m = 13m ²

A System Extension is required for this site (9.6m long and 1.15m wide), giving a total basal area of the AES system of 24m².

The AES system should be installed by a plumber who has been accredited by Chankar Environmental Proprietary Limited to install Advanced Enviro Septic systems, and who has appropriate experience.

Site Preparation

- Rope off the site to prevent damage to the area during other construction activity on the lot.
- Vehicular traffic over the area must be prohibited to avoid compaction.
- Excavate the existing soil surface, parallel with the contour (cross slope) to a depth of 750mm over the selected wastewater land application area.
- Rake/scarify the exposed soil surface.
- Connect the septic tank and AES bed in accordance with the AES site instructions (see below) and the design plans attached.
- The AES pipe must be laid in a bed of approved "system sand". This is a coarse sand meeting the specifications as listed below.

AES System Sand Specifications

- Percentage Restrictions - 35% or less of the total sand may be gravel. 40%-90% of the total sand is to be coarse and very coarse sand.
- Gravel Quality Restrictions - No gravel is to exceed 9mm in diameter. No gravel is smaller than 2mm in diameter.
- Coarse Sand Quality Restrictions - No coarse sand is smaller than 0.5mm in diameter.
- Fines Quality Restrictions - No more than 2% of the total sand may pass through a 75µ m sieve.

Venting – AES system and septic tank

- Ensure that roof vent comprises a minimum of single 80mm diameter pipe or 2 x 40mm diameter vent pipes.
- Roof vent to be a minimum of 3m above ground vent.
- Venting of the septic tank is to be consistent with NCC Pt 3 Tas F101.2.
- Low vent as per AES pipe layout plan (Low vent at end of pipework).

AES The World Leader in Passive Solutions ©

Site Address	Lot 2, 3 Gate Five Road, Carlton River	State	TAS	Post Code	7173
Client Name	Mr W Eisentraut	Date of Site Visit	20/5/22		
Designers Name	Peter Hofto, Rock Solid Geotechnics Pty Ltd	Designers Ph Number	0417 960 769	Designer Lic (e.g QBCC)	CC61591
Lic Plumber	TBA	Plumber Ph Number	TBA	Plumb / Drainer Lic Number	TBA
Council Area	Sorell	Designers AES Cert Number	1463	Date	6/6/22

This Calculator is a guide only, receiving soil classification, surface water, water tables and all other site constraints addressed by the qualified designer.

System Designers site and soil calculation data entry

IMPORTANT NOTES

Enter AES L/m loading rate, "30" for ADV Secondary or "38" Secondary	38	>> This design is for a SECONDARY system.
Is this a new installation Y or N	Y	>> Minimum single vent size is 80mm or 2 x 50mm house vents
Number of Bedrooms	3	>> This is not used in ANY Calculation. If not known use N/A or 0.
Number of persons	5	>> A septic tank outlet filter is NOT RECOMMENDED
Daily Design Flow Allowance Litre/Person/Day	120	
Number of rows required to suit site constraints	2	>> The maximum length of a single AES pipe run is 30m or 10 PIPES
Infiltration Soil Category from site/soil evaluation. CATEGORY	1	
Design Loading Rate based on site & soil evaluation DLR (mm/day)	25	
Bore log depth below system Basal area	1.5m	>> Min depth 1.5m. Check water table/restrictive layer
Is this design a GRAVITY system with no outlet filter? Y or N	n	>> PUMPED. HIGH & LOW vent required including a Velocity Diffuser



Sorell Council

Development Application: Further Response to Request
for Information (Waste Water Report).pdf
Date Received: 20/09/2022
Plans Referenced: PS

COMMENTS :- "The outcome must be important to everyone."

- Designers need to be familiar with special requirements of Local Authorities. ie - Minimum falls from Septic tank outlets to Land application areas etc
- Plumbers are reminded to practice good construction techniques as per AS 1547 & as provided on AES installation instructions supplied with components.

AES System Calculator Outcomes			AES dimensions		
Total System load - litres / day (Q).	600	l/d		AES System	System Extension
Min Length of AES pipe rows to treat loading	7.89	lm	Length:(L)	9.60m	9.60m
Number of FULL AES Pipe lengths per row	3	lths	Width:(W)	1.35m	1.15m
Total Capacity of AES System pipe in Litres	1272	ltr.	Sand Depth :	0.75m	0.15m
			Area m2	13.0 m^2	11.0 m^2
USE CUT LENGTHS OF PIPE IN THIS DESIGN? (ENTER Y)					
IF YOU WISH TO USE A TRENCH EXTENSION DESIGN OPTION ENTER "Y"				Enter Custom Width in metre	
AES INFILTRATION FOOT PRINT AREA - $L = Q / (DLR \times W)$			Length	Width	Minimum AES foot print required
for this Basic Serial design is			9.600m	x 2.50m	= 24.0 m2 total

AES pipes are best centered in the trench parallel to the site slope

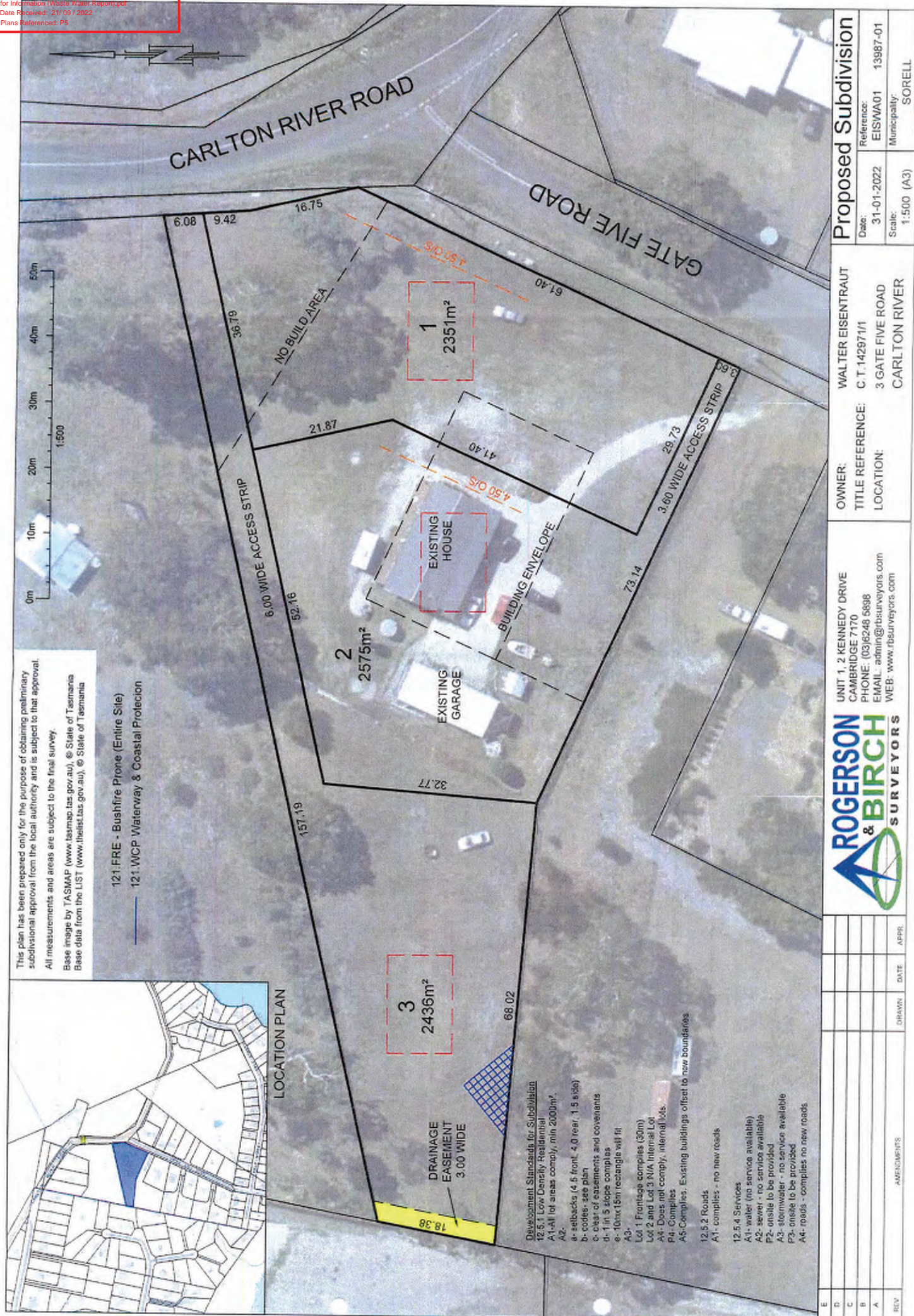
Code	AES System Bill of Materials		Chankar Environmental Use Only		
AES-PIPE	AES 3 metre Lengths required	6	lths		
AESC	AES Couplings required	4	ea		
AESO	AES Offset adaptors	4	ea		
AESODV	AES Oxygen demand vent	2	ea		
AES-IPB	AES 100mm Inspection point base	2	ea		
TD Kit 4	4 Hole Distribution Box Kit		ea		
TD Kit 7	7 Hole Distribution Box Kit		ea		
VS43-4	Sweet Air Filter VS43-4		ea		
AES DESO	Double Offset Adaptors		ea		
TOTAL SYSTEM SAND REQUIRED (Estimate Only)		14	m3		

Please email your AES Calculator (EXCEL FORMAT), Site Layout & AES Design to

design@enviro-septic.com.au

design@enviro-septic.com.au

- > The AES Calculator is a design aid to allow checking of the AES components, configuration and is a guide only. Site and soil conditions referencing AS1547 are calculated and designed by a Qualified Wastewater Designer.
- > Chankar Environmental accepts no responsibility for the soil evaluation, loading calculations or DLR entered by the designer for this calculator.
- > AES pipes can be cut to length on site. They are supplied in 3 meter lengths only.
- > AES ONLY supply AES components as detailed in the Bill of Materials.
- > SEPTIC Tank & other components including SAND will need to be sourced from other suppliers. Refer to our WEBSITE: www.enviro-septic.com.au OR 07 5474 4055



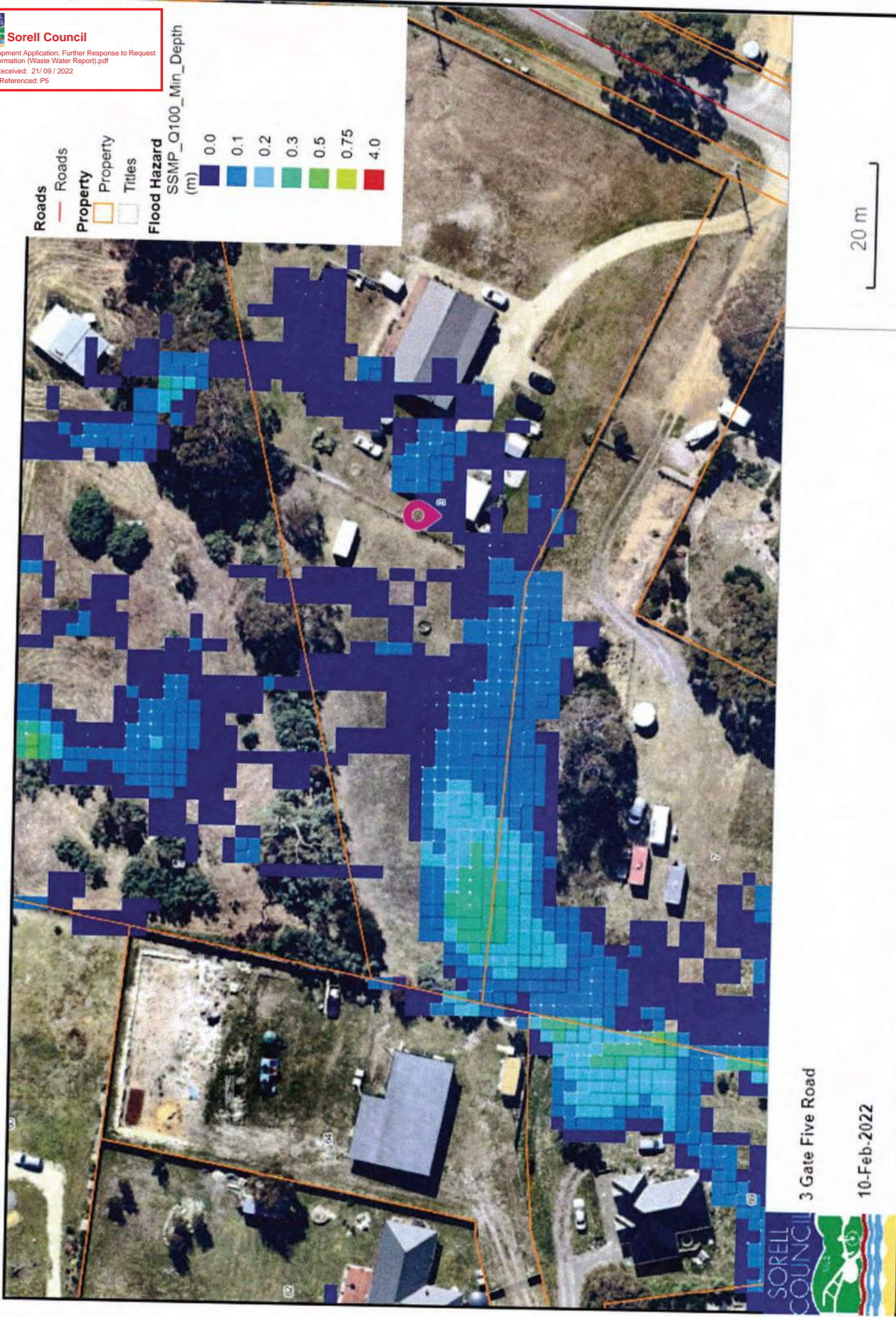
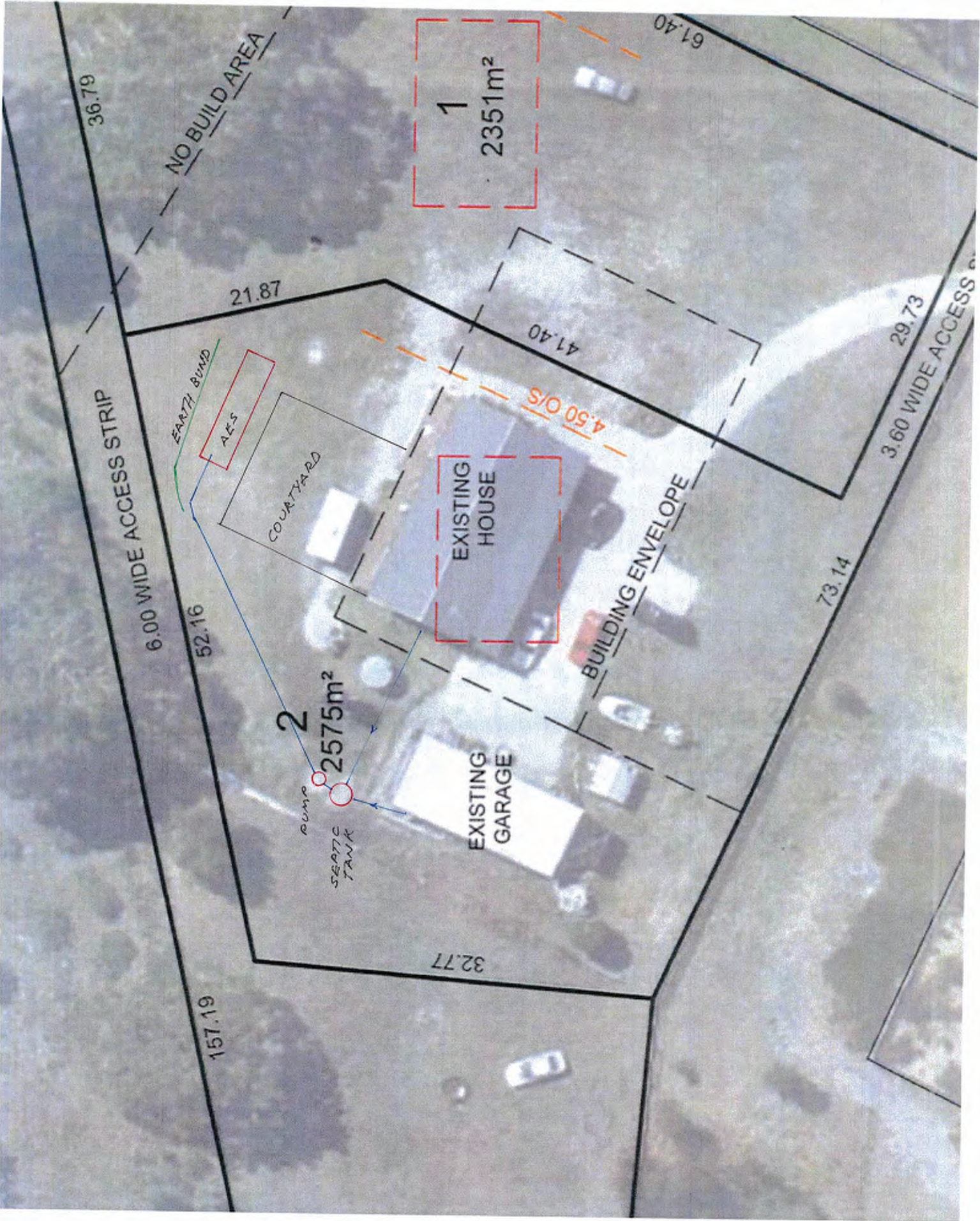
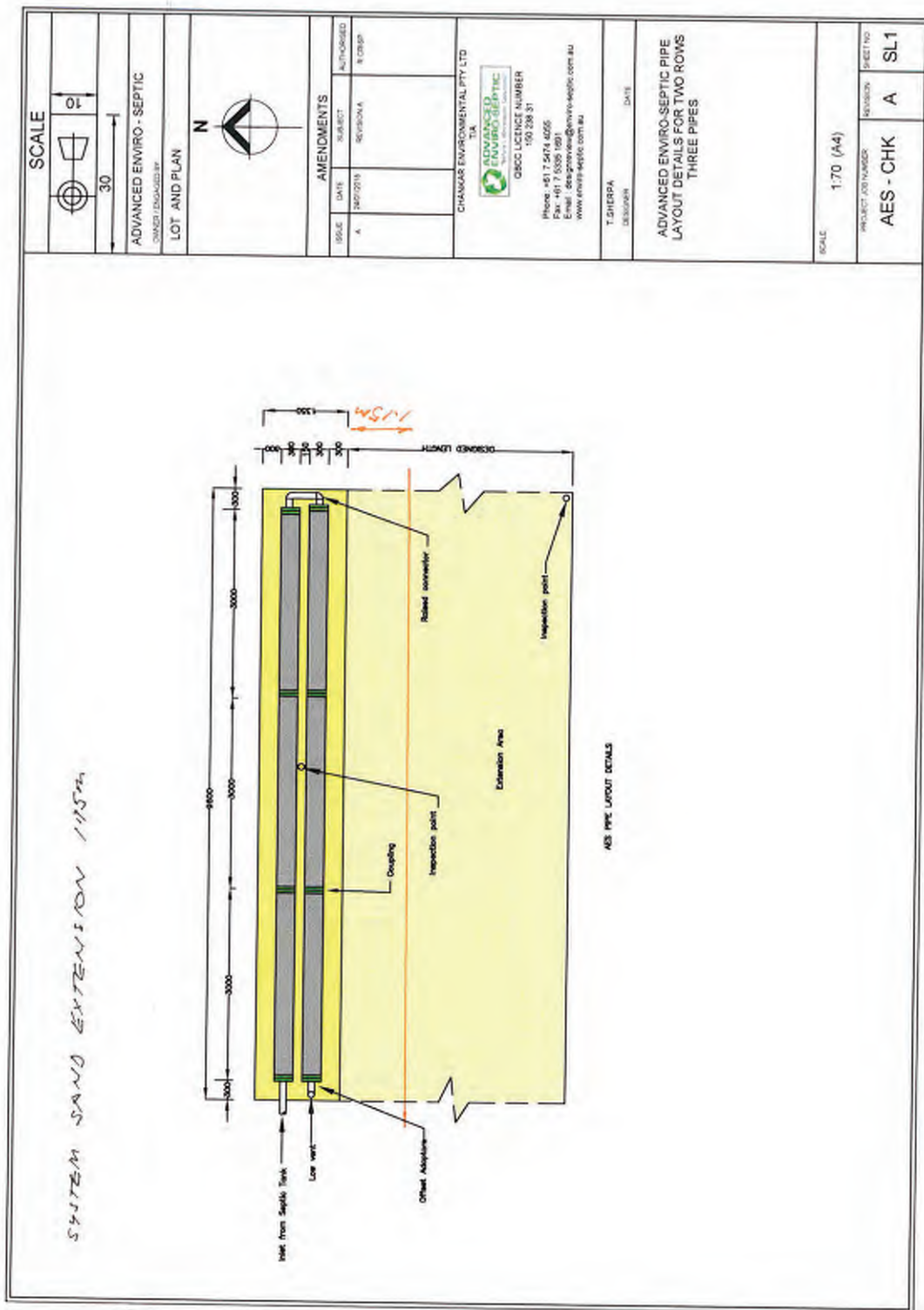
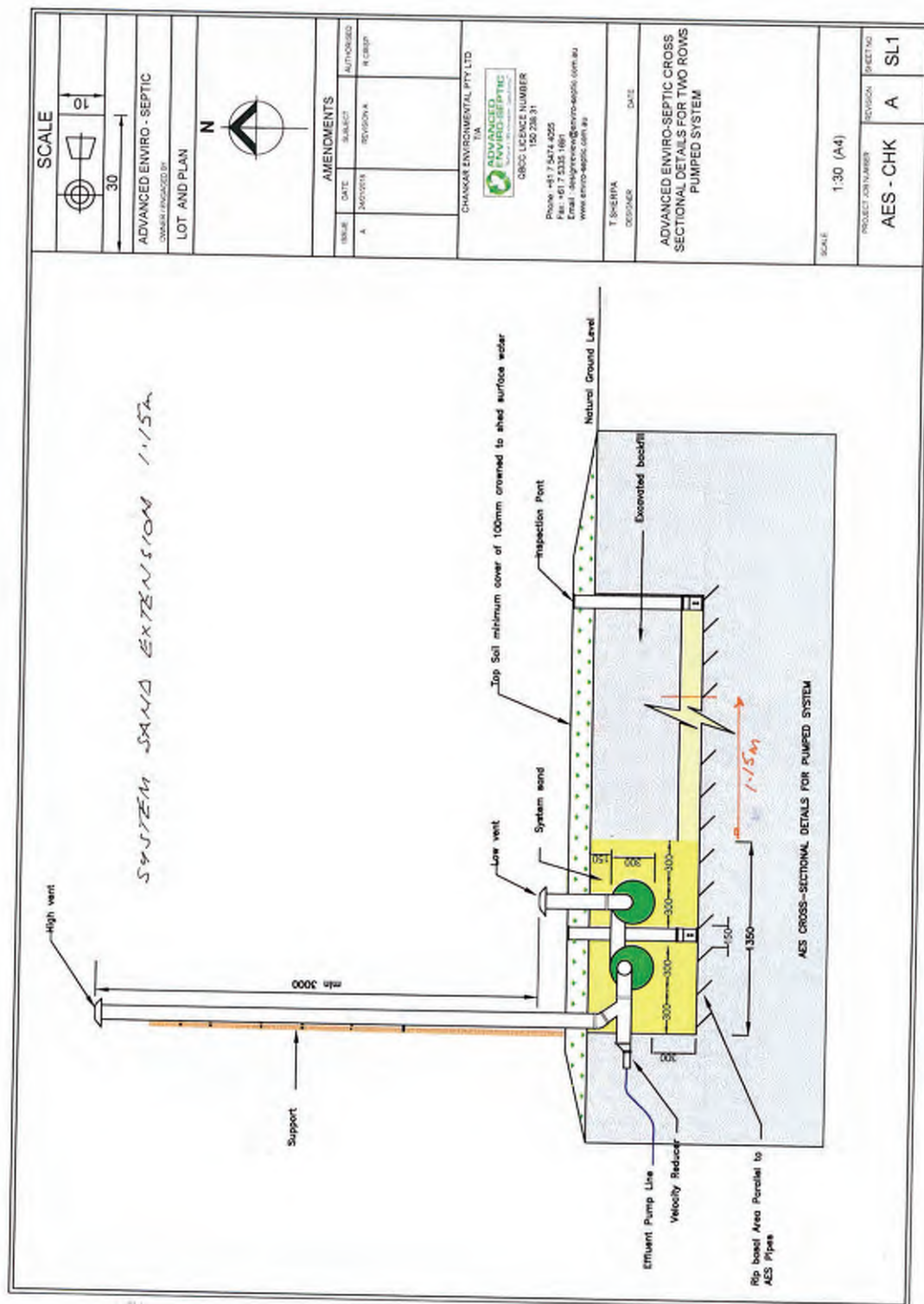


FIGURE 2







SITE AND SOIL EVALUATION REPORT

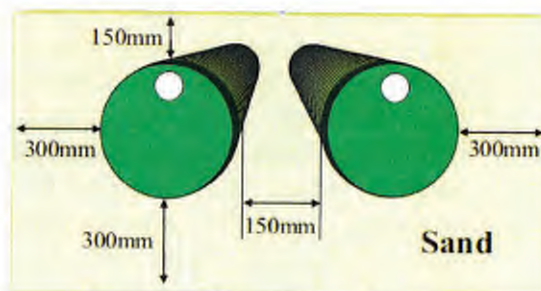
<u>Soil Category:</u>		
(as stated in AS/NZS 1547-2000)	Modified Emerson Test Required	No
1,...2,...3,...4,...5,...6	If Yes, Emerson Class No.	
<u>Measured or Estimated Soil Permeability (m/d):</u>	3.0m/d	
<u>Design Loading Rate: (mm/d)</u>	Design Loading Rate (DLR)	25 mm/day
<u>Geology:</u>	Quaternary sediments.	
<hr/>		
<u>Slope:</u>	2 degrees	
<u>Drainage lines / water courses:</u>	Nil	
<u>Vegetation:</u>	Grass	
<u>Site History: (land use)</u>	Residential block	
<u>Aspect:</u>	Southwest	
<u>Pre-dominant wind direction:</u>	Northwest to southwest	
<u>Site Stability:</u> Will on-site wastewater disposal affect site stability?	No	
<u>Is geological advice required?</u>	No	
<u>Drainage/Groundwater:</u>	Not encountered	
<u>Depth to seasonal groundwater (m):</u>	Not encountered	
<u>Are surface or sub-surface drains required upslope of the land application area</u>	Yes – earth bund	
<hr/>		
<u>Water Supply:</u>		
<input checked="" type="checkbox"/> Rainwater Tanks		
<u>Date of Site Evaluation:</u>	20/5/2022	
<u>Weather Conditions:</u>	Fine	



Advanced Enviro-Septic™ Installation Instructions

1. SET OUT

- Set out should be in accordance with the design approved by Council.
- The length of each run of AES System pipe must be horizontal
- AES calculator footprint dimensions are based upon the DLR of the receiving soil and are the minimum footprint area.
- Any system extension must be to the down slope side unless the infiltration footprint is level.



AES Sand Coverage Minimums

2. EXCAVATION – (track machinery causes less compaction of the soil.)

- Excavate as required leaving the base of excavation loose to aid infiltration. Strip and separate top soil for covering installation as per AS 1547:2012.
DO NOT damage infiltration area by driving equipment or walking on excavation prior to placement of sand layer. Refer to Appendix L Sec L7 of AS1547: 2012. Construction Techniques. Rip or scarify the infiltration area to a depth of 150 to 200mm minimum parallel to the AES pipe on all systems especially systems in Cat 4,5,6 soil with high clay content. (Refer to the design and report for this onsite installation)

“L7.1 Good construction technique AS 1547:2010

The following excavation techniques shall be observed so as to minimise the risk of damage to the soil:

- Plan to excavate only when the weather is fine;
 - Avoid excavation when the soil has a moisture content above the plastic limit. This can be tested by seeing if the soil forms a ‘wire’ when rolled between the palms;
 - During wet seasons or when construction cannot be delayed until the weather becomes fine, smeared soil surfaces may be raked to reinstate a more natural soil surface, taking care to use fine tines and only at the surface;
 - When excavating by machine, fit the bucket with ‘raker teeth’ if possible, and excavate in small ‘bites’ to minimise compaction; and
 - Avoid compaction by keeping people off the finished trench or bed floor.
- In particular for trenches and beds:
- If rain is forecast then cover any open trenches, to protect them from rain damage;
 - Excavate perpendicular to the line of fall or parallel to the contour of sloping ground; and
 - Ensure that the inverts are horizontal.



CL7.1

Damage can be done by:

- Smearing, where the soil surface is smoothed, filling cracks and pores;
- Compacting, where the soil porosity is reduced; and
- Puddling, where washed clay settles on the base of the trench to form a relatively impermeable layer.

In particular, cohesive soils, or soils containing a significant quantity of clay, are susceptible to damage by excavation equipment during construction.

- If using a raised bed configuration ensure you have sufficient soil to cover entire mound or bring in enough sand to fill out batters prior to covering with topsoil etc. as per AS 1547:2012.

3. SYSTEM SAND – Course washed sand with less than 2mm silt (ASTM C-33)

- i. Place minimum 150mm system sand to extension area and minimum 300mm under AES pipe footprint area.
- ii. Place runs of AES System pipe roughly in position (THE FABRIC SEAM MUST BE AT THE TOP AND THE WHITE BIO-ACCELERATOR AT THE BOTTOM.) With 300mm minimum clearance to all footprint edges. Join lengths of AES with AES connectors. To do this slide fabric and fibre back on the 2 pipe ends to be joined and clip AES connector in place. Slide fabric back over connector.
- iii. Place offset adaptors on each run with the 100mm hole at the top.
- iv. Ensure minimum 150mm between AES system pipes. This can be done with pegs, short pieces of 150mm pvc or reusable AES Spacer Plates. One side provides the 300m spacing required for minimum system sand. The opposite side must have a minimum of 300mm of system sand beyond the edge of the AES System pipe.
- v. Place system sand around AES pipes ensuring they stay level and in position. Remove and progressively position spacer plates or PVC pipe until all system pipes are surrounded by system sand to the top. **Walk sand between rows to aid compaction.**
- vi. EXTENSION SAND depth is a minimum of 150mm.



4. CONNECTING ROWS

- i. Connect rows with 100mm pipe as required with a maximum 100mm extending into the AES system pipe. (Raised connection – After placing raised connection pipes the top of the PVC pipe must be level with the top of the AES pipe. Lift and pack with sand.) This ensures airflow is not restricted and buffer capacity is maximised.



5. VENTING

- i. Ensure the system has a High Vent and a low vent. As per design. Low vent is a minimum 150mm above ground. Vents can be located any distance from the system provide they have no water traps that can block oxygen flow through the system. The High Vent must be 3 meters higher than the low vent.
- ii. Pressurised or steep gravity systems will require a **Velocity Diffuser**

6. BACK FILLING

- i. Ensure a minimum of 150mm System sand covers the AES pipes and PVC pipe work.
- ii. Refer to the Onsite design and Council approval and ensure that all diversions drains or site specific requirements are correctly installed.
- iii. Back fill with natural soil and compact. System extensions may require compaction in a couple of layers depending on the depth.
- iv. On mounds and down slopes strip vegetation and place fill evenly and level to all sides to avoid breakout from low points during high seasonal loadings.
- v. Cover excavation area with topsoil creating a finished surface level 50 to 100mm higher than the natural surface level ensuring that water sheds off the land application area and does not pond, compact lightly and seed or grass when completed.

For Installation support phone 0754744055

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
 Section 106
 Section 129
 Section 155

Form **35**

To: *Owner name*

Address

Designer details:

Name: Category:

Business name: Phone No:

Business address:
 Fax No:

Licence No: Email address:

Details of the proposed work:

Owner/Applicant Designer's project reference No.

Address: Lot No:

Type of work: Building work ☐ Plumbing work ☒

Description of the Design Work (Scope, limitations or exclusions): *(X all applicable certificates)*

Certificate Type:	Certificate	Responsible Practitioner
	X Hydraulic design	Engineer

<input type="checkbox"/> Other (specify) Advanced Enviro Septic Bed		
Deemed-to-Satisfy:	Performance Solution: <input checked="" type="checkbox"/> (X the appropriate box)	
Drawing numbers:	Prepared by: ROCK SOLID GEOTECHNICS P/L	Date: 6/6/2022
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: ROCK SOLID GEOTECHNICS P/L	Date: 6/6/2022
Computations:	Prepared by: ROCK SOLID GEOTECHNICS P/L	Date: 6/6/2022
Performance solution proposals:	Prepared by: Stephen Dennis	Date: 6/6/2022
AES Tasmania NCC Performance		

Standards, codes or guidelines relied on in design process:	
AS1547-2012	
Director's Guidelines for Onsite Wastewater Management	

Attribution as designer:	
--------------------------	--

I Stephen Dennis am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Stephen Dennis		6/6/2022
Licence No:	373083211		

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Mr W Eisentraut Owner /Agent
 Office@rbsurveyors.com Address
 Suburb/postcode

Qualified person details:

Qualified person: Stephen John Dennis
 Address: PO Box 1556 Phone No: 0455 826 203
 Noosaville 4566 Fax No:
 Licence No: 373083211 Email address: stevedennis913@gmail.com

Qualifications and Insurance details: BEng(Hons), GradDipMgt
(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Speciality area of expertise: Professional Engineering
 Wastewater Design
 NER, NPER, CPEng, APEC, IntPE(Aust), RPEQ20663
(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot 2, 3 Gate Five Road, Carlton River Lot No: 2
 Certificate of title No:

The assessable item related to this certificate: Design of an onsite wastewater management system.
(description of the assessable item being certified)
 Assessable item includes –
 - a material;
 - a design
 - a form of construction
 - a document
 - testing of a component, building system or plumbing system
 - an inspection, or assessment, performed

Certificate details:

Certificate type: On-site wastewater management – System design
(description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

This certificate is in relation to the above assessable items, at any stage, as part of – (tick one)

☒ building work, plumbing work or plumbing installation or demolition work

OR

☐ a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:	Geotech 22-118a Rock Solid Geotechnics P/L
Relevant calculations:	AES Calculator – Chankar Environmental
References:	<p>NCC Vol 3. Refer to AES Tasmania NCC Performance Solution V4.</p> <p>AS/NZS 1547.2012 - Onsite domestic wastewater management</p> <p>Director's Guidelines for Onsite Wastewater Management 2017</p> <p>Advanced Enviro Septic Design & Installation Manual, Advanced Enviro-Septic Installation Instructions and, Home Owner's Manual; all by Chankar Environmental Pty Ltd, 62 Rene Street, Noosaville QLD 4566</p>

Substance of Certificate: (what it is that is being certified)

Confirmation of the performance solution for design of Advanced Enviro-Septic System at (insert site address)

(Evidence of compliance with NCC Vol 3 TAS Section H is provided in the appended document headed "AES Tasmanian NCC Performance Solution")

Scope and/or Limitations

Exclusions – All works other than the above.

I certify the matters described in this certificate.

Qualified person:	Signed:	Certificate No:	Date:
			6/6/2022

Section 94
 Section 106
 Section 129
 Section 155

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Form **35**

To: Mr W Eisentraut

Owner name

Office@rbsurveyors.com

Address

Designer details:

Name:

PETER HOFTO

Category:

Hydraulic - Restricted

Business name:

ROCK SOLID GEOTECHNICS PTY LTD

Phone No:

0417960769

Business address:

163 Oriellon Road

Oriellon

7172

Fax No:

Licence No:

CC 6159I

Email address:

peter@rockolidgeotechnics.com.au

Details of the proposed work:

Owner/Applicant

Mr W Eisentraut

Designer's

project

reference No.

GEOTECH

22-118a

Address:

Lot 2, 3 Gate Five Road, Carlton River

Lot No:

Type of work:

Building work

☐

Plumbing work

☒

ONSITE WASTEWATER MANAGEMENT SYSTEM

Description of the Design Work (Scope, limitations or exclusions): *(X all applicable certificates)*

Certificate Type:	Certificate	Responsible Practitioner
	X Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer


<input type="checkbox"/> Other (specify)		
Deemed-to-Satisfy: X	Performance Solution: (X the appropriate box)	
Drawing numbers:	Prepared by: ROCK SOLID GEOTECHNICS P/L	Date: 6/6/2022
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: ROCK SOLID GEOTECHNICS P/L	Date: 6/6/2022
Computations:	Prepared by: ROCK SOLID GEOTECHNICS P/L	Date: 6/6/2022
Performance solution proposals:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:	
AS1547-2012	
Director's Guidelines for Onsite Wastewater Management	
Attribution as designer:	

I PETER HOFTO – ROCK SOLID GEOTECHNICS P/L am responsible for the design of that part of the work as described in this certificate;

The documentation relating to the design includes sufficient information for the assessment of the work in accordance with the *Building Act 2016* and sufficient detail for the builder or plumber to carry out the work in accordance with the documents and the Act;

This certificate confirms compliance and is evidence of suitability of this design with the requirements of the National Construction Code.

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	PETER HOFTO		6/6/2022
Licence No:	CC 6159I		

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Mr W Eisentraut

Owner /Agent

Office@rbsurveyors.com

Address

Qualified person details:

Qualified person: Peter Hofto – Rock Solid Geotechnics Pty Ltd

Address: 163 Orielson Road, Orielson 7172

Phone No: 0417960769

Licence No:

Email address: peter@rocksolidgeotechnics.com.au

Qualifications and
Insurance details:

BSc (Hons) – Geology / Geophysics
 PI Insurance – Lloyds Underwriting
 PL Insurance – CGU Insurance Ltd

(description from Column 3 of the
Director of Building Control's
Determination)

Speciality area of
expertise:

Site & Soil Evaluation and Land Application
System Design

(description from Column 4 of the
Director of Building Control's
Determination)

Details of work:

Address: Lot 2, 3 Gate Five Road, Carlton River

Lot No: 2

The assessable
item related to this
certificate:

Onsite wastewater management – site & soil
evaluation for onsite wastewater management
capability.
 Characterisation of wastewater and predicted
hydraulic loadings.
 Selection of land application area.
 Selection of design loading rate.

(description of the assessable item
being certified)

Assessable item includes –

- a material;
- a design
- a form of construction
- a document
- testing of a component, building
system or plumbing system
- an inspection, or assessment,
performed

Certificate details:

Certificate type:

Site & Soil Evaluation and Land Application System
 Design

(description from Column 1 of
 Schedule 1 of the Director of Building
 Control's Determination)

This certificate is in relation to the above assessable item, at any stage, as part of - (tick one)

building work, plumbing work or plumbing installation or demolition work:



or

a building, temporary structure or plumbing installation:



In issuing this certificate the following matters are relevant –

Documents:

AS 1547:2021 On-site domestic wastewater management

References:

AS 1547:2021 On-site domestic wastewater management
 Director's Guidelines for Onsite Wastewater Management

Substance of Certificate: (what it is that is being certified)

Scope and/or Limitations

Exclusions: Design of AES Bed

I certify the matters described in this certificate.

Signed:

Certificate No:

Date:

Qualified person:



GEOTECH
 22-118a

6/6/2022

Assessment of Certifiable Works: (TasWater)

Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.

If you cannot check ALL of these boxes, LEAVE THIS SECTION BLANK.

TasWater must then be contacted to determine if the proposed works are Certifiable Works.

I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

- ☒ The works will not increase the demand for water supplied by TasWater
- ☒ The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- ☒ The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- ☒ The works will not damage or interfere with TasWater's works
- ☒ The works will not adversely affect TasWater's operations
- ☒ The works are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- ☒ I have checked the LISTMap to confirm the location of TasWater infrastructure
- ☒ If the property is connected to TasWater's water system, a water meter is in place, or has been applied.

Certification:

I PETER HOFTO – ROCK SOLID GEOTECHNICS P/L being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008*, that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

Note: The Guidelines for TasWater Certification of Certifiable Works Assessments are available at: www.taswater.com.au

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	PETER HOFTO		6/6/2022

6/6/2022

Mr W Eisentraut
Office@rbsurveyors.com

ROCK SOLID GEOTECHNICS PTY LTD
 Peter Hofto
 163 Orielson Rd
 Orielson
 TAS 7172
 0417960769
peter@rocksolidgeotechnics.com.au

Loading Certificate for Onsite Wastewater System - Lot 2, 3 Gate Five Road, Carlton River

- 1 System Capacity:
 - (medium/long term) 3-bedroom (equivalent) residence
 - 5 persons, 600 litres/day
- 2 Design Criteria Summary:
 - Primary Treated Effluent Dual-purpose septic tank.
 - Soil Category Class 1 SAND
 - Land Application System 9.6m long x 2.5m wide AES Bed
- 3 Reserve Area:
 - Suitable available reserve area.
- 4 Variation from design flows etc:
 - The system should successfully assimilate additional peak loadings which may result from occasional social gatherings provided that this does not exceed use by more than 8 persons in a 24-hour period or more than 1 temporary resident visitors (ie. up to 6 persons total) for a period not exceeding 4 days. Visitors should be advised of the requirement to minimise time spent in showers, not running taps whilst cleaning teeth, and other common sense water conservation measures.
- 5 Consequences of overloading the system:
 - Long term use by more than 5 residents or equivalent may result in overloading of the system, surfacing of effluent, public and environmental health nuisances, pollution of surface water etc.
- 6 Consequences of under-loading the system:
 - Nil.
- 7 Consequences of lack of operation, maintenance and monitoring attention:
 - The septic tank should be pumped at least every 3 years. The outlet filter should be cleaned every 6 months.

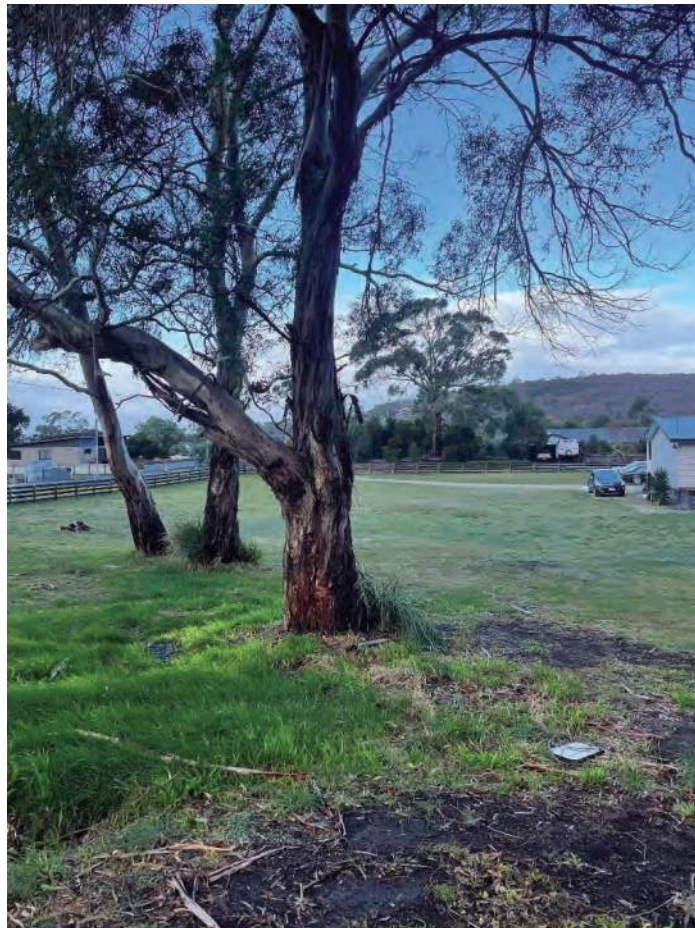

 Peter Hofto
 Rock Solid Geotechnics Pty Ltd

BUSHFIRE ASSESSMENT REPORT

Proposed 3 Lot Subdivision

Address: 3 Gate Five Road, Carlton River TAS 7173

Title Reference: 142971/1



Prepared by James Rogerson, Bushfire Hazard Practitioner
(BFP-161)
VERSION – 1.3
Date: 01/06/2023

Contents

1 INTRODUCTION.....	3
1.1 Background.....	3
1.2 Scope	3
1.3 Scope of BFP Accreditation	3
1.4 Limitations.....	4
1.5 Proposal.....	4
2 PRE-FIELD ASSESSMENT.....	4
2.1 Site Details.....	4
2.2 TasVeg 4.0	6
3 SITE ASSESSMENT	7
3.1 Bushfire Hazard Assessment	7
3.2 Vegetation and Effective Slope	7
3.3 Bushfire Attack Level (BAL)	11
3.4 Definition of BAL-LOW	12
4 BUSHFIRE PROTECTION MEASURES	13
4.1 Hazard Management Areas (HMA)	13
4.2 Public and Fire Fighting Access.....	15
4.3 Water Supply for Fire Fighting	17
4.4 Construction Standards.....	18
5 STATUTORY COMPLIANCE	19
6 CONCLUSION & RECOMMENDATIONS	20
7 REFERENCES.....	20
8 APPENDIX A – SITE PHOTOS.....	21
9 APPENDIX B – SUBDIVISION PROPOSAL PLAN	25
10 APPENDIX C – BUSHFIRE HAZARD MANAGEMENT PLAN	26
11 APPENDIX D – PLANNING CERTIFICATE	27

Disclaimer: The information contained within this report is based on the instructions of AS 3959-2018 the standard states that “Although this Standard is designed to improve the performance of building when subjected to bushfire attack in a designated bushfire-prone area there can be no guarantee that a building will survive a bushfire event of every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire and extreme weather conditions.” (Standards Australia Limited, 2011)

1 INTRODUCTION

1.1 Background

This Bushfire Hazard Report and associated Bushfire Hazard Management Plan (BHMP) has been prepared by James Rogerson of Rogerson and Birch Surveyors on behalf of the proponent to form part of supporting documentation for the proposed two lot subdivision of 3 Gate Five Road, Carlton River.

Under the Sorell Interim Planning Scheme 2015, E1.0 Bushfire-Prone Areas Code it is a requirement that a subdivision application within a bushfire-prone area must accomplish a minimum Bushfire Attack Level (BAL) rating of BAL-19 for all future dwellings on newly formed allotments. This report also includes an associated BHMP which is also a requirement under E1.0.

The proposed development is within a Bushfire-Prone Area overlay and there is bushfire-prone vegetation within 100m from the site. Therefore, this site is within a bushfire-prone area.

1.2 Scope

This Bushfire Report offers an investigation and assessment of the bushfire risk to establish the level of bushfire threat and vulnerability on the land for the purpose of subdivision. This report includes the following:

- A description of the land and adjacent land, and description of the use or development that may be at threat by a bushfire on the subject site;
- Calculates the level of a bushfire threat and offers opinions for bushfire mitigation measures that are consistent with AS3959:2018 and E1.0.
- Subdivision Proposal Plan (Appendix B)
- Bushfire Hazard Management Plan (Appendix C)
- Planning Certificate (Appendix D)

1.3 Scope of BFP Accreditation

I, James Rogerson am an accredited Bushfire Practitioner (BFP-161) to assess bushfire hazard and endorse BHMP's under the the *Chief Officers Scheme for the Accreditation of Bushfire Hazard Practitioners*. I have successfully completed the *Planning for Bushfire Prone Areas Short Course* at University of Technology Sydney.

1.4 Limitations

The site assessment has been conducted and report written on the understanding that:

- The report only deals with the potential bushfire risk, all other statutory assessments are outside the scope of this report;
- The report only classifies the size, volume and status of the vegetation at the time the site assessment was conducted;
- Impacts on future development and vegetation growth have not been considered in this report. No action or reliance is to be placed on this report, other than which it was commissioned.

1.5 Proposal

The proposal is the subdivision of the current title C.T.142971/1 into three resultant titles. See proposal plan (Appendix B).

2 PRE-FIELD ASSESSMENT

2.1 Site Details

Table 1

Owner Name(s)	Walter and Sokunthea Eisentraut
Location	3 Gate Five Road, Carlton River
Title Reference	C.T.142971/1
Property ID	3034425
Municipality	Sorell
Zoning	12.0 Low Density Residential
Planning Overlays	122.FRE – Bushfire-Prone Areas, 122.WCP-Waterway and Coastal Protection Areas
Water Supply for Firefighting	The property is not serviced by reticulated water.
Public Access	Access to the development is off Gate Five Road, via Carlton River Road
Fire History	No fire history recorded on <i>the LIST</i>
Existing Development	Class1a dwelling, class10a shed & an all-weather driveway



Figure 1 Location of subject site. Source: The LIST, © State of Tasmania

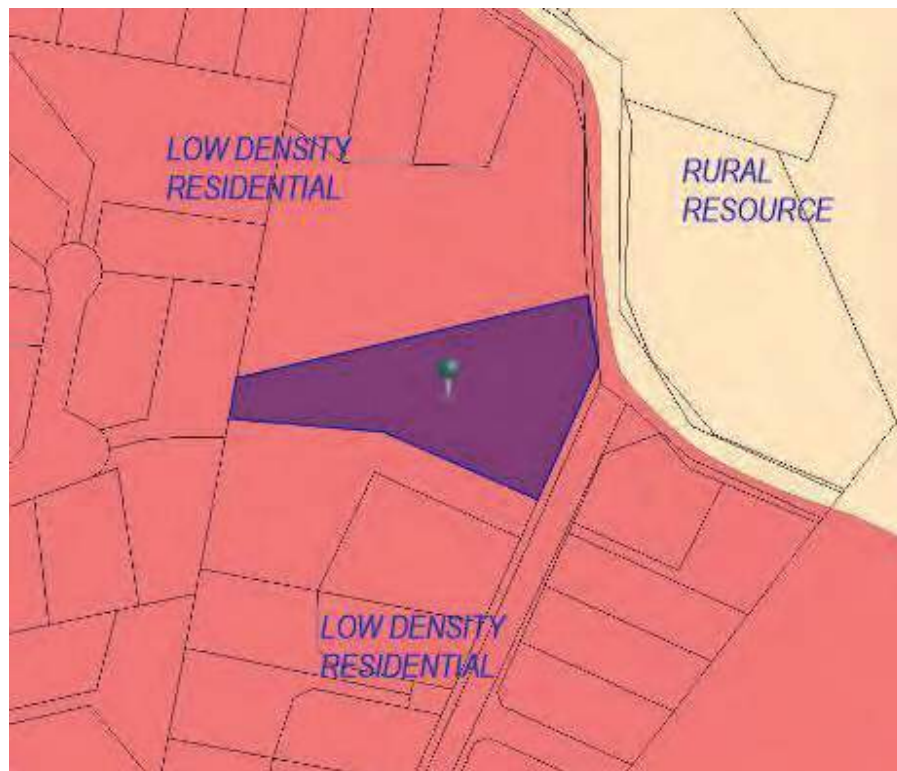


Figure 2 Planning Scheme Zoning of site and surrounding properties. Source: The LIST, © State of Tasmania

2.2 TasVeg 4.0

There are 1 classified vegetation community on the subject site, and 3 additional communities on the surrounding land and parcels. Figure 3 below shows the classified vegetation from TASVEG4.0 (Source: The LIST).

Please note that TASVEG4.0 classification does not necessarily reflect ground conditions.

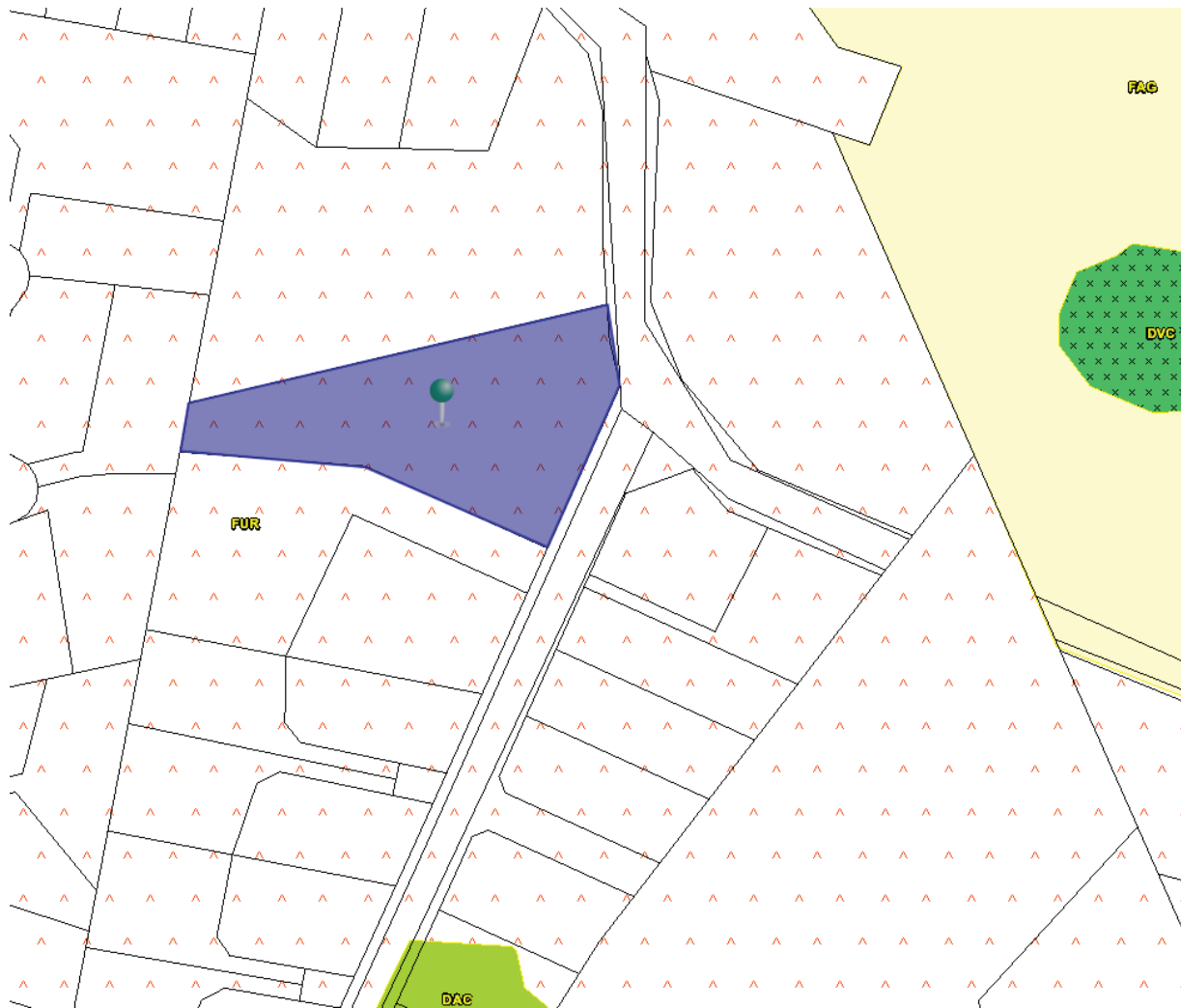


Figure 3 TASVEG4.0 communities on subject site and surrounding land. FUR – Urban areas, FAG – Agricultural land, DVC – Eucalyptus viminalis - Eucalyptus globulus coastal forest and woodland, DAC - Eucalyptus amygdalina coastal forest and woodland

3 SITE ASSESSMENT

The site assessment was conducted by James Rogerson (BFP-161) on the 11th of June 2022.

3.1 Bushfire Hazard Assessment

E1.0 Bushfire Prone Areas Code defines Bushfire-prone areas as follows;

- a) Land that is within the boundary of a bushfire-prone area shown on an overlay on a planning scheme map; or*
- b) Where there is no overlay on a planning scheme map, or where the land is outside the boundary of a bushfire-prone area shown on such map, land that is within 100m of an area of bushfire –prone vegetation equal or greater than 1ha.*

The subject site is within a bushfire-prone areas overlay for the Sorell Interim Planning Scheme 2015 and the subject site is within 100m of an area of bushfire-prone vegetation equal or greater than 1ha. Therefore, this proposed subdivision is within a bushfire-prone area as per the Sorell Interim Planning Scheme 2015.

For the purposes of the BAL Assessment, vegetation within 100m of the proposed subdivision site were assessed and classified in accordance with AS3959:2018 Simplified Procedure (Method 1) (relevant fire danger index: 50-which applies across Tasmania).

BUSHFIRE THREAT DIRECTION

Bushfire threat to this development is from the **GRASSLAND FUEL** north the site. Additional threat is from the **WOODLAND FUEL** to the south.

Prevailing Winds: The prevailing winds for this site are primarily westerly, north westerly.

3.2 Vegetation and Effective Slope

Vegetation and relevant effective slopes within 100m of the proposed subdivision have been inspected and classified in accordance with AS 3959:2018. Effective Slope refers to the slope of the land underneath the classified bushfire-prone vegetation relative to the building site and not the slope between the vegetation and the building site. The effective slope affects a fires rate of spread and flame length and is an acute aspect of bushfire behaviour.

WITHIN THE SITE & SITE DESCRIPTION

The subject site is a medium sized Low Density Residential zoned block. The site is located at the west end of Carlton River suburb and the west boundary is on the boarder with Carlton.

Terrain within is generally flat, with some upslope in the northeast corner in a north easterly aspect.

The subject site is a developed residential lot, consisting of a class1a dwelling, class10a shed and an all-weather driveway. The land surrounding the dwelling and in the front two thirds of the site is used as private open space and is also managed by regular mowing and is therefore classed as MANAGED LAND or LOW THREAT VEGETATION per Clause 2.2.3.2 (e)(f) of AS3959:2018. The rear third of the site appeared less used than the front two thirds. The grass here was longer and there were no private structures for land use etc. However, from aerial imagery over recent years this third was also mowed regularly and is therefore classed as LOW THREAT VEGETATION per Clause 2.2.3.2 (f) of AS3959:2018.

NORTH OF THE SITE

To the north of proposed development upslope and across slope is 340, 342, 346 and 352 Carlton River Road.

#352 is adjacent to the subject site. This property is a large Low Density Residential zoned property. The property is developed with a class10a shed with no visible access found. The land directly surrounding the shed appeared not used as private open space and cannot be classed as managed land or low threat vegetation. Most of the site is covered with unmanaged grass that was at least 200mm-300mm in height. Also within this property is some single standing gum trees and small patches of low scrub. However, as the grass is the predominant vegetation within this property, it is therefore classed as GROUP G GRASSLAND per Table 2.3 of AS3959:2018.

#340 is a small, vacant Low Density Residential zoned property. The property is predominately covered with unmanaged grass due to its minimal land use, with a few single standing gum trees. Therefore, the vegetation here is classed as GROUP G GRASSLAND per Table 2.3 of AS3959:2018.

#342 and #346 are two small, developed Low Density Residential zoned properties. Both properties are consisting of class1a dwellings, class10a sheds, all-weather/concrete driveways, and cultivated gardens. The whole of the properties is used as private open space and therefore classed as MANAGED LAND or LOW THREAT VEGETATION per Clause 2.2.3.2(e)(f) of AS3959:2018.

EAST AND SOUTHEAST OF THE SITE

East of the site across Carlton River Road is 355 Carlton River Road. This property is a medium sized Rural Resource zoned property that is consisting of a class1a dwelling, various class10a sheds and an all-weather driveway. The land directly surrounding the dwelling is used as private open space and is therefore classed as MANAGED LAND per Clause 2.2.3.2 (e)(f) of AS3959:2018. The south portion of the property is vegetated with gum trees that are <30m high, have <30% foliage cover with a grassy understory and is therefore classed as GROUP B WOODLAND per Table 2.3 of AS3959:2018. The north portion of the property appeared more used in and around the sheds etc. There are some single standing gum trees with grassy understory though not as dense as the south of the block. Therefore, the north of block is classed as LOW THREAT VEGETATION per Clause 2.2.3.2 (f) of AS3959:2018.

Southeast of the site across Gate Five Road are various (#2-#10) small developed and undeveloped Low Density Residential zoned properties. 2, 6 and 8 are developed consisting of Class1a dwellings, class10a sheds, all-weather driveways, and cultivated gardens. The land directly surrounding the dwellings is used as private open space and is therefore classed as MANAGED LAND per Clause 2.2.3.2 (e)(f) of AS3959:2018. The remainder of the properties were grassed or landscaped, the grass was managed due to the small size of the properties and therefore the remainder of the developed properties is classed as MANAGED LAND or LOW THREAT VEGETATION per Clause 2.2.3.2 (f) of AS3959:2018. 4 and 10 are vacant or with small sheds on the, and shipping containers in preparation for future development. The properties were grassed but in a managed condition and therefore these 2 properties are classed as LOW THREAT VEGETATION per Clause 2.2.3.2 (f) of AS3959:2018.

SOUTH AND SOUTHWEST OF THE SITE

To the south and southwest of the site is predominately developed medium sized Low Density Residential zoned properties. The only vacant property being adjacent to the subject site which is 7 Gate Five Road. #7 is a battleax block. From site visit the block had various shipping containers, water tanks and a caravan in the preparation for future development. The main part of the block is grassed that appeared mainly managed. However, as the lot is still undeveloped the grass is therefore classed as GROUP G GRASSLAND per Table 2.3 of AS3959:2018. The remainder of the main part of this property is vegetated with gum trees that are <30m high have a <10% foliage cover and has a grassy understory. As the predominant vegetation in this section is grass with only a <10% overstory and being surrounded by grassland and low threat vegetation it is therefore classed as GROUP G GRASSLAND per Table 2.3 of AS3959:2018. The access is used for 3 properties (including the subject site) and is grassed to either side of the gravel formation that is managed and is therefore classed as LOW THREAT VEGETATION per Clause 2.2.3.2 (f) of AS3959:2018.

WEST OF THE SITE

To the west of the subject site are various developed Low Density Residential zoned properties. All these properties in this aspect are consisting of class1a dwellings, class10a sheds, concrete/all-weather driveways, and cultivated gardens. Due to the small size of these properties the whole property is used as private open space and is therefore classed as MANAGED LAND per Clause 2.2.3.2 (e)(f) of AS3959:2018.

Figure 4 below shows the relationship between the subject site and the surrounding vegetation.



Figure 4 classified vegetation (within 100m of site) and existing separation from bushfire-prone vegetation (not to scale)

3.3 Bushfire Attack Level (BAL)

Table 2 BAL rating for each lot and required separation distances

LOT 1 – VACANT				
DIRECTION OF SLOPE	NORTH	EAST	SOUTH	WEST
Vegetation Classification	MANAGED GRASSLAND	MANAGED WOODLAND	MANAGED	MANAGED GRASSLAND
Existing Horizontal distance to classified vegetation	6m-100m (G)	81m-100m (B)	N/A	44mm-100m (G)
Effective Slope under vegetation	Across & Upslope	Across slope	Across slope	Across slope
Exemption				
Current BAL value for each side of the site	BAL-FZ	BAL-12.5	BAL-LOW	BAL-12.5
Separation distances to achieve BAL-19	10m	15m	N/A	10m
Separation distances to achieve BAL-12.5	14m	22m	N/A	10m

LOT 2 – EXISTING DWELLING				
DIRECTION OF SLOPE	NORTH	EAST	SOUTH	WEST
Vegetation Classification	MANAGED GRASSLAND	MANAGED	MANAGED	MANAGED GRASSLAND
Existing Horizontal distance to classified vegetation	20m-100m (G)	N/A	N/A	31m-100m (G)
-Effective Slope under vegetation	Across & Upslope	Across slope	Across slope	Across slope
Exemption				
Current BAL value for each side of the site	BAL-12.5	BAL-LOW	BAL-LOW	BAL-12.5
Separation distances to achieve BAL-19	10m	N/A	N/A	10m
Separation distances to achieve BAL-12.5	14m	N/A	N/A	14m

LOT 3 – VACANT (Main Body of Lot)				
DIRECTION OF SLOPE	NORTH	EAST	SOUTH	WEST
Vegetation Classification	GRASSLAND	MANAGED	GRASSLAND MANAGED	MANAGED
Existing Horizontal distance to classified vegetation	0m-100m (G)	N/A	0m-70m (G)	N/A)
Effective Slope under vegetation	Across & Upslope	Across slope	Across slope	Across slope
Exemption				
Current BAL value for each side of the site	BAL-FZ	BAL-LOW	BAL-FZ	BAL-LOW
Separation distances to achieve BAL-19	10m	N/A	10m	N/A
Separation distances to achieve BAL-12.5	14m	N/A	14m	N/A

3.4 Definition of BAL-LOW

Bushfire Attack Level shall be classified BAL-LOW per Section 2.2.3.2 of AS3959:2018 where the vegetation is one or a combination of any of the following Exemptions:

- Vegetation of any type that is more than 100m from the site.
- Single areas of vegetation less than 1 hectare in area and not within 100m of other areas of vegetation being classified.
- Multiple areas of vegetation less than 0.25 ha in area and not within 20m of the site, or each other.
- Strips of vegetation less than 20m in width (measured perpendicular to the elevation exposed to the strip of vegetation) regardless of length and not within 20m of the site or each other, or other areas of vegetation being classified.
- Non-vegetated areas, including waterways, roads, footpaths, buildings and rocky outcrops.
- Low threat vegetation, including grassland managed in a minimal fuel condition, maintained lawns, golf courses, maintained public reserves and parklands, vineyards, orchards, cultivated gardens, commercial nurseries, nature strips and windbreaks.

NOTE: Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100mm).

The BAL level will also be classified as BAL-LOW if Grassland fuel is >50m from the site for any effective slope per Table 2.6 of AS3959:2018.

BAL ratings are as stated below:

BAL LOW	BAL 12.5	BAL 19	BAL 29	BAL 40	BAL FZ
There is insufficient risk to warrant any specific construction requirements, but there is still some risk	Ember attack and radiant heat below 12.5 kW/m ²	Increasing ember attack and windborne debris, radiant heat between 12.5 kW/m ² and 19 kW/m ²	Increasing ember attack and windborne debris, radiant heat between 19kW/m ² and 29 kW/m ²	Increasing ember attack and windborne debris, radiant heat between 29 kW/m ² and 40 kW/m ² . Exposure to flames from fire front likely	Direct Exposure to flames, radiant heat and embers from the fire front

4 BUSHFIRE PROTECTION MEASURES

4.1 Hazard Management Areas (HMA)

Hazard Management Area as described in the Code “*maintained in a minimal fuel condition and in which there are no other hazards present which will significantly contribute to the spread of a bushfire*”. Also as described from Note 1 of AS3959:2018 Clause 2.2.3.2 “*Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bushfire attack (recognizable as short-cropped grass for example, to a nominal height of 100 mm)*”.

Compliance

The building areas within the lots require a Bushfire Hazard Management Area to be established and maintained between the bushfire vegetation and the area at a distance equal to, or greater than specified for the Bushfire Attack Level in Table 2.6 of AS3959:2018.

Due to sizes of each lot, the whole site is to be used as a HMA as it is currently.

The HMA’s for both lots 1 and 3 need to be established prior to occupancy of future dwellings, and prior to sealing of titles for lot 2.

Due to existing developed land, some separation distances are already achieved for BAL-19.

Minimum separation distances for each lot are stated below.

LOT 1 – Separation Distances (vacant)				
Aspect	North	East	South	West
BAL-19	10m	15m	N/A	10m
BAL-12.5	14m	22m	N/A	14m

LOT 2 – Separation Distances (Existing Dwelling)				
Aspect	North	South	South	West
BAL-19	10m	N/A	N/A	10m
BAL-12.5	14m	N/A	N/A	14m

LOT 3 – Separation Distances (vacant)				
Aspect	North	East	South	West
BAL-19	10m	N/A	10m	N/A
BAL-12.5	14m	N/A	14m	N/A

The Tasmanian Fire Service provides the following advice regarding the implementation and maintenance of Hazard management areas:

- Removing of fallen limbs, sticks, leaf and bark litter
- Maintaining grass at less than a 100mm height
- Removing pine bark and other flammable mulch (especially from against buildings)
- Thinning out understory vegetation to provide horizontal separation between fuels
- Pruning low-hanging tree branches (<2m from the ground) to provide vertical separation between fuel layers
- Pruning larger trees to maintain horizontal separation between canopies
- Minimize the storage of flammable materials such as firewood
- Maintaining vegetation clearance around vehicular access and water supply points
- Use of low-flammability species for landscaping purposes where appropriate
- Clearing out any accumulated leaf and other debris from roof gutters.

Additional site-specific fuel reduction or management may be required. An effective hazard management area does not require removal of all vegetation. Rather, vegetation must be designed and maintained in a way that limits opportunity for vertical and horizontal fire spread in the vicinity of the building being protected. Retaining some established trees can even be beneficial in terms of protecting the building from wind and ember attack

4.2 Public and Fire Fighting Access

Public Access

The proposed development fronts Gate Five Road, which is a bitumen sealed public roads maintained by the Sorell Council. The approximate carriageway width of Gate Five Road is 7m. No upgrades required to the public roads and therefore they comply with public access road requirements.

Property Access

Current Conditions:

Existing access to the existing dwelling is via an all-weather access that winds through proposed lot 1 and 2. The access is also partly through the property 7 Gate Five Road, this strip of land though is required for road widening. The access is approx. 8m in length (which includes part off Gate Five Road and parking/turning areas) for a carriageway width of approximately 3m-4.5m (not including parking/turning area). The existing parking/turning area is between the dwelling and shed, with adequate room for a fire appliance to turn.



Figure 5 – Existing access



Figure 6 – Existing parking/turning area

Compliance:

Lot 1

Access to the building area for lot 1 may or may not be >30m, but access is required for a fire appliance. Therefore, the access must comply with the relevant standards of Acceptable Solution A1 and Table E2(B) of the Code demonstrated in table 3 below.

Lot 2

Access to the existing dwelling and building area for lot 2 will be 30m-200m. The access must comply with the relevant standards of Acceptable Solution A1 and Table E2(B) of the Code demonstrated in table 3 below.

Lot 3

Access to the building area for lot 3 will be 30m-200m. The access must comply with the relevant standards of Acceptable Solution A1 and Table E2(B) of the Code demonstrated in table 3 below.

Accesses for lots 1 and 3 to be constructed prior to occupancy of future habitable dwellings, and upgraded/constructed prior sealing of titles for lot 2.

Table 3 - Requirements for access length greater than 30m but less than 200m E1.6.2 and Table E2(B)

Access Standards: (access length greater than 30m but less than 200m)

- a) All-weather construction;
- b) Load capacity of at least 20 t, including bridges and culverts;
- c) Minimum carriageway width of 4m;
- d) Minimum vertical clearance of 4m;
- e) Minimum horizontal clearance of 0.5m from the edge of the carriageway;
- f) Cross falls less than 3 degrees (1:20 or 5%)
- g) Dips less than 7 degrees (1:8 or 12.5%);
- h) Curves with a minimum inner radius of 10m;
- i) Maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed road; and
- j) Terminate with a turning area for fire appliances provided by one of the following
 - i. A turning circle with a minimum outer radius of 10m; or
 - ii. A property access encircling the building; or
 - iii. A hammerhead 'T' or 'y' turning head 4m wide and 8m long.

4.3 Water Supply for Fire Fighting

Current Conditions:

Site assessment confirmed the property is not serviced by reticulated water. The existing dwelling within lot 2 has a water tank for domestic use only.

Compliance:

All lots must be provided with a firefighting water supply that meet the requirements for Acceptable Solution A2 of section E1.6.3 and Table E5. Firefighting water supply requirements for both lots 1 and 3 must be provided prior to occupancy of future habitable dwellings, and prior to sealing of titles for lot 2. Static water supply requirements are outlined in Table 4 below which is per E1.6.3 and Table E5.

Table 4 – Requirements for Static Water Supply E1.6.3 and Table E5

<p>A. <u>Distance between building area to be protected and water supply</u></p> <ul style="list-style-type: none"> a) the building area to be protected must be located within 90m of the fire fighting water point of a static water supply; and b) the distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area <p>B. <u>Static Water supplies</u></p> <ul style="list-style-type: none"> a) may have a remotely located offtake connected to the static water supply; b) may be a supply for combined use (fire fighting and other uses) but the specified minimum quantity of fire fighting water must be available at all times; c) must be a minimum of 10,000L per building area to be protected. This volume of water must not be used for any other purpose including fire fighting sprinkler or spray systems; d) must be metal, concrete or lagged by non-combustible materials if above ground; and e) if a tank can be located so it is shielded in all directions in compliance with section 3.5 of Australian Standard AS 3959-2009 Construction of buildings in bushfire-prone areas, the tank may be constructed of any material provided that the lowest 400mm of the tank exterior is protected by: <ul style="list-style-type: none"> (i) metal; (ii) non-combustible material; or (iii) fibre-cement a minimum of 6mm thickness. <p>C. <u>Fittings, pipework and accessories (including stands and tank supports)</u></p> <p>Fittings and pipework associated with a fire fighting water point for a static water supply must:</p> <ul style="list-style-type: none"> (a) have a minimum nominal internal diameter of 50mm; (b) be fitted with a valve with a minimum nominal internal diameter of 50mm; (c) be metal or lagged by non-combustible materials if above ground; (d) if buried, have a minimum depth of 300mm [S1];
--

- (e) provide a DIN or NEN standard forged Storz 65mm coupling fitted with a suction washer for connection to fire fighting equipment;
- (f) ensure the coupling is accessible and available for connection at all times;
- (g) ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length);
- (h) ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and
- (i) if a remote offtake is installed, ensure the offtake is in a position that is:
 - (i) visible;
 - (ii) accessible to allow connection by fire fighting equipment;
 - (iii) at a working height of 450 – 600mm above ground level; and
 - (iv) protected from possible damage, including damage by vehicles.

D. Signage for static water connections

The fire fighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must:

- a) comply with water tank signage requirements within Australian Standard AS 2304-2011 Water storage tanks for fire protection systems; or
- b) comply with the Tasmania Fire Service Water Supply Guideline published by the Tasmania Fire Service.

E. Hardstand

A hardstand area for fire appliances must be:

- a) no more than 3m from the fire fighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like);
- b) no closer than 6m from the building area to be protected;
- c) a minimum width of 3m constructed to the same standard as the carriageway; and
- d) connected to the property access by a carriageway equivalent to the standard of the property access.

4.4 Construction Standards

All future habitable buildings within the specified building areas on each lot must be designed and constructed to the minimum BAL ratings specified in the Bushfire Hazard Management Plan (Appendix C) and to BAL construction standards in accordance with AS3959:2018 or subsequent edition as applicable at the time of building approval.

The BAL-19 building setback lines on the BHMP defines the minimum setbacks for habitable buildings.

Future Class 10a buildings within 6m of the Class 1a dwelling must be constructed to the same BAL as the dwelling or provide fire separation in accordance with Clause 3.2.3 of AS3959:2018.

5 STATUTORY COMPLIANCE

The applicable bushfire requirements are specified in State Planning Provisions C13.0 – Bushfire-Prone Areas Code.

Clause	Compliance
E1.4 Use or development exempt from this code	N/A
E1.5.5 Use Standards	
E1.5.1 Vulnerable Uses	N/A
E1.5.2 Hazardous Uses	N/A
E1.6 Development Standards for Subdivision	
E1.6.1 Provision of Hazard Management Areas.	<p>To comply with the Acceptable Solution A1, the proposed plan of subdivision must;</p> <ul style="list-style-type: none"> • Show building areas for each lot; and • Show hazard management areas between these building areas and that of the bushfire vegetation with the separation distances required for BAL 19 in Table 2.6 of <i>Australian Standard AS 3959:2018 Construction of buildings in bushfire-prone areas</i>. <p>The BHMP demonstrates that all lots can accommodate a BAL rating of BAL-19 with on-site vegetation managing for both lots. The HMA's for both lots 1 and 3 need to be established prior to occupancy of future dwellings, and prior to sealing of titles for lot 2.</p> <p>Subject to the compliance with the BHMP the proposal will satisfy the Acceptable Solution E1.6.1(A1)</p>
E1.6.2 Public and firefighting access; A1	<p>The BHMP (through reference to section 4 of this report) specifies requirements for private accesses are consistent with Table E2(B). Accesses for both lots 1 and 3 to be constructed prior to occupancy of future habitable dwellings, and prior to sealing of titles for lot 2.</p> <p>Subject to the compliance with the BHMP the proposal satisfies the Acceptable Solution E1.6.2(A1).</p>
E1.6.3 A2 Provision of water supply for firefighting purposes.	<p>Static water supply is required for all lots per E1.6.3 A2. Firefighting water supply requirements for both lots 1 and 3 <u>must</u> be provided prior to occupancy of future habitable dwellings, and prior to sealing of titles for lot 2.</p> <p>Subject to the compliance with the BHMP the proposal satisfies the Acceptable Solution E1.6.3</p>

6 CONCLUSION & RECOMMENDATIONS

The proposed subdivision is endorsed that each lot can meet the requirements of Sorell Interim Planning Scheme 2015 and E1.0 Bushfire-prone Areas Code for a maximum BAL rating of BAL-19 for all lots. Providing compliance with measures outlined in the BHMP (Appendix C) and sections 4 & 5 of this report.

Recommendations:

- The HMA's within the subdivision be applied in accordance with section 4.1 of this report and the BHMP (Appendix C).
- Static water supply, access driveway, hardstand and turning head area for both lots 1 and 3 needs to be installed prior to occupancy for future habitable dwellings, and prior to sealing of titles for lot 2.
- Sorell Council condition the planning approval on the compliance with the BHMP (as per Appendix C).

7 REFERENCES

Department of Primary Industries and Water, The LIST, viewed July 2022,
www.thelist.tas.gov.au

Standards Australia, 2018, *AS 3959:2018 – Construction of buildings in bushfire-prone areas*, Standards Australia, Sydney.

Tasmanian Planning Commission, 2015, *Sorell Interim Planning Scheme* viewed July 2022,
www.iplan.tas.gov.au

Building Act 2016. The State of Tasmania Department of Premier and Cabinet.
<https://www.legislation.tas.gov.au/view/html/inforce/current/act-2016-025>

Building Regulations 2016. The State of Tasmania Department of Premier and Cabinet.
<https://www.legislation.tas.gov.au/view/html/inforce/current/sr-2016-110>

8 APPENDIX A – SITE PHOTOS



Figure 7 – Grassland fuel south of lot 3, view facing SE



Figure 8 – Grassland fuel and small shed north of the site, view facing NW



Figure 9 – Existing dwelling, parking area and managed land within lot 2, view facing NE



Figure 10 – Managed land within lot 2 (foreground) and low threat veg of lot 1 (background), view facing SE



Figure 11 – Low threat veg within lot 3, view facing E (towards existing dwelling)



Figure 12 – Low threat veg within lot 1, view facing S,SE



Figure 13 – Existing site joint access



Figure 14 – Low threat veg south of the site, view facing SW

9 APPENDIX B – SUBDIVISION PROPOSAL PLAN

10 APPENDIX C – BUSHFIRE HAZARD MANAGEMENT PLAN

11 APPENDIX D – PLANNING CERTIFICATE

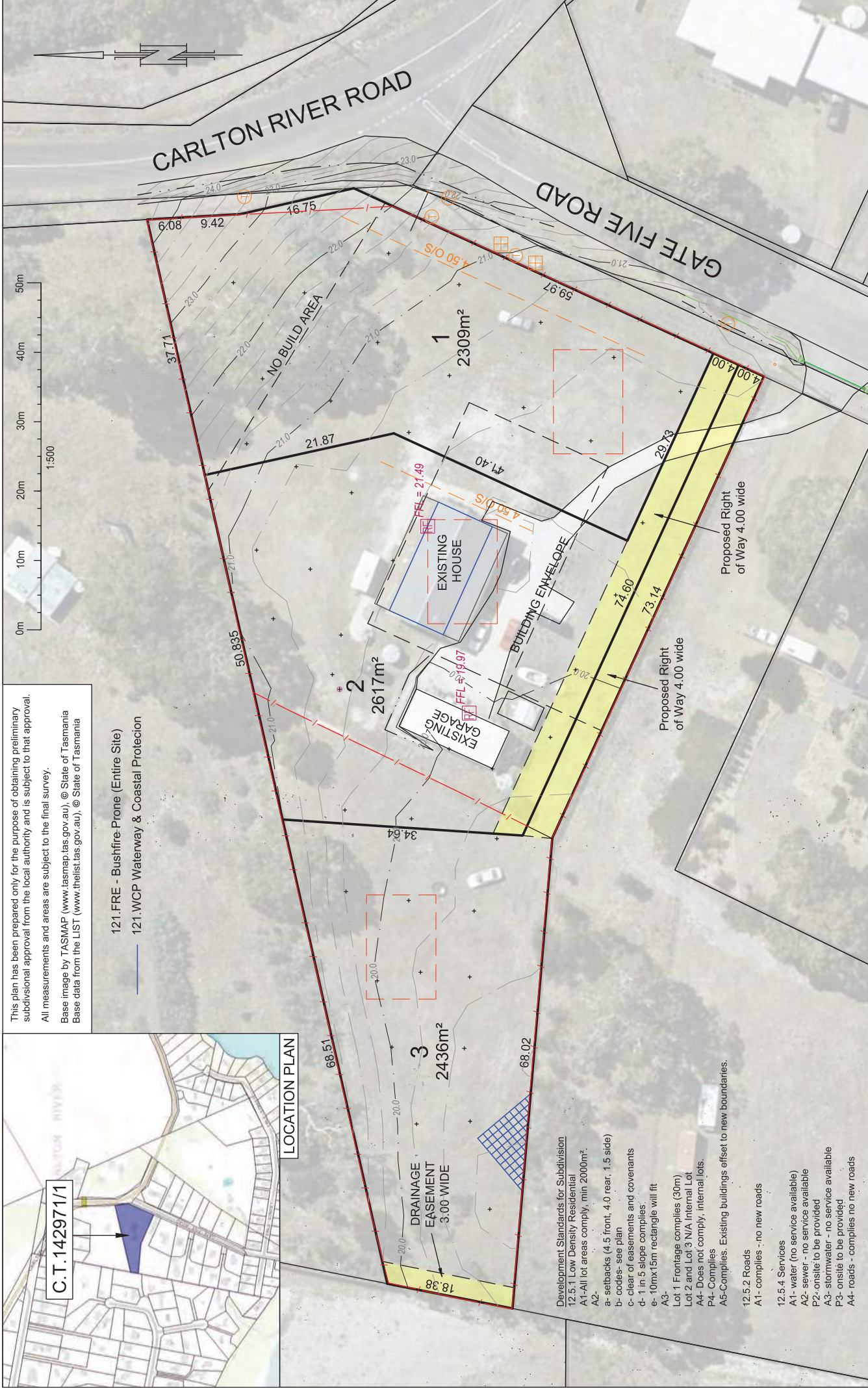


LOCATION PLAN

This plan has been prepared only for the purpose of obtaining preliminary subdivisional approval from the local authority and is subject to that approval. All measurements and areas are subject to the final survey.

Base image by TASMAP (www.tasmap.tas.gov.au), © State of Tasmania
Base data from the LIST (www.thelist.tas.gov.au), © State of Tasmania

121.FRE - Bushfire-Prone (Entire Site)
121.WCP Waterway & Coastal Protection



Development Standards for Subdivision

12.5.1 Low Density Residential

A1-All lot areas comply, min 2000m².

A2-

a- setbacks (4.5 front, 4.0 rear, 1.5 side)

b- codes- see plan

c- clear of easements and covenants

d- 1 in 5 slope complies

e- 10mx15m rectangle will fit

A3-

Lot 1 Frontage complies (30m)

Lot 2 and Lot 3 N/A Internal Lot

A4- Does not comply, internal lots.

P4- Complies

A5-Complies. Existing buildings offset to new boundaries.

12.5.2 Roads

A1- complies - no new roads

12.5.4 Services

A1- water (no service available)

A2- sewer - no service available

P2- on-site to be provided

A3- stormwater - no service available

P3- on-site to be provided

A4- roads - complies no new roads

A1- complies - no new roads

12.5.4 Services

A1- water (no service available)

A2- sewer - no service available

P2- on-site to be provided

A3- stormwater - no service available

P3- on-site to be provided

A4- roads - complies no new roads



UNIT 1, 2 KENNEDY DRIVE
CAMBRIDGE 7170
PHONE: (03)6248 5898
EMAIL: admin@rbsurveyors.com
WEB: www.rbsurveyors.com

OWNER: WALTER EISENTRAUT
TITLE REFERENCE: C.T.142971/1
LOCATION: 3 GATE FIVE ROAD
CARLTON RIVER

Proposed Subdivision
Date: 21/07/2022
Reference: EISWA01
Municipality: SORELL
Scale: 1:500 (A3)

REV	AMENDMENTS	DRAWN	DATE	APPR.
E		LH	28/03/23	LH
D	Add right of way to Lot 2 driveway	LH	16/12/22	LH
C	Add right of way to Lot 3 driveway	AH	24/11/22	AH
B	ADD ENGINEERING DETAIL & GDA2020 BOUNDARY MODEL	LH	17/11/22	LH
A	AMEND INTERNAL BOUNDARIES			

BUSHFIRE HAZARD MANAGEMENT PLAN	
LOCATION:	3 Gate Five Road, Carlton River TAS 7173
TITLE REFERENCE:	C.T.142971/1
PROPERTY ID:	3034425
MUNICIPALITY:	Sorell
DATE:	1st of June 2023 (v1.3)
SCALE:	1:600 @ A3
REFERENCE:	EISWA01

REQUIREMENTS

1. HAZARD MANAGEMENT AREAS (HMA)

1.1. HMA to be established to distances indicated on this plan and as set out in Section 4.1 of the Bushfire Hazard Report.

1.2. Vegetation in the HMA needs to be strategically modified and then maintained in a low fuel state to protect future dwellings from direct flame contact and intense radiant heat. An annual inspection and maintenance of the HMA should be conducted prior to the bushfire season. All grasses or pastures must be kept short (<100 mm) within the HMA. Fine fuel loads at ground level such as leaves, litter and wood piles must be minimal to reduce the quantity of wind borne sparks and embers reaching buildings; and to halt or check direct flame attack.

1.3. Some trees can be retained provided there is horizontal separation between the canopies; and low branches are removed to create vertical separation between the ground and the canopy. Small clumps of established trees and/or shrubs may act to trap embers and reduce wind speeds.

1.4. No trees to overhang houses to prevent branches or leaves from falling on the building.

1.5. Non-combustible elements including driveways, paths and short cropped lawns are recommended within the HMA.

1.6. Fine fuels (leaves bark, twigs) should be removed from the ground periodically (pre-fire season) and all grasses or pastures must be kept short (<100 mm).

2. CONSTRUCTION STANDARDS

2.1. Future dwellings within the specified building areas to be designed and constructed to BAL ratings shown on this plan in accordance with AS3959:2018 at the time of building approval

2.2. Future outbuildings within 6m of a class 1a dwelling must be constructed to the same BAL as the dwelling or provide fire separation in accordance with Clause 3.2.3 of AS3959:2018.

3. PUBLIC AND FIRE-FIGHTING ACCESS REQUIREMENTS

3.1. Access to all lots must comply with the design and construction requirements specified in Section 4.2 of the Bush Fire Report.

4. STATIC FIRE-FIGHTING WATER SUPPLY

4.1 New habitable dwellings and existing dwellings must be supplied with a static water supply that is:

- Dedicated solely for fire fighting purposes;
- Minimum capacity of 10,000L;
- Is accessible by fire fighting vehicles and within 3.0m of a hardstand area; and
- Consistent with the specifications outlined in section 4.3 if the Bushfire Report.

This plan is to be read in conjunction with the preceding Bushfire Assessment Report "Proposed 3 Lot Subdivision 3 Gate Five Road, Carlton River" dated 01/06/2023.

CARLTON RIVER ROAD

GATE FIVE ROAD

GRASSLAND

GRASSLAND

BAL rating for all lots is BAL-19

HMA's, indicative accesses and static water supply tanks for lot 1 and 3 to be implemented prior to construction of a future habitable dwelling and prior to sealing of titles for lot 2.

BAL-19 building areas shown do not include:

- Zone setbacks;
- covenants;
- envelopes; and
- easements

BUILDING AREA BAL-19

HAZARD MANAGEMENT AREA

EXISTING ACCESS

INDICATIVE STATIC WATER SUPPLY

BAL-19 SETBACK

INDICATIVE ACCESSES



BUSHFIRE-PRONE AREAS CODE

CERTIFICATE¹ UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address:

3 Gate Five Road, Carlton River TAS 7173

Certificate of Title / PID:

C.T.142971/1 3034425

2. Proposed Use or Development

Description of proposed Use and Development:

THREE LOT SUBDIVISION OF C.T.142971/1

Applicable Planning Scheme:

Sorell Interim Planning Scheme 2015

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
SUBDIVISION PROPOSAL PLAN	ROGERSON & BIRCH SURVEYORS	28/03/2023	REV D
BUSHFIRE ASSESSMENT REPORT – 3 GATE FIVE ROAD, CARLTON RIVER	JAMES ROGERSON – ROGERSON & BIRCH SURVEYORS	01/06/2023	1.3
BUSHFIRE HAZARD MANGAEMENT PLAN– 3 GATE FIVE ROAD, CARLTON RIVER	JAMES ROGERSON – ROGERSON & BIRCH SURVEYORS	01/06/2023	1.3

¹ This document is the approved form of certification for this purpose and must not be altered from its original form.

4. Nature of Certificate

The following requirements are applicable to the proposed use and development:

<input type="checkbox"/>	E1.4 / C13.4 – Use or development exempt from this Code	
	Compliance test	Compliance Requirement
<input type="checkbox"/>	E1.4(a) / C13.4.1(a)	

<input type="checkbox"/>	E1.5.1 / C13.5.1 – Vulnerable Uses	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.5.1 P1 / C13.5.1 P1	<i>Planning authority discretion required. A proposal cannot be certified as compliant with P1.</i>
<input type="checkbox"/>	E1.5.1 A2 / C13.5.1 A2	
<input type="checkbox"/>	E1.5.1 A3 / C13.5.1 A2	

<input type="checkbox"/>	E1.5.2 / C13.5.2 – Hazardous Uses	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.5.2 P1 / C13.5.2 P1	<i>Planning authority discretion required. A proposal cannot be certified as compliant with P1.</i>
<input type="checkbox"/>	E1.5.2 A2 / C13.5.2 A2	
<input type="checkbox"/>	E1.5.2 A3 / C13.5.2 A3	

<input type="checkbox"/>	E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.6.1 P1 / C13.6.1 P1	<i>Planning authority discretion required. A proposal cannot be certified as compliant with P1.</i>
<input type="checkbox"/>	E1.6.1 A1 (a) / C13.6.1 A1(a)	
<input checked="" type="checkbox"/>	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots (including any lot designated as 'balance')
<input type="checkbox"/>	E1.6.1 A1(c) / C13.6.1 A1(c)	

<input type="checkbox"/>	E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.6.2 P1 / C13.6.2 P1	
<input type="checkbox"/>	E1.6.2 A1 (a) / C13.6.2 A1 (a)	
<input checked="" type="checkbox"/>	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables

<input type="checkbox"/>	E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes	
	Acceptable Solution	Compliance Requirement
<input type="checkbox"/>	E1.6.3 A1 (a) / C13.6.3 A1 (a)	
<input type="checkbox"/>	E1.6.3 A1 (b) / C13.6.3 A1 (b)	
<input type="checkbox"/>	E1.6.3 A1 (c) / C13.6.3 A1 (c)	
<input type="checkbox"/>	E1.6.3 A2 (a) / C13.6.3 A2 (a)	
<input checked="" type="checkbox"/>	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table
<input type="checkbox"/>	E1.6.3 A2 (c) / C13.6.3 A2 (c)	

5. Bushfire Hazard Practitioner

Name: JAMES ROGERSON

Phone No: 0488372283

Postal Address: UNIT 1-2 KENNEDY DRIVE,
CAMBRIDGE PARK

Email Address: JAMES@RBSURVEYORS.COM

Accreditation No: BFP – 161

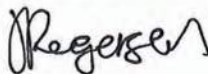
Scope: 1, 2, 3B

6. Certification

I certify that in accordance with the authority given under Part 4A of the *Fire Service Act 1979* that the proposed use and development:

- ☐ Is exempt from the requirement Bushfire-Prone Areas Code because, having regard to the objective of all applicable standards in the Code, there is considered to be an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measures, or
- ☒ The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and compliant with the relevant **Acceptable Solutions** identified in Section 4 of this Certificate.

Signed:
certifier



Name: JAMES ROGERSON

Date: 1 / 6 / 23

Certificate
Number: 161

(for Practitioner Use only)

JMG Ref: 230106CS

Council Ref: SA 2022 / 4 - 1 3034425

31st May 2023

Shane Wells

Sorell Council

Via sorell.council@sorell.tas.gov.au

**RFI RESPONSE - SA 2022 / 4 - 1-3 SUBDIVISION-3 GATE FIVE ROAD, CARLTON RIVER
FOR - Rogerson & Birch Surveyors**

Please refer to the following with regards to the 'request for additional information letter' received from Sorell Council, dated 07 October 2022.

The required additional information is addressed in the sequence below.

Planning:

1. Council flood hazard mapping identifies the site as at risk. Consequently, Code E15.,0 applies. Please submit a flood hazard report prepared in accordance with Code E15.0 and which considers clause 15.8.3 P1.

Engineering:

5. Provide some concept engineering drawings of each access, including details on the proposed dimensions, surface treatment, and drainage provisions for each access. Ensure any bushfire hazard management requirements are complied with. Additionally, include details/notation on the removal of the existing driveway.

Planning Response:

1. A detailed report in Appendix 1 has been prepared and attached for your reference. The report titled 'J230106CS - Flood Hazard Report 02.05.2023' includes a comprehensive resolution and relevant comments to clarify the performance criteria 1 from E15.0 (15.8.3).

Engineering Response:

5. Each access has been detailed with the proposed dimensions, surface treatment and the necessary drainage provisions in drawing (C01 - General Arrangement) attached with this letter response. Refer to Appendix 2.

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as trustee for Johnstone

McGee & Gandy

Unit Trust

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We trust this satisfies Council's request however, if further information or clarification is required with respect to this request, don't hesitate to get in touch with me at (03) 6231 2555 or at cmales@jmg.net.au.

Yours faithfully

JOHNSTONE MCGEE & GANDY PTY LTD



CHRISTOPHER MALES
DIRECTOR - CIVIL DESIGN MANAGER

Appendix 1

Flood Hazard Report

FLOOD HAZARD REPORT

1-3 LOT SUBDIVISION 3 GATE FIVE ROAD, CARLTON RIVER

SA 2922/4 - 1 3034425



Sorell Council

Development Application: Response to Request for
Information - 3 Gate Five Road, Carlton River.pdf

Date Received: 06/06/2023
Plans Referenced: P7

PREPARED FOR





SORELL COUNCIL

2 MAY 2023

TABLE OF CONTENTS

1.	Introduction	3
2.	Existing Parameters and Hydrological Analysis	3
3.	Flood Hazard Analysis	6
4.	Analysis and Recommendations	7
5.	Response to Code E15.0 - 15.8.3 P1.....	8

Appendix 2 - JMG Drawings J230106CS - C01-C02

Issuing Office: 117 Harrington Street, Hobart 7000 JMG Project No. J230106CS								
Document Issue Status								
Ver.	Issue Date	Description	Originator		Checked		Approved	
1	02.05.2023	Preliminary Issue	CAG		JMG		CJM	
2	31.05.2023	RFI Response - Lodgement	CAG		JMG		CJM	

LIMITATIONS & DISCLAIMERS

1. This report is based on a 'walkthrough' visual inspection of the various components of the building. The report does not check original designs or previous contracts. Our inspections do not cover system performance testing, nor destructive testing or intrusive inspections requiring breaking out, opening up or uncovering.
2. Compliance with NCC is not part of the scope of this report. The report may include references to NCC as a guide to likely compliance/non-compliance of a particular aspect but should not be taken as definitive nor comprehensive in respect of NCC compliance.
3. This report presents information and opinions which are to the best of our knowledge accurate. JMG accepts no responsibility to any purchaser, prospective purchaser, or mortgagee of the property who relies in any way on this report.
4. JMG have no pecuniary interests in the property or sale of the property.
5. This report presents information provided by others. JMG do not claim to have checked, and accept no responsibility for, the accuracy of such information.



1. Introduction

JMG Engineers & Planners have been engaged to undertake a Flood Hazard Report for the site (3 Gate Five Road - Carlton River) in order to respond to the Sorell Council RFI (SA 2022/4 - 1 3034425), topic 1 under the planning section.

1. Council flood hazard mapping identifies the site as at risk. Consequently, Code E15.0 applies. Please submit a flood hazard report prepared in accordance with Code E15.0 and which considers clause 15.8.3 P1.

The study has been undertaken in accordance with the Sorell Council Planning Scheme and Australian Rainfall and Run-off 2016. The analysis verifies the hydrological conditions based on the existing Flood Hazard Map (21-Feb-2023) provided by Sorell Council.

2. Existing Parameters and Hydrological Analysis

The site comprises an overall area of 7,362m², featuring grades that do not exceed 10% and an average slope of 3.5% throughout the site.



Figure 1: Hydrological Model - Sorell Council

The site is part of a small catchment with a total area of approximately 1.50ha. In addition, in a 1% AEP storm event considering an 18.3% climate change factor, the area is subjected to 195l/s of peak flow utilizing the Rational Method equation.

Intensity = 105mm/h

C factor = 0.3

Total Area = 2.61ha

Figure 2: Rational Method Parameters



Figure 3: Catchment under analysis

To enhance the understanding of the impacted area, the flood extent has been overlayed on the proposed new lots survey model as per Figure 3.

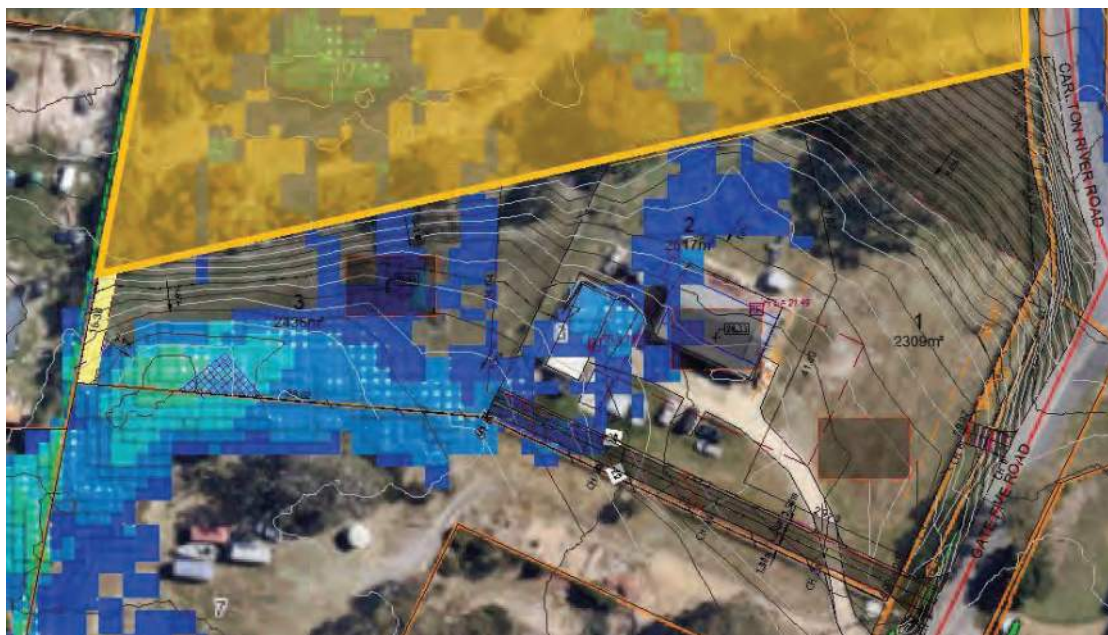


Figure 4: Flood Extents Overlayed on Survey & Lidar - Civil3D Screenshot

Figure 3 shows that the 1% AEP flood extent is limited to Lots 2 and 3. Table 1 presents the maximum inundation depths.

Table 1: Summary of Flood Results for the 1% AEP

Region Affected	Max. Depth - Envelope Region (mm)	Average Slope (%)
Lot 2	150	1.5 - 2.5
Lot 3	150	0.8 – 1.0

Additionally, considering the terrain profile where the overland flow path is predicted to be, a 1D analysis has been processed in order to check the maximum velocities for the 1% AEP + Climate Change storm event.

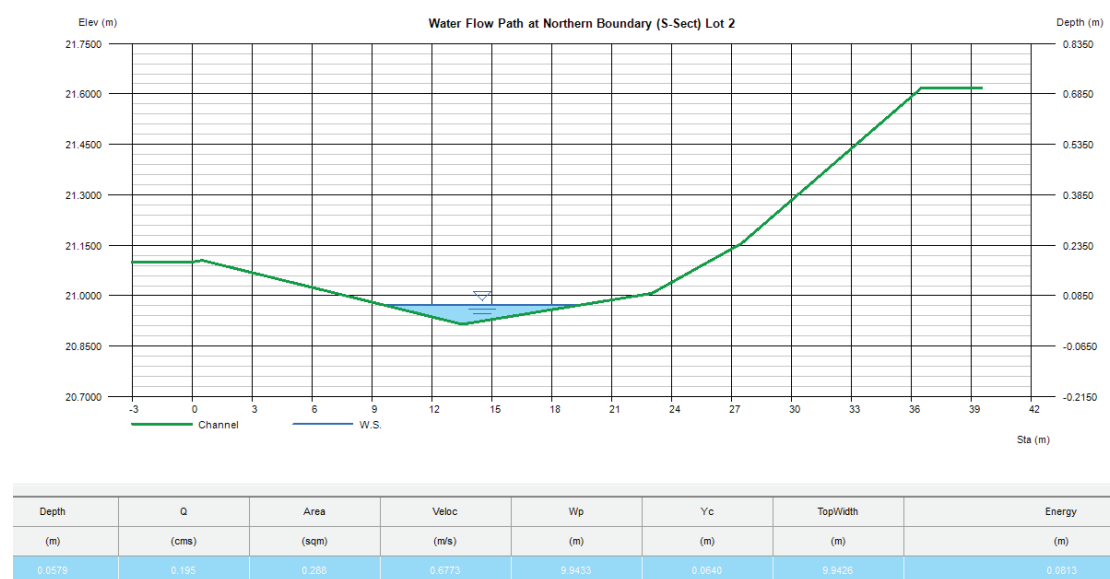


Figure 5: Cross Section at Lot 2 Northern Boundary

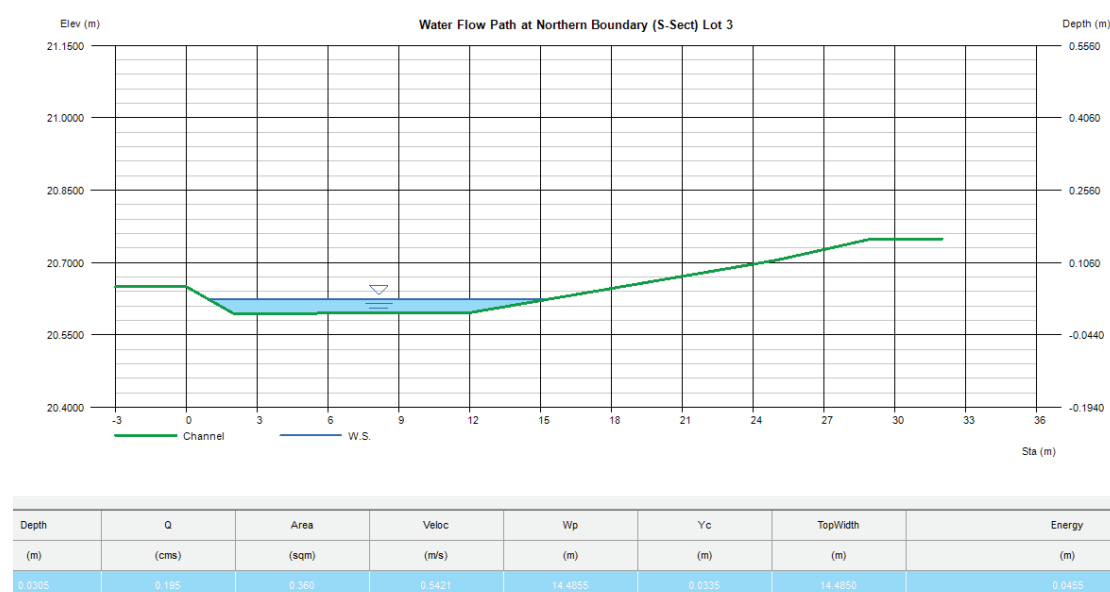


Figure 6: Cross Section at Lot 3 Northern Boundary

Therefore[JB1], based on the analysed data, it can be concluded that Lot 2 & 3 have a maximum depth of 150mm a[CM2]nd an average slope of 2.0% surface, resulting in water velocity vectors that are no greater than 2.0m/s around the building envelope region. Nevertheless, it is noted that at the western boundary of Lot 3 the depth reaches a maximum of 500mm. In a low lying portion of the site, where water is predominately ponding, velocities in this location are very low given the small inflow (140l/s) and large cross section.



Figure 7: Site Surface Conditions

3. Flood Hazard Analysis

Flood Risk Hazard Levels are typically based on inundation depth and flow velocity per the following graphic and table from 'Updating National Guidance on Best Practice Flood Risk Management (D. McLuckie et al., 2014).

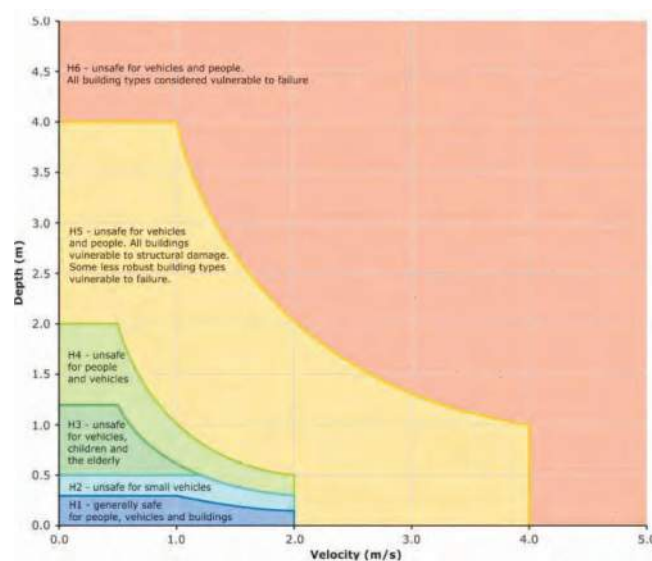


Figure 8: Combined Flood Hazard Curve Classification

In summary, as the vicinity of the building envelopes at Lot 2 & 3 presents slow vector velocities, even with high depths in the aforementioned area, the general classification of these areas are H1[JB3], being generally safe for people, vehicles and buildings - (relatively benign flow conditions / no vulnerability constraints[JB4]). Development of driveway and parking areas on the lots should be restricted to the non-hazard zones, or where necessary to access the building envelope, they should be restricted to the H1 hazard areas.

Lot 3 exhibits a deeper region approximately 30 metres away from the building envelope at its western boundary, with predicted depth levels reaching a maximum of 500mm. This depth margin increases the hazard risk to H2/H3, which should be cautiously avoided. Therefore, development of the Lot should avoid construction of driveways and outbuildings in this area so as there is no requirement for property owner to enter this zone during a flood event.

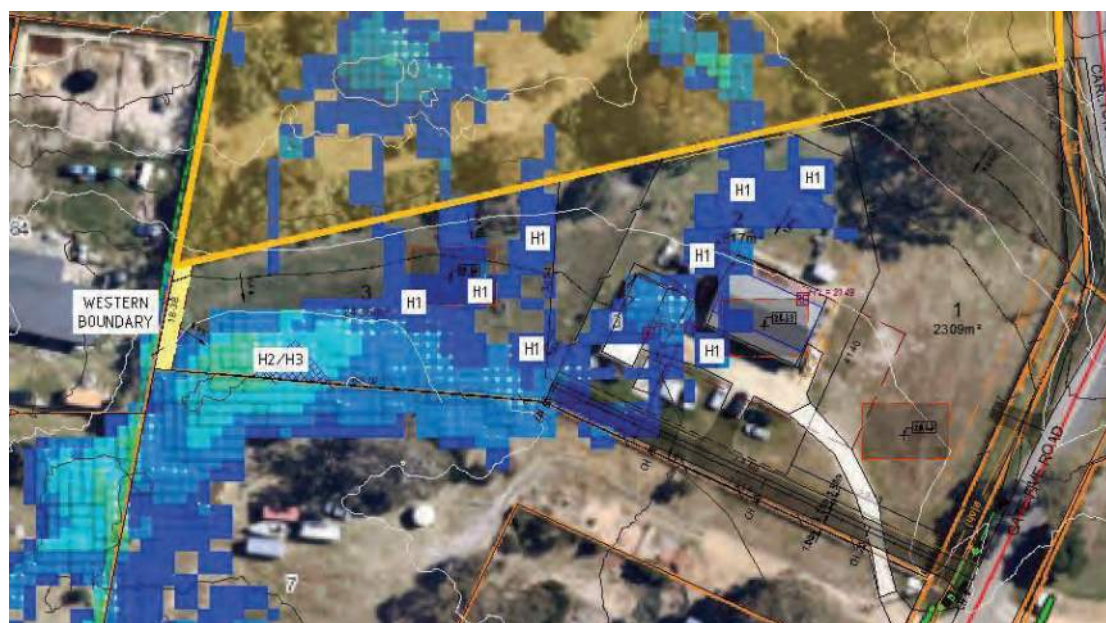


Figure 9: Flood Hazard Summary Plan[CM5]

Lastly, it is important to note that any placement of fill should be avoided in order to prevent any potential displacement of the expected flow patterns onto adjacent properties.

4. Analysis and Recommendations

The analysis in this study suggests recommendations that should be considered for the future development on the proposed lots (2 & 3) in the affected area.

- The existing house located on Lot 2 is situated outside of the projected flood-prone zone, with the exception of its western boundary, which is subject to a H1 hazard level. Despite the mentioned conditions, the lot can still be considered safe for people, vehicles and buildings.
- The proposed house for Lot 3 shall be constructed on stumps, avoiding the placement of fill. Alternatively, cut-off drains can be employed, ensuring that the overland flow is redirected along its natural course and away from neighbouring properties.

- The minimum finish floor level (FFL) for Lot 3 shall be 20.30m AHD to provide 300mm freeboard to the flood level.
- The building envelope should be out of the H2/H3 flood zone.
- In regions where H2/H3 hazard levels are, shall not have the presence of any building construction or carpark area.

5. Response to Code E15.0 - 15.8.3 P1

P1

Each lot, or a lot proposed in a plan of subdivision, within a riverine inundation hazard area, must not create an opportunity for use or development that cannot achieve a tolerable risk from flood, having regard to:

- (a) any increase in risk from flood for adjacent land;
- (b) the level of risk to use or development arising from an increased reliance on public infrastructure;
- (c) the need to minimise future remediation works;
- (d) any loss or substantial compromise by flood of access to the lot, on or off site;
- (e) the need to locate building areas outside the riverine inundation hazard area;
- (f) any advice from a State authority, regulated entity or a council; and
- (g) the advice contained in a flood hazard report.

Figure 10: E15.8.3 Subdivision Within a Riverine Inundation Hazard Area

Ultimately, it can be concluded that:

- (a) There is no increase in risk from flood for any adjacent land.
- (b) The future development does not increase reliance on any public infrastructure as the development will not change the natural/existing flow conditions.
- (c) As the Lot 3 house is to be constructed on stumps, it will not have any necessary remediation works in future.
- (d) Access to lots is available clear of hazardous flood areas.
- (e) The design houses are to be built on stumps with 300mm freeboard from the maximum predicted depth, creating no necessity to relocate the construction envelope.
- (f) This flood report has been prepared at the request of Council.
- (g) Recommendations of this flood report be adopted into any future development on the site.

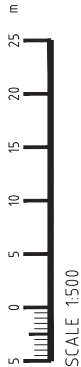
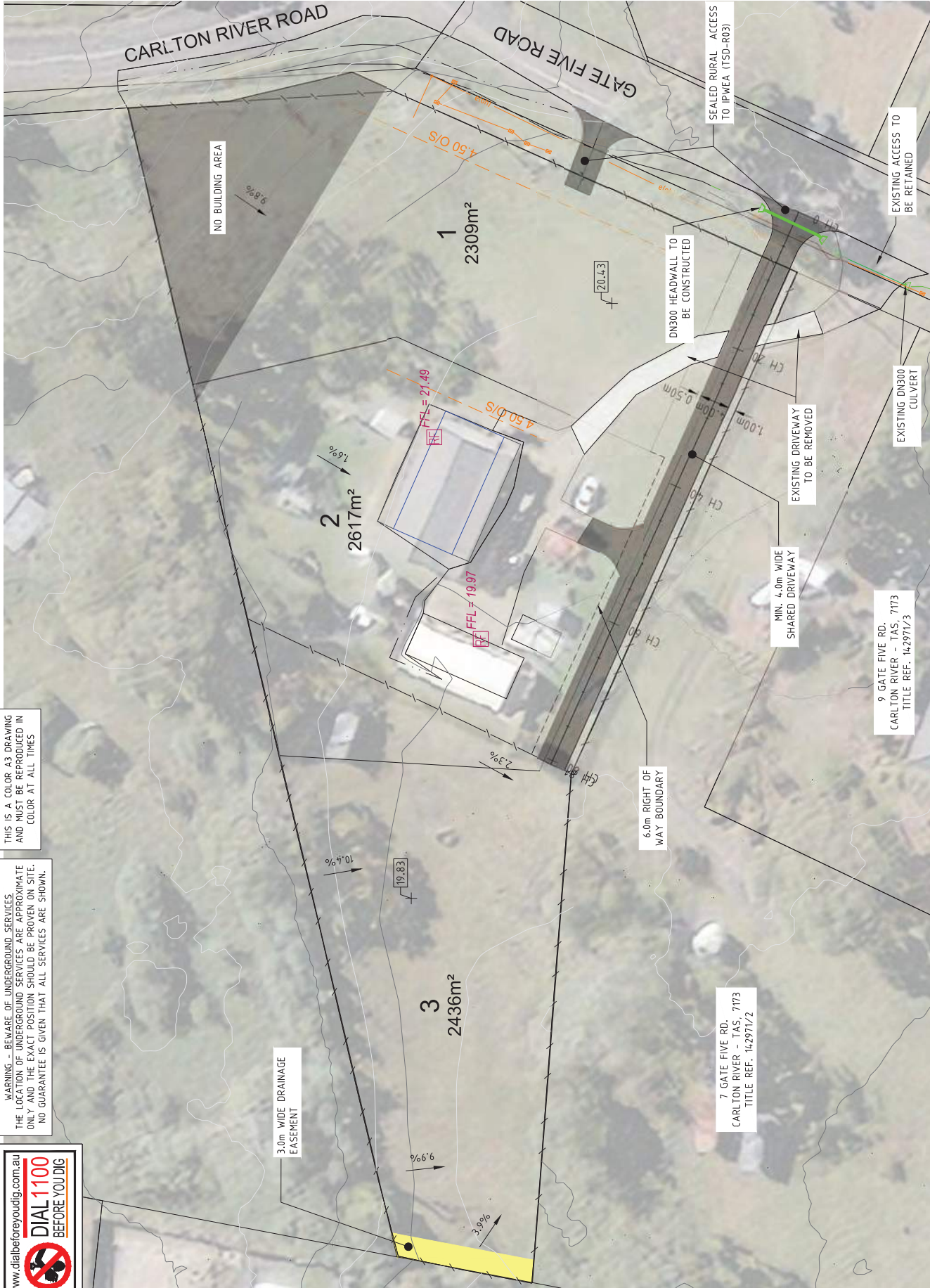
Appendix 2

JMG - Civil Drawings



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PROJECT
1-3 LOTS
3 GATE FIVE ROAD
CARLTON RIVER

TITLE
GENERAL ARRANGEMENT
OVERVIEW

Accepted CIM (toplayer sheet)	Date
Accepted CIM	Date
Accepted CIM (final)	Date

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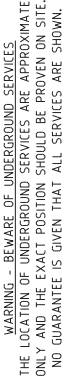
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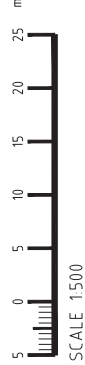
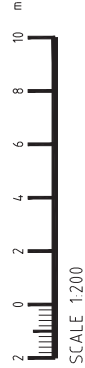
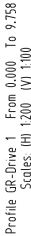
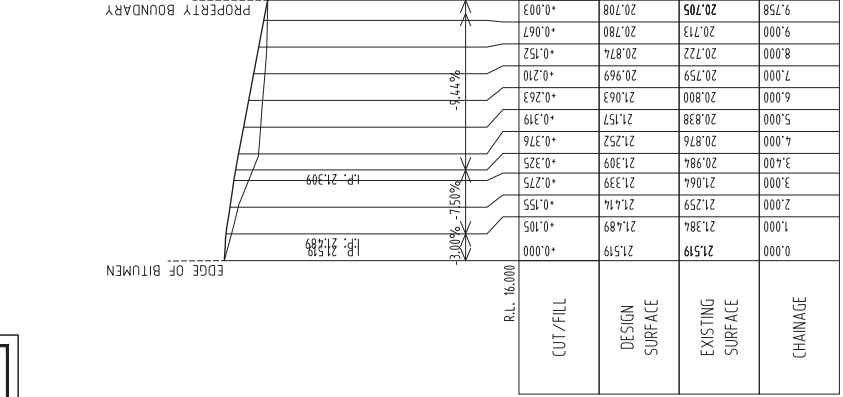
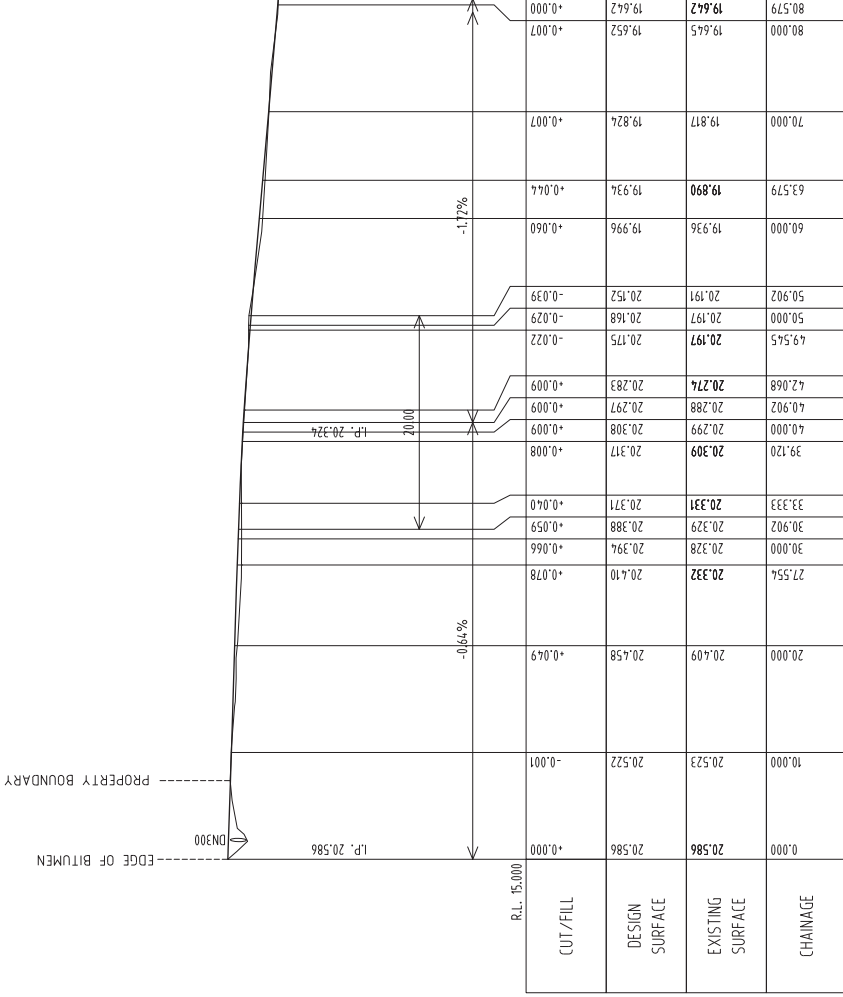
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