

Form 2

NOTICE OF AN APPLICATION FOR PLANNING PERMIT

The land affected by the application is located at:	85 Haydens Bog Road BENDOC 3888 Lot: 2 LP: 219359
The application is for a permit to:	Use and development of a camping and caravan park within 100m of a watercourse
The applicant for the permit is:	Crowther & Sadler Pty Ltd
The application reference number is:	5.2024.60.1

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

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

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

An objection must

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

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

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

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The Victorian Government acknowledges the Traditional Owners of Victoria and pays respects to their ongoing connection to their Country, History and Culture. The Victorian Government extends this respect to their Elders, past, present and emerging.

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

VOLUME 09949 FOLIO 024

Security no : 124112984870M
Produced 27/02/2024 02:58 PM

LAND DESCRIPTION

Lot 2 on Plan of Subdivision 219359X.
PARENT TITLE Volume 09287 Folio 688
Created by instrument LP219359X 11/05/1990

REGISTERED PROPRIETOR

Estate Fee Simple
Joint Proprietors

ENCUMBRANCES, CAVEATS AND NOTICES

Any encumbrances created by Section 98 Transfer of Land Act 1958 or Section 24 Subdivision Act 1988 and any other encumbrances shown or entered on the plan or imaged folio set out under DIAGRAM LOCATION below.

DECLARATION Section 56 HOUSING ACT 1958
F929467 17/11/1975

DIAGRAM LOCATION

SEE LP219359X FOR FURTHER DETAILS AND BOUNDARIES

ACTIVITY IN THE LAST 125 DAYS

NIL

-----END OF REGISTER SEARCH STATEMENT-----

Additional information: (not part of the Register Search Statement)

Street Address: 85 HAYDENS BOG ROAD BENDOC VIC 3888

DOCUMENT END

Delivered from the LANDATA System by Dye & Durham Terrain Pty Ltd

Planning Report ^{v2}

Use & Development of a Camping & Caravan Park
within 100 metres of a watercourse
85 Haydens Bog Road, Bendoc

Our reference – 20433

28 February 2024



FS 520900



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	Land Capability Assessment Report – Land Safe (December 2023)	
	Copy of Title (Lot 2 on LP219359)	

Note: Applicable Planning Application fee is \$2,368.60

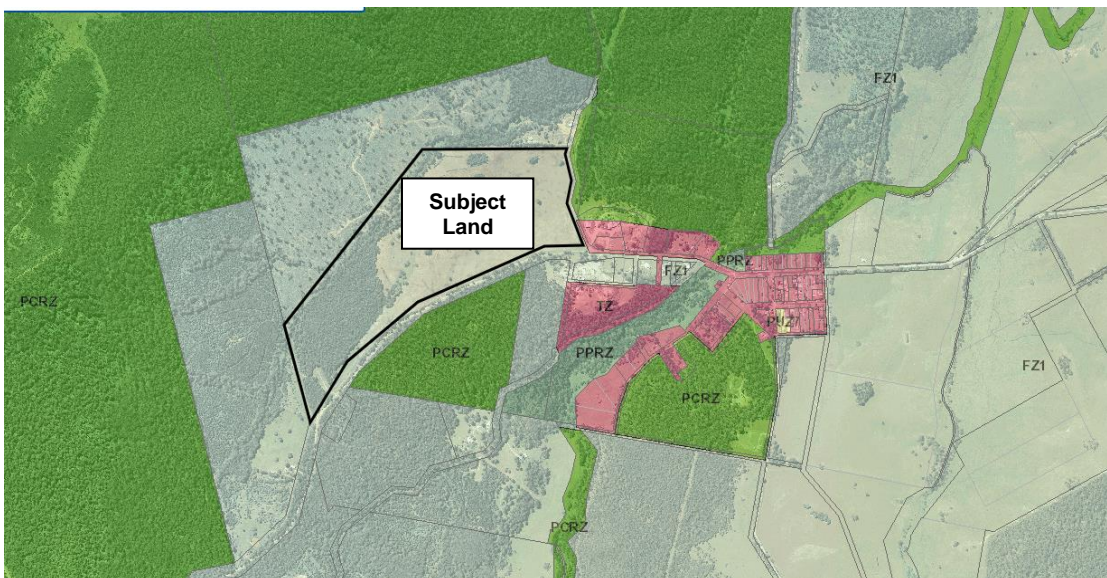
*Class 12 – Buildings & Works Est cost >\$1,000,000 – 5,000,000 (89 Fee Units) &
Class 1 – Use (89 Fee Units) Half Fee*

1. Introduction

This Planning Report is prepared in support of proposed Use & Development of a Camping & Caravan Park at 85 Haydens Bog Road, Bendoc. The Report addresses the provisions of the Farming Zone and Bushfire Management Overlay as contained within the *East Gippsland Planning Scheme*.



Aerial view of subejct land and surrounding precinct – Source: VicPlan



Zone mapping and aerial of subject land and surrounds – Source: VicPlan

2. Subject Land & Surrounding Context

The subject land is formally described at Lot 2 on LP 219359 and has an area of approximately 61.25ha. The property is known as 85 Haydens Bog Road, Bendoc and is located on the west side of the existing township.



View north across the southeastern portion of the subject land

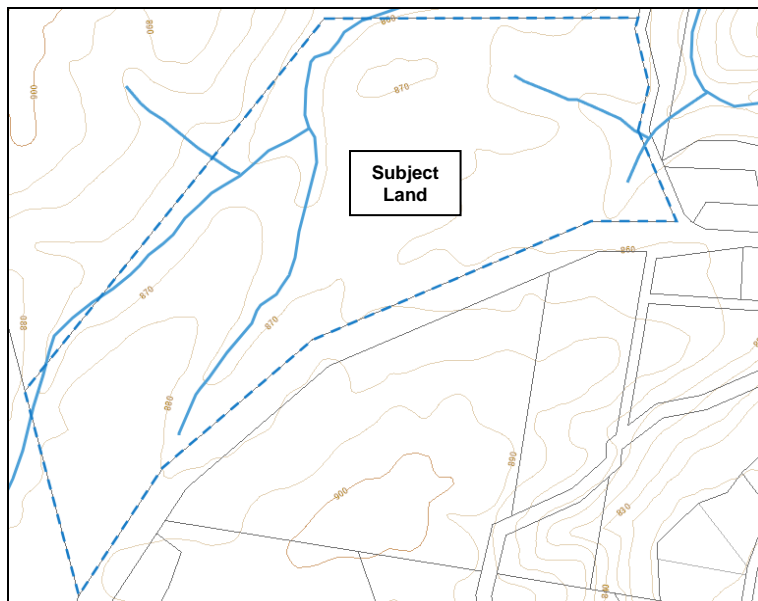
The land is an irregular shape with a frontage of approximately 425m to Haydens Bog Road to the east and a frontage to Old Bendoc-Bonang Road of 1,452 metres to the south.

Vehicle access to the property is established from Old Bendoc-Bonang Road which is a good quality all-weather road. The existing access is approximately 130 metres west of the intersection of Haydens Bog Road. Haydens Bog Road adjoins the eastern boundary of the property and is constructed with a bitumen seal and gravel shoulder.



View west and east along Old Bendoc-Bongang Road

The eastern portion of the property consists of grazing land with some scattered native trees whilst the south-western portion of the property retains dense remnant vegetation. Tucker Creek meanders along the north-west boundary of the property and an overhead powerline dissects the front portion of the land.

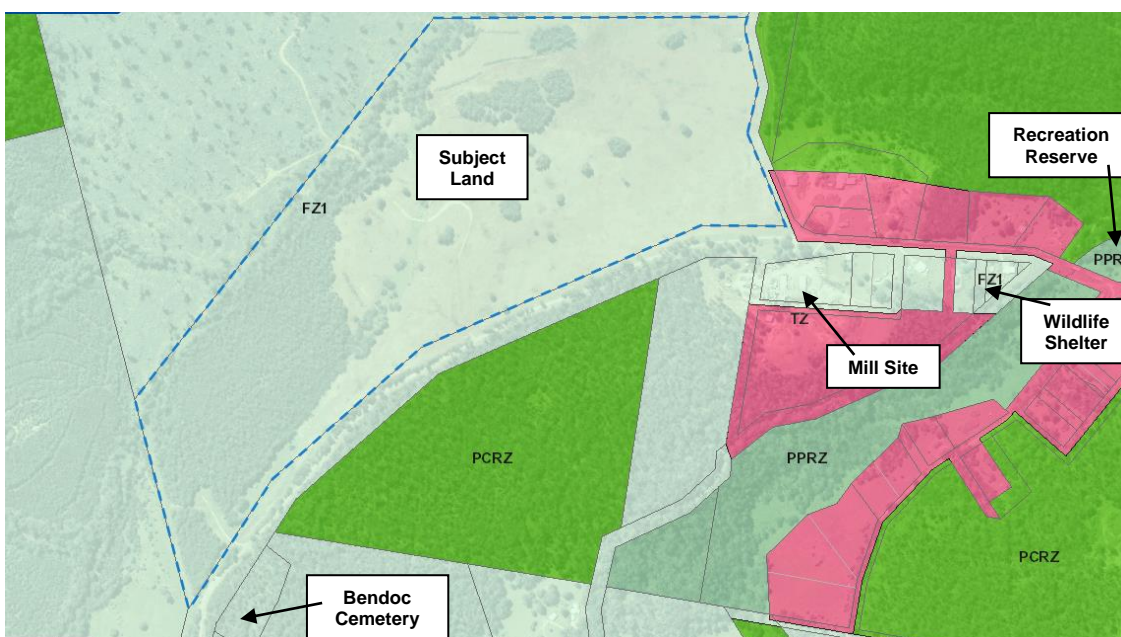


Watercourse & Contour Mapping – Source: VicPlan

The whole of the subject land is affected by the provisions of the Farming Zone – Schedule 1 and Bushfire Management Overlay of the *East Gippsland Planning Scheme*.

Whilst adjoining parcels of land immediately to the north and to the west are also contained within the Farming Zone the site sits on the edge of the existing township area. Properties on the eastern side of Haydens Bog Road which present to Old Bendoc-Bonang Road are contained within the Township Zone.

Land opposite the subject land on the southern side of Old Bendoc-Bonang Road is heavily vegetated and contained within the Public Conservation Resource Zone.



Subject land and surrounding precinct – Source: VicPlan

Bendoc is a small rural town situated on the edge of the Monaro Tablelands approximately 110 km northeast of Orbost and 21km southwest of the New South Wales town of Delegate.

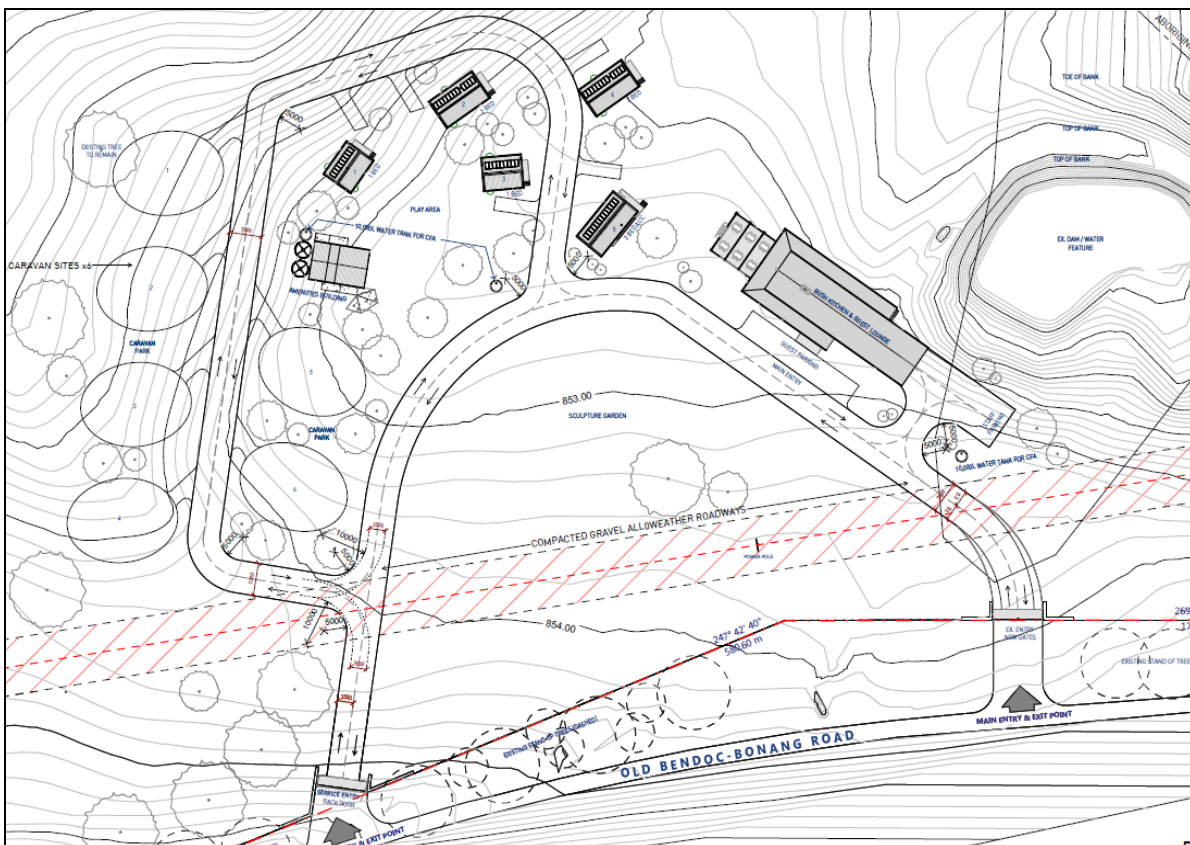
Bendoc was established during the Victorian goldrush in the 1850s. As mining receded, sawmilling became the town's primary industry and dairy farming was established in the wider area.

Bendoc is a somewhat remote community on the north side of the Great Dividing Range. Surrounded by Crown Land with dense forests, Bendoc has come under threat from bushfires on numerous occasions. During the 2019/2020 East Gippsland bushfires access to the town was cut for several days.

The population of Bendoc is 109 based on the 2021 census data and whilst the town offers limited services it does include a post office, police station, hotel and DECCA offices.

3. The Application & Proposal

The Application seeks approval for the use and development of the land for the purposes of a Camping & Caravan Park as depicted on the accompanying Plan Set prepared by *Baenziger Coles*.



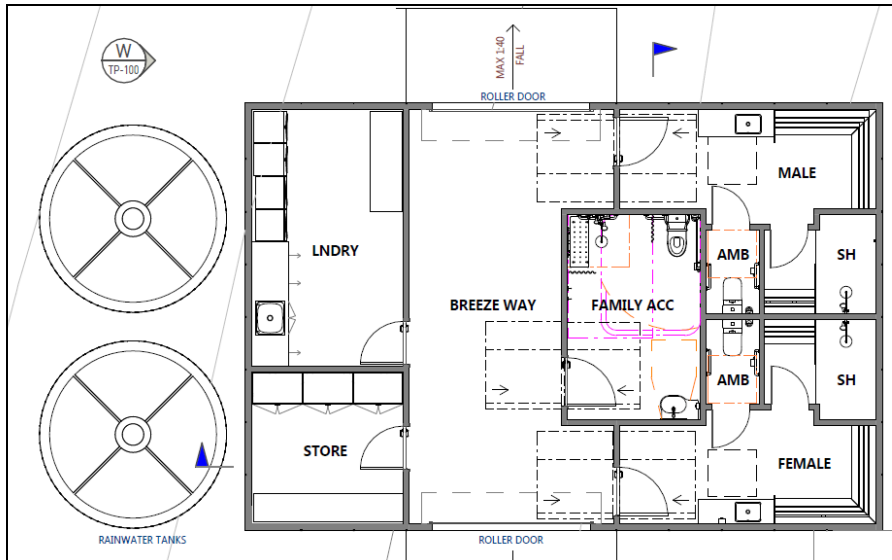
Extract from Site Plan – Source: Baenziger Coles

The Plans nominate the establishment of a Camping & Caravan Park which includes provision for six caravan/camping sites and five cabins for short stay accommodation with an amenities building provided between. A Bush Kitchen & Guest Lounge will also be established to enable guest to prepare their own food.

The proposed Camping & Caravan Park will be registered as prescribed accommodation however will not otherwise be seeking registration under the *Residential Tenancies Act 1997* as a registered caravan park.

Amenities Building

The amenities building will be 12.0 metres in length by 8.0 metres in width with an area of 100m². It will include separate bathroom facilities for male, female and families whilst provision for laundry and storage will be separated by a breezeway.



Floor Plan of Amenities Building – Source: Baenziger Coles

The external walls will be 2.7metres in height and will incorporate highlight windows however the pitched roof design will provide for a maximum building height of 5.28 metres. Rainwater tanks will be affixed to the building for water supply purposes.



Extract from Southern Elevation - Source: Baenziger Coles

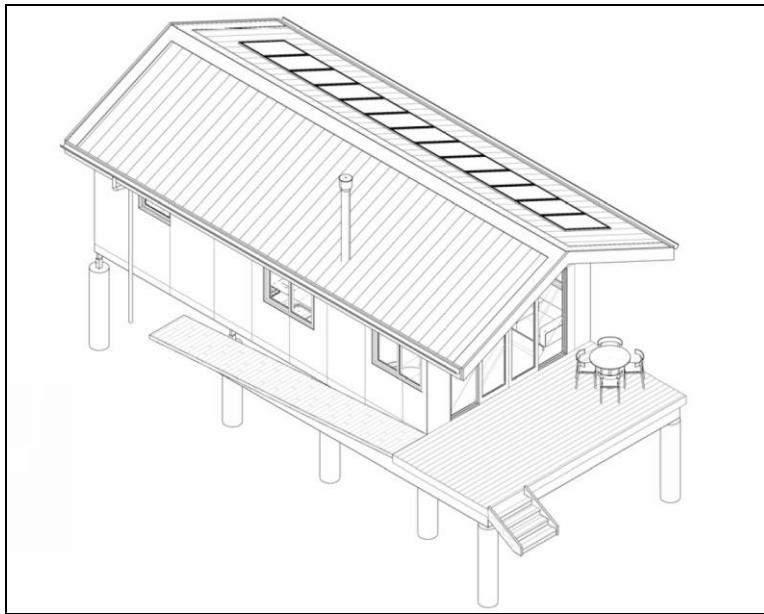
Cabins

A total of five transportable cabins will be established on site of which there will be three differing variants, inclusive of:

Number of Cabins	Bedrooms	Length (Excl deck)	Width (Excl deck)	Gross Floor Area	External Floor Area (Deck)
2	1	6.211m	5.653m	33.2m ²	14.0m ²
2	2	9.45m	5.8m	51.1m ²	14.0m ²
1	2 accessible cabin	10.58m	5.8m	59.4m ²	18.8m ²

The cabins are all transportable and will be set on a stumps. They will have an overall height of 4.38m and will benefit from highlight roof windows and small external decks.

Whilst stairs will provide access to each of the proposed cabins, the accessible cabin will also be provided with a ramp with a maximum grade of 1:14 to enhance accessibility for patrons with limited mobility.



Accessible Cabin Axonometric – Source: Baenziger Coles

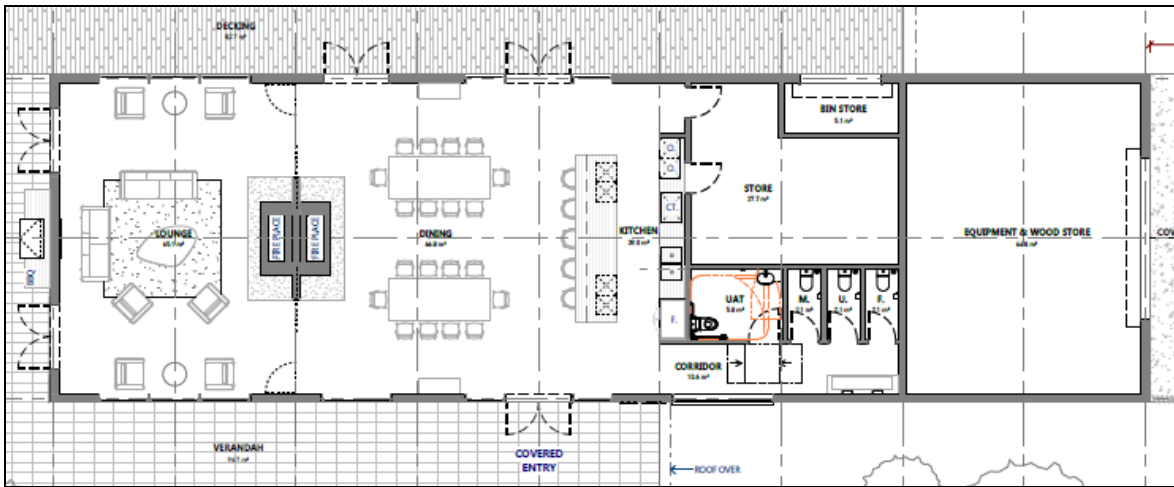
Caravan/Camping Sites

A total of six generous sized caravan and camping sites will be established as part of the proposal to accommodate short term stays. Each of the sites will be provided with access to power supply.

Bush Kitchen & Guest Lounge

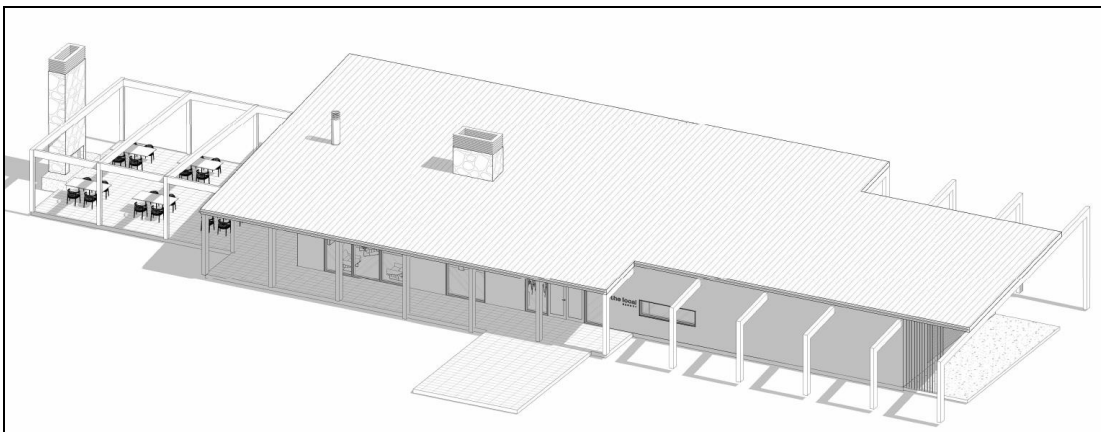
A Bush Kitchen & Guest Lounge will be established on the eastern portion of the land which will provide facilities to enable guests to congregate and prepare their own food.

The building will comprise open plan multi-purpose kitchen, dining and lounge areas and provide for amenities and storage areas. A deck will be established on the northeastern side and a pergola will be established on the northwestern side which will provide for alfresco dining and congregating opportunities.



Extract of Ground Floor Plan - Source: Baenziger Coles

The building will be single storey and will be completed with materials and finishes which complement the natural surrounds and rural locality. Paved access will be established from a carpark area and a verandah on the southern elevation will provide for a covered entry to the building.



Extract from 3D Model Plan (Front AXO) - Source: Baenziger Coles



Extract from Materials & Finishes Plan - Source: Baenziger Coles

Access

Main and secondary points of access will be established to the land from Old Bendoc-Bonang Road to the south to facilitate access to the Camping & Caravan Park.

The proposed access has been nominated logically within existing clearings to avoid any impacts to existing vegetation contained within the roadside corridor and will be provided with entry and exit gateways for safety purposes.

The internal accessway will be a minimum width of 7.0 meters wide and incorporates curves with a minimum turning radius of 10.0 metres to enable two-way traffic and enable emergency vehicles to traverse.

A car park area will be established adjacent to the Bush Kitchen & Guest Lounge for guest convenience which will include a total of 13 car parking spaces, two of which will be accessible with associated shared zone.

Landscaping

Some indicative landscaping has been shown on the accompanying Plan Set however it is anticipated that a more detailed Landscape Plan will be required as a Condition on Permit.

Wastewater Disposal

Accompanying the Application is a Land Capability Assessment Report (LCAR) prepared by *Landsafe* which demonstrates how wastewater associated with the development will be accommodated onsite via a central wastewater treatment plant in the absence of reticulated sewer.

The streams produced are to be combined and treated with a single wastewater treatment plant for simplicity and ease of management before being irrigated to the land.

The mean daily volume of wastewater generated by the proposed development is expected to be 2,143L/day when utilising a balancing tank to store wastewater together with a 10,800L septic tank. Use of a balancing tank will even out daily peaks in wastewater flows and provide a greater consistency on the quality of the wastewater requiring treatment through the plant.

Applying the wastewater to land with absorption trenches and primary treated wastewater requires a total of 294m of absorption trenches. A reserve area of equal size is required with absorption trenches which has the impact of triggering a total effluent envelope of 1,468m² in area.

Given the generous size of the land the property there is more than sufficient area available to establish the necessary effluent disposal envelope on the land while achieving appropriate setbacks from watercourses and site boundaries.

Planning Scheme Clause No.	Description of what is Proposed
35.07-1 _{FZ}	Use Caravan & Camping Park
35.07-4 _{FZ}	Buildings & Works (Section 2 Uses)
35.07-4 _{FZ}	Buildings & Works (within 100 metres of a watercourse)
44.06-2 _{BMO}	Buildings & Works associated with accommodation use (Camping & Caravan Park)

As the subject land is affected by the provisions of the Bushfire Management Overlay it is anticipated that the mandatory Condition prescribed at Clause 44.06-5 will be imposed on Permit triggering the endorsement of the Bushfire Management Plan.

The Application will require referral to the Relevant Referral Authority (CFA) as they are a recommending Referral Authority due to the site's inclusion within the Bushfire Management Overlay.

To consider the matter of onsite wastewater disposal, access and drainage we anticipate council will undertake internal referrals to their Environmental Health and Engineering Departments.

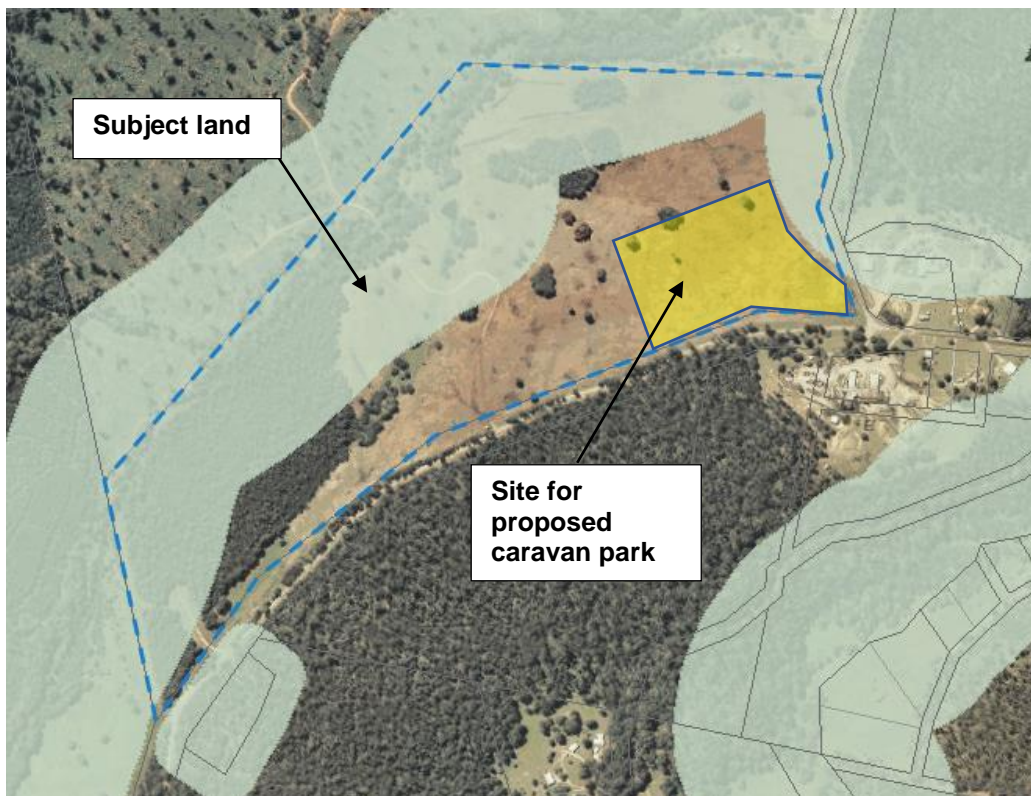
It is noted that the land is not contained within a Special Water Supply Catchment area and that the capacity of wastewater to be generated will be less than 3,000L thereby negating referral to the EPA.

4. Cultural Heritage

The proposal does not trigger any mandatory requirements to provide a Cultural Heritage Management Plan (CHMP) under the *Aboriginal Heritage Act 2006*.

Pursuant to Regulation 7 of the *Aboriginal Heritage Regulations 2018*, a CHMP is required for an activity if:

- (a) *all or part of the activity area for the activity is in an area of cultural heritage sensitivity; and*
- (b) *all or part of the activity is a high impact activity.*



Cultural Heritage Sensitivity Mapping – Source: VicPlan

Part of the subject land is contained within 200 metres of a named waterway (Tucker Creek) and is therefore identified as being an area of cultural heritage sensitivity. Despite this, a large portion of the land is not identified as being cultural heritage sensitive.

Pursuant to Regulation 58 of the *Aboriginal Heritage Regulations 2018* a 'camping and caravan park' is identified as being a high impact activity.

The size and scale of the proposed activities are relatively modest with all buildings, camping sites, driveways, wastewater disposal areas and defensible space being situated on the section of the land which is not identified as being within the area of cultural heritage sensitivity. There is therefore no mandatory requirement to provide a CHMP in support of the proposed activity.

5. Planning Policy

The following comments respond to Municipal Planning Strategy and Planning Policy Framework as relevant to the proposal.

5.1 Municipal Planning Strategy

The East Gippsland Settlement Hierarchy Plan at Clause 02.03-1 *Settlement & Housing* identifies Bendoc as being a small rural settlement. Council's strategic directions for rural settlements seek to consolidate development within township boundaries.

Whilst the subject land is contained within the Farming Zone, it is located on the edge of the existing township area of Bendoc and is located within close proximity to the town centre.

Bendoc provides limited short term and tourist accommodation options and demand arises for short term seasonal accommodation during the bushfire season for DEECA firefighters. Whilst DEECA has a depot within the town, it has does not offer accommodation for staff rostered for bushfire management in the area for any extended periods during the bushfire season.

Whilst Bendoc is not situated on a main tourist route, Bonang Road does provide all weather access through to NSW. Establishing a Caravan & Camping Park will offer accommodation for people travelling between Victoria and NSW who want to take an alternative route.

Clause 02.03-2 *Environmental and Landscape Values* acknowledges the unspoilt nature of large tracts of native vegetation within East Gippsland and its unique biodiversity qualities. The proposal adheres to associated strategic directions as the site vegetation will not be compromised by the proposal through adoption of site responsive design.

Clause 02.03-3 *Environmental Risks and Amenity* seeks to manage and mitigate environmental risks such as bushfire, with associated strategies seeking to prioritise the planning and management responses and adaption strategies to vulnerable areas.

Whilst the surrounding landscape provides a high threat from bushfire the development has been sited appropriately and adopts appropriate bushfire mitigation measures which respond appropriately to the risk. A robust response has been provided against the provisions of the Bushfire Management Overlay and Clause 53.02 *Bushfire Planning*.

Clause 02.03-4 *Natural Resource Management* acknowledges the regions considerable natural resources inclusive of agriculture, forestry and timber, water and minerals.

The proposal responds positively to Council's strategic direction given the subject land is not identified as being within a Special Water Supply Catchment for domestic water supply and is not identified as high quality or prime agricultural land.

The proposal responds well to Clause 02.03-6 *Economic Development* which seeks to support nature-based tourism development to complement opportunities in the parks.

The township of Bendoc has historically relied on the timber industry and sawmilling as the principal industry however, the closure of the sawmills within the town has significantly impacted the town's economy.

Small-scale tourist services, particularly accommodation, is considered an opportunity that can continue to support the town and its residents. The Municipal Planning Strategy encourages tourism development including a range of accommodation. The establishment of a caravan and camping park is considered to be consistent with strategies at both a State and Local Policy level.

5.2 Planning Policy Framework

Clause 12.01-1S *Protection of Biodiversity* seeks to protect and enhance Victoria's biodiversity with supporting strategies aiming to avoid impacts of land use and development on important areas of biodiversity. The proposal responds appropriately as it has been designed to avoid any direct or indirect impacts to native vegetation.

The objective to Clause 12.03-1S *River and riparian corridors, waterways, lakes, wetland and billabongs* seeks to protect and enhance waterway systems with supporting strategies aiming to protect assets and sensitively design development.

The development of a Caravan & Camping Park in the south-east corner of the property will provide generous setbacks from the existing waterway that dissects the site thereby avoiding negative impacts to biodiversity and ecological systems.

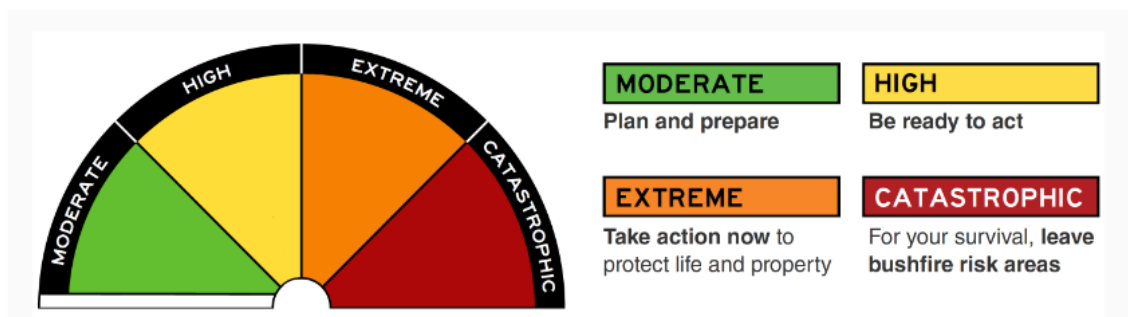
Given the subject land is not serviced by reticulated sewage, the treatment and disposal of wastewater associated with the development must be contained on site. The use of an AWTs and application of wastewater to the land via absorption trenches, with a total effluent envelope of 1,468m² in area, will ensure wastewater is adequately dealt with whilst being generously offset from watercourses.

The proposal has seriously considered Clause 13.02-1S *Bushfire Planning* given the entire site is contained within the Bushfire Management Overlay. A response has been provided against the provisions of the Bushfire Management Overlay (Clause 44.06) and Bushfire Planning (Clause 53.02) confirming the risk associated with the proposed development can be appropriately mitigated.

The Bushfire Management Plan forming part of this Application will be endorsed as part of planning permit which will ensure appropriate bushfire mitigation measures are implemented on an ongoing basis.

In response to the surrounding bushfire risk it is anticipated that a Condition on permit will trigger the need for an Emergency Management Plan (EMP) to be developed.

We anticipate that the EMP will outline the different actions to be undertaken as the bushfire risk increases from Moderate through to Catastrophic. During a rating of High it is likely that actions by the Operator/Manager may be limited to monitoring of weather conditions, whereas when a rating of Extreme and or Catastrophic are in play more drastic measures would be undertaken.



The fire danger rating system in Australia

We would anticipate the need for the Operator/Manager to close the Caravan & Camping Park should the bushfire risk increase to a Catastrophic rating. For any guest due to arrive during a Catastrophic rating, other than for DEECA fire crews and other fire fighter personnel, it would be anticipated that the Operator/Manager contact them and advise them not to attend the site until such time as the bushfire rating has reduced to an acceptable level.

Clause 14.01-1S relating to *Protection of Agricultural Land* has the objective to protect the State's agricultural base by preserving productive farmland. The proposal is considered to respond positively to associated strategies:

- The subject land is not currently performing a viable agricultural use given the limited portion of the land available. Whilst some grazing activity is currently occurring for property for management and maintenance purposes the vegetated nature of the western portion of the site severely limits any viable agricultural opportunity.
- There is no opportunity to enhance the land holding in an attempt to make it more viable given the vegetated nature of the surrounding freehold properties.

- The subject land is located on the edge of the existing township area and essentially forms part of the Bendoc township and is not an isolated parcel of land.

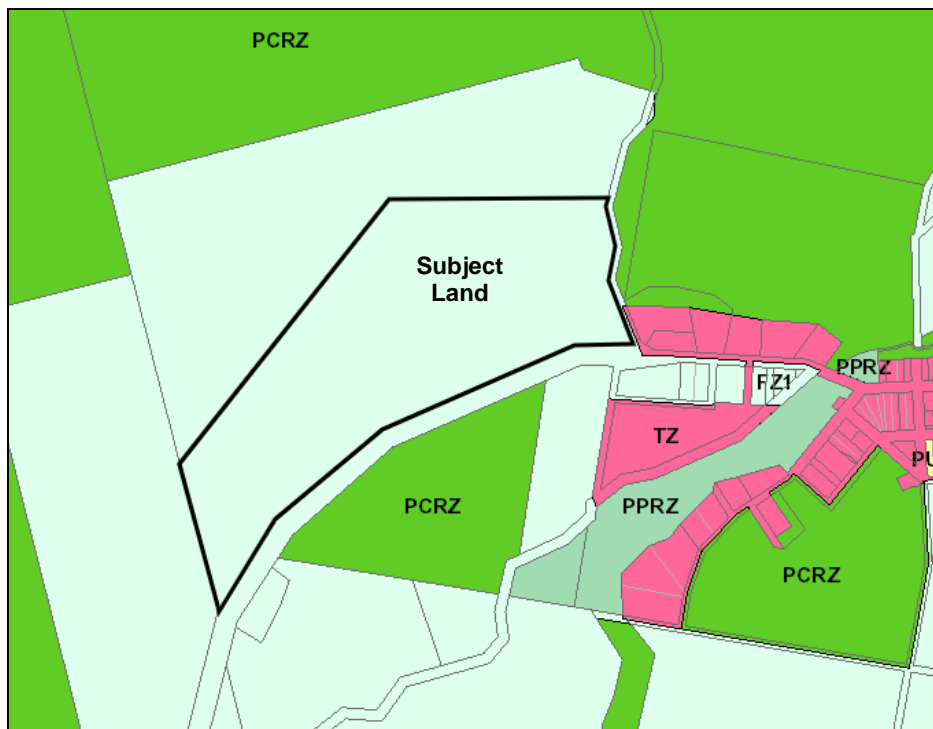
Clause 17.04-1S *Facilitating Tourism* encourages tourism development and well designed and sited tourist facilities. Not only will the proposed Camping & Caravan Park offer accommodation within the area of Bendoc the proposed use will also actively encourage tourism into the area.

6. Planning Elements

6.1 Farming Zone

The whole of the subject land is mapped as being affected by the provisions of the Farming Zone which triggers planning approval at Clause 35.07-1 for use of the land for the purposes of a Caravan & Camping Park.

The Farming Zone also triggers planning approval at Clause 35.07-4 for Buildings & Works as a Caravan & Camping Park. Planning approval is also required given the proposed development will be within 100.0 metres of a watercourse.



Zone Mapping – Source: VicPlan

The proposal responds appropriately to the purpose of the Farming Zone as whilst it is not strictly an agricultural use, the establishment of the Camping & Caravan Park will not result in the removal of any existing agricultural land out of production. It will also ultimately provide employment and tourism opportunities which will support the local community.

Decision Guidelines

The land is currently managed and maintained with cattle grazing however the capacity of the property to cater for viable agricultural production is limited by size, harsh weather conditions and proximity to sensitive uses.

- The subject land is 61.25ha in area which is greater than the Scheduled lot size of 40ha however does not contain sufficient cleared area to sustain viable numbers of livestock.
- The harsh weather conditions experienced in the area during the winter months limits farming opportunities however makes the land more attractive to farming more hardy beef cattle such as Hereford's and Angus.
- Whilst the subject land is contained within the Farming Zone it sits on the edge of the existing township area of Bendoc. Properties immediately to the east of the subject land on the opposite side of Haydens Bog Road are contained within the Township Zone.

The proposed use will be restricted to the southwestern portion of the land only and will therefore enable the continuation of the low scale grazing activity for property management and maintenance on the remainder of the land. The attraction for establishing the Camping & Caravan Park in this location is not only for convenience to the township but to also benefit from the rural atmosphere.

The land in its current format is not considered to be productive in an agricultural sense and the proposal will therefore not unnecessarily result in the loss of any productive land.

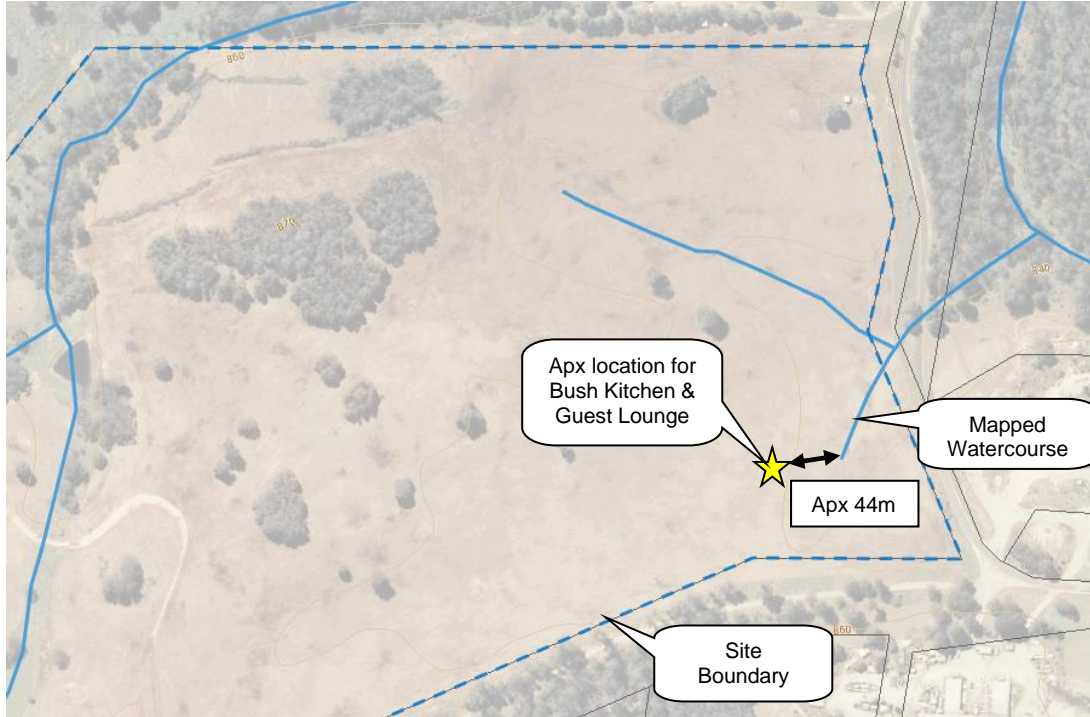
There is limited ability to aggregate the property with adjoining freehold land to enhance the holding and agricultural viability given the vegetated nature of the surrounding properties.

Ultimately the proposed use will not restrict the capacity of the subject land or adjoining land contained within the Farming Zone for agricultural purposes and otherwise responds appropriately to the purpose of the zone.

The proposed development will technically be within 100.0 metres of the existing water course to the east thereby triggering the need for planning approval. Despite this, the development has been generously setback from the watercourse and is not considered to pose any increased risk to water quality or health.

The minimum separation distance between the mapped water course and the proposed Bush Kitchen & Guest Lounge is approximately 44.0 metres. This is not considered to cause any concern as the associated effluent disposal fields will be established further to the east being over 100.0 metres from any mapped watercourse.

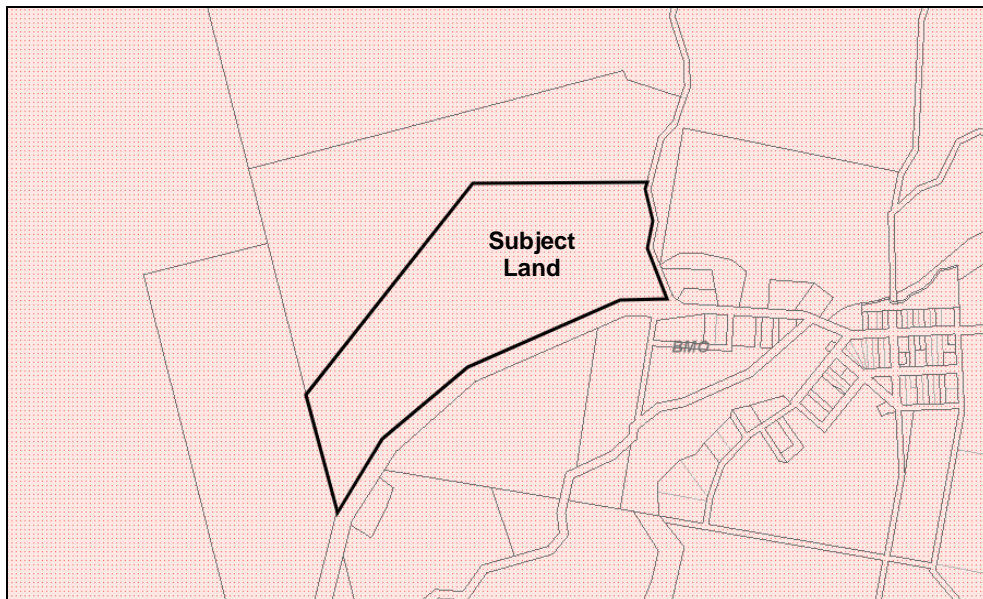
The accompanying LCAR confirms that there is suitable available area contained on the land to accommodate irrigation of the wastewater once it has been through the wastewater treatment plant and associated balancing storage tank.



Aerial photograph – Source: VicPlan

6.2 Bushfire Management Overlay

The proposed subdivision responds positively to the purpose of the Bushfire Management Overlay as the risk to life and property from bushfire can be mitigated to an acceptable level.



Bushfire Management Overlay – Source: VicPlan

Planning approval is triggered at Clause 44.06-2 of the Bushfire Management Overlay for Buildings & Works associated with an accommodation use (Caravan & Camping Park).

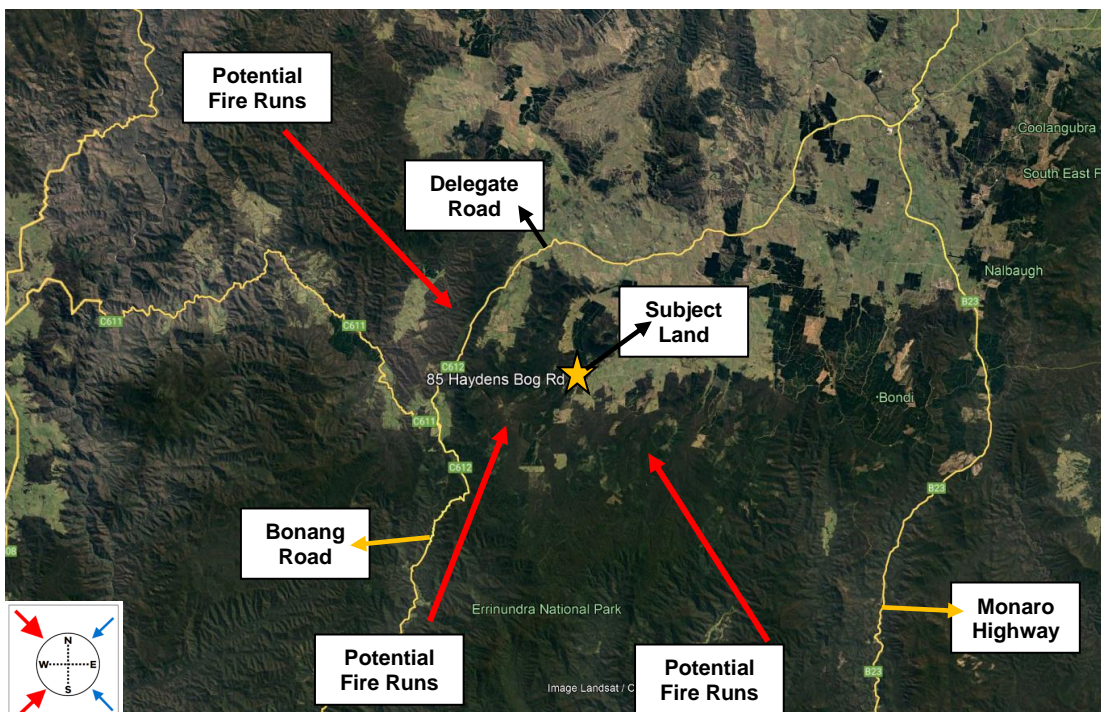
Application Requirements

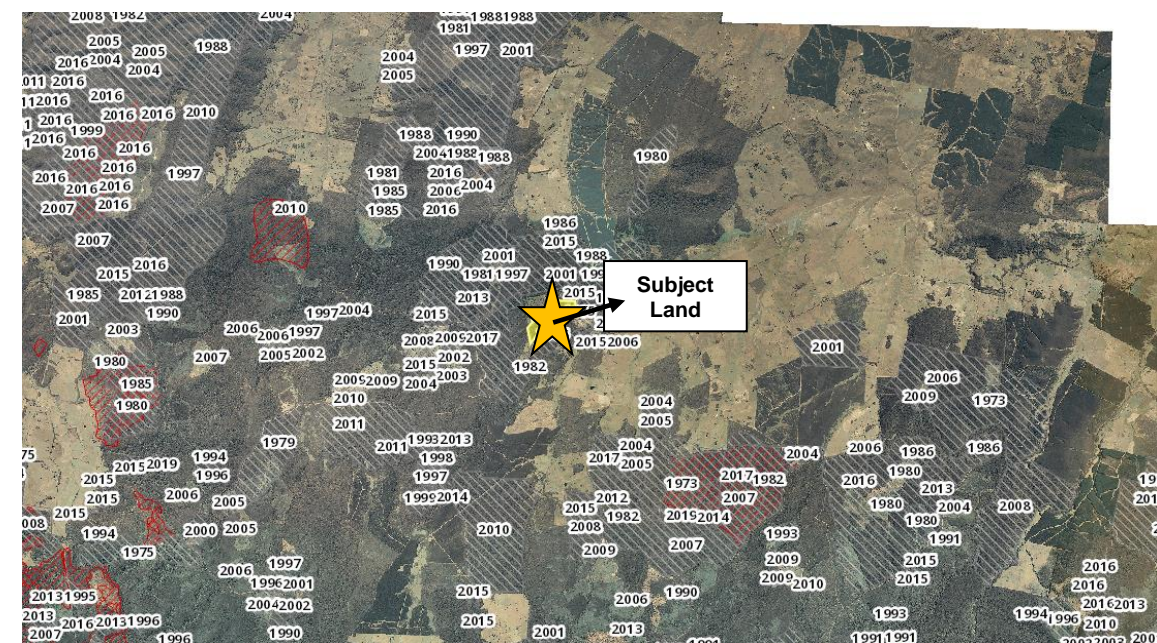
The following Bushfire Hazard Landscape Assessment describes the bushfire hazard more than 150 metres from the subject land. Whilst the site is located on the edge of the township area of Bendoc it is also situated in the northern foothills of the Great Dividing Range with vast areas of forested Crown Land to the north, south and west providing a high bushfire risk from long uncontrollable fire runs.





There is the ability for bushfire to approach from more than one aspect, and the type and extent of the vegetation present may result in neighbourhood-scale destruction as it interacts with the bushfire hazard.

Despite the high bushfire risk, there are more open pastoral areas provided to the east of the Bendoc township and further to the north within proximity to Delegate Road. It would be logical to retreat in those directions in the event of a bushfire. Having regard to the landscape characteristics the site is best described as Landscape Type 3.

Bushfire Hazard Landscape Assessment





	Wildfire	Distance from Subject Land to Bendoc <1km	
	Prescribed Burns	Broader Landscape Type: Three	
	Nearest CFA 25 Clarkeville Road, Bendoc (apx 1km)		Nearest Neighbourhood Safer Place Bendoc Hall Car Park (apx 900m)

Accompanying the Application is a Bushfire Hazard Site Assessment which provides information on the slope and classifiable vegetation within 150 metres of the proposed development.

A Bushfire Management Plan has also been provided which details bushfire mitigation measures inclusive of vegetation management, access, water supply, defendable space and building construction levels.

The mandatory Condition prescribed at Clause 44.06-5 pertaining to Buildings & Works will trigger endorsement of the Bushfire Management Plan thereby providing assurance that the protection measures prescribed thereon are adhered to on an ongoing basis.

The following Bushfire Management Statement has been provided to describe how the proposal responds to the requirements of Clause 44.06-3 and Clause 53.02 *Bushfire Planning*.

Response to Objectives and Standards to Clause 53.02

CLAUSE 53.02-4.1 LANDSCAPE, SITING & DESIGN OBJECTIVES

Objective

Development is appropriate having regard to the nature of the bushfire risk arising from the surrounding landscape.

Development is sited to minimise the risk from bushfire.

Development is sited to provide safe access for vehicles, including emergency vehicles.

Building design minimises vulnerability to bushfire attack.

Approved Measures

AM 2.1

The bushfire risk to the development from the landscape beyond the site can be mitigated to an acceptable level.

Response:

The subject land is located within the north-eastern portion of the municipality and is situated on the edge of the township area of Bendoc. Bendoc has a long history as a “timber town” with timber extracted from the vast areas of Crown land in the surrounds. Whilst land to the northwest, west and south of Bendoc is well vegetated, land to the east of the township comprises large areas of cleared grazing land.

The Bendoc-Orbost Road is the primary road providing access to the township from Orbost to the south. Old Bendoc-Bonang Road is a gravel road providing an alternative route south.

Haydens Bog Road together with Lower Bendoc Road are both sealed roads which offer two routes north out of town and Lower Bendoc Road provides a route to the east to Delegate through cleared pastoral land.

The subject land is considered to be situated within a *Broader Landscape Type Three* as access is readily available to a place that provides shelter from bushfire despite the surrounding bushfire threat.

The characteristics of the wider landscape are considered to pose a high bushfire risk. During the 2019-2020 bushfires which ravaged through Victoria Bendoc was subject to an evacuation order. The town was cut off for several days after the blaze cut the main highway into East Gippsland. It was one of the last communities to be reached by rescue services.

A combination of logging and clearing has occurred within the Crown land and freehold land surrounding Bendoc which has some benefit to interrupting long fire runs but is unlikely to reduce the high bushfire risk. It is considered that additional bushfire mitigation measures be adopted in response to the surrounding landscape in order to minimise the risk.

In the event egress is restricted from the town during a bushfire event the subject land will otherwise provide a safer place to shelter.

AM 2.2

A building is sited to ensure the site best achieves the following:

- The maximum separation distance between the building and the bushfire hazard.
- The building is in close proximity to a public road.
- Access can be provided to the building for emergency service vehicles.

Response:

The proposed development has been sited on the southeastern portion of the site within close proximity to Old Bendoc-Bonang Road which maximises separation from the bushfire threat from adjoining land to the north and within the subject land to the west.

As part of the proposal access will be established from Old Bendoc-Bonang Road which is an all-weather gravel road maintained by the East Gippsland Shire Council which provides direct access into the town centre of Bendoc.



Looking in a westerly direction along Old Bendoc-Bonang Road



Looking in an easterly direction along Old Bendoc-Bonang Road

The development site is not only practical however also minimises the risk to life and property to an acceptable level by catering for good separation distances and access to the adjoining road network.

AM 2.3

A building is designed to be responsive to the landscape risk and reduce the impact of bushfire on the building.

Response:

The proposed cabins, amenities building, and camp kitchen have all be provided with relatively simple roof forms which will aid in limiting the ability for embers to lodge.

Both the amenities building, and the camp kitchen will be provided on a slab on ground which will also offer resilience. Whilst the cabins will be provided on a stump footing system there will be the ability to establish ember guards or base boards to limit the embers from lodging beneath the buildings.

Whilst defensible space is being adopted consistent with Table 3 to Clause 53.02-5 (BAL 12.5) the construction of each of the buildings has been enhanced to be more resilient having regard for the surrounding bushfire risk. A minimum construction standard of BAL 29 has therefore been nominated on the attached Bushfire Management Plan.

Cabins

Whilst the cabins will be provided on a stump footing system there will be the ability to enclose the subfloor structure to limit the potential for embers to lodge beneath the buildings. The floor space below the external decking will also be enclosed.

The external wall will be pre-finished textured compressed cement sheet which will be a minimum of 6mm thick to ensure a construction standard of BAL 29 will be achieved.

The doors and windows, including highlight windows will be framed with bushfire resisting timber and the glass will either be 5mm thick or otherwise protected by screens. It is noted that given the glass panels within the doors will be full length that portion will require screening.

The use of a simple roof form with non-combustible colourbond sheeting responds well to the bushfire risk and the roof areas will be sarked and fitted with ember guards for further protection from ember attack.

Amenities

The amenities building will be simple in form with a gable roof design. It will be provided on a slab and will comprise pre-finished textured compressed cement sheet walls (minimum 6mm width) and colourbond roof sheeting which all respond well to the bushfire threat.

It is anticipated that ember seals will need to be established along the tops of the roller doors to offer protection from embers entering into the building. The roof will also be fully sarked and fitted with ember guards to further enhance protection from ember attack.

The highlight windows will be framed with bushfire resisting timber and the glass will be either 5mm thick or otherwise protected by screens.

Camp Kitchen

The bush kitchen and lounge building will be established on a slab and will comprise a sloping roof which provides a good response to the bushfire risk as it limits the ability for embers to lodge. The roof will also be fully sarked and at the junction of the roof and the wall ember guards will be fitted.

All external doors will be solid timber or otherwise protected by bushfire shutters or screens and will be framed with bushfire resisting timber. The external walls will comprise of non-combustible materials.

All external windows will also be framed with bushfire resisting timber and the glass will either be 5mm thick or otherwise protected by screens. The panels of glass which are full length will be screened for at least 400mm from ground level.

The use of paving and hard stand areas surrounding the building provide a good response to the bushfire risk. Decking will also be established on one aspect which will comprise of non-combustible material. This decking will either be provided with bushfire resisting supports or the sub-floor will otherwise be enclosed.

CLAUSE 53.02-4.2 DEFENDABLE SPACE & CONSTRUCTION OBJECTIVES

Objective

Defendable space and building construction mitigate the effect of flame contact, radiant heat and embers on buildings.

Approved Measures

AM 3.1

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person's unit, industry, office or retail premises is provided with defendable space in accordance with:

- Table 2 Columns A, B or C and Table 6 to Clause 53.02-5 wholly within the title boundaries of the land; or
- If there are significant siting constraints, Table 2 Column D and Table 6 to Clause 53.02-5.

The building is constructed to the bushfire attack level that corresponds to the defendable space provided in accordance with Table 2 to Clause 53.02-5.

Response:

N/A

AM 3.2

A building used for accommodation (other than a dwelling or dependent person's unit), a child care centre, an education centre, a hospital, leisure and recreation or a place of assembly is:

- Provided with defendable space in accordance with Table 3 and Table 6 to Clause 53.02-5 wholly within the title boundaries of the land.
- Constructed to a bushfire attack level of BAL12.5.

Response:

AM 3.2 applies to the Camping & Caravan Park use which is nested within the accommodation group (Clause 73.04-1).

The proposal easily achieves the objective to Clause 53.04-4.2 as defensible space has been nominated around the proposed development consistent with Table 3 to Clause 53.02-5. The defensible space will be contained wholly within the property boundaries which ensures the ongoing ability to manage and maintain vegetation consistent with Table 6 to Clause 53.02-5.

Classifiable vegetation within the 150 metre assessment area is 'grassland' in all directions except to the south which is classified as 'forest' due to the presence of established vegetation on the southern side of Old Bendoc-Bonang Road.

Whilst the slope within the assessment area to the east is classified as downslope >0-5°, all other directions are provided upslope to the development.



Looking in an eastern direction from the proposed development site



Looking in a southerly direction from proposed development site



Looking in a westerly direction from the proposed development site



Looking in a northerly direction across the subject land from Old Bendoc-Bonang Road

The presence of vegetation on an upslope to the south with a 'forest' classification triggers requirement for a separation distance of 60.0 meters. The generous setback of the accommodation buildings into the site ensures that this requirement is easily achieved.

The grassland on the downslope $>0.5^\circ$ to the east of the proposed Camping & Caravan Park incurs the need for 40.0 metres defendable space whilst the grassland on the flat/upslope land to the north and to the west incurs the need for 35.0 metres defendable space.

The defendable space requirements prescribed at Table 3 to Clause 53.02-5 are easily achieved by the proposal and have been further enhanced in direct response to the bushfire risk. This has been achieved by increasing the extent of defendable space to the southern and eastern boundaries which is logical from a management perspective.

Whilst AM 3.2 imposes the need to construct the development to BAL 12.5 specifications, the developments resilience to the bushfire risk will be enhanced by the use of materials which exceed these requirements (BAL 29).

CLAUSE 53.02-4.3 WATER SUPPLY & ACCESS OBJECTIVES

Clause 53.02-4.3 Objective

A static water supply is provided to assist in protecting property.

Vehicle access is designed and constructed to enhance safety in the event of a bushfire

Approved Measures

AM 4.1

A building used for a dwelling (including an extension or alteration to a dwelling), a dependant person's unit, industry, office or retail premises is provided with:

- A static water supply for fire fighting and property protection purposes specified in Table 4 to Clause 53.02-5.
- Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02-5.

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

Response:

N/A

AM 4.2

A building used for accommodation (other than a dwelling or dependent person's unit), childcare centre, education centre, hospital, leisure and recreation or place of assembly is provided with:

- A static water supply for fire fighting and property protection purposes of 10,000 litres per 1,500 square metres of floor space up to 40,000 litres.
- Vehicle access that is designed and constructed as specified in Table 5 to Clause 53.02-5.
- An integrated approach to risk management that ensures the water supply and access arrangements will be effective based on the characteristics of the likely future occupants including their age, mobility and capacity to evacuate during a bushfire emergency.

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

Response:

The accommodation buildings have a total floor space of 646m² thereby triggering the need to provide a static water supply of 10,000L for fire fighting and property protection purposes.

Building	Gross Floor Area
Camp Kitchen	322m ²
Amenities	96m ²
1 Bedroom Cabin	66.4m ² (33.2x2)
2 Bedroom Cabin	102.2m ² (51.1x2)
Accessible Cabin	59.4m ²
Total	646m²

Multiple water tanks will provide static water supply for firefighting purposes throughout the site. These tanks have been strategically positioned to ensure each building and camping site will be within 60.0m to provide sufficient coverage.

The Bushfire Management Plan will be endorsed as part of planning permit and give further life through implementation of the mandatory Condition pursuant to Clause 44.06-5.

6.3 Particular Provisions

6.3.1 Car Parking

The proposal is considered to comply with the Particular Provisions relating to Car Parking prescribed at Clause 52.06 which seeks to ensure the provision of an appropriate number of car parking spaces having regard to the demand.

Clause 52.06-2 specifies that before a new use commences the number of car parking spaces required under Clause 52.06-5 must be provided on the land to the satisfaction of the Responsible Authority.

The car parking requirements prescribed at Table 1 to 52.06-5 do not prescribe any car parking requirements for a Camping & Caravan Park use. The number of spaces must therefore be provided to the satisfaction of the Responsible Authority consistent with Clause 52.06-6.

Informal guest parking has been nominated within proximity to the bush kitchen and guest lounge building which has the capacity to cater for up to 10 cars, assuming bay widths of 2.8m.

The number and standard of car parking spaces is most appropriate and consistent with the car parking provisions given that only 6 camping/caravan sites have been nominated and that the cabins will each be provided with their own kitchen.

7. Conclusion

The proposed Use & Development of a Camping & Caravan Park at 85 Haydens Bog Road, Bendoc is considered to accord with all relevant provisions of the Farming Zone & Bushfire Management Overlay of the *East Gippsland Planning Scheme*. The proposal is consistent with relevant sections of Planning Policy and will offer accommodation opportunities which will ultimately support the township of Bendoc.

For these reasons we respectfully request that Council consider the merits of the Application favourably and resolve to issue a Planning Permit.

Crowther & Sadler Pty Ltd
28 February 2024

LAND CAPABILITY ASSESSMENT
FOR ON-SITE WASTEWATER MANAGEMENT
FOR A PROPOSED
COTTAGE ACCOMODATION & CAMPING
AT 85 HAYDENS BOG ROAD,
BENDOC

for

Danny and Lana Jamieson
of
D & L High Country Earthworks Pty Ltd

by

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December 2023

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Summary of Land Capability Assessment

Property Address	85 Haydens Bog Road, Bendoc (Lot 2 LP219359)
Property Zoning	Farming Zone – (FZ)
Allotment size	Total Property = 59.33 ha
Anticipated Wastewater	<p>Maximum Domestic wastewater based on:</p> <ul style="list-style-type: none"> - 5 Accommodation cabins – 2 with two double beds, 2 with one double bed & 1 all access - 6 powered sites (for caravans) <p>Total annual wastewater production = 0.78 ML Average daily production 2,143 L/day (See Table 1 for detail)</p>
Surface water	<p>Tucker Creek flows through the property close to the northern boundary. There is also a primary tributary of Tucker Creek in the south west corner. EPA setback distances of 30 m to surface waters are required.</p> <p>According to the topographical map there are also two watercourses in the eastern end of the property. The southern most of these watercourses may be considered a waterway, while the other is a broad based swale, and not considered a waterway, as it does not meet the necessary criteria, ie no defined bed and banks, <60 ha catchment and not spring fed. An exclusion zone of 10 m either side of the base of the swale should be implemented as lateral seepage will concentrate in this area, making it less suitable for recycled water irrigation.</p> <p>A dam has been constructed in the south east corner with a catchment area confined to the land upslope in the south east corner of the property (Figure 1).</p>
Stormwater run-on & upslope seepage	There is negligible potential for stormwater run-on to the LAA given the high soil infiltration and permeability rate, provided all stormwater from roofs, driveways and paved surfaces is directed away from wastewater LAAs. There is negligible risk of lateral seepage from upslope given the elevated position in the landscape.
Recommended Buffer Distances	All buffer distances recommended by the EPA Publication 891.4 Code of Practice have been considered and have been included in Appendix 3.
Subsoil Permeability	Soil permeability (K_{sat}) was measured as part of soil investigations for the cellar door LCA in situ at a depth of 300 – 500 mm at 0.16 m/day. The permeability of the subsoil in that area of the property is considered indicative of the subsoil within the proposed development site.
Design Irrigation Rate (DIR) for Subsurface Drip	<p>The DIR for a category 4 soil is 24.5 mm/week or 3.5 mm/day. LAA of 1,218 m²</p> <p>(Wastewater load averaged out to 857 L/day with the use of a balance tank)</p>
Design Loading Rate (DLR) for Absorption trenches	<p>The DLR for a category 4 soil is 42 mm/week or 6 mm/day. LAA of 734 m² (10 trenches x 29.4 m = 734 m)</p>
Factor impacting upon the ability of the property to sustainably apply wastewater to land	<p>The free draining soils and favourable positions in the landscape make this property well suited to sustainable wastewater application to land.</p> <p>With 26-30 ha available for irrigation within the 59 ha property, there is an abundance of land available in which to locate the required 1,218 m² wastewater irrigation field. Provided the recycled water irrigation area is setback a suitable distance from surface waters within the property there are negligible environmental constraints to sustainable wastewater on this property.</p>

1 Introduction

Land Safe¹ has been engaged by Danny and Lana Jamieson of D & L High Country Earthworks Pty Ltd to undertake a Land Capability Assessment (LCA) for onsite wastewater management for the 59.33 ha property at 85 Haydens Bog Road, Bendoc (Lot 2 LP219359).

The owners propose to construct, 5 cabin accommodation units, 6 powered caravan sites and camp kitchen facilities to service the caravan sites on this property.

The investigations for this proposed development have been confined to the north eastern portion of the property, where the wastewater will be applied to land (Subject area). The subject area of the property is currently vacant except for an existing hay shed.

This LCA has been commissioned to determine whether the land is capable of treating and applying accommodation cabins and camping wastewater to land in an environmentally sustainable manner in accordance with both EPA Victoria and Council requirements. If the land is deemed suitable, the size of the designated wastewater Land Application Area (LAA) on the allotment will be calculated for the sustainable application to land of wastewater produced from:

- 5 Accommodation cabins – 2 with two double beds, 2 with one double bed & 1 all access
- 6 powered sites (for caravans)

Should the land be deemed suitable, the size of the designated wastewater Land Application Area (LAA) will be calculated according to the measured soil permeability, in conjunction with Municipal Association of Victoria (MAV) water and nutrient balances.

The size of the LAA will be determined on the basis of the wastewater being treated up to a primary standard and absorption trench, or secondary standard and subsurface drip used as the land application method.

The methods used to complete this LCA are in accordance with Australian Standard (1547:2012) for On-site domestic wastewater management and EPA Victoria Code of Practice Onsite Wastewater Management (891.4).

Town water is not available for potable water supply and there is no town sewer. The property is not located within a potable water catchment.

Glenn Marriott completed the field assessment on 18th May 2023. Glenn Marriott specialises in the field of LCA's for wastewater management.

¹ Land Safe is a division of Ag-Challenge Consulting Pty Ltd.

2 Design Flow Rates

Table 1 has been included to demonstrate how the design flow rates for the proposed development have been calculated². Appendix 5 has more information regarding how this has been calculated on a monthly basis with anticipated fluctuations throughout the week.

It is recommended that all wastewater streams be combined for treatment, storage and land application purposes. This simplifies the wastewater management system for ease of management. From Appendix 5, the total annual volume of wastewater generated is 0.78 ML, which equates to an average of 2,143 L/day.

Table 1. Wastewater Design Flow Rate (DFR) calculations for accommodation cabins and camping (fully serviced).

			fdf	DFR/person	Daily total
	Cottages	2	4	150	1200
		2	2	150	600
		1	4	150	600
Powered camp sits (caravans)		6	4	150	3600
				Max daily flow	6000
				Weekends	12000
				Week days	3000
				Weekly total	15000
				Daily average	2143

Sufficiently large balancing storage is recommended to smooth out daily peaks and troughs between weekends and week days. The use of balancing storage in front of the treatment plant enables a potential reduction in the size of the treatment plant required.

These DFRs are estimates. It is recommended that a water meter be installed to measure wastewater inflows to the wastewater treatment plant. Inflows to the wastewater treatment system will need to be monitored for the benefit of EPA and the owner/operators to ensure the wastewater management system (wastewater treatment and land application areas) is never overloaded beyond its capacity.

3 Development & Key Features of the Property

An aerial photo of the property with topographical features and EPA setbacks has been included in Figure 1. Figure 2 contains the proposed site plans. Figure 3 is a contour map of

² Based on data of anticipated wastewater volumes provided by Stephen Pereira of Aubin Environmental

the proposed development area of the property. A description of the property is presented in Table 2.

Table 2. Property Description.

Property Address	85 Haydens Bog Road, Bendoc (Lot 2 LP219359)
Property Zoning	Farming Zone – (FZ)
Allotment size	Total Property = 59.33 ha

The significant environmental features that may limit or prevent sustainable wastewater application to land on the site are presented in Table 3.

Table 3. Significant environmental features of the property.

Feature	Description
Annual rainfall & Evaporation	Rainfall – Mean = 748 mm ³ Mean Pan Evaporation – 891 mm SILO
Landform	Gently undulating, ridge crest to undulating upper mid slope.
Slope	Most of the property has gentle gradients of ~5%, up to 20% in the far east end.
Surface water	Tucker Creek flows through the property close to the northern boundary. There is also a primary tributary of Tucker Creek in the south west corner. EPA setback distances of 30 m to surface waters are required with secondary treated wastewater, or else 60 m with primary treated wastewater. According to the topographical map there are also two watercourses in the eastern end of the property. The southern most of these watercourses may be considered a waterway, while the other is a broad based swale, and not considered a waterway, as it does not meet the necessary criteria, ie no defined bed and banks, <60 ha catchment and not spring fed. An exclusion zone of 10 m either side of the base of the swale should be implemented as lateral seepage will concentrate in this area, making it less suitable for recycled water irrigation. A dam has been constructed in the south east corner with a catchment area confined to the land upslope in the south east corner of the property (Figure 1).
Groundwater	Groundwater depth is expected to vary between 5-20 m below the soil surface (Figure 5). ⁴ Groundwater does not present a significant risk to wastewater management.
Stormwater run-on & upslope seepage	There is negligible potential for stormwater run-on to the LAA given the high soil infiltration and permeability rate, provided all stormwater from roofs, driveways and paved surfaces is directed away from wastewater LAAs. There is negligible risk of lateral seepage from upslope given the elevated position in the landscape.
Site & subsurface drainage	Site and subsurface drainage is excellent given the free draining well structured red ferrosol and sandy clay soils.
Recommended setbacks	All buffer distances recommended by the EPA have been considered (Appendix 3).

³ <https://www.longpaddock.qld.gov.au/silo/point-data/>

⁴ Visualising Victoria's Groundwater, https://www.vvg.org.au/vvg_map.php?agreement=Agreement+Continued

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Figure 1. Aerial photo of the property with contour overlay. *Note one waterway in the eastern end is not considered a waterway.*

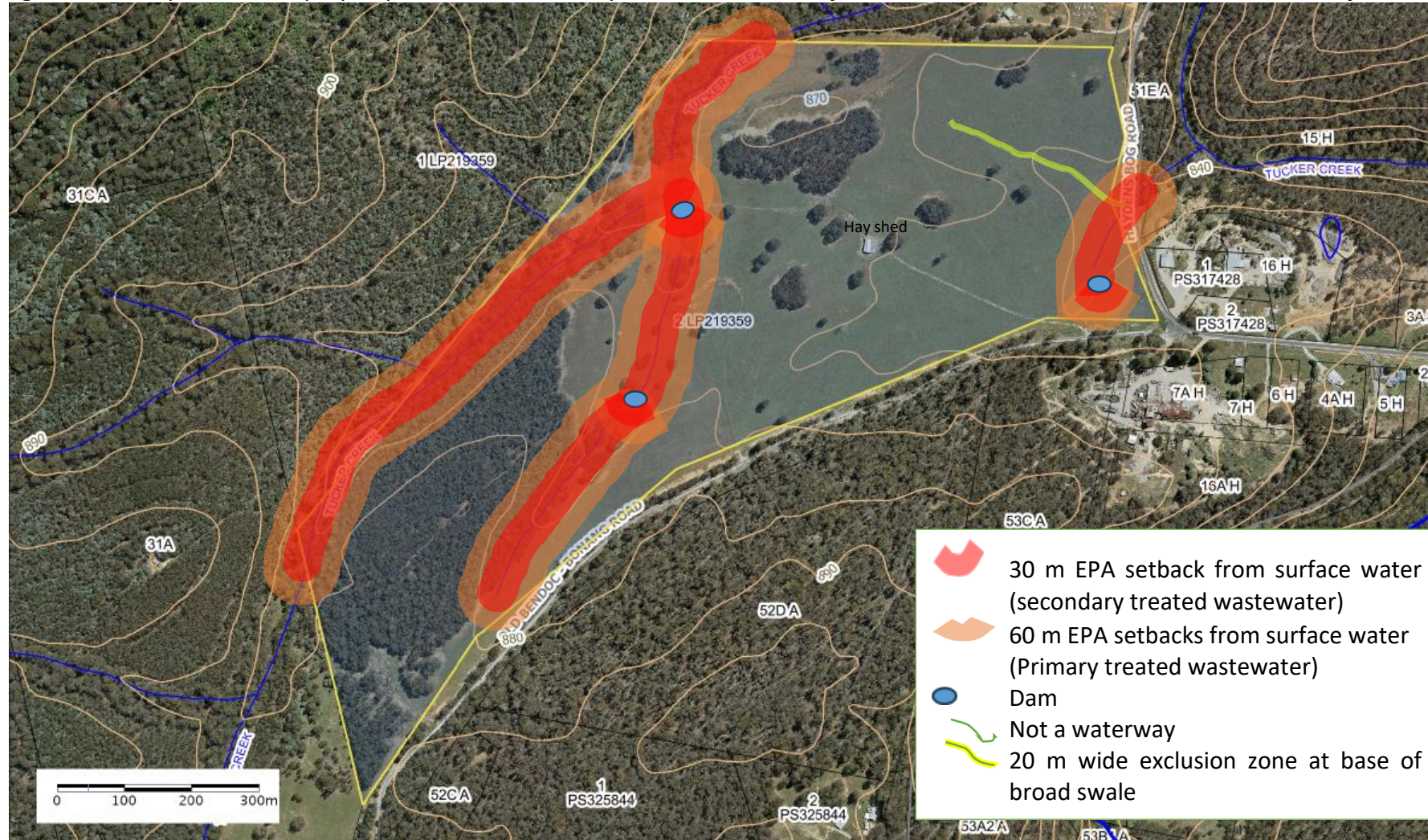
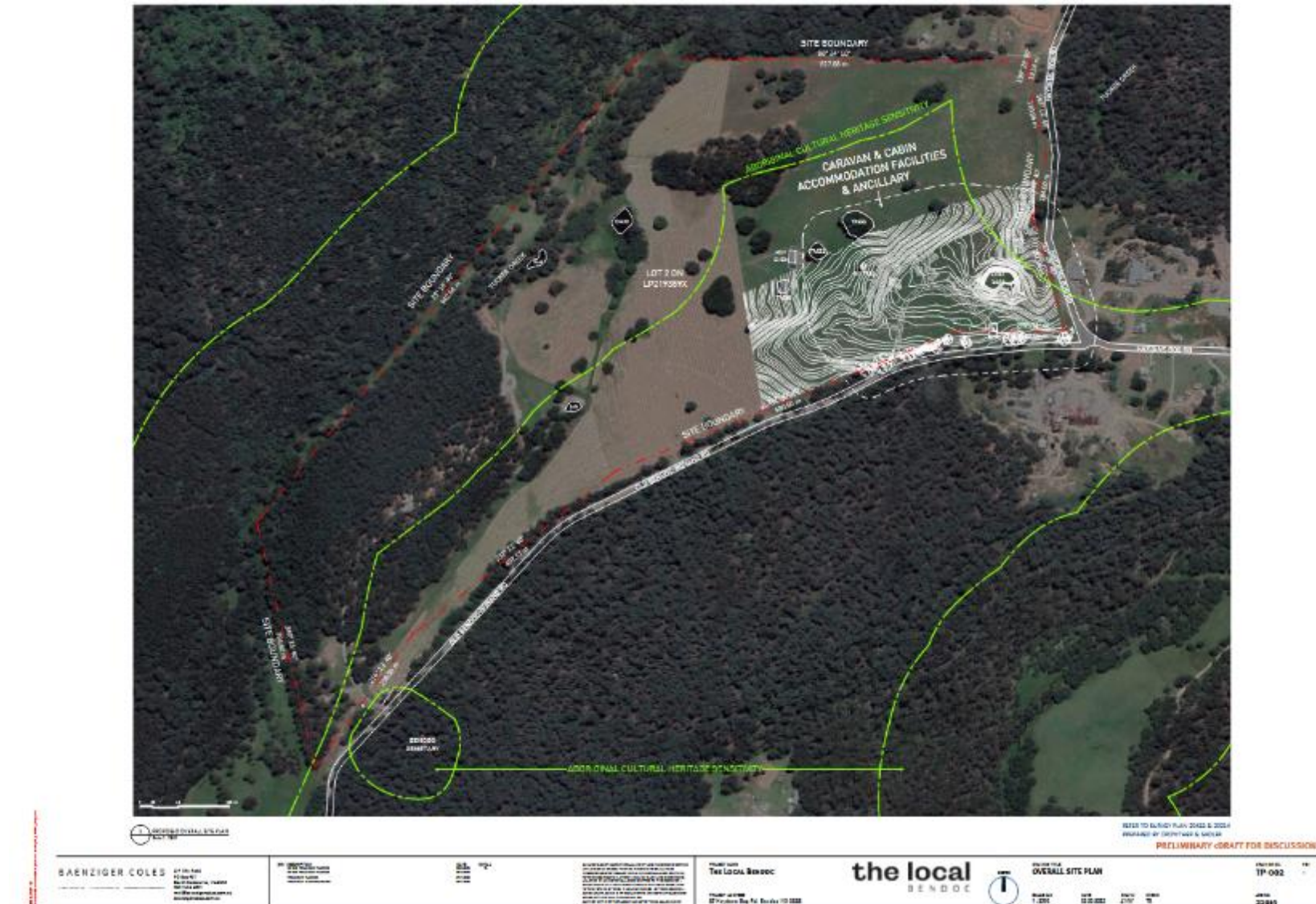


Figure 2. Aerial photo of the property with future unpowered camping area (west end) and proposed new development in the east end.



[illegible]

4 Geology and Groundwater

From Figure 4 the underlying geology consists of Ordovician “Pinnak Sandstone” (Oap) which was deposited as sedimentary marine material consisting of thick to thin bedded sandstone, siltstone and minor chert (silica rock).

Figure 4. Geology of the property (white boundary) overlain on an aerial image.

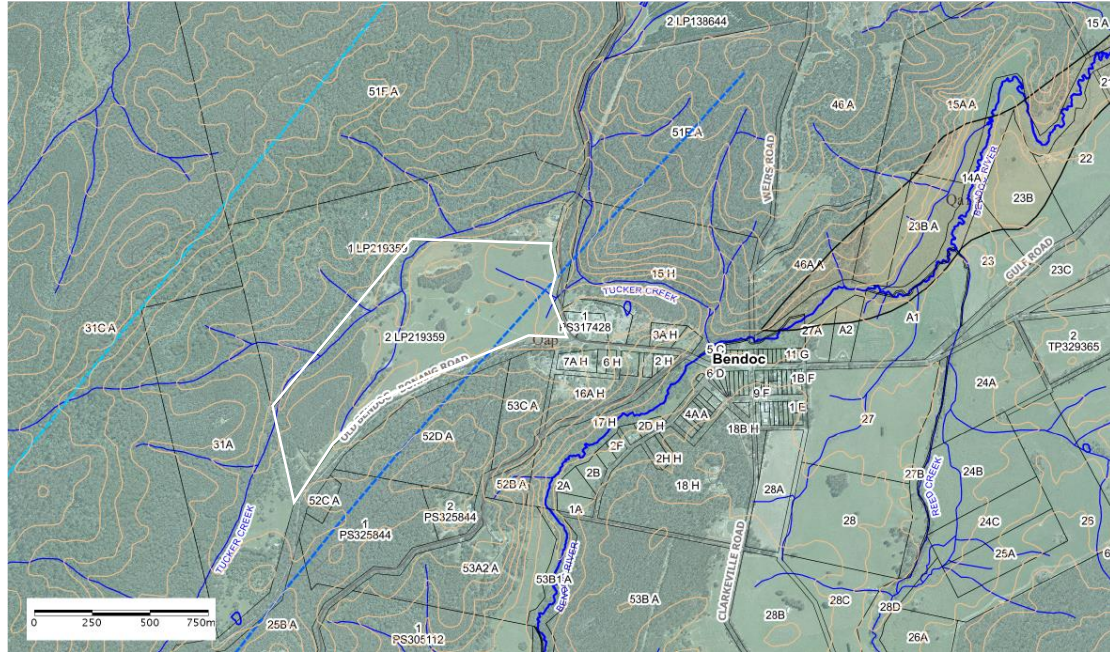
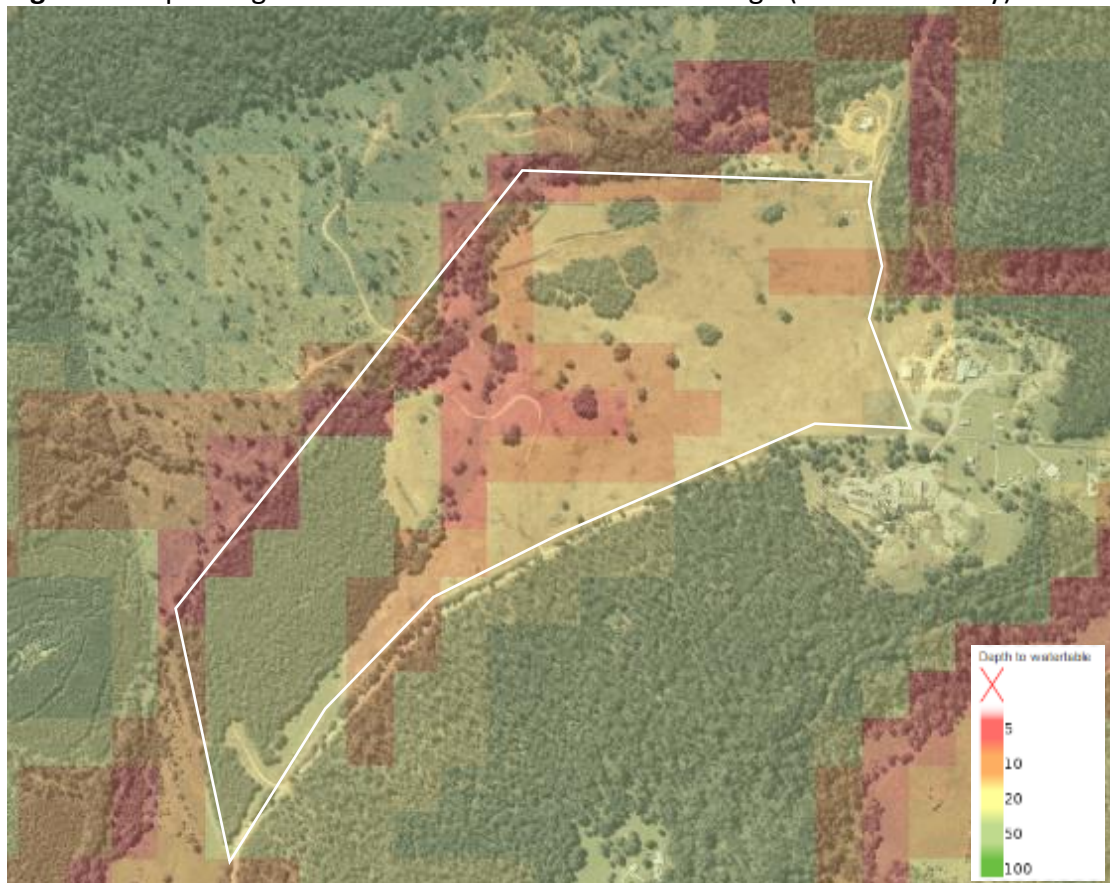


Figure 5. Depth to groundwater overlain on an aerial image (white boundary).



From Figure 5, it can be observed that the depth to groundwater below the surface is expected to vary between 5 and 20 m. The areas of shallowest groundwater are predominantly along the water courses, where setbacks from the water course already apply. The risks to groundwater are considered low, as there is ample soil depth between the point of recycled water application and groundwater to achieve adequate in soil treatment of wastewater.

5 Soil Assessment & Constraints

The soils on the property have been assessed for their suitability to the application of wastewater.

The soils were investigated to a maximum depth of 1.0 metre with a handheld manual auger. These soils are considered representative of the natural soils on this property. Soils were classified according to Australian/New Zealand Standard (AS/NZS 1547:2012). Soil profile descriptions are included in Appendix 1, with specific soil inspection points can be found in Appendix 2.

There is negligible variation in soil type across the property, with very well structured Ferrosol like red gradational soils in all areas. The surface soil consists of dark reddish brown clay loam, which gradually becomes heavier and more red with depth. There is a gradual change from the A12 reddish brown clay loam to a red light clay at around 30 cm from the surface. Soil depth was mostly greater than 1 m, with minor pockets of shallower soil in the central north area. The soil has been identified as having suitable texture and structure for irrigation with wastewater.

5.1 Soil Chemical and Physical Analysis

Soil samples were taken from one surface soils 0-10 cm (A1 soil horizon) and one subsoil 30-50 cm (B1 subsoil horizon) at site 1. The soil samples were sent off for laboratory analysis of physical and chemical properties likely to be affected by wastewater application. The full set of laboratory results are included in Appendix 6.

The soil pH is 5.7 throughout the soil profile, so these soils are strongly acid. This pH is suitable for the growth of most pasture and tree species. No action is required to correct soil pH and no lime (CaCO_3) need be applied.

The Exchangeable Sodium Percentage (ESP) values are all less than 1% throughout the soil profile and therefore non-sodic. There is minimal risk of dispersion given the Dispersion Index values of zero. No gypsum need be applied.

The calcium magnesium ratio varies from 3.5 in the surface soil to 0.3 in the subsoil. While this value is adequate in the surface soil, the subsoil is low so deep rooted species could potentially benefit from the application of calcium.

The level of soil salinity as measured by the electrical conductivity ($\text{EC}_{1:5}$) is low throughout the soil profile, varying from 0.03 and 0.02 dS/m. All EC values are well below 0.6 dS/m at which soils are considered saline. This low level of salinity indicates that salts have been readily removed from the soil profile.

The phosphorus binding capacity varies from very high in the surface soil to extremely high in all subsoils based upon the Phosphorus Binding Index (PBI) values of 480 at the surface and 740 in the subsoil. This indicates that the surface and subsoil have a strong inherent ability to bind phosphorus. These soils can be relied upon to bind and lock up phosphorus applied in the wastewater, so there is minimal risk of phosphorus being mobilised through the soil profile. The soils ability to bind and retain phosphorus applied in the wastewater has been accounted for in the MAV nutrient balance (Appendix 8).

The surface soil has a Colwell P value of 14 mg/kg. This means that the pastures in this area will benefit from the application of phosphorus, as the current phosphorus concentration in the soil is adequate for less than 90% of biological optimum growth.

Overall, the soils on this property are chemically and physically very well suited to sustainable wastewater application, based upon the field assessment and the parameters measured in the laboratory. The soils have a low level of salinity, low sodicity, with low risk of dispersion and are therefore not expected to lose soil permeability when irrigated with wastewater. These are all positives for sustainable wastewater application. The soils also have a very high to extremely high phosphorus binding capability which means there is a low risk of phosphorus loss to the environment from wastewater application, but this is accounted for in the nutrient balance Appendix 8.

5.2 Soil Permeability

Soil permeability (K_{sat}) has been measured with the Talsma-Hallam method as described in the AS/NZS 1547:2012 for on-site domestic wastewater management.

Subsoil permeability (K_{sat} value) for the property has been measured at 0.16 m/day at site 1, which is considered indicative of the red ferrosol soil type.

The soil permeability results are in Table 4. This subsoil permeability is considered acceptable for for primary or secondary treated wastewater application.

Table 4. Soil permeability (K_{sat} in m/day) measured.

Hole No.	1	2	3	4	5	6	7	8	Geometric Mean K_{sat}
K_{sat} (m/day)	0.15	0.18	0.09	0.36	0.25	0.09	0.13	-	0.16

5.3 Environmental Constraints

The property and its environmental features have been assessed to determine their suitability for on-site wastewater management.

This property is well suited for irrigation of wastewater from the proposed development.

- The soils have been measured as being suitably permeable with good chemical and physical properties, including low risk of dispersion. The soils are well structured and relatively free draining, which makes them well suited to irrigation of wastewater.

- Most of the slopes are gently undulating, and the property is located relatively high in the landscape with a low risk of run-on or subsurface seepage from upslope.
- There is adequate land available within this 59 ha property in which to locate a 1,218 m² subsurface irrigation wastewater field or 734 m² absorption trench wastewater irrigation field. Overall, the property is very well suited to irrigation with wastewater.

All areas beyond the 30 m setback from surface water for secondary treated wastewater, or 60 m for primary treated wastewater and beyond 10 m either side of the broad based swale are suitable for wastewater irrigation.

5.4 Required Area for Subsoil Absorption Trenches

The appropriate absorption trench length for a subsoil absorption system has been determined with a water balance constructed by Dr Robert Patterson⁵ with a DLR of 6 L/m²/day. The length of absorption trench required has been determined for Bendoc using inflows of 2,143 L/day.

The water balance in Appendix 9 has been constructed using a trench depth and width of 400 mm and 700 mm respectively. This water balance takes into account soil absorption from the trench base and also 250 mm up the sides of each wall. This means that the water balance allows for storage of effluent in the trench of up to 250 mm in depth, which still allows 150 mm between the highest water mark and the surface with 400 mm deep trenches. This aspect has been factored in to allow for the varying water level in the trench and the absorption potential of the trench side walls.

Table 5 has been included to demonstrate the absorption trench configuration required this property.

Table 5. Absorption trench configuration for Bendoc (2,143 L/day) with trench widths 0.7 m and 2 m of undisturbed soil between each trench.

Trench width (m)	No. Trenches	Trench length (m)	Total length required (m)	Length (m)	Width (m)	Total area required (m ²)
0.7	10	29.35	294	29.4	25.0	734

From Table 5 the land application area (LAA) for absorption trenches is 734 m², depending upon the number of trenches. As a precautionary measure it is recommended that a reserve area of equal size be set aside with this option. **This means that a wastewater envelope of 1,468 m² is required.**

⁵ R.A. Patterson (2006) Water balance spreadsheet derived from water balance included in Table G1, AS 1547:1994. Lanfax Labs Armidale, NSW.

5.5 Required Area for Subsurface Irrigation

Wastewater applied to land via subsurface irrigation, must be treated up to a secondary (20/30) standard⁶.

There are a number of benefits from using pressure compensated subsurface irrigation with secondary treated wastewater including:

- the application of wastewater under pressure so wastewater is applied evenly across the entire land application area (LAA), maximising the uptake of nutrients
- the wastewater can more easily be pumped to higher parts of the property
- wastewater can be used beneficially to irrigate either garden or lawn
- the LAA can be comprised of multiple areas of irregular shape
- reduced EPA setback distances of up to 50%
- avoids the need for a reserve area⁷
- avoids the need for a 6 m setback to the northern property boundary

The MAV water and nutrient balances in Appendix 7 & 8 calculate the size of the LAA on the most limiting factor without the need for winter storage. The size can be limited by (a) the sustainable dispersal of the water in the effluent or (b) the sustainable dispersal of the nutrients in the effluent. The largest area predicted by either of the two MAV balances should be implemented as the LAA.

The minimum area required according to the nutrient balance is 1,001 m², which is less than predicted in the water balance at 1,218 m². The model with the largest predicted area required of the two balances (water and nutrient) should be the one that is used. **Therefore, the water balance predicts that 1,218 m² is required.**

This wastewater Land Application Area (LAA) does not include the area required for the wastewater secondary treatment system, as the area required for the secondary treatment system will depend on the type of system selected.

6 Proposed Wastewater System

Based on the anticipated flow volumes and distribution throughout the year, it is recommended that all wastewater streams produced on the property be combined and treated with a single wastewater treatment plant. As mentioned in Section 2 of this report, it is recommended that a balancing storage tank be installed in front of the treatment plant with a view to even out daily peaks in daily wastewater flows. The balancing storage will not only act to even out flow volumes, but will also ensure greater consistency in the quality of wastewater requiring treatment through the wastewater treatment plant.

The type of treatment plant to be installed is yet to be determined, but will need to be capable of treating wastewater to either primary or secondary standard for wastewater irrigation.

⁶ Secondary standard wastewater (20/30) requires treatment to 20 mg/L of Biological Oxygen Demand (BOD) and 30 mg/L of Suspended Solids (SS).

⁷ EPA Victoria (2016) Guidelines for Environmental Management – Onsite Wastewater Management Code of Practice. Document No. 891.4

The total combined annual wastewater load of 0.78 ML/year has been estimated based on EPA guidelines for fully serviced camping and accommodation. **It is however recommended that a flow meter be installed on the exit of the wastewater treatment plant such that the actual flow rates can be measured once the new system has been installed.** In the event daily wastewater flows are substantially greater than have been calculated in this report then a reassessment of the wastewater management system will be required. Early detection of any substantial change in daily wastewater flows will act as means to implement changes to the wastewater management system prior to an issue occurring.

The specific location of the irrigation field is yet to be determined, but from Figure 6 there is clearly adequate land available to install the maximum irrigation field of 1,218 m², within the 26-30 ha⁸ suitable for irrigation with wastewater. The irrigation field may be installed in multiple areas or irregular shape. It is recommended that the wastewater be viewed as an asset, whereby the nutrient and water content can be used to maintain lush green turf over dry summer months. The irrigation field should be maintained as pasture/turf, so that fodder or lawn clippings can be cut and carried, to prevent nutrient build-up.

6.1 Required Capacity of Septic Tank

The septic tank must have sufficient capacity to ensure that the anticipated maximum daily flow wastewater is retained in the tank for at least 24 hours along with annual accumulation of sludge based on organic loading. The volume of septic tank storage capacity required for this development has been determined from the EPA document 500 and 891.4⁹. The minimum capacity of the septic tank can be calculated by adding the daily maximum wastewater flow (calculated in Section 4.1 of this report) and the mass of BOD in kilograms (expected to be generated at peak times multiplied by a factor of 2 (for every kg of BOD) 2 m³ of septic tank capacity is required), therefore:

BOD Required Volume
$(6,000 \text{ L} \div 1,000) + (40 \text{ visitors} \times 60 \text{ g BOD/person} \times 2)$ $= (6.0 \text{ kL} + 2,400 \text{ g} \times 2)$ $= (6.0 \text{ m}^3 + 2.4 \text{ kg})$ $= (6.0 \text{ m}^3 + 4.8 \text{ m}^3)$ $= 10.8 \text{ m}^3 \text{ or } 10,800 \text{ L of septic tank storage required as a minimum}$

The required **minimum** septic tank capacity for Bendoc is 10,800 L based on peak daily flows however this is considered inadequate in this instance, given the irregularity between the weekdays and weekends. It is recommended that an additional 19,000 L septic tank with a sump pump be installed in series to act as a balance tank (Appendix 10). The aim of the

⁸ Depending on setbacks to surface waters due to either primary or secondary treated wastewater.

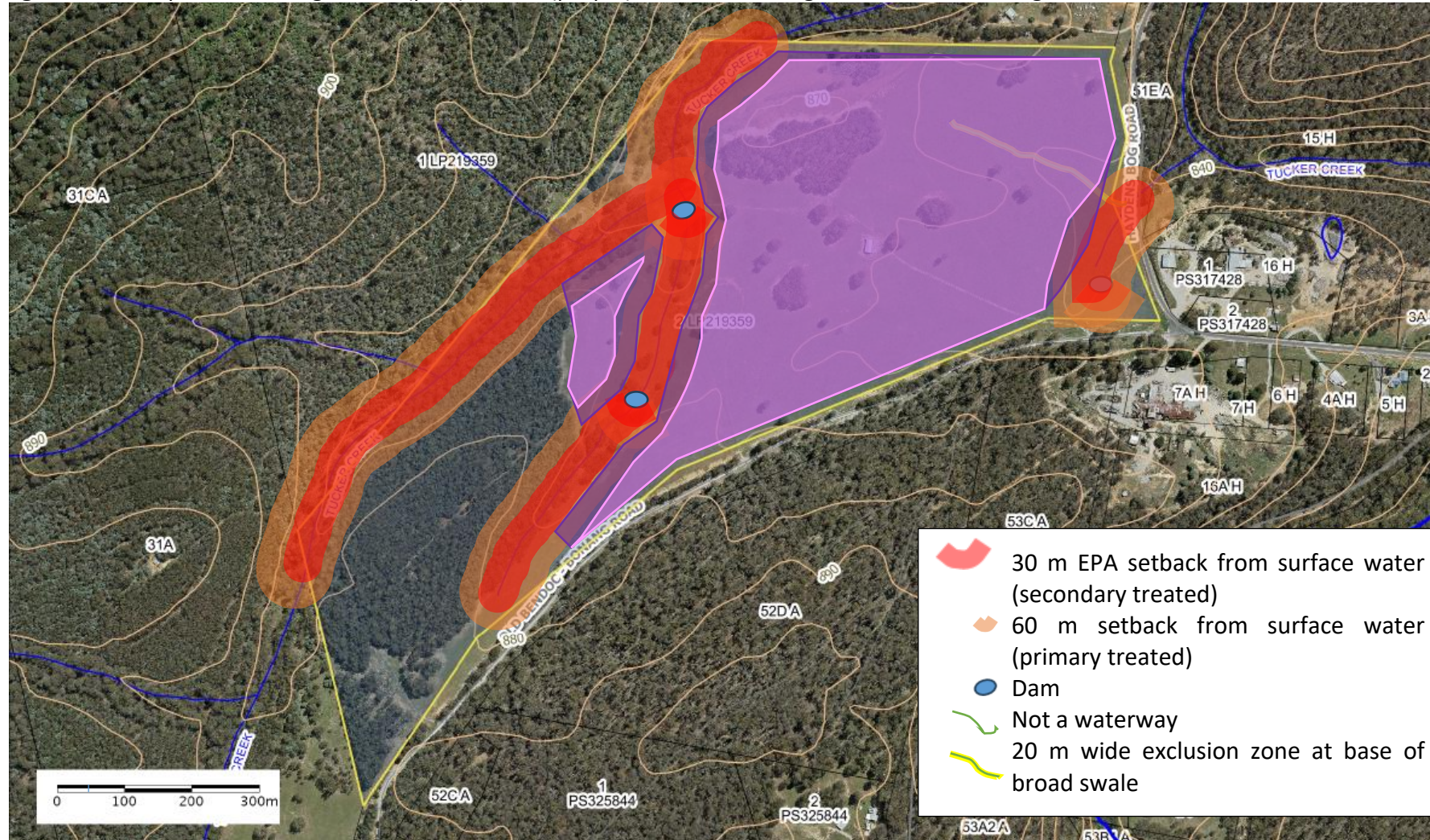
⁹ EPA Victoria (June 1997) Code of Practice for Small Wastewater Treatment Plants

additional 19,000 L balance tank will be to smooth out the peak daily flows of 6,000 L/day over the weekends¹⁰.

To operate as an effective balancing tank, it must be near empty at the commencement of each weekend. The peak daily wastewater flows of 6,000 L/day are expected to enter the 19,000 L balancing storage tank by gravity from the primary 10,800L septic tank. The 19,000 L balancing tank will however need to be fitted with a pump that doses the treatment plant with a volume no greater than 2,143 L/day. The maximum daily volume of wastewater to be treated to a secondary standard and applied to land on this property has been set at 2,143 L/day.

¹⁰ EPA Victoria (July 2016) Guidelines for Environmental Management – Onsite Wastewater Management Code of Practice. & EPA Document (July 2016) Code of practice – Onsite Wastewater Management

Figure 6. Aerial photo showing ~26 ha (pink) - 30 ha (purple) available for irrigation of wastewater given EPA setbacks to sensitive features.



7 Conclusions and Recommendations

Land Safe completed this Land Capability Assessment (LCA) within the 59 ha property at 85 Haydens Bog Road, Bendoc.

The owners propose to develop the site to include:

- Cabin Accommodation
- Powered caravan camp sites (fully serviced)

For the sake of simplicity and ease of management it is recommended that all waste streams be combined and treated in a single wastewater treatment plant before being irrigated to land. Using adequately sized balancing storage the peak flows can be reduced to an average of 2,143 L/day.

The annual wastewater inflow has been estimated at 0.78 ML. Refer to Section 2 for more information on how the Design Flow Rates (DFR) have been calculated. The wastewater management system detailed in this report has been designed to apply a mean volume of 2,143 L/day using a balancing tank of 19,000 L to store wastewater in addition to a 10,800 L septic tank. **A wastewater flow meter must be installed on the treatment plant to verify the estimated wastewater volume.** This will ensure changes to the wastewater management system can be implemented in a timely manner. It is recommended that a balancing storage tank be installed in front of the wastewater treatment plant to even out fluctuations in daily flows.

The soils have been assessed as being suitable for primary or secondary treated wastewater irrigation, based on favourable chemical and physical properties. See Section 4 for more information.

The property is located on a gently undulating ridge, which ensures maximum distances to surrounding surface waters down slope. While Tucker Creek flows close to the northern boundary, there is 26-30 ha¹¹ available for wastewater irrigation within the 59 ha property. Refer to Section 4.3 for more information on environmental constraints.

Based on the MAV water balance and nutrient balance, an irrigation area of 1,218 m² is required for subsurface drip irrigation. No reserve area is required for subsurface irrigation with secondary treated wastewater as the LAA has been designed and sized using the latest version of the Model LCA report.

Alternatively applying the wastewater to land with absorption trenches and primary treated wastewater requires a total of 294 m of absorption trenches (2,143 L/day). A reserve area of equal size is required with absorption trenches, so a total effluent envelope of 1,468 m² is required.

¹¹ Depending on setbacks to surface waters due to primary or secondary treated wastewater.

Trench width (m)	No. Trenches	Trench length (m)	Total length required (m)	Length (m)	Width (m)	Total area required (m ²)
0.7	10	29.35	294	29.4	25.0	734

Overall, the property is very well suited to irrigation with wastewater, being positioned within an elevated location in the landscape combined with permeable and very well structured Ferrosol soils which facilitates drainage. There is ample land available within the 59 ha property in which to install a 734 - 1,218 m² wastewater irrigation field.

Appendix 1 Soil Profile Descriptions

Site 1. Ridge crest – eastern end of property, in pasture.

Ferrosol like red gradational soil

Depth (cm)	Horizon	Description
0 – 12	A1 ₁	Dark reddish brown Clay Loam . Very well structured High in organic matter. <i>Gradual transition to:</i>
12 – 30	A1 ₂	Dark reddish brown Clay Loam . Very well structured <i>Gradual transition to:</i>
30 – 100	B1	Red Light Clay Very well structured Occasional reddish yellow highly weathered parent material <i>--Hole terminated---</i>



Site 2. South eastern corner in base swale

Soil similar to site 1, just lighter in colour throughout.

Reddish yellow highly weathered parent material at depth of 1m below the surface.



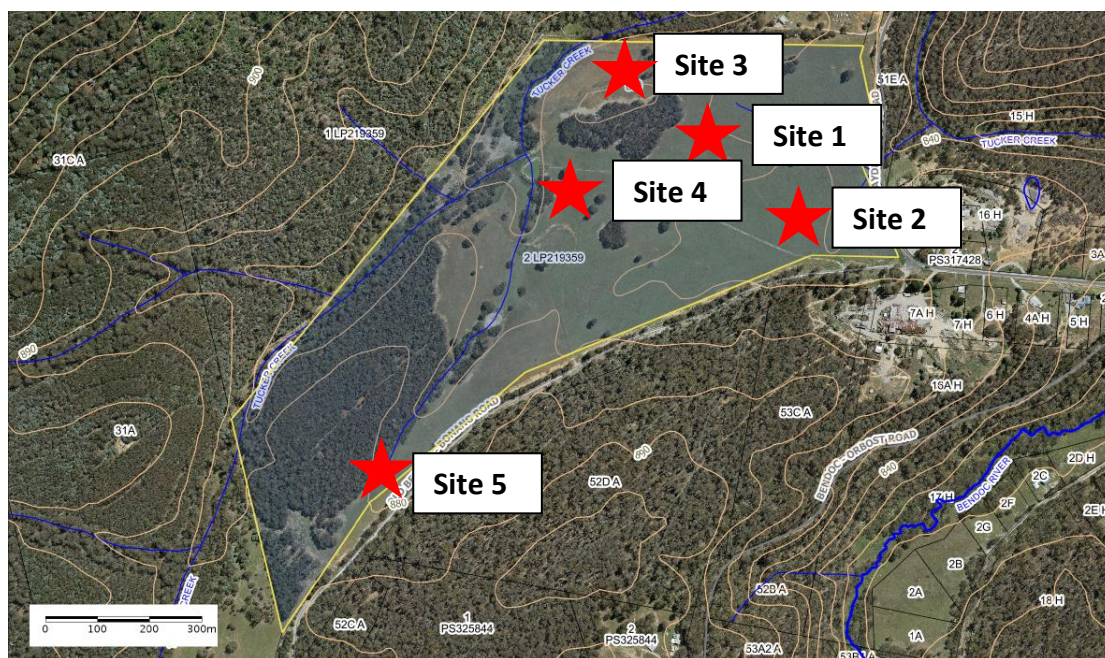
Site 3. Central north end near boundary

Soil similar to site 1, just lighter in colour throughout.

Reddish yellow highly weathered parent material at depth of 1m below the surface.



Appendix 2 Soil Inspection Points



Appendix 3 EPA Setback distances

There is a specific need to determine buffer distances where there is potential impact on drinking water sources from recycled water schemes. Drinking water sources include underground rainwater tanks, bore water supplies, waterways and reservoirs used for potable supply. Buffer distances may need to be agreed with the drinking water supplier.

The following table provides recommended buffer distances from the edge of the wetted area to surface waters for the use of class C recycled water. Buffer distances can be varied while still achieving the required objectives of providing environmental protection.

Table 14: Recommended buffer distances from the edge of the wetted area to surface waters

Irrigation type	Surface waters
Flood/high pressure spray	100 metres
Low pressure spray	50 metres
Trickle or subsurface	30 metres

Recommended buffer distances could be reduced where:

- a class A or B recycled water is used instead of class C
- the surface waters are seasonal or a drainage channel
- best practice measures are implemented to prevent contaminated run-off leaving the site
- the site is particularly favourable, such as an elevated or well vegetated area between the recycling site and the surface water.

Buffer distances may need to be increased where:

- the surface water is highly sensitive (for example, heritage rivers and Ramsar sites)
- the surface water is used for potable water supplies
- the site is unfavourable, such as steep slopes and/or impermeable soils.

Spray drift of recycled water should not occur beyond the boundaries of reuse area as it may result in contamination of non-target produce and ingestion or inhalation of aerosols by the public. The following buffer distances (boundary of the irrigation area to the nearest sensitive development, such as residential areas, public parks, schools and shops) are suggested for spray irrigation applications:

- class A recycled water quality – no buffer distances are prescribed due to best microbiological water quality. However, irrigation should ensure no spray drift or water movement off-site to avoid nuisance aspects
- class B recycled water quality – at least 50 m from the edge of the wetted area to the nearest sensitive development
- class C recycled water quality – at least 100 m from the edge of the wetted area to the nearest sensitive development.

These buffer distances may need to be increased if high pressure spraying is conducted. Alternatively, the buffer distances may be reduced if suggested best practice preventive measures are implemented to reduce spray drift. These measures may include one or many of the following, depending upon the sensitivities of the area:

- tree screens
- anemometer switching systems
- restricted times of watering
- irrigation systems that prevent the generation of fine mist, such as low-rise sprinklers, small throw or micro sprinklers, and part circle sprinklers.

Other measures may be approved if the management plan demonstrates that they significantly reduce the risk to public health and amenity associated with spray drift.

Appendix 4 EPA Design Flow Rates

Code of practice - onsite wastewater management

Table 4: Minimum daily wastewater flow rates and organic loading rates ^{1, 10}

Source	Design hydraulic flow rates for all water supplies ^{2, 4, 5} (L/person.day)	Organic material loading design rates (g BOD/person.day) ⁷
Households with extra wastewater producing facilities ⁶	220	60
Households with standard water fixtures	180	60
Households with full water-reduction fixtures ³	150	60
Motels/hotels/guesthouse		
- per bar attendant	1000	120
- bar meals per diner	10	10
- per resident guest and staff with in-house laundry	150	80
- per resident guest and staff with out-sourced laundry	100	80
Restaurants (per potential diner) ⁹		
- premises <50 seats	40	50
- premises >50 seats	30	40
- tearooms, cafés per seat	10	10
- conference facilities per seat	25	30
- function centre per seat	30	35
- take-away food shop per customer	10	40
Public areas (with toilet, but no showers and no café) ⁸		
- public toilets	6	3
- theatres, art galleries, museum	3	2
- meeting halls with kitchenette	10	5
Premises with showers and toilets		
- golf clubs, gyms, pools etc. (per person)	50	10
Hospitals - per bed	350	150
Shops/shopping centres		
- per employee	15	10
- public access	5	3
School - child care		
- per day pupil and staff	20	20
- resident staff and boarders	150	80
Factories, offices, day training centres, medical centres	20	15
Camping grounds		
- fully serviced	150	60
- recreation areas with showers and toilets	100	40

1. Based on EPA Code of Practice for Small Wastewater Treatment Plants, Publication 500 (1997).
2. When calculating the flow rate for an existing commercial premise, use this table or metered water usage data from the premise's actual or pro-rata indoor use.
3. WELS-rated water-reduction fixtures and fittings - minimum 4 Stars for dual-flush toilets, shower-flow restrictors, aerator taps, flow/pressure control valves and minimum 3 Stars for all appliances (e.g. water-conserving automatic clothes washing machines).
4. These flow rates take into consideration the likelihood of a reliable water supply being currently provided to a premises or in the future (e.g. from groundwater, surface water or reticulated water supply, or a tankered water supply).
5. Where Council is satisfied a household or premises is unlikely to be provided with a reliable water supply (e.g. a rural farming property where groundwater or surface water is unavailable or used only for stock) the design flow rates for Onsite Roof Water Tank Supply listed in the most current version of AS/NZS 1547 may be used.
6. Extra water producing fixtures include, but are not limited to, spa baths.
7. Based on Crites & Tchobanoglous (1998) and EPA Publication 500 (1997).
8. For premises such as public areas, factories or offices that have showers and toilets, use the flow rates for 'Premises with showers and toilets' in the calculations.
9. Number of seats multiplied by the number of seatings i.e., may include multiple seatings for breakfast, morning and afternoon teas, lunch and/or dinner.
10. The organic loading rate must be considered as well as the hydraulic flow rate when selecting the most suitable treatment system.

Appendix 5 Monthly wastewater flows

	31	31	30	31	30	31	31	28	31	30	31	30
	J	A	S	O	N	D	J	F	M	A	M	J
Monthly average	66,429	66,429	64,286	66,429	64,286	66,429	66,429	60,000	66,429	64,286	66,429	64,286
	66.43	66.43	64.29	66.43	64.29	66.43	66.43	60.00	66.43	64.29	66.43	64.29
												782,143

Appendix 6 Soil Laboratory Data

Sample ID		130149255	22027884
Sample Name		A1 HORIZON	B1 HORIZON
User Name		Glenn Marriott	Glenn Marriott
Grower Name		DANNY & LANA JAMIESON	DANNY & LANA JAMIESON
Customer Name		Ag Challenge Consulting Pty Ltd	Ag Challenge Consulting Pty Ltd
Paddock Name		SITE 1	SITE 1
Sampling Date		18/05/2023	18/05/2023
Purchase Order Number		BENDOC	BENDOC
Sample Depth From		0	30
Sample Depth To		10	50
Test Code		2011-069	2011-069
pH (1:5 Water)		5.7	5.7
pH (1:5 CaCl ₂)		4.8	4.4
Electrical Conductivity (1:5 water)	dS/m	0.1	0.02
Phosphorus (Colwell)	mg/kg	14	<5
Phosphorus Buffer Index (PBI-Col)		480	740
Available Potassium	mg/kg	530	220
Calcium (Amm-acet.)	cmol(+)/kg	5.6	0.4
Potassium (Amm-acet.)	cmol(+)/kg	1.4	0.57
Magnesium (Amm-acet.)	cmol(+)/kg	1.6	1.2
Sodium (Amm-acet.)	cmol(+)/kg	0.05	0.04
Calcium/Magnesium Ratio		3.5	0.3
Aluminium (KCl)	cmol(+)/kg	0.5	2.7
Cation Exch. Cap.	cmol(+)/kg	9.2	5.0
Sodium % of Cations (ESP)	%	0.6	0.7
Aluminium Saturation	%	5.8	55
Disp. Index, Loveday/Pyle		0	0
Slaking 2Hrs		Water Stable	Partial
Aluminium (KCl)	mg/kg	48	250
Calcium (Amm-acet.)	%	61	8.2
Magnesium (Amm-acet.)	%	18	25
Potassium (Amm-acet.)	%	15	11
Phosphorus Environmental Risk Index		0.03	0.01

Appendix 7 MAV Water Balance - Irrigation

Secondary treated: Subsurface Drip Irrigation

Nominated Area Water Balance & Storage Calculations For Irrigation																
Site Address:		Bendoc														
INPUT DATA																
Design Wastewater Flow	Q	2143	L/day													
Design DIR	DI R	24.5	mm/week													
Daily DIR		3.5	mm/day													
Nominated Land Application Area	L	461	m sq													
Crop Factor	C	0.7-0.8	unitless													
Retained Rainfall		0.85	unitless													
Rainfall Data (mean monthly)	Bendoc SILO															
Evaporation Data	Bendoc SILO															
Parameter	Symbol	Formula	Units	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec	Total
Days in month	D	\	days	31	28	31	30	31	30	31	31	30	31	30	31	365
Rainfall	R	\	mm/month	68	64	61	58	45	76	54	52	58	67	75	70	748
Evaporation	E	\	mm/month	144	111	91	50	28	17	21	38	60	88	107	135	891
Crop Factor	C			0.80	0.80	0.80	0.70	0.70	0.70	0.70	0.70	0.70	0.80	0.80	0.80	
OUTPUTS																
Evapotranspiration	ET	ExC	mm/month	116	89	73	35	20	12	15	26	42	70	86	108	692
Percolation	B	(DIR/7)xD	mm/month	108.5	98	108.5	105.0	108.5	105.0	108.5	108.5	105.0	108.5	105.0	108.5	1278
Outputs		ET+B	mm/month	224.0	187	181	140	128	117	123	135	147	179	191	216	1969
INPUTS																
Retained Rainfall	RR	R*0.80	mm/month	57.9	54.0	52.3	49.1	38.6	64.3	45.8	44.3	49.3	57.1	63.6	59.3	636
Effluent Irrigation	W	(QxD)/L	mm/month	144.1	130.2	144.1	139.5	144.1	139.5	144.1	144.1	139.5	144.1	139.5	144.1	1697
Inputs		RR+W	mm/month	202.0	184.2	196.4	188.6	182.7	203.7	189.9	188.4	188.8	201.2	203.1	203.4	2332
STORAGE CALCULATION																
Storage remaining from previous month			mm/month	0.0	0.0	0.0	14.9	63.3	117.7	204.4	270.8	324.4	366.0	388.2	400.6	
Storage for the month	S	(RR+W)-(ET+B)	mm/month	-22.0	-2.4	14.9	48.4	54.4	86.7	66.4	53.5	41.7	22.2	12.3	-13.0	322
Cumulative Storage	M		mm	0.0	0.0	14.9	63.3	117.7	204.4	270.8	324.4	366.0	388.2	400.6	387.6	2538
Maximum Storage for Nominated Area	N		mm	400.59												
	V	NxL	L	184673												
LAND AREA REQUIRED FOR ZERO STORAGE			m²	400	453	514	706	741	1218	855	733	657	545	506	423	
MINIMUM AREA REQUIRED FOR ZERO STORAGE:				1218.2	m²											

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Appendix 8 Nutrient Balance - Irrigation

Nutrient Balance							
Site Address:		Bendoc					
<i>Please read the attached notes before using this spreadsheet.</i>							
SUMMARY - LAND APPLICATION AREA REQUIRED BASED ON THE MOST LIMITING BALANCE =							1001 m²
INPUT DATA ^[1]							
Wastewater Loading				Nutrient Crop Uptake			
Hydraulic Load		2143	L/Day	Crop N Uptake	250	kg/ha/yr	which equals 68 mg/m ² /day
Effluent N Concentration		40	mg/L	Crop P Uptake	50	kg/ha/yr	which equals 14 mg/m ² /day
% Lost to Soil Processes (Geary & Gardner 1996)		0.2	Decimal	Phosphorus Sorption			
Total N Loss to Soil		17144	mg/day	P-sorption result	1500	mg/kg	which equals 33750 kg/ha
Remaining N Load after soil loss		68576	mg/day	Bulk Density	1.5	g/cm ²	
Effluent P Concentration		13	mg/L	Depth of Soil	1.5	m	
Design Life of System		50	yrs	% of Predicted P-sorp. ^[2]	0.75	Decimal	
METHOD 1: NUTRIENT BALANCE BASED ON ANNUAL CROP UPTAKE RATES							
Minimum Area required with zero buffer		Determination of Buffer Zone Size for a Nominated Land Application Area (LAA)					
Nitrogen		1001	m ²	Nominated LAA Size		1218	m ²
Phosphorus		187	m ²	Predicted N Export from LAA		-5.42	kg/year
				Predicted P Export from LAA		-57.33	kg/year
				Phosphorus Longevity for LAA		711	Years
				Minimum Buffer Required for excess nutrient		0	m ²
PHOSPHORUS BALANCE							
STEP 1: Using the nominated LAA Size							
Nominated LAA Size		1218	m ²	Phosphorus generated over life of system		521.4633333	kg
Daily P Load		0.02857333	kg/day	Phosphorus vegetative uptake for life of system		0.250	kg/m ²
Daily Uptake		0.01668759	kg/day				
Measured p-sorption capacity		3.375	kg/m ²	Phosphorus adsorbed in 50 years		2.531	kg/m ²
Assumed p-sorption capacity		2.531	kg/m ²	Desired Annual P Application Rate		67.762	kg/year
Site P-sorption capacity		3083.55	kg			0.18565	kg/day
P-load to be sorbed		4.34	kg/year		which equals		
NOTES							
[1]. Model sensitivity to input parameters will affect the accuracy of the result obtained. Where possible site specific data should be used. Otherwise data should be obtained from a reliable source such as,							
- Environment and Health Protection Guideline							
[2]. A multiplier, normally between 0.25 and 0.75, is used to estimate actual P-sorption under field conditions which is assumed to be less than laboratory estimates.							
The effluent N & effluent P concentrations in the original MAV version have been increased by a factor of 1.33 to allow for the lower wastewater volumes predicted in the most recent EPA Onsite Wastewater Management Code of Practice (891.4)							

Appendix 9 MAV Water Balance – Absorption Trenches

Site Address:		Bendoc								
SILO Bendoc		Evap.data SILO Bendoc								
Mean		average Pan evaporation								
Source: AS1547-1994 - Table G1		(Prepared by R.A. Patterson, Lanfax Labs. Armidale updated April 2006)								
1	2	3	4	5	6	7	8	9		
Month	Days	daily pan	Pan Eo	Et	Rainfall	Retained	LTAR*N	Disposal	Effluent	Size of
	per	Eo		+Cf*Eo	P	Rainfall		rate/month	applied	area
	month	(B.Met)				Re=(1-r)P	6	(Et-Re)+	per month	(8)/(7)
								LTAR*N	2143	
		mm	mm	mm	mm	mm	mm	mm	L	m2
Jan	31	4.7	144.4	116	68.1	57.9	186	243.6	66433	273
Feb	28	4.0	110.7	89	63.6	54.0	168	202.5	60004	296
Mar	31	2.9	91.2	73	61.5	52.3	186	206.7	66433	321
Apr	30	1.7	50.3	35	57.8	49.1	180	166.1	64290	387
May	31	0.9	28.2	20	45.4	38.6	186	167.2	66433	397
Jun	30	0.6	17.2	12	75.6	64.3	180	127.8	64290	503
Jul	31	0.7	21.4	15	53.9	45.8	186	155.2	66433	428
Aug	31	1.2	37.7	26	52.1	44.3	186	168.1	66433	395
Sep	30	2.0	60.2	42	58.0	49.3	180	172.8	64290	372
Oct	31	2.8	88.1	70	67.2	57.1	186	199.4	66433	333
Nov	30	3.6	107.2	86	74.9	63.6	180	202.1	64290	318
Dec	31	4.3	134.8	108	69.7	59.3	186	234.6	66433	283
Totals		891.4	692	747.8182	635.6					

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

1	2	3	4	5	6	7	8	9	10	11
month	first trial	application	Disposal	(3)-(4)	Increase	Starting	increase	computed	reset if	equivalent
	area	rate	rate		depth of	depth	depth	depth	Et deficit	storage
	(m2)	(8)*(2)	per month		stored	effluent	effluent	effluent	<0	10 x area
		(above)'			effluent	for		(X)		
		(mm)	(mm)	(mm)	(5)/porosity	month	+(6)	(mm)	(mm)	(L)
Dec								0.0	0	
Jan	382	174	244	-70	-232	0	-232	-232	0	0
Feb		157	203	-45	-151	0	-151	-151	0	0
Mar		174	207	-33	-109	0	-109	-109	0	0
Apr		168	166	2	8	0	8	8	8	922
May		174	167	7	23	8	23	31	31	3571
Jun		168	128	41	136	31	136	167	167	19107
Jul		174	155	19	63	167	63	230	230	26321
Aug		174	168	6	20	230	20	250	250	28618
Sep		168	173	-4	-14	250	-14	236	236	26972
Oct		174	199	-25	-84	236	-84	151	151	17332
Nov		168	202	-34	-112	151	-112	39	39	4501
Dec		174	235	-60	-202	39	-202	-162	0	0
Jan		174	244	-70	-232	0	-232	-232	0	0
Feb		157	203	-45	-151	0	-151	-151	0	0
Mar		174	207	-33	-109	0	-109	-109	0	0
Apr		168	166	2	8	0	8	8	8	922
May		174	167	7	23	8	23	31	31	3571

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

Porosity in disposal area		30%
Variables Table		Runoff Coeff = 0.15 percentage runoff
Summer Crop Factor =		0.8 crop transpiration rate Oct-Mar
Winter Crop Factor =		0.7 crop transpiration rate -Apr-Sep
Change as required		DLR = 6 L/m ² /day
FLOWs=		2143 L/day
Estimated base area of trench =		382 square metres
Maximum depth of stored effluent =		250 mm depth
Trench dimensions (mm)		width = 700 mm depth = 400 mm
Length of trench required =		294 metres

NOTES:

As a model, the best results are only ESTIMATES of performance.

A model is used to assess SENSITIVITY to changes in the variables and the effect upon application area

Table 2 is run for 16 months to ensure system returns to ZERO at some stage

Appendix 10 Balancing Storage

	Date	Day	Daily inflow	Total Site Outflow	Volume in Balancing storage
					7715
Monday	1st	1	600	2143	6172
Tuesday	2nd	2	600	2143	4629
Wednesday	3rd	3	600	2143	3086
Thursday	4th	4	600	2143	1543
Friday	5th	5	600	2143	0
Saturday	6th	6	6000	2143	3857
Sunday	7th	7	6000	2143	7714
Monday	8th	8	6000	2143	11571
Tuesday	9th	9	6000	2143	15428
Wednesday	10th	10	600	2143	13885
Thursday	11th	11	600	2143	12342
Friday	12th	12	600	2143	10799
Saturday	13th	13	6000	2143	14656
Sunday	14th	14	6000	2143	18513
Monday	15th	15	600	2143	16970
Tuesday	16th	16	600	2143	15427
Wednesday	17th	17	600	2143	13884
Thursday	18th	18	600	2143	12341
Friday	19th	19	600	2143	10798
Saturday	20th	20	6000	2143	14655
Sunday	21st	21	6000	2143	18512
Monday	22nd	22	600	2143	16969
Tuesday	23rd	23	600	2143	15426
Wednesday	24th	24	600	2143	13883
Thursday	25th	25	600	2143	12340
Friday	26th	26	600	2143	10797
Saturday	27th	27	6000	2143	14654
Sunday	28th	28	6000	2143	18511
Monday	29th	29	600	2143	16968
Tuesday	30th	30	600	2143	15425
Wednesday	31st	31	600	2143	13882
Thursday	1st	32	600	2143	12339
Friday	2nd	33	600	2143	10796
Saturday	3rd	34	6000	2143	14653
Sunday	4th	35	6000	2143	18510
Monday	5th	36	600	2143	16967
Tuesday	6th	37	600	2143	15424
Wednesday	7th	38	600	2143	13881
Thursday	8th	39	600	2143	12338
Friday	9th	40	6000	2143	16195

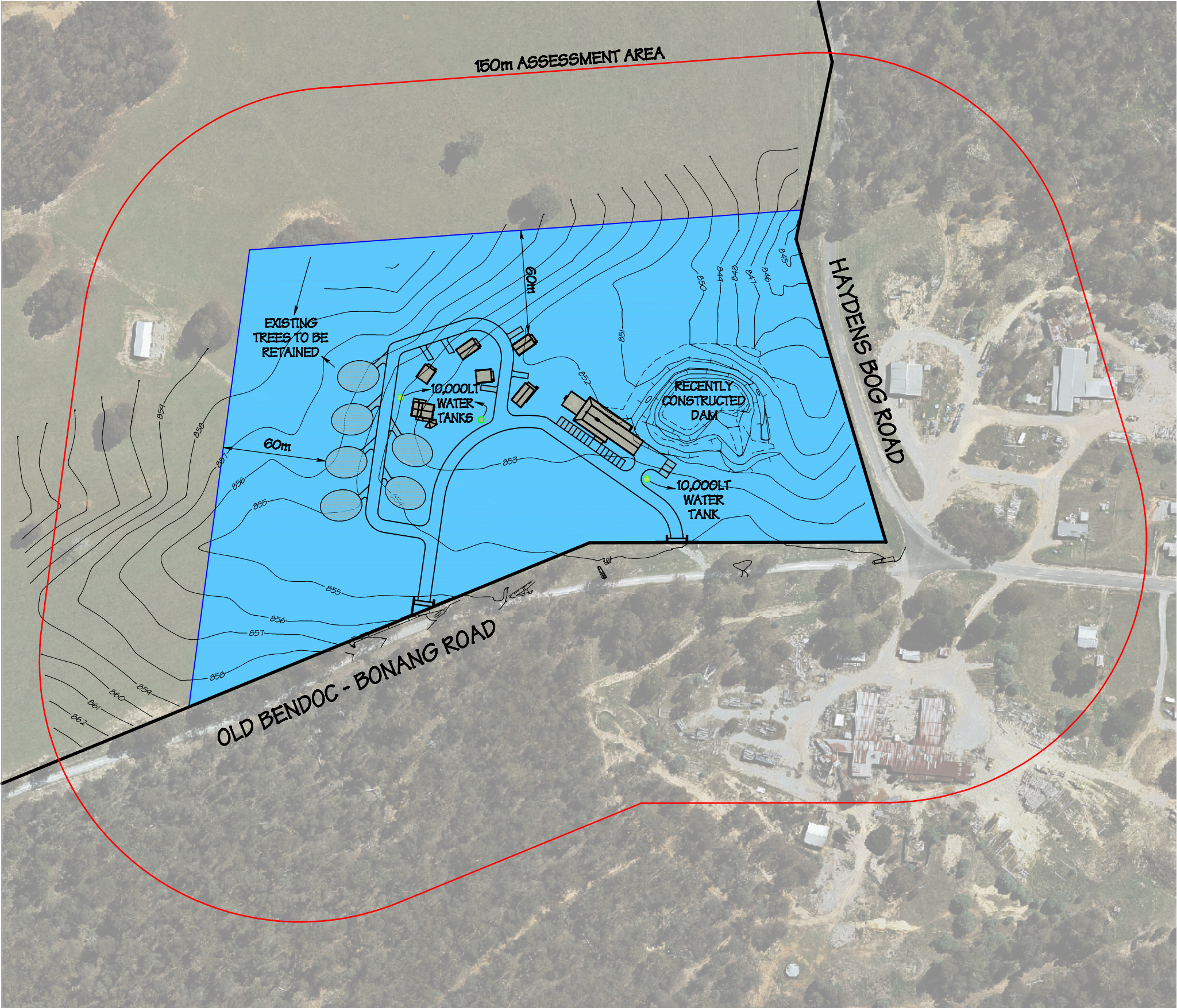
BUSHFIRE HAZARD
SITE ASSESSMENT

PARISH OF BENDOC
SECTION A
CROWN ALLOTMENT 52 (PART)

LOT 2 ON LP219359X

	NORTH	EAST	SOUTH	WEST
SLOPE	UPSLOPE	DOWNSLOPE >0-5°	UPSLOPE	UPSLOPE
VEG TYPE	GRASSLAND	FOREST	GRASSLAND	GRASSLAND
SEPARATION DISTANCES*	35m	40m	60m	35m

*SEPARATION DISTANCES DERIVED FROM
TABLE 3 CLAUSE 53.02-5



DANNY & LANA JAMIESON
85 HAYDENS BOG ROAD, BENDOC

Crowther & Sadler Pty. Ltd.
LICENSED SURVEYORS & TOWN PLANNERS
162 MACLEOD STREET, BAIRNSDALE, VIC., 3875
P. (03) 5162 5011 E. contact@crowthersadler.com.au

FILENAME: Y:\20000-20999\20400-20499\20433 Jamieson\20433 BHSA V1.pro

NOTATIONS

SCALE (SHEET SIZE A3)

1 : 2500

SURVEYORS REF.

20433

VERSION 1 - DRAWN 23/02/2023

MANAGEMENT OF VEGETATION WITHIN
THE AREA OF DEFENDABLE SPACE - SHOWN

VEGETATION (AND OTHER FLAMMABLE MATERIALS) WILL BE MODIFIED
AND MANAGED IN ACCORDANCE WITH THE FOLLOWING REQUIREMENTS;

- GRASS MUST BE SHORT CROPPED AND MAINTAINED DURING THE DECLARED FIRE DANGER PERIOD.
- ALL LEAVES AND VEGETATION DEBRIS MUST BE REMOVED AT REGULAR INTERVALS DURING THE DECLARED FIRE DANGER PERIOD.
- WITHIN 10m OF A BUILDING, FLAMMABLE OBJECTS MUST NOT BE LOCATED CLOSE TO THE VULNERABLE PARTS OF THE BUILDING.
- PLANTS GREATER THAN 10 CENTIMETRES IN HEIGHT MUST NOT BE PLACED WITHIN 3m OF A WINDOW OR GLASS FEATURE OF THE BUILDING.
- SHRUBS MUST NOT BE LOCATED UNDER THE CANOPY OF TREES.
- INDIVIDUAL AND CLUMPS OF SHRUBS MUST NOT EXCEED 5m² IN AREA AND MUST BE SEPARATED BY AT LEAST 5m.
- TREES MUST NOT OVERHANG OR TOUCH ANY ELEMENTS OF THE BUILDING.
- THE CANOPY OF TREES MUST BE SEPARATED BY AT LEAST 5m.
- THERE MUST BE A CLEARANCE OF AT LEAST 2m BETWEEN THE LOWEST TREE BRANCHES AND GROUND LEVEL.

VEHICLE ACCESS

VEHICLE ACCESS TO THE DWELLING MUST BE PROVIDED FOR
FIRE FIGHTING PURPOSES WHICH MEETS THE FOLLOWING REQUIREMENTS;

- MUST BE CONSTRUCTED SO THAT THEY ARE ACCESSIBLE IN ALL WEATHER CONDITIONS AND CAPABLE OF ACCOMMODATING A VEHICLE OF 15 TONNES FOR THE TRAFFICABLE WIDTH.
- HAVE A MINIMUM TRAFFICABLE WIDTH OF 3.5 METRES OF ALL-WEATHER CONSTRUCTION.
- CURVES MUST HAVE A MINIMUM INNER RADIUS OF 10m.
- THE AVERAGE GRADE MUST BE NO MORE THAN 1 IN 7 (14.4%) (8.1°) WITH A MAXIMUM OF NO MORE THAN 1 IN 5 (20%) (11.3°) FOR NO MORE THAN 50m.
- BE CLEAR OF ENCROACHMENTS FOR AT LEAST 0.5m ON EACH SIDE AND 4m ABOVE THE ACCESSWAY.
- DIPS MUST HAVE NO MORE THAN A 1 IN 8 (12.5%) (7.1°) ENTRY AND EXIT ANGLE.
- INCORPORATE A TURNING AREA FOR FIRE FIGHTING VEHICLES CLOSE TO THE BUILDING
- INCORPORATE PASSING BAYS AT LEAST EVERY 200m WHICH MUST BE AT LEAST 20m LONG AND HAVE A MINIMUM TRAFFICABLE WIDTH OF 6m.

WATER SUPPLY

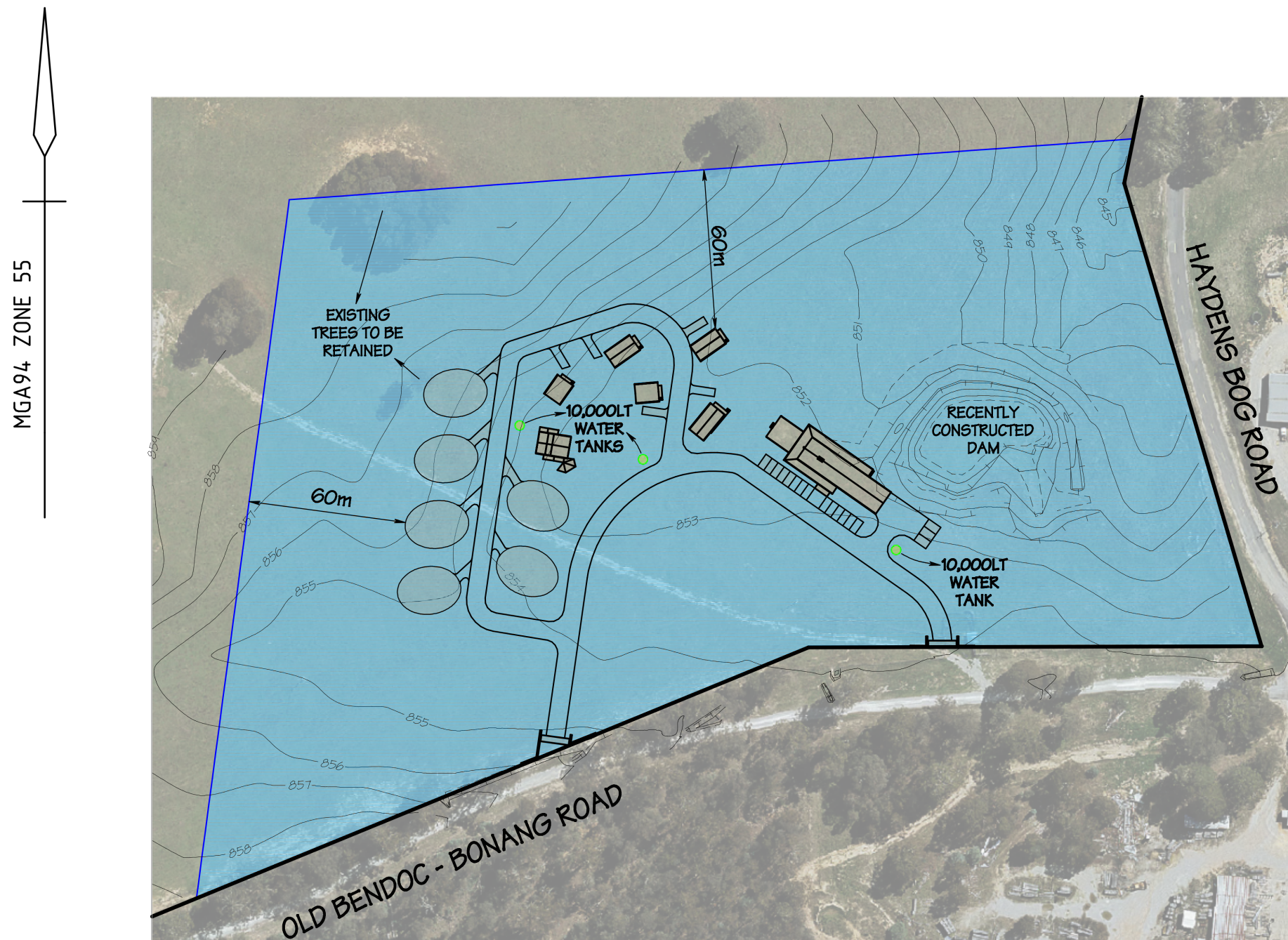
PRIOR TO OCCUPANCY OF A DWELLING,
INSTALL 10,000 LITRES OF EFFECTIVE WATER SUPPLY
FOR FIRE FIGHTING PURPOSES THAT MUST COMPLY
WITH THE FOLLOWING REQUIREMENTS MUST;

- BE STORED IN AN ABOVE GROUND WATER TANK CONSTRUCTED OF CONCRETE OR METAL.
- ALL FIXED ABOVE-GROUND WATER PIPES AND FITTINGS REQUIRED FOR FIRE FIGHTING PURPOSES MUST BE MADE OF CORROSIVE RESISTANT METAL.
- INCLUDE A SEPARATE OUTLET FOR OCCUPANT USE.
- INCORPORATE A SEPARATE BALL OR GATE VALVE (BRITISH STANDARD PIPE (BSP) 65mm) AND COUPLING (64 mm CFA 3 THREAD PER INCH MALE FITTING).
- BE LOCATED WITHIN 60m OF THE OUTER EDGE OF THE APPROVED BUILDING.
- THE OUTLET/S OF THE WATER TANK MUST BE WITHIN 4m OF THE ACCESSWAY AND BE UNOBSTRUCTED.
- BE READILY IDENTIFIABLE FROM THE BUILDING OR APPROPRIATE IDENTIFICATION SIGNAGE TO THE SATISFACTION OF CFA MUST BE PROVIDED.
- ANY PIPEWORK AND FITTINGS MUST BE A MINIMUM OF 65 mm (EXCLUDING THE CFA COUPLING).

CONSTRUCTION

THE CONSTRUCTION OF A DWELLING
MUST BE DESIGNED & CONSTRUCTED
TO A MINIMUM BUSHFIRE ATTACK LEVEL BAL-29
IN ACCORDANCE WITH AS 3959-2018

Printed 27/03/2024
Page 63 of 77



DANNY & LANA JAMIESON
85 HAYDENS BOG ROAD, BENDOC

Crowther & Sadler Pty.Ltd.
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152 MACLEOD STREET, BAIRNSDALE, VIC., 3875
P. (03) 5152 5011 E. contact@crowthersadler.com.au

FILENAME: Y:\20000-20999\20400-20499\20433 Jamleson\20433 BMP V1.pro

BUSHFIRE MANAGEMENT PLAN

PARISH OF BENDOC
SECTION A
CROWN ALLOTMENT 52 (PART)

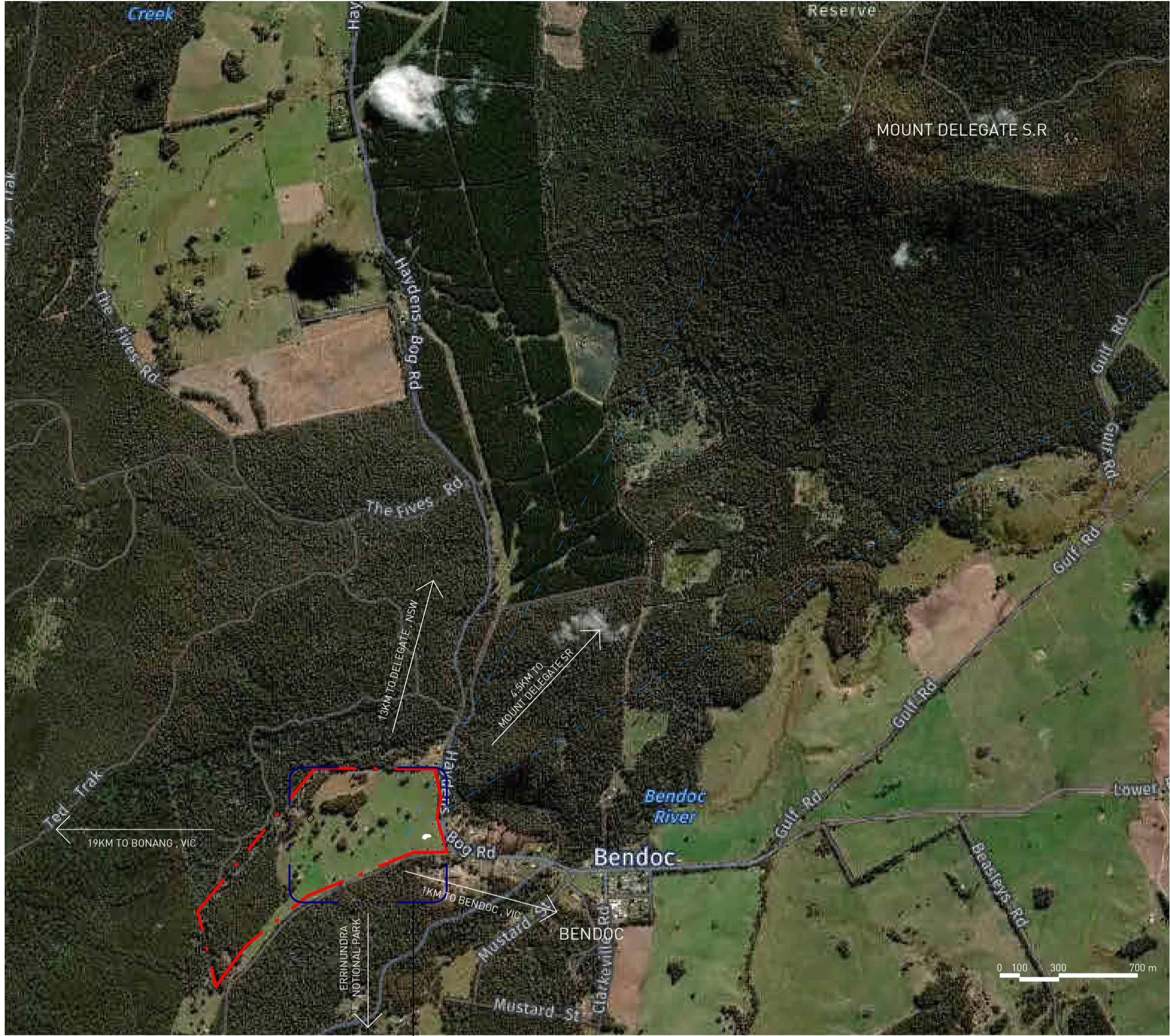
LOT 2 ON LP219359X

PLAN REF.

20433-BMP
VERSION 1 - DRAWN 23/02/2023

SCALE (SHEET SIZE A3)

1 : 2000



2
TP-001
SUBJECT SITE

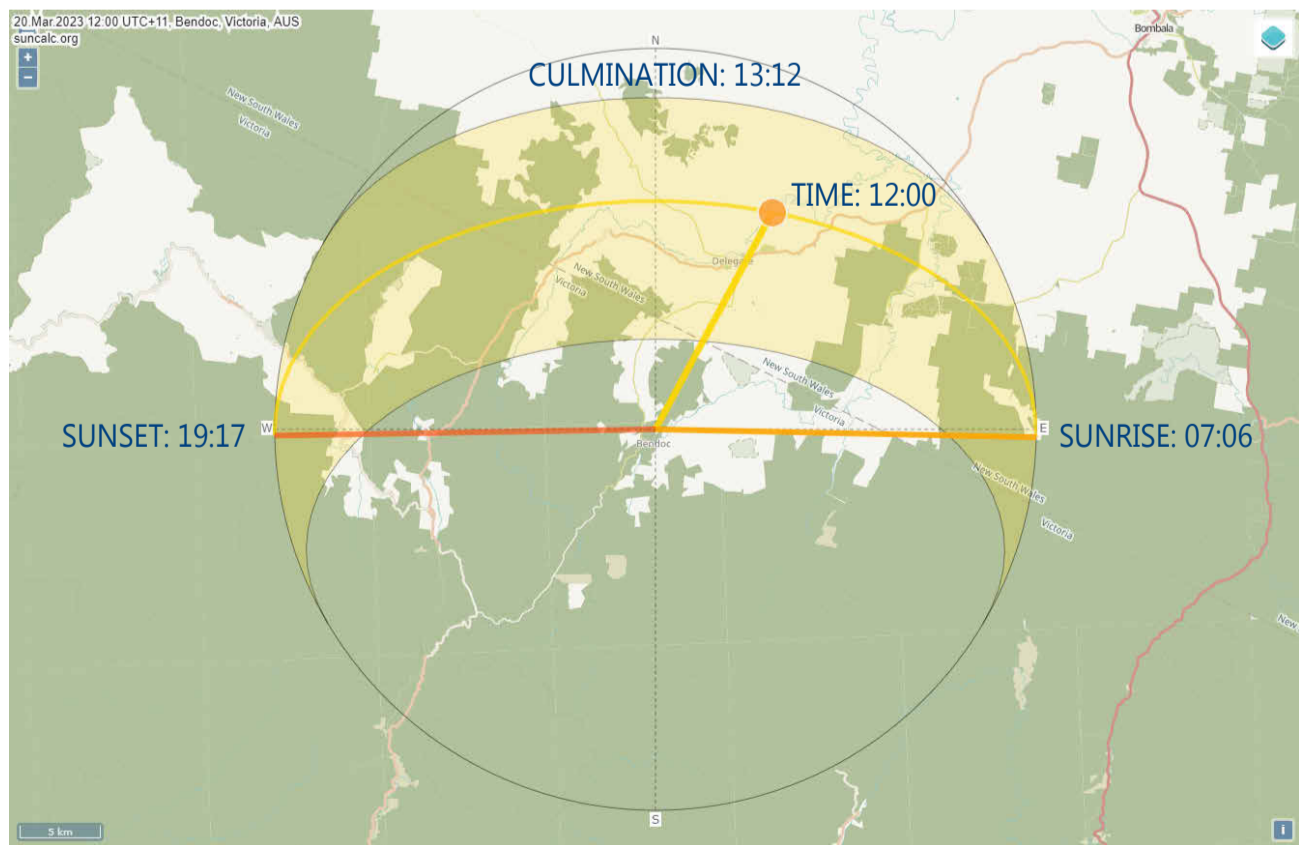
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LOCATION PLAN
Scale 1 : 20000



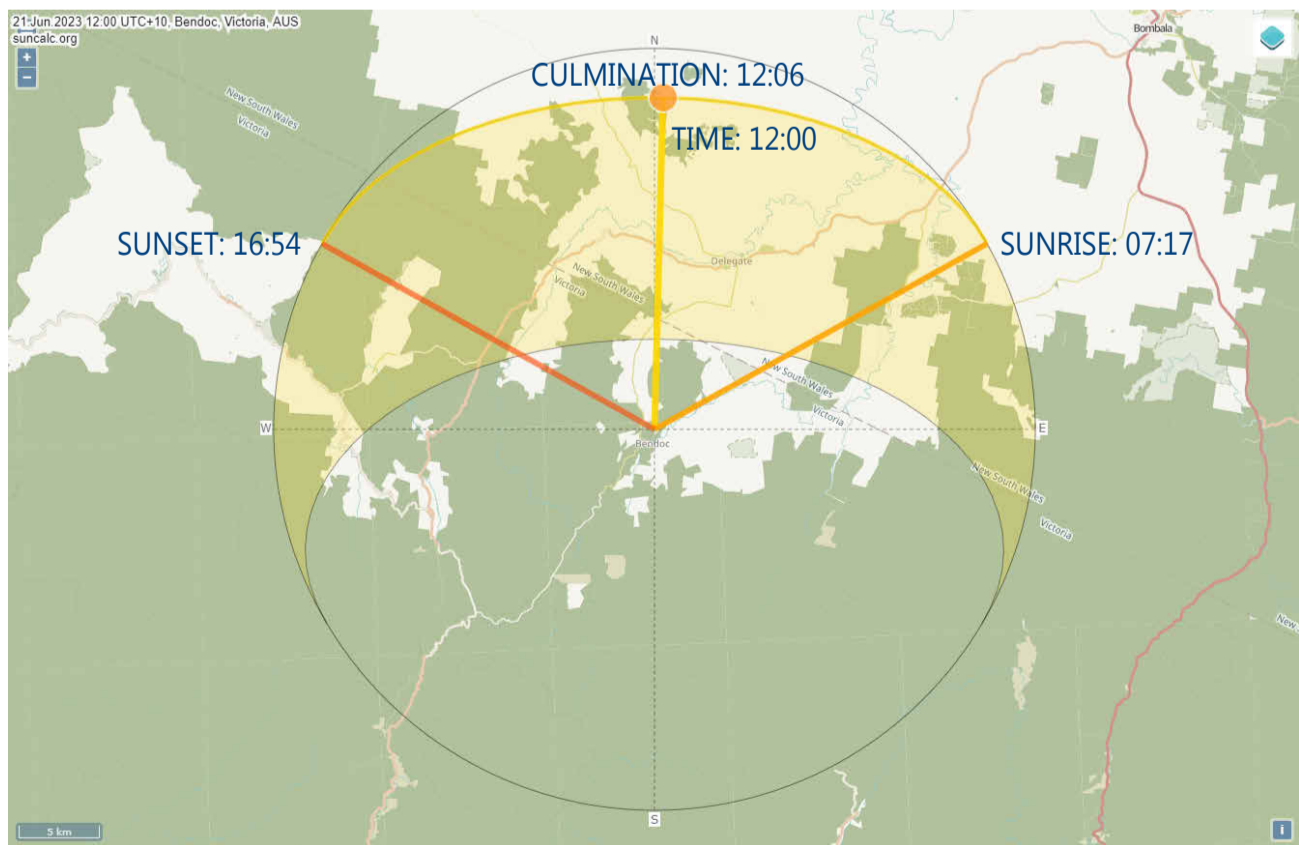
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EXISTING SITE ANALYSIS PLAN
Scale 1 : 5000



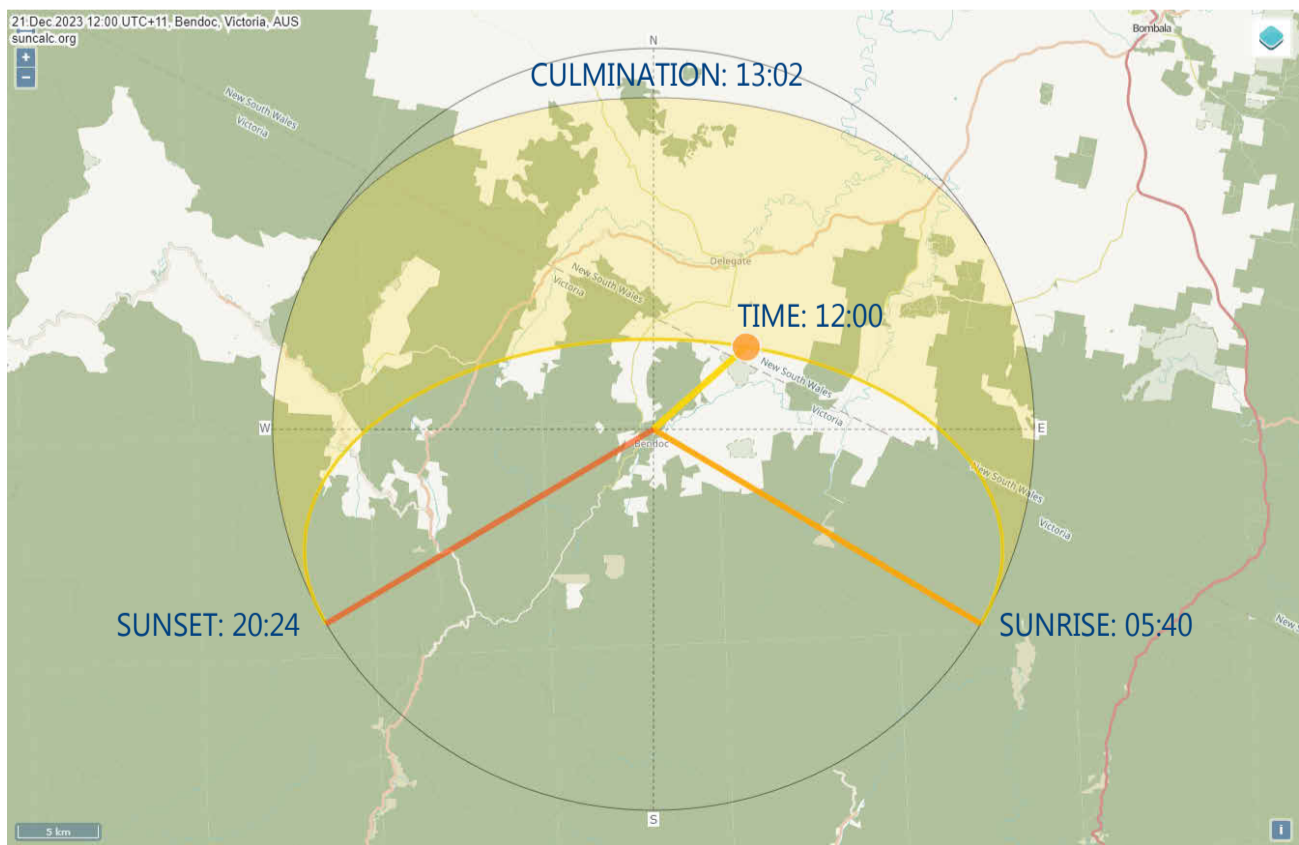
3
PREVAILING WINDS
NTS



MARCH/SEPTEMBER EQUINOX



JUNE SOLSTICE



DECEMBER SOLSTICE

4
SUN PATHS
NTS

TP - DRAWING SCHEDULE		
SHEET NO.	SHEET NAME	REV.
TP-001	SITE INFORMATION & SITE ANALYSIS	-
TP-002	OVERALL SITE PLAN	-
TP-003	PROPOSED SITE PLAN	-
TP-100	PROPOSED AMENITIES	-
TP-101	PROPOSED CABINS (1 BED)	-
TP-102	PROPOSED CABINS (2 BED)	-
TP-103	PROPOSED CABINS (2 BED ACC.)	-
TP-300	GROUND FLOOR PLAN - BUSH KITCHEN & GUEST LOUNGE	-
TP-301	ROOF PLAN	-
TP-302	SECTIONS	-
TP-303	3D MODELS	-
TP-400	INSPIRATION	-
TP-401	MATERIALS & FINISHES	-
TP-402	EXTERNAL MATERIAL SCHEDULE	-
TOTAL: 14		

OPPORTUNITIES:

- PROXIMITY TO BENDOC (1KM) AND NSW BORDER
- 4.5 KM TO MOUNT DELEGATE SR
- POTENTIAL FOR VIEWS TO MOUNT DELEGATE
- PROXIMITY TO NATIONAL PARKS, BENDOC STATE FOREST, BONANG STATE FOREST AND ERRINUNDRA NATIONAL PARK.
- AVAILABILITY OF ON-SITE PARKING.
- THERE ARE NO OTHER RETAIL FACILITIES OTHER THAN THE COMMERCIAL HOTEL.
- SITUATED ON A PORTION OF PRIVATE FARMING LAND
- PROJECT LOCATED WITHIN THE EAST GIPPSLAND PLANNING SCHEME.
- THE SITE IS ESSENTIALLY CLEARED

CONSTRAINTS:

- CULTURAL HERITAGE SENSITIVITY OVERLAY
- BUSHFIRE MANAGEMENT OVERLAY.
- BENDOC IS A REMOTE TOWN AND HAD A POPULATION OF 115
- NOT WELL CONNECTED TO PUBLIC TRANSPORT (BUS & TRAIN)
- LOWER TERRAIN AREAS
- THERE IS NO RETICULATED GAS TO THE SITE
- NO RETICULATED TOWN WATER IS AVAILABLE
- THERE IS NO RETICULATED SEWERAGE TO SITE

NOTES:

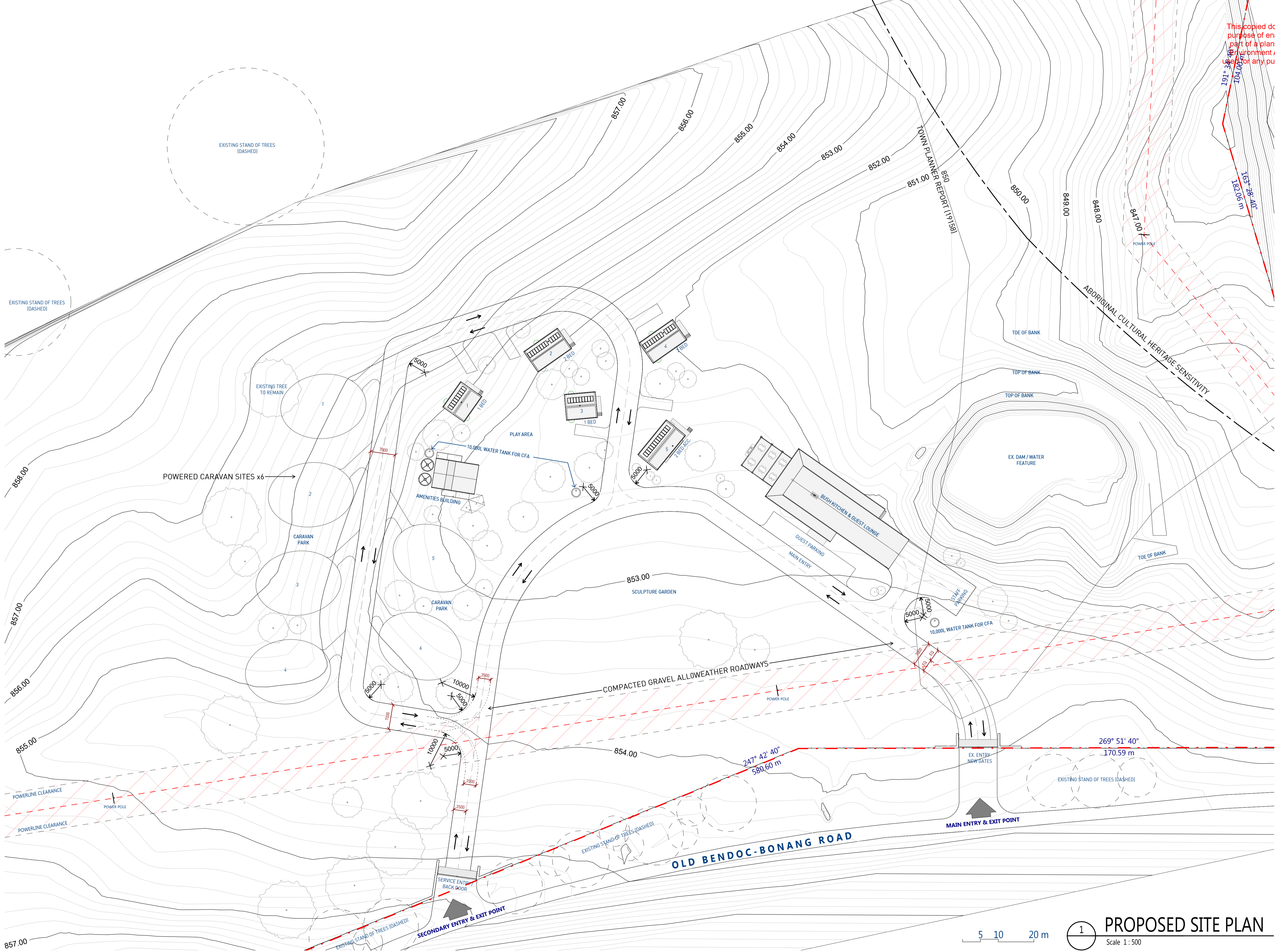
REFER ALSO TO PLAN OF SURVEY PREPARED BY CROWTHER SADLER



REFER TO SURVEY PLAN 20433 & 20214
PREPARED BY CROWTHER & SADLER

TOWN PLANNING PERMIT

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POPULATION NUMBERS

POWERED CARAVAN SITES: 6 x 4 PERSONS
SUB-TOTAL: 24 PERSONS

1-BED CABINS (x2) x 2 PERSONS = 4 PERSONS
2-BED ACCESSIBLE (x1) x 4 PERSONS = 4 PERSONS
2-BED CABINS (x2) x 4 PERSONS = 8 PERSONS
SUB-TOTAL: 16 PERSONS

TOTAL: 40 PERSONS MAX. ACCOMMODATION

DEVELOPMENT TABLE

GUEST FACILITY

BUSH KITCHEN & GUEST LOUNGE GFA: 322 m²
ONSITE CAR SPACES: 11 (inc, ACCESSIBLE x2)

1-BED CABIN: 2
2-BED CABIN: 2
2-BED ACCESSIBLE CABIN: 1
AMENITIES: 1

CARAVAN SITES: 6

NOTES:

CAR SPACES ARE TYPICALLY 2800 x 5500 (WxD mm).

INTERNAL ROAD NETWORK IS UNSEALED BUT MAINTAINED TO PROVIDE ALL WEATHER ACCESS.

1 PROPOSED SITE PLAN
Scale 1: 500

BAENZIGER COLES

ARCHITECTURE INTERIOR DESIGN PROJECT MANAGEMENT

419 City Road
PO Box 957
South Melbourne, Vic 3205
(03) 9696 6899
mail@baenzigercoles.com.au
baenzigercoles.com.au

REV DESCRIPTION
REVISED PRELIMINARY PLANNING
REVISED PRELIMINARY PLANNING
PRELIMINARY PLANNING
PRELIMINARY PLANNING UPDATES
TOWN PLANNING PERMIT

DATE
20.02.2024
20.10.2023
21.11.2023
20.11.2023
12.02.2024

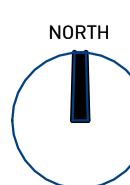
INITIAL

BUILDERS / CONTRACTORS SHALL VERIFY JOB DIMENSIONS BEFORE ANY JOB COMMENCES. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED WORK. WORK SHALL ALSO CONFORM TO THE SPECIFICATION, OTHER DRAWINGS AND JOB DIMENSIONS. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGNER / CONSULTANT AND MANUFACTURE SHALL NOT COMMENCE PRIOR TO THE RETURN OF SHOP DRAWINGS SIGNED BY THE DESIGNER / CONSULTANT. COPYRIGHT REMAINS THE PROPERTY OF BAENZIGER COLES PTY LTD. ALL WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE TO THE LOCAL BUILDING CODES AND AUTHORITY REGULATIONS.

PROJECT NAME
The Local Bendoc

PROJECT ADDRESS
85 Haydens Bog Rd, Bendoc VIC 3888

the local
BENDOC



DRAWING TITLE
PROPOSED SITE PLAN

SCALE: (A1)
As indicated

DATE
12.02.2024

DRAWN
NY

CHECK
TB

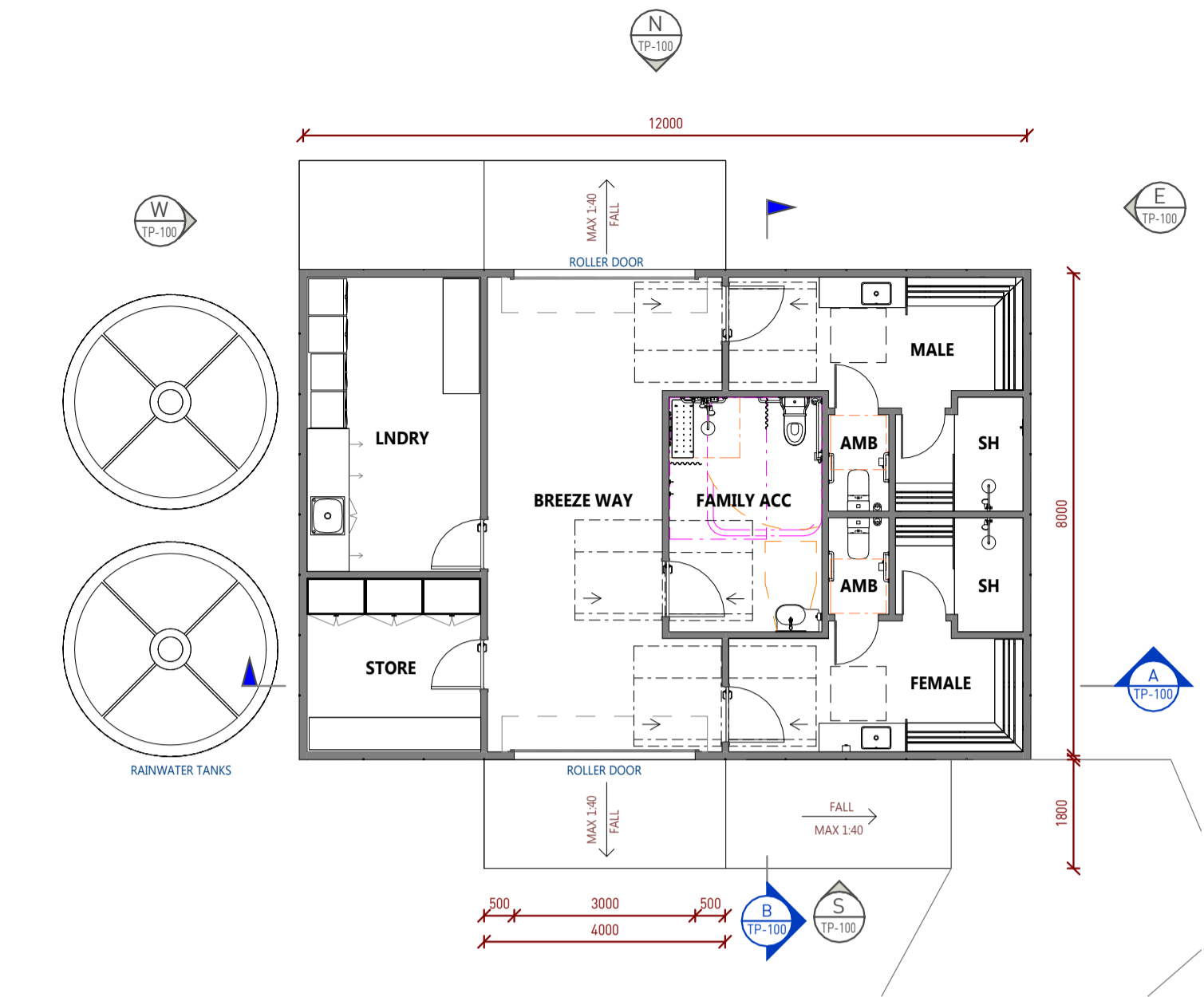
DRAWING NO.

REV

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Page 66 of 77

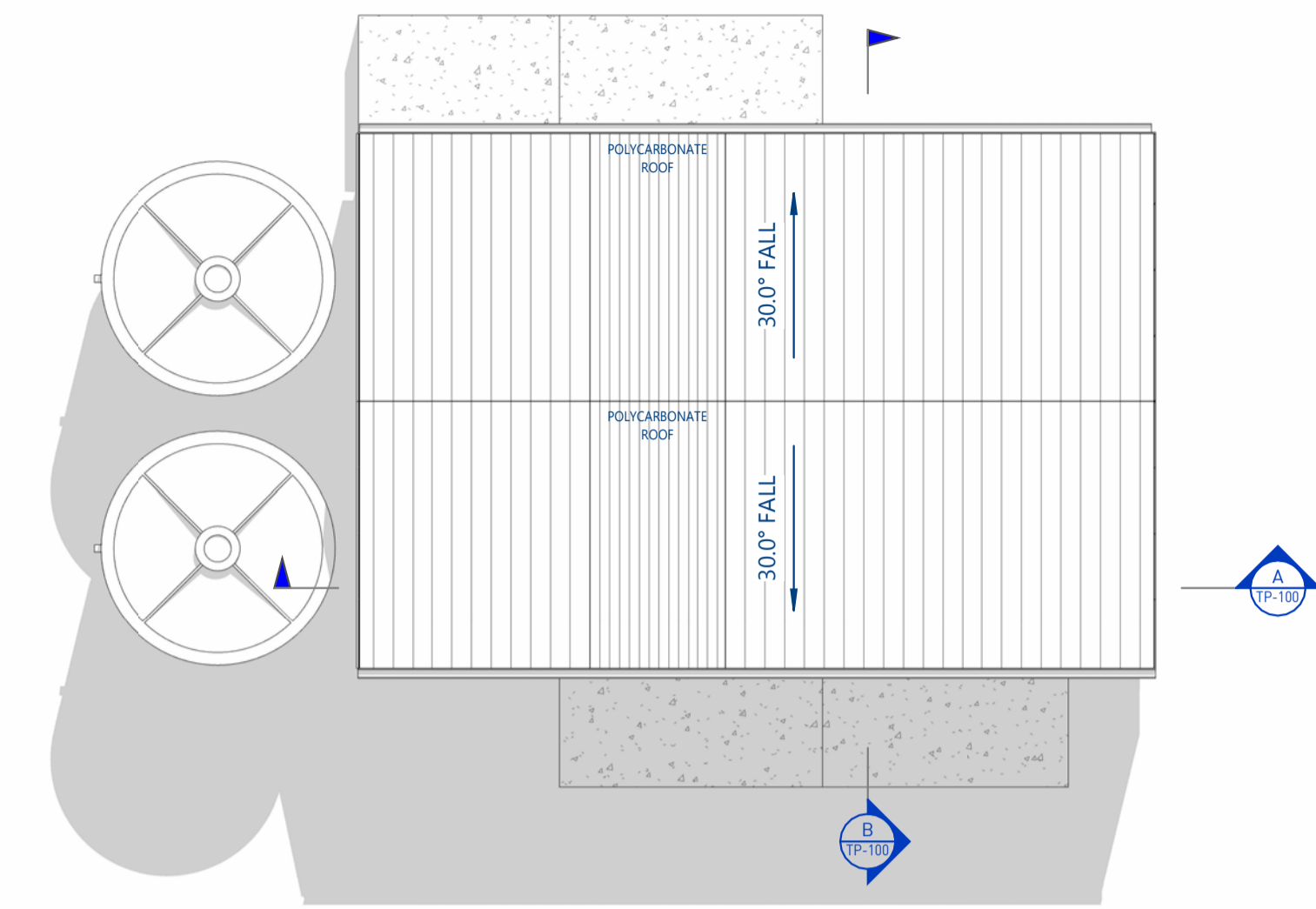
JOB NO.
22019

TOWN PLANNING PERMIT

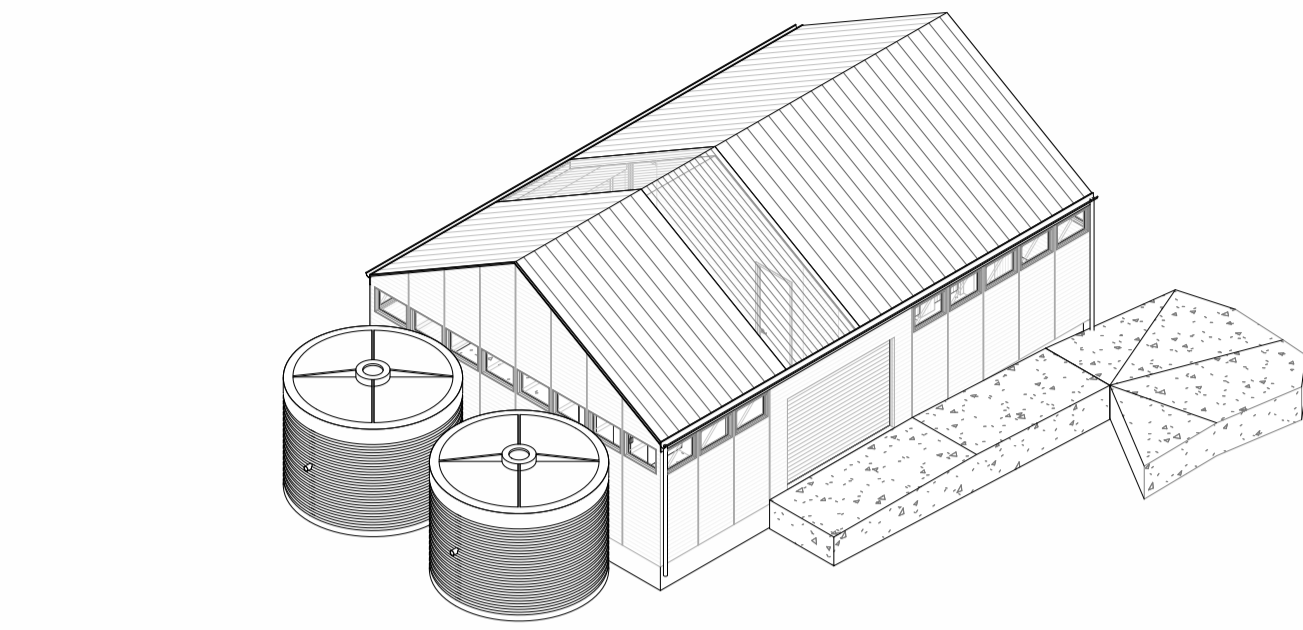


1 FLOOR PLAN
Scale 1 : 100

APPROX AREA: 100 m2



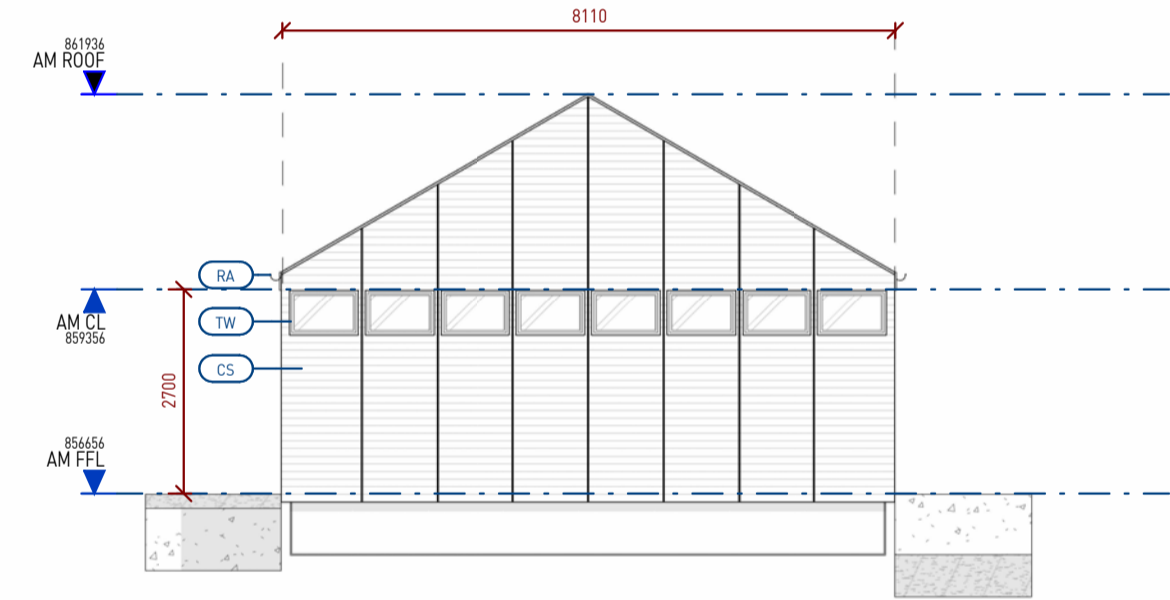
2 ROOF PLAN
Scale 1 : 100



3 AMENITIES AXONOMETRIC
Scale



S ELEVATION - SOUTH
Scale 1 : 100



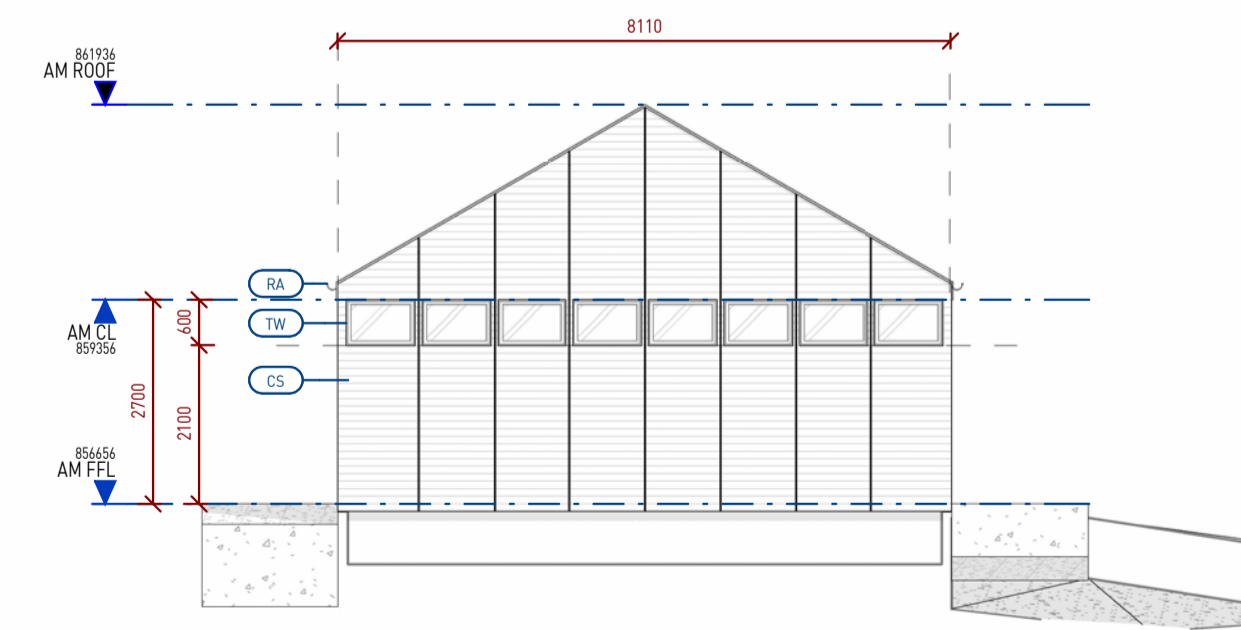
E ELEVATION - EAST
Scale 1 : 100



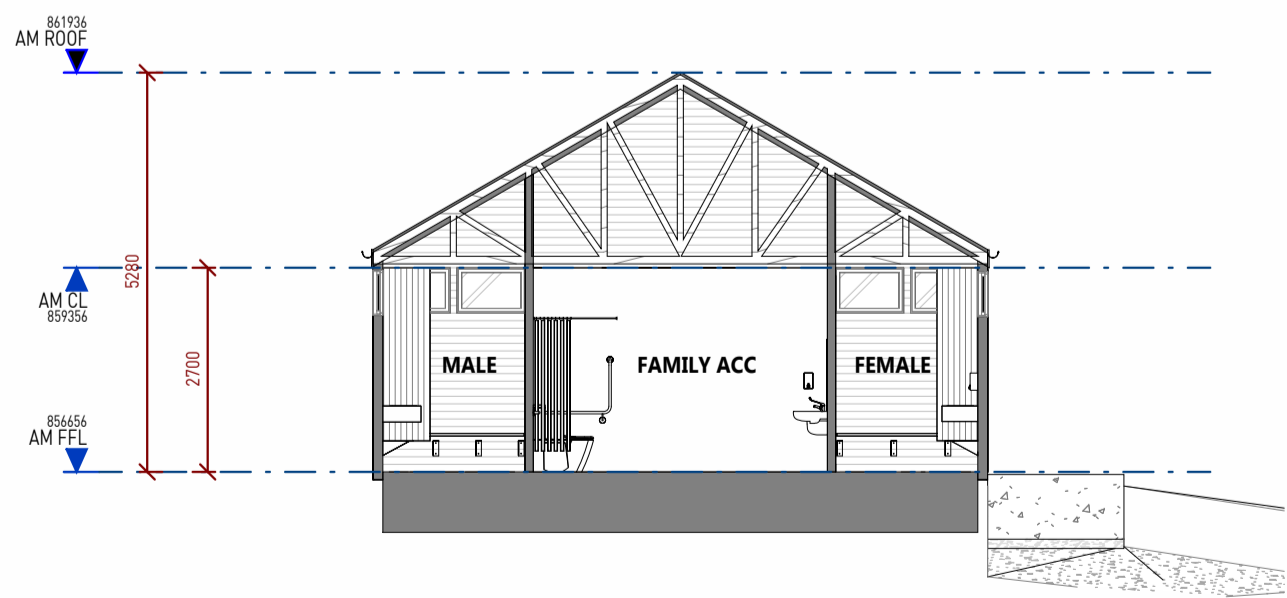
A SECTION A
Scale 1 : 100



N ELEVATION - NORTH
Scale 1 : 100



W ELEVATION - WEST
Scale 1 : 100



B SECTION B
Scale 1 : 100

EXTERNAL MATERIAL SCHEDULE REFER TO WD-402

BAENZIGER COLES

ARCHITECTURE INTERIOR DESIGN PROJECT MANAGEMENT

419 City Road
PO Box 957
South Melbourne, Vic 3205
(03) 9696 6899
mail@baenzigercoles.com.au
baenzigercoles.com.au

REV DESCRIPTION
TOWN PLANNING PERMIT

DATE
12.02.2024

INITIAL

BUILDERS / CONTRACTORS SHALL VERIFY JOB DIMENSIONS BEFORE ANY JOB COMMENCES. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED WORK. WORK SHALL ALSO CONFORM TO THE SPECIFICATION. OTHER DIMENSIONS AND JOB DIMENSIONS ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGNER / CONSULTANT AND MANUFACTURE SHALL NOT COMMENCE PRIOR TO THE RETURN OF SHOP DRAWINGS SIGNED BY THE DESIGNER / CONSULTANT. COPYRIGHT REMAINS THE PROPERTY OF BAENZIGER COLES PTY LTD. ALL WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE TO THE LOCAL BUILDING CODES AND AUTHORITY REGULATIONS.

PROJECT NAME
The Local Bendoc

PROJECT ADDRESS
85 Haydens Bog Rd, Bendoc VIC 3888

the local
BENDOC

DRAWING TITLE
PROPOSED AMENITIES

SCALE (A1)
1 : 100

DATE
12.02.2024

DRAWN
TS/AY

CHECK
TB

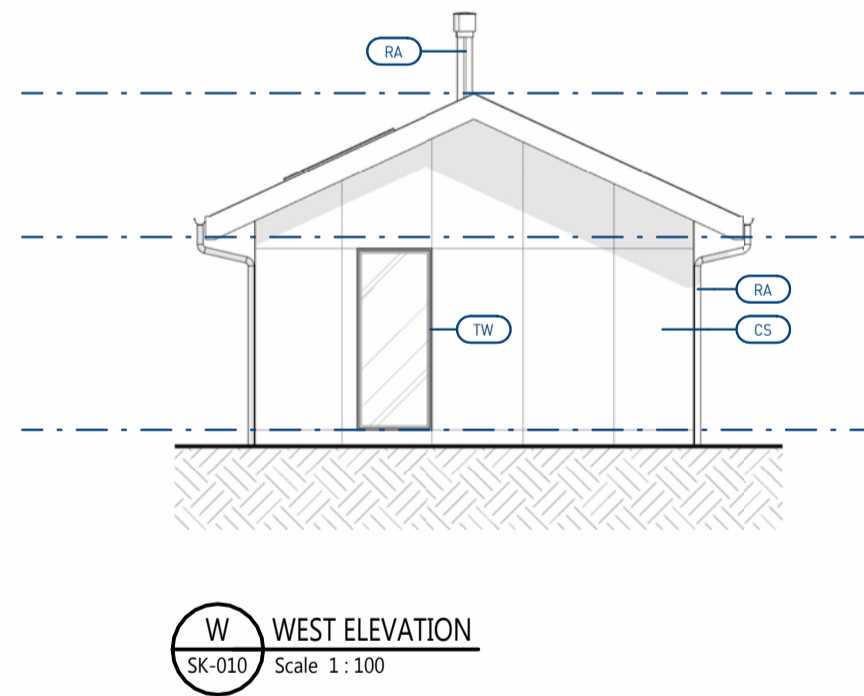
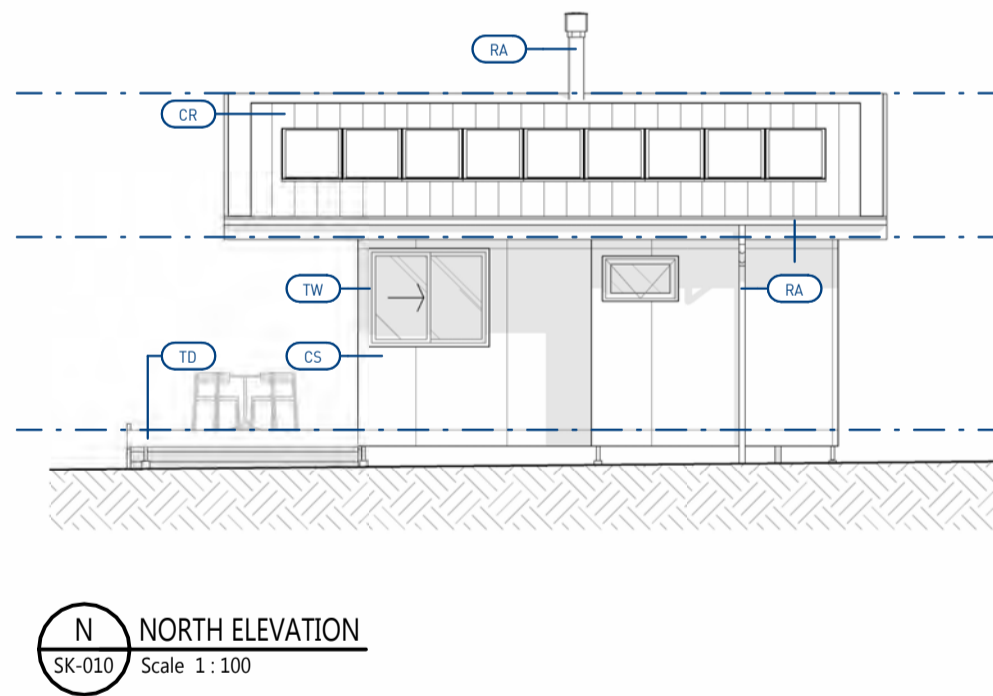
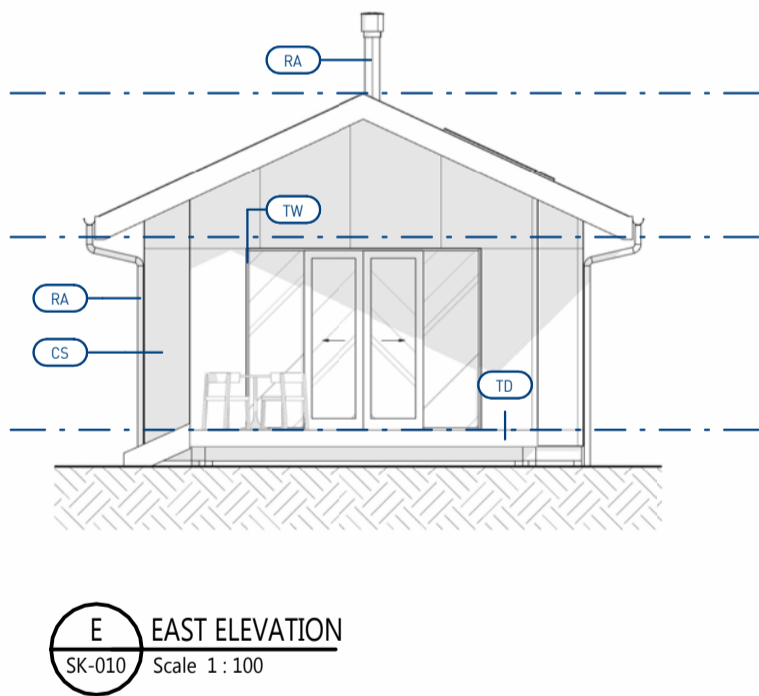
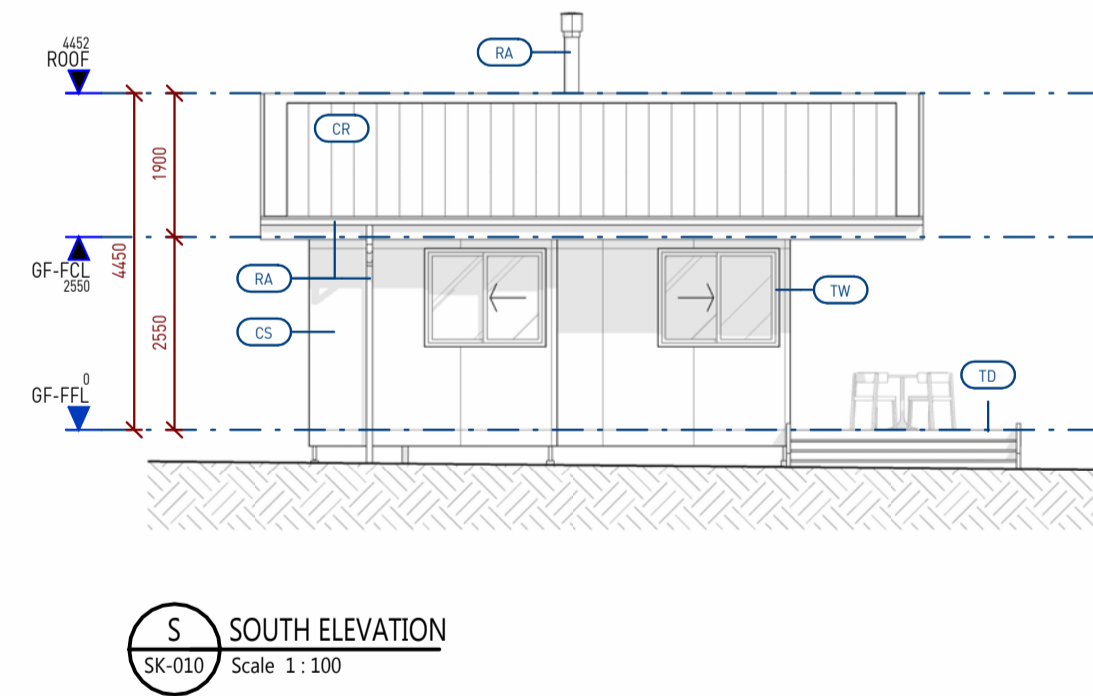
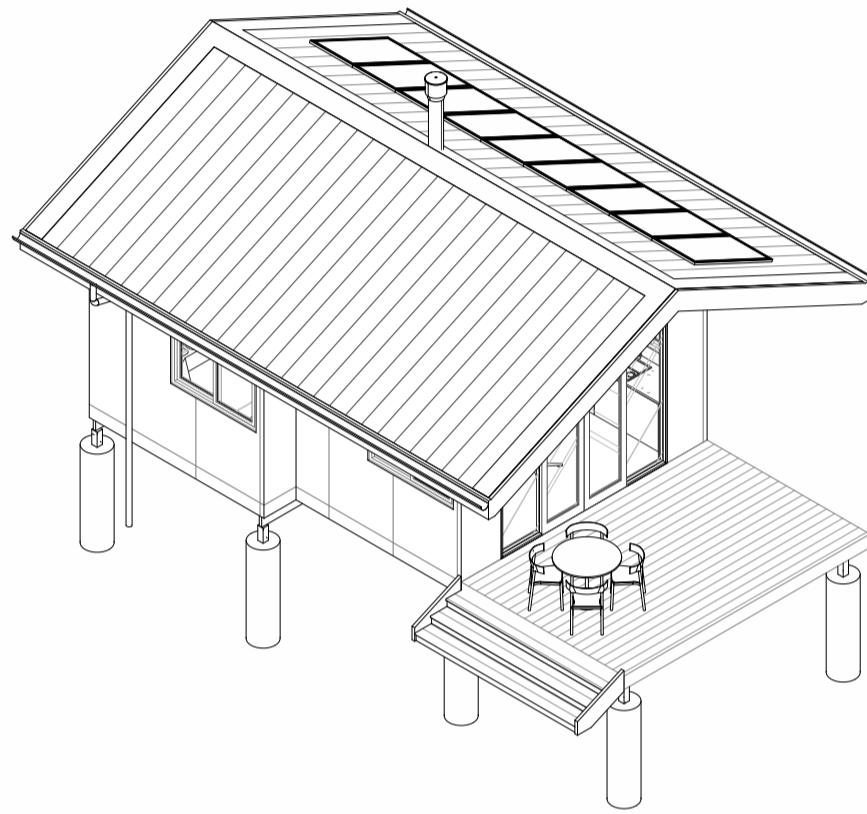
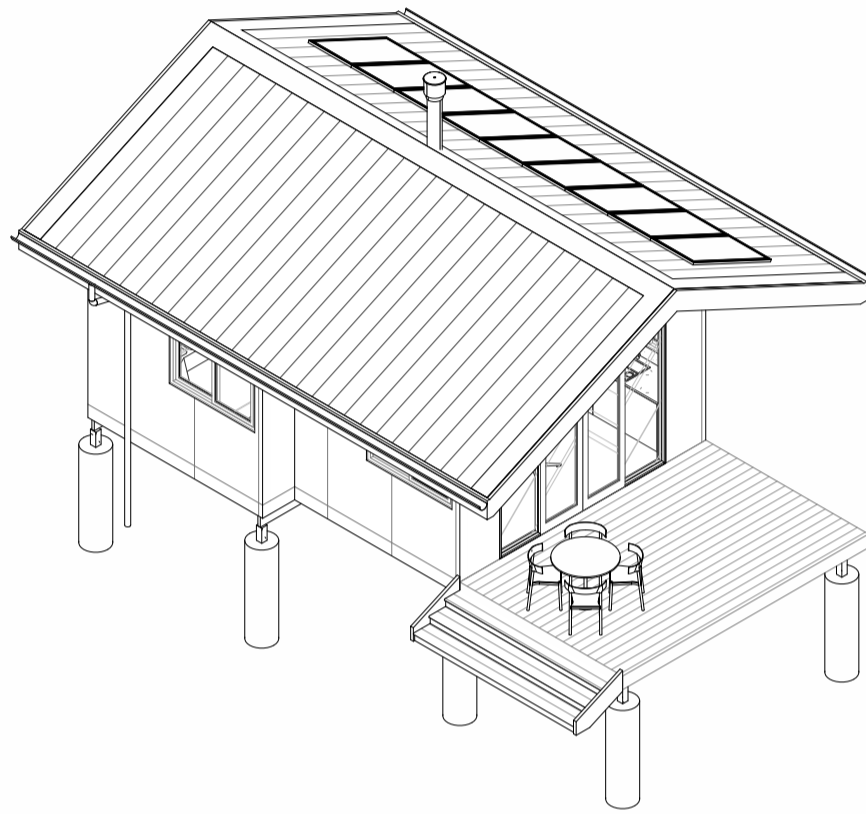
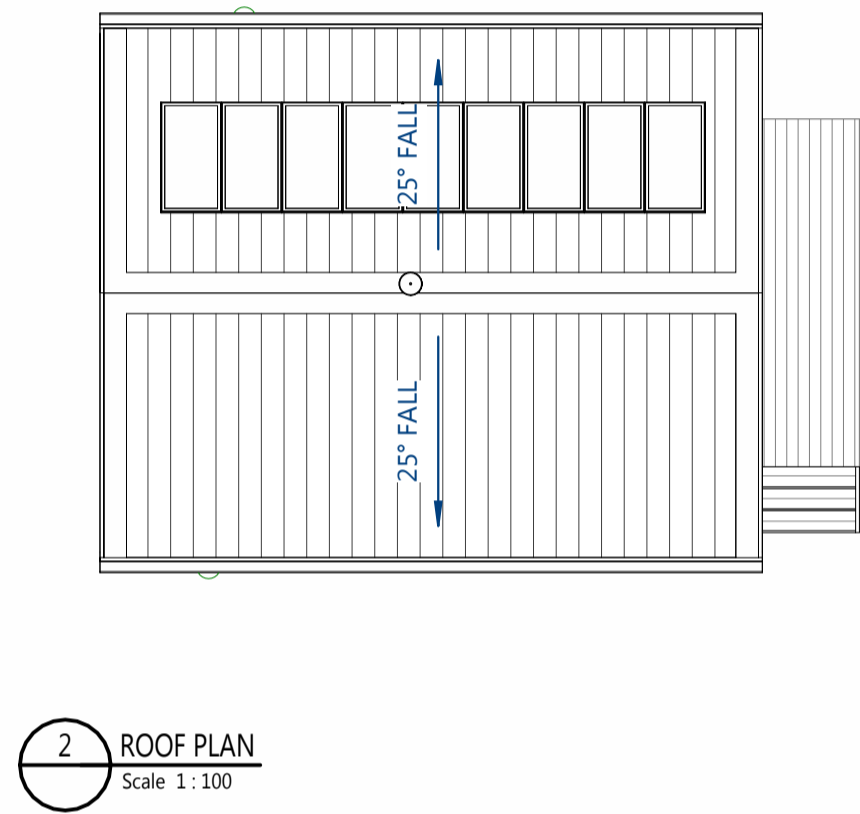
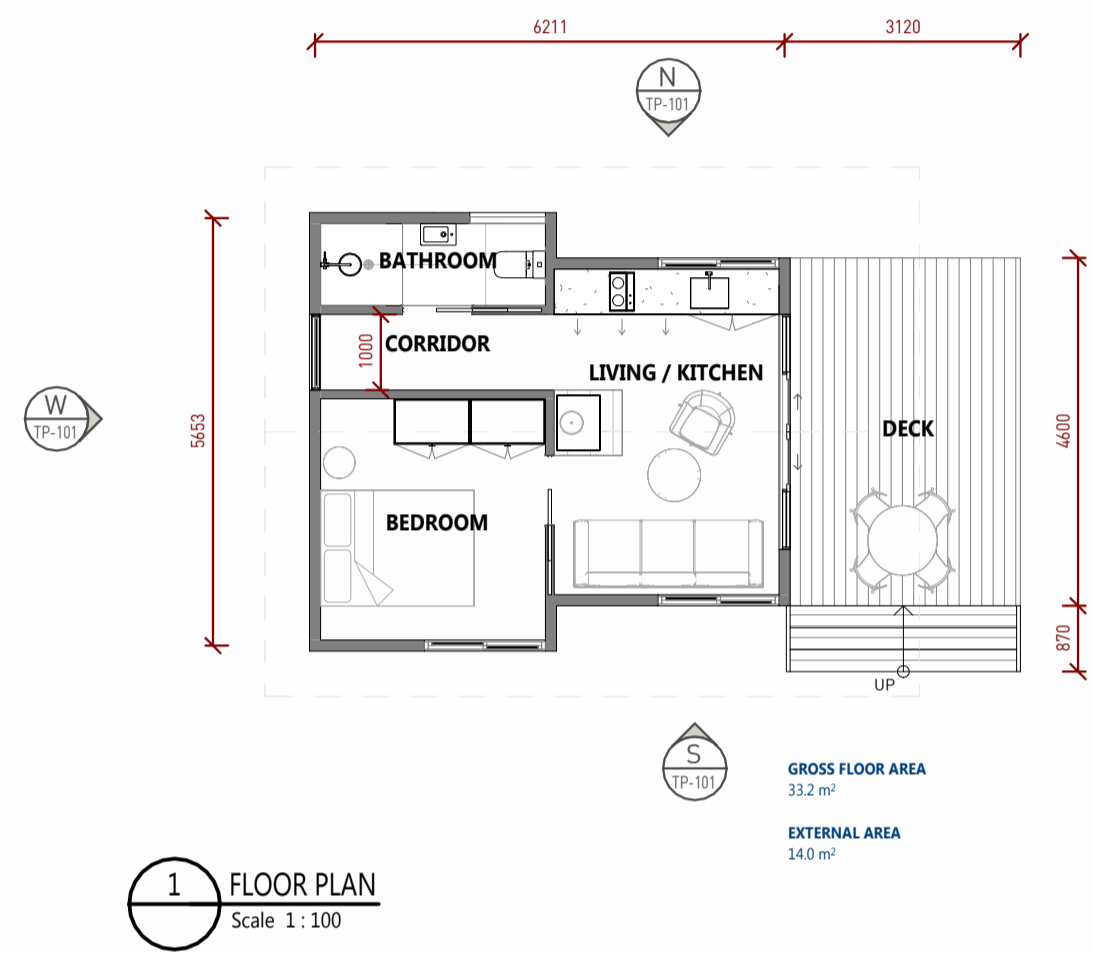
DRAWING NO.

REV

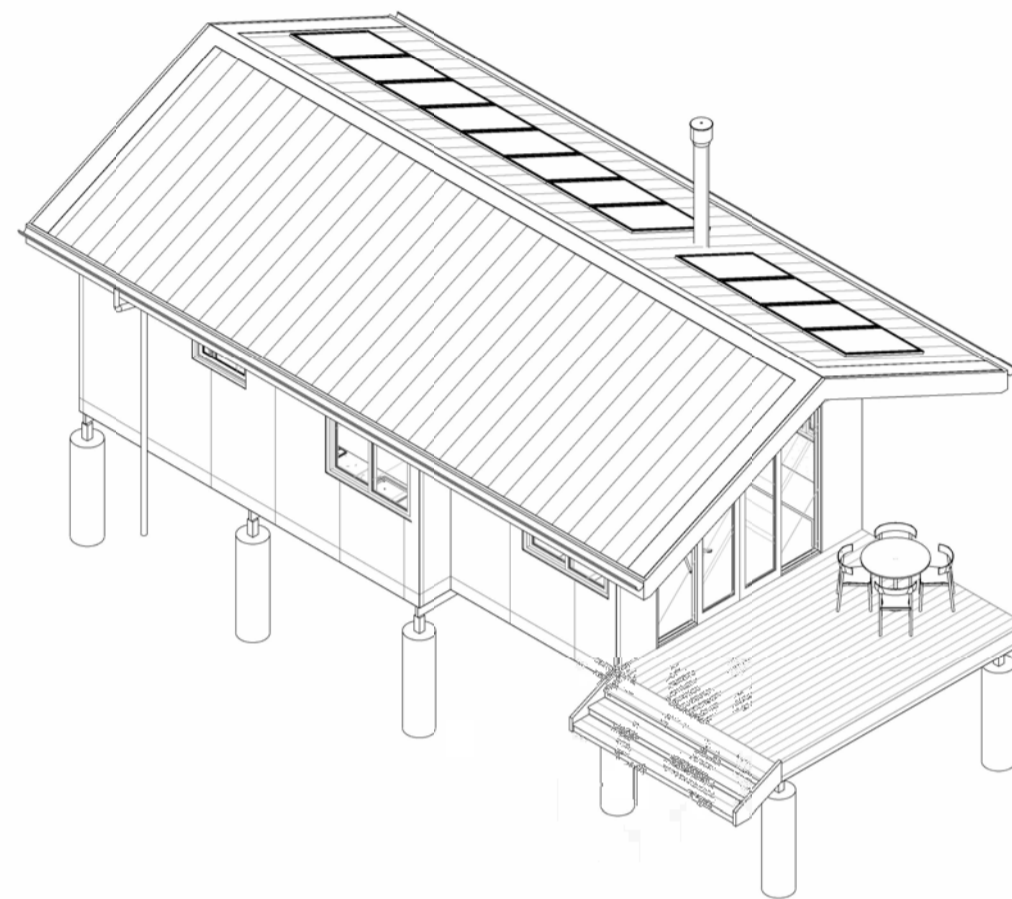
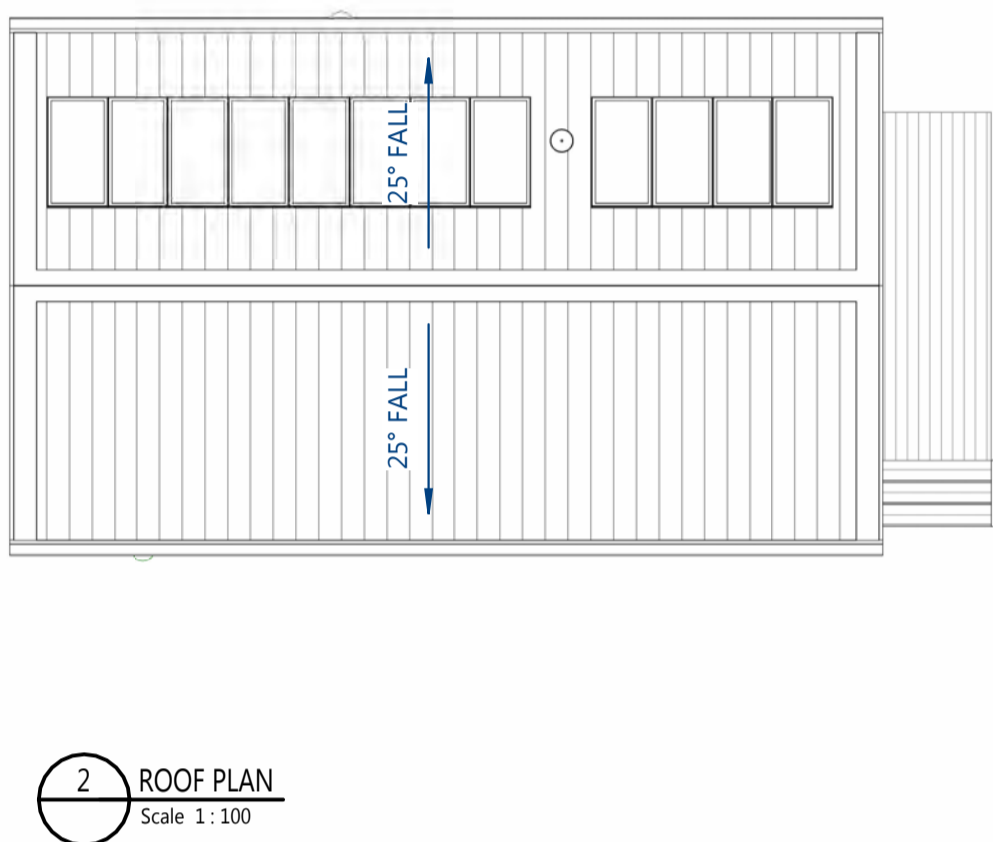
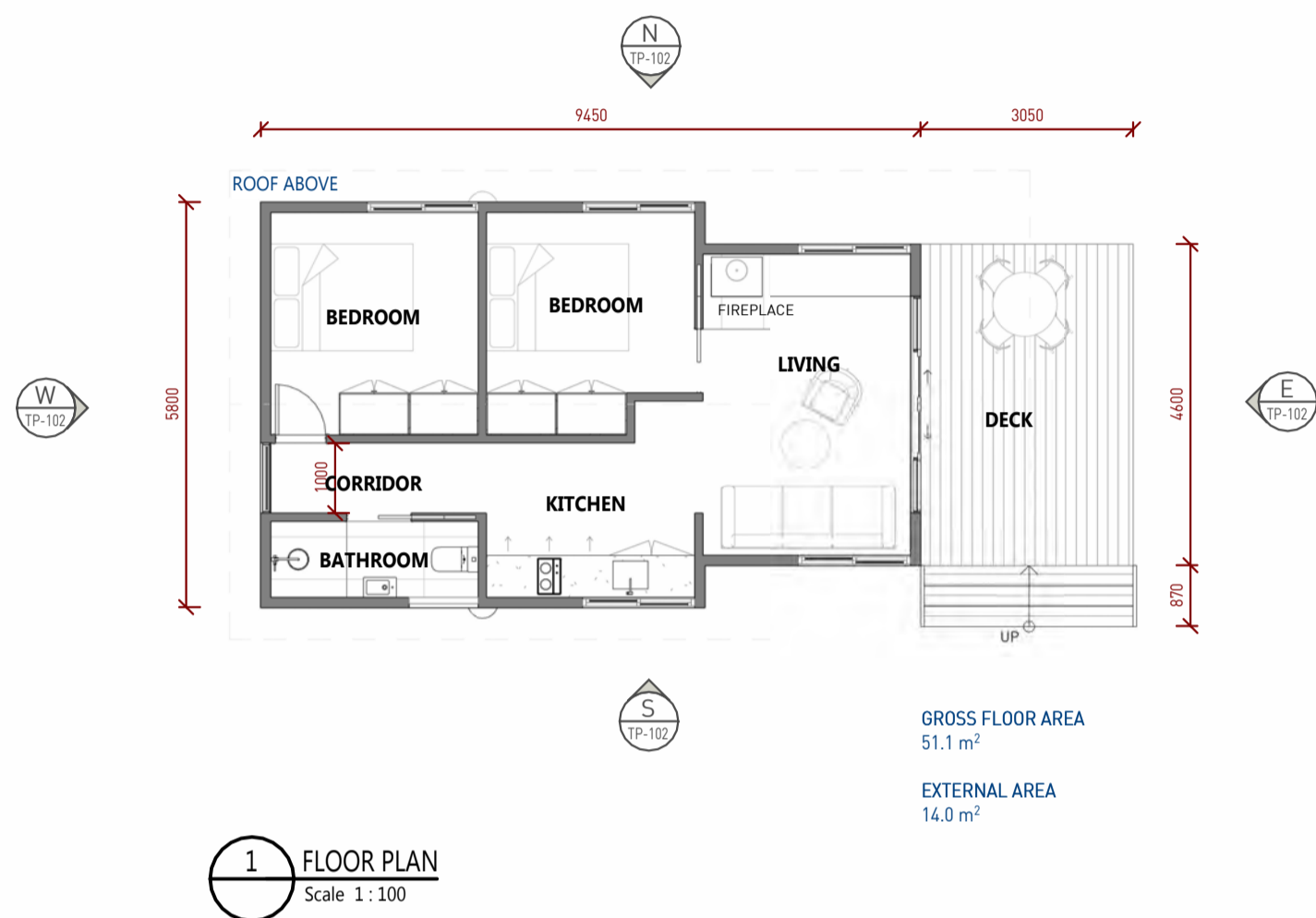
Printed 27/03/2024
Page 67 of 77

JOB NO.
22019

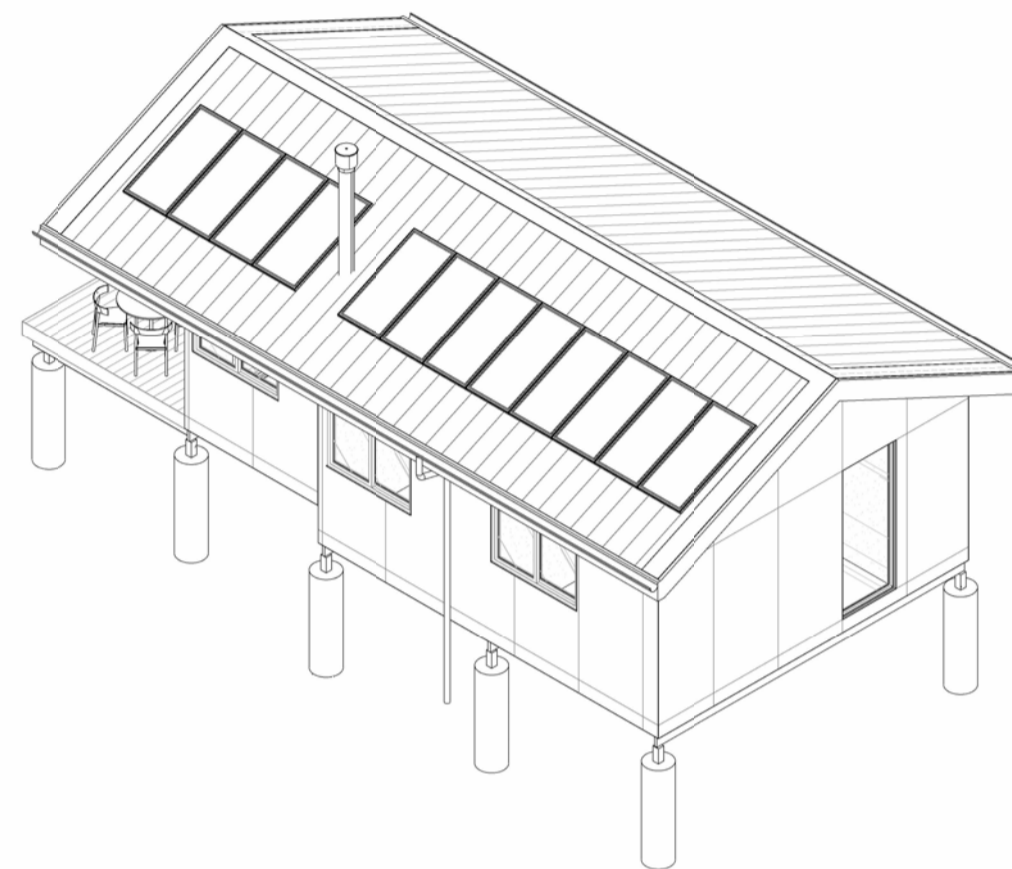
TOWN PLANNING PERMIT



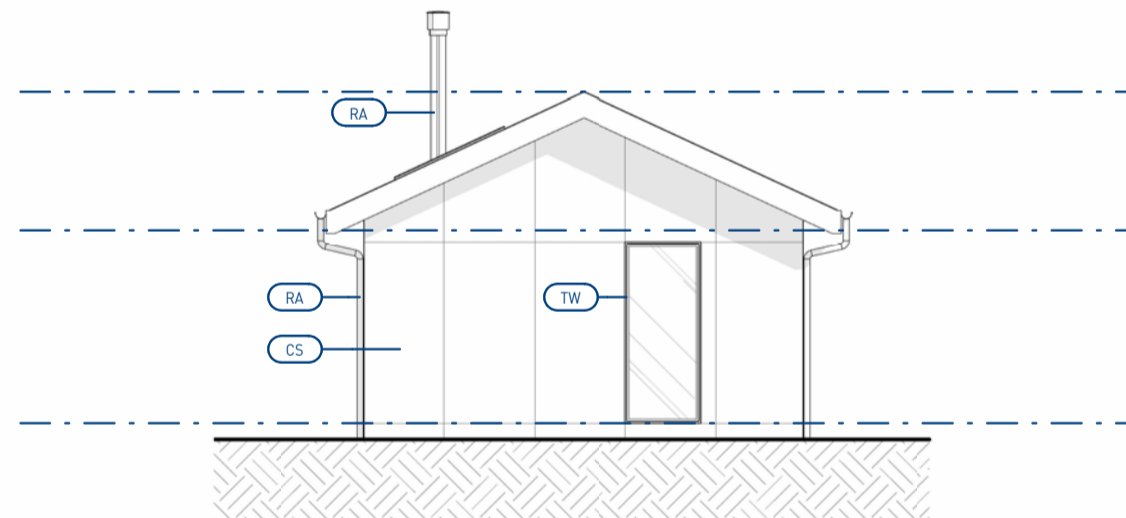
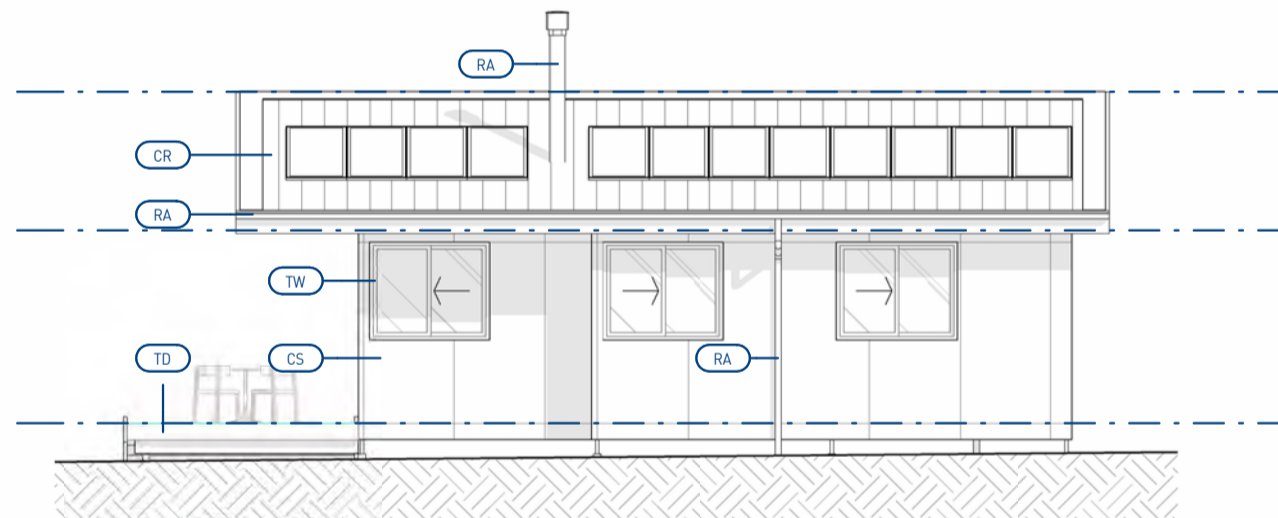
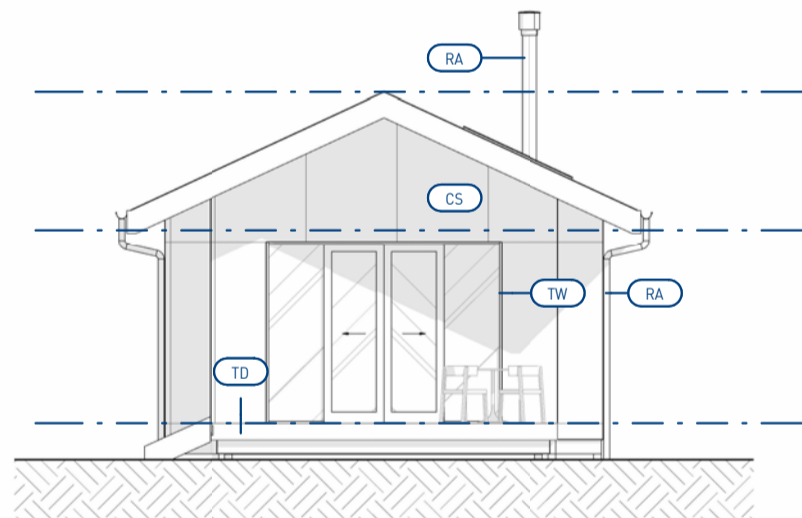
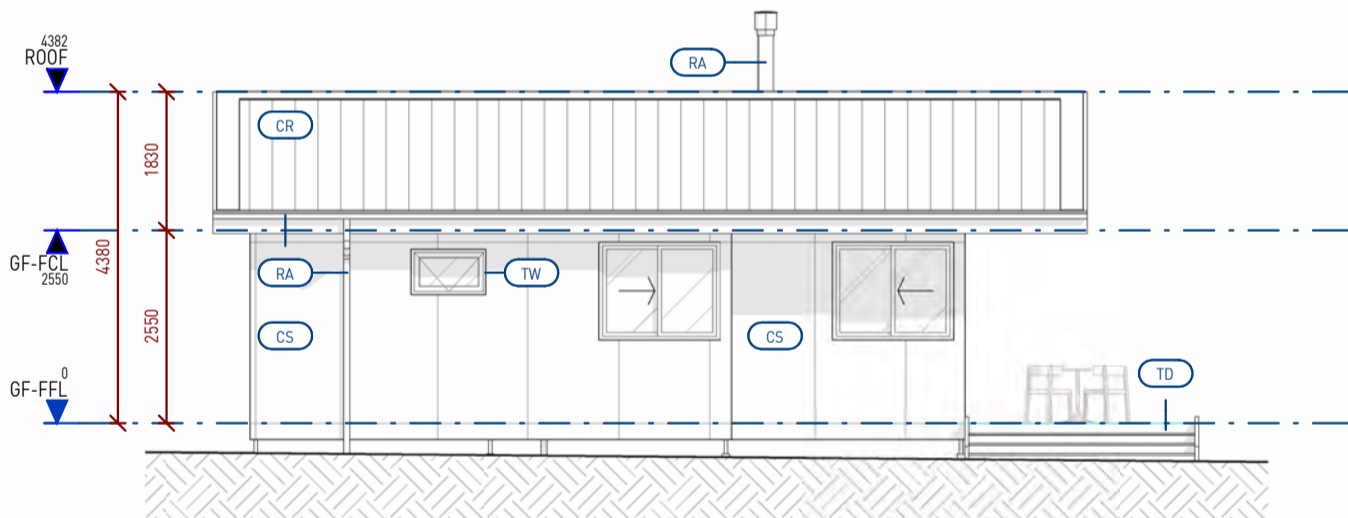
EXTERNAL MATERIAL SCHEDULE REFER TO WD-402



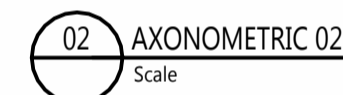
01 AXONOMETRIC 01
Scale



02 AXONOMETRIC 02
Scale



EXTERNAL MATERIAL SCHEDULE REFER TO WD-402



ARCHITECTURE INTERIOR DESIGN PROJECT MANAGEMENT

REV	DESCRIPTION
1	TOWN PLANNING PERMIT

DATE 12.02.2024 INITIAL

BUILDERS/CONTRACTORS SHALL VERIFY JOB DIMENSIONS BEFORE ANY JOB COMMENCES, FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED WORK. WORK SHALL ALSO CONFORM TO THE SPECIFICATION, OTHER DRAWINGS AND JOB DIMENSIONS. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGNER / CONSULTANT AND MANUFACTURE SHALL NOT COMMENCE PRIOR TO THE RETURN OF SHOP DRAWINGS SIGNED BY THE DESIGNER / CONSULTANT. COPYRIGHT REMAINS THE PROPERTY OF BAENZIGER COLES PTY. LTD. ALL WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE TO THE LOCAL BUILDING CODES AND AUTHORITY REGULATIONS.

PROJECT ADDRESS
85 Haydens Bog Rd, Bendoc VIC 3888

the local
B E N D O C

SCALE (A1)
1:100

DATE
12.02.2024

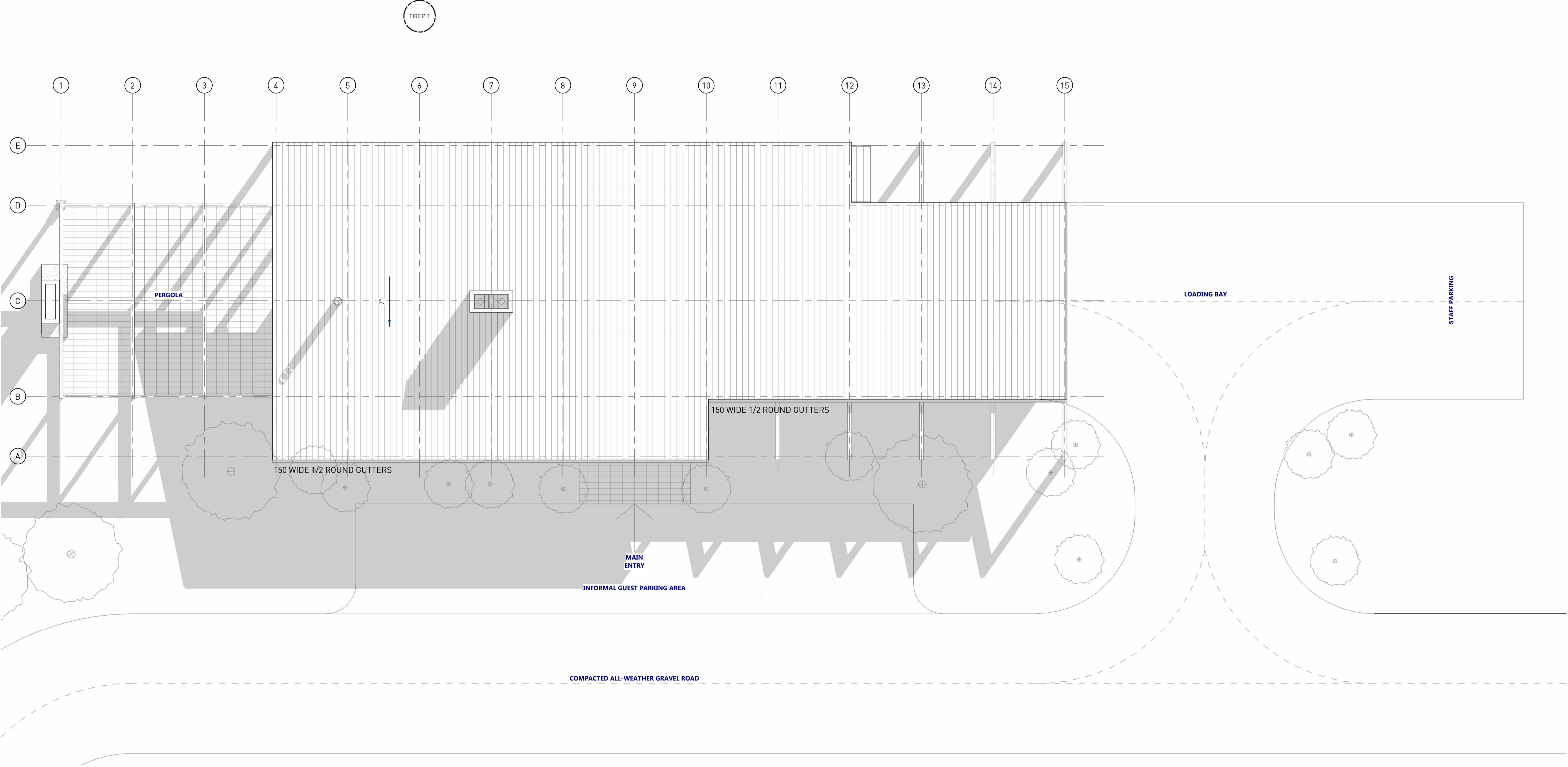
DRAWN
AY

DRAWING NO. REV.

JOB NO.
22019



ENTRY PAVING:	44.2 m ²	1-BED CABIN:	2
VERANDAH:	96.2 m ²	2-BED CABIN:	2
PERGOLA:	34.6 m ²	2 BED ACCESSIBLE :	1
DECKING:	82.7 m ²	AMENITIES:	1
<u>SUB-TOTAL:</u>	257.7 m ²	CARAVAN SITES:	6



1 ROOF PLAN
Scale 1 : 100

BAENZIGER COLES

ARCHITECTURE INTERIOR DESIGN PROJECT MANAGEMENT

419 City Road
PO Box 957
South Melbourne, Vic 3205
(03) 9696 6899
mail@baenzigercoles.com.au
baenzigercoles.com.au

REV DESCRIPTION
TOWN PLANNING PERMIT

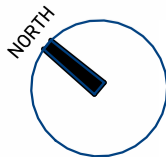
DATE
12.02.2024 INITIAL

BUILDERS / CONTRACTORS SHALL VERIFY JOB DIMENSIONS BEFORE ANY JOB COMMENCES. FIGURED DIMENSIONS SHALL TAKE PRECEDENCE OVER SCALED WORK. WORK SHALL ALSO CONFORM TO THE SPECIFICATION. OTHER DRAWINGS AND JOB DIMENSIONS. ALL SHOP DRAWINGS SHALL BE SUBMITTED TO THE DESIGNER / CONSULTANT AND MANUFACTURE SHALL NOT COMMENCE PRIOR TO THE RETURN OF SHOP DRAWINGS SIGNED BY THE DESIGNER / CONSULTANT. COPYRIGHT REMAINS THE PROPERTY OF BAENZIGER COLES PTY LTD. ALL WORK SHALL BE CARRIED OUT IN STRICT ACCORDANCE TO THE LOCAL BUILDING CODES AND AUTHORITY REGULATIONS.

PROJECT NAME
The Local Bendoc

PROJECT ADDRESS
85 Haydens Bog Rd, Bendoc VIC 3888

the local
BENDOC



DRAWING TITLE
ROOF PLAN

SCALE (A1)
1 : 100

DATE
12.02.2024

DRAWN
AY

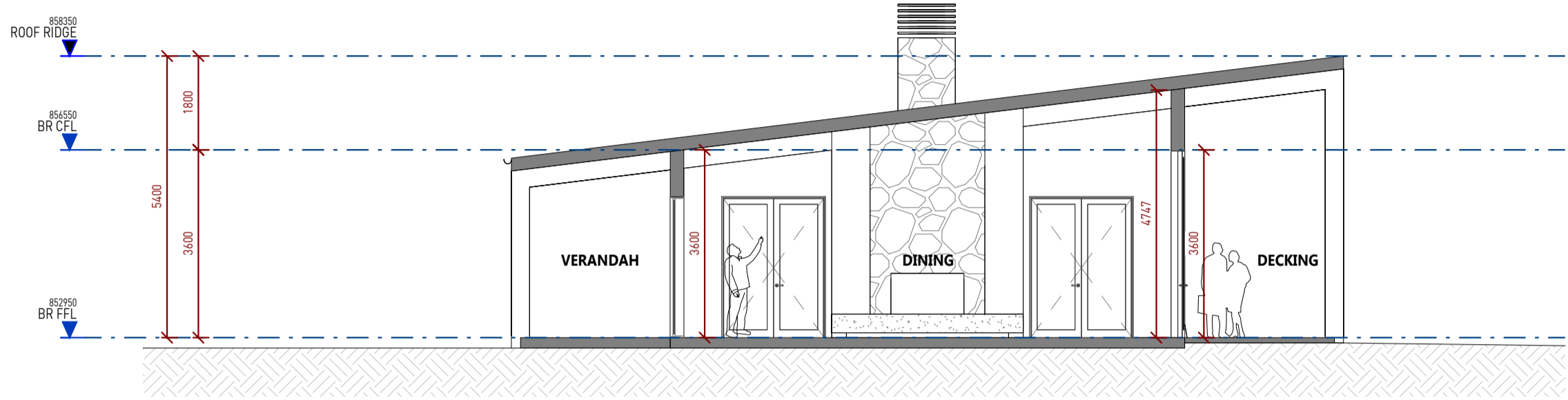
CHECK
TB

TOWN PLANNING PERMIT

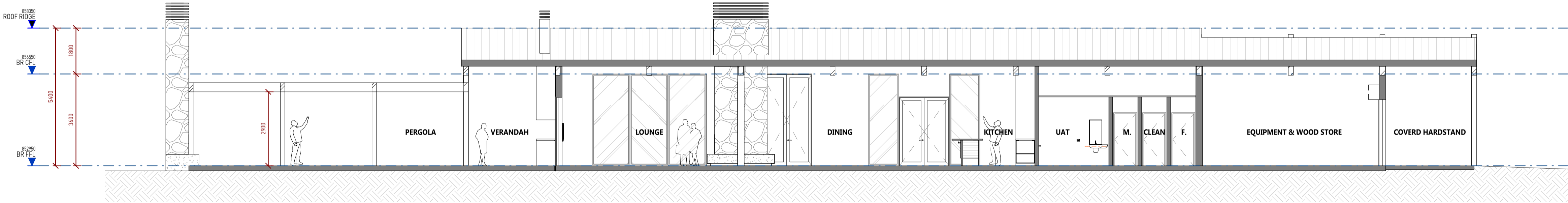
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DRAWING NO.
22019

JOB NO.
22019



1
TP-300 SECTION 1
Scale 1:100



2
TP-300 SECTION 2
Scale 1:100

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PROJECT NAME
The Local Bendoc

PROJECT ADDRESS
85 Haydens Bog Rd, Bendoc VIC 3888

the local
BENDOC

DRAWING TITLE
SECTIONS

SCALE (A1)
1:100

DATE
12.02.2024

DRAWN
NY/TS

CHECK
TB

DRAWING NO.

22019

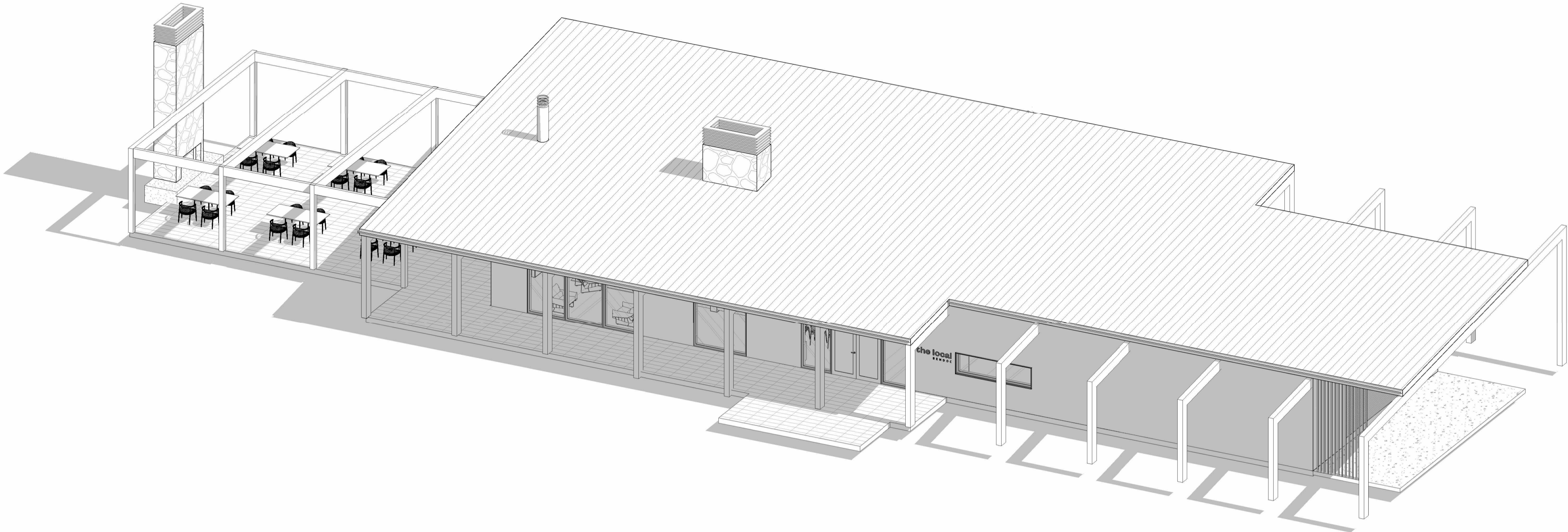
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22019

REV

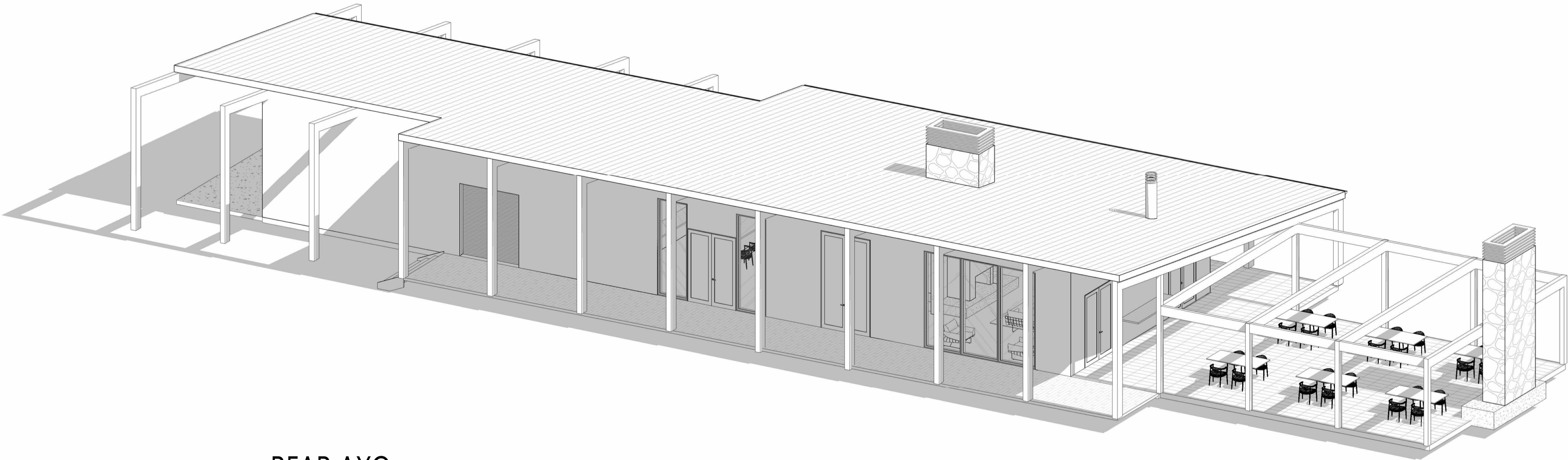
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TOWN PLANNING PERMIT

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1 FRONT AXO
Scale



2 REAR AXO
Scale

INSPIRATION



BAENZIGER COLES

ARCHITECTURE INTERIOR DESIGN PROJECT MANAGEMENT

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DATE INITIAL
12.02.2024

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PROJECT NAME
The Local Bendoc

PROJECT ADDRESS
85 Haydens Bog Rd, Bendoc VIC 3888

DRAWING TITLE
INSPIRATION

SCALE (A1)

DATE
12.02.2024

DRAWN
TS/NY

CHECK
TB

DRAWING NO. REV

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JOB NO.
22019

TOWN PLANNING PERMIT

INTERNAL MATERIAL

- CN1 110mm THICK REINFORCED CONCRETE SLAB - BURNISHED FINISH
- CN2 110mm THICK REINFORCED CONCRETE SLAB - STEEL TROWEL FINISH
- CN3 110mm THICK REINFORCED DRIVEWAY - EXPOSED AGGREGATE FINISH
- TM1 SOLID TIMBER DECKING
- TM2 SOLID TIMBER FLOORING
- EM1 COIR FIBRE ENTRY MATT
- TI 1200x600x8mm THICK PORCELAIN TILES
- ST1 ENGINEERED STONE FINISH
- ST2 BLUESTONE CUSTOM SIZE SLABS
- PVT SELECTED CONCRETE PAVING ON REINFORCED CONCRETE SLAB



EXTERNAL MATERIAL COLOUR RANGE

COLORBOND STEEL



ROOF

CR - COLORBOND ROOF SHEETING

RA - COLORBOND ROOF ACCESSORIES

(GUTTERS, DOWNPIPES, FLUES, FLASHINGS, WATER TANKS, ETC.)

PR - POLYCARBONATE ROOFING

WALL

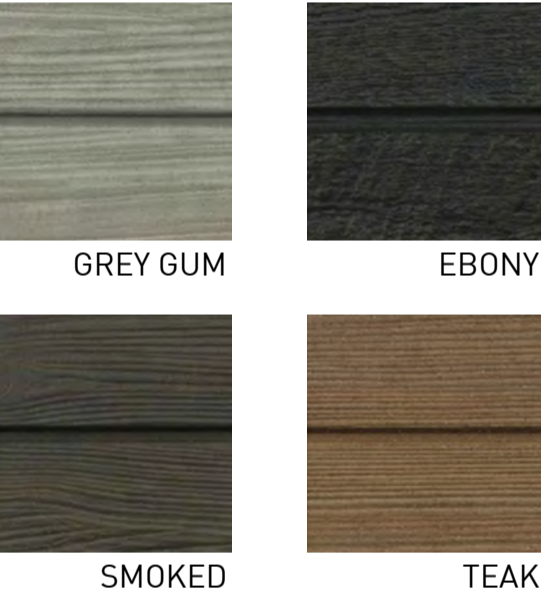
CW - COLORBOND WALL SHEETING

WINDOW & DOOR

WS - POWDER-COATED ALUMINIUM WINDOW SHROUD

RD - POWDER-COATED STEEL ROLLER SHUTTER DOOR

CEMENT SHEET



WALL

CS - PRE-FINISHED TEXTURED COMPRESSED CEMENT SHEET

STACKED STONE



*LOCAL SOURCED NATURAL STONE

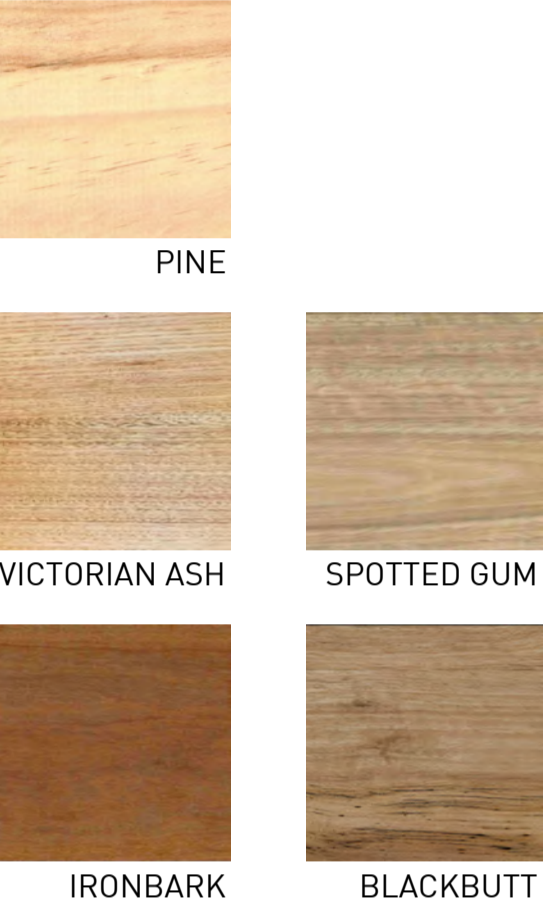
WALL

RW - RETAINING WALL WITH STACKED STONE BASE (SW)

SW - STACKED STONE CLADDING

(FIRE PLACES, CHIMNEYS, COLUMN BASES & FEATURE DETAILS)

TIMBER



*LOCAL SOURCED AUSTRALIAN SOFTWOOD/HARDWOOD

WINDOW & DOOR

TW - TIMBER WINDOWS / DOORS FRAME

FLOOR

TD - TIMBER DECK

OTHER ELEMENTS

TP - TIMBER POST

TS - TIMBER SCREEN & OTHER FEATURE TIMBER ELEMENTS

CORTEN STEEL



FEATURE ARCHITECTURAL STEEL WORK

CO - CORTEN STEEL

PAVING



*LOCAL SOURCED NATURAL STONE

FLOOR

PV - NATURAL STONE PAVING

GP - GRAVEL PAVING