

Exhibited

This planning application is open for
public comment until
05 October 2026

Reference no	PLN-26-0149
Site	268 PERTH MILL ROAD PERTH
Proposed Development	Single Dwelling and Outbuilding (shipping container)
Zone	10.0 Low Density Residential
Use class	Residential

Written representations may be made during this time to the General Manager;
mailed to PO Box 156, Longford, Tasmania 7301,
delivered to Council offices or
a pdf letter emailed to planning@nmc.tas.gov.au

(no special form required)



PLANNING APPLICATION

FOR BUILDINGS, WORKS AND CHANGE OF USE

(E.g. Residential houses, sheds, carports, retaining walls, visitor accommodation, commercial development, signage etc.)

Office Use Only:

The Proposal

Description of proposal:

Simple 128m² rectangular design. Timber cladding.
Tin roof, timber window frames.
3b, 2 bath. - There's a build very similar to my
proposal just a few doors down!

Driveway construction material:

Blaze metal

The Land

Site address:

268 Perth Mill Rd, Perth. TAS.
7300.

Title reference:

C/T: 187 993 - folio 3

Existing buildings on site:

N/A

Existing use of site:

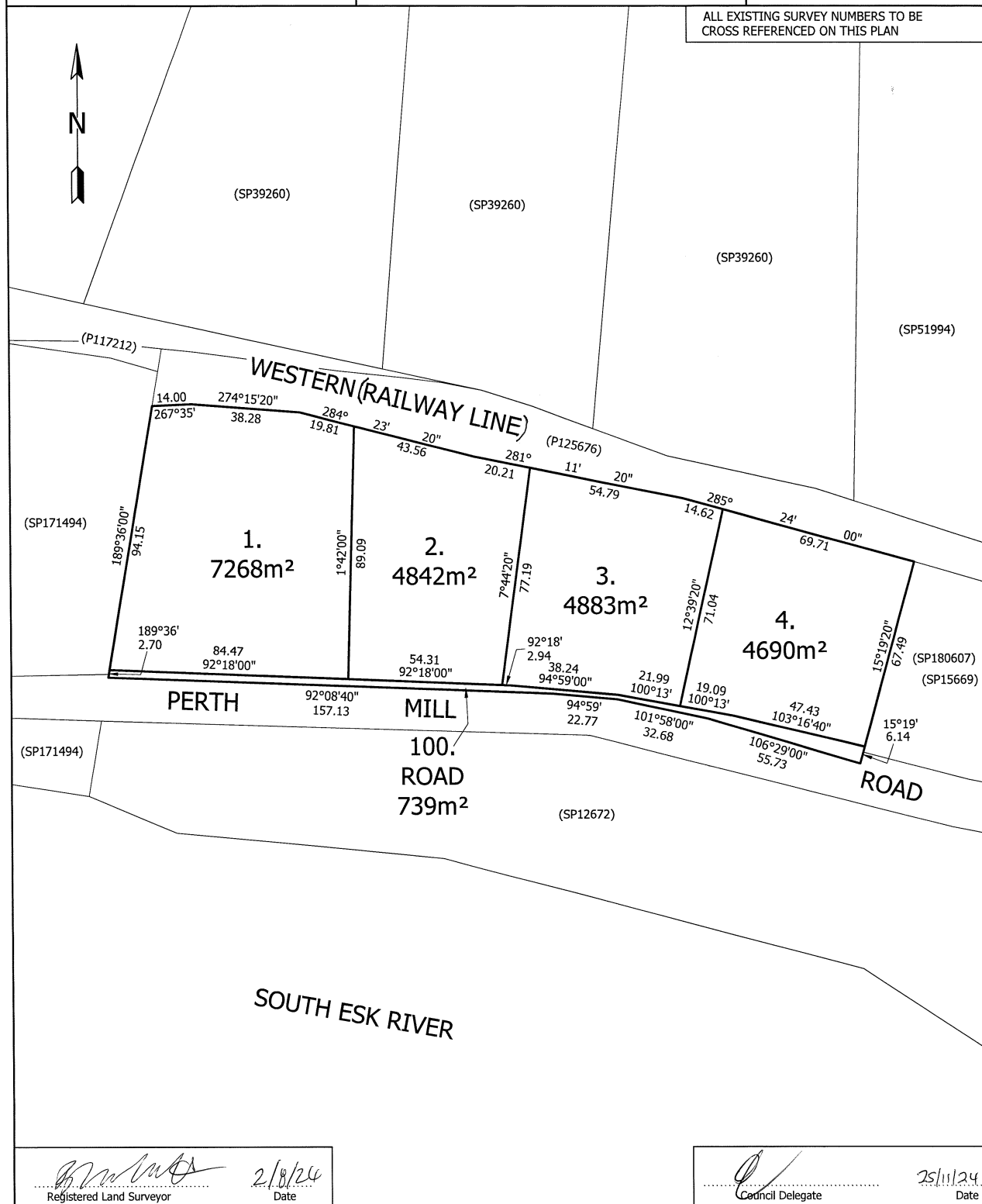
Land (?)

Applicant justification of any variation/discretion to the
Tasmanian Planning Scheme – Northern Midlands

'Priority final Plan'

OWNER: MELISSA JANE BIFFIN TRENT ROBIN BIFFIN	PLAN OF SURVEY  WOOLCOTT SURVEYS BY SURVEYOR: BRETT RICHARD WOOLCOTT LOCATION: LAND DISTRICT OF CORNWALL PARISH OF PERTH SCALE 1: 1250 LENGTHS IN METRES	REGISTERED NUMBER SP187993
FOLIO REFERENCE: C.T.15829/1		GRANTEE: PART OF 1321A-0R-0P GRANTED TO ROBERT CAMPBELL

ALL EXISTING SURVEY NUMBERS TO BE
CROSS REFERENCED ON THIS PLAN



Pitt & Sherry
(Operations) Pty Ltd
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Located nationally —
 Melbourne
 Sydney
 Brisbane
 Hobart
 Launceston
 Newcastle
 Devonport

11 August 2026

Samuel Banfield
 268 Perth Mill Road
 Perth TAS 7300

Dear Sam,

Re: Railway Noise and Vibration Impact at 268 Perth Mill Road, Perth



1. Introduction

This noise and ground vibration assessment has been prepared to support the development application for a proposed residential dwelling at 268 Perth Mill Road, Perth. The assessment is required as the site falls within the 50 metre attenuation zone of the TasRail Western Line Railway corridor. The site is zoned *Low Density Residential* under the Tasmanian Planning Scheme - *Northern Midlands*. The location of the site and proposed dwelling are shown in Figure 1 and Figure 2, below.

2. Tasmanian Planning Scheme Requirements

The *Tasmanian Planning Scheme – Northern Midlands*, Clause C3, *Road and Railway Assets Code* defines an attenuation zone of 50 metres from the boundary of a rail corridor or a major road with a speed limit above 60km/h. The parcel including the proposed dwelling falls within the attenuation zone of the TasRail Western Line. (Note Perth Mill Road is not a Major Road.)

Clause C3.6.1 provides development standards for habitable buildings for sensitive uses within a road or rail attenuation area and is reproduced below:

Objective:	
To minimise the effects of noise, vibration, light and air emissions on lots for sensitive uses within a road or railway attenuation area, from existing and future major roads and the rail network.	
Acceptable Solution	Performance Criteria
A1	P1
Unless within a building area on a sealed plan approved under this planning scheme, habitable buildings for a sensitive use within a road or railway attenuation area, must be:	Habitable buildings for sensitive uses within a road or railway attenuation area, must be sited, designed or screened to minimise adverse effects of noise, vibration, light and air emissions from the existing or future major road or rail network, having regard to:
a. within a row of existing habitable buildings for sensitive uses and no closer to the existing or future major road or rail network than the adjoining habitable building; b. an extension which extends no closer to the existing or future major road or rail network than: i. the existing habitable building; or ii. an adjoining habitable building for a sensitive use; or c. located or designed so that external noise levels are not more than the level in Table C3.2 measured in accordance with Part D of the Noise Measurement Procedures Manual, 2nd edition, July 2008.	a. the topography of the site; b. the proposed setback; c. any buffers created by natural or other features; d. the location of existing or proposed buildings on the site; e. the frequency of use of the rail network; f. the speed limit and traffic volume of the road; g. any noise, vibration, light and air emissions from the rail network or road; h. the nature of the road; i. the nature of the development; j. the need for the development; k. any traffic impact assessment; l. any mitigating measures proposed; m. any recommendations from a suitably qualified person for mitigation of noise; and n. any advice received from the rail or road authority.

Table C3.2 identifies the following acceptable limits within a road or railway attenuation area:

- **Railways:** An average noise level over 24 hours ($L_{Aeq, 24 \text{ hour}}$) of 65 dB(A) and a maximum (L_{Amax}) noise level of 87 dB(A) assessed as a single event maximum sound pressure level.

3. Noise

Train noise measurements have been previously undertaken by **pitt&sherry** over a 3 day period, on the Western Line. At a measurement distance of 8.5 metres from the centreline of the railway line the following noise levels from passing trains were identified:

- A typical $L_{Aeq, 10min}$ of 76.4 dB(A) for the 10 minute period in which trains were passing,
- A peak L_{Apeak} of 86.6 dB(A) (i.e., the peak noise level as the train passed), and
- A maximum L_{Amax} of 95.6 dB(A) (i.e., from train horns)

Based on the proposed building plans the minimum distance between the closest façade to the railway line and the centre of the railway line is about 32 metres. The nearest level crossings to the site are about 800 to 1400 metres to the east and west of the property. Assuming the horn is sounded 200 metres prior to the train reaching the crossing and a maximum of 4 trains along the rail over a 24 hour period this provides the following noise levels:

- A $L_{Aeq, 24hour}$ of 49.3 dB(A)
- A L_{Apeak} of 75.1 dB(A)
- A L_{Amax} of 74.0 dB(A)

These noise levels are all below the relevant limit by a significant margin, therefore the proposed dwelling meets the Acceptable Solution A1 (c).

4. Conclusion

Calculated noise levels from trains passing the proposed dwelling are significantly below the noise levels given in the Table C3.2. At the proposed building setback of 37m, the level of ground vibration from the rollingstock currently operating in Tasmania is not sufficient to pose a threat to building structures or annoyance to residents.

As such the proposed dwelling meets the Acceptable Solution A1 (c) of the *Tasmanian Planning Scheme – Northern Midlands*, Clause C3, *Road and Railway Assets Code*.

Please do not hesitate to contact us if you have any queries.

Yours sincerely,



Alexander Seen
Mechanical Engineer / Noise Specialist



Douglas Ford
Principal Mechanical Engineer / Noise Specialist

Author Qualifications

Douglas Ford (Bachelor of Engineering (Mechanical), University of Queensland, MIEAust, CPEng, RPEQ)

Doug has over 30 years' mechanical engineering experience working in design, technical support, research, maintenance and project management roles. He has 13 years' experience in the area of writing noise assessments in support of planning permit applications in Tasmania, industrial and traffic noise modelling and the design of noise attenuation measures for industrial and commercial building applications. He has appeared as an expert witness before the Tasmanian Civil and Administrative Tribunal on a number of occasions and submitted numerous assessment reports to the Tasmanian EPA. He also has significant experience modelling and assessing other emissions including dust, odour, airborne chemical pollutants, and nuisance lighting.

Alexander Seen (Bachelor of Engineering (Marine and Offshore Engineering), Australian Maritime College)

Alex has four years' experience undertaking noise measurements, noise modelling and writing noise assessments. Under the supervision of Douglas Ford, he has completed a wide range of projects including assessments for a number of different industrial and commercial developments, residential subdivisions and road upgrades.



Figure 1: Aerial view of 268 Mill Road and surrounding area.



Figure 2: Proposed building location including setback from railway reserve.

Exhibited

BUSHFIRE HAZARD REPORT

Residential - Single Dwelling - Class 1a
268 Perth Mill Road, Perth
July 2026



Job number: L260628
NL05326

Prepared by: Alex Bowles
Town Planner / Accredited Bushfire Practitioner
BFP-186

Rev. no	Description	Date
1	FINAL	8/07/2026

Disclaimer

This report deals with the potential bushfire risk only, all other statutory assessments sit outside of this report. This report is not to be used for future or further development on the site, other than what has been specifically provided for in the certified plans attached. Nova Land Consulting Pty Ltd accepts no responsibility to any purchaser, prospective purchaser or mortgagee of the property who in any way rely on this report. This report sets out the owner's requirements and responsibilities and does not guarantee that buildings will survive in the event of a bushfire event. If characteristics of the property change or are altered from those which have been identified, the BAL classification may be different to that which has been identified as part of this report. In this event the report is considered to be void.

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Executive Summary

Application is made for a Residential - Single Dwelling. The property is located at 268 Perth Mill Road, Perth. The block is mapped as being within a bushfire prone area, as shown on a bushfire prone area overlay under C13.0 of the Bushfire Prone Areas Code under the *Tasmanian Planning Scheme - Northern Midlands*. A bushfire event at this site or within the immediate area is likely to impact on buildings at this location and subject development to considerable radiant heat and ember attack.

Site access is provided via Perth Mill Road to the south of the site, a sealed road maintained by the Council (as Road Authority).

A hazard management plan has also been prepared and is included as part 2 of this report. This plan outlines the owner's responsibilities to maintain a managed hazard management area around the proposed buildings and any other requirements to ensure compliance with *Director's Determination - Bushfire Hazard Areas Version 1.2*. The purpose of this report is to satisfy the requirements of the *Director's Determination - Bushfire Hazard Areas Version 1.2* by identifying and recommending all relevant bushfire risk mitigation measures in compliance with applicable standards and regulations.

The recommended actions necessary to achieve compliance with the Director's Determination are listed below, and upon their full implementation, the Single Dwelling will be considered compliant with the determination.

Conclusions and recommendations

- a) Construction of the proposed structure to meet **BAL-12.5** requirements in accordance with AS3959:2018 and section 5.8 of this report.
- b) Establishment and maintenance of the Bushfire Hazard Management Area (HMA) as shown in the BHMP, kept in a low-fuel condition as outlined in Section 5.7. To achieve and maintain compliance with **BAL-12.5**, the HMA must be maintained over the **entire property**. These areas must be maintained in a low-fuel state in perpetuity to ensure the continued effectiveness of bushfire risk mitigation measures.
- c) Where the static firefighting water point can be accessed by a fire appliance within 30 metres of the road reserve, no specific property access design or construction requirements apply under Element A. Where fire appliance access is required to extend beyond 30 metres, the property access must be designed and constructed in accordance with Section 5.5 of this report, including the provision of an all-weather accessway, minimum 4-metre carriageway width, required clearances, compliant gradients, and a suitable turning area for fire appliances.
- d) The proposed building must be provided with a dedicated firefighting onsite water supply of 10,000L. Water supply, hoselay distance, hardstand and signage must be in compliance with section 5.6 of this report, ensuring tank and fittings are compliant with this section of the report.

Prior to use of the Residential - Single Dwelling., all recommendations outlined in this report must be fully implemented.

Signed:



Alex Bowles
Town Planner / Accredited Bushfire Practitioner
BFP-186

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Part 1 – Bushfire Report

1. Introduction

The following is a summary of the application information:

Property Address	268 Perth Mill Road, Perth
Certificate of title	187993/3
Property ID (PID)	9940843
Existing Use and Development	Vacant
Zoning	Low Density Residential Zone (10.0)
Effective Planning Scheme	Tasmanian Planning Scheme - Northern Midlands
Proposed Works	Residential - Single Dwelling
Use Class	Residential
BCA Class	Class 1a
Title Size	4883m ²
Identified on a Bushfire Overlay Map	Yes
Priority Vegetation Overlay Map	No
Existing Water Supply	Site is not serviced by hydrants and therefore relies on onsite management.
Vehicular Access	Via existing crossover onto Perth Mill Road

2. Bushfire Assessment

A bushfire assessment is required to determine the potential impacts a development may experience in a bushfire event and provide advice on how to mitigate and reduce these impacts.

An assessment is required where the subject site is located within a bushfire-prone area, and the nature of the development requires consideration and assessment of any risk.

A bushfire-prone area, is an area where a bushfire event has the potential to occur, based on its proximity and separation to vegetation which may be considered as a threat.

In Tasmania, most local Councils have a planning scheme overlay map that identifies bushfire-prone areas. The assessment will determine a Bushfire Attack Level (BAL) rating for development. The BAL is assessed in accordance with Australian Standard AS 3959-2018 *construction of buildings in bushfire-prone areas*.

Development needs to be constructed in accordance with the assessed BAL rating, whilst recommendations relating to water, access and hazard management areas (HMA) need to be followed and implemented

3. Site Description

The land is zoned Low Density Residential Zone (10.0) under the applicable Tasmanian Planning Scheme – Northern Midlands. The site is situated within an established residential lifestyle area, forming part of a linear residential strip along Perth Mill Road.

Surrounding land uses generally comprise detached dwellings on large allotments, consistent with the intended character of the Low-Density Residential Zone (10.0). The broader estate presents as relatively well-managed, with maintained vegetation and established residential improvements.

The site exhibits a general fall toward the south, descending from approximately 164.5 metres AHD at its highest point at the northeastern corner to around 154 metres AHD at the low point of the land on the southwest, representing an average gradient of approximately 6 degrees across the site.

The property relies on on-site servicing for utilities.

Overall, the locality is characterised by a semi-rural residential environment, with spacious lots, managed vegetation, and a consistent pattern of low-density development.



Figure 1 - Location of subject site (Highlighted).

4. The Proposal

The proposal seeks approval for the construction of a single residential dwelling on the subject site. The dwelling has been designed as a single-storey building with a maximum height of approximately 6.6 metres above natural ground level. The primary roof form comprises a 29-degree gable roof over the majority of the dwelling, with the covered deck incorporating a lower 9-degree pitched roof.

The dwelling itself measures approximately 16 metres by 8 metres (128m²) and is complemented by a wrap-around deck extending around most sides of the building. Including the deck, the overall building footprint is approximately 19.5 metres by 12 metres, resulting in a total building footprint of approximately 234m².

Internally, the dwelling provides an open-plan kitchen, living and dining area, together with three bedrooms and two bathrooms.

The dwelling maintains setbacks of approximately 32.845 metres from the front boundary, 10 metres from the eastern side boundary, 23 metres from the northern boundary, and 34.78 metres from the western boundary.

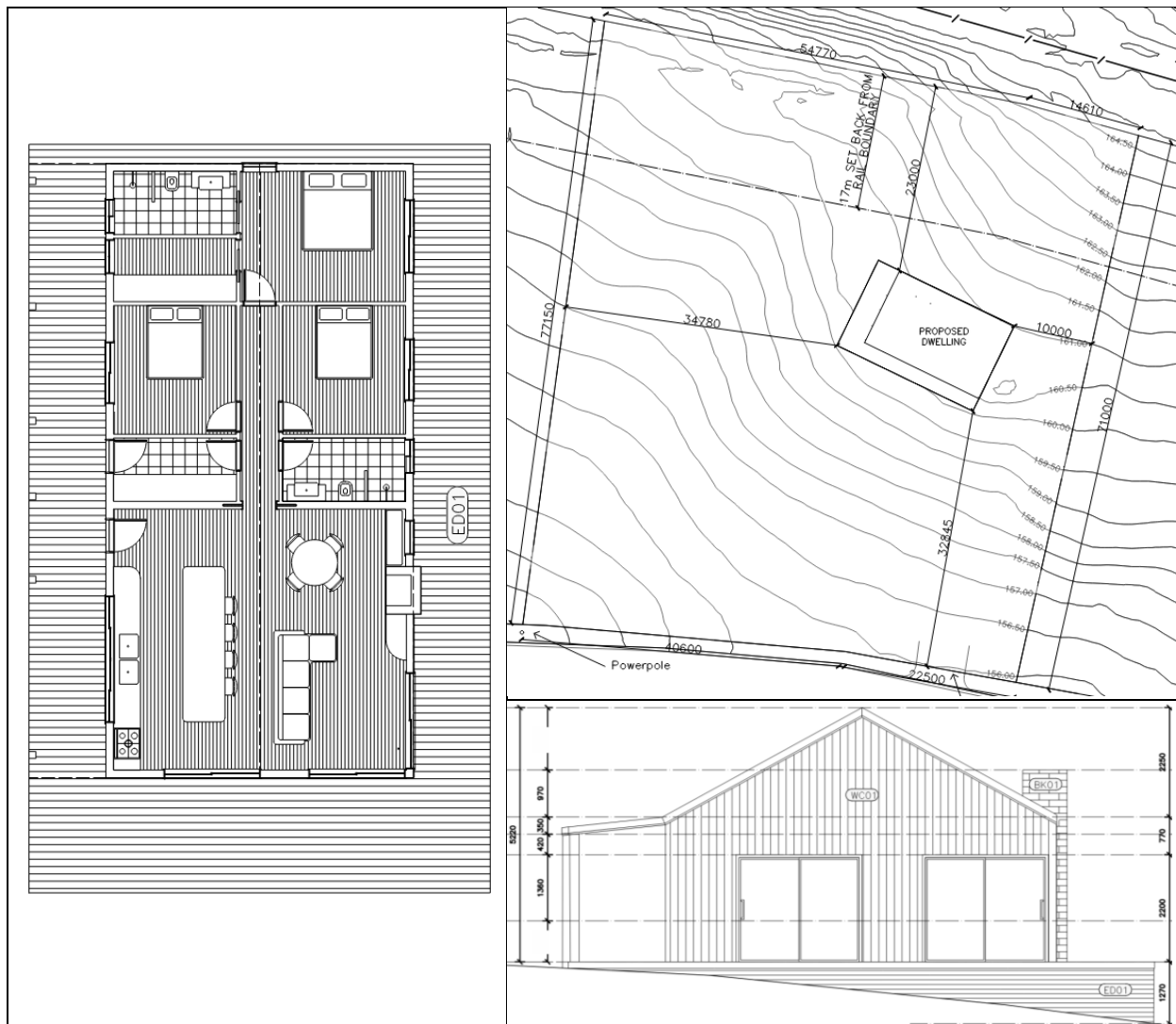


Figure 2 – Proposal Plans - Excerpts of Site Plan, Floor Plan & Elevations

5. Bushfire Site and BAL Assessment

5.1 Vegetation Analysis

The subject site, comprising approximately 4,883m², exhibits a predominantly managed vegetative state reflective of its semi-rural residential context. Vegetation within the site is primarily characterised by maintained, low-lying grass with minimal fuel loading.

Shrubland, comprising low-lying shrubs and blackberry infestations, is present to the south of the site across Perth Mill Road and a strip to the north along the railway corridor, forming part of the prevailing vegetation within the immediate locality. Interspersed within the shrubland to the south are isolated areas of classified grassland. Beyond this vegetation lies an existing watercourse, which is considered an excluded area for the purposes of this assessment.

The residential lifestyle properties to the south-east, east and west are generally considered managed, characterised by maintained lawns and consistent property maintenance. This managed environment also extends to the adjoining road reserve and railway reserve, where ongoing maintenance has limited the establishment and regeneration of unmanaged vegetation.

To the north, beyond the railway corridor, the vegetation exhibits a more established tree canopy with a prominent grassland understorey, more appropriately classified as woodland. Further north, this woodland transitions back to open grassland associated with the broader Devon Hills landscape.

Overall, the site and its surrounding locality comprise a mosaic of managed residential land, shrubland, grassland and woodland vegetation, reflecting the transition between the established rural-residential development along Perth Mill Road and the more expansive rural landscape beyond.

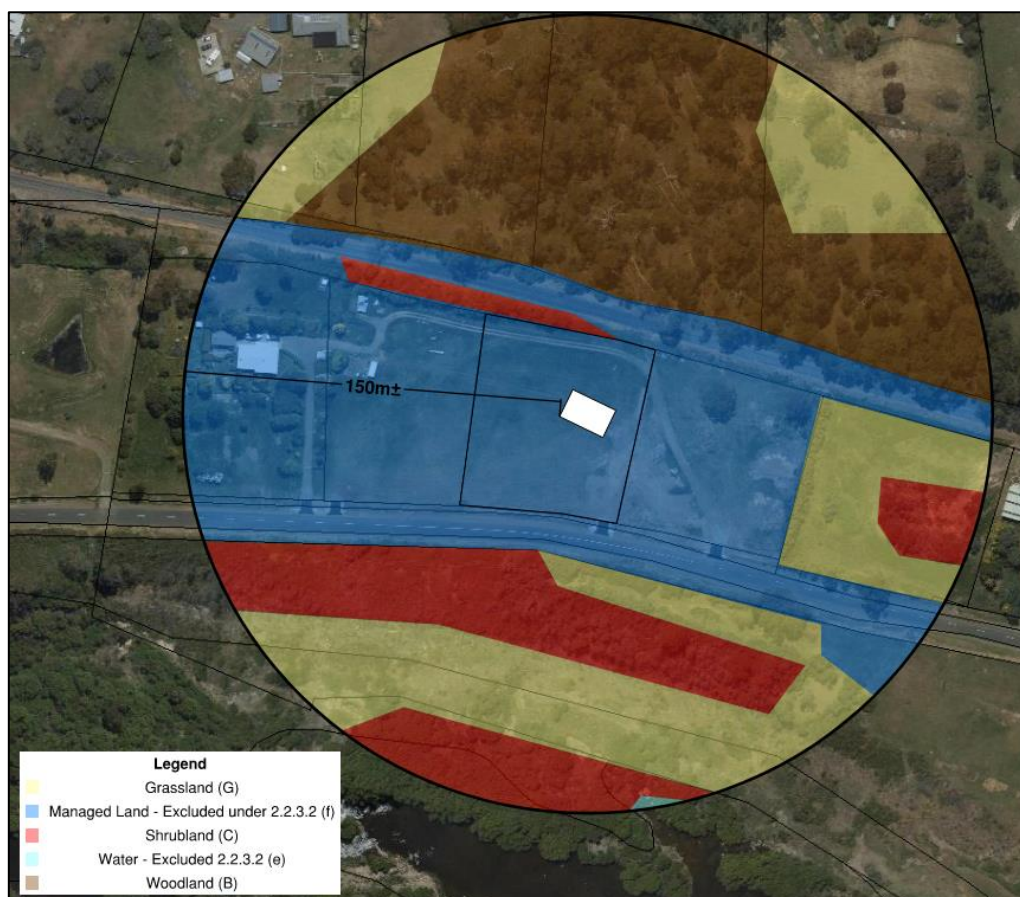


Figure 3 –Class 1a building site with 150m vegetation.

5.2 Slope Analysis

The subject site exhibits a consistent fall toward the south, generally sloping in the direction of the existing South Esk River. The overall gradient across the site is approximately 6 degrees toward the south-west low point, however noting the general slope is to the south of the site.

This slope continues consistently beyond the site toward the watercourse, maintaining an average gradient of approximately 10.6% (around 6 degrees) beneath the classified vegetation. Accordingly, the southern aspect has been assessed as having an effective downslope of greater than 5 degrees and up to 10 degrees for the purposes of the bushfire assessment.

The eastern, western and northern aspects of the proposed building area are generally flat or upslope (approximately 0 degrees) and are not considered to have any meaningful influence on bushfire behaviour. Consequently, the predominant slope influence for bushfire assessment purposes is confined to the southern aspect of the site.

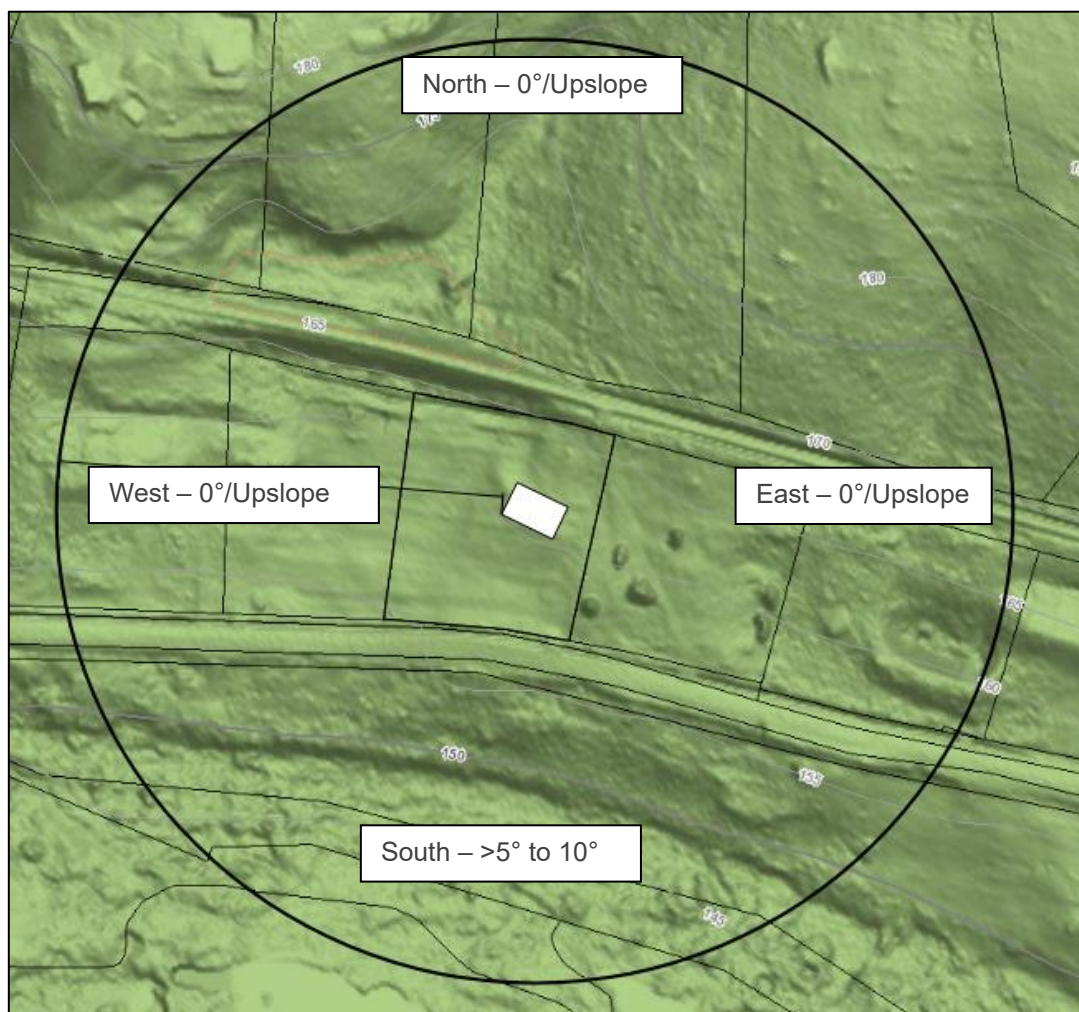


Figure 4 – Slope under bushfire prone vegetation within 150m of site (source: The LISTMap)

5.3 Photos



Figure 5 – View of the adjoining property to the east, demonstrating a well-managed residential allotment with maintained vegetation.



Figure 6 – View of the railway corridor from the north-eastern corner of the site, showing clear evidence of management land within the corridor, with recent slashing and removal of significant vegetation along the boundary with woodland vegetation in the background.



Figure 7 – View across the subject site from the northern boundary looking south, demonstrating the well-managed condition of the site and predominance of low-lying grass.



Figure 8 – View of the adjoining property to the west, illustrating the consistently managed residential landscape and maintained vegetation.



Figure 9 – Classified vegetation along the northern boundary within the rail corridor, showing slightly taller vegetation with blackberry infestations interspersed throughout. A shrubland categorisation is appropriate for this vegetation.



Figure 10 – View of the classified shrubland located to the south of Perth Mill Road.

5.4 BAL Assessment

Fire Danger Index (FDI) for Tasmania is 50

Note 1: Refer to Table 2.3 under AS3959:2018 for description and classification of vegetation.

Note 2: If there is no classified vegetation within 100m of the site then the BAL is LOW for that part of the site.

Vegetation classification (See Table 2.3)	North ☒ North-East ☐	South ☒ South-West ☐	East ☒ South-East ☐	West ☒ North-West ☐
Group A Forest				
Group B Woodland	41m-100m+			
Group C Shrub-land	23m - 30m	51m-90m		
Group D Scrub				
Group E Mallee/Mulga				
Group F Rainforest				
Group G (FDI 50) Grassland Tussock Moorland		50-60m 90m-100m+	78-100m+	
Managed Land (inc. Proposed HMA)	0m-23m 30m-41m (Rail Corridor)	0m-50m	0-78m	0-100m+
Exclusions (where applicable)	Strikeout relevant paragraph descriptor from clause 2.2.3.2.			
	(f)			

Step 3: Distance of the site from classified vegetation (see clause 2.2.4)

Distance to classified vegetation	Show distanced in metres			
	23m	50m	78m	

Step 4: Determine the effective slope of land under the classified vegetation

Effective slope	Upslope			
Slope under the classified vegetation	Upslope/0° ☒	Upslope/0° ☐	Upslope/0° ☒	Upslope/0° ☐
	Downslope			
	>0 to 5° ☐	>0 to 5° ☐	>0 to 5° ☐	>0 to 5° ☐
	>5 to 10° ☐	>5 to 10° ☒	>5 to 10° ☐	>5 to 10° ☐
	>10 to 15° ☐	>10 to 15° ☐	>10 to 15° ☐	>10 to 15° ☐
	>15 to 20° ☐	>15 to 20° ☐	>15 to 20° ☐	>15 to 20° ☐
BAL value for each side of the site providing hazard management areas are achieved	BAL 12.5	BAL 12.5	BAL 12.5	BAL LOW
ASSESSED BAL LEVEL	The BAL level for the proposed Residential - Single Dwelling is BAL 12.5			

5.5 Vehicular Access

The following standards are taken from section 2.3.2 of the *Directors Determination – Bushfire Hazard Areas (version 1.2)*. All vehicular access from the carriageway to the fire fighting water point must comply with the relevant requirements.

Requirements for Property Access	
A. Property access length is less than 30 metres, or access is not required for a fire appliance to access a firefighting water point.	
There are no specified design and construction requirements.	
B. Property access length is 30 metres or greater, or access is required for a fire appliance to access a firefighting water point.	
The following design and construction requirements apply to property access: (a) all-weather construction; (b) load capacity of at least 20 tonnes, including for bridges and culverts; (c) minimum carriageway width of 4 metres; (d) minimum vertical clearance of 4 metres; (e) minimum horizontal clearance of 0.5 metres from the edge of the carriageway, excluding gate posts; (f) cross falls of less than 3 degrees (1:20 or 5%); (g) dips less than 7 degrees (1:8 or 12.5%) entry and exit angle; (h) curves with a minimum inner radius of 10 metres; (i) maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and (j) terminate with a turning area for fire appliances provided by one of the following: (i) a turning circle with a minimum outer radius of 10 metres; (ii) a property access encircling the building; or - a hammerhead “T” or “Y” turning head 4 metres wide and 8 metres long.	

Assessment:

The proposed dwelling has been assessed as being capable of being serviced by a fire appliance from the road reserve, with the nominated firefighting water supply able to be located within 30 metres of the road. Accordingly, the proposal complies with Element A, as property access exceeding 30 metres is not required for a fire appliance to access the firefighting water point. The Bushfire Hazard Management Plan details a compliant Element A solution, including the location of the firefighting water supply relative to the road reserve.

Notwithstanding this assessment, should the firefighting water supply ultimately be relocated to a position more than 30 metres from the road reserve, or should access by a fire appliance beyond 30 metres become necessary, Element B would apply. In this circumstance, the property access would be required to comply with all applicable design and construction requirements of Element B, including an all-weather pavement, minimum 4-metre carriageway width, compliant vertical and horizontal clearances, acceptable gradients and crossfalls, and a compliant turning area for fire appliances.

Accordingly, the proposal demonstrates compliance with Element A as proposed. Any future change to the location of the firefighting water supply that results in

Element B being triggered (i.e. locating the static water supply more than 30m from the road) would require the access to be upgraded to comply with Element B.

5.6 Water Supply

The following standards are taken from section 2.3.3 of the *Directors Determination – Bushfire Hazard Areas (version 1.2)*. A new building or extension constructed within a bushfire prone area, must be provided with a water supply for fire fighting purposes.

Static Firefighting Water Supply

A. Distance between building area to be protected and water supply

The following requirements apply:

- (a) the building to be protected must be located within 90 metres of the firefighting water point of a static water supply; and
- (b) the distance must be measured as a hose lay between the firefighting water point and the furthest part of the building.

B. Static Water Supplies

A static water supply:

- (a) may have a remotely located offtake connected to the static water supply;
- (b) may be a supply for combined use (firefighting and other uses) but the specified minimum quantity of firefighting water must be available at all times;
- (c) must be a minimum of 10,000 litres per building including associated Class 10 Building or deck to be protected. This volume of water must not be used for any other purpose, including firefighting sprinkler or spray systems;
- (d) must be metal, concrete or lagged by non-combustible materials if above ground; and
- (e) if a tank can be located, so it is shielded in all directions in compliance with Section 3.5 of AS 3959, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by:
 - (i) metal;
 - (ii) non-combustible material; or
 - (iii) fibre-cement a minimum of 6 mm thickness.

C. Fittings, pipework and accessories (including stands and tank supports)

Fittings and pipework associated with a firefighting water point for a static water supply must:

- (a) have a minimum nominal internal diameter of 50mm;
- (b) be fitted with a valve with a minimum nominal internal diameter of 50mm;
- (c) be metal or lagged by non-combustible materials if above ground;
- (d) if buried, have a minimum depth of 300mm;
- (e) provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment;
- (f) ensure the coupling is accessible and available for connection at all times;
- (g) ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length);
- (h) ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and

(i) where a remote offtake is installed, ensure the offtake is in a position that is: (i) visible; (ii) accessible to allow connection by firefighting equipment; (iii) at a working height of 450mm – 600mm above ground level; and (iv) protected from possible damage, including damage by vehicles.
D. Signage for static water connections
The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must: (a) comply with water tank signage requirements within AS 2304; or (b) comply with the Tasmania Fire Service Water Supply Signage Guideline published by the Tasmania Fire Service.
E. Hardstand
A hardstand area for fire appliances must be provided: (a) no more than three metres from the firefighting water point measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (b) no closer than six metres from the building to be protected; (c) with a minimum width of three metres and a minimum length of six metres constructed to the same standard as the carriageway; and (d) connected to the property access by a carriageway equivalent to the standard of the property access.

Assessment

The proposed dwelling is required to be provided with a static firefighting water supply, as a reticulated firefighting water supply is not available to service the site.

The Bushfire Hazard Management Plan demonstrates that the proposed dwelling can be serviced by a compliant static water supply. The indicative firefighting water point is located within 90 metres of the furthest part of the dwelling, measured as a hose lay, thereby satisfying the requirements of Element A.

The static water supply is required to provide a minimum dedicated firefighting water volume of 10,000 litres, which must be available at all times and not utilised for any other purpose. The tank is to be constructed of metal or concrete, or non-combustible material.

All fittings, pipework and accessories are to comply with Element C, including the provision of a minimum 50 mm outlet, compliant Storz coupling.

The firefighting water point must also be identified with compliant signage in accordance with Element D, ensuring the connection is readily identifiable by attending fire appliances.

A compliant hardstand is required adjacent to the firefighting water point in accordance with Element E. The hardstand is to be connected to the property access and constructed to the same standard as the accessway, providing safe and convenient access for fire appliances during a bushfire event.

Subject to these requirements being implemented, the proposed static firefighting water supply is considered capable of complying with the requirements of the Director's Determination.

5.7 Requirements for Hazard Management

The following standards are taken from section 2.3.4 of the *Directors Determination – Bushfire Hazard Areas (version 1.2)*. A new building must provide an appropriate hazard management area.

Requirements for Hazard Management Area

A. New buildings on lots provided with a BAL at the time of subdivision.

A new building must:

- (a) be provided with a HMA no smaller than the required separation distances required for BAL-19, except where a higher BAL was approved as part of the subdivision bushfire hazard management plan; and
- (b) have a HMA established in accordance with a certified bushfire hazard management plan

Assessment

The subdivision from which this site originated was approved after the introduction of bushfire planning requirements for subdivisions (registration date of these titles is in 2024). As a result, the site must be designed to achieve a Bushfire Attack Level (BAL) of 19.

In this instance the dwelling has been assigned a Bushfire Attack Level (BAL) of 12.5 based on the hazard management area (HMA) and separation from classified vegetation. A HMA providing the separation distances required for BAL-12.5 has been identified as requiring management area of the **entirety of the subject site**.

The HMA must be established and maintained in accordance with a certified Bushfire Hazard Management Plan (BHMP) and the *Director's Determination – Bushfire Hazard Areas (v1.2)*. Vegetation within this area is to be modified and maintained to:

- Reduce windborne sparks and embers reaching the building;
- Reduce radiant heat at the building; and
- Halt or slow direct flame attack.

The HMA will also provide access for firefighting purposes and must be kept in a minimal fuel condition, free from other hazards that could contribute to bushfire spread.

Requirements for Establishing and Maintaining the HMA

Fuel Management

The property owner must maintain the HMA in accordance with the certified BHMP. This includes:

- Keeping grass to a maximum height of 100 mm and fuel loads below 2 t/ha.
- Ensuring trees and undergrowth are cleared from the immediate vicinity of the building.
- Removing all undergrowth and understorey vegetation (up to 2 m) within the BHMA.
- Using only non-combustible materials (e.g., stone, pebbles) for pathways within 1 m of the building.
- Limiting total shrub cover to no more than 20% of the HMA.
- Maintaining a clear space from the dwelling of at least four times the mature height of any shrubs planted.
- Avoiding planting shrubs in clumps to prevent debris build-up.

Landscaping Guidelines

- Select non-flammable ground covers or succulent-style plants for pathways and landscaped areas. Avoid vegetation that produces fine, easily ignitable fuel, excessive debris, long bark strips, fibrous bark, or overhanging canopies.
- Do not use timber woodchips or other flammable mulches.
- Avoid brush and timber fencing where possible.
- Locate woodpiles, sheds, and other combustible items upslope and well clear of the building.

The HMA is required to be established prior to use of the structure. Once the HMA is implemented, this will ensure compliance with this provision.

5.8 Construction Standards

Section 2.3.1 of the *Director's Determination - Bushfire Hazard Areas (version 1.2)* determines that building work within a Bushfire Prone Area must be designed and constructed in accordance with Australian Standard 3959:2018 and as determined by an appropriate Bushfire Attack Level (BAL) for the site.

BAL 12.5 focuses on protecting the building from ember attack and radiant heat levels exceeding the BAL LOW threshold. The proposed development must comply with the construction requirements for a BAL 12.5 rating in accordance with section 3 & 5 of Australian Standard 3959:2018. In accordance with Section 3.4 of Australian Standard 3959:2018, construction to a higher BAL level is also permitted.

6. Conclusions and Recommendations

This report has been prepared to inform the owner and relevant building service providers of the bushfire protection requirements applicable to the proposed development on the subject site. The land is located within a bushfire-prone area and is therefore subject to the provisions of *AS3959:2018 – Construction of Buildings in Bushfire-Prone Areas* and the *Director's Determination – Bushfire Hazard Areas (v1.2)*.

The attached Bushfire Hazard Management Plan (BHMP) outlines the measures required to mitigate bushfire risk and achieve compliance with the *Director's Determination – Bushfire Hazard Areas (v1.2)* and *AS3959:2018*. These measures provide a structured approach to reducing the potential impacts of bushfire on life and property. While they cannot guarantee survival of the development during a bushfire event, they are designed to give the development the best possible chance of withstanding bushfire conditions when correctly implemented.

The following requirements detailed in this report must be adhered to and maintained in perpetuity to ensure ongoing protection of life and property, including:

- a) Construction of the proposed structure to meet **BAL-12.5** requirements in accordance with *AS3959:2018* and section 5.8 of this report.
- b) Establishment and maintenance of the Bushfire Hazard Management Area (HMA) as shown in the BHMP, kept in a low-fuel condition as outlined in Section 5.7. To achieve and maintain compliance with **BAL-12.5**, the HMA must be maintained over the entire property. These areas must be maintained in a low-fuel state in perpetuity to ensure the continued effectiveness of bushfire risk mitigation measures.
- c) Where the static firefighting water point can be accessed by a fire appliance within 30 metres of the road reserve, no specific property access design or construction requirements apply under Element A. Where fire appliance access is required to extend beyond 30 metres, the property access must be designed and constructed in accordance with Section 5.5 of this report, including the provision of an all-weather accessway, minimum 4-metre carriageway width, required clearances, compliant gradients, and a suitable turning area for fire appliances.
- d) The proposed building must provide a dedicated firefighting onsite water supply of 10,000L. Water supply, hardstand and signage must be in compliance with section 5.6 of this report, ensuring tank and fittings are compliant with this section of the report.

Beyond these mandatory requirements, the landowner is strongly encouraged to prepare and maintain a ***Bushfire Survival Plan***, and to familiarise themselves with their ***Community Protection Plan*** and ***Nearby Safer Place*** as advised by the Tasmanian Fire Service.

A properly prepared and maintained property is far more likely to survive a bushfire than one that is not. The measures outlined in this report represent the minimum standard of preparedness expected under the current regulations and must be implemented without exception.

Relevant Documents

Please note, this report should be read in conjunction with the following documents:

Bushfire Hazard Management Plan, Job No L260628, Dated 8/07/2026.

Drawings prepared by J Pinkerton, Drawings no. 001 to 007 inclusive, dated 22/06/2026

References/Resources

Australian Standards Board. (2018). *AS 3959:2018 – Construction of buildings in bushfire-prone areas*. Standards Australia.

Tasmanian Government. (n.d.). *Director's Determination – Bushfire Hazard Areas* (Version 1.2). Tasmania Government.

Tasmanian Government. (1993). *Land Use Planning and Approvals Act 1993* (Tas.).

Tasmanian Government. (2016). *Building Act 2016* (Tas.).

Tasmanian Government. (n.d.). *Tasmanian Planning Scheme – State Planning Provisions and Local Provisions Schedule*.

Tasmania Fire Service. (2005). *Fire retardant garden plants for the urban fringe and rural areas*. Tasmania Fire Service.

Part 2 – Bushfire Hazard Management Plan

Indicative Scale

- Existing Crossover
- Hardstand Area - 3m x 6m min
- Hazard Management Area
- Indicative Driveway - TBD
- Indicative Hose Lay - No more than 90m
- Proposed Dwelling
- Static Water Supply - 10,000L Tank

- Plan to be read in conjunction with Bushfire Hazard Report By Nova Land Consulting – Single Dwelling – Class 1a, 268 Perth Mill Road, Western Junction, Ref No. L260628, Version 1, Dated 08/07/2026.

- Site is currently vacant.
- Proposal is for a Residential Class 1a Single Dwelling.
- Ensure that all relevant consultants and contractors are provided with a full copy of this plan and supporting report.

- Specified separation distances shown on this plan provide for a **BAL-12.5** solution.

- Habitable building and associated outbuilding must be designed and constructed to comply with AS3959:2018 section 3 for General Requirements and Section 5 for **BAL-12.5** Requirements.

- Higher levels of construction are acceptable.

- As the indicative dedicated Static Firefighting Water Supply is within 30m of the road Row A of Table 2 of the Director's Determination applies.

- Therefore, no specified property access design and construction requirements are required for firefighting purposes.

- Should the tank be required to be located beyond 30m from the road, Row B of Table 2 of the Director's Determination applies, refer to Section 5.5 of Bushfire Report.

- Install a metal or concrete firefighting water tank with a minimum of 10,000 litres of stored water dedicated solely to firefighting purposes. The tank must be fitted with a compliant Storz water connection point located within 90 metres of the furthest element of the habitable building, measured as a hoselay, and accessible within 3 metres of a constructed hardstand. Remote offtakes connected to the static water supply are permitted. Refer to the bushfire report for details of compliant fittings.

- The firefighting water point must be identified with permanently fixed signage compliant with Tasmania Fire Service (TFS) guidelines. Keep the area immediately above and around the connection point free of vegetation.

- Construct hardstand area for fire appliance access to the firefighting water point. Minimum 3m wide, constructed to the same standard as the property access and located <3m from the firefighting water point and >6m from the building to be protected.

Please note: The **entirety** of the land parcel is to be regularly maintained by the owners or occupiers. Within the Bushfire HMA, the following is required to ensure a minimal fuel condition is achieved for the development and is required to be maintained in perpetuity.

- Maintain lawn and grassed areas to a height of less than 100 mm.
- Use non-combustible landscaping materials (e.g. stone, pebbles) within 1 metre of the dwelling and along paths.
- Pine bark, timber woodchip and other flammable mulches must not be used.
- Vegetation along paths to consist of low-flammability, non-combustible ground cover or succulents; avoid fine fuel or debris-producing species.

- Total shrub cover limited to no more than 20% of the available area.
- Maintain a clear space from the dwelling equal to four times the mature height of any shrub planted.
- Avoid clumping of shrubs to prevent build-up of debris.
- Low-flammability plants are acceptable in the Hazard Management Area (HMA), including ornamental and vegetable gardens, ground covers, and maintained lawns.
- Do not plant adjacent to walls, decks, or beneath glazed elements.

- Remove all undergrowth and understorey vegetation (up to 2 m high) within the HMA.
- Prune trees to remove low-hanging branches and maintain horizontal canopy separation.
- Maintain trees and undergrowth clear of the dwelling on all sides.
- Selectively position trees and shrubs in discontinuous rows or clumps to reduce fuel continuity.

- Regularly remove ground fuels, including fallen branches, sticks, leaves.

- Clear accumulated debris from roof gutters.
- Maintain the entire HMA in a minimal fuel condition in perpetuity, ensuring vegetation and hazards do not significantly contribute to bushfire attack.

- Avoid use of brush and timber fencing where possible.
- Store firewood, garden sheds, and other combustible materials upslope and away from the dwelling to reduce bushfire exposure.

Hazard Management Area (HMA)
A protection zone over the **entirety of the title** is required to be established and maintained in perpetuity by the owners.

Indicative
Hoselay - 69m±

3 m wide hardstand for fire access within 3 m of water point, >6 m from building. Constructed to same standard as property access.

Min. 10,000L static water supply for firefighting only (indicative location).

Indicative Driveway -
Location TBD

Site Plan



Bushfire Assessment Stamped Plans

Practitioner: Alex Bowles

Accreditation No.: BFP - 186

Scope of Work : 1 & 2



156 George Street,
Launceston 7250
132 Davey Street,
Hobart 7000

Phone (03) 6709 8116
Email: info@novaland.com.au

Bushfire Hazard Management Plan

Residential - Single Dwelling - Class 1a
268 Perth Mill Road, Perth
CT: 187993/3
PID: 9940843

Certificate Number
NL05326

Notes:

- This BHMP should be read in conjunction with the report undertaken by Nova Land Consulting in relation to this development.

Job Number
L260628

Drawn	AJB
Scale	As shown
Date	8-Jul-26
Edition	1
Sheet	1/1

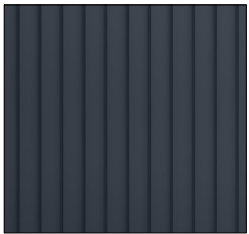
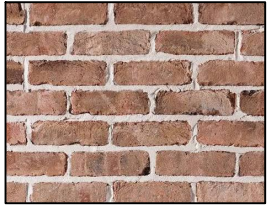
BAL 12.5

Annexure 1 – Proposed Dwelling Plans

SITE INFO

Building Class	Class 1a
Building m2	120m2
Land Title Reference	
Property ID	CT187993-3
Lot Size m2	4883m2
Zoning	Low Density Residential

EXTERIOR FINISHES SCHEDULE

RS01		COLOURBOND Double Lock Standing Seam Cladding Colour: Ironstone
WC01		Timber Cladding Board and Batten Profile Specie/Finish: To be advised.
BK01		Recycled Red Brick Stretcher Bond
ED01		EkoDeck Composite Decking Specie: Backbeach

SITE LOCATION



DRAWING SCHEDULE

001	Title Page
002	Site Survey
003	Site Plan
004	Floor Plan
005	Roof Plan
006	Elevations
007	Elevations

General Notes

DO NOT SCALE from these drawings. Use figured dimensions only. The builder/contractor must verify all dimensions and levels on-site

All work must comply with NCC and Australian Standards

The building and all works are to comply with local council development design and construction specifications

Refer to requirements of the Geotechnical Report (where applicable) for foundation design. Building contractor to confirm "good ground" prior to construction.

Glazed assemblies to comply with AS2047, AS1288 and AS1107

Fire resistance levels are to be in accordance with NCC BCA spec.

All building materials and systems to be installed in accordance to manufacture specifications/recommendations

All brickwork construction to comply with AS3700 and AS2904

The builder shall take all necessary steps to ensure structural stability and water tightness of all new and/or existing structures.

Project Name

Perth Mill Road

Address

268 Perth Mill Road,
Perth TAS 7300

Owner

Samuel Banfield

DA Prepared By

J.Pinkerton

Date

22/06/2026

Scale

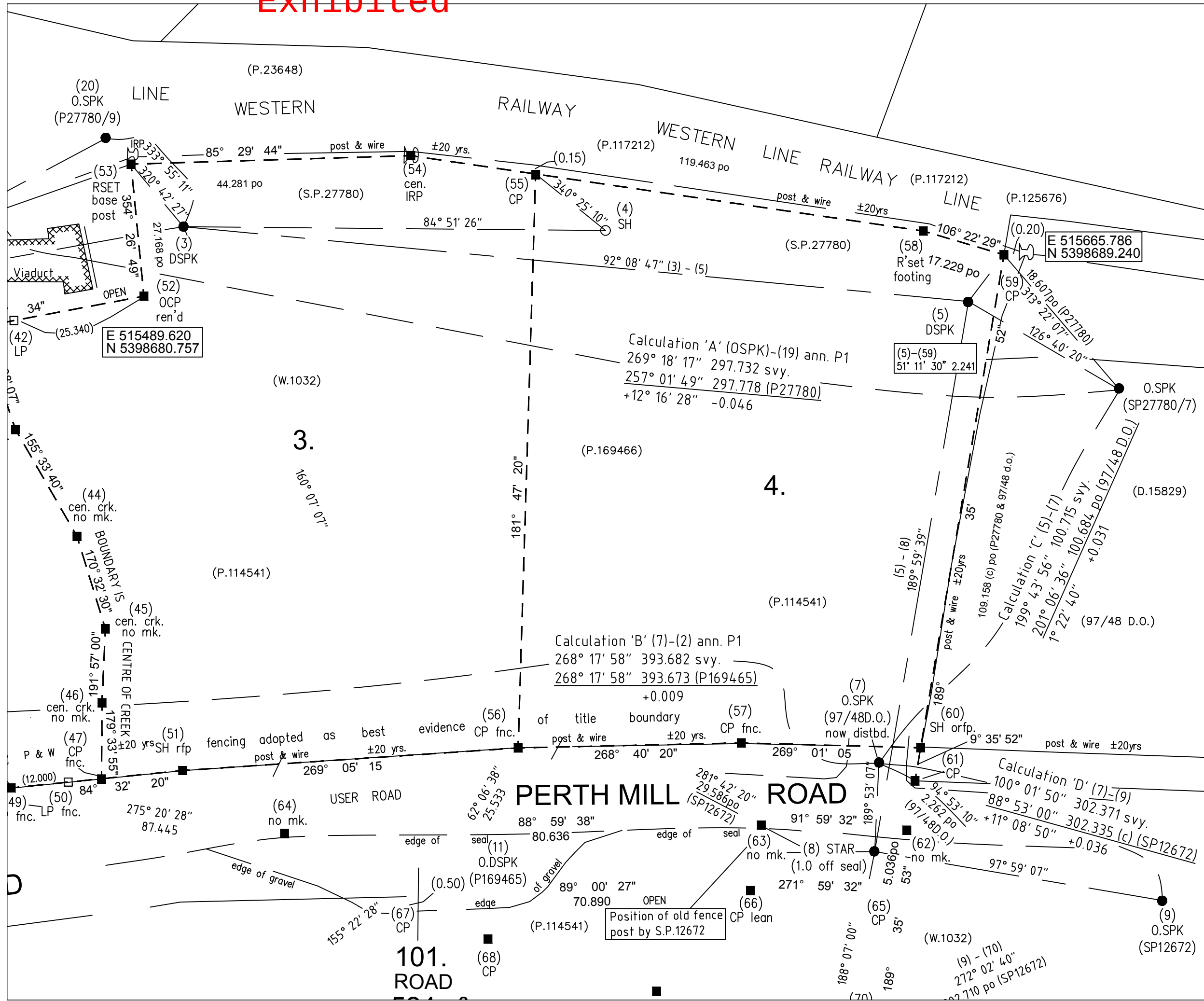
Drawing Title

TITLE
PAGE

Drawing No.

001

Exhibited



General Notes	
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Glazed assemblies to comply with AS2047, AS1288 and AS1107	
Fire resistance levels are to be in accordance with NCC BCA spec.	
All building materials and systems to be installed in accordance to manufacture specifications/recommendations	
All brickwork construction to comply with AS3700 and AS2904	
The builder shall take all necessary steps to ensure structural stability and water tightness of all new and/or existing structures.	
Project Name	Perth Mill Road
Address	268 Perth Mill Road, Perth TAS 7300
Owner	Samuel Banfield
DA Prepared By	J.Pinkerton
Date	22/06/2026
Scale	1:500
Drawing Title	SURVEY PLAN
Drawing No.	002

Exhibited



General Notes

Site coverage from these drawings. Use figured dimensions only. The builder/contractor must verify all dimensions and levels on-site

All work must comply with NCC and Australian Standards

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All building materials and systems to be installed in accordance to manufacture specifications/recommendations

All brickwork construction to comply with AS3700 and AS2904

The builder shall take all necessary steps to ensure structural stability and water tightness of all new and/or existing structures.

Project Name

Perth Mill Road

Address

268 Perth Mill Road,
Perth TAS 7300

Owner

Samuel Banfield

DA Prepared By

J.Pinkerton

Date

22/06/2026

Scale

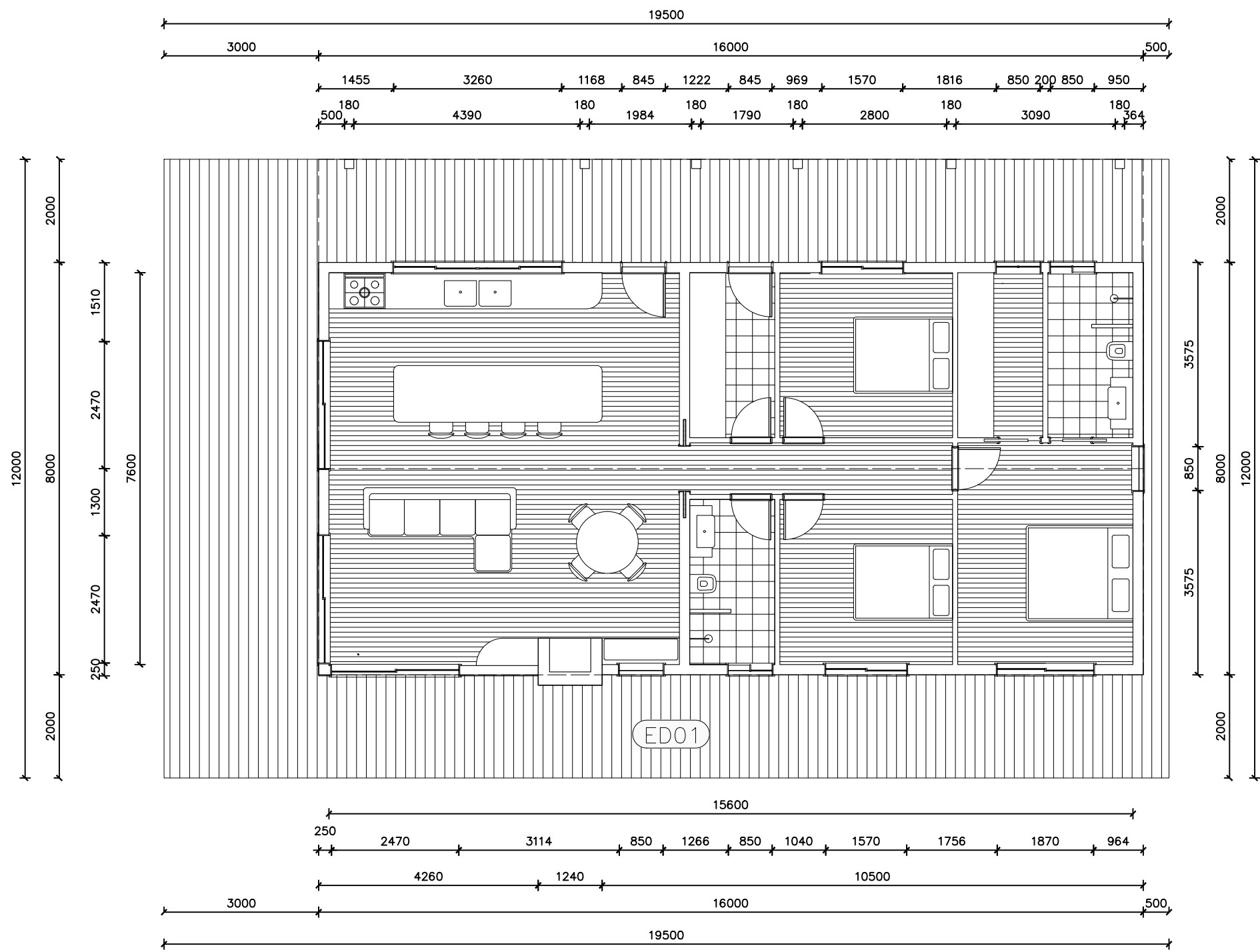
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Drawing Title

SITE
PLAN

Drawing No.

003



1 FLOOR PLAN
004

General Notes

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The builder shall take all necessary steps to ensure structural stability and water tightness of all new and/or existing structures.

Project Name

Perth Mill Road

Address

268 Perth Mill Road,
Perth TAS 7300

Owner

Samuel Banfield

DA Prepared By

J.Pinkerton

Date

22/06/2026

Scale

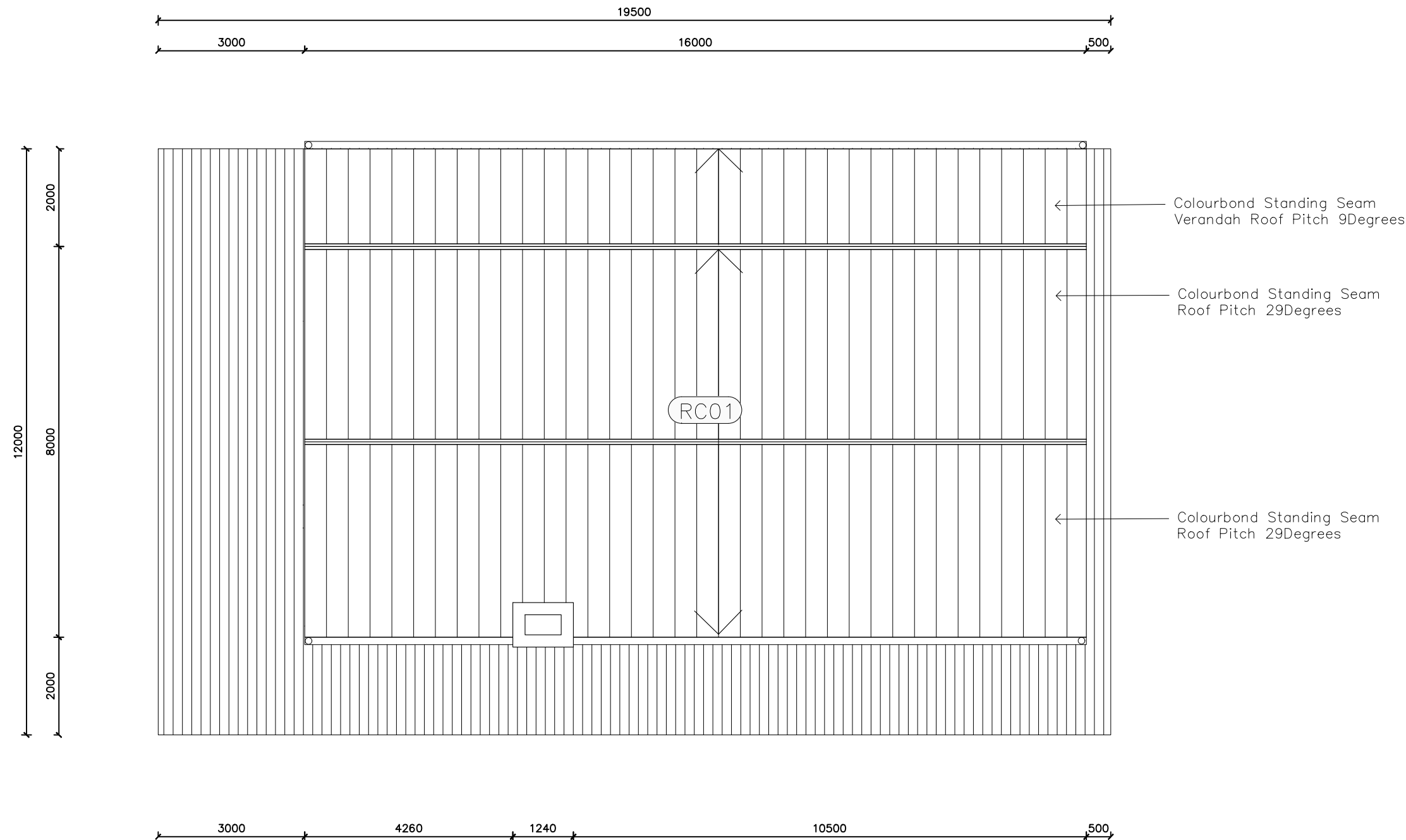
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Drawing Title

FLOOR
PLAN

Drawing No.

004



General Notes

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Project Name

Perth Mill Road

Address

268 Perth Mill Road,
Perth TAS 7300

Owner

Samuel Banfield

DA Prepared By

J.Pinkerton

Date

22/06/2026

Scale

1:100

Drawing Title

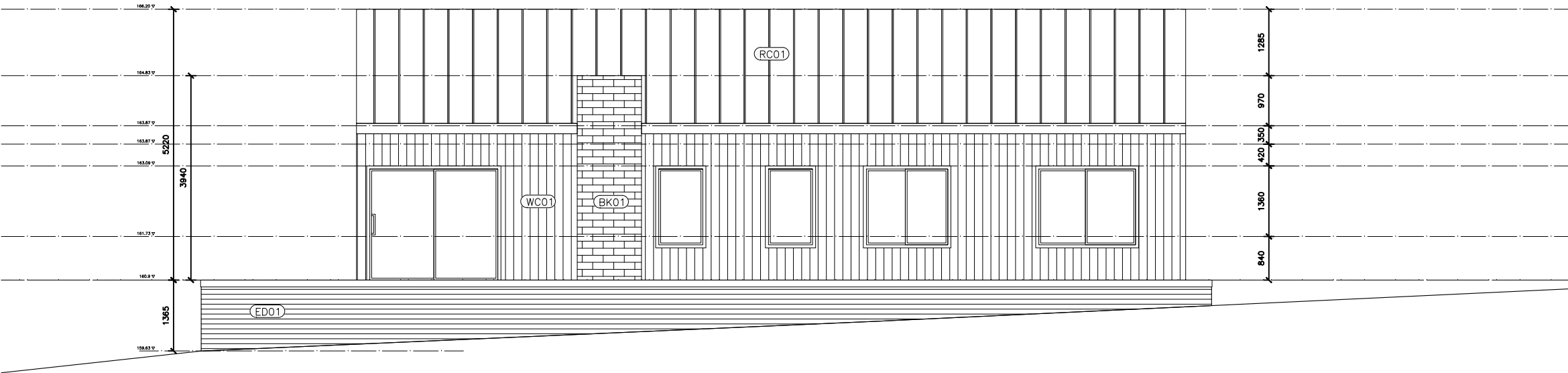
ROOF
PLAN

Drawing No.

005



1 NORTH ELEVATION
006



2 SOUTH ELEVATION
006

General Notes

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Project Name

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268 Perth Mill Road,
Perth TAS 7300

Owner

Samuel Banfield

DA Prepared By

J.Pinkerton

Date

22/06/2026

Scale

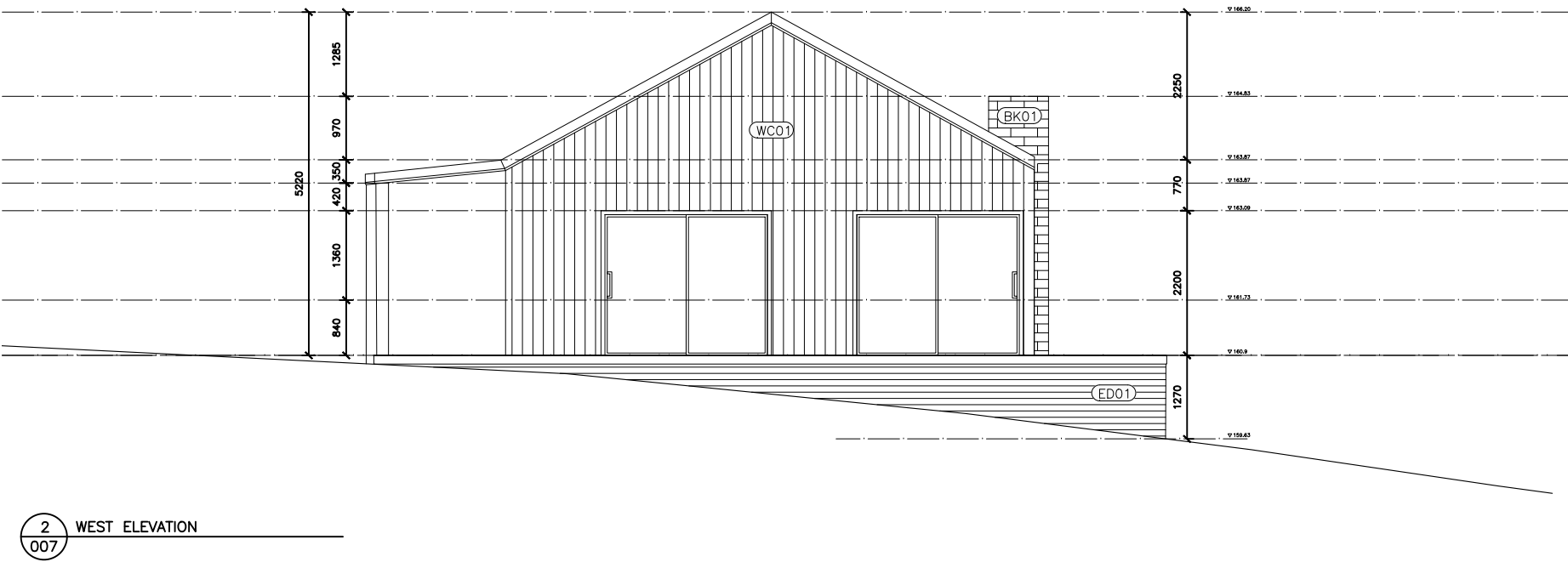
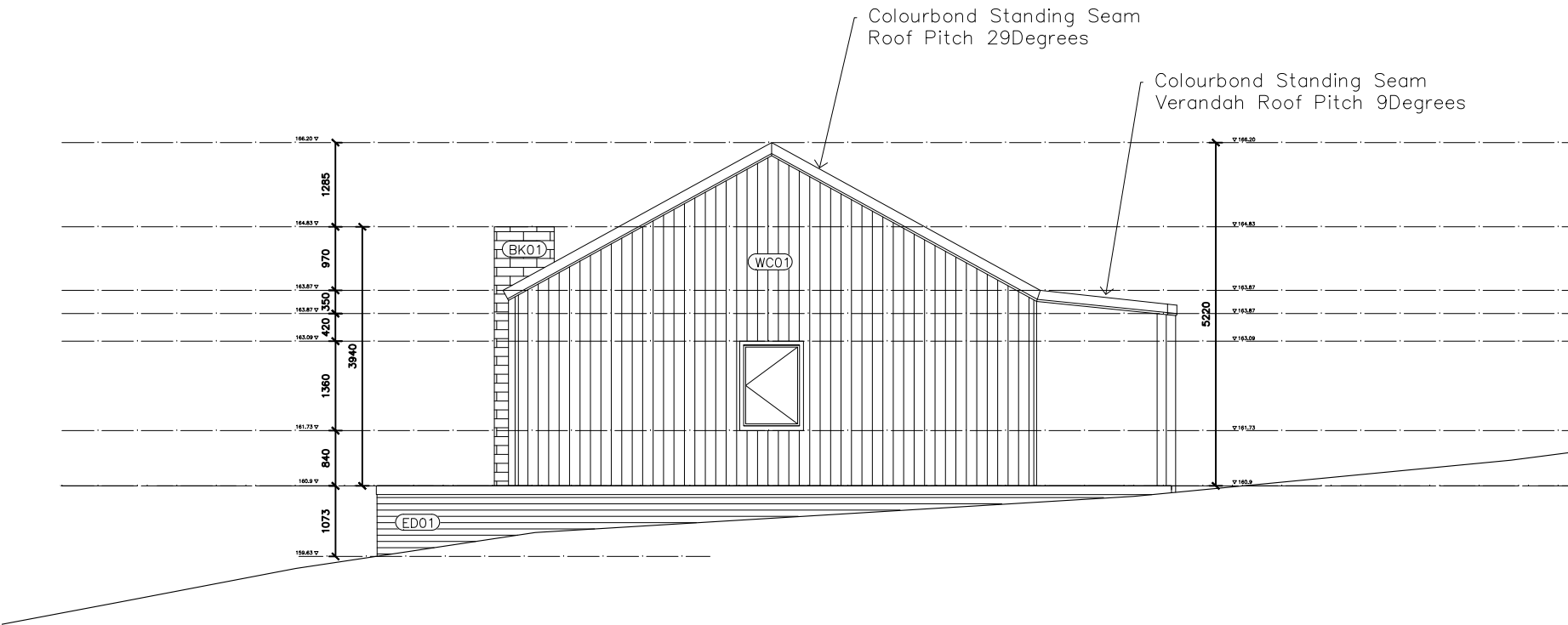
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Drawing Title

ELEVATIONS

Drawing No.

006



General Notes

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Refer to requirements of the Geotechnical Report (where applicable) for foundation design. Building contractor to confirm "good ground" prior to construction.

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Project Name

Perth Mill Road

Address

268 Perth Mill Road,
Perth TAS 7300

Owner

Samuel Banfield

DA Prepared By

J.Pinkerton

Date

22/06/2026

Scale

1:100

Drawing Title

ELEVATIONS

Drawing No.

007

Annexure 2 – Form 55



Land Surveying | Town Planning | Project Management
w novaland.com.au
e info@novaland.com.au

Launceston
156 George Street
Launceston 7250
p (03) 6709 8116

Hobart
Rear studio, 132 Davey
Street
Hobart 7000
p (03) 6227 7968

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent
 Address
 Suburb/postcode

Qualified person details:

Qualified person:
 Address: Phone No:
 Fax No:
 Licence No: Email address:

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

Speciality area of expertise: (description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot No:
 Certificate of title No:
 The assessable item related to this certificate: (description of the assessable item being certified)
 Assessable item includes –
 - a material;
 - a design
 - a form of construction
 - a document
 - testing of a component, building system or plumbing system
 - an inspection, or assessment, performed

Certificate details:

Certificate type: (description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

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

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

OR

Exhibited

 a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:	Bushfire Hazard Management Plan, Job No. L260628, Dated 8/07/2026. Bushfire Hazard Report – 268 Perth Mill Road, Perth, Ref No. L260628, Version 1, Dated 8/07/2026 Drawings prepared by J Pinkerton, Drawings no. 001 to 007 inclusive, dated 22/06/2026
Relevant calculations:	AS 3959:2018 - Method 1 BAL assessment. BAL - 12.5 Refer Bushfire Hazard Report & BHMP
References:	• <i>Australian Standards 3959 – Construction of Buildings in Bushfire Prone Areas, Standards Australia – 2018.</i> • <i>Directors determination – Bushfire Hazard Areas Version 1.2.</i> • <i>Building Regulations 2016 (Part 5 Division 6)</i> • <i>Building Act 2016</i>

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

The bushfire hazard management plan prescribes requirements for construction, hazard management areas, access and water supplies. All requirements must be implemented prior to occupancy.

The dwelling must be designed and constructed to a minimum standard of: **BAL 12.5** under AS3959-2018.

Scope and/or Limitations

1. The scope of this certification is limited to compliance with the requirements of the Director's Determination – Bushfire Hazard Areas V1.2
2. The effectiveness of the measures and recommendations made in the abovementioned documentation are dependent on their implementation and maintenance for the life of the subject building.
3. The assessed Bushfire Attack Level is correct at the time of certification. No liability can be accepted for the actions of other parties that compromise the effectiveness of the recommended hazard management area of construction standards.
4. No guarantee can be provided that building work will survive every bushfire event.

Exhibited

5. No action or reliance is to be placed on this certificate or report other than for which it was commissioned.

I certify the matters described in this certificate.

Qualified person:	<i>Signed:</i> 	<i>Certificate No:</i> NL05326	<i>Date:</i> 9 July 2026
-------------------	---	---	---

Exhibited

GEOTON Pty Ltd
Geotechnical Consultants

Geoton Pty Ltd ABN 81 129 764 629
PO Box 522 Prospect TAS 7250
Unit 24, 16-18 Goodman Court
Invermay TAS 7248
Tel (+61) (3) 6326 5001
www.geoton.com.au

28 August 2025

Reference No. GL25478Ab

Mr Sam Banfield
2/1 Bifrons Court
EAST LAUNCESTON TAS 7250

Dear Sir

**RE: Site Classification & On-site Wastewater Disposal Assessment and Design
268 (Lot 3) Perth Mill Road, Perth**

We have pleasure in submitting herein our report detailing the results of the geotechnical investigation conducted at the above site.

Should you require clarification of any aspect of this report, please contact Anne Foster on 03 6326 5001.

For and on behalf of

Geoton Pty Ltd



Tony Barriera

Director – Principal Geotechnical Engineer

Rev No.	Date	Written By	Reviewed By	Description
Ab	28/08/2025	A Foster	S Shahandeh	Original

Exhibited

Site Classification & On-site Wastewater Disposal Assessment and Design

1 INTRODUCTION

A limited scope investigation has been conducted for Mr Sam Banfield at the site of a proposed residential development at 268 (Lot 3) Perth Mill Road, Perth.

The investigation has been conducted to assess the following:

- The general subsurface conditions at the site and consequently assign a Site Classification in accordance with AS 2870 – 2011 “Residential Slabs and Footings”;
- The surrounding topography and provide a Wind Classification in accordance with AS 4055 – 2021 “Wind Loads for Housing”; and
- The suitability of the site for disposal of domestic wastewater and the design of an on-site wastewater disposal system in accordance with AS/NZS 1547:2012 “On-site Domestic Wastewater Management”.

No plan of the proposed development was provided. We understand that the proposed development will comprise a three-bedroom dwelling to be located within the north-eastern portion of the site.

2 FIELD INVESTIGATION

The field investigation was conducted on 15 August 2025 and involved the drilling of 4 boreholes by 4WD mounted auger rig to the auger refusal or investigated depths of 1.5m to 2.0m.

In-situ vane shear strength tests were conducted in the clay layers encountered in the investigation, with samples of these soils being obtained for subsequent laboratory testing.

The results of the field and laboratory tests are shown on the borehole logs.

The logs of the boreholes are included in Appendix A and their locations are shown on Drawing 1, attached.

3 SITE CONDITIONS

The site comprises 4,883m² in size and is currently undeveloped. The site is located on a south-westerly facing varying slope of approximately 1° to 12°, vegetated with low grass (Plate 1).

The proposed wastewater disposal area is located within the north-western portion of the site on a south-westerly facing slope of approximately 3° to 5°.

Exhibited

Site Classification & On-site Wastewater Disposal Assessment and Design



Plate 1: View of the site looking to the north.

The MRT Digital Geological Atlas, 1: 25,000 Series, indicates that the site is mapped as Quaternary period sediments, with this being generally confirmed by our field investigation.

Examination of the LIST Landslide Planning Map – Hazard Bands Overlay indicates that the site is not within a mapped landslide hazard band.

The investigation indicated that the soil profile is relatively uniform over the site. The boreholes generally encountered clayey silt fill and topsoil to depths of 0.2m to 0.7m, underlain by natural gravelly to silty clay to the auger refusal or investigated depths of 1.5m to 2.0m. Additionally, Borehole BH01 encountered extremely weathered material (rock weathered to such an extent that it has soil properties while retaining a rock fabric) from a depth of 1.7m to the auger refusal depth of 1.8m.

Auger refusal in Boreholes BH01 and BH03 was inferred to be on highly weathered rock.

The boreholes did not encounter any signs of groundwater seepage, however, the soil in Boreholes BH02 and BH04 was wet.

Full details of soil conditions encountered are presented on the borehole logs.

An assessment of the plasticity characteristics of the materials encountered indicates that the clay soils at this site possess a high shrink/swell potential.

Exhibited

Site Classification & On-site Wastewater Disposal Assessment and Design

4 SITE CLASSIFICATION

After allowing due consideration of the site geology, drainage and soil conditions, and the presence of fill to depths greater than 0.4m, the site has been classified as follows:

CLASS P (AS 2870)

However, if all footings are founded through the fill to found uniformly on the natural silty clay, footings may be proportioned to a **CLASS H1**.

Foundation designs in accordance with this classification are to be subject to the overriding conditions of the Foundations section below.

This classification is applicable only for ground conditions encountered at the time of this investigation. If cut or fill earthworks are carried out, then the site classification will need to be re-assessed, and possibly changed.

5 FOUNDATIONS

Particular attention should be paid to the design of footings as required by AS 2870 – 2011.

In addition to normal founding requirements arising from the above classification, particular conditions at this site dictate that the founding medium for all footings would be as follows:

**Silty CLAY (CL/CI) – low to medium plasticity, pale brown or grey
encountered beneath the fill, topsoil and firm clay below 0.4m (BH02) to 0.7m
(bh01) from the existing ground surface**

An allowable bearing pressure of **100 kPa** is available for edge beams, strips, pads and bored piers founded as above.

No structure should be founded on fill without the footings extending through the fill to the natural soils.

If groundwater is encountered in site or footing excavations, it is recommended that subsoil drains are installed discharging to the stormwater system.

If rock is encountered in site or footing excavations, then it is recommended that all footings are founded uniformly to rock.

The site classification presented assumes that the current natural drainage and infiltration conditions at the site will not be markedly affected by the proposed site development work. Care should therefore be taken to ensure that surface water is not permitted to collect adjacent to the structure and that significant changes to seasonal soil moisture equilibria do not develop as a result of service trench construction or tree root action.

Attention is drawn to Appendix B of AS 2870 and CSIRO Building Technical File BTF18 “Foundation Maintenance and Footing Performance: A Homeowner’s Guide” as a guide to maintenance requirements for the proposed structure.

Exhibited

Site Classification & On-site Wastewater Disposal Assessment and Design

Although the borehole data provides an indication of subsurface conditions at the site, variations in soil conditions may occur in areas of the site not specifically covered by the field investigation. The base of all footing or beam excavations should therefore be inspected to ensure that the founding medium meets the requirements referenced herein with respect to type and strength of founding material.

The boreholes were backfilled shortly after being drilled, not allowing time for groundwater seepage flows to develop. Groundwater seepages or higher groundwater levels can occur during and/or after a prolonged period of wet weather or a heavy rainfall event.

6 PLUMBING

Classification for foundations was P Class, due to the presence of uncontrolled fill. Provided there is no loading around the plumbing pipework, the plumbing can be installed proportioned to **Class H1** for soil reactivity purposes.

If during plumbing trench excavations, soft or loose ground is encountered, it is recommended the plumbing trenches be excavated to natural ground and backfilled with granular material to the invert level of the pipework.

7 WIND CLASSIFICATION

After allowing due consideration of the region, terrain, shielding and topography, the site has been classified as follows:

WIND CLASSIFICATION N2 (AS 4055)

REGION	TERRAIN CATEGORY	SHIELDING	TOPOGRAPHY
A	TC2	NS	T0

8 EFFLUENT DISPOSAL

The AS/NZS 1547:2012 and *Building Act 2016*: Director's Guidelines for On-site Wastewater Management Systems provide guidelines for typical wastewater flow allowances under a range of circumstances. The documents recommend a typical wastewater flow of 120L/person/day for households on tank water. As the proposed development is to be a three-bedroom dwelling, a population equivalent of 5 persons with a wastewater design flow rate of **600L/day** has been adopted.

8.1 Permeability of Soil and Soil Category

Based on the findings of the borehole investigation, the soil has been classified as follows:

- Texture – Medium to Heavy Clay (Table E1 from AS/NZS 1547);
- Structure – Massive (Table E4 from AS/NZS 1547); and
- Category – 6 (Table E1 from AS/NZS 1547).

For massive Category 6 soils the indicative permeability (K_{sat}) from AS/NZS1547 Table 5.1 is <0.06m/day.

- Adopted Permeability – 0.02m/day.

8.2 Disposal and Treatment Method

The soils within the proposed effluent disposal area are assessed as having sufficient depth and clay content to provide an adequate attenuation period for the breakdown of pathogens within the treated effluent.

As the site has Category 6 soils that have very low permeability, the site is not suitable for traditional absorption trenches or beds.

As such, the site is considered suitable for the disposal of domestic wastewater by way of a Secondary Treated System (STS) and sub-surface (near surface) irrigation.

8.3 Tank Installation

As the site may be subject to high groundwater levels, care must be taken when installing the STS unit. "AS/NZS 1546.1:2008 Section 3.2.2 – Anchorage," provides guidance on the installation of in-ground tanks, and the specific STS unit manufacturer's installation instructions should be adhered to.

8.4 Design Irrigation Rate

According to AS/NZS 1547 Tables M1 and M2, the recommended design irrigation rate (DIR) for sub-surface irrigation (drip irrigation) on Category 6 soils on a slope of less than 10% is 2mm/day.

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Site Classification & On-site Wastewater Disposal Assessment and Design

8.5 STS and Sub-Surface Irrigation

The disposal area is calculated using the following equation:

$$A = Q/DIR,$$

where A is area in m²;

Q is design daily flow in L/day; and

DIR is design irrigation rate in mm/day.

As the DIR has been set at 2mm/day and the Q at 600L/day, the area required for the effluent disposal field is **300m²** as per the equation above.

There is adequate area for effluent disposal on site.

A reserve (back-up) area of 300m² is available if required.

The sub-surface irrigation is to be constructed as per the cross sections detailed in Drawing WW-06 attached. The design details for the irrigation area are as follows:

- The irrigation lines are generally installed at a depth of 100mm into a minimum depth of 250mm of good quality topsoil. We consider the topsoil encountered as suitable for sub-surface irrigation;
- The irrigation lines are required to have a typical line spacing of 1m; and
- The irrigation area is not to be located through any poorly drained depressions. As such, minor filling/mounding of the irrigation area may be required to ensure there is no localised saturated area.

Guidelines for the design of sub-surface irrigation are outlined in AS/NZS 1547 Appendix M.

The area of the disposal field shall be vegetated with grasses or other suitable vegetation. A list of Tasmanian plants suitable for treated wastewater from STS units is attached as Appendix B. Grass planted within the disposal field shall be maintained, and a mat of dead grass from mowing shall not be allowed to accumulate on the ground surface.

The risk management process is an inherent part of the on-site wastewater disposal design. The on-site wastewater disposal system has been designed by considering the site characteristics and with risk identification in accordance with AS1547:2012. The risk reduction measures are detailed in the report and form the basis of the system selection and design.

As part of the Building Act, the client must specify the STS model and provide the Certificate of Accreditation for that particular model before the proposed development gets approval. A list of accredited STS models can be found on the Tasmanian Consumer, Building and Occupational Services website. An 8EP (equivalent persons) or 10EP model is appropriate for the proposed development.

<https://www.cbos.tas.gov.au/topics/technical-regulation/plumbing-standards/wastewater/aerated-wastewater-treatment-systems>

Exhibited

Site Classification & On-site Wastewater Disposal Assessment and Design

8.6 Setbacks

The minimum separation distances between the disposal area and downslope features are based on Appendix R from AS/NZS 1547 “Recommended Setback Distances for Land Application Systems” and Section 3.1 from the *Building Act 2016: Director’s Guidelines for On-site Wastewater Management Systems*. The following minimum setbacks are required:

- 23.0m from downslope sensitive features such as watercourses;
- 1.5m from upslope and cross-slope property boundaries;
- 5.5m from downslope property boundaries;
- 3.0m from upslope and cross-slope buildings;
- 4.0m from downslope buildings;
- 3.0m from downslope cut batters; and
- 50.0m from groundwater bores.

The closest groundwater bore as mapped on the LIST is 450m from the site.

8.7 Wastewater Recommendations

It is recommended that the following actions are undertaken in looking after your system:

- Minimise domestic water use;
- Minimise the use of non-biodegradable detergents;
- Minimise the use of detergents containing phosphorous (e.g. Calgon or similar);
- Avoid discharging polluting chemicals into wastewater systems; and
- Monitor quality of groundwater.

9 REFERENCES

Department of Justice. (2017). *Building Act 2016 Director’s Guidelines for On-site Wastewater Management Systems v2.0*. Consumer, Building and Occupational Services.

Standards Australia Limited. (2011). *AS 2870: Residential Slabs and Footings Construction*. Sydney: SAI Global Limited.

Standards Australia Limited. (2012). *AS/NZS 1547 On-site Domestic Wastewater Management*. Sydney: SAI Global Limited.

Standards Australia Limited. (2017). *AS 1726: Geotechnical Site Investigation*. Sydney: SAI Global Limited.

Standards Australia Limited. (2021). *AS 4055: Wind Loads for Housing*. Sydney: SAI Global Limited.

Exhibited

Site Classification & On-site Wastewater Disposal Assessment and Design

Attachments:

Limitations of report

Drawing 1: Site Plan

Drawing 2: Wastewater Cross Section

Drawing WW-01: Typical Cut-off Drain Section

Drawing WW-06: Typical Subsurface Irrigation Section

Appendix A: Borehole Logs & Explanation Sheets

Appendix B: List of STS Example Plants

Appendix C: Certificate Forms



Geotechnical Consultants - Limitations of report

These notes have been prepared to assist in the interpretation and understanding of the limitations of this report.

Project specific criteria

The report has been developed on the basis of unique project specific requirements as understood by Geoton and applies only to the site investigated. Project criteria are typically identified in the Client brief and the associated proposal prepared by Geoton and may include risk factors arising from limitations on scope imposed by the Client. The report should not be used without further consultation if significant changes to the project occur. No responsibility for problems that might occur due to changed factors will be accepted without consultation.

Subsurface variations with time

Because a report is based on conditions which existed at the time of subsurface exploration, decisions should not be based on a report whose adequacy may have been affected by time. For example, water levels can vary with time, fill may be placed on a site and pollutants may migrate with time. In the event of significant delays in the commencement of a project, further advice should be sought.

Interpretation of factual data

Site assessment identifies actual subsurface conditions only at those points where samples are taken and at the time they are taken. All available data is interpreted by professionals to provide an opinion about overall site conditions, their likely impact on the proposed development and recommended actions. Actual conditions may differ from those inferred to exist, as it is virtually impossible to provide a definitive subsurface profile which includes all the possible variabilities inherent in soil and rock masses.

Report Recommendations

The report is based on the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until earthworks and/or foundation construction is almost complete and therefore the report recommendations can only be regarded as preliminary. Where variations in conditions are encountered, further advice should be sought.

Specific purposes

This report should not be applied to any project other than that originally specified at the time the report was issued.

Interpretation by others

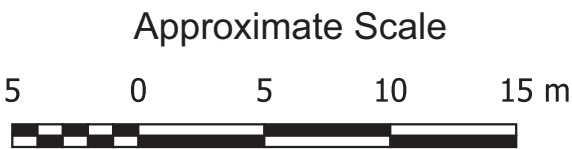
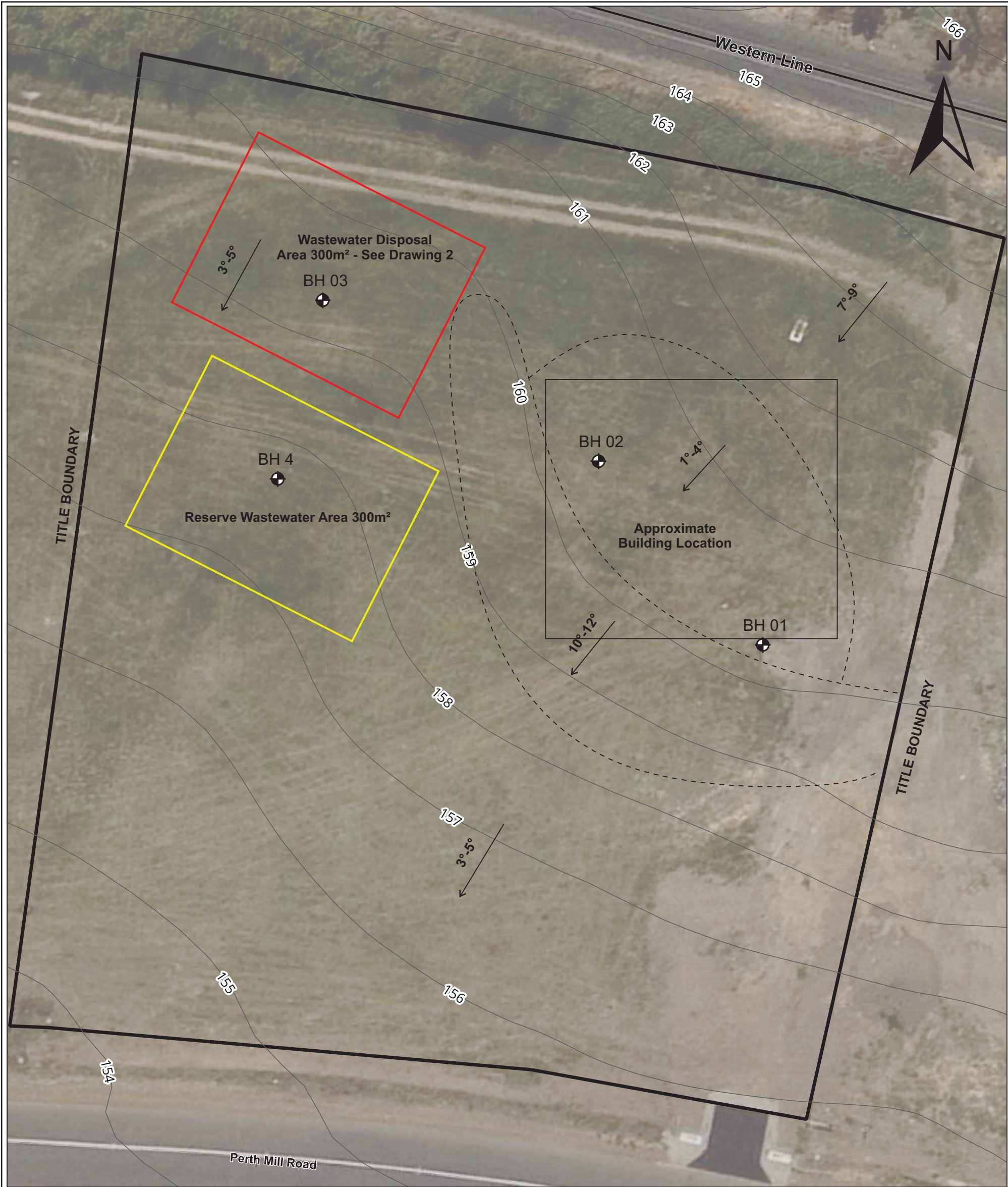
Geoton will not be responsible for interpretations of site data or the report findings by others involved in the design and construction process. Where any confusion exists, clarification should be sought from Geoton.

Report integrity

The report as a whole presents the findings of the site assessment and the report should not be copied in part or altered in any way.

Geoenvironmental issues

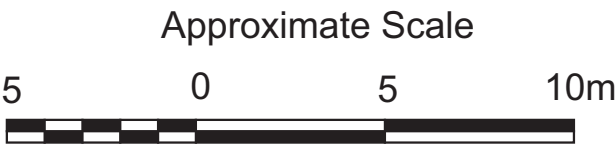
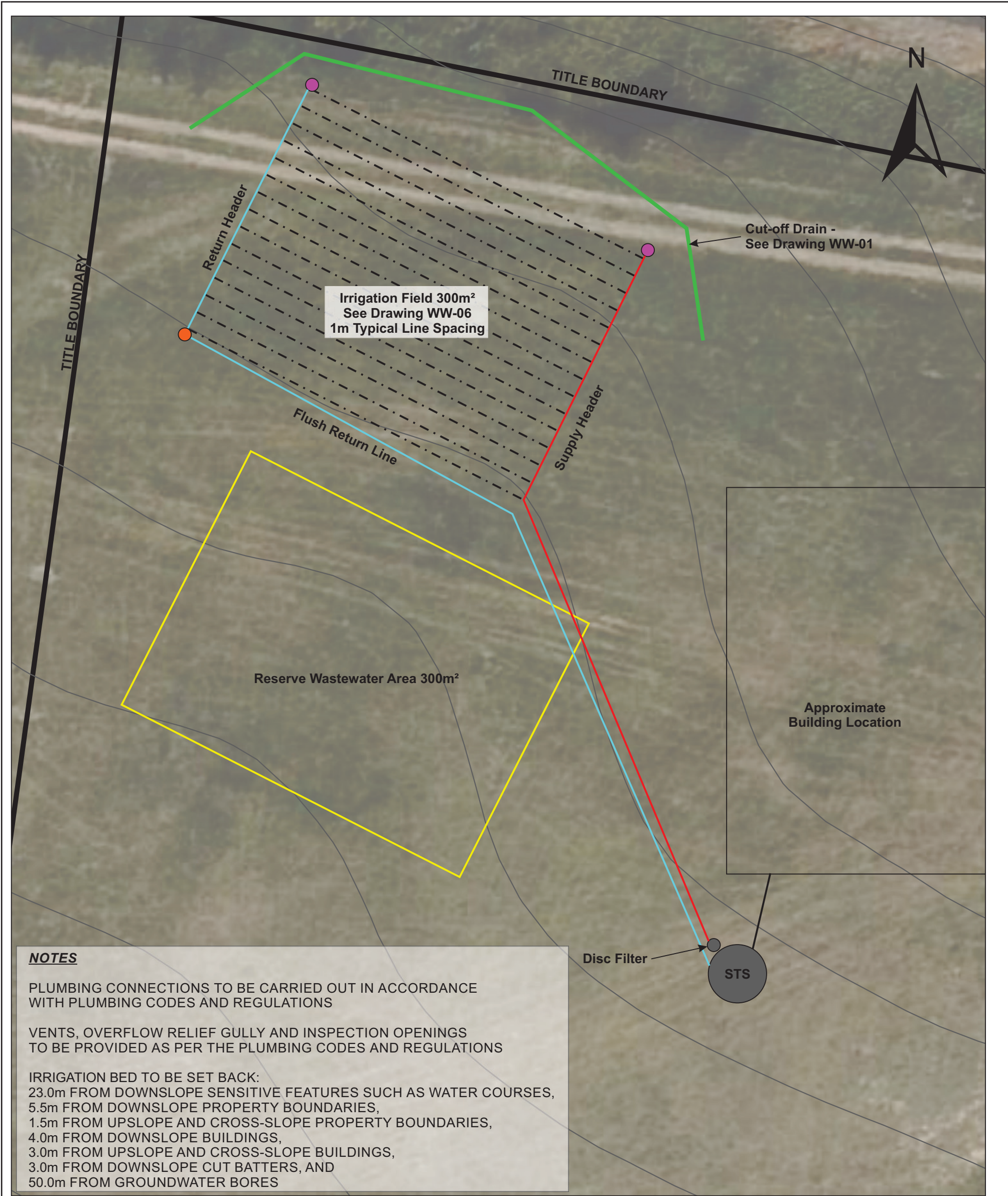
This report does not cover issues of site contamination unless specifically required to do so by the client. In the absence of such a request, Geoton take no responsibility for such issues.



Legend

- BH 01 Approximate Borehole Location
- Approximate Slope angle in Degrees
- Contour in Metres (LiDAR Derived)
- Approximate Change in Slope

GEOTON Pty Ltd	Client: MR SAM BANFIELD			
Date	28/08/2025	Drawn	AF	Project: 268 (LOT 3) PERTH MILL ROAD PERTH
Scale	1:300	Approved	TB	
Original size	A3	Rev		Title: SITE PLAN
				Project no: GL25478A
				Drawing no. 1

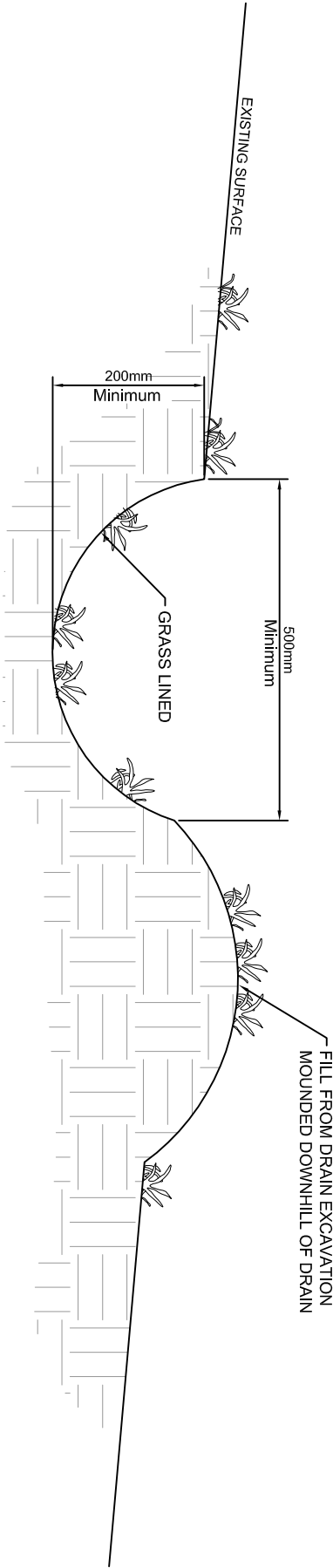


Legend

- 1m Contours (LiDAR Derived)
- Air/Vacuum Release Valve at Highest Point
- Flush Valve at Lowest Point or Return to Tank

GEOTON Pty Ltd				Client: MR SAM BANFIELD	
				Project: 268 (LOT 3) PERTH MILL ROAD PERTH	
Date	28/08/2025	Drawn	AF	Title: WASTEWATER PLAN	
Scale	1:200	Approved	TB		
Original size	A3	Rev		Project no: GL25478A	Drawing no. 2

Exhibited



TYPICAL CUT-OFF DRAIN SECTION

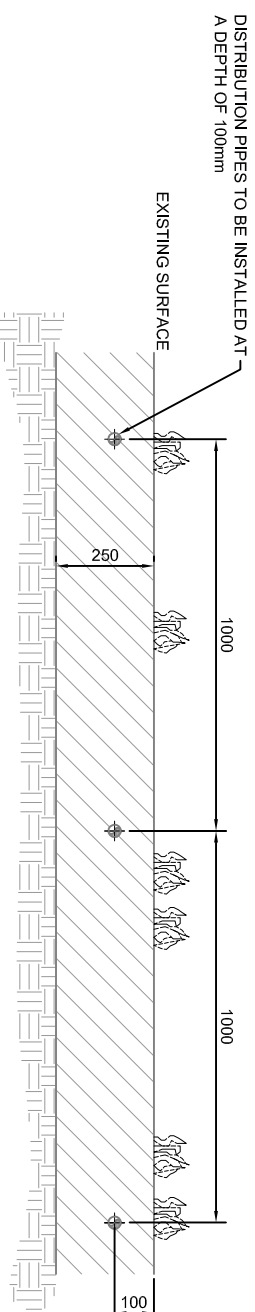
SCALE 1:10

SCALE



DRAWING:	WW-01
DATE:	06/01/25
REVISION:	A
SCALE:	@ A4
DRAWN:	B.STREET
DESIGNED:	T.BARRIERA
APPROVED:	T.BARRIERA

Exhibited



SHALLOW SUB-SURFACE DRIP IRRIGATION CATEGORY 1, 2 & 6 SOILS

SCALE 1:20

SCALE



DRAWING:	WWW-06
DATE:	06/01/2024
REVISION:	A
SCALE:	@ A4
DRAWN:	B. STREET
DESIGNED:	T. BARRIERA
APPROVED:	T. BARRIERA

Exhibited

Appendix A

Borehole Logs

Client : Mr Sam Banfield
 Project : Site Classification & On-site Wastewater Design
 Location : (Lot 3) 268 Perth Mill Road, Perth

Easting : 0.00
 Northing : 0.00
 Inclination : -90deg
 Azimuth :

Sheet : 1 OF 1
 Job No : GL25478A
 Logged : Anne Foster
 Logged Date : 15/08/2025
 Drill Rig : Drilltech - 150mm

Method	Drilling	Water	Samples	Testing	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture condition	Consistency density, index	Structure, Additional Observations
				V (kPa)							
ADV					0.25		.	FILL-Clayey SILT-low plasticity, brown, with fine gravel, root fibres	M-D	St	FILL
					0.50		.	FILL-Gravelly CLAY-low plasticity, brown, sub-rounded	M	VSt	
				R							
					0.75		CL	Silty CLAY-low plasticity, pale brown, trace fine gravel,	M	VSt	NATURAL w ~ PL
					1						
				120							
					1.25		CH	Silty CLAY-high plasticity, brown,	M	VSt	
					1.50						
			D (%)		1.75		CL	Extremely weathered material Silty CLAY soil properties-low plasticity, yellow brown,	D	Fr	
								BH01 Refusal at 1.8 m (auger refusal on inferred highly weathered rock)			

Client : Mr Sam Banfield
Project : Site Classification & On-site Wastewater Design
Location : (Lot 3) 268 Perth Mill Road, Perth

Easting : 0.00
Northing : 0.00
Inclination : -90deg
Azimuth :

Sheet : 1 OF 1
Job No : GL25478A
Logged : Anne Foster
Logged Date : 15/08/2025
Drill Rig : Drilltech - 150mm

Method	Drilling	Water	Samples	Testing	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture condition	Consistency density, index	Structure, Additional Observations
				V (kPa)							
ADV							ML	TOPSOIL-Clayey SILT-low plasticity, dark brown, root fibres	M	St	
					0.25		CI	Gravelly CLAY-medium plasticity, grey, fine sub-rounded	W	F	w > LL
					0.50		CI	Silty CLAY-medium plasticity, grey,	W-M	St	w > PL, w < LL
				80							
					0.75						
			D (%) LL=44% PL=19% PI=25% LS=11.5		1						
				72							
					1.25						
					1.50						
					1.75		CH	becoming yellow brown, increasing plasticity	W-M	VSt	w < PL
								BH02 Terminated at 2 m			

Client : Mr Sam Banfield
Project : Site Classification & On-site Wastewater Design
Location : (Lot 3) 268 Perth Mill Road, Perth

Easting : 0.00
Northing : 0.00
Inclination : -90deg
Azimuth :

Sheet : 1 OF 1
Job No : GL25478A
Logged : Anne Foster
Logged Date : 15/08/2025
Drill Rig : Drilltech - 150mm

Method	Drilling	Water	Samples	Testing	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture condition	Consistency density, index	Structure, Additional Observations
ADV					0.25		ML	TOPSOIL-Clayey SILT-low plasticity, dark brown, root fibres	M	St	
					0.50		CL	Silty CLAY-low plasticity, pale brown, with fine gravel, trace cobbles	M	VSt	w ~ PL
					0.75						
					1		CL	becoming orange,	M	VSt	
					1.25		CI	Silty CLAY-medium plasticity, brown mottled orange, trace cobbles	M	VSt	
							CI		D	VSt	poor spoil recovery
								BH03 Refusal at 1.5 m (auger refusal on inferred highly weathered rock)			

Client : Mr Sam Banfield
Project : Site Classification & On-site Wastewater Design
Location : (Lot 3) 268 Perth Mill Road, Perth

Easting : 0.00
Northing : 0.00
Inclination : -90deg
Azimuth :

Sheet : 1 OF 1
Job No : GL25478A
Logged : Anne Foster
Logged Date : 15/08/2025
Drill Rig : Drilltech - 150mm

Method	Drilling	Water	Samples	Testing	Depth (m)	Graphic Log	Classification Code	Material Description	Moisture condition	Consistency density, index	Structure, Additional Observations
ADV							ML	TOPSOIL-Clayey SILT-low plasticity, dark brown, root fibres	M	St	
					0.25		CL	Silty CLAY-low plasticity, pale brown,	M	VSt	w ~ PL
					0.50		CL	trace fine gravel,	W-M	St	w > PL, w < LL
					0.75						
					1		CI	Silty CLAY-medium plasticity, pale brown, trace fine gravel,	W-M	St	
					1.25		CI		M	VSt	w ~ PL
								BH04 Terminated at 1.5 m			

Investigation Log Explanation Sheet

METHOD – BOREHOLE

TERM	Description
AS	Auger Screwing*
AD	Auger Drilling*
RR	Roller / Tricone
W	Washbore
CT	Cable Tool
HA	Hand Auger
DT	Diatube
B	Blank Bit
V	V Bit
T	TC Bit

* Bit shown by suffix e.g. ADT

METHOD – EXCAVATION

TERM	Description
N	Natural exposure
X	Existing excavation
H	Backhoe bucket
B	Bulldozer blade
R	Ripper
E	Excavator
HT	Hand Tools

SUPPORT

TERM	Description
M	Mud
N	Nil
C	Casing
S	Shoring

PENETRATION

1	2	3	4	
				No resistance ranging to Refusal

WATER

Symbol	Description
	Water inflow
	Water outflow
	17/3/08 water on date shown

NOTES, SAMPLES, TESTS

TERM	Description
U ₅₀	Undisturbed sample 50 mm diameter
U ₆₃	Undisturbed sample 63 mm diameter
U ₈₁	Undisturbed sample 81 mm diameter
D	Disturbed sample
N	Standard Penetration Test (SPT)
N*	SPT – sample recovered
N _c	SPT with solid cone
V	Vane Shear
PP	Pocket Penetrometer
P	Pressometer
B _s	Bulk sample
E	Environmental Sample
R	Refusal – Material cannot be penetrated
DCP	Dynamic Cone Penetrometer (blows/100mm)
PL	Plastic Limit
LL	Liquid Limit
LS	Linear Shrinkage

CLASSIFICATION SYMBOLS AND SOIL DESCRIPTION

Based on AS 1726:2017

MOISTURE

TERM	Description
D	Dry
M	Moist
W	Wet

CONSISTENCY/DENSITY INDEX

TERM	Description
VS	very soft
S	soft
F	firm
St	stiff
VSt	very stiff
H	hard
Fr	friable
VL	very loose
L	loose
MD	medium dense
D	dense
VD	Very dense

Soil Description Explanation Sheet (1of 2)

DEFINITION

In engineering terms, soil includes every type of uncemented or partially cemented inorganic or organic material found in the ground. In practice, if the material can be remoulded or disintegrated by hand in its field condition or in water it is described as a soil. Other materials are described using rock description terms.

CLASSIFICATION SYMBOL AND SOIL NAME

Soils are described in accordance with the AS 1726: 2017 as shown in the table on Sheet 2.

PARTICLE SIZE DEFINITIONS

NAME	SUBDIVISION	SIZE (mm)
BOULDERS		>200
COBBLES		63 to 200
GRAVEL	Coarse	19 to 63
	Medium	6.7 to 19
	Fine	2.36 to 6.7
SAND	Coarse	0.6 to 2.36
	Medium	0.21 to 0.6
	Fine	0.075 to 0.21
SILT		0.002 to 0.075
CLAY		<0.002

MOISTURE CONDITION

Coarse Grained Soils

Dry Non-cohesive and free running.

Moist Soil feels cool, darkened in colour.
Soil tends to stick together.

Wet As for moist but with free water forming when handling.

Fine Grained Soils

Moist, dry of Plastic Limited – $w < PL$

Hard and friable or powdery.

Moist, near Plastic Limit – $w \approx PL$

Soils can be moulded at a moisture content approximately equal to the plastic limit.

Moist, wet of Plastic Limit – $w > PL$

Soils usually weakened and free water forms on hands when handling.

Wet, near Liquid Limit - $w \approx LL$

Wet, wet of Liquid Limit - $w > LL$

CONSISTENCY TERMS FOR COHESIVE SOILS

TERM	UNDRAINED STRENGTH s_u (kPa)	FIELD GUIDE
Very Soft	≤ 12	Exudes between the fingers when squeezed in hand
Soft	12 to 25	Can be moulded by light finger pressure
Firm	25 to 50	Can be moulded by strong finger pressure
Stiff	50 to 100	Cannot be moulded by fingers
Very Stiff	100 to 200	Can be indented by thumb nail
Hard	>200	Can be indented with difficulty by thumb nail
Friable	–	Can be easily crumbled or broken into small pieces by hand

RELATIVE DENSITY OF NON-COHESIVE SOILS

TERM	DENSITY INDEX (%)
Very Loose	≤ 15
Loose	15 to 35
Medium Dense	35 to 65
Dense	65 to 85
Very Dense	> 85

DESCRIPTIVE TERMS FOR ACCESSORY SOIL COMPONENTS

DESIGNATION OF COMPONENT	IN COARSE GRAINED SOILS		IN FINE GRAINED SOILS	TERM
	% Fines	% Accessory coarse fraction	% Sand/ gravel	
Minor	≤ 5	≤ 15	≤ 15	Trace
	>5, ≤ 12	>15, ≤ 30	>15, ≤ 30	With
Secondary	>12	>30	>30	Prefix

SOIL STRUCTURE

ZONING		CEMENTING	
Layer	Continuous across the exposure or sample.	Weakly cemented	Easily disaggregated by hand in air or water.
Lens	Discontinuous layer of different material, with lenticular shape.	Moderately cemented	Effort is required to disaggregate the soil by hand in air or water.
Pocket	An irregular inclusion of different material.		

GEOLOGICAL ORIGIN

WEATHERED IN PLACE SOILS

Extremely Weathered material	Material is weathered to such an extent that it has soil properties. Structure and/or fabric of parent rock material retained and visible.
Residual soil	Structure and/or fabric of parent rock material not retained and visible.

TRANSPORTED SOILS

Aeolian soil	Carried and deposited by wind.
Alluvial soil	Deposited by streams and rivers.
Colluvial soil	Soil and rock debris transported downslope by gravity.
Estuarine soil	Deposited in coastal estuaries, and including sediments carried by inflowing rivers and streams, and tidal currents.
Fill	Man-made deposit. Fill may be significantly more variable between tested locations than naturally occurring soils.
Lacustrine soil	Deposited in freshwater lakes.
Marine soil	Deposited in a marine environment.

Soil Description Explanation Sheet (2 of 2)

SOIL CLASSIFICATION INCLUDING IDENTIFICATION AND DESCRIPTION

FIELD IDENTIFICATION PROCEDURES (Excluding particles larger than 63 mm and basing fractions on estimated mass)					GROUP SYMBOL	PRIMARY NAME	
COARSE GRAINED SOIL More than 65% of soil excluding oversize fraction is larger than 0.075 mm	(A 0.075 mm particle is about the smallest particle visible to naked eyes)	GRAVEL More than half of coarse fraction is larger than 2.36 mm	CLEAN GRAVEL (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate particle sizes	GW	GRAVEL	
				Predominantly one size or a range of sizes with some intermediate sizes missing	GP	GRAVEL	
			GRAVEL WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML and MH below)	GM	Silty GRAVEL	
				Plastic fines (for identification procedures see CL, CI and CH below)	GC	Clayey GRAVEL	
		SAND More than half of coarse fraction is smaller than 2.36 mm	CLEAN SAND (Little or no fines)	Wide range in grain size and substantial amounts of all intermediate sizes	SW	SAND	
				Predominantly one size or a range of sizes with some intermediate sizes missing	SP	SAND	
			SAND WITH FINES (Appreciable amount of fines)	Non-plastic fines (for identification procedures see ML and MH below)	SM	Silty SAND	
				Plastic fines (for identification procedures see CL, CI and CH below)	SC	Clayey SAND	
FINE GRAINED SOIL More than 35% of soil excluding oversize fraction is smaller than 0.075 mm	(A 0.075 mm particle is about the smallest particle visible to naked eyes)	IDENTIFICATION PROCEDURES ON FRACTIONS <0.075 mm					
			DRY STRENGTH	DILATANCY	TOUGHNESS		
		SILT & CLAY (low to medium plasticity, LL ≤ 50)	None to Low	Slow to Rapid	Low	ML	SILT
			Medium to High	None to Slow	Medium	CL, CI	CLAY
			Low to Medium	Slow	Low	OL	ORGANIC SILT
		SILT & CLAY (high plasticity, LL > 50)	Low to Medium	None to Slow	Low to Medium	MH	SILT
			High to Very High	None	High	CH	CLAY
			Medium to High	None to Very Slow	Low to Medium	OH	ORGANIC CLAY
		Highly Organic Soil	Readily identified by colour, odour, spongy feel and frequently by fibrous texture.			Pt	PEAT
		• LL – Liquid Limit.					

• LL – Liquid Limit.

COMMON DEFECTS IN SOILS

TERM	DEFINITION	DIAGRAM	TERM	DEFINITION	DIAGRAM
PARTING	A surface or crack across which the soil has little or no tensile strength. Parallel or sub parallel to layering (e.g. bedding). May be open or closed.		SOFTENED ZONE	A zone in clayey soil, usually adjacent to a defect in which the soil has a higher moisture content than elsewhere.	
FISSURE	A surface or crack across which the soil has little or no tensile strength, but which is not parallel or sub parallel to layering. May be open or closed. May include desiccation cracks.		TUBE	Tubular cavity. May occur singly or as one of a large number of separate or inter-connected tubes. Walls often coated with clay or strengthened by denser packing of grains. May contain organic matter.	
SHEARED SEAM	Zone in clayey soil with roughly parallel near planar, curved or undulating boundaries containing closely spaced, smooth or slickensided, curved intersecting fissures which divide the mass into lenticular or wedge-shaped blocks.		TUBE CAST	An infilled tube. The infill may be uncemented or weakly cemented soil or have rock properties.	
SHEARED SURFACE	A near planar curved or undulating, smooth, polished or slickensided surface in clayey soil. The polished or slickensided surface indicates that movement (in many cases very little) has occurred along the defect.		INFILLED SEAM	Sheet or wall like body of soil substance or mass with roughly planar to irregular near parallel boundaries which cuts through a soil mass. Formed by infilling of open defects.	

Exhibited

Appendix B

STS Example Plants

Wastewater Treatment Units

Tasmanian Plants suitable for Water from Wastewater Treatment Units

Water from septic tanks and aerated wastewater treatment units such as Biocycle, Envirocycle or other may contain salts, boron and disease bearing microbes. The major ingredients of most cleaning fluids are various salts, of which common kitchen salt (sodium chloride) is the least common. These salts may have large concentrations in wastewater, which can have a detrimental effect on plants. The survival of plants will depend on the concentrations of salts. Long-term build up of chemicals and salts in the soil will adversely affect any plantings.

We can't guarantee these plants will survive but they are tolerant to reasonable amounts of the main offenders and will tolerate wet conditions.

Below is a list of plants to help make an attractive garden bed for your wastewater treatment area.

PLANTS 1 – 6m

Acacia mucronata

Variable willow wattle, Narrow leaf wattle

An upright or spreading, medium to tall shrub 3-4m X 2-3m. Quick growing. Profuse cream to yellow flowers in spring, showy. Attracts seed eating birds. Drought tolerant.

Acacia verticillata

Prickly Moses

Prickly shrub to 2m. Useful habitat plant and very attractive in flower.

Banksia marginata

Honeysuckle, Silver banksia

Evergreen shrub or small tree with attractive narrow, smooth edged leaves which are square or notched at the end and silvery beneath. Greenish yellow cones of flowers that last as cut flowers. Grows well in sandy soil. Strong upright growth.

Bauera rubioides

Dog Rose

Hardy small to medium dense shrub. 1-2m X 1-2m wide with masses of dainty pink flowers, flowering most of year, attracting butterflies. Grows well in wet or moist soils, prefers acid soils. Likes full or filtered sun. Good coastal plant. Frost tolerant. Prune regularly. Good erosion control.

Callistemon pallidus

Lemon Bottlebrush

Evergreen medium shrub, very upright with silky leaves that become smooth with age. Lovely lemon yellow bottlebrushes in spring and summer. Likes a dry or moist position. Tolerates full or filtered sunlight. Attracts nectar eating birds.

Callitris oblonga

Cypress pine, South esk pine

This is one of Australia's native conifers. It has an attractive shrubby shape and is suitable for use in the garden as a fast growing hedge, since it can be pruned to shape. It is also useful for gardens where the soil is rocky and sandy but will tolerate a range of soils, providing the drainage is good.

Correa backhousiana

Velvet correa

A dense, bushy, spreading shrub to 1.5m high by 2m wide. Leaves are glossy green on top, rusty coloured underneath. Greenish cream bell flowers in winter. Spring bird attracting. Tolerates lime and coastal plantings. Usually frost resistant.

Leptospermum lanigerum

Woolley tea-tree

Hardy medium to large shrub 2.5 to 5m high x 1.2-3m wide, massed with white flowers during spring. Soft grey foliage. Prefers moist to wet soils with good drainage and will grow well in full or filtered sun. Attracts butterflies and seed eating birds. Tolerates light snow, smog and frost.

Exhibited

Melaleuca ericifolia

A very hard, fast growing small evergreen tree suited to most soils and aspects. Suitable for poorly drained or saline soils and withstands coastal exposure. Needle-like leaves and 2-3cm long cream flower spikes, in spring and early summer. Ideal for planting as a screen.

Melaleuca gibbosa

Fine leafed paperbark, Slender honey-myrtle

Evergreen small shrub with mauve/purple ball shaped flowers in late spring and summer. Suitable for most soils, tolerating lime and salt soil. Frost resistant.

Melaleuca squarrosa

Tall, bushy shrub, good foliage. Scented, yellow brush flowers, in spring-summer. Suitable for most soils, tolerating very wet conditions, lime, saline and frost.

Micrantheum hexandrum

River box

Attractive foliage plant with new growth showing red stems. Cream flowers in spring. Grows up to 2m high. Prune to form a dense screen plant.

Notelaea ligustrina

Native Olive, Mock olive, Privet mock olive

Tall shrub with smooth, dark green leaves. Small yellow flowers and purple fruit. Prefers a moist, semi-shaded position but grows well in a wide range of conditions.

Pomaderris apetala

Dogwood

Medium to tall shrub 3 to 15 m. This shrub grows in a wide variety of sites from very dry to very wet but will grow larger with moisture. Looks good planted in copses.

SHRUBS TO 1m

Amperea xiphioclada

Upright or arching stems. Attractive foliage sculpturesque in appearance to 60cm. Useful for basket weaving. Dry to moist sites.

Blechnum penna-marina

Alpine Water Fern

Attractive, low growing, matted ground cover. Leathery dark green fronds to 15cm long, tinged pink when young. Ideal hanging baskets. Rockeries and moist positions in the open ground.

Blechnum wattsi

Hard Water Fern

Hardy and vigorous fern with dark green leathery fronds to 1m tall. Very easily grown in large pot or a moist, shady position in the ground.

Callistemon viridiflorus

Green Bottlebrush

Erect shrub with pale green bottlebrushes. Good in damp conditions. 1-2m X 1m. Frost resistant.

Carex appressa

Tall sedge, Tussock sedge

A tall perennial to 1.8m high. Stems acutely 3 angled and leaves 3-6mm broad. Occurs in winter wet depressions that can dry out completely in summer. Flowers in spring.

Carex inyx

Tassell Sedge

Evergreen clump forming sedge with green foliage and gorgeous golden brown pendulous tassels 1m x 1m.

Carex tasmanica

Curley Sedge

An upright sedge to 30cm. Attractive tight curls on tips of leaves. Wet sites but will tolerate long dry spells.

Dianella tasmanica

Flax Lily

An evergreen perennial plant with arching, strap-like leaves which can be up to 1.2m long. During spring and summer this plant bears clusters of nodding, star shaped, bright blue to purple flowers which are followed by glossy deep blue berries. Thrives in a sunny to partly shaded position in humus rich, well drained soil. Ideal for rockeries, poolside planting and containers.

Exhibited

Ficinea nodosa (syn isolepis nodosa)

Knobby club rush

Dense tufted native rush with stiff stems. Rounded brown flower knobs in summer. Suit damp or moist sandy soil. 60cm X 1m wide.

Ficinea nodosa (syn isolepis nodosa)

Knobby club rush (syn. *Isolepis nodosa*)

Ideal for planting around pond margins, this fast growing perennial plant forms clumps of upright, often arching, dark green stems. Brownish, globular flower heads are produced throughout the year. A tough hardy plant which thrives in full sun in a range of soils. Tolerates salt spray, waterlogged and saline soils. Adds texture and colour to seaside gardens and water features, useful for general garden planting.

Goodenia elongata

Lanky Goodenia

Suckering ground cover 10cm tall X 50cm. Glossy green leaves, rich yellow flowers on tall stems spring-summer, prefers moist soils in full sun or part shade.

Isolepis inundata

Knobby club rush, Swamp club rush

Handy aquatic for waters edge or general planting (eg. shrub beds, dry creek beds).

Lomandra longifolia

Long leaf mat bush, Sagg

A popular plant for use as accent in gardens, where the rush like foliage contrasts well with broad leafed plants. Use it next to ponds or as a boarder plant. Flowers in spring, bearing clusters of cream, strongly perfumed flowers - great for use in flora arrangements. A very adaptable plant that will grow well in a range of soils but does best in a moist position.

Mazus pumilio

Mauve carpet

Low growing creeping plant. Ideal ground cover, with mauve flowers, spring and summer. Semi shade or sun.

Melaleuca squamea

A bushy shrub to 1m with stunning mauve flowers in spring-summer. Grows well in a damp spot. Frost hardy.

Poa labillardieri

A popular native grass grown for its soft blue foliage. In the warmer months this clumping plant produces an attractive flower head with a purple tint. Thrives in a sunny to partly shaded position and grows in a range of soils. Suitable for planting under trees, embankments and mass plantings. Cut to just above ground level in late winter for fresh new spring growth.

Polystichum proliferum

Mother Shield Fern

An easy to grow fern with attractive green fronds. New fronds are covered with eye catching brownish scales. An ideal plant for ferneries and shaded garden positions but will perform equally well when planted in a container. Plant in humus rich, moist, well drained soil in part shade. Fertilise with a good organic fertilizer. When planting in containers use a premium potting mix.

Polystichum proliferum

Mother Shield Fern

Attractive native fern with arching fronds to 1m long forming plantlets near the tip. Very easily grown in a moist position in morning or filtered sun. Suitable for tubs.

Pratia pedunculata

Blue pratia, Common pratia, White pratia

This dainty, spreading plant forms a carpet of tiny green leaves which from spring to early summer is smothered in a mass of tiny, white flowers. This carpeting plant is ideal for filling in spaces near rocks and sleepers and makes an attractive groundcover. Thrives in a sunny to semi-shaded position in moist soil. Keep moist at all times.

Pratia pedunculata

Blue pratia, Common pratia, White pratia

This dainty, spreading plant forms a carpet of tiny, green leaves, which from spring to early summer is smothered in a mass of tiny blue flowers. This carpeting plant is ideal for filling in spaces near rocks and sleepers, and makes an attractive groundcover, thrives in a sunny to semi-shaded position in moist soil. Keep moist at all times.

Scaevola hookeri

Creeping fan flower, Mat fan flower

A very densely matting, evergreen groundcover with glossy, dark green leaves and small, white fan-shaped flowers in flushes, during spring, summer and autumn. An excellent soil binding plant for average to moist positions. Frost hardy.

Exhibited

Velleia paradoxa

Spur valleia

Wild flower 20cm X 20cm with large yellow flowers spring and summer. Prefers moist soils which are well drained and part shade to full sun.

Viola fuscoviolacea

A spreading, matting violet with attractive dense foliage and tiny deep purple-blue flowers in spring and summer. Prefers a moist position. Withstands frosts and snow.

Viola hederacea

Native violet

An attractive creeping evergreen perennial with fan shaped leaves. This plant produces beautiful mauve flowers over a long flowering period. An ideal ground cover for full sun to part shade in well drained soils.

TREES

Acacia dealbata

Silver Wattle

A tall tree with a smooth trunk, often decorated with silvery, mottled patches contrasting with the greyish-green leaves. In spring, clusters of golden-yellow, fluffy ball like flowers almost cover the whole tree.

Acacia melanoxylon

Blackwood

A beautiful formal tree that produces one of Australia's most sought after woods for cabinet making. Light yellow flowers occur in winter and early spring. A useful tree for a windbreak or screen as it grows densely. It is also tolerant of a wide range of positions, however its height and width will be greatest if the soil is moist and fertile.

Eucalyptus ovata

Black gum, Swamp gum

Evergreen medium to tall moisture loving tree, good for poorly drained soils. Smooth white trunk. Masses of white flowers in autumn which attract birds. Frost hardy. Good tree for cool districts. Water absorber. Drought tolerant. Excellent shade and windbreak tree.

Eucalyptus rodwayi

Swamp Peppermint

This tree is suitable for a wide range of conditions, from very dry sandy soils to river banks. Grows 15 to 20m.

Eucalyptus viminalis

White Gum

A magnificent tree with a lovely white trunk. This tree is suitable for very dry to very wet sites. Its height is 20 to 40m depending on availability of moisture.

Pomaderris apetala

Dogwood

Medium to tall shrub 3 to 15 m. This shrub grows in a wide variety of sites from very dry to very wet but will grow larger with moisture. Looks good planted in copses.

Prostanthera lasianthos

Christmas bush, Tasmanian Christmas bush

The Tasmanian Christmas bush comes into flower around Christmas with masses of mint scented foliage. A rapid growth in a range of soils but for best results grow in a well drained soil and mulch to retain moisture in the drier months. An attractive plant that will grow in a range of positions in the garden.

Tasmannia lanceolata

Mountain pepper, Native pepper

Small leafed mountain form. Handsome foliage shrub with bright green leaves and red stems. Creamy-yellow flowers in spring. Slow growing to 1.5m, hardy in a cool moist well drained position in sun or shade.

Exhibited

Appendix C

Certificate Forms

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Mr Sam Banfield Owner /Agent
2/1 Bifrons Court Address
East Launceston Tas 7250 Suburb/postcode

Qualified person details:

Qualified person: Tony Barriera - Geoton Pty. Ltd.
Address: PO Box 522 Prospect Tas 7250 Phone No: 03 6326 5001
Fax No:
Licence No: CC6220 P Email address: tbarriera@geoton.com.au

Qualifications and Insurance details: Tony Barriera – BEng, MSc
CPEng, NER – IEAust 471929
Civil, Geotechnical
Certain Underwriters at Lloyd's-
About Underwriting (description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Speciality area of expertise: Geotechnical Engineering (description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: Lot 3, 268 Perth Mill Road Perth Tas 7300 Lot No: 3
Certificate of title No: 187993/3
The assessable item related to this certificate: Classification of foundation conditions according to AS2870 - 2011 (description of the assessable item being certified)
Assessable item includes –
- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: Foundation Site Classification – AS2870 (description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

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

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

or

a building, temporary structure or plumbing installation: ☒

Exhibited

In issuing this certificate the following matters are relevant –

Documents:

Geoton Pty Ltd, Report Reference No. GL25478Ab,
dated 28/08/2025

Relevant
calculations:

Refer to report

References:

AS 2870 – 2011 Residential Slabs and Footings Construction
AS 4055 – 2021 Wind Loads for Housing
CSIRO Building Technical File 18

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

Site Classification in accordance with AS2870 - 2011
Wind Loading in accordance with AS 4055 - 2021
Findings and recommendations of report

Scope and/or Limitations

The classification applies to the site as investigated at the time and does not account for any future alteration to foundation conditions resulting from earthworks, drainage condition changes or site maintenance variations.

I certify the matters described in this certificate.

Signed:

Qualified person:



Certificate No:

GL25478Ab

Date:

28/08/2025

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

To: Owner name
 Address
 Suburb/postcode

Form **35**

Designer details:

Name: Category:
Hydraulic - Domestic
Business name: Phone No:
Business address:
 Fax No:
Licence No: Email address:

Details of the proposed work:

Owner/Applicant Designer's project reference No.
Address: Lot No:

Type of work: Building work ☐ Plumbing work ☒ (X all applicable)

Description of work:

New building
on-site wastewater management system

(new building / alteration /
addition / repair / removal /
re-erection
water / sewerage /
stormwater /
on-site wastewater
management system /
backflow prevention / other)

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

Certificate Type:	Certificate	Responsible Practitioner
	☐ Building design	Architect or Building Designer
	☐ Structural design	Engineer or Civil Designer
	☐ Fire Safety design	Fire Engineer
	☒ Civil design	Civil Engineer or Civil Designer
	☐ Hydraulic design	Building Services Designer
	☐ Fire service design	Building Services Designer
	☐ Electrical design	Building Services Designer
	☐ Mechanical design	Building Service Designer
	☐ Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	☐ Other (specify)	

Deemed-to-Satisfy: ☒ Performance Solution: ☐ (X the appropriate box)

Other details:

All design documents provided in Report GL25478Ab, dated 28/08/2025

Exhibited

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by:	Date:
Schedules:	Prepared by:	Date:
Specifications:	Prepared by:	Date:
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:

All design documents are contained within report
AS/NZS1547:2012 On-site domestic-wastewater management

Any other relevant documentation:

Attribution as designer:

I Tony Barriera of Geoton Pty Ltd am responsible for the design of that part of the work as described in this certificate;

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

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

	Name: (print)	Signed	Date
Designer:	Tony Barriera		28/08/2025
Licence No:	CC6220P		

Exhibited

Assessment of Certifiable Works: (TasWater)

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

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

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

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

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

Certification:

I Tony Barriera of Geoton Pty Ltd being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008*, that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

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

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Tony Barriera		28/08/2025

LOADING CERTIFICATE

To:	Mr Sam Banfield	Owner /Agent	Certificate Ref: AS/NZS 1547:2012 Section 7.4.2
	2/1 Bifrons Court	Address	
	East Launceston Tas	Suburb/postcode	
		7250	

Details of work:

Address:	268 (Lot 3) Perth Mill Road	Lot No:	3
	Perth Tas	7300	Certificate of title No: 187993/3
The work related to this certificate:	On-site domestic-wastewater management	(description of the work or part work being certified)	

Certificate details:

In issuing this certificate the following matters are relevant –

Documents:	Report GL25478Ab dated 28/08/2025 Drawing 1 – Site Plan Drawing 2 – Wastewater Plan Drawing WW-01 – Typical Cut-off Drain Section Drawing WW-06 – Typical Subsurface Irrigation Section
Relevant calculations:	Contained in the above
References:	AS/NZS1547:2012 On-site domestic-wastewater management

Substance of Certificate:

This certificate sets out the design criteria and the limitations associated with use of the system.

Wastewater Characteristics

Population equivalent used for this assessment	= 5 (3 bedroom dwelling)
Wastewater volume (L/day) used for this assessment	= 600 (120 Litres per person)
Approximate blackwater volume (L/day)	= 240
Approximate greywater volume (L/day)	= 360

Soil Characteristics/Design Criteria

Texture (Table E1 from AS/NZS 1547)	= Medium to Heavy clay
Soil category (Table E1 from AS/NZS 1547)	= 6
Soil structure (Table E4 from AS/NZS 1547)	= Massive
Indicative permeability (Table 5.1 from AS/NZS 1547)	= <0.06m/day
Adopted permeability	= 0.02m/day
Adopted Design Irrigation Rate	= 2mm/day
Soil thickness for disposal	= 1.5m
Minimum depth (m) to water	= >1.5m

Exhibited

Dimensions for On-Site Treatment System

Disposal and treatment methods = Secondary Treatment System (STS) and sub-surface irrigation

Site modification and specific design = None

Primary disposal area required = 300m²

Reserve disposal area required = 300m²

Location and use of Reserve area = Reserve area located to the south of the proposed irrigation field. Currently vacant with a low cover of grass.

Is there sufficient area available on site for disposal (including reserve) = Yes

Notes

The purpose of the reserve area is to allow for future extension of the land application system to allow a factor of safety against unforeseen malfunction or failure, perhaps following increased household occupancy or inadvertent misuse of the system.

The land application area may be reduced to account for flow reductions by water-saving devices, provided the organic loading rate is not higher than it would have been without the flow reduction.

Allowable Variation from Design Flow

Based on an approved STS 8EP system (8 equivalent persons) rated at 1,200 litres per day and a wastewater design volume of 600L/day the allowable variation from design flow (peak loading events) would be an additional 600L/day.

System Limitations

Consequences of overloading the system:

- (A) Adverse effects on soil properties and plant growth through excess salt accumulation in the root zone during extended dry periods
- (B) Harmful long-term environmental effects to the soil of land application system or the adjacent surface water and groundwater; or
- (C) Increased risk to public health from surface ponding in the land application area or channelling or seepage beyond the land application area.

Consequences of underloading the system:

The treatment system can be switched to the power saving mode, when no sewage flows are generated for an extended period of time (e.g. holidays). In this mode, aeration is reduced to the minimum required to supply the microbes with oxygen to ensure they remain viable.

Consequences of changes in loading of the system: The system has been designed for domestic onsite wastewater disposal, and as such effluent will be domestic and is not expected to change significantly. Significant changes in loading of the system can result in system failure.

Operation Requirements

Refer to operation manual of preferred secondary treatment system.

The use of water saving fixtures is required.

Adverse effects of not operating the system correctly may include:

- (A) Odour; and
- (B) Disease.

Exhibited

Maintenance Requirements

Refer to operation manual of preferred secondary treatment system.

Adverse effects of not maintaining and monitoring the system correctly may include:

- (A) Odour;
- (B) Pump failure;
- (C) Air blower failure or filter blockage;
- (D) Alarm failure;
- (E) Irrigation field failure; and
- (F) Poor water quality, lack of disinfection.

I certify the matters described in this certificate.

	<i>Signed:</i>	<i>Date:</i>	<i>Certificate No.</i>
Certifier:		28/08/2025	GL25478Ab

Exhibited

Received

14.09.2026



strata
geoscience and environmental

Onsite Wastewater System Design

**268 Perth Mill Road
Perth**

August 2026

Important Notes:

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Strata Geoscience and Environmental reserves the right to submit this report the relevant regulatory agencies where it has a responsibility to do so.

1. Introduction

Strata Geoscience and Environmental Pty Ltd was commissioned to conduct an onsite wastewater system design for:

Client and Site Details	
Client Name	Sam Banfield
Site Address	268 Perth Mill Road Perth
Proposed Development	New wastewater system

The investigation was conducted with reference to Australian Standards AS1547-2012 Onsite Domestic Wastewater Management and also follows the principles outlined in AS1726-1993 Geotechnical Site Investigations.

2. Summary of Site and Soil Evaluation and Design Outcomes

The investigation's key findings were:

	SSE and Design Outcomes
General Comments	Site suitable for disposal of secondary treatment
Key Site and Soil Limitations to System Design	• Variable clay soils • Drainage • Proximal downslope surface waters
Summary of Proposed System Specification	Primary Treatment: AWTs Secondary Treatment: AWTs Land Application: Irrigation

3. Investigation

Please refer to Appendix 3 for Site and Soil Evaluation results.

4. Interpretation

The site is situated on a slight slope underlain by deep clay based soils developing from inferred Jurassic aged geologies.

With respect to the sustainability of long term disposal of wastewater within the site boundaries the following comments are made:

Soils – Natural soils will have a low permeability for the acceptance of wastewater flows and will show a high cation exchange complex for the absorption of nutrients from effluent

Environmental Sensitivities – The development area is moderately sloping with nearest surface water body located approximately 50+ m downslope of the dwelling. Groundwater was not intersected throughout geotechnical investigation and is anticipated to be several meters beneath the existing ground surface however it may flow over clayey subsoils as a perched watertable throughout wet periods.

Climate - the nearest weather station with long term data is Perth Station with a mean annual rainfall of 730 mm (BOM 2026) and no evaporation data. A net rainfall deficit would likely exist for the site.

Title Searches – Searches of the Land Title did not show any easements or right of ways which would affect the positioning of the wastewater land application system.

Given the above, the general environmental and public health risk associated with the site is regarded as low provided adequate setback distances and other controls are adopted.

5. Onsite Wastewater System Design

5.1 Site and Soil Considerations

Results of the SSE (Appendix 3) found the following typical soil profile on site:

	Topsoils (A1-A3)	Subsoils (B1-B3)
Description	CLAYEY SILT (ML)	Silty CLAY (CL)
Soil Category (AS1547-5712)	1	5
Indicative Permeability (m/d)	1.5-2.0	0.1-0.5
Recommended DIR (mm/d)/DLR (L/D)	5/40	3 /12
pH	6.1	5.8
EC	2.2	4.2
Emmerson Class	8	5

5.2 Risk Management of Site and Soil Constraints

Risk identification and reduction measures compliant with AS1547 – 2012

Clause A3.2 is presented below:

Risk	Factors that Increase Risk Likelihood	Design Risk Reduction Measures
Hydraulic Overloading of System	• Under scaled system • Prolonged overuse • Leaking taps • Shock Loading • Excessive solid disposal	• Scale to peak potential loading • Use Conservative DLR/DIR • Use water conservation practices eg water reduction fixtures
Biological Failure	• Overuse of household chemicals • Shock loading	• Limit detergents and bleach use where practical • System not fit for sinkerator installation
Marginal Soil Conditions	• Dispersive soils • Poor aspect/drainage	• Treat with gypsum, manage sodium inputs
Site Constraints	• Clays • Drainage • Proximal downslope surface waters	• Irrigation • Irrigation on flatter areas where possible • secondary treatment, Irrigation, maintain maximum available setback • trenches inappropriate

Risk	Factors that Increase Risk Likelihood	Design Risk Reduction Measures
High Rainfall/Torrential Rainfall	• Inappropriate LAA Scaling • Stormwater impacts	• Use suitable hydraulic scaling • Stormwater Diversion around LAA if required
Clogged Outlet Filter	• Overloading • Infrequent cleaning	• Clean monthly
Pipe Blockages	• Overloading • Infrequent de-sludging	• Reduce solids inflows • De-sludge septic max 3 year intervals • Check IO's regularly
Sludge transport to LAA	• Infrequent de-sludging • Clogged outlet filter • High organic loading	• De-sludge septic max 3 year intervals • Clean filter monthly • No sinkerator installation
Broken pipes in LAA	• Stock/vehicles	• Exclude stock/vehicles

5.3 Proposed Wastewater System Concept Design

It is therefore recommended that the following system be adopted:

Treatment Train Component	Proposed Concept Design
Primary Treatment	• AWTs
Secondary Treatment	• AWTs
LAA Design	• IRRIGATION

5.4 Effluent Flow and Land Application Area Modelling

The following loadings apply:

Maximum Daily Hydraulic and BOD Loadings			
Segment	Loading (L/D)	Maximum Daily Hydraulic Loading (L/D)	Maximum Daily BOD Loading (g/D)
3 Bedroom Dwelling 5EP	5EP at 120L/D 5EP at 60g BOD/EP/D	600	300
Totals		600	300
Min Land Application Area Requirement m² (based upon DIR of 3.0mm/d)		200	

The absorption area could be catered for by 200m² of Irrigation installed as shown on the site plan with adequate room for a 50% reserve if required (see Appendix 2). Refer to Appendix 2/3 for more detailed calculations as well as specific design and construction notes.

5.5 System Specifications

The system has the following specification (see Appendix 3 for further details):

- Min DN100 gravity fed sewer pipe
- Min 1500L/day treatment capacity AWTS (tank to be anchored to prevent tank pop out due groundwater fluctuations).
- Min 200 m² Irrigation
- Provision for 50% reserve area (must remain free from development)

5.6 Management Requirements

It is imperative that regular servicing of the treatment unit compliant with the prescriptions of the manufacturer and Council permit occur.

To ensure that the treatment system functions adequately and provides effective treatment and disposal of effluent over its design life, asset owners have the following responsibilities:

- Suitably qualified maintenance contractors must be engaged to service the system, as required by Council under the approval to operate.
- Keep as much fat and oil out of the system as possible; and
- Conserve water.

Minimum servicing schedule:

Treatment Train Component	Service Interval
AWTS	• SERIVES AS PER MANUFACTURERS RECOMMENDATIONS WITH QUALIFIED TECHNICIAN, RETAIN ALL RECORDS
IRRIGATION	• ENSURE ADEQUATE PLANTINGS OF 1 PLANT PER 4M² AT INSTALLATION. • ENSURE UPSLOPE INTERCEPTOR (WHERE RECOMMENDED) IS INSTALLED.

To ensure that the land application area (LAA) functions adequately and provides effective treatment and disposal of effluent over its design life, asset owners have the following responsibilities:

- LAA should be checked regularly to ensure that effluent is draining freely, including flushing of lines and cleaning of inline filters.
- All vehicles, livestock and large trees should be excluded from around the Covered Drip Irrigation area.
- Low sodium/phosphorous based detergents should be used to increase the service life of Covered Drip Irrigation area.
- Regularly harvest (mow) vegetation within the LAA and remove this to maximise uptake of water and nutrients;
- Not to erect any structures over the LAA;
- Ensure that the LAA is kept level by filling any depressions with good quality topsoil (not clay).

Excessive surface dampness, smell or growth of vegetation around the LAA may indicate sub-optimal performance and professional advice should be sort.

5.7 Compliance Requirements

Demonstration of wastewater compliance to Building Act 2016:

Acceptable Solutions	Performance Criteria	Compliance
A1 Horizontal separation distance from a building to a land application area must comply with one of the following: a. be no less than 6m: b. be no less than: (i) 3m from an upslope or level building. (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building (iii) If secondary treatment and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building	P1 a. The land application area is located so that the risk of wastewater reducing the bearing capacity of the buildings foundations is acceptably low	Complies with b(i)
A2 Horizontal separation distance from downslope water to a land application area must comply with (a) or (b). a) be no less than 100m b) be no less than the following: i) If primary treated effluent to be no less than 15m plus 7m for every degree of average gradient from a downslope surface water, or; ii) if secondary treatment and subsurface application, no less than 15m plus 2 m for every degree of average gradient	P2 Horizontal separation distance from downslope water to a land application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable	Complies with A2 (bii)

from a downslope surface water		
A3 Horizontal separation distance from a property boundary to a land application area must comply with either of the following: a) be no less than 40m from a property boundary b) be no less than the following: i) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary, or; ii) if secondary treatment and subsurface application, no less than 1.5m plus 1 m for every degree of average gradient from a downslope surface water	P3 Horizontal separation distance from the boundary to a land application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R, and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable	Complies with A3 (B) (II)
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient	P4 Horizontal separation distance from a downslope bore to a land application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R, and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable	Complies with A4
A5	P5 Vertical separation distance between groundwater to a land	Complies with A5 (b)

Vertical separation distance between groundwater and a land application area must be no less than a) 1.5m if primary treated effluent; or b) 0.5m if secondary treated	application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R, and b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable	
A6 Vertical separation distance between a limiting layer and a land application area must be no less than c) 1.5m if primary treated effluent; or d) 0.5m if secondary treated	P6 Vertical setback must be consistent with AS/NZS 1547 Appendix R,	Complies with A6(b)

6. Conclusions and Further Recommendations

In conclusion the following comments and recommendations are made:

- The maximum wastewater flow rate (MWWF) modelling conducted in this report shows that the generated flows are likely to be no more than **600 L/day**.
- That such flows will require a land application area (LAA) comprising **One 200m² Irrigation**.
- It is likely that peak flows associated with the development should be within the buffering capacity of the system both in terms of the system sizing as well as for their acceptance into the disposal area.
- If the hydraulic capacity of soils underlying disposal areas is exceeded by effluent water flows, the disposal area has the capacity to be increased by up to 50%.
- **If the prescriptions of this report are followed the likely human and environmental health risks associated with effluent disposal onsite is rated as low.**

S Nielsen MEngSc CPSS
Director
Strata Geoscience and Environmental Pty Ltd
E:sven@strataconsulting.com.au



7. References

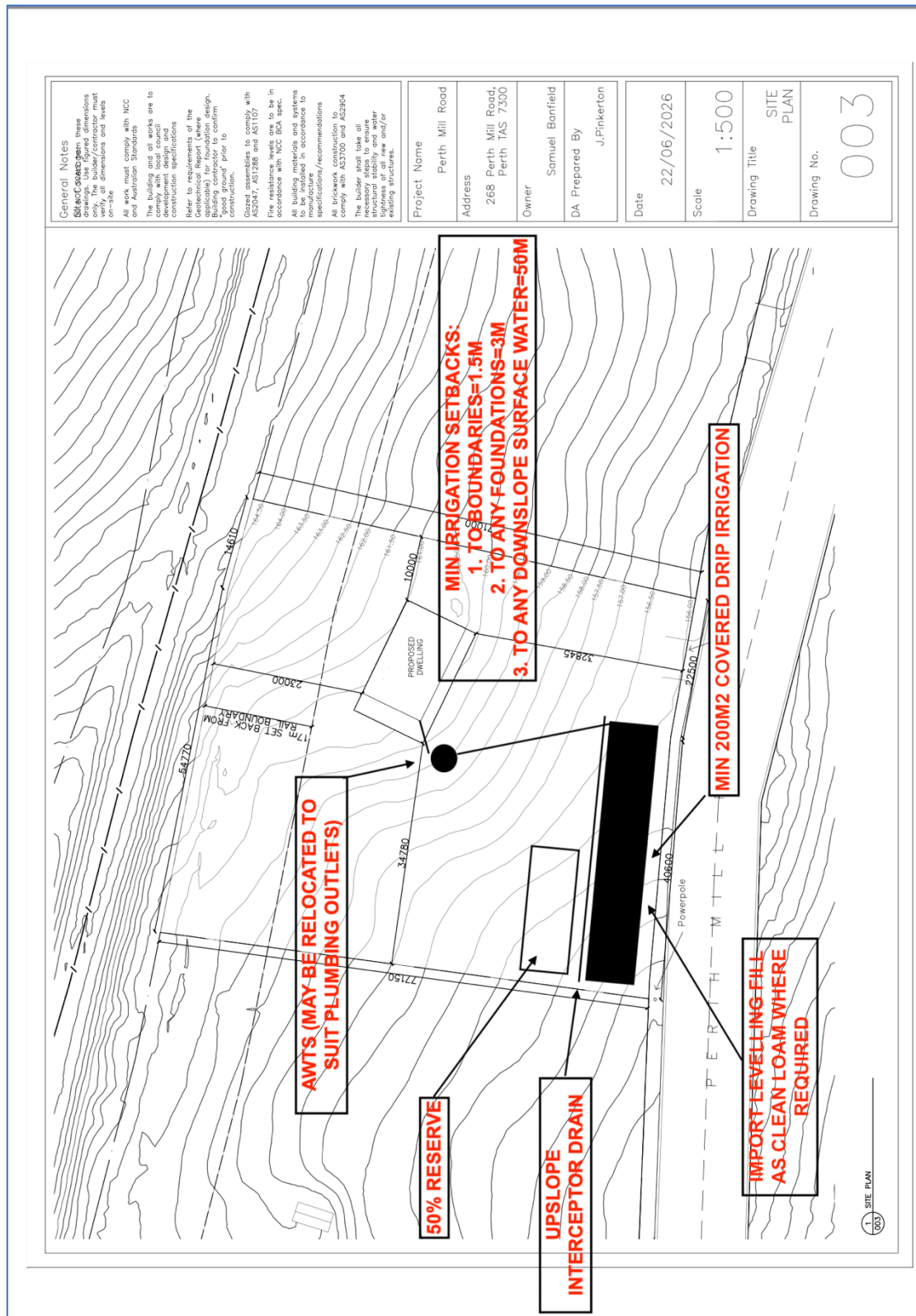
- AS1726-1993- Geotechnical Site Investigations
- AS1547-2012 Onsite Domestic Wastewater Management
- Bureau of Meteorology Website- Monthly Climate Statistics

Appendix 1 Wastewater Loading Certificate

Wastewater Loading Certificate*	
System Capacity	600L/D
Design Summary	
• Effluent Quality	Secondary
• Adopted Soil category	5
• Amended Adopted Soil Category	Not amended
• Adopted DLR/DIR (mm/d OR L/m ² /d)	3
• LAA Design	Irrigation
• Primary LAA Requirement	200m ²
• Reserve Area	Min 50% reserve LAA must be maintained in an undeveloped state near the primary system as identified on the site plan
Fixtures	Assumes std water saving fixtures inc 6/3L dual flush toilets, aerator forcets, Washing/dishwashing machines with min WELSS rating 4.5 star
Consequences of Variation in Effluent Flows	
• High Flows	The system should be capable of buffering against flows of up to 10 % in a 24 hr period or 5% over a 7 day period. System not rated for spa installation.
• Low Flows	Should not affect system performance. Organic dose loading required if system is left undosed for more than 2 weeks.
Consequences of Variation in Effluent Quality	Residence to avoid the installation of sink disposal systems (eg "sinkerators"), or the addition of large amounts of household cleaning products or other solvents. These can overload system BOD or affect effluent treatment by system biota.
Consequences of Lack of Maintenance and Monitoring Attention	Owners should maintain the system in compliance with systems Home Owners Manual and council permit. All livestock, vehicles and persons to be excluded from the LAA. Failure to ensure the above may lead to infection of waterways, bores or the spread of disease, as well as production of foul odours, attraction of pests and excessive weed growth.

* In accordance with Clause 7.4.2(d) of AS/NZS 1547-2012.

Appendix 2 Land Application Design Plans and Construction Notes



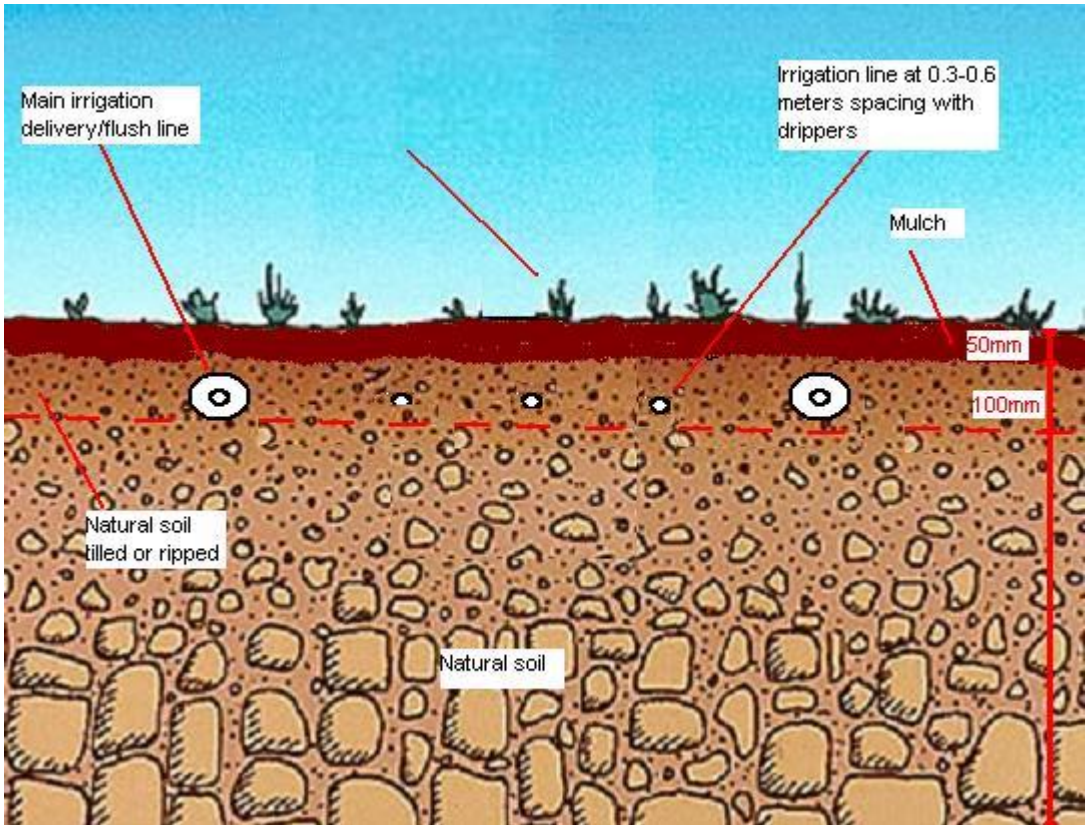


Figure 1 Irrigation cross section showing major delivery/flush lines and irrigation lines.

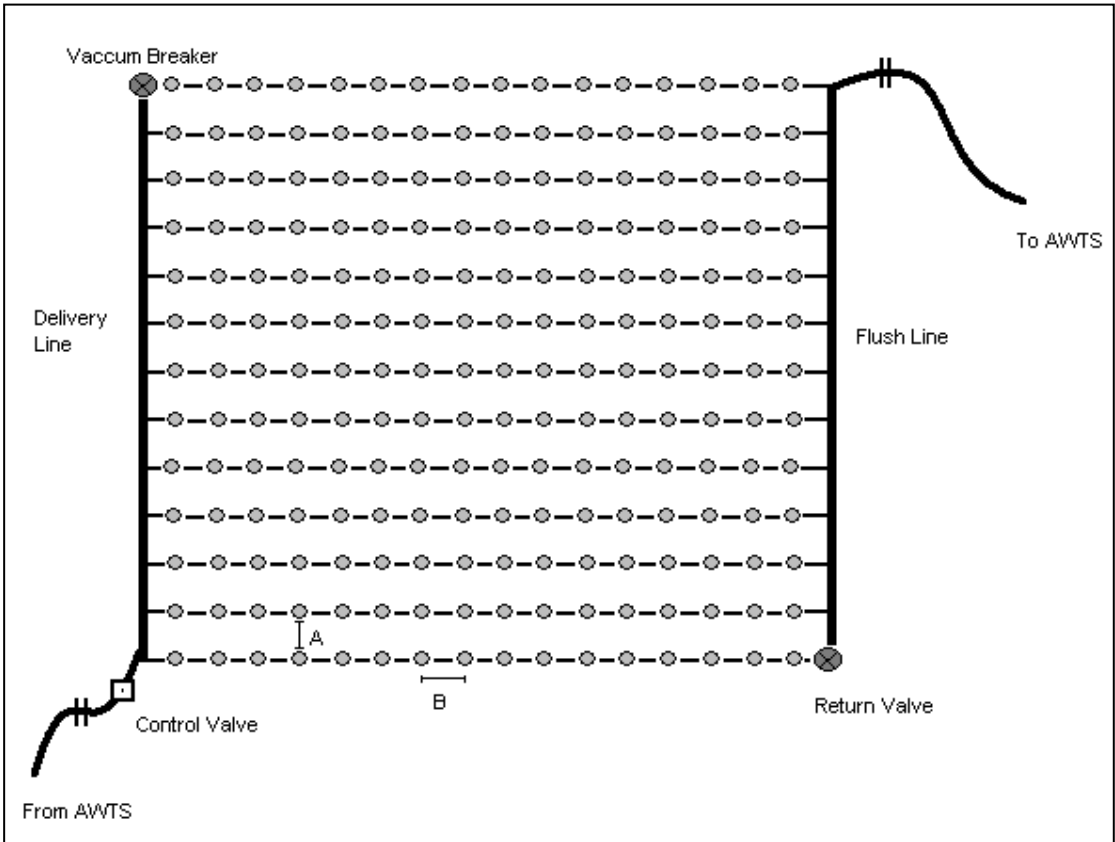
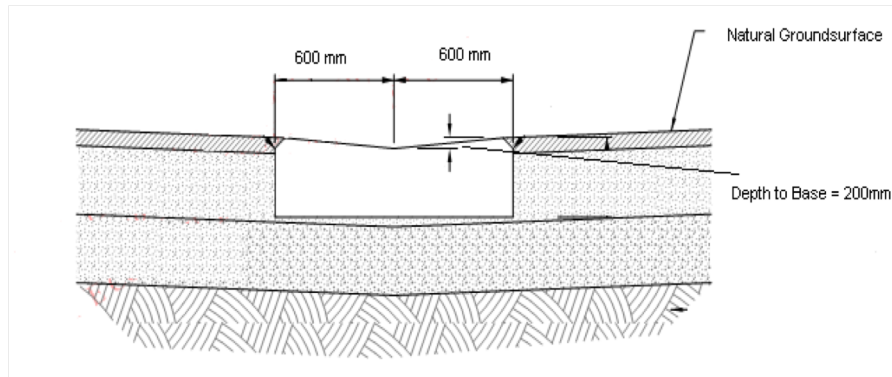


Figure 2 Irrigation Plan View

Land Application Area Design and Construction Notes

1. Delivery/flush line diameter = 25 -30 mm
2. Irrigation line diameter = 12-16mm
3. Irrigation line spacing (A) =1000 mm
4. A vacuum breaker should be installed at the highest point of the irrigation area (or in the case of multiple irrigation lots at each lot). This breaker should be protected and marked).
5. A flush line should be installed at the lowest point of the irrigation area incorporating a return valve for back flushing of the system back into the treatment chamber.
6. **All lateral lines MUST be installed parallel to the contours of the land. All minimum setbacks MUST be adhered to.**
7. An inline filter must be inserted into the delivery line.
8. The first 100mm of the natural soil below the ground surface should be mechanically tilled to aid line installation and soil permeability
9. Gypsum should be incorporated at the rate of 1kg/5m² in dispersive soils.
10. Imported topsoil (not clay) should be applied as shown above.
11. Irrigation areas greater than 400 m² should be split into 100 m² cells with effluent flows switched between irrigation lots with an automatic valve system.
12. Where practical a 50% reserve area should be identified on the site to allow movement of the irrigation area if required.
13. In areas of moderate to steep slopes (>10%) then upslope cut off drainage should be installed to minimise shallow ground water recharge of the irrigation area from upslope.
14. All livestock and Vehicles MUST be excluded from irrigation area.

Interceptor Spoon Drain Design and Construction Notes

**Figure 3 Spoon drain cross section showing key dimensions**

1. Spoon drain should be located upslope of the proposed irrigation area/trenches/beds as shown in site plan.
2. Spoon Drains should be 1200mm wide and 200mm deep.
3. Spoon drains are best employed for areas where surface water run on from upslope areas is possible with little immediate subsurface recharge anticipated.
4. The drainage channel can be armoured with 50-100mm Dolerite aggregate if soils are anticipated to be dispersive or intensive peak flows are expected (ie if immediately down slope from hardstand surfaces).
5. Spoon drains should be constructed to ensure adequate fall to appropriate stormwater discharge points or other suitable areas provided that any water is not disposed of over site boundaries.

Appendix 3 Site and Soil Evaluation

Site and Soil Evaluation with Reference to AS1547 Table D1 Appendix D1	
Site Factor	Result
Slope (over proposed system/LAA)	Up to 6 Degrees
Shape	Simple
Aspect	SW
Exposure	Moderate exposure to both sun and wind
Erosion, mass movements landslip	Not likely
Boulders/Rock Outcrops	None
Vegetation	Grass
Watercourse	See site plans >50m+ from LAA.
Soil Water Regime	No groundwater found
Fill	None observed
Run-on/Flooding	Not anticipated over the development area or LAA. Upslope interceptor to capture any surface, near surface flows.
Channeled Runoff	No concentrated runoff over proposed LAA. See storm water management plan (or similar) for details of onsite storm water management.
Soil Surface Condition	Moist
Salinity	No saline tolerant species, salt scald or bare earth observed.
Other Site and Soil Factors	Ensure tank located to ensure gravity dosing







strata
geoscience and environmental

Bore Log

BH01

Client: See Section 1

Project:

Drill Type:

Drilling Met:

Fluid Nil

Coords

Bearing: Dip:

R.L. SEE WS

Logged by: SN

Date:

RL	Depth (mm)	Graphic Log	Material Description	Soil			Rock			Weathering			Frac. Spacing (mm)			Sampling and Insitu Testing		
				V	S	M	V	S	M	V	S	M	V	S	M	V	S	M
			BROWN CLAYEY SILT (ML) SOFT MOIST															
			TRENDING BROWN SILTY CLAY (CH) FIRM-STIFF, HP GRADUAL REFUSAL AS AUGER BOGGING															
	500																	
	1000																	
	1500																	
	2000																	
	2500																	
	3000																	
	3500																	
	4000																	
	4500																	
	5000																	
	5500																	
	6000																	

TERMINATED AT 1.5 M

Appendix 4 Form 35 and System Accreditation Certificate

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155Form **35**

To: SAM BANFIELD

Owner name

Address

Suburb/postcode

Designer details:

Name:

S NIELSEN

Category:

HYDRAULIC
SERVICES

Business name:

STRATA GEOSCIENCE AND
ENVIRONMNETAL P/L

Phone No:

0413545358

Business
address:

72-74 LAMBECK DRIVE

TULLAMARINE

3043

Fax No:

Licence No:

CC6113K

Email address:

sven@strataconsulting.com.au

Details of the proposed work:

Owner/Applicant

AS ABOVE

Designer's project
reference No.

SR06761

Address:

268 PERTH MILL ROAD

Lot No:

PERTH

Type of work:

Building work ☐Plumbing work ☒ (X all applicable)

Description of work:

WASTEWATER SYSTEM LAND APPLICATION SPECIFICATION
– ONLY WARRANTED TO A THE MAXIMUM MODELLED DAILY
FLOW RATE AND WHEN INSTALLED AS PER THE DESIGN
AND TERMS AND CONDITIONS OF THE REPORT.(new building / alteration /
addition / repair / removal /
re-erection
water / sewerage /
stormwater /
on-site wastewater
management system /
backflow prevention / other)

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

Certificate Type:	Certificate	Responsible Practitioner
	☐ Building design	Architect or Building Designer
	☐ Structural design	Engineer or Civil Designer
	☐ Fire Safety design	Fire Engineer
	☐ Civil design	Civil Engineer or Civil Designer
	☒ Hydraulic design	Building Services Designer

☐ Fire service design	Building Services Designer
☐ Electrical design	Building Services Designer
☐ Mechanical design	Building Service Designer
☐ Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
☐ Other (specify)	
Deemed-to-Satisfy: ☒ X	Performance Solution: ☐ (X the appropriate box)
Other details:	

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by:	Date:
Schedules:	Prepared by:	Date
Specifications:	Prepared by: SN	Date 6/8/26
Computations	Prepared by: SN	Date 6/8/26
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by:	Date

Standards, codes or guidelines relied on in design process:

AS1547-2012

Any other relevant documentation:	

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

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

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

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

Name: (print)SVEN NIESEN SN

Designer:	SVEN NIESEN	<i>Sven Nielsen</i>	6/8/26
-----------	-------------	---------------------	--------

Licence No:	CC6113K
-------------	---------

Assessment of Certifiable Works: (TasWater)	
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Note: single residential dwellings and outbuildings on a lot with an existing sewer connection are not considered to increase demand and are not certifiable.

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

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

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

- ☒ The works will not increase the demand for water supplied by TasWater
- ☒ The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater’s sewerage infrastructure
- ☒ The works will not require a new connection, or a modification to an existing connection, to be made to TasWater’s infrastructure
- ☒ The works will not damage or interfere with TasWater’s works

- ☒ The works will not adversely affect TasWater’s operations
- ☒ The work are not within 2m of TasWater’s infrastructure and are outside any TasWater easement
- ☒ I have checked the LISTMap to confirm the location of TasWater infrastructure
- ☒ If the property is connected to TasWater’s water system, a water meter is in place, or has been applied for to TasWater.

Certification:

ISVEN NIELSEN..... being responsible for the proposed work, am satisfied that the works described above are not Certifiable Works, as defined within the *Water and Sewerage Industry Act 2008*, that I have answered the above questions with all due diligence and have read and understood the Guidelines for TasWater CCW Assessments.

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

	Name: (print)	Signed	Date
Designer:	SVEN NIELSEN	Sven Nielsen	Date: 6/8/26



Certificate of Accreditation

On-Site Wastewater Management System

This Certificate of Accreditation is hereby issued by the Director of Building Control pursuant to Section 18(1) of the *Building Act 2016* and the accreditation of products.

System:	Taylex ABS1500 and PABS1500
Manufacturer or Supplier:	Taylex Australia Pty Ltd
Of:	56 Prairie Rd ORMEAU QLD 4208

This is to certify that the ABS1500 and PABS1500 as described in Schedule 1, has been accredited for use as a **Secondary Treatment System** for the treatment of domestic wastewater generated in association with any class of building defined within the National Construction Code. This accreditation is subject to the conditions and permitted uses specified in Schedule 2, and in accordance with the *Building Act 2016*.

A handwritten signature in blue ink that reads "Pearce".

Robyn Pearce
Director of Building Control
Consumer, Building and Occupational Services
Department of Justice

Date of Issue: 20 October 2025

Certificate Number: DOC/25/82462

This Certificate of Accreditation is in force until 06 November 2030 unless withdrawn earlier at the discretion of the Director of Building Control



Appendix 5 Terms and Conditions

Scope of Work

These Terms and Conditions apply to any services provided to you ("the Client") by Strata Geoscience and Environmental Pty Ltd ("Strata"). By continuing to instruct Strata to act after receiving the Terms and Conditions or by using this report and its findings for design and/or permit application processes and not objecting to any of the Terms and Conditions the Client agrees to be bound by these Terms and Conditions, and any other terms and conditions supplied by Strata from time to time at Strata's sole and absolute discretion. The scope of the services provided to the Client by Strata is limited to the services and specified purpose agreed between Strata and the Client and set out in the correspondence to which this document is enclosed or annexed ("the Services"). Strata does not purport to advise beyond the Services.

Third Parties

The Services are supplied to the Client for the sole benefit of the Client and must not be relied upon by any person or entity other than the Client. Strata is not responsible or liable to any third party. All parties other than the Client are advised to seek their own advice before proceeding with any course of action.

Provision of Information

The Client is responsible for the provision of all legal, survey and other particulars concerning the site on which Strata is providing the Services, including particulars of existing structures and services and features for the site and for adjoining sites and structures. The Client is also responsible for the provision of specialised services not provided by Strata. If Strata obtains these particulars or specialised services on the instruction of the Client, Strata does so as agent of the Client and at the Client's expense. Strata is not obliged to confirm the accuracy and completeness of information supplied by the Client or any third party service provider. The Client is responsible for the accuracy and completeness of all particulars or services provided by the Client or obtained on the Client's behalf. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever suffered by the Client or any other person or entity resulting from the failure of the Client or third party to provide accurate and complete information. In the event additional information becomes available to the Client, the Client must inform Strata in writing of that information as soon as possible. Further advice will be provided at the Client's cost. Any report is prepared on the assumption that the instructions and information supplied to Strata has been provided in good faith and is all of the information relevant to the provision of the Services by Strata. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever if Strata has been supplied with insufficient, incorrect, incomplete, false or misleading information.

Integrity

Any report provided by Strata presents the findings of the site assessment. While all reasonable care is taken when conducting site investigations and reporting to the Client, Strata does not warrant that the information contained in any report is free from errors or omissions. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from errors in a report. Any report should be read in its entirety, inclusive of any summary and annexures. Strata does not accept any responsibility where part of any report is relied upon without reference to the full report.

Project Specific Criteria

Any report provided by Strata will be prepared on the basis of unique project development plans which apply only to the site that is being investigated. Reports provided by Strata do not apply to any project other than that originally specified by the Client to Strata. The Report must not be used or relied upon if any changes to the project are made. The Client should engage Strata to further advise on the effect of any change to the project. Further advice will be provided at the Client's cost. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever where any change to the project is made without obtaining a further written report from Strata. Changes to the project may include, but are not limited to, changes to the investigated site or neighbouring sites, for instance, variation of the location of proposed building envelopes/footprints, changes to building design which may impact upon building settlement or slope stability, or changes to earthworks, including removal (site cutting) or deposition of sediments or rock from the site.

Classification to AS2870-5711

It must be emphasised that the site classification to AS2870-5711 and recommendations referred to in this report are based solely on the observed soil profile at the time of the investigation for this report and account has been taken of Clause 2.1.1 of AS2870 - 5711. Other abnormal moisture conditions as defined in AS2870 - 5711 Clause 1.3.3 (a) (b) (c) and (d) may need to be considered in the design of the structure. Without designing for the possibility of all abnormal moisture conditions as defined in Clause 1.3.3, distresses will occur and may result in non "acceptable probabilities of serviceability and safety of the building during its design life", as defined in AS2870 - 5711, Clause 1.3.1. Furthermore the classification is preliminary in nature and needs verification at the founding surface inspection phase. The classification may be changed at this time based upon the nature of the founding surface over the entire footprint of the project area. Any costs associated with a change in the site classification are to be incurred by the client. Furthermore any costs associated with delayed works associated with a founding surface inspection or a change in classification are to be borne by the client. Where founding surface inspections are not commissioned the classifications contained within this report are void.

Subsurface Variations with Time

Any report provided by Strata is based upon subsurface conditions encountered at the time of the investigation. Conditions can and do change significantly and unexpectedly over a short period of time. For example groundwater levels may fluctuate over time, affecting latent soil bearing capacity and ex-situ/insitu fill sediments may be placed/removed from the site. Changes to the subsurface conditions that were encountered at the time of the investigation void all recommendations made by Strata in any report. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from any change to the subsurface conditions that were encountered at the time of the investigation. In the event of a delay in the commencement of a project or if additional information becomes available to the Client about a change in conditions becomes available to the Client, the Client should engage Strata to make a further investigation to ensure that the conditions initially encountered still exist. Further advice will be provided at the Client's cost. Without limiting the generality of the above statement, Strata does not accept liability where any report is relied upon after three months from the date of the report, (unless otherwise provided in the report or required by the Australian Standard which the report purports to comply with), or the date when the Client becomes aware of any change in condition. Any report should be reviewed regularly to ensure that it continues to be accurate and further advice requested from Strata where applicable.

Interpretation

Site investigation identifies subsurface conditions only at the discrete points of geotechnical drilling, and at the time of drilling. All data received from the geotechnical drilling is interpreted to report to the Client about overall site conditions as well as their anticipated impact upon the specific project. Actual site conditions may vary from those inferred to exist as it is virtually impossible to provide a definitive subsurface profile which accounts for all the possible variability inherent in earth materials. This is particularly pertinent to some weathered sedimentary geologies or colluvial/alluvial clast deposits which may show significant variability in depth to refusal over a development area. Rock incongruities such as joints, dips or faults may also result in subsurface variability. Soil depths and composition can vary due to natural and anthropogenic processes. Variability may lead to differences between the design depth of bored/driven piers compared with the actual depth of individual piers constructed onsite. It may also affect the founding depth of conventional strip, pier and beam or slab footings, which may result in increased costs associated with excavation (particularly of rock) or materials costs of foundations. Founding surface inspections should be commissioned by the Client prior to foundation construction to verify the results of initial site characterisation and failure to insure this will void the classifications and recommendations contained within this report. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from any variation from the site conditions inferred to exist.

Strata is not responsible for the interpretation of site data or report findings by other parties, including parties involved in the design and construction process. The Client must seek advice from Strata about the interpretation of the site data or report.

Report Recommendations

Any report recommendations provided by Strata are only preliminary. A report is based upon the assumption that the site conditions as revealed through selective point sampling are indicative of actual conditions throughout an area. This assumption cannot be substantiated until earthworks and/or foundation construction is almost complete. Where variations in conditions are encountered, Strata should be engaged to provide further advice. Further advice will be provided at the Client's cost. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever if the results of selective point sampling are not indicative of actual conditions throughout an area or if the Client becomes aware of variations in conditions and does not engage Strata for further advice.

Geo-environmental Considerations

Where onsite wastewater site investigation and land application system designs are provided by Strata, reasonable effort will be made to minimise environmental and public health risks associated with the disposal of effluent within site boundaries with respect to relevant Australian guidelines and industry best practise at the time of investigation. Strata is not liable, and accepts no responsibility, for any claim, demand, charge, loss, damage, injury or expense whatsoever resulting from:

- (i) changes to either the project or site conditions that affect the onsite wastewater land application system's ability to safely dispose of modelled wastewater flows; or
- (ii) seepage, pollution or contamination or the cost of removing, nullifying or clearing up seepage, polluting or contaminating substances; or
- (iii) poor system performance where septic tanks have not been de-sludged at maximum intervals of 3 years or AWTs systems have not been serviced in compliance with the manufacturers recommendations; or
- (iv) failure of the client to commission both interim and final inspections by the designer throughout the system construction; or
- (v) the selection of inappropriate plants for Covered Drip Irrigation areas; or
- (vi) damage to any infrastructure including but not limited to foundations, walls, driveways and pavements; or
- (vii) land instability, soil erosion or dispersion; or
- (viii) design changes requested by the Permit Authority.

Furthermore Strata does not guarantee land application area design life beyond 2 years from installation.

Strata does not consider site contamination, unless the Client specifically instructs Strata to consider the site contamination in writing. If a request is made by the Client to consider site contamination, Strata will provide additional terms and conditions that will apply to the engagement.

Copyright and Use of Documents

Copyright in all drawings, reports, specifications, calculations and other documents provided by Strata or its employees in connection with the Services remain vested in Strata. The Client has a licence to use the documents for the purpose of completing the project. However, the Client must not otherwise use the documents, make copies of the documents or amend the documents unless express approval in writing is given in advance by Strata. The Client must not publish or allow to be published, in whole or in part, any document provided by Strata or the name or professional affiliations of Strata, without first obtaining the written consent of Strata as to the form and context in which it is to appear.

If, during the course of providing the Services, Strata develops, discovers or first reduces to practice a concept, product or process which is capable of being patented then such concept, product or process is and remains the property of Strata and:

- (i) the Client must not use, infringe or otherwise appropriate the same other than for the purpose of the project without first obtaining the written consent of Strata; and
- (ii) the Client is entitled to a royalty free licence to use the same during the life of the works comprising the project.

Digital Copies of Report

If any report is provided to the Client in an electronic copy except directly from Strata, the Client should verify the report contents with Strata to ensure they have not been altered or varied from the report provided by Strata.

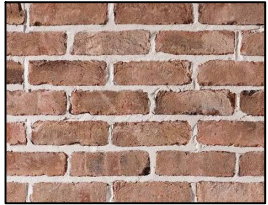
Exhibited

Received

SITE INFO

Building Class	Class 1a
Building m2	120m2
Land Title Reference	
Property ID	CT187993-3
Lot Size m2	4883m2
Zone	Low Density Residential

EXTERIOR FINISHES SCHEDULE

RS01		COLOURBOND Double Lock Standing Seam Cladding Colour: Ironstone
WC01		Timber Cladding Board and Batten Profile Specie/Finish: To be advised.
BK01		Recycled Red Brick Stretcher Bond
ED01		EkoDeck Composite Decking Specie: Backbeach

SITE LOCATION



14.09.2026

DRAWING SCHEDULE

001	Title Page
002	Site Survey
003	Site Plan
004	Floor Plan
005	Roof Plan
006	Long Elevations
007	Short Elevations
008	Images

General Notes

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All work must comply with NCC and Australian Standards

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Refer to requirements of the Geotechnical Report (where applicable) for foundation design. Building contractor to confirm "good ground" prior to construction.

Glazed assemblies to comply with AS2047, AS1288 and AS1107

Fire resistance levels are to be in accordance with NCC BCA spec.

All building materials and systems to be installed in accordance to manufacture specifications/recommendations

All brickwork construction to comply with AS3700 and AS2904

The builder shall take all necessary steps to ensure structural stability and water tightness of all new and/or existing structures.

Project Name

Perth Mill Road

Address

268 Perth Mill Road,
Perth TAS 7300

Owner

Samuel Banfield

Drawn

J.Pinkerton

Date

14/09/2026

Scale

Drawing Title

TITLE
PAGE

Drawing No.

001

Received

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Scale

1:500

Drawing Title

SURVEY PLAN

Drawing No.

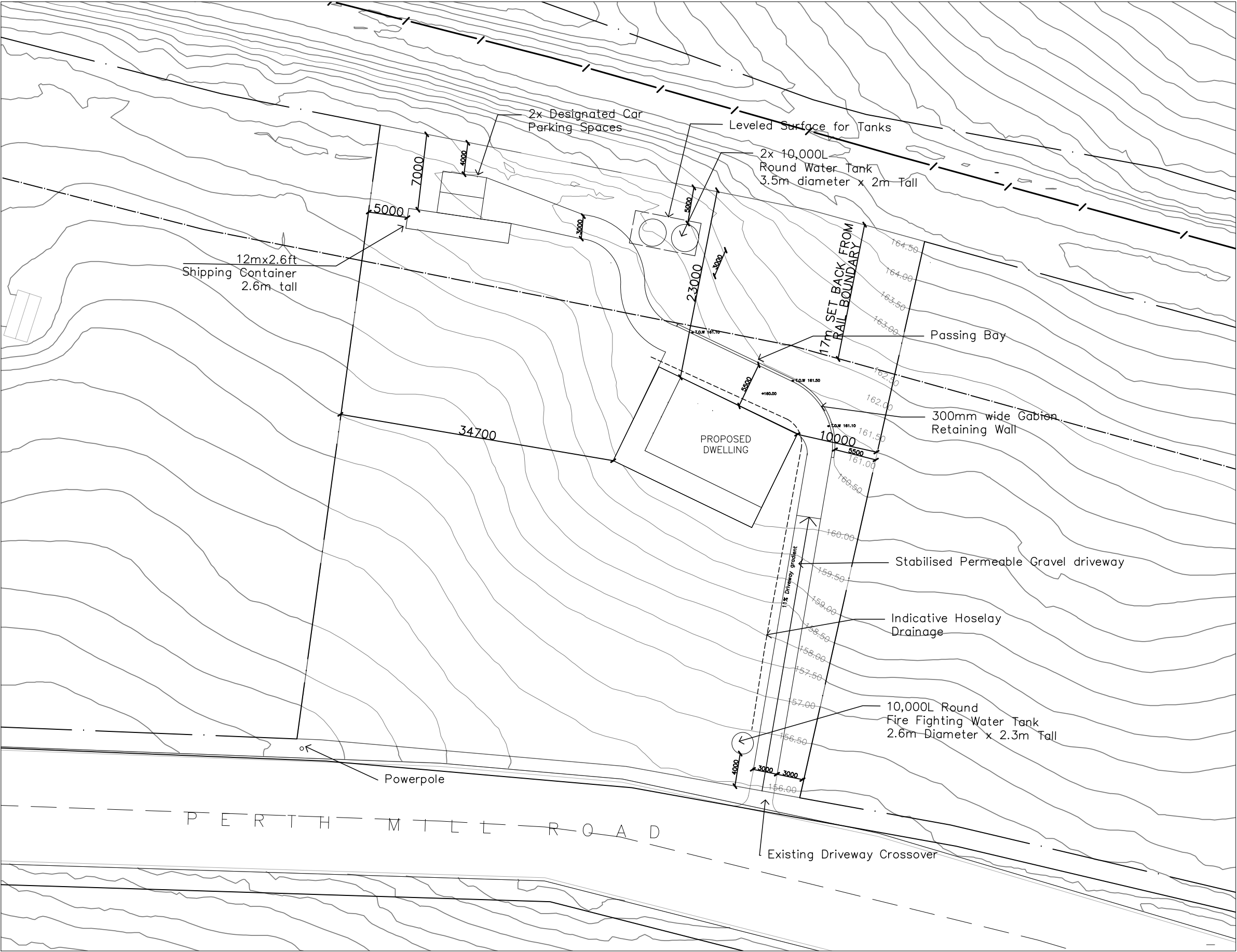
002

Exhibited

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1 SITE PLAN
003



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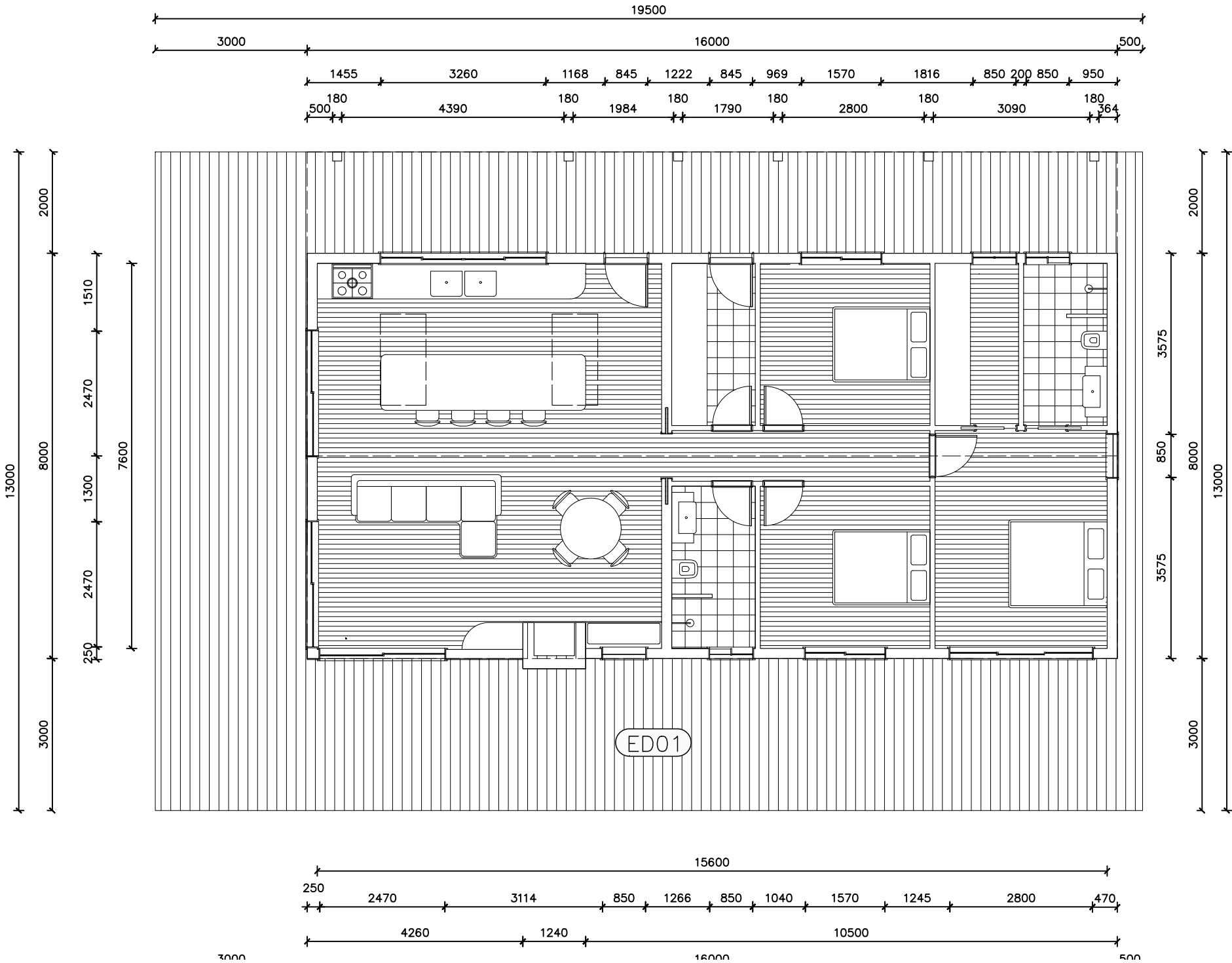
Drawing Title
SITE PLAN

Drawing No.
003

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Scale

1:100

Drawing Title

FLOOR
PLAN

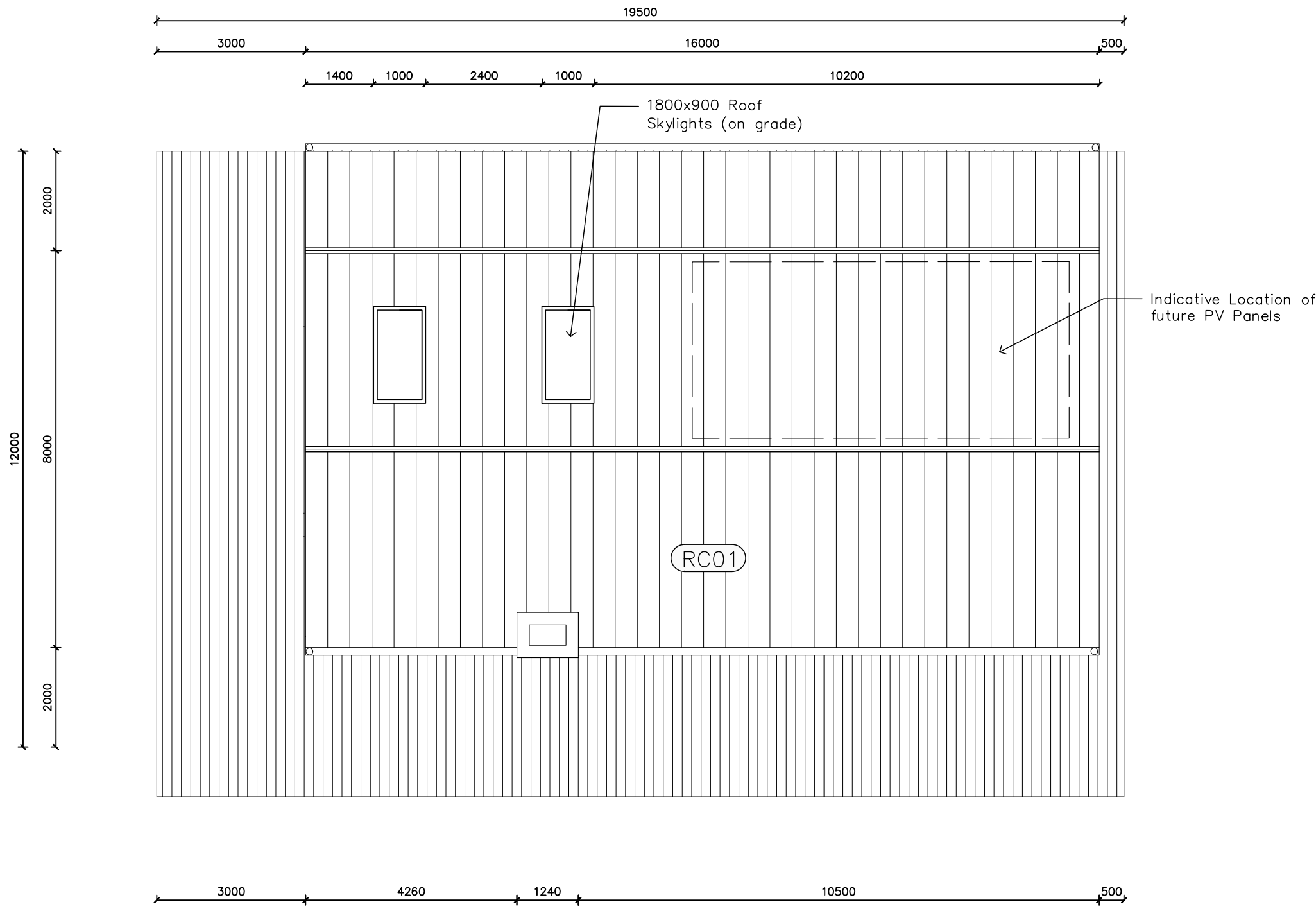
Drawing No.

004

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Scale

1:100

Drawing Title

ROOF
PLAN

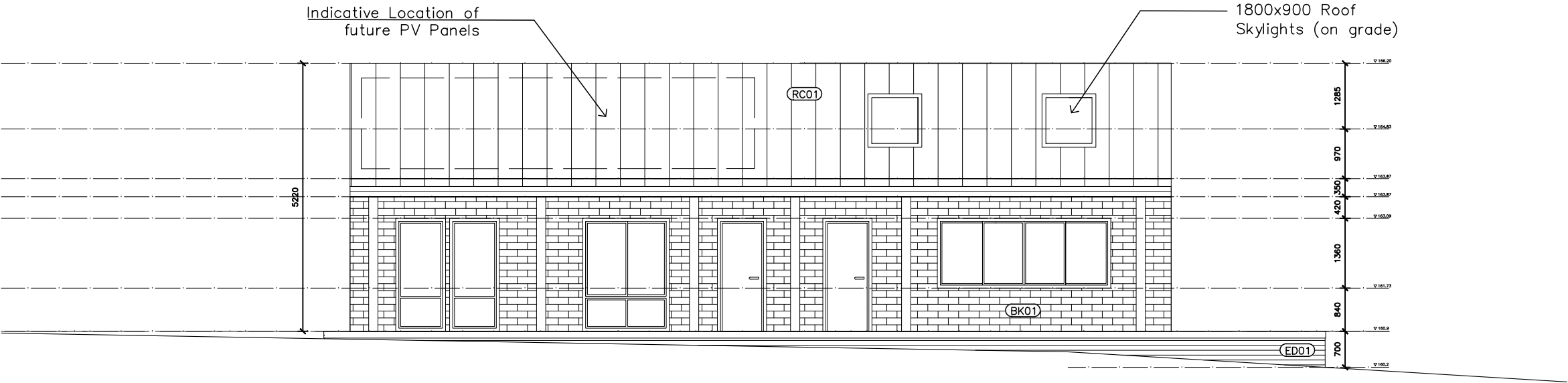
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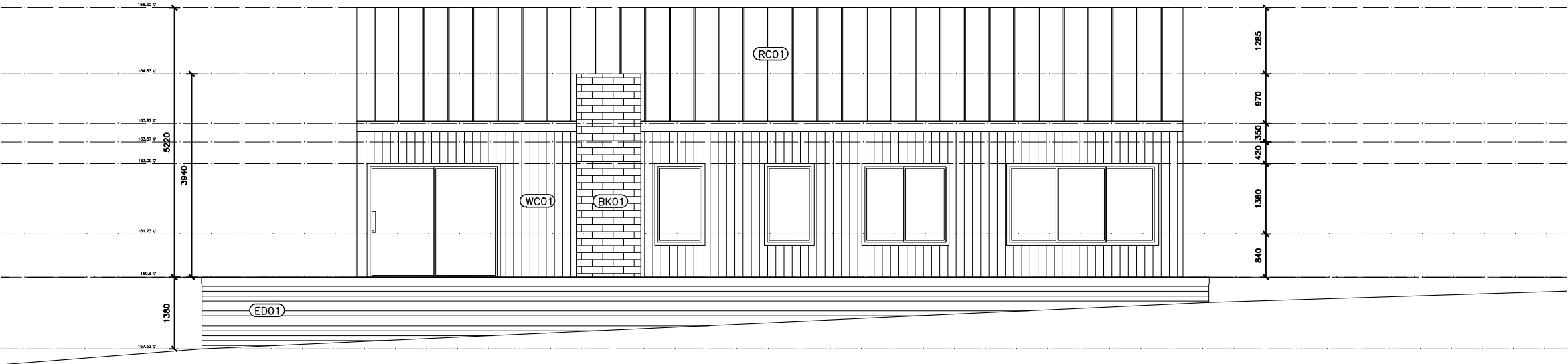
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1 NORTH ELEVATION
006



2 SOUTH ELEVATION
006

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Drawing Title

LONG
ELEVATIONS

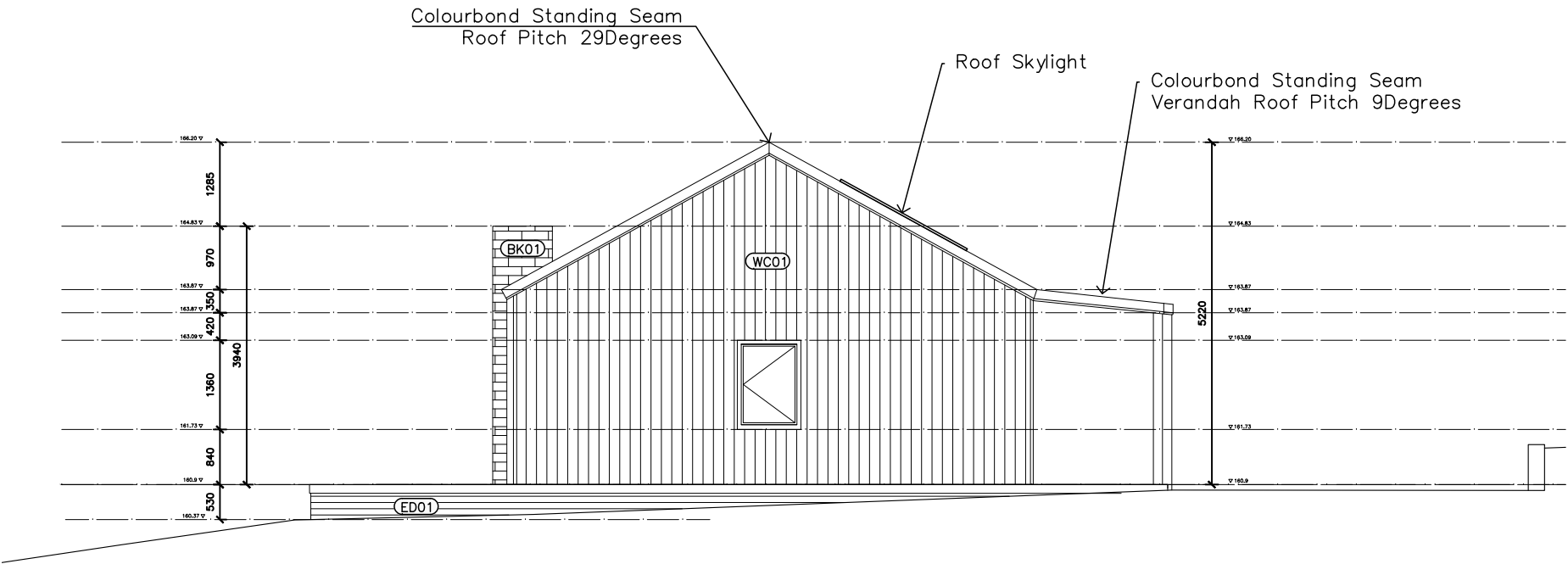
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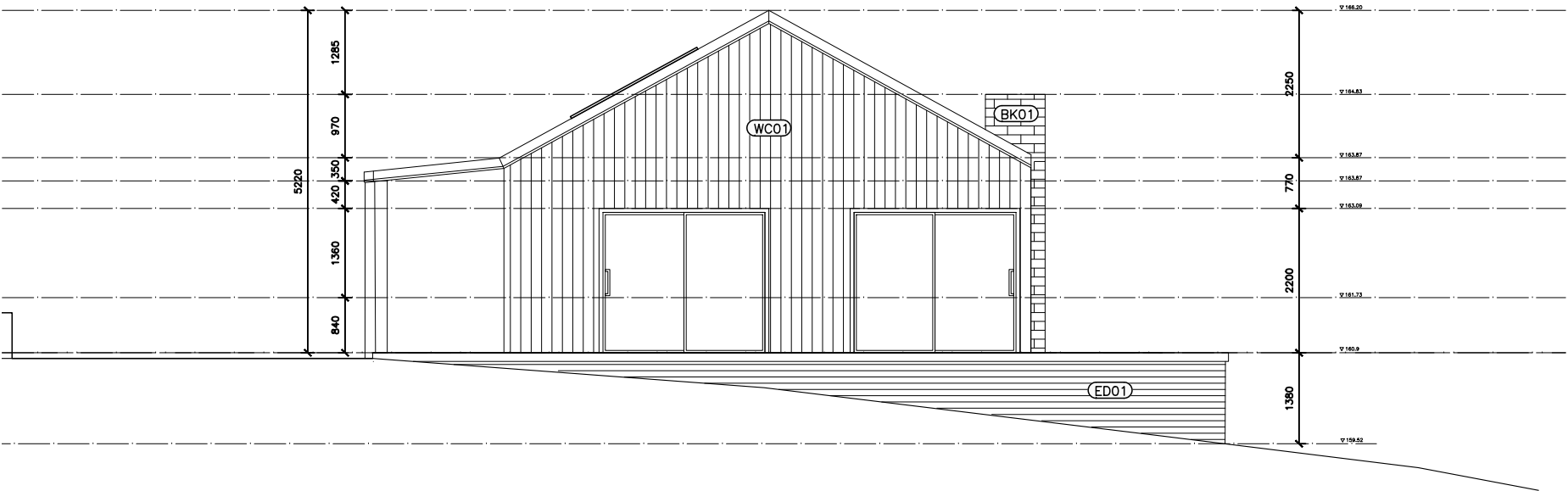
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1 EAST ELEVATION
007



2 WEST ELEVATION
007

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Scale

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Drawing Title

SHORT
ELEVATIONS

Drawing No.

007

14.09.2026



1 IMAGE 1
008 SHORT ELEVATION



2 IMAGE 2
008 LONG ELEVATION



2 IMAGE 3
008 LONG ELEVATION



4 IMAGE 4
008 SHORT ELEVATION

SHIPPING CONTAINER INFO

MATERIAL	CORTEN STEEL
DIMENSIONS	40ftx8ft
HEIGHT	2.6m
COLOUR	Colourbond Basalt

PHOTOS DO NOT SHOW FINAL LOCATION ON SITE. SHIPPING CONTAINER TO BE MOVED. LOCATION CURRENTLY TEMPORARY

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IMAGES

Drawing No.

008