



## **DEVELOPMENT APPLICATION**

### **PDPLANPMTD-2025/053706**

**PROPOSAL:** Additions & Alterations (Single Dwelling)

**LOCATION:** 887 Cambridge Road, Cambridge

**RELEVANT PLANNING SCHEME:** Tasmanian Planning Scheme - Clarence

**ADVERTISING EXPIRY DATE:** 06 October 2025

The relevant plans and documents can be inspected at the Council offices, 38 Bligh Street, Rosny Park, during normal office hours until 06 October 2025. In addition to legislative requirements, plans and documents can also be viewed at [www.ccc.tas.gov.au](http://www.ccc.tas.gov.au) during these times.

Any person may make representations about the application to the Chief Executive Officer, by writing to PO Box 96, Rosny Park, 7018 or by electronic mail to [clarence@ccc.tas.gov.au](mailto:clarence@ccc.tas.gov.au). Representations must be received by Council on or before 06 October 2025.

To enable Council to contact you if necessary, would you please also include a day time contact number in any correspondence you may forward.

Any personal information submitted is covered by Council's privacy policy, available at [www.ccc.tas.gov.au](http://www.ccc.tas.gov.au) or at the Council offices.

# Clarence City Council



## APPLICATION FOR DEVELOPMENT / USE OR SUBDIVISION

The personal information on this form is required by Council for the development of land under the Land Use Planning and Approvals Act 1993. We will only use your personal information for this and other related purposes. If this information is not provided, we may not be able to deal with this matter. You may access and/or amend your personal information at any time. How we use this information is explained in our **Privacy Policy**, which is available at [www.ccc.tas.gov.au](http://www.ccc.tas.gov.au) or at Council offices.

Proposal:

Addition and Alteration

Location:

Address **887 Cambridge Road**  
Suburb/Town **Cambridge** Postcode **7170**

Current Owners/s:

Applicant:

**Personal Information Removed**

Tax Invoice for application fees to be in the name of: (if different from applicant)

Estimated cost of development

\$ 750,000

Is the property on the Tasmanian Heritage Register?

Yes

No

(if yes, we recommend you discuss your proposal with Heritage Tasmania prior to lodgement as exemptions may apply which may save you time on your proposal)

If you had pre-application discussions with a Council Officer, please give their name

Current Use of Site:

Residential Dwelling

Does the proposal involve land administered or owned by the Crown or Council?

Yes

No

Declaration:

- *I have read the Certificate of Title and Schedule of Easements for the land and am satisfied that this application is not prevented by any restrictions, easements or covenants.*
- *I authorise the provision of a copy of any documents relating to this application to any person for the purposes of assessment or public consultation. I agree to arrange for the permission of the copyright owner of any part of this application to be obtained. I have arranged permission for Council's representatives to enter the land to assess this application*
- *I declare that, in accordance with Section 52 of the Land Use Planning and Approvals Act 1993, that I have notified the owner of the intention to make this application. Where the subject property is owned or controlled by Council or the Crown, their signed consent is attached. Where the application is submitted under Section 43A, the owner's consent is attached.*
- *I declare that the information in this declaration is true and correct.*

Acknowledgement:

- *I acknowledge that the documentation submitted in support of my application will become a public record held by Council and may be reproduced by Council in both electronic and hard copy format in order to facilitate the assessment process; for display purposes during public consultation; and to fulfil its statutory obligations. I further acknowledge that following determination of my application, Council will store documentation relating to my application in electronic format only.*

Applicant's Signature:

Signature	<b>Personal Information Removed</b>	Date 23/06/25
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**PLEASE REFER TO THE DEVELOPMENT/USE AND SUBDIVISION CHECKLIST ON THE FOLLOWING PAGES TO DETERMINE WHAT DOCUMENTATION MUST BE SUBMITTED WITH YOUR APPLICATION.**

Documentation required:

### 1. **MANDATORY DOCUMENTATION**

*This information is required for the application to be valid. An application lodged without these items is unable to proceed.*

- Details of the location of the proposed use or development.
- A copy of the current Certificate of Title, Sealed Plan, Plan or Diagram and Schedule of Easements and other restrictions for each parcel of land on which the use or development is proposed.
- Full description of the proposed use or development.
- Description of the proposed operation.  
*May include where appropriate: staff/student/customer numbers; operating hours; truck movements; and loading/unloading requirements; waste generation and disposal; equipment used; pollution, including noise, fumes, smoke or vibration and mitigation/management measures.*
- Declaration the owner has been notified if the applicant is not the owner.
- Crown or Council consent (if publically-owned land).
- Any reports, plans or other information required by the relevant zone or code.
- Fees prescribed by the Council.

*Application fees (please phone 03 6217 9550 to determine what fees apply). An invoice will be emailed upon lodgement.*

### 2. **ADDITIONAL DOCUMENTATION**

*In addition to the mandatory information required above, Council may, to enable it to consider an application, request further information it considers necessary to ensure that the proposed use or development will comply with any relevant standards and purpose statements in the zone, codes or specific area plan, applicable to the use or development.*

- Site analysis plan and site plan**, including where relevant:
  - *Existing and proposed use(s) on site.*
  - *Boundaries and dimensions of the site.*
  - *Topography, including contours showing AHD levels and major site features.*
  - *Natural drainage lines, watercourses and wetlands on or adjacent to the site.*
  - *Soil type.*
  - *Vegetation types and distribution, and trees and vegetation to be removed.*
  - *Location and capacity of any existing services or easements on/to the site.*
  - *Existing pedestrian and vehicle access to the site.*
  - *Location of existing and proposed buildings on the site.*
  - *Location of existing adjoining properties, adjacent buildings and their uses.*
  - *Any natural hazards that may affect use or development on the site.*
  - *Proposed roads, driveways, car parking areas and footpaths within the site.*
  - *Any proposed open space, communal space, or facilities on the site.*
  - *Main utility service connection points and easements.*
  - *Proposed subdivision lot boundaries.*

- Where it is proposed to erect buildings, **detailed plans** with dimensions at a scale of 1:100 or 1:200 showing:
  - *Internal layout of each building on the site.*
  - *Private open space for each dwelling.*
  - *External storage spaces.*
  - *Car parking space location and layout.*
  - *Major elevations of every building to be erected.*
  - *Shadow diagrams of the proposed buildings and adjacent structures demonstrating the extent of shading of adjacent private open spaces and external windows of buildings on adjacent sites.*
  - *Relationship of the elevations to natural ground level, showing any proposed cut or fill.*
  - *Materials and colours to be used on rooves and external walls.*
- Where it is proposed to erect buildings, a plan of the proposed **landscaping** showing:
  - *Planting concepts.*
  - *Paving materials and drainage treatments and lighting for vehicle areas and footpaths.*
  - *Plantings proposed for screening from adjacent sites or public places.*
- Any additional reports, plans or other information required by the relevant zone or code.

*This list is not comprehensive for all possible situations. If you require further information about what may be required as part of your application documentation, please contact Council's Planning Officers on (03) 6217 9550 who will be pleased to assist.*

SEARCH OF TORRENS TITLE

VOLUME 127512	FOLIO 1
EDITION 4	DATE OF ISSUE 11-Mar-2025

SEARCH DATE : 23-Jul-2025

SEARCH TIME : 09.14 AM

DESCRIPTION OF LAND

City of CLARENCE

Lot 1 on Plan [127512](#)

Derivation : Part of 1,956 Acres Gtd to George Stokell

Derived from A16922

SCHEDULE 1

[N224442](#) TRANSFER to CAMERON DAVID VOSS and JACQUELINE MAREE  
VOSS Registered 11-Mar-2025 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

[SP6995](#) BURDENING EASEMENT: Right of drainage (appurtenant to Lot 1 on Sealed Plan No. [6995](#)) over the Drainage Easement 1.52 wide shown passing through the said land within described on Plan No. [127512](#)

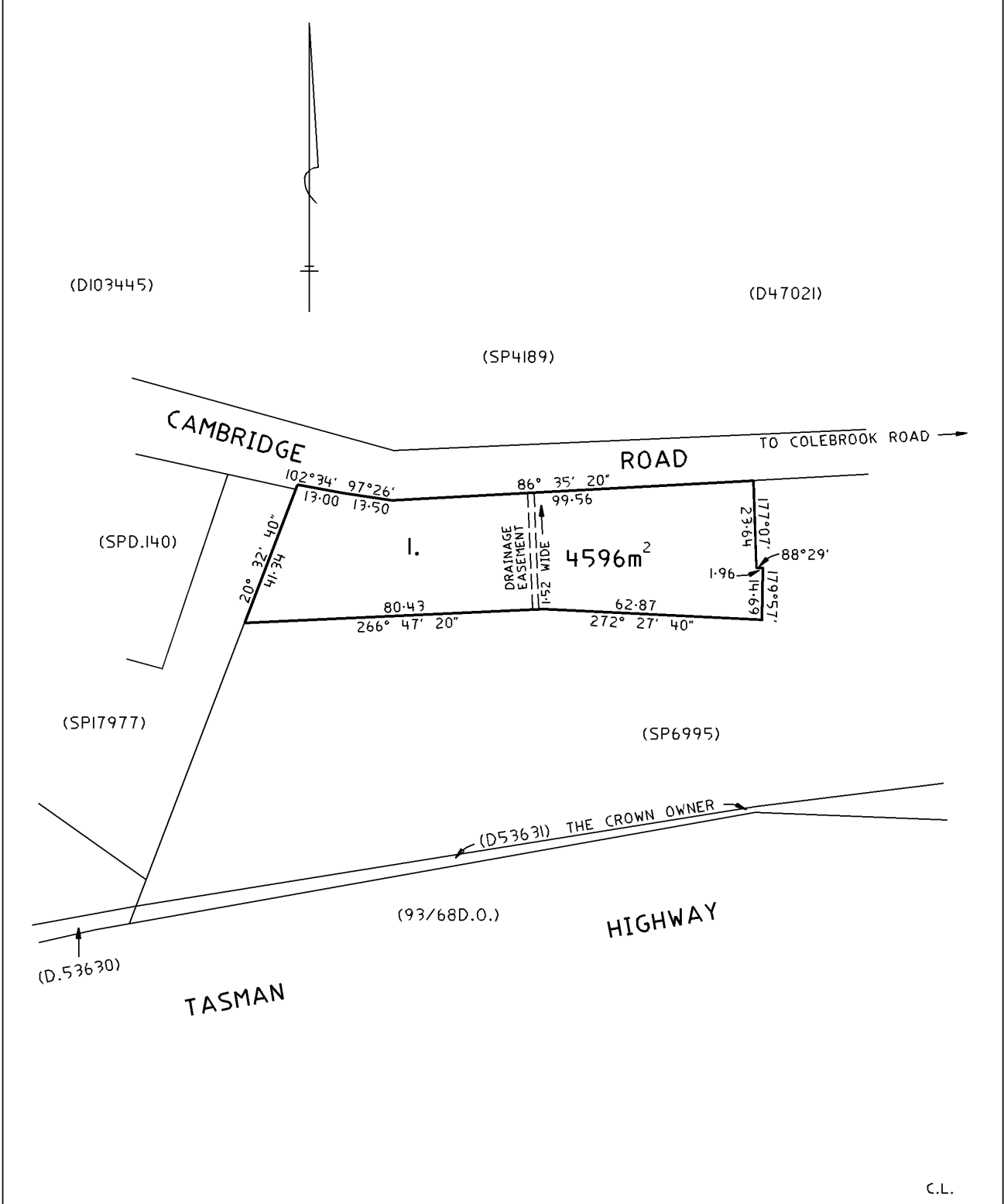
[C947016](#) BURDENING EASEMENT: A Service Easement (appurtenant to Lot 2 on Sealed Plan [155185](#)) over the land marked "Drainage Easement 1.52 Wide" shown on Plan [127512](#)  
Registered 03-Mar-2010 at noon

[E407439](#) MORTGAGE to Commonwealth Bank of Australia  
Registered 11-Mar-2025 at 12.02 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER L.T.ACT 1980		<b>PLAN OF TITLE</b>		Registered Number
FOLIO REFERENCE A.16922				<b>P.127512</b>
GRANTEE PART OF 1956-0-0 GTD. TO GEORGE STOKELL		LOCATION	APPROVED <u>1 MAY 1997</u>	
		CITY OF CLARENCE	<i>Abulaladin</i> Recorder of Titles	
		FIRST SURVEY PLAN No. 101/59D.0.		
		COMPILED BY		
		SCALE 1: 1000	LENGTHS IN METRES	
MAPSHEET MUNICIPAL CODE No. 107 (5225-24)	LAST UPI No 1407838	LAST PLAN No. 101/59D.0.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN	



P I N N A C L E

# PINNACLE














Note: The images provided are artistic representations only and should not be used as references for final colours, finishes, or external/internal features.

## 887 Cambridge Road, Cambridge - 7170

Owner(s) or Clients	Jackie & Cameron Voss	Title Reference	127512/1
Building Classification	1a & 10a	Zoning	Rural Living
Designer	Jason Nickerson CC6073Y	Land Size	4596m <sup>2</sup>
Total Floor Area (Combined)	160.20m <sup>2</sup>	Design Wind Speed	N3
Deck	41.49m <sup>2</sup>	Soil Classification	H1
Alpine Area	N/A	Climate Zone	7
Other Hazards	Bushfire-prone areas, Airport obstacle limitation area, Flood-prone areas	Corrosion Environment	Low
		Bushfire Attack Level (BAL)	TBA

ID	Sheet Name	Issue
A.01	Location Plan	DA - 01
A.02	Site Plan - Existing	DA - 01
A.03	Site Plan - Proposed	DA - 01
A.04	Floor Plan - Existing	DA - 01
A.05	Floor Plan - Proposed	DA - 01
A.06	Elevations - Existing	DA - 01
A.07	Elevations - Proposed	DA - 01
A.08	Elevations - Proposed	DA - 01
A.09	Shed 6x9m Floor Plan & Elevations	DA - 01
A.10	Shed 8x12m Floor Plan & Elevations	DA - 01
A.11	Roof Plan	DA - 01
A.12	Electrical Plan	DA - 01
A.13	Door & Window Schedule	DA - 01

**Legend**

-  - Electrical Connection
-  - Electrical Turret
-  - Sewer Connection
-  - Stormwater Connection
-  - Telstra Connection
-  - Telstra Pit
-  - Water Meter
-  - Water Stop Valve
-  - Fire Hydrant
-  - Solar Bollard Light
-  - Spotlight with sensor

**RENOVATION LEGEND**

-  EXISTING
-  DEMOLITION
-  NEW CONSTRUCTION

**Survey Notes from Surveyor**

This plan and associated digital model is prepared for Pinnacle Drafting from a combination of field survey and existing records for the purpose of designing new constructions on the land and should not be used for any other purpose.

The title boundaries as shown on this plan were not marked at the time of the survey and have been determined by plan dimensions only and not by field survey. No measurements or offsets are to be derived between the features on this plan and the boundary layer. The relationship between the features in this model and the boundary layers cannot be used for any set out purposes or to confirm the position of the title boundaries on site.

Services shown have been located where visible by field survey. Prior to any demolition, excavation or construction on the site, the relevant authority should be contacted for possible location of further underground services and detailed locations of all services.

This note forms an integral part of the Plan/Data. Any reproduction of this plan/model without this note attached will render the information shown invalid.

**Site Areas**

Site Area	4596 m <sup>2</sup>
Building Footprint	214.2 m <sup>2</sup>
Total Site Coverage	4.66%



**PINNACLE**

PINNACLE DRAFTING & DESIGN  
 7/3 Abernant Way, Cambridge 7170  
 03 6248 4218  
 admin@pinnacledrafting.com.au  
 www.pinnacledrafting.com.au  
 Licence: CC6073Y

**Location Plan**

Revision: **DA - 01**  
 Approved by: **JN**

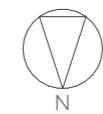
Scale: **1:500** @ A3  
 Pg. No: **A.01**

Proposal: Alteration & Addition  
 Client: Jackie & Cameron Voss  
 Address: 887 Cambridge Road, Cambridge - 7170

Date: 04/07/2025  
 Drawn by: CJ  
 Job No: 060-2024  
 Engineer: TBA  
 Building Surveyor: TBA

ID	Date	Designer

NOTE: Refer to cover page for further details on changes.



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**Legend**

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**Demolition Notes**

**Generally**

- 1. Compliance:**  
Demolition work must adhere to Australian Standard AS 2601-2001: The Demolition of Structures.  
All works to adhere to Regulations 45, 46, and 47 of the Building Act 2016.
- 2. Permit Hours:**  
All demolition activities should be carried out within the permitted permit hours only.
- 3. Site Management:**  
The builder is responsible for implementing adequate measures to prevent the tracking of mud and debris onto public roads.  
Sediment control measures should be in place to prevent sediment entry into council infrastructure (refer to Site Water Management Plan, SWMP).  
The demolition site must be kept clean and tidy at all times.

**Prior to Demolition**

- 1. Service Location:**  
Conduct a Dial Before You Dig (DBYD) to obtain a new DBYD and locate all existing services in the demolition area.  
Contact relevant authorities to assist in locating and identifying owned assets.
- 2. Utilities:**  
Electrical Supply: Terminate electrical supply as required by the relevant authorities.  
Plumbing: Cap plumbing services to the satisfaction of the relevant authorities.  
Telephone: Cap and terminate all telephone services as required.  
Gas: Cap and terminate gas supply as required (if applicable).

**3. Hazardous Materials:**

A safety management plan must be in place, covering aspects like personal protective equipment (PPE), emergency procedures, and safety data sheets for any hazardous materials on-site.  
Asbestos: Identify asbestos through a professional inspection and ensure it is removed in accordance with all removal guidelines (if required).  
**Important Note**  
During demolition works, hose down the site as needed to prevent dust travel and ensure a safe environment for workers and nearby residents.  
Measures should be taken to protect the public from demolition hazards. This includes securing the site with barriers, providing clear signage, and ensuring that debris does not pose a risk to nearby areas or people.

**References:**

Tasmanian Legislation Online: Provides details on the Building Act 2016, including demolition requirements (Tasmanian Legislation).  
Consumer, Building and Occupational Services (CBOS): Offers information on building standards and demolition regulations in Tasmania (CBOS).  
Australian Standard AS 2601-2001: The Demolition of Structures.

**Surface Water Drainage**

Ground to fall away from building in all directions in compliance with AS2870 & N.C.C 2022 3.3.3.

Surface water must be diverted away from a Class 1 building as follows:

- (a) Slab-on-ground - finished ground level adjacent to a building: the external finished surface surrounding the slab must be drained to move surface water away from the building and graded to give a slope of not less than (i) 25mm over the first 1m from the building (A) in low rainfall intensity areas for surfaces that are reasonably impermeable (such as concrete or claypaving); or (B) for any reasonably impermeable surface that forms part of an access path or ramp provided for the purposes of Clauses 1.1 (2) or (4)(c) of the ABCB Standard for Livable Housing Design; or (ii) 50 mm over the first 1 m from the building in any other case.
- (b) Slab-on-ground - finished slab heights: the height of the slab-on-ground above external finished surfaces must be not less than (i) 100 mm above the finished ground level in low rainfall intensity areas or sandy, well-drained areas; or (ii) 50 mm above impermeable (paved or concrete) areas that slope away from the building in accordance with (a); or (iii) 150 mm in any other case.
- (c) The ground beneath suspended floors must be graded so that the area beneath the building is above the adjacent external finished ground level and surface water is prevented from ponding under the building.

**Subsoil Drainage**

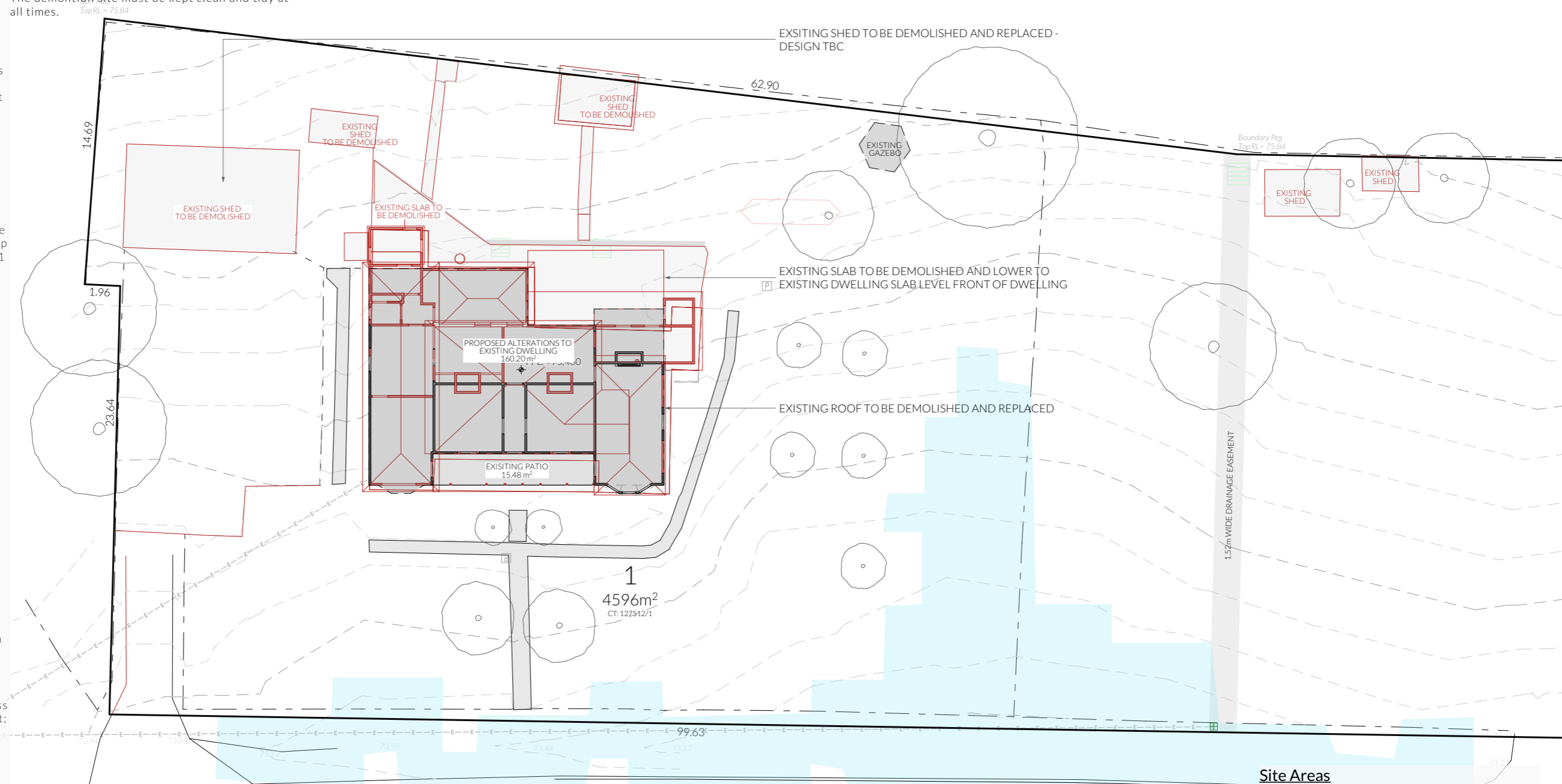
is to comply with AS2870, AS3500 & N.C.C 2022 3.3.4.

- Where a subsoil drainage system is installed to divert subsurface water away from the area beneath a building, the subsoil drain must-
- (a) be graded with a uniform fall of not less than 1:300; and
  - (b) discharge into an external silt pit or sump with-
    - (i) the level of discharge from the silt pit or sump into an impervious drainage line not less than 50 mm below the invert level of the inlet; and provision for cleaning and maintenance.

**Note**

All driveway pits and grate drains to be **Class B**.

Stormwater pits are indicative. Location may vary depending on site conditions.














NOT FOR CONSTRUCTION

**Site Areas**

Site Area	4596 m <sup>2</sup>
Building Footprint	214.2 m <sup>2</sup>
Total Site Coverage	4.66%

	PINNACLE DRAFTING & DESIGN 7/3 Abernant Way, Cambridge 7170 03 6248 4218 admin@pinnacledrafting.com.au www.pinnacledrafting.com.au Licence: CC6073Y	<b>Site Plan - Existing</b>  Revision: <b>DA - 01</b> Approved by: <b>JN</b>	Scale: <b>1:250 @ A3</b>  Pg. No: <b>A.02</b>	Proposal: Alteration & Addition Client: Jackie & Cameron Voss Address: 887 Cambridge Road, Cambridge - 7170	Date: 04/07/2025 Drawn by: CJ Job No: 060-2024 Engineer: TBA Building Surveyor: TBA	<table border="1"> <thead> <tr> <th>ID</th> <th>Date</th> <th>Designer</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ID	Date	Designer					These drawings are the property of Pinnacle Drafting & Design Pty Ltd, reproduction in whole or part is strictly forbidden without written consent. © 2025. These drawings are to be read in conjunction with all drawings and documentation by Engineers, Surveyors and any other consultants referred to within this drawing set as well as any Certificate of Likely Compliance and/or permit documentation. DO NOT SCALE FROM DRAWINGS. All Contractors are to verify dimensions on site before commencing any orders, works or requesting producing shop drawings. ANY AND ALL DISCREPANCIES DISCOVERED BY OUTSIDE PARTIES ARE TO BE BROUGHT TO THE ATTENTION OF PINNACLE DRAFTING & DESIGN PTY LTD AS SOON AS PRACTICABLE. This document must be printed in colour. Pinnacle Drafting takes no responsibility for any errors, issues, or omissions caused by contractors and builders not following colour-printed plans.
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**Legend**

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- (c) The ground beneath suspended floors must be graded so that the area beneath the building is above the adjacent external finished ground level and surface water is prevented from ponding under the building.

Flood Overlay - as per ListMap

**Subsoil Drainage**

is to comply with AS2870, AS3500 & N.C.C 2022 3.3.4.

Where a subsoil drainage system is installed to divert subsurface water away from the area beneath a building, the subsoil drain must-

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**Note**

All driveway pits and grate drains to be **Class B**.

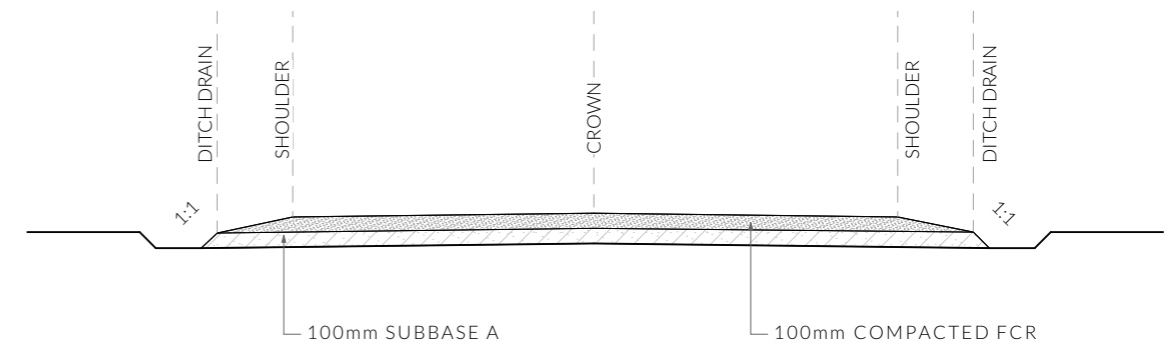
Stormwater pits are indicative. Location may vary depending on site conditions.

**Important Note**

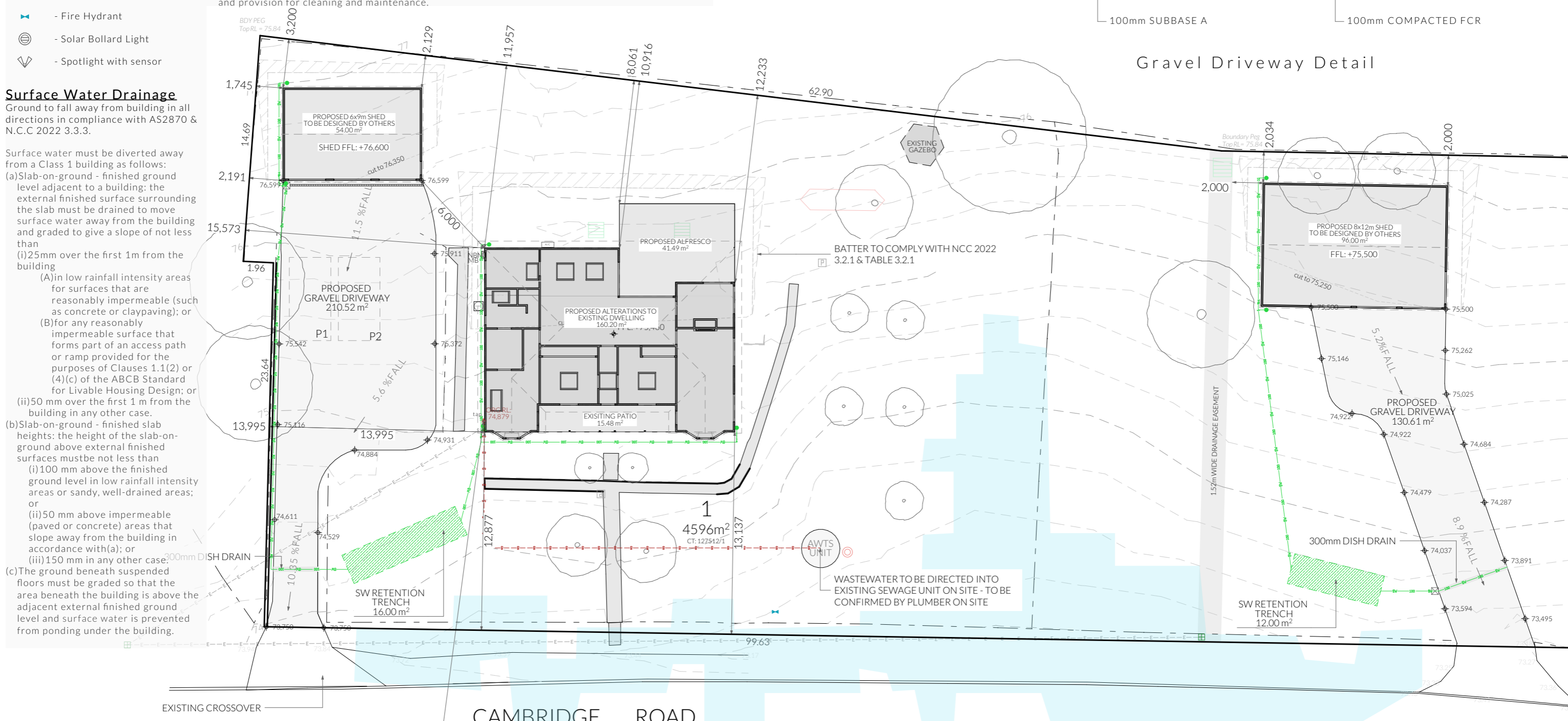
Refer to Stormwater report completed by GES dated August 2025 for details on Wastewater Design.

**Important Note**

Refer to bushfire report completed by GES dated September 2025 for details on Bushfire rating & management.



Gravel Driveway Detail




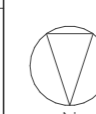

EXISTING CROSSOVER  
ORG WITH TAP OVER, TOP OF ORG TO BE A MINIMUM OF 150mm BELOW LOWEST SANITARY FIXTURE

CAMBRIDGE ROAD

NOT FOR CONSTRUCTION

**Site Areas**

Site Area	4596 m <sup>2</sup>
Building Footprint	214.2 m <sup>2</sup>
Total Site Coverage	4.66%

	PINNACLE DRAFTING & DESIGN 7/3 Abernant Way, Cambridge 7170 03 6248 4218 admin@pinnacledrafting.com.au www.pinnacledrafting.com.au Licence: CC6073Y	<b>Site Plan - Proposed</b>  Revision: DA - 01 Approved by: JN	Scale: <b>1:250</b> @ A3  Pg. No: <b>A.03</b>	Proposal: Alteration & Addition Client: Jackie & Cameron Voss Address: 887 Cambridge Road, Cambridge - 7170	Date: 04/07/2025 Drawn by: CJ Job No: 060-2024 Engineer: TBA Building Surveyor: TBA	<table border="1" style="width: 100%; border-collapse: collapse; font-size: 8px;"> <tr> <th>ID</th> <th>Date</th> <th>Designer</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	ID	Date	Designer					These drawings are the property of Pinnacle Drafting & Design Pty Ltd, reproduction in whole or part is strictly forbidden without written consent. © 2025. These drawings are to be read in conjunction with all drawings and documentation by Engineers, Surveyors and any other consultants referred to within this drawing set as well as any Certificate of Likely Compliance and/or permit documentation. DO NOT SCALE FROM DRAWINGS. All Contractors are to verify dimensions on site before commencing any orders, works or requesting producing shop drawings. ANY AND ALL DISCREPANCIES DISCOVERED BY OUTSIDE PARTIES ARE TO BE BROUGHT TO THE ATTENTION OF PINNACLE DRAFTING & DESIGN PTY LTD AS SOON AS PRACTICABLE. This document must be printed in colour. Pinnacle Drafting takes no responsibility for any errors, issues, or omissions caused by contractors and builders not following colour-printed plans.	
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Access Panel



Articulation Joint



Smoke Alarm

### RENOVATION LEGEND

— - EXISTING

— — — - DEMOLITION

### Construction of sanitary compartments 10.4.2 of NCC 2022

The door to a fully enclosed sanitary compartment must -

- open outwards; or
- slide; or
- be readily removable from the outside of the compartment.

unless there is a clear space of at least 1.2 m, measured in accordance with Figure 10.4.2 of NCC 2022 Vol II, between the closet pan within the sanitary compartment and the doorway.

### Note: Safe Movement & Egress

Openable windows greater than 4m above the surface below are to be fitted with a device to limit opening or a suitable screen so a 125mm sphere cannot pass through. Except for Bedrooms, where the requirement is for heights above 2m. Refer to clauses 11.3.7 and 11.3.8 of NCC 2022 for further information on suitable protective devices.

### Note: Paved Areas

All paths and patios to fall away from dwelling.

### Note: Stair Construction

All stairs to be constructed in accordance with NCC Vol II 2022 Part 11.2.2:

Riser: Min 115mm - Max 190mm

Going: Min 240mm - Max 355mm

Slope (2R+G): Max 550 - Min 700

For stairways serving non-habitable room used infrequently, refer to table 11.2.2(b).

Landings to comply with Clause 11.2.5 and be a minimum of 750mm deep measured 500mm from the inside edge of the landing.

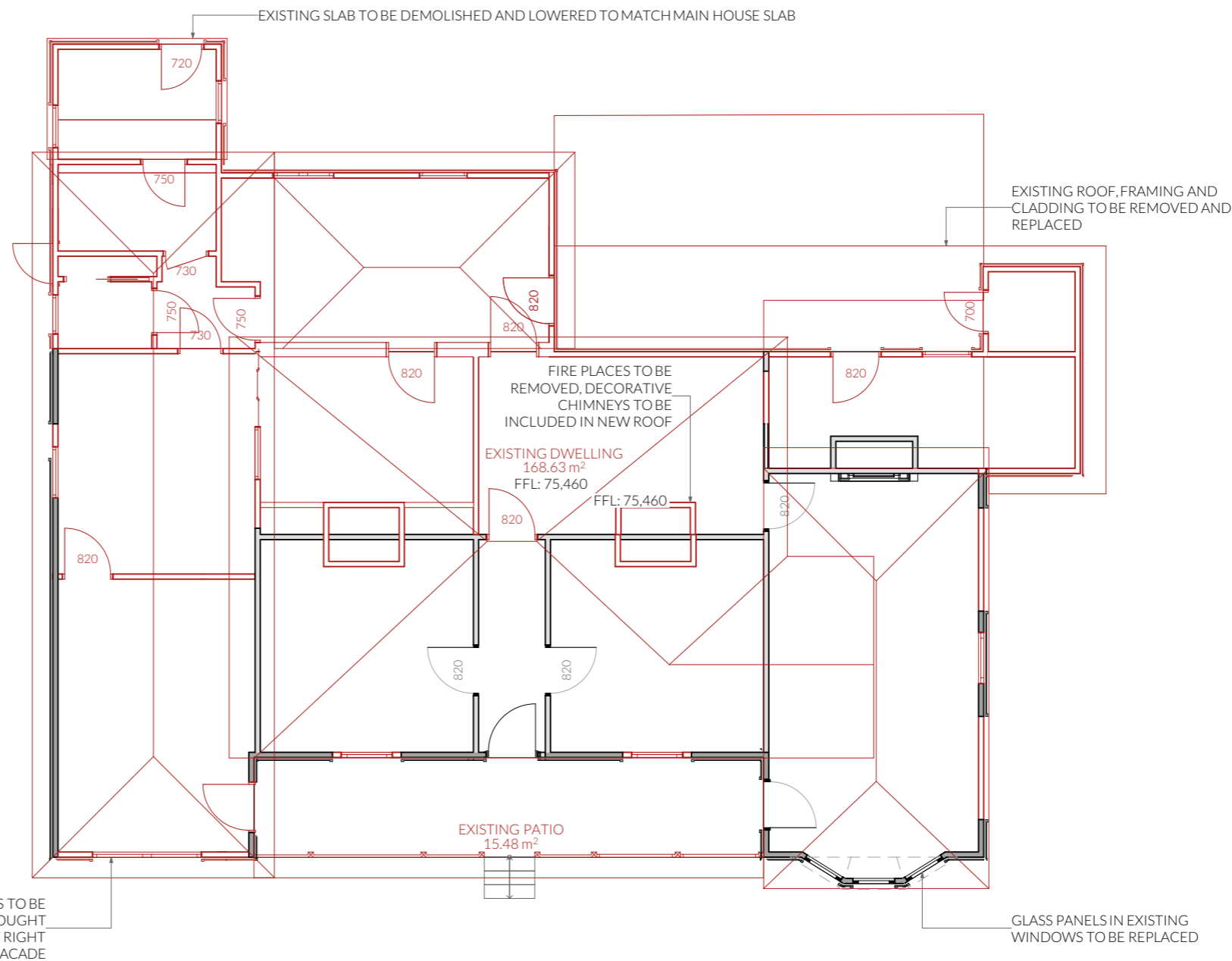
Slip resistance of treads, nosings and ramps to comply with Clause 11.2.4.

### Heights of rooms & other spaces 10.3.1 of NCC 2022

Heights of rooms and other spaces must not be less than;

- (a) in a habitable room excluding a kitchen - 2.4 m; and
- (b) in a kitchen - 2.1 m; and
- (c) in a corridor, passageway or the like - 2.1 m; and
- (d) in a bathroom, shower room, laundry, sanitary compartment, airlock, pantry, storeroom, garage, car parking area or the like - 2.1 m; and
- (e) in a room or space with a sloping ceiling or projections below the ceiling line within- See NCC directly for these items
- (f) in a stairway, ramp, landing, or the like - 2.0 m measured vertically above the nosing line of stairway treads or the floor surface of a ramp, landing or the like.

If required onsite, the builder may work within the tolerances of the above as specified within the NCC 2022 Vol II. Builder to contact Pinnacle before undertaking works.



### Floor Areas

Existing Total Floor Area	168.63m <sup>2</sup>
Existing Patio	15.48m <sup>2</sup>

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### Floor Plan - Existing

Revision: DA - 01  
 Approved by: JN

Scale: 1:100 @ A3  
 Pg. No: A.04

Proposal: Alteration & Addition  
 Client: Jackie & Cameron Voss  
 Address: 887 Cambridge Road, Cambridge - 7170

Date: 04/07/2025  
 Drawn by: CJ  
 Job No: 060-2024  
 Engineer: TBA  
 Building Surveyor: TBA

ID	Date	Designer

NOTE: Refer to cover page for further details on changes.



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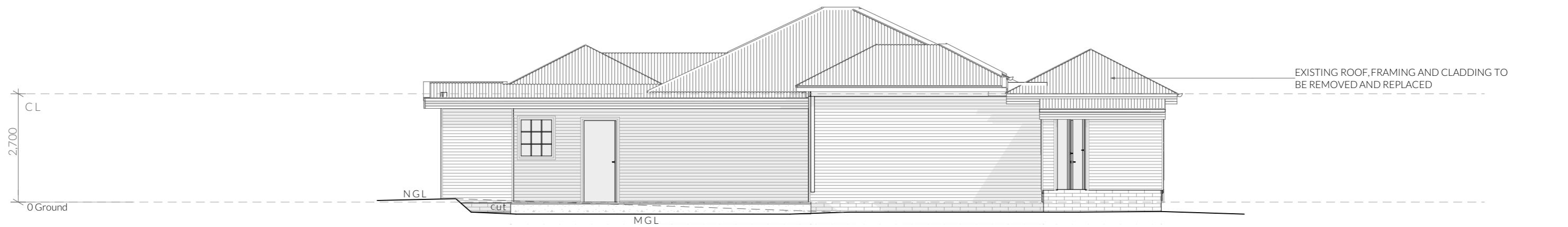
East Elevation

1:100



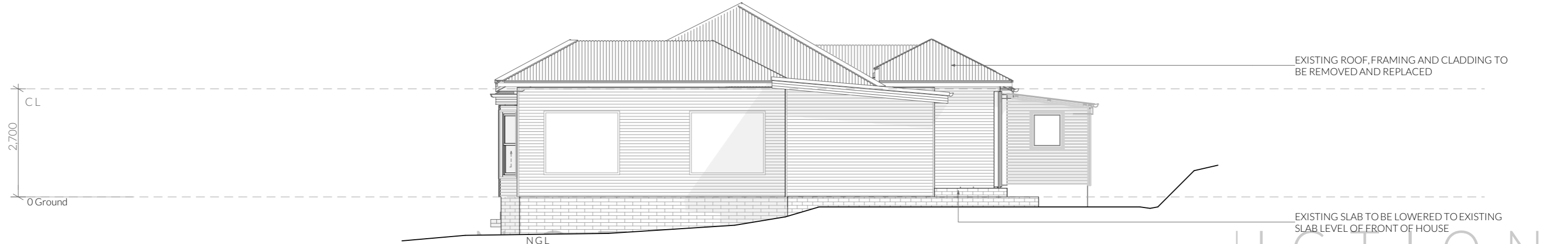
North Elevation

1:100



South Elevation

1:100



West Elevation

1:100

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**Elevations - Existing**

Revision: **DA - 01**  
Approved by: **JN**

Scale: **1:100** @ A3  
Pg. No: **A.06**

Proposal: Alteration & Addition  
Client: Jackie & Cameron Voss  
Address: 887 Cambridge Road, Cambridge - 7170

Date: 04/07/2025  
Drawn by: CJ  
Job No: 060-2024  
Engineer: TBA  
Building Surveyor: TBA

ID	Date	Designer

NOTE: Refer to cover page for further details on changes.

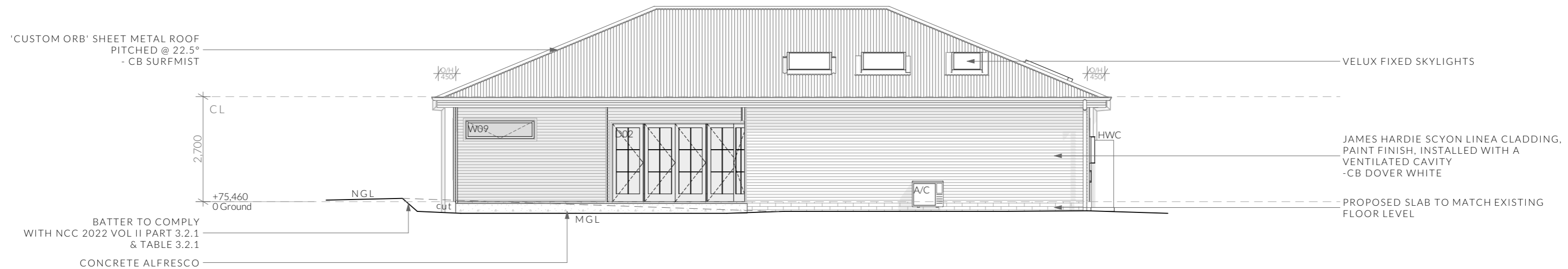
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West Elevation

1:100



South Elevation

1:100

**NOTE**

Clearances between cladding and ground shall comply with Clause 7.5.7 of the NCC 2022 and shall be a minimum clearance of: 100mm in low rainfall intensity areas or sandy, well-drained areas; or 50mm above impermeable areas that slope away from the building; or 150mm in any other case.

Wall cladding must extend a minimum of 50 mm below the bearer or lowest horizontal part of the suspended floor framing.

U.N.O in builders specifications or located in saline environments or if using a glazed finish brick, brickwork is to be installed in stretcher bond pattern with raked joints.

As per NCC parts 11.3.7 and 11.3.8,

Openable windows greater than 4m above ground level are to be fitted with a device to limit the opening or a suitable screen so a 125mm sphere cannot pass through, and withstand a force of 250N. Except for bedrooms, where the requirement is for heights above 2m.

All stairs to be constructed in accordance with NCC 2022 Vol II Part 11.2.2

Riser: Min 115mm - Max 190mm

Going: Min 240mm - Max 355mm

Slope (2R+G): Max 550 - Min 700

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	ID	Date	Designer										
<small>NOTE: Refer to cover page for further details on changes.</small>													



North Elevation

1:100



East Elevation

1:100

**NOTE**  
Clearances between cladding and ground shall comply with Clause 7.5.7 of the NCC 2022 and shall be a minimum clearance of: 100mm in low rainfall intensity areas or sandy, well-drained areas; or 50mm above impermeable areas that slope away from the building; or 150mm in any other case.

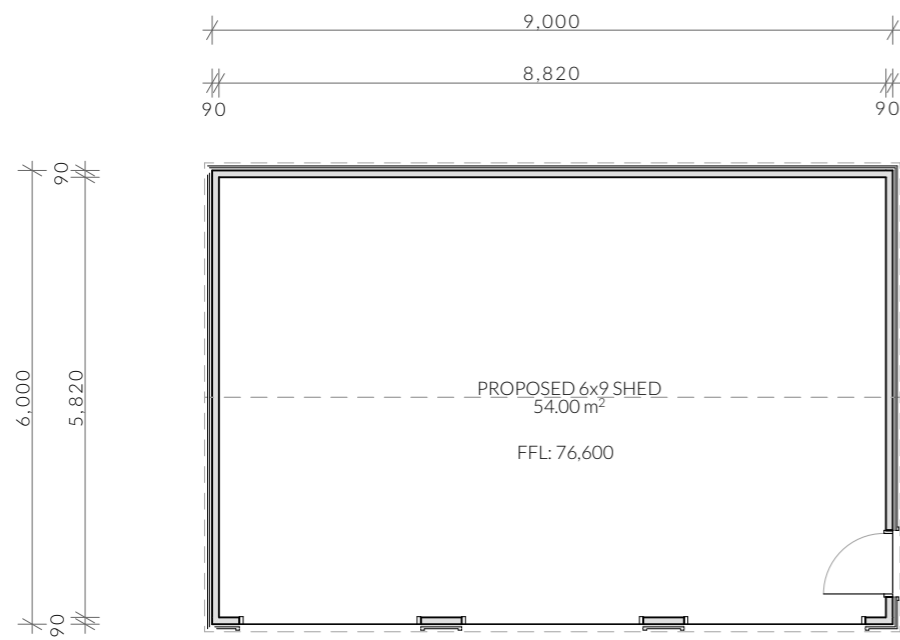
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U.N.O in builders specifications or located in saline environments or if using a glazed finish brick, brickwork is to be installed in stretcher bond pattern with raked joints.

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All stairs to be constructed in accordance with NCC 2022 Vol II Part 11.2.2  
Riser: Min 115mm - Max 190mm      Going: Min 240mm - Max 355mm      Slope (2R+G): Max 550 - Min 700

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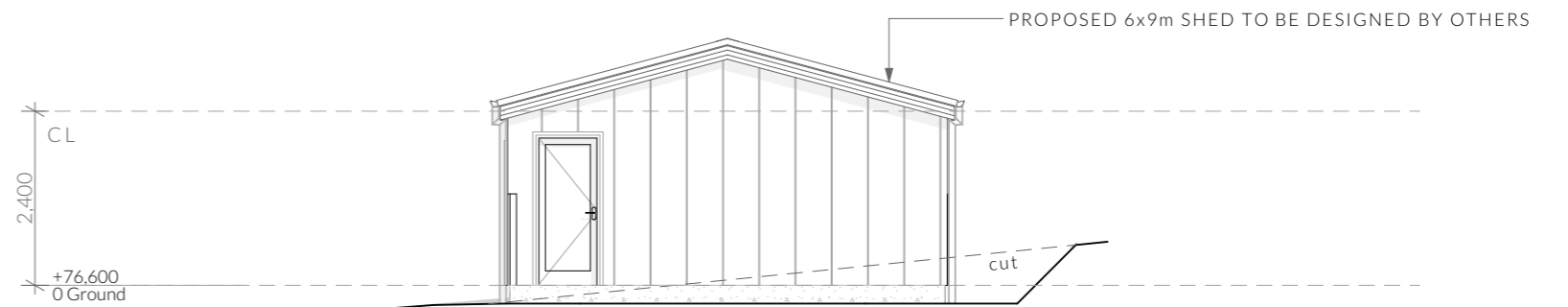
	PINNACLE DRAFTING & DESIGN 7/3 Abernant Way, Cambridge 7170 03 6248 4218 admin@pinnacledrafting.com.au www.pinnacledrafting.com.au Licence: CC6073Y	<b>Elevations - Proposed</b>  Revision: <b>DA - 01</b> Approved by: <b>JN</b>	Scale: <b>1:100 @ A3</b>  Pg. No: <b>A.08</b>	Proposal: Alteration & Addition Client: Jackie & Cameron Voss Address: 887 Cambridge Road, Cambridge - 7170	Date: 04/07/2025 Drawn by: CJ Job No: 060-2024 Engineer: TBA Building Surveyor: TBA	<table border="1"> <thead> <tr> <th>ID</th> <th>Date</th> <th>Designer</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ID	Date	Designer				These drawings are the property of Pinnacle Drafting & Design Pty Ltd, reproduction in whole or part is strictly forbidden without written consent. © 2025. These drawings are to be read in conjunction with all drawings and documentation by Engineers, Surveyors and any other consultants referred to within this drawing set as well as any Certificate of Likely Compliance and/or permit documentation. DO NOT SCALE FROM DRAWINGS. All Contractors are to verify dimensions on site before commencing any orders, works or requesting producing shop drawings. ANY AND ALL DISCREPANCIES DISCOVERED BY OUTSIDE PARTIES ARE TO BE BROUGHT TO THE ATTENTION OF PINNACLE DRAFTING & DESIGN PTY LTD AS SOON AS PRACTICABLE. This document must be printed in colour. Pinnacle Drafting takes no responsibility for any errors, issues, or omissions caused by contractors and builders not following colour-printed plans.	
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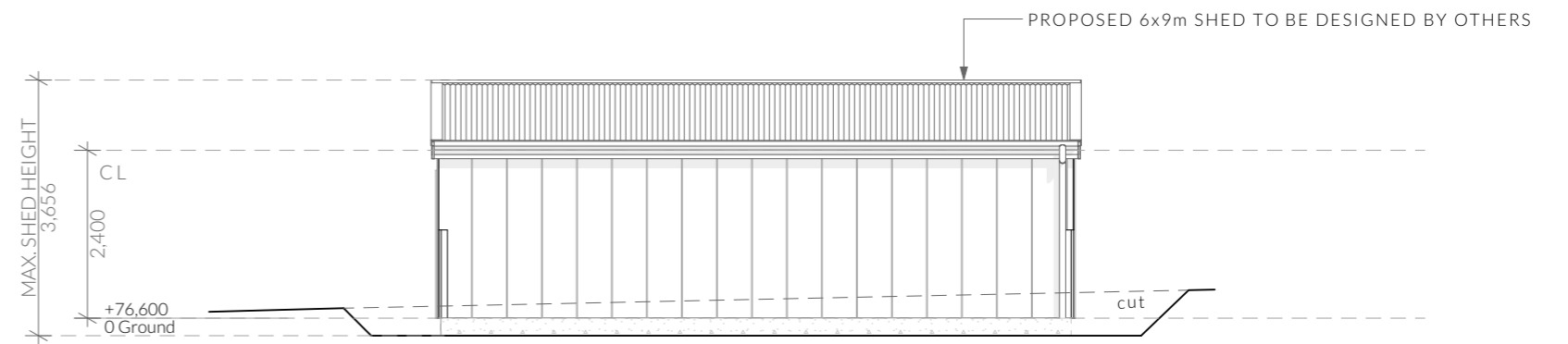
6x9m Shed Floor Plan



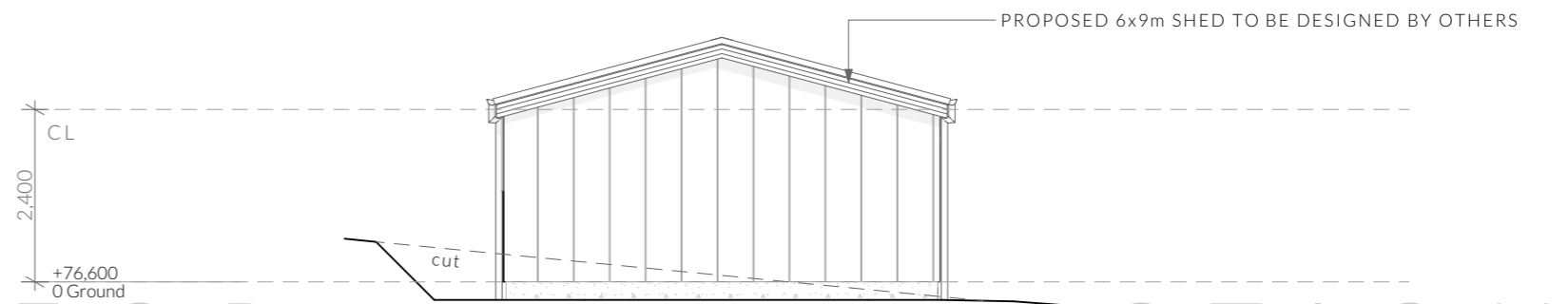
North Elevation



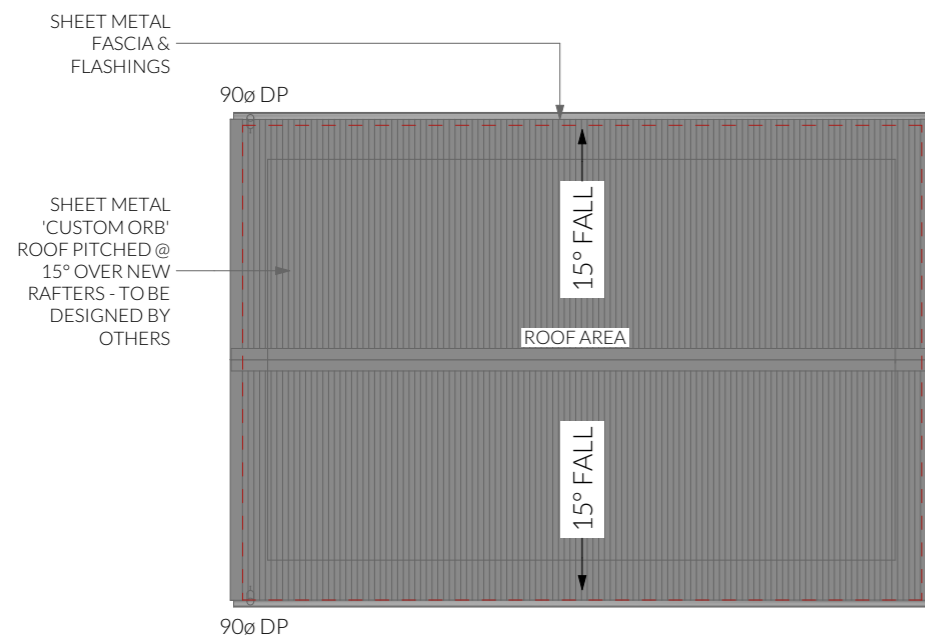
West Elevation



South Elevation



East Elevation



6x9m Shed Roof Plan

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Shed 6x9m Floor Plan & Elevations

Revision: DA - 01  
Approved by: JN

Scale: 1:100 @ A3  
Pg. No: A.09

Proposal: Alteration & Addition  
Client: Jackie & Cameron Voss  
Address: 887 Cambridge Road, Cambridge - 7170

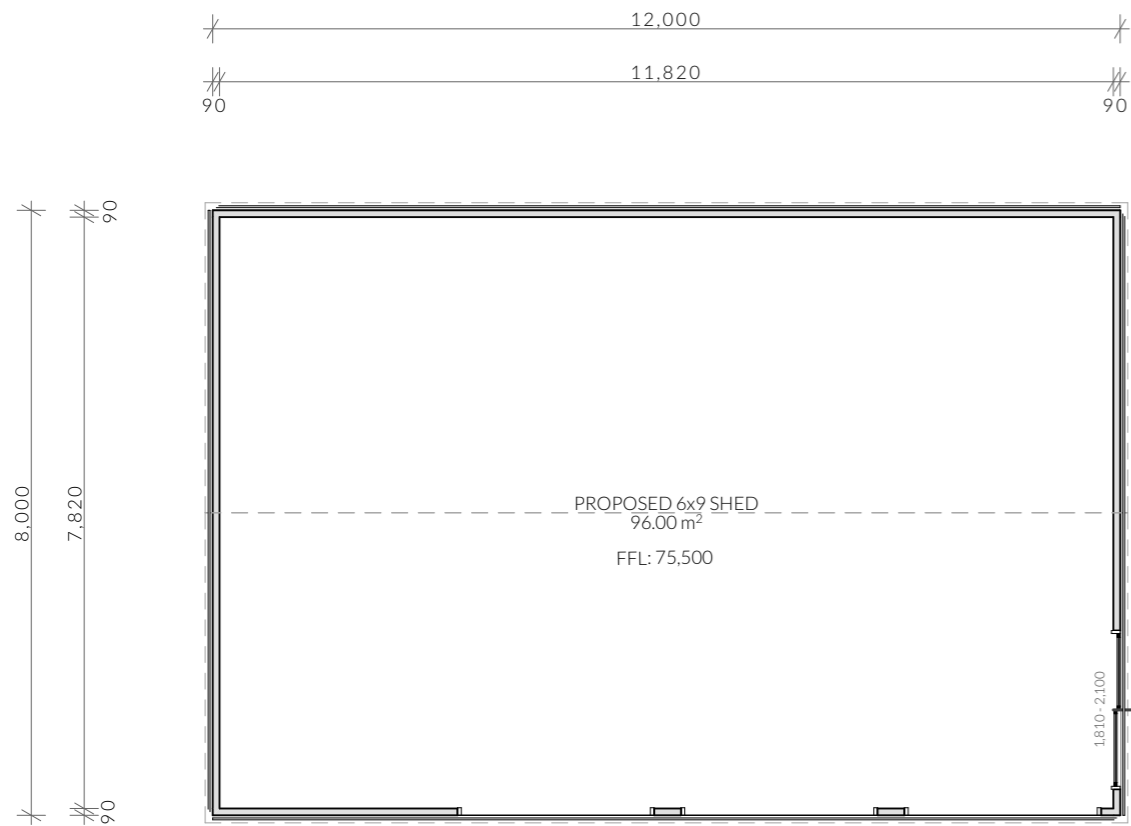
Date: 04/07/2025  
Drawn by: CJ  
Job No: 060-2024  
Engineer: TBA  
Building Surveyor: TBA

ID	Date	Designer

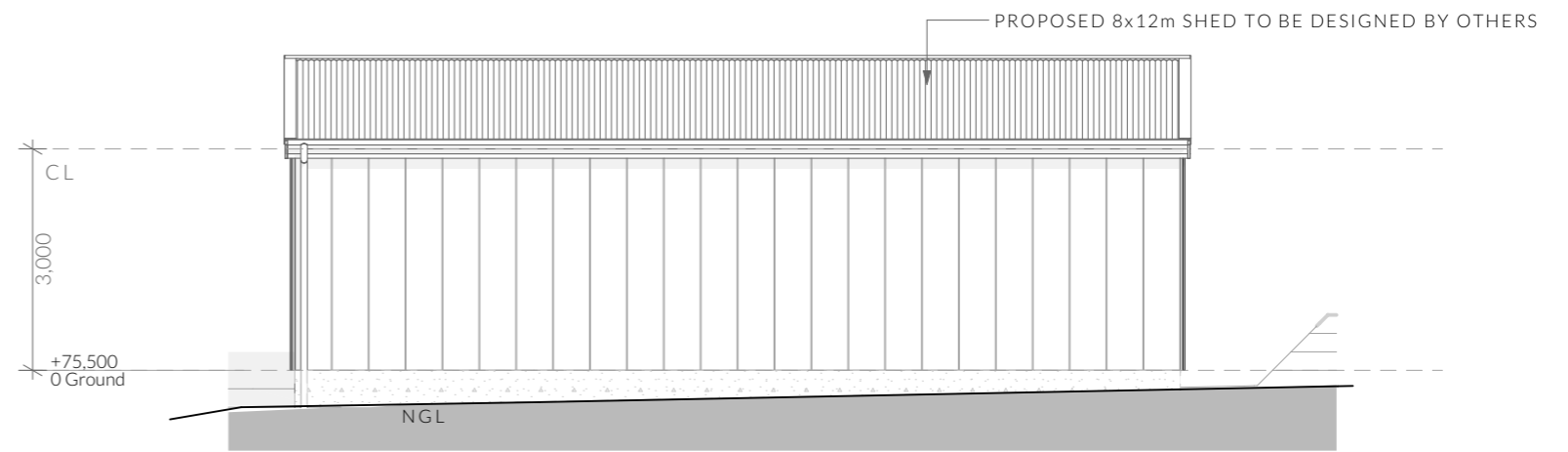
NOTE: Refer to cover page for further details on changes.

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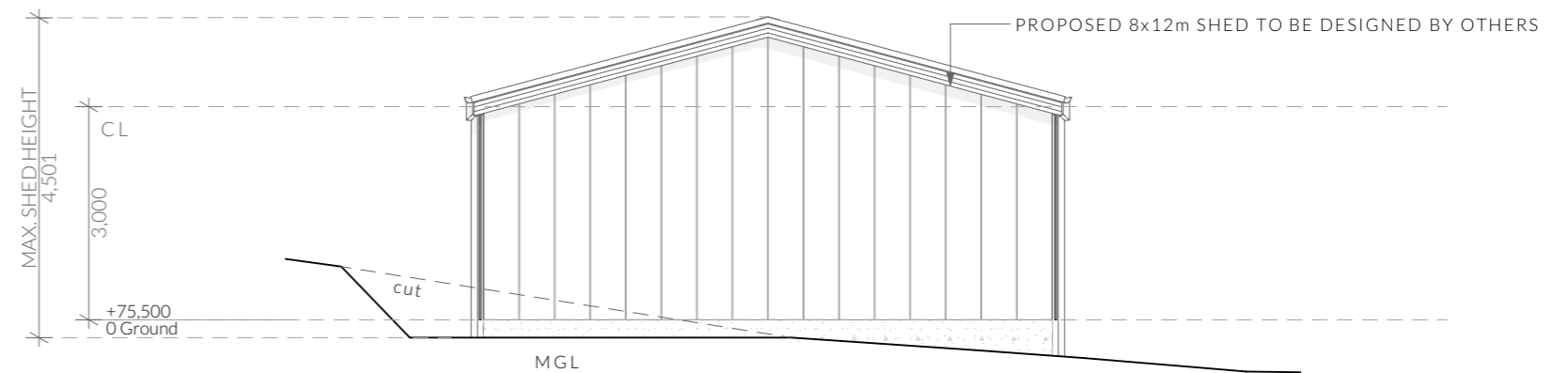
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ASSOCIATION OF AUSTRALIA



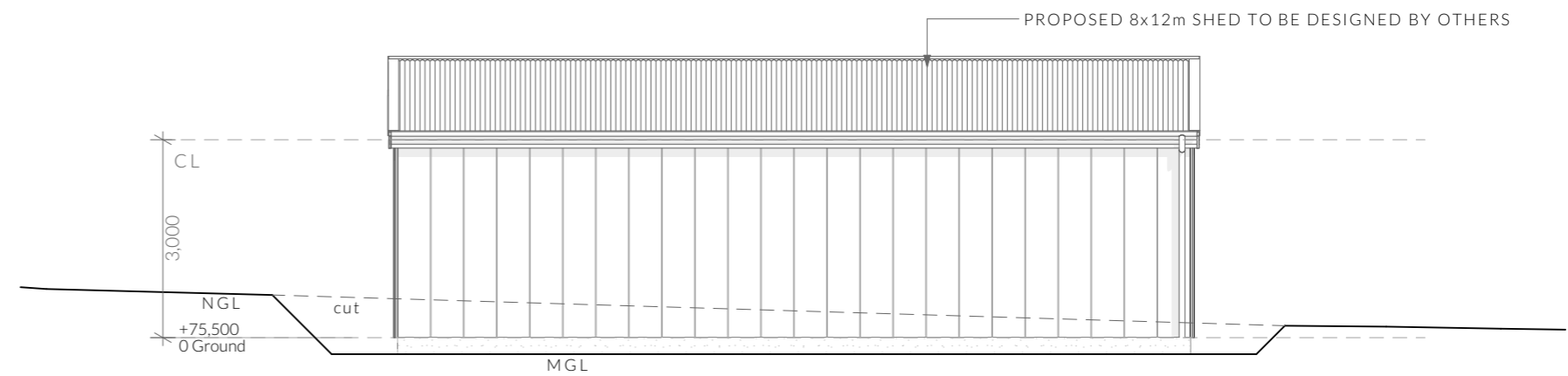
8x12m Shed Floor Plan



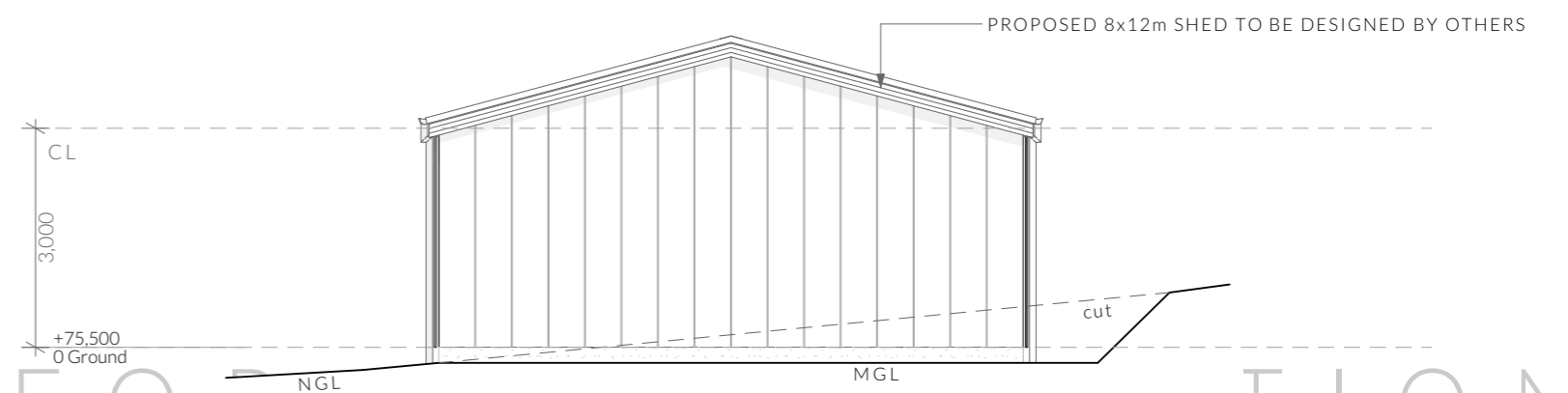
North Elevation



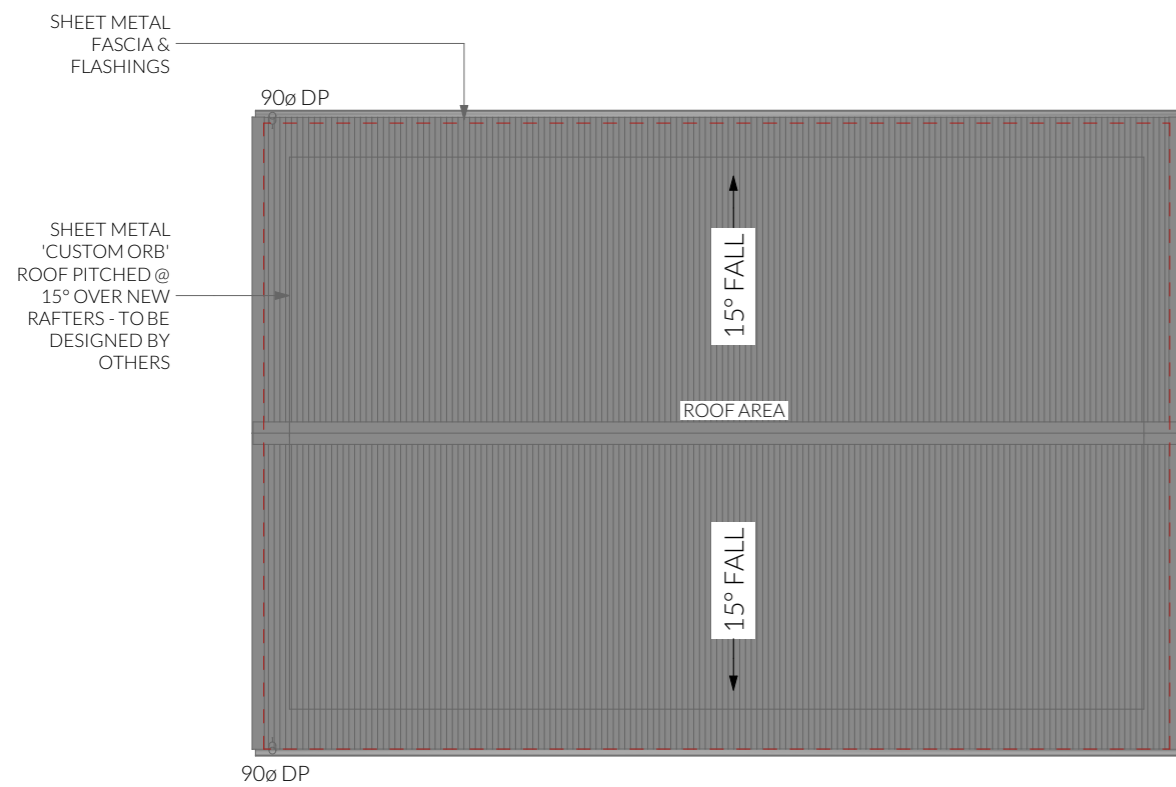
West Elevation



South Elevation



East Elevation



8x12m Shed Roof Plan

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Shed 8x12m Floor Plan & Elevations

Revision: DA - 01  
Approved by: JN

Scale: 1:100 @ A3  
Pg. No: A.10

Proposal: Alteration & Addition  
Client: Jackie & Cameron Voss  
Address: 887 Cambridge Road, Cambridge - 7170

Date: 04/07/2025  
Drawn by: CJ  
Job No: 060-2024  
Engineer: TBA  
Building Surveyor: TBA

ID	Date	Designer

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**Ventilation of roof spaces NCC 2022**

**Part 10.8.3**

A roof must have a roof space that-

- (a) is located-
  - (i) immediately above the primary insulation layer; or
  - (ii) immediately above sarking with a vapour permeance of not less than 1.14 µg/N.s, which is immediately above the primary insulation layer; or
  - (iii) immediately above ceiling insulation; and
- (b) has a height of not less than 20 mm; and
- (c) is either-
  - (i) ventilated to outdoor air through evenly distributed openings in accordance with Table 10.8.3; or
  - (ii) located immediately underneath the roof tiles of an unsarked tiled roof.

**Stormwater Notes**

All gutters, downpipes and rain heads to be designed and installed in compliance with AS3500.3 & NCC 2022 Volume II Part 7.4.

**Roofing Cladding**

Roof cladding, flashings, cappings, roof sheeting and fixings are to be installed in accordance with NCC 2022 Volume II Part 7.2 for sheet roofing and Part 7.3 for tiled and shingle roofing.

**Eaves & Soffit Linings**

To comply with NCC 2022 Vol II Part 7.5.5 and where provided, external fibre-cement sheets and linings used as eaves and soffit linings must-

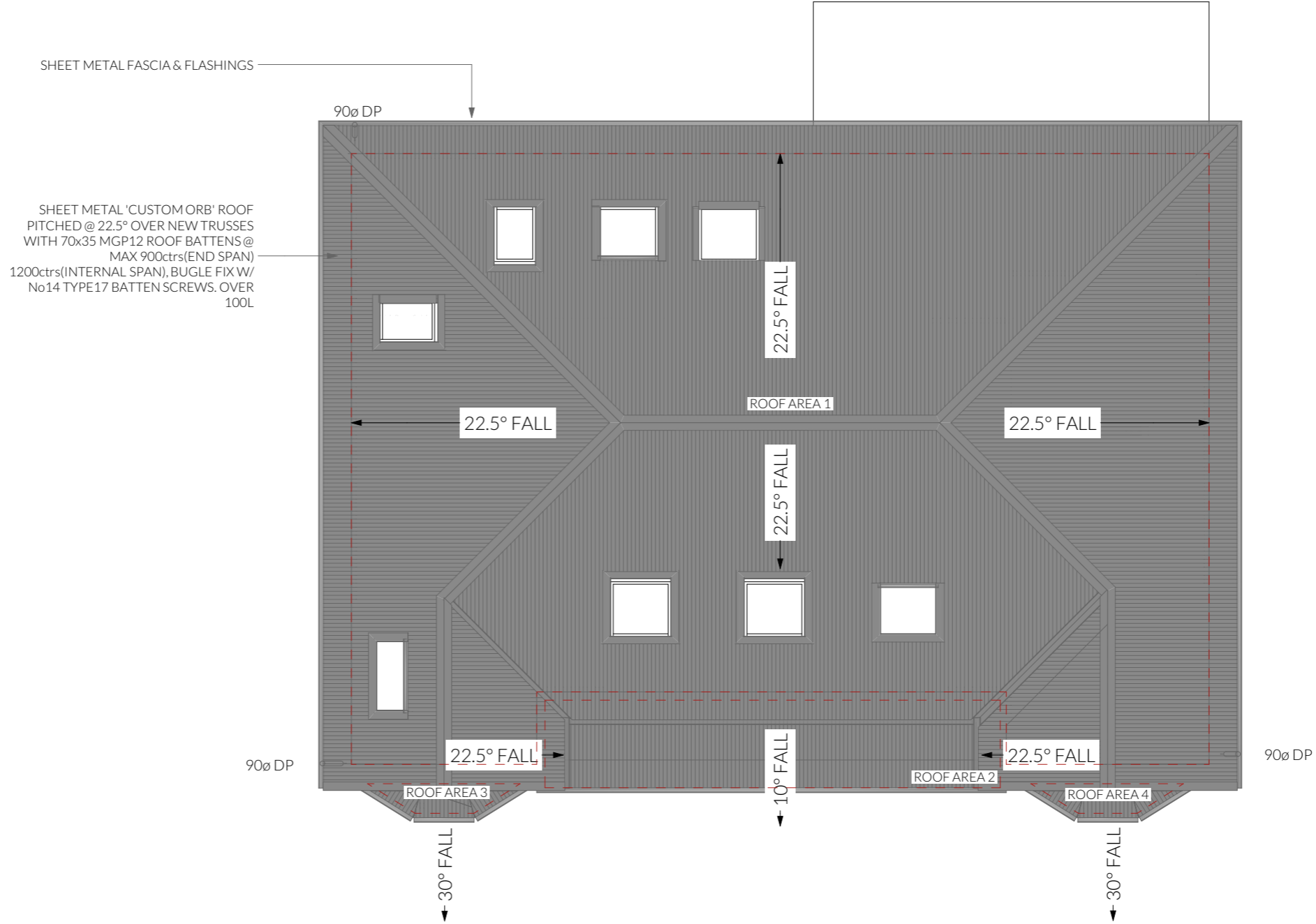
- (a) comply with AS/NZS 2908.2 or ISO 8336; and
- (b) be fixed in accordance with Table 7.5.5 and Figure 7.5.5 using-
  - (i) 2.8 x 30 mm fibre-cement nails; or
  - (ii) No. 8 wafer head screws (for 4.5 mm and 6 mm sheets only); or
  - (iii) No. 8 self embedding head screws (for 6 mm sheets only).

Refer to table 7.5.5 for trimmer and fastener spacings.

**Important Note**

Existing trusses, roof and cladding to be removed and replaced with new framing and cladding

ROOF PITCH	VENTILATION OF OPENINGS (TABLE 10.8.3)
>15° AND <75°	7,000 mm <sup>2</sup> /m provided at the eaves and 5,000 mm <sup>2</sup> /m at high level, plus an additional 18,000 mm <sup>2</sup> /m at the eaves if the roof has a cathedral ceiling
(1) Ventilation openings are specified as a minimum free open area per metre length of the longest horizontal dimension of the roof. (2) For the purposes of this Table, high level openings are openings provided at the ridge or not more than 900 mm below the ridge or highest point of the roof space, measured vertically.	

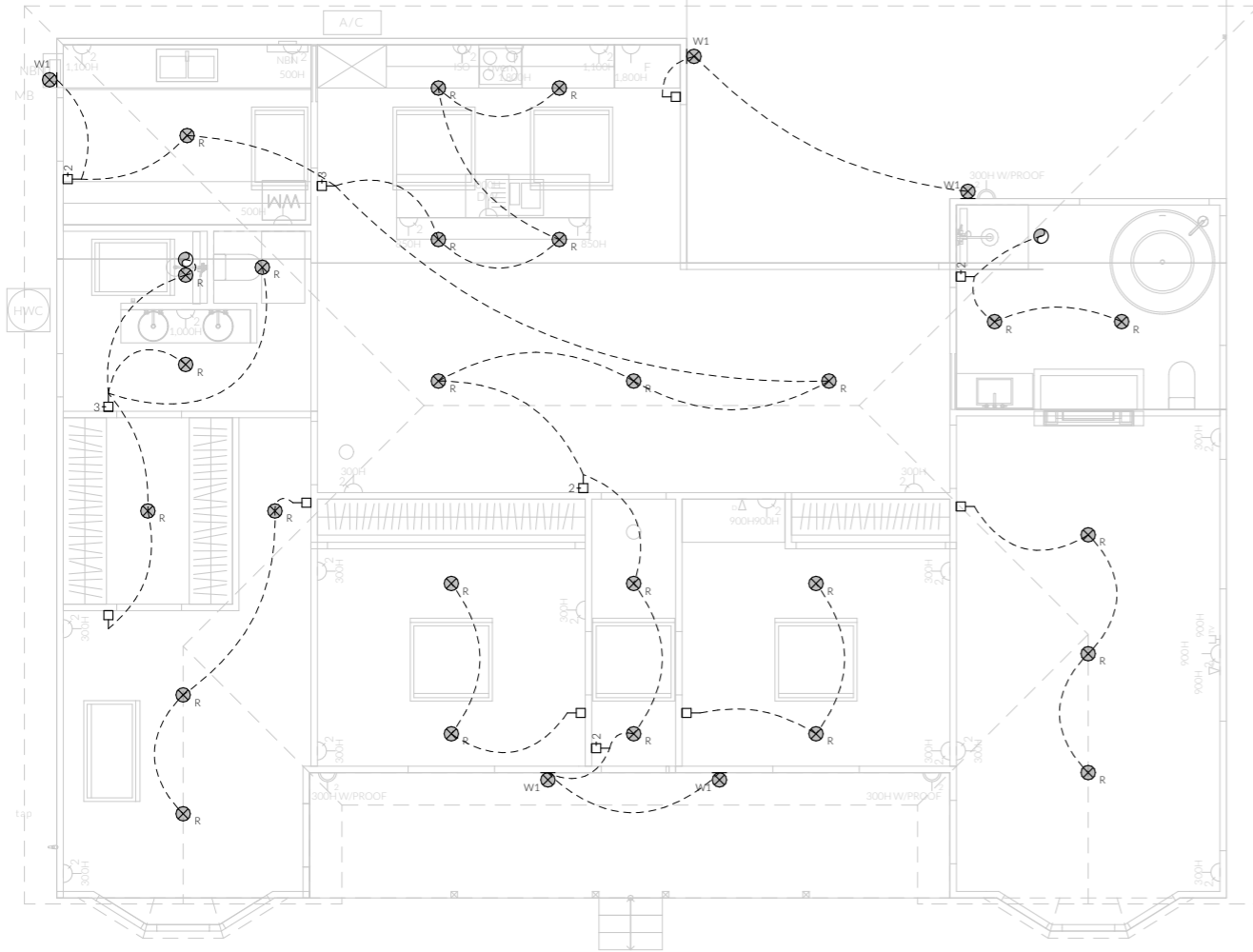


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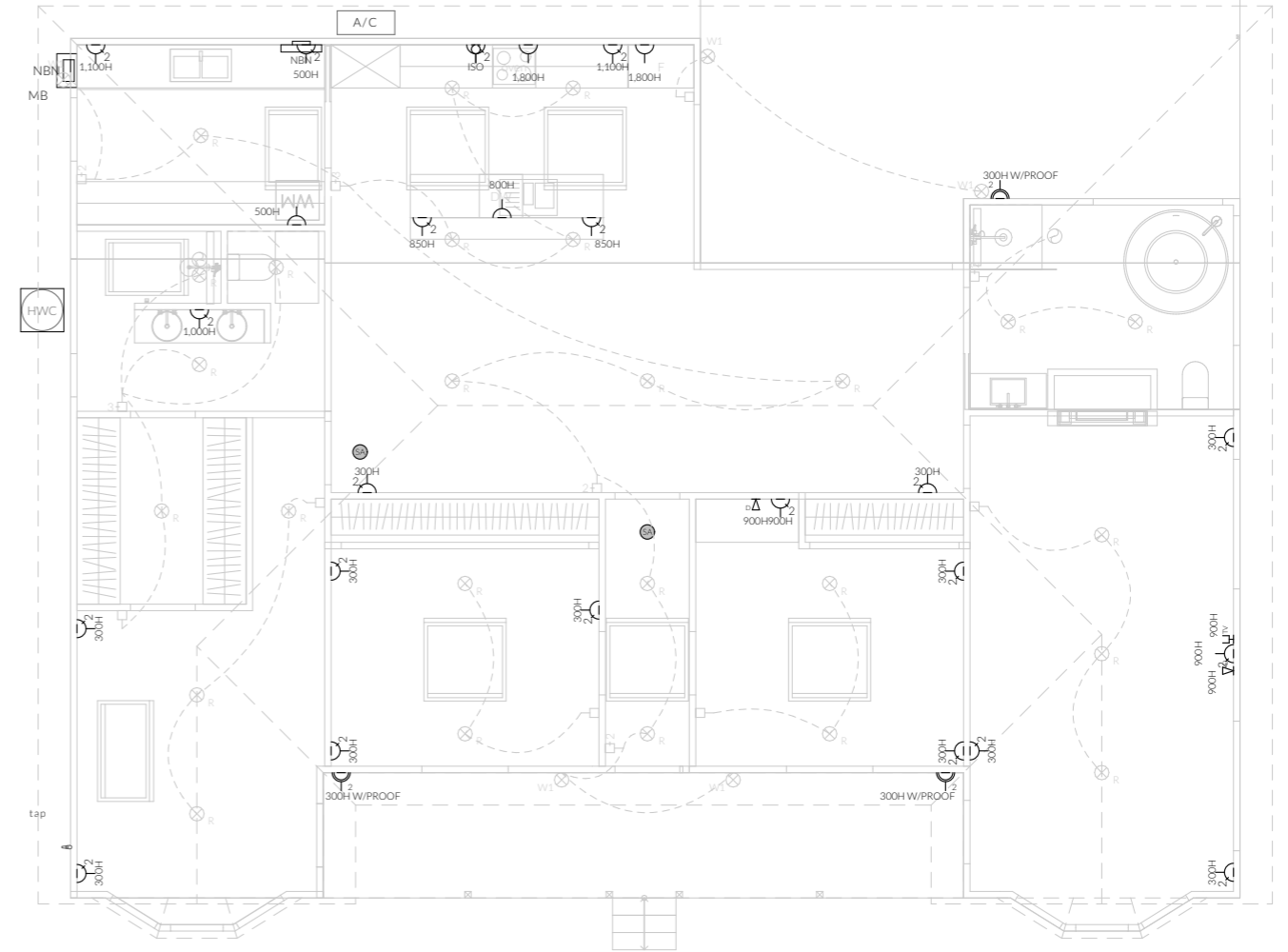
	PINNACLE DRAFTING & DESIGN 7/3 Abernant Way, Cambridge 7170 03 6248 4218 admin@pinnacledrafting.com.au www.pinnacledrafting.com.au Licence: CC6073Y	<b>Roof Plan</b>  Revision: <b>DA - 01</b> Approved by: <b>JN</b>	Scale: <b>1:100</b> @ A3 Pg. No: <b>A.11</b>	Proposal: Alteration & Addition Client: Jackie & Cameron Voss Address: 887 Cambridge Road, Cambridge - 7170	Date: 04/07/2025 Drawn by: CJ Job No: 060-2024 Engineer: TBA Building Surveyor: TBA	<table border="1"> <thead> <tr> <th>ID</th> <th>Date</th> <th>Designer</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ID	Date	Designer					These drawings are the property of Pinnacle Drafting & Design Pty Ltd, reproduction in whole or part is strictly forbidden without written consent. © 2025. These drawings are to be read in conjunction with all drawings and documentation by Engineers, Surveyors and any other consultants referred to within this drawing set as well as any Certificate of Likely Compliance and/or permit documentation. DO NOT SCALE FROM DRAWINGS. All Contractors are to verify dimensions on site before commencing any orders, works or requesting producing shop drawings. ANY AND ALL DISCREPANCIES DISCOVERED BY OUTSIDE PARTIES ARE TO BE BROUGHT TO THE ATTENTION OF PINNACLE DRAFTING & DESIGN PTY LTD AS SOON AS PRACTICABLE. This document must be printed in colour. Pinnacle Drafting takes no responsibility for any errors, issues, or omissions caused by contractors and builders not following colour-printed plans.	
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**ELECTRICAL LEGEND**

Symbol	Description	Allowance	Quantity
900H	DATA - CAT 6 (RJ45) - 1 GANG		2
900H	DATA - TV CONNECTION		1
900H	FAN - CEILING - EX-HAUST		2
900H	GPO - (2) DOUBLE		24
900H	GPO - (2) DOUBLE (WITH COOKTOP ISOLATOR SWITCH)		1
300H W/PROOF	GPO - WEATHER PROOF DOUBLE		3
⊗ <sub>R</sub>	LIGHT - CEILING - DOWNLIGHT RECESSED	10W	26
⊗ <sub>W1</sub>	LIGHT - WALL MOUNTED - TYPE 1	10W	5
⊙	SERVICE - SMOKE ALARM		2
□	SWITCH - LIGHT 1 GANG		6
2 □	SWITCH - LIGHT 2 GANG		4
3 □	SWITCH - LIGHT 3 GANG		2



Electrical Plan - Lower - Light/Reflected Ceiling



Electrical Plan - Lower - Power

**Smoke Alarms Part 9.5 of NCC 2022**

- Smoke alarms must-
- (a) be located in-
    - (i) a Class 1a building in accordance with 9.5.2 and 9.5.4; and
    - (ii) a Class 1b building in accordance with 9.5.3 and 9.5.4; and
  - (b) comply with AS 3786, except that in a Class 10a private garage where the use of the area is likely to result in smoke alarms causing spurious signals, any other alarm deemed suitable in accordance with AS 1670.1 may be installed provided that smoke alarms complying with AS 3786 are installed elsewhere in the Class 1 building; and
  - (c) be powered from the consumer mains source where a consumer mains source is supplied to the building; and be interconnected where there is more than one alarm.

In a Class 1a building, smoke alarms must be located in-

- (a) any storey containing bedrooms, every corridor or hallway associated with a bedroom, or if there is no corridor or hallway, in an area between the bedrooms and the remainder of the building; and
- (b) each other storey not containing bedrooms.

Smoke alarms required by 9.5.2 and 9.5.3 must be installed on or near the ceiling, in accordance with the following:

- (a) Where a smoke alarm is located on the ceiling it must be-
  - (i) a minimum of 300 mm away from the corner junction of the wall and ceiling; and
  - (ii) between 500 mm and 1500 mm away from the high point and apexes of the ceiling, if the room has a sloping ceiling.
- (b) Where (a) is not possible, the smoke alarm may be installed on the wall, and located a minimum of 300 mm and a maximum of 500 mm off the ceiling at the junction with the wall.

**Note: Exhaust Fans**

- Exhaust fans to comply with NCC 2022 Vol 2 Part 10.8.2 and have:
- An exhaust system installed in a kitchen, bathroom, sanitary compartment or laundry must have a minimum flow rate of-
    - (a) 25 L/s for a bathroom or sanitary compartment; and
    - (b) 40 L/s for a kitchen or laundry.
  - Exhaust from a kitchen, kitchen range hood, bathroom, sanitary compartment or laundry must discharge directly or via a shaft or duct to outdoor air.
  - Where a venting clothes dryer is installed, it must discharge directly or via a shaft or duct to outdoor air.
  - An exhaust system that is not run continuously and is serving a bathroom or sanitary compartment that is not ventilated in accordance with 10.6.2(a) must-
    - (a) be interlocked with the room's light switch; and
    - (b) include a run-on timer so that the exhaust system continues to operate for 10 minutes after the light switch is turned off.

**Note: Lighting**

- Lighting layout may change, owner to confirm with builder prior to purchase/installation of exact quantity and location of electrical services provided that installation is compliant with AS3000 and artificial lighting allowances do not exceed:
- 5W/m<sup>2</sup> in class 1a dwellings
  - 4W/m<sup>2</sup> to veranda, balcony or the like
  - 3W/m<sup>2</sup> in a class 10a dwelling associated with the class 1a dwelling

**Preparation for future Solar Installation:**

U.N.O - All downlights are to be Insulation Contact (IC) rated.  
Should the solar design be required for future installation, 2/25mm solarflex (or similar) conduits marked "solar" are to be installed from the meter box to the roof space - See electrical plan.

**Notes**

- U.N.O ceilings are to be plasterboard.
- ◁-----▷ Dimmable Circuit
- ┴-----┴ Timer Circuit(as fan note)
- PB - Plasterboard
- CS - Cement Sheet Eaves
- PW - Plywood Ceiling
- TB - Timber Batten Ceiling

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**Electrical Plan**

Revision: **DA - 01**  
Approved by: **JN**

Scale: **@A3**  
Pg. No: **A.12**

Proposal: Alteration & Addition  
Client: Jackie & Cameron Voss  
Address: 887 Cambridge Road, Cambridge - 7170

Date: 04/07/2025  
Drawn by: CJ  
Job No: 060-2024  
Engineer: TBA  
Building Surveyor: TBA

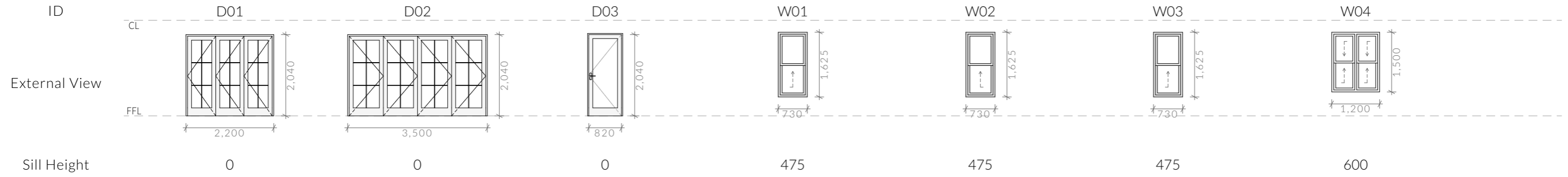
ID	Date	Designer

NOTE: Refer to cover page for further details on changes.

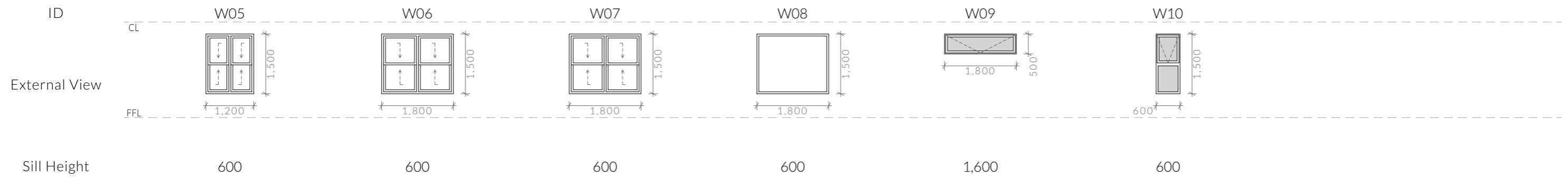


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**bdoo**  
BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA



Notes



Notes

**Glazing**

All glazing must comply with Section 8 of NCC Vol II 2022.

Windows must be installed in accordance with the following:

- (a) Structural building loads must not be transferred to the window assembly.
- (b) A minimum 10 mm gap must be provided between the top of the window assembly and any loadbearing framing or masonry wall element.
- (c) The requirements of (b) may be increased where necessary to allow for frame settlement over wide openings.
- (d) Packing, if provided between each window assembly and the frame, must be-
  - (i) located along each side and bottom; and
  - (ii) fixed to ensure the sides and bottom of the window assembly remain straight; and
  - (iii) clear of any flashing material.

If a door, side panel or panel is capable of being mistaken for a doorway or opening, the glass must be marked to make it readily visible with an opaque band not less than 20 mm in height located so that-

- (a) the upper edge is not less than 700 mm above the floor; and
- (b) the lower edge is not more than 1.2 m above the floor.

Refer to Part 8.4.7 for exemptions.

**Glazing - 52mm Double Glazed (clear)**

All windows & doors to be glazed with the minimum following values:

Window Type	U-Value	SHGC
Awning	4.1	0.57
Fixed	3.2	0.67

Values based on products from Clark Windows. Where Argon Gas is specified the U-Value is reduced by 0.1 across all products.

NOT FOR CONSTRUCTION

	PINNACLE DRAFTING & DESIGN 7/3 Abernant Way, Cambridge 7170 03 6248 4218 admin@pinnacledrafting.com.au www.pinnacledrafting.com.au Licence: CC6073Y	<b>Door &amp; Window Schedule</b>  Revision: <b>DA - 01</b> Approved by: <b>JN</b>	Scale: @ A3 Pg. No: <b>A.13</b>	Proposal: Alteration & Addition Client: Jackie & Cameron Voss Address: 887 Cambridge Road, Cambridge - 7170	Date: 04/07/2025 Drawn by: CJ Job No: 060-2024 Engineer: TBA Building Surveyor: TBA	<table border="1" style="width: 100%; border-collapse: collapse;"> <tr> <th style="width: 20%;">ID</th> <th style="width: 20%;">Date</th> <th style="width: 20%;">Designer</th> </tr> <tr> <td> </td> <td> </td> <td> </td> </tr> </table>	ID	Date	Designer				These drawings are the property of Pinnacle Drafting & Design Pty Ltd, reproduction in whole or part is strictly forbidden without written consent. © 2025. These drawings are to be read in conjunction with all drawings and documentation by Engineers, Surveyors and any other consultants referred to within this drawing set as well as any Certificate of Likely Compliance and/or permit documentation. DO NOT SCALE FROM DRAWINGS. All Contractors are to verify dimensions on site before commencing any orders, works or requesting producing shop drawings. ANY AND ALL DISCREPANCIES DISCOVERED BY OUTSIDE PARTIES ARE TO BE BROUGHT TO THE ATTENTION OF PINNACLE DRAFTING & DESIGN PTY LTD AS SOON AS PRACTICABLE. This document must be printed in colour. Pinnacle Drafting takes no responsibility for any errors, issues, or omissions caused by contractors and builders not following colour-printed plans.	
	ID	Date	Designer											
NOTE: Refer to cover page for further details on changes.														

Dear Sir/Madam,

**PDPLANPMTD-2025/053706**  
**887 Cambridge Road, Cambridge**

In response to your correspondence dated 17/09/2025  
I have addressed your requests as follows:

ITEM	COUNCIL REQUEST	DEVELOPMENT RESPONSE
1	<p><b>P1</b> <i>All parking, access ways, manoeuvring and circulation spaces must be readily identifiable and constructed so that they are useable in all weather conditions, having regard to:</i></p> <ul style="list-style-type: none"><li><i>(a) the nature of the use;</i></li><li><i>(b) the topography of the land;</i></li><li><i>(c) the drainage system available;</i></li><li><i>(d) the likelihood of transporting sediment or debris from the site onto a road or public place;</i></li><li><i>(e) the likelihood of generating dust; and</i></li><li><i>(f) the nature of the proposed surfacing.</i></li></ul>	<p><b>(a) Nature of the use</b> The use is residential, generating a relatively low volume of daily vehicle movements. A gravel surface is appropriate for this intensity of use and is consistent with the character of the surrounding area.</p> <p><b>(b) Topography of the land</b> The driveway follows the natural slope of the site at a moderate grade. The gravel surface will be compacted and stabilised to ensure safe access and manoeuvring in all weather conditions.</p> <p><b>(c) Drainage system available</b> The site drainage has been designed to direct surface runoff into on-site swales and soakage areas. The gravel surface is permeable, reducing runoff compared with a sealed surface, and minimises the demand on the proposed stormwater system.</p> <p><b>(d) Transport of sediment or debris</b> The gravel driveway will be constructed with a stabilised entry section (grid) at the connection to the public road to prevent gravel being tracked or washed onto the road reserve. Regular maintenance of the gravel surface will further mitigate this risk.</p> <p><b>(e) Likelihood of generating dust</b> The driveway will be constructed using fine, compacted gravel to minimise loose material. With regular</p>

# P I N N A C L E

maintenance, the likelihood of generating dust is low, particularly given the short length and low traffic volume expected.

**(f) Nature of the proposed surfacing**

The proposed compacted gravel surface is a durable and functional finish, appropriate for a residential driveway. It ensures year-round usability, integrates with the landscape, and minimises impermeable surface coverage.

**Conclusion**

On this basis, the proposed gravel driveway meets the performance requirements of P1.

I trust the provided information addresses the matters identified in the further information request and ask that the council now accept the submitted documentation as a valid application under LUPA.

# **STORMWATER ASSESSMENT**

**887 Cambridge Road**

**Cambridge**

**August 2025**



GEO-ENVIRONMENTAL

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S O L U T I O N S

Disclaimer: The author does not warrant the information contained in this document is free from errors or omissions. The author shall not in any way be liable for any loss, damage or injury suffered by the User consequent upon, or incidental to, the existence of errors in the information.

**Investigation Details**

<b>Client:</b>	Jackie & Cameron Voss
<b>Site Address:</b>	887 Cambridge Road, Cambridge
<b>Date of Inspection:</b>	14/01/2025
<b>Proposed Works:</b>	Alterations/Additions
<b>Investigation Method:</b>	Geoprobe 540UD - Direct Push
<b>Inspected by:</b>	C. Cooper

**Site Details**

<b>Certificate of Title (CT):</b>	127512/1
<b>Title Area:</b>	Approx. 4629 m <sup>2</sup>
<b>Applicable Planning Overlays:</b>	Bushfire-prone areas, Airport obstacle limitation area
<b>Slope &amp; Aspect:</b>	5° N facing slope
<b>Vegetation:</b>	Mixed Flora

**Background Information**

<b>Geology Map:</b>	MRT
<b>Geological Unit:</b>	Jurassic Dolerite
<b>Climate:</b>	Annual rainfall approx. 600mm
<b>Water Connection:</b>	Tank
<b>Sewer Connection:</b>	Unserviced-on-site required
<b>Testing and Classification:</b>	Onsite stormwater

## Investigation

A number of test holes were completed to identify the distribution of, and variation in soil materials on the site. See soil profile conditions presented below.

### **Soil Profile Summary**

BH 1 Depth (m)	BH 2,3 Depth (m)	USCS	Description
0.00-0.30		GP	FILL: <b>Gravelly SAND</b> : pale brown, slightly moist, very dense
	0.00-0.20	SM	<b>Silty SAND</b> : grey, brown, slightly moist, loose
0.30-0.60	0.20-0.30	ML	<b>Clayey SILT</b> : dark brown, slightly moist, dense,
0.60-1.60	0.30-1.50	CH	<b>Silty CLAY</b> : high plasticity, grey, brown, slightly moist, stiff,
1.60-3.00	1.50-2.00	CI	<b>Silty CLAY</b> : with gravels, medium plasticity, red, brown, slightly moist, stiff, no refusal

## Soil Conditions

The soils on site have developed over Jurassic dolerite and consist of deep predominantly reactive clay profiles. The soil has a low estimated permeability in the order of 0.12-0.5m/day.

GES have identified the following at the site:

- The site has a grade of approximately 10% and presents a low risk to slope stability and landslip
- There are proposals for cuts or change of grade which may impact on any proposed onsite stormwater absorption
- The site soils have been identified as comprising of deep clay profiles
- No evidence of a water table was observed at the time of the investigation
- There is a low risk of the natural soils being impacted by contamination
- No bedrock was encountered during investigations

## Soil Dispersion

The soils on site were not identified as dispersive.

## **Existing Conditions and Assumptions**

The site has an area of approximately 4629m<sup>2</sup> with a total proposed impervious area of approx. 700m<sup>2</sup>. This is comprised of a total roof area of approx. 390m<sup>2</sup> over the dwelling and two sheds, coupled with approx. 310m<sup>2</sup> of gravel driveway.

There is no public stormwater system that the property can connect to, therefore it is proposed that stormwater from the site be routed through the proposed conventional underground drainage system comprising of Grated Sumps and PVC Pipes, coupled with soakage trench elements for on-site detention.

The stormwater management report is prepared in accordance with the design criteria listed below:

- The stormwater drainage system is designed using Bureau of Meteorology (BOM) published rainfall Intensity Frequency Duration (IFD) data as a minor / major system to accommodate the 5% AEP / 20 min storm events.
- The flow rate of stormwater leaving the site shall be designed so that it does not exceed the pre-developed flow rate for both the minor and major rain events.
- The total site discharges are modelled as described in *Storm Drainage Design in Small Urban Catchments*, a handbook for Australian practice by *Australian Rainfall and Runoff (ARR2019)*, Book 9 – Runoff in Urban Areas.

## **Detention Calculations**

Detention calculations area provided in Appendix A

## **Summary and Conclusions**

- Detention design to be adopted as per design and documentation.
- The designed solution complies with the performance solution design check carried out.
- Two soakage trenches are proposed – Trench A will accept flows from the dwelling, medium sized shed and associated driveway, with dimensions of 8m x 2m x 1m (16m<sup>2</sup> base). Trench B will accept flows from the large shed and associated driveway to the west of the dwelling, with dimensions of 6m x 2m x 0.6m (12m<sup>2</sup> base)
- Each trench has been designed over a 20-minute storm duration and is proposed for dispersion of roof flows and gravel driveway areas.
- DN100 slotted PVC pipe with geotextile covering on top of aggregate to be installed within the soakage trench.

It is also recommended that regular inspection and maintenance is conducted to ensure the stormwater system is operating without obstruction. A schematic of recommended checks is attached.

## GES Stormwater Maintenance Plan Checklist

Indicative frequency	Inspection and criteria	Maintenance activities (where required)
Annual	Check whether any tree branches overhang the roof or are likely to grow to overhang the roof	If safe and where permitted, consider pruning back any overhanging branches
	Check that access covers to storage tanks are closed	Secure any open access covers to prevent risk of entry
	Check that screens on inlets, overflows and other openings do not have holes and are securely fastened	Repair any defective screens to keep out mosquitoes
	Inspect tank water for presence of rats, birds, frogs, lizards or other vermin or insects	Remove any infestations, identify point of entry and close vermin and insect-proof mesh
	Inspect tank water for presence of mosquito larvae (inspect more frequently in sub-tropical and tropical northern Australia, based on local requirements)	Identify point of entry and close with insect-proof mesh with holes no greater than 1.6 mm in diameter
	Inspect gutters for leaf accumulation and ponding	Clean leaves from gutters-remove more regularly if required. If water is ponding, repair gutter to ensure water flows to downpipe
	Check signage at external roof water taps and that any removable handle taps are being properly used	Replace or repair the missing or damaged signage and fittings
	Check plumbing and pump connections are watertight/without leakage	Repair any leaks as necessary
	Check suction strainers, in-line strainers and pump location for debris	Clean suction strainers, in-line strainers or debris from pump location
	Check pump installation is adequate for reliable ongoing operation	Modify and repair as required
	Check first flush diverter, if present	Clean first flush diverter, repair and replace if necessary
	Check health of absorption trench area and surrounding grass or plants	Investigate any adverse impacts observed that might be due to irrigation
	Check condition of roof and coatings	Investigate and resolve any apparent changes to roof condition, such as loss of material coatings

Triennial	Drain, clean out and check the condition of the tank walls and roof to ensure no holes have arisen due to tank deterioration	Repair any tank defects
	Check sediment levels in the tank	Organise a suitable contractor to remove accumulated sediment if levels are approaching those that may block tank outlets
	Undertake a systematic review of operational control of risks to the system	Identify the reason for any problems during inspections and take actions to prevent failures occurring in future
After 20 years and then every 5 years	Monitor the effectiveness of the stormwater absorption area to assess for any clogging due to algal growth, or blocking due to tree roots/grass growth/trench failure.	Clean or replace clogged equipment
Ongoing	Inspect and follow up on any complaints or concerns raised that could indicate problems with the system	Repair or replace any problems that are notified

## APPENDIX A: STORMWATER DETENTION CALCULATIONS

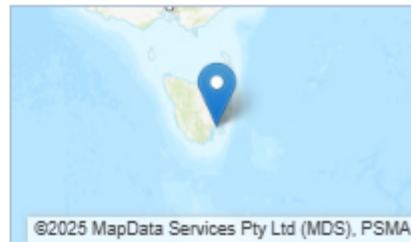
<b>STORAGE TRENCH</b>		<b>TRENCH A</b>	
<b>Hydrology</b>			
Total Catchment Area		485	m <sup>2</sup>
Runoff Coefficient		0.797	
Annular Recurrence Interval (ARI)		20	yr
<b>Ground Conditions</b>			
Hydraulic conductivity (K)		0.12	m/day
		0.080	mm/min
Adjusted Rate (15% clogging factor)		0.068	mm/min
<b>Trench Design</b>			
Length		8	m
Width		2	m
Depth		1	m
Infiltration Area		16	m <sup>2</sup>
Porosity		0.35	%
Trench Storage		5.60	m <sup>3</sup>
		5600	L
<b>Final Check</b>			
<b>Criteria</b>	<b>Requirement</b>	<b>Design</b>	<b>Check</b>
Detention reqd	5180	5600	OK
<b>STORAGE TRENCH</b>		<b>TRENCH B</b>	
<b>Hydrology</b>			
Total Catchment Area		215	m <sup>2</sup>
Runoff Coefficient		0.74	
Annular Recurrence Interval (ARI)		20	yr
<b>Ground Conditions</b>			
Hydraulic conductivity (K)		0.12	m/day
		0.080	mm/min
Adjusted Rate (15% clogging factor)		0.068	mm/min
<b>Trench Design</b>			
Length		6	m
Width		2	m
Depth		0.6	m
Infiltration Area		12	m <sup>2</sup>
Porosity		0.35	%
Trench Storage		2.52	m <sup>3</sup>
		2520	L
<b>Final Check</b>			
<b>Criteria</b>	<b>Requirement</b>	<b>Design</b>	<b>Check</b>
Detention reqd	2070	2520	OK

STORM CHECK	TRENCH A				
	Storm Duration	Intensity	Inflow Volume	Outflow Volume	Required Storage
	(mm/hr)	(m <sup>3</sup> )	(L)	(L)	(hr)
1 min	139	895	1	894	13.70
2 min	109	1404	2	1402	21.48
3 min	98.7	1908	3	1904	29.17
4 min	91.3	2353	4	2348	35.97
5 min	85.2	2744	5	2739	41.96
10 min	64.6	4162	11	4151	63.59
15 min	52.6	5083	16	5067	77.62
20 min	44.8	5772	22	5751	88.09
25 min	39.2	6314	27	6286	96.30
30 min	35.1	6784	33	6751	103.42
45 min	27.3	7915	49	7866	120.49
1 hour	22.8	8813	65	8748	134.01
1.5 hour	17.8	10321	98	10223	156.60
2 hour	15	11596	131	11466	175.64
3 hour	11.9	13800	196	13604	208.39
4.5 hour	9.56	16629	294	16335	250.24
6 hour	8.24	19111	392	18719	286.75
9 hour	6.7	23309	588	22721	348.06
12 hour	5.77	26764	783	25981	397.99
18 hour	4.63	32215	1175	31040	475.48
24 hour	3.91	36273	1567	34707	531.66
30 hour	3.4	39428	1958	37469	573.98
36 hour	3.01	41886	2350	39536	605.64
48 hour	2.44	45272	3133	42139	645.51
72 hour	1.76	48983	4700	44283	678.35
			<b>Full volume</b>	5600	678.35

STORM CHECK	TRENCH B				
Storm Duration	Intensity	Inflow Volume	Outflow Volume	Required Storage	Emptying time
	(mm/hr)	(m <sup>3</sup> )	(L)	(L)	(hr)
1 min	139	369	1	368	7.51
2 min	109	578	2	576	11.77
3 min	98.7	785	2	783	15.99
4 min	91.3	968	3	965	19.71
5 min	85.2	1130	4	1126	22.99
10 min	64.6	1713	8	1705	34.82
15 min	52.6	2092	12	2080	42.48
20 min	44.8	2376	16	2360	48.19
25 min	39.2	2599	20	2578	52.66
30 min	35.1	2792	24	2768	56.53
45 min	27.3	3258	37	3221	65.79
1 hour	22.8	3627	49	3579	73.09
1.5 hour	17.8	4248	73	4175	85.26
2 hour	15	4773	98	4675	95.49
3 hour	11.9	5680	147	5533	113.01
4.5 hour	9.56	6844	220	6624	135.30
6 hour	8.24	7866	294	7572	154.66
9 hour	6.7	9594	441	9153	186.95
12 hour	5.77	11016	588	10429	213.00
18 hour	4.63	13259	881	12378	252.82
24 hour	3.91	14930	1175	13755	280.94
30 hour	3.4	16228	1469	14759	301.46
36 hour	3.01	17240	1763	15478	316.13
48 hour	2.44	18634	2350	16284	332.59
72 hour	1.76	20161	3525	16636	339.79
			<b>Full volume</b>	2520	339.79
<b>Notes:</b>					
Inflow volume calculated using Equation 10.1 (WSUD Guidelines: Chapter 10)					
Outflow volume calculated using Equation 10.2 (WSUD Guidelines: Chapter 10)					
Required storage and emptying time is left blank when outflow volume exceeds inflow volume					

## Location

**Label:** 887 Cambridge Road, Cambridge  
**Latitude:** 42.8375 [Nearest grid cell: 42.8375 (S)]  
**Longitude:** 147.4625 [Nearest grid cell: 147.4625 (E)]



## IFD Design Rainfall Intensity (mm/h)

Issued: 29 August 2025

Rainfall intensity for Durations, Exceedance per Year (EY), and Annual Exceedance Probabilities (AEP).  
[FAQ for New ARR probability terminology](#)

Table

Chart

Unit:

Duration	Annual Exceedance Probability (AEP)						
	63.2%	50%#	20%*	10%	5%	2%	1%
1 min	62.1	70.2	97.7	118	139	170	195
2 min	53.1	59.6	80.5	95.2	109	127	141
3 min	47.0	52.8	71.9	85.4	98.7	116	130
4 min	42.4	47.8	65.6	78.4	91.3	109	122
5 min	38.8	43.9	60.5	72.7	85.2	102	116
10 min	28.3	32.0	44.8	54.4	64.6	79.4	91.9
15 min	22.9	26.0	36.4	44.2	52.6	64.9	75.2
20 min	19.6	22.2	31.1	37.7	44.8	55.1	63.7
25 min	17.3	19.6	27.4	33.1	39.2	48.0	55.3
30 min	15.7	17.7	24.6	29.7	35.1	42.8	49.1
45 min	12.5	14.1	19.4	23.3	27.3	32.8	37.3
1 hour	10.6	12.0	16.4	19.6	22.8	27.1	30.6
1.5 hour	8.50	9.57	13.0	15.4	17.8	20.9	23.3
2 hour	7.27	8.19	11.1	13.0	15.0	17.5	19.4
3 hour	5.84	6.59	8.89	10.4	11.9	13.8	15.2
4.5 hour	4.69	5.31	7.17	8.39	9.56	11.1	12.2
6 hour	4.01	4.55	6.17	7.23	8.24	9.57	10.6
9 hour	3.20	3.64	4.98	5.86	6.70	7.83	8.69
12 hour	2.70	3.08	4.26	5.03	5.77	6.80	7.57
18 hour	2.10	2.41	3.37	4.01	4.63	5.51	6.19
24 hour	1.73	1.99	2.81	3.37	3.91	4.69	5.29
30 hour	1.48	1.71	2.42	2.92	3.40	4.09	4.63
36 hour	1.30	1.50	2.13	2.57	3.01	3.63	4.12
48 hour	1.04	1.20	1.72	2.08	2.44	2.95	3.36
72 hour	0.748	0.862	1.23	1.50	1.76	2.13	2.42
96 hour	0.585	0.673	0.959	1.16	1.37	1.64	1.87
120 hour	0.481	0.553	0.783	0.943	1.11	1.33	1.51
144 hour	0.410	0.471	0.661	0.791	0.930	1.11	1.26
168 hour	0.359	0.411	0.573	0.680	0.799	0.955	1.08

Note:

# The 50% AEP IFD **does not** correspond to the 2 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 1.44 ARI.

\* The 20% AEP IFD **does not** correspond to the 5 year Average Recurrence Interval (ARI) IFD. Rather it corresponds to the 4.48 ARI.

Location: Cambridge, TAS  
 Site: 485m<sup>2</sup> with tc = 20 and tcs = 15 mins.  
 PSD: AEP of 5%, Underground rectangular tank PSD = 1.80L/s  
 Storage: AEP of 5%, Underground rectangular tank volume = 5.18m<sup>3</sup>

**Design Criteria** (Custom AEP IFD data used)

Location = Cambridge, TAS  
 Method = E (A)RI 2001,A(E)P 2019

PSD annual exceedance probability (APE) = 5 %  
 Storage annual exceedance probability (APE) = 5 %

Storage method = U (A)bove,(P)ipe,(U)nderground,(C)ustom

**Site Geometry**

Site area (As) = 485 m<sup>2</sup> = 0.0485 Ha  
 Pre-development coefficient (Cp) = 0.30  
 Post development coefficient (Cw) = 0.79  
 Total catchment (tc) = 20 minutes  
 Upstream catchment to site (tcs) = 15 minutes

**Coefficient Calculations**

Pre-development				Post development			
Zone	Area (m <sup>2</sup> )	C	Area * C	Zone	Area (m <sup>2</sup> )	C	Area * C
Concrete	0	0.90	0	Concrete	0	0.90	0
Roof	0	1.00	0	Roof	285	1.00	285
Gravel	0	0.50	0	Gravel	200	0.50	100
Garden	485	0.30	146	Garden	0	0.30	0
<b>Total</b>	<b>485</b>	<b>m<sup>2</sup></b>	<b>146</b>	<b>Total</b>	<b>485</b>	<b>m<sup>2</sup></b>	<b>385</b>

$C_p = \frac{\sum Area * C}{Total} = 0.300$

$C_w = \frac{\sum Area * C}{Total} = 0.794$

**Permissible Site Discharge (PSD) (AEP of 5%)**

PSD Intensity (I) = 44.8 mm/hr For catchment tc = 20 mins.  
 Pre-development (Qp = Cp\*I\*As/0.36) = 1.81 L/s  
 Peak post development (Qa = 2\*Cw\*I\*As/0.36) = 9.57 L/s = (0.214 x I) Eq. 2.24  
 Storage method = U (A)bove,(P)ipe,(U)nderground,(C)ustom  
 Permissible site discharge (Qu = PSD) = 1.803 L/s

**Above ground - Eq 3.8**

$Q = PSD^2 - 2 * Q_a / t_c * (0.667 * t_c * Q_p / Q_a + 0.75 * t_c + 0.25 * t_{cs}) * PSD + 2 * Q_a * Q_p$   
 Taking x as = PSD and solving  
 a = 1.0      b = -20.4      c = 34.6  
 $PSD = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$   
 PSD = 1.873 L/s

**Below ground pipe - Eq 3.3**

$Q_p = PSD * [1.6 * t_{cs} / \{t_c * (1 - 2 * PSD / (3 * Q_a))\} - 0.6 * t_{cs}^{2.67} / \{t_c * (1 - 2 * PSD_p / (3 * Q_a))\}^{2.67}]$   
 = 1.81  
 PSD = 1.854 L/s

**Below ground rectangular tank - Eq 3.4**

$t = t_{cs} / \{t_c * (1 - 2 * PSD / (3 * Q_a))\} = 0.858$   
 $Q_p = PSD * [0.005 - 0.455 * t + 5.228 * t^2 - 1.045 * t^3 - 7.199 * t^4 + 4.519 * t^5]$   
 = 1.81  
 PSD = 1.803 L/s

**Design Storage Capacity (AEP of 5%)**

Above ground (Vs) =  $[0.5*Qa*td - [(0.875*PSD*td)(1-0.917*PSD/Qa) + (0.427*td*PSD^2/Qa)]] * 60/10^3 \text{ m}^3$  Eq 4.23  
 Below ground pipe (Vs) =  $[(0.5*Qa - 0.637*PSD + 0.089*PSD^2/Qa)*td] * 60/10^3 \text{ m}^3$  Eq 4.8  
 Below ground rect. tank (Vs) =  $[(0.5*Qa - 0.572*PSD + 0.048*PSD^2/Qa)*td] * 60/10^3 \text{ m}^3$  Eq 4.13

td (mins)	I (mm/hr)	Qa (L/s)	Above Vs (m <sup>3</sup> )	Pipe Vs (m <sup>3</sup> )	B/G Vs (m <sup>3</sup> )
5	85.2	18.2			2.43
17	49.1	10.5			4.32
24	40.2	8.6			4.73
30	35.1	7.5			4.94
36	31.3	6.7			5.07
42	28.5	6.1			5.14
48	26.2	5.6			5.18
55	24.0	5.1			5.18
61	22.5	4.8			5.17
67	21.3	4.5			5.14

Table 1 - Storage as function of time for AEP of 5%

Type	td (mins)	I (mm/hr)	Qa (L/s)	Vs (m <sup>3</sup> )
Above Pipe				
B/ground	53.3	24.5	5.2	5.18

Table 2 - Storage requirements for AEP of 5%

**Frequency of operation of Above Ground storage**

$Q_{op2} = 0.75$  Cl 2.4.5.1  
 $Q_{p2} = Q_{op2} * Q_{p1}$  (where  $Q_{p1} = PSD$ ) = 1.40 L/s at which time above ground storage occurs  
 $I = 360 * Q_{p2} / (2 * C_w * A_s * 10^3)$  = 6.6 mm/h Eq 4.24

**Period of Storage**

**Time to Fill:**

Above ground (tf) =  $td * (1 - 0.92 * PSD / Qa)$  Eq 4.27  
 Below ground pipe (tf) =  $td * (1 - 2 * PSD / (3 * Qa))$  Eq 3.2  
 Below ground rect. tank (tf) =  $td * (1 - 2 * PSD / (3 * Qa))$  Eq 3.2

**Time to empty:**

Above ground (te) =  $(Vs + 0.33 * PSD^2 * td / Qa * 60 / 10^3) * (1.14 / PSD) * (10^3 / 60)$  Eq 4.28  
 Below ground pipe (te) =  $1.464 / PSD * (Vs + 0.333 * PSD^2 * td / Qa * 60 / 10^3) * (10^3 / 60)$  Eq 4.32  
 Below ground rect. tank (te) =  $2.653 / PSD * (Vs + 0.333 * PSD^2 * td / Qa * 60 / 10^3) * (10^3 / 60)$  Eq 4.36

Storage period (Ps = tf + te) Eq 4.26

Type	td (mins)	Qa (L/s)	Vs (L/s)	tf (mins)	te (mins)	Ps (mins)
Above Pipe						
B/ground	53.3	5.2	5.2	41.1	143.3	184.4

Table 3 - Period of Storage requirements for AEP of 5%

**Orifice**

Permissible site discharge ( $Q_u = PSD$ ) = 1.80 L/s (Underground storage)  
 Orifice coefficient (CD) = 0.61 For sharp circular orifice  
 Gravitational acceration (g) = 9.81 m/s<sup>2</sup>  
 Maximum storage depth above orifice (H) = 900 mm  
 Orifice flow (Q) =  $CD * A_o * \sqrt{2 * g * H}$

Therefore:

Orifice area ( $A_o$ ) = 703 mm<sup>2</sup>  
 Orifice diameter ( $D = \sqrt{4 * A_o / \pi}$ ) = 29.9 mm

Location: Cambridge, TAS  
 Site: 215m<sup>2</sup> with tc = 20 and tcs = 15 mins.  
 PSD: AEP of 5%, Underground rectangular tank PSD = 0.80L/s  
 Storage: AEP of 5%, Underground rectangular tank volume = 2.07m<sup>3</sup>

**Design Criteria** (Custom AEP IFD data used)

Location = Cambridge, TAS  
 Method = E (A)RI 2001,A(E)P 2019

PSD annual exceedance probability (APE) = 5 %  
 Storage annual exceedance probability (APE) = 5 %

Storage method = U (A)bove,(P)ipe,(U)nderground,(C)ustom

**Site Geometry**

Site area (As) = 215 m<sup>2</sup> = 0.0215 Ha  
 Pre-development coefficient (Cp) = 0.30  
 Post development coefficient (Cw) = 0.74  
 Total catchment (tc) = 20 minutes  
 Upstream catchment to site (tcs) = 15 minutes

**Coefficient Calculations**

Pre-development				Post development			
Zone	Area (m <sup>2</sup> )	C	Area * C	Zone	Area (m <sup>2</sup> )	C	Area * C
Concrete	0	0.90	0	Concrete	0	0.90	0
Roof	0	1.00	0	Roof	105	1.00	105
Gravel	0	0.50	0	Gravel	110	0.50	55
Garden	215	0.30	65	Garden	0	0.30	0
<b>Total</b>	<b>215</b>	<b>m<sup>2</sup></b>	<b>65</b>	<b>Total</b>	<b>215</b>	<b>m<sup>2</sup></b>	<b>160</b>

$C_p = \frac{\sum Area * C}{Total} = 0.300$

$C_w = \frac{\sum Area * C}{Total} = 0.744$

**Permissible Site Discharge (PSD) (AEP of 5%)**

PSD Intensity (I) = 44.8 mm/hr For catchment tc = 20 mins.  
 Pre-development (Qp = Cp\*1\*As/0.36) = 0.80 L/s  
 Peak post development (Qa = 2\*Cw\*1\*As/0.36) = 3.98 L/s = (0.089 x I) Eq. 2.24  
 Storage method = U (A)bove,(P)ipe,(U)nderground,(C)ustom  
 Permissible site discharge (Qu = PSD) = 0.798 L/s

**Above ground - Eq 3.8**

$$0 = PSD^2 - 2*Qa/tc*(0.667*tc*Qp/Qa + 0.75*tc+0.25*tcs)*PSD + 2*Qa*Qp$$

Taking x as = PSD and solving

a = 1.0      b = -8.5      c = 6.4

$$PSD = \frac{-b \pm \sqrt{b^2 - 4ac}}{2a}$$

PSD = 0.828 L/s

**Below ground pipe - Eq 3.3**

$$Q_p = PSD * [1.6 * tcs / \{tc * (1 - 2 * PSD / (3 * Q_a))\} - 0.6 * tcs^{2.67} / \{tc * (1 - 2 * PSD_p / (3 * Q_a))\}^{2.67}]$$

= 0.80

PSD = 0.820 L/s

**Below ground rectangular tank - Eq 3.4**

$$t = tcs / \{tc * (1 - 2 * PSD / (3 * Q_a))\} = 0.866$$

$$Q_p = PSD * [0.005 - 0.455 * t + 5.228 * t^2 - 1.045 * t^3 - 7.199 * t^4 + 4.519 * t^5]$$

= 0.80

PSD = 0.798 L/s

**Design Storage Capacity (AEP of 5%)**

Above ground (Vs) =  $[0.5*Qa*td - [(0.875*PSD*td)(1-0.917*PSD/Qa) + (0.427*td*PSD^2/Qa)]] * 60/10^3 \text{ m}^3$  Eq 4.23  
 Below ground pipe (Vs) =  $[(0.5*Qa - 0.637*PSD + 0.089*PSD^2/Qa)*td] * 60/10^3 \text{ m}^3$  Eq 4.8  
 Below ground rect. tank (Vs) =  $[(0.5*Qa - 0.572*PSD + 0.048*PSD^2/Qa)*td] * 60/10^3 \text{ m}^3$  Eq 4.13

td (mins)	I (mm/hr)	Qa (L/s)	Above Vs (m³)	Pipe Vs (m³)	B/G Vs (m³)
5	85.2	7.6			1.00
16	50.8	4.5			1.73
22	42.3	3.8			1.89
27	37.4	3.3			1.97
33	33.1	2.9			2.03
38	30.3	2.7			2.06
44	27.7	2.5			2.07
49	25.8	2.3			2.07
55	24.0	2.1			2.07
60	22.8	2.0			2.05

Table 1 - Storage as function of time for AEP of 5%

Type	td (mins)	I (mm/hr)	Qa (L/s)	Vs (m³)
Above Pipe				
B/ground	47.9	26.2	2.3	2.07

Table 2 - Storage requirements for AEP of 5%

**Frequency of operation of Above Ground storage**

$Q_{op2} = 0.75$  Cl 2.4.5.1  
 $Q_{p2} = Q_{op2} * Q_{p1}$  (where  $Q_{p1} = PSD$ ) = 0.62 L/s at which time above ground storage occurs  
 $I = 360 * Q_{p2} / (2 * C_w * A_s * 10^3)$  = 7.0 mm/h Eq 4.24

**Period of Storage**

**Time to Fill:**

Above ground (tf) =  $td * (1 - 0.92 * PSD / Qa)$  Eq 4.27  
 Below ground pipe (tf) =  $td * (1 - 2 * PSD / (3 * Qa))$  Eq 3.2  
 Below ground rect. tank (tf) =  $td * (1 - 2 * PSD / (3 * Qa))$  Eq 3.2

**Time to empty:**

Above ground (te) =  $(Vs + 0.33 * PSD^2 * td / Qa * 60 / 10^3) * (1.14 / PSD) * (10^3 / 60)$  Eq 4.28  
 Below ground pipe (te) =  $1.464 / PSD * (Vs + 0.333 * PSD^2 * td / Qa * 60 / 10^3) * (10^3 / 60)$  Eq 4.32  
 Below ground rect. tank (te) =  $2.653 / PSD * (Vs + 0.333 * PSD^2 * td / Qa * 60 / 10^3) * (10^3 / 60)$  Eq 4.36

Storage period (Ps = tf + te) Eq 4.26

Type	td (mins)	Qa (L/s)	Vs (L/s)	tf (mins)	te (mins)	Ps (mins)
Above Pipe						
B/ground	47.9	2.3	2.1	37.0	129.5	166.4

Table 3 - Period of Storage requirements for AEP of 5%

**Orifice**

Permissible site discharge ( $Q_u = PSD$ ) = 0.80 L/s (Underground storage)  
 Orifice coefficient (CD) = 0.61 For sharp circular orifice  
 Gravitational acceration (g) = 9.81 m/s²  
 Maximum storage depth above orifice (H) = 50 mm  
 Orifice flow (Q) =  $CD * A_o * \sqrt{2 * g * H}$

Therefore:

Orifice area ( $A_o$ ) = 1320 mm²  
 Orifice diameter ( $D = \sqrt{4 * A_o / \pi}$ ) = 41.0 mm

# CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94  
Section 106  
Section 129  
Section 155

Form **35**

To: Jackie & Cameron Voss *Owner name*  
87 Brookston Drive *Address*  
Mornington 7018 *Suburb/postcode*

## Designer details:

Name: Vinamra Gupta *Category:* Civil Engineer  
Business name: Geo-Environmental Solutions *Phone No:* 03 6223 1839  
Business address: 29 Kirksway Place  
Battery Point 7004 *Fax No:* N/A  
Licence No: 685982720 *Email address:* office@geosolutions.net.au

## Details of the proposed work:

**Owner/Applicant** Jackie & Cameron Voss *Designer's project reference No.* J11075  
**Address:** 887 Cambridge Road *Lot No:* 127512/1  
Cambridge 7170  
**Type of work:** Building work  Plumbing work  *(X all applicable)*

### Description of work:

On-Site stormwater system - design *(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
	<input type="checkbox"/> Building design	Architect or Building Designer
	<input type="checkbox"/> Structural design	Engineer or Civil Designer
	<input type="checkbox"/> Fire Safety design	Fire Engineer
	<input checked="" type="checkbox"/> Civil design	Civil Engineer or Civil Designer
	<input type="checkbox"/> Hydraulic design	Building Services Designer
	<input type="checkbox"/> Fire service design	Building Services Designer
	<input type="checkbox"/> Electrical design	Building Services Designer
	<input type="checkbox"/> Mechanical design	Building Service Designer
	<input type="checkbox"/> Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	<input type="checkbox"/> Other (specify)	

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

### Other details:

Onsite stormwater retention.

## Design documents provided:

The following documents are provided with this Certificate –

*Document description:*

Drawing numbers:	Prepared by: Geo-Environmental Solutions	Date: Aug-25
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Geo-Environmental Solutions	Date: Aug-25
Computations:	Prepared by:	Date:
Performance solution proposals: Onsite stormwater retention	Prepared by: Geo-Environmental Solutions	Date: Aug-25
Test reports:	Prepared by: Geo-Environmental Solutions	Date: Aug-25

<b>Standards, codes or guidelines relied on in design process:</b>	
AS3500 (Parts 0-5)-2013 Plumbing and drainage set.	


<b>Any other relevant documentation:</b>	
Stormwater Assessment - 887 Cambridge Road, Cambridge - Aug-25	

<b>Attribution as designer:</b>	
---------------------------------	--

I Vinamra Gupta, am responsible for the design of that part of the work as described in this certificate;

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

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

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Vinamra Gupta		29/08/2025
Licence No:	685982720		

**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 ..... Vinamra Gupta..... 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](http://www.taswater.com.au)

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	Vinamra Gupta		29/08/2025

**Legend**

- Electrical Connection
- Electrical Turret
- Sewer Connection
- Stormwater Connection
- Telstra Connection
- Telstra Pit
- Water Meter
- Water Stop Valve
- Fire Hydrant
- Solar Bollard Light
- Spotlight with sensor

**Surface Water Drainage**

Ground to fall away from building in all directions in compliance with AS2870 & N.C.C 2022 3.3.3.

- Surface water must be diverted away from a Class 1 building as follows:
- (a) Slab-on-ground - finished ground level adjacent to a building; the external finished surface surrounding the slab must be drained to move surface water away from the building and graded to give a slope of not less than
    - (i) 25mm over the first 1m from the building
    - (A) in low rainfall intensity areas for surfaces that are reasonably impermeable (such as concrete or claypaving); or
    - (B) for any reasonably impermeable surface that forms part of an access path or ramp provided for the purposes of Clauses 1.1(2) or (4)(c) of the ABCB Standard for Livable Housing Design; or
    - (ii) 50 mm over the first 1 m from the building in any other case.
  - (b) Slab-on-ground - finished slab heights: the height of the slab-on-ground above external finished surfaces must be not less than
    - (i) 100 mm above the finished ground level in low rainfall intensity areas or sandy, well-drained areas; or
    - (ii) 50 mm above impermeable (paved or concrete) areas that slope away from the building in accordance with (a); or
    - (iii) 150 mm in any other case.
  - (c) The ground beneath suspended floors must be graded so that the area beneath the building is above the adjacent external finished ground level and surface water is prevented from ponding under the building.

**Subsoil Drainage**

is to comply with AS2870, AS3500 & N.C.C 2022 3.3.4.

Where a subsoil drainage system is installed to divert subsurface water away from the area beneath a building, the subsoil drain must-

- (a) be graded with a uniform fall of not less than 1:300; and
- (b) discharge into an external silt pit or sump with-
  - (i) the level of discharge from the silt pit or sump into an impervious drainage line not less than 50 mm below the invert level of the inlet; and provision for cleaning and maintenance.

**Note**

All driveway pits and grate drains to be Class B.

Stormwater pits are indicative. Location may vary depending on site conditions.

**New Services**

- STORMWATER PIPE WITH FLOW DIRECTION
- GRATED STORMWATER PIT 450x450 CLASS A ACO GALVANISED HEELGUARD OR SIMILAR ENGINEER APPROVED

**Performance Solution Compliance Notes:**

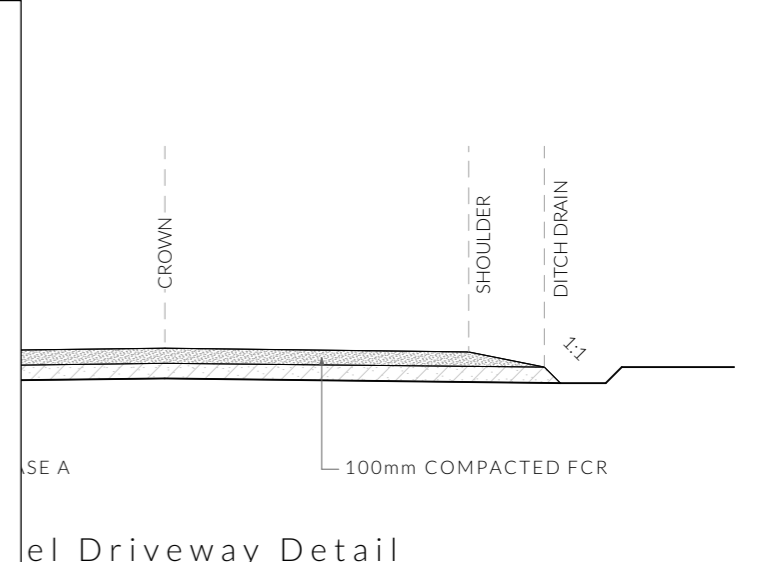
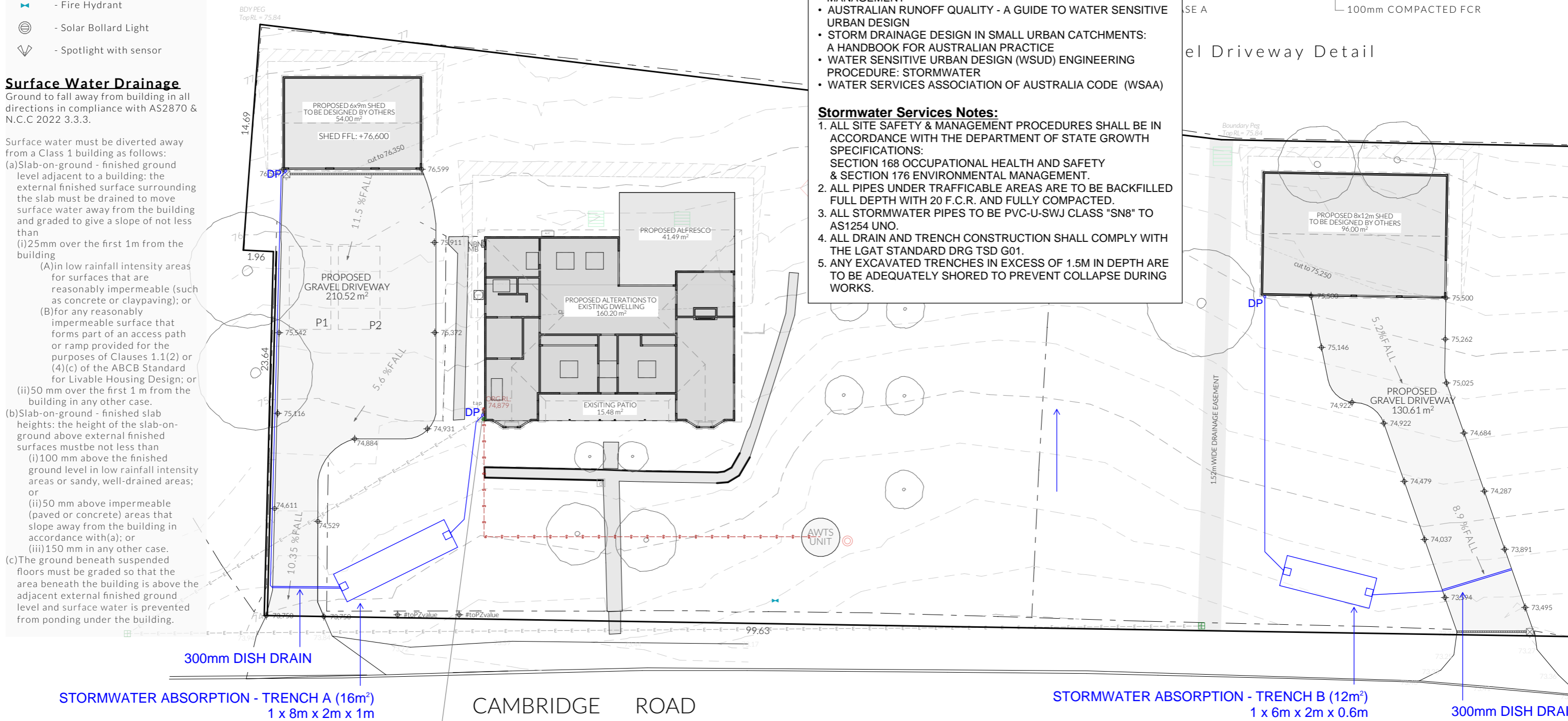
AS 3500.3 - CL 7.10  
 • 7.10.1 - OVERFLOW IS SAFE AND DOES NOT COMPROMISE FREEBOARD TO HABITABLE SPACES.

**GENERAL**

- AS/NZS 3500.3: PART 3 STORMWATER DRAINAGE AUSTRALIAN RAINFALL AND RUN-OFF VOLUME 8: URBAN STORMWATER MANAGEMENT
- AUSTRALIAN RUNOFF QUALITY - A GUIDE TO WATER SENSITIVE URBAN DESIGN
- STORM DRAINAGE DESIGN IN SMALL URBAN CATCHMENTS: A HANDBOOK FOR AUSTRALIAN PRACTICE
- WATER SENSITIVE URBAN DESIGN (WSUD) ENGINEERING PROCEDURE: STORMWATER
- WATER SERVICES ASSOCIATION OF AUSTRALIA CODE (WSAA)

**Stormwater Services Notes:**

1. ALL SITE SAFETY & MANAGEMENT PROCEDURES SHALL BE IN ACCORDANCE WITH THE DEPARTMENT OF STATE GROWTH SPECIFICATIONS: SECTION 168 OCCUPATIONAL HEALTH AND SAFETY & SECTION 176 ENVIRONMENTAL MANAGEMENT.
2. ALL PIPES UNDER TRAFFICABLE AREAS ARE TO BE BACKFILLED FULL DEPTH WITH 20 F.C.R. AND FULLY COMPACTED.
3. ALL STORMWATER PIPES TO BE PVC-U-SWJ CLASS "SN8" TO AS1254 UNO.
4. ALL DRAIN AND TRENCH CONSTRUCTION SHALL COMPLY WITH THE LGAT STANDARD DRG TSD G01.
5. ANY EXCAVATED TRENCHES IN EXCESS OF 1.5M IN DEPTH ARE TO BE ADEQUATELY SHORED TO PREVENT COLLAPSE DURING WORKS.



ORG WITH TAP OVER, TOP OF ORG TO BE A MINIMUM OF 150mm BELOW LOWEST SANITARY FIXTURE

NOT FOR CONSTRUCTION

**Site Areas**

Site Area	4596 m²
Building Footprint	214.2 m²
Total Site Coverage	4.66%

	PINNACLE DRAFTING & DESIGN 7/3 Abernant Way, Cambridge 7170 03 6248 4218 admin@pinnacledrafting.com.au www.pinnacledrafting.com.au Licence: CC6073Y	<b>Site Plan - Proposed</b>  Revision: DA - 01 Approved by: JN	Scale: 1:250, 1:500 Pg. No: A.03	Proposal: Alteration & Addition Client: Jackie & Cameron Voss Address: 887 Cambridge Road, Cambridge - 7170	Date: 04/07/2025 Drawn by: CJ Job No: 060-2024 Engineer: TBA Building Surveyor: TBA	<table border="1" style="width: 100%; border-collapse: collapse;"> <thead> <tr> <th>ID</th> <th>Date</th> <th>Designer</th> </tr> </thead> <tbody> <tr> <td> </td> <td> </td> <td> </td> </tr> </tbody> </table>	ID	Date	Designer					These drawings are the property of Pinnacle Drafting & Design Pty Ltd, reproduction in whole or part is strictly forbidden without written consent. © 2025. These drawings are to be read in conjunction with all drawings and documentation by Engineers, Surveyors and any other consultants referred to within this drawing set as well as any Certificate of Likely Compliance and/or permit documentation. DO NOT SCALE FROM DRAWINGS. All Contractors are to verify dimensions on site before commencing any orders, works or requesting/producing shop drawings. ANY AND ALL DISCREPANCIES DISCOVERED BY OUTSIDE PARTIES ARE TO BE BROUGHT TO THE ATTENTION OF PINNACLE DRAFTING & DESIGN PTY LTD AS SOON AS PRACTICABLE. This document must be printed in colour. Pinnacle Drafting takes no responsibility for any errors, issues, or omissions caused by contractors and builders not following colour-printed plans.
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NOTE: Refer to cover page for further details on changes.														

**Design notes:**

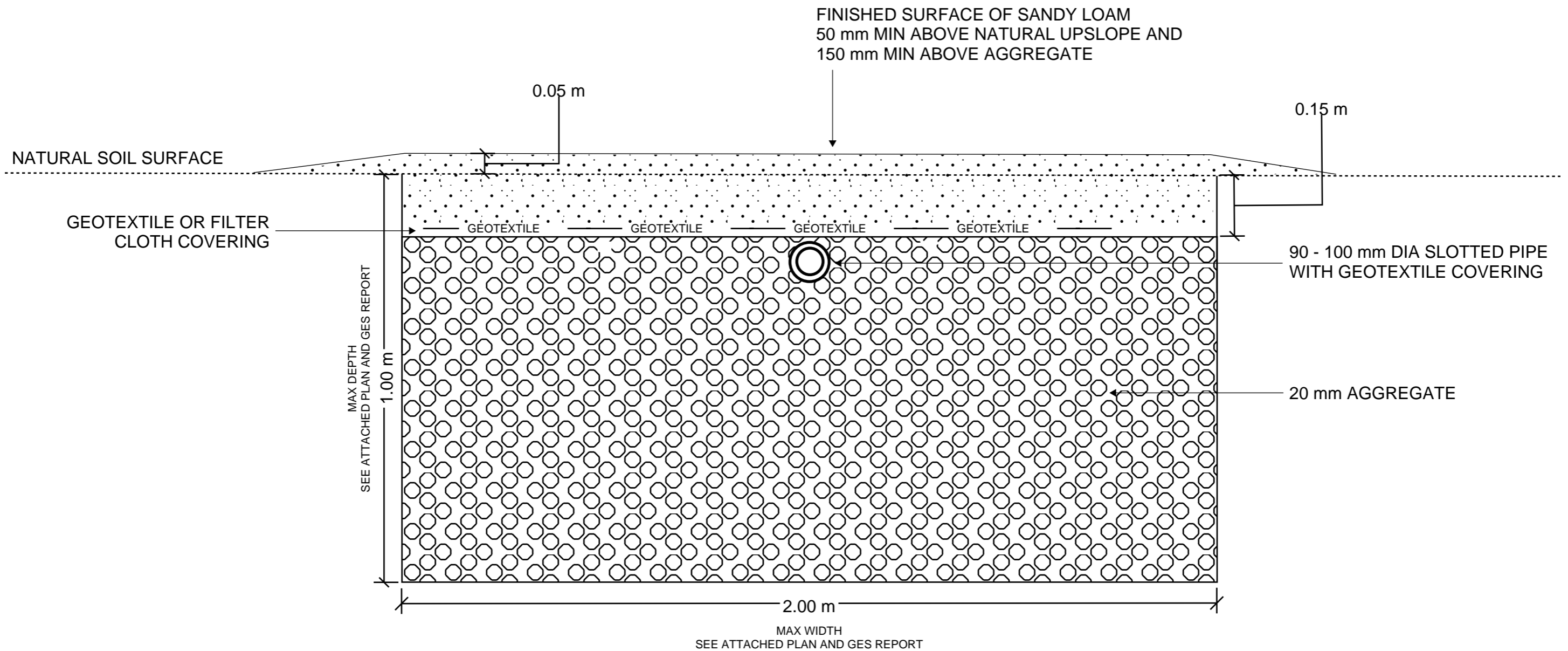
1. Absorption trench dimensions of up to 20m long by 1.0m deep by 2.0m wide  
 – total storage volume calculated at average 35% porosity.
2. Base of trenches to be excavated level and smearing and compaction avoided.
3. 90-100mm slotted pipe should be placed in the top 100mm of the 20mm aggregate
4. Geotextile or filter cloth to be placed over the pipe to prevent clogging of the pipes and aggregate
5. All works on site to comply with AS3500 and Tasmanian Plumbing code.



GEO-ENVIRONMENTAL

SOLUTIONS

29 Kirksway Place, Battery Point  
 T| 62231839 E| office@geosolutions.net.au



Do not scale from these drawings.  
 Dimensions to take precedence  
 over scale.

Geo-Environmental Solutions

Stormwater Trench Detail

Sheet 1 of 1