

NOTICE OF PROPOSED DEVELOPMENT

Notice is hereby given that an application has been made for planning approval for the following development:

SITE:

8 EASTAUGH STREET, DODGES FERRY

**PROPOSED DEVELOPMENT:
DWELLING & OUTBUILDING**

The relevant plans and documents can be inspected at the Council Offices at 47 Cole Street, Sorell during normal office hours, or the plans may be viewed on Council's website at www.sorell.tas.gov.au until **Monday 2nd March 2026**.

Any person may make representation in relation to the proposal by letter or electronic mail (sorell.council@sorell.tas.gov.au) addressed to the General Manager. Representations must be received no later than **Monday 2nd March 2026**

APPLICATION NO: 5.2026-14.1
DATE: 13 FEBRUARY 2026



Disclaimer

Any information extracted from this document (from the face of the document or by scale) should be verified on site. Council takes no responsibility for the accuracy of any information contained or presented in the document. While every care has been taken to ensure the accuracy of this information, Council makes no representations or warranties about the accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and liability.

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SEARCH OF TORRENS TITLE

 Sorell Council
Development Application: Certificate of title - 8 Eastaugh Street, Dodges Ferry.pdf
Plans Reference: P2 Date received: 29/01/2026

VOLUME 187805	FOLIO 1
EDITION 2	DATE OF ISSUE 20-Nov-2025

SEARCH DATE : 29-Jan-2026

SEARCH TIME : 11.01 am

DESCRIPTION OF LAND

Town of DODGES FERRY

Lot 1 on Sealed Plan **187805**

Derivation : Part of 547 Acres Gtd. to Thomas Macdowell.

Prior CT **185271/200****SCHEDULE 1****N291166** TRANSFER to TIMOTHY TERENCE CASTLE and MADELINE LAURA CASTLE Registered 20-Nov-2025 at noon**SCHEDULE 2**

Reservations and conditions in the Crown Grant if any

SP187805 EASEMENTS in Schedule of Easements**SP187805** FENCING PROVISION in Schedule of Easements**SP185271** FENCING PROVISION in Schedule of Easements**E437584** MORTGAGE to National Australia Bank Limited
Registered 20-Nov-2025 at 12.01 pm**UNREGISTERED DEALINGS AND NOTATIONS**

No unregistered dealings or other notations

SCHEDULE OF EASEMENTS

NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED.
SIGNATURES MUST BE ATTESTED.

Registered Number

SP 187805

PAGE 1 OF 2 PAGE/S

EASEMENTS AND PROFITS

Each lot on the plan is together with:-

- (1) such rights of drainage over the drainage easements shown on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and
- (2) any easements or profits a prendre described hereunder.

Each lot on the plan is subject to:-

- (1) such rights of drainage over the drainage easements shown on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and
- (2) any easements or profits a prendre described hereunder.

The direction of the flow of water through the drainage easements shown on the plan is indicated by arrows.

Easements

Lot 100 on the plan is SUBJECT TO a Service Easement over that part of Lot 100 shown on the plan as "SERVICE EASEMENT (SP185271)" appurtenant to Lot 6 on SP185271.

Lots 1, 7 and 8 on the plan are SUBJECT TO a Right of Drainage over those parts of Lots 1, 7 and 8 shown as "DRAINAGE EASEMENT A" in gross in favour of the Sorell Council.

Covenants

No covenants are created in this Schedule of Easements

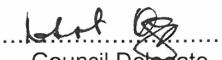
**Sorell Council**Development Application: Certificate of title - 8
Eastaugh Street, Dodges Ferry.pdfPlans Reference: P2
Date received: 29/01/2026**Fencing Provision**

In respect of each lot shown on the plan, the Vendor DDC Operations Pty Ltd will not be required to fence.

Interpretation

Service Easement means the full and free right of every person who is entitled to an estate or interest in possession in the land indicated as the dominant tenement or any part of that land. And those persons' employees, agents and contractors, with which such rights being capable of enjoyment in common with the owner of the servient tenement and the relevant Council the relevant Water Authority, Aurora Energy Pty Ltd or any other relevant electrical supply entity and Telstra Corporation or any other telecommunications supply entity (and their successors from time to time), to lay services and to have the right of free and uninterrupted passage and running of water, electricity, telephone or other services or supplies (including electronic or other information transfer services) through, under, over and along the easement by pipes, wires, cables, poles, and all other conducting media which are now or at any time laid under the natural surface of the land are safe and protected in accordance with all relevant Acts, Regulations or By-Laws, together with a right for them and their surveyors and workmen to enter on the easement with or without machinery, materials and specialist service providers for the purposes of inspecting, laying, installing, cleaning, repairing, maintaining, renewing, re-laying or removing any such pipes, wires, cables, poles or

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: DDC Operations Pty Ltd (ACN 655 059 724)	PLAN SEALED BY: SORELL COUNCIL
FOLIO REF: 185271/200	DATE: 20.11.24
SOLICITOR Dobson Mitchell and Allport and AB 23001454:	REF NO. 7.2022.32.1
	 Council Delegate

NOTE: The Council Delegate must sign the Certificate for the purposes of identification.

**ANNEXURE TO
SCHEDULE OF EASEMENTS**

PAGE 2 OF 2 PAGE/S

Registered Number

SP 187805

SUBDIVIDER: DDC Operations Pty Ltd (ACN 655 059 724)

FOLIO REFERENCE: 185271/200

PAGE 2 OF 2 PAGE/S

other conducting media with every person exercising such right causing as little damage and inconvenience as reasonably practicable in so doing and making good any damage caused to the service tenement.

Executed by DDC Operations Pty Ltd in
Accordance with section 127(1) of the
Corporations Act 2001

}

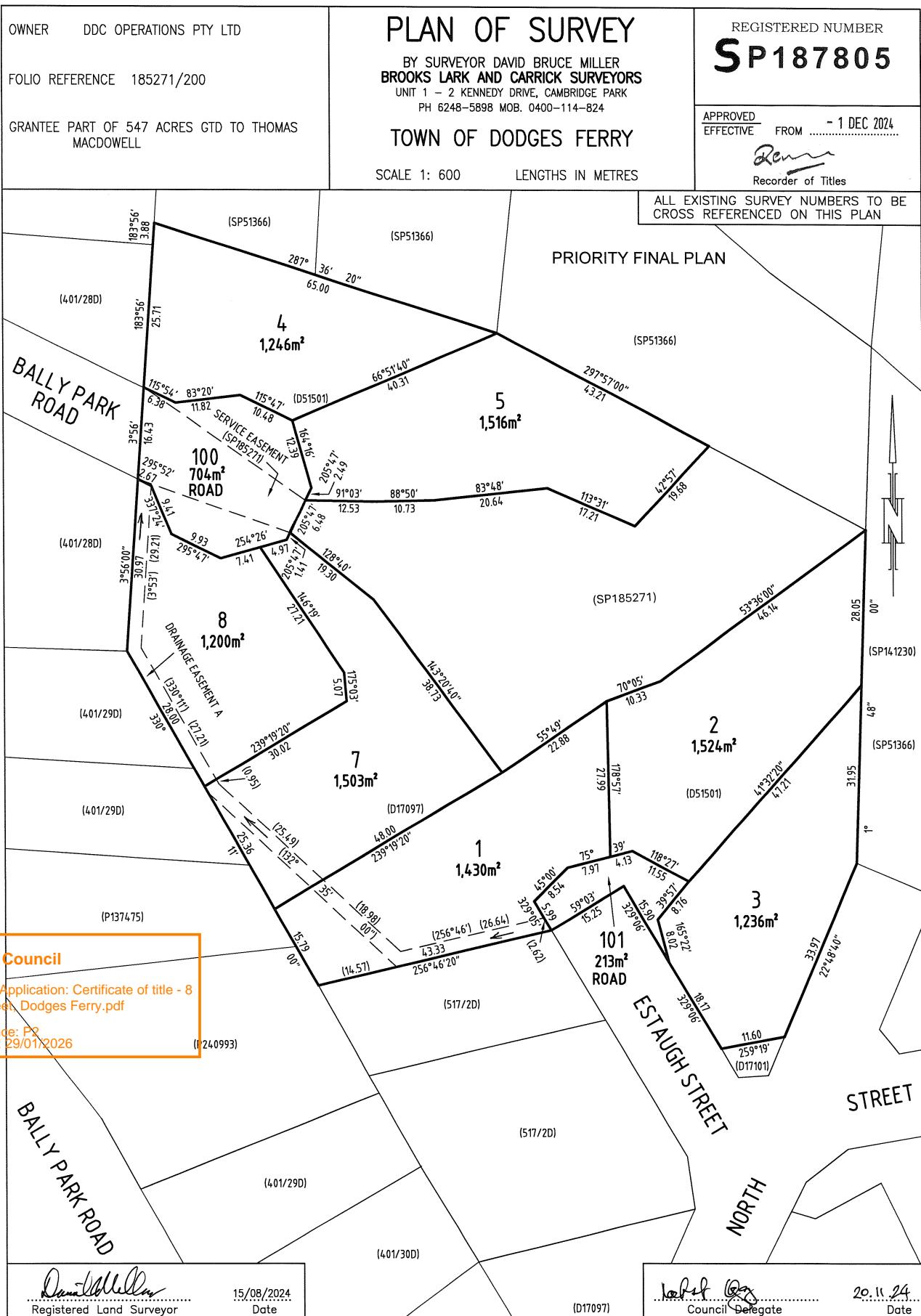
Sole Director/Secretary

Name of Sole Director/Secretary
(print)

DAVID MILLER

**Sorell Council**Development Application: Certificate of title - 8
Eastaugh Street, Dodges Ferry.pdfPlans Reference: P2
Date received: 29/01/2026

NOTE: Every annexed page must be signed by the parties to the dealing or where the party is a corporate body be signed by the persons who have attested the affixing of the seal of that body to the dealing.





Part B: Please note that Part B of this form is publicly exhibited.

Full description of Proposal:	Use: Residential Dwelling Development: Proposed 3 Bedroom Dwelling & Shed <i>Large or complex proposals should be described in a letter or planning report.</i>	Plans Reference:P1 Date Received:29/01/2026
Design and construction cost of proposal:	\$ 600,000	

Is all, or some the work already constructed:	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>
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Location of proposed works:	Street address: 8 Eastaugh Street Suburb: Dodges Ferry Postcode: 7173 Certificate of Title(s) Volume: 187805 Folio: 1
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Current Use of Site	Vacant Site
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Current Owner/s:	Name(s) Timothy & Madelaine Castle
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Is the Property on the Tasmanian Heritage Register?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please provide written advice from Heritage Tasmania</i>
Is the proposal to be carried out in more than one stage?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please clearly describe in plans</i>
Have any potentially contaminating uses been undertaken on the site?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please complete the Additional Information for Non-Residential Use</i>
Is any vegetation proposed to be removed?	No: <input type="checkbox"/> Yes: <input checked="" type="checkbox"/>	<i>If yes, please ensure plans clearly show area to be impacted</i>
Does the proposal involve land administered or owned by either the Crown or Council?	No: <input checked="" type="checkbox"/> Yes: <input type="checkbox"/>	<i>If yes, please complete the Council or Crown land section on page 3</i>
If a new or upgraded vehicular crossing is required from Council to the front boundary please complete the Vehicular Crossing (and Associated Works) application form <u>https://www.sorell.tas.gov.au/services/engineering/</u>		

Part B continued: Please note that Part B of this form is publicly exhibited

Declarations and acknowledgements

- I/we confirm that the application does not contradict any easement, covenant or restriction specified in the Certificate of Title, Schedule of Easements or Part 5 Agreement for the land.
- I/we consent to Council employees or consultants entering the site and have arranged permission and/or access for Council's representatives to enter the land at any time during normal business hours.
- I/we authorise the provision of a copy of any documents relating to this application to any person for the purposes of assessment or public consultation and have permission of the copyright owner for such copies.
- I/we declare that, in accordance with s52(1) of the *Land Use Planning and Approvals Act 1993*, that I have notified the owner(s) of the intention to make this application.
- I/we declare that the information in this application is true and correct.

Details of how the Council manages personal information and how you can request access or corrections to it is outlined in Council's Privacy Policy available on the Council website.

- I/we 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 exhibition, 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.
- Where the General Manager's consent is also required under s.14 of the *Urban Drainage Act 2013*, by making this application I/we also apply for that consent.

Applicant Signature:

Signature:  Date: 22/01/2026

Crown or General Manager Land Owner Consent

If the land that is the subject of this application is owned or administered by either the Crown or Sorell Council, the consent of the relevant Minister or the Council General Manager whichever is applicable, must be included here. This consent should be completed and signed by either the General Manager, the Minister, or a delegate (as specified in s52 (1D-1G) of the *Land Use Planning and Approvals Act 1993*).

Please note:

- If General Manager consent is required, please first complete the General Manager consent application form available on our website www.sorell.tas.gov.au
- If the application involves Crown land you will also need a letter of consent.
- Any consent is for the purposes of making this application only and is not consent to undertaken work or take any other action with respect to the proposed use or development.

I _____ being responsible for the

administration of land at _____

declare that I have given permission for the making of this application for



Sorell Council

Development Application: Development Application - 8 Eastaugh Street, Dodges Ferry.pdf

Plans Reference:P1
Date Received:29/01/2026

Signature of General Manager,
Minister or Delegate:

Signature: Date:

SITE SOIL EVALUATION FOR FOUNDATIONS AND WASTEWATER



8 EASTAUGH STREET - DODGES FERRY PROPOSED DWELLING

Client: MADELAINE & TIMOTHY CASTLE

Certificate of Title: 187805/1

Investigation Date: 19/08/2025



Sorell Council

Development Application: Development Application - 8 Eastaugh Street, Dodges Ferry.pdf

Plans Reference:P1
Date Received:29/01/2026

Refer to this Report As

Enviro-Tech Consultants Pty. Ltd. 2025. Site Soil Evaluation for Foundations and Wastewater Report for a Proposed Dwelling, 8 Eastaugh Street - Dodges Ferry. Unpublished report for Madelaine and Timothy Castle by Enviro-Tech Consultants Pty. Ltd., 19/08/2025.

Report Distribution

This report has been prepared by Enviro-Tech Consultants Pty. Ltd. (Envirotech) for the use by parties involved in the proposed development of the property named above.

Permission is hereby given by Envirotech and the client, for this report to be copied and distributed to interested parties, but only if it is reproduced in colour, and only distributed in full. No responsibility is otherwise taken for the contents.

Limitations of this report

In some cases, variations in actual Site conditions may exist between subsurface investigation boreholes. This report only applies to the tested parts of the Site at the Site of testing, and if not specifically stated otherwise, results should not be interpreted beyond the tested areas.

The Site investigation is based on the observed and tested soil conditions relevant to the inspection date and provided design plans (building footprints presented in Attachment A). Any site works which has been conducted which is not in line with the Site plans will not be assessed. Subsurface conditions may change laterally and vertically between test Sites, so discrepancies may occur between what is described in the reports and what is exposed by subsequent excavations. No responsibility is therefore accepted for any difference in what is reported, and actual Site and soil conditions for parts of the investigation Site which were not assessed at the time of inspection.

This report has been prepared based on provided plans detailed herein. Should there be any significant changes to these plans, then this report should not be used without further consultation which may include drilling new investigation holes to cover the revised building footprint. This report should not be applied to any project other than indicated herein.

No responsibility is accepted for subsequent works carried out which deviate from the Site plans provided or activities onsite or through climate variability including but not limited to placement of fill, uncontrolled earthworks, altered drainage conditions or changes in groundwater levels.

At the time of construction, if conditions exist which differ from those described in this report, it is recommended that the base of all footing excavations be inspected to ensure that the founding medium meets that requirement referenced herein or stipulated by an engineer before any footings are poured.

Investigation Summary

Site Classification

In accordance with AS2870 – 2011 and after thorough consideration of the known details pertaining to the proposed building and associated works (hereafter referred to as the Site), the geology, soil conditions, soil properties, and drainage characteristics of the Site have been classified as follows:

CLASS S is based on soil profiles around the proposed building envelope being classified as slightly reactive to soil moisture variation, with test locations potentially subject to surface movement ranging from 0 to 20 mm.

Foundations

It is recommended that concentrated loads including but not limited to slab edge or internal beam or strip footings supported directly on piers or pads which are founded in the Distinctly Weathered SANDSTONE Bedrock at 0.6 to 0.7 m depth or greater

Wind Load Classification

The AS 4055-2021 Wind loads for Housing classification is summarised.

Region:	A
Terrain category:	TC1
Shielding Classification:	PS
Topographic Classification:	T1
Wind Classification:	N3
Design Wind Gust Speed (V _{h,u}) m/s	50

I recommend that during construction, I and/or the design engineer are notified of any major variation in the foundation conditions as predicted in this report.



Kris Taylor, BSc (hons)

Environmental & Engineering Geologist

Director

Site Investigation

The Site investigation is summarised in Table 1.

Table 1 Summary of Site Investigation

Client	Madelaine and Timothy Castle
Project Address	8 Eastaugh Street - Dodges Ferry
Council	Sorell
Planning Scheme	Tasmanian Planning Scheme
Inundation, Erosion or Landslip Overlays	None
Proposed	Dwelling
Investigation	Fieldwork was carried out by an Engineering Geologist on the 19/8/2025
Site Topography	The building site has a gentle slope of approximately 8% (5°) to the northwest
Site Drainage	The site receives overland flow runoff directly from the southeast.
Soil Profiling	Three investigation holes were direct push sampled from surface level around the proposed dwelling (Appendix A):
Investigation Depths	The target excavation depth was estimated at 2.3 m. Borehole BH01 was direct push sampled to 0.9 m, borehole BH02 was direct push sampled to 0.7 m, and borehole BH03 was direct push sampled to 0.2 m (all ending in SANDSTONE). Borehole logs and photos are presented in Appendix B & C.
Soil moisture and groundwater	All recovered soil at the site ranged from dry to moist. Groundwater was not encountered.
Geology	According to 1:250,000 Mineral Resources Tasmania geological mapping (accessed through The LIST), the geology comprises of: Permian - Triassic Dominantly quartz sandstone.

Soil Profiles

The geology of the site has been documented and described according to Australian Standard AS1726 for Geotechnical Site Investigations, which includes the Unified Soil Classification System (USCS). Soil layers, and where applicable, bedrock layers, are summarized in Table 2.

Table 2 Soil Summary Table

#	Layer	Details	USCS	BH01	BH02	BH03
1	Silty SAND	TOPSOIL: Silty SAND, very dark brown, well sorted, fine grained sand, with gravel, with clay, trace roots, 5 % roots; sub-angular gravel, MD	SM	0-0.3 DS@0.1	0-0.2	
2	Silty SAND	Silty SAND with clay, trace gravel, light yellowish brown, mottled dark greyish brown, well sorted, medium grained sand; angular gravel, MD-D	SM			0-0.1 DS@0.0
3	SAND	SAND with silt, trace clay, yellow, well sorted, fine grained sand, L-MD	SM	0.3-0.6 DS@0.5	0.2-0.4	
4	Silty SAND	Silty SAND trace clay, brownish yellow, well sorted, fine grained sand, MD-D	SM	0.6-0.7 DS@0.6	0.4-0.6	
5	Silty SAND	Silty SAND with clay, trace gravel, very pale brown, well sorted, fine grained sand, MD	SM	0.7-0.8 DS@0.7		
6	CLAY	CLAY, reddish yellow, mottled very dark grey, medium plasticity, trace organics, 5 % , VSt	CL		0.6-0.7 DS@0.6	
7	SANDSTONE	Distinctly Weathered SANDSTONE Bedrock, L (rock strength inferred from BH03,0.1)		0.8-0.9 REF	REF	0.1-0.2 PL@0.1 REF

Consistency¹ VS Very soft; S Soft; F Firm; St Stiff; Vst Very Stiff; H Hard. Consistency values are based on soil strengths AT THE TIME OF TESTING and is subject to variability based on field moisture condition

Density² VL Very loose; L Loose; MD Medium dense; D Dense; VD Very Dense

Rock Strength EL Extremely Low; VL Very Low; L Low; M Medium; H High; VH Very High; EH Extremely High

PL Point load test (lump)

DS Disturbed sample

PV Pocket vane shear test

FV Downhole field vane shear test

U50 Undisturbed 48mm diameter core sample collected for laboratory testing.

REF Borehole refusal

INF DCP has continued through this layer and the geology has been inferred.

¹ Soil consistencies are derived from a combination of field index, DCP and shear vane readings.

² Soil density descriptions presented in engineering logs are derived from the DCP testing.

Recommendations

Dispersive soils

Findings

The results presented in Appendix F indicate:

- Shallow soil Layers 1 to 3 are considered either not dispersive (Class 4 or greater) or only slightly dispersive (Class 3) to depths of between 0.4 to -0.6m depth.
- Deeper soil Layers 4 and 5 comprises Emerson Class 2 and Emerson Class 1 category soils which are considered moderately to severely dispersive respectively.

Site specific recommendations

- No specific recommendations apply to manage soil dispersion.
- A single dispersive soil layer was identified. It is recommended that if cut and fill are proposed, the water must be prevented from entering beneath the pad. Surface water and groundwater is to be intercepted in a toe drain and diverted away from the building.
- If a pad is not proposed, no specific management measures are required.

Soil Exposure Classification

The soil has been tested for salinity impacts on footings in accordance with AS2870, as well as preliminary pH testing as a proxy to potential sulphate aggressivity.

- With Class A1 soil conditions based on salinity and pH, there are no apparent footing exposure hazards.

Plumbing

Refer to hydraulic design drawings for detailed plumbing advice and requirements.

Refer to Table 5 to assess soil movement (Ys) around pipework for different depth ranges.

*Table 3 Millimetres soil movement (Ys) for determining plumbing requirements for various soil depths **

Building	Profiles	P*	E Ys >75	H2 Ys 60- 75	H1 Ys 40- 60	M Ys 20- 40	S Ys 0-20	A Ys 0
Dwelling	BH01 BH02	No					0-0.8	0.8-3

* Depths in this table are based on surfaces at the time of testing and do not allow for the influence of any additional fill added to the soil profile unless the Iss calculation depth has been modified based on the proposed cut and fill (see 'Footing Minimum Target Depths'). Where additional fill is proposed (and not indicated in the attached plans) Enviro-Tech are to be advised of final FFL's so the Site classification can be recalculated according to the specific fill reactivity and thickness used in the design.

Class A and S

When pipework service trench bases fall within Class A to S depth range as shown in Table 5, and all plumbing recommendations herein have been implemented, the drainage system does not require any additional protection and should be installed following the AS/NZS 3500 series standards.

Wastewater

The saturated soil permeability is estimated to be at a rate of 11mm per hour. Soil is consistent with a Sandy Loam and considered Category 2.

Rock Excavability

A 5-tone excavator or larger fitted with a GP bucket will be effective in excavating bedrock.

Permanent Cut Batters – Soil and Rock

To ensure that cuts remain serviceable, it is recommended that unretained cuts in soil do not exceed 1V: 2H and unsupported batters in bedrock do not exceed 2V: 1H. Before cuts are approached by workers, cuts must be appropriately scaled to remove any loose soil and rock. The bedrock should not be increased beyond 2.0 m height relative to depth below natural level, without inspection by a suitably qualified person to ensure that these cuts are safe to work under.

Filling Works

- In the case where either of the following conditions occur, the Site is classified as Class P (AS2870 Clauses 2.5.2 and 2.5.3), in which case footings are to be designed in accordance with engineering specifications:
 - FILL OTHER THAN SAND exceeds 0.4 m depth.
 - SAND FILL exceeds 0.8 m depth.
- It is recommended that footing (edge beams, internal beams, and load support thickenings) concentrated loads are transferred through the fill to target founding layers.
- Subject to engineering advice, edge beams, internal beams, and load support thickenings may need to be founded on natural ground.
- SAND or FCR is always recommended rather than fill containing SILT or CLAY.
- Compacted CLAY or SAND FILL on well drained slopes should not exceed 1V:2H unless supported by an engineered retaining wall.
- Compacted stable rock fill on well drained slopes should not exceed 2V:3H unless supported by an engineered retaining wall.
- Any proposed filling works must be in accordance with AS3798 'Earthworks for Residential and Commercial Developments'.
- Before placing fill for landscaping, all topsoil should be removed from the filled area.
- Ideally, the fill should be free draining and placed to prevent water ponding. The fill should be placed in layers no greater than 150mm height and suitably compacted.

Long-term erosion management

The following measures are generally recommended for maintaining long-term erosion stability of soil slopes:

- Slopes exceeding 1V: 4H and up to 1V: 3H will need to be effectively stabilised with mulch/topsoil mixes, drill/broadcast seeding, hydroseeding or soil binders.
- Slopes up to 1V:2H can be stabilised with straw mulching.
- Slopes exceeding 1V: 2H and up to 1V:1.5H may be effectively stabilised with hydromulching
- Slopes exceeding 1V:1.5H but no greater than 1V: 1H will generally require measures such as erosion control blankets.

Earth-Retaining Structures

Any excavations higher than 1.0m and exceeding the recommended batter angle should be supported with a retaining wall engineered that allows free drainage of the retained soil and rock.

Building Pad Preparation

Any organic matter or other deleterious materials will need to be removed from the building envelope.

Topsoil containing grass roots must be removed from the area on which the footing will rest.

Unless otherwise stated in an engineering report, fill or loose, soft, low bearing capacity soil should either be removed from the building pad, or otherwise footings or piers should ideally be established to the base of this material to support the proposed structure.

Earthworks should be carried out in accordance with AS3798 'Earthworks for Residential and Commercial Developments'. Unsuitable materials in structural fill are listed in AS2870 Section 4.3.

The base of the excavation must be generally level but may slope not more than 1:40 to allow excavations to drain.

Pad Preparation - Compaction

It is recommended that any crushed rock, sand or granular soils across the building pad, filled areas and the base of the footing excavations are compacted with several passes with a medium weight (~80 kg) plate compactor (80 kg).

Footing Preparation

Footing excavations must be free of loose earth, tree roots, mud or debris immediately before pouring concrete, ensuring the footing is appropriately seated on the target layer.

Foundation Maintenance

Details on appropriate site and foundation maintenance practises from the CSIRO BTF 18 Foundation Maintenance and Footing Performance: A Homeowner's Guide are presented in Appendix J.



Kris Taylor, BSc (hons)

Environmental & Engineering Geologist

Notes About Your Assessment

The Site classification provided and footing recommendations including foundation depths are assessed based on the subsurface profile conditions present at the time of fieldwork and may vary according to any subsequent Site works carried out. Site works may include changes to the existing soil profile by cutting more than 0.5 m and filling more than 0.4 to 0.8 m depending on the type of material and the design of the footing. All footings must be founded through fill other than sand not exceeding 0.4 m depth or sand not exceeding 0.8 m depth, or otherwise a Class P applies (AS2870 Clauses 2.5.2 and 2.5.3).

For reference, borehole investigation depths relative to natural soil surface levels are stated in borehole logs where applicable.

In some cases, variations in actual Site conditions may exist between subsurface investigation boreholes. At the time of construction, if conditions exist which differ from those described in this report, it is recommended that the base of all footing excavations be inspected to ensure that the founding medium meets the requirement referenced herein or stipulated by an engineer before any footings are poured.

The site classification assumes that the performance requirements as set out in Appendix B of AS 2870 are acceptable and that site foundation maintenance is carried out to avoid extreme wetting and drying.

It is the responsibility of the homeowner to ensure that the soil conditions are maintained and that abnormal moisture conditions do not develop around the building. The following are examples of poor practises that can result in abnormal soil conditions:

- The effect of trees being too close to a footing.
- Excessive or irregular watering of gardens adjacent to the building.
- Failure to maintain Site drainage.
- Failure to repair plumbing leaks.
- Loss of vegetation near the building.

The pages that make up the last six pages of this report are an integral part of this report. The notes contain advice and recommendations for all stakeholders in this project (i.e. the structural engineer, builder, owner, and future owners) and should be read and followed by all concerned.

References

AS 1289.6.3.2-2003 Soil strength and consolidation tests - Determination of the penetration resistance of a soil - 9 kg dynamic cone penetrometer test, Standards Australia, Sydney, Retrieved from SAI Global

AS 1289.7.1.1-2003 Methods of testing soils for engineering purposes Method 7.1.1: Soil reactivity tests—Determination of the shrinkage index of a soil—Shrink-swell index, Standards Australia, Sydney, Retrieved from SAI Global

AS 1726-2017, Geotechnical Site investigations, Standards Australia, Sydney, Retrieved from SAI Global

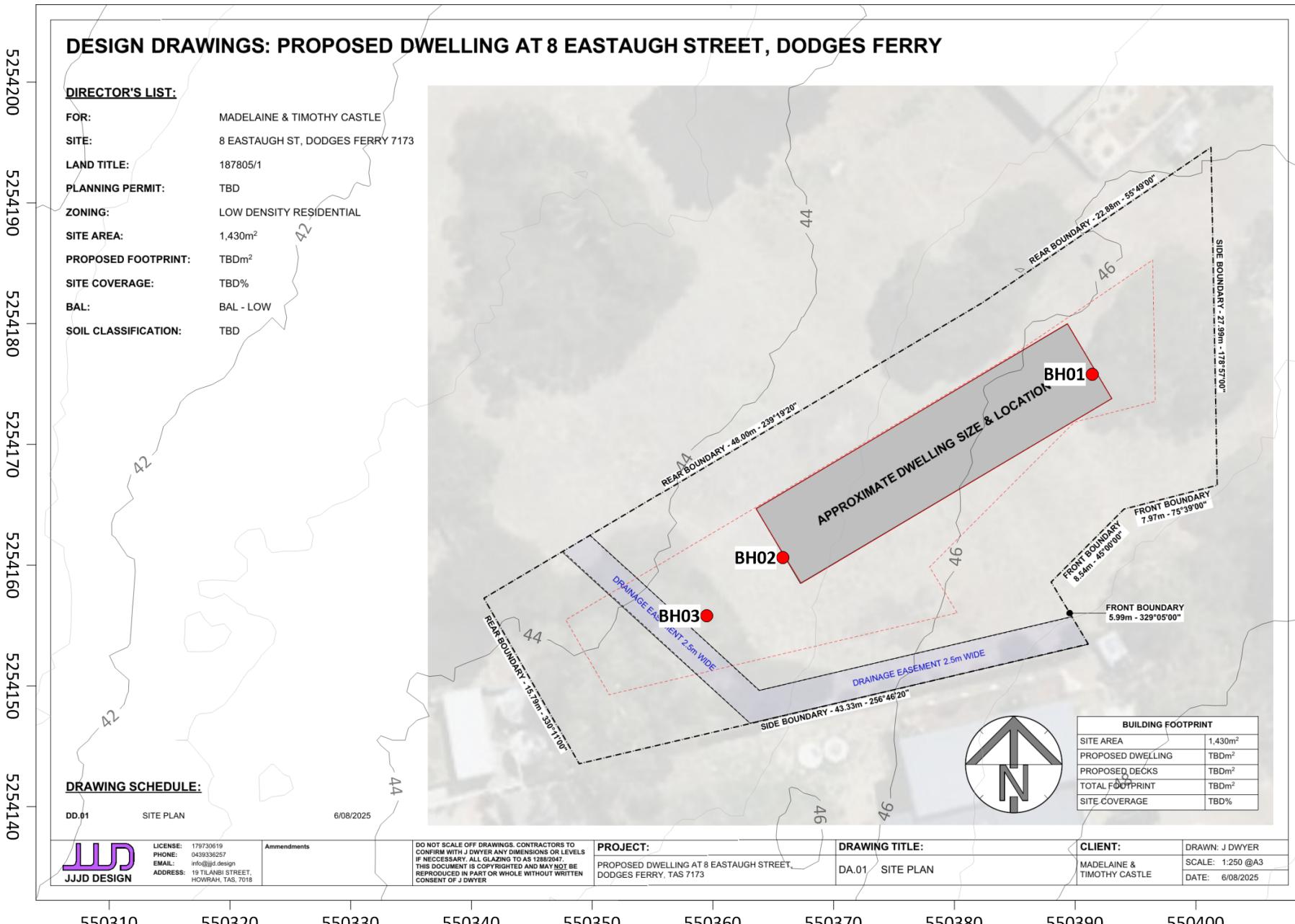
AS 2870-2011, Residential slabs and footings, Standards Australia, Sydney, Retrieved from SAI Global

AS4055 (2021). Australian Standard. Prepared by Committee BD-099, Wind Loads for Housing. Approved on behalf of the Council of Standards Australia on 1st June 2021 and published on 25th June 2021.

DPIPWE 2009. Dispersive Soils and their Management. Technical Reference Manual. Sustainable Land Use Department of Primary Industries Water and Environment.

Webster, S.L., Brown, R.W. and Porter, J.R. (1994) Force Projection Site Evaluation Using the Electric Cone Penetrometer (ECP) and the Dynamic Cone Penetrometer (DCP). Technical Report No. GL-94-17, Air Force Civil Engineering Support Agency, US Air Force, Tyndall Air Force Base, FL.

Appendix A Mapping



Appendix B Borehole Logs

		ASSESSMENT: Foundation Classification STRUCTURE: Dwelling EASTING: 550391.5 HORIZONTAL NORTHING: 5254176 ACCURACY: 0.61m				HOLE ID NO.: BH01 DATE TESTED: 19/08/2025 LOGGED BY: M. Scalisi ELEVATION: 48.00			
LOCATION: 8 Eastaugh Street - Dodges Ferry CLIENT: MADELAINE & TIMOTHY CASTLE					EQUIPMENT: AMS Powerprobe 9120 RAP NATURAL SURFACE (RL):				
DEPTH (m)	GRAPHIC	DESCRIPTION	LAYER	DENSITY CONSISTENCY STRENGTH	MOISTURE INDEX	SAMPLES	TEST	Cu (kPa)	UCS (kg/cm ²)
0.0	SM	TOPSOIL: Silty SAND, very dark brown, well sorted, fine grained sand, with gravel, with clay, trace roots, 5 % roots	1	medium dense	Slightly Moist	12 DS			5.0
0.5	SM	SAND with silt, trace clay, yellow, well sorted, fine grained sand	3	loose to medium dense	Moist	13 DS			5.0
	SM	Silty SAND trace clay, brownish yellow, well sorted, fine grained sand	4	medium dense	Slightly Moist	15 DS			2.0
	SM	Silty SAND with clay, trace gravel, very pale brown, well sorted, fine grained sand	5		Slightly Moist	19 DS			2.9
		Distinctly Weathered SANDSTONE Bedrock light brown	7		Dry				2.8
		Direct Push Sampler Refusal on Distinctly Weathered SANDSTONE Bedrock End of borehole at 0.9m depth.							4.0
									6.0
								REF	
GROUNDWATER: Not Encountered TESTING: Penetrometer: AS 1289.6.3.2 Where blows per 100mm are less than 1, distance travelled per penetrometer blow is measured and converted to blows per 100mm. DS - Disturbed Sample; U50 - Undisturbed 50mm Core; FV - Field Vane (Ømm); PP - Pocket Penetrometer; CBR - Californian Bearing Ratio; PV - Pocket Vane									
					PAGE 1 of 1				

		ASSESSMENT: Foundation Classification STRUCTURE: Dwelling EASTING: 550366 HORIZONTAL NORTHING: 5254160.5 ACCURACY: 0.62m				HOLE ID NO.: BH02 DATE TESTED: 19/08/2025 LOGGED BY: M. Scalisi ELEVATION: 46.00			
LOCATION: 8 Eastaugh Street - Dodges Ferry CLIENT: MADELAINE & TIMOTHY CASTLE					EQUIPMENT: Core & Auger NATURAL SURFACE (RL):				
DEPTH (m)	GRAPHIC	DESCRIPTION	LAYER	DENSITY CONSISTENCY STRENGTH	MOISTURE INDEX	SAMPLES %	TEST	Cu (kPa)	UCS (kg/cm ²)
0.0	SM	TOPSOIL: Silty SAND, very dark brown, well sorted, fine grained sand, with gravel, with clay, trace roots, 5 % roots	1	medium dense	Slightly Moist	18	DS	REF	5.0 7.0 7.0 7.0 7.0 8.0
	SM	SAND with silt, trace clay, yellow, well sorted, fine grained sand	3		Slightly Moist				5.0 7.0 7.0 7.0 7.0 8.0
0.5	SM	Silty SAND trace clay, brownish yellow, well sorted, fine grained sand	4	medium dense to dense	Slightly Moist	18	DS	REF	5.0 7.0 7.0 7.0 7.0 8.0
	CL	CLAY, reddish yellow, mottled very dark grey, medium plasticity, trace organics, 5 %	6	very stiff	Slightly Moist				5.0 7.0 7.0 7.0 7.0 8.0
		Direct Push Sampler Refusal on Distinctly Weathered SANDSTONE Bedrock End of borehole at 0.7m depth.							
GROUNDWATER: Not Encountered									
TESTING: Penetrometer: AS 1289.6.3.2 Where blows per 100mm are less than 1, distance travelled per penetrometer blow is measured and converted to blows per 100mm. DS - Disturbed Sample; U50 - Undisturbed 50mm Core; FV - Field Vane (Ømm); PP - Pocket Penetrometer; CBR - Californian Bearing Ratio: PV - Pocket Vane					PAGE 1 of 1				

		ASSESSMENT: Foundation Classification STRUCTURE: Dwelling EASTING: 550359 HORIZONTAL NORTHING: 5254156 ACCURACY: 0.77m				HOLE ID NO.: BH03 DATE TESTED: 19/08/2025 LOGGED BY: M. Scalisi ELEVATION: 46.00						
LOCATION: 8 Eastaugh Street - Dodges Ferry CLIENT: MADELAINE & TIMOTHY CASTLE					EQUIPMENT: Power Auger NATURAL SURFACE (RL):							
DEPTH (m)	GRAPHIC	DESCRIPTION	LAYER	DENSITY CONSISTENCY STRENGTH	MOISTURE INDEX	%	SAMPLES	TEST	Cu (kPa)	UCS (kg/cm ²)	BLOW COUNT	blows/100mm
0.0	SM	Silty SAND with clay, trace gravel, light yellowish brown, mottled dark greyish brown, well sorted, medium grained sand	2	medium dense to dense	Slightly Moist	5	PL DS	IS 50			0 5 10 15 20	
		Distinctly Weathered SANDSTONE Bedrock light brown	7	low								
		Direct Push Sampler Refusal on Distinctly Weathered SANDSTONE Bedrock										
		End of borehole at 0.2m depth.										
GROUNDWATER: Not Encountered										PAGE 1 of 1		
TESTING: Permeameter: AS 1289.6.7.3 Where blows per 100mm are less than 1, distance travelled per penetrometer blow is measured and converted to blows per 100mm. DS - Disturbed Sample; U50 - Undisturbed 50mm Core; FV - Field Vane (Ømm); PP - Pocket Penetrometer; CBR - Californian Bearing Ratio; PV - Pocket Vane										PAGE 1 of 1		

Appendix C Core Photographs

BH01



BH02



BH03



*** 1 metre core tray length**

Appendix D Explanatory Notes



USCS Soil Classification Methodology

Soil classification was undertaken in accordance with the Unified Soil Classification System (USCS) and AS 1726 – Geotechnical Site Investigations, using a combination of particle size distribution and plasticity assessment. This process was applied consistently to all soil layers encountered.

1. Particle Size Distribution (Wet Sieve Analysis)

Particle size analysis was performed by wet sieving in accordance with Australian Standard sieve sizes:

- Gravel fraction: >2.36 mm
- Sand fraction: 0.075 mm to 2.36 mm
- Fines fraction (silt + clay): <0.075 mm

Samples were soaked (often overnight) to fully disperse fines prior to sieving. Wet sieving is particularly effective for Tasmanian soils, which are often dispersive, ensuring accurate quantification of the fines fraction. The oversize fraction (>63 mm) was excluded from the mass percentages before classification.

2. Plasticity Assessment

Plasticity of the fines fraction was determined using:

- Laboratory Atterberg limits, where available, with liquid limit (WL) and plasticity index (PI) plotted on the Plasticity Chart (AS 1726) to determine the fines classification (silt vs clay) and plasticity level (low, medium, high).
- Field index tests (where Atterberg limits were not available), following Table 1 & Table 2:
 - Dry strength – resistance of dried soil to crushing.
 - Dilatancy – reaction of a moist soil pat to shaking.
 - Toughness – resistance of a soil thread near the plastic limit.

Table 1 Field Assessment of Fine-Grained Soils (adapted from AS 1726 Table 7)

Dry Strength		Dilatancy (reaction to shaking)		Toughness (consistency near plastic limit)	
None	The dry specimen crumbles into powder with mere pressure of handling.	None	No visible reaction or change in the specimen.	Low	Only slight pressure is required to roll the thread near the plastic limit. The thread and the lump are weak and soft.
Low	The dry specimen crumbles into powder with some finger pressure.		Water appears slowly on the surface of the specimen during shaking and does not disappear during squeezing.		Medium pressure is required to roll the thread to near the plastic limit. The thread and the lump have medium stiffness.
Medium	The dry specimen breaks into pieces or crumbles with considerable finger pressure.	Slow	Water appears quickly on the surface of the specimen during shaking and disappears during squeezing.	High	Considerable pressure is required to roll the thread near the plastic limit. The thread and the lump have very high stiffness.
High	The dry specimen cannot be broken with finger pressure. Specimen will break into pieces between thumb and a hard surface.				
Very High	The dry specimen cannot be broken between the thumb and a hard surface.				

Table 2 Identification of Fine-Grained Soils by Visual-Tactile Methods (adapted from AS 1726 Table 8)

Soil description	Identification of inorganic fine-grained soils		
	Dry Strength	Dilatancy	Toughness and Plasticity
SILT	None to low	Slow to rapid	Low or thread cannot be formed
Clayey SILT — Clay/silt mixtures of low plasticity	Low to medium	None to slow	Low to medium
Silty CLAY — Silt/clay mixtures of medium plasticity	Medium to high	None to slow	Medium
High plasticity CLAY	High to very high	None	High

3. Classification Hierarchy

3.1 Fine- vs Coarse-Grained determination

- Fine-grained soils: More than 35% (by mass) passes the 0.075 mm sieve → classify using Table 3
- Coarse-grained soils: More than 65% (by mass) is retained on the 0.075 mm sieve → classify using Table 4.

3.2 Coarse-grained soils (Table 4):

1. Determine Gravel vs Sand:

- Gravel (G*) – more than 50% of the coarse fraction is retained on the 2.36 mm sieve.
- Sand (S*) – less than 50% of the coarse fraction is retained on the 2.36 mm sieve.

2. Assign fines modifiers:

- $\leq 5\%$ fines: “Clean” gravels/sands (GW, GP, SW, SP).
- 5–12% fines: Dual classification (e.g., SP-SM, GW-GM).
- $\geq 12\%$ fines: Silty or clayey modifiers (GM, GC, SM, SC) based on fines plasticity from Atterberg limits or field index tests.

3.3 Fines classification for coarse-grained soils

When coarse-grained soils contain $\geq 12\%$ fines, the fines fraction is classified as silty or clayey based on:

- Atterberg limits where available; or
- Field index tests (Table 1 & Table 2) where Atterberg limits are not available.

3.4 Fine-grained soils (Table 3)

Fine-grained soils are those with $>35\%$ (by mass) passing the 0.075 mm sieve.

- With Atterberg limits available: WL and PI are plotted on the Plasticity Chart (AS 1726) to determine plasticity level (low, medium, or high) and USCS classification (ML, CL/CI/CH, MH, OL, OH).
- Where Atterberg limits are not available: The fines are classified directly in accordance with Table 3 by comparing field index test results (dry strength, dilatancy, toughness) to the criteria given for each USCS group. This allows direct assignment of ML, CL/CI/CH, MH, or OL/OH without reference to the A-line.

Organic soils (OL, OH) are identified based on colour, odour, and fibrous texture in addition to field index characteristics.

4. Integration of Results

The final USCS group symbol for each layer was determined by integrating:

- The proportion of gravel, sand, and fines from wet sieve analysis.
- The classification of the fines fraction using either Atterberg limits or field index methods.
- The classification hierarchy in Table 3 & Table 4.

This combined approach ensures that soil classification is both quantitatively accurate and fully compliant with AS 1726, while allowing consistent classification whether laboratory Atterberg limit testing is available.

Table 3 Classification of Fine-Grained Soils (adapted from AS 1726 Table 10)

Major Division	Group Symbol	Typical names	Field classification of silt and clay			Laboratory classification
			Dry strength	Dilatancy	Toughness	% <0.075
SILT and CLAY (low to medium plasticity, %)	ML	Inorganic silt and very fine sand, rock flour, silty or clayey fine sand or silt with low plasticity	None to low	Slow to rapid	Low	Below A line
	CL, CI	Inorganic clay of low to medium plasticity, gravelly clay, sandy clay	Medium to high	None to slow	Medium	Above A line
	OL	Organic silt	Low to medium	Slow	Low	Below A line
SILT and CLAY (high plasticity)	MH	Inorganic silt	Low to medium	None to slow	Low to medium	Below A line
	CH	Inorganic clay of high plasticity	High to very high	None	High	Above A line
	OH	Organic clay of medium to high plasticity, organic silt	Medium to high	None to very slow	Low to medium	Below A line
Highly organic soil	Pt	Peat, highly organic soil	—	—	—	—

Table 4 Classification of Coarse-Grained Soils (adapted from AS 1726 Table 9)

Major Division	Group Symbol	Typical names	Field classification of sand and gravel	Laboratory classification
GRAVEL (more than half of coarse fraction is larger than 2.36 mm)	GW	Gravel and gravel-sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤5% fines, Cu > 4, 1 < Cc < 3
	GP	Gravel and gravel-sand mixtures, little or no fines, uniform gravels	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤5% fines, fails to comply with above
	GM	Gravel-silt mixtures and gravel-sand-silt mixtures	'Dirty' materials with excess of non-plastic fines, zero to medium dry strength	≥12% fines, fines are silty

Major Division	Group Symbol	Typical names	Field classification of sand and gravel	Laboratory classification
	GC	Gravel–clay mixtures and gravel–sand–clay mixtures	‘Dirty’ materials with excess plastic fines, medium to high dry strength	≥12% fines, fines behave as clay
SAND (more than half of coarse fraction is smaller than 2.36 mm)	SW	Sand and gravel–sand mixtures, little or no fines	Wide range in grain size and substantial amounts of all intermediate sizes, not enough fines to bind coarse grains, no dry strength	≤5% fines, Cu > 6, 1 < Cc < 3
	SP	Sand and gravel–sand mixtures, little or no fines, uniform sands	Predominantly one size or range of sizes with some intermediate sizes missing, not enough fines to bind coarse grains, no dry strength	≤5% fines, fails to comply with above
	SM	Sand–silt mixtures	‘Dirty’ materials with excess of non-plastic fines, zero to medium dry strength	≥12% fines, fines are silty
	SC	Sand–clay mixtures	‘Dirty’ materials with excess plastic fines, medium to high dry strength	≥12% fines, fines are clayey

Standard Methodology for Determination of Soil Reactivity and Index of Shrink–Swell (Ips) for SIFE Investigations

1. Introduction

This methodology outlines the procedures adopted by Enviro-Tech Consultants Pty. Ltd. for determining soil reactivity and deriving the Index of Shrink–Swell (Ips) for each soil layer in accordance with the principles of AS 2870. The method combines Australian Standard testing procedures with enhanced correlation techniques developed from an extensive dataset of over 2,000 field and laboratory tests.

The approach ensures consistent, accurate classification of soil reactivity across a wide range of soil types. By combining standard and modified testing procedures, it enables calculation of profile movement for complex soil profiles, accounting for groundwater levels, bedrock depth, and particle size distribution.

2. Sampling and Preparation

2.1 Undisturbed Sampling

Undisturbed samples are collected using a thin-wall sampler to preserve natural soil structure and in-situ moisture conditions when performing shrink–swell testing. A 45 mm diameter core sampler is used for these tests to ensure uniformity and comparability between results. Most other laboratory testing is carried out on disturbed samples, which is one of the advantages of the linear shrinkage and modified linear shrinkage testing methods.

2.2 Sample Identification

All samples are assigned a Unified Soil Classification System (USCS) code using accurate laboratory and field identification techniques in accordance with AS 1726 (detailed procedure included herein). This classification underpins the correlation methods described in later sections.

2.3 Moisture Content Measurement

Field moisture content is recorded at the time of sampling, providing baseline data for correlation to laboratory shrink–swell results.

3. Standard Testing Procedures

3.1 Shrink–Swell Testing

Shrink–swell testing is performed on cohesive soils in accordance with the relevant Australian Standard method for determining the shrink–swell index. This test provides the primary Ips value for these soil types.

3.2 Linear Shrinkage Testing

Linear shrinkage testing is carried out in accordance with the Australian Standard method, which determines shrinkage from a soil prepared at its liquid limit. This standard approach typically excludes a proportion of the sandy fraction.

4. Secondary Modified Linear Shrinkage Method

4.1 Rationale

In practice, the relationship between shrink–swell test results and standard linear shrinkage results is often inconsistent, particularly for non-cohesive or marginally cohesive soils. To improve correlation, a secondary modified linear shrinkage method has been developed.

4.2 Modified Moisture Basis

Instead of preparing samples solely at the liquid limit, this method uses a “modified moisture” content representative of upper-range field moisture conditions for each USCS soil type. These values are derived from a dataset of over 2,000 samples collected predominantly during winter or immediately thereafter, representing the highest seasonal moisture levels without crossing into “abnormal moisture conditions” as defined in AS 2870.

4.3 Application to Non-Cohesive Soils

This approach enables reactivity assessment of sandy and silty soils that are unsuitable for shrink–swell testing due to their inability to remain intact during testing, but which still display measurable reactivity.

5. Gravel and Cobble Fraction Adjustments

5.1 Gravel Fraction

For all materials, the sand fraction is retained in testing, and the gravel fraction is re-added into the calculation. Because gravel has negligible moisture absorption, its proportion is used to adjust shrinkage values downwards.

5.2 Cobbles

Where cobbles are present:

- 0–35% cobbles: shrinkage is scaled according to the proportion of soil matrix between cobbles.
- 35% cobbles: shrinkage is considered negligible, as the soil matrix is insufficient to impart meaningful reactivity.

6. Correlation and Calibration

6.1 Dataset Development

Extensive correlation has been undertaken between:

- Standard shrink–swell results
- Standard linear shrinkage results
- Modified linear shrinkage results

6.2 USCS-Based Correlation

Accurate USCS classification is the key input variable. Once correlations are established for each USCS class, I_{ps} values can be assigned to future samples based solely on classification and moisture parameters, without requiring repeated shrink–swell testing.

7. Predictive Modelling and Database Search Method

Enviro-Tech Consultants maintains a large and continuously expanding database of soil test results, including shrink–swell, linear shrinkage, particle size distribution, USCS classification, and detailed field descriptions (e.g., colour, texture, structure).

When assessing a new Site, we search this database for comparable sites using multiple parameters:

- Geology – parent material type and origin
- USCS classification – precise laboratory classification

- Soil colour and descriptive features – matching field logging records
- Particle size distribution – percentage gravel, sand, and fines

This multi-parameter search allows us to identify highly similar soils and adopt Ips values from past testing at those sites with confidence. The approach reduces the need for repeated shrinkage or shrink–swell testing where soils are well represented in the database, while still meeting the requirements for reliable reactivity estimation.

8. Compliance with AS 2870 – Clause 2.3.2 (C2 & C3)

Our predictive approach aligns directly with the requirements of AS 2870 Clause 2.3.2:

c (ii): We maintain and utilise a database of past test results to estimate soil reactivity for sites with similar soil and geological conditions.

C (iii): Testing is repeated at regular intervals to ensure correlations remain valid. At minimum, reactivity testing is conducted once every 50 sites, but in practice we test far more frequently – typically at least once every 20 sites, and rarely more than six months between tests. On average, new verification testing is undertaken approximately monthly.

This compliance ensures that our methods are both technically robust and standards-compliant, providing clients with defensible, high-quality results.

9. Calculation of Profile Movement

9.1 Ips Values per Layer

An Ips value is determined for each soil layer based on test results or correlations.

9.2 Adjustment for Groundwater and Bedrock

Where groundwater or bedrock occurs within the profile, Ips values are reduced for the affected layers in accordance with AS 2870 principles.

9.3 Design Suction Change Depth (Hs)

Given the lack of statewide, high-resolution climatic data for Tasmania, a conservative Hs value of 3.0 m is adopted for all sites, in preference to regionalised values. This ensures a cautious approach where actual depth of suction change cannot be accurately modelled.

9.4 Surface Suction Change (Δ us)

A standard surface suction change of 1.2 is applied in calculations, in line with AS 2870.

10. Advantages of the Modified Method

- Allows for reactivity assessment across all soil types, including non-cohesive sands and silts.
- Provides consistent correlation between laboratory and field methods.
- Enables accurate whole-profile movement estimation based on standardised USCS classification.
- Incorporates gravel and cobble fraction corrections for more realistic movement predictions.
- Reduces reliance on repeat laboratory shrink–swell testing for every sample.
- Fully compliant with AS 2870 Clause 2.3.2 (C2 & C3).

11. Limitations

- The method assumes accurate USCS classification and field moisture determination.
- The modified linear shrinkage method requires prior calibration for each USCS type.
- Adoption of a conservative H_s value may slightly overestimate movement in some locations.

12. Conclusion

This methodology blends rigorous Australian Standard test procedures with enhanced, data-driven correlation techniques, enabling Enviro-Tech Consultants Pty. Ltd. to deliver accurate, consistent, and site-specific soil reactivity assessments across Tasmania. The inclusion of >2,000 test results, gravel and cobble adjustments, predictive modelling from a comprehensive database, and modified moisture testing provides a robust basis for predicting profile movement in varied geological conditions, while maintaining strict compliance with AS 2870.

Appendix E Soil and Rock Testing

Dynamic Cone Penetrometer (DCP)

Dynamic cone penetrometer (DCP) testing was conducted according to AS 1289.6.3.2 with the results presented in Appendix C.

Soil Characterisation

Table 4 summarises the soil classification results for each layer encountered, including particle size distribution, plasticity assessment, and the assigned USCS group symbol.

Classifications were undertaken in accordance with AS 1726 – Geotechnical Site Investigations using the methodology provided in the Explanatory Notes section of this report.

Particle size distributions were determined by wet sieve analysis, and fines classifications were based on Atterberg limits where available, or on field index tests (dry strength, dilatancy, toughness) in accordance with AS 1726 Tables 7, 8, 9, and 10.

Full explanatory notes and reference tables are provided in Explanatory Notes section of this report.

Table 4 Summary of the Soil Characterisation

Layer	Soil	Borehole	Depth From (m)	Field Moisture %	Gravel %	Sand %	Fine %	Analysed Plasticity	Assigned USCS
1	Silty SAND	BH01	0.1	11.8	21.4	47.3	31.3		SC
2	Silty SAND	BH03	0	4.6	13.2	62.5	24.3		SC
3	SAND	BH01	0.5	13.4	0	83.1	16.9		SC
4	Silty SAND	BH01	0.6	14.6	0	78.3	21.7		SC
5	Silty SAND	BH01	0.7	18.9	4.4	66.5	29.1		SC
6	Silty Sandy CLAY	BH02	0.6	17.5	0	59.1	40.9	M	CI

Soil Dispersion (Emerson aggregate test)

Select soil samples were tested for dispersion susceptibility using the Emerson Class number method according to AS1289.3.8.1. The results presented in Table 5 demonstrate that:

- Shallow soil Layers 1 to 3 are considered either not dispersive (Class 4 or greater) or only slightly dispersive (Class 3) to depths of between 0.4 to -0.6m depth.
- Deeper soil Layers 4 and 5 comprises Emerson Class 2 and Emerson Class 1 category soils which are considered moderately to severely dispersive respectively.

Table 5 Summary of the Emerson class results.

Layer	Soil	Depth	Sample ID	Emersion Class	Date Tested	Water	pH
2	Silty SAND with clay, trace gravel	0	BH03 0.0	Class >4	22/08/2025	DI 13°C	
1	TOPSOIL: Silty SAND	0.1	BH01 0.1	Class 3	22/08/2025	DI 13°C	0.1
3	SAND with silt, trace clay	0.5	BH01 0.5	Class 3	22/08/2025	DI 13°C	0.09
4	Silty SAND trace clay	0.6	BH01 0.6	Class 2	22/08/2025	DI 13°C	0.15
6	Silty Sandy CLAY	0.6	BH02 0.6	Class 1	22/08/2025	DI 13°C	0.18
5	Silty SAND with clay, trace gravel	0.7	BH01 0.7	Class >4	22/08/2025	DI 13°C	0.25

Soil Aggressivity Testing (Footing Exposure Classification)

Soil samples from across the Site were assessed for potential aggressivity to concrete in accordance with the requirements of AS 2870:2011 – Residential Slabs and Footings (Clauses 5.5.1–5.5.3). Testing was undertaken to determine the salinity exposure class and provide an indicative assessment of sulphate soil potential.

The results are summarised in Table 6 which presents the sampling depth and location, soil texture classification, electrical conductivity (EC1:5), salinity factor (K), calculated saturated extract electrical conductivity (ECe), and the corresponding salinity exposure class (Table 5.1, AS 2870). Soil pH values were also measured and used as a conservative indicator of potential sulphate aggressivity, together with the assigned soil condition class, to derive an indicative sulphate exposure class (Table 5.2, AS 2870).

It is noted that the sulphate assessment has been undertaken on the basis of pH values only, and therefore represents a conservative assumption. Where soils exhibit $\text{pH} < 5.5$ or are otherwise classified within B or C exposure classes, confirmatory laboratory testing of sulphate concentrations may be warranted to refine the exposure classification and confirm appropriate concrete durability requirements.

Salinity testing has been undertaken in accordance with the relevant guidelines and provides a direct basis for assigning salinity exposure classification.

Where aggressive soils are discerned, detailed recommendations for the management of aggressive soils, including concrete strength, curing and reinforcement cover requirements, are presented in Appendix G.

Table 6 Soil Aggressivity Assessment in Accordance with AS 2870:2011

Layer	Location	Depth	Saline Soil Determination					Sulphate Soil Potential^		
			USDA Soil Texture Class	EC1:5	K*	Ece	Exposure Class	pH1:5	Soil Condition Class	Exposure Class
				mS/cm		dS/m				
1	BH01	0.1	Sandy loam	0.1	11.0	1.10	A1	6.3	B	A1
2	BH03	0.0	Loamy sand	0.18	13.0	2.34	A1	6.0	B	A1
3	BH01	0.5	Sand	0.09	13.5	1.22	A1	6.2	B	A1
4	BH01	0.6	Loamy sand	0.15	13.0	1.95	A1	5.7	B	A1
5	BH01	0.7	Sandy loam	0.25	11.0	2.75	A1	5.9	B	A1
6	BH02	0.6	Clay	0.18	5.5	0.99	A1	6.4	B	A1

[^] Preliminary findings based on soil pH only. Further sulphate testing required to rule out sulphate soil exposure risks

*Electrical conductivity of the 1:5 soil–water extract (EC1:5) was measured at 25 °C and converted to an equivalent saturated paste extract (ECe) using texture-based conversion factors (ECe = $k \times EC1:5$) following Slavich, P.G. & Patterson, R.A. (1990). Estimating the electrical conductivity of saturated paste extracts from 1:5 soil:water suspensions and texture. Australian Journal of Soil Research, 28, 453–463.

Permeameter Testing

Permeameter testing was carried out in borehole BH03. A soil auger was used to excavate the Soil to prepare for the test to ensure the soak well was effectively draining. Where applicable, the reported water table height has been used as the test depth. Results are presented Table 7.

Table 7 Permeameter testing results.

Borehole	Hole Depth (m)	Hole Diameter (mm)	Test Duration (min)	Flow Rate (cm ³ /min)	K _{sat} (m/day)	K _{sat} (mm/hr)
BH03	0.15	50	3.5	37.6	2.6E-01	10.7

Rock Point Load Testing

Rock samples collected from the Project Area were tested using a digital rock point load tester which has been manufactured in accordance with AS 4133.4.1. The 'lump' sample method and calculation have been used in the tests.

A sandstone rock sample was collected from the building envelope within the Project Area. The Sandstone inferred to have a low rock strength based on interpretation of the point load testing results (Table 8).

Table 8 Point load index testing results.

	Units	BH03
Depth	m	0.100
Layer		7
Test	MPa (IS50)	0.204
Index		L

Appendix F Geotechnical Interpretation

Footing Minimum Target Depths

Footing design for the proposed structures are to consider the depths of limiting layers at the base of potentially problematic soils. Where practical/allowable, thickened beams may be deepened through problematic soil layers according to engineering specifications (Table 9). Table 10 should be referred to where only 50kPa allowable bearing capacity is required.

Table 9 also presents a summary of the estimated soil depths and associated layers where less than 5mm of vertical soil movement can be expected due to soil moisture fluctuations from normal seasonal wetting and drying cycles. Where 5mm tolerances are required, concentrated loads including but not limited to slab edge or internal beam or strip footings shall be supported directly on piers in accordance with minimum target layer depths presented in Table 9, with considerations given to required bearing capacities in accordance with Table 10.

All footing depth, soil movement, and bearing capacity calculations presented in this section are based on interpretive I_{ps} or I_{ss} values derived from field and laboratory data, as outlined in the Explanatory Notes section of this report. These values are used to infer soil reactivity in the absence of direct measurement, in accordance with industry best practice.

Table 9 Soil characteristic surface movements and recommended footing minimum target depths

Footing design parameters	BH01	BH02
Ys Calculation Depth	0m [^]	0m [^]
Surface movement Ys (mm)	5	10
Soil reactivity class	S	S
Base of problem soil layer (m)*	-	-
Layer at base of problem soil*	-	-
Pier/Footing minimum target depth (m) [#]	>0.9 [^]	>0.8 [^]
Pier/footing minimum target layer [#]	7	7
Allowable bearing capacity at min target depth (kPa) [#]	400	400

- No problem layers encountered

[^] Calculations relative to surface of borehole at the time of investigation

[~] Calculated based on revised soil profile depth/thickness following indicative cut and fill. Inferred fill reactivity indicated (I_{ss} value) which is typically based on more reactive soils expected to be encountered within inferred cut.

* Base of problematic soil layer depth below top of borehole surface at the time of testing to achieve 100 kPa allowable bearing capacity or greater.

Target soil layer depth where Ys values from normal wetting and drying cycles are estimated at less than 5mm vertical movement. >minimum bored pier depths (see bearing capacity table for bored pier design depths).

Soil and Rock Allowable Bearing Capacity & End Bearing Capacity

Soil allowable bearing capacity was calculated from correlations with DCP blow counts. A recommended safety factor of 3 is applied in accordance with AS2870. Where high clay and silt content is observed in the soil, soil allowable bearing capacity is determined from undrained shear strengths using field vane correlated DCP values. Interpretive bearing capacity values are presented in Table 10.

Table 10 Soil allowable bearing capacities and problematic ground conditions.

Depth below investigation surface (m)	Allowable Bearing Capacity (kPa)		
	BH01	BH02	BH03
0	210*	260*	
0.1	210	270	SANDSTONE
0.2	170	300	
0.3	140	300	
0.4	110	320	
0.5	140	330	
0.6	180	REF	
0.7	220		
0.8	SANDSTONE		

Correlations drawn from DCP and vane shear testing.

REF - Penetrometer Refusal

^ Footings to be founded through the FILL

~ Problematic soil layer attributed to loose, soft, or low allowable bearing capacity soil (<100 kPa)

*Soil layer expected at the base of problematic soil layers at test location (or at surface where problematic soils not encountered) to achieve 100 kPa allowable bearing capacity or greater.

Footing Exposure Management

The soil aggressivity testing results presented in Table 6 have been interpreted in Table 11 to provide indicative requirements for minimum concrete strength, curing duration and reinforcement cover in accordance with AS 2870:2011. This table builds on the previous classification summary by applying the relevant durability provisions to each individual soil layer encountered across the Site.

From these results presented in Table 11, with Class A1 soil conditions based on salinity and pH, there are no apparent footing exposure hazards.

Table 11 Interpretation of Soil Aggressivity Results – Minimum Concrete Strength, Curing and Cover

Layer	Location	Depth	Exposure Classification		Minimum Concrete	Minimum Days Curing	Cover~
			From (m)	Salinity	Sulphate^		
1	BH01	0.1	A1	A1	20	3	40
2	BH03	0.0	A1	A1	20	3	40
3	BH01	0.5	A1	A1	20	3	40
4	BH01	0.6	A1	A1	20	3	40
5	BH01	0.7	A1	A1	20	3	40
6	BH02	0.6	A1	A1	20	3	40

^Sulphate class is conservatively estimated from soil pH and further testing is required on soil samples to confirm if the low pH is attributed to sulphate or other cations within the soil. If pH conditions are attributed primarily to sulphate, then the indicated exposure classification is expected to reliable but subject to sulphate concentration threshold presented in AS2870.

Where a damp-proofing membrane is installed, the minimum reinforcement cover in saline (non A1) soils may be reduced to 30 m

' Where a damp-proofing membrane is installed, the minimum reinforcement cover in sulphate (non A1) soils may be reduced by 10 mm.

Appendix G Foundation Maintenance & Footing Performance (CSIRO)

Foundation Maintenance and Footing Performance: A Homeowner's Guide



Buildings can and often do move. This movement can be up, down, lateral or rotational. The fundamental cause of movement in buildings can usually be related to one or more problems in the foundation soil. It is important for the homeowner to identify the soil type in order to ascertain the measures that should be put in place in order to ensure that problems in the foundation soil can be prevented, thus protecting against building movement.

This Building Technology File is designed to identify causes of soil-related building movement, and to suggest methods of prevention of resultant cracking in buildings.

Soil Types

The types of soils usually present under the topsoil in land zoned for residential buildings can be split into two approximate groups – granular and clay. Quite often, foundation soil is a mixture of both types. The general problems associated with soils having granular content are usually caused by erosion. Clay soils are subject to saturation and swell/shrink problems.

Classifications for a given area can generally be obtained by application to the local authority, but these are sometimes unreliable and if there is doubt, a geotechnical report should be commissioned. As most buildings suffering movement problems are founded on clay soils, there is an emphasis on classification of soils according to the amount of swell and shrinkage they experience with variations of water content. The table below is Table 2.1 from AS 2870, the Residential Slab and Footing Code.

Causes of Movement

Settlement due to construction

There are two types of settlement that occur as a result of construction:

- Immediate settlement occurs when a building is first placed on its foundation soil, as a result of compaction of the soil under the weight of the structure. The cohesive quality of clay soil mitigates against this, but granular (particularly sandy) soil is susceptible.
- Consolidation settlement is a feature of clay soil and may take place because of the expulsion of moisture from the soil or because of the soil's lack of resistance to local compressive or shear stresses. This will usually take place during the first few months after construction, but has been known to take many years in exceptional cases.

These problems are the province of the builder and should be taken into consideration as part of the preparation of the site for construction. Building Technology File 19 (BTF 19) deals with these problems.

Erosion

All soils are prone to erosion, but sandy soil is particularly susceptible to being washed away. Even clay with a sand component of say 10% or more can suffer from erosion.

Saturation

This is particularly a problem in clay soils. Saturation creates a bog-like suspension of the soil that causes it to lose virtually all of its bearing capacity. To a lesser degree, sand is affected by saturation because saturated sand may undergo a reduction in volume – particularly imported sand fill for bedding and blinding layers. However, this usually occurs as immediate settlement and should normally be the province of the builder.

Seasonal swelling and shrinkage of soil

All clays react to the presence of water by slowly absorbing it, making the soil increase in volume (see table below). The degree of increase varies considerably between different clays, as does the degree of decrease during the subsequent drying out caused by fair weather periods. Because of the low absorption and expulsion rate, this phenomenon will not usually be noticeable unless there are prolonged rainy or dry periods, usually of weeks or months, depending on the land and soil characteristics.

The swelling of soil creates an upward force on the footings of the building, and shrinkage creates subsidence that takes away the support needed by the footing to retain equilibrium.

Shear failure

This phenomenon occurs when the foundation soil does not have sufficient strength to support the weight of the footing. There are two major post-construction causes:

- Significant load increase.
- Reduction of lateral support of the soil under the footing due to erosion or excavation.
- In clay soil, shear failure can be caused by saturation of the soil adjacent to or under the footing.

GENERAL DEFINITIONS OF SITE CLASSES

Class	Foundation
A	Most sand and rock sites with little or no ground movement from moisture changes
S	Slightly reactive clay sites with only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which can experience moderate ground movement from moisture changes
H	Highly reactive clay sites, which can experience high ground movement from moisture changes
E	Extremely reactive sites, which can experience extreme ground movement from moisture changes
A to P	Filled sites
P	Sites which include soft soils, such as soft clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soils subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise

Tree root growth

Trees and shrubs that are allowed to grow in the vicinity of footings can cause foundation soil movement in two ways:

- Roots that grow under footings may increase in cross-sectional size, exerting upward pressure on footings.
- Roots in the vicinity of footings will absorb much of the moisture in the foundation soil, causing shrinkage or subsidence.

Unevenness of Movement

The types of ground movement described above usually occur unevenly throughout the building's foundation soil. Settlement due to construction tends to be uneven because of:

- Differing compaction of foundation soil prior to construction.
- Differing moisture content of foundation soil prior to construction.

Movement due to non-construction causes is usually more uneven still. Erosion can undermine a footing that traverses the flow or can create the conditions for shear failure by eroding soil adjacent to a footing that runs in the same direction as the flow.

Saturation of clay foundation soil may occur where subfloor walls create a dam that makes water pond. It can also occur wherever there is a source of water near footings in clay soil. This leads to a severe reduction in the strength of the soil which may create local shear failure.

Seasonal swelling and shrinkage of clay soil affects the perimeter of the building first, then gradually spreads to the interior. The swelling process will usually begin at the uphill extreme of the building, or on the weather side where the land is flat. Swelling gradually reaches the interior soil as absorption continues. Shrinkage usually begins where the sun's heat is greatest.

Effects of Uneven Soil Movement on Structures

Erosion and saturation

Erosion removes the support from under footings, tending to create subsidence of the part of the structure under which it occurs. Brickwork walls will resist the stress created by this removal of support by bridging the gap or cantilevering until the bricks or the mortar bedding fail. Older masonry has little resistance. Evidence of failure varies according to circumstances and symptoms may include:

- Step cracking in the mortar beds in the body of the wall or above/below openings such as doors or windows.
- Vertical cracking in the bricks (usually but not necessarily in line with the vertical beds or perpends).

Isolated piers affected by erosion or saturation of foundations will eventually lose contact with the bearers they support and may tilt or fall over. The floors that have lost this support will become bouncy, sometimes rattling ornaments etc.

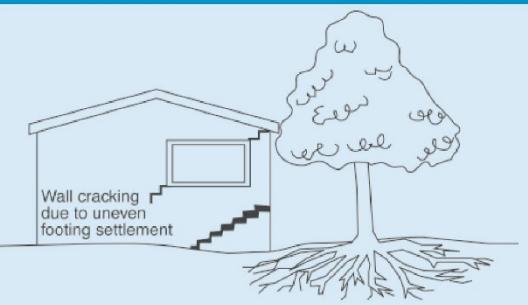
Seasonal swelling/shrinkage in clay

Swelling foundation soil due to rainy periods first lifts the most exposed extremities of the footing system, then the remainder of the perimeter footings while gradually permeating inside the building footprint to lift internal footings. This swelling first tends to create a dish effect, because the external footings are pushed higher than the internal ones.

The first noticeable symptom may be that the floor appears slightly dished. This is often accompanied by some doors binding on the floor or the door head, together with some cracking of cornice mitres. In buildings with timber flooring supported by bearers and joists, the floor can be bouncy. Externally there may be visible dishing of the hip or ridge lines.

As the moisture absorption process completes its journey to the innermost areas of the building, the internal footings will rise. If the spread of moisture is roughly even, it may be that the symptoms will temporarily disappear, but it is more likely that swelling will be uneven, creating a difference rather than a disappearance in symptoms. In buildings with timber flooring supported by bearers and joists, the isolated piers will rise more easily than the strip footings or piers under walls, creating noticeable doming of flooring.

Trees can cause shrinkage and damage



As the weather pattern changes and the soil begins to dry out, the external footings will be first affected, beginning with the locations where the sun's effect is strongest. This has the effect of lowering the external footings. The doming is accentuated and cracking reduces or disappears where it occurred because of dishing, but other cracks open up. The roof lines may become convex.

Doming and dishing are also affected by weather in other ways. In areas where warm, wet summers and cooler dry winters prevail, water migration tends to be toward the interior and doming will be accentuated, whereas where summers are dry and winters are cold and wet, migration tends to be toward the exterior and the underlying propensity is toward dishing.

Movement caused by tree roots

In general, growing roots will exert an upward pressure on footings, whereas soil subject to drying because of tree or shrub roots will tend to remove support from under footings by inducing shrinkage.

Complications caused by the structure itself

Most forces that the soil causes to be exerted on structures are vertical – i.e. either up or down. However, because these forces are seldom spread evenly around the footings, and because the building resists uneven movement because of its rigidity, forces are exerted from one part of the building to another. The net result of all these forces is usually rotational. This resultant force often complicates the diagnosis because the visible symptoms do not simply reflect the original cause. A common symptom is binding of doors on the vertical member of the frame.

Effects on full masonry structures

Brickwork will resist cracking where it can. It will attempt to span areas that lose support because of subsided foundations or raised points. It is therefore usual to see cracking at weak points, such as openings for windows or doors.

In the event of construction settlement, cracking will usually remain unchanged after the process of settlement has ceased.

With local shear or erosion, cracking will usually continue to develop until the original cause has been remedied, or until the subsidence has completely neutralised the affected portion of footing and the structure has stabilised on other footings that remain effective.

In the case of swell/shrink effects, the brickwork will in some cases return to its original position after completion of a cycle, however it is more likely that the rotational effect will not be exactly reversed, and it is also usual that brickwork will settle in its new position and will resist the forces trying to return it to its original position. This means that in a case where swelling takes place after construction and cracking occurs, the cracking is likely to at least partly remain after the shrink segment of the cycle is complete. Thus, each time the cycle is repeated, the likelihood is that the cracking will become wider until the sections of brickwork become virtually independent.

With repeated cycles, once the cracking is established, if there is no other complication, it is normal for the incidence of cracking to stabilise, as the building has the articulation it needs to cope with the problem. This is by no means always the case, however, and monitoring of cracks in walls and floors should always be treated seriously.

Upheaval caused by growth of tree roots under footings is not a simple vertical shear stress. There is a tendency for the root to also exert lateral forces that attempt to separate sections of brickwork after initial cracking has occurred.

The normal structural arrangement is that the inner leaf of brickwork in the external walls and at least some of the internal walls (depending on the roof type) comprise the load-bearing structure on which any upper floors, ceilings and the roof are supported. In these cases, it is internally visible cracking that should be the main focus of attention, however there are a few examples of dwellings whose external leaf of masonry plays some supporting role, so this should be checked if there is any doubt. In any case, externally visible cracking is important as a guide to stresses on the structure generally, and it should also be remembered that the external walls must be capable of supporting themselves.

Effects on framed structures

Timber or steel framed buildings are less likely to exhibit cracking due to swell/shrink than masonry buildings because of their flexibility. Also, the doming/dishing effects tend to be lower because of the lighter weight of walls. The main risks to framed buildings are encountered because of the isolated pier footings used under walls. Where erosion or saturation cause a footing to fall away, this can double the span which a wall must bridge. This additional stress can create cracking in wall linings, particularly where there is a weak point in the structure caused by a door or window opening. It is, however, unlikely that framed structures will be so stressed as to suffer serious damage without first exhibiting some or all of the above symptoms for a considerable period. The same warning period should apply in the case of upheaval. It should be noted, however, that where framed buildings are supported by strip footings there is only one leaf of brickwork and therefore the externally visible walls are the supporting structure for the building. In this case, the subfloor masonry walls can be expected to behave as full brickwork walls.

Effects on brick veneer structures

Because the load-bearing structure of a brick veneer building is the frame that makes up the interior leaf of the external walls plus perhaps the internal walls, depending on the type of roof, the building can be expected to behave as a framed structure, except that the external masonry will behave in a similar way to the external leaf of a full masonry structure.

Water Service and Drainage

Where a water service pipe, a sewer or stormwater drainage pipe is in the vicinity of a building, a water leak can cause erosion, swelling or saturation of susceptible soil. Even a minuscule leak can be enough to saturate a clay foundation. A leaking tap near a building can have the same effect. In addition, trenches containing pipes can become watercourses even though backfilled, particularly where broken rubble is used as fill. Water that runs along these trenches can be responsible for serious erosion, interstrata seepage into subfloor areas and saturation.

Pipe leakage and trench water flows also encourage tree and shrub roots to the source of water, complicating and exacerbating the problem.

Poor roof plumbing can result in large volumes of rainwater being concentrated in a small area of soil:

- Incorrect falls in roof guttering may result in overflows, as may gutters blocked with leaves etc.

- Corroded guttering or downpipes can spill water to ground.
- Downpipes not positively connected to a proper stormwater collection system will direct a concentration of water to soil that is directly adjacent to footings, sometimes causing large-scale problems such as erosion, saturation and migration of water under the building.

Seriousness of Cracking

In general, most cracking found in masonry walls is a cosmetic nuisance only and can be kept in repair or even ignored. The table below is a reproduction of Table C1 of AS 2870.

AS 2870 also publishes figures relating to cracking in concrete floors, however because wall cracking will usually reach the critical point significantly earlier than cracking in slabs, this table is not reproduced here.

Prevention/ Cure

Plumbing

Where building movement is caused by water service, roof plumbing, sewer or stormwater failure, the remedy is to repair the problem. It is prudent, however, to consider also rerouting pipes away from the building where possible, and relocating taps to positions where any leakage will not direct water to the building vicinity. Even where gully traps are present, there is sometimes sufficient spill to create erosion or saturation, particularly in modern installations using smaller diameter PVC fixtures. Indeed, some gully traps are not situated directly under the taps that are installed to charge them, with the result that water from the tap may enter the backfilled trench that houses the sewer piping. If the trench has been poorly backfilled, the water will either pond or flow along the bottom of the trench. As these trenches usually run alongside the footings and can be at a similar depth, it is not hard to see how any water that is thus directed into a trench can easily affect the foundation's ability to support footings or even gain entry to the subfloor area.

Ground drainage

In all soils there is the capacity for water to travel on the surface and below it. Surface water flows can be established by inspection during and after heavy or prolonged rain. If necessary, a grated drain system connected to the stormwater collection system is usually an easy solution.

It is, however, sometimes necessary when attempting to prevent water migration that testing be carried out to establish watertable height and subsoil water flows. This subject is referred to in BTF 19 and may properly be regarded as an area for an expert consultant.

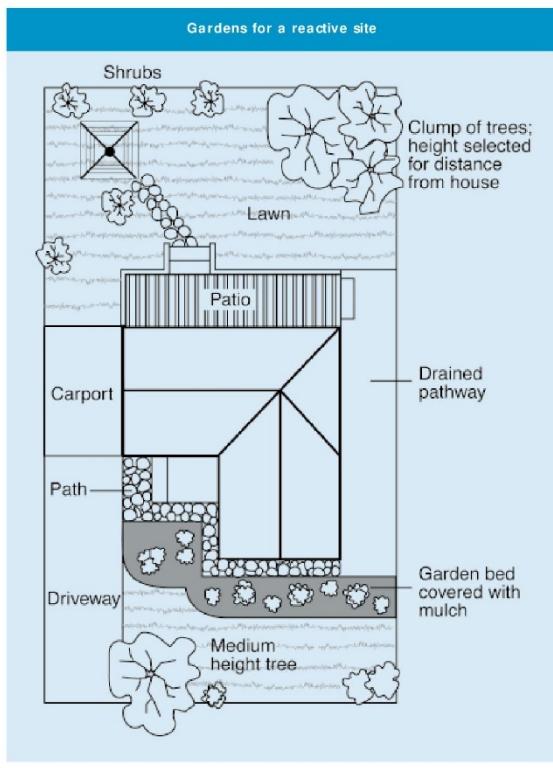
Protection of the building perimeter

It is essential to remember that the soil that affects footings extends well beyond the actual building line. Watering of garden plants, shrubs and trees causes some of the most serious water problems.

For this reason, particularly where problems exist or are likely to occur, it is recommended that an apron of paving be installed around as much of the building perimeter as necessary. This paving

CLASSIFICATION OF DAMAGE WITH REFERENCE TO WALLS

Description of typical damage and required repair	Approximate crack width limit (see Note 3)	Damage category
Hairline cracks	<0.1 mm	0
Fine cracks which do not need repair	<1 mm	1
Cracks noticeable but easily filled. Doors and windows stick slightly	<5 mm	2
Cracks can be repaired and possibly a small amount of wall will need to be replaced. Doors and windows stick. Service pipes can fracture. Weather-tightness often impaired	5–15 mm (or a number of cracks 3 mm or more in one group)	3
Extensive repair work involving breaking-out and replacing sections of walls, especially over doors and windows. Window and door frames distort. Walls lean or bulge noticeably, some loss of bearing in beams. Service pipes disrupted	15–25 mm but also depend on number of cracks	4



should extend outwards a minimum of 900 mm (more in highly reactive soil) and should have a minimum fall away from the building of 1:60. The finished paving should be no less than 100 mm below brick vent bases.

It is prudent to relocate drainage pipes away from this paving, if possible, to avoid complications from future leakage. If this is not practical, earthenware pipes should be replaced by PVC and backfilling should be of the same soil type as the surrounding soil and compacted to the same density.

Except in areas where freezing of water is an issue, it is wise to remove taps in the building area and relocate them well away from the building – preferably not uphill from it (see BTF 19).

It may be desirable to install a grated drain at the outside edge of the paving on the uphill side of the building. If subsoil drainage is needed this can be installed under the surface drain.

Condensation

In buildings with a subfloor void such as where bearers and joists support flooring, insufficient ventilation creates ideal conditions for condensation, particularly where there is little clearance between the floor and the ground. Condensation adds to the moisture already present in the subfloor and significantly slows the process of drying out. Installation of an adequate subfloor ventilation system, either natural or mechanical, is desirable.

Warning: Although this Building Technology File deals with cracking in buildings, it should be said that subfloor moisture can result in the development of other problems, notably:

- Water that is transmitted into masonry, metal or timber building elements causes damage and/or decay to those elements.
- High subfloor humidity and moisture content create an ideal environment for various pests, including termites and spiders.
- Where high moisture levels are transmitted to the flooring and walls, an increase in the dust mite count can ensue within the living areas. Dust mites, as well as dampness in general, can be a health hazard to inhabitants, particularly those who are abnormally susceptible to respiratory ailments.

The garden

The ideal vegetation layout is to have lawn or plants that require only light watering immediately adjacent to the drainage or paving edge, then more demanding plants, shrubs and trees spread out in that order.

Overwatering due to misuse of automatic watering systems is a common cause of saturation and water migration under footings. If it is necessary to use these systems, it is important to remove garden beds to a completely safe distance from buildings.

Existing trees

Where a tree is causing a problem of soil drying or there is the existence or threat of upheaval of footings, if the offending roots are subsidiary and their removal will not significantly damage the tree, they should be severed and a concrete or metal barrier placed vertically in the soil to prevent future root growth in the direction of the building. If it is not possible to remove the relevant roots without damage to the tree, an application to remove the tree should be made to the local authority. A prudent plan is to transplant likely offenders before they become a problem.

Information on trees, plants and shrubs

State departments overseeing agriculture can give information regarding root patterns, volume of water needed and safe distance from buildings of most species. Botanic gardens are also sources of information. For information on plant roots and drains, see Building Technology File 17.

Excavation

Excavation around footings must be properly engineered. Soil supporting footings can only be safely excavated at an angle that allows the soil under the footing to remain stable. This angle is called the angle of repose (or friction) and varies significantly between soil types and conditions. Removal of soil within the angle of repose will cause subsidence.

Remediation

Where erosion has occurred that has washed away soil adjacent to footings, soil of the same classification should be introduced and compacted to the same density. Where footings have been undermined, augmentation or other specialist work may be required. Remediation of footings and foundations is generally the realm of a specialist consultant.

Where isolated footings rise and fall because of swell/shrink effect, the homeowner may be tempted to alleviate floor bounce by filling the gap that has appeared between the bearer and the pier with blocking. The danger here is that when the next swell segment of the cycle occurs, the extra blocking will push the floor up into an accentuated dome and may also cause local shear failure in the soil. If it is necessary to use blocking, it should be by a pair of fine wedges and monitoring should be carried out fortnightly.

This BTF was prepared by John Lewer FAIB, MIAMA, Partner, Construction Diagnosis.

The information in this and other issues in the series was derived from various sources and was believed to be correct when published.

The information is advisory. It is provided in good faith and not claimed to be an exhaustive treatment of the relevant subject.

Further professional advice needs to be obtained before taking any action based on the information provided.

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CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

To: Madelaine and Timothy Castle
8 Eastaugh Street
Dodges Ferry

Owner /Agent
Address
Suburb/postcode 7173

Form **55**

Qualified person details:

Qualified person: Kris Taylor
Address: 445 Macquarie Street Phone No: 0476 595 889
Hobart 7004 Fax No:
Licence No: NA Email address: office@envirotechtas.com.au

Qualifications and Insurance details: Bachelor of Science with Honours in Geology. Lloyd's Underwriting \$2,000,000: Site classification. Soil & rock testing. Soil & rock mechanics.

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

Speciality area of expertise: Foundation classification in accordance with AS 2870*
(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work: Foundation Classification

Address: 8 Eastaugh Street Lot No: 1
Dodges Ferry 7173 Certificate of title No: 187805/1
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 classification - AS 2870 and Stability Report in accordance with Foundation and Footings Society (Tasmania) Code of Practice.*
(description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

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

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:	*Enviro-Tech Consultants Pty. Ltd. 2025. Site Soil Evaluation for Foundations and Wastewater Report for a Proposed Dwelling, 8 Eastaugh Street - Dodges Ferry. Unpublished report for Madelaine and Timothy Castle by Enviro-Tech Consultants Pty. Ltd., 19/08/2025.
Relevant calculations:	
References:	AS2870-2011 Residential Slabs and Footings AS1726-2017 Geotechnical site investigations AS1289-2014 Methods of testing soils for engineering purposes CSIRO Building technology file – 18.

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

Foundation classification consistent with AS2870-2011.

Scope and/or Limitations

The classification applies to the Site as inspected and does not account for future alteration to foundation conditions as a result of earth works, placement of fill, uncontrolled earthworks, drainage condition changes, variations in site maintenance other than indicated in supplied plans.

*This report contains soil classification information prepared in accordance with AS2870 as well as AS2870 extracts which may be used as general guidance for plumbing design. The hydraulic designer is to use their own judgment in the application of this information and this report must be read in conjunction with hydraulic plans prepared for the proposed development.

I certify the matters described in this certificate.

Qualified person:	<i>Signed:</i> 	<i>Certificate No:</i> <input type="text"/>	<i>Date:</i> <input type="text" value="19/08/2025"/>
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CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

To: Madelaine and Timothy Castle
8 Eastaugh Street
Dodies ferry

Owner /Agent
Address
Suburb/postcode

Form 55

Qualified person details:

Qualified person: Kris Taylor
Address: 445 Macquarie Street Hobart 7004
Phone No: 0476 595 889
Fax No:
Licence No: NA Email address: office@envirotechtas.com.au

Qualifications and Insurance details: Bachelor of Science with honours in geology, 25 years environmental geology experience, PI Insurance to \$2,000,000 in environmental geology

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

Speciality area of expertise: Site and soil evaluation and land application system design*

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

Details of work

Address: 8 Eastaugh Street
Dodies Ferry 7173
Lot No: 1
Certificate of title No: 187805/1
The assessable item related to this certificate: Site and soil evaluation for wastewater management

(description of the assessable item being certified)
Assessable item includes –
- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: On-site wastewater management

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

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

building work, plumbing work or plumbing installation or demolition work

OR

a building, temporary structure or plumbing installation

In issuing this certificate the following matters are relevant –

Documents:

Enviro-Tech Consultants Pty. Ltd. 2025. Site Soil Evaluation for Foundations and Wastewater Report for a Proposed Dwelling, 8 Eastaugh Street - Dodges Ferry. Unpublished report for Madelaine and Timothy Castle by Enviro-Tech Consultants Pty. Ltd., 19/08/2025.

Site 'On-site wastewater design report' (CKEMP Design)

References:

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

- An assessment of Site and soil conditions for on-site wastewater management and design

Scope and/or Limitations

*Site and soil evaluation by Enviro-Tech Consultants Pty. Ltd.
Land application system design is assessed in a separate 'On-site wastewater report' by a licensed building service designer:
- Chris Fysh Licensed Building Services Designer - Civil / Hydraulic (License No: 479819732)

I certify the matters described in this certificate.

Qualified person:

Signed:



Certificate No:

Date:

19/08/2025

ON-SITE WASTEWATER REPORT

Madelaine and Timothy Castle

8 Eastaugh Street Dodges Ferry

Fysh Design Reference: **CKD-HYD-310**

Date: 15/09/2025

For Approval – Rev 0



Sorell Council

Development Application: Development Application - 8 Eastaugh Street, Dodges Ferry.pdf

Plans Reference: P1

Date Received: 29/01/2026

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6. CONCLUSION

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Appendix B – Recommended Irrigation Details and Cross sections for construction

Appendix C – Form 35 Certificate

FYSH DESIGN
CIVIL HYDRAULIC

1. INTRODUCTION AND SCOPE OF ENGAGEMENT

Fysh Design has been engaged to provide a design for a new wastewater system for the proposed 3-bedroom dwelling 8 Eastaugh Street, Dodges Ferry

The proposed dwelling will have **3 bedrooms with potential study**

The following report outlines the methodology and assumptions used for the proposed AWTS secondary treatment system.

2. WASTEWATER DESIGN

Site Conditions

Client: Madelaine and Timothy Castle

Address: 8 Eastaugh Street, Dodges Ferry

Site Area – Approx 1430m²

Building Type – Proposed residential dwelling

Drainage lines & Water Courses – Free drainage with overland flow run off directly from the southeast, no groundwater encountered.

Vegetation – Mixed native grass species, native trees, bushland

Rainfall in the previous 7 days – 67.8mm (Hobart Airport Weather Station)

Average slope approx. Moderate slope of 8% (4 Deg) to the Northwest

Domestic water supply – Rainwater Tank Supply

Background Information

Mapped Geology – Mineral Resources Tasmania 1:250,000

Rock Type – Permian – Triassic Sandstone

Soil Depth – 0.9-0.2m refusal found. (sandstone bedrock)

Landslide Zoning None

Flood Prone Zoning - None

Local Rainfall Data – Annual rainfall approx. 521mm (Hobart Airport Weather Station)

Local Services – Onsite wastewater disposal, Rainwater Tank Supply

A site and soil report were conducted by Enviro-Tech Soil Consultants on the 19th of August 2025 (see attached with compiled documents) Figure 1 below displays the soil profile and properties analysed by Enviro-Tech Soil Consultants.

Three auger holes were completed to identify the profile and variation in soil materials on site. Test Hole BH03 was drilled within the approximate location where the existing wastewater irrigation line system is, in accordance with AS1547.2012 (refer to figure 04)

		ASSESSMENT: Foundation Classification STRUCTURE: Dwelling EASTING: 550359 HORIZONTAL NORTHING: 5254156 ACCURACY: 0.77m				HOLE ID NO.: BH03 DATE TESTED: 19/08/2025 LOGGED BY: M. Scalisi ELEVATION: 46.00	
LOCATION: 8 Eastaugh Street - Dodges Ferry CLIENT: MADELAINE & TIMOTHY CASTLE				EQUIPMENT: Power Auger NATURAL SURFACE (RL):			
DEPTH (m)	GRAPHIC	DESCRIPTION	LAYER	DENSITY CONSISTENCY STRENGTH	MOISTURE INDEX	SAMPLES TEST	BLow COUNT
0.0	SM	Silty SAND with clay, trace gravel, light yellowish brown, mottled dark greyish brown, well sorted, medium grained sand	2	medium dense to dense	5 Slightly Moist	PL DS IS 50	0 5 10 15 20 blows/100mm
		Distinctly Weathered SANDSTONE Bedrock light brown	7	low			
		Direct Push Sampler Refusal on Distinctly Weathered SANDSTONE Bedrock					
		End of borehole at 0.2m depth.					

Figure 1. Bore Hole 03 Soil Profile data

BH03



* 1 metre core tray length

Figure 2 – Bore Hole 03 Soil Samples

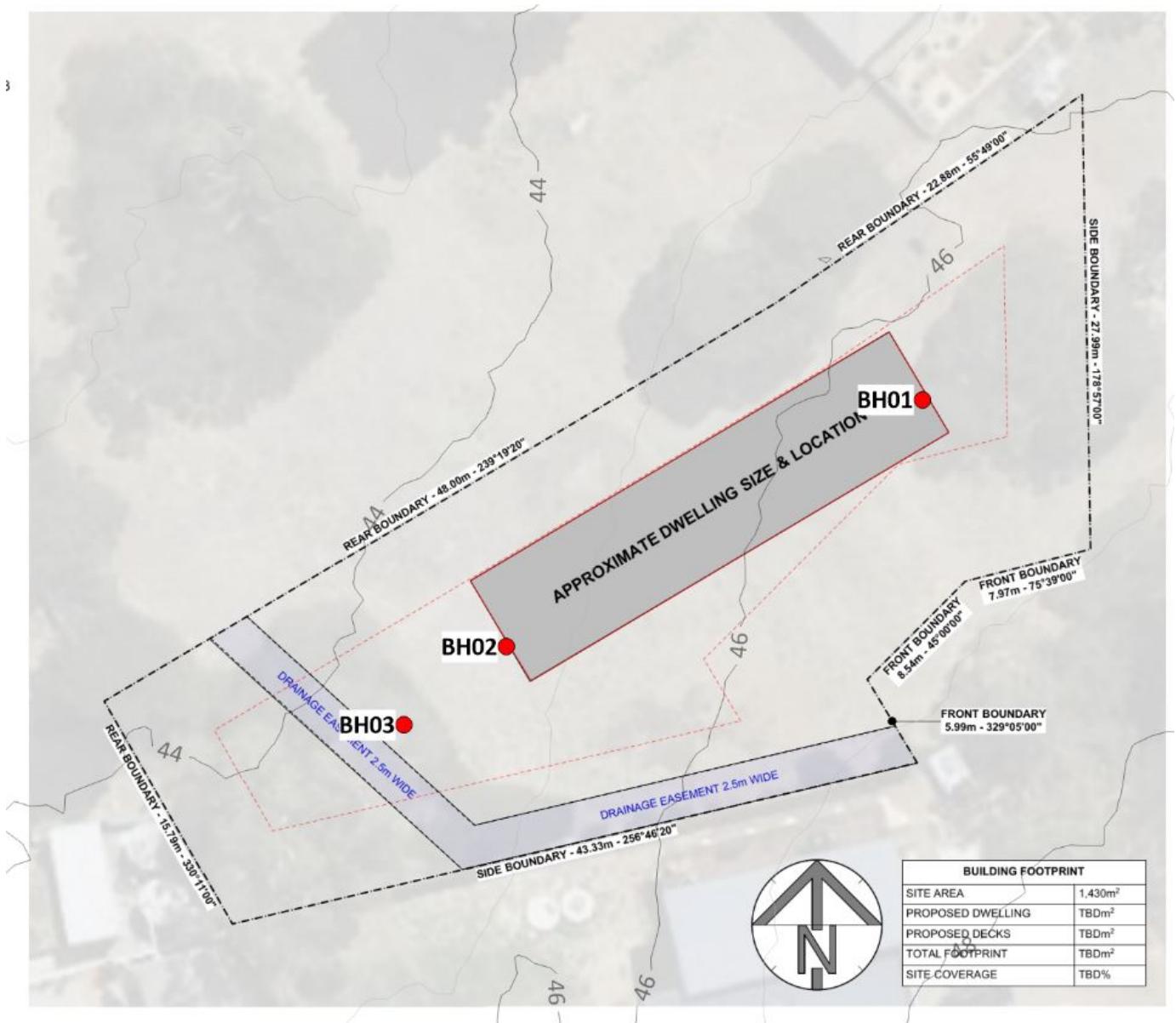


Figure 3 – Bore Hole Test Location



Figure 4 – Proposed Tested Area for Land Application area

Wastewater Loading Certificate for system design (As per Clause 7.4.2(d) of AS1547/2012) (Proposed)

Proposed System Capacity – 6 people @ 120 L/Person/Day (As per Table 1 of Tasmanian directors' determination for wastewater, for a 3-bedroom dwelling

Summary of Design Criteria (Proposed) – DIR 5.0/m²/day (Secondary Treatment DIR Rating)

Q = Design Flow = 720L/Day

Q/ (DIRxLine) separation (1m)

720/ (5.0x1.0) = 145m sqm area / (Minimum rounded required)

This calculation is based on the existing soil most limiting layer as clayey sandy loam (Category 2)

Water Supply – Rainwater Tank

Reserve area use - (unused backyard area)

Consequences of changes in loading capacity – A proposed Fuji Clean ACE1200 or Taylex ABS 1500 Poly or Concrete system (or approved equivalent) the Taylex ABS 1500 Poly or Concrete system Secondary treatment system has an additional peak load capacity of 780L per day with demands only requiring 720L per day, with an overall capacity of 1200-1500L per day. Irrigation area has some redundancy and has been sized conservatively with slope etc.

Consequences of overloading the system – A Fuji Clean ACE1200 or proposed Taylex ABS 1500 Poly or Concrete system (or approved equivalent) the Taylex ABS 1500 Poly or Concrete system Secondary treatment system has an additional peak load capacity of 780L per day with demands only requiring 720L per day, with an overall capacity of 1200-1500L per day. Irrigation area has some redundancy and has been sized conservatively with slope etc.

Consequences of underloading the system – No odour should occur due to 2 stage solid break down of the proposed system utilizing secondary treatment, so long as the proposed system is maintained by qualified contractor on a quarterly basis.

Consequences poor maintenance or attention – Refer to maintenance section of report.

Other Design considerations

- Use water saving fixtures.
- Remove excess fats and grease from kitchen dishes.
- Ensure no solids are put into the system.
- Food disposal system not to be used.
- Do not dispose of sanitary nappies or napkins to the system.
- Use biodegradable detergents.
- Do not dispose of powerful chemicals, bleaches, or whiteners etc down drain system.
- Spread load of washing machine and dishwasher routines throughout the day

Wastewater Classification and Recommendations

According to AS1547.2012 for on-site wastewater management the natural site soil in the property is classified as sand (**Category 2**).

Table J1 of AS1547.2012 indicates based on 3 bedroom with potentially study in the main dwelling, a conservative population of up to 6 people loading has been adopted.

Table J1 of AS1547.2012 indicates based on 3 bedroom in the proposed dwelling a conservative population of up to 6 people loading has been adopted. It is proposed all outflow from the proposed building is connected via a DN100 Gravity line to a proposed Taylex ABS 1500L AWTS system (or approved equivalent) then outflows via pumped discharged to adequately sized sub surface irrigation system

An upslope cut off drain table drain is recommended upslope for the irrigation area for peak rainfall events, to prevent water egress into the irrigation area (as per detail)

A DIR of 5.0/mm/day, **Category 2** rating has been applied to this rating due utilizing imported 250mm of sandy loam or topsoil, and a 250mm thick layer of imported well-structured sandy loam **or mulch** on top of proposed poly irrigation area. For calculations, please refer to the trench summary reports.

Please see design / construction details at the end of the report for further details on the sub surface area

Wastewater Site Layout

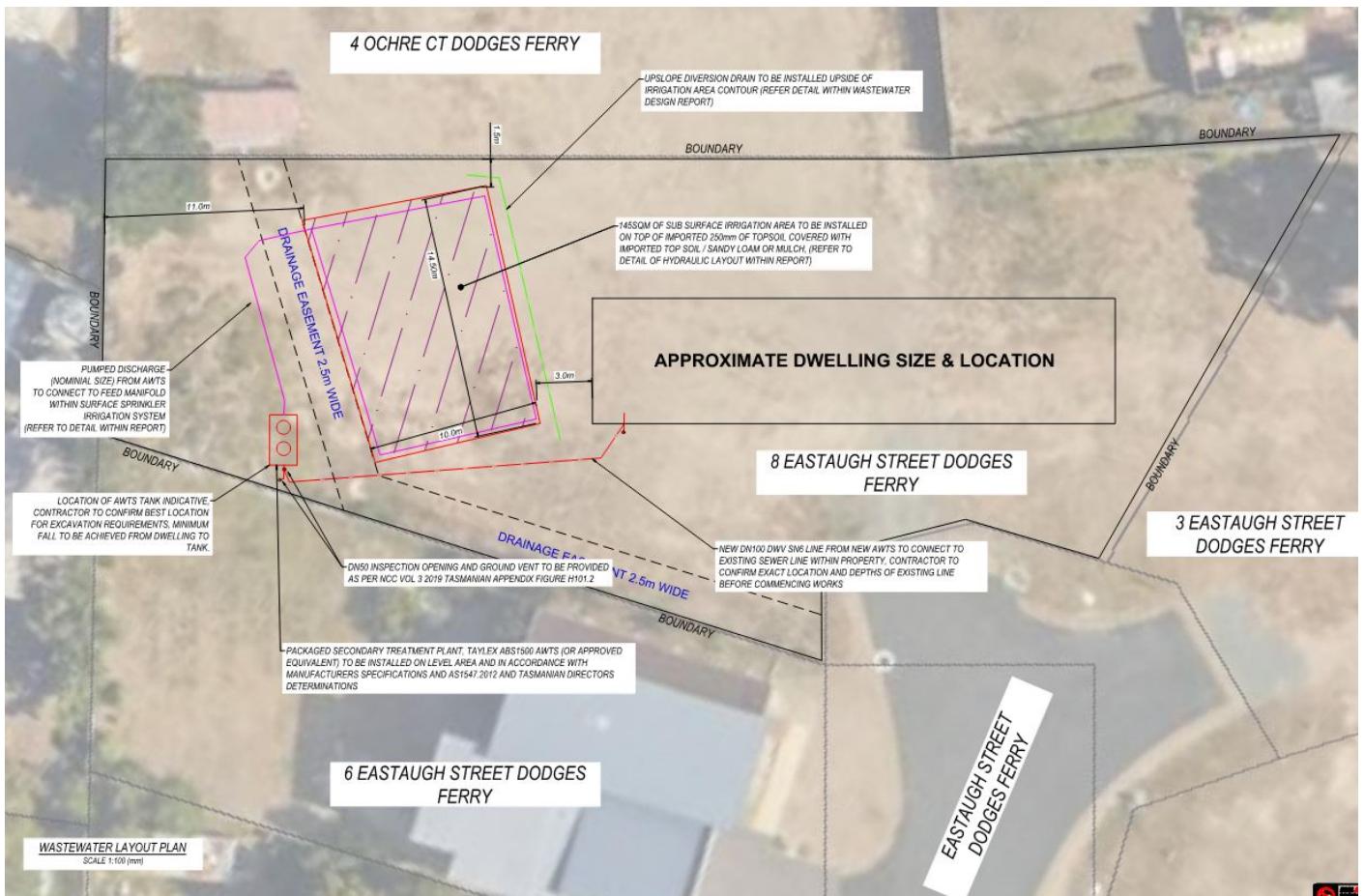


Figure 5: OVERALL SITE LAYOUT

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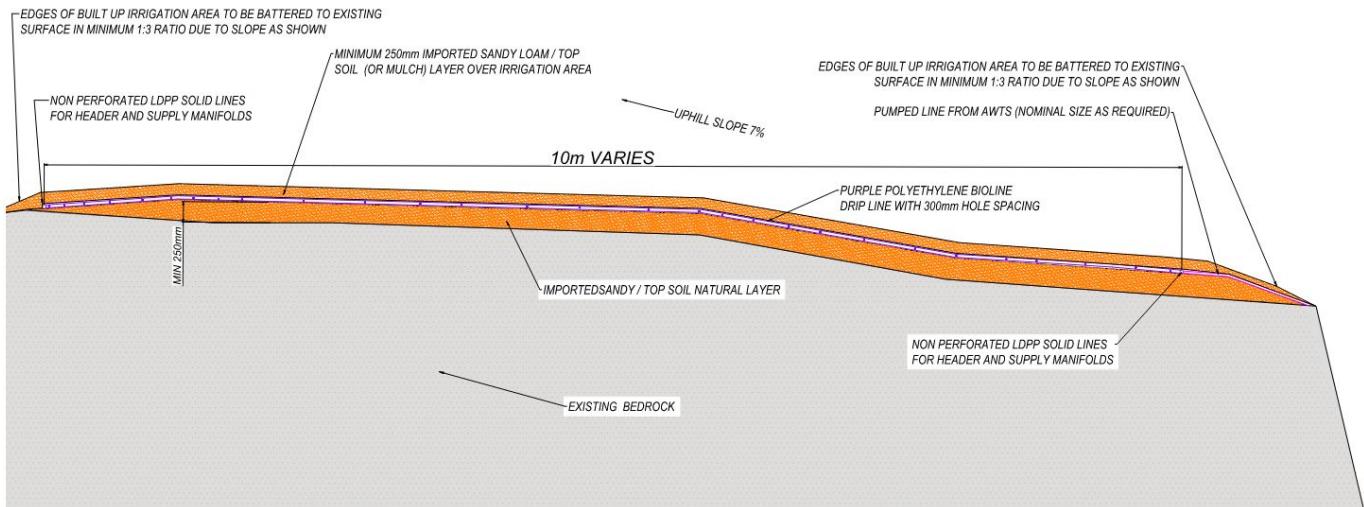


Figure 7: RECOMMENDED IRRIGATION CROSS SECTION DETAIL

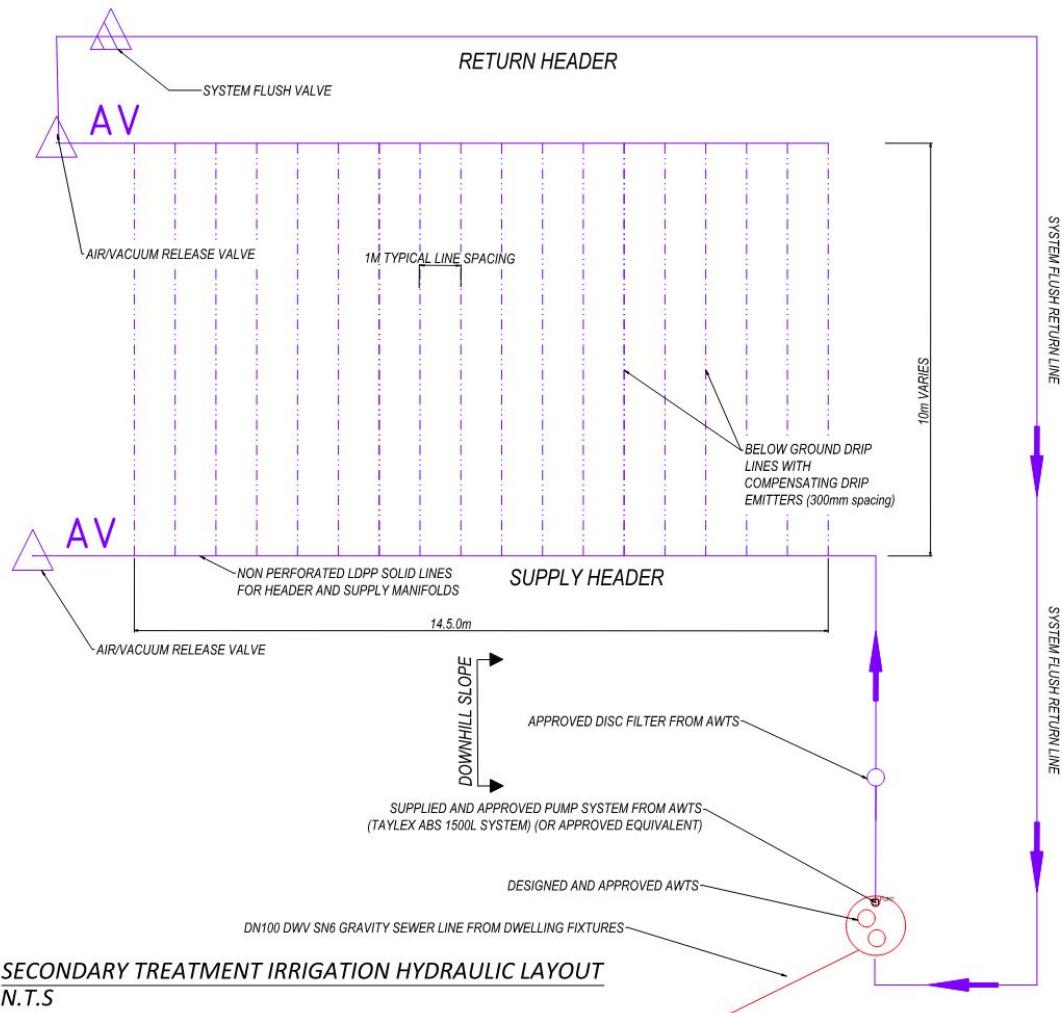


Figure 8: PROPOSED WASTEWATER IRRIGATION LAYOUT

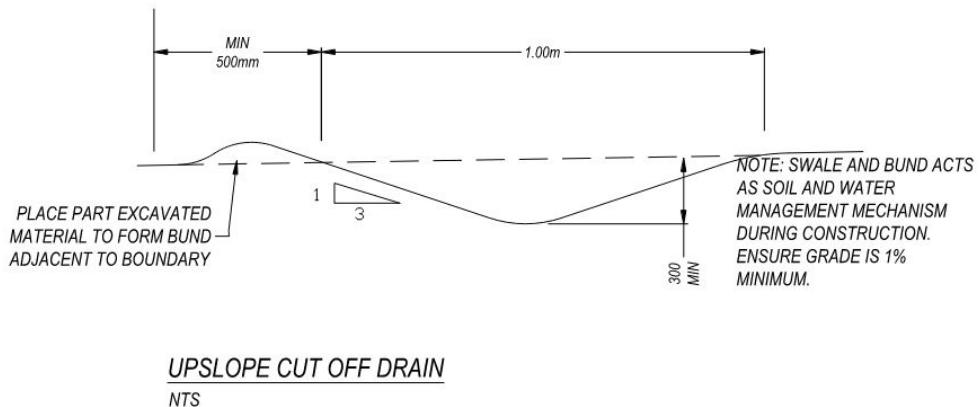


Figure 9: PROPOSED UPSLOPE CUT OFF DRAIN

- Treatment Sub surface irrigation area dimensions of up to 1 x 14.5m Long x 10.0m wide x 0.3m deep (145m² Total)
- Sub surface Irrigation area to be excavated to a max grade of 10% across the entire footprint, battered at min 1 in 4 to existing surface where required.
- Base of irrigation area to be excavated level and spearing and compaction MUST be avoided.
- All works onsite to comply with AS3500.2, NCC2022, AS1547.2012 and all council regulations.

Tasmanian directors' determination guideline requirements for on-site wastewater management – building extensions, alterations, or outbuildings.

- A2 acceptable solution has been satisfied due to a new treatment system within the existing site (New Dwelling)

Tasmanian directors' determination guideline requirements for Wastewater (standards for wastewater land application areas)

- A1 acceptable solution has been satisfied as no downstream building present
- A2 acceptable solution has been satisfied with over **300m** distance to a downslope waterway. **Satisfied**
- A3 acceptable solution has been satisfied with over **11m** distance to a downslope boundary. As per A3 (b) (iii) secondary sub surface irrigation $1.5m + 1m$ for every degree (4) of average gradient = $1.5 + 4 \times 1 = 5.5m$ **setback requirement**
- A4 acceptable solution has been as no water bore detected on site. (Ref Enviro-tech Report)
- A5 acceptable solution has been satisfied as site is free draining and no ponding groundwater on site due to soil properties.
- A6 acceptable solution has been satisfied as due to secondary treatment sub surface irrigation achieving **500mm** distance from bedrock with sub surface irrigation using imported sandy loam or topsoil to create 500mm of vertical separation

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3. TRENCH 3 LOADING

Fysh Design

Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Assessment Report Wastewater Design

Assessment for	Madelaine and Timothy Castle	Assess. Date	10-Sep-25
	8 Eastaugh Street Dodges Ferry	Ref. No.	CKD-HYD-310
Assessed site(s)	8 Eastaugh Street Dodges Ferry	Site(s) inspected	10-Sep-25
Local authority	Sorell Council	Assessed by	Chris Fysh

This report summarises wastewater volumes, climatic inputs for the site, soil characteristics and system sizing and design issues. Site Capability and Environmental sensitivity issues are reported separately, where 'Alert' columns flag factors with high (A) or very high (AA) limitations which probably require special consideration for system design(s). Blank spaces on this page indicate data have not been entered into TRENCH.

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 720 (using the 'No. of bedrooms in a dwelling' method)
Septic tank wastewater volume (L/day) = 240
Sullage volume (L/day) = 480
Total nitrogen (kg/year) generated by wastewater = 2.6
Total phosphorus (kg/year) generated by wastewater = 0.8

Climatic assumptions for site

(Evapotranspiration calculated using the crop factor method)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	52	43	46	55	57	54	53	61	52	61	66	62
Adopted rainfall (R, mm)	52	43	46	55	57	54	53	61	52	61	66	62
Retained rain (Rr, mm)	47	39	41	50	51	49	48	55	47	55	59	56
Max. daily temp. (deg. C)	22	21	20	18	15	13	13	14	15	17	18	20
Evapotrans (ET, mm)	153	135	124	66	32	16	23	36	55	91	99	133
Evapotr. less rain (mm)	106	96	83	16	-19	-32	-24	-19	8	36	40	77

Annual evapotranspiration less retained rain (mm) = 368

Soil characteristics

Texture = Sand Category = 2 Thick. (m) = 0.25
Adopted permeability (m/day) = 3 Adopted LTAR (L/sq m/day) = 5 Min depth (m) to water = 15

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site: All wastewater will be disposed of on the site
The preferred method of on-site primary treatment: In a package treatment plant
The preferred method of on-site secondary treatment: In-ground
The preferred type of in-ground secondary treatment: None
The preferred type of above-ground secondary treatment: Trickle irrigation
Site modifications or specific designs: Not needed

Suggested dimensions for on-site secondary treatment system

Total length (m) = 14
Width (m) = 10
Depth (m) = 0.25
Total disposal area (sq m) required = 150
comprising a Primary Area (sq m) of: 145
and a Secondary (backup) Area (sq m) of:

Sufficient area is available on site

To enter comments, click on the line below 'Comments'. (This yellow-shaded box and the buttons on this page will not be printed.)

Comments

LTAR is based on secondary treatment effluent (5.0DIR) sub surface Irrigation rate Based on a 3.5 bedrooms with a conservative rate of 6 people at 120 L per day on rainwater tank supply (Category 2 soil)

Figure 9: WASTEWATER ASSESSMENT REPORT

Fysh Design

Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Site Capability Report Wastewater Design

Assessment for	Madelaine and Timothy Castle 8 Eastaugh Street Dodges Ferry	Assess. Date	10-Sep-25
Assessed site(s)	8 Eastaugh Street Dodges Ferry	Ref. No.	CKD-HYD-310
Local authority	Sorell Council	Site(s) inspected	10-Sep-25
		Assessed by	Chris Fysh

This report summarises data relating to the physical capability of the assessed site(s) to accept wastewater. Environmental sensitivity and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) site limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation Trench	Amended	Remarks
AA	Expected design area	sq m	145		Very high		
	Density of disposal systems	/sq km	1		Very low		
	Slope angle	degrees	4		Very low		
	Slope form	Straight simple			Low		
	Surface drainage	Good			Very low		
	Flood potential	Site floods <1:100 yrs			Very low		
	Heavy rain events	Infrequent			Moderate		
	Aspect (Southern hemi.)	Faces N			Very low		
	Frequency of strong winds	Common			Low		
	Wastewater volume	L/day	720		Moderate		
	SAR of septic tank effluent		0.8		Very low		
	SAR of sullage		1.9		Low		
AA	Soil thickness	m	0.3		Very high		
AA	Depth to bedrock	m	0.3		Very high		
A	Surface rock outcrop	%	5		High		
	Cobbles in soil	%	5		Low		
	Soil pH		4.5		Moderate		
	Soil bulk density	gm/cub. cm	1.2		Very low		
A	Soil dispersion	Emerson No.	3		High		
	Adopted permeability	m/day	3		Very low		
	Long Term Accept. Rate	L/day/sq m	5				

Figure 10: SITE CAPABILITY REPORT

Fysh Design

Land suitability and system sizing for on-site wastewater management
Trench 3.0 (Australian Institute of Environmental Health)

Environmental Sensitivity Report Wastewater Design

Assessment for	Madelaine and Timothy Castle 8 Eastaugh Street Dodges Ferry	Assess. Date	10-Sep-25
Assessed site(s)	8 Eastaugh Street Dodges Ferry	Ref. No.	CKD-HYD-310
Local authority	Sorell Council	Site(s) inspected	10-Sep-25
		Assessed by	Chris Fysh

This report summarises data relating to the environmental sensitivity of the assessed site(s) in relation to applied wastewater. Physical capability and system design issues are reported separately. The 'Alert' column flags factors with high (A) or very high (AA) limitations which probably require special consideration in site acceptability or for system design(s). Blank spaces indicate data have not been entered into TRENCH.

Alert	Factor	Units	Value	Confid level	Limitation Trench	Amended	Remarks
	Cation exchange capacity	mmol/100g	100		Low		
	Phos. adsorp. capacity	kg/cub m	1		Moderate		
	Annual rainfall excess	mm	-368		Very low		
	Min. depth to water table	m	15		Very low		
	Annual nutrient load	kg	3.4		Very low		
	G'water environ. value	Indust non-sensit			Very low		
	Min. separation dist. required	m	1		Very low		
	Risk to adjacent bores						Factor not assessed
	Surf. water env. value	Indust non-sensit			Very low		
	Dist. to nearest surface water	m	300		Low		
A	Dist. to nearest other feature	m	11		High		
	Risk of slope instability	Very low			Very low		
	Distance to landslip	m	1000		Very low		

Figure 11: ENVIRONMENTAL SENSITIVITY REPORT

4. MAINTENANCE AND MONITORING

- 4.1 Each installation must be serviced and monitored at not less than 3 monthly intervals in accordance with the conditions of accreditation, the conditions of permit / maintenance specified in a Schedule of Maintenance and manufacturer's requirements.
- Notes:
 - (1) Only a licensed plumber and or his or her qualified technician can carry out the maintenance and required monitoring of the system other than electrical work unless licensed to do so.
 - (2) The licensed plumber and his or her technician may need to complete training by the supplier before carrying out any maintenance on the system. The licensed plumber and their technician must comply with the applicable Directors Determination with regard to the training, reporting requirements and qualifications required to carry out servicing on the STS.
 - (3) The maintenance and monitoring intervals may be combined provided the monitoring frequency remains at 3-month intervals.
- 4.2 The owner of the system must enter into and maintain a maintenance contract with a suitable licenced plumbing contractor.
- 4.3 The owner must notify the council that a maintenance contract is in place for the maintenance of the STS.
- 4.4 The system must be operated and maintained to ensure it performs continuously and without any intervention between inspections carried out by the plumber.
- 4.5 A service report is to be prepared by the plumber who carried out the work detailing the inspection of the installation and the results of all servicing tests and conditions at the completion of all scheduled or unscheduled services or inspections.
- 4.6 The service report is to be accompanied by a signed document certifying that the system is operating and performing adequately.
- 4.7 A copy of the service report and certifying document is to be provided to the occupant and council. Each service report is to contain a statement reminding the user about items and products that must not be placed in the system.
- 4.8 Each service must include monitoring the operation of the system and associated land application system.
- 4.9 Maintenance must be carried out on all mechanical, electrical and functioning components of the system including the associated land application system as appropriate.
- 4.10 The monitoring, servicing and reporting of the installation must include but not be restricted to the following matters, as appropriate:
 - 4.10.1 Reporting on weather conditions, ambient temperature, effluent temperature
 - 4.10.2 Odour
 - 4.10.3 Check and test pump
 - 4.10.4 Check and test air blower, fan or air venturi and clean/replace air filters
 - 4.10.5 Check and test alarm system
 - 4.10.6 Check slime growth on membranes and report the on condition of membranes
 - 4.10.7 Check and report operation of sludge return, sludge level and de-sludging
 - 4.10.8 Check and record water meter reading (if fitted)
 - 4.10.9 Check and record operation of irrigation area, irrigation fittings Department of Justice – Certificate of Accreditation Doc/20/66067 Date of Issue: 14/08/20 Director of Building Control Page 13 of 20 Delegate of Minister for Building and Construction

4.10.10 Check and clean/replace irrigation filters.

4.10.11 Check and report on water quality (testing for pH, Turbidity, EC and dissolved oxygen)
4.10.12 Check, and replenish chlorine disinfection system.

4.10.13 Cleaning of the following items at above the waterline – I. clarifier II. pipework III. valves IV. walls of chambers.

Maintenance requirements for wastewater tanks

Visual inspection is to be performed annually, and pumped out regularly, once scum and sludge occupy two thirds of the tank volume and reduces settling volume below 24 hours retention, at no less than 2.5 - 3-year intervals.

Any visible wet spots or uneven grass colour can show signs of pipe blockage, blocked or damage irrigation lines shall be replaced if required.



5. CONCLUSION

This report has demonstrated that the proposed development at 8 Eastaugh Street Dodges Ferry, complies with the onsite wastewater quality conditions of Sorell Council plumbing and environmental requirements.

Please contact cfysh@fyshdesign.com.au if you require any additional information.

Yours sincerely

Chris Fysh



Director

Fysh Design

Building Services Designer Licence: 479819732

Mob: 0414 149 394

Email: cfysh@fyshdesign.com.au

A large, semi-transparent watermark of the FYSH DESIGN CIVIL HYDRAULIC logo is centered on the page. The text 'FYSH DESIGN' is in a large, bold, sans-serif font, and 'CIVIL HYDRAULIC' is in a smaller font below it.

DEVELOPMENT APPLICATION: PROPOSED DWELLING & SHED AT 8 EASTAUGH STREET, DODGES FERRY

DIRECTOR'S LIST:

FOR: MADELAINE & TIMOTHY CASTLE
SITE: 8 EASTAUGH ST, DODGES FERRY 7173
LAND TITLE: 187805/1
PLANNING PERMIT: TBD
ZONING: LOW DENSITY RESIDENTIAL
SITE AREA: 1,430.35m²
PROPOSED FOOTPRINT: 334.75m²
SITE COVERAGE: 13.40%
BAL: BAL - LOW
SOIL CLASSIFICATION: CLASS 'S'

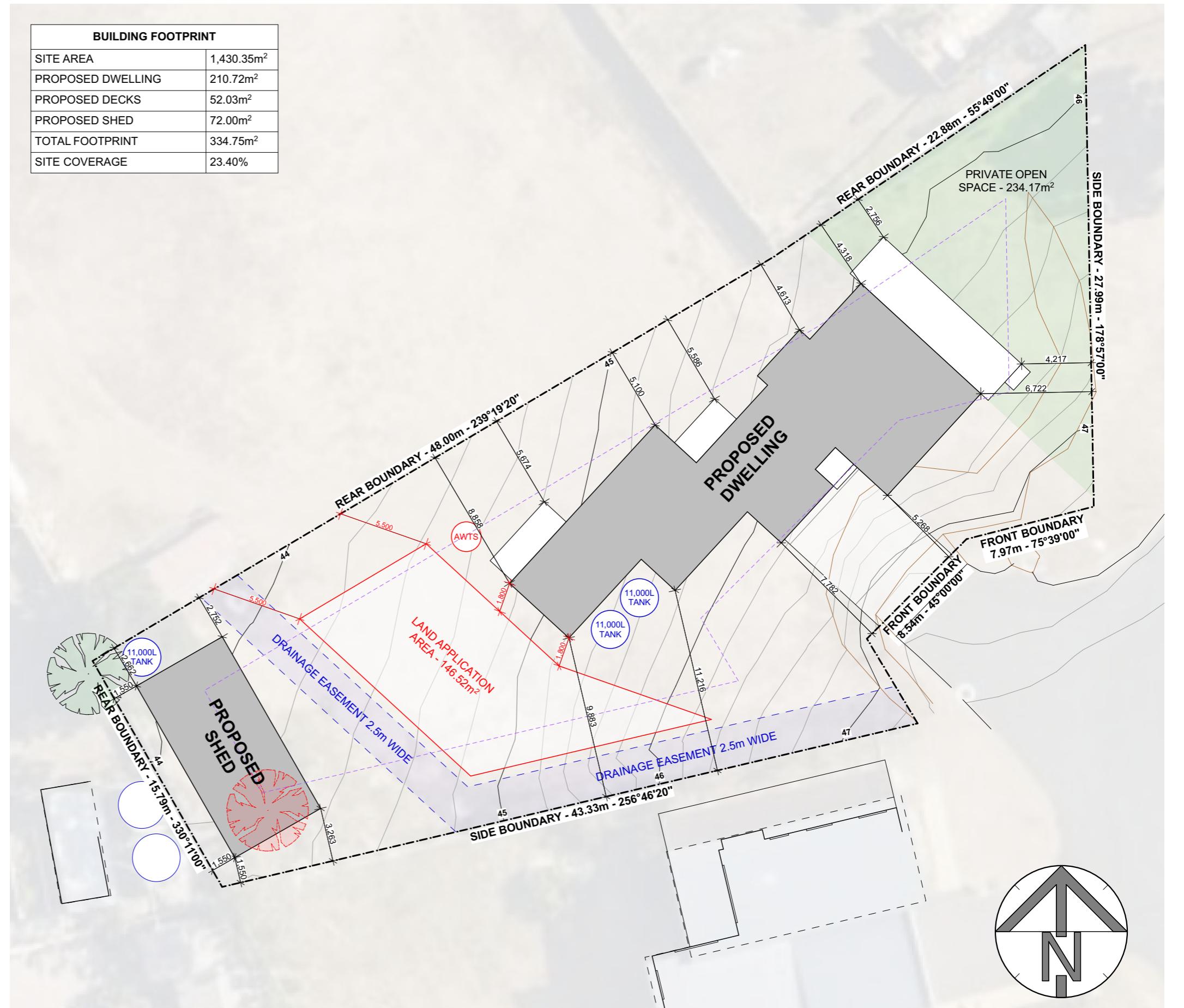
BUILDING FOOTPRINT	
SITE AREA	1,430.35m ²
PROPOSED DWELLING	210.72m ²
PROPOSED DECKS	52.03m ²
PROPOSED SHED	72.00m ²
TOTAL FOOTPRINT	334.75m ²
SITE COVERAGE	23.40%



Development Application: 5.2026.14.1 -
 Response to Request For Information - 8
 Eastaugh Street, Dodges Ferry - P2.pdf
 Plans Reference: P2
 Date received: 5/02/2026

DRAWING SCHEDULE:

DA.01	SITE PLAN	5/02/2026
DA.02	DWELLING FLOOR PLAN	5/02/2026
DA.03	DWELLING ELEVATIONS 1 OF 2	5/02/2026
DA.04	DWELLING ELEVATIONS 2 OF 2	5/02/2026
DA.05	SHED FLOOR PLAN	5/02/2026
DA.06	SHED ELEVATIONS	5/02/2026
DA.07	STORMWATER PLAN	5/02/2026
DA.08	3D PERSPECTIVE 1 OF 3	5/02/2026
DA.09	3D PERSPECTIVE 2 OF 3	5/02/2026
DA.10	3D PERSPECTIVE 3 OF 3	5/02/2026



LICENSE: 179730619
 PHONE: 0439336257
 EMAIL: info@jjjd.design
 ADDRESS: 19 TILANBI STREET, HOWRAH, TAS, 7018

Ammendments

DO NOT SCALE OFF DRAWINGS. CONTRACTORS TO
 CONFIRM WITH J DWYER ANY DIMENSIONS OR LEVELS
 IF NECESSARY. ALL GLAZING TO AS 1288/2047.
 THIS DOCUMENT IS COPYRIGHTED AND MAY NOT BE
 REPRODUCED IN PART OR WHOLE WITHOUT WRITTEN
 CONSENT OF J DWYER

PROJECT:

PROPOSED DWELLING AT 8 EASTAUGH STREET,
DODGES FERRY, TAS 7173

DRAWING TITLE:

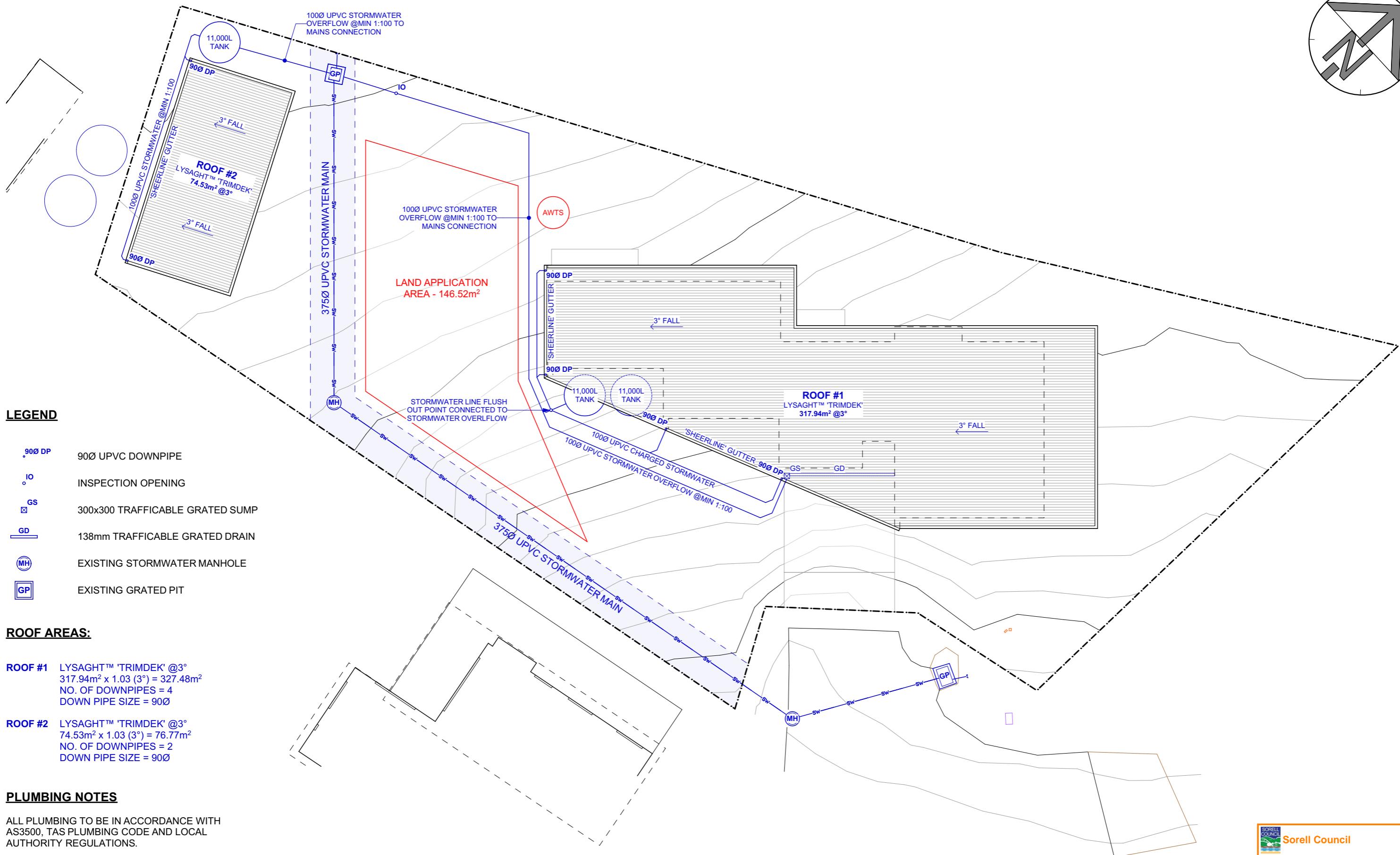
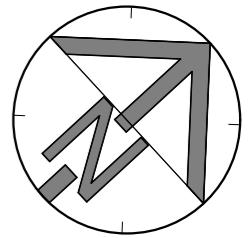
DA.01 SITE PLAN

CLIENT:

MADELAINE & TIMOTHY CASTLE

DRAWN: J DWYER

SCALE: 1:250 @A3
DATE: 5/02/2026



Sorell Council
 Development Application: 5.2026.14.1 -
 Response to Request For Information - 8
 Eastaugh Street, Dodges Ferry - P2.pdf
 Plans Reference: P2
 Date received: 5/02/2026

4 OCHRE CT DODGES FERRY

UPSLOPE DIVERSION DRAIN TO BE INSTALLED UPSIDE OF
IRRIGATION AREA CONTOUR (REFER DETAIL WITHIN WASTEWATER
DESIGN REPORT)

BOUNDARY

11.0m

DRAINAGE EASEMENT 2.5m WIDE

PUMPED DISCHARGE
(NOMINAL SIZE) FROM AWTS
TO CONNECT TO FEED MANIFOLD
WITHIN SURFACE SPRINKLER
IRRIGATION SYSTEM
(REFER TO DETAIL WITHIN REPORT)

BOUNDARY

LOCATION OF AWTS TANK INDICATIVE,
CONTRACTOR TO CONFIRM BEST LOCATION
FOR EXCAVATION REQUIREMENTS, MINIMUM
FALL TO BE ACHIEVED FROM DWELLING TO
TANK.

DN50 INSPECTION OPENING AND GROUND VENT TO BE PROVIDED
AS PER NCC VOL 3 2019 TASMANIAN APPENDIX FIGURE H101.2

NT 2.5m WIDE

PACKAGED SECONDARY TREATMENT PLANT, TAYLEX ABS1500 AWTS (OR APPROVED
EQUIVALENT) TO BE INSTALLED ON LEVEL AREA AND IN ACCORDANCE WITH
MANUFACTURERS SPECIFICATIONS AND AS1547.2012 AND TASMANIAN DIRECTORS
DETERMINATIONS

APPROXIMATE DWELLING SIZE & LOCATION

8 EASTAUGH STREET DODGES FERRY

NEW DN100 DWV SN6 LINE FROM NEW AWTS TO CONNECT TO
EXISTING SEWER LINE WITHIN PROPERTY, CONTRACTOR TO
CONFIRM EXACT LOCATION AND DEPTHS OF EXISTING LINE
BEFORE COMMENCING WORKS

BOUNDARY

6 EASTAUGH STREET DODGES FERRY

WASTEWATER LAYOUT PLAN
SCALE 1:100 (mm)

EASTAUGH STREET
DODGES FERRY

3 EASTAUGH STREET DODGES FERRY

BOUNDARY

BOUNDARY

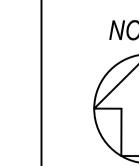
BOUNDARY



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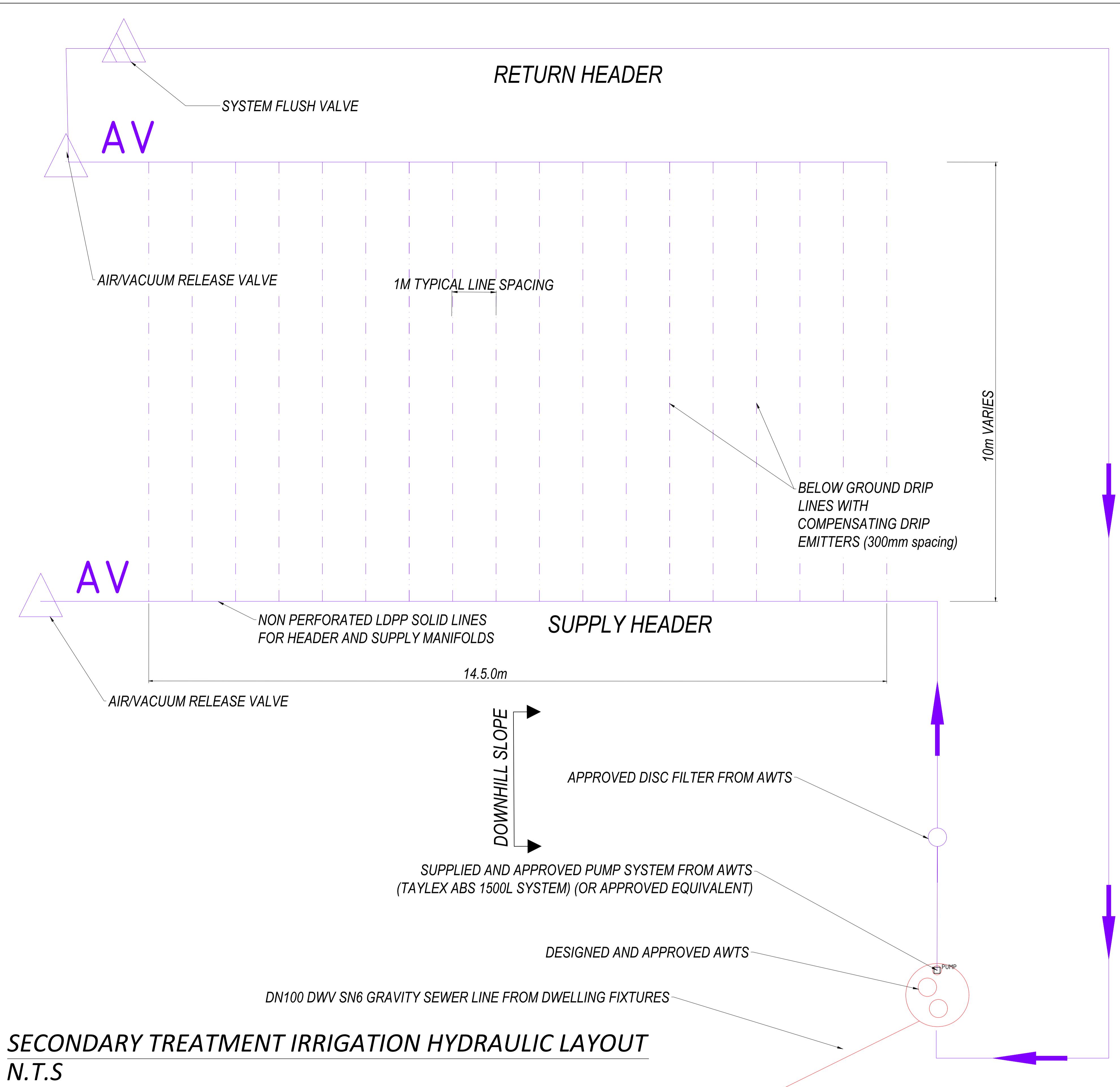


FYSH DESIGN
UNIT 4, 160 BUNGANA WAY
CAMBRIDGE TAS
PH: 0414 149 394
ACCREDITATION: BSD LICENCE NO. 479819732



PROPOSED WASTEWATER SYSTEM
CLIENT: MADELINE AND TIMOTHY CASTLE
8 EASTAUGH STREET, DODGES FERRY TAS
DRAWING TITLE
WASTEWATER LAYOUT PLAN

SCALE 1:100
DESIGNED OF
DRAWN OF
PROJECT H02
SHEET NO.
REVISION 0



0	BUILDING APPROVAL	CF	15/09/2025	REV	DESCRIPTION	DATE
REV						

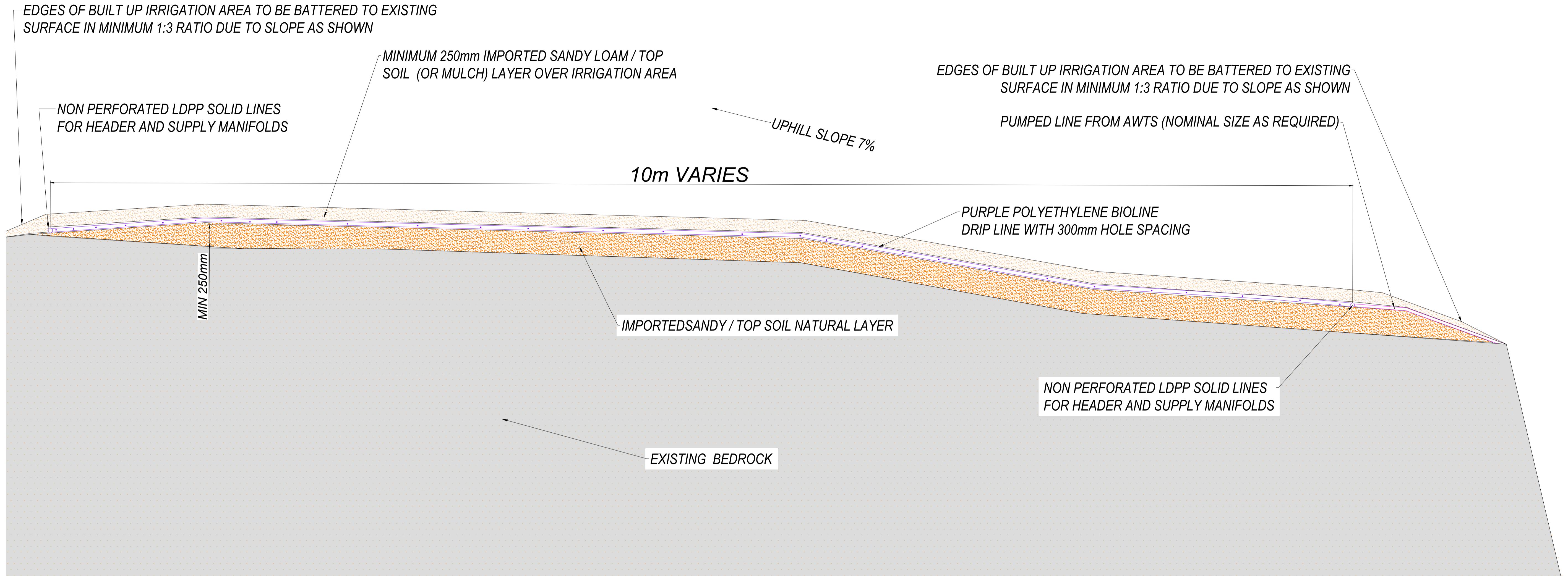


FYSH DESIGN
UNIT 4, 160 BUNGANA WAY
CAMBRIDGE TAS, 7170
PH: 0414 149 394
ACCREDITATION: BSD LICENCE NO. 479819732

PROPOSED WASTEWATER SYSTEM
CLIENT: MADELAINE AND TIMOTHY CASTLE
8 EASTAUGH STREET, DODGES FERRY TAS
DRAWING TITLE
ONSITE WASTEWATER CROSS SECTION

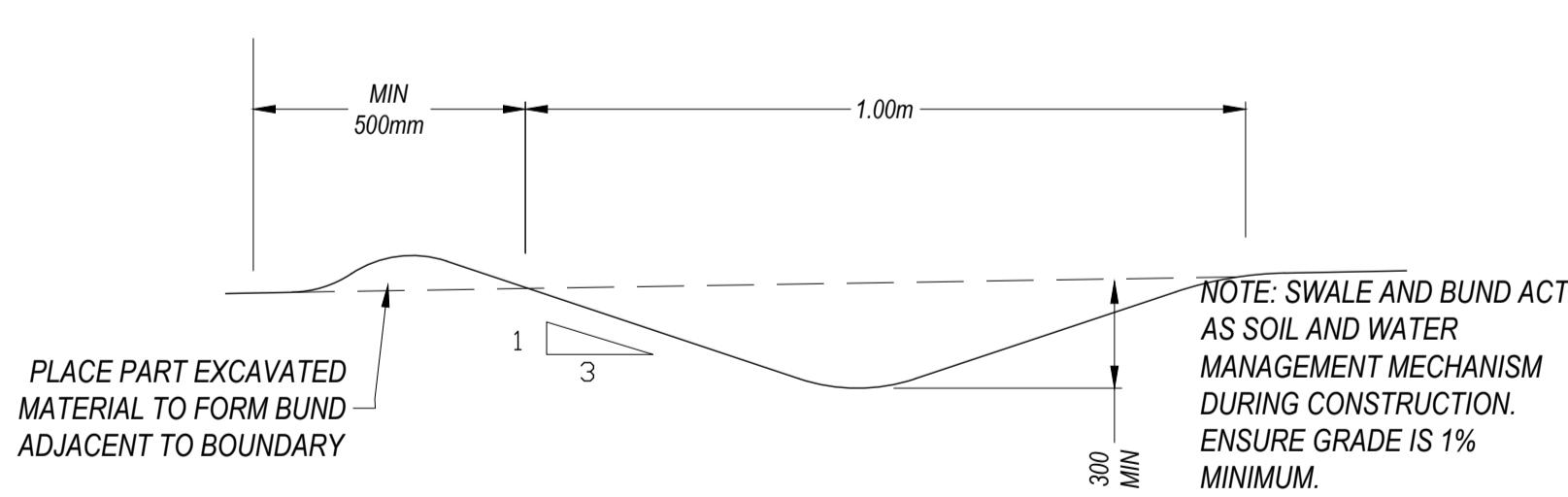
SCALE 1:100
DESIGNED CF DRAWN CF
PROJECT SHEET NO.
CKD-HYD-310 H01
REVISION 0





SECONDARY TREATMENT IRRIGATION CROSS SECTION DETAIL

N.T.S



UPSLOPE CUT OFF DRAIN
NTS

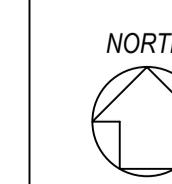
DESIGN NOTES:

- ONE 5mm HOLE AT CENTER OF INVERT OF EACH PIPE TO ALLOW FOR DRAINAGE BETWEEN PUMP CYCLES
- GEOTEXTILE FOR FILTER CLOTH TO BE PLACED OVER THE DISTRIBUTION PIPES TO PREVENT CLOGGING OF THE PIPES AND AGGREGATE - THE SIDES OF THE BED SHOULD ALSO BE LINED WITH HDPE LINER
- FINISH FINISHED SURFACE WITH SANDY LOAM TO BE A MINIMUM OF 150mm ABOVE AGGREGATE WITH TURF COVER OR MULCHED WITH APPROPRIATE VEGETATION (EG NATIVE GRASSES AND SMALL SHRUBS AT 1 PLANT PER 1m²)
- THE TURF OR VEGETATION IS AN ESSENTIAL COMPONENT OF THE SYSTEM AND MUST BE MAINTAINED WITH REGULAR MOWING AND OR TRIMMING AS NEEDED
- THE DISTRIBUTION PIPE GRID MUST BE ABSOLUTELY LEVEL TO ALLOW EVEN DISTRIBUTION OF EFFLUENT AROUND THE ABSORPTION AREA - IT IS RECOMMENDED THAT THE LEVEL BE VERIFIED BY RUNNING WATER INTO THE SYSTEM BEFORE BACKFILLING AND COMMISSIONING TRENCH
- ALL WORKS ON SITE TO COMPLY WITH AS3500, AS1547.2012, NCC VOL 3 2019
- PUMP TO BE CAPABLE OF DELIVERING THE TOTAL FLOW RATE REQUIRED AT ALL LATERALS WHILST PROVIDING A 1.5m RESIDUAL HEAD (SQUIRT HEIGHT) AT THE HIGHEST ORIFICE (WITH NO MORE THAN 15% VARIATION IN SQUIRT HEIGHT ACROSS THE ENTIRE BED)
- FOR BEDS WITH INDIVIDUAL LATERALS, NO MORE THAN 15m LONG, IT IS ACCEPTABLE TO ADOPT A FLOW RATE 4.5L/MIN/LINEAL METER. TOTAL DYNAMIC HEAD (INCLUDING FRICTION LOSS) WILL NEED TO BE DETERMINED ON A SITE-SPECIFIC BASIS
- INDIVIDUAL FLUSH POINTS MUST BE INSTALLED FOR EACH LATERAL. THIS MAY BE A SCREW CAP FITTING ON A 90 DEGREE ELBOW LEVEL WITH THE BED SURFACE OR PRESSURE CONTROLLED FLUSH VALE INSIDE AN IRRIGATION BOX

0	BUILDING APPROVAL	CF	15/09/2025	REV	DESCRIPTION	DATE	DESCRIPTION	DATE
REV								



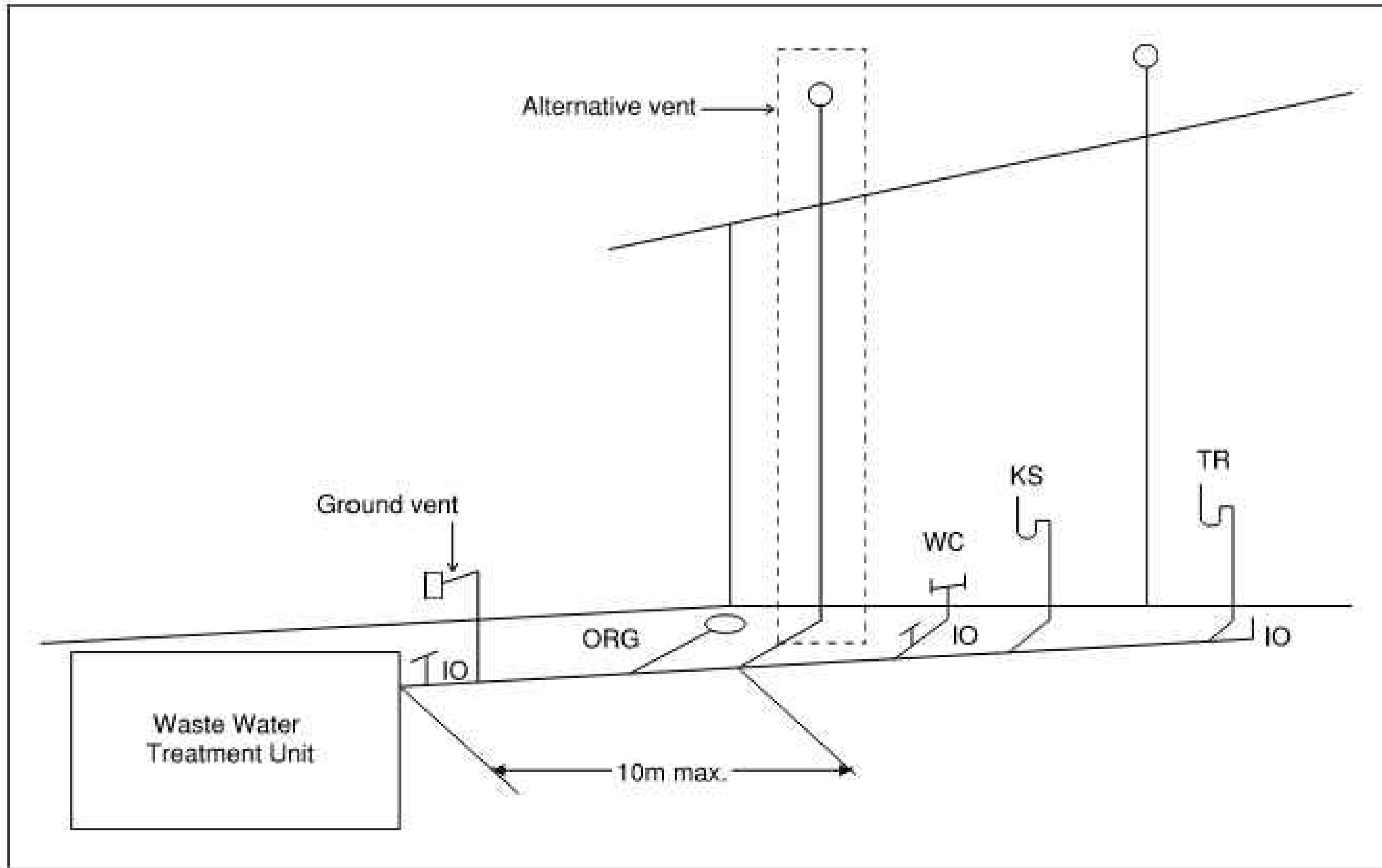
FYSH DESIGN
UNIT 4, 160 BUNGANA WAY
CAMBRIDGE TAS, 7170
PH: 0414 149 394
ACCREDITATION: BSD LICENCE NO. 479819732



PROPOSED WASTEWATER SYSTEM
CLIENT: MADELINE AND TIMOTHY CASTLE
8 EASTAUGH STREET, DODGES FERRY TAS
DRAWING TITLE
ONSITE WASTEWATER PLAN AND NOTES

SCALE 1:100
DESIGNED CF DRAWN CF
PROJECT CKD-HYD-310 SHEET NO. H02
REVISION 0





TAS FIGURE H101.2 ALTERNATIVE VENTING ARRANGEMENTS

VENTS MUST TERMINATE IN ACCORDANCE WITH AS3500.2

ALTERNATIVE VENTING TO BE USED BY EXTENDING A VENT TO TERMINATE AS IF AN UPSTREAM VENT, WITH THE VENT CONNECTION BETWEEN THE LAST SANITARY FIXTURE OR SANITARY APPLIANCE AND ONSITE WASTEWATER MANAGEMENT SYSTEM. USE OF A GROUND VENT IS NOT RECOMMENDED

INSPECTION OPENINGS MUST BE LOCATED AT THE INLET TO AN ONSITE WASTEWATER MANAGEMENT SYSTEM TREATMENT UNIT AND THE POINT OF CONNECTION TO THE LAND APPLICATION SYSTEM AND MUST TERMINATE AS CLOSE AS PRACTICAL TO THE UNDERSIDE OF AN APPROVED INSPECTION COVER INSTALLED AT THE FINISHED SURFACE LEVEL

ACCESS OPENINGS PROVIDING ACCESS FOR DESLUDGING OR MAINTENANCE OF ON-SITE WASTEWATER MANAGEMENT SYSTEM TREATMENT UNITS MUST TERMINATE AT OR ABOVE FINISHED SURFACE LEVEL

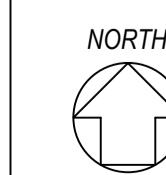
ALTERNATIVE VENT IS THE PREFERRED ARRANGEMENT WHERE POSSIBLE.

TASMANIAN WASTEWATER VENTING REQUIREMENTS DETAIL

0	BUILDING APPROVAL	CF	15/09/2025			
REV	DESCRIPTION	DATE	REV	DESCRIPTION	DATE	



FYSH DESIGN
UNIT 4, 160 BUNGANA WAY
CAMBRIDGE TAS, 7170
PH: 0414 149 394
ACCREDITATION: BSD LICENCE NO. 479819732



PROPOSED WASTEWATER SYSTEM
CLIENT: MADELINE AND TIMOTHY CASTLE
8 EASTAUGH STREET, DODGES FERRY TAS
DRAWING TITLE
ONSITE WASTEWATER PLAN AND NOTES

SCALE 1:100
DESIGNED CF DRAWN CF
PROJECT CKD-HYD-310 SHEET NO. H01
SCALE AS NOTED
REVISION 0



Section 94
Section 106
Section 129
Section 155

CERTIFICATE OF THE RESPONSIBLE DESIGNER

To: Madelaine and Timothy Castle Owner name
8 Eastaugh Street Address
Dodges Ferry TAS Suburb/postcode

Form **35**

Designer details:

Name: Christopher Fysh Category: Building Services Designer – Civil / Hydraulic
Business name: Fysh Design Phone No: 0414149394
Business address: Unit 4, 160 Bungana Way Fax No:
Cambridge Tas Email address: cfysh@fyshdesign.com.au
Licence No: 479819732

Details of the proposed work:

Owner/Applicant Madelaine and Timothy Castle Designer's project reference No. CKD-HYD-310
Address: 8 Eastaugh Street
Dodges Ferry TAS TAS

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

Description of work:

Wastewater 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 type="checkbox"/> Civil design	Civil Engineer or Civil Designer
	<input checked="" 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: <input checked="" type="checkbox"/>	(X the appropriate box)

Other details:

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:-Wastewater Report-Rev-0	Prepared by: Fysh Design	Date:15/09/2025
Schedules:	Prepared by:	Date:
Specifications:	Prepared by:	Date:
Computations:	Prepared by:	Date:
Performance solution proposals: Stormwater onsite disposal trench	Prepared by: Fysh Design and Artee Engineers	Date:10/09/2025
Test reports:	Prepared by:	Date:

Standards, codes or guidelines relied on in design process:

AS3500.2, AS1547.2012 NCC2022 Vol 3

Any other relevant documentation:

Insurance details:

CGU Civil / Hydraulic Liability Professional Indemnity CGU PI 05-21 \$5,000,000
CGU General and Product Public Liability \$20,000,000

Attribution as designer:

I Christopher Fysh 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:	Christopher Fysh		15/09/2025
Licence No:	479819732		

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 ..Christopher Fysh..... 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:	Christopher Fysh		15/09/2025

GENERAL NOTES:

1. THIS PLAN HAS BEEN PREPARED BY SURVEY PLUS FROM A COMBINATION OF EXISTING RECORDS AND FIELD SURVEY FOR THE PURPOSES OF SHOWING THE PHYSICAL FEATURES OF THE LAND AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

2. TITLE BOUNDARIES SHOWN WERE NOT VERIFIED OR MARKED BY SURVEY PLUS AT THE TIME OF THIS SURVEY.

3. SERVICES SHOWN ON THIS PLAN WERE LOCATED WHERE POSSIBLE BY FIELD SURVEY. THEY ARE NOT A COMPLETE PICTURE OF SERVICES ON SITE. ALL SERVICE LOCATIONS ARE TO BE VERIFIED BEFORE COMMENCEMENT OF ANY WORK ON SITE, IN PARTICULAR THOSE SERVICES NOT PREVIOUSLY LOCATED THROUGH FIELD SURVEY.

4. SURVEY PLUS CAN NOT ACCEPT LIABILITY WHATSOEVER FOR LOSS OR DAMAGE CAUSED TO ANY UNDERGROUND SERVICE WHETHER SHOWN BY OUR SURVEY OR NOT.

5. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA. REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH A REPRODUCTION INVALID AND NOT SUITABLE FOR USE WITHOUT PRIOR AUTHORITY OF SURVEY PLUS.

6. HORIZONTAL DATUM IS MGA (GDA94).

7. VERTICAL DATUM IS AHD.

8. CONTOUR INTERVAL IS 0.2 METRE, INDEX IS 1.0 METRE.

9. SURVEY BY ROBOTIC TOTAL STATION AND RTK GPS.

10. IMPORTED DATA SHOWN ON THIS PLAN WAS OBTAINED FOR PUBLIC AVAILABLE DATA FROM VARIOUS GOVERNMENT AUTHORITIES. THIS INFORMATION IS PROVIDED FOR GUIDANCE ONLY. THE ACCURACY OF ANY IMPORTED DATA IS PER THE ACCURACY QUOTED BY THE SOURCE AND IS IN NO WAY GUARANTEED BY SURVEY PLUS. USERS MUST NOT RELY ON THIS DATA FOR ON-GROUND LOCATION OF BOUNDARIES AND/OR SERVICES.

LIST DATA IMPORT

- TasWater-SewerLateralLine
- TasWater-SewerMain
- TasWater-SewerMaintenanceHole
- TasWater-SewerPressurisedMain
- TasWater-WaterHydrant
- TasWater-WaterLateralLine
- TasWater-WaterMain

11. BOUNDARIES ARE COMPILED ONLY FROM SP187805 AND RELEVANT SURVEY INFORMATION OBTAINED FROM LAND TITLES OFFICE AND ARE APPROXIMATE AND SUBJECT TO SURVEY.

13. ALL WINDOWS WERE NOT ABLE TO BE LOCATED DUE TO OBSTRUCTION OF LINE OF SIGHT FROM TOTAL STATION. WINDOW LOCATIONS ARE APPROXIMATE ONLY DUE TO BEING UNABLE TO BE PERPENDICULAR TO WINDOWS WHEN LOCATING WITH TOTAL STATION.

14. 3D DATA TURNED OFF IN LAYER CONTROL.

- 3D TIN
- MAJOR CONTOUR 3D
- MINOR CONTOUR 3D

LEGEND

BDY A = COMPILED BOUNDARY 255°39' 7.97m

BDY B = COMPILED BOUNDARY 255°00' 8.54m

BDY C = COMPILED BOUNDARY 149°05' 5.99m

CLC = Comms Lot Connection

ELC = Elec. Lot Connection

SWG = Stormwater Grated Pit

Top RL:46.95

In Inv RL:46.01

Out Inv RL:45.96

DEVELOPMENT APPLICATION: PROPOSED DWELLING & SHED AT 8 EASTAUGH STREET, DODGES FERRY

DIRECTOR'S LIST:

FOR: MADELAINE & TIMOTHY CASTLE
SITE: 8 EASTAUGH ST, DODGES FERRY 7173
LAND TITLE: 187805/1
PLANNING PERMIT: TBD
ZONING: LOW DENSITY RESIDENTIAL
SITE AREA: 1,430.35m²
PROPOSED FOOTPRINT: 334.75m²
SITE COVERAGE: 13.40%
BAL: BAL - LOW
SOIL CLASSIFICATION: CLASS 'S'

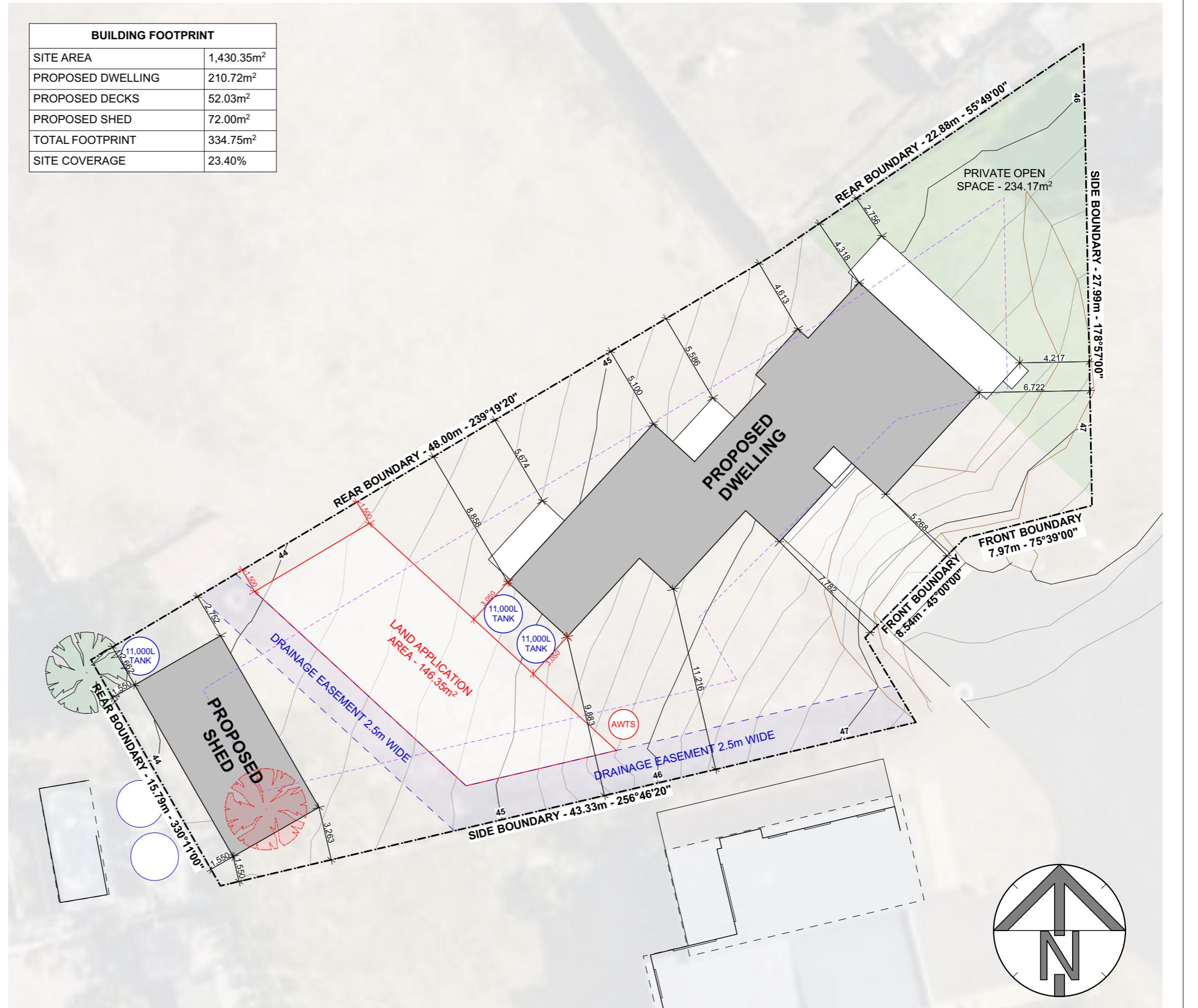
BUILDING FOOTPRINT	
SITE AREA	1,430.35m ²
PROPOSED DWELLING	210.72m ²
PROPOSED DECKS	52.03m ²
PROPOSED SHED	72.00m ²
TOTAL FOOTPRINT	334.75m ²
SITE COVERAGE	23.40%



Development Application: Development Application - 8 Eastaugh Street, Dodges Ferry.pdf
 Plans Reference:P1
 Date Received:29/01/2026

DRAWING SCHEDULE:

DA.01	SITE PLAN	22/01/2026
DA.02	DWELLING FLOOR PLAN	22/01/2026
DA.03	DWELLING ELEVATIONS 1 OF 2	22/01/2026
DA.04	DWELLING ELEVATIONS 2 OF 2	22/01/2026
DA.05	SHED FLOOR PLAN	22/01/2026
DA.06	SHED ELEVATIONS	22/01/2026
DA.07	STORMWATER PLAN	22/01/2026
DA.08	3D PERSPECTIVE 1 OF 3	22/01/2026
DA.09	3D PERSPECTIVE 2 OF 3	22/01/2026
DA.10	3D PERSPECTIVE 3 OF 3	22/01/2026



LICENSE: 179730619
 PHONE: 043936257
 EMAIL: info@jjjd.design
 ADDRESS: 19 TILANBI STREET, HOWRAH, TAS, 7018

Ammendments

DO NOT SCALE OFF DRAWINGS. CONTRACTORS TO
 CONFIRM WITH J DWYER ANY DIMENSIONS OR LEVELS
 IF NECESSARY. ALL GLAZING TO AS 1288/2047.
 THIS DOCUMENT IS COPYRIGHTED AND MAY NOT BE
 REPRODUCED IN PART OR WHOLE WITHOUT WRITTEN
 CONSENT OF J DWYER

PROJECT:

PROPOSED DWELLING AT 8 EASTAUGH STREET,
DODGES FERRY, TAS 7173

DRAWING TITLE:

DA.01 SITE PLAN

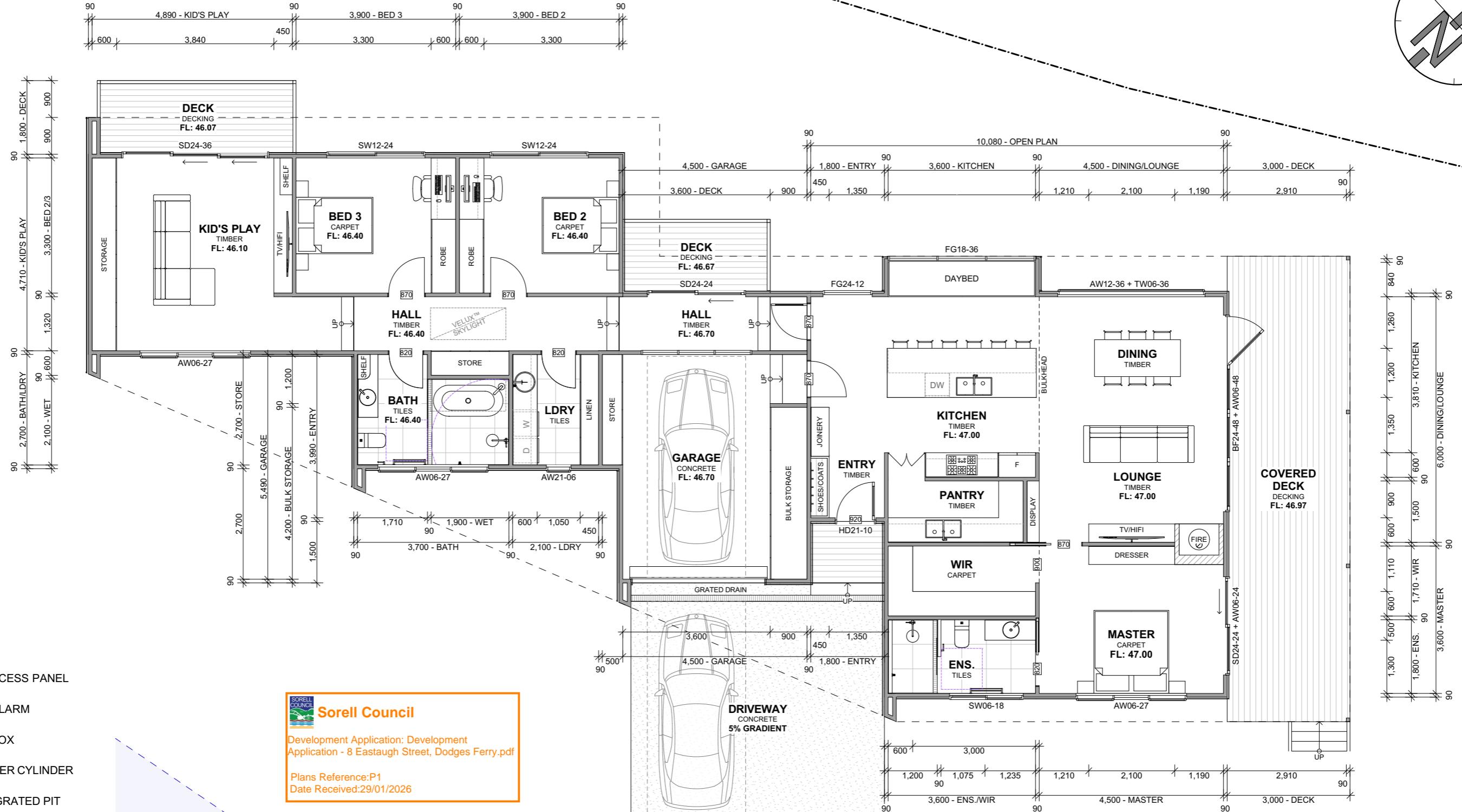
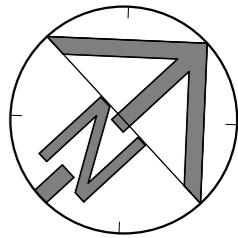
CLIENT:

MADELAINE & TIMOTHY CASTLE

DRAWN: J DWYER

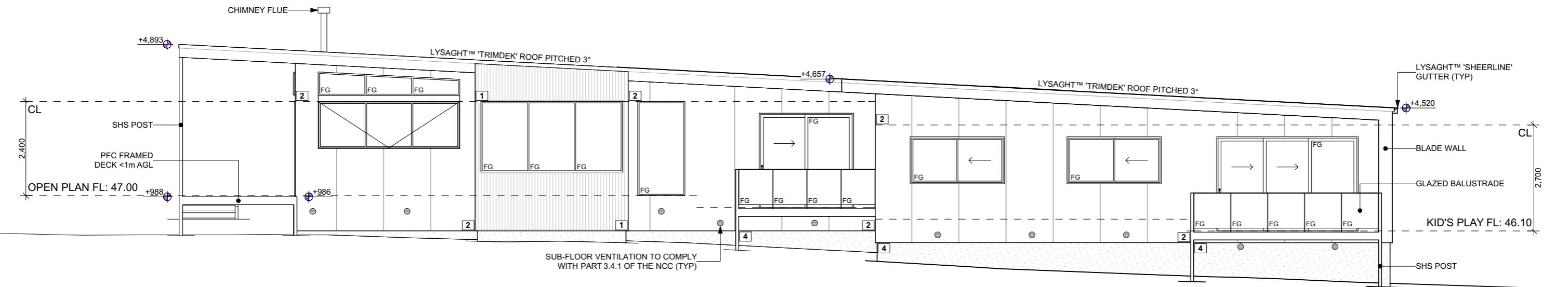
SCALE: 1:250 @A3

DATE: 22/01/2026



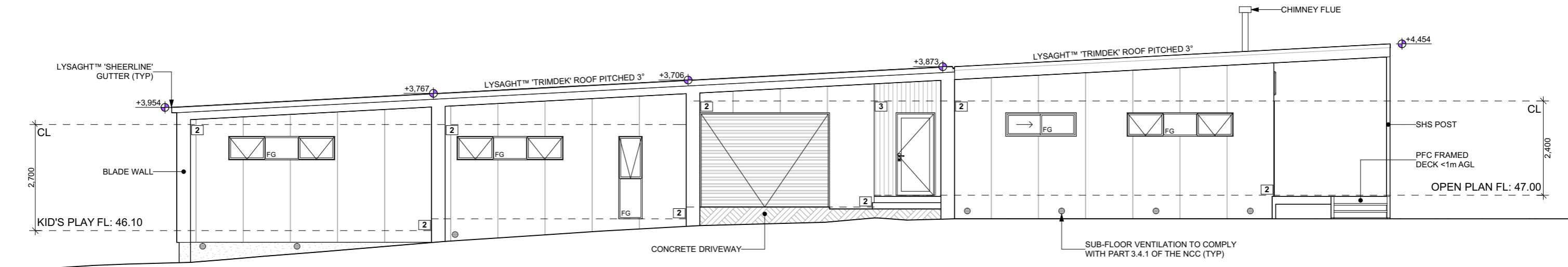
FLOOR AREAS:

MAIN WING FLOOR AREA: 99.55m²
 KID'S WING FLOOR AREA: 77.34m²
 GARAGE FLOOR AREA: 26.06m²
 SHED FLOOR AREA: 72.00m²
 TOTAL DECKS: 52.03m²
 TOTAL FLOOR AREA: 326.98m²



NORTH-WEST ELEVATION

SCALE 1:100 @A3



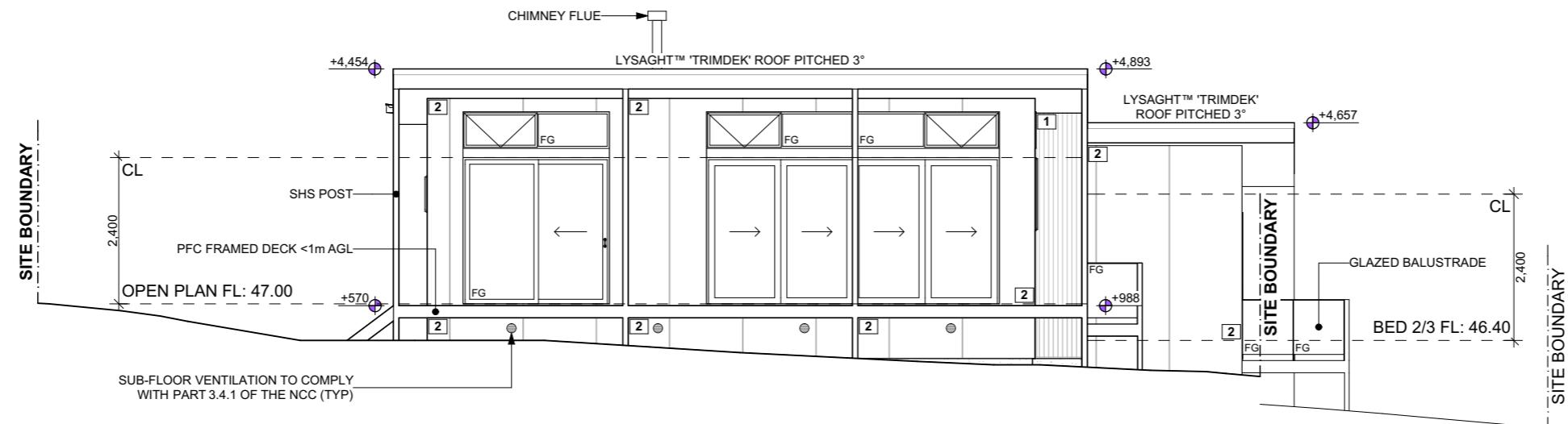
SOUTH-EAST ELEVATION

SCALE 1:100 @A3

LEGEND:

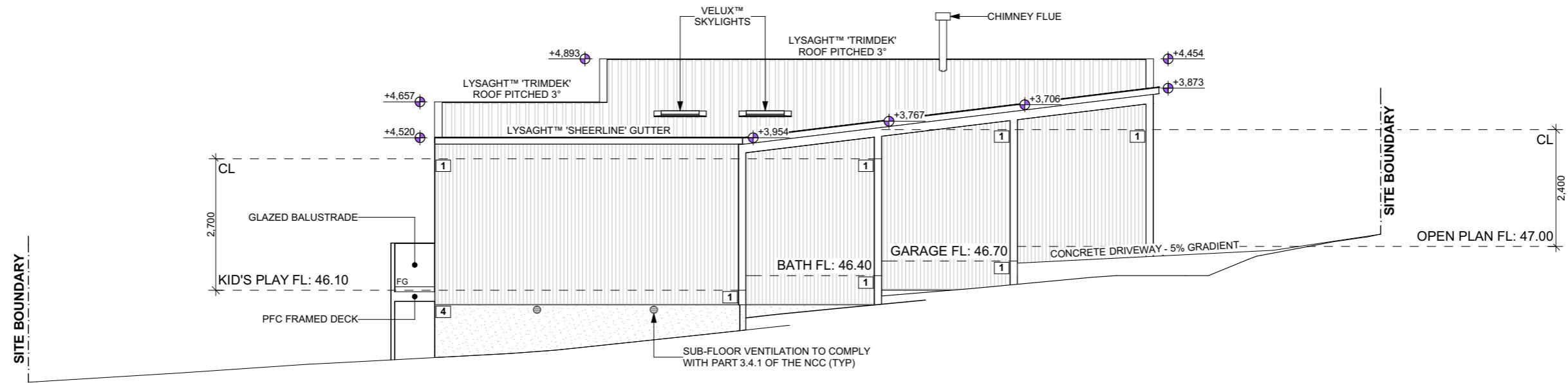
- FG FIXED GLAZING
- NGL NATURAL GROUND LINE
- +1.234 HEIGHT ABOVE NGL
- 1 LYSAGHT™ 'CUSTOM ORB' MS CLADDING - DOVER WHITE
- 2 9mm FRC CLADDING - SURFMIST
- 3 19mm TIMBER SHIPLAP CLADDING - CLEAR FINISH
- 4 RENDERED BLOCKWORK - SURFMIST





NORTH-EAST ELEVATION

SCALE 1:100 @A3



SOUTH-WEST ELEVATION

SCALE 1:100 @A3

LEGEND:

FG FIXED GLAZING

NGL NATURAL GROUND LINE

+1.234 HEIGHT ABOVE NGL

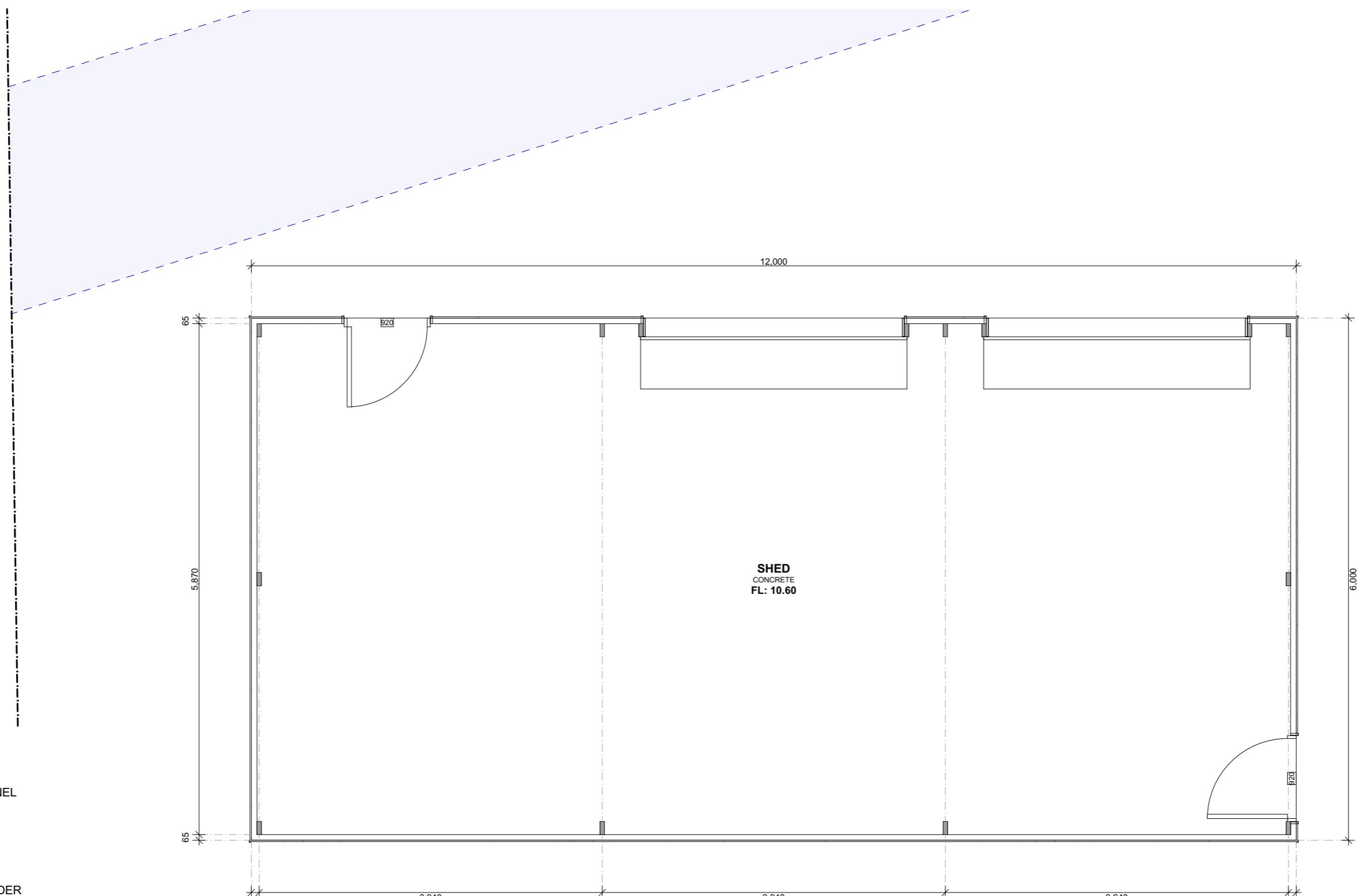
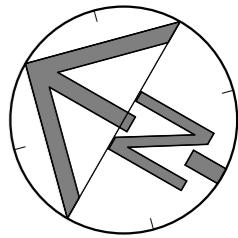
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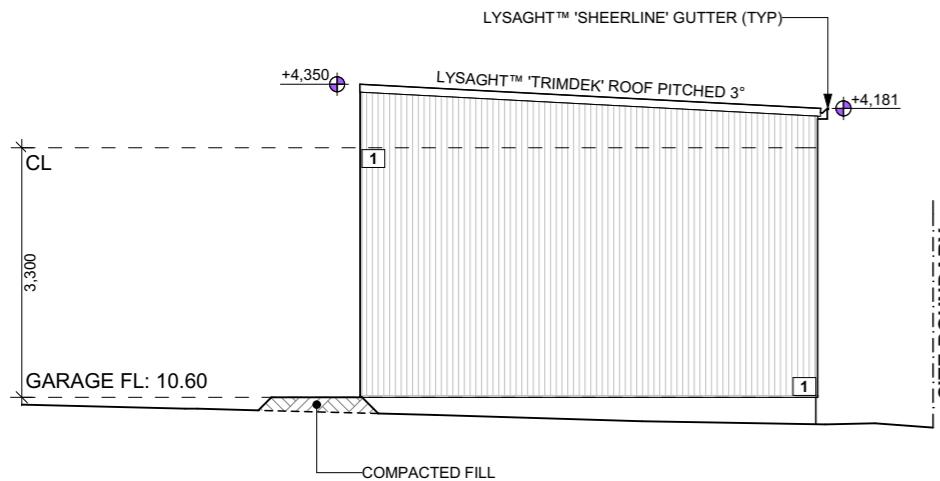
2 9mm FRC CLADDING - SURFMIST

3 19mm TIMBER SHIPLAP CLADDING - CLEAR FINISH

4 RENDERED BLOCKWORK - SURFMIST

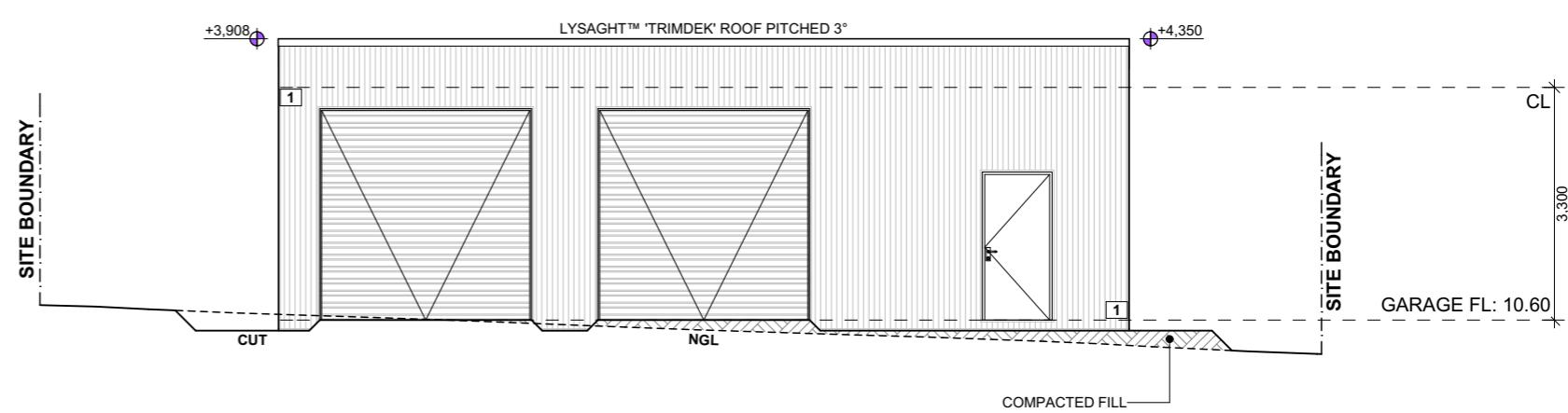






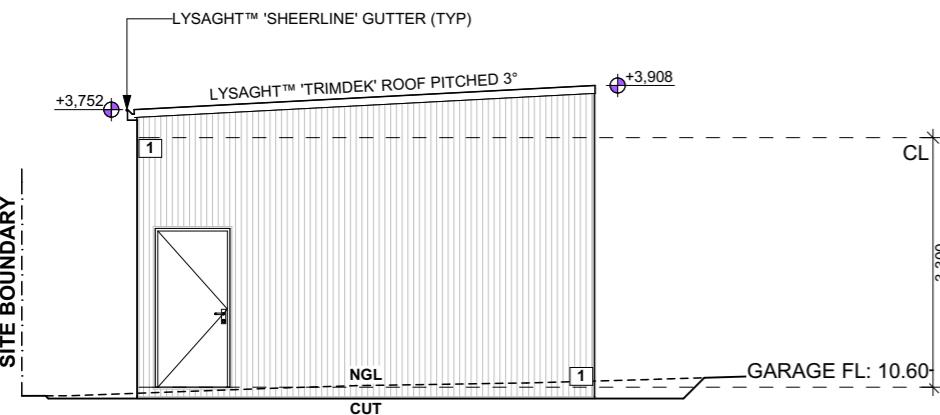
NNW ELEVATION

SCALE 1:100 @A3



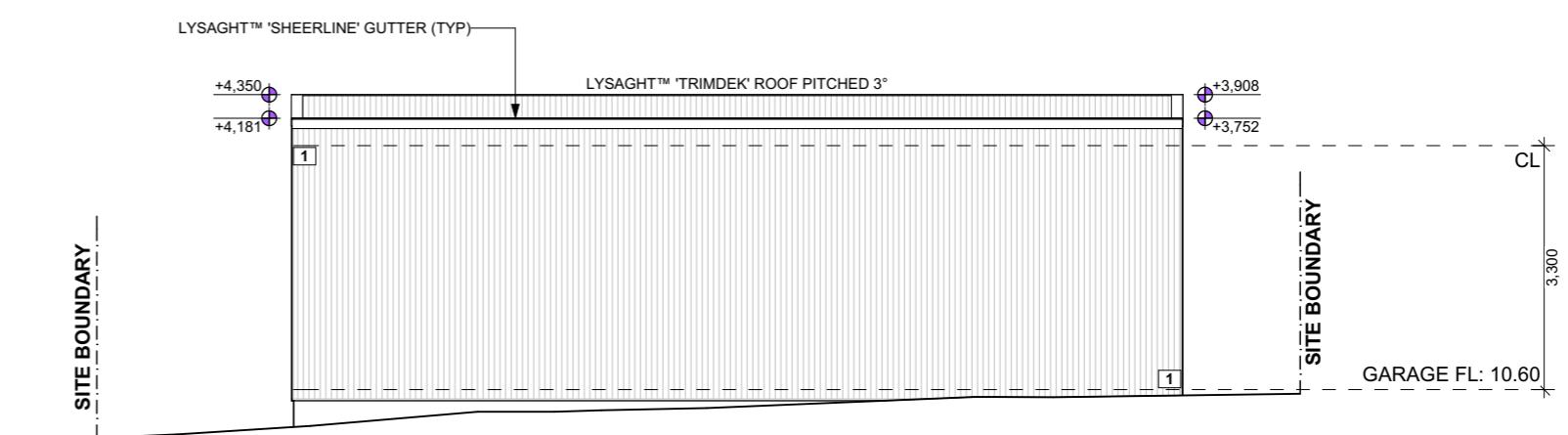
ENE ELEVATION

SCALE 1:100 @A3



SSE ELEVATION

SCALE 1:100 @A3



WSW ELEVATION

SCALE 1:100 @A3

LEGEND:

FG FIXED GLAZING

NGL NATURAL GROUND LINE

+1.234 HEIGHT ABOVE NGL

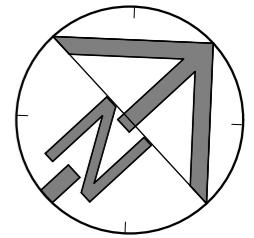
1 LYSAGHT™ 'CUSTOM ORB' MS CLADDING - DOVER WHITE

2 9mm FRC CLADDING - SURFMIST

3 19mm TIMBER SHIPLAP CLADDING - CLEAR FINISH

4 RENDERED BLOCKWORK - SURFMIST

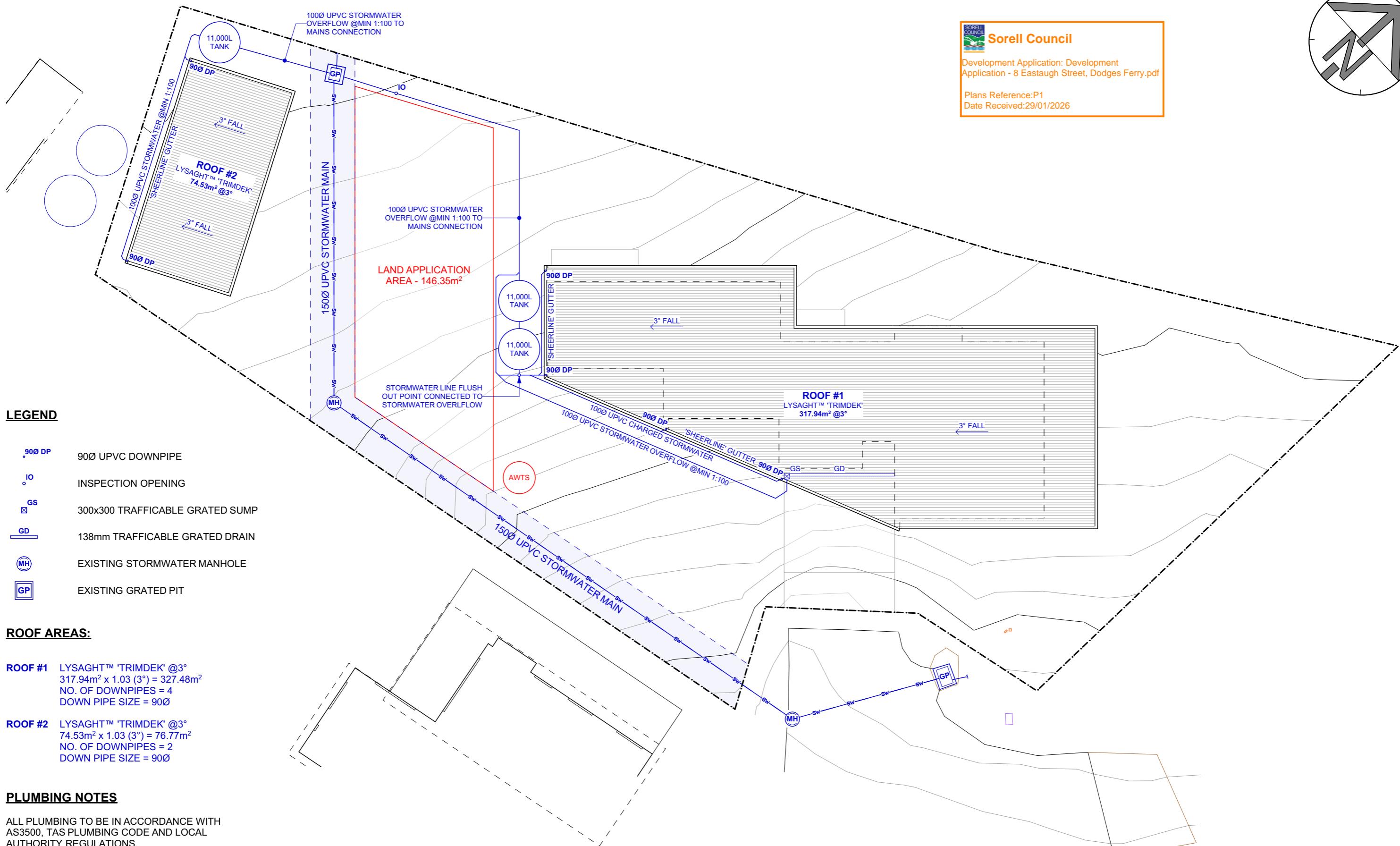




Sorell Council

Development Application: Development Application - 8 Eastaugh Street, Dodges Ferry.pdf

Plans Reference:P1
Date Received:29/01/2026





NORTH PERSPECTIVE

 **Sorell Council**
Development Application: Development Application - 8 Eastaugh Street, Dodges Ferry.pdf
Plans Reference:P1
Date Received:29/01/2026



NORTH-WEST PERSPECTIVE



WEST PERSPECTIVE



SOUTH-WEST PERSPECTIVE



SOUTH PERSPECTIVE



Sorell Council

Development Application: Development
Application - 8 Eastaugh Street, Dodges Ferry.pdf

Plans Reference:P1
Date Received:29/01/2026



SOUTH-EAST PERSPECTIVE



EAST PERSPECTIVE



NORTH-EAST PERSPECTIVE



DINING

 **Sorell Council**

Development Application: Development
Application - 8 Eastaugh Street, Dodges Ferry.pdf

Plans Reference:P1
Date Received:29/01/2026



DINING/LOUNGE



LOUNGE



KITCHEN