



DEVELOPMENT APPLICATION

PDPLANPMTD-2026/061534

PROPOSAL: Dwelling

LOCATION: 19 Pyrmont Road, Rokeby

RELEVANT PLANNING SCHEME: Tasmanian Planning Scheme - Clarence

ADVERTISING EXPIRY DATE: 13/07/2026

The relevant plans and documents can be inspected at the Council offices, 38 Bligh Street, Rosny Park, during normal office hours until 13/07/2026. In addition to legislative requirements, plans and documents can also be viewed at www.ccc.tas.gov.au during these times.

Any person may make representations about the application to the Chief Executive Officer, by writing to PO Box 96, Rosny Park, 7018 or by electronic mail to clarence@ccc.tas.gov.au. Representations must be received by Council on or before 13/07/2026.

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

Any personal information submitted is covered by Council's privacy policy, available at www.ccc.tas.gov.au or at the Council offices.

Planning Application

Use this form to obtain planning approval for the use and development of land, including change of use, subdividing land into smaller lots, lot consolidation, or signage.

Please refer to the Planning Application checklist on the following pages to determine what documentation must be submitted with your application.

Proposal: **New Residence**

Location: **Lot 33 Tasman Rise, Rokeby**

Personal Information Removed

Is the property on the Tasmanian Heritage Register?

Yes No

If yes, we recommend you discuss your proposal with Heritage Tasmania prior to lodgement as



exemptions may apply which may save you time on your proposal.

If you had pre-application discussions with City of Clarence, please provide planner's name:

N/A

Current use of site:

Vacant Lot

Does the proposal involve land administered or owned by the Crown or Council? Yes No

Declaration

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

Acknowledgement

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

Personal Information Removed



Planning Application checklist

Mandatory Documents

This information is required for the application to be valid. We are unable to proceed with an application without these documents.

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

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

Additional Documents

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

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



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

This list is not comprehensive for all possible situations. If you require further information about what may be required as part of your application documentation, please contact City of Clarence Planning team on (03) 6217 9550.



SEARCH OF TORRENS TITLE

VOLUME 189872	FOLIO 33
EDITION 1	DATE OF ISSUE 01-Apr-2026

SEARCH DATE : 08-Apr-2026

SEARCH TIME : 08.47 am

DESCRIPTION OF LAND

City of CLARENCE
 Lot 33 on Sealed Plan [189872](#)
 Derivation : Part of Lot 37617 (56.81ha) Gtd. to The
 Director-General of Housing & Construction
 Prior CT [164406/3](#)

SCHEDULE 1

[M926006](#) TRANSFER to ORIGINAL INSIGHT PTY LTD Registered
 19-Dec-2021 at 12.01 pm

SCHEDULE 2

Reservations and conditions in the Crown Grant if any
[SP189872](#) EASEMENTS in Schedule of Easements
[SP189872](#) COVENANTS in Schedule of Easements
[SP189872](#) FENCING COVENANT in Schedule of Easements
[SP142549](#) COVENANTS in Schedule of Easements
[SP142549](#) FENCING COVENANT in Schedule of Easements
[SP142549](#) WATER SUPPLY RESTRICTION
[SP142549](#) SEWERAGE AND/OR DRAINAGE RESTRICTION
[N194698](#) MORTGAGE to Manda Capital Holdings Pty Ltd
 Registered 21-June-2024 at 12.01 pm
[N280782](#) MORTGAGE to RCCC Civil Contracting Pty Ltd
 Registered 11-Oct-2025 at noon
[E380291](#) AGREEMENT pursuant to Section 78 of the Land Use
 Planning and Approvals Act 1993 Registered
 01-Apr-2026 at noon

UNREGISTERED DEALINGS AND NOTATIONS

N104005 CAVEAT by Manda Capital Holdings Pty Ltd Lodged by
 PAGE SEAGER [Merged] on 16-Dec-2025 BP: N104005

OWNER:
ORIGINAL INSIGHT PTY LTD

FOLIO REFERENCE:
164406/3

GRANTEE:
Part of Lot 37617 (56.81ha) and Part of Lot 37843, (18.21ha) Gtd to The Director-General of Housing & Construction

NEW PLAN OF SURVEY

BY SURVEYOR:
N. J. SWARDS of
LEARY COX & CRIPPS SURVEYORS
Unit G04 40 Mollie Street, HOBART TAS 7000
P 03 6118 2030
E admin@lccsurvey.com

LOCATION:
City of CLARENCE

SCALE 1: 2500

LENGTHS IN METRES

Registered Number
SP 189872

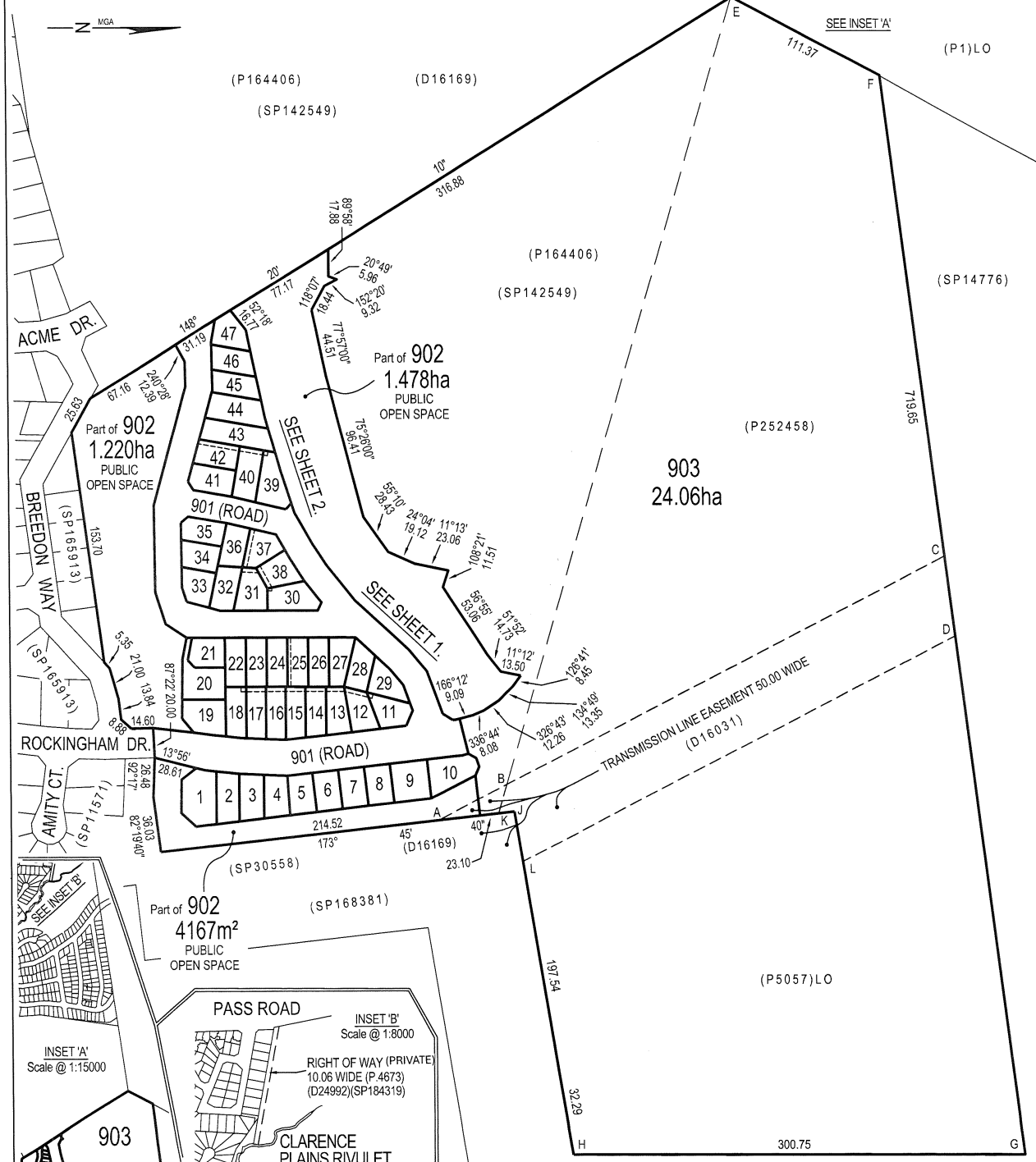
APPROVED EFFECTIVE FROM - 1 APR 2026

N. J. Swards
Recorder of Titles

PRIORITY FINAL PLAN LOTS 902 & 903 HAVE BEEN COMPILED FROM SP164405, P164406 AND THIS SURVEY

INDEX PLAN

ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN



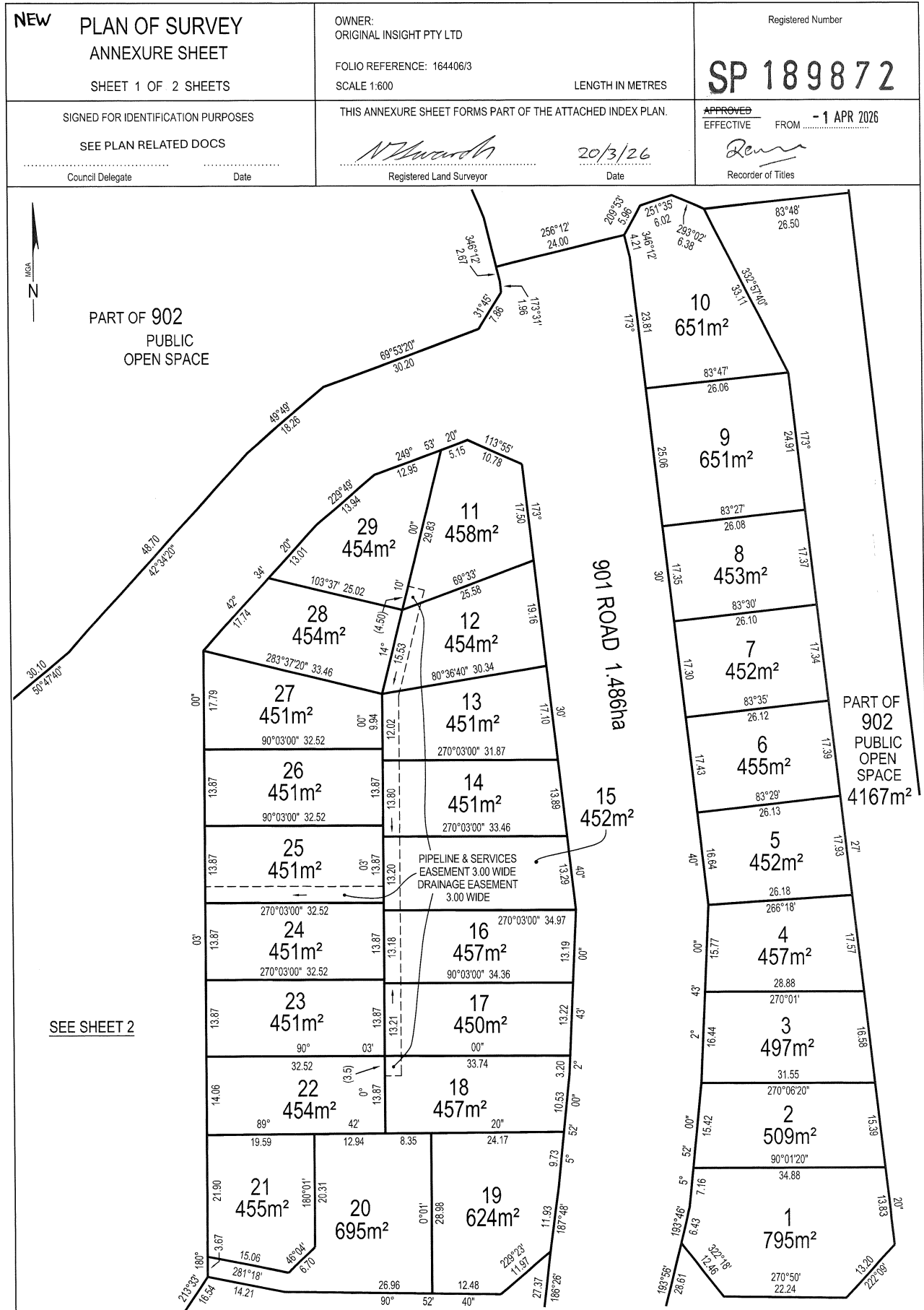
N. J. Swards
Registered Land Surveyor

20/3/26
Date

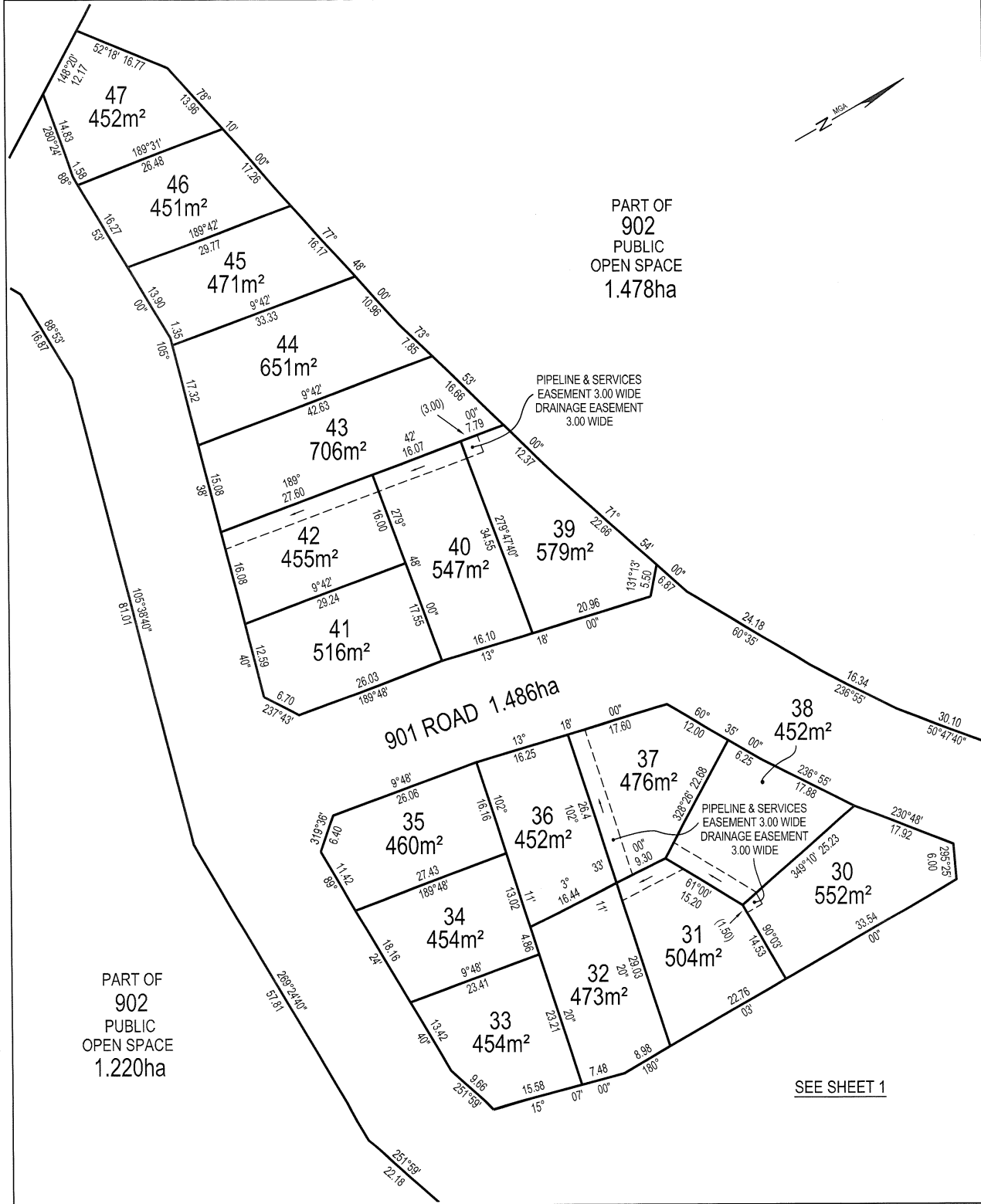
SEE PLAN RELATED DOCS

.....
Council Delegate

.....
Date



<p>NEW PLAN OF SURVEY ANNEXURE SHEET</p> <p>SHEET 2 OF 2 SHEETS</p>	<p>OWNER: ORIGINAL INSIGHT PTY LTD</p>	<p>Registered Number SP 189872</p>
	<p>FOLIO REFERENCE: 164406/3</p> <p>SCALE 1:600</p> <p>LENGTH IN METRES</p>	<p>APPROVED EFFECTIVE FROM - 1 APR 2026</p>
<p>SIGNED FOR IDENTIFICATION PURPOSES</p> <p>SEE PLAN RELATED DOCS</p> <p>..... Council Delegate Date</p>	<p>THIS ANNEXURE SHEET FORMS PART OF THE ATTACHED INDEX PLAN.</p> <p><i>N. Wood</i> 20/3/26 Registered Land Surveyor Date</p>	<p><i>Renn</i> Recorder of Titles</p>



SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP 189872

PAGE 1 OF 7 PAGES

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.

NEW EASEMENTS

Lots 11 to 18 (inclusive), 25, 30, 31, 37, 38, 39, 40 and 42 on the Plan are each SUBJECT TO a Pipeline and Services Easement (as defined herein) in gross in favour of the Tasmanian Water and Sewerage Corporation Pty Limited, its successors and assigns ("TasWater") over that part of the respective Lot marked "PIPELINE & SERVICES EASEMENT 3.00 WIDE DRAINAGE EASEMENT 3.00 WIDE" on the Plan ("the Easement Land").

Lots 11 to 18 (inclusive), 25, 30, 31, 37, 38, 39, 40 and 42 on the Plan are each SUBJECT TO a right of drainage in gross in favour of Clarence City Council over that part of the respective Lot marked "PIPELINE & SERVICES EASEMENT 3.00 WIDE DRAINAGE EASEMENT 3.00 WIDE" on the Plan.

EXISTING EASEMENTS

Each Lot on the Plan (but excluding that part of Lot 903 marked "EFGHJK") is TOGETHER WITH a right of way over the area marked "RIGHT OF WAY, 10.06 WIDE" on the Plan more fully defined in SP142549. (PRIVATE)

Lots 902 & 903 are
~~Lot 902~~ on the Plan is SUBJECT TO a Transmission Line Easement (in favour of the Hydro Electric Commission) over that part of the Lot marked "TRANSMISSION LINE EASEMENT 50.00 WIDE" on the Plan and as created by and more fully set forth in SP142549.

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: Original Insight Pty Ltd (ACN 168 660 786) FOLIO REF: Volume 164406 Folio 3 SOLICITOR & REFERENCE: Butler, McIntyre & Butler: 250343	PLAN SEALED BY: Clarence City Council DATE: 3 MARCH 2026 PDP PLAN PMTD - REF NO. 20211 024236 Council Delegate Peter Warnekin - ACTING HO
<p>NOTE: The Council Delegate must sign the Certificate for the purposes of identification.</p>	

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<p>ANNEXURE TO SCHEDULE OF EASEMENTS</p> <p>PAGE 2 OF 7 PAGES</p>	<p>Registered Number</p> <p>SP 189872</p>
<p>SUBDIVIDER: Original Insight Pty Ltd (ACN 168 660 786) FOLIO REFERENCE: Volume 164406 Folio 3</p>	

EXISTING COVENANTS

Each Lot on the Plan is burdened by the restrictive covenants created by and more fully set forth in SP142549.

FENCING COVENANT

The owner of each Lot on the Plan covenants with Original Insight Pty Ltd (ACN 168 660 786) (“the Vendor”) that the Vendor shall not be required to fence.

DEFINITIONS

“**Pipeline and Services Easement**” means:-

THE FULL RIGHT AND LIBERTY for TasWater at all times to:

- (1) enter and remain upon the Easement Land with or without employees, contractors, agents and all other persons duly authorised by it and with or without machinery, vehicles, plant and equipment;
- (2) investigate, take soil, rock and other samples, survey, open and break up and excavate the Easement Land for any purpose or activity that TasWater is authorised to do or undertake;
- (3) install, retain, operate, modify, relocate, maintain, inspect, cleanse and repair the Infrastructure;
- (4) remove and replace the Infrastructure;
- (5) run and pass sewage, water and electricity through and along the Infrastructure;
- (6) do all works reasonably required in connection with such activities or as may be authorised or required by any law:
 - (1) without doing unnecessary damage to the Easement Land; and
 - (2) leaving the Easement Land in a clean and tidy condition; and
- (7) if the Easement Land is not directly accessible from a highway, then for the purpose of undertaking any of the preceding activities TasWater may with or without employees, contractors, agents and all other persons authorised by it, and with or without machinery, vehicles, plant and equipment enter the Lots from the highway at any then existing vehicle entry and cross the Lots to the Easement Land; and



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.

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<p>ANNEXURE TO SCHEDULE OF EASEMENTS</p> <p>PAGE 3 OF 7 PAGES</p>	<p>Registered Number</p> <p>SP 189872</p>
<p>SUBDIVIDER: Original Insight Pty Ltd (ACN 168 660 786) FOLIO REFERENCE: Volume 164406 Folio 3</p>	

(8) use the Easement Land as a right of carriageway for the purpose of undertaking any of the preceding purposes on other land, TasWater reinstating any damage that it causes in doing so to any boundary fence of the Lots.

PROVIDED ALWAYS THAT:

(1) The registered proprietors of the Lots in the folio of the Register ("the Owner") must not without the written consent of TasWater first had and obtained and only in compliance with any conditions which form the consent:

- (a) alter, excavate, plough, drill or otherwise penetrate the ground level of the Easement Land;
- (b) install, erect or plant any building, structure, fence, pit, well, footing, pipeline, paving, tree, shrub or other object on or in the Easement Land;
- (c) remove any thing that supports, protects or covers any Infrastructure on or in the Easement Land;
- (d) do any thing which will or might damage or contribute to damage to any of the Infrastructure on or in the Easement Land;
- (e) in any way prevent or interfere with the proper exercise and benefit of the Easement Land by TasWater or its employees, contractors, agents and all other persons duly authorised by it; or
- (f) permit or allow any action which the Owner must not do or acquiesce in that action.

(2) TasWater is not required to fence any part of the Easement Land.

(3) The Owner may erect a fence across the Easement Land at the boundaries of the Lots.

(4) The Owner may erect a gate across any part of the Easement Land subject to these conditions:

- (a) the Owner must provide TasWater with a key to any lock which would prevent the opening of the gate; and
- (b) if the Owner does not provide TasWater with that key or the key provided does not fit the lock, TasWater may cut the lock from the gate.

(5) If the Owner causes damage to any of the Infrastructure, the Owner is liable for the actual cost to TasWater of the repair of the Infrastructure damaged.



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<p>ANNEXURE TO SCHEDULE OF EASEMENTS</p> <p>PAGE 4 OF 7 PAGES</p>	<p>Registered Number</p> <p>SP 189872</p>
<p>SUBDIVIDER: Original Insight Pty Ltd (ACN 168 660 786) FOLIO REFERENCE: Volume 164406 Folio 3</p>	

- (6) If the Owner fails to comply with any of the preceding conditions, without forfeiting any right of action, damages or otherwise against the Owner, TasWater may:
- (a) reinstate the ground level of the Easement Land; or
 - (b) remove from the Easement Land any building, structure, pit, well, footing, pipeline, paving, tree, shrub or other object; or
 - (c) replace any thing that supported, protected or covered the Infrastructure.

“Infrastructure” means infrastructure owned or for which TasWater is responsible and includes but is not limited to:

- (a) sewer pipes and water pipes and associated valves;
- (b) telemetry and monitoring devices;
- (c) inspection and access pits;
- (d) power poles and lines, electrical wires, electrical cables and other conducting media (excluding telemetry and monitoring devices);
- (e) markers or signs indicating the location of the Easement Land, the Infrastructure or any warnings or restrictions with respect to the Easement Land or the Infrastructure;
- (f) any thing reasonably required to support, protect or cover any of the Infrastructure;
- (g) any other infrastructure whether of a similar nature or not to the preceding which is reasonably required for the piping of sewage or water, or the running of electricity, through the Easement Land or monitoring or managing that activity; and
- (h) where the context permits, any part of the Infrastructure.



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ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 5 OF 7 PAGES	Registered Number SP 189872
SUBDIVIDER: Original Insight Pty Ltd (ACN 168 660 786) FOLIO REFERENCE: Volume 164406 Folio 3	

Executed by **Original Insight Pty Ltd (ACN 168 660 786)**, the Registered Proprietor of the land contained in Certificate of Title Volume 164406 Folio 3 in accordance with section 127 of the Corporations Act 2001 (Cth) by being signed by:



Seyon Won
 Sole Director and Company Secretary

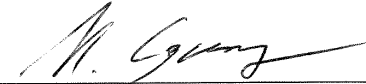
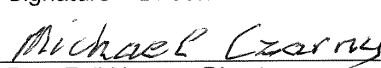

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NOTE: Every annexed page must be signed by the parties to the dealing or where the party is a corporate body be signed by the persons who have attested the affixing of the seal of that body to the dealing.

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ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 6 OF 7 PAGES	Registered Number SP 189872
SUBDIVIDER: Original Insight Pty Ltd (ACN 168 660 786) FOLIO REFERENCE: Volume 164406 Folio 3	

Executed by **Manda Capital Holdings Pty Ltd (ACN 168 795 088)**, the Registered Mortgagee of the land contained in Certificate of Title Volume 164406 Folio 3 under Mortgage N194698 in accordance with section 127 of the Corporations Act 2001 (Cth) by being signed by:


 Signature – Director

 Print Full Name – Director

 Signature – Director/~~Company Secretary*~~ *3/03/26*
 Print Full Name – Director/~~Company Secretary*~~
 *Delete whichever is inapplicable *3/03/26*

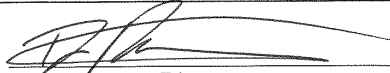
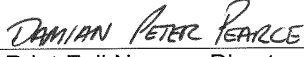

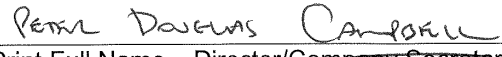
* BRADLEY JOHN WALSH
SOLICITOR FOR THE VENDOR

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ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 7 OF 7 PAGES	Registered Number SP 189872
SUBDIVIDER: Original Insight Pty Ltd (ACN 168 660 786) FOLIO REFERENCE: Volume 164406 Folio 3	

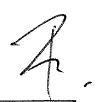
Executed by **RCCC Civil Contracting Pty Ltd (ACN 097 095 611)**, the Registered Mortgagee of the land contained in Certificate of Title Volume 164406 Folio 3 under Mortgage N280782 in accordance with section 127 of the Corporations Act 2001 (Cth) by being signed by:


 Signature – Director

 Print Full Name – Director

 Signature – Director/~~Company Secretary*~~

 Print Full Name – Director/~~Company Secretary*~~

*Delete whichever is inapplicable

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.

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SCHEDULE OF EASEMENTS	Registered Number
NOTE: THE SCHEDULE MUST BE SIGNED BY THE OWNERS & MORTGAGEES OF THE LAND AFFECTED. SIGNATURES MUST BE ATTESTED.	SP142549

PAGE 1 OF 4 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.

Rights of carriageway hereon deleted by me pursuant to Request to Amend No. E296066 made under Section 103 of the Local Government (Building & Miscellaneous Provisions) Act 1993


Recorder of Titles 13 SEP 2022
Date

EASEMENTS

Lot 1 and Lot 2 are together with a right of way over the Right of Way (Private) 10.06 metres wide shown on the plan.

Lot 3 (but excluding that part of Lot 3 marked "EFGHJK") is together with a right of way over the Right of Way (Private) 10.06 metres wide shown on the plan.

~~Lot 2 is together with a right of carriageway over that portion of the Right of Way (Private) 6.00 metres wide showing passing through Lot 1.~~


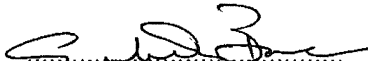
~~Lot 3 is together with a right of carriageway over that portion of the Right of Way (Private) 6.00 metres wide shown passing through Lot 1 and Lot 2.~~

~~Lot 1 is subject to a right of carriageway over that portion of the Right of Way (Private) 6.00 metres wide shown passing through Lot 1, appurtenant to Lot 2 and Lot 3.~~

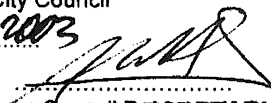
~~Lot 2 is subject to a right of carriageway over that portion of the Right of Way (Private) 6.00 metres wide shown passing through Lot 2, appurtenant to Lot 3.~~

Lot 3 is subject to a Transmission Line Easement for the Hydro Electric Commission over that portion of the Transmission Line Easement 50.00 metres wide shown on Lot 3 outside that part of Lot 3 marked "EFGHJK", as shown on the plan.

Lot 3 is subject to a Transmission Line Easement for the Hydro Electric Commission in the terms created by and more fully set out in A751455 over that portion of the Transmission Line Easement 50.00 metres wide shown within that part of Lot 3 marked "EFGHJK", as shown on the plan.

Signed by the Vendor  
Robert Duncan Drewe Ann Candida Baker

(USE ANNEXURE PAGES FOR CONTINUATION)

SUBDIVIDER: Ann Candida Baker and Robert Duncan Drewe FOLIO REF: 252324/1 and 252458/1 SOLICITOR & REFERENCE: Peter Worrall Lawyers (Matthew Pawson)	PLAN SEALED BY: Clarence City Council DATE: 4 DECEMBER 2003 10-2003/100 REF NO.  CORPORATE SECRETARY CLARENCE CITY COUNCIL
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NOTE: The Council Delegate must sign the Certificate for the purposes of identification.

<p>ANNEXURE TO SCHEDULE OF EASEMENTS</p> <p>PAGE 2 OF 4 PAGES</p>	<p>Registered Number</p> <p>SP 142549</p>
<p>SUBDIVIDER: Ann Candida Baker and Robert Duncan Drewe FOLIO REFERENCE: 252324/1 and 252458/1</p>	

COVENANTS

The Owner of each Lot covenants with ROBERT DUNCAN DREWE and ANN CANDIDA BAKER and the Owner or Owners for the time being of every other Lot shown on the plan to the intent that the burden of these covenants may run with and bind the covenantor's Lot and every part thereof and that the benefit thereof shall be annexed to and devolve with each and every part of every other Lot shown on the plan to observe the following stipulations:

1. Not to subdivide that Lot at any time without the prior consent in writing of the Corporation;
2. Not to erect on that Lot more than a single residence, which may include an ancillary apartment together with usual outbuildings as may be permitted by the Corporation, without the consent of the Corporation;
3. Not to use the land for any purpose except as a residence or for the purpose of house occupation without the prior consent of the Corporation in writing.
4. Not to use any engine or machinery in any trade or business, nor erect or use or permit to be used on any part of any lot shown on the Plan nor to conduct or permit to be conducted any trade or business on or from any part of the same, including but not limited to mining, quarrying or market gardening. The leasing of the property for private residential purposes is not deemed to be a breach of this covenant.
- 5.. Not to keep any animals other than domestic pets on any lot shown on the Plan and not to make any application for a kennel licence in respect of any lot shown on the Plan nor to keep or establish or permit to be kept or established any licensed kennel upon any lot or any part of any lot shown on the Plan nor to keep at one time more than two adult canines on any lot shown on the Plan.
6. The Vendor may, at the Vendor's absolute discretion, waive the burden of any covenant contained in this Schedule of Easements in favour of any lot by notice in writing to the registered proprietor of that lot.


FENCING COVENANT

In respect of each Lot shown on the plan, the Vendor ROBERT DUNCAN DREWE and ANN CANDIDA BAKER shall not be required to fence.

Signed by the Vendor



.....
Robert Duncan Drewe



.....
Ann Candida Baker

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.

ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 3 OF 4 PAGES	Registered Number SP142549
SUBDIVIDER: Ann Candida Baker and Robert Duncan Drewe FOLIO REFERENCE: 252324/1 and 252458/1	

INTERPRETATION

“right of way over the Right of Way (Private) 10.06 metres wide” means the right and liberty for Reginald Chipman the owner of the said land within described his successors in title his and their executors administrators and assigns his and their servants and workmen and all other by his or their permission full right and liberty at all times by day or by night and for all purposes with or without horses carts carriages waggons and other vehicles laden or unladen to go pass and repass and to drive cattle sheep and other animals along over and upon all that strip of land marked A.B.C.D. on Diagram No. 24992 and shown as Right of Way (Private) 10.06 wide on the plan.

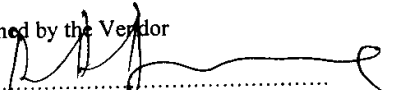
“right of carriageway over the Right of Way (Private) 6.00 metres wide” is defined in the Schedule 8 of the *Conveyancing Law and Property Act 1884*.

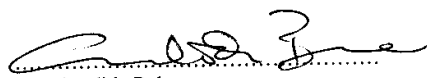
“Transmission Line Easement” means the full and free right and liberty for the Hydro Electric Commission and its successors and its and their servants agents and workmen at all times hereafter:

- (a) to clear the lands marked "Transmission Line Easement 50.00 wide on Diagram No. 16169 (the said lands being portion of the said land within described and being hereinafter called "the servient land") and to erect place inspect alter and repair renew maintain and use in upon and over and along and remove from the servient land towers poles wires cables apparatus appliances and other ancillary works (all of which are hereinafter collectively referred to as "the said lines") for the transmission and distribution of electrical energy and for purposes incidental thereto;
- (b) to cause or permit energy to flow or be transmitted through and along the said lines;
- (c) to cut away remove and keep clear of the said lines all trees and all other obstructions or erections of any nature whatsoever which may at any time overhang encroach or be in or on the servient land and which may in any way endanger or interfere with the proper operation of the said lines; and
- (d) to enter into and upon the servient land for all or any of the above purposes with or without all necessary plant equipment machinery and vehicles of every kind.

“Corporation” means the Warden Councillors and Electors of the City of Clarence.

SEE OVER FOR EXECUTION

Signed by the Vendor

 Robert Duncan Drewe

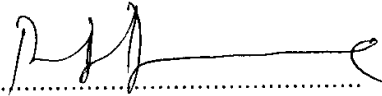

 Ann Candida Baker

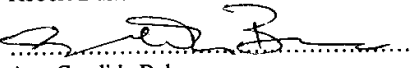
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ANNEXURE TO SCHEDULE OF EASEMENTS PAGE 4 OF 4 PAGES	Registered Number SP 142549
SUBDIVIDER: Ann Candida Baker and Robert Duncan Drewe FOLIO REFERENCE: 252324/1 and 252458/1	

EXECUTION

Signed by the Vendor)
 ROBERT DUNCAN DREWE and)
 ANN CANDIDA BAKER)
 in the presence of)



 Robert Duncan Drewe



 Ann Candida Baker

Witness Signature.....
 Witness Name.. BEVERLEY CALLOW
 Witness Address.. 73 HIGGINS HWY RD. PRETTY BEACH 2287
 Witness Occupation.. PERFORMER / TEACHER

Signed for an on behalf of)
 NATIONAL AUSTRALIA BANK)
 as mortgagee of Folios of the Register)
 Volume 252324 Folio 1 and)
 Volume 252458 Folio 1)
 by its authorised officer(s))
 in the presence of)

Witness Signature.....
 Witness Name.....
 Witness Address.....
 Witness Occupation.....

Executed by NATIONAL AUSTRALIA BANK LIMITED)
 by its Attorney Andrew Michael Downie under Power of)
 Attorney No. 67/0241 and amended by 71/5033 (who)
 states that he holds the office in the NATIONAL AUSTRALIA)
 BANK LIMITED indicated under his signature and who declares)
 he has received no notice of revocation of the said Power) in the)
 presence of:)



 Mobile Manager Manager



Jenny Doran, Bank Officer
 76 Liverpool Street, Hobart

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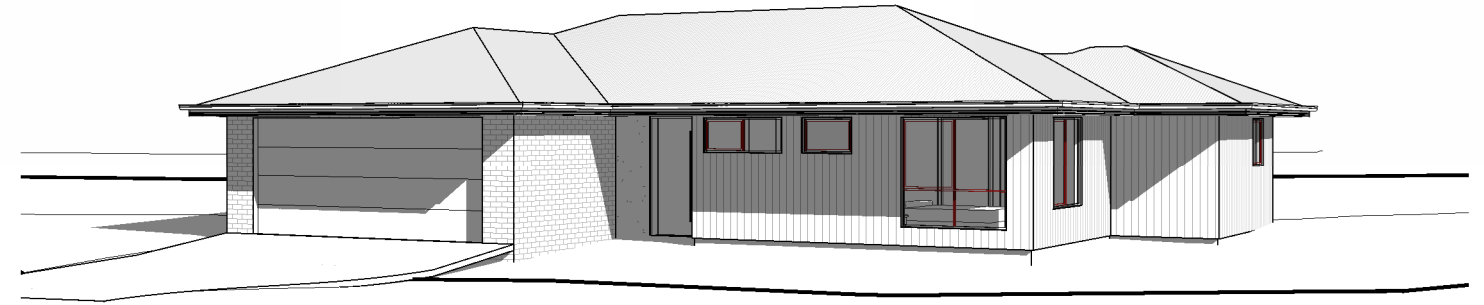
PROPOSED NEW RESIDENCE

LOT 33 TASMAN RISE,

ROKEBY

ORIGINAL INSIGHT PTY. LTD.

PD26028



BUILDING DRAWINGS

No	DRAWING
01	SITE PLAN
02	SITE DRAINAGE PLAN
03	LOCALITY PLAN
04	FLOOR PLAN
05	DOOR AND WINDOW SCHEDULES
06	ELEVATIONS
07	ELEVATIONS
08	ROOF PLAN
09	PERSPECTIVES

THIS PROJECT HAS BEEN DETERMINED TO HAVE A BUSHFIRE ATTACK LEVEL (BAL) OF - **BAL LOW**
ALL CONSTRUCTION MUST COMPLY WITH AS3959.
THERE ARE NO CONSTRUCTION REQUIREMENTS FOR BAL LOW

GENERAL PROJECT INFORMATION

TITLE REFERENCE: 189872/33
SITE AREA: 454m²
DESIGN WIND SPEED: N2
SOIL CLASSIFICATION: H-1
CLIMATE ZONE: 7
ALPINE AREA: NO
CORROSIVE ENVIRONMENT: NO
BAL RATING: LOW
OTHER KNOWN HAZARDS: PRIORITY VEGETATION AREA, WATERWAY AND COASTAL PROTECTION AREA, AIRPORT OBSTACLE LIMITATION AREA, FLOOD-PRONE AREAS, INNER PROTECTION AREA, ELECTRICITY TRANSMISSION CORRIDOR, LOW LANDSLIP HAZARD BAND

FLOOR AREA	107.42 m ²	(11.56 SQUARES)
GARAGE AREA	40.45 m ²	(4.35 SQUARES)
TOTAL AREA	147.87 m ²	15.92 SQUARES

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H: Shop 9, 105-111 Main Road, Moonah, 7009
p(h) + 03 6228 4575
info@primedesigntas.com.au
Accredited Building Practitioner:

 **bdca**
BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

primedesigntas.com.au
Frank Geskus -No CC246A

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REV.	DATE	DESCRIPTION
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JUNE 2026

PLANNING

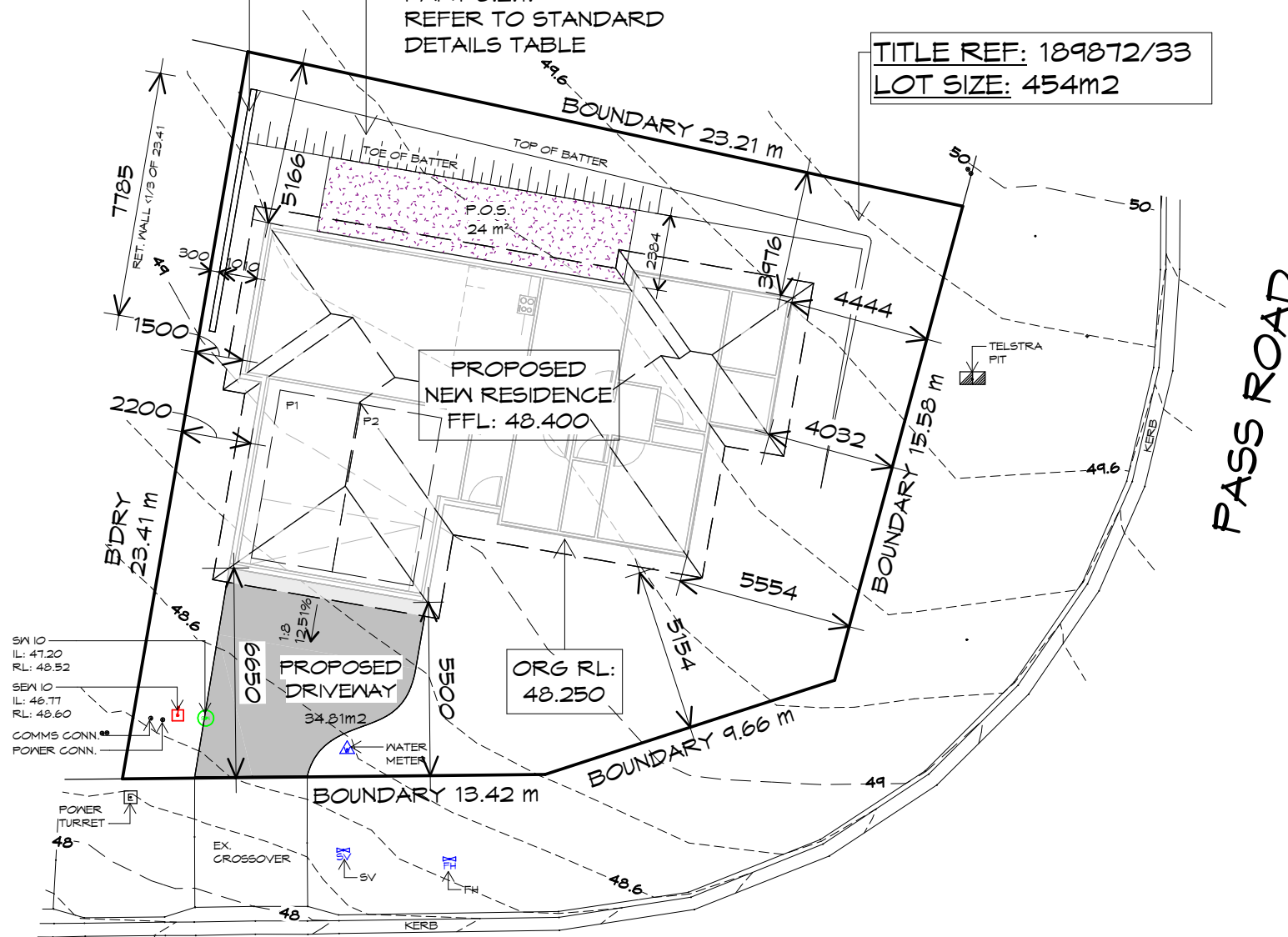


THIS PROJECT HAS BEEN DETERMINED TO HAVE A BUSHFIRE ATTACK LEVEL (BAL) OF - BAL LOW
 ALL CONSTRUCTION MUST COMPLY WITH AS3959.
 THERE ARE NO CONSTRUCTION REQUIREMENTS FOR BAL LOW

LANDSCAPE RETAINING WALL
 INSTALL PER MANUFACTURERS
 SPEC.

BATTER NOTE
 BATTER AS PER
 ABCB HOUSING PROVISIONS
 PART 3.2.1.
 REFER TO STANDARD
 DETAILS TABLE

TITLE REF: 189872/33
 LOT SIZE: 454m²



PASS ROAD

SITE PLAN

1 : 200

NOTE: DIMENSIONED BOUNDARY OFFSETS TO THE PROPOSED BUILDING ARE TO THE EXTERNAL CLADDING U.N.O.

SETBACKS
 REFER TO DIMENSIONS AND ELEVATIONS FOR FURTHER DETAILS.

GARAGE IS LOCATED WITHIN 12m OF THE PRIMARY FRONTAGE, OPENING WIDTH IS 5.1m

SITE COVERAGE
 BUILDING FOOTPRINT 147.89 / SITE AREA 454 = 0.325
 TOTAL SITE COVERAGE 32%

PRIVATE OPEN SPACE
 24m² MINIMUM,
 WITH A MINIMUM DIMENSION OF 4m
 GRADIENT NO STEEPER THAN 1:10

GENERAL NOTES

- CHECK & VERIFY ALL DIMENSIONS & LEVELS ON SITE
- WRITTEN DIMENSIONS TO TAKE PREFERENCE OVER SCALED
- ALL WORK TO BE STRICTLY IN ACCORDANCE WITH NCC 2022, ALL S.A.A. CODES & LOCAL AUTHORITY BY-LAWS
- ALL DIMENSIONS INDICATED ARE FRAME TO FRAME AND DO NOT ALLOW FOR WALL LININGS
- CONFIRM ALL FLOOR AREAS
- ALL PLUMBING WORKS TO BE STRICTLY IN ACCORDANCE WITH A.S. 3500, NCC 2022 & APPROVED BY COUNCIL INSPECTOR
- BUILDER/PLUMBER TO ENSURE ADEQUATE FALL TO SITE CONNECTION POINTS IN ACCORDANCE WITH A.S. 3500 FOR STORMWATER AND SEWER BEFORE CONSTRUCTION COMMENCES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE ENGINEER'S STRUCTURAL DRAWINGS
- ALL WINDOWS AND GLAZING TO COMPLY WITH A.S. 1288 & A.S. 2047
- ALL SET OUT OF BUILDINGS & STRUCTURES TO BE CARRIED OUT BY A REGISTERED LAND SURVEYOR AND CHECKED PRIOR TO CONSTRUCTION
- IF CONSTRUCTION OF THE DESIGN IN THIS SET OF DRAWINGS DIFFER FROM THE DESIGN AND DETAIL IN THESE AND ANY ASSOCIATED DOCUMENTS BUILDER AND OWNER ARE TO NOTIFY DESIGNER
- BUILDER'S RESPONSIBILITY TO COMPLY WITH ALL PLANNING CONDITIONS
- BUILDER TO HAVE STAMPED BUILDING APPROVAL DRAWINGS AND PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION
- CONSTRUCTION TO COMPLY WITH AS 3959, READ IN CONJUNCTION WITH BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT REPORT.
- DRAWINGS ARE REQUIRED TO BE VIEWED OR PRINTED IN COLOUR.

SURVEYOR NOTE:
 IMPORTANT NOTE:

THIS PLAN HAS BEEN PREPARED FOR KNEST FROM A COMBINATION OF FIELD SURVEY AND EXISTING RECORDS FOR THE PURPOSE OF DESIGNING NEW CONSTRUCTIONS ON THE LAND AND SHOULD NOT BE USED FOR ANY OTHER PURPOSE.

UNDERGROUND SERVICES HAVE NOT BEEN LOCATED.

THE RELEVANT AUTHORITIES SHOULD BE CONTACTED REGARDING THE LOCATION OF UNDERGROUND UTILITIES (TELSTRA, WATER MAINS, SEWER, DRAINAGE, GAS) WHICH REQUIRE VERIFICATION ON SITE BEFORE CONSTRUCTION.

THIS DATA IS ON A PLANE COORDINATE SYSTEM -

DISTANCES ARE WHAT WOULD BE MEASURED ON THE GROUND USING A TAPE MEASURE. THE COORDINATES HAVE AN MGA2020 ORIGIN AT SPM9529 (E:536564.131 N:5251746.728 RL:56.30)
 THE COMBINED SCALE FACTOR (CSF) TO BE APPLIED TO CONVERT TO MGA2020 COORDINATE SYSTEM IS 0.99960760 USING SPM9529 AS THE SCALE ORIGIN POINT.

BOUNDARIES ARE PROVISIONAL ONLY AND HAVE BEEN SUPPLIED BY LEARY, COX & CRIPPS SURVEYORS

DATUM: PLANE MGA BASED ON SPM9529
 CONOUR INTERVAL: 200MM

DRIVEWAY GRADIENT
 MAXIMUM GRADIENT 1:4 (25%)
 TO AS 2890

CAR PARKING GRADIENT
 PARALLEL TO PARKING ANGLE 1:20 (5%)
 CROSSFALL 1:16 (6.25%)



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Client name:
 ORIGINAL INSIGHT PTY. LTD.

Project:
 PROPOSED NEW RESIDENCE
 LOT 33 TASMAN RISE,
 ROKEBY

Date:
 23.06.2026

Drafted by:
 L.L.

Approved by:
 Approver

Project/Drawing no:
 PD26028 - 01

Scale:
 1 : 200

Revision:
 01

Accredited building practitioner: Frank Geskus - No CC246A
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REV. DATE DESCRIPTION

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Drawing:
 SITE PLAN

THIS PROJECT HAS BEEN DETERMINED TO HAVE A BUSHFIRE ATTACK LEVEL (BAL) OF - BAL LOW
 ALL CONSTRUCTION MUST COMPLY WITH AS3959.
 THERE ARE NO CONSTRUCTION REQUIREMENTS FOR BAL LOW

LEGEND

- GP 450X 450 SURFACE DRAINAGE PIT
- NET AREAS
- SEWER LINE
- STORMWATER LINE
- 100φ AG DRAIN

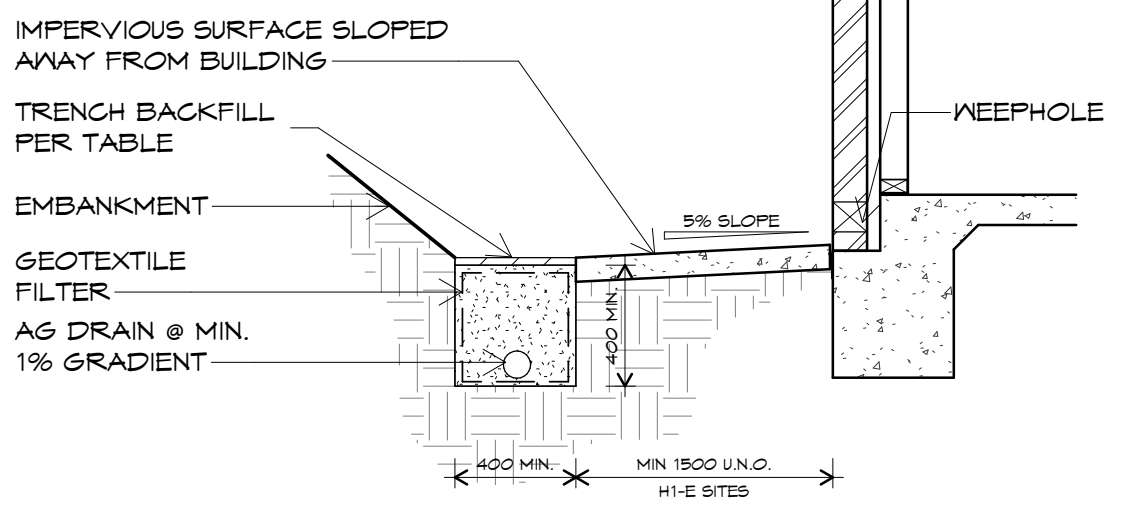
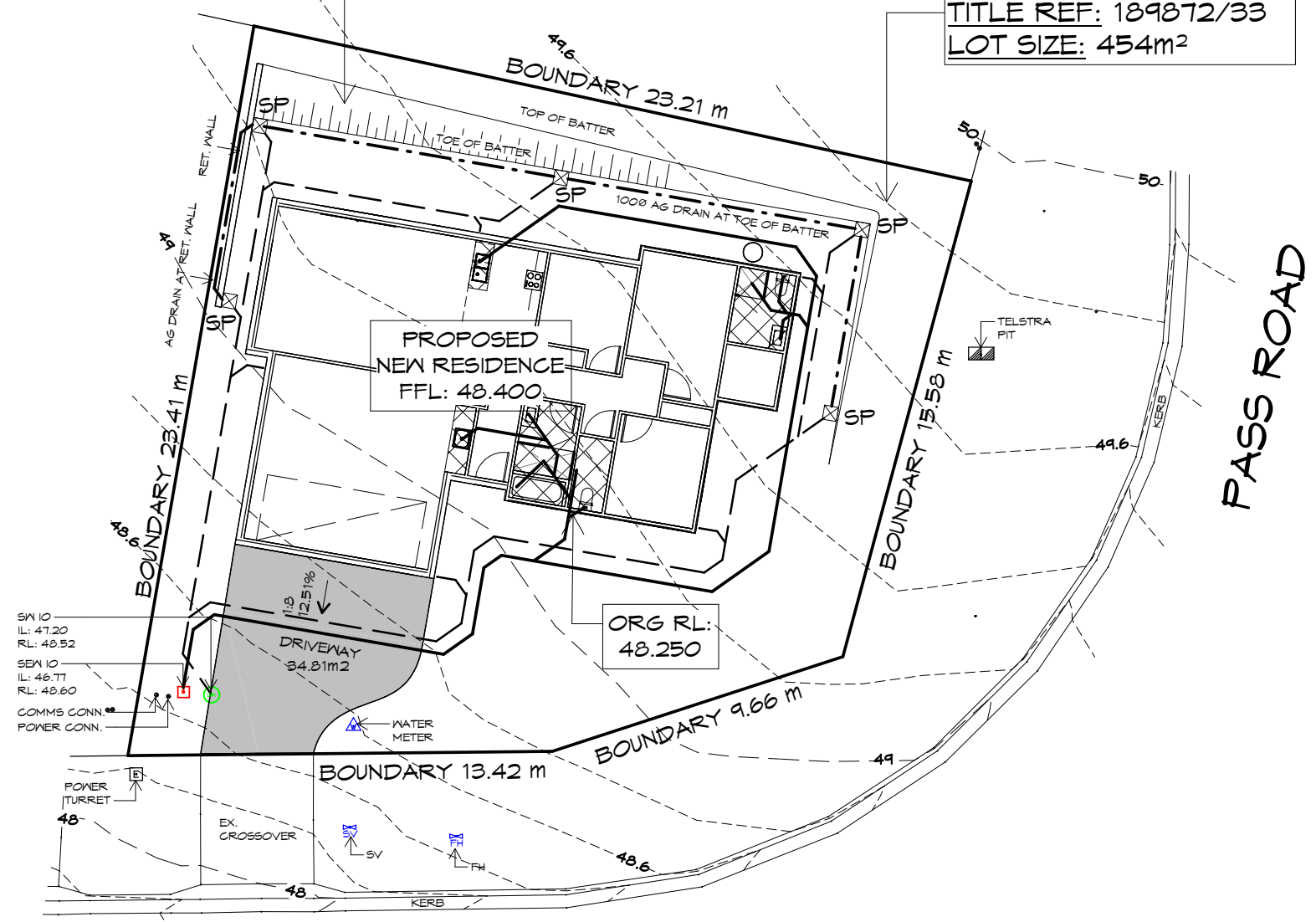
BATTER NOTE
 BATTER AS PER
 ABCB HOUSING PROVISIONS
 PART 3.2.1.
 REFER TO STANDARD
 DETAILS TABLE

TITLE REF: 189872/33
 LOT SIZE: 454m²

PLUMBING NOTES:
 ALL DRAINAGE WORK SHOWN IS PROVISIONAL
 ONLY AND IS SUBJECT TO AMENDMENT TO
 COMPLY WITH THE REQUIREMENTS OF THE LOCAL
 AUTHORITIES.
 ALL WORK IS TO COMPLY WITH THE REQUIREMENTS
 OF AS 3500.2021 & THE TASMANIAN PLUMBING CODE.
 AND MUST BE CARRIED OUT BY A LICENCED
 TRADESMAN ONLY.

TRENCH BACKFILL PER SITE CLASS
 TO COMPLY WITH AS2870 PART 5.6.3

SOIL CLASS	BACKFILL MATERIAL
A-S	CRUSHED DRAINAGE ROCK
M-E	COMPACTED CLAY



SITE DRAINAGE
 1 : 200

TYPICAL AG DRAIN DETAIL
 N.T.S.



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REV. DATE DESCRIPTION

Client name:
 ORIGINAL INSIGHT PTY. LTD.

Project:
 PROPOSED NEW RESIDENCE
 LOT 33 TASMAN RISE,
 ROKEBY

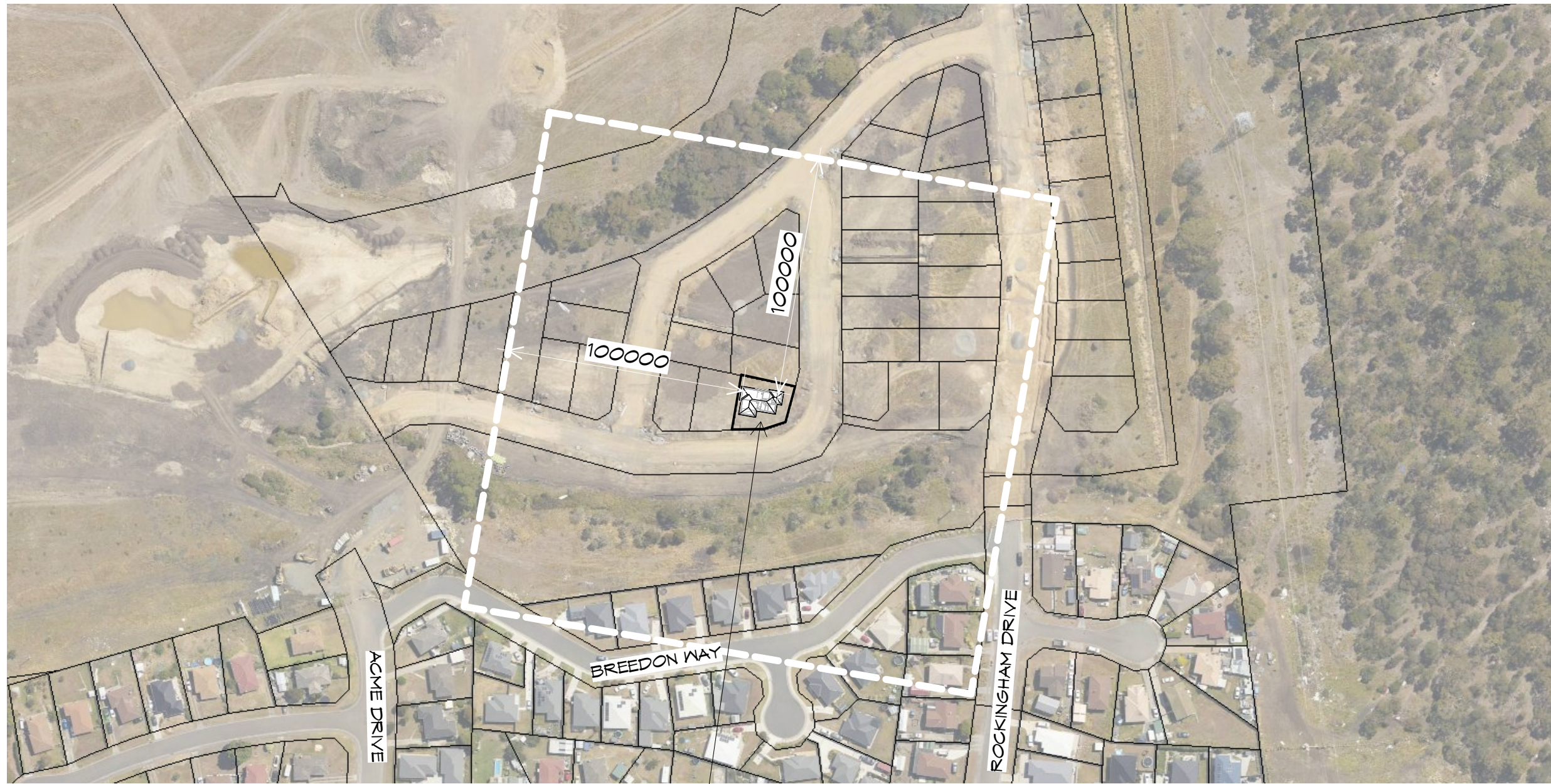
Date: 23.06.2026
 Drafted by: L.L.
 Approved by: Approver

Project/Drawing no: PD26028 - 02
 Scale: As indicated
 Revision: 01

PLANNING
 NOTE: DO NOT SCALE OFF DRAWINGS

Drawing:
 SITE DRAINAGE PLAN

Accredited building practitioner: Frank Geskus -No CC246A
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LOCALITY PLAN

1 : 2000

LOT 33 TASMAN RISE,
ROKEBY

THIS PROJECT HAS BEEN DETERMINED TO HAVE A
BUSHFIRE ATTACK LEVEL (BAL) OF - **BAL LOW**
ALL CONSTRUCTION MUST COMPLY WITH AS3959.
THERE ARE NO CONSTRUCTION REQUIREMENTS FOR BAL LOW

THIS SITE IS ZONED **GENERAL RESIDENCE** AND **REQUIRES A BUSHFIRE ASSESSMENT.**
RESIDENCE IS NOT OVER 100m FROM UNMANAGED BUSH/GRASSLANDS GREATER THAN 1 HECTARE.

REFER TO BUSHFIRE ASSESSMENT REPORT BY RHYS MENADUE FROM DECEMBER 2022 FOR MANAGMENT PLAN

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ASSOCIATION OF AUSTRALIA



REV.	DATE	DESCRIPTION

Client name:
ORIGINAL INSIGHT PTY. LTD.

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Project:
PROPOSED NEW RESIDENCE
LOT 33 TASMAN RISE,
ROKEBY

Drawing:
LOCALITY PLAN

Date: 23.06.2026	Drafted by: L.L.	Approved by: Approver
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Project/Drawing no: PD26028 - 03	Scale: 1 : 2000	Revision: 01
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NOTE:
WHERE LIGHT WEIGHT CLADDING IS USED DIMENSIONS ARE TO FRAME ONLY AND DO NOT INCLUDE LIGHT WEIGHT CLADDING

THIS PROJECT HAS BEEN DETERMINED TO HAVE A BUSHFIRE ATTACK LEVEL (BAL) OF - **BAL LOW**
ALL CONSTRUCTION MUST COMPLY WITH AS3959.
THERE ARE NO CONSTRUCTION REQUIREMENTS FOR BAL LOW

LEGEND

- CSD CAVITY SLIDING DOOR
- S/D SLIDING DOOR
- G.S. GLASS SCREEN
- HWC HOT WATER CYLINDER

SANITARY COMPARTMENTS
MAINTAIN A CLEAR SPACE OF AT LEAST 1.2m BETWEEN THE CLOSET PAN AND NEAREST PART OF THE DOORWAY.
OTHERWISE ENSURE REMOVABLE HINGES ARE INSTALLED TO SWING DOORS TO COMPLY ABCB HOUSING PROVISIONS PART 10.4

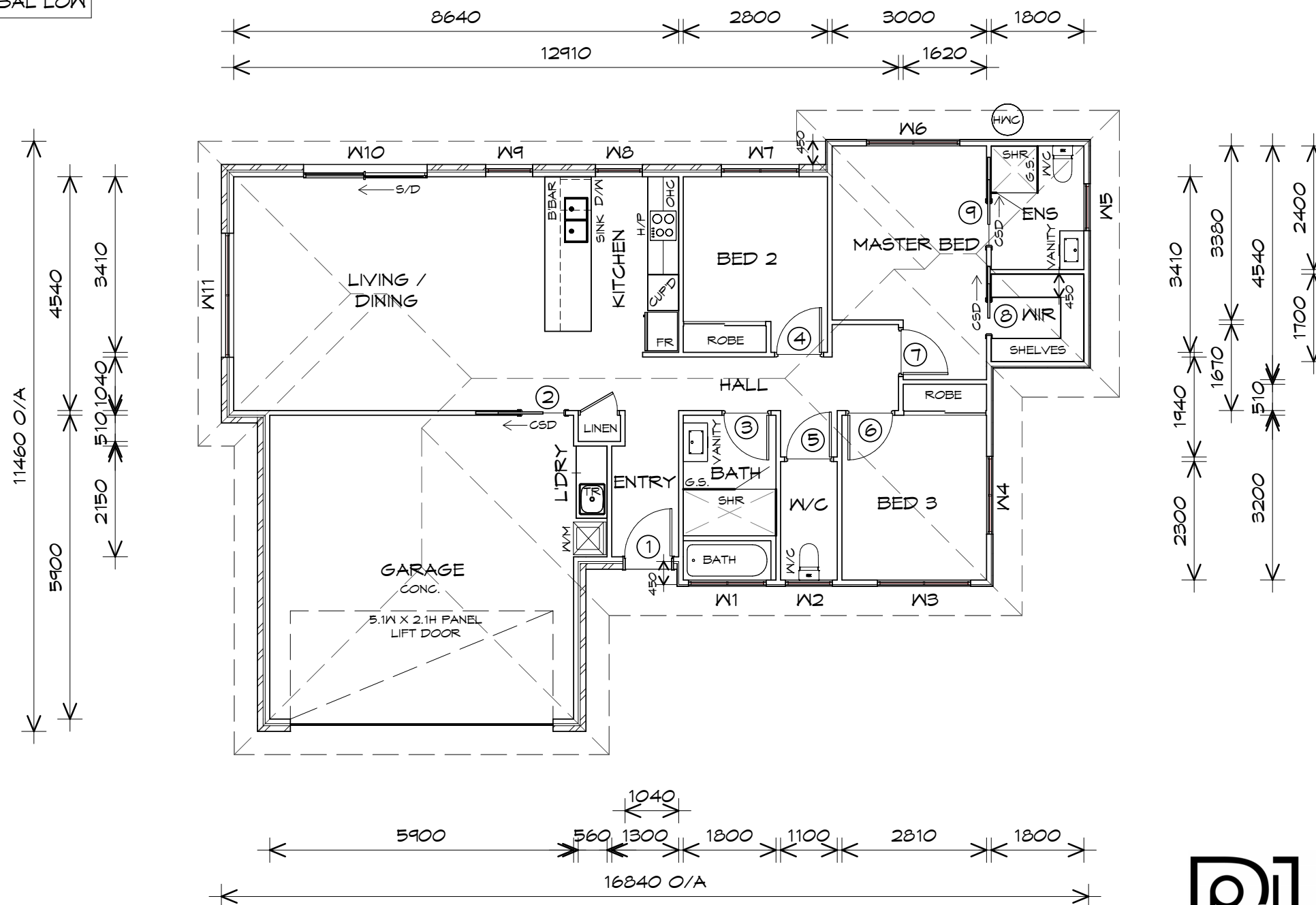
WINDOW WITHIN NET AREA
C/M SAFETY GLASS AS PER AS1288.2021
BEVEL WINDOW SEAL
RETURN TILES OR LAMPANEL TO WINDOW (TYPICAL)

FLOOR PLAN

1 : 100

FLOOR AREA 107.42 m² (11.56 SQUARES)
GARAGE AREA 40.45 m² (4.35 SQUARES)
TOTAL AREA 147.87 15.92

NOTE:
FLOOR AREAS INCLUDE TO EXTERNAL FACE OF BUILDING AND GARAGE, UNLESS OTHERWISE STATED.
DECKS AND OUTDOOR AREAS ARE CALCULATED SEPARATELY.



REV.	DATE	DESCRIPTION

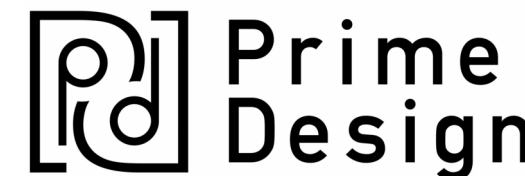
Client name:
ORIGINAL INSIGHT PTY. LTD.

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Project:
PROPOSED NEW RESIDENCE
LOT 33 TASMAN RISE,
ROKEBY

Drawing:
FLOOR PLAN



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Date: 23.06.2026
Drafted by: L.L.
Approved by: Approver

Project/Drawing no: PD26028 - 04
Scale: 1 : 100
Revision: 01

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DOOR SCHEDULE			
MARK	WIDTH	TYPE	REMARKS
1	920	EXTERNAL ENTRY DOOR	
2	870	CAVITY SLIDING DOOR	
3	870	INTERNAL TIMBER DOOR	
4	870	INTERNAL TIMBER DOOR	
5	870	INTERNAL TIMBER DOOR	
6	870	INTERNAL TIMBER DOOR	
7	870	INTERNAL TIMBER DOOR	
8	670	CAVITY SLIDING DOOR	
9	870	CAVITY SLIDING DOOR	

WINDOW SCHEDULE				
MARK	HEIGHT	WIDTH	TYPE	REMARKS
W1	600	1510	AWNING WINDOW	
W2	600	910	AWNING WINDOW	OPAQUE
W3	1800	1810	AWNING WINDOW	
W4	1500	1510	AWNING WINDOW	
W5	900	910	AWNING WINDOW	OPAQUE
W6	1500	1810	AWNING WINDOW	
W7	1500	1510	AWNING WINDOW	
W8	1800	910	AWNING WINDOW	
W9	1800	910	AWNING WINDOW	
W10	2100	2400	SLIDING DOOR	
W11	600	2410	AWNING WINDOW	

ALUMINIUM WINDOWS **DOUBLE GLAZING COMPLETE**
WITH FLY SCREENS TO SUIT **BAL LOW RATING**.
ALL WINDOW MEASUREMENTS TO BE VERIFIED ON SITE
PRIOR TO ORDERING

EXTERNAL GLAZING TO BE LOW REFLECTIVITY
≤ 10% FOR ALL EXTERNAL SURFACES



REV.	DATE	DESCRIPTION

Client name:
ORIGINAL INSIGHT PTY. LTD.

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS

Project:
PROPOSED NEW RESIDENCE
LOT 33 TASMAN RISE,
ROKEBY

Drawing:
DOOR AND WINDOW SCHEDULES



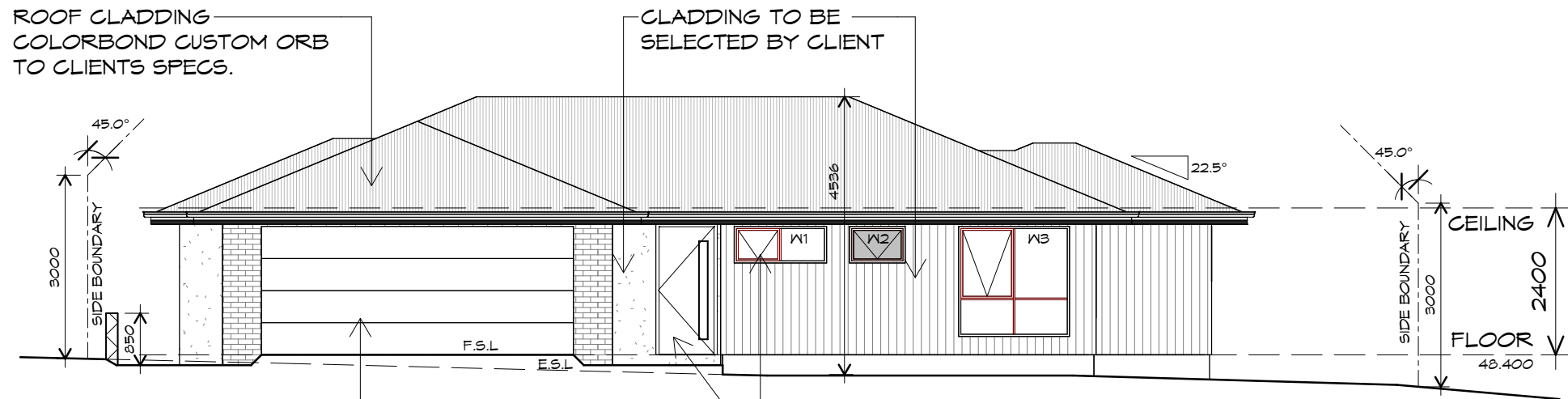
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Project/Drawing no: PD26028 - 05	Scale:	Revision: 01
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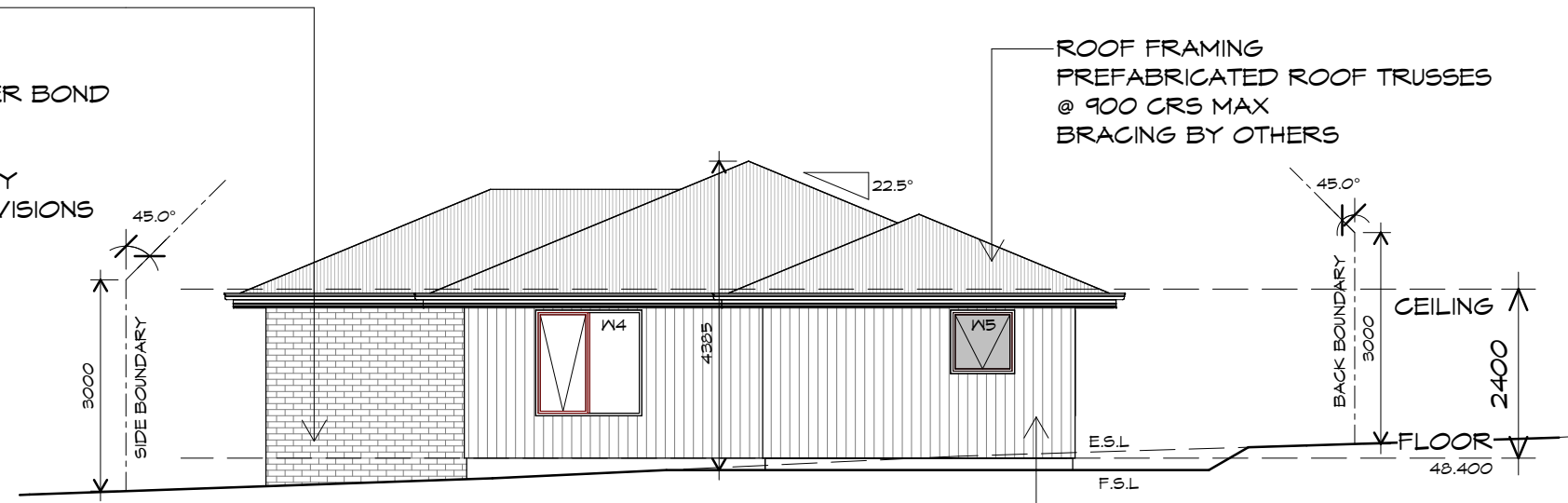
SOUTHERN ELEVATION

1 : 100

PANEL LIFT DOOR 5100 WIDE x 2100 HIGH CLADDING PANELS TO CLIENTS SPEC FIXED IN ACCORDANCE WITH MANUFACTURERS SPEC

DOORS AND WINDOWS TO BE SEALED IN ACCORDANCE WITH ABCB HOUSING PROVISIONS PART 13.4

BRICKWORK
 SELECTED FIRED CLAY FACE BRICKS.
 RAKED JOINTS, STRETCHER BOND
 REFER ENGINEER FOR ARTICULATION JOINTS
 ALL MASONRY TO COMPLY WITH ABCB HOUSING PROVISIONS PART 5



EASTERN ELEVATION

1 : 100

ROOF FRAMING
 PREFABRICATED ROOF TRUSSES
 @ 900 CRS MAX
 BRACING BY OTHERS

CLADDING TO BE SELECTED BY CLIENT

NOTE:
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 ≤ 10% FOR ALL EXTERNAL SURFACES



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Date: 23.06.2026
 Drafted by: L.L.
 Approved by: Approver

Project/Drawing no: PD26028 - 06
 Scale: 1 : 100
 Revision: 01

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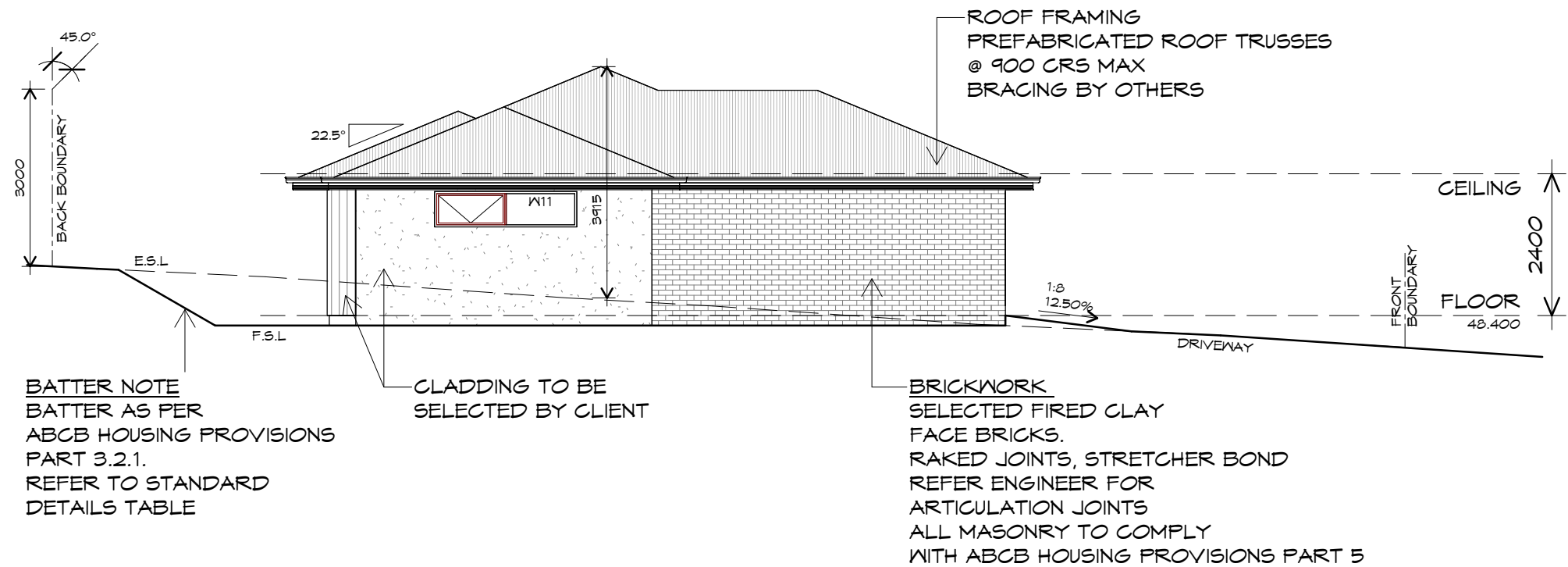
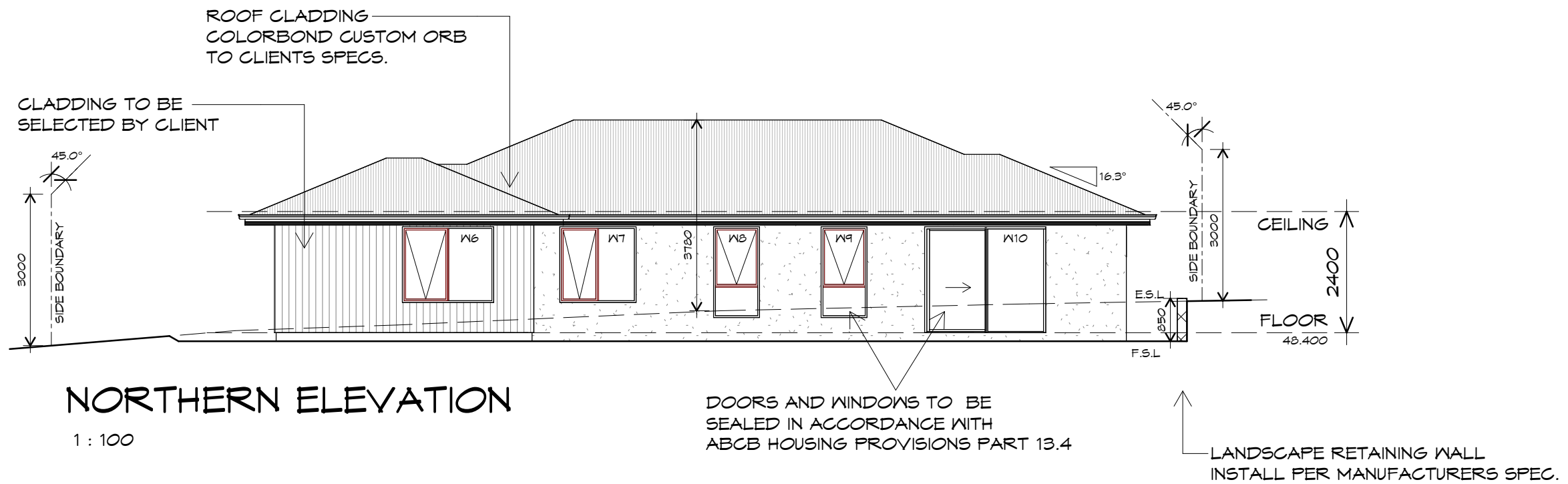
Project:
 PROPOSED NEW RESIDENCE
 LOT 33 TASMAN RISE,
 ROKEBY

Drawing:
 ELEVATIONS

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

REV.	DATE	DESCRIPTION
------	------	-------------



WESTERN ELEVATION

1 : 100

NOTE:
EXTERNAL GLAZING TO BE LOW REFLECTIVITY
≤ 10% FOR ALL EXTERNAL SURFACES



REV.	DATE	DESCRIPTION

Client name:
ORIGINAL INSIGHT PTY. LTD.

PLANNING
NOTE: DO NOT SCALE OFF DRAWINGS

Project:
PROPOSED NEW RESIDENCE
LOT 33 TASMAN RISE,
ROKEBY

Drawing:
ELEVATIONS



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Date:	Drafted by:	Approved by:
23.06.2026	L.L.	Approver

Project/Drawing no:	Scale:	Revision:
PD26028 - 07	1 : 100	01

Accredited building practitioner: Frank Geskus - No CC246A
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ROOF PLUMBING NOTES:

GUTTER INSTALLATION
 TO BE IN ACCORDANCE WITH
 ABCB HOUSING PROVISIONS PART 7.4.4
 WITH FALL NO LESS THAN
 1:500 FOR EAVES GUTTER
 BOX GUTTERS IN ACCORDANCE WITH
 AS33500.3:2021

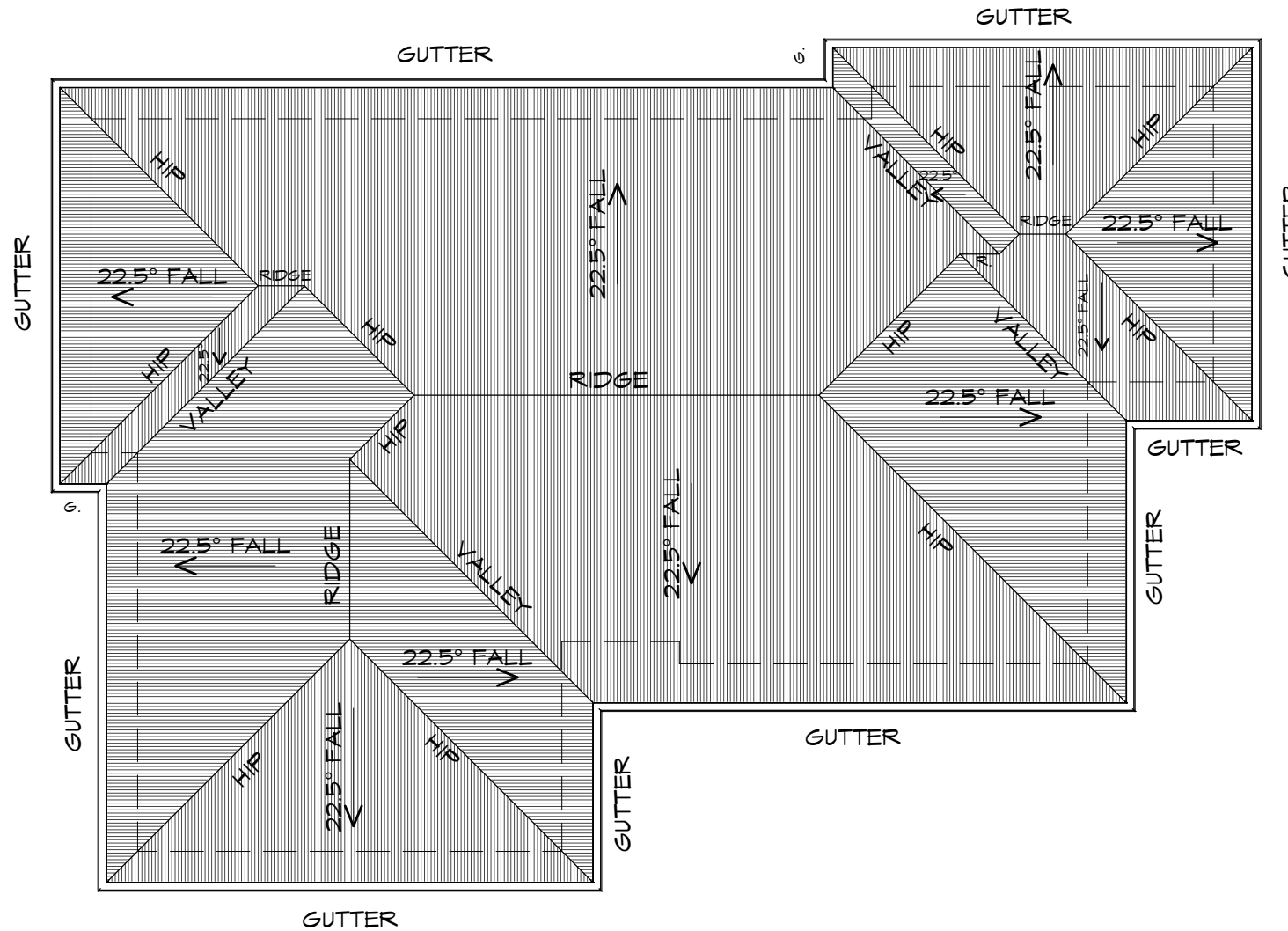
UNLESS FIXED TO METAL FASCIA
 EAVES GUTTER TO BE FIXED
 @ 1200 CRS MAX.

VALLEY GUTTERS ON A ROOF WITH A PITCH:
 A) MORE THAN 12.5° DEGREES - MUST
 HAVE A WIDTH OF NOT LESS THAN
 400mm AND ROOF OVERHANG OF NOT
 LESS THAN 150mm EACH SIDE OF VALLEY
 GUTTER.
 B) LESS THAN 12.5° DEGREES, MUST BE
 DESIGNED AS A BOX GUTTER.

LAP GUTTERS 75mm IN THE DIRECTION
 OF FLOW, RIVET & SEAL WITH AN
 APPROVED SILICONE SEALANT.

DOWNPIPE POSITIONS SHOWN ON THIS
 PLAN ARE NOMINAL ONLY.
 EXACT LOCATION & NUMBER OF D.P.'S
 REQUIRED ARE TO BE IN ACCORDANCE
 WITH ABCB HOUSING PROVISIONS PART 7.4.5
 REQUIREMENTS.
 SPACING BETWEEN DOWNPIPES MUST NOT
 BE MORE THAN 12m & LOCATED AS CLOSE AS
 POSSIBLE TO VALLEY GUTTERS

METAL ROOF
 METAL SHEETING ROOF TO BE INSTALLED IN
 ACCORDANCE WITH ABCB HOUSING PROVISIONS PART
 7.2. REFER TO TABLE 7.2.2a FOR ACCEPTABLE
 CORROSION PROTECTION FOR SHEET ROOFING,
 REFER TO TABLE 7.2.2b-7.2.2e FOR ACCEPTABILITY
 OF CONTACT BETWEEN DIFFERENT ROOFING
 MATERIALS. FOR FIXING, SHEET LAYING SEQUENCE,
 FASTENER FREQUENCY FOR TRANVERSE FLASHINGS
 AND CAPPINGS, ANTI CAPILLARY BREAKS, FLASHING
 DETAILS REFER TO ABCB HOUSING PROVISIONS PART
 7.2.5- 7.2.7. ROOF PENETRATION FLASHING DETAILS.
 REFER TO TO ABCB HOUSING PROVISIONS PART
 7.2.5- 7.2.7. ROOF SHEETING MUST OVERHANG MIN
 35mm AS PER ABCB HOUSING PROVISIONS PART 7.2.8



ROOF PLAN

1 : 100

ADDITIONAL ROOF LOAD
 NO SOLAR P.V. SYSTEM HAS BEEN ALLOWED FOR,
 NO SOLAR HOT WATER HAS BEEN ALLOWED FOR.



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Date:	Drafted by:	Approved by:
23.06.2026	L.L.	Approver
Project/Drawing no:	Scale:	Revision:
PD26028 - 08	1 : 100	01

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Client name:
 ORIGINAL INSIGHT PTY. LTD.

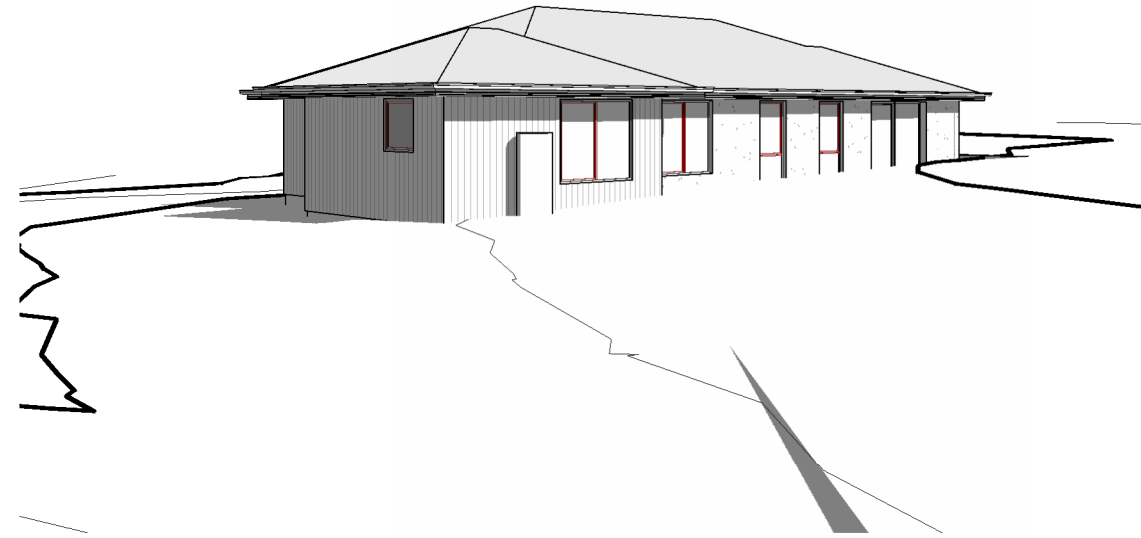
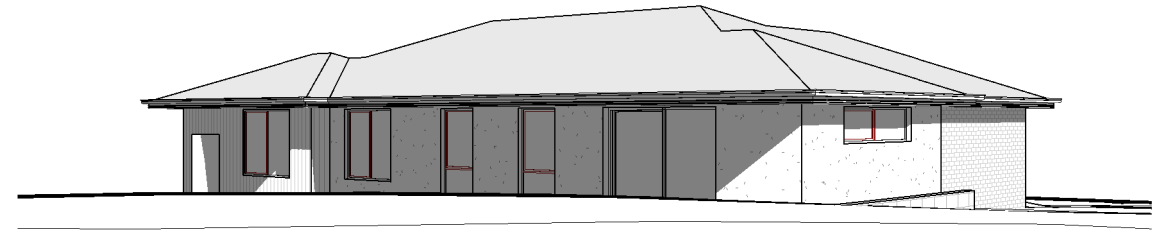
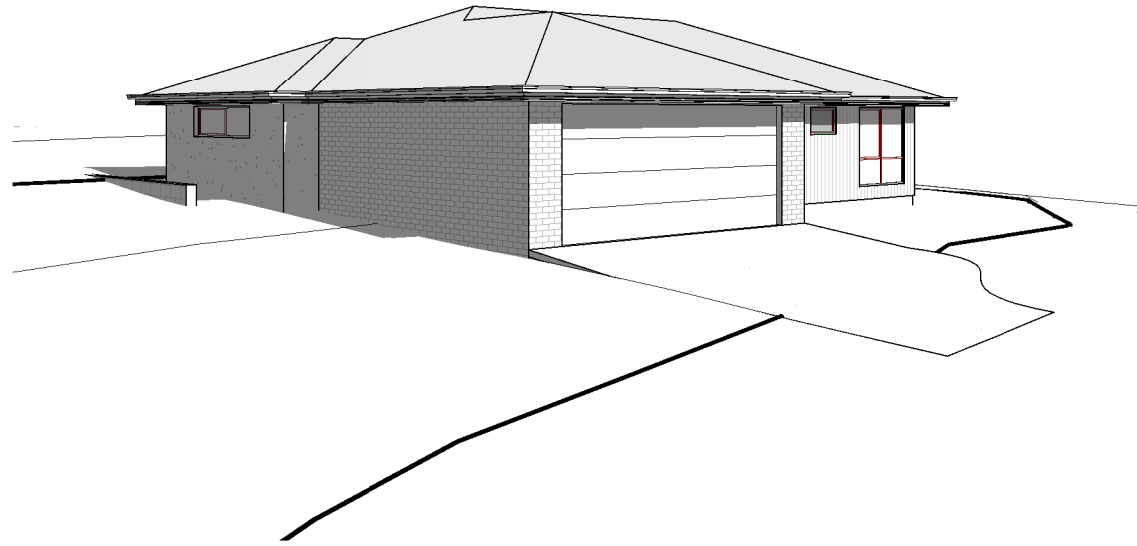
Project:
 PROPOSED NEW RESIDENCE
 LOT 33 TASMAN RISE,
 ROKEBY

Drawing:
 ROOF PLAN

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

REV.	DATE	DESCRIPTION
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Client name:
 ORIGINAL INSIGHT PTY. LTD.

Project:
 PROPOSED NEW RESIDENCE
 LOT 33 TASMAN RISE,
 ROKEBY

Date: 23.06.2026	Drafted by: L.L.	Approved by: Approver
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Project/Drawing no: PD26028 - 09	Scale:	Revision: 01
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PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

Drawing:
 PERSPECTIVES

REV. DATE	DESCRIPTION
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DOYLE
SOIL
CONSULTING



SITE AND SOIL EVALUATION REPORT
FOUNDATION AND WINDLOADING ASSESSMENT

Lot 33 Tasman Rise
Rokeby

December 2025

Doyle Soil Consulting: 6/76 Auburn Rd Kingston Beach 7050 – 0488 080 455 – robyn@doylesoilconsulting.com.au

SITE INFORMATION

Client: Knest Modular Building

Address: Lot 33 Tasman Rise, Rokeby (Part of CT 164406/3)

Site Area: Unknown

Date of inspection: 5/12/2025

Building type: New house

Services: Reticulated water supply and sewer

Relevant Planning Overlays: Flood prone areas in the vicinity

Mapped Geology - Mineral Resources Tasmania 1:25 000 Hobart sheet: **Qham** = Alluvium and marsh deposits of modern flood plains

Soil Depth: approximately 2.9 m

Subsoil Drainage: Imperfectly drained

Drainage lines/water courses: Minor tributaries 50 m north and south

Vegetation: pasture

Rainfall in previous 7 days: Approximately 2 mm

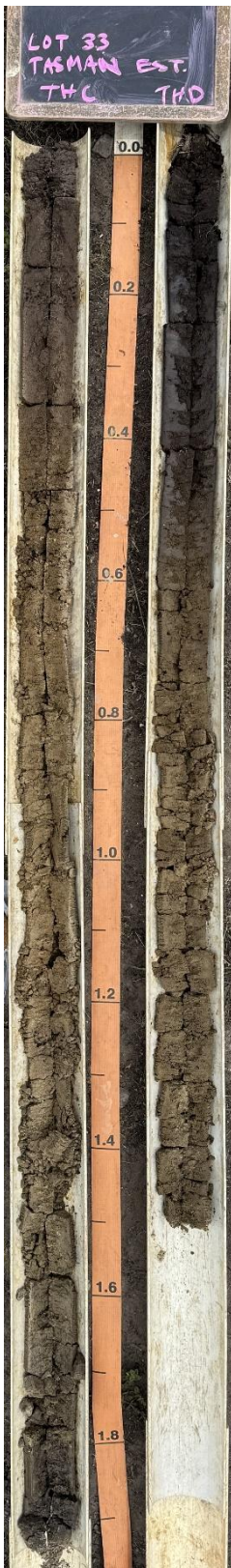
Slope: Approximately 3° to the west

SITE ASSESSMENT AND SAMPLE TESTING

Site investigation and soil classification in accordance with AS 2870-2011 *Residential slabs and footings* and in accordance with AS 4055-2021 *Wind load for Housing*. Test holes were dug using a Christie Post Driver Soil Sampling Kit, comprising CHPD78 Christie Post Driver with Soil Sampling Tube (50 mm OD x 1600/2100 mm). For test hole and DCP locations, see Appendix 1.

- Two test hole (TH) cores:
 - TH1 with no refusal at 1.5 m
 - TH2 with no refusal at 1.9 m
- One Dynamic Cone Penetrometer (DCP) test:
 - DCP1 with refusal at 3.0 m
- Emerson Dispersion test on subsoils and linear shrinkage tests on all likely founding layers.
 - All clays = Emerson Class 8 (non-dispersive)

SOIL PROFILES – Test Hole C



Depth (m)	Horizon	Description and field texture grade	USCS Class
0 – 0.1	FILL	Uncontrolled local Medium and Sandy Light Clay FILL	CH
0.1 – 0.4	A1	Dark brown (10YR 3/3) grading to brown (10YR 5/3), Sandy Clay Loam , moderate medium angular blocky structure, slightly moist hard grading to stiff consistency	SC
0.4 – 1.8	BC	Greyish brown (2.5Y 4/3), Very Sandy Light Clay , strong medium platy structure, dry soft friable consistency	CL
1.8 – 1.9	2B2	Black (10YR 2/1), Silty Medium Clay , massive, moist stiff consistency, common stress cutans <u>No Refusal</u>	CH

SOIL PROFILES – Test Hole D

Depth (m)	Horizon	Description and field texture grade	USCS Class
0 – 0.2	A1	Black (10YR 2/1), Sandy Loam , moderate medium platy structure, dry loose consistency	SM
0.2 – 0.6	B1	Black (10YR 2/1) grading to very dark greyish brown (2.5YR 3/2), Sandy Light Clay , massive, moist firm consistency	CH
0.6 – 1.5	BC	Very dark greyish brown (2.5Y 3/2) grading to dark greyish brown (2.5Y 4/2), Sandy Clay Loam , moderate medium platy structure, slightly moist firm friable consistency but dense in situ <u>No Refusal</u>	SC

SITE AND SOIL COMMENTS

The natural soil profiles are formed from alluvial deposits derived from the upslope Jurassic dolerite slopes. The profiles are very deep, with refusal occurring at approximately 2.9 – 3.0 m depth on probable alluvial gravels. The field textures of the soil profile are dominated by clay, which is highly to very highly reactive, weakly structured and non-dispersive. There are also layers of sandy (SC) deposited material up to 1.4 m thick across the site. These overlie additional (and older) clayey (CH) deposited materials. The DCP indicates a low bearing capacity to at least 0.6 m. Founding on the underlying, deeper and stiffer, alluvial gravels and sands at and below approximately 2.9 m depth, is recommended.

LINEAR SHRINKAGE AND SOIL REACTIVITY

Samples of the clayey subsoils were tested for reactivity using the linear shrinkage test. Linear shrinkage provides an approximate guide to aid site classification (for foundations) based on the reactivity of clays. The results suggest the clays are slightly to moderately to highly reactive (refer to tables below and *AS2870-2011 clause 2.1.2 table 2.1*).

TH #	Depth (m)	Length of mould (mm)	Longitudinal Shrinkage (LS) in mm	LS (%)	Soil Class
C	0.5 - 1.5	125	10	8	M
C	1.8 - 1.9	125	26	20.8	H – 2
D	0.2 – 0.6	125	18	14.4	H – 1

DCP TESTS AND ESTIMATED BEARING CAPACITY

A minimum bearing capacity of 100 kPa is required for strip and pad footings and under the edge footings and associated slab foundations (refer to tables below and *AS2870-2011 clause 2.4.5*). We provide an estimated allowable soil bearing capacity based on a review of published literature relating field Dynamic Cone Penetrometer (DCP) readings to triaxial soil strength tests.

The DCP penetrometer is a method of estimating *in situ* strength of the soil. Soil moisture level at the time of measurement will greatly affect DCP readings. Moisture-related variability in soil bearing capacity is most pronounced in coherent soils (clays and silty clays) which may be stiff/hard when dry but become soft/firm when moist/slightly moist.

Surface layers (upper ~0.7 m) are subject to seasonal variation in soil moisture content, leading to possible higher DCP values in summer/drought conditions. Soil moisture below ~0.7 m will vary less with the season, meaning DCP values; hence, soil-bearing capacity at these depths is likely to be representative of year-round conditions.

When estimating the suitable foundation depth, we take into account the interplay between soil bearing capacity and seasonally variable soil moisture conditions in the upper layers (refer to *soil consistency* in Soil Profile descriptions). The subsoils in the upper 0.7 m were slightly moist when tested (December '25).

The data from DCP1 indicate the bearing capacity of the soil is at a *suitable* strength below 0.6 m. However, the underlying and highly competent probable alluvial gravels at approximately 2.9 m would be the *recommended* foundation material.

DCP 1				
Depth (mm)	DCP n-number (Blows/100 mm)	DCP Penetration Index (mm/Blow)	Estimated Allowable Bearing Capacity (kPa = n x 30)	Likely Variance (+/-)
0 - 100	5	20.0	150	50
100 - 200	4	25.0	120	40
200 - 300	4	25.0	120	40
300 - 400	5	20.0	150	50
400 - 500	8	12.5	240	80
500 - 600	10	10.0	300	100
600 - 700	12	8.3	360	120
700 - 800	18	5.6	540	180
800 - 900	18	5.6	540	180
900 - 1000	16	6.3	480	160
1000 - 1100	15	6.7	450	150
1100 - 1200	12	8.3	360	120
1200 - 1300	12	8.3	360	120
1300 - 1400	11	9.1	330	110
1400 - 1500	9	11.1	270	90
1500 - 1600	4	25.0	120	40
1600 - 1700	4	25.0	120	40
1700 - 1800	6	16.7	180	60
1800 - 1900	5	20.0	150	50
1900 - 2000	5	20.0	150	50
2000 - 2100	6	16.7	180	60
2100 - 2200	5	20.0	150	50
2200 - 2300	8	12.5	240	80
2300 - 2400	6	16.7	180	60
2400 - 2500	5	20.0	150	50
2500 - 2600	9	11.1	270	90
2600 - 2700	14	7.1	420	140
2700 - 2800	21	4.8	630	210
2800 - 2900	31	3.2	930	310
2900 - 3000	30	3.3	900	300

WIND CLASSIFICATION

The following wind classification for the site is in accordance with AS 4055-2021 (*Wind loads for Housing*). For structures other than class 1 and class 10 structures, or that exceed the geometric limits in Clause 1.2 of AS 4055-2021, the wind classification shall be calculated in accordance with AS 1170.2-2021 (*Structural Design Actions – Wind Actions*).

The wind classification for the site, per AS 4055-2021:

Region:	A
Terrain Category:	TC2.5
Shielding Classification:	PS – partial shielding
Topographic Classification:	T1– lower 3rd of slope feature
Wind Classification:	N2
Design Wind Gust Speed ($V_{h,u}$):	40 m/sec

SITE CLASSIFICATION AND RECOMMENDATIONS

For standard foundations (100 kPa bearing capacity), the site meets the criteria for a **Class P** site classification, as set out in AS2870-2011 (construction). This classification is appropriate due to the presence of materials with low bearing capacity to approximately 0.6 m depth. Founding on the deeper and stiffer, alluvial gravels and sands at and below approximately 2.9 m depth, is recommended.

If a stiffened raft-type foundation is utilised (where slab tied to edge footings), the bearing capacity requirement is reduced to 50 kPa, and therefore a site classification of **Class H-1** becomes appropriate (see Note 1). However, we strongly recommend founding on the deeper and stiffer, alluvial gravels and sands at and below approximately 2.8 m depth.

Note 1 – In addition to the **Class P** site classification, the site/clays meet the reactivity levels of **Class H-1** or reactive, with 40 – 60 mm the dominant reactivity of expected surface movement under normal soil moisture ranges for the location.

Note 2 – All foundations require ongoing adequate drainage and vegetation management – please refer to the attached CSIRO foundation management BTF 18 sheet.

Note 3 – If any foundations are placed on FILL that is > 0.5 m in depth, then **Class P** is applicable.

Note 4 – Based on the upper 0.6 m of soil, all plumbing fixtures and fittings should be installed using **Class H-1** as per *Appendix G AS/NZS 3500.2.2021*.

General Notes – Important points pertinent to the maintenance of foundation soil conditions

This report relates to the soil and site conditions on the property at the time of the site assessment. The satisfactory long-term performance of footings is dependent upon ongoing site maintenance by the owner.

Examples of abnormal moisture conditions developing after construction include the following:

- A) The effect of trees too close to the footings.
- B) Excessive or irregular watering of gardens adjacent to the footings.
- C) Failure to maintain site drainage affecting footings.
- D) Failure to repair plumbing leaks affecting footings.
- E) Loss of vegetation from near the building.

All earthworks on site must comply with AS 3798-2007 Guidelines on Earthworks for commercial and residential developments.

REPORT LIMITATIONS

Whilst every attempt is made to describe sub-surface conditions, natural variation will occur that cannot be determined by limited investigative soil testing. Therefore, discrepancies are possible between test results and observations during construction. It is our intention to accurately indicate the most probable soil type(s) and conditions for the area assessed. However, due to the nature of sampling an area, variations in soil type, soil depth and site conditions may occur.

We accept no responsibility for any differences between what we have reported and actual site and soil conditions for particular regions we could not directly assess at the time of inspection.

It is recommended that during construction, Doyle Soil Consulting and/or the design engineer be notified of any major variation to the foundation conditions as predicted in this report. Any changes to the site through excavations may alter the site classification.

In these cases, it is expected that the owner consults the author for a reclassification. This report requires certification via a form 55 certificate from Doyle Soil Consulting to validate its contents.

Because site discrepancies may occur between this report and actual site conditions, it is a condition of certification of this report that the builder be provided with a copy of this report.



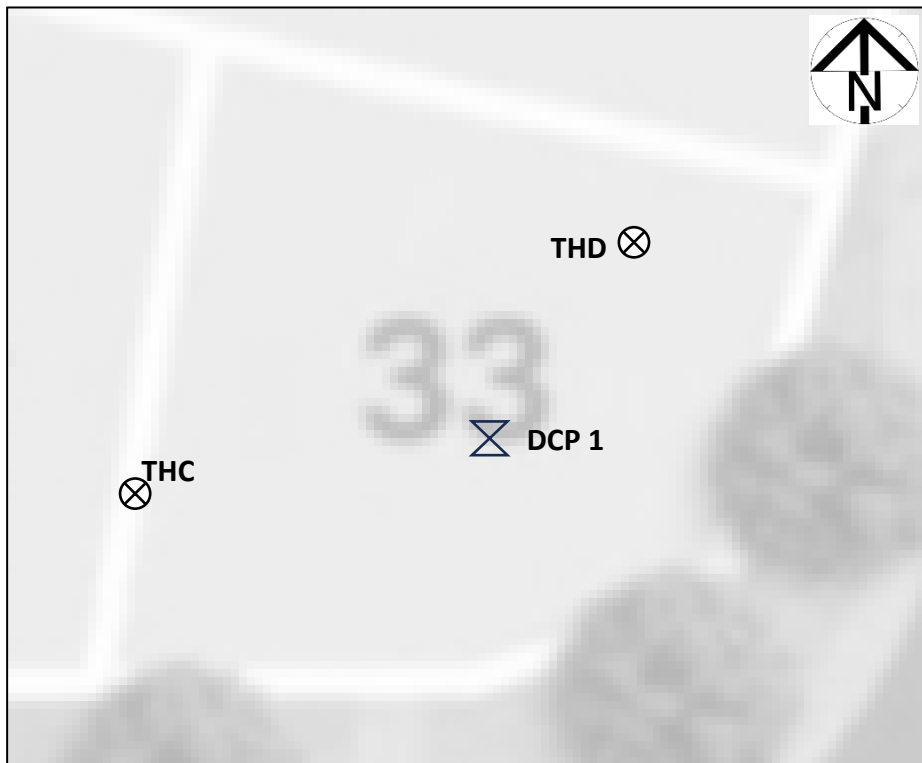
Rowan Mason
B.Agr.Sc.(Hons).
Soil Scientist



Robyn Doyle
B.Agr.Sc.
CPSS (Certified Prof Soil Scientist)
Soil Scientist and Wastewater Designer
Licence no. **CC7418**



APPENDIX 1 – Approximate test hole and DCP locations



APPENDIX 2 – Definitions of Soil Horizons

Horizon name	Meaning
A1	Dark topsoils, zone of maximum organic activity
A2 or E	Leached, light/pale washed-out sandy layer
A3 or AB	Transition from A to B, more like A
B1 or BA	Transition from A to B, more like B
B2	Main subsoils layer with brown colouration, accumulations of clay, humus, iron oxide, etc
B3	Transitional from B2 to C
C	Weakly weathered soil parent materials
Subscript	Meaning
r	Reducing conditions (anaerobic)
t	Enriched in translocated clay
s	Iron/aluminium oxide accumulations in subsoil
g	Mottled, suggesting periodic/seasonal wetness
m	Cemented layer (oxides, carbonates, humus, silica etc)
k	Calcium carbonate (lime) accumulation
h	Humus accumulation in subsoil

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

To: Owner name
 Address
 Suburb/postcode

Form **55**

Qualified person details:

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

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

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

Details of work:

Address: Lot No:
 Certificate of title No:

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

Certificate details:

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

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

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

or

a building, temporary structure or plumbing installation:

In issuing this certificate the following matters are relevant –

Documents:

The attached Geotechnical Assessment Report for the address detailed above in, 'Details of Work'.

Relevant calculations:

Refer to above report.

References:

AS2870-2011 Residential slabs and footings
AS1726-2017 Geotechnical site investigations
CSIRO Building Technology File -18

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

Site classification consistent with AS2870-2011.


Scope and/or Limitations

The classification applies to the site as inspected and does not account for future alterations to foundation conditions as a result of earthworks, drainage condition changes or variations in site maintenance.

I certify the matters described in this certificate.

Qualified person:

Signed:



Certificate No:

1905

Date:

12/12/2025



Foundation Maintenance and Footing Performance: A Homeowner's Guide



PUBLISHING
BTF 18-2011
replaces
Information
Sheet 10/91

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 2870-2011, 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, which may experience only slight ground movement from moisture changes
M	Moderately reactive clay or silt sites, which may experience moderate ground movement from moisture changes
H1	Highly reactive clay sites, which may experience high ground movement from moisture changes
H2	Highly reactive clay sites, which may experience very high ground movement from moisture changes
E	Extremely reactive sites, which may experience extreme ground movement from moisture changes

Notes

1. Where controlled fill has been used, the site may be classified A to E according to the type of fill used.
2. Filled sites. Class P is used for sites which include soft fills, such as clay or silt or loose sands; landslip; mine subsidence; collapsing soils; soil subject to erosion; reactive sites subject to abnormal moisture conditions or sites which cannot be classified otherwise.
3. Where deep-seated moisture changes exist on sites at depths of 3 m or greater, further classification is needed for Classes M to E (M-D, H1-D, H2-D and E-D).

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 perpend).

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

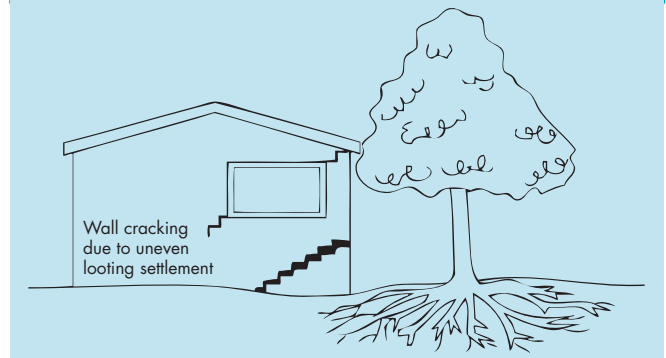
Swelling foundation soil due to rainy periods first lifts the most exposed extremities of the footing system, then the remainder of the perimeter footings while gradually permeating inside the building footprint to lift internal footings. This swelling first tends to create a dish effect, because the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

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

Trees can cause shrinkage and damage



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 causes 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 2870-2011.

AS 2870-2011 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

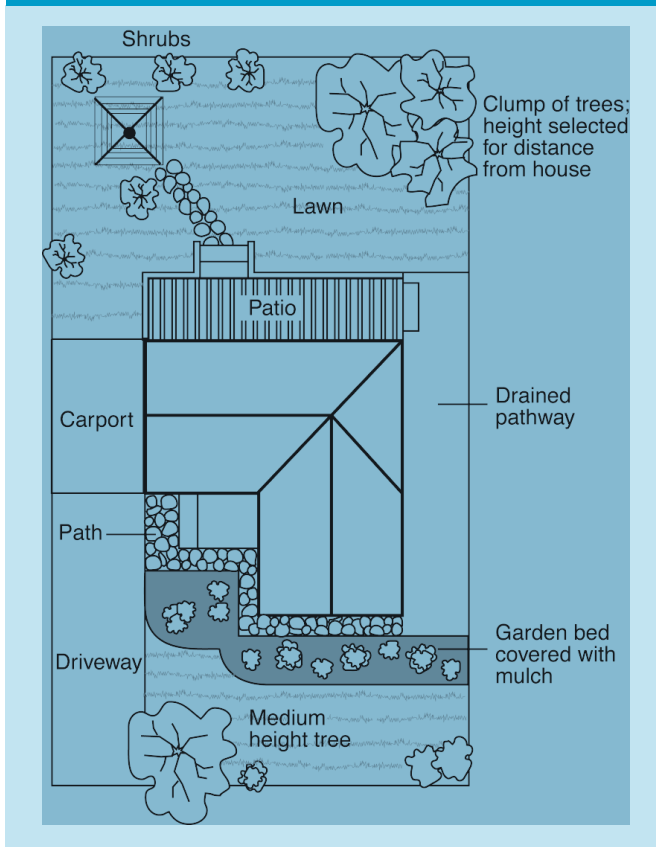
It is essential to remember that the soil that affects footings extends well beyond the actual building line. Watering of garden plants, shrubs and trees causes some of the most serious water problems.

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 should

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. Weathertightness 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 depends on number of cracks	4

Gardens for a reactive site



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.

Distributed by

CSIRO PUBLISHING Locked Bag 10, Clayton South VIC 3169

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