



DISCRETIONARY APPLICATION

For Public Display

Applicant:

J Rainbird

Location:

70 Marked Tree Road, Gretna

Proposal:

Dwelling

DA Number:

DA 2024 / 08

Date Advertised:

30 April 2024

Date Representation Period Closes:

14 May 2024

Responsible Officer:

Louisa Brown (Planning Officer)

Viewing Documents:

The relevant documents may be viewed at Council's website www.centralhighlands.tas.gov.au or at Council's Offices 19 Alexander Street, Bothwell & 6 Tarleton Street, Hamilton during normal office hours.

Representations to:

General Manager
19 Alexander Street
BOTHWELL TAS 7030

Email:

development@centralhighlands.tas.gov.au



Development & Environmental Services
19 Alexander Street
BOTHWELL TAS 7030

Phone (03) 6259 5503
Fax (03) 6259 5722

www.centralhighlands.tas.gov.au

For office use only:

Date Received:	31/1/24
DA Number:	
BA Number:	
PID:	3486040

TYPE	<input checked="" type="checkbox"/>
Discretionary	<input type="checkbox"/>
Permitted	<input type="checkbox"/>

Application for Planning Approval - Use and Development

Use this form to apply for planning approval in accordance with section 57 and 58 of the Land Use Planning and Approvals Act 1993 (the Act).

Tick ☒ if there has been a pre-application meeting with a Council officer:

Yes: ☐ No: ☒

Officer's name

Date:

Applicant, Owner & Contact Details:

Provide details of the Applicant and Owner of the land. (Please print)

Applicant:	JONIA RAINBARD		Phone No:	0431243051
Address:	9 BATURST ST NEW NORFOLK 7140		Fax No:	
Email:	blackbirdcustomcycles@yahoo.com		Mobile No:	
Owner:	AS ABOVE		Phone No:	
Address:			Fax No:	

Land Details:

Provide details of the land, including street address, title details and the existing use.

Address:	70 MARKED TREE RD BRETNA	Volume:	171936
Existing Use:	VACANT	Folio:	1

Proposed Use and Development Details:

Provide details of the proposed use and of the proposed development and works.

Use:	NEW DWELLING	
Development:		
External Materials:	WEATHER - BOARD / CONCRETE SLAB	
External Colours	(Roof) COLOUR - BOND	(Walls) WEATHER - BOARD

Is proposed development to be staged:	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	Tick <input checked="" type="checkbox"/>
Is the proposed development located on land previously used as a tip site?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Is the place on the Tasmanian Heritage Register?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Have you sought advice from Heritage Tasmania?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	
Has a Certificate of Exemption been sought for these works?	Yes <input type="checkbox"/>	No <input checked="" type="checkbox"/>	

Provide an estimate of the completed value of the proposed development works, including the value of all site works and any labour contributions by the Applicant or the Owner.

Est. value: \$ 220,000 Write 'Nil' if no works are proposed, e.g. change of use

Declaration:

I/we hereby apply for planning approval to carry out the use or development described in this application and the accompanying documents and declare that:

- The information in this application is true and correct.
- In relation to this application, I/we agree to allow Council employees or consultants to enter the site in order to assess the application.
- I/we authorise Council to provide a copy of any documents relating to this application to any person for the purpose of assessment or public consultation and agree to arrange for the permission of the copyright owner of any part of this application to be obtained.
Council will only use the information provided to consider and determine the application for planning approval. Information provided may be made available for public inspection in accordance with section 57 of the Act.
- I/we declare that the Owner has been notified of the intention to make this application in accordance with section 52(1) of the Land Use Planning and Approvals Act 1993.
Applies where the applicant is not the Owner and the land is not Crown land or owned by a council, and is not land administered by the Crown or a council.

Signature:

The Applicant must sign and date this form.

Date: 12. 12. 23

Refer to application checklist on reverse for additional information requirements.

Information

If you provide an email address in this form then the Central Highlands Council ("the Council") will treat the provision of the email address as consent to the Council, pursuant to Section 6 of the Electronic Transactions Act 2000, to using that email address for the purposes of assessing the Application under the Land Use Planning and Approvals Act 1993 ("the Act").

If you provide an email address, the Council will not provide hard copy documentation unless specifically requested.

It is your responsibility to provide the Council with the correct email address and to check your email for communications from the Council.

If you do not wish for the Council to use your email address as the method of contact and for the giving of information, **please tick** ☐ the box

Heritage Tasmania

If the Property is listed on the Tasmanian Heritage Register then the Application will be referred to Heritage Tasmania unless an Exemption Certificate has been provided with this Application.
(Phone 1300 850 332 or email enquires@heritage.tas.gov.au)

TasWater

Depending on the works proposed Council may be required to refer the Application to TasWater for assessment (Phone 136992)

Submission of Application

Applications can be submitted in a number of ways as follows:

- Electronically: Email to development@centralhighlands.tas.gov.au
- Post: 19 Alexander Street, BOTHWELL 7030
- In Person: Development & Environmental Services Office, 19 Alexander Street, Bothwell 7030

SEARCH OF TORRENS TITLE

VOLUME 171936	FOLIO 1
EDITION 2	DATE OF ISSUE 17-Oct-2017

SEARCH DATE : 24-Apr-2024

SEARCH TIME : 03.06 PM

DESCRIPTION OF LAND

Parish of GRAFTON Land District of MONMOUTH

Lot 1 on Sealed Plan 171936

Derivation : Part of 863 Acres Loc. to Josiah Spode.

Prior CT 113368/1

SCHEDULE 1

M658450 TRANSFER to JOHN VICTOR RAINBIRD and PATRICIA
RAINBIRD Registered 17-Oct-2017 at 12.01 PM

SCHEDULE 2

Reservations and conditions in the Crown Grant if any

SP171936 FENCING PROVISION in Schedule of Easements

SP171936 WATER SUPPLY RESTRICTION

SP171936 SEWERAGE AND/OR DRAINAGE RESTRICTION

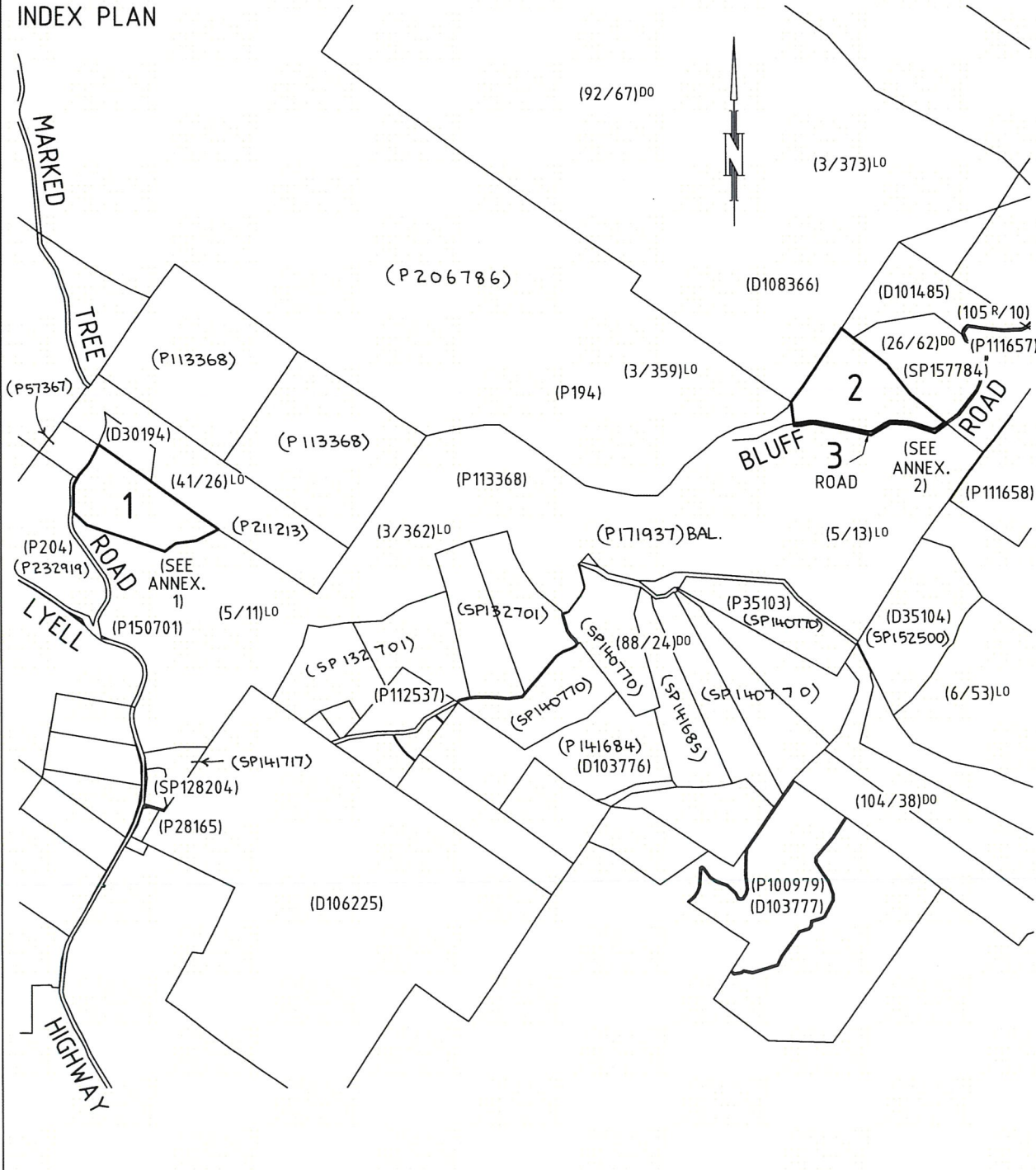
SP171936 SEPTIC TANK NOTIFICATION

UNREGISTERED DEALINGS AND NOTATIONS

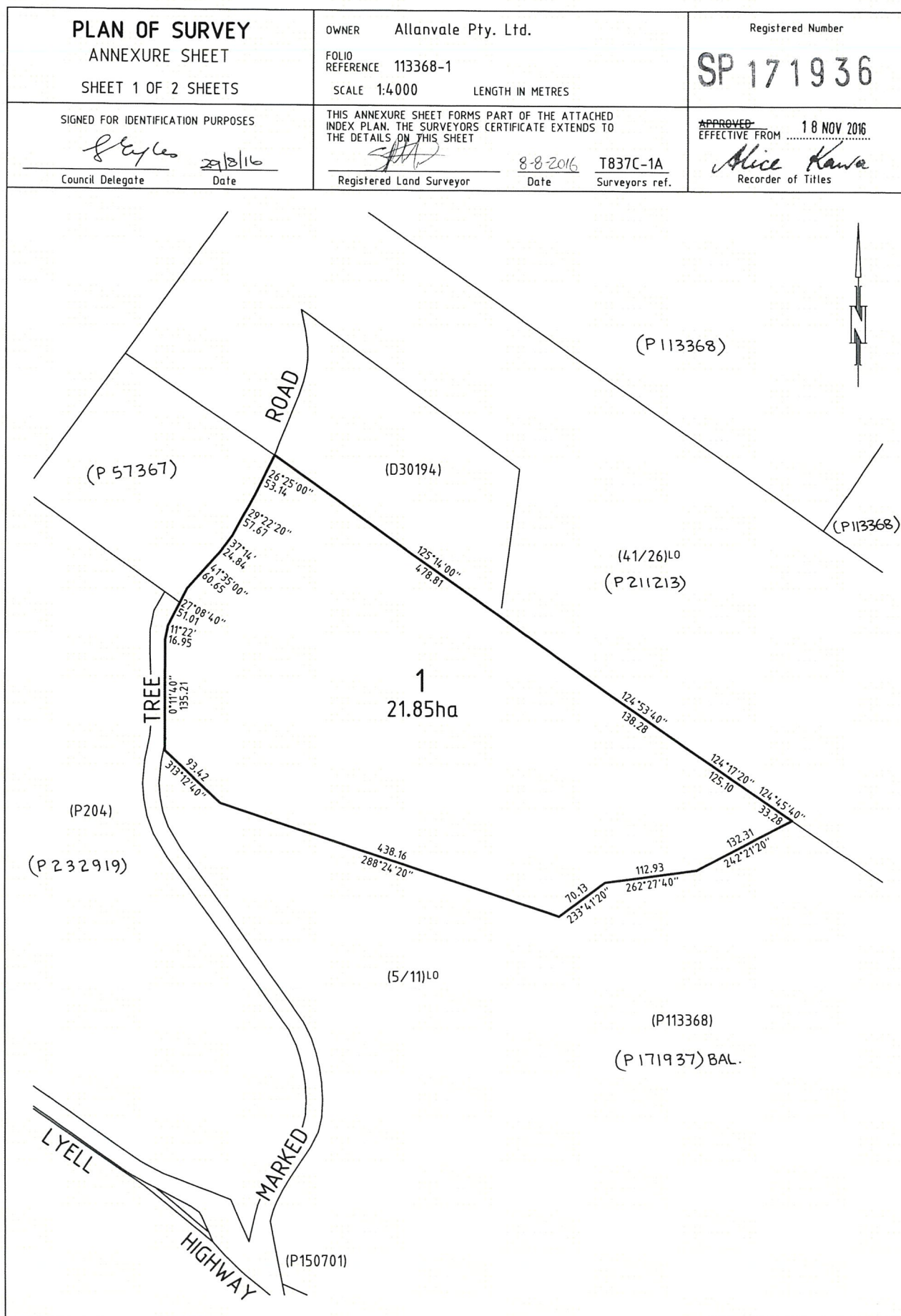
No unregistered dealings or other notations

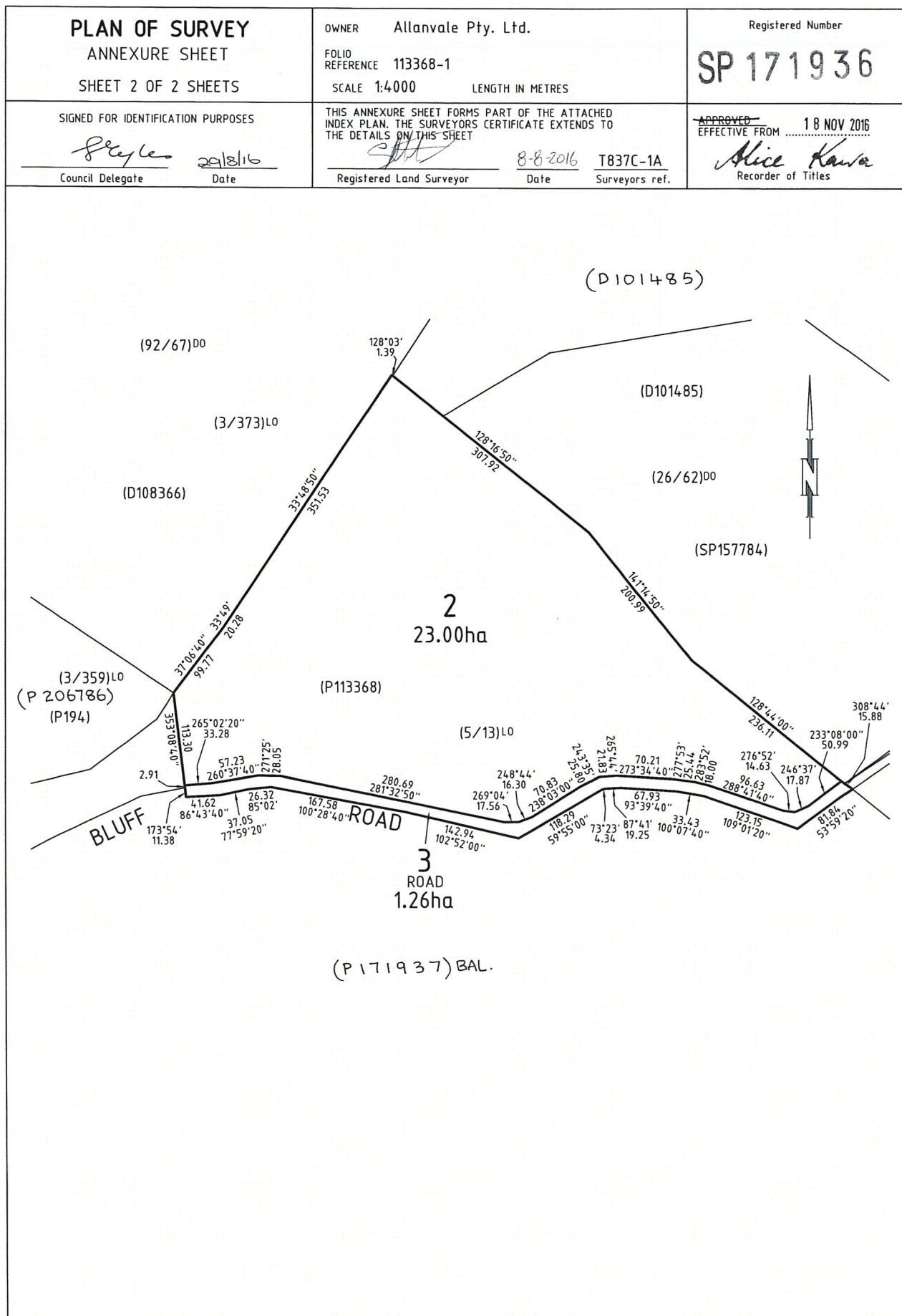
OWNER Allanvale Pty. Ltd. FOLIO REFERENCE 113368-1 GRANTEE Part of 863 acres loc. to Josiah Spode; part of lot 331, 645 ac., John James Fenton pur.; part of 300 ac. gtd. to Valentine Griffiths; part of location to John H. Patterson; part of 500 ac. gtd. to John Marshall		PLAN OF SURVEY BY SURVEYOR S. Roberts of PDA SURVEYORS 127 BATHURST STREET, HOBART LOCATION Land District of MONMOUTH Parish of GRAFTON		REGISTERED NUMBER SP171936 APPROVED EFFECTIVE FROM 18 NOV 2016 <i>Alice Kawa</i> Recorder of Titles	
SCALE: 1:20,000		LENGTHS IN METRES		SURVEYORS REF: T837C-1A	
MAPSHEET MUNICIPAL CODE No. 105 (4827)		LAST UPI No.		LAST PLAN No. P113368	
ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN					

INDEX PLAN

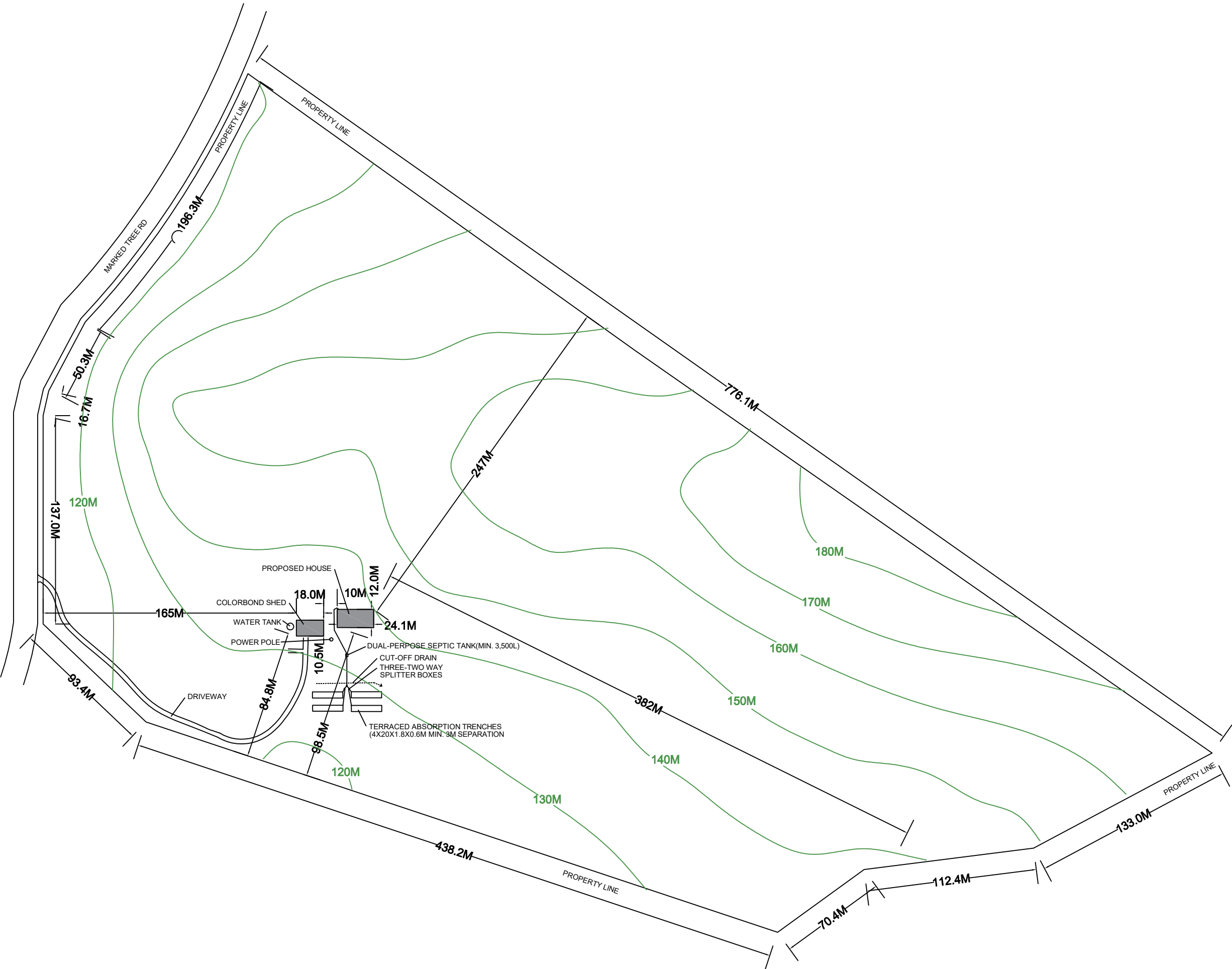


Styke 29/8/16
 COUNCIL DELEGATE DATE





NOTE: FOR THE SCALE TO BE CORRECT SHEET MUST BE PRINTED ON A3



NOTES:

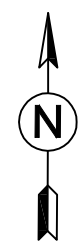
ADDRESS:
70 MARKED TREE RD
GRETNA TAS 7140

SITE PLAN

LOT AREA: 219,720 SQ.M.

PLOT SIZE: A3

DRAWING SCALE: 1:2500





GENERAL NOTES

DO NOT SCALE PLANS, USE WRITTEN DIMENSIONS ONLY.
THE OWNER/BUILDER SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS LEVELS,
SETBACKS AND SPECIFICATIONS PRIOR TO COMMENCING WORKS OR ORDERING
MATERIALS AND SHALL BE RESPONSIBLE FOR ENSURING THAT ALL BUILDING WORKS
CONFORM TO THE BUILDING CODE OF AUSTRALIA . CURRENT STANDARDS, BUILDING REGULATIONS
AND TOWN PLANNING REQUIREMENTS, REPORT ANY DISCREPANCIES TO THIS OFFICE.

ALL WORKS SHALL COMPLY WITH BUT NOT LIMITED TO THE
BUILDING CODE OF AUSTRALIA AND THE AUSTRALIAN STANDARDS.

THESE PLANS SHALL BE READ IN CONJUNCTION WITH ANY STRUCTURAL AND CIVIL
ENGINEERING COMPUTIONS AND DRAWINGS

CONSTRUCTION NOTES

1. EXTERNAL WALLS = 90mm
2. INTERNAL WALLS = 90mm
2. N2 WIND DESIGN SPEED
3. ALL INTERNAL DOORS 2040 HT
4. WC DOOR EXTERNAL REMOVABLE HINGES

ENERGY EFFICIENCY NOTES:

1. ALL SHOWER ROSES TO BE 'AAA' SHOWER ROSES
2. IF WATER PRESSURE TO BUILDING EXCEEDS 500 kpa.
PRESSURE LIMITING DEVICE TO BE INSTALLED.
3. MINIMW 4-STAR WELS RATED TOILETS TO BE INSTALLED.
4. MINIMW 3-STAR WELS RATED TAPWARE FOR
5. KITCHEN SINKS, BATHROOM BASINS & LAUNDRY TROUGHS.
6. 250 LITRE RHEEM HOT WATER SYSTEM (OR SIMILAR)
7. MINIMUM 4-STAR MEPS RATED AIR CONDITIONERS TO BE INSTALLED (IF APPLICABLE)
8. 80% TOTAL ENCLOSED FLOOR AREA TO HAVE ENERGY EFFICIENT GLOBES INSTALLED.
9. INSULATION ABOVE 3.3 R VALUE TO ALL CEILING SPACE INCLUDING TERRACE & FRONT BALCONY

JOHN RAINBIRD

70 MARKED TREE
ROAD GREтна,
HOBART TASMANIA
7140



P&J Constructions
049 215 3413

No.	Description	Date

NOTES

Project number	23-733
Date	7/11/2023
Drawn by	P&J Constructions
Checked by	Checker
A101	
Scale	

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7/11/2023 5:48:29 AM

- CONSTRUCTION NOTES**
- EXTERNAL WALLS = 90mm
 - INTERNAL WALLS = 90mm
 - N2 WIND DESIGN SPEED
 - ALL INTERNAL DOORS 2040 HT
 - WC DOOR EXTERNAL REMOVABLE HINGES

- ENERGY EFFICIENCY NOTES:**
- ALL SHOWER ROSES TO BE 'AAA' SHOWER ROSES
 - IF WATER PRESSURE TO BUILDING EXCEEDS 500 kpa. PRESSURE LIMITING DEVICE TO BE INSTALLED.
 - MINIMW 4-STAR WELS RATED TOILETS TO BE INSTALLED.
 - MINIMW 3-STAR WELS RATED TAPWARE FOR
 - KITCHEN SINKS, BATHROOM BASINS & LAUNDRY TROUGHS.
 - 250 LITRE RHEEM HOT WATER SYSTEM (OR SIMILAR)
 - MINIMUM 4-STAR MEPS RATED AIR CONDITIONERS TO BE INSTALLED (IF APPLICABLE)
 - 80% TOTAL ENCLOSED FLOOR AREA TO HAVE ENERGY EFFICIENT GLOBES INSTALLED.
 - INSULATION ABOVE 3.3 R VALUE TO ALL CEILING SPACE INCLUDING TERRACE & FRONT BALCONY

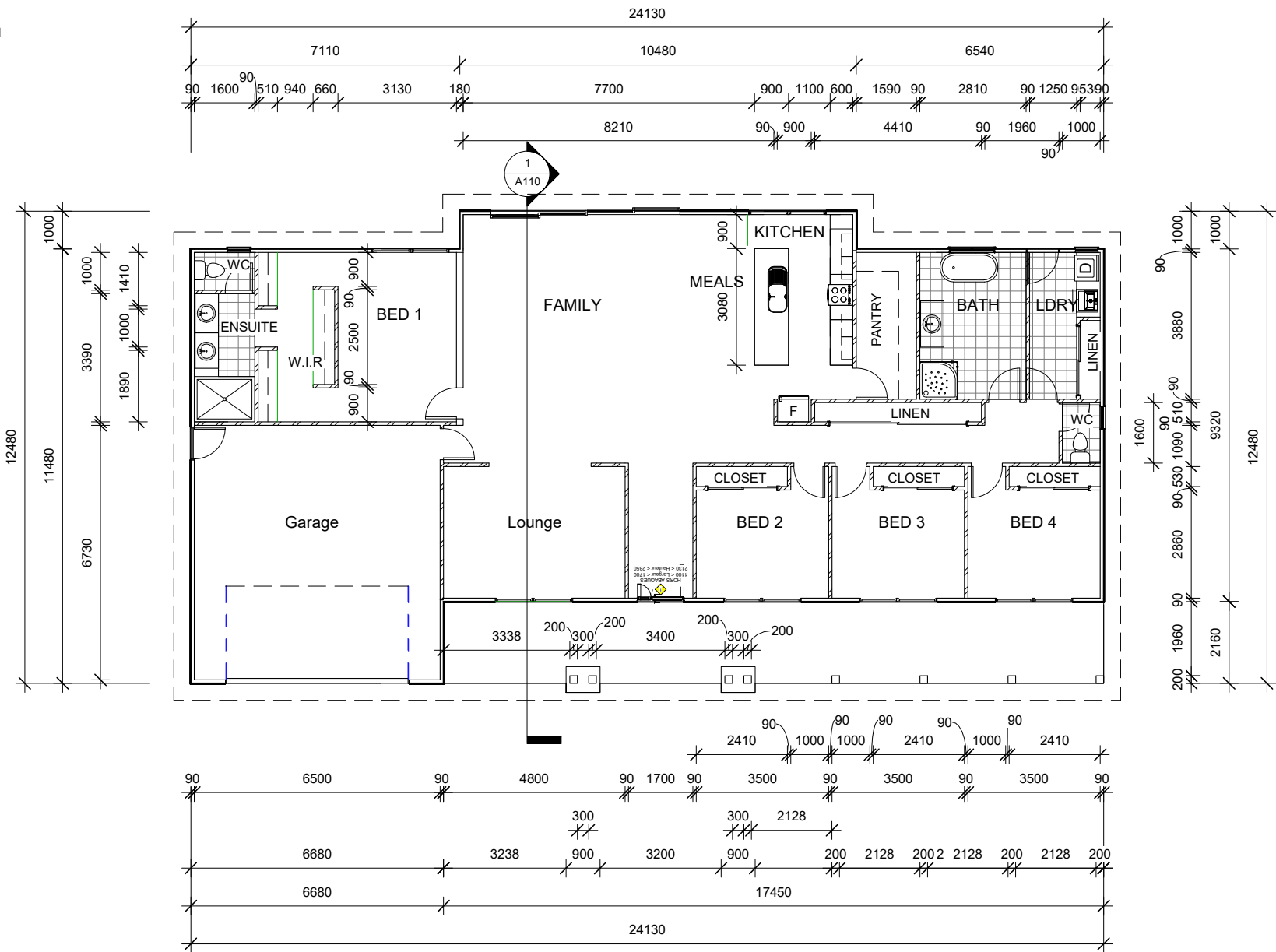
GENERAL NOTES

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THESE PLANS SHALL BE READ IN CONJUNCTION WITH ANY STRUCTURAL AND CIVIL ENGINEERING COMPUTATIONS AND DRAWINGS

- LEGEND**
- CJ : CONSTRUCTION JOINT
DP : DOWNPIPE
FP : FIRE PLACE
FW: FLOOR WASTE
EPS: EXPANDED POLYSTYRENE FOAM (EPS) Sandwiched
HWS: HOT WATER SYSTEM
AC: AIR CONDITIONING
PS: PLUMBING STACK / DUCT
SP: STEEL POST
T.B.C.: TO BE CONFIRMED
RL: RELATIVE LEVEL
AHD: AUSTRALIAN HEIGHT DATUM
CSD: CAVITY SLIDING DOOR
OHC: OVER HEAD CUPBOARD
FG: FIXED GLASS
FSR: FLOOR SPACE RATIO
LB: LOAD BEARING
NGL: NATURAL GROUND LINE
UBO: UNDER BENCH OVEN
WO: WALL OVEN
DW: DISHWASHER
MW: MICROWAVE
WM: WASHING MACHINE
WIR: WALK-IN-ROBE
ASD: SLIDING GLASS DOOR
ASW: ALUMINIUM SLIDING WINDOW
ADH: ALUM. DOUBLE HUNG WINDOW
AAW: ALUM. AWNING WINDOW
ALW: ALUM. LOUVRE WINDOW
BCA: BUILDING CODE OF AUSTRALIA
AS: AUSTRALIAN STANDARDS



1 FLOOR PLAN
1 : 100

JOHN RAINBIRD

70 MARKED TREE
ROAD GRETNA,
HOBART TASMANIA
7140



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049 215 3413

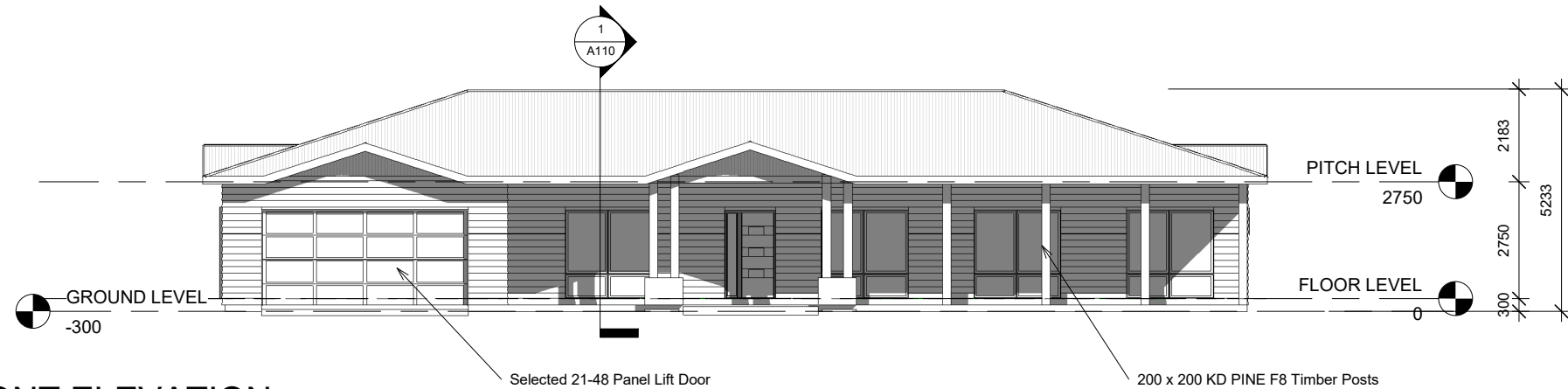
AREAS

LIVING AREA: 207.4 m²
GARAGE AREA: 45.8 m²
VERANDAHS: 37.3 m²
TOTAL AREA: 290.5 m²

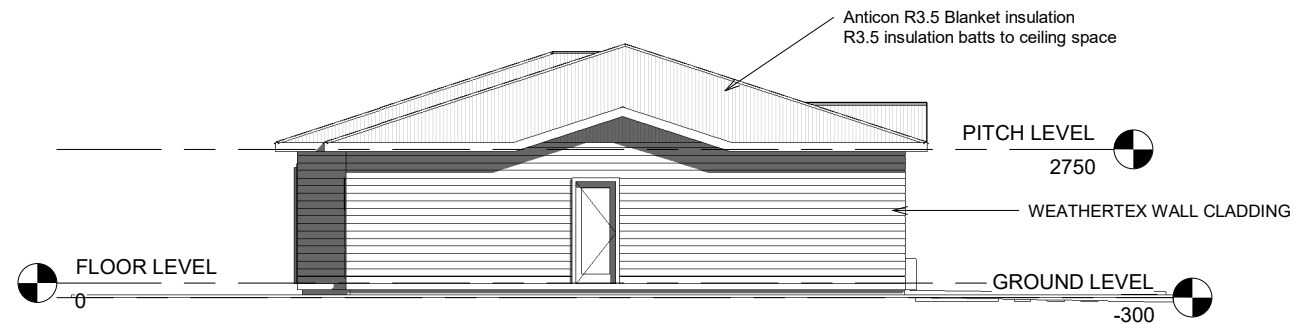
No.	Description	Date

FLOOR PLAN

Project number	23-733
Date	7/11/2023
Drawn by	P&J Constructions
Checked by	Checker
A102	
Scale	1 : 100

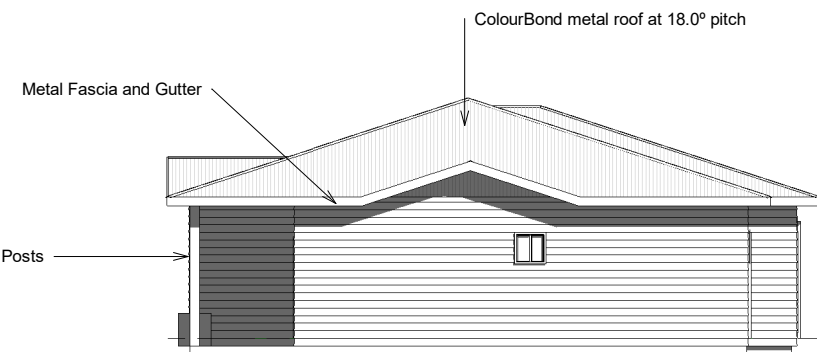


3 FRONT ELEVATION
1 : 100



4 LEFT SIDE ELEVATION
1 : 100

COLOURBOND METAL ROOF
ROOF TRUSSES AT 900 CTRS FIXED TO
MANUFACTURERS SPECS TO BE DESIGNED BY ENGINEER



1 RIGHT SIDE ELEVATION
1 : 100



2 BACK ELEVATION
1 : 100

SLAB AND FOOTINGS TO ENGINEER'S DETAIL.
POISONS TO A.S. 3660.1-2000 STANDARDS

JOHN RAINBIRD

70 MARKED TREE
ROAD GREтна,
HOBART TASMANIA
7140



P&J Constructions
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No.	Description	Date

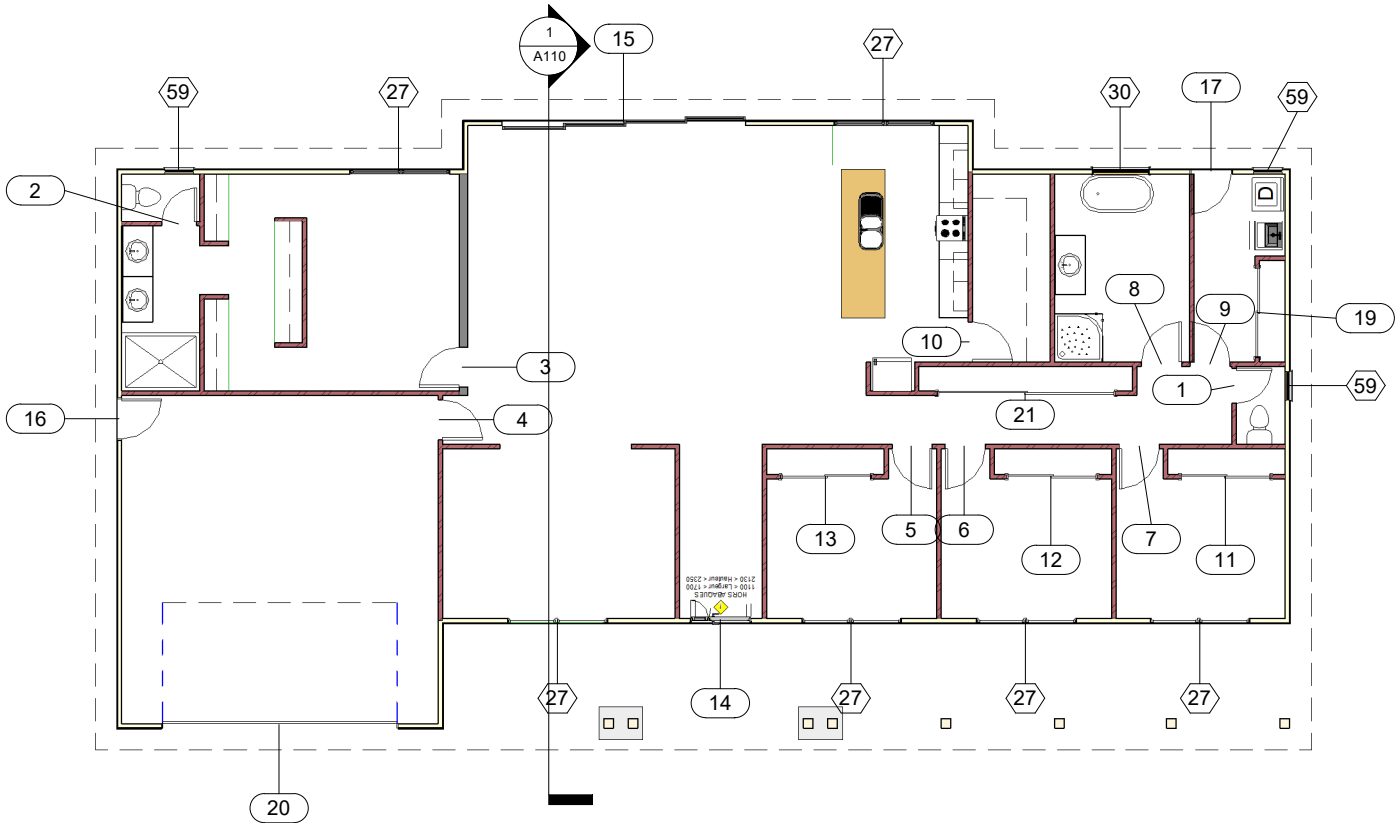
ELEVATION PLAN

Project number	23-733
Date	7/11/2023
Drawn by	P&J Constructions
Checked by	Checker
A103	
Scale	1 : 100

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Door Schedule			
Height	Width	Type Mark	Mark
2040	720	129	1
2040	720	129	2
2040	820	128	3
2040	820	128	4
2040	820	128	5
2040	820	128	6
2040	820	128	7
2040	820	128	8
2040	820	128	9
2040	820	128	10
2100	1800	136	11
2100	1800	136	12
2100	1800	136	13
2300	4800	45	20
2100	1200	79	14
2400	5000	40	15
2100	820	97	16
2100	820	97	17
2100	1800	136	19
2100	3600	42	21

Window Schedule				
Height	Width	Mark	Type Mark	Type Comments
1500	1000	1	27	2100-1500/600
1500	1000	5	27	2100-1500/600
1500	1000	6	27	2100-1500/600
1500	1000	12	27	2100-1500/600
1500	1000	14	27	2100-1500/600
1500	1000	16	27	2100-1500/600
1200	1200	7	30	
600	600	28	59	
600	600	8	59	
600	600	10	59	



1 WINDOWS & DOORS
1 : 100

JOHN RAINBIRD

70 MARKED TREE
ROAD GREтна,
HOBART TASMANIA
7140



P&J Constructions
049 215 3413


























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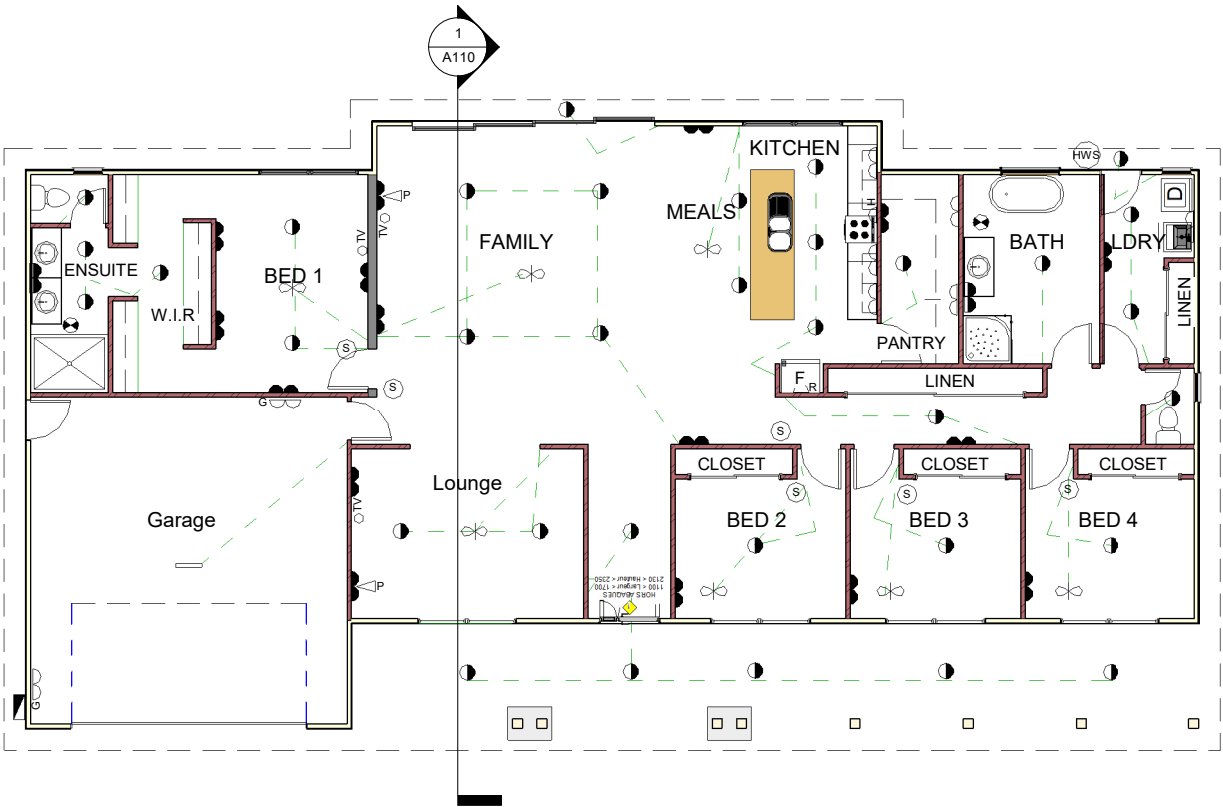
WINDOWS & DOORS

Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker

A104

Scale	1 : 100
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ELECTRICAL LEGEND											
	METER BOX		FLOURESCENT LIGHT - 1200 SINGLE		SINGLE OUTLET 1050 ABOVE FLOOR LEVEL		MICROWAVE OUTLET 1650 A.F.I IF REQUIRED		HW3	HOT WATER SERVICE	
	LIGHT SWITCH 1500 ABOVE FLOOR LEVEL		EXHAUST FAN		DOUBLE OUTLET 1050 ABOVE FLOOR LEVEL		RANGEHOOD OUTLET 1650 A.F.I IF REQUIRED		(S)	SMOKE DETECTOR	
	FEATURE CEILING LIGHT		CEILING FAN		VANITY OUTLET 1100 ABOVE FLOOR		OTV		CF	CEILING FAN LIGHT	
	WALL MOUNTED LIGHT		SINGLE OUTLET 1200 ABOVE FLOOR LEVEL		GARAGE OUTLET 1350 ABOVE FLOOR		TP		ME	MINISPLIT EVAPORATORS	
	DOWNLIGHT		DOUBLE OUTLET 1200 ABOVE FLOOR LEVEL		REFRIDERATOR OUTLET 1650 ABOVE FLOOR		TP		MC	MINISPLIT CONDENSER	



1 ELECTRICAL PLAN
1 : 100

JOHN RAINBIRD

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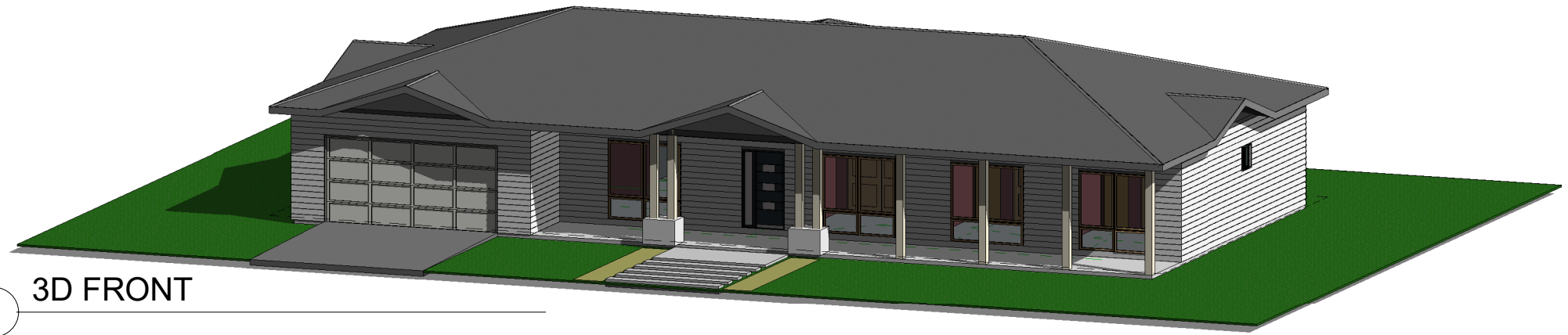
No.	Description	Date

ELECTRICAL PLAN

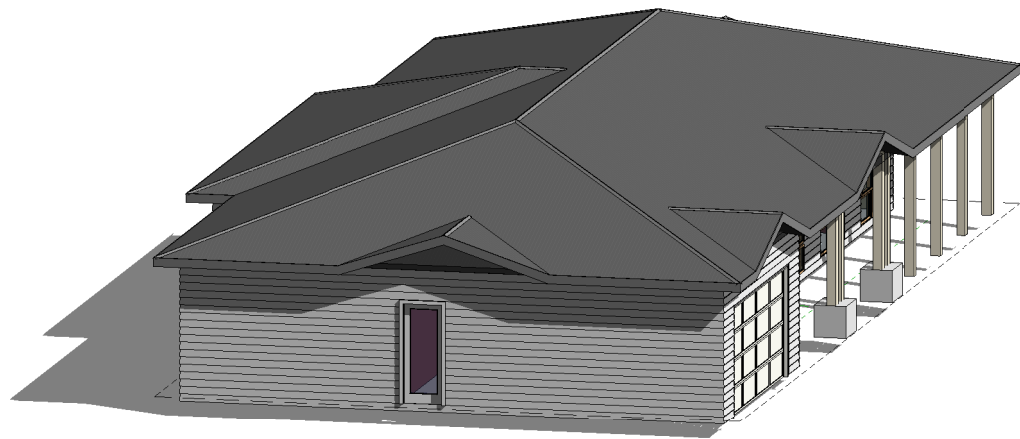
Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker

A105

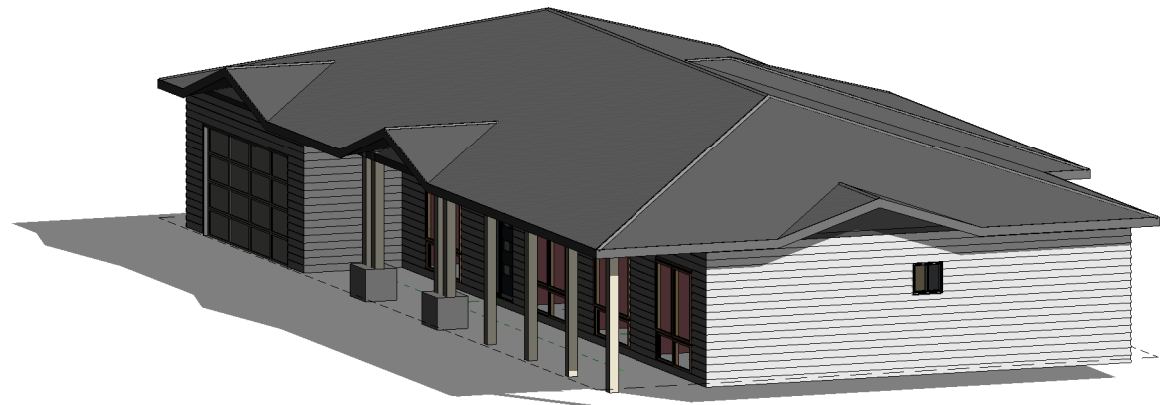
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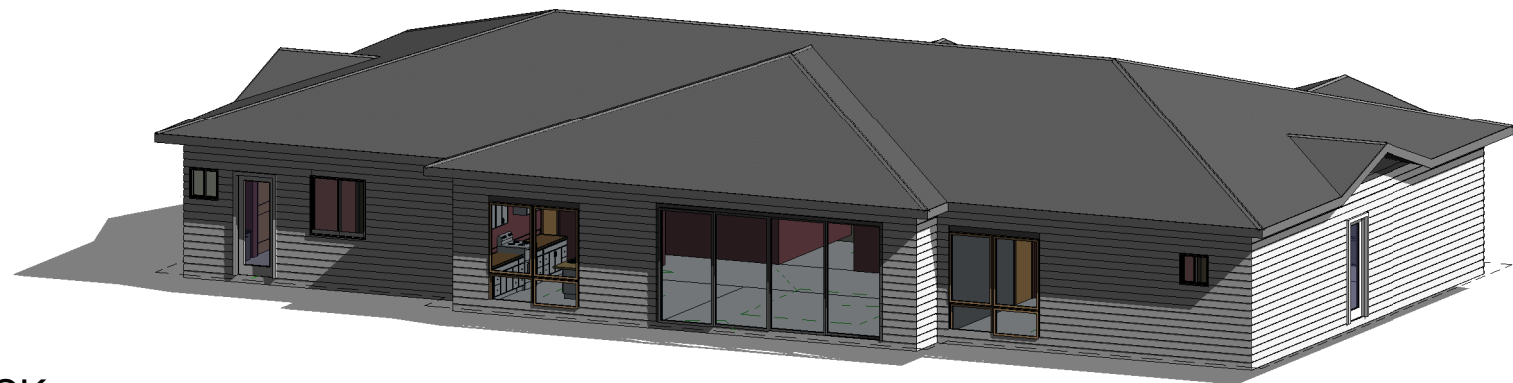
1 3D FRONT



2 3D LEFT SIDE



4 3D RIGHT SIDE



3 3D BACK

JOHN RAINBIRD

70 MARKED TREE
ROAD GRETN,
HOBART TASMANIA
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No.	Description	Date

3D VIEWS

Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker

A106

Scale

LINTELS F14 HW

SPAN	SIZE
600	50 X 75
900	50 X 100
1200	75 X 75
1500	100 X 75
1800	125 X 75
2100	150 X 75
2400	150 X 75
2700	200 X 75
3000	225 X 75

JAMB STUDS

UP TO 1600 - 2/75 X 50 F14
UP TO 2700 - 3/75 X 50 F14
UP TO 3900 - 4/75 X 50 F14

WIND BRACING N3 DIRECTION A

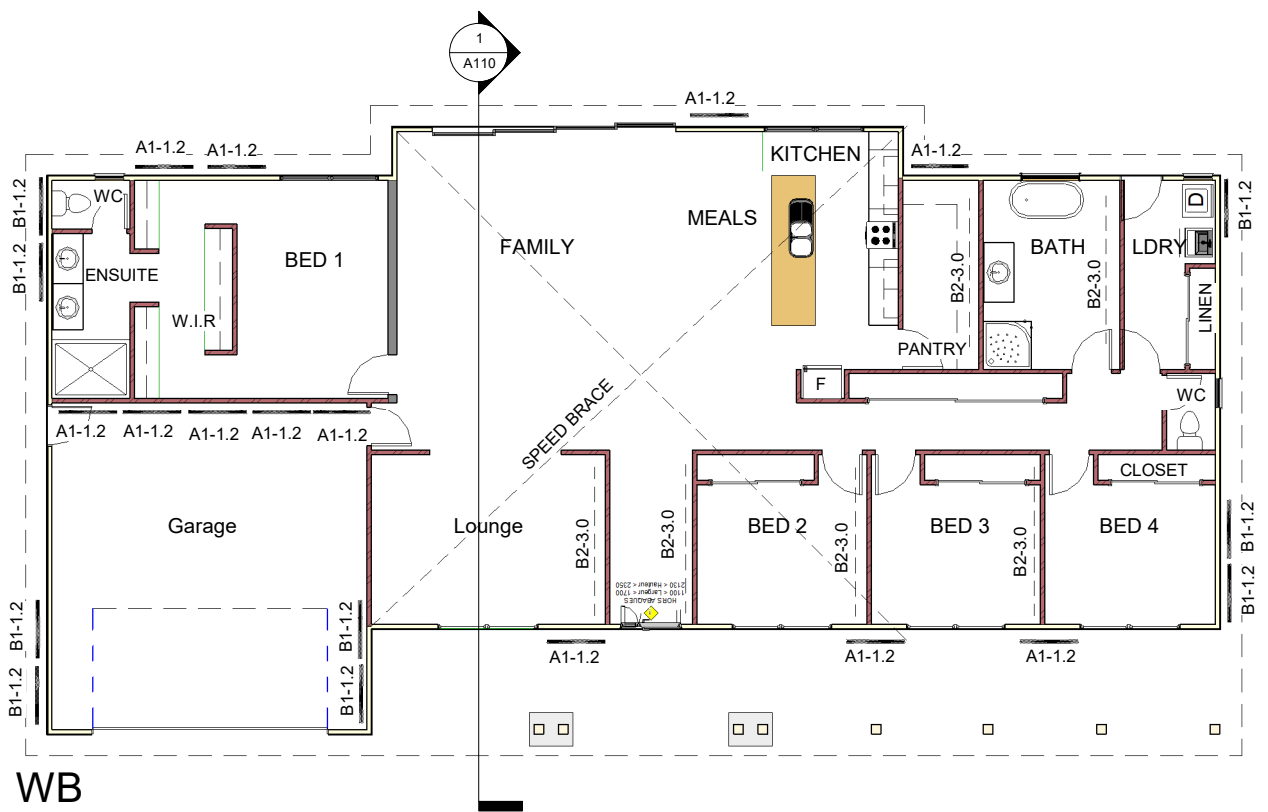
PANEL	NUMBER	Structural Ply 6kN / Meter	tb.1a (g.i.strap) 1.5kN / Meter	rod, conc 2.5kN / Meter	Sub-Total
A1	12	7.2			86.4 Kn
A2					
A3					
		Resistance Gained			86.4 Kn
		Resistance Required			58.5 Kn

WIND BRACING N3 DIRECTION B

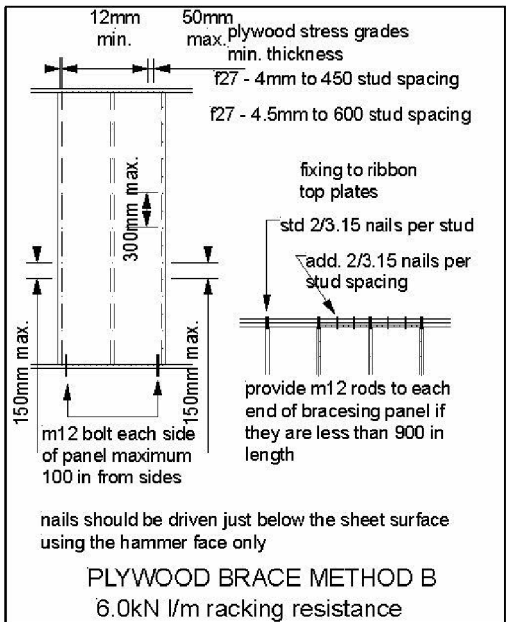
PANEL	NUMBER	Structural Ply 6kN / Meter	tb.1a (g.i.strap) 1.5kN / Meter	rod, conc 2.5kN / Meter	Sub-Total
B1	9	7.2			64.8 Kn
B2	5		4.5		22.5 Kn
B3					
		Resistance Gained			87.3 Kn
		Resistance Required			85.3 Kn

JOHN RAINBIRD

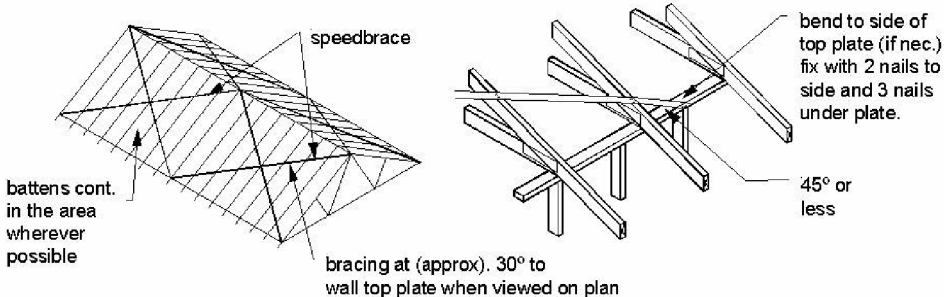
70 MARKED TREE
ROAD GRETNA,
HOBART TASMANIA
7140



1
WB
1 : 100



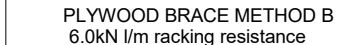
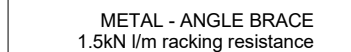
SPEEDBRACE DETAIL



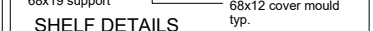
No.	Description	Date

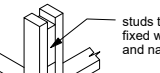
WB

Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker
A107	
Scale	1 : 100



- all construction to be in strict accordance with:-
the building code of australia AS 1684- 1999
- termite treatment to comply with the provisions of Part 3.1.3 of the BCA and with AS3660.1-
- concrete construction to comply with AS2870.1 AS3600.
- timber construction to comply with the provisions of Part 3.4.3 of the BCA and AS1720.1 AS1684.
- concrete roofing to comply with AS1757, AS2050 and be fixed to manufacturer's spec's for relevant conditions.
- weepholes in masonry walls at 900 ctrs.
- vertical articulation in masonry walls to comply with the provisions of Part 3.3.1.8 of the BCA.
- wet areas to comply with the provisions of Part 3.8.1 of the BCA.
- Smoke alarms to comply with the provisions of Part 3.7.2 of the BCA.
- wall bracing to comply with the provisions of Part 3.4.3.8 of the BCA + AS 1684- 1999
- ensure shear blocks are of a sufficient length to avoid possible splitting.
- glass installation to comply with AS1288, and AS2047



TIE DOWN CALCULATION -		AS 1684 - 1999		GENERAL NOTES			
MEMBER CONNECTION - JD4 TYP. u.n.o	UPLIFT REQ.	UPLIFT RESISTED	ROOF FRAMING	LININGS		SOFFIT LININGS	
ROOF BATTENS TO TRUSSES: WITHIN 1200mm OF EDGES (1/65x3, 0.5se deformed shank nail)	table 9.14 0.50kN	table 9.25(a) 0.68kN	ROOFING SHALL BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS TO SUIT ROOF BATTENS SHALL BE FIXED AS PER TIE DOWN SCHEDULE.	CEILING SHALL BE LINED WITH 10mm THICK SUPACEL LINING. FOR FRAME SPACING OF 600mm AND 10mm THICK PLASTERBOARD FOR FRAME SPACINGS OF 450mm (eg UNDERSIDE OF FIRST FLOOR JOISTS).		SOFFIT BEARERS @ EACH TRUSS TAIL WITH 4.5mm F.C SH NAILED AT 225 CTRS WITHIN 1200 OF EXTERNAL BUILDING CORNERS AND AT 300 CTRS ELSEWHERE. NOTE:- USE 2.0 x 30mm GALV FIBRE CEMENT NAILS	
ROOF AREA (1/65x2.8e plain shank nail) (4mm PENETRATION INTO RECEIVING MEMBER)	0.23kN	0.32kN	ENTIRE ROOF SHALL BE TRUSS CONSTRUCTION AT DESIGNED AND INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION TO SUIT CONDITIONS UNLESS NOTED OTHERWISE ON PLANS	WALLS SHALL BE LINED WITH 10mm THICK PLASTERBOARD OR 6mm THICK VILLABOARD TO		WALL FRAMING	
ROOF TRUSSES TO TOP PLATE: @ 600 CRS 1/30x0.8 G.L. LOOP STRAP FIXED OVER TRUSS W/STRAP ENDS FIXED TO PLATE WITH 4/2.8e NAILS PLUS 2/75mm SKEW NAILS TO EACH INTERFACE	table 9.13 3.3kN	table 9.21(d) 13.0kN	CEILING BINDERS SHALL BE 70x35 F5 AT 3000 CTRS. MAXIMUM.				
WALL FRAMING - GROUND FLOOR: TOP AND BOTTOM PLATES TO STUDS: @ 1800 CRS PRYDA STA. IN BUILT CLAW NAILS. WALL FRAMING - GROUND FLOOR INTERMEDIATE TOP AND BOTTOM PLATES TO STUDS: PLATES UP TO 38mm THICK - 2/75mm NAILS PLATES 38-50mm THICK - 2/90mm NAILS NAILS S THRU PLATE IN BOTH CASES.	7.5kN	10.3kN	CONCRETE	WET AREAS: FIXED @ 300 CTRS OR 200 CTRS WHEN TILED. REFER TO BRACING PLANS FOR POSSIBLE VARIATIONS TO WALL LININGS OR FIXING METHODS. ALL ABOVE LININGS SHALL APPLY UNLESS NOTED OTHERWISE ON FLOOR PLANS.		MG10 PINE FRAME TO LOAD BEARING WALLS 70 x 35 FRAME - STUDS AT 450 CTRS NOT NOTCHED - ONE ROW OF NOGGINGS 70 x 35 FRAME - BOTTOM PLATES 70 x 35 FRAME - TOP PLATES, NOT NOTCHED. (SAME RATING AS RIBBON PLATE ABOVE) TOP PLATES FOR ROOF SPANS 4400 - 7900: ADD - RIBBON PLATE 70 x 35 MGP10 TOP PLATES FOR ROOF SPANS 7900 - 14700: ADD - RIBBON PLATE 70 x 35 MGP12	
NOGGINGS TO STUDS: 2/75mm NAILS SKEW NAILED OR THRU NAILED. BOTTOM PLATES TO CONCRETE SLAB: M12 BOLT AT NOT MORE THAN 3000mm CTRS.			REFER TO ENGINEER'S DETAILS. PROVIDE CONTINUOUS 200um POLYTHENE VAPOUR BARRIER LAPPED 200 MM. AND SEALED AT ALL JOINTS AND PENETRATIONS. PROVIDE TERMITE CONTROL IN ACCORDANCE WITH A.S. 3660.1			TOP PLATES FOR ROOF SPANS 7900 - 14700: ADD - RIBBON PLATE 70 x 35 MGP12	
OR CHEMICAL EXPANSION OR FIRED PROP. FASTENERS. BOTTOM PLATE TO JOISTS: PLATES UP TO 38mm THICK - 2/75mm NAILS PLATES 38 - 50mm THICK - 2/90mm NAILS RIBBON PLATE TO TOP PLATE - REFER TO AS 1684.4 - 1999	table 9.11 11.0kN	table 9.18(d) 15.0kN	BRICKWORK	APPROVED BRICK TIES AT 600 x 600 CTRS. MAX. STAGGERED. BRICKWORK SHALL HAVE APPROVED DAMP COURSE NOT LESS THAN 2 COURSES ABOVE GROUND LEVEL. PROVIDE APPROVED CAVITY FLASHING WITH WEEPHOLES AT 900mm CTRS. MAXIMUM.		MG10 PINE FRAME TO NON LOAD BEARING WALLS AND PARTITIONS 70 x 35 FRAME - STUDS AT 450 CTRS - ONE ROW NOGGINGS - TOP AND BOTTOM PLATES	
						PROVIDE SLOTT NOGGINGS SUPPORT BELOW FIRST FLOOR BOTTOM PLATE. WALL NOGGING AT 1350mm CTRS. MAXIMUM. PROVIDE ADDITIONAL NOGGING TO SUIT TOILET ROLL HOLDERS, TOWEL RAILS, ETC... SEE DETAILS ABC	
				STD CORNER DETAIL			

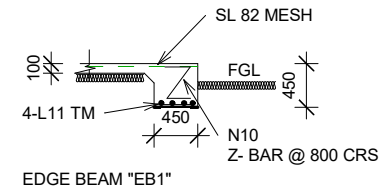
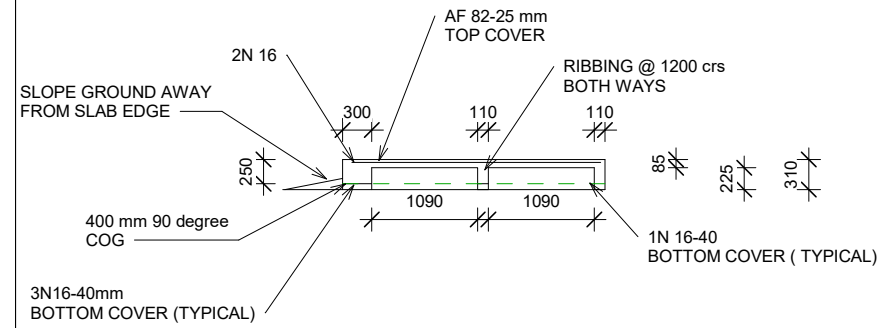
JOHN RAINBIRD
70 MARKED TREE ROAD GRETN, HOBART TASMANIA 7140

[illegible]

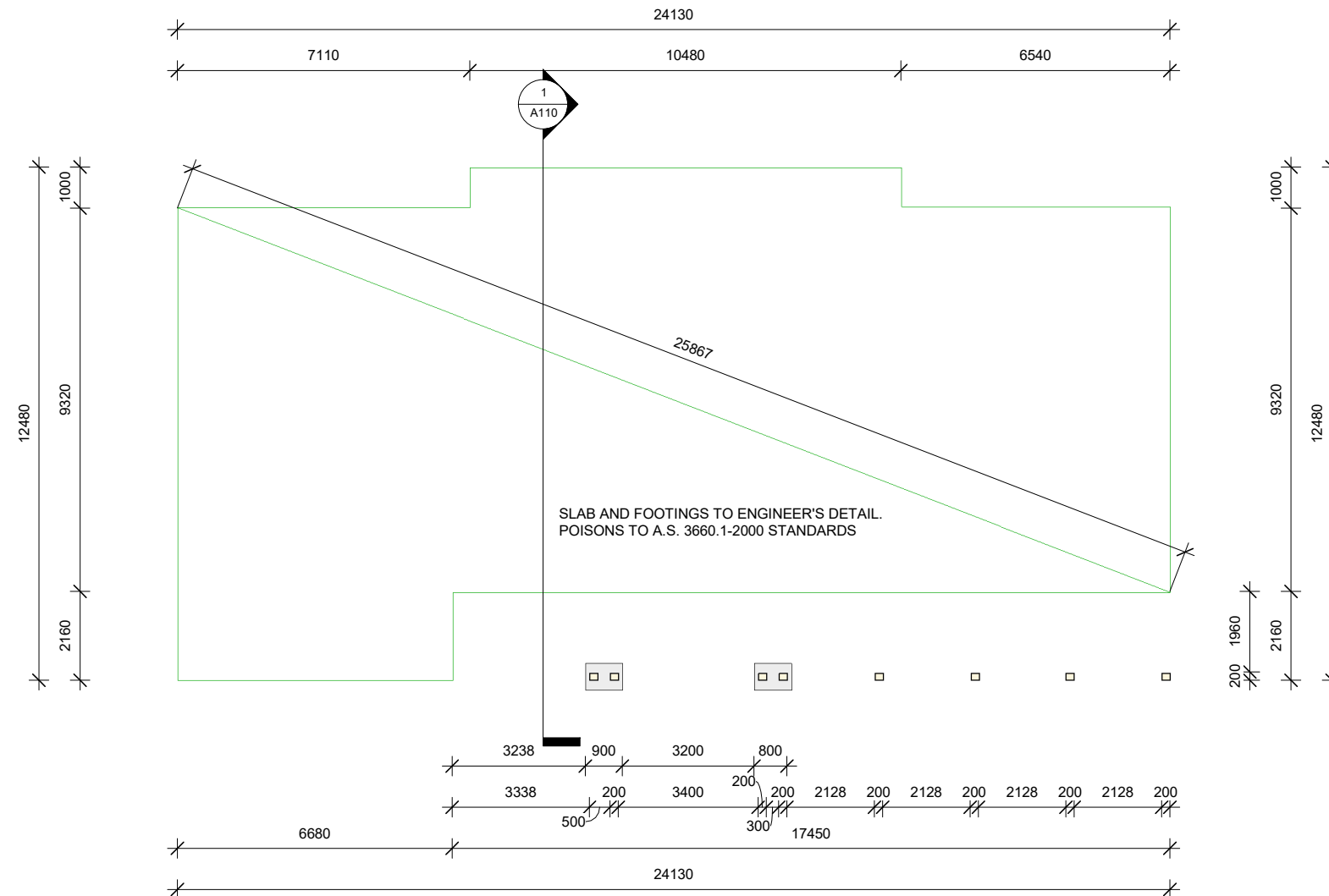
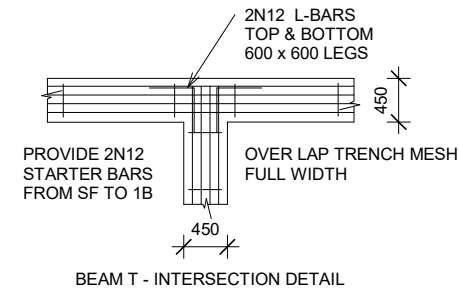
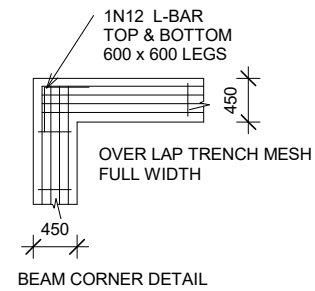
TD

Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker
A108	
Scale	1 : 100

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TYPICAL SLAB ONLY SUBJECT SOIL TEST AND TO ENGINEER'S DETAIL.



1 SLAB LAYOUT
1 : 100

JOHN RAINBIRD

70 MARKED TREE
ROAD GREтна,
HOBART TASMANIA
7140



P&J Constructions
049 215 3413

No.	Description	Date

SLAB LAYOUT

Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker
A109	
Scale	As indicated

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GENERAL FRAMING MEMBERS (U.N.O)

STUDS

90x35 MGP10 @ 450 MAX.CTRS.
NOTCHES20mm FOR BRACING
(MAX.HEIGHT 2700mm)
90x45 mgp10 @ 450 MAX.CTRS.
(HEIGHT 2700mm-3000mm)
90x45 F17 KD HW @ 450 MAX. CTRS
(MAX. HEIGTH 3700mm)

DOUBLE STUDS: 2/90x45 MGP 10 STUDS
FIXED END STUD WALL TO MASONRY WALLS WITH M10
DYNABOLT AT TOP, BOTTOM AND 1500 MAX. CTRS. (TYP.)

WALL PLATES

TOP PLATE - 2/45x90 MGP 10 NOT TRENCHED
BOTTOM PLATE - 45x90 MGP 10 NOT TRENCHED

INTERNAL FINISHES:

1. Walls -10mm Gib boards (AQUALINE TO WET AREAS)
2. Ceiling -13mm Gib Board (AQUALINE TO WET AREAS)
3. Skirting - 60x10mm SB Pine
4. Cornice - 55mm Gib Cove
5. Exterior joinery - FJ PP quality reveals with architraves
6. Interior Doors - MDF HC PQ on grooved Pine liners

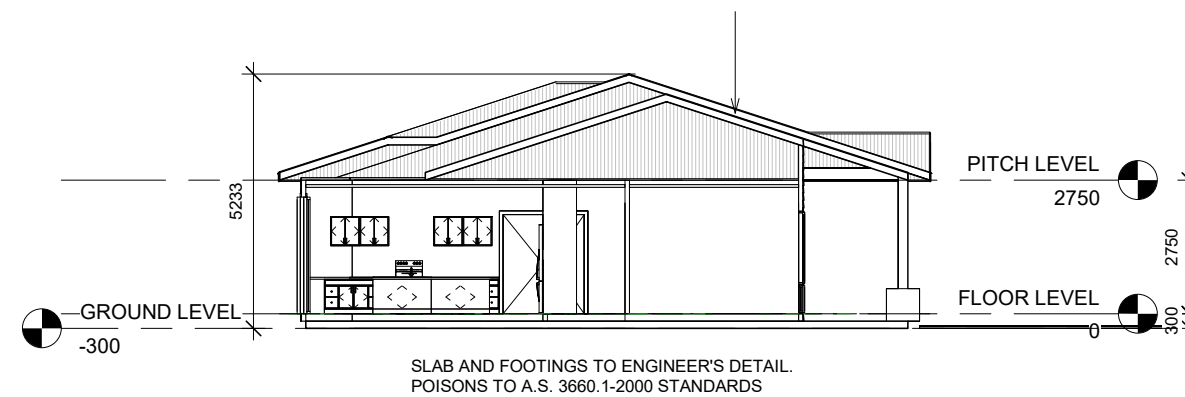
GENERAL NOTES:

1. All Stud Heights 2750 mm unless noted otherwise
2. N3 windzone
3. All dimensions are to framing
4. All Soffits to be 450mm to wall framing unless noted otherwise
5. All Levels to be check on site prior to commencing on job
6. All dimensions to be verified during construction
7. All timber to be SG8 unless specified otherwise
8. Install Noging for wall hung vanities

WATERPROOFING AREAS

WATERPROOFING OF WET AREAS, BATHROOM,
SHOWERS, SANITARY COMPARTMENTS AND THE
LIKE SHALL BE PROVIDED IN ACCORDANCE WITH
A.S.3740-2004: WATERPROOFING OF WET AREAS
WITHIN THE BUILDING

COLOURBOND METAL ROOF
ROOF TRUSSES AT 900 CTRS FIXED TO
MANUFACTURERS SPECS TO BE DESIGNED BY ENGINEER



1 Section 1
1 : 100

STUD AT SIDE OPENINGS
OPENING WIDTH: STUDS:

UP TO 1200mm 1/90x45 MGP10
1200mm - 1800mm 2/90x45 MGP10
1800mm - 2400mm 2/90x45 MGP10

WALL BRACING

BRACING OF ALL STUD WALLS TO BE IN ACCORDANCE WITH
THE RESIDENTIAL TIMBER FRAMING CONSTRUCTION
A.S.1684.2-2006 U.N.O

FIXING REQUIREMENTS

GENERALS: REFER TO A.S.1684.2-2006 RESIDENTIAL

TIMBER FRAMING CONSTRUCTION

MANUAL TYPICAL FIXING EQUIREMENTS
GENERALS: EQUIVILENT TIMBER GRADE CAN BE USED
TO REPLACED TIMBER GRADES SPECIF

ALL STRUCTURAL TIMBER SIZES TO BE IN ACCORDANCE WITH
A.S.1684-NATIONAL TIMBER FRAMING CO

JOHN RAINBIRD

70 MARKED TREE
ROAD GREтна,
HOBART TASMANIA
7140



P&J Constructions
049 215 3413

No.	Description	Date

SECTION

Project number	23-733
Date	7/11/2023
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A110	
Scale	1 : 100

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70 Marked Tree Rd,
Gretna.
Tasmania 7140

Assessment of Agricultural risk Central Highland Region



Table of Contents

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Climate Change Scenarios	21



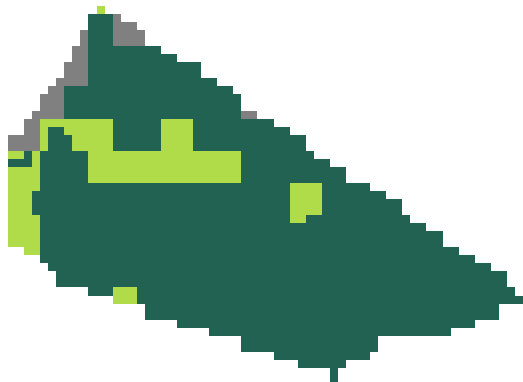
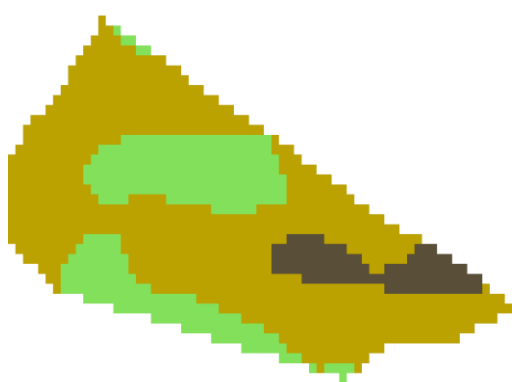
Site Area	21.849 Ha
Address	70 Marked Tree Rd, Gretna TAS 7140, Australia
Latitude & Longitude	-42.64561, 146.93487
Postcode	7140
Suburb	Gretna
LGA	Central Highlands
State	TAS
Closest Urban Centre	Sandy Point - 428 km (351° NNW)
Closest Major Cities	Mordialloc, City (Mordiall - 540 km (342° NNW)
Closest Grain Recieval Site	173 Mackey St North Geelong, VIC 3215 - 548 km (336° NW)

Lot & Plans / Title Details

171936/1

21.849 Ha

Property and Climate Summary



Arable Semi-Arable Non-Arable

Nature Grazing

Arable Land	5 Ha	25%
Primary Land Uses	Nature (84.6%)	Grazing (11.9%)
Dominant Soil Types	Dermosol (89.6%)	Chromosol (10.4%)
Growing Seasons	Winter (primary)	Spring (secondary)
Terrain Summary	143.9m average elevation	7.6° average slope

Productivity Cropping

3.9 t/ha

Wheat Ton Equivalent (average)

Average, min and max yield over the past 10 years

1 3.9 3.9 3.9 3.9 5 t/ha min 25% 75% max

Rainfall Annual

514 mm

50 Year Average

Average, min and max rainfall from 1970 to present

0 310 452 568 806 1,000 mm min 25% 75% max

Climate Risk

2.9

Agtuary Combined Climate Risk Score

Risk score based on historical heavy rainfall, heat stress and frost

1 2.5 2.5 3.0 3.8 5 Low Risk min 25% 75% max Extreme Risk

Climate Change Rainfall

538 mm (+5%)

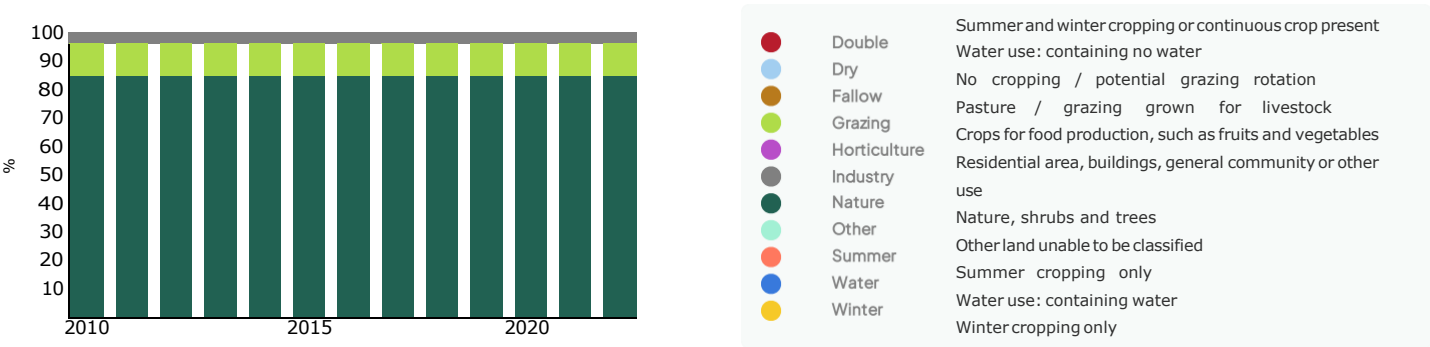
30 Year Rainfall Forecast

Average, min and max rainfall over the next 30 years

0 445 514 561 601 1,000 mm min 25% 75% max

Land Use

Percentage breakdown of the area for different uses



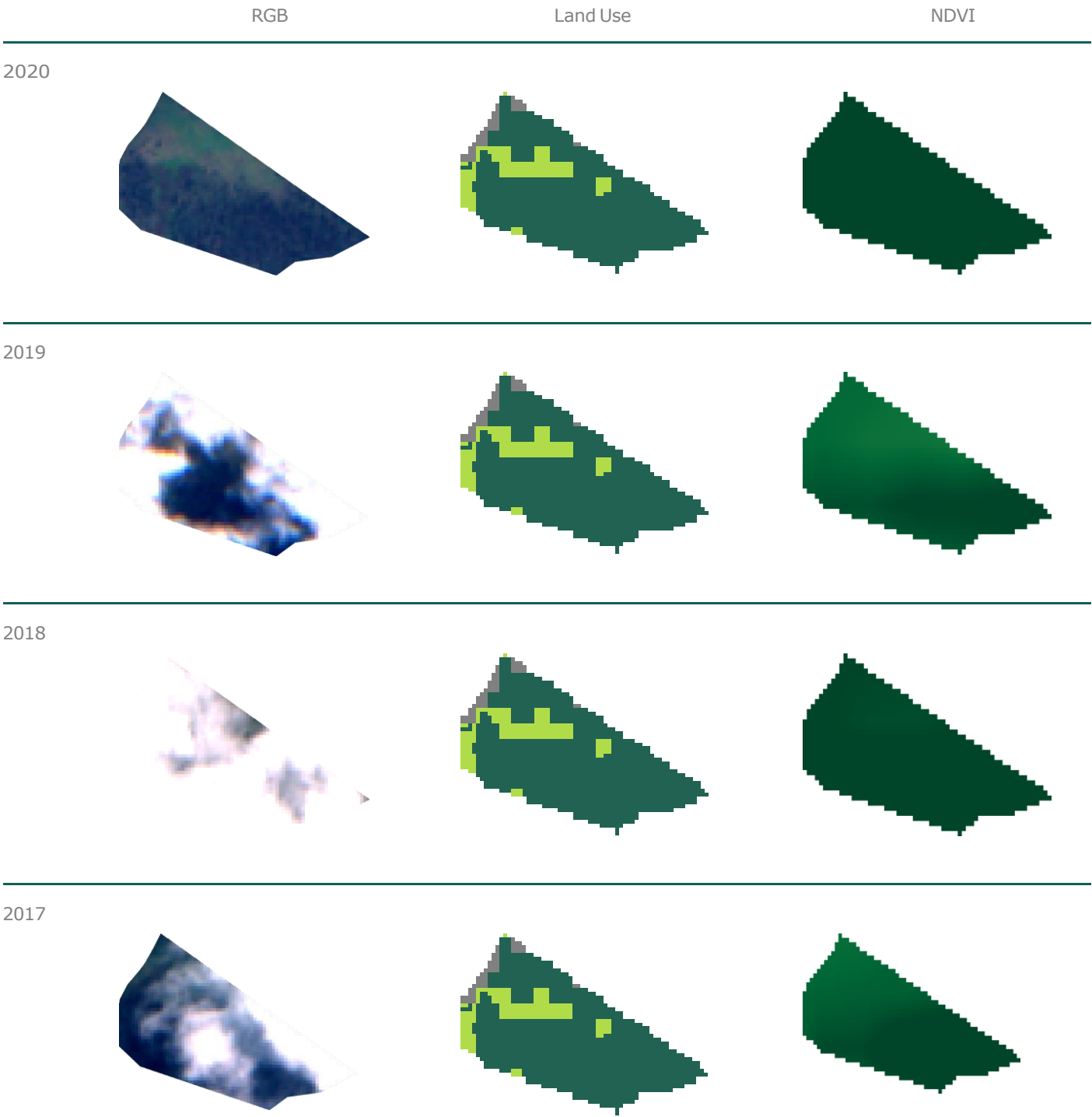
Nature	18 ha	84.6 %
Grazing	3 ha	11.9 %
Industry	1 ha	3.5 %
Other	0 ha	0.0 %
Dry	0 ha	0.0 %



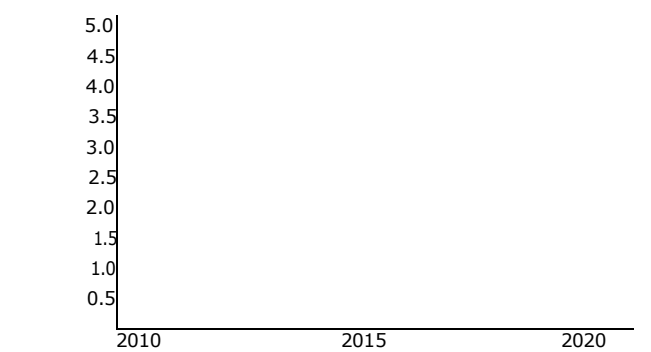
Land use data for this property was determined from running our internal Land Use matching algorithm on to frequent, historical satellite imagery and its indicators.

Our internal land use algorithm analyses each pixel in the satellite imagery over 12-month periods to determine the closest matching land use type per year.

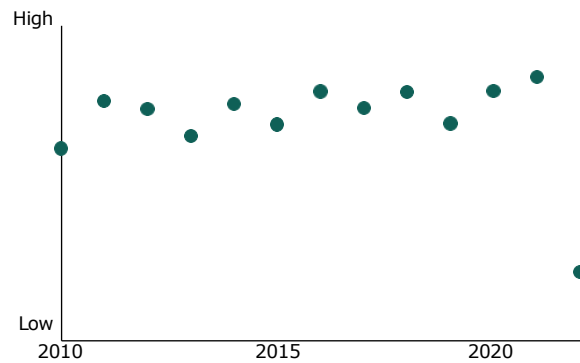
Land Use Continued



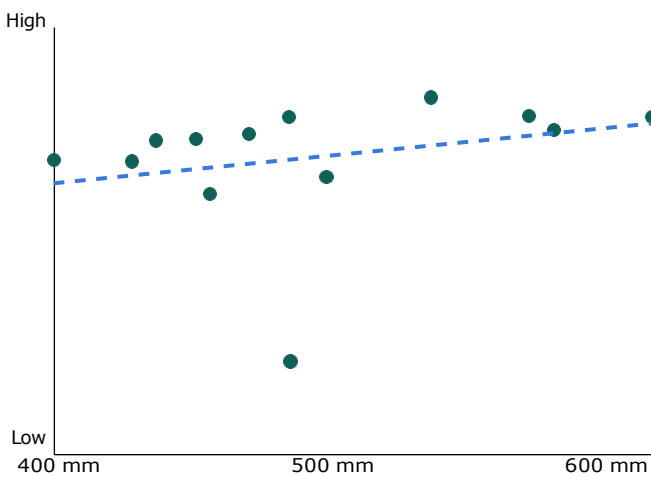
Yield
Winter Cropping



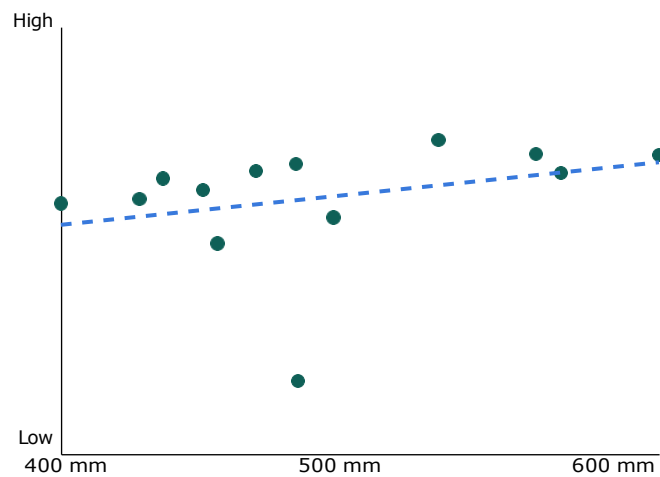
Bioquality
Nature



Nature Productivity vs Rainfall (mm)
20 year history of production vs. Rainfall volume



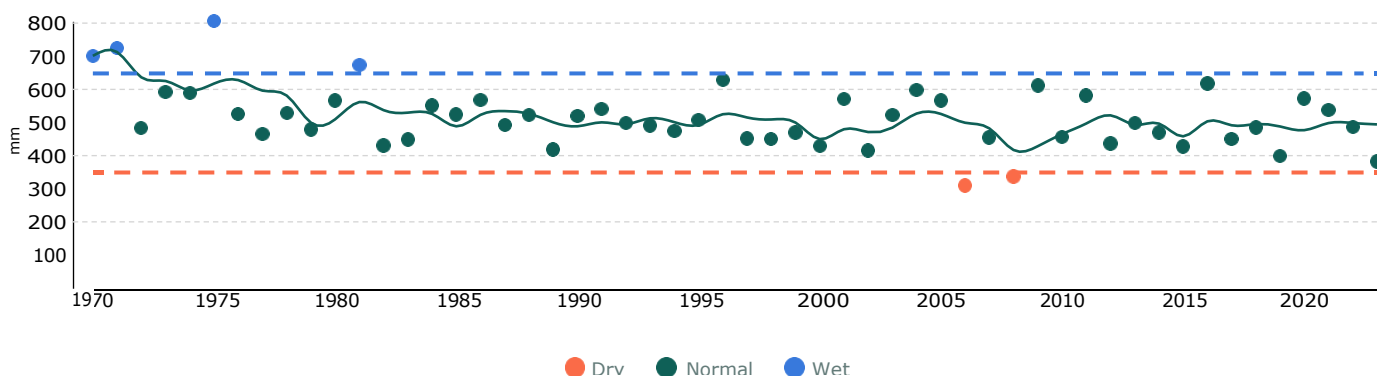
Grazing Productivity vs Rainfall (mm)
20 year history of production vs. Rainfall volume



Rainfall

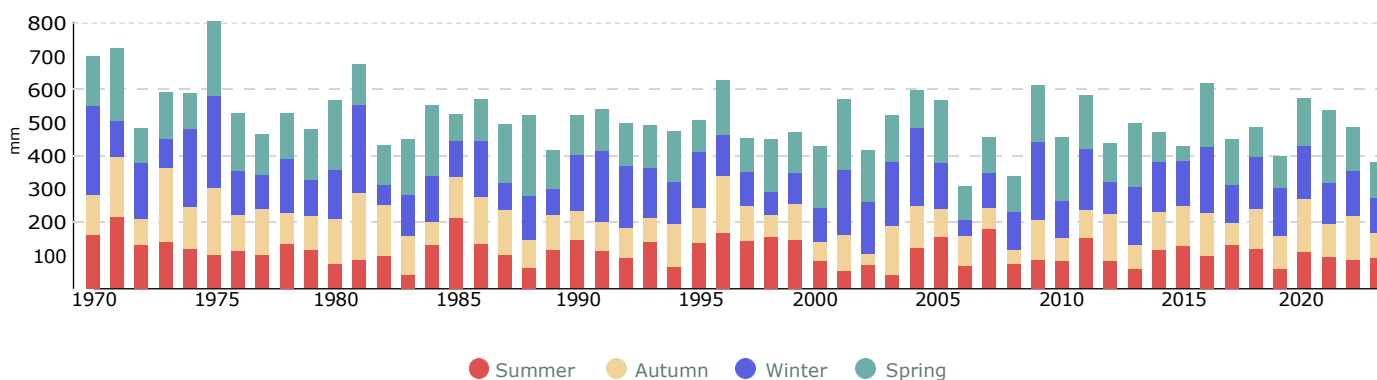
50 Year Annual Rainfall History

Recorded levels of rainfall volume per year within normal (average), dry (below average) or wet (above average) conditions.
1970 - 2022



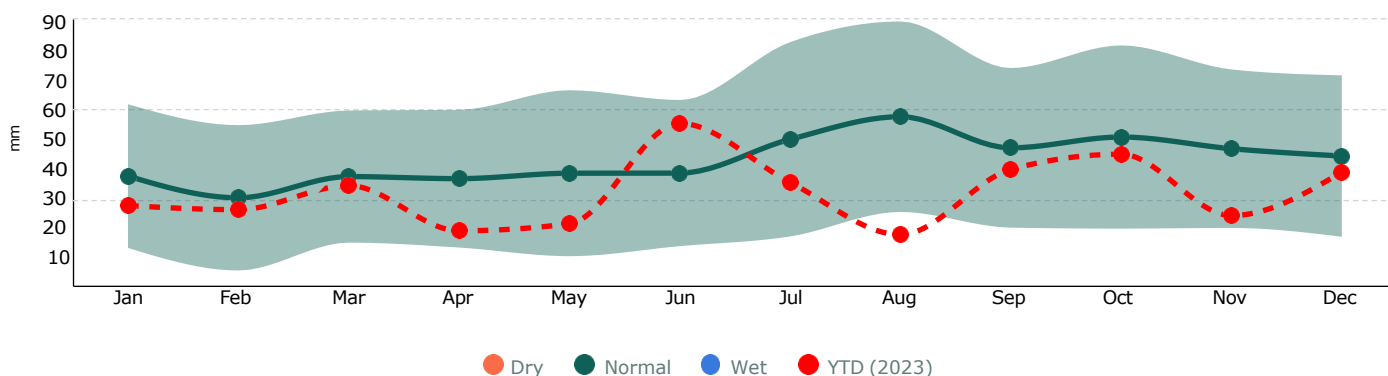
50 Year Seasonal Rainfall History

Recorded levels of rainfall volume per season during the last 50 years
1970 - 2022



50 Year Monthly Rainfall History & Year To Date

Recorded levels of rainfall volume per month within normal (average), dry (below average) or wet (above average) conditions during the last 50 years.
1970 - 2022



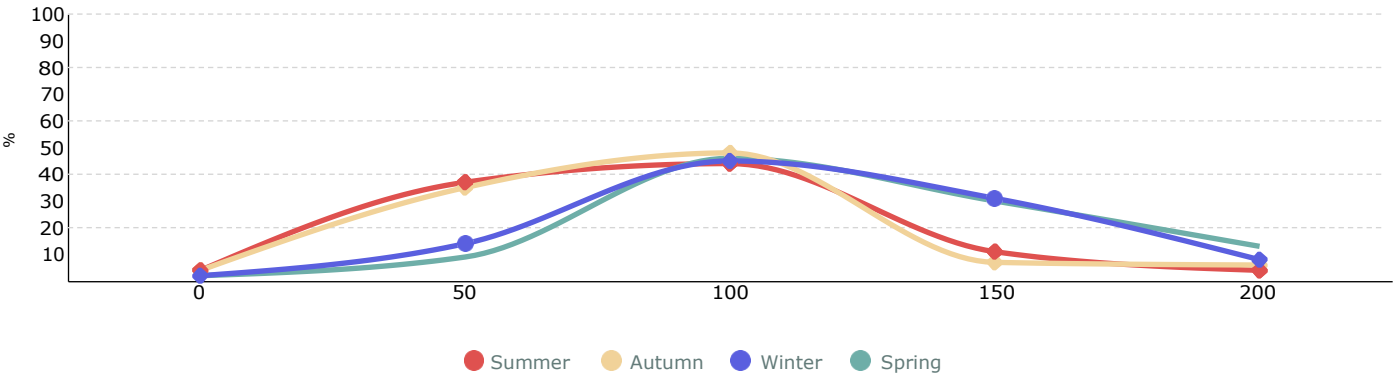
Rainfall data by [SILO, Long Paddock](#) is licensed under [CC BY 4.0](#).

The datasets are constructed from observational data obtained from the Australian Bureau of Meteorology.

Rainfall history for this property was determined from national gridded datasets, interpolated between weather stations.

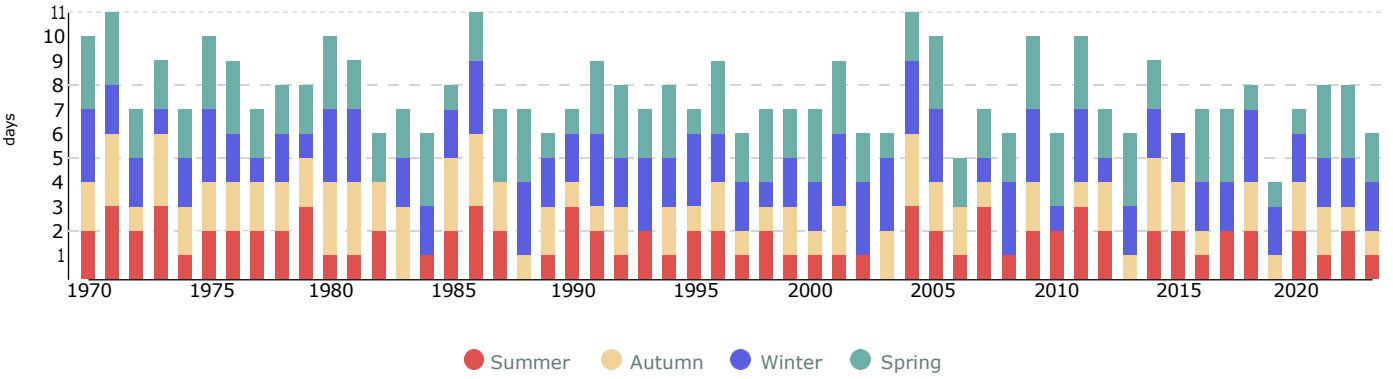
Rainfall Reliability

The chance of rain (%) per season (in mm) during the last 50 years
1970 - 2022



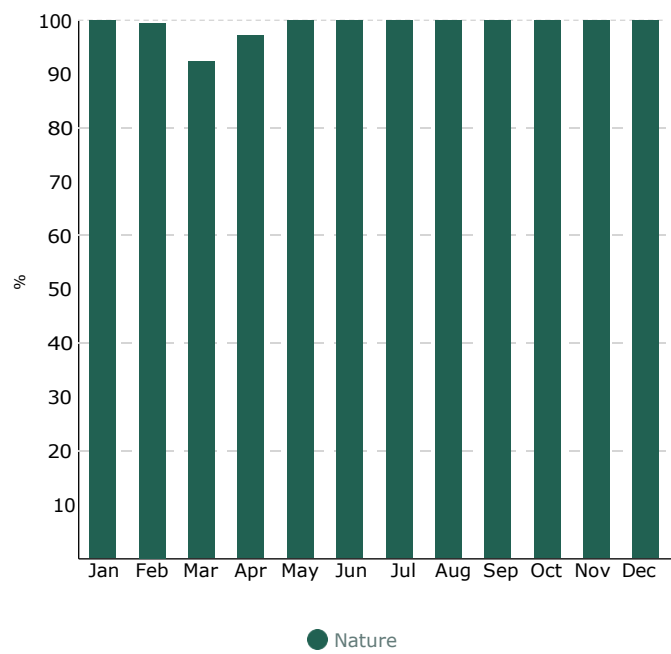
Rainfall Duration

Recorded number of days with rain above 30mm per season during the last 50 years
1970 - 2022



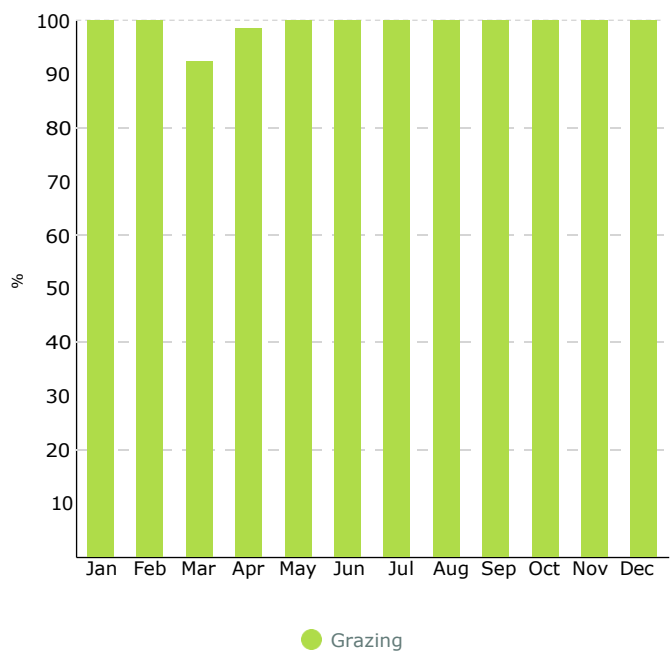
Average Nature Land Cover

For the past 10 years, monthly average (in %) of land covered by nature crop



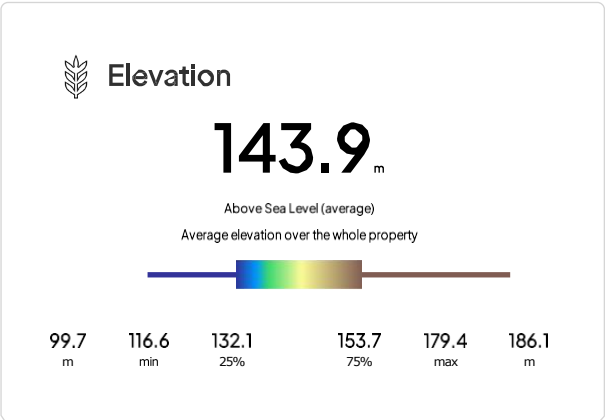
Average Grazing Land Cover

For the past 10 years, monthly average (in %) of land covered by grazing crop



Land cover data for this property was determined from Agtuary internal Land Use algorithms applied to monthly satellite imagery.

Terrain Summary



Australian Soil Classification



- Dermosol (89.6%)
Well structured but weak texture contrast. Low levels of free iron. Moderate to higher chemical fertility and water-capacity
- Chromosol (10.4%)
Strong contrasting texture, not strongly acidic or sodic in subsoil. Moderate chemical fertility and water-capacity

USDA Taxonomy



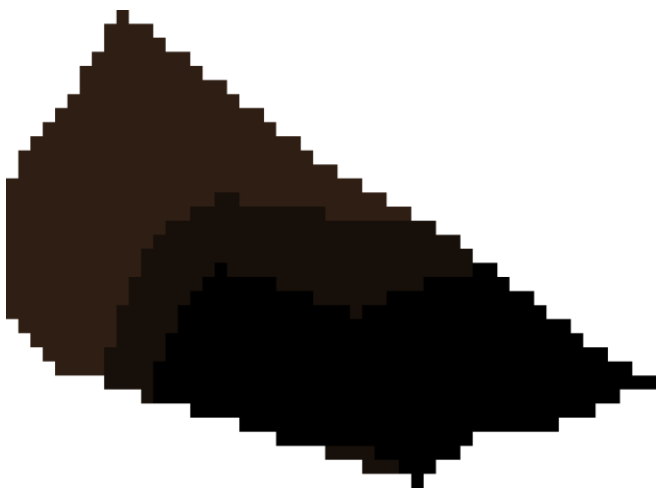
- Ustox (100.0%)

[SoilGrids](#) from [ISRIC](#).

SoilGrids is a system for global digital soil mapping that uses state-of-the-art machine learning methods to map the spatial distribution of soil properties across the globe.

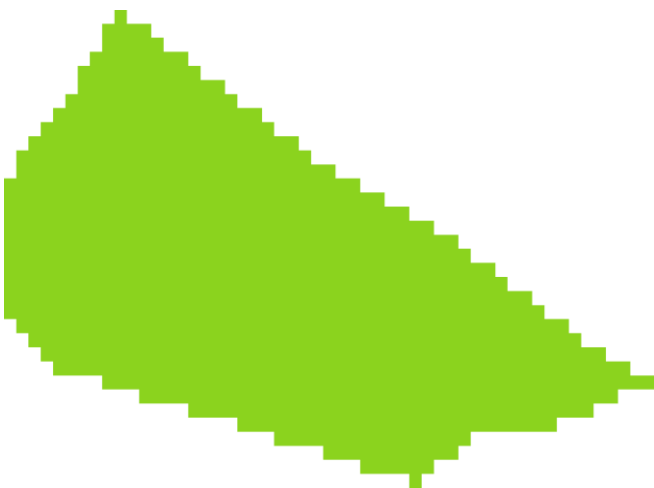
Soil data produced for this property from national soil maps, based on interpolated soil sample data from [Soil and Landscape Grid of Australia](#).

Organic Carbon Content %



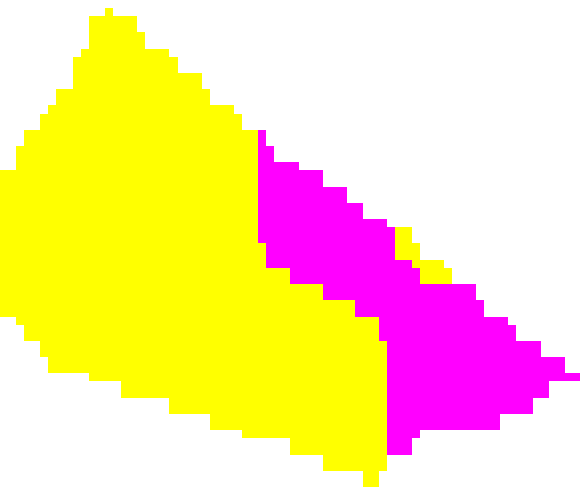
0 50%

pH



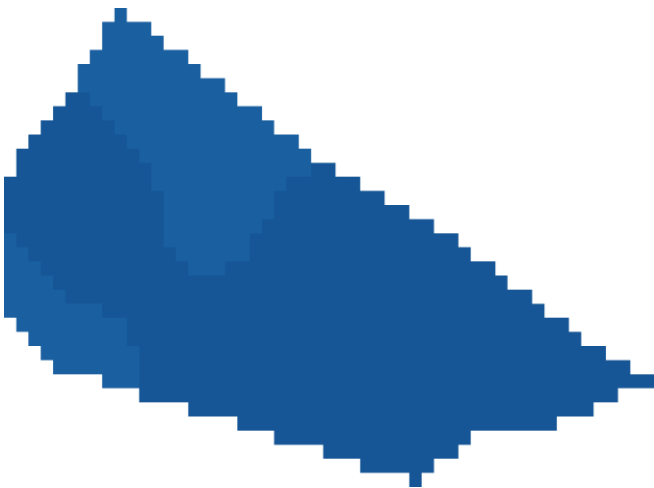
0 14

Texture



● Sandy Clay Loam (74%)
● Sandy Loam (26%)

Available Water Capacity mm

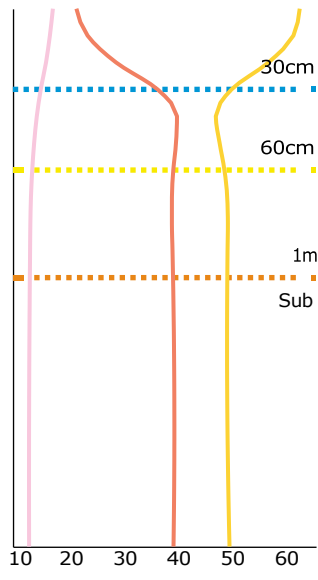


0 20%

Soil Profile

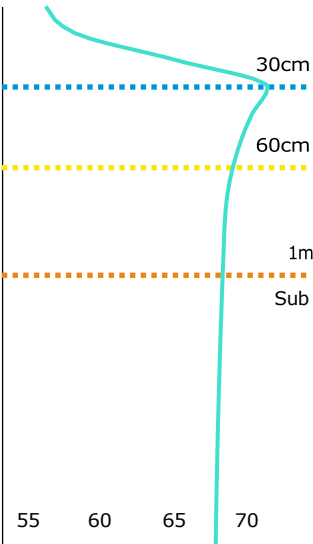
Soil Texture

Distribution of typical sand, silt and clay from the surface to 2 meters deep



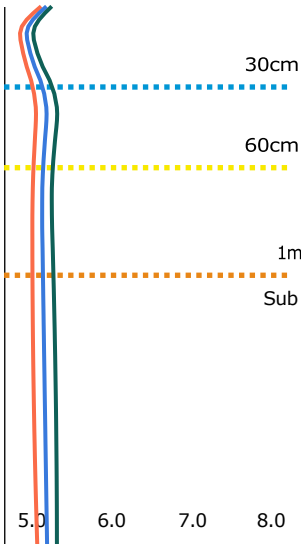
Loamyness

Percentage of typical loamyness from the surface to 2 meters deep



pH

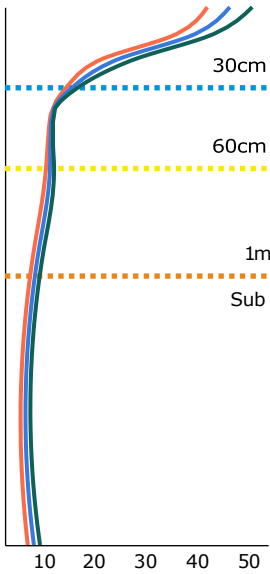
Typical pH level from the surface to 2 metres deep



Sand % Silt % Clay % Loamyness % Min Mean Max

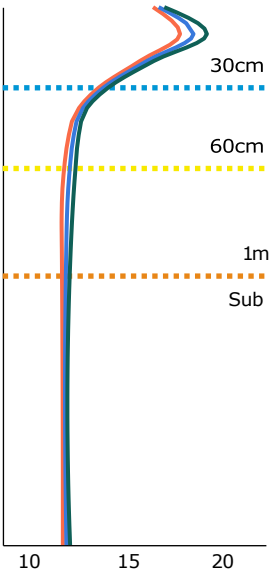
Organic Carbon Content

Organic Carbon Content distribution (%) from the surface to 2 metres in the ground



Avail. Water Capacity

Available water capacity distribution (%) from the surface to 2 metres in the ground



Min % Mean % Max % Min % Mean % Max %

Forest Classification



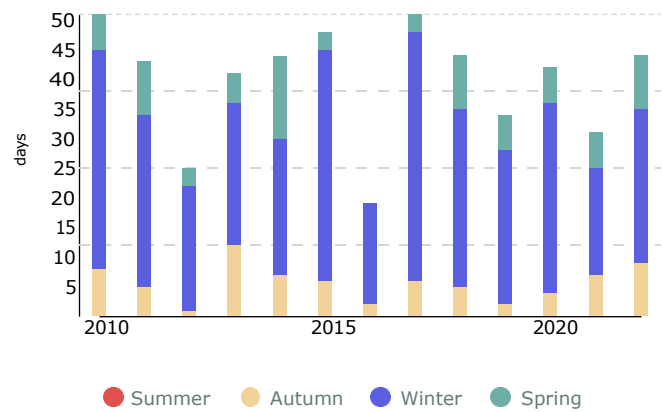
Land Cover



[Forests](#) from [ABARES](#).
Forests of Australia is a dataset of national forest extent, by national forest category and type.
[Land cover from Geoscience Australia](#).
National dataset for vegetation cover and extent at a single point in time.
Forest and land cover data produced for this property from national maps.

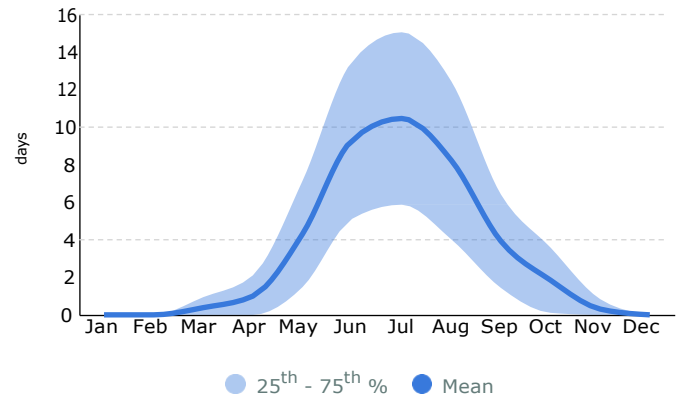
Frost Duration

Number of days per season with recorded temperatures below 0 degrees Celsius from 2010 to 2021.



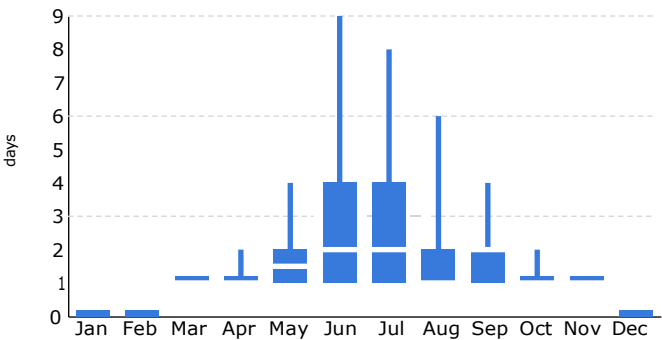
Frost Profile

The lowest, average and highest number of days per month with recorded temperatures below 0 degrees Celsius.



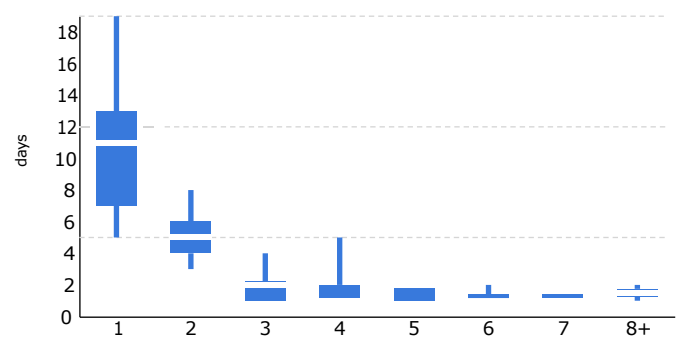
Monthly Frost Stress Events

Days below 0 degrees



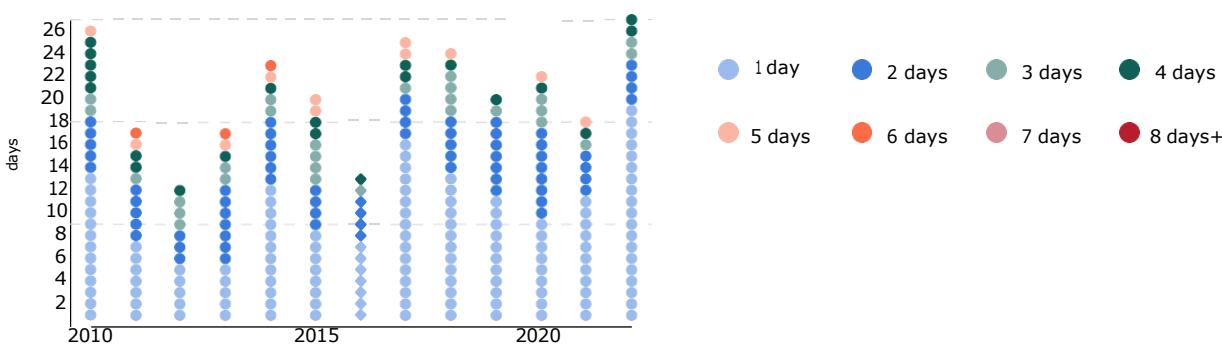
Annual Frequency of Frost Stress

Days below 0 degrees



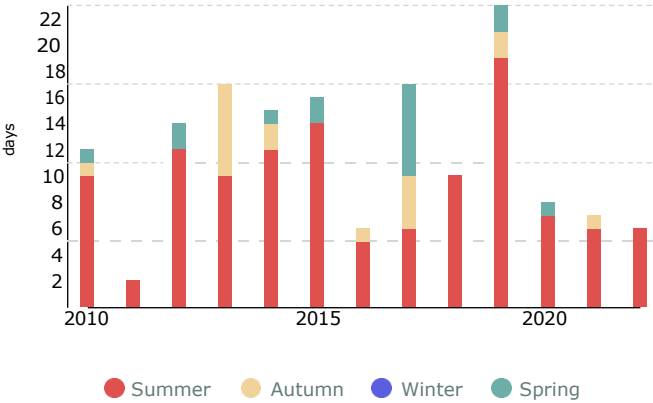
Historical Frost Events

Events of continuous days below 0 degrees
2010 - 2022



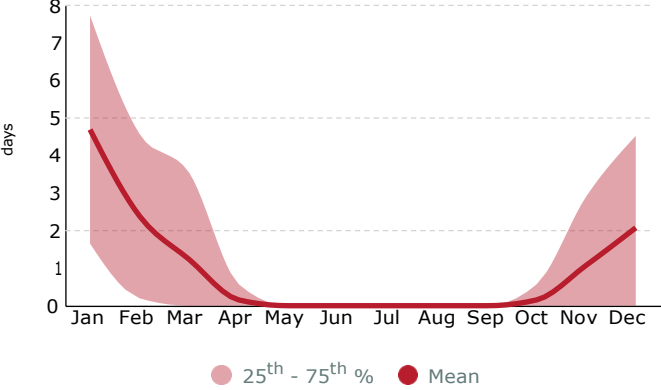
Heat Duration

Number of days per season that recorded temperatures above 30 degrees Celsius from 2010 to 2021.



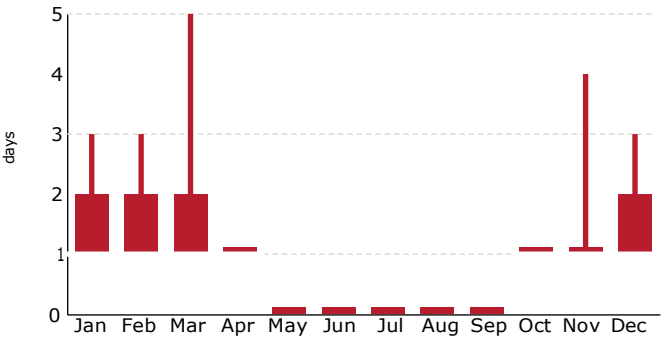
Heat Profile

The lowest, average and highest number of days per month with recorded temperatures above 30 degrees Celsius.



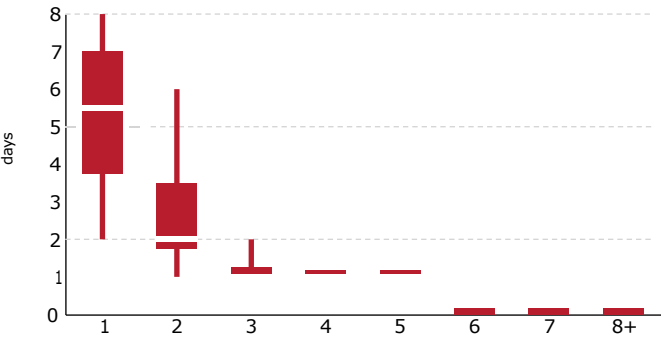
Monthly Heat Stress Events

Days above 30 degrees



Annual Frequency of Heat Stress

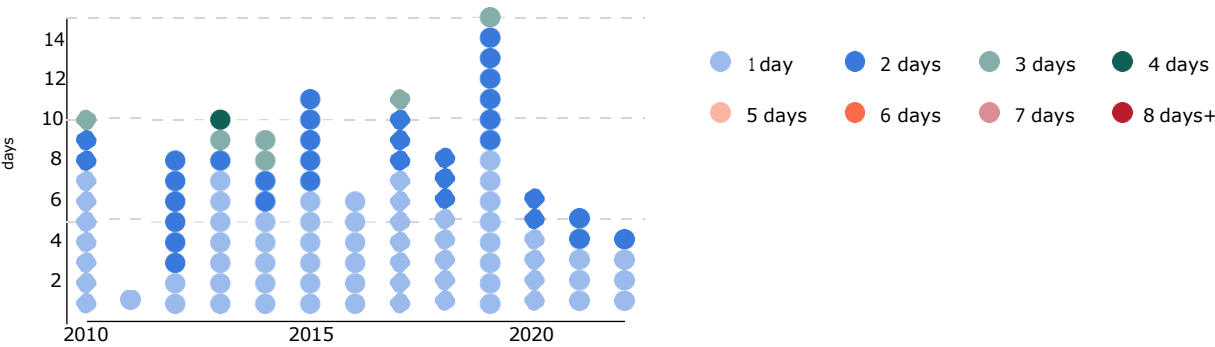
Days above 30 degrees



Historical Heat Events

Events of continuous days above 30 degrees

2010 - 2022

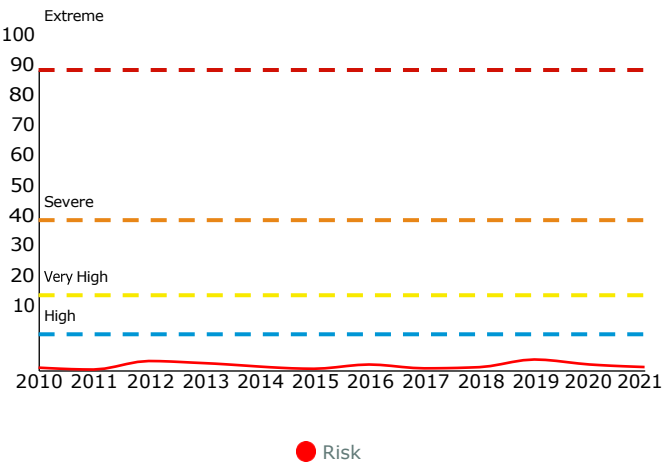




Low  Extreme

Grassland Fire Risk

The degree of fire risk based on the estimated McArthur
Grassland Fire Risk Index
2010 - 2021



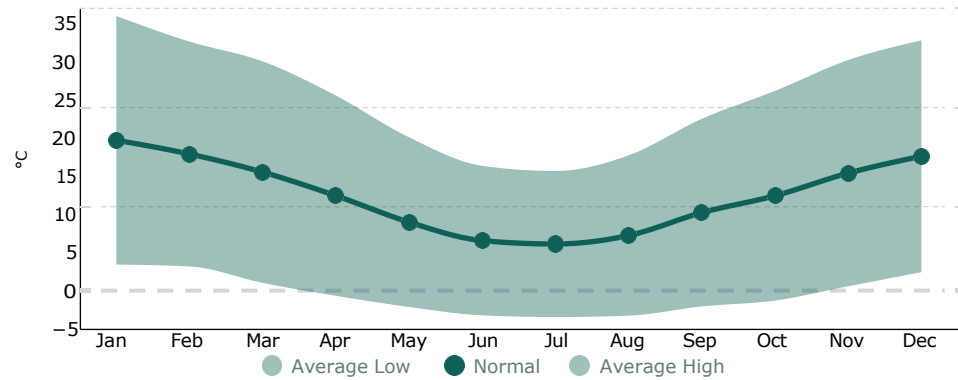
Detected Fires

Recorded approximate dates of detected burned ground from satellite imagery and the percentage of land affected.

No fires were detected from 2010–2022

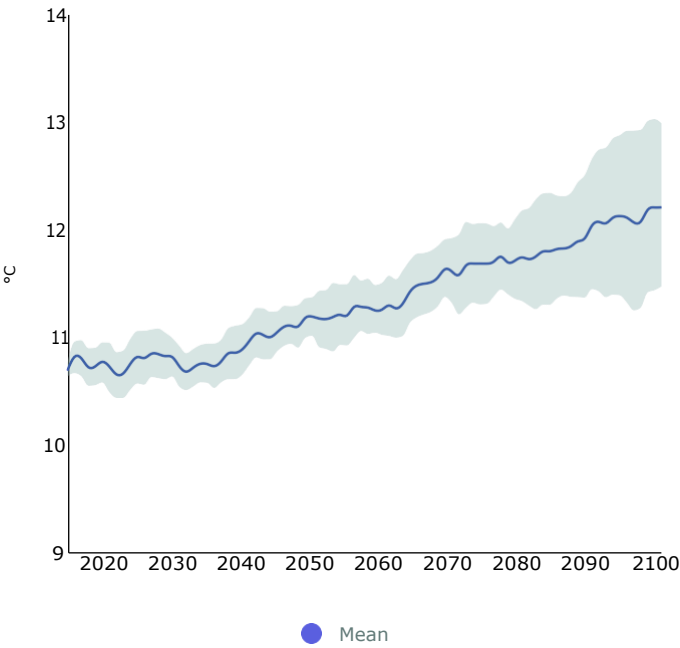
50 Year Monthly Temperature History

1970 - 2022



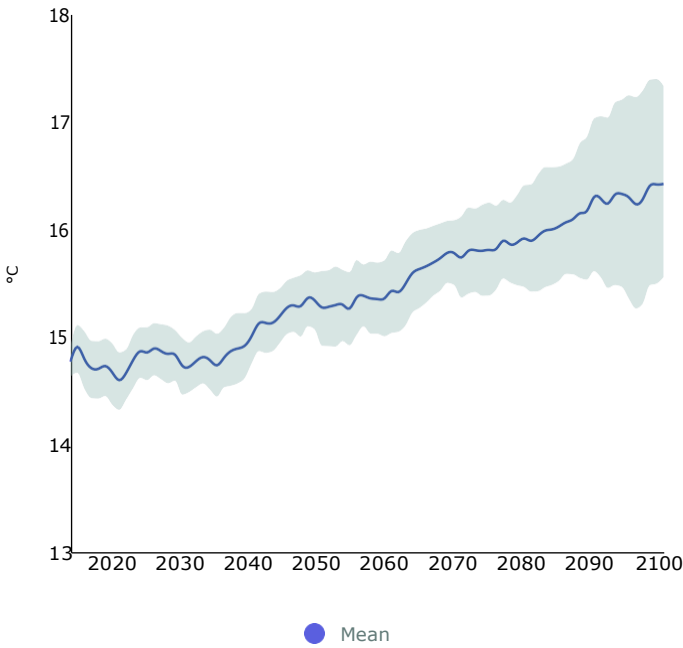
Minimum Temperature

Future estimated minimum temperature due to different climate scenarios



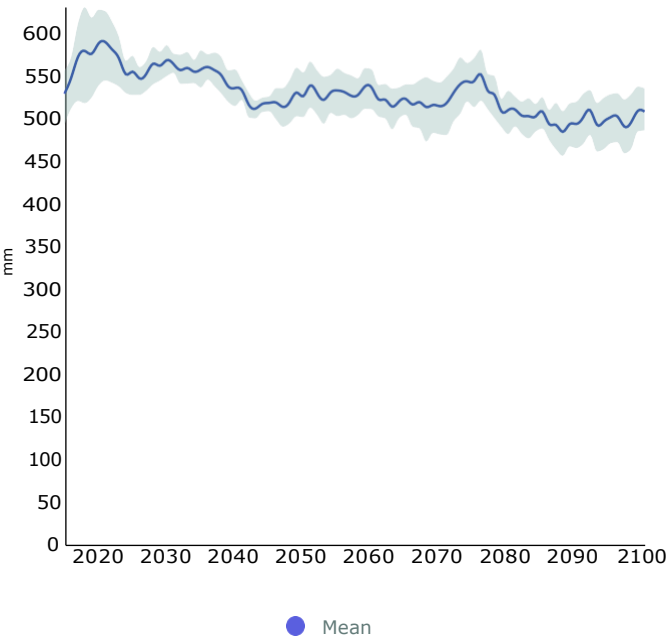
Maximum Temperature

Future estimated maximum temperature due to different climate scenarios



Rainfall

Future estimated rainfall due to different climate scenarios



Climate change data taken from CMIP6 global climate projections (<https://research.csiro.au/access/cmip6/>). Mean projections are based on the average of 4 scenarios: RCP2.6, RCP4.5, RCP7.0, RCP8.5, until 2100. Shaded areas correspond to 20% and 80% percentile values from the 4 scenarios

The property located at 70 Marked Tree rd. Gretna. Tasmania 7140.
Total 21.849Ha

Access to the house site is direct from Marked Tree rd.

The proposed house site is in a location that does not impact on the grazeable area, as can be seen on the NDVI data above.

No noise/visual pollution from the house, to neighboring land holders due to the natural landscape/ timber of the location.

Observing the above NDVI and Land use data the property has maintained similar status since 2017.

All areas have good ground cover, thus no erosion on the property.

The soil type is stable with good water retention/absorption ability thus minimal water run off to neighboring properties.

No known notifiable weeds are present.

Static population of native animals.

There are no livestock on the property reducing bio security risks to neighboring livestock enterprises.

There are no waterways (creeks/streams etc.) through this property eliminating contamination risks.

All water runoff from the house site is contained as can be seen in the Geo Environmental Assessment.

This block is a low value agricultural grazing land, consisting of Tussock grass and Bracken fern. Total grazing area is approximately 3Ha with 18Ha being visualized as natural vegetation as noted above in NDVI and other data sets.

The surrounding properties, with the exception of one are small in size with no noticeable agricultural enterprises in existence!

The one substantial property was the origin of this 21.829ha sell off parcel approximately 5 years ago.

Using the above information and the attached documentation for the Geo Environmental Assessment and the Bushfire Hazard Report, I believe this property poses no risk to surrounding agricultural enterprises.

Zoning Agriculture/discretionary Residential

70 Marked Tree Rd. Gretna. Is not capable of supporting an economically viable mainstream Agricultural enterprise.

The total area (21.89Ha) limits agricultural viability!

A cleared/grazeable area of 3Ha, with the balance being timbered/tussocks prevents mainstream agriculture being established!

Using data on rainfall/pasture growth rates (Natural Resource Management, Tasmania) this area's livestock carrying capacity would be approximately 6 dry sheep per Ha of cleared land, this demonstrates the lack of value/viability for livestock production.

This minimal grazable area doesn't make it an sustainable additional section of land for neighboring land holders.

All access is via Marked Tree rd. therefor no intrusion on neighboring land holders. There are no neighboring dwellings in the immediate vicinity of the proposed house site.

In my view this block is a suitable residential site with no sustainable agricultural value.

Cont.

Bruce Creek

Agricultural Business Management

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Disclaimer

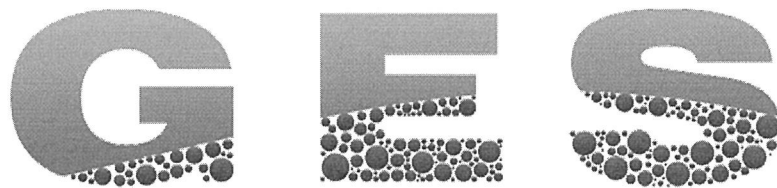
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GEO-ENVIRONMENTAL ASSESSMENT

70 Marked Tree Road

Gretna

January 2024



GEO-ENVIRONMENTAL

S O L U T I O N S

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

Investigation Details

Client:	John Rainbird
Site Address:	70 Marked Tree Road, Gretna
Date of Inspection:	14/11/2023
Proposed Works:	New house
Investigation Method:	Geoprobe 540UD - Direct Push
Inspected by:	M. Campbell

Site Details

Certificate of Title (CT):	171936/1
Title Area:	Approx. 21.89 ha
Applicable Planning Overlays:	Bushfire-prone Areas, Landslip Hazard
Slope & Aspect:	9° S facing slope
Vegetation:	Grass & Weeds
Ground Surface:	Disturbed

Background Information

Geology Map:	MRT 1:250000
Geological Unit:	Triassic Sandstone
Climate:	Annual rainfall 550mm
Water Connection:	Tank
Sewer Connection:	Unserviced-On-site required
Testing and Classification:	AS2870:2011, AS1726:2017 & AS1547:2012

Investigation

A number of bore holes were completed to identify the distribution and variation of the soil materials at the site, bore hole locations are indicated on the site plan. See soil profile conditions presented below. Tests were conducted across the site to obtain bearing capacities of the material at the time of this investigation.

Soil Profile Summary

BH 1 Depth (m)	BH 2 Depth (m)	Description
0.00-0.20	0.00-0.40	Silty SAND (SW): Brown-grey, slightly moist, loose.
0.20-0.60	0.20-0.90	SAND (SP): Yellow-brown, slightly moist, loose to medium dense.
0.60-0.70		Sandy CLAY (CL): Low plasticity, yellow-brown, slightly moist, very hard (BH1 refusal on rock).
	0.90-1.00	Sand (SW) trace clay and soft rock: Orange, slightly moist, very dense to refusal on rock.

Wastewater Soil Profile Summary

BH 3 Depth (m)	Horizon	Description
0.00-0.20	A1	Silty SAND (SW): Brown-grey, slightly moist, loose.
0.20-1.10	B2	CLAY (CI): Medium plasticity, dark brown to grey-yellow with depth, slightly moist, firm.
1.10-1.20	BC	Sandy CLAY (CL): Low plasticity, yellow-brown, slightly moist, very hard, refusal on rock).

Site Notes

Soils on site are developing from Triassic Sandstone. The soils consist of windblown sands over clay subsoils developing from weathered rock.

Site Classification

The site has been assessed and classified in accordance with AS2870:2011 “Residential Slabs and Footings”.

The site has been classified as:

Class M

Y^s range: **20-40mm**

Notes: Soils on site are have plastic and reactive characteristics, however, these soils are shallow and not likely to exhibit maximum ground surface movement potential with an indicative Y's range of 20-40mm. All foundations must be founded into the underlying bedrock

Wind Loading Classification

According to “AS4055:2021 - Wind Loads for Housing” the house site is classified below:

Wind Classification:	N3
Region:	A
Terrain Category:	2.0
Shielding Classification:	PS
Topographic Classification:	T2
Wind Classification:	N3
Design Wind Gust Speed – m/s ($V_{h,u}$):	50

Wastewater Classification & Recommendations

According to AS1547-2012 (on-site waste-water management) the natural soil is classified as **Light Clay (category 5)**. It is proposed to install a dual-purpose septic tank with on-site absorption. A Design Loading Rate (DLR) of 5L/m²/day has been assigned for primary treated effluent.

The proposed four-bedroom dwelling has a calculated maximum wastewater output of 720L/day. This is based on a tank water supply and a maximum occupancy of 6 people (120L/day/person).

Using the DLR of 5L/m²/day, an absorption area of at least 144m² will be required to accommodate the expected flows. This can be accommodated by four 20m x 1.8m x 0.5m terraced absorption trenches connected to a dual-purpose septic tank (min 3500L) via three two-way splitter boxes with speed levelers to ensure equal distribution. Soils on site were found to be slightly dispersive therefore it is strongly recommended that gypsum be applied to the bottom of the absorption area at a rate of 1Kg/m². For all

calculations please refer to the Trench summary reports. A cut-off drain will be required upslope of the absorption area and the area excluded from traffic or any future building works. A 100% reserve area should be set aside for future wastewater requirements. There is sufficient space available on site to accommodate the reserve due to the large property size (>2ha). Therefore, a formal reserve area has not been assigned

The following setback distances are required to comply with the Building Act 2016:

Upslope or level buildings:	3m
Downslope buildings:	13m
Upslope or level boundaries:	1.5m
Downslope boundaries:	18m
Downslope surface water:	>100

Compliance with Building Act 2016 Guidelines for On-site Wastewater Management Systems is outlined in the attached table.

During construction GES will need to be notified of any variation to the soil conditions or wastewater loading as outlined in this report.

Construction Notes & Recommendations

The site has been classified as **Class M**.

It is recommended the foundations be placed on the underlying bedrock to minimise the potential for significant foundation movement.

Specific care must be taken with all site excavation due to the dispersion potential of the soils and reference to the DPIW publication “Dispersive soil management” is strongly recommended.

All earthworks on site must comply with AS3798:2007, and I further recommend that consideration be given to drainage and sediment control on site during and after construction. Care should also be taken to ensure there is adequate drainage in the construction area to avoid the potential for weak bearing and foundation settlement associated with excessive soil moisture.

During construction GES will need to be notified of any variation to the soil conditions or wastewater loading as outlined in this report.



Dr John Paul Cumming B.Agr.Sc (hons) PhD CPSS GAICD

Director

GES Pty Ltd

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

Assessment Report Site assessment for on-site waste water disposal

Assessment for John Rainbird	Assess. Date	8-Jan-24
	Ref. No.	
Assessed site(s) 70 Marked Tree Road, Gretna	Site(s) inspected	14-Nov-23
Local authority Central Highlands	Assessed by	John Paul Cumming

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

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 720 (using the 'No. of bedrooms in a dwelling' method)
 Septic tank wastewater volume (L/day) = 240
 Sullage volume (L/day) = 480
 Total nitrogen (kg/year) generated by wastewater = 6.5
 Total phosphorus (kg/year) generated by wastewater = 2.7

Climatic assumptions for site

(Evapotranspiration calculated using the crop factor method)

	Jan	Feb	Mar	Apr	May	Jun	Jul	Aug	Sep	Oct	Nov	Dec
Mean rainfall (mm)	41	34	39	46	46	48	50	54	53	57	52	50
Adopted rainfall (R, mm)	41	34	39	46	46	48	50	54	53	57	52	50
Retained rain (Rr, mm)	32	27	31	36	37	38	40	43	43	46	42	40
Max. daily temp. (deg. C)												
Evapotrans (ET, mm)	130	110	91	63	42	29	32	42	63	84	105	126
Evapotr. less rain (mm)	98	83	60	27	5	-9	-8	-1	20	38	63	86
Annual evapotranspiration less retained rain (mm) =												461

Soil characteristics

Texture = Light Clay Category = 5 Thick. (m) = 1.2
 Adopted permeability (m/day) = 0.12 Adopted LTAR (L/sq m/day) = 5 Min depth (m) to water = 3

Proposed disposal and treatment methods

Proportion of wastewater to be retained on site: All wastewater will be disposed of on the site
 The preferred method of on-site primary treatment: In dual purpose septic tank(s)
 The preferred method of on-site secondary treatment: In-ground
 The preferred type of in-ground secondary treatment: Trench(es)
 The preferred type of above-ground secondary treatment: None
 Site modifications or specific designs: Not needed

Suggested dimensions for on-site secondary treatment system

Total length (m) = 80
 Width (m) = 1.8
 Depth (m) = 0.5
 Total disposal area (sq m) required = 140
 comprising a Primary Area (sq m) of: 144
 and a Secondary (backup) Area (sq m) of:

Sufficient area is available on site

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

Comments

A conservative DLR of 5L/m²/day has been assigned for the category 5 soils on site due to the use of wide disposal beds. An absorption area of 144m² is required for the proposed development.

GES Pty Ltd

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

Site Capability Report

Site assessment for on-site waste water disposal

Assessment for John Rainbird

Assess. Date

8-Jan-24

Ref. No.

Assessed site(s) 70 Marked Tree Road, Gretna

Site(s) inspected

14-Nov-23

Local authority Central Highlands

Assessed by John Paul Cumming

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

Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
	Expected design area	sq m	5,000	V. high	Very low		
	Density of disposal systems	/sq km	2	Mod.	Very low		
	Slope angle	degrees	9	High	Moderate		
	Slope form	Straight simple		High	Low		
	Surface drainage	Imperfect		High	Moderate		
	Flood potential	Site floods <1:100 yrs		High	Very low		
	Heavy rain events	Infrequent		High	Moderate		
AA	Aspect (Southern hemi.)	Faces S		V. high	Very high		
	Frequency of strong winds	Common		High	Low		
	Wastewater volume	L/day	720	High	Moderate		
	SAR of septic tank effluent		1.4	High	Low		
	SAR of sullage		2.5	High	Moderate		
	Soil thickness	m	1.2	V. high	Very low		
	Depth to bedrock	m	1.2	V. high	Moderate		
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	0	V. high	Very low		
	Soil pH		6.5	High	Very low		
	Soil bulk density	gm/cub. cm	1.5	High	Low		
	Soil dispersion	Emerson No.	7	V. high	Very low		
	Adopted permeability	m/day	0.12	Mod.	Very low		
	Long Term Accept. Rate	L/day/sq m	5	High	Moderate		

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

Comments

The site has the capability to accept onsite wastewater.,

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

Site Capability Report
Site assessment for on-site waste water disposal

Assessment for John Rainbird

Assess. Date

8-Jan-24

Ref. No.

Assessed site(s) 70 Marked Tree Road, Gretna

Site(s) inspected

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Local authority Central Highlands

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Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
	Expected design area	sq m	5,000	V. high	Very low		
	Density of disposal systems	/sq km	2	Mod.	Very low		
	Slope angle	degrees	9	High	Moderate		
	Slope form	Straight simple		High	Low		
	Surface drainage	Imperfect		High	Moderate		
	Flood potential	Site floods <1:100 yrs		High	Very low		
	Heavy rain events	Infrequent		High	Moderate		
AA	Aspect (Southern hemi.)	Faces S		V. high	Very high		
	Frequency of strong winds	Common		High	Low		
	Wastewater volume	L/day	720	High	Moderate		
	SAR of septic tank effluent		1.4	High	Low		
	SAR of sullage		2.5	High	Moderate		
	Soil thickness	m	1.2	V. high	Very low		
	Depth to bedrock	m	1.2	V. high	Moderate		
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	0	V. high	Very low		
	Soil pH		6.5	High	Very low		
	Soil bulk density	gm/cub. cm	1.5	High	Low		
AA	Soil dispersion	Emerson No.	2	V. high	Very high		
	Adopted permeability	m/day	0.12	Mod.	Very low		
	Long Term Accept. Rate	L/day/sq m	5	High	Moderate		

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

Comments

The site has the capability to accept onsite wastewater. Soils were found to be slightly dispersive therefore gypsum needs to be applied to the bottom of each trench at a rate of 1Kg/m².

GES Pty Ltd

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

Environmental Sensitivity Report Site assessment for on-site waste water disposal

Assessment for John Rainbird

Assess. Date

8-Jan-24

Ref. No.

Assessed site(s) 70 Marked Tree Road, Gretna

Site(s) inspected

14-Nov-23

Local authority Central Highlands

Assessed by John Paul Cumming

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

Alert	Factor	Units	Value	Confid level	Limitation		Remarks
					Trench	Amended	
	Cation exchange capacity	mmol/100g	80	High	Low		
	Phos. adsorp. capacity	kg/cub m	0.7	High	Moderate		
	Annual rainfall excess	mm	-461	High	Very low		
	Min. depth to water table	m	3	High	Very low		
	Annual nutrient load	kg	9.2	High	Low		
	G'water environ. value	Agric non-sensit		V. high	Low		
	Min. separation dist. required	m	3	High	Very low		
	Risk to adjacent bores	Very low		V. high	Very low		
	Surf. water env. value	Agric sensit/dom drink		V. high	Moderate		
	Dist. to nearest surface water	m	Yes	V. high	Very low		
	Dist. to nearest other feature	m	65	V. high	Low		
	Risk of slope instability	Very low		V. high	Very low		
AA	Distance to landslip	m	10	V. high	Very high		

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

Comments

There is low risk of environmental degradation associated with the proposed onsite wastewater management system. Care should be taken to ensure that trenches are installed as per the design recommendations due to the limited soil depth on site. All prescribed setbacks must be observed to minimise risk to sensitive features in the vicinity of the application area.

Demonstration of wastewater system compliance to *Building Act 2016 Guidelines for On-site Wastewater*

Acceptable Solutions	Performance Criteria	Compliance
<p>A1</p> <p>Horizontal separation distance from a building to a land application area must comply with one of the following:</p> <ul style="list-style-type: none"> a) be no less than 6m; or b) be no less than: <ul style="list-style-type: none"> (i) 3m from an upslope building or level building; (ii) If primary treated effluent to be no less than 4m plus 1m for every degree of average gradient from a downslope building; (iii) If secondary treated effluent and subsurface application, no less than 2m plus 0.25m for every degree of average gradient from a downslope building. 	<p>P1</p> <ul style="list-style-type: none"> a) The land application area is located so that <ul style="list-style-type: none"> (i) the risk of wastewater reducing the bearing capacity of a building's foundations is acceptably low.; and (ii) is setback a sufficient distance from a downslope excavation around or under a building to prevent inadequately treated wastewater seeping out of that excavation 	<p>Complies with A1 (b) (i) Land application area will be located with a minimum separation distance of 3m from an upslope or level building.</p> <p>Complies with A1 (b) (ii) Land application area will be located with a minimum separation distance of 13m off a downslope building.</p>
<p>A2</p> <p>Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b)</p> <ul style="list-style-type: none"> (a) be no less than 100m; or (b) be no less than the following: <ul style="list-style-type: none"> (i) if primary treated effluent 15m plus 7m for every degree of average gradient to downslope surface water; or (ii) if secondary treated effluent and subsurface application, 15m plus 2m for every degree of average gradient to down slope surface water. 	<p>P2</p> <p>Horizontal separation distance from downslope surface water to a land application area must comply with all of the following:</p> <ul style="list-style-type: none"> a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable. 	<p>Complies with A2 (a) Land application area located >100m from downslope surface water</p>

<p>A3</p> <p>Horizontal separation distance from a property boundary to a land application area must comply with either of the following:</p> <p>(a) be no less than 40m from a property boundary; or</p> <p>(b) be no less than:</p> <p>(i) 1.5m from an upslope or level property boundary; and</p> <p>(ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or</p> <p>(iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.</p>	<p>P3</p> <p>Horizontal separation distance from a property boundary to a land application area must comply with all of the following:</p> <p>(a) Setback must be consistent with AS/NZS 1547 Appendix R; and</p> <p>(b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.</p>	<p>Complies with A3 (b) (i) Land application area will be located with a minimum separation distance of 1.5m from an upslope or level property boundary</p> <p>Complies with A3 (b) (ii) Land application area will be located with a minimum separation distance of 18m of downslope property boundary.</p>
<p>A4</p> <p>Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.</p>	<p>P4</p> <p>Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following:</p> <p>(a) Setback must be consistent with AS/NZS 1547 Appendix R; and</p> <p>(b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable</p>	<p>Complies with A4 No bore or well identified within 50m</p>

<p>A5</p> <p>Vertical separation distance between groundwater and a land application area must be no less than:</p> <p>(a) 1.5m if primary treated effluent;</p> <p>(b) 0.6m if secondary treated effluent</p>	<p>P5</p> <p>Vertical separation distance between groundwater and a land application area must comply with the following:</p> <p>(a) Setback must be consistent with AS/NZS 1547 Appendix R; and</p> <p>(b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable</p>	<p>Complies with A5 (a)</p> <p>No groundwater encountered</p>
<p>A6</p> <p>Vertical separation distance between a limiting layer and a land application area must be no less than:</p> <p>(a) 1.5m if primary treated effluent; or</p> <p>(b) 0.5m if secondary treated effluent</p>	<p>P6</p> <p>Vertical setback must be consistent with AS/NZS1547 Appendix R.</p>	<p>Complies with P6 vertical setback of 0.6m consistent with AS/NZS 1547 Appendix R</p>
<p>A7</p> <p>nil</p>	<p>P7</p> <p>A wastewater treatment unit must be located a sufficient distance from buildings or neighbouring properties so that emissions (odour, noise or aerosols) from the unit do not create an environmental nuisance to the residents of those properties</p>	<p>Complies</p>

ASSESSMENT OF HORIZONTAL AND VERTICAL SETBACK DISTANCES

(adapted from Table R1 in AS1547 - to be used in conjunction with Site Constraint Table)

Site feature	Setback distance range (m)	Site constraint items of specific concern (from Site Constraint Table)	Assessment	Adopted setback distance (m)
	<i>Horizontal setback distance</i> (m)			
Property boundary	1.5 – 50	A, D, J	18	>18
Buildings/houses	2.0 – > 6	A, D, J	2	>2m
Surface water	15 – 100	A, B, D, E, F, G, J	>100	>100
Bore, well	15 – 50	A, C, H, J	N/A	N/A
Recreational areas (Children's play areas, swimming pools and so on)	3 – 15	A, E, J	N/A	N/A
In-ground water tank	4 – 15	A, E, J	N/A	N/A
Retaining wall and Embankments, escarpments, cuttings	3.0 m or 45° angle from toe of wall (whichever is greatest)	D, G, H	N/A	N/A
	<i>Vertical setback distance</i> (m)			
Groundwater	0.6 – > 1.5	A, C, F, H, I, J	0.6	N/A
Hardpan or bedrock	0.5 – ≥ 1.5	A, C, J	0.5	0.6

SITE CONSTRAINT RATING

(adapted from Table R2 in AS1547 - used as a guide in determining appropriate setback distances)

Item	Site/system feature	Constraint scale (see Note 1)		Sensitive features	Comment	Constraint Rating
		LOWER	HIGHER			
		Examples of constraint factors (see Note 2)				
A	Microbial quality of effluent	Effluent quality consistently producing ≤ 10 cfu/100 mL <i>E. coli</i> (secondary treated effluent with disinfection)	Effluent quality consistently ≤ 6 <i>E. coli</i> (for example, primary treated effluent)	Groundwater and surface pollution hazard, public health hazard	Primary treated effluent	Moderate
B	Surface water	Category 1 to 3 soils, no surface water down gradient within > 100 m, low rainfall area	Category 4 to 6 soils, permanent surface water <50 m down gradient, high rainfall area, high resource/environmental value	Surface water pollution hazard for low permeable soils, low lying or poorly draining areas	Downslope surface water >100m	Complies with Acceptable Solutions
C	Groundwater	Category 5 and 6 soils, low resource/environmental value	Category 1 and 2 soils, gravel aquifers, high resource/environmental value	Groundwater pollution hazard	Light Clay (category 5) soil No groundwater encountered	Low
D	Slope	0 – 6% (surface effluent application) 0 – 10% (subsurface effluent application)	> 10% (surface effluent application), > 30% subsurface effluent application	Off-site export of effluent, erosion	<10 slope subsurface effluent	Low
E	Position of land application area in landscape.	Downgradient of surface water, property boundary, recreational area	Upgradient of surface water, property boundary, recreational area	Surface water pollution hazard, off-site export of effluent	Downslope boundary minimum 18m	Complies with Acceptable Solutions
F	Drainage	Category 1 and 2 soils, gently sloping area	Category 6 soils, sites with visible seepage, moisture tolerant vegetation, low lying area	Groundwater pollution hazard	Light Clay (category 5) soil No visible seepage or moisture tolerant sp	Complies with Acceptable Solutions
G	Flood potential	Above 1 in 20 year flood contour	Below 1 in 20 year flood contour	Off-site export of effluent, system failure, mechanical faults	Above 1:20 year flood contour	Complies with Acceptable Solutions

SITE CONSTRAINT RATING (cont)

Item	Site/system feature	Constraint scale (see Note 1)		Sensitive features	Comment	Constraint Rating
		LOWER	HIGHER			
H	Geology and soils	Category 3 and 4 soils, low porous regolith, deep, uniform soils	Category 1 and 6 soils, fractured rock, gravel aquifers, highly porous regolith	Groundwater pollution hazard for porous regolith and permeable soils	Light Clay (category 5) soil High permeability	Complies with Acceptable Solutions
I	Landform	Hill crests, convex side slopes, and plains	Drainage plains and incise channels	Groundwater pollution hazard, resurfacing hazard	side slope	Complies with Acceptable Solutions
J	Application method	Drip irrigation or subsurface application of effluent	Surface/above ground application of effluent	Off-site export of effluent, surface water pollution	Subsurface application	Low

AS1547:2012 – Loading Certificate – Septic System Design

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

Site Address: 70 Marked Tree Road, Gretna

System Capacity: 6 people @ 120L/person/day

Summary of Design Criteria

DLR: 5L/m²/day.

Absorption area: 144m²

Reserve area location /use: Not Assigned - more than 100% available

Water saving features fitted: Standard fixtures

Allowable variation from design flows: 1 event @ 200% daily loading per quarter

Typical loading change consequences: Expected to be minimal due to capacity of system and site area (provided loading changes within 25% of design)

Overloading consequences: Continued overloading may cause hydraulic failure of the absorption area and require upgrading/extension of the area. Risk considered acceptable due to visible signs of overloading and owner monitoring.

Underloading consequences: Lower than expected flows will have minimal consequences on system operation unless the house has long periods of non occupation. Under such circumstances additional maintenance of the system may be required. Risk considered acceptable.

Lack of maintenance / monitoring consequences: Issues of underloading/overloading and condition of the absorption area require monitoring and maintenance, if not completed system failure may result in unacceptable health and environmental risks. Septic tank de-sludging must also be monitored to prevent excessive sludge and scum accumulation. Monitoring and regulation by the property owner required to ensure compliance.

Other operational considerations: Owners/occupiers must be aware of the operational requirements and limitations of the system, including the following; the absorption area must not be subject to traffic by vehicles or heavy stock and should be fenced if required. The absorption area must be kept with adequate grass cover to assist in evapotranspiration of treated effluent in the absorption trenches. The septic tank must be desludged at least every 3 years, and any other infrastructure such as septic tank outlet filters must also be cleaned regularly (approx. every 6 months depending upon usage). Foreign materials such as rubbish and solid waste must be kept out of the system.

CERTIFICATE OF THE RESPONSIBLE DESIGNER

Section 94
Section 106
Section 129
Section 155

To: Owner name
 Address
 Suburb/postcode

Form **35**

Designer details:

Name: Category:
Business name: Phone No:
Business address:
 Fax No:
Licence No: Email address:

Details of the proposed work:

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

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

Description of work:

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

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

Certificate Type:	Certificate	Responsible Practitioner
	<input type="checkbox"/> Building design	Architect or Building Designer
	<input type="checkbox"/> Structural design	Engineer or Civil Designer
	<input type="checkbox"/> Fire Safety design	Fire Engineer
	<input type="checkbox"/> Civil design	Civil Engineer or Civil Designer
	<input checked="" type="checkbox"/> Hydraulic design	Building Services Designer
	<input type="checkbox"/> Fire service design	Building Services Designer
	<input type="checkbox"/> Electrical design	Building Services Designer
	<input type="checkbox"/> Mechanical design	Building Service Designer
	<input type="checkbox"/> Plumbing design	Plumber-Certifier; Architect, Building Designer or Engineer
	<input type="checkbox"/> Other (specify)	

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

Other details:

Septic tank with onsite absorption trenches

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: Geo-Environmental Solutions	Date: Jan-24
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Geo-Environmental Solutions	Date: Jan-24
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by: Geo-Environmental Solutions	Date: Jan-24

Standards, codes or guidelines relied on in design process:

AS1547:2012 On-site domestic wastewater management.

AS3500 (Parts 0-5)-2013 Plumbing and drainage set.

Any other relevant documentation:

Geo-Environmental Assessment - 70 Marked Tree Road Gretna - Jan-24

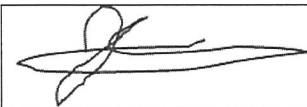
Geo-Environmental Assessment - 70 Marked Tree Road Gretna - Jan-24

Attribution as designer:

I John-Paul Cumming, am responsible for the design of that part of the work as described in this certificate;

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

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

	<i>Name: (print)</i>	<i>Signed</i>	<i>Date</i>
Designer:	John-Paul Cumming		08/01/2024
Licence No:	CC774A		

Assessment of Certifiable Works: (TasWater)

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

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

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

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

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

Certification:

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

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

	Name: (print)	Signed	Date
Designer:	John-Paul Cumming		08/01/2024



CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

To: John Rainbird
70 Marked Tree Road
Gretna 7140

Owner /Agent
Address
Suburb/postcode

Form **55**

Qualified person details:

Qualified person: John-Paul Cumming
Address: 29 Kirksway Place
Battery Point 7004
Licence No: AO999
Phone No: 03 6223 1839
Fax No:
Email address: jcumming@geosolutions.net.au

Qualifications and Insurance details: Certified Professional Soil Scientist (CPSS stage 2)
(description from Column 3 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Speciality area of expertise: AS2870-2011 Foundation Classification
(description from Column 4 of the Director's Determination - Certificates by Qualified Persons for Assessable Items)

Details of work:

Address: 70 Marked Tree Road
Gretna 7140
Lot No:
Certificate of title No: 171936/1

The assessable item related to this certificate: Classification of foundation Conditions according to AS2870-2011
(description of the assessable item being certified)
Assessable item includes –
- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: Foundation Classification
(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 soil report for the address detailed above in 'details of work'
Relevant calculations:	Reference the 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 alteration to foundation conditions as a result of earth works, drainage condition changes or variations in site maintenance.

I, John-Paul Cumming certify the matters described in this certificate.

Qualified person:

Signed:

Certificate No:

J9732

Date:

08/01/2024





Wastewater system:

- Dual-purpose septic tank (min 3500L)
 - Cut-off drain
 - Three two-way splitter boxes
 - Terraced Absorption Trenches
4 x 20m x 1.8m x 0.6m
 - Min 3m separation
 - Min 3m from upslope buildings
 - Min 13m from downslope buildings
 - Min 1.5m from upslope or level boundaries
 - Min 18m from downslope boundary
 - Min 100m from downslope surface water
- Refer to GES report

GES
GEO-ENVIRONMENTAL
SOLUTIONS
11-22238477 Professional Seal
84512023

Dr. John Paul Canning
Bioscience Designer
CCCT744

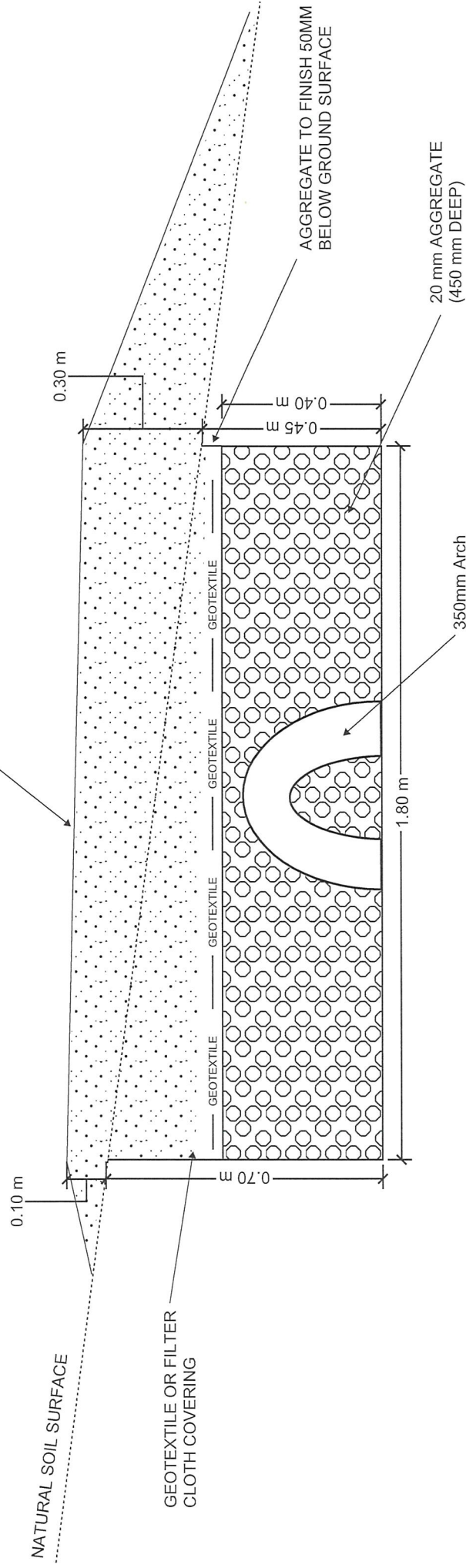
Approximate Test Hole Location

Do not scale from these drawings. Dimensions to take precedence over scale.	John Rainbird 70 Marked Tree Road Gretna	C.T.: 171936/1 PID: 3486640	Date: 8/01/2023	On-Site Wastewater Management Plan	Drawing Number:	Sheet 1 of 1 Drawn by: LR
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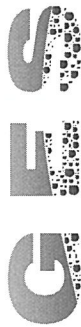
SOLUTIONS

T 62231839 E office@geosolutions.net.au

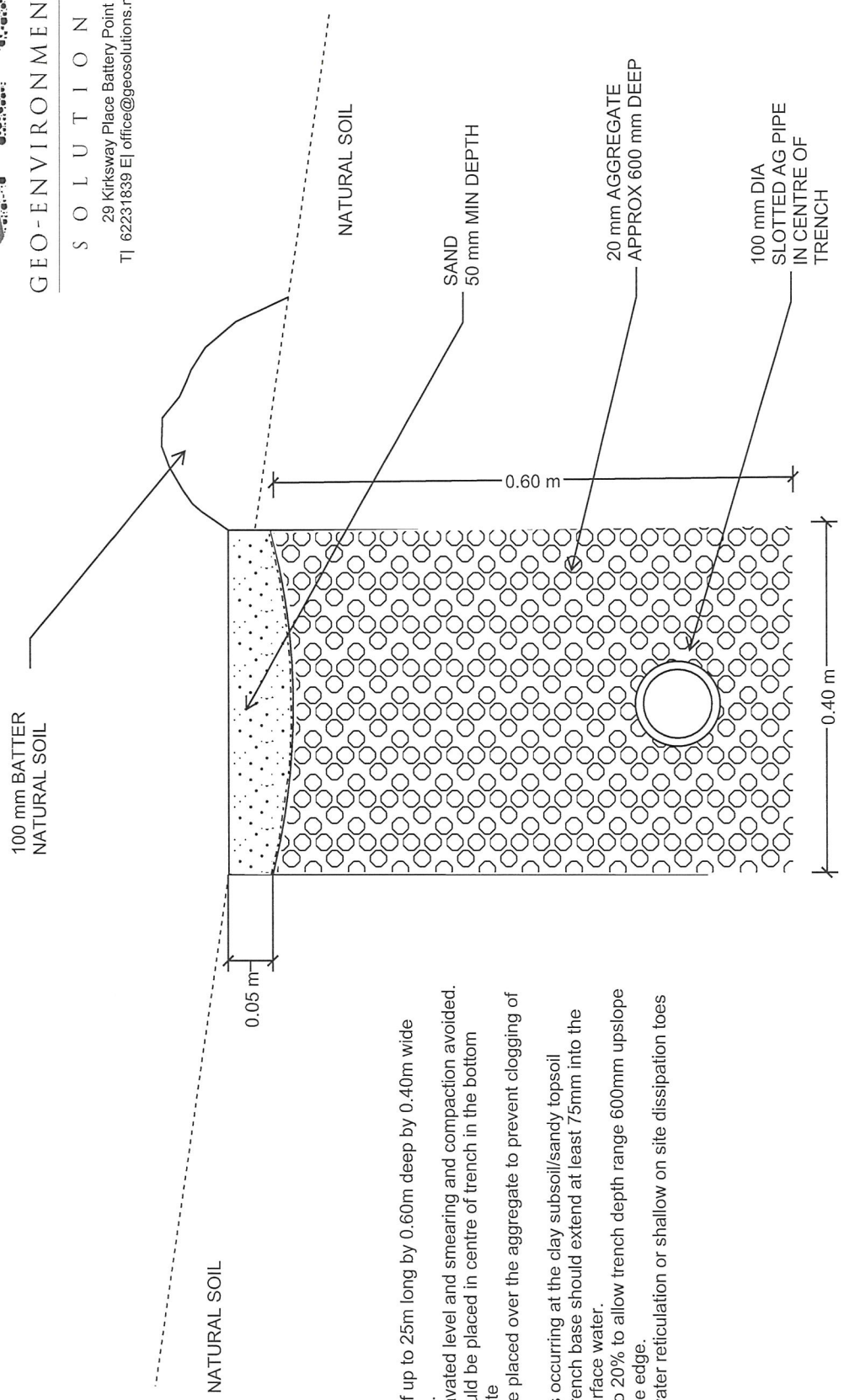
- FINISHED SURFACE OF SANDY LOAM
100 mm MIN ABOVE NATURAL UPSLOPE AND
300 mm MIN ON DOWN SLOPE EDGE OF TRENCH



Sheet 1 of 1



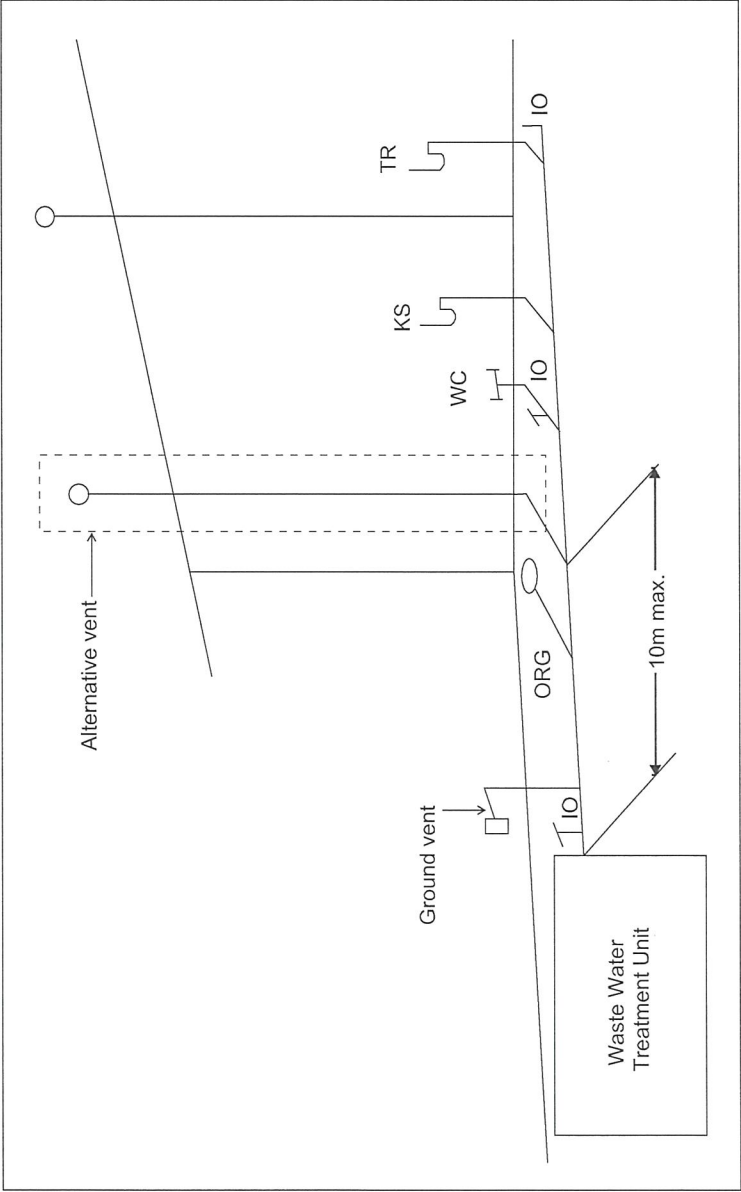
GEO-ENVIRONMENTAL
SOLUTIONS
29 Kirksway Place Battery Point
Tf 62231839 E| office@geosolutions.net.au



Design notes:

1. Cut-off trench dimensions of up to 25m long by 0.60m deep by 0.40m wide (depths and widths minimum).
2. Base of trenches to be excavated level and smearing and compaction avoided.
3. 100mm slotted ag-pipe should be placed in centre of trench in the bottom 100mm of the 20mm aggregate
4. Geotextile or filter cloth to be placed over the aggregate to prevent clogging of the pipes and aggregate
5. If shallow subsurface flow is occurring at the clay subsoil/sandy topsoil boundary (duplex soils), the trench base should extend at least 75mm into the subsoil clay to capture sub-surface water.
6. Construction on slopes up to 20% to allow trench depth range 600mm upslope edge to 400mm on down slope edge.
7. Trench discharge to stormwater reticulation or shallow on site dissipation toes across the contour.

Do not scale from these drawings. Dimensions to take precedence over scale.	Geo-Environmental Solutions	Date: Nov 2021	Cut-Off Drain Detail	Sheet 1 of 1
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Tas Figure H101.2 Alternative Venting Arrangements

Vents must terminate in accordance with AS/NZS 3500.2

Alternative venting to be used by extending a vent to terminate as if an upstream vent, with the vent connection between the last sanitary fixture or sanitary appliance and the on-site wastewater management system. Use of a ground vent in not recommended

Inspection openings must be located at the inlet to an on-site wastewater management system treatment unit and the point of connection to the land application system and must terminate as close as practicable to the underside of an approved inspection opening cover installed at the finished surface level

Access openings providing access for desludging or maintenance of on-site wastewater management system treatment units must terminate at or above finished surface level

Alternative vent is the preferred arrangement where possible.



COASTAL ENERGY
CONSULTANTS

ENERGY EFFICIENCY REPORT

CLIENT: PJ CONSTRUCTIONS

ADDRESS: 70 MARKED TREE ROAD, GRETNA 7140

JOB NO: AFP2310

DATE: 2ND DECEMBER 2023



THERMAL PERFORMANCE SPECIFICATION

THE NATIONAL CONSTRUCTION CODE (NCC) BUILDING CODE OF AUSTRALIA (BCA)

PROPERTY DETAILS

CLIENT NAME: PJ Constructions

BUILDING CLASS: 1

PROPERTY DESCRIPTION: TBA

LOCAL COUNCIL: Central Highlands Council

SITE ADDRESS: 70 Marked Tree Road, Gretna 7140

★ STAR RATING: 6.1	HEATING LOADS: 180.6	COOLING LOADS: 0.3
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EXTERNAL WALLS

<u>Construction</u>	<u>Insulation</u>	<u>R-Value</u>	<u>Colour</u>	<u>Detail</u>
CLADDING	BATTS	2.50		

INTERNAL WALLS

<u>Construction</u>	<u>Insulation</u>	<u>R-Value</u>	<u>Detail</u>
STUD	BATTS	2.00	BETWEEN GARAGE & DWELLING ONLY

FLOORS

<u>Construction</u>	<u>Insulation</u>	<u>R-Value</u>	<u>Covering</u>	<u>Area</u>
WAFFLE POD	NIL			175MM

ROOF

<u>Construction</u>	<u>Insulation</u>	<u>R-Value</u>	<u>Colour</u>	<u>Detail</u>
METAL SHEET	ANTICON	3.50		

CEILINGS

<u>Construction</u>	<u>Insulation</u>	<u>R-Value</u>	<u>Detail</u>
PLASTER	BATTS	3.50	

WINDOWS

<u>Glass</u>	<u>Frame</u>	<u>U Value</u>	<u>SHGC</u>	<u>Area (M2)</u>
TBA	ALUMINIUM	5.40	0.58	

NOTES

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Nationwide House Energy Rating Scheme

NatHERS Certificate No. 0009100496

Generated on 01 Dec 2023 using BERS Pro v4.4.1.5 (3.21)

Property

Address 70 MARKED TREE ROAD ,
GRETNA , Tas , 7140

Lot/DP

NCC Class* 1A

Type New Dwelling

Plans

Main plan 23-733 7/11/23

Prepared by PJ CONSTRUCTIONS

Construction and environment

Assessed floor area (m²)*	Exposure type
Conditioned* 173.0	Open
Unconditioned* 63.0	NatHERS climate zone
Total 236.0	68
Garage 43.0	



Accredited assessor

Name Linda Strahan

Business name HINTERLAND ECO ASSESSMENTS

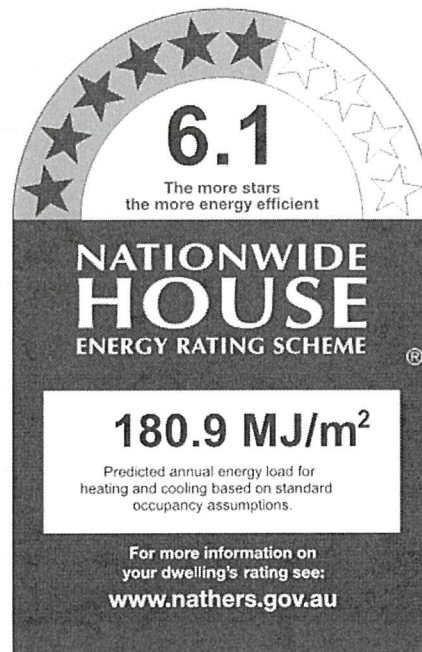
Email linda@hinterlandecoassessments.com.au

Phone 0438 991 418

Accreditation No. DMN/21/2056

Assessor Accrediting Organisation
Design Matters National

Declaration of interest Declaration completed: no conflicts



Thermal performance

Heating	Cooling
180.6	0.3
MJ/m²	MJ/m²

About the rating

NatHERS software models the expected thermal energy loads using information about the design and construction, climate and common patterns of household use. The software does not take into account appliances, apart from the airflow impacts from ceiling fans.

Verification

To verify this certificate, scan the QR code or visit www.hstar.com.au/QR/Generate?p=PZVoKOTzV. When using either link, ensure you are visiting www.hstar.com.au



National Construction Code (NCC) requirements

The NCC's requirements for NatHERS-rated houses are detailed in 3.12.0(a)(i) and 3.12.5 of the NCC Volume Two. For apartments the requirements are detailed in J0.2 and J5 to J8 of the NCC Volume One.

In NCC 2019, these requirements include minimum star ratings and separate heating and cooling load limits that need to be met by buildings and apartments through the NatHERS assessment. Requirements additional to the NatHERS assessment that must also be satisfied include, but are not limited to: insulation installation methods, thermal breaks, building sealing, water heating and pumping, and artificial lighting requirements. The NCC and NatHERS Heating and Cooling Load Limits (Australian Building Codes Board Standard) are available at www.abcb.gov.au.

State and territory variations and additions to the NCC may also apply.

Certificate check

Ensure the dwelling is designed and then built as per the NatHERS Certificate. While you need to check the accuracy of the whole Certificate, the following spot check covers some important items impacting the dwelling's rating.

Genuine certificate

Does this Certificate match the one available at the web address or QR code in the verification box on the front page? Does the set of NatHERS-stamped plans for the dwelling have a Certificate number on the stamp that matches this Certificate?

Ceiling penetrations*

Does the 'number' and 'type' of ceiling penetrations (e.g. downlights, exhaust fans, etc) shown on the stamped plans or installed, match what is shown in this Certificate?

Windows

Does the installed window meet the substitution tolerances (SHGC and U-value) and window type, of the window shown on this Certificate? Substituted values must be based on the Australian Fenestration Rating Council (AFRC) protocol.

Apartment entrance doors

Does the 'External Door Schedule' show apartment entrance doors? Please note that an "external door" between the modelled dwelling and a shared space, such as an enclosed corridor or foyer, should not be included in the assessment (because it overstates the possible ventilation) and would invalidate the Certificate.

Exposure*

Has the appropriate exposure level (terrain) been applied? For example, it is unlikely that a ground-floor apartment is "exposed" or a top floor high-rise apartment is "protected".

Provisional* values

Have provisional values been used in the assessment and, if so, noted in "additional notes" below?

Additional notes

I MODELLED SHADING AS IT RELATES TO THE HOUSE, BUT WITH NO SITE PLAN I WAS NOT ABLE TO

MODEL ANY OUTBUILDINGS OR OTHER PERMANENT FEATURES.

INSULATION

175 MM WAFFLE POD

EXTERNAL WALL R2.5

INTERNAL WALL AROUND GARAGE TO REST OF THE HOUSE R2.0

CEILING INSULATION R3.5

ROOF INSULATION R3.5

DOUBLE GLAZING WITH UV 5.4 & SHGC OF 0.58

I have modeled the shading in accordance with NatHERS principles

Window and glazed door *type and performance*



Default* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
ALM-002-03 A	Aluminium B SG High Solar Gain Low-E	5.4	0.58	0.55	0.61

Custom* windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Window and glazed door *schedule*

Location	Window ID	Window no.	Height (mm)	Width (mm)	Window type	Opening %	Orientation	Window shading device*
BED 1 WC	ALM-002-03 A	n/a	600	600	n/a	45	NE	No
BED 1	ALM-002-03 A	n/a	2100	1500	n/a	30	NE	No
KIT MEALS FAMIL	ALM-002-03 A	n/a	2100	1500	n/a	30	NE	No
KIT MEALS FAMIL	ALM-002-03 A	n/a	2400	5000	n/a	45	NE	No
BATH	ALM-002-03 A	n/a	1200	1200	n/a	45	NE	No
LDRY	ALM-002-03 A	n/a	600	600	n/a	45	NE	No
WC	ALM-002-03 A	n/a	600	600	n/a	45	SE	No
BED 4	ALM-002-03 A	n/a	2100	1500	n/a	30	SW	No
BED 3	ALM-002-03 A	n/a	2100	1500	n/a	30	SW	No
BED 2	ALM-002-03 A	n/a	2100	1500	n/a	30	SW	No
LOUNGE	ALM-002-03 A	n/a	2100	1500	n/a	30	SW	No

Roof window *type and performance*

Default* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

Custom* roof windows

Window ID	Window Description	Maximum U-value*	SHGC*	Substitution tolerance ranges	
				SHGC lower limit	SHGC upper limit
No Data Available					

* Refer to glossary.



Roof window schedule

Location	Window ID	Window no.	Opening %	Height (mm)	Width (mm)	Orientation	Outdoor shade	Indoor shade
No Data Available								

Skylight type and performance

Skylight ID	Skylight description
-------------	----------------------

No Data Available

Skylight schedule

Location	Skylight ID	Skylight No.	Skylight shaft length (mm)	Area (m ²)	Orientation	Outdoor shade	Diffuser	Skylight shaft reflectance
No Data Available								

External door schedule

Location	Height (mm)	Width (mm)	Opening %	Orientation
LDRY	2100	820	90	NE
ENTRY	2100	1200	90	SW
GARAGE	2300	4800	90	SW
GARAGE	2100	820	90	NW

External wall type

Wall ID	Wall type	Solar absorptance	Wall shade (colour)	Bulk insulation (R-value)	Reflective wall wrap*
EW-1	Weatherboard Cavity Panel Direct Fix	0.30	Light	Anti-glare foil with bulk no gap R2.5	No

External wall schedule

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
BED 1 WC	EW-1	2750	1595	NE	550	NO

Location	Wall ID	Height (mm)	Width (mm)	Orientation	Horizontal shading feature* maximum projection (mm)	Vertical shading feature (yes/no)
BED 1 WC	EW-1	2750	995	NW	550	NO
BED 1 ENSUITE	EW-1	2750	3490	NW	550	NO
BED 1 WIR	EW-1	2750	2190	NE	550	NO
BED 1	EW-1	2750	3290	NE	550	YES
KIT MEALS FAMIL	EW-1	2750	10300	NE	550	NO
KIT MEALS FAMIL	EW-1	2750	1000	SE	7100	YES
KIT MEALS FAMIL	EW-1	2750	1000	NW	7650	YES
PANTRY	EW-1	2750	1690	NE	550	YES
BATH	EW-1	2750	2890	NE	550	NO
LDRY	EW-1	2750	1945	NE	550	NO
LDRY	EW-1	2750	3895	SE	550	NO
WC	EW-1	2750	1640	SE	550	NO
BED 4	EW-1	2750	3595	SE	550	NO
BED 4	EW-1	2750	3545	SW	2700	NO
BED 3	EW-1	2750	3590	SW	2700	NO
BED 2	EW-1	2750	3590	SW	2700	NO
ENTRY	EW-1	2750	1790	SW	2700	NO
LOUNGE	EW-1	2750	4940	SW	2700	YES
GARAGE	EW-1	2750	2150	SE	18050	YES
GARAGE	EW-1	2750	6450	SW	550	NO
GARAGE	EW-1	2750	6795	NW	550	NO

Internal wall type

Wall ID	Wall type	Area (m ²)	Bulk insulation
IW-1 - Cavity wall, direct fix plasterboard, single gap		196.00	No insulation
IW-2 - Cavity wall, direct fix plasterboard, single gap		31.00	Bulk Insulation, No Air Gap R2



Floor type

Location	Construction	Area Sub-floor (m ²)	Added insulation ventilation (R-value)	Covering
BED 1 WC	Waffle pod slab 175 mm 100mm	1.50	None	Waffle Pod 175mm Ceramic Tiles 8mm
BED 1 ENSUITE	Waffle pod slab 175 mm 100mm	5.30	None	Waffle Pod 175mm Ceramic Tiles 8mm
BED 1 WIR	Waffle pod slab 175 mm 100mm	9.40	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
BED 1	Waffle pod slab 175 mm 100mm	14.30	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
KIT MEALS FAMIL	Waffle pod slab 175 mm 100mm	64.30	None	Waffle Pod 175mm 60/40 Carpet 10mm/Ceramic
PANTRY	Waffle pod slab 175 mm 100mm	6.20	None	Waffle Pod 175mm Ceramic Tiles 8mm
BATH	Waffle pod slab 175 mm 100mm	10.80	None	Waffle Pod 175mm Ceramic Tiles 8mm
LDRY	Waffle pod slab 175 mm 100mm	7.30	None	Waffle Pod 175mm Ceramic Tiles 8mm
WC	Waffle pod slab 175 mm 100mm	1.60	None	Waffle Pod 175mm Ceramic Tiles 8mm
HALL	Waffle pod slab 175 mm 100mm	11.00	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
BED 4	Waffle pod slab 175 mm 100mm	12.50	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
BED 3	Waffle pod slab 175 mm 100mm	12.50	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
BED 2	Waffle pod slab 175 mm 100mm	12.50	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
ENTRY	Waffle pod slab 175 mm 100mm	6.10	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
LOUNGE	Waffle pod slab 175 mm 100mm	17.30	None	Waffle Pod 175mm Carpet+Rubber Underlay 18mm
GARAGE	Waffle pod slab 175 mm 100mm	43.40	None	Waffle Pod 175mm Bare

Ceiling type

Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
BED 1 WC	Plasterboard	Bulk Insulation R3.5	No
BED 1 ENSUITE	Plasterboard	Bulk Insulation R3.5	No
BED 1 WIR	Plasterboard	Bulk Insulation R3.5	No
BED 1	Plasterboard	Bulk Insulation R3.5	No
KIT MEALS FAMIL	Plasterboard	Bulk Insulation R3.5	No
PANTRY	Plasterboard	Bulk Insulation R3.5	No
BATH	Plasterboard	Bulk Insulation R3.5	No
LDRY	Plasterboard	Bulk Insulation R3.5	No
WC	Plasterboard	Bulk Insulation R3.5	No



Location	Construction material/type	Bulk insulation R-value (may include edge batt values)	Reflective wrap*
HALL	Plasterboard	Bulk Insulation R3.5	No
BED 4	Plasterboard	Bulk Insulation R3.5	No
BED 3	Plasterboard	Bulk Insulation R3.5	No
BED 2	Plasterboard	Bulk Insulation R3.5	No
ENTRY	Plasterboard	Bulk Insulation R3.5	No
LOUNGE	Plasterboard	Bulk Insulation R3.5	No
GARAGE	Plasterboard	Bulk Insulation R3.5	No

Ceiling penetrations*

Location	Quantity	Type	Diameter (mm)	Sealed/unsealed
BED 1 WC	1	Downlights - LED	150	Sealed
BED 1 ENSUITE	2	Downlights - LED	150	Sealed
BED 1 ENSUITE	1	Exhaust Fans	300	Sealed
BED 1 WIR	1	Downlights - LED	150	Sealed
BED 1	2	Downlights - LED	150	Sealed
KIT MEALS FAMIL	9	Downlights - LED	150	Sealed
KIT MEALS FAMIL	1	Exhaust Fans	300	Sealed
PANTRY	1	Downlights - LED	150	Sealed
BATH	1	Downlights - LED	150	Sealed
BATH	1	Exhaust Fans	300	Sealed
LDRY	2	Downlights - LED	150	Sealed
WC	1	Downlights - LED	150	Sealed
BED 4	1	Downlights - LED	150	Sealed
BED 3	1	Downlights - LED	150	Sealed
BED 2	1	Downlights - LED	150	Sealed
ENTRY	1	Downlights - LED	150	Sealed
LOUNGE	2	Downlights - LED	150	Sealed
GARAGE	1	Downlights - CFL	160	Sealed

* Refer to glossary.



Ceiling fans

Location	Quantity	Diameter (mm)
BED 1	1	1200
KIT MEALS FAMIL	2	1200
BED 4	1	1200
BED 3	1	1200
BED 2	1	1200
LOUNGE	1	1200

Roof type

Construction	Added insulation (R-value)	Solar absorptance	Roof shade
Corrugated Iron	Bulk, Reflective Side Down, Anti-glare Up R3.5	0.43	Medium

Explanatory notes

About this report

A NatHERS rating is a comprehensive, dynamic computer modelling evaluation of a home, using the floorplans, elevations and specifications to estimate an energy load. It addresses the building layout, orientation and fabric (i.e. walls, windows, floors, roofs and ceilings), but does not cover the water or energy use of appliances or energy production of solar panels.

Ratings are based on a unique climate zone where the home is located and are generated using standard assumptions, including occupancy patterns and thermostat settings. The actual energy consumption of a home may vary significantly from the predicted energy load, as the assumptions used in the rating will not match actual usage patterns. For example, the number of occupants and personal heating or cooling preferences will vary.

While the figures are an indicative guide to energy use, they can be used as a reliable guide for comparing different dwelling designs and to demonstrate that the design meets the energy efficiency requirements in the National Construction Code. Homes that are energy efficient use less energy, are warmer on cool days, cooler on hot days and cost less to run. The higher the star rating the more thermally efficient the dwelling is.

Accredited assessors

To ensure the NatHERS Certificate is of a high quality, always use an accredited or licenced assessor. NatHERS accredited assessors are members of a professional body called an Assessor Accrediting Organisation (AAO).

Australian Capital Territory (ACT) licensed assessors may only produce assessments for regulatory purposes using software for which they have a licence endorsement. Licence endorsements can be confirmed on the ACT licensing register

AAOs have specific quality assurance processes in place, and continuing professional development requirements, to maintain a high and consistent standard of assessments across the country. Non-accredited assessors do not have this level of quality assurance or any ongoing training requirements.

Any questions or concerns about this report should be directed to the assessor in the first instance. If the assessor is unable to address these questions or concerns, the AAO specified on the front of this certificate should be contacted.

Disclaimer

The format of the NatHERS Certificate was developed by the NatHERS Administrator. However the content of each individual certificate is entered and created by the assessor to create a NatHERS Certificate. It is the responsibility of the assessor who prepared this certificate to use NatHERS accredited software correctly and follow the NatHERS Technical Notes to produce a NatHERS Certificate.

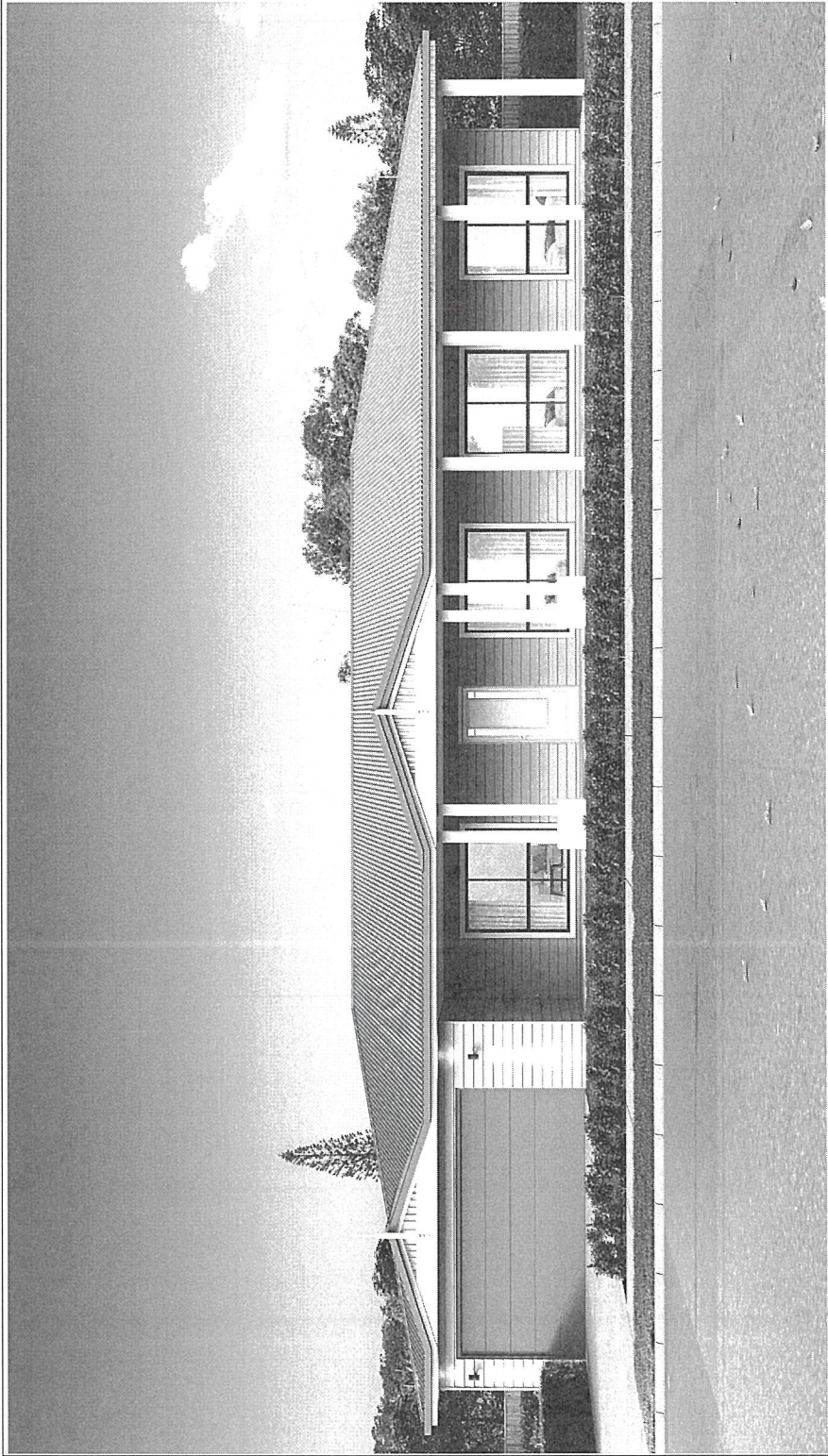
The predicted annual energy load in this NatHERS Certificate is an estimate based on an assessment of the building by the assessor. It is not a prediction of actual energy use, but may be used to compare how other buildings are likely to perform when used in a similar way.

Information presented in this report relies on a range of standard assumptions (both embedded in NatHERS accredited software and made by the assessor who prepared this report), including assumptions about occupancy, indoor air temperature and local climate.

Not all assumptions that may have been made by the assessor while using the NatHERS accredited software tool are presented in this report and further details or data files may be available from the assessor.

Glossary

Annual energy load	the predicted amount of energy required for heating and cooling, based on standard occupancy assumptions.
Assessed floor area	the floor area modelled in the software for the purpose of the NatHERS assessment. Note, this may not be consistent with the floor area in the design documents.
Ceiling penetrations	features that require a penetration to the ceiling, including downlights, vents, exhaust fans, rangehoods, chimneys and flues. Excludes fixtures attached to the ceiling with small holes through the ceiling for wiring, e.g. ceiling fans; pendant lights, and heating and cooling ducts.
Conditioned	a zone within a dwelling that is expected to require heating and cooling based on standard occupancy assumptions. In some circumstances it will include garages.
Custom windows	windows listed in NatHERS software that are available on the market in Australia and have a WERS (Window Energy Rating Scheme) rating.
Default windows	windows that are representative of a specific type of window product and whose properties have been derived by statistical methods.
Entrance door	these signify ventilation benefits in the modelling software and must not be modelled as a door when opening to a minimally ventilated corridor in a Class 2 building.
Exposure category – exposed	terrain with no obstructions e.g. flat grazing land, ocean-frontage, desert, exposed high-rise unit (usually above 10 floors).
Exposure category – open	terrain with few obstructions at a similar height e.g. grasslands with few well scattered obstructions below 10m, farmland with scattered sheds, lightly vegetated bush blocks, elevated units (e.g. above 3 floors).
Exposure category – suburban	terrain with numerous, closely spaced obstructions below 10m e.g. suburban housing, heavily vegetated bushland areas.
Exposure category – protected	terrain with numerous, closely spaced obstructions over 10 m e.g. city and industrial areas.
Horizontal shading feature	provides shading to the building in the horizontal plane, e.g. eaves, verandahs, pergolas, carports, or overhangs or balconies from upper levels.
National Construction Code (NCC) Class	the NCC groups buildings by their function and use, and assigns a classification code. NatHERS software models NCC Class 1, 2 or 4 buildings and attached Class 10a buildings. Definitions can be found at www.abcb.gov.au .
Opening percentage	the openability percentage or operable (moveable) area of doors or windows that is used in ventilation calculations.
Provisional value	an assumed value that does not represent an actual value. For example, if the wall colour is unspecified in the documentation, a provisional value of 'medium' must be modelled. Acceptable provisional values are outlined in the NatHERS Technical Note and can be found at www.nathers.gov.au
Reflective wrap (also known as foil)	can be applied to walls, roofs and ceilings. When combined with an appropriate airgap and emissivity value, it provides insulative properties.
Roof window	for NatHERS this is typically an operable window (i.e. can be opened), will have a plaster or similar tight well if there is an attic space, and generally does not have a diffuser.
Shading device	a device fixed to windows that provides shading e.g. window awnings or screens but excludes eaves.
Shading features	includes neighbouring buildings, fences, and wing walls, but excludes eaves.
Solar heat gain coefficient (SHGC)	the fraction of incident solar radiation admitted through a window, both directly transmitted as well as absorbed and subsequently released inward. SHGC is expressed as a number between 0 and 1. The lower a window's SHGC, the less solar heat it transmits.
Skylight (also known as roof lights)	for NatHERS this is typically a moulded unit with flexible reflective tubing (light well) and a diffuser at ceiling level.
U-value	the rate of heat transfer through a window. The lower the U-value, the better the insulating ability.
Unconditioned	a zone within a dwelling that is assumed to not require heating and cooling based on standard occupancy assumptions.
Vertical shading features	provides shading to the building in the vertical plane and can be parallel or perpendicular to the subject wall/window. Includes privacy screens, other walls in the building (wing walls), fences, other buildings, vegetation (protected or listed heritage trees).



GENERAL NOTES
DO NOT SCALE PLANS. USE WRITTEN DIMENSIONS ONLY.
THE OWNER/BUILDER SUBCONTRACTOR SHALL VERIFY ALL DIMENSIONS, LEVELS, SETBACKS AND SPECIFICATIONS PRIOR TO COMMENCING WORKS OR ORDERING MATERIALS AND SHALL BE RESPONSIBLE FOR ENSURING THAT ALL BUILDING WORKS CONFORM TO THE BUILDING CODE OF AUSTRALIA, CURRENT STANDARDS, BUILDING REGULATIONS AND TOWN PLANNING REQUIREMENTS. REPORT ANY DISCREPANCIES TO THIS OFFICE.

ALL WORKS SHALL COMPLY WITH BUT NOT LIMITED TO THE BUILDING CODE OF AUSTRALIA AND THE AUSTRALIAN STANDARDS.
THESE PLANS SHALL BE READ IN CONJUNCTION WITH ANY STRUCTURAL AND CIVIL ENGINEERING COMPUTATIONS AND DRAWINGS

CONSTRUCTION NOTES
1. EXTERNAL WALLS = 80mm
2. INTERNAL WALLS = 90mm
3. NZ WIND DESIGN SPEED
4. ALL INTERNAL DOORS 2040 HT
5. WC DOOR EXTERNAL REMOVABLE HINGES

ENERGY EFFICIENCY NOTES:
1. ALL SHOWER ROSES TO BE 'AAA' SHOWER ROSES
2. IF WATER PRESSURE TO BUILDING EXCEEDS 500 kpa, PRESSURE LIMITING DEVICE TO BE INSTALLED
3. ALL KITCHEN SINKS, BATHROOM BASINS & LAUNDRY TROUGHS, MINIMUM 3-STAR WELS RATED TAPWARE FOR
4. KITCHEN SINKS, BATHROOM BASINS & LAUNDRY TROUGHS, MINIMUM 4-STAR MEPS RATED AIR CONDITIONERS TO BE INSTALLED (IF APPLICABLE)
5. 80% TOTAL ENCLOSED FLOOR AREA TO HAVE EFFICIENT GLAZING INCLUDING TERRACE & FRONT BALCONY
6. INSULATION ABOVE 3.9 R VALUE TO ALL CEILING SPACE INCLUDING TERRACE & FRONT BALCONY



JOHN RAINBIRD

70 MARKED TREE
ROAD GREYNA,
HOBART TASMANIA
7140



P&J Constructions
049 215 3413

No.	Description	Date

NOTES

Project number	23-733
Date	7/11/2023
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Scale	A101

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70 MARKED TREE
ROAD GREYNA,
HOBART TASMANIA
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AREAS
LIVING AREA: 207.4 m²
GARAGE AREA: 45.8 m²
VERANDAH: 37.3 m²
TOTAL AREA: 290.5 m²

No.	Description	Date

FLOOR PLAN

Project number	23-733
Date	7/11/2023
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Checked by	Checker
Scale	A102
Scale	1 : 100

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GENERAL NOTES

- ALL DIMENSIONS TO BE IN METERS, USE WRITTEN DIMENSIONS ONLY.
- THE CONTRACTOR SHALL BE RESPONSIBLE FOR OBTAINING ALL DIMENSIONS, LEVELS, SETBACKS AND SPECIFICATIONS PRIOR TO COMMENCING WORKS OF ORDERING MATERIALS AND SHALL BE RESPONSIBLE FOR ENSURING THAT ALL BUILDING WORKS CONFORM TO THE BUILDING CODE OF AUSTRALIA, CURRENT STANDARDS, BUILDING REGULATIONS AND TOWN PLANNING REQUIREMENTS. REPORT ANY DISCREPANCIES TO THIS OFFICE.
- ALL WORKS SHALL COMPLY WITH BUT NOT LIMITED TO THE BUILDING CODE OF AUSTRALIA AND THE AUSTRALIAN STANDARDS.

THESE PLANS SHALL BE READ IN CONJUNCTION WITH ANY STRUCTURAL AND CIVIL ENGINEERING COMPUTATIONS AND DRAWINGS

ENERGY EFFICIENCY NOTES:

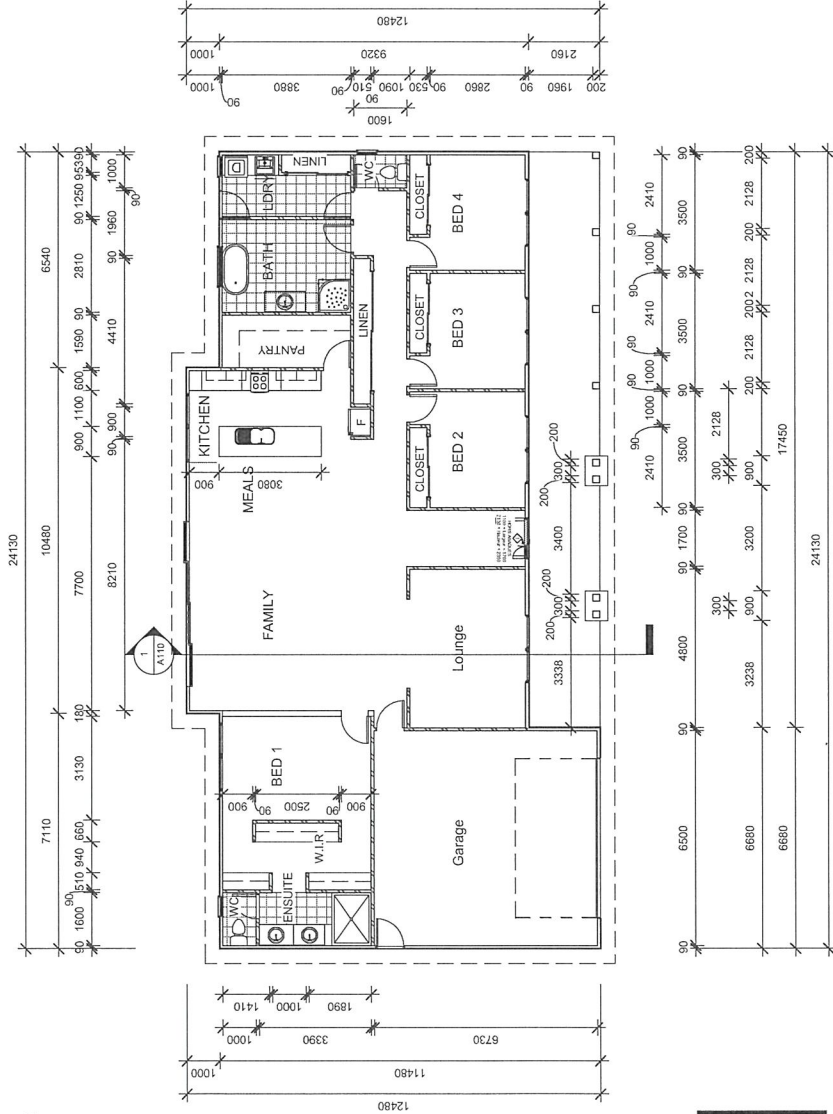
- ALL SHOWER ROSES TO BE 4-STAR SHOWER ROSES
- ALL SHOWER ROSES TO BE 4-STAR SHOWER ROSES
- MINIMUM 4-STAR WELS RATED TAPWARE TO BE INSTALLED.
- MINIMUM 4-STAR WELS RATED TAPWARE TO BE INSTALLED.
- KITCHEN SINKS, BATHROOM BASINS & LAUNDRY TROUGHS.
- 200 LITRE PER SECOND FLOW RATE FOR SHOWER HEADS.
- STAR RATED WATER SAVING CONSUMERS TO BE INSTALLED (IF APPLICABLE).
- 80% TOTAL ENCLOSED FLOOR AREA TO HAVE ENERGY EFFICIENT GLASS INSTALLED.
- INSULATION ABOVE 3.3 R VALUE TO ALL CEILING SPACE INCLUDING TERRACE & FRONT BALCONY

CONSTRUCTION NOTES

- EXTERNAL WALLS = 90mm
- ALL INTERIOR WALLS = 90mm
- ALL INTERIOR DOORS 2040 HT
- WC DOOR EXTERNAL REMOVABLE HINGES

LEGEND

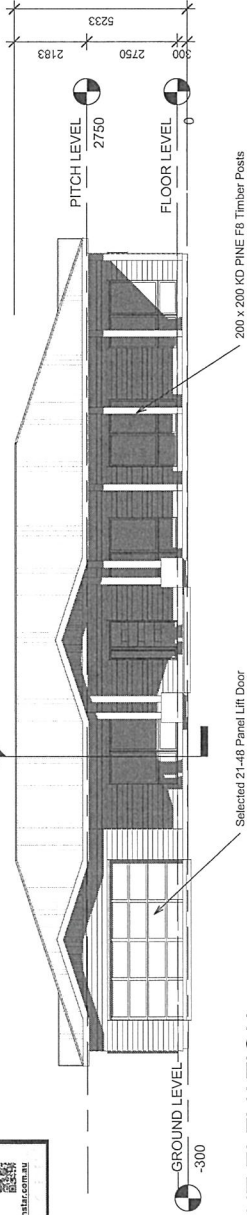
- CJ: CONSTRUCTION JOINT
DP: DOWNPIPE
FP: FIRE PLACE
FW: FLOOR WASTE
EPS: EXPANDED POLYSTYRENE FOAM (EPS) Sandwiched
AC: AIR CONDITIONING
PS: PLUMBING STACK / DUCT
SP: STEEL POST
T.B.C.: TO BE CONFIRMED
R.E.L.: RELATIVE LEVEL
A.H.D.: AUSTRALIAN HEIGHT DATUM
CSD: CAVITY SLIDING DOOR
OHC: OVER HEAD CUPBOARD
FG: FIXED GLASS
FSR: FLOOR SPACE RATIO
NGL: NATURAL LIGHT
UBO: UNDER BENCH OVEN
WO: WALL OVEN
DW: DISHWASHER
MW: MICROWAVE
WIR: WALK-IN-REF
WIR: WALK-IN-ROBE
ASD: SLIDING GLASS DOOR
ASW: ALUMINIUM SLIDING WINDOW
ADH: ALUM. DOUBLE HUNG WINDOW
AAW: ALUM. AWMING WINDOW
AWW: ALUM. AWMING WINDOW
BCA: BUILDING CODE OF AUSTRALIA
AS: AUSTRALIAN STANDARDS



FLOOR PLAN

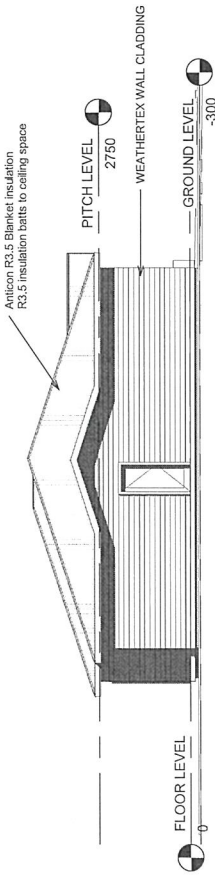
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3 FRONT ELEVATION

1 : 100

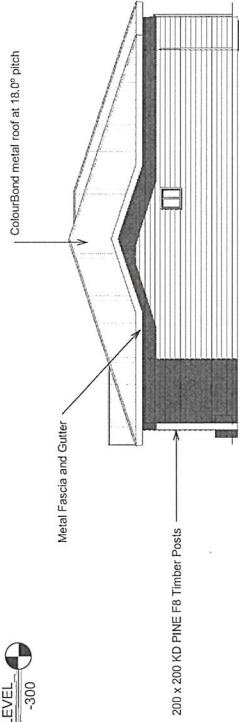


4 LEFT SIDE ELEVATION

1 : 100

COLOURBOND METAL ROOF
ROOF TRUSSES AT 900 CTRS FIXED TO
MANUFACTURERS SPECS TO BE DESIGNED BY ENGINEER

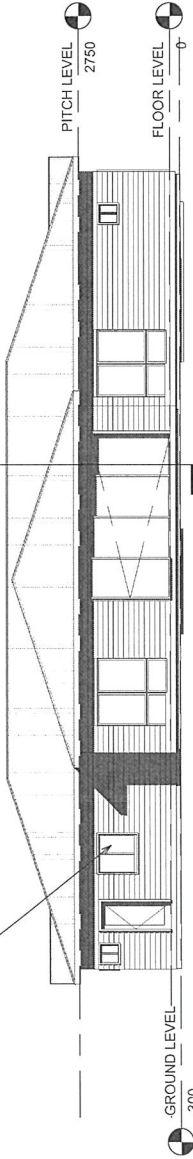
10mm SUPERCCEL TO CEILINGS
10mm PLASTERBOARD TO WALLS



1 RIGHT SIDE ELEVATION

1 : 100

Aluminum framed sliding glass doors and windows



2 BACK ELEVATION

1 : 100

SLAB AND FOOTINGS TO ENGINEERS DETAIL.
POISONS TO A.S. 3660.1-2000 STANDARDS

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No.	Description	Date

ELEVATION PLAN

Project number	23-733
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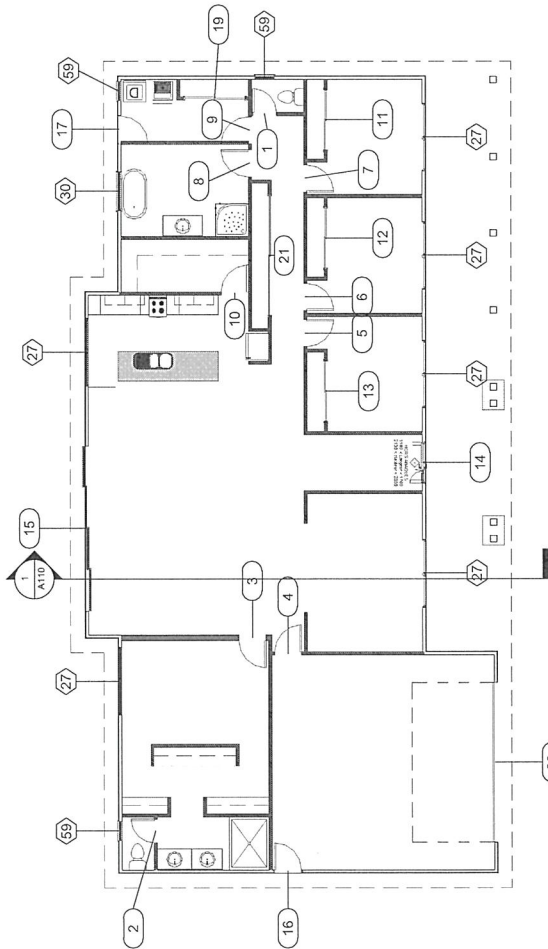
Door Schedule			
Height	Width	Type Mark	Mark
2040	720	129	1
2040	720	129	2
2040	820	128	3
2040	820	128	4
2040	820	128	5
2040	820	128	6
2040	820	128	7
2040	820	128	8
2040	820	128	9
2040	820	128	10
2040	1800	136	11
2100	1800	136	12
2100	1800	136	13
2300	4800	45	20
2100	1200	79	14
2400	5000	40	15
2100	820	97	16
2100	820	97	17
2100	1800	136	19
2100	3600	42	21

Window Schedule			
Height	Width	Mark	Type Comments
1500	1000	1	2100-1500/600
1500	1000	5	2100-1500/600
1500	1000	6	2100-1500/600
1500	1000	12	2100-1500/600
1500	1000	14	2100-1500/600
1500	1000	16	2100-1500/600
1200	1200	7	30
600	600	28	59
600	600	8	59
600	600	10	59

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1 WINDOWS & DOORS

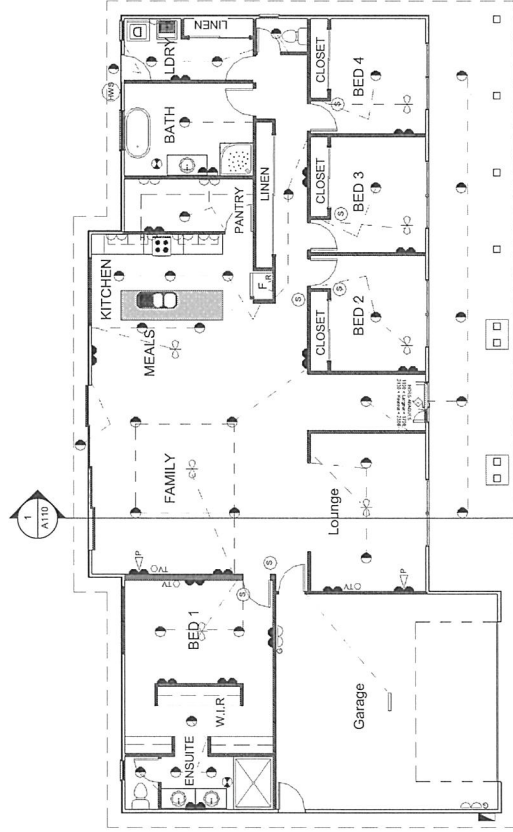
1 : 100

WINDOWS & DOORS

Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker
A104	
Scale	1 : 100

ELECTRICAL LEGEND

METER BOX	—	FLUORESCENT LIGHT - 1000 SINGLE	⊖	SINGLE OUTLET 1000 ABOVE FLOOR LEVEL	⊖	MICROWAVE OUTLET 1000 A.F.I.F REQUIRED	⊖	HOT WATER SERVICE	⊖
LIGHT SWITCH 1000 ABOVE FLOOR LEVEL	⊖	EXHAUST FAN	⊖	DOUBLE OUTLET 1000 ABOVE FLOOR LEVEL	⊖	RANGEHOOD OUTLET 1000 A.F.I.F REQUIRED	⊖	SMOKE DETECTOR	⊖
FEATURE CEILING LIGHT	⊖	CEILING FAN	⊖	VANITY OUTLET 1000 ABOVE FLOOR	⊖	TELEVISION OUTLET	⊖	CEILING FAN LIGHT	⊖
WALL MOUNTED LIGHT	⊖	SINGLE OUTLET 1000 ABOVE FLOOR LEVEL	⊖	GARAGE OUTLET 1000 ABOVE FLOOR	⊖	TELEPHONE OUTLET 300 ABOVE FLOOR	⊖	MISPLUT EVAPORATORS	⊖
DOWNLIGHT	⊖	DOUBLE OUTLET 1000 ABOVE FLOOR LEVEL	⊖	REFRIGERATOR OUTLET 1000 ABOVE FLOOR	⊖	TELEPHONE OUTLET 1000 ABOVE FLOOR	⊖	MISPLUT CONDENSER	⊖



1 ELECTRICAL PLAN

1 : 100

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70 MARKED TREE
ROAD GREYNA,
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No.	Description	Date

ELECTRICAL PLAN

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A105	
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000100406 01 Dec 2023
6.1
HOUSE
180.9
1000

Accreditation No. CHN010026
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70 MARKED TREE ROAD,
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7140
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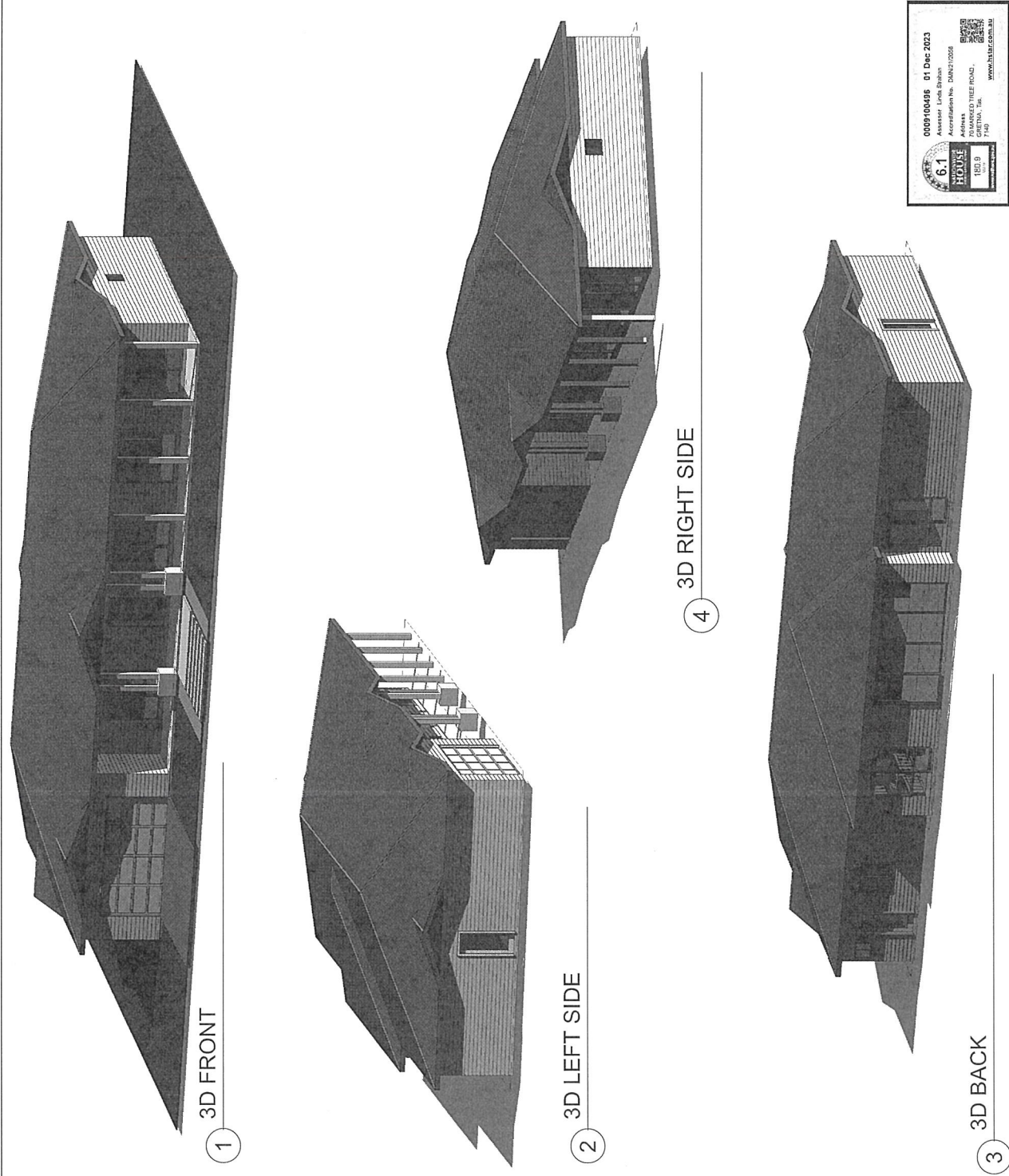
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No.	Description	Date

3D VIEWS	
Project number	23-733
Date	7/11/2023
Drawn by	Author
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A106	
Scale	



LINTELS F14 HW	
SPAN	SIZE
600	50 X 75
900	50 X 100
1200	75 X 75
1500	100 X 75
1800	125 X 75
2100	150 X 75
2400	150 X 75
2700	200 X 75
3000	225 X 75

JAMB STUDS	
UP TO 1600 - 2/75 X 50 F14	
UP TO 2700 - 3/75 X 50 F14	
UP TO 3800 - 4/75 X 50 F14	

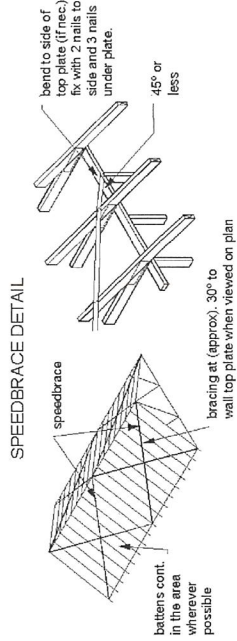
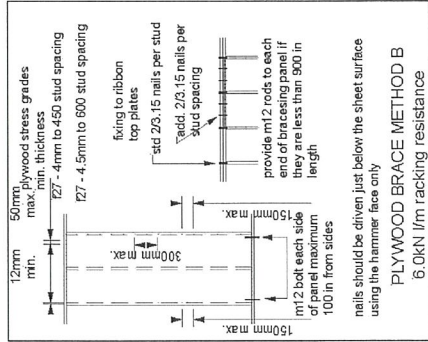
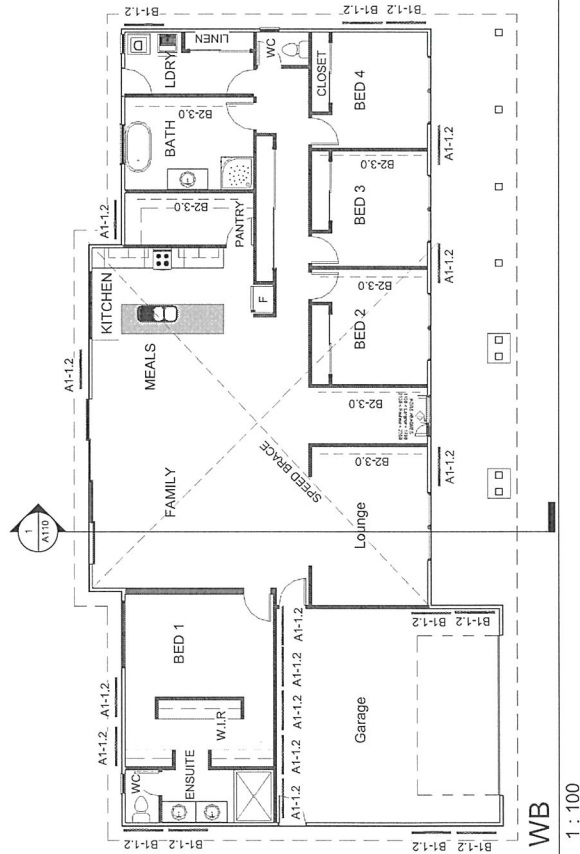
WIND BRACING N3 DIRECTION A				
PANEL	NUMBER	Structural Ply 6kN / Meter	1b, 1a (6.1 strap) 1.5kN / Meter	rod, conc 2.5kN / Meter
A1	12	7.2		
A2				
A3				
		Resistance Gained		86.4 Kn
		Resistance Required		58.5 Kn

WIND BRACING N3 DIRECTION B				
PANEL	NUMBER	Structural Ply 6kN / Meter	1b, 1a (6.1 strap) 1.5kN / Meter	rod, conc 2.5kN / Meter
B1	9	7.2		
B2	5		4.5	
B3				
		Resistance Gained		87.3 Kn
		Resistance Required		85.3 Kn

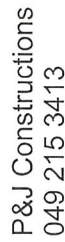
JOHN RAINBIRD

70 MARKED TREE

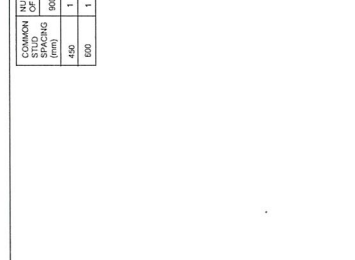
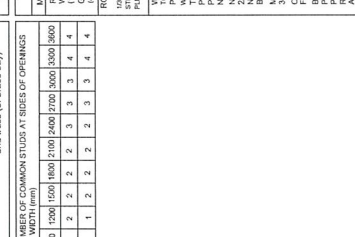
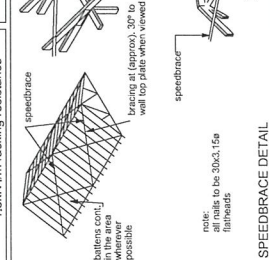
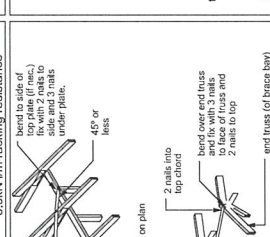
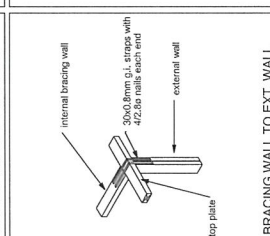
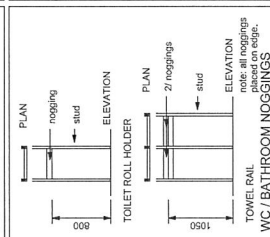
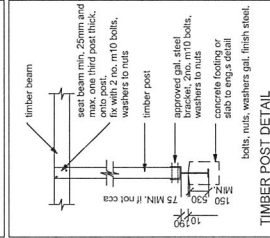
ROAD GREINA,
HOBART TASMANIA
7140



70 MARKED TREE
ROAD GREYNA,
HOBART TASMANIA
7140

[illegible]

Project number	23-733
Date	7/11/2023
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A108	
Scale	1 : 100



UNFINISHED	SOFT LININGS	SPRIT BEARERS IN EACH TRUSS WITH 4.2cm ² x 1.5m C/P SHEETS SPRIT BEARERS IN EACH TRUSS WITH 4.2cm ² x 1.5m C/P SHEETS CONCRETE AND 200mm CTRFLY REINFORCED WALLS NOTE: USE 200mm CTRFLY REINFORCED WALLS
FINISHED	WALL FRAMING	MSP10 PIPE FRAME TO LOAD BEARING WALLS 70 x 35 FRAME - STUDS AT 450 CTRS NOT NOTICED 70 x 35 FRAME - BOTTOM PLATES TOP PLATES AS SPECIFIED, NOT NOTICED. TOP PLATES AS SPECIFIED, NOT NOTICED. ADD - ROBBION PLATE 70 x 35 MSP10 TOP PLATE ADD - ROBBION PLATE 70 x 35 MSP10 TOP PLATE ADD - ROBBION PLATE 70 x 35 MSP10 TOP PLATE
FINISHED	WALL FRAMING	MSP10 PIPE FRAME TO NON LOAD BEARING 70 x 35 FRAME - STUDS AT 450 CTRS - ONE ROW NOGGINGS - TOP AND BOTTOM PLATES
FINISHED	WALL FRAMING	PROVIDE SOFT NOGGINGS SUPPORT BELOW FIRST CTRFLY. PROVIDE WALL NOGGING AT 1500mm CTRFLY. MAXIMUM PROVIDE ADDITIONAL NOGGING TO SILET ROADS, WALL HOLDERS, TOWER WALLS, ETC... TO BAIT TIE ROADS ABOVE

[illegible][illegible][illegible]

NUMBER OF COMMON STUDIOS AT SIDES OF OFFERINGS		NUMBER OF COMMON STUDIOS AT SIDES OF OFFERINGS	
STUDIO	STUDIO	STUDIO	STUDIO
1	2	3	4
5	6	7	8
9	10	11	12
13	14	15	16
17	18	19	20
21	22	23	24
25	26	27	28
29	30	31	32
33	34	35	36
37	38	39	40
41	42	43	44
45	46	47	48
49	50	51	52
53	54	55	56
57	58	59	60
61	62	63	64
65	66	67	68
69	70	71	72
73	74	75	76
77	78	79	80
81	82	83	84
85	86	87	88
89	90	91	92
93	94	95	96
97	98	99	100

COMMON LAYER SPACING (mm)	1	1
450	1	1
600	1	1

0009100496 01 Dec 2023
 Assessor Linda Strahlen
 Accreditation No. DWAN2102506
 Address
 MARKSBERG TREE ROAD,
 COLEINA, TN,
 37424
 www.hstar.com.au

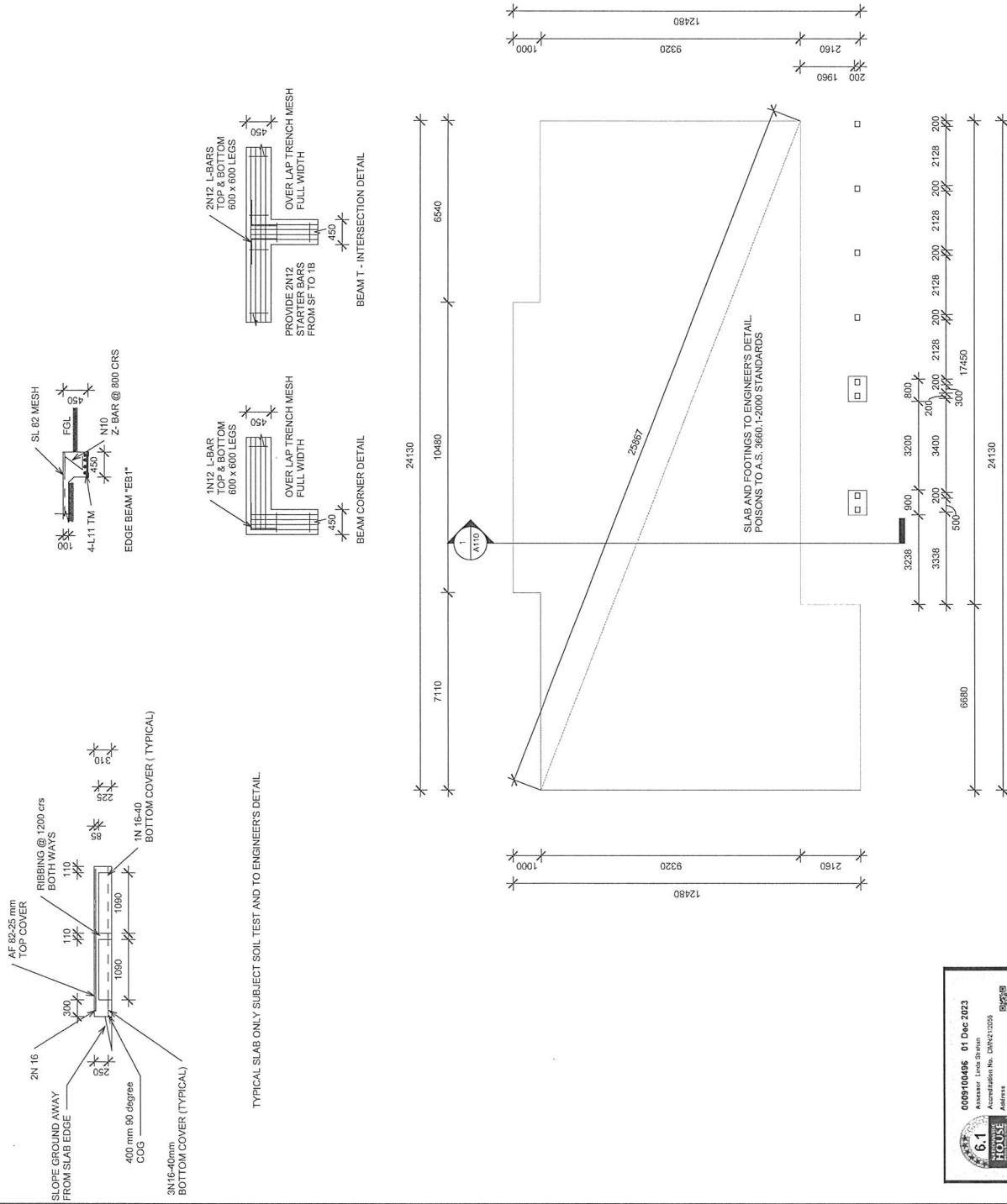
70 MARKED TREE
ROAD GRETNA,
HOBART TASMANIA
7140

[illegible]

Project number	23-733
Date	7/11/2023
Drawn by	Author
Checked by	Checker
A109	
Scale	As indicated

Scale	As indicated
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SLAB LAYOUT

1 : 100

0009100496 01 Dec 2023
 Assessor: Linda Strahan
 Accreditation No. DWAN2120256
 Address: FOWKED TREE ROAD,
 BERNINA, Tas.,
 7140
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GENERAL FRAMING MEMBERS (U.N.O.)

STUDS

90x35 MGP10 @ 450 MAX.CTRS.
NOTCHES20mm FOR BRACING
(MAX.HEIGHT 2700mm)
90x45 mgp10 @ 450 MAX. CTRS.
(HEIGHT 2700mm-3000mm)
90x45 F17 KD HW @ 450 MAX. CTRS
(MAX. HEIGHT 3700mm)

DOUBLE STUDS: 2/90x45 MGP 10 STUDS
FIXED END STUD WALL TO MASONRY WALLS WITH M10
DYNABOLT AT TOP, BOTTOM AND 1500 MAX. CTRS. (TYP.)

WALL PLATES

TOP PLATE - 2/45X90 MGP 10 NOT TRENCHED
BOTTOM PLATE - 45X90 MGP 10 NOT TRENCHED

INTERNAL FINISHES:

1. Walls -10mm Gfb boards (AQUALINE TO WET AREAS)
2. Ceiling -13mm Gfb Board (AQUALINE TO WET AREAS)
3. Skirting - 60x10mm SB Pine
4. Cornice - 55mm Gfb Cove
5. Exterior joinery - FJ PF quality reveals with architraves
6. Interior Doors - MDF HC PQ on grooved Pine liners



STUD AT SIDE OPENINGS
OPENING WIDTH: STUDS:

UP TO 1200mm - 1/90x45 MGP10
1200mm - 1800mm 2/90x45 MGP10
1800mm - 2400mm 2/90x45 MGP10

WALL BRACING

BRACING OF ALL STUD WALLS TO BE IN ACCORDANCE WITH
THE RESIDENTIAL TIMBER FRAMING CONSTRUCTION
A.S.1684.2-2006 U.N.O

FIXING REQUIREMENTS

GENERALS: REFER TO A.S.1684.2-2006 RESIDENTIAL

TIMBER FRAMING CONSTRUCTION

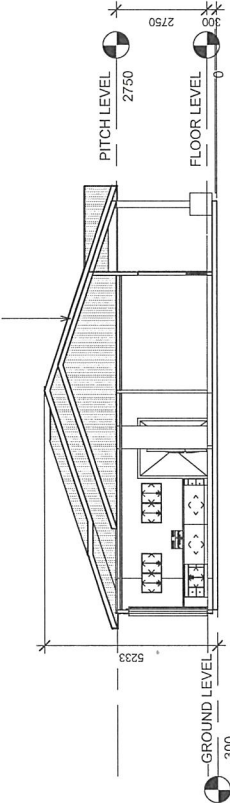
MANUAL TYPICAL FIXING REQUIREMENTS
GENERALS: EQUIVALENT TIMBER GRADE CAN BE USED
TO REPLACED TIMBER GRADES SPECIF

GENERAL NOTES:

1. All Stud Heights 2750 mm unless noted otherwise
2. N3 windzone
3. All dimensions are to framing
4. All Soffits to be 450mm to wall framing unless noted otherwise
5. All Levels to be check on site prior to commencing on job
6. All dimensions to be verified during construction
7. All timber to be SG8 unless specified otherwise
8. Install Noggins for wall hung vanities

WATERPROOFING AREAS
WATERPROOFING OF WET AREAS, BATHROOM,
SHOWERS, SANITARY COMPARTMENTS AND THE
LIKE SHALL BE PROVIDED IN ACCORDANCE WITH
A.S.3740-2004: WATERPROOFING OF WET AREAS
WITHIN THE BUILDING

COLOURBOND METAL ROOF
ROOF TRUSSES AT 900 CTRS FIXED TO
MANUFACTURERS SPECS TO BE DESIGNED BY ENGINEER



SLAB AND FOOTINGS TO ENGINEER'S DETAIL
POISONS TO A.S. 3680.1-2000 STANDARDS

Section 1

1 : 100

JOHN RAINBIRD

70 MARKED TREE
ROAD GRETNA,
HOBART TASMANIA
7140



P&J Constructions
049 215 3413

No.	Description	Date

SECTION

Project number	23-733
Date	7/11/2023
Drawn by	P&J Constructions
Checked by	Checker
	A110
Scale	1 : 100

ALL STRUCTURAL TIMBER SIZES TO BE IN ACCORDANCE WITH
A.S.1684-NATIONAL TIMBER FRAMING CO

