Application for Planning Approval

Land Use Planning and Approvals Act 1993

APPLICATION NO.

DA2023/125

LOCATION OF AFFECTED AREA

136 KATHLEEN DRIVE, OLD BEACH

DESCRIPTION OF DEVELOPMENT PROPOSAL

SINGLE DWELLING

A COPY OF THE DEVELOPMENT APPLICATION MAY BE VIEWED AT www.brighton.tas.gov.au AND AT THE COUNCIL OFFICES, 1 TIVOLI ROAD, OLD BEACH, BETWEEN 8:15 A.M. AND 4:45 P.M., MONDAY TO FRIDAY OR VIA THE QR CODE BELOW. ANY PERSON MAY MAKE WRITTEN REPRESENTATIONS CONCERNING AN APPLICATION UNTIL 4:45 P.M. ON 08/08/2023. ADDRESSED TO THE GENERAL MANAGER AT 1 TIVOLI ROAD, OLD BEACH, 7017 OR BY EMAIL AT development@brighton.tas.gov.au. REPRESENTATIONS SHOULD INCLUDE A DAYTIME TELEPHONE NUMBER TO ALLOW COUNCIL OFFICERS TO DISCUSS, IF NECESSARY, ANY MATTERS RAISED.

JANINE BANKS
ACTING General Manager

SCAN ME

Brighton
going places

PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

B.A.L. TURNER & A.K. RATCLIFFE

PDH22031

PLANNING

BUILDING DRAWINGS

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

FLOOR AREA	242.15	m2	(26.04	SQUARES)
LANDING AREA	2.62	m2	(0.28	SQUARES)
LANDING AREA	2.17	m2	(0.23	SQUARES)
PORCH AREA	4.39	m2	(0.47	SQUARES)
LANDING AREA	4.90	m2	(0.53	SQUARES)
TOTAL AREA	256.23		27.55	

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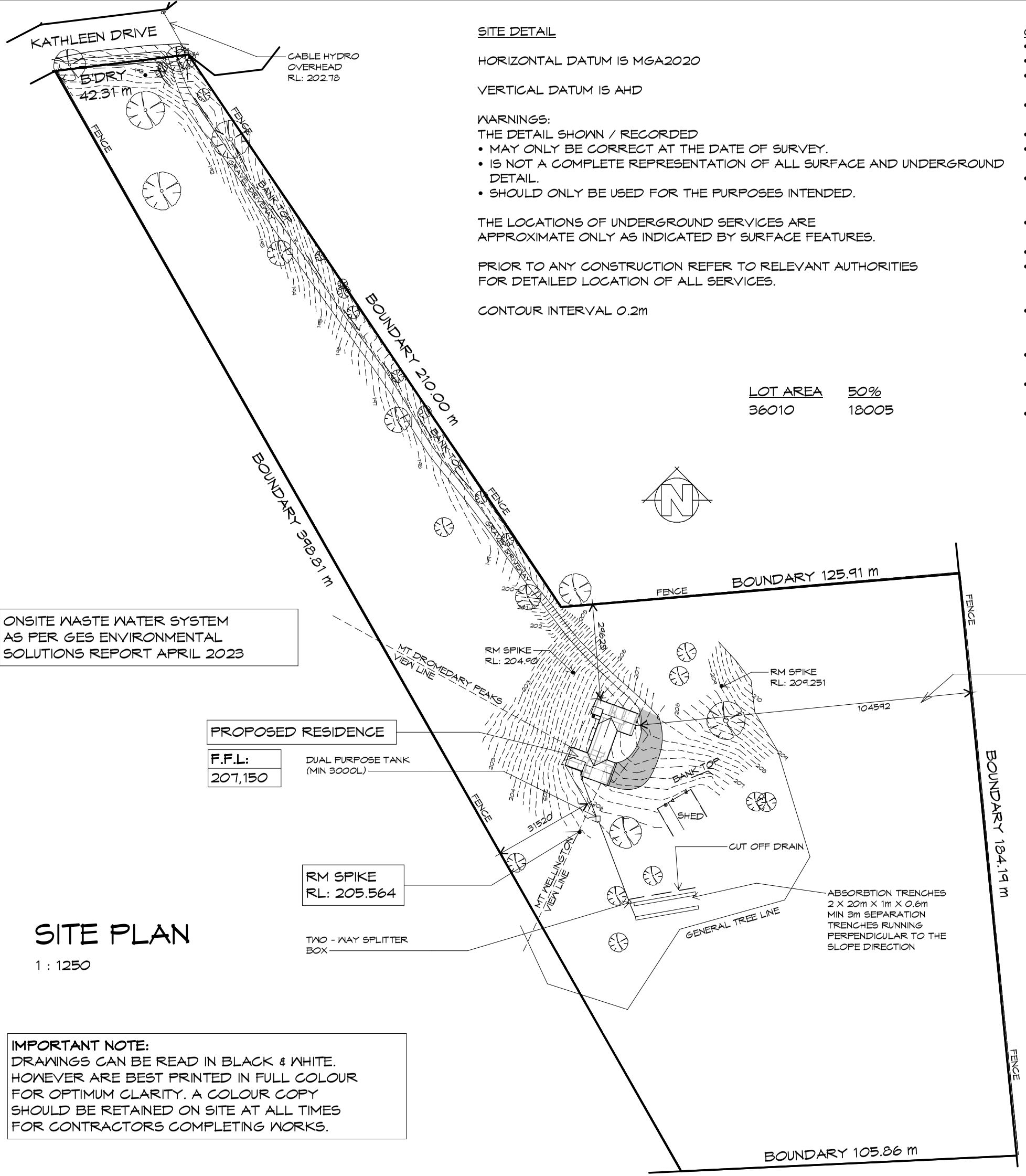
Shop 9, 105-111 Main Road, Moonah Hobart 7009
p(h)+03 6228 4575
info@ primedesigntas.com.au primedesigntas.com.au
Accredited Building Practitioner: Frank Geskus -No CC246A

JUNE 2023



SITE PLAN

1 : 1250

ONSITE WASTE WATER SYSTEM
AS PER GES ENVIRONMENTAL
SOLUTIONS REPORT APRIL 2023

IMPORTANT NOTE:
DRAWINGS CAN BE READ IN BLACK & WHITE.
HOWEVER ARE BEST PRINTED IN FULL COLOUR
FOR OPTIMUM CLARITY. A COLOUR COPY
SHOULD BE RETAINED ON SITE AT ALL TIMES
FOR CONTRACTORS COMPLETING WORKS.

SITE DETAIL

HORIZONTAL DATUM IS MGA2020

VERTICAL DATUM IS AHD

WARNINGS:
THE DETAIL SHOWN / RECORDED
- MAY ONLY BE CORRECT AT THE DATE OF SURVEY.
- IS NOT A COMPLETE REPRESENTATION OF ALL SURFACE AND UNDERGROUND DETAIL.
- SHOULD ONLY BE USED FOR THE PURPOSES INTENDED.

THE LOCATIONS OF UNDERGROUND SERVICES ARE
APPROXIMATE ONLY AS INDICATED BY SURFACE FEATURES.

PRIOR TO ANY CONSTRUCTION REFER TO RELEVANT AUTHORITIES
FOR DETAILED LOCATION OF ALL SERVICES.

CONTOUR INTERVAL 0.2m

LOT AREA	50%
36010	18005

GENERAL NOTES

- CHECK & VERIFY ALL DIMENSIONS & LEVELS ON SITE
- WRITTEN DIMENSIONS TO TAKE PREFERENCE OVER SCALED
- ALL WORK TO BE STRICTLY IN ACCORDANCE WITH NCC 2019, ALL S.A.A.. CODES & LOCAL AUTHORITY BY-LAWS
- ALL DIMENSIONS INDICATED ARE FRAME TO FRAME AND DO NOT ALLOW FOR WALL LININGS
- CONFIRM ALL FLOOR AREAS
- ALL PLUMBING WORKS TO BE STRICTLY IN ACCORDANCE WITH A.S. 3500 & APPROVED BY COUNCIL INSPECTOR
- BUILDER/PLUMBER TO ENSURE ADEQUATE FALL TO SITE CONNECTION POINTS IN ACCORDANCE WITH A.S. 3500 FOR STORMWATER AND SEWER BEFORE CONSTRUCTION COMMENCES
- THIS DRAWING IS TO BE READ IN CONJUNCTION WITH THE ENGINEER'S STRUCTURAL DRAWINGS
- ALL WINDOWS AND GLAZING TO COMPLY WITH A.S. 1288 & A.S. 2047
- ALL SET OUT OF BUILDINGS & STRUCTURES TO BE CARRIED OUT BY A REGISTERED LAND SURVEYOR AND CHECKED PRIOR TO CONSTRUCTION
- IF CONSTRUCTION OF THE DESIGN IN THIS SET OF DRAWINGS DIFFER FROM THE DESIGN AND DETAIL IN THESE AND ANY ASSOCIATED DOCUMENTS BUILDER AND OWNER ARE TO NOTIFY DESIGNER
- BUILDER'S RESPONSIBILITY TO COMPLY WITH ALL PLANNING CONDITIONS
- BUILDER TO HAVE STAMPED BUILDING APPROVAL DRAWINGS AND PERMITS PRIOR TO COMMENCEMENT OF CONSTRUCTION
- CONSTRUCTION TO COMPLY WITH AS 3959, READ IN CONJUNCTION WITH BUSHFIRE ATTACK LEVEL (BAL) ASSESSMENT REPORT.

BUSHFIRE PROPERTY ACCESS AND TURNING
REFER ASSESSMENT PREPARED BY
GES ENVIRONMENTAL SOLUTIONS
JOB NO: J3076v1.0
FOR FURTHER DETAILS.
ALL CONSTRUCTION MUST
COMPLY WITH AS3959.

TITLE REF: 106247/13
LOT SIZE: 3.601ha

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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p(l)+ 03 6332 3790
Shop 9, 105-111 Main Road, Moonah Hobart 7009
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info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

Client name:
B.A.L. TURNER & A.K. RATCLIFFE

Drawing:
SITE PLAN

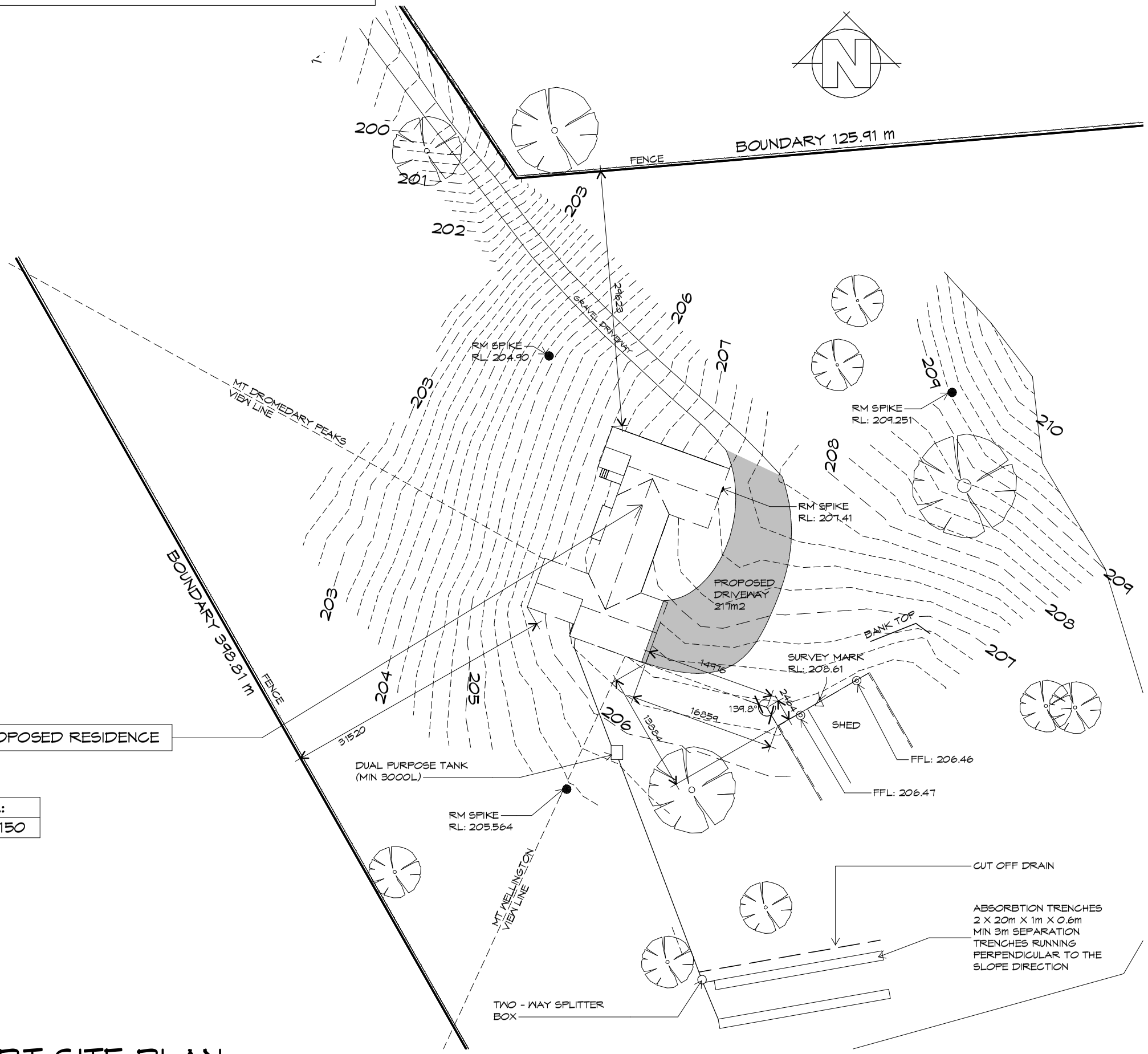
Drafted by:	Approved by:
A.J.C	F.G.G
Date:	Scale:
27.06.2023	1 : 1250
Project/Drawing no:	Revision:
PDH22031 -01	05

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A

THIS PROJECT HAS BEEN DETERMINED TO HAVE A BUSHFIRE ATTACK LEVEL (BAL) OF - 12.5
REFER TO ASSESSMENT FOR FURTHER DETAILS.
ALL CONSTRUCTION MUST COMPLY WITH AS3959.

ONSITE WASTE WATER SYSTEM
AS PER GES ENVIRONMENTAL
SOLUTIONS REPORT APRIL 2023



F.F.L:
207,150

PART SITE PLAN

1 : 500

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

Client name:
B.A.L. TURNER & A.K. RATCLIFFE

Drawing:
PART SITE PLAN

Drafted by:	Approved by:
A.J.C	F.G.G
Date:	Scale:
27.06.2023	1 : 500
Project/Drawing no:	Revision:
PDH22031 -02	05

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A

THIS SITE IS ZONED **RURAL LIVING** THEREFORE **REQUIRES/DOES NOT REQUIRE** A BUSHFIRE ASSESSMENT.
RESIDENCE **IS NOT** OVER **100m** FROM UNMANAGED BUSH/GRASSLANDS GREATER THAN 1 HECTARE.

REFER TO BUSHFIRE ASSESSMENT REPORT FOR MANAGMENT PLAN

LOCALITY PLAN

1 : 2000

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

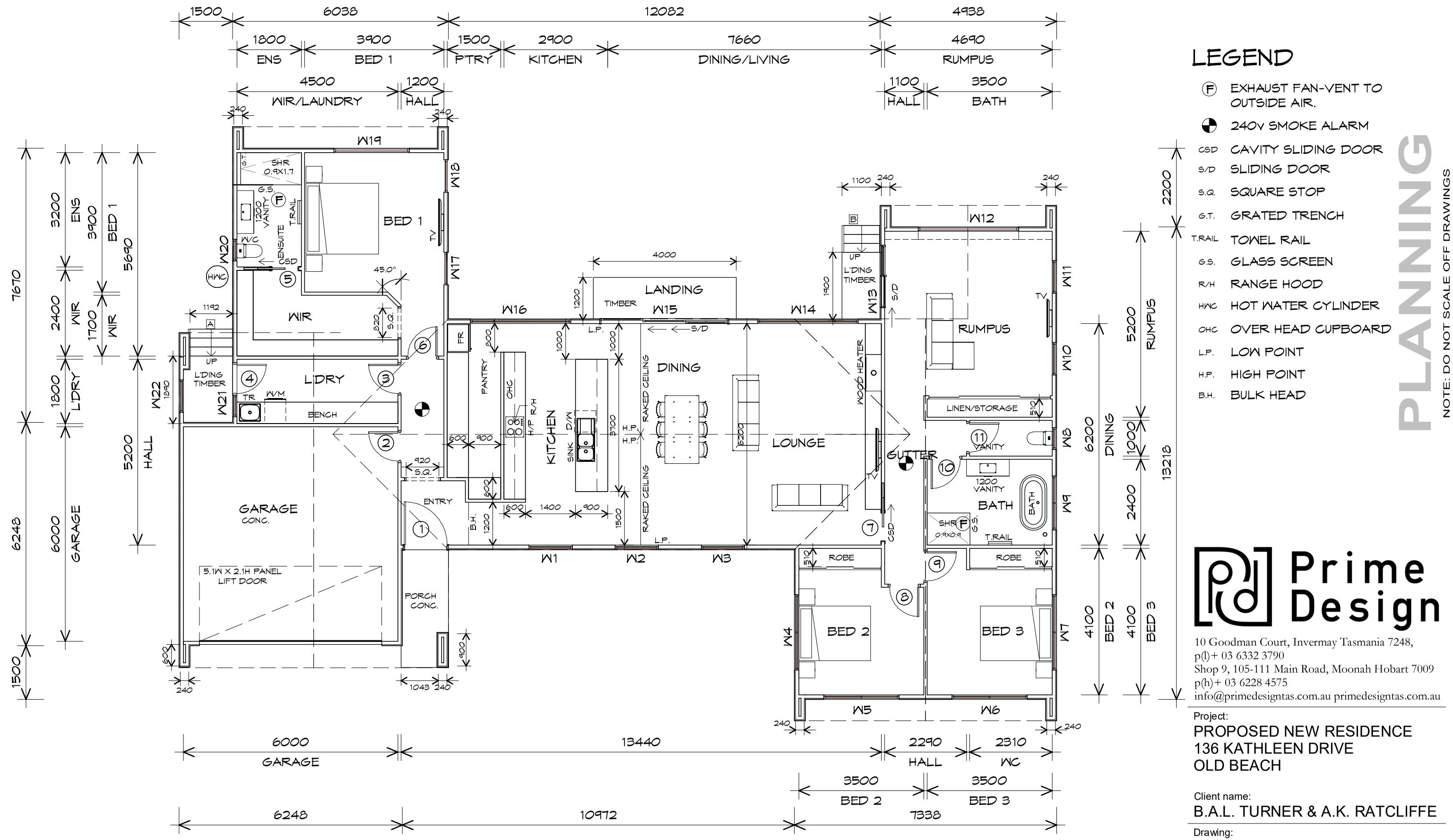
Client name:
B.A.L. TURNER & A.K. RATCLIFFE

Drawing:
LOCALITY PLAN

Drafted by:	Approved by:
A.J.C	F.G.G
Date:	Scale:
27.06.2023	1 : 2000
Project/Drawing no:	Revision:
PDH22031 -03	05

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A



FLOOR PLAN

1 : 100

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

FLOOR AREA	242.15	m2	(26.04	SQUARES)
LANDING AREA	2.62	m2	(0.28	SQUARES)
LANDING AREA	2.17	m2	(0.23	SQUARES)
PORCH AREA	4.39	m2	(0.47	SQUARES)
LANDING AREA	4.90	m2	(0.53	SQUARES)
TOTAL AREA	256.23		27.55	

STAIRS

STAIR	NO RISERS	RISER H'T	TREAD DEPTH
A	4	188	250
B	4	188	250

GOING NON SLIP TO COMPLY NCC 2019

LEGEND

- (F) EXHAUST FAN-VENT TO OUTSIDE AIR.
- 240v SMOKE ALARM
- CSD CAVITY SLIDING DOOR
- S/D SLIDING DOOR
- S.Q. SQUARE STOP
- G.T. GRATED TRENCH
- T.RAIL TOWEL RAIL
- G.S. GLASS SCREEN
- R/H RANGE HOOD
- HWC HOT WATER CYLINDER
- OHC OVER HEAD CUPBOARD
- L.P. LOW POINT
- H.P. HIGH POINT
- B.H. BULK HEAD

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

Client name:
B.A.L. TURNER & A.K. RATCLIFFE

Drawing:
FLOOR PLAN

Drafted by: A.J.C
Approved by: F.G.G
Date: 27.06.2023
Scale: 1 : 100
Project/Drawing no: PDH22031 -04
Revision: 05

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A

DOOR SCHEDULE

MARK	WIDTH	TYPE	REMARKS
1	1200	EXTERNAL ENTRY DOOR	
2	820	INTERNAL TIMBER DOOR	
3	820	INTERNAL TIMBER DOOR	
4	820	GLAZED EXTERNAL DOOR	COUPLED
5	770	CAVITY SLIDING DOOR	
6	820	INTERNAL TIMBER DOOR	
7	820	CAVITY SLIDING DOOR	
8	820	INTERNAL TIMBER DOOR	
9	820	INTERNAL TIMBER DOOR	
10	820	INTERNAL TIMBER DOOR	
11	820	INTERNAL TIMBER DOOR	

WINDOW SCHEDULE

MARK	HEIGHT	WIDTH	TYPE	REMARKS
W1	2100	1210	AWNING WINDOW	
W2	2100	1210	AWNING WINDOW	
W3	2100	1210	AWNING WINDOW	
W4	600	2110	AWNING WINDOW	
W5	1800	2110	AWNING WINDOW	
W6	1800	2110	AWNING WINDOW	
W7	600	2110	AWNING WINDOW	
W8	900	610	AWNING WINDOW	OPAQUE
W9	900	1510	AWNING WINDOW	OPAQUE
W10	2100	910	AWNING WINDOW	
W11	2100	910	AWNING WINDOW	
W12	2100	2810	FIXED WINDOW	
W13	2100	1750	SLIDING DOOR	
W14	2100	2810	AWNING WINDOW	
W15	2100	3610	STACKING SLIDING DOOR	
W16	2100	2810	AWNING WINDOW	
W17	2100	910	AWNING WINDOW	
W18	2100	910	AWNING WINDOW	
W19	2100	2110	FIXED WINDOW	
W20	900	610	AWNING WINDOW	
W21	900	610	AWNING WINDOW	COUPLED
W22	1200	910	AWNING WINDOW	

ALUMINIUM WINDOWS **DOUBLE GLAZING** COMPLETE
WITH FLY SCREENS TO SUIT **12.5 BAL** RATING.
ALL WINDOW MEASUREMENTS TO BE VERIFIED ON SITE
PRIOR TO ORDERING

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

Drawing:
DOOR AND WINDOW SCHEDULES

Client name:
B.A.L. TURNER & A.K. RATCLIFFE

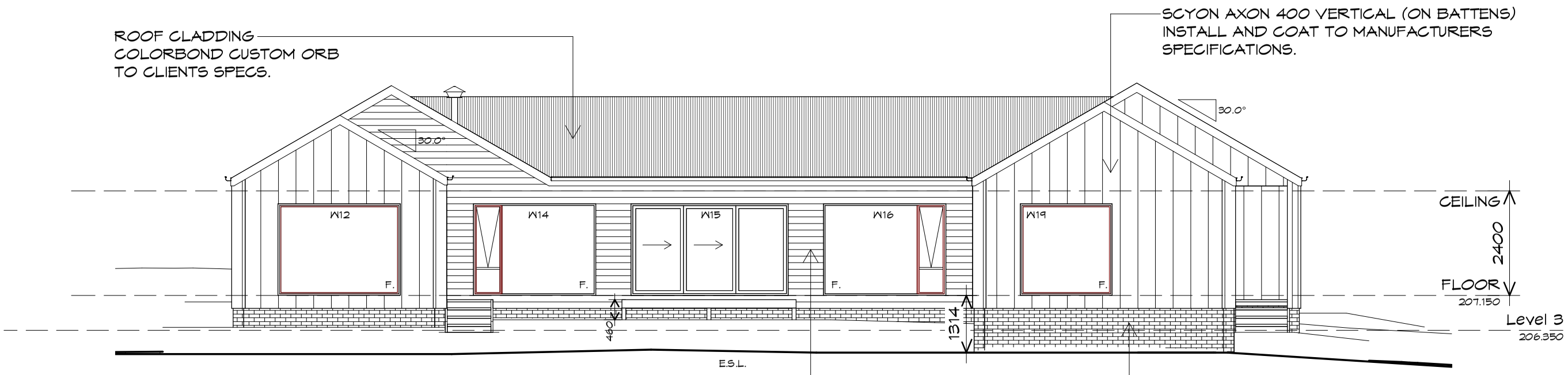
Date: 27.06.2023
Scale:

Drafted by: A.J.C
Approved by: F.G.G

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

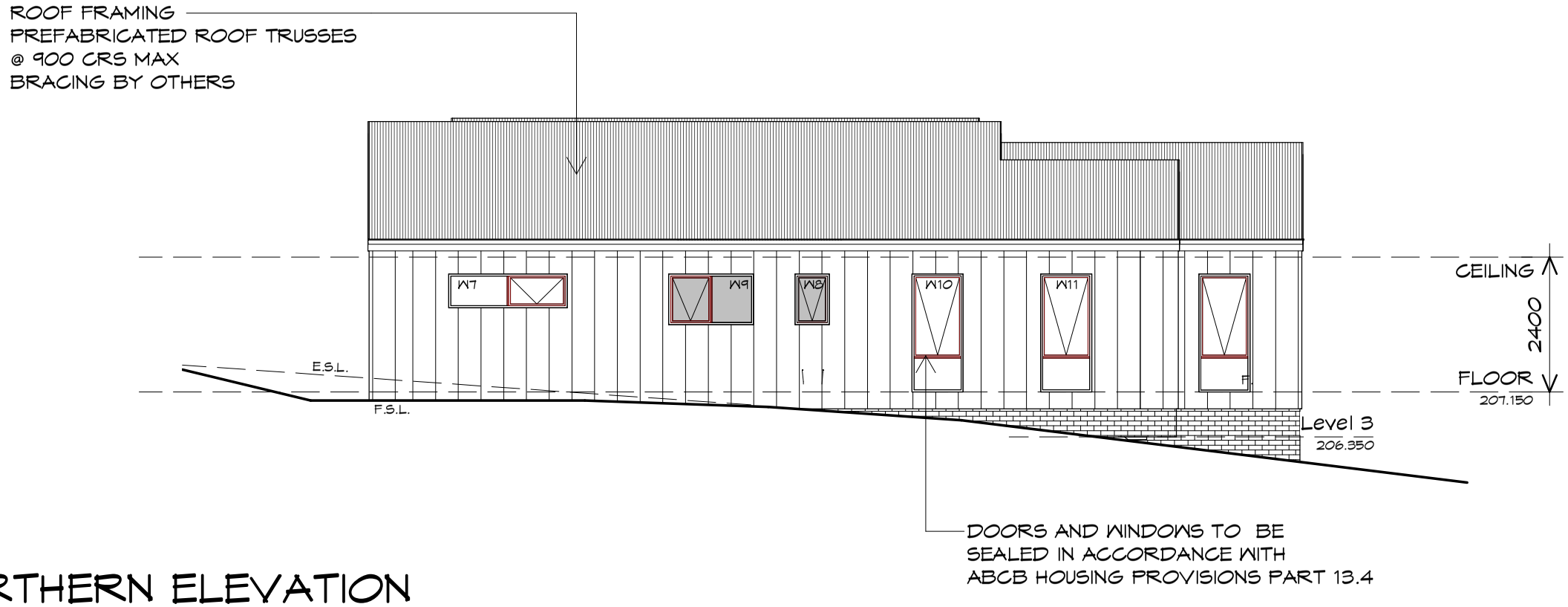
Project/Drawing no: PDH22031 -05
Revision: 05

Accredited building practitioner: Frank Geskus -No CC246A



WESTERN ELEVATION

1 : 100



NORTHERN ELEVATION

1 : 100

PLANNING

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Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

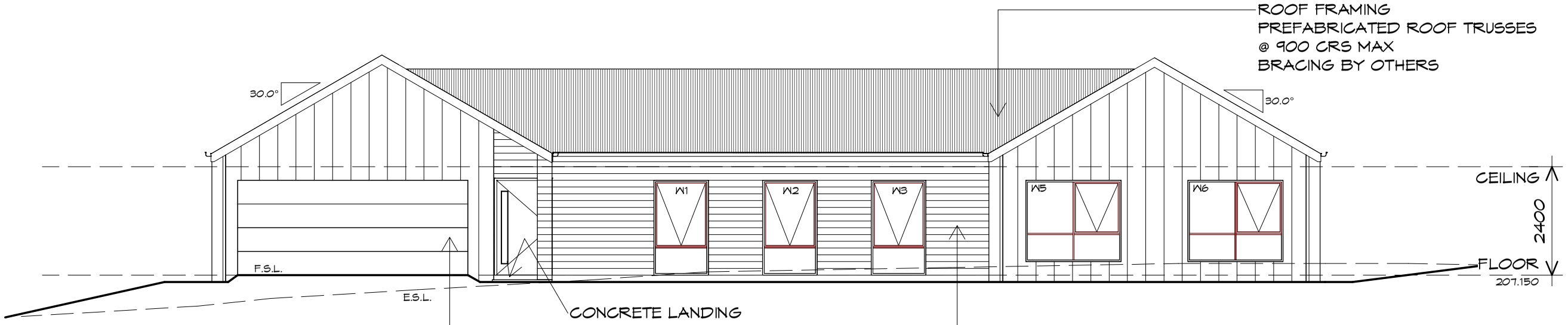
Client name:
B.A.L. TURNER & A.K. RATCLIFFE

Drawing:
ELEVATIONS

Drafted by:	Approved by:
A.J.C	F.G.G
Date:	Scale:
27.06.2023	1 : 100
Project/Drawing no:	Revision:
PDH22031 -06	05

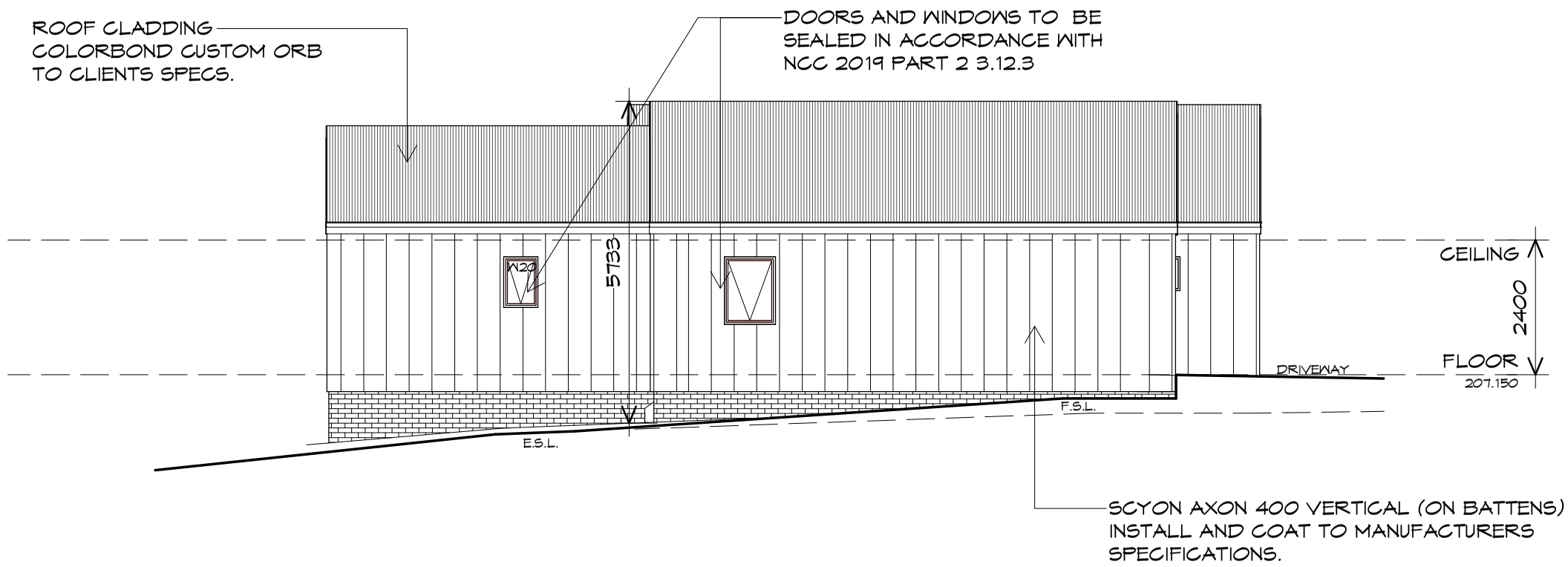
BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A



EASTERN ELEVATION

1 : 100



SOUTHERN ELEVATION

1 : 100

PLANNING

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info@primedesigntas.com.au primedesigntas.com.au

Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

Client name:
B.A.L. TURNER & A.K. RATCLIFFE

Drawing:
ELEVATIONS

Drafted by:	Approved by:
A.J.C	F.G.G
Date:	Scale:
27.06.2023	1 : 100
Project/Drawing no:	Revision:
PDH22031 -07	05

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Accredited building practitioner: Frank Geskus -No CC246A

ROOF PLUMBING NOTES:

GUTTER INSTALLATION
TO BE IN ACCORDANCE WITH
NCC 2019 PART 3.5.2.4.
WITH FALL NO LESS THAN
1:100 FOR BOX GUTTERS
1:500 FOR EAVES GUTTER

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

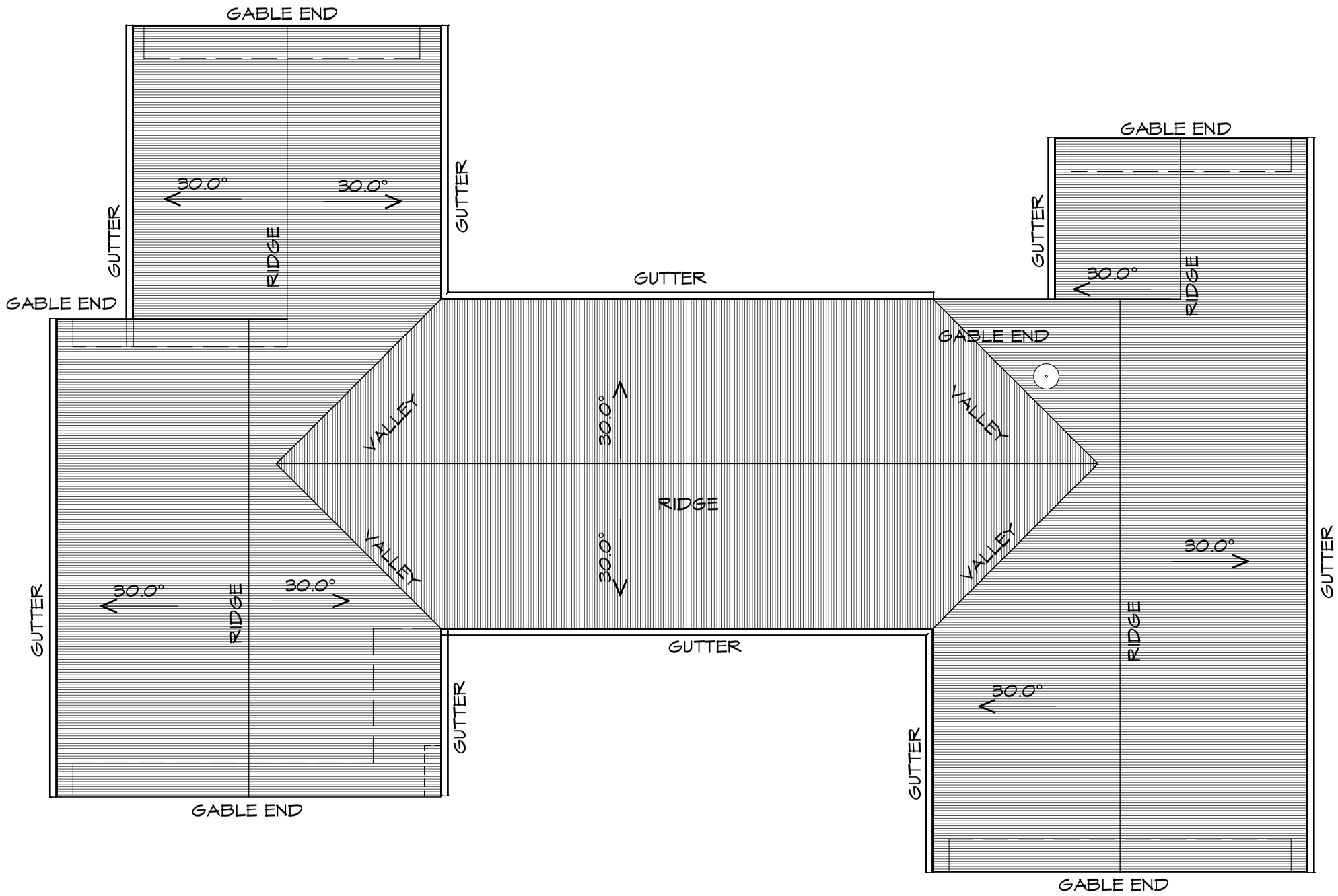
VALLEY GUTTERS ON A ROOF WITH A PITCH:
A) MORE THAN 12.5° DEGREES - MUST
HAVE A WIDTH OF NOT LESS THAN
400mm AND ROOF OVERHANG OF NOT
LESS THAN 150mm EACH SIDE OFVALLEY
GUTTER.
B) LESS THAN 12.5° DEGREES, MUST BE
DESIGNED AS A BOX GUTTER.

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

DOWNPIPE POSITIONS SHOWN ON THIS
PLAN ARE NOMINAL ONLY.
EXACT LOCATION & NUMBER OF D.P'S
REQUIRED ARE TO BE IN ACCORDANCE
WITH NCC 2019 PART 3.5.2.5 REQUIREMENTS.
SPACING BETWEEN DOWNPIPES MUST NOT
BE MORE THAN 12m & WITHIN 1.2m FROM A
VALLEY GUTTER.

METAL ROOF
METAL SHEETING ROOF TO BE INSTALLED IN
ACCORDANCE WITH NCC 2019 PART 3.5.1.3.
REFER TO TABLE 3.5.3.1a FOR ACCEPTABLE
CORROSION PROTECTION FOR SHEET ROOFING,
REFER TO TABLE 3.5.1.1 FOR ACCEPTABILITY OF
CONTACT BETWEEN DIFFERENT ROOFING
MATERIALS.
FOR FIXING, SHEET LAYING SEQUENCE, FASTENER
FREQUENCY FOR TRANVERSE FLASHINGS AND
CAPPINGS, ANTI CAPILLARY BREAKS, FLASHING
DETAILS REFER TO NCC 2019 PART 3.5.1.5-3.5.1.7
ROOF PENETRATION FLASHING DETAILS.
REFER TO NCC 2019 PART 3.5.1.5-3.5.1.7
ROOF SHEETING MUST OVERHANG MIN 35mm AS PER
NCC 2019 PART 3.5.1.8

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



ROOF PLAN

1 : 100

PLANNING

NOTE: DO NOT SCALE OFF DRAWINGS

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Project:
PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

Drawing:
ROOF PLAN

Client name:
B.A.L. TURNER & A.K. RATCLIFFE

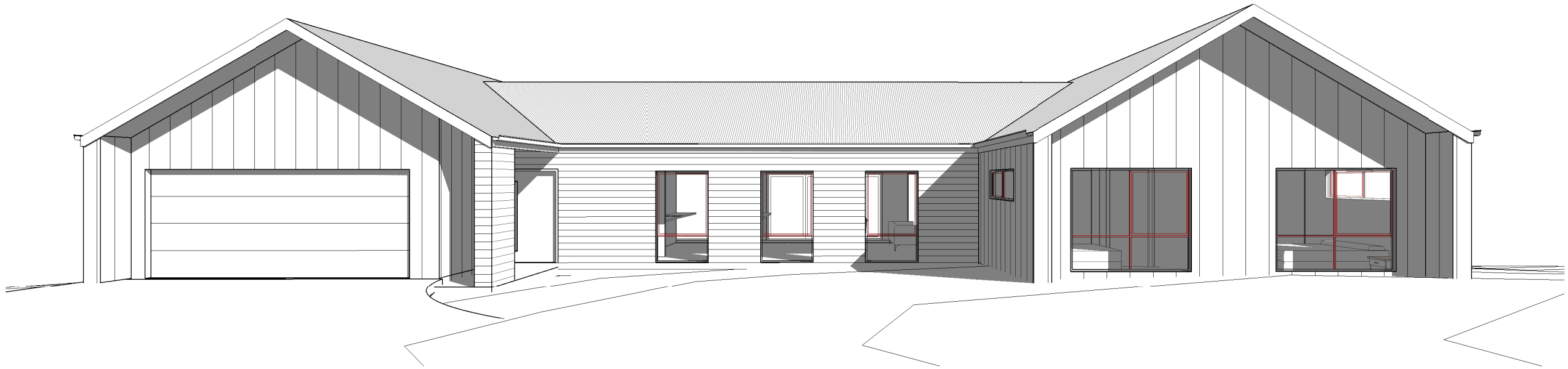
Date: 27.06.2023
Scale: 1 : 100

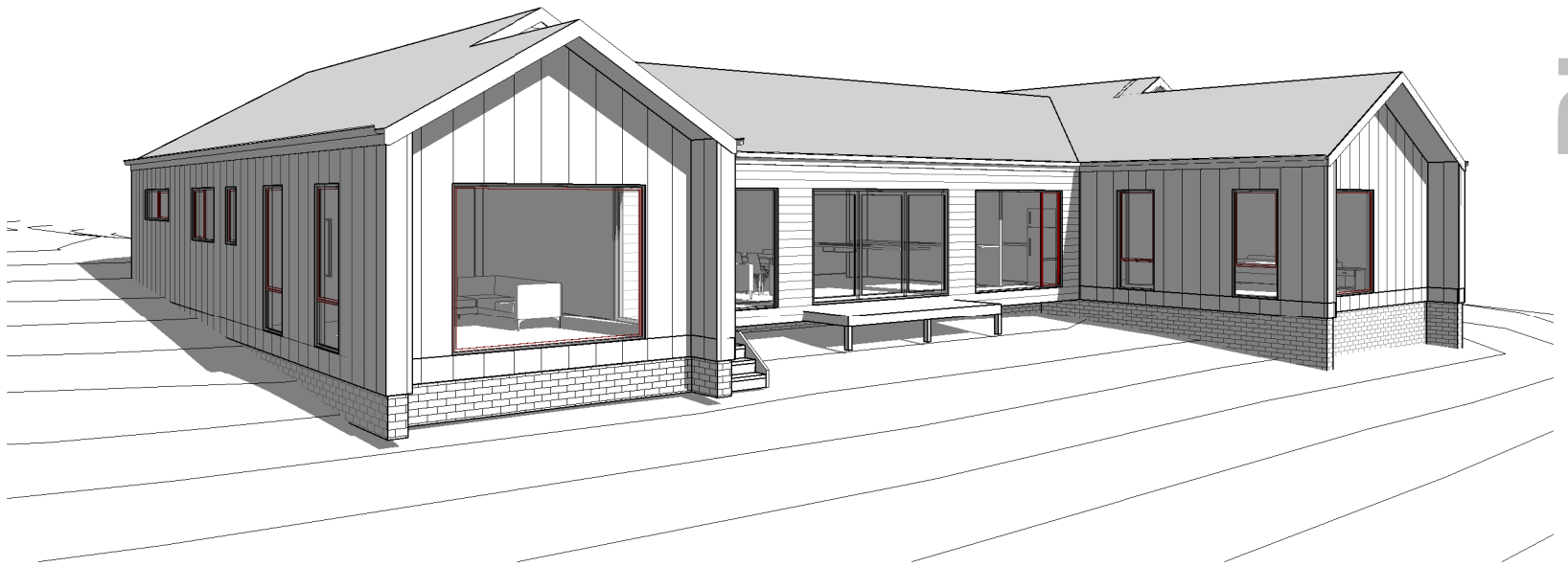
Drafted by: A.J.C
Approved by: F.G.G

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Project/Drawing no: PDH22031 -08
Revision: 05

Accredited building practitioner: Frank Geskus -No CC246A





PLANNING

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PROPOSED NEW RESIDENCE
136 KATHLEEN DRIVE
OLD BEACH

Drawing:
PERSPECTIVES

Client name:
B.A.L. TURNER & A.K. RATCLIFFE

Date: 27.06.2023

Scale:

Drafted by: A.J.C

Approved by: F.G.G

BUILDING DESIGNERS ASSOCIATION OF AUSTRALIA

Project/Drawing no: PDH22031 -09

Revision: 05

Accredited building practitioner: Frank Geskus -No CC246A

GEO-ENVIRONMENTAL SOLUTIONS

Proposed Residential Development – 136 Kathleen Drive, Old Beach

Bushfire Hazard Report

Applicant: B. Turner & A. Ratcliffe

February 2023 J3076v1.0

GEO- ENVIRONMENTAL SOLUTIONS
29 Kirksway Place, Battery Point, Tasmania. 7004. T|62231839 E|office@geosolutions.net.au www.geosolutions.net.au

Contents

Disclaimer

The measures contained in Australian Standard 3959-2018 cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the unpredictable nature and behaviour of fire and extreme weather conditions.

Reasonable steps have been taken to ensure that the information contained within this report is accurate and reflects the conditions on and around the lot at the time of assessment. The assessment has been based on the information provided by you or your designer.

Authorship

This report was prepared by Mark Van den Berg BSc. (Hons.) FPO (planning) of Geo Environmental Solutions. Base data for mapping: TasMap, Digital and aerial photography: Mark Van den Berg, GoogleEarth.

1.0 Purpose

This bushfire hazard report is intended to provide information in relation to the proposal. It will demonstrate compliance with the *Building Regulations 2016*, and the *Directors Determination – Bushfire Hazard Areas*, *version 1.1, 12th April 2021*. Provide a certificate of others (form 55) as specified by the Director of Building Control for bushfire hazard and give guidance by way of a certified bushfire hazard management plan which shows a means of protection from bushfires in a form approved by the Chief Fire Officer of the Tasmania Fire Service.

2.0 Summary

Site details & compliance

Title reference	106247/13
PID	7834550
Address	136 Kathleen Drive, Old Beach
Applicant	B. Turner & A. Ratcliffe
Municipality	Brighton
Planning Scheme	Tasmanian Planning Scheme - Brighton
Zoning	Rural Living
Land size	~3.5Ha
Bushfire Attack Level	BAL-12.5
Certificate of others (form 55)	Complete and attached
Bushfire Hazard Management Plan	Certified & Attached

Development of a new class 1a building at 136 Kathleen Drive, Old Beach requires demonstrated compliance with *Building Regulations 2016*, and the *Directors Determination – Bushfire Hazard Areas*, *version 1.1, 12th April 2021*, the site is located in a bushfire prone area. The Bushfire attack level has been determined as BAL-29, provisions for construction standards, hazard management areas, property access and water supplies for firefighting will be required as detailed in this report and on the Bushfire Hazard Management Plan (BHMP).

3.0 Introduction

This bushfire hazard report has been completed to form part of supporting documentation for a building permit application for the proposed development. The proposed development site has been identified as being in a bushfire prone area. A site-specific bushfire hazard management plan has been provided for mitigation and compliance purposes.

4.0 Proposal

The proposal is for the construction of a new class 1a building and associated property access at 136 Kathleen Drive, Old Beach (appendix B).

5.0 Bushfire Attack Level (BAL) Assessment

5.1 Methods

The Bushfire attack level has been determined through the application of section 2 of AS3959-2018 'Simplified Procedure'. Vegetation has been classified using a combination of onsite observations and remotely sensed data to be consistent with table 2.3 of AS359-2018. Slope and distances have been determined by infield measurement and/or the use of remotely sensed data (aerial/satellite photography, GIS layers from various sources) analysed with proprietary software systems. Where appropriate vegetation has been classified as low threat.

5.2 Site Description

The proposal is located at 136 Kathleen Drive, Old Beach, in the municipality of Brighton and is zoned Rural Living under the Tasmanian Planning Scheme - Brighton. Access to the lot will be by an existing crossover from Kathleen Drive, a council-maintained road. The lot is ~3.5 Ha, is irregular in shape and is located approximately 2.0km north of Gunners Quoin (Figure 1).

Adjacent lands surrounding the lot are zoned Rural Living and Landscape Conservation and carry bushfire prone vegetation. At a landscape scale the lot occurs in a rural setting on the western flank and foothills of the Meehan Range which is characterised by forests and woodland vegetation with sparse residential development. The lot has gentle to moderate slopes with a dominantly westerly aspect.

Vegetation surrounding the lot was assessed (Table 1) and described as 'woodland' (as per AS3959-2018). The classified vegetation potentially having the greatest impact on the site occurs to the north and north-west of the site (Figure 2). The vegetation classification system as defined in AS 3959-2018 Table 2.3 and Figure 2.4 (A to H) has been used to determine vegetation types within 100 metres of the site (Table 1).

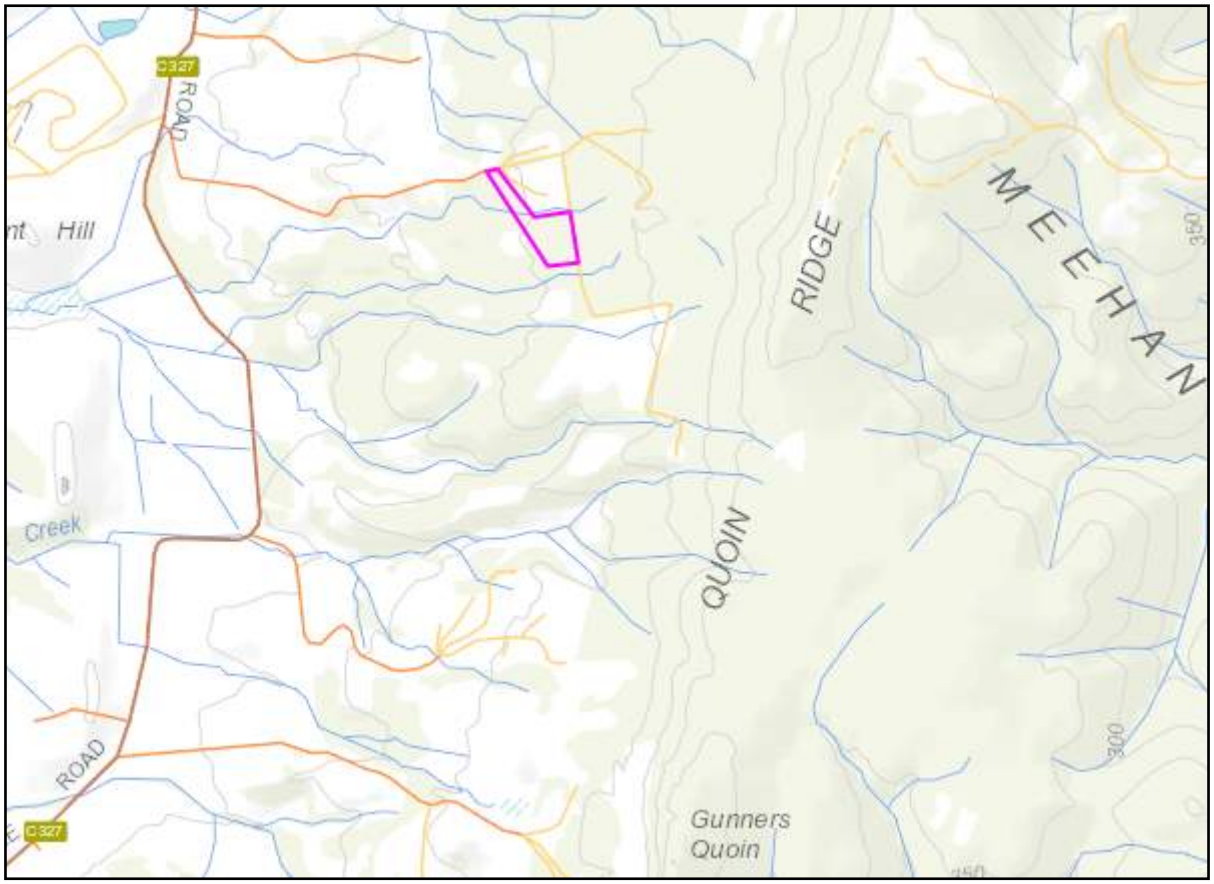


Figure 1. The lot in a topographical context (lot outlined in pink).

Figure 2. Shows the approximate location of the site (pink line) in the context of the adjacent lands and classified vegetation.

Table 1. Bushfire Attack Level (BAL) Assessment

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North	Woodland^	flat 0º	0 to 70 metres	22 metres	**BAL-12.5**
	Exclusion 2.2.3.2 (e, f)^^	flat 0º	70 to 100 metres		
	--	--	--		
	--	--	--		
East	Woodland^	upslope	0 to >100 metres	22 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South	Woodland^	flat 0º	0 to 100 metres	22 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
West	Open woodland	>0 to 5º downslope	0 to 16 metres	16 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		

^ Vegetation classification as per AS3959-2018 and Figures 2.4(A) to 2.4(H).
* Low threat vegetation as per Bushfire Prone Areas Advisory Note (BHAN) No.1-2014, version 3, 8/11/2017.
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

6.0 Results

The bushfire attack level for the site has been determined as BAL-12.5. While the risk is considered to be low, there is a risk of ember attack and a likelihood of low levels of radiant heat impacting the site. The construction elements are expected to be exposed to a heat flux not greater than 12.5 kW/m2.

6.1 Property Access

Property access is required for a fire appliance to connect to a dedicated static firefighting water supply. In this circumstance the following design and construction requirements apply to the existing property access which will need to be brought into compliance with the following standards;

(a) All-weather construction;

(b) Load capacity of at least 20 tonnes, including for bridges and culverts;

(c) Minimum carriageway width of 4 metres;

(d) Minimum vertical clearance of 4 metres;

(e) Minimum horizontal clearance of 0.5 metres from the edge of the carriageway;

(f) Cross falls of less than 3° (1:20 or 5%);

(g) Dips less than 7° (1:8 or 12.5%) entry and exit angle;

(h) Curves with a minimum inner radius of 10 metres;

(i) Maximum gradient of 15° (1:3.5 or 28%) for sealed roads, and 10° (1:5.5 or 18%) for unsealed roads; and

(j) Terminate with a turning area for fire appliances provided by one of the following:

(i) A turning circle with a minimum outer radius of 10 metres;

(ii) A property access encircling the building; or

(iii) A hammerhead “T” or “Y” turning head 4 metres wide and 8 metres long

(k) Passing bays an additional 2 metres carriageway width and 20 metres length provided every 200 metres.

6.2 Water Supplies for Firefighting

The site is not serviced by a reticulated water supply, therefore a dedicated, static firefighting water supply will be provided in accordance with table 2.

Table 2. Requirements for Static Water Supplies dedicated for Firefighting

Element		Requirement
A.	Distance between building area to be protected and water supply	The following requirements apply: (a) The building area to be protected must be located within 90 metres of the firefighting water point of a static water supply; and (b) The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area
B.	Static Water Supplies	A static water supply: (a) May have a remotely located offtake connected to the static water supply; (b) May be a supply for combined use (firefighting and other uses) but the specified minimum quantity of firefighting water must be available at all times; (c) Must be a minimum of 10,000 litres per building area to be protected. This volume of water must not be used for any other purpose including firefighting sprinkler or spray systems;

Element		Requirement
		(d) Must be metal, concrete or lagged by non-combustible materials if above ground; and (e) If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959:2018, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by: (i) metal; (ii) non-combustible material; or (iii) fibre-cement a minimum of 6 mm thickness.
C.	Fittings, pipework and accessories (including stands and tank supports)	Fittings and pipework associated with a firefighting water point for a static water supply must: (a) Have a minimum nominal internal diameter of 50mm; (b) Be fitted with a valve with a minimum nominal internal diameter of 50mm; (c) Be metal or lagged by non-combustible materials if above ground; (d) Where buried, have a minimum depth of 300mm; (e) Provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment; (f) Ensure the coupling is accessible and available for connection at all times; (g) Ensure the coupling is fitted with a blank cap and securing chain (minimum 220 mm length); (h) Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table; and (i) Where a remote offtake is installed, ensure the offtake is in a position that is: (i) Visible; (ii) Accessible to allow connection by firefighting equipment; (iii) At a working height of 450 – 600mm above ground level; and (iv) Protected from possible damage, including damage by vehicles.
D.	Signage for static water connections	The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must: (a) comply with water tank signage requirements within AS 2304:2019; or (b) comply with the Tasmania Fire Service Water Supply Signage Guideline published by the Tasmania Fire Service.
E.	Hardstand A hardstand area for fire appliances must be provided:	(a) No more than three metres from the firefighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (b) No closer than six metres from the building area to be protected; (c) With a minimum width of three metres constructed to the same standard as the carriageway; and (d) Connected to the property access by a carriageway equivalent to the standard of the property access.

6.3 Hazard Management Area.

A hazard management area will need to be established and maintained for the life of the development and is shown on the BHMP. Guidance for the establishment and maintenance of the hazard management area is given below and on the BHMP.

A hazard management area is the area, between a habitable building or building area and the bushfire prone vegetation, which provides access to a fire front for firefighting, which is maintained in a minimal fuel condition and in which there are no other hazards present which will significantly contribute to the spread of a bushfire. This can be achieved through, but is not limited to the following strategies;

- Remove fallen limbs, sticks, leaf and bark litter;
- Maintain grass at less than a 100mm height;
- Avoid the use of flammable mulches (especially against buildings);
- Thin out under-story vegetation to provide horizontal separation between fuels;
- Prune low-hanging tree branches (<2m from the ground) to provide vertical separation between fuel layers;
- Remove and or prune larger trees to maintain horizontal separation between canopies;
- Minimise the storage of flammable materials such as firewood;

- Maintain vegetation clearance around vehicular access;
- Use low-flammability plant species for landscaping purposes where possible;
- Clear out any accumulated leaf and other debris from roof gutters and other debris accumulation points.

7.0 Compliance

Table 3. Compliance with the Directors Determination Requirements for Building in Bushfire Hazard Areas, *version 1.1, 12th April 2021*.

Requirements	Compliance
2.3.1 Design & Construction Requirements	Clause 2.3.1 requires buildings to be constructed in accordance with AS3959-2018 or NASH standard – Steel Framed Construction in Bushfire Areas consistent with the BAL determined for the site. The BHMP specifies construction to BAL-12.5 standards of AS3959-2018. If the proposed buildings are designed and constructed in accordance with BAL-12.5 construction standards the development will comply with clause 2.3.1.
2.3.2 Property Access	Clause 2.3.2 requires property access to be designed and constructed to comply with table 2 of the determination and is applicable from the public roadway to within (at minimum) 90 metres of the furthest part of the building/s and includes access to a hardstand for the firefighting water point. Design and construction standards for property access consistent with table 2 have be prescribed on the BHMP, the existing access will need to be brought into compliance with these standards If the property access is designed and constructed in accordance with the requirements of section 6.1 of this report, the proposal will comply with clause 2.3.2.
2.3.3 Water Supply for Firefighting	Clause 2.3.3 requires that a new building constructed in a bushfire-prone area is provided with a dedicated firefighting water supply in accordance with tables 3A or 3B. Reticulated water supplies consistent with table 3B have been specified in this report and are required for compliance on the BHMP. If the requirements of section 6.2 of this report are implemented the proposal will comply with clause 2.3.3.
2.3.4 Hazard management areas	Hazard management areas specified which are consistent with table 4 and which achieve the minimum separation dimensions required for the BAL assessed of table 2.6 of AS3959.
3. Bushfire hazard management plan and certificate	A bushfire hazard management plan has been prepared for work for which this division applies and has been certified in accordance with the Chief Officers requirements by an accredited person.
4.5 Emergency Plan	The proposal is for the construction of a new class 1a building, therefore in this circumstance, Emergency Plans are not required for bushfire mitigation and compliance.

8.0 Guidance

The defendable space (hazard management area) around a building is critical for providing occupants and/or fire fighters with safe access to the building in order that fire fighting activities may be under taken. The larger the defendable space, the safer it will be for those defending the structure. Some desirable characteristics of a hazard management area are:

- The area directly adjacent to the building has a significant amount of flammable material removed such that there is little to no material available to burn around the building;
- Includes non flammable areas such as paths, driveways, short cropped lawns;
- Establishment of orchards, vegetable gardens, dams or waste water effluent disposal areas on the fire prone side of the building;
- Creating wind breaks and radiation shields such as non combustible fences and low flammability hedges;
- It is not necessary to remove all vegetation from the defendable space, trees can provide protection from wind borne embers and radiant heat in some circumstances.

9.0 Further Information

For further information on preparing yourself and your property for bushfires visit the Tasmania Fire Service website at www.fire.tas.gov.au or phone 1800 000 699 for information on:

- Preparing a bushfire survival plan
- Preparing yourself and your home for a bushfire
- Guidelines for development in bushfire prone areas in Tasmania
- Fire resisting plants for the urban fringe and rural areas
- Using fire outdoors
- Fire permits
- Total fire bans
- Bushfires burning in Tasmania

10.0 References

Australian Building Codes Board, *National Construction Code, Building Code of Australia,* Australian Building Codes Board, Canberra.

Building Amendment (Bushfire-Prone Areas) Regulations 2016

Directors Determination – Bushfire Hazard Areas, version 1.1, 12th April 2021

The Bushfire Planning Group 2005, *Guidelines for development in bushfire prone areas of Tasmania – Living with fire in Tasmania,* Tasmania Fire Service, Hobart.

Tasmania Fire Service 2013, *Building for Bushfire – Planning and Building in Bushfire-Prone Areas for Owners and Builders*.

Tasmanian Planning Scheme - Brighton. Tasmanian Planning Commission Hobart 2020.

Standards Australia, AS3959-2018 Construction of buildings in bushfire-prone areas. Sydney, NSW., Australia.

11.0 Limitations Statement

This Bushfire Hazard Report has been prepared in accordance with the scope of services between Geo-Environmental Solutions Pty. Ltd. (GES) and the applicant named in section 2. To the best of GES's knowledge, the information presented herein represents the Client's requirements at the time of printing of the Report. However, the passage of time, manifestation of latent conditions or impacts of future events may result in findings differing from that described in this Report. In preparing this Report, GES has relied upon data, surveys, analyses, designs, plans and other information provided by the Client and other individuals and organisations referenced herein. Except as otherwise stated in this Report, GES has not verified the accuracy or completeness of such data, surveys, analyses, designs, plans and other information.

The scope of this study does not allow for the review of every possible bushfire hazard condition and does not provide a guarantee that no loss of property or life will occur as a result of bushfire. As stated in AS3959-2018 “It should be borne in mind that the measures contained in this Standard cannot guarantee that a building will survive a bushfire event on every occasion. This is substantially due to the degree of vegetation management, the unpredictable nature and behaviour of fire, and extreme weather conditions”. In addition, no responsibility is taken for any loss which is a result of actions contrary to AS3959-2018 or the Tasmanian Planning Commission Bushfire code.

This report does not purport to provide legal advice. Readers of the report should engage professional legal practitioners for this purpose as required. No responsibility is accepted for use of any part of this report in any other context or for any other purpose by third party.

Appendix A - Site Photos

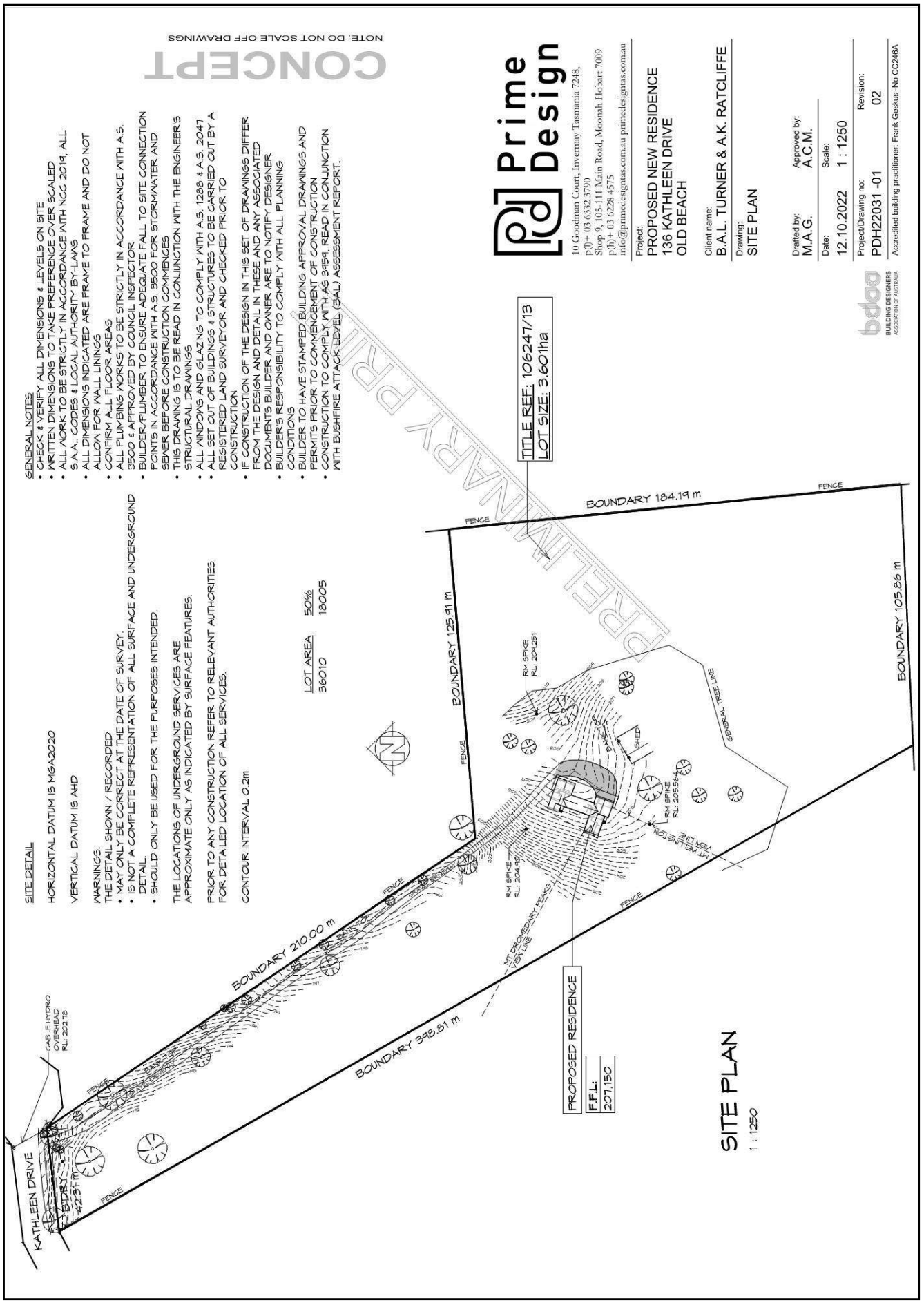
Figure 3. Northern azimuth from the site.

Figure 4. Eastern azimuth from the site.

Figure 5. Southern azimuth from the site.

Figure 6. Western azimuth from the site.

Appendix B – Site Plan



BUSHFIRE HAZARD MANAGEMENT PLAN

Bushfire Hazard Management Plan, 136 Kathleen Drive, Old Beach. February 2023. J3076v1.
Tasmanian Planning Scheme - Brighton

Compliance Requirements

Property Access

Property access length is 30 metres or greater; and access is required for a fire appliance to connect to a firefighting water point.
The following design and construction requirements apply to property access:
(a) All-weather construction;
(b) Load capacity of at least 20 tonnes, including for bridges and culverts;
(c) Minimum carriageway width of 4 metres;
(d) Minimum vertical clearance of 4 metres;
(e) Minimum horizontal clearance of 0.5 metres from the edge of the carriageway;
(f) Cross falls of less than 3° (1:20 or 5%);
(g) Dips less than 7° (1:8 or 12.5%) entry and exit angle;
(h) Curves with a minimum inner radius of 10 metres;
(i) Maximum gradient of 15° (1:3.5 or 28%) for sealed roads, and 10° (1:5.5 or 18%) for unsealed roads; and
(j) Terminate with a turning area for fire appliances provided by one of the following:
(i) A turning circle with a minimum outer radius of 10 metres;
(ii) A property access encircling the building; or
(iii) A hammerhead "T" or "Y" turning head 4 metres wide and 8 metres long
(k) Passing bays of 2 metres additional carriageway width and 20 metres length provided every 200 metres.

Water Supplies for Firefighting

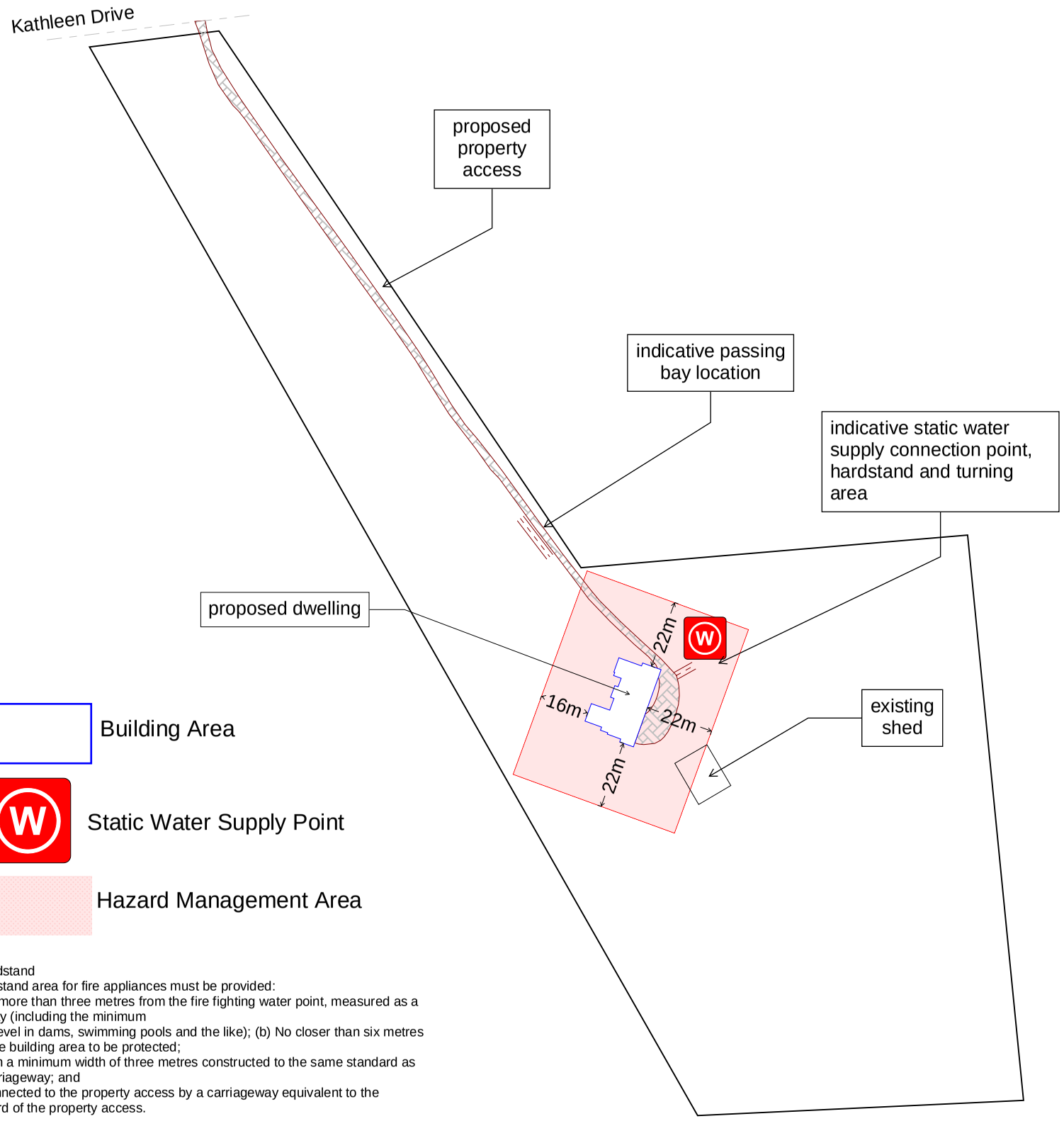
The site is not serviced by a reticulated water supply, therefore a dedicated, static firefighting water supply will be provided in accordance with the following;

A) Distance between building area to be protected and water supply
The following requirements apply:
(a) The building area to be protected must be located within 90 metres of the fire fighting water point of a static water supply; and
(b) The distance must be measured as a hose lay, between the fire fighting water point and the furthest part of the building area.

B) Static Water Supplies
A static water supply:
(a) May have a remotely located offtake connected to the static water supply;
(b) May be a supply for combined use (fire fighting and other uses) but the specified minimum quantity of fire fighting water must be available at all times;
(c) Must be a minimum of 10,000 litres per building area to be protected. This volume of water must not be used for any other purpose including fire fighting sprinkler or spray systems;
(d) Must be metal, concrete or lagged by non-combustible materials if above ground; and
(e) If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959-2009, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by:
(i) metal;
(ii) non-combustible material; or
(iii) fibre-cement a minimum of 6 mm thickness.

C) Fittings and pipework associated with a fire fighting water point for a static water supply must:
(a) Have a minimum nominal internal diameter of 50mm; (2) Be fitted with a valve with a minimum nominal internal diameter of 50mm;
(b) Be fitted with a valve with a minimum nominal internal diameter of 50mm;
(c) Be metal or lagged by non-combustible materials if above ground;
(d) Where buried, have a minimum depth of 300mm (compliant with AS/NZS 3500.1-2003 Clause 5.23);
(e) Provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to fire fighting equipment;
(f) Ensure the coupling is accessible and available for connection at all times;
(g) Ensure the coupling is fitted with a blank cap and securing chain (minimum 220 mm length);
(h) Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table; and
(i) Where a remote offtake is installed, ensure the offtake is in a position that is:
(i) Visible;
(ii) Accessible to allow connection by fire fighting equipment,
(iii) At a working height of 450 – 600mm above ground level; and
(iv) Protected from possible damage, including damage by vehicles.

D) Signage for static water connections
The fire fighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must comply with the Tasmania Fire Service Water Supply Signage Guideline published by the Tasmania Fire Service



E) Hardstand
A hardstand area for fire appliances must be provided:
(a) No more than three metres from the fire fighting water point, measured as a hose lay (including the minimum
water level in dams, swimming pools and the like); (b) No closer than six metres from the building area to be protected;
(c) With a minimum width of three metres constructed to the same standard as the carriageway; and
(d) Connected to the property access by a carriageway equivalent to the standard of the property access.

Hazard Management Areas

A hazard management area is required to be established and maintained for the life of the building and is shown on this BHMP. Guidance for the establishment and maintenance of the hazard management area is also provided.

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

Building Specifications to BAL-12.5 of AS3959-2018

Hazard Management Area
A hazard management area is the area, between a habitable building or building area and the bushfire prone vegetation, which provides access to a fire front for firefighting, which is maintained in a minimal fuel condition and in which there are no other hazards present which will significantly contribute to the spread of a bushfire. This can be achieved through, but is not limited to the following actions;

- Remove fallen limbs, sticks, leaf and bark litter;
- Maintain grass at less than a 100mm height;
- Remove pine bark and other flammable mulch (especially from against buildings);
- Thin out under-story vegetation to provide horizontal separation between fuels;
- Prune low-hanging tree branches (<2m from the ground) to provide (vertical separation between fuel layers;
- Prune larger trees to maintain horizontal separation between canopies;
- Minimise the storage of flammable materials such as firewood;
- Maintain vegetation clearance around vehicular access and water supply points;
- Use low-flammability species for landscaping purposes where appropriate;
- Clear out any accumulated leaf and other debris from roof gutters and other accumulation points.

It is not necessary to remove all vegetation from the hazard management area, trees may provide protection from wind borne embers and radiant heat under some circumstances.

Certification No. J3076

Mark Van den Berg
Acc. No. BFP-108
Scope 1, 2, 3A, 3B, 3C.

Do not scale from these drawings. Dimensions to take precedence over scale. Written specifications to take precedence over diagrammatic representations.	B. Turner & A Ratcliffe 227 Briggs Road, Honeywood, Tas. 7017	C.T.: 106247/13 PID: 7834550	Date: 24/02/2023	Bushfire Hazard Management Plan 136 Kathleen Drive, Old Beach. February 2023. J3076v1. Bushfire Management Report 136 Kathleen Drive, Old Beach. February 2023. J3076v1.	Drawing Number: A01	Sheet 1 of 1 Prepared by: MvdB

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form 55

To: Brock Turner *Owner /Agent*

136 Kathleen Drive *Address*

Old Beach 7017 *Suburb/postcode*

Qualified person details:

Qualified person: Mark Van den Berg

Address: 29 Kirksway Place

Battery Point TAS 7004

Phone No: 03 6223 1839

Fax No:

Licence No: BFP-108

Email address: mvandenberg@geosolutions.net.au

Qualifications and Insurance details: Accredited to report on bushfire hazards under Part IVA of the Fire Service Act.
BFP-108 scope 1, 2, 3a, 3b, 3c.
Sterling Insurance PI policy No. 17080170

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

Speciality area of expertise: Analysis of bushfire hazards in bushfire prone areas

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

Details of work:

Address: 136 Kathleen Drive

Old Beach 7017

Lot No:

Certificate of title No: 106247/13

The assessable item related to this certificate: New building work in a bushfire prone area.

(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: Bushfire Hazard

(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: X

or

a building, temporary structure or plumbing installation:

In issuing this certificate the following matters are relevant –

Documents: The attached Bushfire Hazard Report and Bushfire Hazard Management Plan for the address detailed above in 'details of work'

Relevant calculations: Reference the above report.

References: AS3959-2018 Construction of Buildings in Bushfire-prone Areas. Directors Determination for: Bushfire Hazard Areas v1.1 or Requirements for Building in Bushfire-prone Areas (transitional) v2.2

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

Bushfire Attack Level Assessment in accordance with AS3959-2018 and determination of other mitigation measures as required by the relevant Directors Determination as cited in the Bushfire Hazard Report.

Scope and/or Limitations

Scope: This report was commissioned to identify the Bushfire Attack Level for the existing property. Limitations: The inspection has been undertaken and report provided on the understanding that;-1. The report only deals with the potential bushfire risk all other statutory assessments are outside the scope of this report. 2. The report only identifies the size, volume and status of vegetation at the time the site inspection was undertaken. 3. Impacts of future development and vegetation growth have not been considered.

I certify the matters described in this certificate.

Qualified person: *Signed:* 

Certificate No: J3076

Date: 24/02/2023

DISPERSIVE SOIL ASSESSMENT

136 Kathleen Dive

Old Beach

February 2023

GEO-ENVIRONMENTAL

SOLUTIONS

Introduction

Client:	Brock Turner
Date of inspection:	15/02/23
Location:	136 Kathleen Drive, Old Beach
Land description:	Approx 3.549ha rural residential property
Building type:	Proposed new house
Investigation:	Geoprobe 540UD
Inspected by:	G McDonald

Background information

Map:	Mineral Resources Tasmania, Richmond sheet 1:25000
Rock type:	Quaternary boulder deposits of dolerite
Soil depth:	Approx. 0.6-0.75m
Planning overlays:	Potential Dispersive Soil, Priority vegetation area, Bushfire-prone area.
Local meteorology:	Annual rainfall Approx 600 mm
Local services:	On site services required

Site conditions

Slope and aspect:	approx. 15% slope to the north west
Site drainage:	Good surface drainage, imperfect subsoil drainage
Vegetation:	Native flora and weed species
Weather conditions:	Becoming fine, approx. 6mm rainfall received in preceding 7 days.
Ground surface:	Dry surface conditions

Investigation

A number of auger holes were completed to identify the distribution of, and variation in soil materials on the site. Representative auger holes were drilled on site at the proposed building location and chosen for testing and classification according to AS2870-2011 (see profile summaries).

Profile Summary

Hole 1 Depth (m)	Hole 2 Depth (m)	USCS	Description
0.00 – 0.30	0.00 – 0.40	ML	**Clayey SILT**: brown-yellow, slightly moist, soft.
0.30 – 0.75	0.40 – 0.60	GW	**Sandy GRAVEL**: grey-brown, dry, dense to very dense with depth, refusal on assumed boulders.

Soil Profile Notes

The soil onsite feature shallow clayey silt topsoil overlying sandy gravel subsoil profiles formed from talus deposits of dolerite. The soils are well structured and there is no evidence of erosion on the site.

Dispersive Soil Assessment

The dispersive soil assessment of the property takes into account the proposed construction area.

Potential for dispersive soils

The site has been identified as an area with "Potential Dispersive Soils" according to the Brighton Council Interim Planning Scheme 2015. This is due mapping of part of the site as containing soils developed from Triassic sediments. Triassic sediments in the local area known to produce soils with an excess of sodium on the soil exchange complex, which can cause soil dispersion. Under some circumstances the presence of dispersive soils can also lead to significant erosion, and in particular tunnel erosion. Based upon field survey of the property, no visible tunnel or gully erosion was identified. In addition, the soils on site appear to be dominated by the dolerite talus deposits, which are generally higher in calcium and magnesium, and low in sodium content. However, a soil sampling program was undertaken to identify the presence of dispersive soils in the proposed development areas.

Soil sampling and testing

Two samples were taken at the site for assessment of dispersion. An Emerson (1968) Dispersion test was conducted to determine if these samples were dispersive.

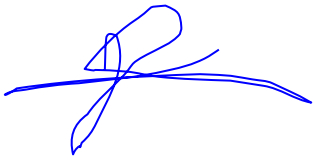
The soil samples from both holes showed no signs of dispersion.

Based upon the test results there is little risk of soil dispersion and erosion on the site, and as such no dispersive soil management recommendations have been made.

Conclusions

There is a very low risk associated with dispersive soils and potential erosion on the site. It is recommended that a standard soil and water management plan is prepared for all excavation works on site, and appropriate batter angles be employed for all site excavation.

It is recommended that during construction that GES be notified of any major variation to the soil conditions as predicted in this report.



Dr John Paul Cumming B.Agr.Sc (hons) PhD CPSS GAICD
Environmental and Engineering Soil Scient

Appendix 1– Soil test results

Laboratory Test Results

Sample Submitted By: G McDonald

Date Submitted: 15/02/2023

Sample Identification: 2 samples – 136 Kathleen Drive

Soil to be tested: **Emerson soil dispersion test**

Result:

Sample	Texture	Emerson class	Description
BH1	**Clayey Silt**	**Class 8**	**No Dispersion**
BH2	**Clayey Silt**	**Class 8**	**No Dispersion**

Sample Tested by: G McDonald

ONSITE-WASTEWATER ASSESSMENT

136 Kathleen Drive

Old Beach

April 2023

GEO-ENVIRONMENTAL

SOLUTIONS

Investigation Details

Client:	Brock Turner
Site Address:	136 Kathleen Drive, Old Beach
Date of Inspection:	15/02/2023
Proposed Works:	New house
Investigation Method:	Geoprobe 540UD - Direct Push
Inspected by:	G. McDonald

Site Details

Certificate of Title (CT):	106247/13
Title Area:	Approx. 3.549 ha
Applicable Planning Overlays:	Bushfire-prone Areas, Priority Vegetation
Slope & Aspect:	5° SW facing slope
Vegetation:	Bush Disturbed

Background Information

Geology Map:	MRT 1:25000
Geological Unit:	Quaternary Sediments
Climate:	Annual rainfall 600mm
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 2 Depth (m)	HRZ	Description
0.00-0.25	A1	TOPSOIL: **Clayey SILT**: Brown-yellow, slightly moist, soft.
0.25-1.60	B2	**Clayey SAND trace gravels:** Yellow-brown-grey slightly moist medium dense to dense with depth.
1.60-1.65	BC	**Sandy GRAVEL:** Grey, dry, very dense to refusal on rock.

Site Notes

The soils on site consist of clayey silt topsoil overlying clayey sand subsoils which have developed from Quaternary sediments derived from Jurassic boulder deposits.

Wastewater Classification & Recommendations

According to AS1547-2012 (on-site waste-water management) the natural soil is classified as **Sandy Loam (category 2).** It is proposed to install a dual-purpose septic tank with on-site absorption. A Design Loading Rate (DLR) of 15L/m^2/day has been assigned for primary treated effluent.

The proposed three-bedroom dwelling has a calculated maximum wastewater output of 600L/day. This is based on a tank water supply and a maximum occupancy of 5 people (120L/day/person).

Using the DLR of 15L/m^2/day, an absorption area of at least 40m^2 will be required to accommodate the expected flows. This can be accommodated by two 20m x 1m x 0.6m terraced absorption trenches connected to a dual-purpose septic tank (min 3000L) via a two-way splitter box with speed levelers to ensure equal distribution. 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:	9m
Upslope or level boundaries:	1.5m
Downslope boundaries:	10m
Downslope surface water:	>100m

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.

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

Director

GES P/L

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	Brock Turner	Assess. Date	17-Apr-23
		Ref. No.	
Assessed site(s)	136 Kathleen Drive, Old Beach	Site(s) inspected	15-Feb-23
Local authority	Brighton	Assessed by	John Paul Cumming

This report summarises wastewater volumes, climatic inputs for the site, soil characteristics and sustem 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 w hich probably require special consideration for system design(s). Blank spaces on this page indicate data have not been enterec into TRENCH.

Wastewater Characteristics

Wastewater volume (L/day) used for this assessment = 600 (using the 'No. of bedrooms in a dwelling' method)
Septic tank wastewater volume (L/day) = 200
Sullage volume (L/day) = 400
Total nitrogen (kg/year) generated by wastewater = 2.2
Total phosphorus (kg/year) generated by wastewater = 1.1

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	36	36	45	36	29	46	47	40	48	44	56
Adopted rainfall (R, mm)	41	36	36	45	36	29	46	47	40	48	44	56
Retained rain (Rr, mm)	35	31	31	38	31	25	39	40	34	41	37	48
Max. daily temp. (deg. C)												
Evapotrans (ET, mm)	130	110	91	63	42	29	32	42	63	84	105	126
Evapotr. less rain (mm)	**95**	**79**	**60**	**25**	**11**	**5**	**-8**	**2**	**29**	**43**	**68**	**78**

Annual evapotranspiration less retained rain (mm) = 489

Soil characterisitics

Texture = Sandy Loam Category = 2 Thick. (m) = 1.55
Adopted permeability (m/day) = 3 Adopted LTAR (L/sq m/day) = 15 Min depth (m) to water = 5

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) =	40
Width (m) =	1
Depth (m) =	0.6
Total disposal area (sq m) required =	40
comprising a Primary Area (sq m) of:	40
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
Using the DLR of 15mm/day, a trench area of 40m^2 is required.

GES P/L

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	Brock Turner	Assess. Date	17-Apr-23
		Ref. No.	
Assessed site(s)	136 Kathleen Drive, Old Beach	Site(s) inspected	15-Feb-23
Local authority	Brighton	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 Trench	Limitation Amended	Remarks
	Expected design area	sq m	1,700	V. high	Low		
	Density of disposal systems	/sq km	10	Mod.	Very low		
	Slope angle	degrees	5	High	Low		
	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		
A	Aspect (Southern hemi.)	Faces SE or SW		V. high	High		
	Frequency of strong winds	Common		High	Low		
	Wastewater volume	L/day	600	High	Moderate	No change	
	SAR of septic tank effluent		1.2	High	Low		
	SAR of sullage		2.1	High	Moderate		
	Soil thickness	m	1.6	V. high	Very low		
	Depth to bedrock	m	1.6	Mod.	Low		
	Surface rock outcrop	%	0	V. high	Very low		
	Cobbles in soil	%	2	V. high	Very low		
	Soil pH		7.0	High	Very low		
	Soil bulk density	gm/cub. cm	1.5	High	Low		
	Soil dispersion	Emerson No.	8	V. high	Very low		
AA	Adopted permeability	m/day	3	Mod.	Very high		
	Long Term Accept. Rate	L/day/sq m	15	High	Very low	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 primary treated wastewater.

GES P/L

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	Brock Turner	Assess. Date	17-Apr-23
		Ref. No.	
Assessed site(s)	136 Kathleen Drive, Old Beach	Site(s) inspected	15-Feb-23
Local authority	Brighton	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 Trench	Limitation Amended	Remarks
	Cation exchange capacity	mmol/100g	90	High	Low		
	Phos. adsorp. capacity	kg/cub m	0.7	High	Moderate		
	Annual rainfall excess	mm	-489	High	Very low		
	Min. depth to water table	m	5	High	Very low		
	Annual nutrient load	kg	3.3	High	Very 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 non-sensit		V. high	Low		
	Dist. to nearest surface water	m	181	V. high	Moderate		
	Dist. to nearest other feature	m	22	V. high	High	Moderate	Other factors lessen impact
	Risk of slope instability	Low		V. high	Low		
	Distance to landslip	m	1650	V. high	Very low		

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

Comments

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

Acceptable Solutions	**Performance Criteria**	**Compliance**
A1 Horizontal separation distance from a building to a land application area must comply with one of the following: a) be no less than 6m; or b) be no less than: (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.	P1 a) The land application area is located so that (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	Complies with A1 (b) (i) Land application area will be located with a minimum separation distance of 3m from an upslope or level building. Complies with A1 (b) (ii) Land application area will be located with a minimum separation distance of 9m of downslope building.
A2 Horizontal separation distance from downslope surface water to a land application area must comply with (a) or (b) (a) be no less than 100m; or (b) be no less than the following: (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.	P2 Horizontal separation distance from downslope surface water to a land application area must comply with all of the following: a) Setbacks must be consistent with AS/NZS 1547 Appendix R; b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	Complies with A2 (a) Land application area located > 100m from downslope surface water

A3 Horizontal separation distance from a property boundary to a land application area must comply with either of the following: (a) be no less than 40m from a property boundary; or (b) be no less than: (i) 1 .5m from an upslope or level property boundary; and (ii) If primary treated effluent 2m for every degree of average gradient from a downslope property boundary; or (iii) If secondary treated effluent and subsurface application, 1.5m plus 1m for every degree of average gradient from a downslope property boundary.	P3 Horizontal separation distance from a property boundary to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment in accordance with Appendix A of AS/NZS 1547 has been completed that demonstrates that the risk is acceptable.	Complies with A3 (b) (i) Land application area will be located with a minimum separation distance of 1.5m from an upslope or level property boundary Complies with A3 (b) (ii) Land application area will be located with a minimum separation distance of 10m of downslope property boundary.
A4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must be no less than 50m and not be within the zone of influence of the bore whether up or down gradient.	P4 Horizontal separation distance from a downslope bore, well or similar water supply to a land application area must comply with all of the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 demonstrates that the risk is acceptable	Complies with A4 No bore or well identified within 50m

A5 Vertical separation distance between groundwater and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.6m if secondary treated effluent	P5 Vertical separation distance between groundwater and a land application area must comply with the following: (a) Setback must be consistent with AS/NZS 1547 Appendix R; and (b) A risk assessment completed in accordance with Appendix A of AS/NZS 1547 that demonstrates that the risk is acceptable	Complies with A5 (a) No groundwater encountered
A6 Vertical separation distance between a limiting layer and a land application area must be no less than: (a) 1.5m if primary treated effluent; or (b) 0.5m if secondary treated effluent	P6 Vertical setback must be consistent with AS/NZS1547 Appendix R.	Vertical separation of 0.6m is consistent with AS1547 Appendix R
A7 nil	P7 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	Complies

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)
	Horizontal setback distance (m)			
Property boundary	1.5 – 50	A, D, J	10	>10
Buildings/houses	2.0 – > 6	A, D, J	3	>3m
Surface water	15 – 100	A, B, D, E, F, G, J		>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
	Vertical setback distance (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) LOWER ⟷ HIGHER Examples of constraint factors (see Note 2)		Sensitive features	Comment	Constraint Rating
A	Microbial quality of effluent	Effluent quality consistently producing ≤ 10 cfu/100 mL *E. coli* (secondary treated effluent with disinfection)	Effluent quality consistently ^{6} *E. coli* (for example, primary treated effluent)	Groundwater and surface pollution hazard, public health hazard	Primary treated effluent	Moderate due to no groundwater or surface pollution hazard
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	Sandy Loam (category 2) soil No groundwater encountered Low resource value	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	Approx 5° slope, subsurface effluent	Complies with Acceptable Solutions
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 10m	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	Sandy Loam (category 2) 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) LOWER ⟷ HIGHER Examples of constraint factors (see Note 2)		Sensitive features	Comment	Constraint Rating
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	Sandy Loam (category 2) soil moderate 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: 136 Kathleen Drive, Old Beach

System Capacity: 5 people @ 120L/person/day

Summary of Design Criteria

DLR: 15L/m^2/day.

Absorption area: 40m^2

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

Form **35**

To: Brock Turner *Owner name*
136 Kathleen Drive *Address*
Old Beach 7017 *Suburb/postcode*

Designer details:

Name: John-Paul Cumming
Category: Bld. Srvcs. Dsgnr. - Hydraulic
Business name: Geo-Environmental Solutions
Phone No: 03 6223 1839
Business address: 29 Kirksway Place
Battery Point 7004
Fax No: N/A
Licence No: CC774A
Email address: office@geosolutions.net.au

Details of the proposed work:

Owner/Applicant Brock Turner
Designer's project reference No. J3076
Address: 136 Kathleen Drive
Lot No: 106247/13
Old Beach 7017

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

Description of work:
On-site wastewater management system - design

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

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

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

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

Other details:

Septic tank with Absorption trenches

Design documents provided:

The following documents are provided with this Certificate –

Document description:

Drawing numbers:	Prepared by: Geo-Environmental Solutions	Date: Apr-23
Schedules:	Prepared by:	Date:
Specifications:	Prepared by: Geo-Environmental Solutions	Date: Apr-23
Computations:	Prepared by:	Date:
Performance solution proposals:	Prepared by:	Date:
Test reports:	Prepared by: Geo-Environmental Solutions	Date: Apr-23

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:

Onsite Wastewater Assessment - 136 Kathleen Drive, Old Beach - Apr-23

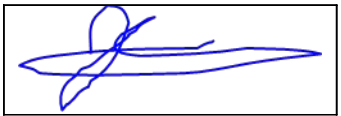
Onsite Wastewater Assessment - 136 Kathleen Drive, Old Beach - Apr-23

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.

	Name: (print)	*Signed*	*Date*
Designer:	John-Paul Cumming		17/04/2023
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.

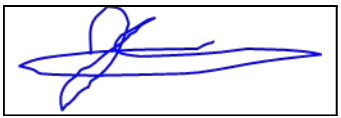
I confirm that the proposed works are not Certifiable Works, in accordance with the Guidelines for TasWater CCW Assessments, by virtue that all of the following are satisfied:

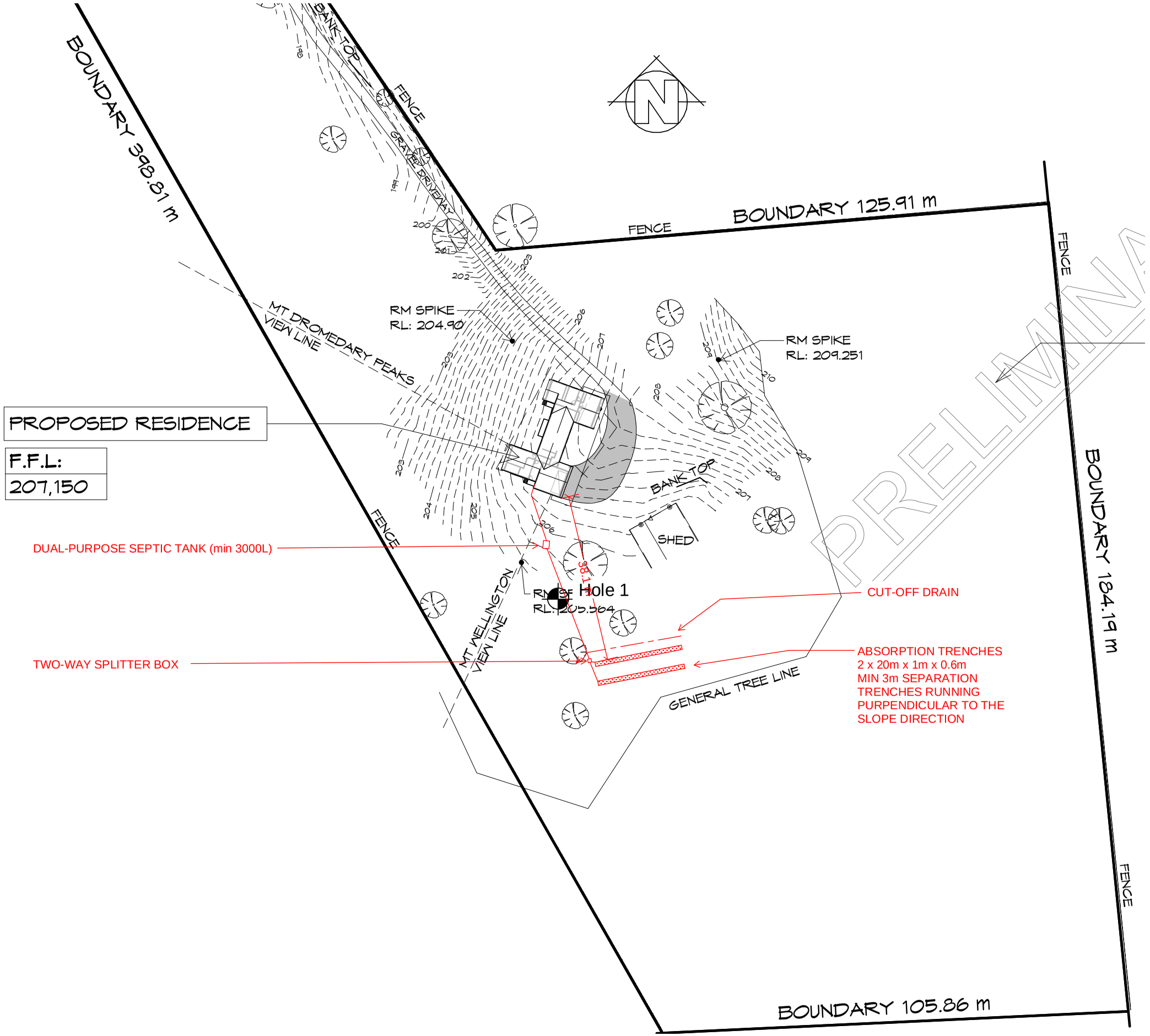
- [x] The works will not increase the demand for water supplied by TasWater
- [x] The works will not increase or decrease the amount of sewage or toxins that is to be removed by, or discharged into, TasWater's sewerage infrastructure
- [x] The works will not require a new connection, or a modification to an existing connection, to be made to TasWater's infrastructure
- [x] The works will not damage or interfere with TasWater's works
- [x] The works will not adversely affect TasWater's operations
- [x] The work are not within 2m of TasWater's infrastructure and are outside any TasWater easement
- [x] I have checked the LISTMap to confirm the location of TasWater infrastructure
- [x] 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		17/04/2023



Wastewater system:

Dual-purpose septic tank (min 3000L)

Cut-off drain
Two-way splitter box

Absorption Trenches
2 x 20m x 1m x 0.6m

Min 3m separation

Min 3m from upslope buildings
Min 9m from downslope buildings
Min 1.5m from upslope or level boundaries
Min 10m from downslope boundary
Min 100m from downslope surface water

Refer to GES report

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

Dr. John Paul Cumming
Building Services Designer-Hydraulic
CCC774A

17/04/2023

Do not scale from these drawings. Dimensions to take precedence over scale.	Brock Turner 136 Kathleen Drive, Old Beach 7017	C.T.: 106247/13 PID: 7834550	Date: 17/04/2023	On-Site Wastewater Management Plan	Drawing Number:	Sheet 1 of 1 Drawn by: LR

Design notes:

1. Absorption trench dimensions of up to 20m long by 0.45m deep by 1.0m wide – total storage volume calculated at average 35% porosity.
2. Base of trenches to be excavated level and smearing and compaction avoided.
3. 350mm Arch should be placed in the centre of trench
4. Geotextile or filter cloth to be placed over the distribution arch to prevent clogging
5. Construction on slopes up to 20% to allow trench depth range 600mm upslope edge to 450mm on down slope edge
6. Dispersive soils gypsum to be incorporated into the base of the trench at a rate of 1kg/m^2
7. All works on site to comply with AS3500 and Tasmanian Plumbing code.

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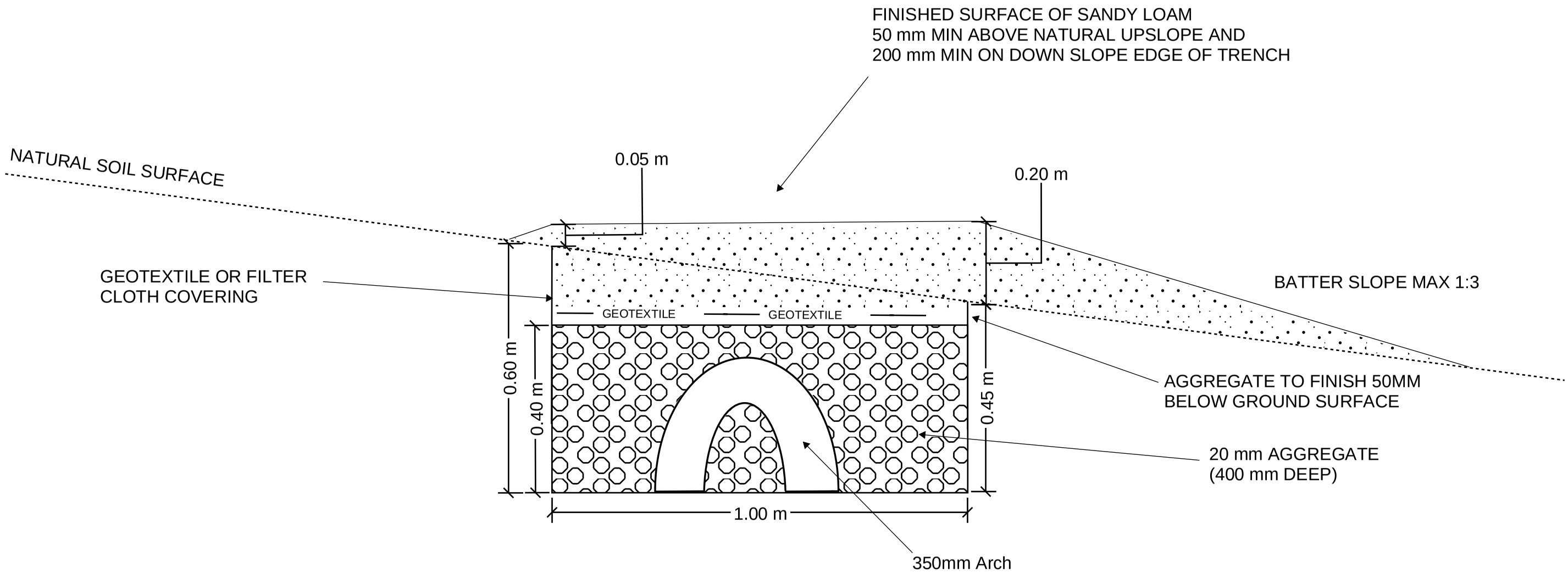

Do not scale from these drawings. Dimensions to take precedence over scale.	Geo-Environmental Solutions		Date: Apr 2023	Terraced Absorption Trench Detail	Sheet 1 of 1

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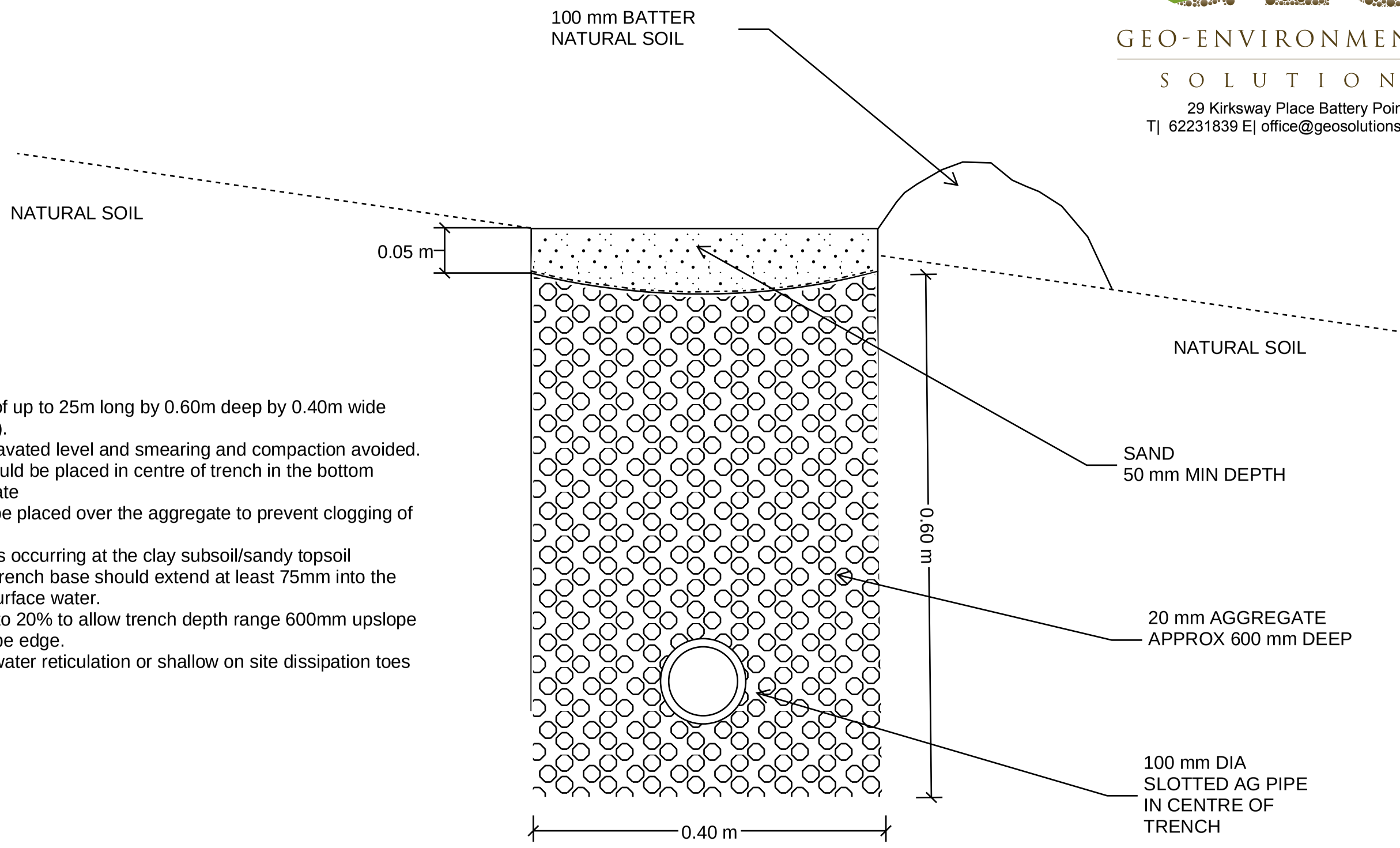

Design notes:

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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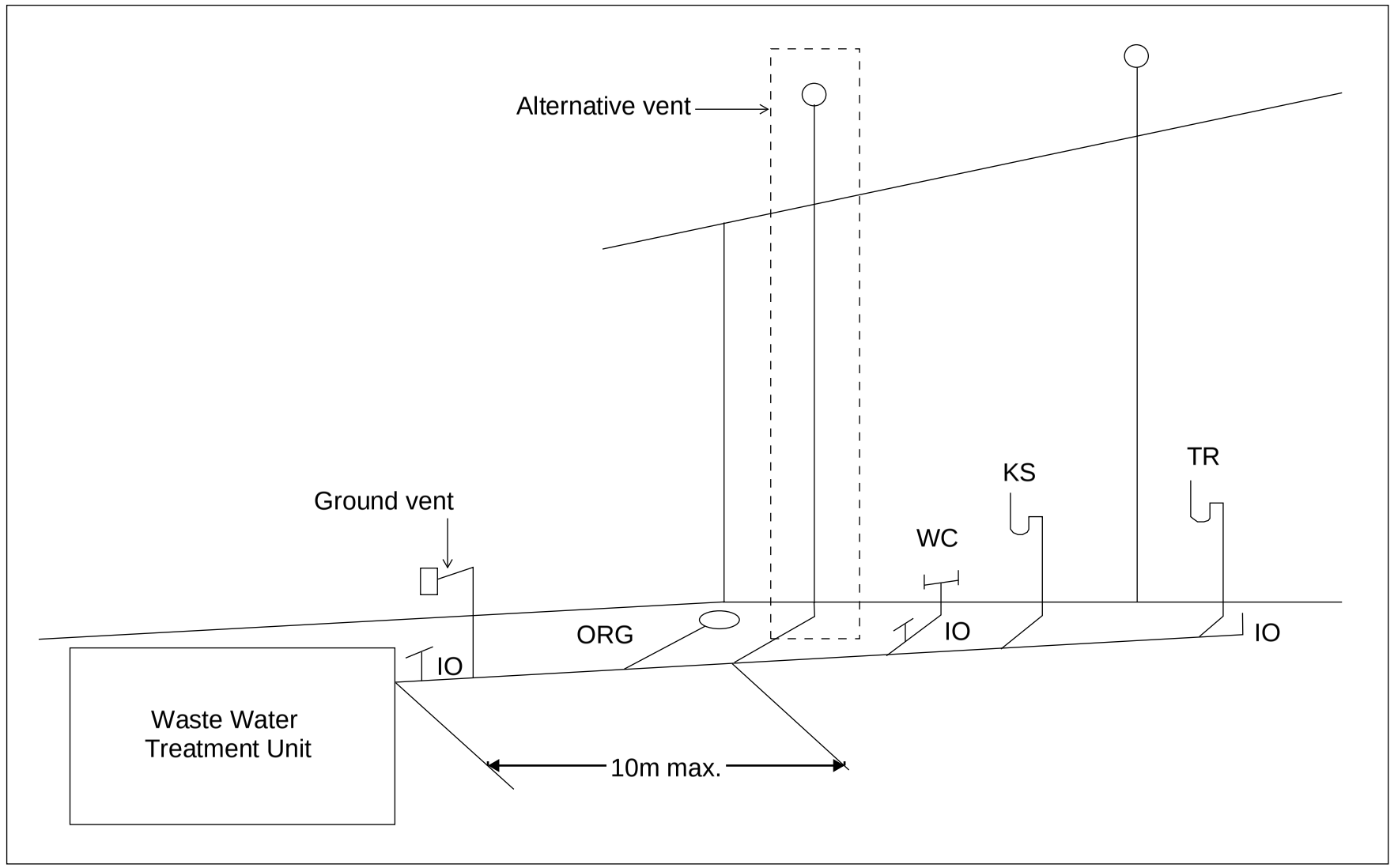

Tas Figure H101.2 Alternative Venting Arrangements

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 unites must terminate at or above finished surface level

Alternative vent is the preferred arrangement where possible.

Do not scale from these drawings. Dimensions to take precedence over scale.				Tas Figure H101.2 Alternative Venting Arrangements		Sheet 1 of 1