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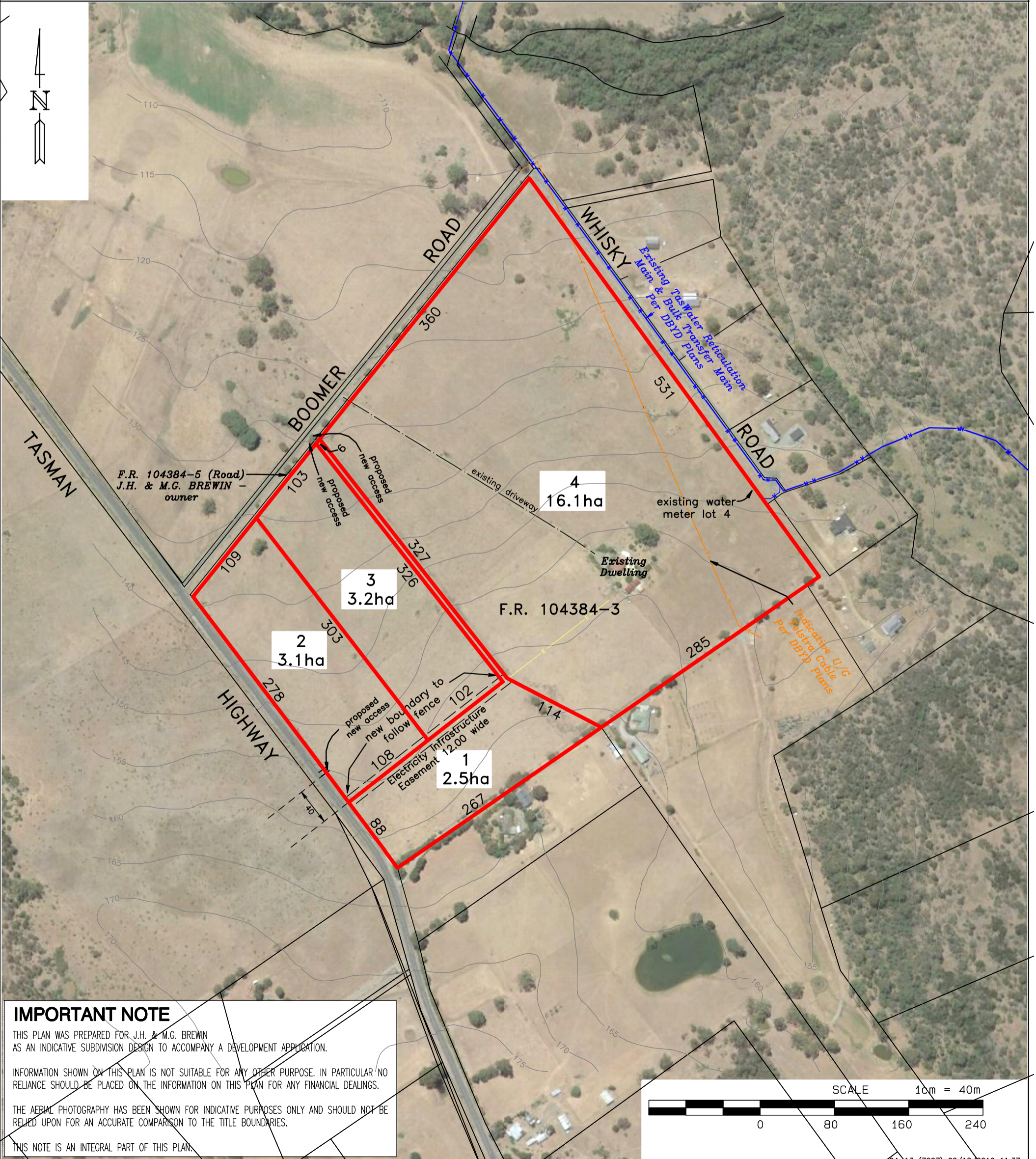
**PLAN OF
SUBDIVISION
SHEET 1 OF 1**

**REF: 04-13
(7207)**

Municipality: CITY OF LAUNCESTON
Site Address: 40690 TASMAN HIGHWAY, WAVERLEY
Tasmap Sheet: LAUNCESTON (5041)
Grid Reference: E: 517859 N: 5412657 (MGA)

Owners: J.H. & M.G. BREWIN
Title Refs: 104384-3
Dates: Version A: 15-12-2016
Version B:
Version C:
Scale: 1 : 4000 @ A3

DISCLAIMER: This is a preliminary plan prepared without field survey and forms part of an application to subdivide the land described and is not to be used for any other purpose. Contours and levels may be transcribed from other sources and their accuracy has not been verified. These should not be used. The dimensions, area, location of improvements and number of lots are approximate and may vary as a result of decisions by the Municipality, Land Use Planning Review Panel, engineering or other advice. Easements may not be shown as these are to be determined at the time of survey. The plan is not to be copied unless this note is included.



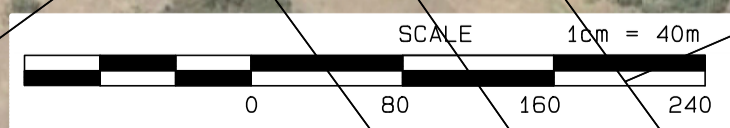
IMPORTANT NOTE

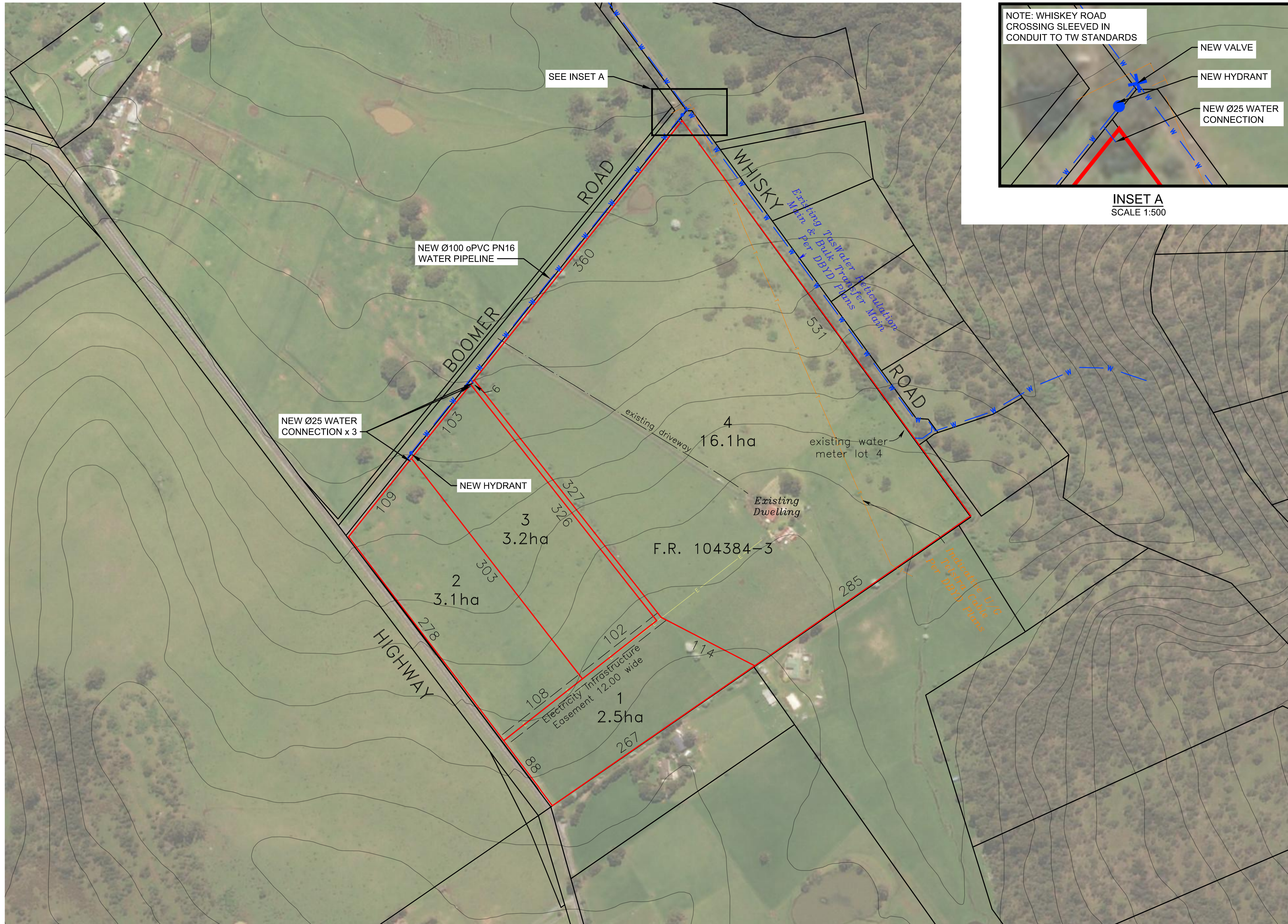
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THIS NOTE IS AN INTEGRAL PART OF THIS PLAN.





INSET A
SCALE 1:500

PLAN
SCALE 1:2000

FOR COMMENT

D		
C	-	-
B	-	-
A	COMMENT	02/10/2017
Rev.	Description	Date

REVISIONS

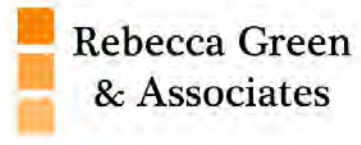
Client:

Project Manager:

Project:

Drawing Title:

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A1	BH	AH	02/10/17
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AS SHOWN			A



Appendix E: Waste Water Disposal Assessment



ONSITE WASTEWATER DESIGN REPORT

Proposed Development – 40690 Tasman Highway, Waverley

Prepared on behalf of J & M Brewin

Prepared By:

Risden Knightley BE (Civil), Ass Dip Civil Eng, MIEAust, CC 2539X

PO Box 128, Prospect 7250

Mobile: 0400 642469 Fax: 6343 1668

Email: rjkmil@netspace.net.au

SITE AND SOIL EVALUATION REPORT

SUMMARY

An excavation was completed to identify the distribution of, and variation in soil material.

In accordance with AS 1547/2012, for on-site waste water management, the soil on the property is classified as Category 6 by soil profiling.

The report provides recommendations relating to site-specific investigations and detailed design. This study has been completed based on AS 1547/2012 and the calculations required by this standard. Trench 3 has not been utilised as a more conservative approach is necessary.

<u>Municipality</u>	Launceston
<u>Location</u>	40690 Tasman Highway, Waverley
<u>Client</u>	J & M Brewin
<u>Address</u>	As Detailed
<u>Telephone Contact</u>	N/A
<u>Title Reference</u>	104384/3
<u>Desktop Study</u>	14 October 2016
<u>Water Supply</u>	Tank Water

SITE INFORMATION

Assessment is for the purpose of determining waste water disposal requirements for a proposed 4 lot subdivision.

This assessment is for planning purposes only.

The existing dwelling will form one of the 4 lots. It is not included in this assessment as dwelling's system is existing and operational.

This assessment pertains to the remaining 3 lots of the proposed subdivision. Calculations are based on the provision of wastewater facilities for 4 bedroom dwellings.

Land Use

Rural Resource

Method of Testing

An excavation was completed to identify the distribution of, and variation in soil material – by hand auger

Waterways

Distillery Creek to the North

History

Existing dwelling on rural property

Climate

Annual rainfall for the area is approximately 676 mm (*Refer BOM Site 091237*)

SOIL PROFILE

Test holes were drilled using a hand auger.

In accordance with AS 1547/2012, for on-site waste water management, the soil on the property is classified as Category 6. The clay soil has a strong structure with a drained permeability of 0.5 (m/day) as confirmed by soil profiling.

As the proposed development would be on tank water, in accordance with Table H1 calculations have been based on an allowance of 120 litres per person per day.

Recommended DIR for Drip Irrigation System

The recommended DIR in consultation with Table M1 of AS 1547/2012 has been assessed as 2 mm/day, with a Soil Category of 6.

Calculation as per AS1547

Current Design:

This type of system requires a calculation of area:

$$A = qw/DIR$$

Where,	A = Irrigation Area (m ²)	420m ²
	qw = Total effluent generated by household (l/day)	840 (120*7)
	DIR = Design Irrigation Rate in mm/day	2

SYSTEM OPERATIONAL CONSIDERATIONS

Installation of an AWTS system requires consideration for ongoing maintenance and care of the system to ensure its longevity. It is essential that manufacturers guidelines are adhered to and maintenance requirements are carried out.

In relation to the system, low sodium/phosphorus products are to be utilised, together with optimisation of washing regimes to limit overloading of water allowance when taking into consideration washing machine and dishwasher usage and personal bathing/hygiene.

A regular inspection is to be carried out by the manufacturer's agent and the inspection report forwarded to Council.

The maintenance of the AWTS is to be carried out as per the manufacturer's guidelines. It is important to note that the area is to be protected from vehicles and livestock.

RISK ASSESSMENT

The following table outlines assessed risks and rankings in relation to the system recommendation.

<i>RISK</i>	<i>ESTIMATED LEVEL</i>	<i>MITIGATION MEASURES & REASSESSED RISK LEVEL</i>
<u>Wastewater System Hydraulic Failure</u>	High	Ensure good depth of topsoil and drip irrigate wastewater into well planted irrigation field. (LOW)
<u>Marginal Soil Conditions/Removal of Vegetation</u>	Medium	Ensure sufficient topsoil depth and plant density. (LOW)
<u>Pipe Blockage</u>	Medium	Provision of system care and maintenance guidelines to homeowner by manufacturer. (LOW)
<u>Wastewater Biological Failure</u>	High	Flow balancing if wastewater treatment unit sensitive to changes in hydraulic load. Selection of wastewater treatment unit appropriate to pattern of use for dwelling. (LOW)

<u>Biological Failure from Chemical Poisoning</u>	High	Education of property owners. Use of low sodium/phosphorous products. (LOW)
<u>Pipe Damage</u>	High	The infiltration area is to be protected by fencing or by other appropriate means. No vehicles or animal compaction. (LOW)
<u>Appropriate Installation</u>	High	Installation by suitably qualified and endorsed AWTS installer. Inspection required to ensure appropriate installation. (LOW)
<u>Erosion</u>	Low	Area slopes to northeast and northwest. Erosion likely. (LOW)
<u>Impact of Reserve Provisions</u>	Low	There is sufficient area on site for reserve, if required. (LOW)

SYSTEM RECOMMENDATION(S)

On this basis, it is recommended that new dwellings within the subdivision (with up to 4 bedrooms) be treated by Envirocycle (Tas) 10ANR AWTS systems, with allowance for a 420m² irrigation area and provision of 100% reserve (per lot). Refer to attached cross section plan for construction details.

It is noted that the newly created lots will be approximately 3.1 hectares, 3.2 hectares and 2.5 hectares. The balanced lot which incorporates the house will be approximately 16.1 hectares.

The newly created lots will each have sufficient area available for 420m² of irrigation area and provision of 100% reserve area. Dependent on positioning of dwellings in relation to irrigation areas, cut off drains may be required.

LIMITATIONS

Site and soil evaluation according to AS 1547/2012. Land application system design and sizing according to water budgeting in AS 1547/2012.

Valid for site and soil conditions as inspection or as prescribed in landscaping plans. Valid for the loading rate assigned from present fixtures in the dwelling or based upon the information supplied by or on behalf of the owners being true and correct. The system designed will in the future require additional maintenance to keep it operational.

Signed and Dated:



14 October 2016

ATTACHMENTS

Profile Logs
Plan – Test Pit Location
Wastewater Plan & Cross Section Detail
Loading Certificate

SOIL PROFILE LOG

CLIENT: J & M Brewin	HOLE NO.: 1
PROJECT: 16/17 TAS 037	DATE LOGGED: 29/08/2016
LOCATION: 40690 Tasman Highway, Waverley 7250	
METHOD: Hand Auger	

Depth (m)	Sample	Test	Graphic Log	Moisture	Consistency	Symbol	Description	Comments
0.1-				M	F	SM	<u>LOAM</u> ; Dark brown.	Topsoil
0.3-				M	S	CH	<u>CLAY</u> ; Dark brown, traces of rock, high plasticity.	
0.4-								
0.6-								Hole terminated at 0.6 m
0.9-								
1.1-								
1.3m-								
2.0-								
2.5-								

Sample:	Moisture:	Consistency Cohesive:	Consistency Noncohesive:	Density:	Soils:
U50 - 50mm tube	D - dry	VS - very soft	VL - very loose	VL - very loose	G - gravel
H - hand	SM - slightly moist	S - soft L - loose L - loose	L - loose	MD - medium dense	C - clay
Test:	M - moist	F - firm	MD - medium dense	D - dense	S - sand
V - shear vane	VM - very moist	St - stiff	D - dense	VD - very dense	M - silt
HP - Hand penetrometer	S - saturated	VSt - very stiff	VD - very dense		XW, DW, SW, FR, (ROCK)
UCS	W - free water	H - hard			

RJK Consulting Engineers

ABN 71162701528

PO Box 128 PROSPECT TAS 7250

Phone 0400 642 469

SOIL PROFILE LOG

CLIENT: J & M Brewin	HOLE NO.: 2
PROJECT: 16/17 TAS 037	DATE LOGGED: 29/08/2016
LOCATION: 40690 Tasman Highway, Waverley 7250	
METHOD: Hand Auger	

Depth (m)	Sample	Test	Graphic Log	Moisture	Consistency	Symbol		Comments
0.1-				M	F	SM	LOAM: Dark brown, large number of rocks.	Topsoil
0.3-				M	F	CH	CLAY: Light brown, large amount of rock, sticky.	
0.4-								
0.6-								Hole terminated at 0.4 m
0.9-								
1.1-								
1.3m-								
2.0-								
2.5-								

Sample:	Moisture:	Consistency Cohesive:	Consistency Noncohesive:	Density:	Soils:
U50 - 50mm tube	D - dry	VS - very soft	VL - very loose	VL - very loose	G - gravel
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UCS	W - free water	H - hard			

RJK Consulting Engineers

ABN 71162701528

PO Box 128 PROSPECT TAS 7250

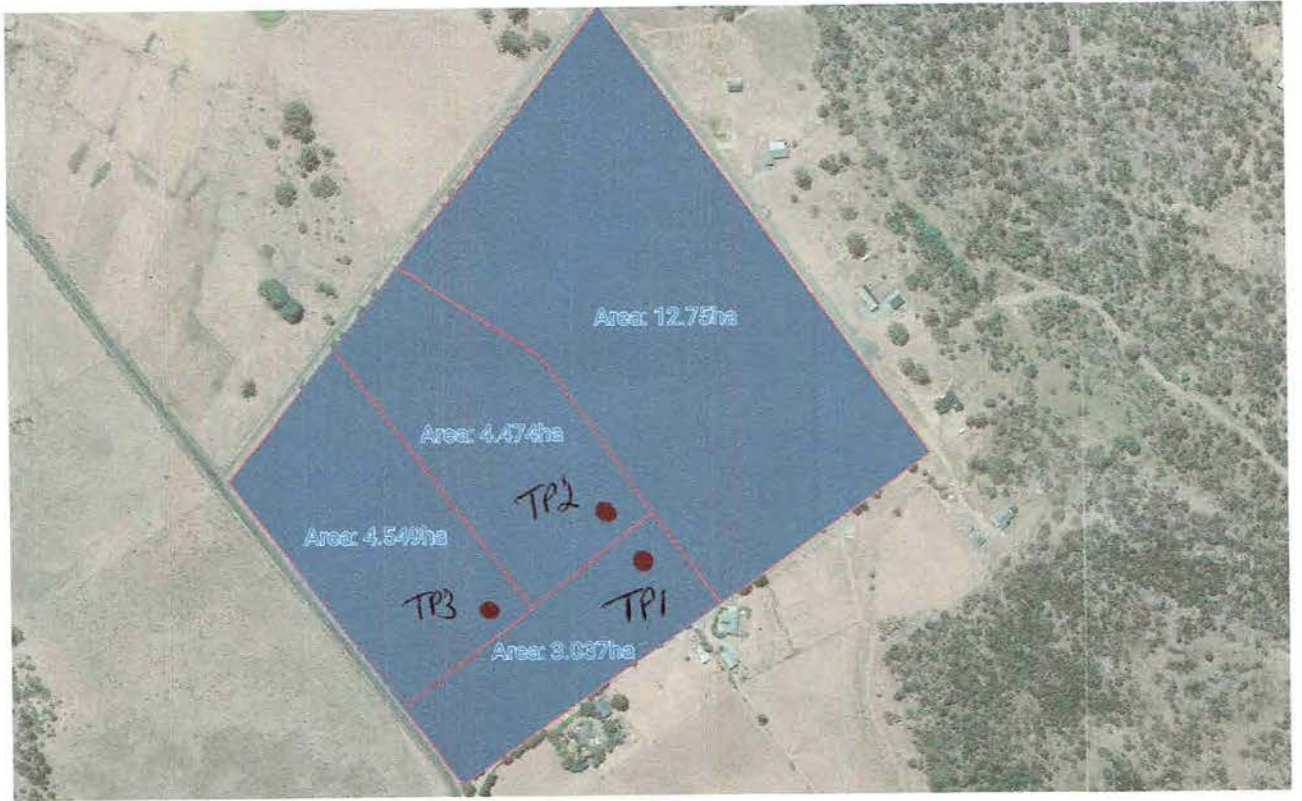
Phone 0400 642 469

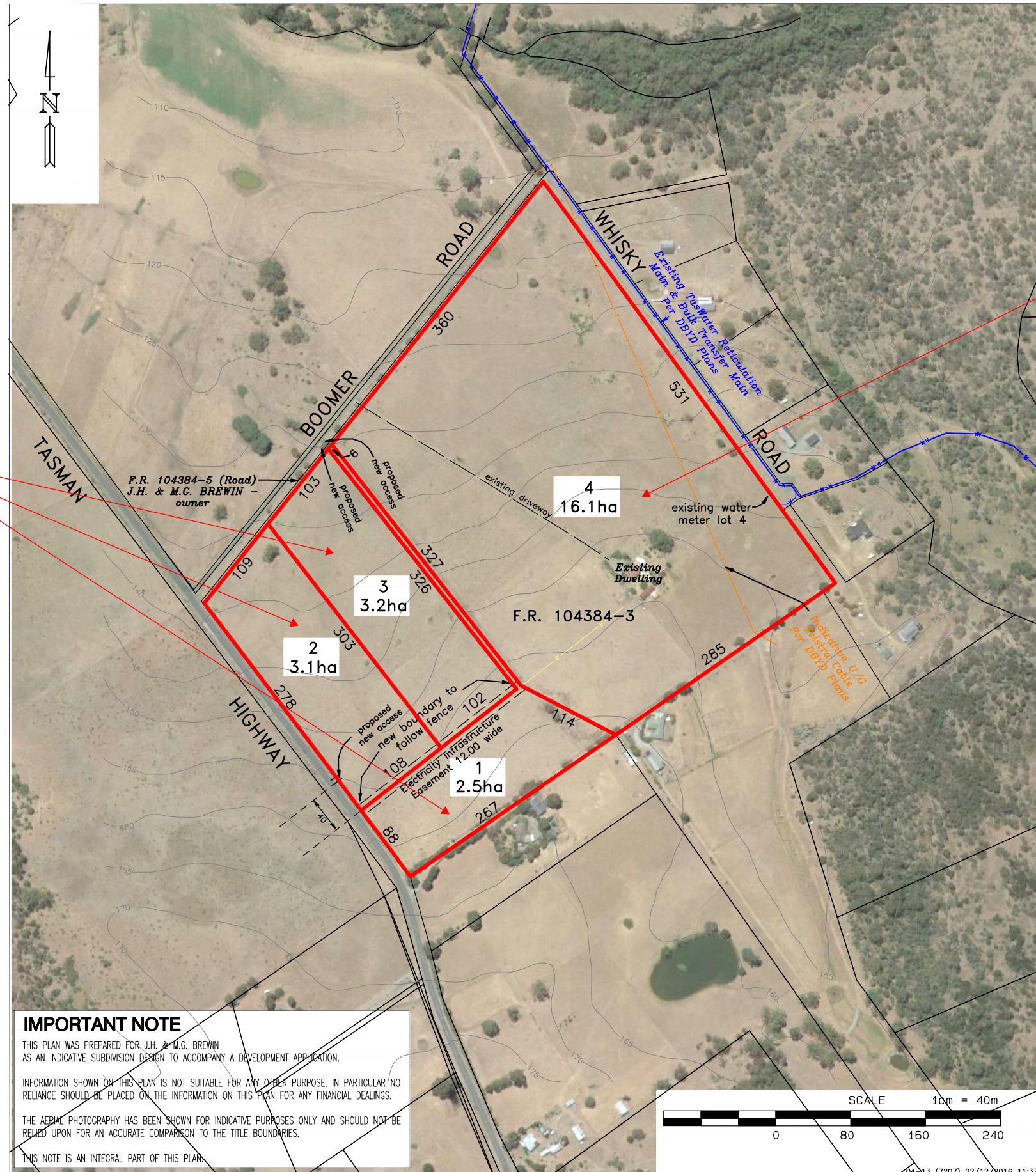
SOIL PROFILE LOG

CLIENT: J & M Brewin	HOLE NO.: 3
PROJECT: 16/17 TAS 037	DATE LOGGED: 29/08/2016
LOCATION: 40690 Tasman Highway, Waverley 7250	
METHOD: Hand Auger	

Depth (m)	Sample	Test	Graphic Log	Moisture	Consistency	Symbol		Comments
0.1-				M	F	SM	LOAM ; Dark brown, large number of rocks.	Topsoil
0.3-				M	F	CH	CLAY ; Light brown, large amount of rock, sticky.	
0.4-								Hole terminated at 0.4 m
0.6-								
0.9-								
1.1-								
1.3m-								
2.0-								
2.5-								

Sample:	Moisture:	Consistency Cohesive:	Consistency Noncohesive:	Density:	Soils:
U50 - 50mm tube	D - dry	VS - very soft	VL - very loose	VL - very loose	G - gravel
H - hand	SM - slightly moist	S - soft L - loose L - loose	L - loose	MD - medium dense	C - clay
Test:	M - moist	F - firm	MD - medium dense	D - dense	S - sand
V - shear vane	VM - very moist	St - stiff	D - dense	VD - very dense	M - silt
HP - Hand penetrometer	S - saturated	VSt - very stiff	VD - very dense		XW, DW, SW, FR, (ROCK)
UCS	W - free water	H - hard			





IRRIGATION AREA OF 420m² IS REQUIRED FOR EACH LOT. POSITIONING OF DWELLINGS IS UNKNOWN. IRRIGATION AREAS TO BE LOCATED, GIVING CONSIDERATION TO CONTOURS AND HOUSE LOCATIONS. CUT OFF DRAINS MAY BE REQUIRED. SUFFICIENT AREA FOR 100% RESERVE.

BALANCE LOT WITH EXISTING DWELLING AND SUFFICIENT WASTEWATER REQUIREMENTS.

NOTE: THERE IS SUFFICIENT AREA ON SITE TO ACCOMMODATE IRRIGATION REQUIREMENTS PER RJK CONSULTING ENGINEERS WASTEWATER ASSESSMENT FOR PLANNING PURPOSES.

Risden Knightley - 991537

Registered Professional Engineer
BE Civil MIEAust CPEng NPR
RPEQ 15425

14/10/2016

Tasmanian Accreditation No. CC2539X




IMPORTANT NOTE

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D	??	??
C	??	??
B	??	??
A	??	??

Rev	Details	Chk	Date
Address: Po Box 128 Prospect Tasmania 7250 Ph: 0400 642 469 Email: rjkmail@netspace.net.au			

PROPOSED NEW SUBDIVISION
40690 TASMAN HIGHWAY
WAVERLEY

WASTEWATER PLAN

J & M BREWIN

DO NOT SCALE. If in doubt ask for dimensions.

Surveyed	N/A	N/A	Checked	
Designed	N/A	N/A	Approved	
Drawn	N/A	N/A		

Scales A1 N/A	Scales A3	Job No. 16/17 TAS 037
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CAD Path\File path File Name	Sheet S 1	of Sheets	Rev. B
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The Contractor shall check all dimensions on site.
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Drip Irrigation Field - 40690 Tasman Highway, Waverley Proposed 4 Lot Subdivision

RJK Consulting Engineers

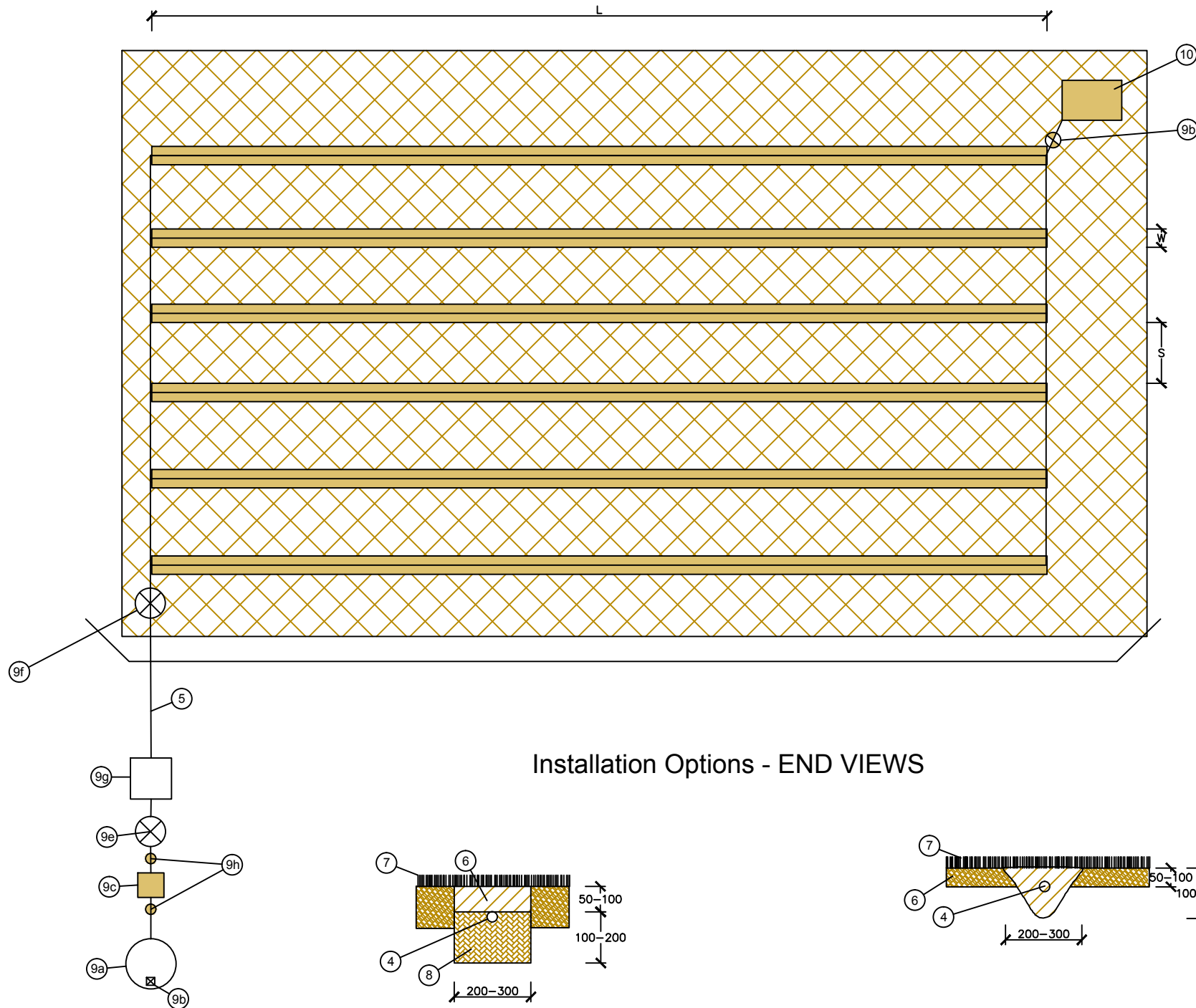
Civil
Structural
Maritime
Residential

ABP No. CC2539X

Postal Address
PO Box 128
Prospect
Tasmania 7250

Mob 0400642469

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rjkmail@netspace.net.au



Sub-surface Drip Irrigation - Design and Installation Requirements:

1. Approximate trench spacing (S) should be at least 1 m for conventional micro trenches and 0.5 m for the shallow ripped micro trench.
2. Trench length (L) and width (W) to be determined in accordance with specific hydraulic designs.
3. The total irrigation surface area 420m² (A=L x N) should be sized according to Council requirements and AS/NZS 1547 for sustainable effluent re-use. Where laterals spacing greater than 1 m, calculate irrigation area as 300 mm each side of lateral. Fields shall be no greater than 500 m², laterals shall follow contours as much as possible.
4. Pressure compensating sub-surface drip irrigation pipes, minimum of 13mm internal diameter, with dripper valves to be installed at 100-300 mm. Spacing should be less dense on highly permeable soils. "Non-drain" irrigation types preferred for sloping sites, mandatory for slopes greater than 15%.
5. Principal effluent distribution line from 25 mm (minimum) manifold.
6. Existing or imported top-soil.
7. Grass or suitable (short, non-intrusively rotting) plants.
8. 10-20 mm distribution aggregate.
9. Provisions and details should be made for the following components: (a) pumps - selection based on site-specific flow and pressure requirements of the installation; (b) pump well; (c) in-line filter - 150-200 micron or in accordance with manufacturers details; (d) scouring or flushing valves - provision to flush the system to a trench or back to the head works; (e) automatic air release valve - to evacuate air and prevent pressurisation in pipe work; (f) vacuum release valve - to prevent a vacuum sucking soil/water in to pipe work and; (g) indexing or rotor valve - where irrigation of multiple fields is required; (h) 400 kpa glycerine filled pressure gauges either side of filter. There must be no more than 70 kpa loss through the filter before it is cleaned.

10. The effluent flushed out during the regular maintenance can be either flushed into a sub-surface pit (150 mm depth, 1 m² area /field, filled with 10-20mm gravel at the bottom of each field, a combined pit at the bottom of all fields, or returned to the pump well at the top of the field provided that the pump is adequate to pump this head and volume.

11. The commissioning of the irrigation system should include a hydraulic test run to check for leaks and uneven distribution prior to back filling.

12. The irrigation area should be delineated by signs. Signs should indicate "Sewerage effluent pipe work is installed below. DO NOT DIG".

13. On completion of work a plan indicating the works as executed shall be provided to Council detailing any changes to the original design. Note that all alterations should be checked with Council prior to installation, and may in some cases require an amendment to the approval.

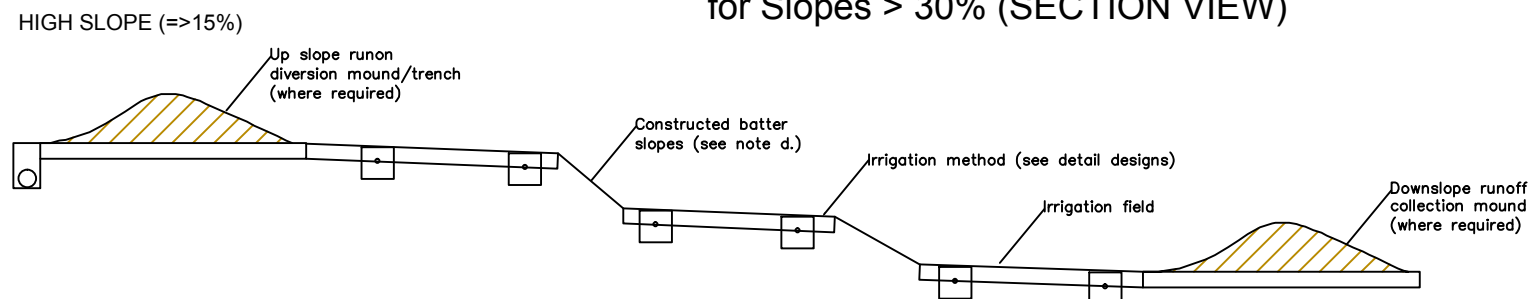
Notes:

- a. Irrigation design requires specialist knowledge, and should only be undertaken by people with adequate understanding and experience.
- b. If terracing is required, geotechnical design input will be required to ensure that effluent and trenches will not destabilise batters.
- c. All pipe work and fitting shall be installed as per manufacturers specifications and in compliance with AS2689 "Plastic Pipes and Fittings for Irrigation and Rural Application". Effluent grade pipe work shall be used if available on market.
- d. Subsurface irrigation field to be covered between 50-100mm topsoil, then planted with grass or other suitable cover.
- e. Surface stormwater and sub-surface seepage shall be diverted from the irrigation area. Construction of upslope sub-surface swale and/or drain may be necessary in poorly drained sites. Downstream containment swale may be necessary if upstream of sensitive receptor or close to property boundary.

Maintenance and Management:

1. The system operator should maintain the irrigation area regularly, to ensure adequate cover of the pipe work, elimination of weeds maintenance and harvesting of plants and shrubs.
2. A three monthly service is to be carried out by a service contractor authorised by Council to service the irrigation system. This should include: (1) a clean out of the filter; (2) system flush; (3) a check and clean of the vacuum breaker (if installed); (4) visual check and clean or air valve; (5) visual check and clean of indexing or rotor valve; (6) check for root intrusion or other forms of damage to irrigation field; and (7) visual check of the electrical system (refer problems to electrician).
3. A service report shall be prepared and a copy should be forwarded to council after each service.
4. Owners/operators should maintain servicing and inspection records.

Profile of Terraced Irrigation Field for Slopes > 30% (SECTION VIEW)



TABULATED SCALES REFER TO A3 SIZE DRAWING SHEET
DIMENSIONS ARE IN METRES - DO NOT SCALE. CHECK AND VERIFY ALL DIMENSIONS ON SITE, REFER DISCREPANCIES TO THE SUPERINTENDENT
ALL WORK SHALL BE CARRIED OUT IN ACCORDANCE WITH:
- APPLICABLE AUSTRALIAN STANDARDS
- LOCAL AUTHORITY REQUIREMENTS

Risden Knightley - 991537

Registered Professional Engineer
BE Civil MIEAust CPEng NPR
RPEQ 15425



14/10/2016

Tasmanian Accreditation No. CC2539X

PROJECT: 16/17 TAS 037
IRRIGATION DETAILS PER LOT

DRAWING: DESIGN
SUB-SURFACE IRRIGATION FIELD

DESIGNED: R.J.K. DRAWN: T.P. SCALE: N/A 01 1

CHECKED: R.J.K. DRAWING No. REV. 01 1



AS1547/2012 – Loading Certificate

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

Subdivision Site Address: 40690 Tasman Hwy, Waverley (CT 104384/3)

System Capacity: 7 persons @120L/person/day (per lot)

Summary of Design Criteria

DIR: 2 mm/day

Irrigation area: 420m² (per lot)

Reserve area location/use: Assigned

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 use of AWTS.

Overloading consequences: Continued overloading may cause hydraulic failure of the area and require upgrading/extension of the area. Risk considered acceptable due to ongoing maintenance inspections.

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 due to permanent occupancy.

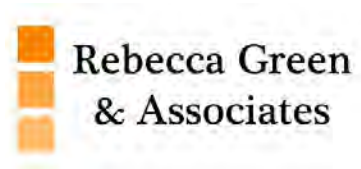
Lack of maintenance/monitoring consequences: Issues of underloading/overloading and condition of the irrigation area require monitoring and maintenance, if not completed system failure may result in unacceptable health and environmental risks. Monitoring and regulation by the permit authority required to ensure compliance.

Other considerations: Owners/occupiers must be made aware of the operational requirements and limitations of the system by the installer.

Prepared By:

Risden Knightley BE (Civil), Ass Dip Civil Eng, MIEAust, CC 2539X
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Appendix F: Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan

Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan

40690 Tasman Highway, Waverley



Prepared for (Client)

Joseph and Meredith Brewin

PO Box 232

NEWSTEAD TAS 7250

Assessed & Prepared by

Rebecca Green

Senior Planning Consultant & Accredited Bushfire Hazard Assessor

Rebecca Green & Associates

PO Box 2108 LAUNCESTON TAS 7250

Mobile: 0409 284 422

Version 1

4 January 2017

Job No: RGA-B518

Executive Summary

The proposed development at 40690 Tasman Highway, Waverley, is subject to bushfire threat. A bushfire attack under extreme fire weather conditions is likely to subject buildings at this site to considerable radiant heat, ember attack along with wind and smoke.

The site requires bushfire protection measures to protect the buildings and people that may be on site during a bushfire.

These measures include provision of hazard management areas in close proximity to the buildings, implementation of safe egress routes, establishment of a water supply and construction of buildings as described in AS 3959-2009 Construction of Buildings in Bushfire Prone Areas.

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Schedule 1 – Bushfire Report

1.0 Introduction

The Bushfire Attack Level (BAL) Report and Bushfire Hazard Management Plan (BHMP) has been prepared for submission with a Planning Permit Application under the *Land Use Planning and Approvals Act 1993; Bushfire-Prone Areas Code* and/or a Building Permit Application under the *Building Act 2016 & Regulations 2016*.

The Bushfire Attack Level (BAL) is established taking into account the type and density of vegetation within 100 metres of the proposed building site and the slope of the land; using the simplified method in AS 3959-2009 Construction of Buildings in Bushfire Prone Areas; and includes:

- The type and density of vegetation on the site,
- Relationship of that vegetation to the slope and topography of the land,
- Orientation and predominant fire risk,
- Other features attributing to bushfire risk.

On completion of assessment, a Bushfire Attack Level (BAL) is established which has a direct reference to the construction methods and techniques to be undertaken on the buildings and for the preparation of a Bushfire Hazard Management Plan (BHMP).

1.1 Scope

This report was commissioned to identify the Bushfire Attack Level for the existing property. ALL comment, advice and fire suppression measures are in relation to compliance with *Bushfire-Prone Areas Code* of the Launceston Interim Planning Scheme 2015, the Building Code of Australia and Australian Standards, *AS 3959-2009, Construction of buildings in bushfire-prone areas*.

1.2 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 and cannot be relied upon for any future development.
3. Impacts of future development and vegetation growth have not been considered.

No action or reliance is to be placed on this report; other than for which it was commissioned.

1.3 Proposal

The proposal is for the development of a 4 Lot Subdivision at 40690 Tasman Highway, Waverley. One lot currently exists; the proposal is for three additional lots.

Lot 1 will have an area of approximately 2.5 hectares and will front Tasman Highway and Boomer Road. Access will be off Boomer Road. Lot 1 will be vacant.

Lot 2 will have an area of approximately 3.1 hectares and will also front Tasman Highway and Boomer Road. Access will be off Tasman Highway. Lot 2 will be vacant.

Lot 3 will have an area of approximately 3.2 hectares and will front Boomer Road with access from Boomer Road. Lot 3 will be vacant.

Lot 4 will have an area of approximately 16.1 hectares and will front Boomer Road and Whisky Road. Lot 4 will contain an existing dwelling as well as a number of outbuildings.

2.0 Site Description for Proposal (Bushfire Context)

2.1 Locality Plan

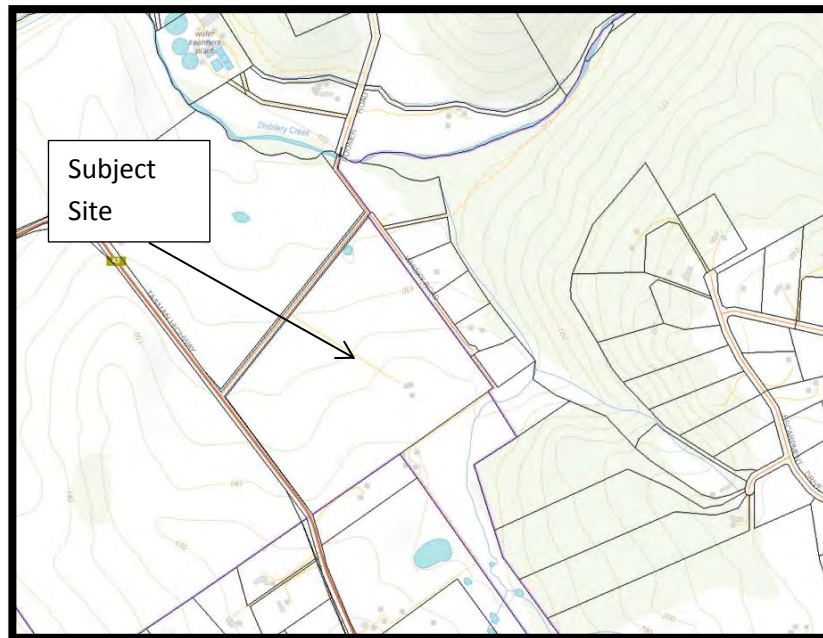


Figure 1: Location Plan of 40690 Tasman Highway, Waverley

2.2 Site Details

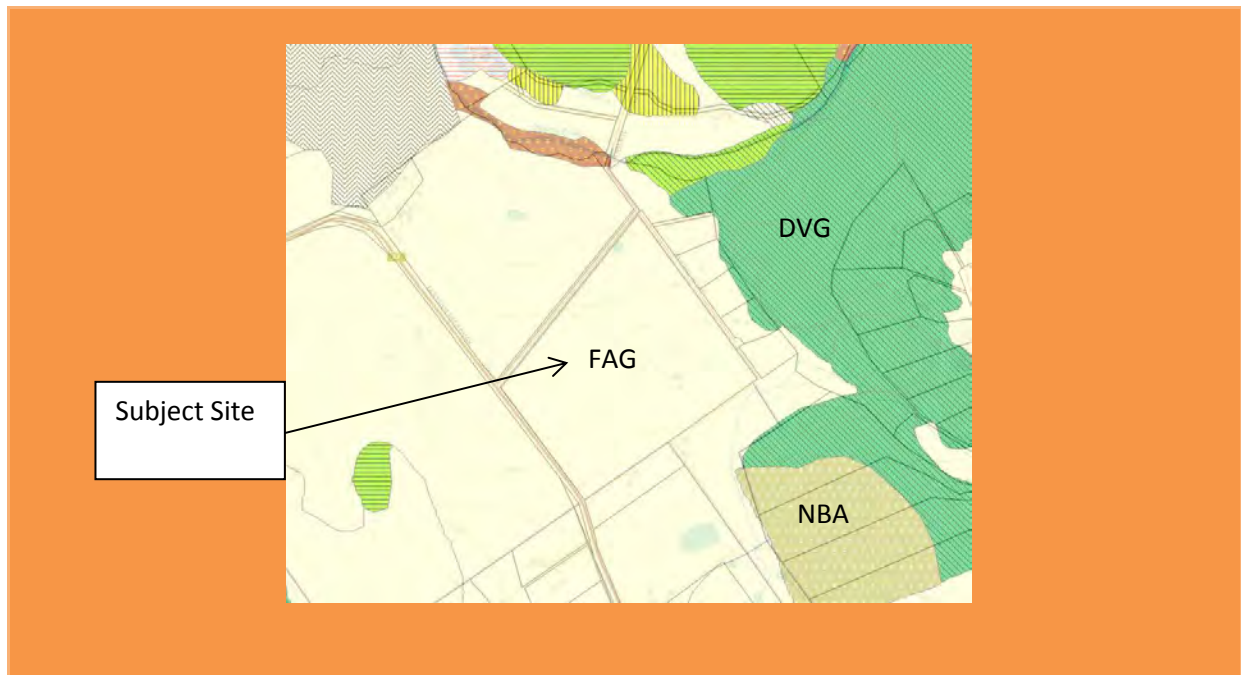
Property Address	40690 Tasman Highway, Waverley
Certificate of Title	Volume 104384 Folio 3
Owner	Joseph Henry Brewin and Meredith Grace Brewin
Existing Use	Rural and Residential
Type of Proposed Work	4 Lot Subdivision
Existing Structures	1 x dwelling and outbuildings
Water Supply	On-site for fire fighting for Lots 1, 2, and 3. Fire hydrants existing in Whisky Road only.
Road Access	Tasman Highway, Boomer Road, Whisky Road

3.0 Bushfire Site Assessment

3.1 Vegetation Analysis

3.1.1 TasVeg Classification

Reference to Tasmanian Vegetation Monitoring & Mapping Program (TASVEG) indicates the land in and around the property is generally comprising of varying vegetation types including:



Code	Species	Vegetation Group
FAG	<ul style="list-style-type: none"> Agricultural land 	Agricultural, urban and exotic vegetation
DVG	<ul style="list-style-type: none"> <i>Eucalyptus viminalis</i> grassy forest and woodland 	Dry eucalypt forest and woodland
NBA	<ul style="list-style-type: none"> <i>Bursaria</i> – acacia woodland and scrub 	Non eucalypt forest and woodland

3.1.2 Site & Vegetation Photos



CT 10206/1 from Tasman Highway



Looking towards Lot 2 from Tasman Highway



Looking north towards Lot 2 from Tasman Highway



Looking southwest from Lots 1 and 2



Looking southeast towards Lot 2 from Boomer Road



Looking north from Boomer Road towards CT104384/2



Looking towards access to Lots 1 and 3



Looking northwest towards CT104384/2 from Boomer Road



Existing access to Lot 4



Looking southwest to Lot 4 from near intersection of Whisky Road and Boomer Road



Looking south towards Lot 4 from Whisky Road



Looking northeast of Lot 4 from Whisky Road



Looking northeast of Lot 4 from Whisky Road



Looking southeast at end of Whisky Road



Looking south from end of Whisky Road



Looking southeast towards existing dwelling on Lot 4 from Whisky Road

3.2 BAL Assessment – Subdivision

The Acceptable Solution in Clause 1.6.1 of Interim Planning Directive No. 1 Bushfire-Prone Areas Code requires all lots within the proposed subdivision to demonstrate that each lot can achieve a Hazard Management Area between the bushfire vegetation and each building on the lot with distances equal to or greater than those specified in Table 2.4.4 of AS3959-2009 Construction of Buildings in Bushfire Prone Areas for **BAL 19**.

Lot 1

Vegetation classification AS3959	North <input type="checkbox"/> North-East <input checked="" type="checkbox"/>	South <input type="checkbox"/> South-West <input checked="" type="checkbox"/>	East <input type="checkbox"/> South-East <input checked="" type="checkbox"/>	West <input type="checkbox"/> North-West <input checked="" type="checkbox"/>
Group A	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest
Group B	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland
Group C	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land
Group D	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub
Group E	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga
Group F	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest
Group G	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland
	<input type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land	<input type="checkbox"/> Managed Land
Effective slope (degrees)	<input type="checkbox"/> Up/0°	<input checked="" type="checkbox"/> Up/0°	<input checked="" type="checkbox"/> Up/0°	<input type="checkbox"/> Up/0°
	<input checked="" type="checkbox"/> >0-5°	<input type="checkbox"/> >0-5°	<input type="checkbox"/> >0-5°	<input checked="" type="checkbox"/> >0-5°
	<input type="checkbox"/> >5-10°	<input type="checkbox"/> >5-10°	<input type="checkbox"/> >5-10°	<input type="checkbox"/> >5-10°
	<input type="checkbox"/> >10-15°	<input type="checkbox"/> >10-15°	<input type="checkbox"/> >10-15°	<input type="checkbox"/> >10-15°
	<input type="checkbox"/> >15-20°	<input type="checkbox"/> >15-20°	<input type="checkbox"/> >15-20°	<input type="checkbox"/> >15-20°
Likely direction of bushfire attack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Prevailing winds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
REQUIRED Distance to classified vegetation for BAL 19	11-<16m	10-<14m	10-<14m	11-<16m
REQUIRED Distance to classified vegetation for BAL 12.5	16-<50m	14-<50m	14-<50m	16-<50m

Lot 2

Vegetation classification AS3959	North <input type="checkbox"/> North-East <input checked="" type="checkbox"/>	South <input type="checkbox"/> South-West <input checked="" type="checkbox"/>	East <input type="checkbox"/> South-East <input checked="" type="checkbox"/>	West <input type="checkbox"/> North-West <input checked="" type="checkbox"/>
Group A	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest
Group B	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland
Group C	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land
Group D	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub
Group E	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga
Group F	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest
Group G	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland
	<input type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land
Effective slope (degrees)	<input type="checkbox"/> Up/0 ⁰	<input checked="" type="checkbox"/> Up/0 ⁰	<input checked="" type="checkbox"/> Up/0 ⁰	<input type="checkbox"/> Up/0 ⁰
	<input checked="" type="checkbox"/> >0-5 ⁰	<input type="checkbox"/> >0-5 ⁰	<input type="checkbox"/> >0-5 ⁰	<input checked="" type="checkbox"/> >0-5 ⁰
	<input type="checkbox"/> >5-10 ⁰	<input type="checkbox"/> >5-10 ⁰	<input type="checkbox"/> >5-10 ⁰	<input type="checkbox"/> >5-10 ⁰
	<input type="checkbox"/> >10-15 ⁰	<input type="checkbox"/> >10-15 ⁰	<input type="checkbox"/> >10-15 ⁰	<input type="checkbox"/> >10-15 ⁰
	<input type="checkbox"/> >15-20 ⁰	<input type="checkbox"/> >15-20 ⁰	<input type="checkbox"/> >15-20 ⁰	<input type="checkbox"/> >15-20 ⁰
Likely direction of bushfire attack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Prevailing winds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
REQUIRED Distance to classified vegetation for BAL 19	11-<164m	10-<14m	10-<14m	11-<16m
REQUIRED Distance to classified vegetation for BAL 12.5	16-<50m	14-<50m	14-<50m	16-<50m

Lot 3

Vegetation classification AS3959	North <input type="checkbox"/> North-East <input checked="" type="checkbox"/>	South <input type="checkbox"/> South-West <input checked="" type="checkbox"/>	East <input type="checkbox"/> South-East <input checked="" type="checkbox"/>	West <input type="checkbox"/> North-West <input checked="" type="checkbox"/>
Group A	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest
Group B	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland
Group C	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land
Group D	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub
Group E	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga
Group F	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest
Group G	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland
	<input type="checkbox"/> Managed Land	<input type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land
Effective slope (degrees)	<input type="checkbox"/> Up/0°	<input checked="" type="checkbox"/> Up/0°	<input checked="" type="checkbox"/> Up/0°	<input type="checkbox"/> Up/0°
	<input checked="" type="checkbox"/> >0-5°	<input type="checkbox"/> >0-5°	<input type="checkbox"/> >0-5°	<input checked="" type="checkbox"/> >0-5°
	<input type="checkbox"/> >5-10°	<input type="checkbox"/> >5-10°	<input type="checkbox"/> >5-10°	<input type="checkbox"/> >5-10°
	<input type="checkbox"/> >10-15°	<input type="checkbox"/> >10-15°	<input type="checkbox"/> >10-15°	<input type="checkbox"/> >10-15°
	<input type="checkbox"/> >15-20°	<input type="checkbox"/> >15-20°	<input type="checkbox"/> >15-20°	<input type="checkbox"/> >15-20°
Likely direction of bushfire attack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Prevailing winds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
REQUIRED Distance to classified vegetation for BAL 19	11-<16m	10-<14m	10-<14m	11-<16m
REQUIRED Distance to classified vegetation for BAL 12.5	16-<50m	14-<50m	14-<50m	16-<50m

Lot 4

Vegetation classification AS3959	North <input type="checkbox"/> North-East <input checked="" type="checkbox"/>	South <input type="checkbox"/> South-West <input checked="" type="checkbox"/>	East <input type="checkbox"/> South-East <input checked="" type="checkbox"/>	West <input type="checkbox"/> North-West <input checked="" type="checkbox"/>
Group A	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest	<input type="checkbox"/> Forest
Group B	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland	<input type="checkbox"/> Woodland
Group C	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land	<input type="checkbox"/> Shrub-land
Group D	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub	<input type="checkbox"/> Scrub
Group E	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga	<input type="checkbox"/> Mallee-Mulga
Group F	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest	<input type="checkbox"/> Rainforest
Group G	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland	<input checked="" type="checkbox"/> Grassland
	<input checked="" type="checkbox"/> Managed Land	<input type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land	<input checked="" type="checkbox"/> Managed Land
Effective slope (degrees)	<input type="checkbox"/> Up/0 ⁰	<input checked="" type="checkbox"/> Up/0 ⁰	<input checked="" type="checkbox"/> Up/0 ⁰	<input type="checkbox"/> Up/0 ⁰
	<input checked="" type="checkbox"/> >0-5 ⁰	<input type="checkbox"/> >0-5 ⁰	<input type="checkbox"/> >0-5 ⁰	<input checked="" type="checkbox"/> >0-5 ⁰
	<input type="checkbox"/> >5-10 ⁰	<input type="checkbox"/> >5-10 ⁰	<input type="checkbox"/> >5-10 ⁰	<input type="checkbox"/> >5-10 ⁰
	<input type="checkbox"/> >10-15 ⁰	<input type="checkbox"/> >10-15 ⁰	<input type="checkbox"/> >10-15 ⁰	<input type="checkbox"/> >10-15 ⁰
	<input type="checkbox"/> >15-20 ⁰	<input type="checkbox"/> >15-20 ⁰	<input type="checkbox"/> >15-20 ⁰	<input type="checkbox"/> >15-20 ⁰
Likely direction of bushfire attack	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
Prevailing winds	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input checked="" type="checkbox"/>
REQUIRED Distance to classified vegetation for BAL 19	11-<16m	10-<14m	10-<14m	11-<16m
REQUIRED Distance to classified vegetation for BAL 12.5	16-<50m	14-<50m	14-<50m	16-<50m

BAL – 12.5	The risk is considered to be LOW. There is a risk of ember attack. The construction elements are expected to be exposed to a heat flux not greater than 12.5 kW/m ² .
BAL – 19	The risk is considered to be MODERATE. There is a risk of ember attack and burning debris ignited by windborne embers and a likelihood of exposure to radiant heat. The construction elements are expected to be exposed to a heat flux not greater than 19 kW/m ² .

3.3 Outbuildings

Not applicable - existing.

3.4 Road Access

Roads are to be constructed to provide vehicle access to the site to assist firefighting and emergency personnel to defend the building or evacuate occupants; and provide access at all times to the water supply for firefighting purposes on the building site.

Private access roads are to be maintained from the entrance to the property cross over with the public road through to the buildings on the site.

New – Lots 1, 2 and 3 Road Access and Driveways	Access via direct road frontage Private access driveway / roads are to be constructed from the entrance of the property cross over at the public road through to the buildings and on-site dedicated fire fighting water supply (if applicable). Private access roads are to be constructed/maintained to a standard not less than specified in Table E4.
Lot 4 Road Access and Driveways	Access via existing direct road frontage. Private access driveway / roads are to be <u>maintained</u> from the entrance of the property cross over at the public road through to the buildings and on-site dedicated fire fighting water supply. Private access roads are to be maintained to a standard not less than specified in Table E4.

Table E4: Standards for Property Access

The following design and construction requirements apply to property access length is 30 metres or greater or access for a fire appliance to a water connection point (dwelling and water connection point):

- (i) All weather construction;
- (ii) Load capacity of at least 20 tonnes, including for bridges and culverts;
- (iii) Minimum carriageway width of 4 metres;
- (iv) Minimum vertical clearance of 4 metres;
- (v) Minimum horizontal clearance of 0.5 metres from the edge of the carriageway;
- (vi) Cross falls of less than 3 degrees (1:20 or 5%);
- (vii) Dips less than 7 degrees (1:8 or 12.5%) entry and exit angle;
- (viii) Curves with a minimum inner radius of 10 metres;
- (ix) Maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads; and
- (x) Terminate with a turning area for fire appliances provided by one of the following:
 - a) A turning circle with a minimum inner radius of 10 metres;
 - b) A property access encircling the building; or
 - c) A hammerhead “T” or “Y” turning head 4 metres wide and 8 metres long.

3.5 Water Supply

A building that is constructed in a designated bushfire prone area must provide access at all times to a sufficient supply of water for firefighting purposes on the building site.

The exterior elements of a Habitable building in a designated Bushfire prone area must be within reach of a 120m long hose (lay) connected to –

- (i) A fire hydrant with a minimum flow rate of 600L per minute and pressure of 200kpa; or
- (ii) A stored water supply in a water tank, swimming pool, dam or lake available for firefighting at all times which has the capacity of at least 10,000L for each separate building.

New – Lots 1, 2, and 3 On-site Dedicated Fire Fighting Water Supply	On-site water supply is required.
Lot 4	No increase in risk – 1 x existing dwelling. On-site water supply is existing and existing fire hydrants in Whisky Road are within 120m hose lay of portion of Lot 4.

It should be recognised that although water supply as specified above may be in compliance with the requirements of the Building Code of Australia, the supply may not be adequate for all firefighting situations.

Table E7: Static Water Supply for Fire Fighting

Column 1		Column 2
Element		Requirement
A.	Distance between building area to be protected and water supply	<p>The following requirements apply:</p> <ol style="list-style-type: none"> (1) The building area to be protected must be located within 90 metres of the water connection point of a static water supply; and (2) The distance must be measured as a hose lay, between the water connection point and the furthest part of the building area.
B.	Static Water Supplies	<p>A static water supply:</p> <ol style="list-style-type: none"> (1) May have a remotely located offtake connected to the static water supply; (2) 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; (3) 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; (4) Must be metal, concrete or lagged by non-combustible materials if above ground; and (5) 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 400mm of the tank exterior is protected by: <ol style="list-style-type: none"> (a) Metal; (b) Non-combustible material; or (c) Fibre-cement a minimum 6mm thickness.
C.	Fittings, pipework and accessories (including stands and tank supports)	<p>Fittings and pipework associated with a water connection point for a static water supply must:</p> <ol style="list-style-type: none"> (1) Have a minimum nominal internal diameter of 50mm; (2) Be fitted with a valve with a minimum nominal diameter of 50mm; (3) Be metal or lagged by non-combustible materials if above ground; (4) Where buried, have a minimum depth of 300mm (compliant with AS/NZS 3500.1-2003 Clause 5.23); (5) Provide a DIN or NEN standard forged Storz 65mm coupling fitted with a suction washer for connection to fire fighting equipment; (6) Ensure the coupling is accessible and available for connection at all times; (7) Ensure the coupling is fitted with a blank cap and securing chain (minimum 220mm length); (8) Ensure underground tanks have either an opening at the top of not less than 250mm diameter or a coupling compliant with this Table; and

		<p>(9) Where a remote offtake is installed, ensure the offtake is in a position that is:</p> <ul style="list-style-type: none"> (a) Visible; (b) Accessible to allow connection by fire fighting equipment; (c) At a working height of 450-600mm above ground level; and (d) Protected from possible damager, including damage from vehicles.
D.	Signage for static water connections	<p>The water connection 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:</p> <ul style="list-style-type: none"> (1) Water tank signage requirements within AS 2304-2011 Water storage tanks for fire protection systems; or (2) The following requirements: <ul style="list-style-type: none"> (a) Be marked with the letter “W” contained within a circle with the letter in upper case of not less than 100mm in height; (b) Be in fade-resistant material with white reflective lettering and circle on a red background; (c) Be located within one metre of the water connection point in a situation which will not impede access or operation; and (d) Be no less than 400mm above the ground.
E.	Hardstand	<p>A hardstand area for fire appliances must be provided:</p> <ul style="list-style-type: none"> (1) No more than three metres from the water connection point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (2) No closer than six metres from the building area to be protected; (3) With a minimum width of three metres constructed to the same standard as the carriageway; and (4) Connected to the property access by a carriageway equivalent to the standard of the property access.

4.0 Bushfire-Prone Areas Code Assessment Criteria

Assessment has been completed below to demonstrate the BAL and BHMP have been developed in compliance with the Acceptable Solutions and/or the Performance Criteria as specified in the Bushfire-Prone Areas Code.

E1.4 – Exemptions – No increase in risk to existing dwelling on Lot 4. Adequate separation to boundaries is existing. Any future additions to the dwelling on Lot 4 will require a separate assessment, however, it is demonstrated that the lot can provide for a BAL 19 building area.

E1.5 Vulnerable Uses – Not applicable.

E1.6.1 Subdivision

E1.6.1.1 Hazard Management Areas		
Comments		
<input checked="" type="checkbox"/> A1	(b)	Specified distances for Hazard Management Areas for BAL 19 as specified on the plan are in accordance with AS3959. The proposal complies.
<input type="checkbox"/> P1		
E1.6.1.2 Public Access		
Comments		
<input checked="" type="checkbox"/> A1	(a)	Lot 4 contains an existing dwelling. Adequate separation to boundaries is existing. There is insufficient increase in risk to the existing dwelling by the proposed subdivision.
<input checked="" type="checkbox"/> A1	(b)	The private driveway to Lots 1, 2 and 3 will be constructed in accordance with Table E4. The property access is greater than 30 metres.
<input type="checkbox"/> P1		
<input checked="" type="checkbox"/> A2		Not applicable.
<input type="checkbox"/> P2	No PC	
E1.6.1.3 Water supply for fire fighting purposes		
Comments		
<input type="checkbox"/> A1		Not applicable.
<input type="checkbox"/> P1	No PC	
<input checked="" type="checkbox"/> A2	(a)	Lot 4 contains an existing dwelling. Adequate separation to boundaries is existing. There is insufficient increase in risk to the existing dwelling by the proposed subdivision.
<input checked="" type="checkbox"/> A2	(b)	It is proposed that Lots 1, 2 and 3 will need to have its own independent firefighting water supply as existing fire hydrants in Whisky Road are greater than 120m hose lay. A new dwelling on each lot is to be supplied with a stored water supply in a water supply tank at least 10,000 litres per building area to be protected, with a fitting suitable for TFS access.
<input type="checkbox"/> P2	No PC	

5.0 Layout Options

Not relevant to this proposal.

6.0 Other Planning Provisions

Not relevant to this proposal.

7.0 Conclusions and Recommendations

Mitigation from bushfire is dependent on the careful management of the site by maintaining reduced fuel loads within the hazard management areas and within the site generally and to provide sources of water supply dedicated for firefighting purposes and the construction and maintenance of a safe egress route.

The site has been assessed as demonstrating a building area that have the dimensions equal to or greater than the separation distance required for BAL 19 in Table 2.4.4 of AS 3959 – 2009 Construction of Buildings in Bushfire Prone Areas.

Access

Lots 1, 2 and 3 - The driveway to each lot is to be constructed of all-weather construction, with a minimum width of access of 4 metres.

Lot 4 – Existing access is not restricted.

Water Supplies

Lots 1, 2 and 3 - On-site water storage – 10,000 litre dedicated fire fighting water supply, water tank, swimming pool, dam or the like is to be provided.

Lot 4 – Insufficient increase in risk to existing dwelling.

Fuel Managed Areas

Hazard Management Areas as detailed within the plan shall be constructed and maintained as detailed in Schedule 2.

Schedule 2 – Bushfire Hazard Management Plan

Access Road (All lots):

Private access roads are to be constructed (Lots 1, 2 and 3) and maintained (Lot 4) from the entrance to the property cross-over with the public road through to the dwelling and water storage on the site.

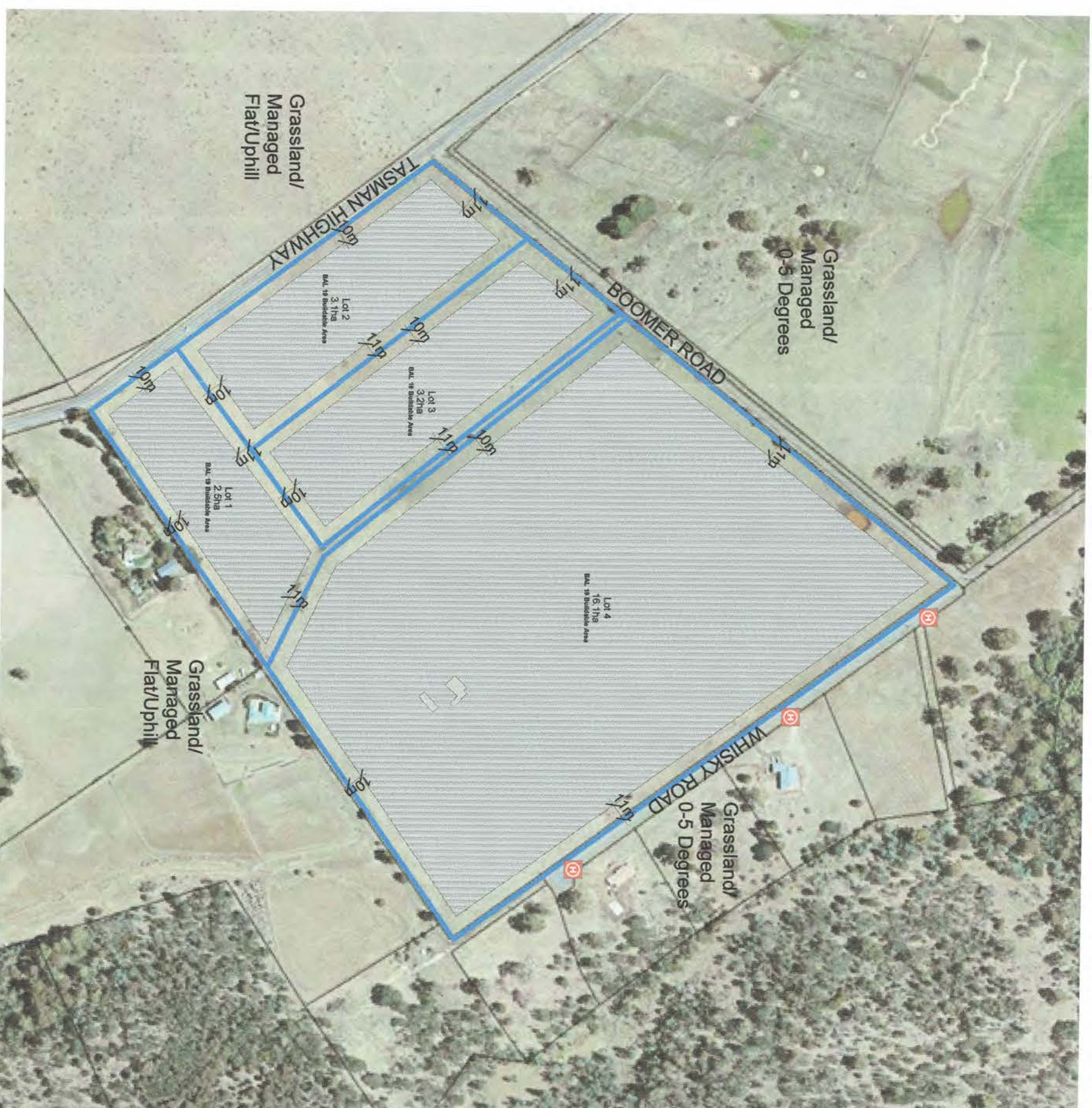
- > All-weather construction (minimum)
- > Minimum carriageway width of 4 metres
- >Vegetation must be cleared for a height of 4 metres above the carriageway and 0.5 metres each side of the carriageway
- >Must terminate with a turning area for fire appliances of either a turning circle with a minimum inner radius of 10 metres, a property access encircling the building, or a hammerhead "T" or "Y" turning head 4 metres wide and 8 metres long

Hazard Management- Vegetation Management:

Vegetation in the hazard management area (as dimensioned and shown) is to be managed and maintained in a minimum fuel condition

On-Site Water Storage (Lots 1, 2 and 3):

- 10,000 litre dedicated fire fighting water supply tank, Swimming pool, Dam or the like is to be provided as specified below:
- > Tanks above ground pipes and fittings must be made of non-rusting, non-combustible, non-heat-deforming materials
- > Tanks and fittings must be situated more than 6 metres from a building but contained within the hazard management area
- > Tanks must be fitted with a standard compliant forged storz 65mm adaptor fitted with a standard (delivery) washer rated to 1800KPa working pressure and 2400KPa burst pressure
- >The building area to be protected must be located within 90 metres of the water connection point of a static water supply (measured as a hose lay)



BUSHFIRE HAZARD MANAGEMENT PLAN

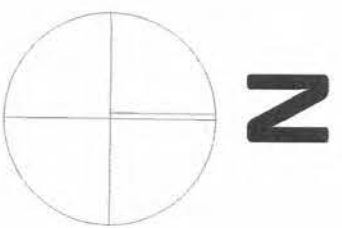
40690 Tasman Highway, Waverley

4 Lot Subdivision

Bushfire Attack Level - BAL 19

Date: 4 January 2017

Rebecca Green & Associates



Form 55

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: Owner /Agent
 Address
 Suburb/postcode

Qualified person details:

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

Qualifications and Insurance details: *(description from Column 3 of the Director of Building Control's Determination)*

Speciality area of expertise: *(description from Column 4 of the Director of Building Control's Determination)*

Details of work:

Address: Lot No:
 Certificate of title No:
The assessable item related to this certificate: *(description of the assessable item being certified)*
Assessable item includes –

- a material;
- a design
- a form of construction
- a document
- testing of a component, building system or plumbing system
- an inspection, or assessment, performed

Certificate details:

Certificate type: *(description from Column 1 of Schedule 1 of the Director of Building Control's Determination)*

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:	Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan (Rebecca Green & Associates, 4 January 2017, Job No. RGA-B518)
Relevant	N/A
References:	<i>Interim Planning Directive No 1, Bushfire-Prone Areas Code</i> <i>Australian Standard 3959-2009</i>

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

1. Assessment of the site Bushfire Attack Level to Australian Standard 3959
2. Bushfire Hazard Management Plan showing BAL-19 solutions.

Scope and/or Limitations

Scope

This report and certification was commissioned to identify the Bushfire Attack Level for the existing property. All comment, advice and fire suppression measures are in relation to compliance with *Interim Planning Directive No 1, Bushfire-Prone Areas Code* issued by the Tasmanian Planning Commission, the *Building Act 2016 & Regulations 2016, Building Code of Australia* and *Australian Standard 3959-2009, Construction of buildings in bushfire-prone areas*.

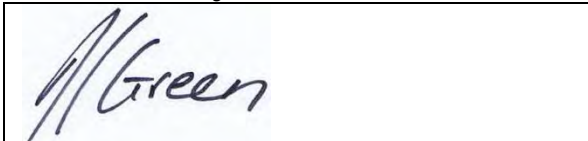
Limitations

The assessment 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 certificate.
2. The report only identifies the size, volume and status of vegetation at the time the inspection was undertaken and cannot be relied upon for any future development.
3. Impacts of future development and vegetation growth have not been considered.
4. No assurance is given or inferred for the health, safety or amenity of the general public, individuals or occupants in the event of a Bushfire.
5. No warranty is offered or inferred for any buildings constructed on the property in the event of a Bushfire.

No action or reliance is to be placed on this certificate or report; other than for which it was commissioned.

I certify the matters described in this certificate.

Qualified person:	<i>Signed:</i> 	<i>Certificate No.:</i> 4 January 2017	<i>Date:</i> RG-429/2016
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Attachment 1 – Certificate of Compliance to the Bushfire-prone Area Code

CODE E1 – BUSHFIRE-PRONE AREAS CODE

CERTIFICATE¹ UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies²

Land that is the Use or Development Site that is relied upon for bushfire hazard management or protection.

Name of planning scheme or instrument:

Launceston Interim Planning Scheme 2015

Street address:

40690 Tasman Highway, Waverley

Certificate of Title / PID:

CT 104374/3

Land that is not the Use or Development Site that is relied upon for bushfire hazard management or protection.

Street address:

Certificate of Title / PID:

2. Proposed Use or Development

Description of Use or Development:

4 Lot Subdivision

Code Clauses³:

E1.4 Exempt Development

E1.5.1 Vulnerable Use

E1.5.2 Hazardous Use

E1.6.1 Subdivision

¹ This document is the approved form of certification for this purpose, and must not be altered from its original form.

² If the certificate relates to bushfire management or protection measures that rely on land that is not in the same lot as the site for the use or development described, the details of all of the applicable land must be provided.

³ Indicate by placing X in the corresponding for the relevant clauses of E1.0 Bushfire-prone Areas Code.

3. Documents relied upon⁴

Documents, Plans and/or Specifications

Title: Plan of Subdivision, Ref: 04-13 (7207)

Author: Cohen & Associates P/L

Date: 15-12-2016 **Version:** A

Bushfire Report

Title: Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan

Author: Rebecca Green

Date: 4 January 2017 **Version:** 1

Bushfire Hazard Management Plan

Title: Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan

Author: Rebecca Green

Date: 4 January 2017 **Version:** 1

Other Documents

Title:

Author:

Date: **Version:**

⁴ List each document that is provided or relied upon to describe the use or development, or to assess and manage risk from bushfire. Each document must be identified by reference to title, author, date and version.

4. Nature of Certificate⁵

<input checked="" type="checkbox"/>	E1.4 – Use or development exempt from this code		
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
<input checked="" type="checkbox"/>	E1.4 (a)	Insufficient increase in risk	Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green, 4 January 2017 – Lot 4.

<input type="checkbox"/>	E1.5.1 – Vulnerable Uses		
	E1.5.1.1 Standards for vulnerable use		
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
<input type="checkbox"/>	E1.5.1.1 P1.	Risk is mitigated	
<input type="checkbox"/>	E1.5.1.1 A2.1	BHMP	
<input type="checkbox"/>	E1.5.1.1 A2.2	Emergency Plan	

<input type="checkbox"/>	E1.5.2 – Hazardous Uses		
	E1.5.2.1 Standards for hazardous use		
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
<input type="checkbox"/>	E1.5.2.1 P1.	Risk is mitigated	
<input type="checkbox"/>	E1.5.2.1 A2.1	BHMP	
<input type="checkbox"/>	E1.5.2.1 A2.2	Emergency Plan	

<input checked="" type="checkbox"/>	E1.6.1 – Development standards for subdivision		
	E1.6.1.1 Subdivision: Provision of hazard management areas		
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
<input type="checkbox"/>	E1.6.1.1 P1.	Hazard Management Areas are sufficient to mitigate risk	
<input type="checkbox"/>	E1.6.1.1 A1. (a)	Insufficient increase in risk	

⁵ The certificate must indicate by placing X in the corresponding for each applicable standard and the corresponding compliance test within each standard that is relied upon to demonstrate compliance to Code E1

<input checked="" type="checkbox"/>	E1.6.1.1 A1. (b)	Provides BAL 19 for all lots	Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green, 4 January 2017.
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E1.6.1.2 Subdivision: Public and fire fighting access			
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
<input type="checkbox"/>	E1.6.1.2 P1.	Access is sufficient to mitigate risk	
<input checked="" type="checkbox"/>	E1.6.1.2 A1. (a)	Insufficient increase in risk	Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green, 4 January 2017 – Lot 4.
<input checked="" type="checkbox"/>	E1.6.1.2 A1. (b)	Access complies with Tables E3, E4 & E5	Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green, 4 January 2017 – Lot 1,2, and 3.

E1.6.1.3 Subdivision: Provision of water supply for fire fighting purposes			
	Assessment Criteria	Compliance Requirement	Reference to Applicable Document(s)
<input type="checkbox"/>	E1.6.1.3 A1. (a)	Insufficient increase in risk	
<input type="checkbox"/>	E1.6.1.3 A1. (b)	Reticulated water supply is consistent with the objective	
<input type="checkbox"/>	E1.6.1.3 A1. (c)	Reticulated water supply complies with Table E6.	
<input checked="" type="checkbox"/>	E1.6.1.3 A2. (a)	Insufficient increase in risk	Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green, 4 January 2017 – Lot 4.
<input type="checkbox"/>	E1.6.1.3 A2. (b)	Static water supply is consistent with the objective	
<input checked="" type="checkbox"/>	E1.6.1.3 A2. (c)	Static water supply complies with Table E7.	Refer to Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan, prepared by Rebecca Green, 4 January 2017 – Lot 1, 2 and 3.

5. Bushfire Hazard Practitioner⁶

Name:	Rebecca Green	Phone No:	0409 284 422
Address:	PO Box 2108	Fax No:	
		Email Address:	admin@rgassociates.com.au
	Launceston, Tas		7250
Accreditation No:	BFP – 116	Scope:	1, 2, 3A, 3B, 3C

6. Certification⁷

I, certify that in accordance with the authority given under Part 4A of the Fire Service Act 1979 –

The use or development described in this certificate is exempt from application of Code E1 – Bushfire-Prone Areas in accordance with Clause E1.4 (a) because there is an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measure in order to be consistent with the objectives for all the applicable standards identified in Section 4 of this Certificate.



or

There is an insufficient increase in risk from bushfire to warrant the provision of specific measures for bushfire hazard management and/or bushfire protection in order for the use or development described to be consistent with the objective for each of the applicable standards identified in Section 4 of this Certificate.



and/or

The Bushfire Hazard Management Plan/s identified in Section 4 of this certificate is/are in accordance with the Chief Officer's requirements and can deliver an outcome for the use or development described that is consistent with the objective and the relevant compliance test for each of the applicable standards identified in Section 4 of this Certificate.



Signed:
certifier



Date:

4 January
2017

Certificate No:

RG-22/2017

⁶ A Bushfire Hazard Practitioner is a person accredited by the Chief Officer of the Tasmania Fire Service under Part IVA of *Fire Service Act 1979*. The list of practitioners and scope of work is found at www.fire.tas.gov.au.

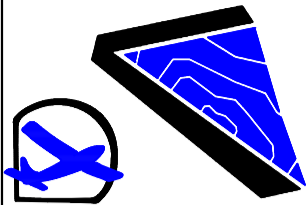
⁷ The relevant certification must be indicated by placing X in the corresponding .



Attachment 2 – AS3959-2009 Construction Requirements

	BAL-LOW	BAL-12.5	BAL-19	BAL-29	BAL-40	BAL-FZ (FLAME ZONE)
SUBFLOOR SUPPORTS	No special construction requirements.	No special construction requirements.	No special construction requirements.	Enclosure by external wall or by fixed frame or aluminium mesh. Non-combustible supports where the surface is non-combustible. For test wall timber slung or posts to 75 mm round timber.	Enclosure by external wall or reinforced concrete slab or non-combustible material such as fibre cement sheet or the non-combustible of the tested for timber resistance to AS 1530.8.1.	Structural supports – enclosure by external wall or non-combustible with an RL of 300/- or be tested for timber resistance to AS 1530.8.2.
FLOORS	No special construction requirements.	No special construction requirements.	No special construction requirements.	Concrete slab on ground, enclosure by external wall, metal mesh or framing less than 400 mm above ground level to be non-combustible, underlaid by the residential timber or protected on the underside with suitable mineral wool insulation.	Concrete slab on ground, enclosure by external wall or reinforced concrete slab or non-combustible material such as fibre cement sheet or the non-combustible of the tested for timber resistance to AS 1530.8.1.	Concrete slab on ground or enclosure by external wall or an RL of 300/0/30 or production of underside with 30 minute independent spread of the system or be tested for timber resistance to AS 1530.8.2.
EXTERNAL WALLS	No special construction requirements.	As per BAL-19	External walls – Part less than 400 mm above ground or decks etc to be of non-combustible material. 6 mm fibre cement clad or weather resistant/insulated for residential timber.	Non-combustible material (concrete, brick, masonry, metal deck, sprayed concrete, concrete, timber framed, stone framed walls) seated on the outside and clad with 9 mm fibre cement sheeting or this sheeting to be tested for timber resistance to AS 1530.8.1.	Non-combustible material (concrete, brick, masonry, metal deck, sprayed concrete, concrete) or timber framed or steel framed walls seated on the outside and clad with 9 mm fibre cement sheeting or steel sheeting or be tested for timber resistance to AS 1530.8.1.	Non-combustible material (concrete, brick, masonry, metal deck, sprayed concrete, concrete) or timber framed or steel framed walls seated on the outside and clad with 9 mm fibre cement sheeting or steel sheeting or be tested for timber resistance to AS 1530.8.2.
EXTERNAL WINDOWS	No special construction requirements.	As per BAL-19 except that 4 mm Grade 4 safety glass can be used in place of 5 mm tempered glass.	Protected by weather shield, completely protected with steel, masonry or aluminium mesh. 5 mm tempered or 4 mm safety glass over 400 mm of ground floor etc. Operable partitions enclosed with frame of metal or wood and/or PVC-U or weather resistant timber.	Protected by weather shield or completely protected with steel, masonry or aluminium mesh, or 5 mm tempered or 4 mm safety glass over 400 mm of ground floor etc. Operable partitions enclosed with frame of metal or wood and/or PVC-U or weather resistant timber.	Protected by weather shield or 5 mm tempered glass. Operable partitions screened with steel or bronze mesh.	Protected by weather shield or RL of 400/- and weather resistant screens enclosed with steel or bronze mesh or be tested for timber resistance to AS 1530.8.2.
EXTERNAL DOORS	No special construction requirements.	As per BAL-19 except that door framing can be substituted by the residential (high density) frame.	Protected by weather shield, or covered with steel, bronze or aluminium mesh or gasket with 5 mm tempered or 400 mm above threshold, metal or weather resistant timber framed for 400 mm above ground, including etc. tight fitting with weather strips at base.	Protected by weather shield, or covered with steel, masonry or aluminium mesh or non-combustible, or 35 mm solid timber, or 400 mm above threshold. Metal or weather resistant timber framed tight fitting with weather strips at base.	Protected by weather shield, non-combustible or 35 mm solid timber, metal framed tight fitting with weather strips at base.	Protected by weather shield or RL of 400/- and weather resistant screens enclosed with steel or bronze mesh or be tested for timber resistance to AS 1530.8.2.
ROOFS	No special construction requirements.	As per BAL-19	Non-combustible covering. Roof/wall junction sealed. Opening fitted with non-combustible external gasket. Roof to be fully sealed.	Non-combustible covering. Roof/wall junction sealed. Opening fitted with non-combustible external gasket. Roof to be fully sealed.	Non-combustible covering. Roof/wall junction sealed. Opening fitted with non-combustible external gasket. Roof to be fully sealed and no roof mounted evaporative coolers.	Roof with RL of 300/0/30 or tested for timber resistance to AS 1530.8.2. Roof/wall junction sealed. Opening fitted with non-combustible external gasket. No roof mounted evaporative coolers.
VERANDAS DECKS ETC.	No special construction requirements.	As per BAL-19	Enclosed sub-floor space – no special requirement for moderate winds within 400 mm of ground. No special requirements for supports or framing. Decking to be non-combustible or weather resistant with 300 mm timber joists and 400 mm vertically from a gasket element.	Enclosed sub-floor space or non-combustible or weather resistant timber supports. Decking to be non-combustible.	Enclosed sub-floor space or non-combustible supports. Decking to be non-combustible.	Enclosed sub-floor space or non-combustible supports. Decking to be non-combustible.

Attachment 3 – Plan of Subdivision – Cohen & Associates P/L



COHEN & ASSOCIATES P/L

LAND & AERIAL SURVEYORS

ABN 70 689 298 535

103 CAMERON STREET
PO BOX 990 LAUNCESTON 7250 TAS
TELEPHONE : 03 6331 4633

www.surveyingtas.com.au
EMAIL : admin@surveyingtas.com.au

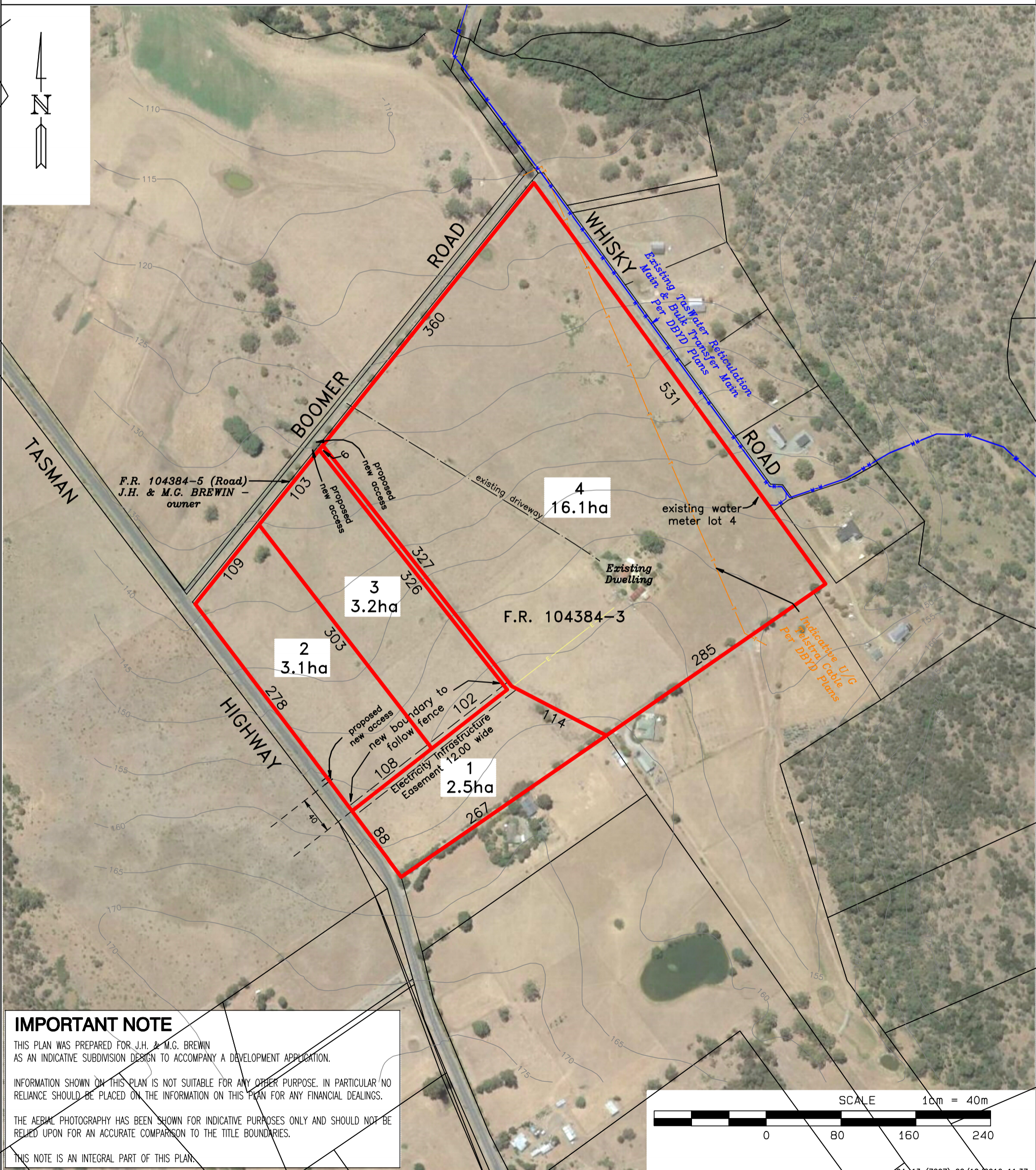
PLAN OF SUBDIVISION SHEET 1 OF 1

REF: 04-13
(7207)

Municipality: CITY OF LAUNCESTON
Site Address: 40690 TASMAN HIGHWAY, WAVERLEY
Tasmap Sheet: LAUNCESTON (5041)
Grid Reference: E: 517859 N: 5412657 (MGA)

Owners: J.H. & M.G. BREWIN
Title Refs: 104384-3
Dates: Version A: 15-12-2016
Version B:
Version C:
Scale: 1 : 4000 @ A3

DISCLAIMER: This is a preliminary plan prepared without field survey and forms part of an application to subdivide the land described and is not to be used for any other purpose. Contours and levels may be transcribed from other sources and their accuracy has not been verified. These should not be used. The dimensions, area, location of improvements and number of lots are approximate and may vary as a result of decisions by the Municipality, Land Use Planning Review Panel, engineering or other advice. Easements may not be shown as these are to be determined at the time of survey. The plan is not to be copied unless this note is included.



IMPORTANT NOTE

THIS PLAN WAS PREPARED FOR J.H. & M.G. BREWIN AS AN INDICATIVE SUBDIVISION DESIGN TO ACCOMPANY A DEVELOPMENT APPLICATION.

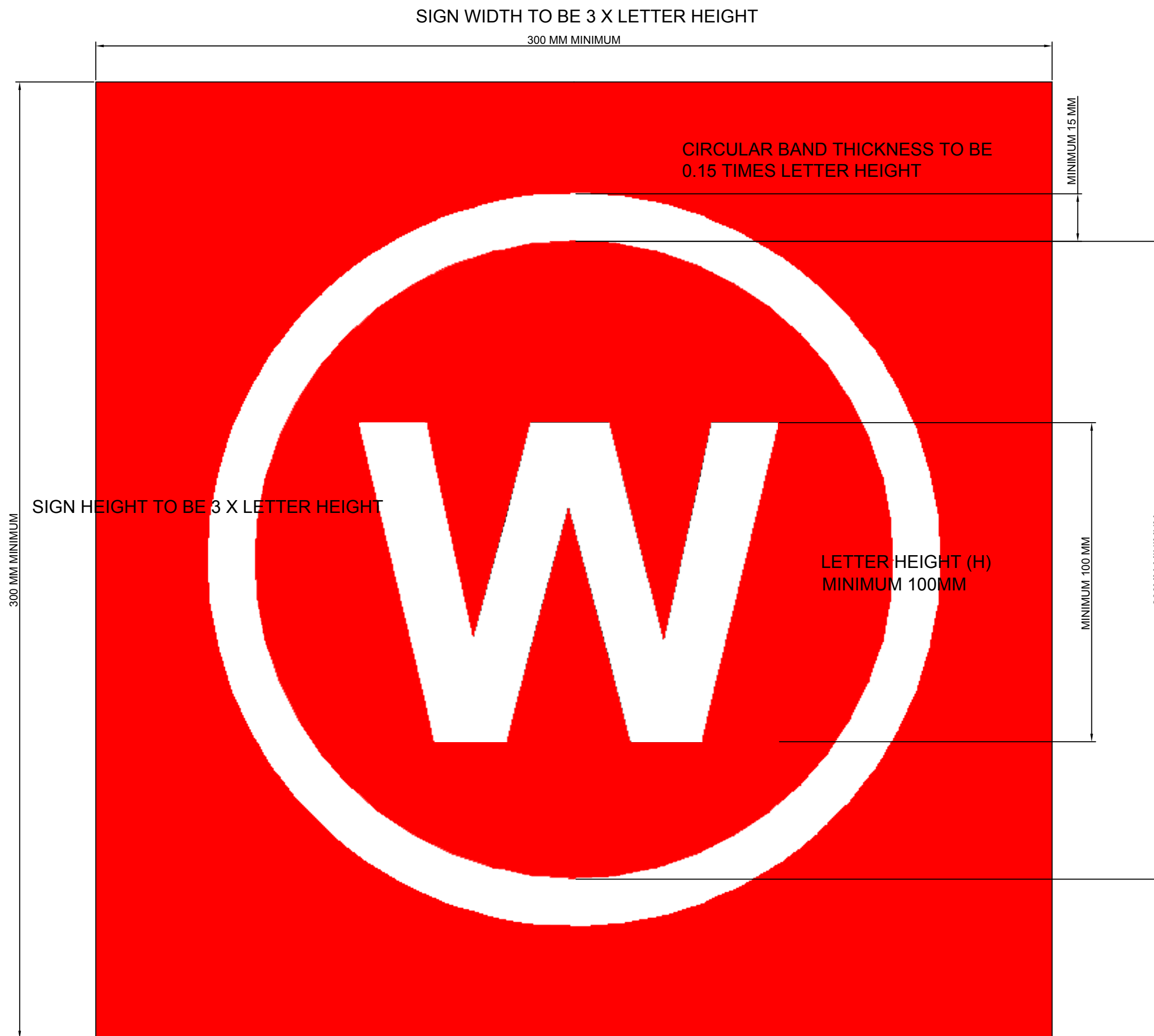
INFORMATION SHOWN ON THIS PLAN IS NOT SUITABLE FOR ANY OTHER PURPOSE. IN PARTICULAR NO RELIANCE SHOULD BE PLACED ON THE INFORMATION ON THIS PLAN FOR ANY FINANCIAL DEALINGS.

THE AERIAL PHOTOGRAPHY HAS BEEN SHOWN FOR INDICATIVE PURPOSES ONLY AND SHOULD NOT BE RELIED UPON FOR AN ACCURATE COMPARISON TO THE TITLE BOUNDARIES.

THIS NOTE IS AN INTEGRAL PART OF THIS PLAN.

Attachment 4 – Signage for Static Water Connections

10,000 LITRE DOMESTIC FIREFIGHTING STATIC WATER INDICATOR SIGN



LETTERING TO BE UPPERCASE AND NOT LESS THAN 100MM IN HEIGHT

INSIDE DIAMETER OF CIRCULAR BAND TO BE 2 TIMES LETTER HEIGHT

SIGN SIZE DIMENSIONS
3 X LETTER HEIGHT HIGH AND 3 X LETTER HEIGHT WIDE.

THICKNESS OF CIRCULAR BAND TO BE 0.15 TIMES LETTER HEIGHT

TEXT STYLE TO BE IN ACCORDANCE WITH AS1744.2015, SERIES F

SIGN TO BE IN FADE RESISTING MATERIAL WITH WHITE REFLECTIVE LETTERING AND CIRCLE ON A RED BACKGROUND

RED TO BE R-13 SIGNAL RED COLOUR CODE 1795U

WHITE SUBSTRATE COLOUR TO BE PMS 186C

SIGN TO BE CONSTRUCTED FROM UV STABILIZED, NON FLAMMABLE AND NON HEAT DEFORMING MATERIAL

SIGN TO BE PERMANENTLY FIXED



References

- (a) Tasmanian Planning Commission 2016, *Tasmanian Interim Planning Directive No. 1, Bushfire-Prone Areas Code*, Tasmania.
- (b) Australian Standards, AS 3959-2009, *Construction of buildings in bushfire-prone areas*, Standards Australia, Sydney NSW.
- (c) Resource Management & Conservation Division of the Department Primary Industry & Water September 2006, TASVEG, *Tasmanian Vegetation Map*, Tasmania.
- (d) Tasmanian Government, Land Information System Tasmania, www.thelist.tas.gov.au