Rebecca Green & Associates

Appendix A: Land Owners Consent

Tasmanian Planning Commission
PO Box 1691
Hobart Tas 7001

To whom it may concern,

Re: Application for Planning Scheme Amendment and Subdivision: 40690 Tasman Highway, Waverley

As owners of the property at 40690 Tasman Highway, Waverley, we authorise Rebecca Green of Rebecca Green and Associates to act as applicant on our behalf, in accordance with Section 43a) of the *Land Use Planning and Approvals Act 1993*.

Sincerely,

J. Brewin M. Brewin

Date: 31/3/2017

Rebecca Green & Associates

Appendix B: Certificate of Title

RESULT OF SEARCH

RECORDER OF TITLES

Issued Pursuant to the Land Titles Act 1980

Tasmanian Government

SEARCH OF TORRENS TITLE

VOLUME	FOLIO
104384	3
EDITION	DATE OF ISSUE
5	02-Sep-1998

SEARCH DATE : 31-Mar-2017
SEARCH TIME : 01.00 PM

DESCRIPTION OF LAND

City of LAUNCESTON
Lot 3 on Sealed Plan 104384
Derivation : Part of 122A-3R-OPs Granted to J. Waddell
Prior CT 50728/2

SCHEDULE 1

C97961 TRANSFER to JOSEPH HENRY BREWIN and MEREDITH GRACE BREWIN Registered 02-Sep-1998 at noon

SCHEDULE 2

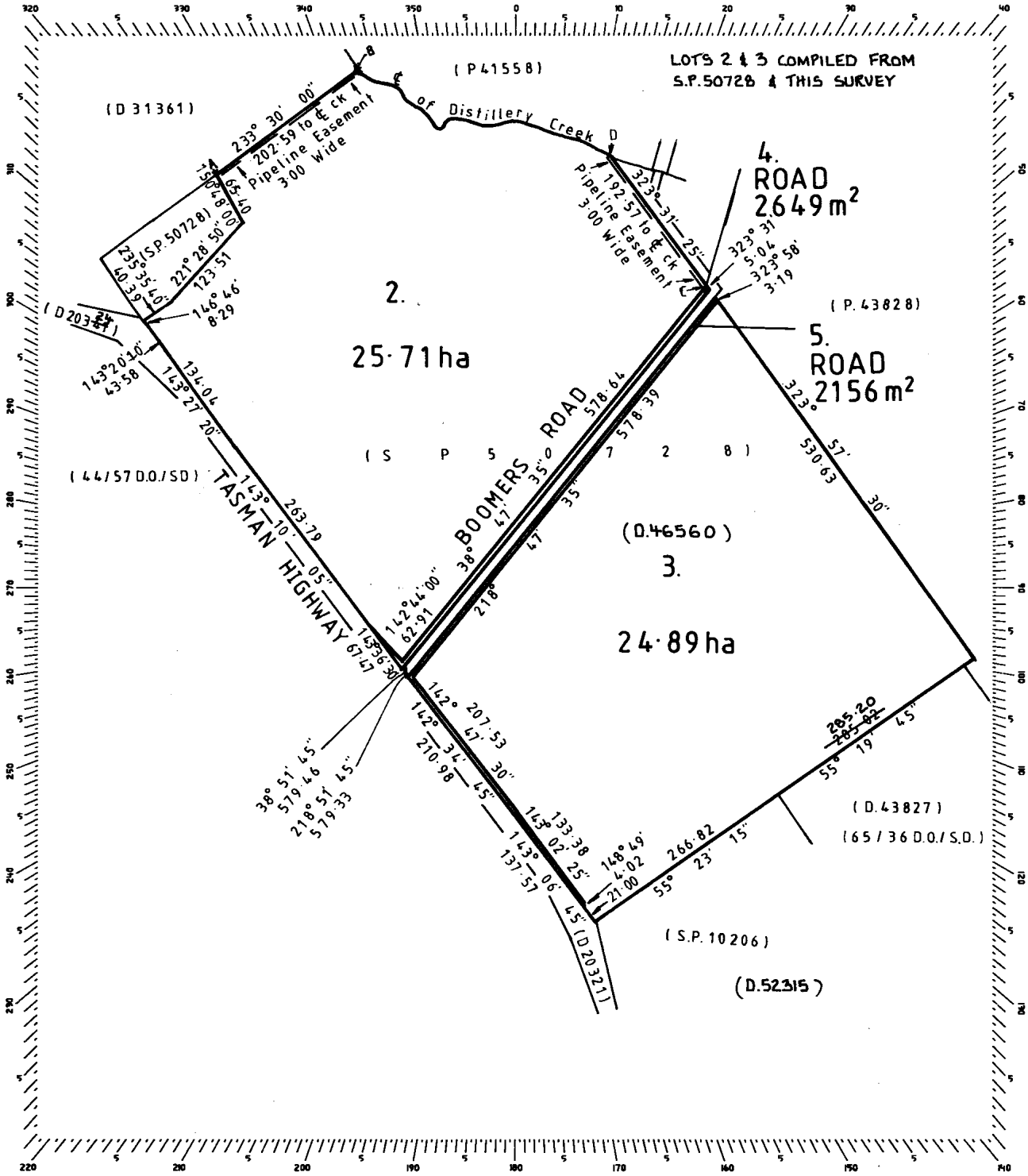
Reservations and conditions in the Crown Grant if any
SP104384 EASEMENTS in Schedule of Easements
SP 50728,SP104384 FENCING PROVISION in Schedule of Easements
SP 50728,SP104384 COUNCIL NOTIFICATION under Section 468(12) of the Local Government Act 1962
C97962 MORTGAGE to Commonwealth Bank of Australia Registered 02-Sep-1998 at 12.01 PM

UNREGISTERED DEALINGS AND NOTATIONS

No unregistered dealings or other notations

OWNER A.J. & J.L. Rosier A.V. & G.M. Rosier FOLIO REFERENCE ~~C.T. 4003 17~~ C.T. 50728-2 GRANTEE Part of 122a 3r 0p Gtd to John Waddell	**PLAN OF SURVEY** BY SURVEYOR S.A. Beattie of Stuart A. Beattie LOCATION Scottsdale **CITY OF LAUNCESTON** SCALE 1: 5000 LENGTHS IN METRES	REGISTERED NUMBER **SP104384** APPROVED EFFECTIVE FROM 19 APR 1993 Recorder of Titles

STATE MUNICIPAL CODE No.	LAST UPI No.	LAST SURVEY PLAN No.	ALL EXISTING SURVEY NUMBERS TO BE CROSS REFERENCED ON THIS PLAN
54	31952	S.P. 50728	



REGISTERED NUMBER

SCHEDULE OF EASEMENTS SP104384

NOTE:—The Town Clerk or Council Clerk must sign the certificate on the back page for the purpose of identification.

The Schedule must be signed by the owners and mortgagees of the land affected. Signatures should be attested.

EASEMENTS AND PROFITS

Each lot on the plan is together with:—

(1) such rights of drainage over the drainage easements shewn on the plan (if any) as may be necessary to drain the stormwater and other surplus water from such lot; and

(2) any easements or profits à prendre described hereunder.

Each lot on the plan is subject to:—

(1) such rights of drainage over the drainage easements shewn on the plan (if any) as passing through such lot as may be necessary to drain the stormwater and other surplus water from any other lot on the plan; and

(2) any easements or profits à prendre described hereunder.

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

EASEMENTS

LOT 2 is SUBJECT TO:

(1) The Pipeline Easement appurtenant to Lot 1 on Sealed Plan No. 50728 more fully set out in Sealed Plan No. 50728. over Pipeline Easement AB on t plan

(2) The full free and uninterrupted right and liberty (appurtenant to Lot 3 on the Plan) from time to time and at all times hereafter to:

(a) lay relay inspect maintain repair renew remove and cleanse a line or lines of water mains and water pipes and pumps on and under the surface of the "Pipeline Easement 3.00 wide marked C-D" (hereinafter referred to as "the Pipeline Easement" together with all such sluice and other valves manholes inspection openings stopcocks and other fittings of whatever nature as may be necessary or expedient

(b) to install poles wires and other necessary apparatus for the purpose of conveying electricity on under or over the surface of

the Pipeline Easement.

(c) to install and maintain a pump and to erect a building for use as a pump house on the surface of the Pipeline Easement.

and for all and any of those purposes the full free and uninterrupted right and liberty to go pass and repass over and along the Pipeline Easement with or without inspectors workmen servants or agents or machinery and for the purposes aforesaid to open and break up the soil of the Pipeline Easement and remove such materials doing as little damage as may be but without being responsible or held liable for any inconvenience to the owner or owners his or their heirs and assigns or occupiers for the time being of the Pipeline Easement.

LOT 3 is TOGETHER WITH the full free and uninterrupted right and liberty from time to time and at all times hereafter to:

(a) lay relay inspect maintain repair renew remove and cleanse a line or lines of water mains and water pipes and pumps on and under the surface of the the Pipeline Easement together with all such sluice and other valves manholes inspection openings stopcocks and other fittings of whatever nature as may be necessary or expedient

(b) to install poles wires and other necessary apparatus for the purpose of conveying electricity on under or over the surface of the Pipeline Easement.

(c) to install and maintain a pump and to erect a building for use as a pump house on the surface of the Pipeline Easement.

and for all and any of those purposes the full free and uninterrupted right and liberty to go pass and repass over and along the Pipeline Easement with or without inspectors workmen servants or agents or machinery and for the purposes aforesaid to open and break up the soil of the Pipeline Easement and remove such materials doing as little damage as may be but without being responsible or held liable for any inconvenience to the owner or owners his or their heirs and assigns or occupiers for the time being of the Pipeline Easement.

FENCING PROVISION

In respect of each Lot the Vendors (Allan Vincent Rosier, Gwendolyn May Rosier, Alan James Rosier and Judith Lynette Rosier) shall not be required to fence.

SIGNED by ALLAN VINCENT ROSIER)
GWENDOLYN MAY ROSIER ALAN JAMES)
ROSIER and JUDITH LYNETTE ROSIER)
the registered proprietors of the)
land comprised in Folio of the)
Register Volume 4803 Folio 17 in)
the presence of:-)

Witness:
Address:
Occupation:

This is the schedule of easements attached to the plan of A.J. & J.L. Rosier
(Insert Subdivider's Full Name)

A.V. & G.M. Rosier affecting land in

CT 4803 – 17
(Insert Title Reference)

Sealed by CITY OF LAUNCESTON on 1st April 1993

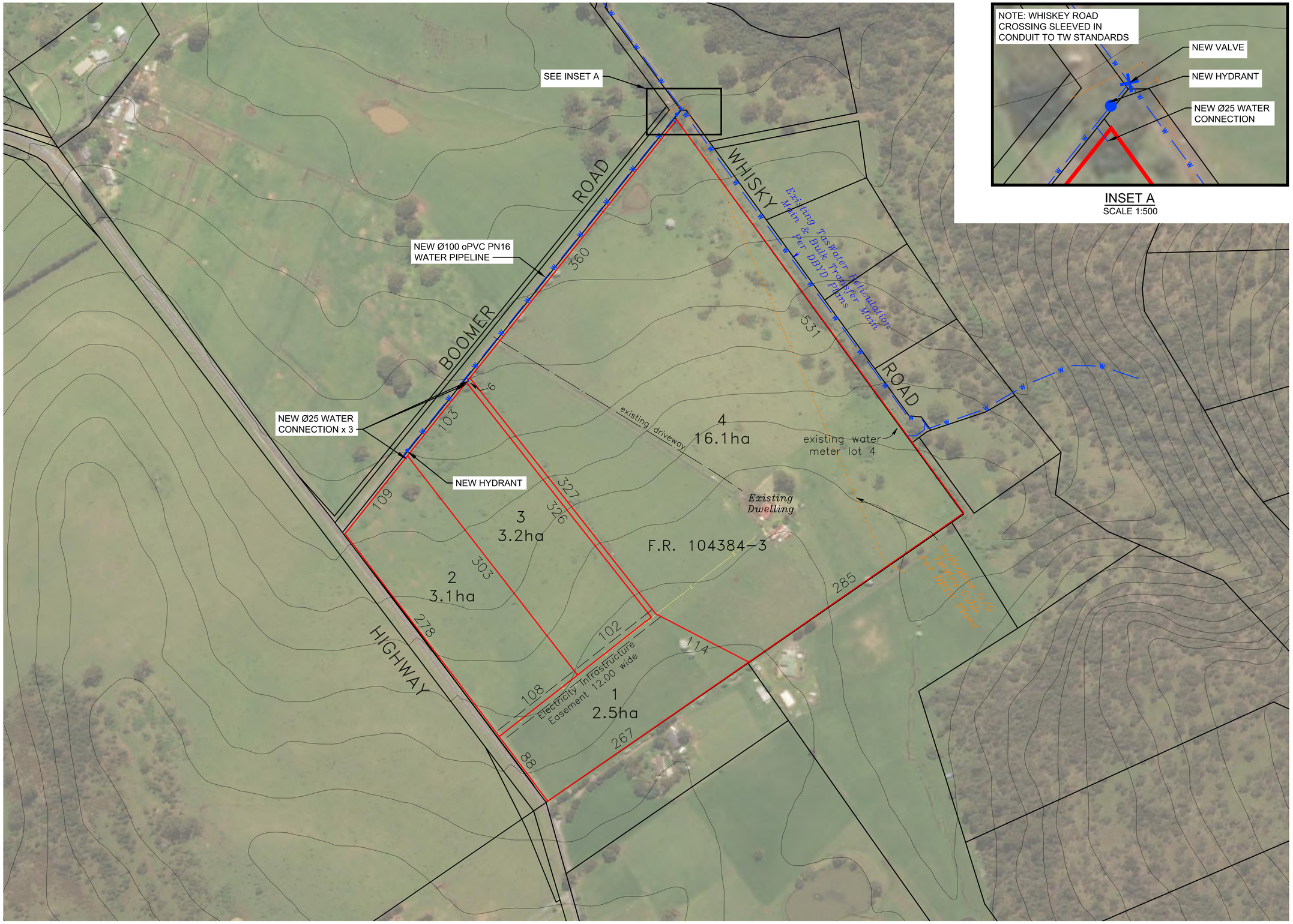
Solicitor's Reference

Council Clerk/Town Clerk
Corporate Secretary/ M. Reynolds

OS K 31 34

Rebecca Green & Associates

Appendix C: Plan of Subdivision



PLAN
SCALE 1:2000

INSET A
SCALE 1:500

39 Paterson Street Launceston
Tasmania 7250
Phone (03) 6331 6968
Mob 0419 374 975
Email admin@ipdconsulting.com.au

IPD Consulting
Infrastructure Planning & Design

FOR COMMENT

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

REVISIONS

Client:

Project Manager:

Project:

Drawing Title:

Original Size:	Drawn:	Approved:	Date:
A1	BH	AH	02/10/17

Scale:	Drawing No:	Rev:
AS SHOWN		A

Rebecca Green & Associates

Appendix D: Agricultural Report

Land Capability Report

Prepared for: Joe Brewin

Property Title Reference: 10438/3 & 104384/5

40690 Tasman Highway
Waverly

This land capability report refers to the assessment of the property title 104384/3 and 104384/5, and is located on 40690 Tasman Highway, Waverly.

Land Capability Class	Land Characteristics						Land Management Issues		
	Geology & Soils	Slope %	Topography & Elevation	Erosion Type & Severity	Climatic Limitations	Soil Qualities	Main Limitations to Agricultural Use	Main Land Management Requirements	Agricultural Versatility
6rc	Dolerite geology, with a brown Dermosol soil type present. This Dermosol soil has a relatively low water holding capacity Rocky outcrops and smaller stone fragments are present on the surface and throughout the soil profile, particularly in the western and northern areas of the property.	0-5	Flat to gently sloping. 154-160 m ASL	Light to medium Rill and sheet erosion on exposed soils due to surface water movement.	This site experiences a high incidence of frosts, short growing season, and lower pasture growth rates. Due to the site's exposure to prevailing westerly winds this site experiences a higher level of soil evaporation, and as a consequence the potential spring and summer pasture growth rates are limited.	Well drained.	The land productivity is limited by; — Low pasture growth rates during winter — These soils have a low soil moisture holding capacity — Short spring growing season — Significant amount of stone present throughout the soil profile — Rock outcrops present on the property, particularly on the western and northern area	Avoid situations that lead to the exposure of bare soil, therefore maintain sufficient ground cover, avoid over-grazing, and reduce grazing pressure in these areas during wetter periods.	Suitable for low intensity seasonal grazing, with a limited stocking rate potential. A high level supplementary feeding would be required for livestock grazing these pastures.
6erc		3-14	Gentle to moderately sloping. 124-152 m ASL	Medium severity. Rill and sheet erosion on exposed soils due to surface water movement.		Well drained, except for the land located in south eastern area property due to the presence of bedrock close to the surface.			Suitable for low intensity seasonal grazing, with a limited stocking rate potential. A high level supplementary feeding would be required for livestock grazing these pastures.

Land assessed in accordance with the Land Capability Survey of Tasmania, DPIWE 2000.

Property Land Capability Assessment

The Class 6 land on this property is considered unsuitable for horticultural cropping purposes, and only has a limited grazing potential.

This property has a very low agricultural productivity potential, and is limited by;

- low fertility and relatively shallow soils
- low soil moisture holding capacity
- presence of rocky outcrops over the property and stone throughout the soil profile
- relatively high incidence of frost during winter
- high exposure to prevailing westerly winds
- difficulties (economic and practical) associated with renovating and improving the existing pastures into an economically viable and productive grazing feed base

The land in the vicinity of this property has been traditionally used for “rough” seasonal sheep grazing, which relied upon large areas of land grazed infrequently at a low stocking rate (typically 5-8 DSE/ha) and due to the limitations mentioned above this land is not considered to be agriculturally productive.

The pastures present on this property could be partially improved, such as the introduction of hardy grasses and legume cultivars. Due to the widespread presence of rocky outcrops and surface stone over the property drilling new seed is not possible and therefore the only practical method of pasture renovation would be by broadcasting on the seed, however this will result in a reduced plant establishment due to poor seed to soil contact.

There is no prime agricultural land in the immediate vicinity of this property, and the nearest prime agricultural Class ≤3 land is located approximately 3,500 m away to the south of St Leonards.

SERVE-AG

Map of the Property

The following image shows the property 104384/3 & 104384/5 on 40690 Tasman Highway.

Images of the property 104384/3 & 104384/5 on 40690 Tasman Highway.

Image#1; example of the outcrop of rock present over the property

Image#2; top soil profile of the Dermosol soil type present throughout the property

This report was prepared by;

Jason Lynch B.App.Sci.(hort)

Senior Agronomist
Serve-Ag Pty Ltd

Work 64560790
Fax 64521998
Mobile 0409979428
Email jlynch@serve-ag.com.au

Rebecca Green & Associates

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: rjkmail@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.

Municipality	Launceston
Location	40690 Tasman Highway, Waverley
Client	J & M Brewin
Address	As Detailed
Telephone Contact	N/A
Title Reference	104384/3
Desktop Study	14 October 2016
Water Supply	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 (m2)	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 optomisation 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.

RISK	***ESTIMATED LEVEL***	***MITIGATION MEASURES & REASSESSED RISK LEVEL***
Wastewater System Hydraulic Failure	High	Ensure good depth of topsoil and drip irrigate wastewater into well planted irrigation field. ***(LOW)***
Marginal Soil Conditions/Removal of Vegetation	Medium	Ensure sufficient topsoil depth and plant density. ***(LOW)***
Pipe Blockage	Medium	Provision of system care and maintenance guidelines to homeowner by manufacturer. ***(LOW)***
Wastewater Biological Failure	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)***

Biological Failure from Chemical Poisoning	High	Education of property owners. Use of low sodium/phosphorous products. ***(LOW)***
Pipe Damage	High	The infiltration area is to be protected by fencing or by other appropriate means. No vehicles or animal compaction. ***(LOW)***
Appropriate Installation	High	Installation by suitably qualified and endorsed AWTS installer. Inspection required to ensure appropriate installation. ***(LOW)***
Erosion	Low	Area slopes to northeast and northwest. Erosion likely. ***(LOW)***
Impact of Reserve Provisions	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 420m^2 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 420m^2 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

RJK Consulting Engineers
ABN 71162701528
PO Box 128 PROSPECT TAS 7250
Phone 0400 642 469

SOIL P R O F I L E L O G

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

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

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 P R O F I L E L O G

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

Depth (m)	Sample	Test	Graphic Log	Moisture	Consistency	Symbol		Comments
0.1				M	F	SM	**LOAM**; Dark brown, large number of rocks.	Topsoil
0.3-0.4				M	F	CH	**CLAY**; Light brown, large amount of rock, sticky.	
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
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			

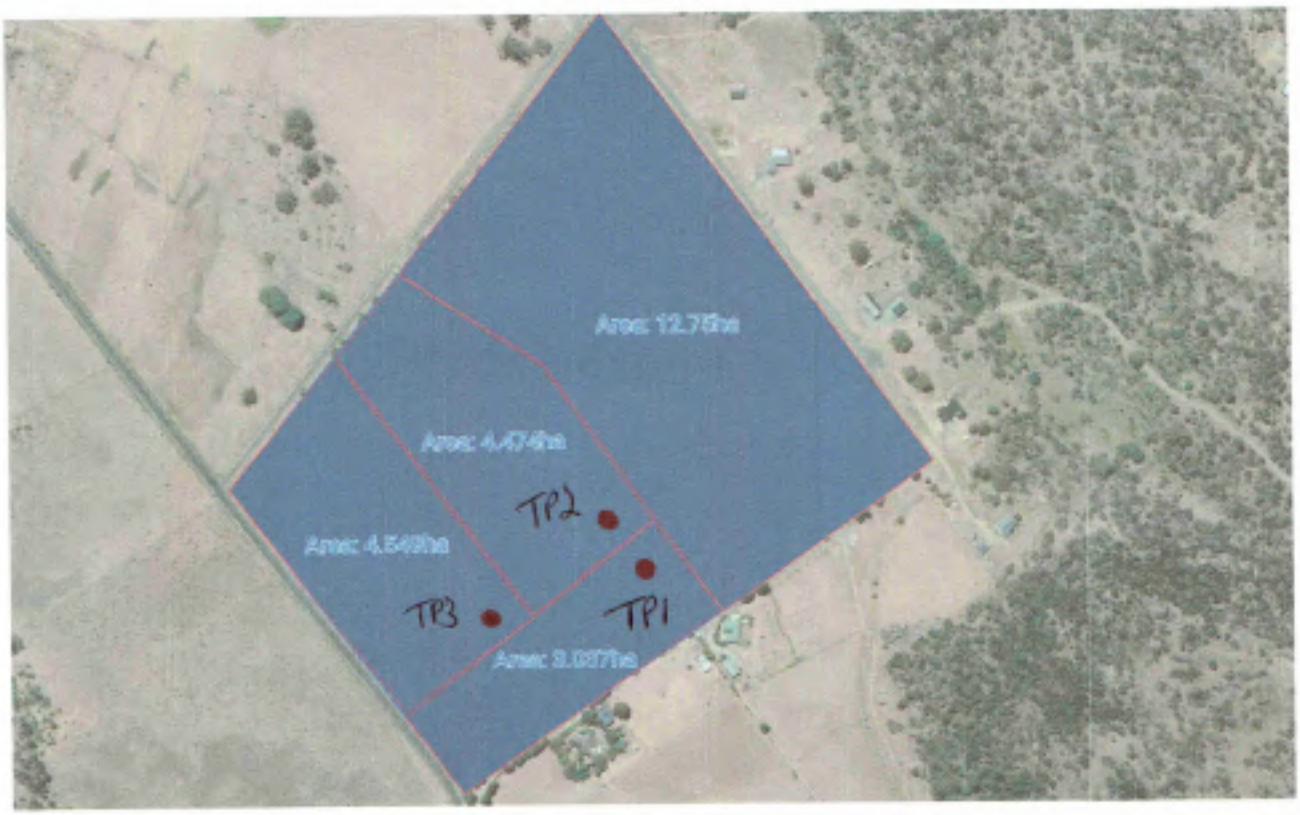
RJK Consulting Engineers
ABN 71162701528
PO Box 128 PROSPECT TAS 7250
Phone 0400 642 469

SOIL P R O F I L E L O G

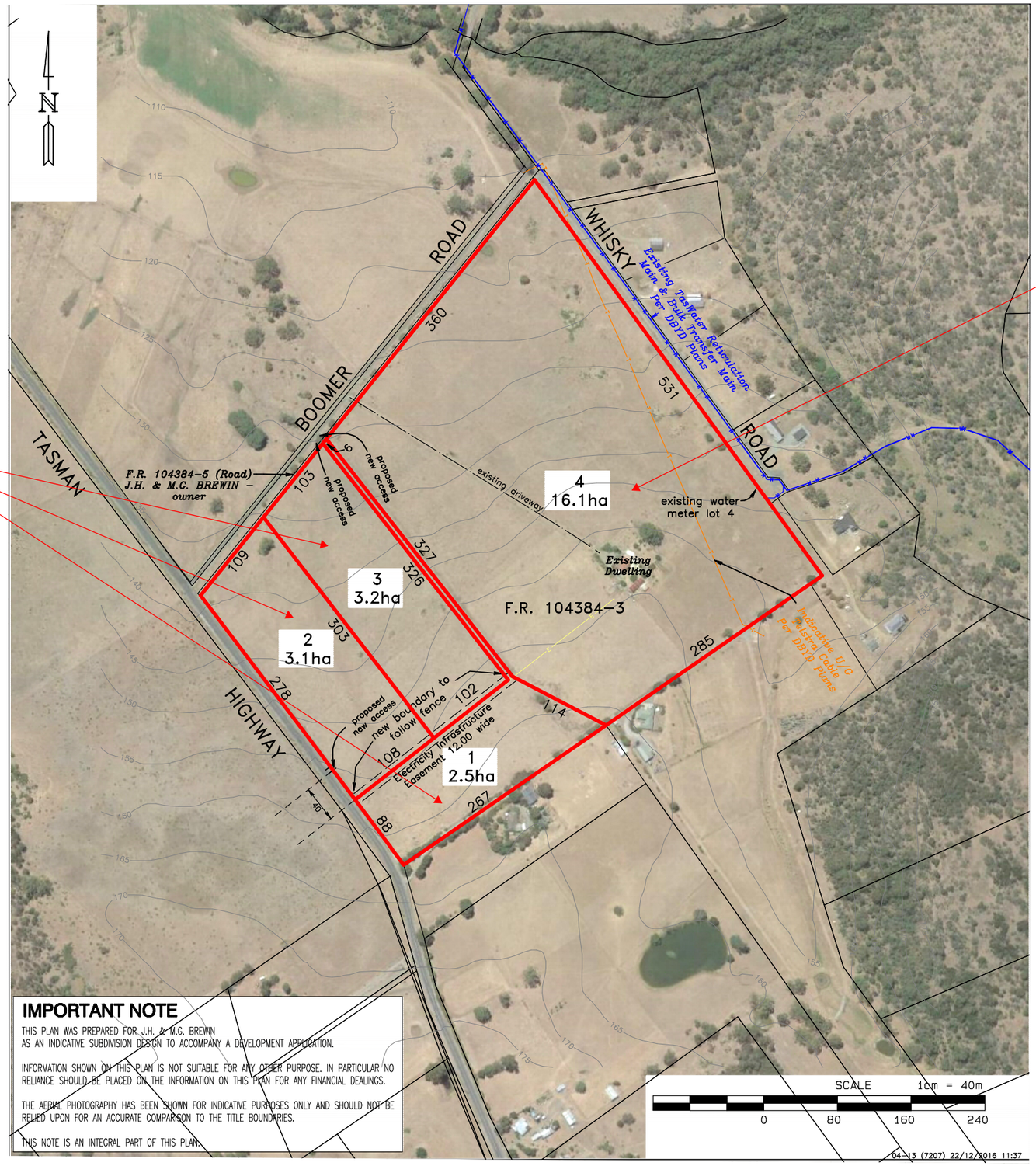
CLIENT: J & M Brewin
PROJECT: 16/17 TAS 037
LOCATION: 40690 Tasman Highway, Waverley 7250 **HOLE NO.:** 3
METHOD: Hand Auger **DATE LOGGED:** 29/08/2016

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

Rev	Details	Chk	Date
D	?? ??		??
C	?? ??		??
B	?? ??		??
A	?? ??		??

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.

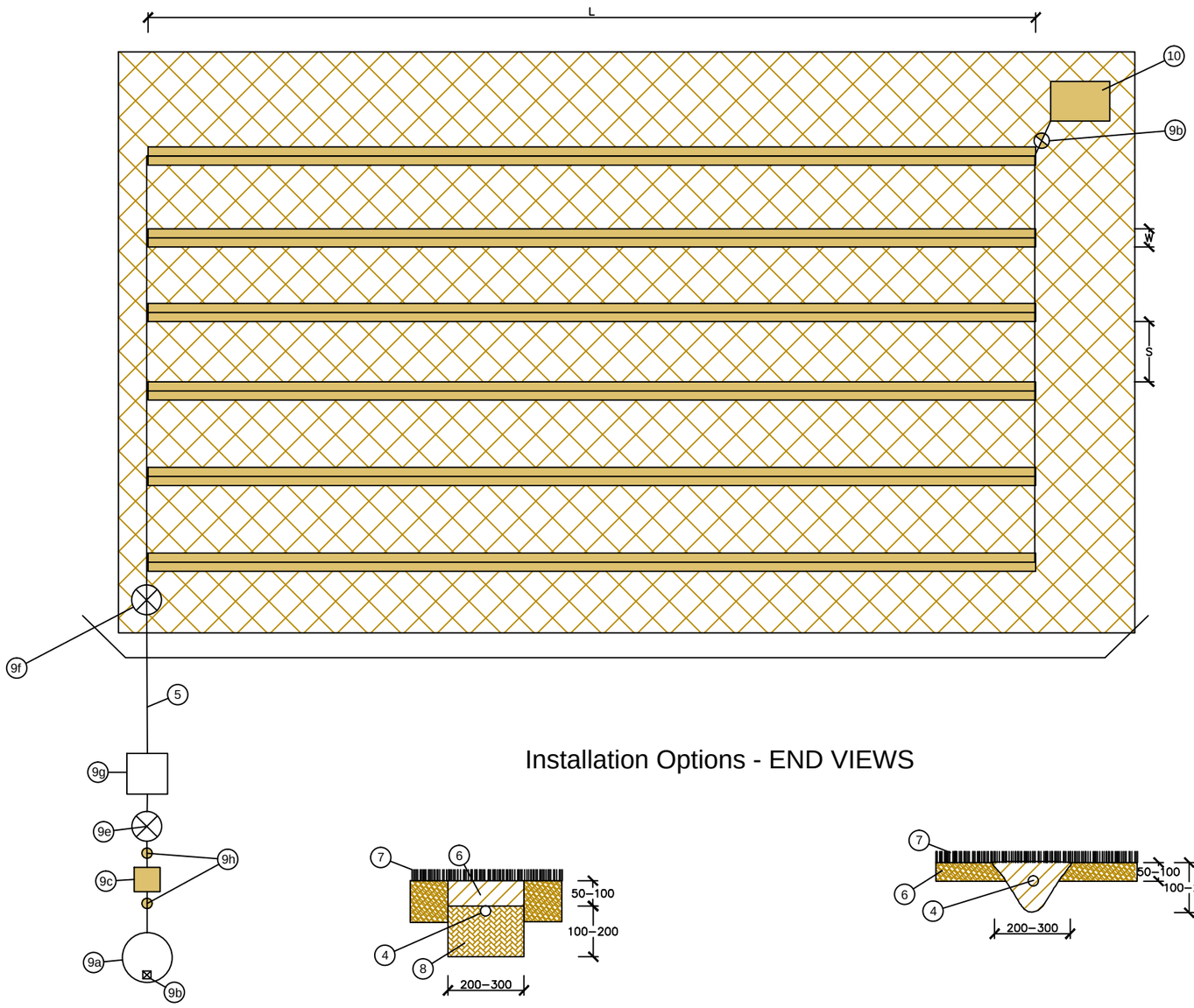
Surveyed	N/A	N/A	Checked	
Designed	N/A	N/A	Approved	
Drawn	N/A	N/A		

Scales A1	Scales A3	Job No.
N/A		16/17 TAS 037

CAD Path\File path File Name	Sheet	of Sheets	Rev.
	S 1		B

The Contractor shall check all dimensions on site.

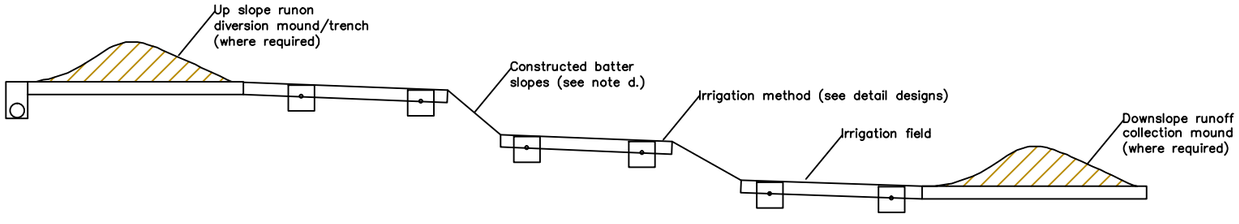
Drip Irrigation Field - 40690 Tasman Highway, Waverley
Proposed 4 Lot Subdivision



Installation Options - END VIEWS

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

HIGH SLOPE (=>15%)



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/operatiors should maintain servicing and inspection records.

RJK Consulting Engineers

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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

CHECKED: R.J.K.

DRAWING No. 01 REV. 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 Hway, 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:

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Rebecca Green & Associates

Appendix F: Bushfire Hazard Assessment Report & Bushfire Hazard Management Plan

Rebecca Green & Associates

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.

Rebecca Green & Associates

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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

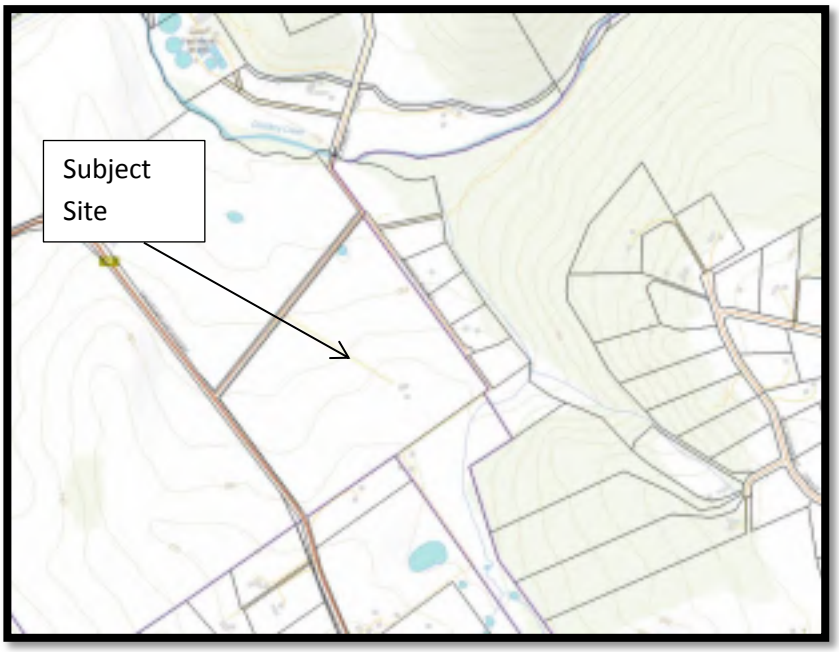


Figure 1: Location Plan of 40690 Tasman Highway, Waverley

2.2 Site Details

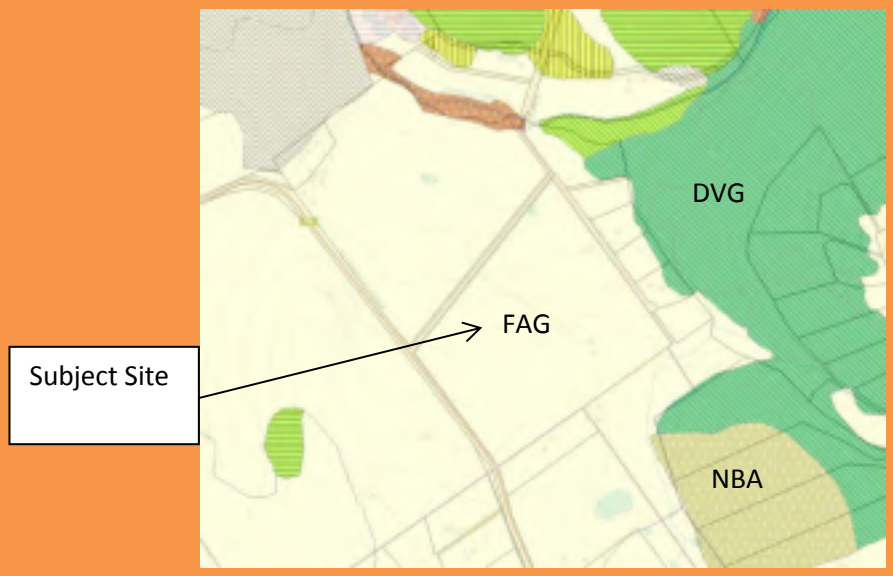
Property Address	40690 Tasman Highway, Waverley
Certificate of Title	Volume 104384 Folio 3
Owner	Joseph Henry Brewin and Meredith Grace Brewin
Existing Use	Rural and Residential
Type of Proposed Work	4 Lot Subdivision
Existing Structures	1 x dwelling and outbuildings
Water Supply	On-site for fire fighting 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	• Agricultural land	Agricultural, urban and exotic vegetation
DVG	• Eucalyptus viminalis grassy forest and woodland	Dry eucalypt forest and woodland
NBA	• Bursaria – acacia woodland and scrub	Non eucalypt forest and woodland

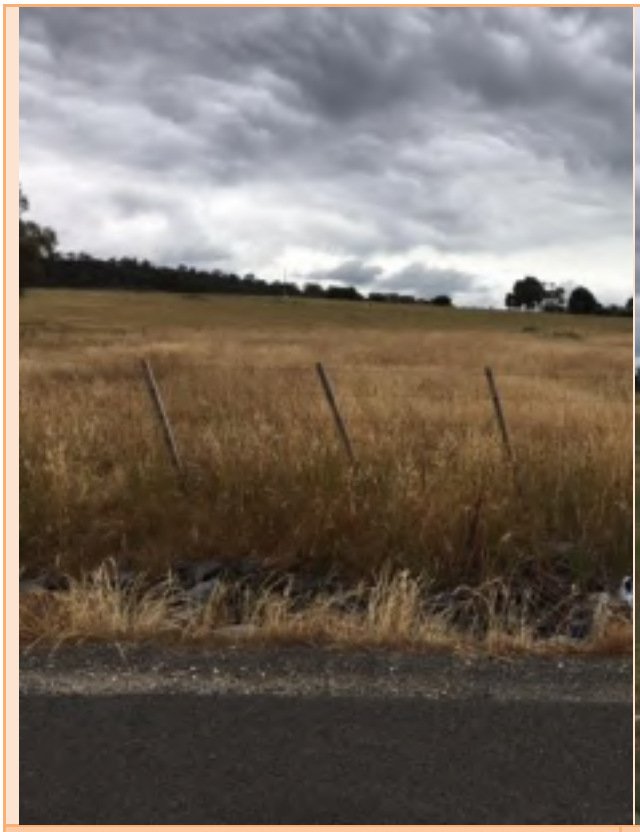
3.1.2 Site & Vegetation Photos

CT 10206/1 from Tasman Highway

Looking towards Lot 2 from Tasman Highway

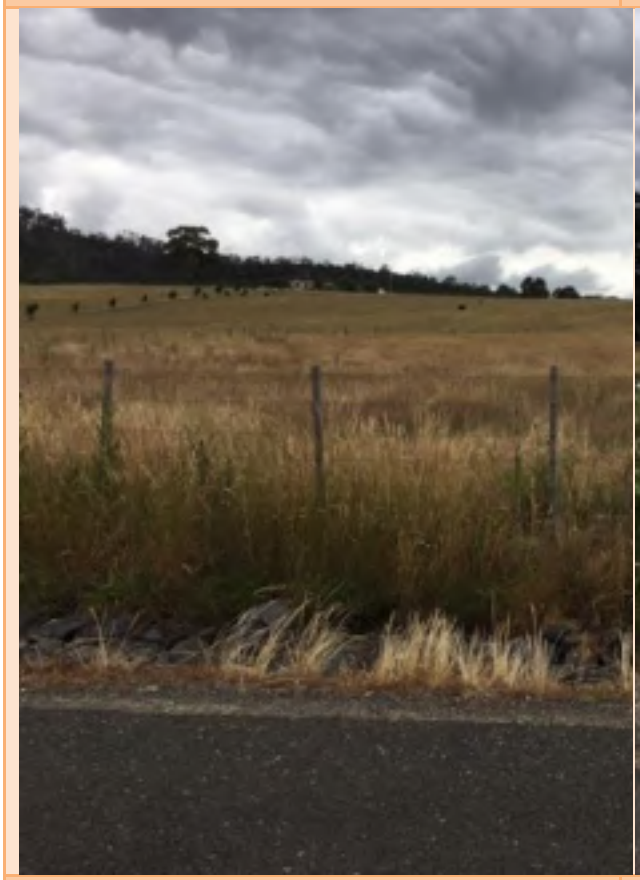
Looking north towards Lot 2 from Tasman Highway

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

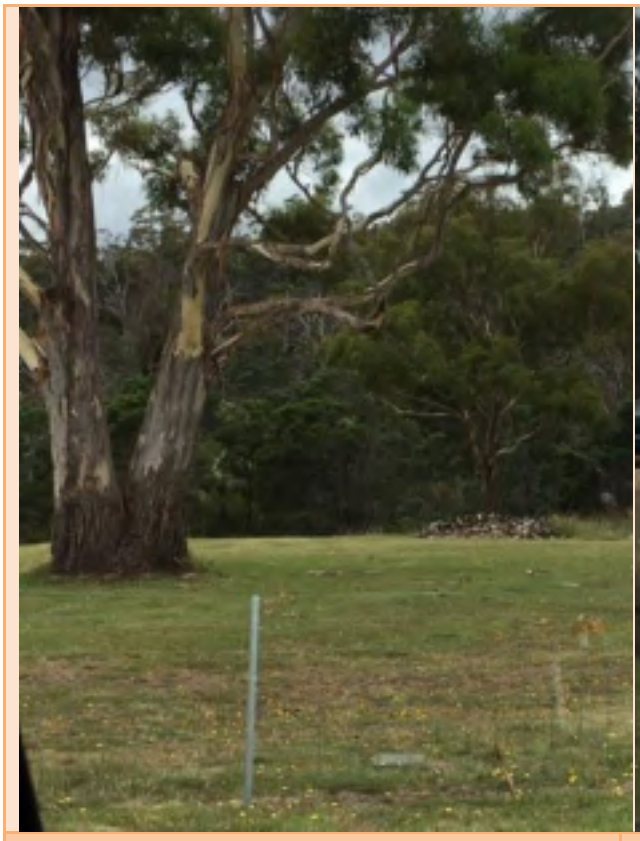
Looking northwest towards CT104384/2 from Boomer Road

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 ☐ North-East ☒	South ☐ South-West ☒	East ☐ South-East ☒	West ☐ North-West ☒
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☐ Managed Land	☒ Managed Land	☒ Managed Land	☐ Managed Land
Effective slope (degrees)	☐ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☒ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☐	☐	☐	☒
Prevailing winds	☐	☐	☐	☒
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 ☐ North-East ☒	South ☐ South-West ☒	East ☐ South-East ☒	West ☐ North-West ☒
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☐ Managed Land	☒ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☐ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☒ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☐	☐	☐	☒
Prevailing winds	☐	☐	☐	☒
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**

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Lot 3

Vegetation classification AS3959	North ☐ North-East ☒	South ☐ South-West ☒	East ☐ South-East ☒	West ☐ North-West ☒
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☐ Managed Land	☐ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☐ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☒ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☐	☐	☐	☒
Prevailing winds	☐	☐	☐	☒
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 ☐ North-East ☒	South ☐ South-West ☒	East ☐ South-East ☒	West ☐ North-West ☒
Group A	☐ Forest	☐ Forest	☐ Forest	☐ Forest
Group B	☐ Woodland	☐ Woodland	☐ Woodland	☐ Woodland
Group C	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land	☐ Shrub-land
Group D	☐ Scrub	☐ Scrub	☐ Scrub	☐ Scrub
Group E	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga	☐ Mallee-Mulga
Group F	☐ Rainforest	☐ Rainforest	☐ Rainforest	☐ Rainforest
Group G	☒ Grassland	☒ Grassland	☒ Grassland	☒ Grassland
	☒ Managed Land	☐ Managed Land	☒ Managed Land	☒ Managed Land
Effective slope (degrees)	☐ Up/0^0	☒ Up/0^0	☒ Up/0^0	☐ Up/0^0
	☒ >0-5^0	☐ >0-5^0	☐ >0-5^0	☒ >0-5^0
	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0	☐ >5-10^0
	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0	☐ >10-15^0
	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0	☐ >15-20^0
Likely direction of bushfire attack	☐	☐	☐	☒
Prevailing winds	☐	☐	☐	☒
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 maintained 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	The following requirements apply: (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	A static water supply: (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: (a) Metal; (b) Non-combustible material; or (c) Fibre-cement a minimum 6mm thickness.
C.	Fittings, pipework and accessories (including stands and tank supports)	Fittings and pipework associated with a water connection point for a static water supply must: (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

		(9) Where a remote offtake is installed, ensure the offtake is in a position that is: (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	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: (1) Water tank signage requirements within AS 2304-2011 Water storage tanks for fire protection systems; or (2) The following requirements: (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	A hardstand area for fire appliances must be provided: (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
☒ **A1**	(b)	Specified distances for Hazard Management Areas for BAL 19 as specified on the plan are in accordance with AS3959. The proposal complies.
☐ **P1**		
E1.6.1.2 Public Access		
		Comments
☒ **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.
☒ **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.
☐ **P1**		
☒ **A2**		Not applicable.
☐ **P2**	No PC	
E1.6.1.3 Water supply for fire fighting purposes		
		Comments
☐ **A1**		Not applicable.
☐ **P1**	No PC	
☒ **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.
☒ **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.
☐ **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

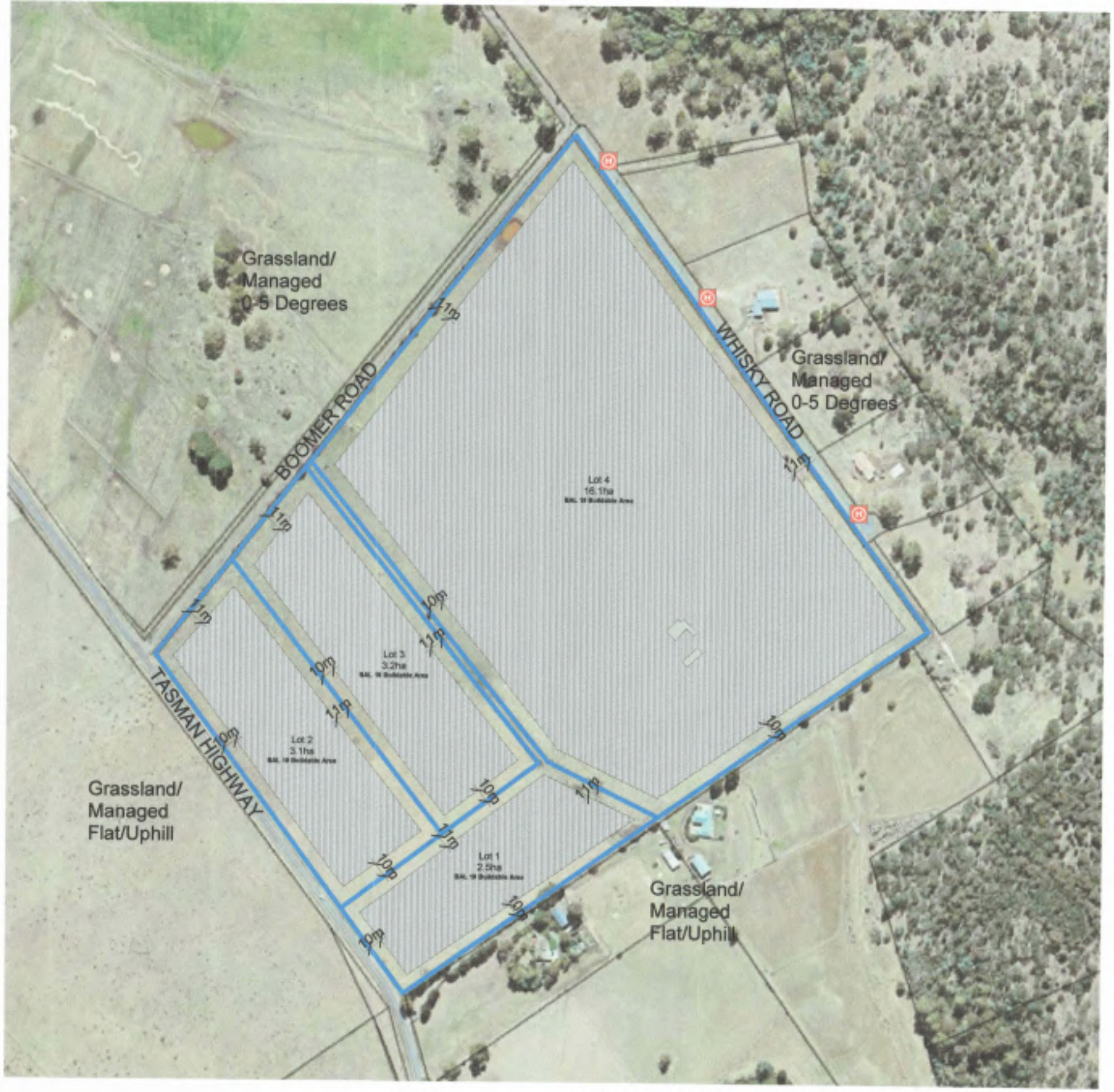
Hazard Management Areas as detailed within the plan shall be constructed and maintained as detailed in Schedule 2.

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 then 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)



N

Rebecca Green & Associates

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: Joseph and Meredith Brewin *Owner /Agent*

PO Box 232 *Address*

Newstead 7250 *Suburb/postcode*

Qualified person details:

Qualified person: Rebecca Green

Address: PO Box 2108 Phone No: 0409 284 422

Launceston 7250 Fax No:

Licence No: BFP-116 Email address: admin@rgassociates.com.au

Qualifications and Insurance details: Accredited to report on bushfire hazards under Part IVA of the *Fire Services Act 1979*

(description from Column 3 of the Director of Building Control's Determination)

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

(description from Column 4 of the Director of Building Control's Determination)

Details of work:

Address: 40690 Tasman Highway Lot No: 3

Waverley 7250 Certificate of title No: 104384

The assessable item related to this certificate: 4 Lot Subdivision

(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 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:	*Interim Planning Directive No 1, Bushfire-Prone Areas Code* *Australian Standard 3959-2009*

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.

	Signed:	*Certificate No:*	*Date:*
Qualified person:		4 January 2017	RG-429/2016

Rebecca Green & Associates

Attachment 1 – Certificate of Compliance to the Bushfire-prone Area Code

CODE E1 – BUSHFIRE-PRONE AREAS CODE

CERTIFICATE[1] UNDER S51(2)(d) *LAND USE PLANNING AND APPROVALS ACT 1993*

1. Land to which certificate applies[2]

Land that <u>is</u> 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 <u>is not</u> 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 Clauses[3]:

☒ **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 upon[4]

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 Certificate[5]

☒	E1.4 – Use or development exempt from this code		
	Assessment Criteria	**Compliance Requirement**	**Reference to Applicable Document(s)**
☒	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.

❑	E1.5.1 – Vulnerable Uses		
	E1.5.1.1 Standards for vulnerable use		
	Assessment Criteria	**Compliance Requirement**	**Reference to Applicable Document(s)**
❑	E1.5.1.1 P1.	Risk is mitigated	
❑	E1.5.1.1 A2.1	BHMP	
❑	E1.5.1.1 A2.2	Emergency Plan	

❑	E1.5.2 – Hazardous Uses		
	E1.5.2.1 Standards for hazardous use		
	Assessment Criteria	**Compliance Requirement**	**Reference to Applicable Document(s)**
❑	E1.5.2.1 P1.	Risk is mitigated	
❑	E1.5.2.1 A2.1	BHMP	
❑	E1.5.2.1 A2.2	Emergency Plan	

☒	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)**
☐	E1.6.1.1 P1.	Hazard Management Areas are sufficient to mitigate risk	
☐	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

☒	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.

	E1.6.1.2 Subdivision: Public and fire fighting access		
	Assessment Criteria	**Compliance Requirement**	**Reference to Applicable Document(s)**
☐	E1.6.1.2 P1.	Access is sufficient to mitigate risk	
☒	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.
☒	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)**
☐	E1.6.1.3 A1. (a)	Insufficient increase in risk	
☐	E1.6.1.3 A1. (b)	Reticulated water supply is consistent with the objective	
☐	E1.6.1.3 A1. (c)	Reticulated water supply complies with Table E6.	
☒	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.
☐	E1.6.1.3 A2. (b)	Static water supply is consistent with the objective	
☒	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 Practitioner[6]

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. Certification[7]

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*

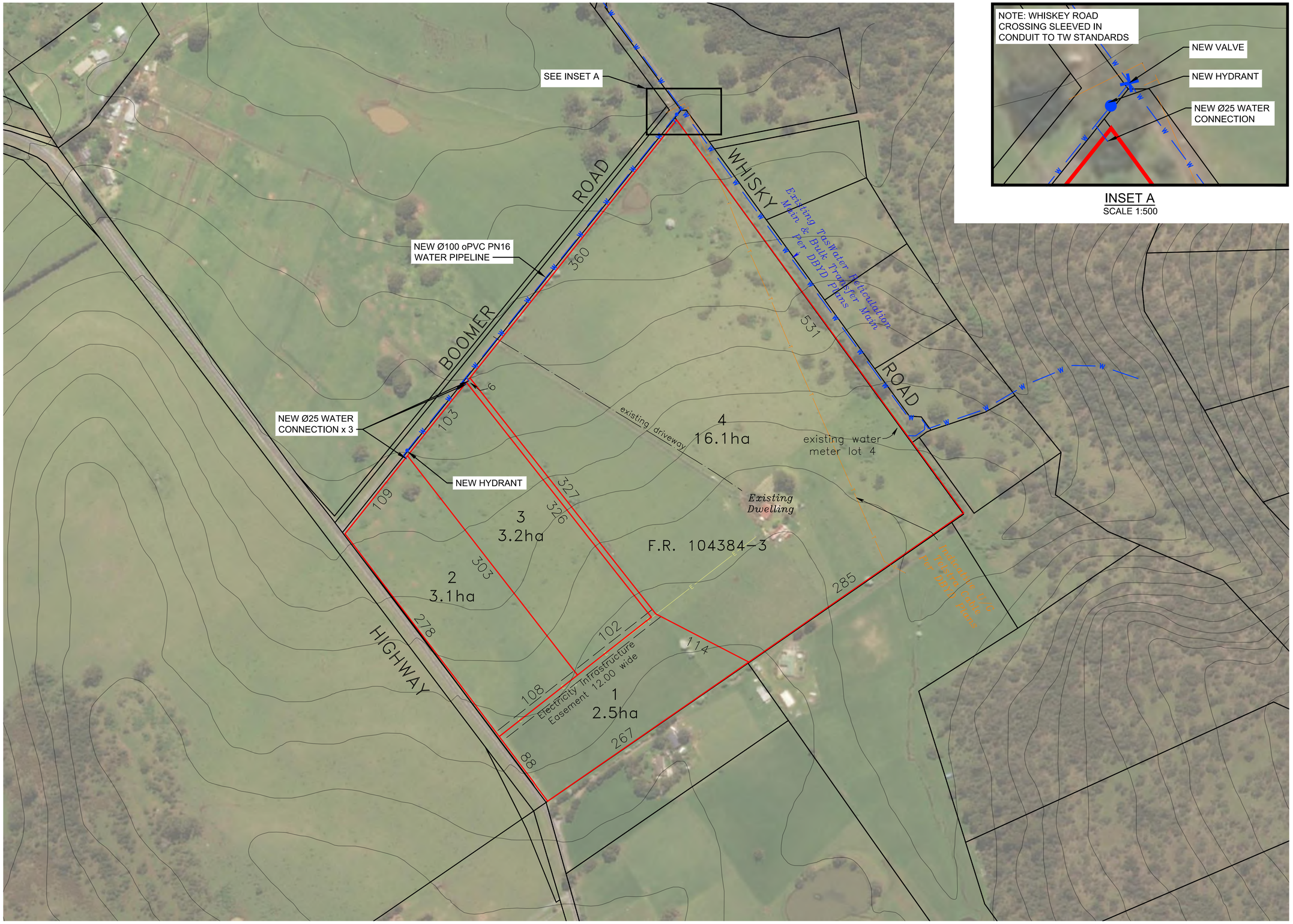
Date: 4 January 2017 **Certificate No:** RGA-22/2017

[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

Rebecca Green & Associates

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



PLAN
SCALE 1:2000

INSET A
SCALE 1:500

39 Paterson Street Launceston
Tasmania 7250
Phone (03) 6331 6968
Mob 0419 374 975
Email admin@ipdconsulting.com.au

IPD Consulting
Infrastructure Planning & Design

FOR COMMENT

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

REVISIONS

Client:

Project Manager:

Project:

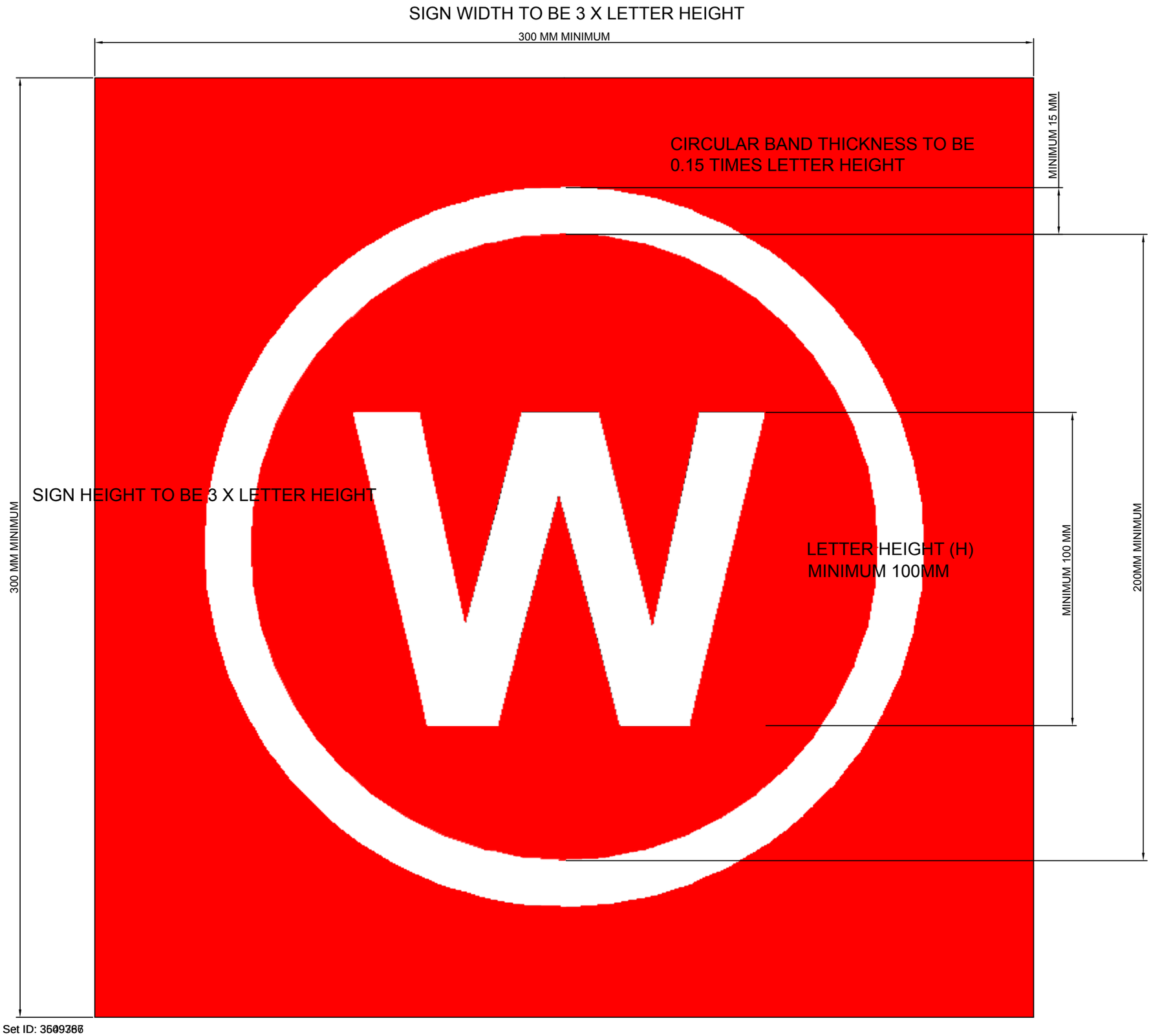
Drawing Title:

Original Size:	Drawn:	Approved:	Date:
A1	BH	AH	02/10/17

Scale:	Drawing No:	Rev:
AS SHOWN		A

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 WTH 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

Tasmania Fire Service

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

Rebecca Green & Associates

Appendix G: Traffic Assessment

TRAFFIC IMPACT ASSESSMENT

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: rjkmail@netspace.net.au

TABLE OF CONTENTS

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INTRODUCTION

A proposed 4 lot subdivision is being advanced for land at 40690 Tasman Highway, Waverley (CT 104384/3). An existing dwelling is located on the property which fronts Boomer Road and will form one of the 4 lots.

In accordance with section E4 Road and Railway Assets Code of the Launceston Interim Planning Scheme 2015, a traffic report is required as part of the documentation for the proposal. RJK Consulting Engineers have been engaged to undertake a traffic impact assessment, to determine the impact a 4 lot subdivision may have on the surrounding area.

A site investigation has been undertaken.

Objectives

The key objectives of the report are:

- Review of the existing road environment in the vicinity of the site and the traffic conditions on the road network.
- Provision of information on the proposed development with regards to traffic movements and activity.
- Identification of the traffic generation potential of the proposal with respect to the surrounding road network in terms of road network capacity.
- Traffic implications of the proposal with respect to the external road network in terms of traffic efficiency, road safety and Planning Scheme requirements.

Project Scope

This report (including all associated mapping and information) relates only to the area identified in the following map.

Figure 1 - Listmap reference of location

Figure 2 - Aerial photograph of location

The outcomes have been developed based on the resources available. The report provides recommendations relating to site-specific investigations and detailed design. The report has also been confirmed in relation to requirements from Council and the applicable planning scheme. During the preparation of this report Department of State Growth (DSG) was also contacted regarding crash history and City of Launceston regarding traffic counts.

Applicable Planning Scheme

Throughout this report, assessments have been based on Launceston Interim Planning Scheme 2015.

EXISTING CONDITIONS

The Site

The proposed subdivision is located at the corner of Boomer Road and Tasman Highway, Waverley.

Tasman Highway is a sealed road with grass swale drains each side. Tasman Highway is approximately 6.7 metres wide.

Boomer Road is approximately 4.3 metres wide, sealed and has large open drains each side.

The subdivision land could be described as rolling countryside on a hillside. At present it is a large rural property. Road frontage to both sides of the subdivision could be termed typical rural with unsealed shoulders and open swale drains. Limited signage/street lighting is afforded to motorists.

Existing Land Use

The subject site is located within the Rural Resource Zone per Launceston Interim Planning Scheme 2015.

Impacted Road Network

The intersection of Tasman Highway and Boomer Road would be mostly impacted by this development. This intersection currently operates as a signalised giveway 'T' intersection.

Boomer Road
This road is assessed as a local road serving some 15 residences along with a water treatment plant. The road is constructed with a sealed road width of 4.3 metres, with open drains each side.

Tasman Highway
Tasman Highway is constructed with a sealed pavement, grass verges and gravel shoulders. Width is measured at 6.7 metres.

PROPOSED DEVELOPMENT & ACCESS ARRANGEMENTS

The proposal is to subdivide the site for the purpose of 4 residential allotments, ranging in size in accordance with the attached plan.

Access to the site is proposed to be provided as follows:

- 3 Lots, including existing dwelling will be accessed directly off Boomer Road (Lots 1, 3 & 4)
- 1 Lot will be accessed directly off Tasman Highway (Lot 2). This access will be approximately 40 metres away from the electricity power pole and 5 metres off the Telstra cable pit.

A copy of the proposed development plan is attached as *Appendix A*.

Figure 3 – Boomer Road at existing residential access, looking left towards Tasman Highway

Figure 4 – Boomer Road at existing residential access, looking right

Figure 5 – Indicative access point for lot on Tasman Highway, looking left

Figure 6 – Indicative access point for lot on Tasman Highway, looking right

TRIP GENERATION

Traffic Generation

The RTA Guide to Traffic Generating Developments (2002) (*RTA Guide*) sets out traffic generation rates based on survey data collected in New South Wales for a range of land uses. This guide is used by DSG and is generally regarded as the standard metropolitan development characteristics.

Standard Residential Lots

The RTA Guide sets out the following rates for the standard residential dwellings:

- Daily vehicle trips = 9 per dwelling
- Weekday peak hour vehicle trips = 0.85 per dwelling

Current Traffic

Boomer Road is classified as a local road. Traffic counts in this vicinity indicate AADT volumes of an average of approximately 176 vehicles per day, taking into account seasonal variance. (*City of Launceston Traffic Counts*)

Tasman Highway shows traffic counts of approximately 1775. (*State Growth*)

PEAK HOUR TRIP ASSIGNMENT

Based upon the figures detailed, estimated peak hour and daily traffic from the current existing area is as follows:

TRAFFIC PATH	**TRAFFIC GENERATION**	
	Daily	*AM/PM Peak*
Direct to Boomer Road	176	34/31
Tasman Highway	1775	177

Additionally, the following figures are the traffic flows from the proposed subdivision:

TRAFFIC PATH	**TRAFFIC GENERATION**	
	Daily	*AM/PM Peak*
Direct to Tasman Highway	9	0.85
Boomer Road	18	1.70

Traffic Distribution

The distribution of existing traffic is based on the location of the households in respect to local services and work environments. Noting such, all traffic in the 'AM' will be to Launceston and 'PM' will be return journeys.

TRAFFIC GROWTH

Minimal traffic growth is expected in the area and therefore is not considered to have an impact on the projected 10 year forecast.

IMPACT ON TRANSPORT NETWORK

Access Impacts

The proposed development would be accessing Boomer Road and Tasman Highway directly. These crossovers will be to Council Standards and Department of State Growth Standards. No new roads will be constructed. Access permits will be required and are not part of this development.

Sight Distance Assessment

Site distance from all proposed new accesses are deemed suitable for the speed environment.

These SISD's have been assessed against Table 4.6.4. The SISD requirements of a road with speed limit of 100 km/hr is 250 metres. As per discussions with Council, the 85% speed is 72 km/hr, yielding an SISD of approximately 140 metres. As the SISD's exceed this on site no issues are noted. Average SISD for each driveway on Boomer Road is 175 metres.

The access for Lot 2 on Tasman Highway yields an SISD of in excess of 300 metres looking toward the right back to Launceston and 314 metres looking left towards Abel Hill Road, therefore complies.

Traffic Capacity

When comparing the proposed traffic to the current existing traffic, it is recognised that there is no compromise on the safety or function of the intersections as the level of service has not altered - this being noted by the increase of approximately 3 cars in the peak period, increasing peak flow to 37 vph or 1 every 1.6 minutes.

Road Safety

The designated state speed limit for both roads at this location is 100 km/hr, however the 85% speed has been assessed as being 72 km/hr for Boomer Road. This lower than normal speed assessment for Boomer Road has been based on the road geometry and the rural nature of the straight section of road.

Existing road safety deficiencies can be highlighted through the examination of existing crash history. Accident records indicate there have been no reported crashes in the past 5 years within the vicinity of the intersection of Boomer Road and Tasman Highway, along with nil report on Boomer Road. This suggests that the speed environment for these roads is acceptable and that no safety issues are present to motorists.

Pedestrian and Cyclist Impacts

Footpaths are not available. There are no cycling lanes present.

Public Transport Provision

Public transport provision for this site is relatively poor. No regular public bus service is provided. Given the nature of the proposed development, demand for public transport is expected to be low.

Parking Assessment

Parking will be allocated within the boundary at each parcel of land.

Access for Larger Vehicles

Access for larger vehicles is not expected. The largest design vehicle will be the existing 8.8metre Design Service Vehicle (garbage truck) on the main road.

PLANNING SCHEME REQUIREMENTS

E 4 Road & Railway Assets Code Assessment in accordance with code indicates:

LAUNCESTON INTERIM PLANNING SCHEME 2015		
Section		Response
E 4.5.1 Existing road accesses and junctions	A1	Increase demand is 18 vehicle movements per day on Boomer Road. This is an approximate 10% increase. Noting the relatively low count and no crash history, this is deemed appropriate.
E 4.5.2 Exiting level crossings	Not Applicable	
E 4.6.1 Development adjacent to roads and railways	Not Applicable	
E 4.6.2 Road accesses and junctions	P1	The nature, frequency and use has minimal impact on traffic flow. No deficiency noted with traffic.
E 4.6.3 New level crossings	Not Applicable	
E 4.6.4 Site distance at accesses, junctions and level crossings	A1	SISD meets requirements for relative speeds.

CONCLUSION / RECOMMENDATIONS

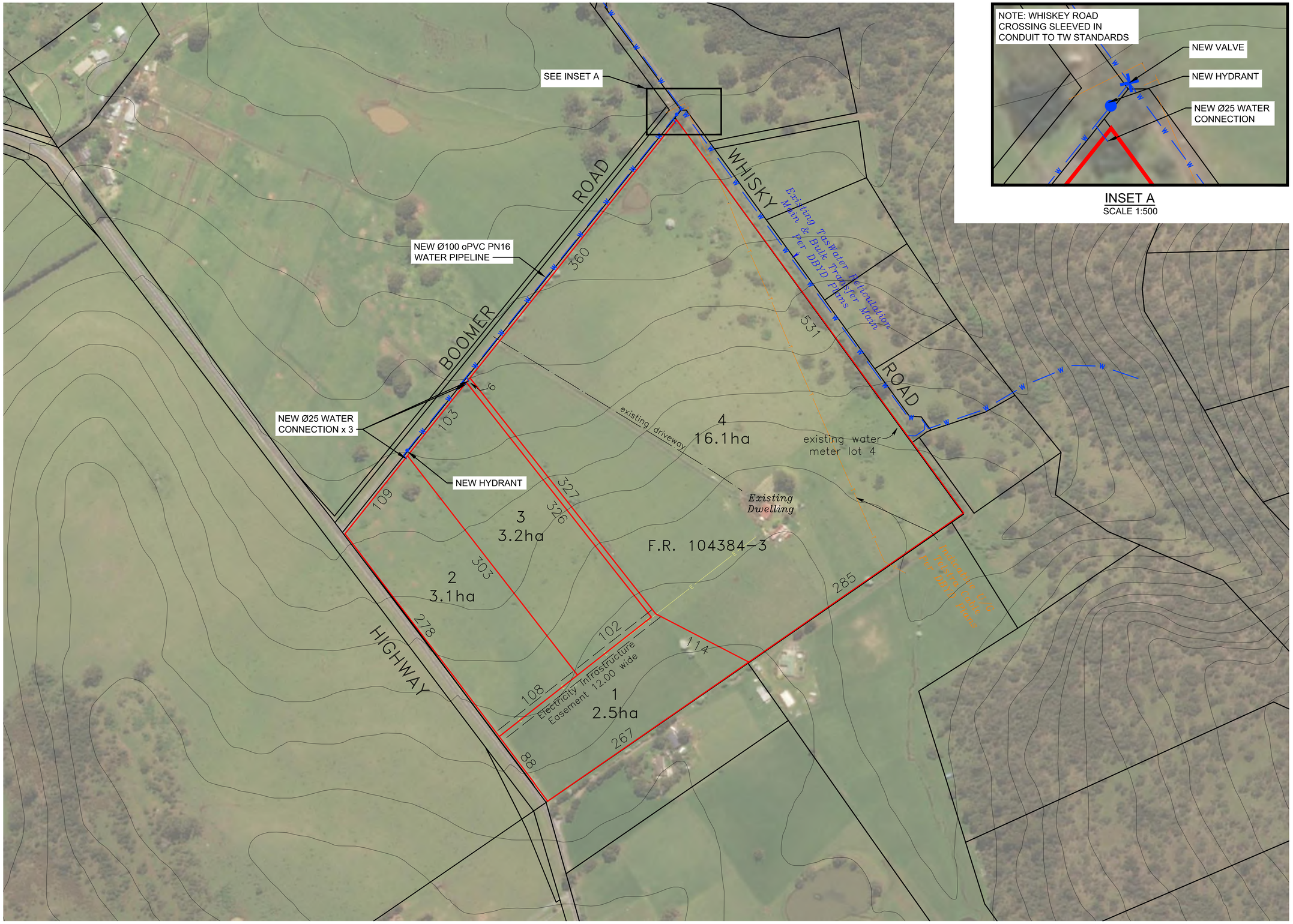
Assessment of the proposed development indicates:

No significant road safety impacts are foreseen for the proposed development.

This is based on the following:

- The surrounding road transport network is capable of absorbing the relatively small estimated traffic generation of the proposed development.
- Sight distance at the access exceeds Planning Scheme requirements and therefore provides a safe access environment.
- The crash history of the surrounding road network near the subject site does not indicate that there are any specific road safety issues that are likely to be exacerbated by traffic generated by the proposed development.
- New accesses to be constructed to Council & DSG sealed standards.
- Works permits will need to be applied for, which is a requirement separate to this application.

January 2017
Revision



PLAN
SCALE 1:2000

INSET A
SCALE 1:500

39 Paterson Street Launceston
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IPD Consulting
Infrastructure Planning & Design

FOR COMMENT

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

REVISIONS

Client:

Project Manager:

Project:

Drawing Title:

Original Size:	Drawn:	Approved:	Date:
A1	BH	AH	02/10/17

Scale:	Drawing No:	Rev:
AS SHOWN		A