Attachments to item number 5.1 -

Planning Report;

Bushfire Hazard Report;

Letter from PDA regarding stormwater management;

Crown Consent;

Letter from PDA regarding Traffic Impact

Preliminary Engineering Designs

PDA
SURVEYORS, ENGINEERS & PLANNERS

Planning Report

16-42 Arthur Highway, Dunalley
8 Lot Subdivision

47948CT | May 2023

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PDA Contributors

Planning Assessment	Jane Monks	26th May 2023
Review & Approval	Craig Terry	14th June 2023

Revision History

Revision	Description	Date
0	First Issue	June 2023
1		
2		

EXECUTIVE SUMMARY

Council approval is sought for a 8 lot subdivision at 16-42 Arthur Highway, Dunalley (CT 206181/1). This planning assessment, combined with supplimentary documention has been provided in support of the proposed development.

Development Details:

Client/Owner	Brendan Michael Shane Daly
Property Address	16-42 Arthur Highway, Dunalley
Proposal	8 Lot Subdivision
Land Area	13.05ha±

PID / CT	5956618	206181/1
Planning Ordinance	*Tasmanian Planning Scheme - Sorell*	
Land Zoning	11.0 Rural Living A	
Specific Areas Plans	N/A	
Code Overlays	Bushfire Prone Area Waterway and Coastal Protection Area Priority Vegetation Area Flood Prone Area	

Use Status	Residential
Application Status	Discretionary

1. Introduction/Context

Council approval is sought for an 8 lot subdivision at 16-42 Arthur Highway, Dunalley. In support of the proposal, the following associated documents have been provided in conjunction with this planning assessment:

- The Title Plan and Folio: CT 206181/1
- Proposed Plan of Subdivision: PDA 47948CT-2F
- Bushfire Hazard Assessment & Bushfire Hazard Management Plan prepared by Mark Van den Berg of Geo-Environmental Solutions Pty Ltd: J5353v3

1.1. The Land

Figure 1. Existing aerial image of the subject land (LISTmap, 2023)

The subject land is located at 16-42 Arthur Highway (PID: 5956618). It is an irregular shaped parcel of land with a single residence and outbuildings located in the southern corner, as shown in Figure 1. The land is characterised by open grasslands and bordered by dense bush at the northern boundary. Access to the land is provided by the adjacent Arthur Highway.

1.2 Natural Values

There are no Natural Values identified on the subject land.

2. The Proposal

A Planning Permit for an 8 lot subdivision is sought, in accordance with Section 57 of the *Land Use Planning and Approvals Act 1993* and Clause 6.8 of the *Tasmanian Planning Scheme – Sorell.*

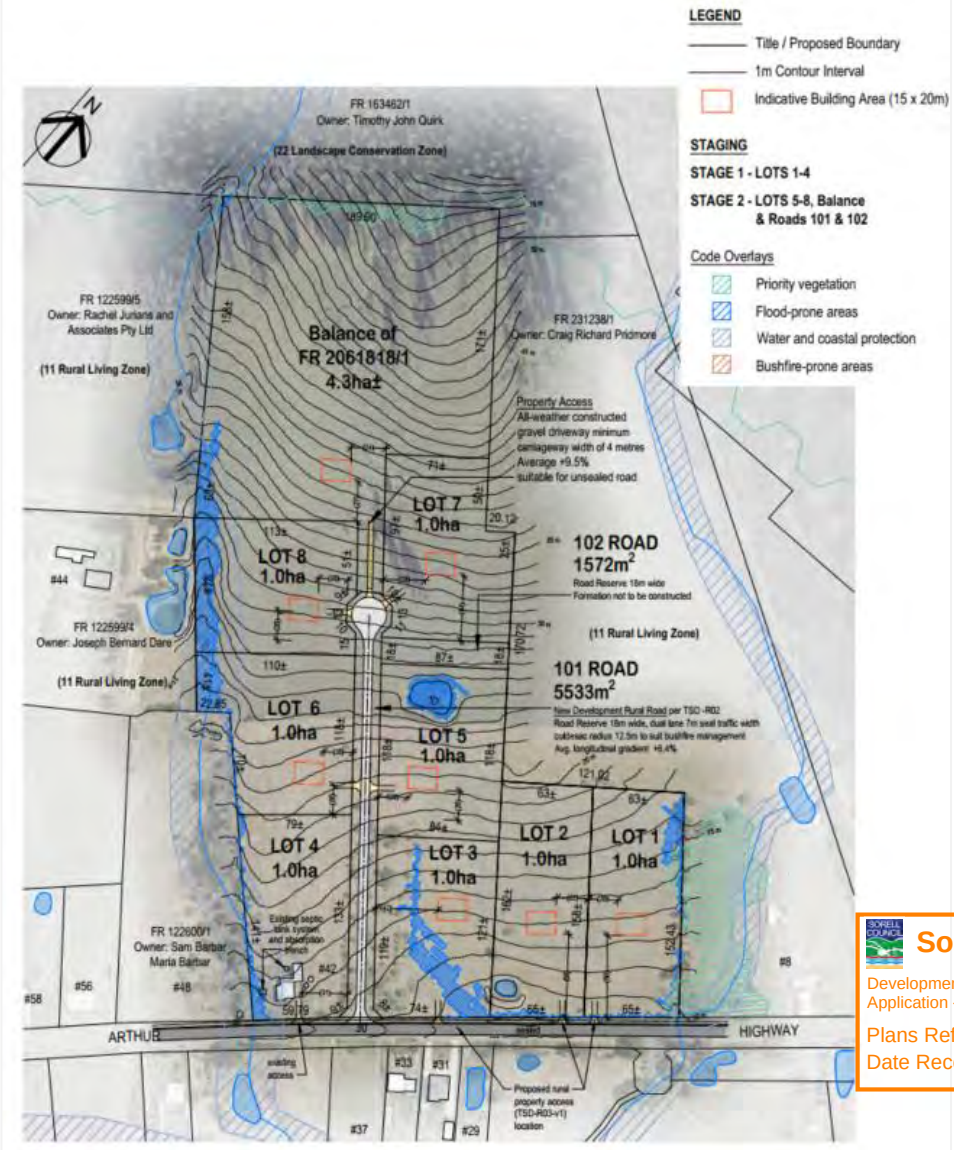

Figure 2. Proposed Plan of Subdivision
(Please refer to the attached file PDA 47948CT-2F for complete Plan of Subdivision)

It is proposed that the subject land be subdivided into 8 lots and balance, as per the Plan of Subdivision illustrated in Figure 2. Proposed Lot 4 is to encompass the existing dwelling, associated outbuildings and vehicular access. The remaining lots have been provided with a minimum 15m x 20m indicative building area and vehicular access to the land via Arthur Highway. Lots 1-3 have will have direct access onto Arthur Highway, whilst lots 5-8 and the balance, will be provided with safe access by means of a new development rural road with a terminating cul-de-sac head, as illustrated in Figure 2 and the attached Plan of Subdivision. The

proposed new road is to be transferred to council as a public road, and drained to council engineering requirements. In conjunction with the formation of the new road, provision for future development of the northeast neighbouring land is also proposed with the creation of lot 102 Road that is not to be formed, but transferred as a separate road lot to council should that land be development into the future.

As the subject land in not within a reticulated water or sewer serviced area, no new connection points are proposed. However, due to the minimum lot size of proposed lots being 1ha±, each lot is capable of accommodating an on-site wastewater treatment system and stormwater retention adequate from the future use and development of the land. Excluding lot 4, of which has an existing on-site water system that is contained wholly within the proposed lot boundaries.

3. Planning Assessment

This current proposal for subdivision has been developed in accordance with the *Tasmanian Planning Scheme – Sorell*.

3.1. Use Class

Residential

3.2 Zoning

Figure 3. Zoning identification of the subject land and surrounds (LISTmap, 2023)

The subject land is located within the Rural Living A Zone, as shown in Figure 3. Rural Living A limits subdivision of the land to minimum lot sizes of 1 ha as per Table 11.1. The northern boundary of the subject land is zoned Landscape Conservation, whilst the remaining surrounding area is also zoned Rural Living.

3.3 Zone Standards – Rural Living A

11.5 Development standards for Subdivision

11.5.1 Lot design

Objective:
That each lot: (a) has an area and dimensions appropriate for use and development in the zone; (b) is provided with appropriate access to a road; and (c) contains areas which are suitable for residential development.
Acceptable Solutions
A1 Each lot, or a lot proposed in a plan of subdivision, must: (a) have an area not less than specified in Table 11.1 and: (i) be able to contain a minimum area of 15m x 20m clear of: a. all setbacks required by clause 11.4.2 A2 and A3; and b. easements or other title restrictions that limit or restrict development; and (ii) existing buildings are consistent with the setback required by clause 11.4.2 A2 and A3; (b) be required for public use by the Crown, a council or a State authority; (c) be required for the provision of Utilities; or (d) be for the consolidation of a lot with another lot provided each lot is within the same zone.

Response:

A1 is met: At 1ha± per proposed lot and 4.3ha± balance, each lots meet the minimum lot size requirements of Table 11.1. Each lot has also been provided with a 15m x 20m indicative area clear of all setbacks required by clause 11.4.2 A2 and A3. Excluding lot 4, of which has an existing dwelling and associated outbuildings consistent with the all setback requirements of clause 11.4.2 A2 and A3;

A2	**P2**
Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must have a frontage not less than 40m.	Each lot, or a lot proposed in a plan of subdivision, must be provided with a frontage or legal connection to a road by a right of carriageway, that is sufficient for the intended use, having regard to: (a)the width of frontage proposed, if any; (b)the number of other lots which have the land subject to the right of carriageway as their sole or principal means of access; (c)the topography of the site; (d)the functionality and useability of the frontage; (e)the ability to manoeuvre vehicles on the site; and (f)the pattern of development existing on established properties in the area, and is not less than 3.6m wide.

Response:

P2 is met: Each proposed lot satisfies all of the performance criteria as follows:

(a) At 65m±, 65 m±, 201m±, 202m±, 118 m±, 118 m±, 34m±, 47 m±, and 18m±, each lot has ample frontage and access opportunities to the land;

(b) No proposed lot are subject to a right of carriageway;

(c) The topography of the land gently slopes upward toward the northwest;

(d) Each lot has been provided with sufficient frontage to maximise functionality and useability of the land;

(e) At 1ha± and over, each lot has ample opportunity and ability to manoeuvre vehicles on the site;

(f) The proposal is consistent with the pattern of development existing on established properties in the area, and is not less than 3.6m wide.

A3
Each lot, or a lot proposed in a plan of subdivision, must be provided with a vehicular access from the boundary of the lot to a road in accordance with the requirements of the road authority.

Response:

A3 is met: Each lot has been provided with vehicular access in accordance with the requirements of the road authority.

11.5.2 Roads

Objective:

That the arrangement of new roads with a subdivision provides:
(a)safe, convenient and efficient connections to assist accessibility and mobility of the community;
(b)adequate accommodation of vehicular, pedestrian, cycling and public transport traffic; and
(c)the efficient ultimate subdivision of the entirety of the land and of surrounding land.

Acceptable Solutions	Performance Criteria
A1 The subdivision includes no new road.	**P1** The arrangement and construction of roads within a subdivision must provide an appropriate level of access, connectivity, safety, convenience and legibility for vehicles, having regard to: (a) any relevant road network plan adopted by the council; (b) the existing and proposed road hierarchy; (c) maximising connectivity with the surrounding road network; (d) appropriate access to public transport; and (e) access for pedestrians and cyclists.

Response:

P1 is met: The proposed road provides an appropriate level of access, connectivity, safety, convenience and legibility for vehicles, and satisfies the performance criteria as follows:

(a) *Not applicable* as there is currently no future road network plan for the area;

(b) The proposed new road provides access off the Arthur Highway, being a category 3 reginal access road;

(c) Provision for future road development to service the adjacent land to the northeast has been provided by proposed lot 102 Road. Which is not to be constructed as part of this development, but can be, should the land to the northeast be approved for further development;

(d) *Not applicable* as there is currently no public transport networks available for the area;

(e) *Not applicable* as there is no footpaths or cycleways to connect to at this time.

11.5.3 Services

Objective:	
That the subdivision of land provides services for the future use and development of the land	
Acceptable Solutions	**Performance Criteria**
A1 Each lot, or a lot proposed in a plan of subdivision, excluding for public open space, a riparian or littoral reserve or Utilities, must: (a) be connected to a full water supply service if the frontage of the lot is within 30m of a full water supply service; or (b) be connected to a limited water supply service if the frontage of the lot is within 30m of a limited water supply service, unless a regulated entity advises that the lot is unable to be connected to the relevant water supply service.	
Response:	
A1 is met: *Not applicable* as there is no water supply service available at this time.	

A2	**P2**
Each lot, or a lot proposed in a plan of subdivision, excluding within Rural Living Zone C or Rural Living Zone D or for public open space, a riparian or littoral reserve or Utilities, must: (a) be connected to a reticulated sewerage system; or (b) be connected to a reticulated sewerage system if the frontage of each lot is within 30m of a reticulated sewerage system and can be connected by gravity feed.	Each lot, or a lot proposed in a plan of subdivision, excluding within Rural Living Zone C or Rural Living Zone D or for public open space, a riparian or littoral reserve or Utilities, must be capable of accommodating an on-site wastewater treatment system adequate for the future use and development of the land.
Response:	
P2 is met: The land is not currently within a reticulated sewerage serviced area. While Lot 4 has an existing on-site wastewater treatment system, due to the size of the lots being 1ha± and over, all have the capacity and are capable of accommodating an on-site wastewater treatment system adequate from the future use and development of the land.	

3.4 Codes

Figure 4. Scheme Overlay identification of the subject land and surrounds (LISTmap, 2023)

The subject land is overlayed with a Bushfire Prone Area, and Waterway and Coastal Protection Area, Priority Vegetation Area, and Flood Prone Area, as illustrated in Figure 4. Whilst the proposed subdivision also requires the following Codes under the Tasmanian Planning Scheme – Sorell to be considered.

Code	*Comments:*
C1.0 Signs Code	*N/A*
C2.0 Parking and Sustainable Transport Code	As this Code is relevant to this proposal, an assessment is provided below
C3.0 Road and Railway Assets Code	As this Code is relevant to this proposal, an assessment is provided below
C4.0 Electricity Transmission Infrastructure	*N/A*
C5.0 Telecommunications Code	*N/A*
C6.0 Local Historic Heritage Code	*N/A*
C7.0 Natural Assets Code	As this Code is relevant to this proposal, an assessment is provided below
C8.0 Scenic Protection Code	*N/A*
C9.0 Attenuation Code	*N/A*
C10.0 Coastal Erosion Hazard Code	*N/A*
C11.0 Coastal Inundation Hazard Code	*N/A*
C12.0 Flood-Prone Areas Hazard Code	As this Code is relevant to this proposal, an assessment is provided below
C13.0 Bushfire-Prone Areas Code	Please refer to the attached *Bushfire Hazard Report* prepared by Mark Van den Berg of Geo-Environmental Solutions Pty Ltd
C14.0 Potentially Contaminated Land Code	*N/A*
C15.0 Landslip Hazard Code	*N/A*
C16.0 Safeguarding of Airports Code	*N/A*

3.5 Code Standards

C2.0 Parking and Sustainable Transport Code

C2.6.7 Development Standards

2.6.1 Construction of parking areas

Objective:	
That parking areas are constructed to an appropriate standard.	
Acceptable Solutions	
A1 **All parking, access ways, manoeuvring and circulation spaces must:** **(a) be constructed with a durable all-weather pavement;** **(b) be drained to the public stormwater system, or contain stormwater on the site; and** (c) excluding all uses in the Rural Zone, Agriculture Zone, Landscape Conservation Zone, Environmental Management Zone, Recreation Zone and Open Space Zone, be surfaced by a spray seal, asphalt, concrete, pavers or equivalent material to restrict abrasion from traffic and minimise entry of water to the pavement.	
Response: **A1 is met:** The access way provided to service the balance lot will be constructed of all-weather gravel driveway with a minimum carriageway width of 4m, and will be drained to the new public road stormwater system as per council engineering requirements.	

C2.6.2 Design and layout of parking areas

Objective:	
That parking areas are designed and laid out to provide convenient, safe and efficient parking.	
Acceptable Solutions	
A1 **Parking, access ways, manoeuvring and circulation spaces must either:** **(a) comply with the following:** **(i) have a gradient in accordance with Australian Standard AS 2890-Parking facilities, Parts 1-6;** **(ii) provide for vehicles to enter and exit the site in a forward direction where providing for more than 4 parking spaces;** **(iii) have an access width not less than the requirements in Table C2.2;** **(iv) have car parking space dimensions which satisfy the requirements in Table C2.3;** **(v) have a combined access and manoeuvring width adjacent to parking spaces not less than the requirements in Table C2.3 where there are 3 or more car parking spaces;** **(vi) have a vertical clearance of not less than 2.1m above the parking surface level; and** **(vii) excluding a single dwelling, be delineated by line marking or other clear physical means; or**	

(b) comply with Australian Standard AS 2890- Parking facilities, Parts 1-6.

Response:

A1 is met: The balance lot access way meets all acceptable solutions. As there is no parking proposed, (b) is not applicable, whilst the access way provided for the balance lot complies with (a) as follows:

(i) *Not applicable* as no parking is proposed;

(ii) *Not applicable* as no more than 4 parking spaces are proposed;

(iii) With a minimum carriageway width of 4m, the access width to the balance lot is greater than the internal access way width for vehicles requirements stipulated in Table C2.2, and in accordance with bushfire management requirements;

(iv) *Not applicable* as no parking spaces are proposed;

(v) *Not applicable* as no parking spaces are proposed;

(vi) *Not applicable* as no parking spaces are proposed;

(vii) *Not applicable* as no parking spaces are proposed.

C2.6.3 Number of accesses for vehicles

Objective:
That: (a) access to land is provided which is safe and efficient for users of the land and all road network users, including but not limited to drivers, passengers, pedestrians and cyclists by minimising the number of vehicle accesses; (b) accesses do not cause an unreasonable loss of amenity of adjoining uses; and (c) the number of accesses minimise impacts on the streetscape.

Acceptable Solutions	
A1 The number of accesses provided for each frontage must: (a) be no more than 1; or (b) no more than the existing number of accesses, whichever is the greater.	

Response:

A1 is met: Each lot has no more than one vehicle access point per road frontage

C3.0 Road and Railway Assets Code

C3.5. Use Standards

C3.5.1 Traffic generation at a vehicle crossing, level crossing or new junction

Objective:
To minimise any adverse effects on the safety and efficiency of the road or rail network from vehicular traffic generated from the site at an existing or new vehicle crossing or level crossing or new junction.

Acceptable Solutions	

A1.1
For a category 1 road or a limited access road, vehicular traffic to and from the site will not require:
(a) a new junction;
(b) a new vehicle crossing; or
(c) a new level crossing.

A1.2
For a road, excluding a category 1 road or a limited access road, written consent for a new junction, vehicle crossing, or level crossing to serve the use and development has been issued by the road authority.

A1.3
For the rail network, written consent for a new private level crossing to serve the use and development has been issued by the rail authority.

A1.4
Vehicular traffic to and from the site, using an existing vehicle crossing or private level crossing, will not increase by more than:
(a) the amounts in Table C3.1; or
(b) allowed by a licence issued under Part IVA of the Roads and Jetties Act 1935 in respect to a limited access road.

A1.5
Vehicular traffic must be able to enter and leave a major road in a forward direction.

Response:

A1.1 is met: *Not applicable* as Arthur Highway is a Category 3 Reginal Access Road in the State Road Hierarchy;

A1.2 is met: An application to the Department of State for Crown Consent for a new junction has been lodged concurrently with this development application and will be forwarded to council in due course;

A1.3 is met: not applicable as no new level crossing is proposed;

A1.4 is met: Traffic to and from the existing vehicle crossing that services proposed lot 4, will not increase by more than 10% as stipulated in Table C3.1. The proposed new road will however increase vehicle movements. According to the RTA guide to Traffic Generating Developments 2002, traffic generation rates for dwelling houses are calculated and considered as 9 daily trips per house. Therefore, the estimated vehicular traffic to and from the subject site is estimated at 81 vehicles per day (VPD), being an increase of 72 VPD. Therefore, meeting the acceptable increase in average annual daily traffic to and from the site (total of ingress and egress) of less than 10% as stipulated in Table C3.1.

A Traffic Impact Assessment is currently being prepared by
Traffic & Civil Services Pty Ltd in support of this proposal will be supplied in due course.

A1.5 is met: Vehicular traffic is able to enter and leave a major road in a forward direction.

C3.7 Development Standards for subdivision

C3.7.1 Subdivision for sensitive uses with a road or railway attenuation area

Objective:	
To minimise the effects of noise, vibration, light and air emissions on lots for sensitive uses within a road or railway attenuation area, from existing and future major roads and the rail network.	
Acceptable Solutions	
A1 A lot, or a lot proposed in a plan of subdivision, intended for a sensitive use must have a building area for the sensitive use that is not within a road or railway attenuation area.	

Response:

A1 is met: *Not applicable,* the section of Arthur Highway that the subject land fronts has a speed limit of 60km/h, therefore is not within a road attenuation area.

C7.0 Natural Assets Code

C7.7 Development Standards for subdivision

C7.7.1 Subdivision within a waterway & coastal protection area or future coastal refugia area

Objective:

That:
(a) works associated with subdivision within a waterway and coastal protection area or a future coastal refugia area will not have an unnecessary or unacceptable impact on natural assets; and
(b) future development likely to be facilitated by subdivision is unlikely to lead to an unnecessary or unacceptable impact on natural assets.

Acceptable Solutions

A1
Each lot, or a lot proposed in a plan of subdivision, within a waterway and coastal protection area or a future coastal refugia area, must:
(a) be for the creation of separate lots for existing buildings;
(b) be required for public use by the Crown, a council, or a State authority;
(c) be required for the provision of Utilities;
(d) be for the consolidation of a lot; or
(e) not include any works (excluding boundary fencing), building area, services, bushfire hazard management area or vehicular access within a waterway and coastal protection area or future coastal refugia area.

Response:

A1 is met: The proposal meets acceptable solution (e), as no works are proposed within the waterway and coastal protection area.

C7.7.2 Subdivision within a priority vegetation area

Objective:

That:
(a) works associated with subdivision will not have an unnecessary or unacceptable impact on priority vegetation; and
(b) future development likely to be facilitated by subdivision is unlikely to lead to an unnecessary or unacceptable impact on priority vegetation.

Acceptable Solutions

A1
Each lot, or a lot proposed in a plan of subdivision, within a priority vegetation area must:
(a) be for the purposes of creating separate lots for existing buildings;
(b) be required for public use by the Crown, a council, or a State authority;
(c) be required for the provision of Utilities;
(d) be for the consolidation of a lot; or
(e) not include any works (excluding boundary fencing), building area, bushfire hazard management area, services or vehicular access within a priority vegetation area.

Response:

A1 is met: The proposal meets acceptable solution (e), as no works are proposed within the priority vegetation area.

C12.0 Flood Prone Areas Hazard Code

C12.7 Development Standards for Subdivision

C12.7.1 Subdivision within a flood prone hazard area

Objective:
That subdivision within a flood-prone hazard area does not create an opportunity for use or development that cannot achieve a tolerable risk from flood.
Acceptable Solutions
A1 Each lot, or a lot proposed in a plan of subdivision, within a flood-prone hazard area, must: (a) be able to contain a building area, vehicle access, and services, that are wholly located outside a flood-prone hazard area; (b) be for the creation of separate lots for existing buildings; (c) be required for public use by the Crown, a council or a State authority; or (d) be required for the provision of Utilities.
Response: **A1 is met:** The proposal meets acceptable solution (a), as no works are proposed within the flood prone hazard area, with all indicative building areas, vehicle access and services are wholly located outside of the flood prone hazard area.

C13.0 Bushfire-Prone Areas Code

A Bushfire Hazard Assessment and Bushfire Hazard Management Plan has been prepared and supplied in support of the proposed subdivision. As seen below, Section 6.1 of Geo-Solutions Bushfire Hazard Report by Mark Van den Berg, provides a summary of planning compliance applicable to this current application. Whilst the Bushfire Hazard Management Plan can be located in Appendix C of the attached report.

6.1 Planning Compliance

Table 2 summarises the compliance requirements for subdivisions in bushfire prone areas against Code C13 as they apply to this proposal. A planning certificate has been issued for the associated BHMP as being compliant with the relevant standards as outlined below and is located in appendix D.

Table 2. Compliance with Code C13 of the Tasmanian Planning Scheme -Sorell

Clause	Compliance
C13.4 Use or development exempt from this code	Not applicable.
C13.5 1 Vulnerable Uses	Not applicable.
C13.5.2 Hazardous Uses	Not applicable
C13.6.1 Subdivision: Provision of hazard management areas	The Bushfire Hazard Management Plan is certified by an accredited person. Each lot within the subdivision has a building area and associated hazard management area shown which is suitable for BAL-12.5 construction standards. Hazard management areas are able to be contained within each individual lot, therefore there is no requirement for part 5 agreements or easements to facilitate hazard management. The proposal is compliant with the acceptable solution at A1, (b).
C13.6.2 Subdivision: Public and firefighting access	The Bushfire Hazard Management Plan specifies minimum standards for new public roadways and property access consistent with the requirements of table C13.1 and C13.2 respectively. There is no proposal for fire trails as part of this development. The Bushfire Hazard Management Plan is certified by an accredited person. The proposal is compliant with the acceptable solution at A1, (b).
C13.6.3 Subdivision: Provision of water supply for firefighting purposes	The Bushfire Hazard Management Plan requires static water supplies to be provided for all lots. The specifications for static water supplies are provided consistent with table C13.5. The proposal is compliant with the acceptable solution at A2, (b).

Conclusion

The planning assessment and supporting documentation provided, demonstrates that the development proposal for a 8 lot subdivision at 16-42 Arthur Highway, Dunalley meets all requirements of the *Tasmanian Planning Scheme – Sorell*.

Yours faithfully,
PDA Surveyors, Engineers & Planners
Per:

Jane Monks

Contact

For any enquiries, please contact one of our offices:

HOBART
A: 127 Bathurst Street, Hobart Tasmania 7000
P: (03) 6234 3217
E: pda.hbt@pda.com.au

KINGSTON
A: 6 Freeman Street, Kingston, TAS 7050
P: (03) 6229 2131
E: pda.ktn@pda.com.au

HUONVILLE
A: 8/16 Main Street, Huonville, TAS 7109 - (By appointment)
P: (03) 6264 1277
E: pda.huon@pda.com.au

EAST COAST
A: 3 Franklin Street, Swansea TAS 7190 - (By appointment)
P: (03) 6130 9099
E: pda.east@pda.com.au

LAUNCESTON
A: 3/23 Brisbane Street, Launceston, TAS 7250
P: (03) 6331 4099
E: pda.ltn@pda.com.au

DELORAINE
A: 16 Emu Bay Road, Deloraine, TAS 7304 - (By appointment)
P: (03) 6362 2993
E: pda.ltn@pda.com.au

BURNIE
A: 6 Queen Street, Burnie, TAS 7320
P: (03) 6431 4400
E: pda.bne@pda.com.au

DEVONPORT
A: 77 Gunn Street, Devonport, TAS 7310
P: (03) 6423 6875
E: pda.dpt@pda.com.au

WALTER SURVEYS
A: 127 Bathurst Street, Hobart, TAS 7000 (Civil Site Surveying and Machine Control)
P: 0419 532 669 (Tom Walter)
E: tom.walter@waltersurveys.com.au

GES

GEO-ENVIRONMENTAL

SOLUTIONS

Proposed Subdivision

42 Arthur Highway, Dunalley

Bushfire Hazard Report

Applicant: PDA Surveyors.

June 2023, J5353v3.0

Geo-Environmental Solutions - 29 Kirksway Place, Battery point, Tasmania, 7004.
Phone: 036223 1839 Email: Web: www.geosolutions.net.au

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Appendix A - Plan of Subdivision
Appendix B - BAL assessment tables
Appendix C - Bushfire Hazard Management Plan
Appendix D - Planning Certificate

1.0 Introduction

This Bushfire Hazard Report has been completed to form part of supporting documentation for a planning permit application for a proposed subdivision. The proposed subdivision occurs in a Bushfire-prone Area defined by the Tasmanian Planning Scheme - Sorell (the Scheme). This report has been prepared by Mark Van den Berg a qualified person under Part 4a of the *Fire Service Act 1979* of Geo Environmental Solutions Pty Ltd for PDA Surveyors.

The report considers all the relevant standards of Code C13 of the planning scheme, specifically;

- The requirements for appropriate Hazard Management Areas (HMA's) in relation to building areas;
- The requirements for Public and Private access;
- The provision of water supplies for firefighting purposes;
- Compliance with the planning scheme, and
- Provides a Bushfire Hazard Management Plan to facilitate appropriate compliant future development.

2.0 Proposal

It is proposed that an eight lot plus balance subdivision with two roadway lots is developed on the site described as per the proposed plan of subdivision in appendix A. Public access to new lots will be provided by existing and new public roadways. The development is proposed to occur over two stages. Lot 4 has existing residential development; all other lots are undeveloped.

3.0 Site Description

The subject site comprises private land on one title at 42 Arthur Highway, Dunalley, CT: 206181/1 (figure 1). The site occurs in the municipality of Sorell, this application is administered through the Sorell Interim planning scheme 2015 which makes provision for subdivision. The proposed development occurs within the Rural Living zone.
The site is located north-east of the Dunalley settled area, approximately 1.0km south-east of Township Hill (figure 1), is dominated by grassland vegetation transitioning to landscape scale native vegetation to the north and north-west. The sites have gentle slopes with a dominantly south eastly aspect, surrounding lands comprise both developed and un-developed areas characterised by grassland vegetation with sparse native vegetation remnants (figure 2).

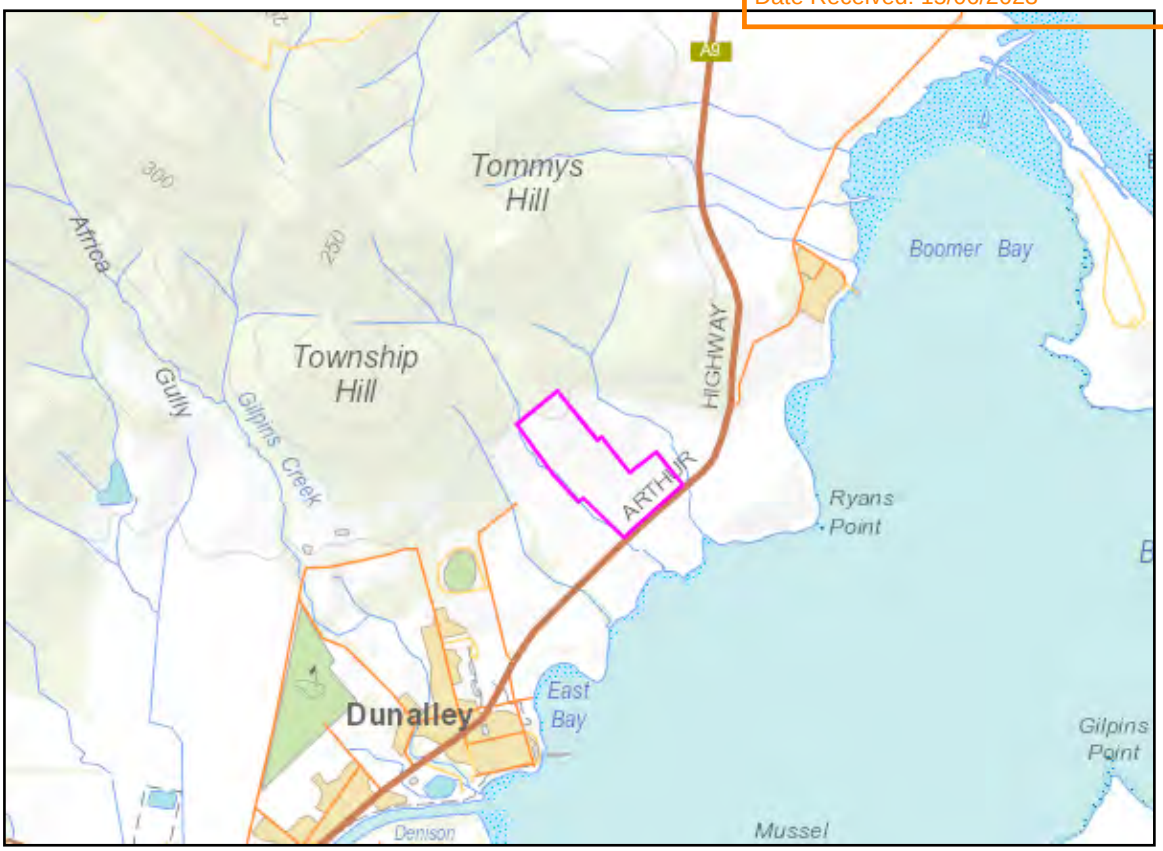


Figure 1. The site in a topographical context, pink line defines the subdivision boundary (approx.).

Figure 2. Aerial photo of the site, pink line defines the subdivision boundary (approx.).

4.0 Bushfire Hazard Assessment

4.1 Vegetation

The site and adjacent lands within 100 metres of the proposed building areas carry grassland vegetation with landscape scale native forest vegetation to the north-west. Lands to the south and west are fragmented by residential development on large lots (figures 3 to 6). The highest risk vegetation occurs to the north and north-west of the sites.

4.2 slopes

The effective slopes in relation to the proposed new lots are gentle (<5 degrees) and are unlikely to have a significant impact on fire behaviour.

Figure 3. Grassland vegetation looking north from the vicinity of Lot 3.

Figure 4. Grassland vegetation looking east from the vicinity of lot 3.

Figure 5. Grassland vegetation looking south from the vicinity of lot 3.

Figure 6. Grassland vegetation looking west from the vicinity of lot 3.

4.3 Bushfire Attack Level

An assessment of vegetation and topography was undertaken within and adjacent to the subdivision area. A bushfire attack level assessment as per *AS3959-2018* was completed which has determined setbacks for each lot from bushfire-prone vegetation such that subsequent residential development does not exceed BAL-19 of AS3959-2018 (appendix B). The building areas and bushfire attack level are identified on the BHMP. A building area has been established within the remaining lot, encompassing the footprint of the existing residential development.

5.0 Bushfire Prone Areas Code

Code C13 of the planning scheme articulates requirements for the provision of hazard management areas, standards for access and firefighting water supplies and requirements for hazard management for staged subdivisions. Existing residential development on the balance lot will need to comply with sections 5.1, 5.2 and 5.3, these specifications will need to be implemented prior to the sealing of titles.

5.1 Hazard Management Areas

Hazard management areas are required to be established for each lot, they provide an area around the building within which fuels are managed to reduce the impacts of direct flame contact, radiant heat and ember attack on the site. Lot 4, with existing residential development will require the HMA to be established prior to sealing of titles.
The Bushfire Hazard Management Plan (BHMP) shows building areas (for habitable buildings) and the associated HMA's for each lot, guidance for establishment and maintenance of HMA's is provided below.

The subdivision is to occur in two stages. Each proposed lot can accommodate a hazard management area with sufficient separation from bushfire-prone vegetation not exceeding the requirements for BAL-19 of AS3959-2018. This means that each lot is not dependant on adjacent land use or management for bushfire mitigation.

5.1.1 Building areas

Building areas for habitable buildings on each lot are shown on the BHMP. Each lot has been assessed and a Bushfire Attack Level (BAL) assigned to it. If future buildings are located within the building area and comply with the minimum setbacks for the lot, the buildings may be constructed to the bushfire attack level assigned to that lot. If associated structures like sheds or other non-habitable buildings exist or are proposed, they do not need to conform to a BAL unless they are within 6 metres of the habitable building. Building areas for lots with existing residential development have been defined to include the footprint of the existing residential building.

5.1.2 Hazard Management Area requirements

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

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

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

5.2 Public and firefighting Access

5.2.1 Public Roads

One new roadway terminating in a cul-de-sac is proposal for this subdivision. The new roadway will be required to conform with the following design and construction specifications.

Unless the development standards in the zone require a higher standard, the following apply:

- two-wheel drive, all-weather construction;
- load capacity of at least 20t, including for bridges and culverts;
- minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road;

- minimum vertical clearance of 4m;
- minimum horizontal clearance of 2m from the edge of the carriageway;
- cross falls of less than 3 degrees (1:20 or 5%);
- maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads;
- curves have a minimum inner radius of 10m;
- dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7 metres in width;
- dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and
- carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with Australian Standard AS1743-2001 Road signs-specifications

5.2.2 Property access (for building compliance)

Property access will be required to be established to access static water supply connection points. Lot 4, with existing residential development, will require property access to be modified to achieve the following standards prior to the sealing of titles.

The following design and construction standards apply to property access:

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

All lots within stage 1 are accessed from an existing roadway, (Arthur Highway), all lots within stage 2 will be accessed from a new road terminating with a cul-de-sac.

5.3 Water supplies for firefighting (for building compliance)

The subdivision is not serviced by a reticulated water supply. In this circumstance, a static water supply dedicated for firefighting for each building area which is compliant with the specifications of table 1 is required. In the case of Lot 4 with existing residential

development the static water supply will be required to be provided before the sealing of titles.

Table 1. Specifications for static water supplies for firefighting.

Element		Requirement
A	Distance between building area to be protected and water supply	The following requirements apply: (a) The building area to be protected must be located within 90 metres of the firefighting water point of a static water supply; and (b) The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area.
B	Static Water Supplies	A static water supply: (a) May have a remotely located offtake connected to the static water supply; (b) May be a supply for combined use (firefighting and other uses) but the specified minimum quantity of firefighting water must be available at all times; (c) Must be a minimum of 10,000 litres per building area to be protected. This volume of water must not be used for any other purpose including firefighting sprinkler or spray systems; (d) Must be metal, concrete or lagged by non-combustible materials if above ground; and (e) If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959-2018, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by: (i) metal; (ii) non-combustible material; or (iii) fibre-cement a minimum of 6 mm thickness.
C	Fittings, pipework and accessories (including stands and tank supports)	Fittings and pipework associated with a fire fighting water point for a static water supply must: (a) Have a minimum nominal internal diameter of 50mm; (b) Be fitted with a valve with a minimum nominal internal diameter of 50mm; (c) Be metal or lagged by non-combustible materials if above ground; (d) Where buried, have a minimum depth of 300mm (compliant with AS/NZS 3500.1-2003 Clause 5.23); (e) Provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to firefighting equipment; (f) Ensure the coupling is accessible and available for connection at all times; (g) Ensure the coupling is fitted with a blank cap and securing chain (minimum 220 mm length); (h) Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table; and (i) Where a remote offtake is installed, ensure the offtake is in a position that is: (i) Visible; (ii) Accessible to allow connection by firefighting equipment, (iii) At a working height of 450 – 600mm above ground level; and (iv) Protected from possible damage, including damage by vehicles.
D	Signage for static water connections	Signage for static water connections The firefighting water point for a static water supply must be identified by a sign permanently fixed to the exterior of the assembly in a visible location. The sign must: (a) comply with the water tank signage requirements within *Australian Standard AS2304-2011 Water storage tanks for fire protection systems*; or (b) comply with the Tasmania Fire Service Water Supply Guideline published by the Tasmania Fire Service
E	A hardstand area for fire appliances must be provided:	(a) no more than three metres from the firefighting water point, measured as a hose lay (including the minimum water level in dams, swimming pools and the like); (b) no closer than six metres from the building area to be protected; (c) a minimum width of three metres constructed to the same standard as the carriageway; and (d) connected to the property access by a carriageway equivalent to the standard of the property access.

6.0 Compliance

6.1 Planning Compliance

Table 2 summarises the compliance requirements for subdivisions in bushfire prone areas against Code C13 as they apply to this proposal. A planning certificate has been issued for the associated BHMP as being compliant with the relevant standards as outlined below and is located in appendix D.

Table 2. Compliance with Code C13 of the Tasmanian Planning Scheme -Sorell

Clause	Compliance
C13.4 Use or development exempt from this code	Not applicable.
C13.5 1 Vulnerable Uses	Not applicable.
C13.5.2 Hazardous Uses	Not applicable
C13.6.1 Subdivision: Provision of hazard management areas	The Bushfire Hazard Management Plan is certified by an accredited person. Each lot within the subdivision has a building area and associated hazard management area shown which is suitable for BAL-12.5 construction standards. Hazard management areas are able to be contained within each individual lot, therefore there is no requirement for part 5 agreements or easements to facilitate hazard management. The proposal is compliant with the acceptable solution at A1, (b).
C13.6.2 Subdivision: Public and firefighting access	The Bushfire Hazard Management Plan specifies minimum standards for new public roadways and property access consistent with the requirements of table C13.1 and C13.2 respectively. There is no proposal for fire trails as part of this development. The Bushfire Hazard Management Plan is certified by an accredited person. The proposal is compliant with the acceptable solution at A1, (b).
C13.6.3 Subdivision: Provision of water supply for firefighting purposes	The Bushfire Hazard Management Plan requires static water supplies to be provided for all lots. The specifications for static water supplies are provided consistent with table C13.5. The proposal is compliant with the acceptable solution at A2, (b).

6.2 Building Compliance (for future development)

Future residential development may not require assessment for bushfire management requirements at the planning application stage. Subsequent building applications will require demonstrated compliance with the Directors Determination. If future development is undertaken in compliance with the Bushfire Hazard Management Plan associated with this report, a building surveyor may rely upon it for building compliance purposes if it is not more than 6 years old.

7.0 Summary

The proposed development occurs within a bushfire-prone area. The vegetation is classified as grassland with the highest risk presented by vegetation to the north and north-west of the building areas.

A bushfire hazard management plan has been developed and shows hazard management areas with building areas and construction standards, the location of new public roadways and proposed property access with specifications for their design and construction, and requirements for the provision of firefighting water supplies.

If future development for an individual lot is proposed and is compliant with all the specifications of the bushfire hazard management plan, it may be relied upon for building compliance purposes. If subsequent development does not comply with all the specifications a new assessment will be required.

8.0 Limitations Statement

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

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

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

9.0 References

Building Amendment (Bushfire-Prone Areas) Regulations 2014

Determination, Director of Building Control – Requirements for Building in Bushfire-Prone Areas, version 2.1 29th August 2017. Consumer, Building and Occupational Services, Department of Justice, Tasmania

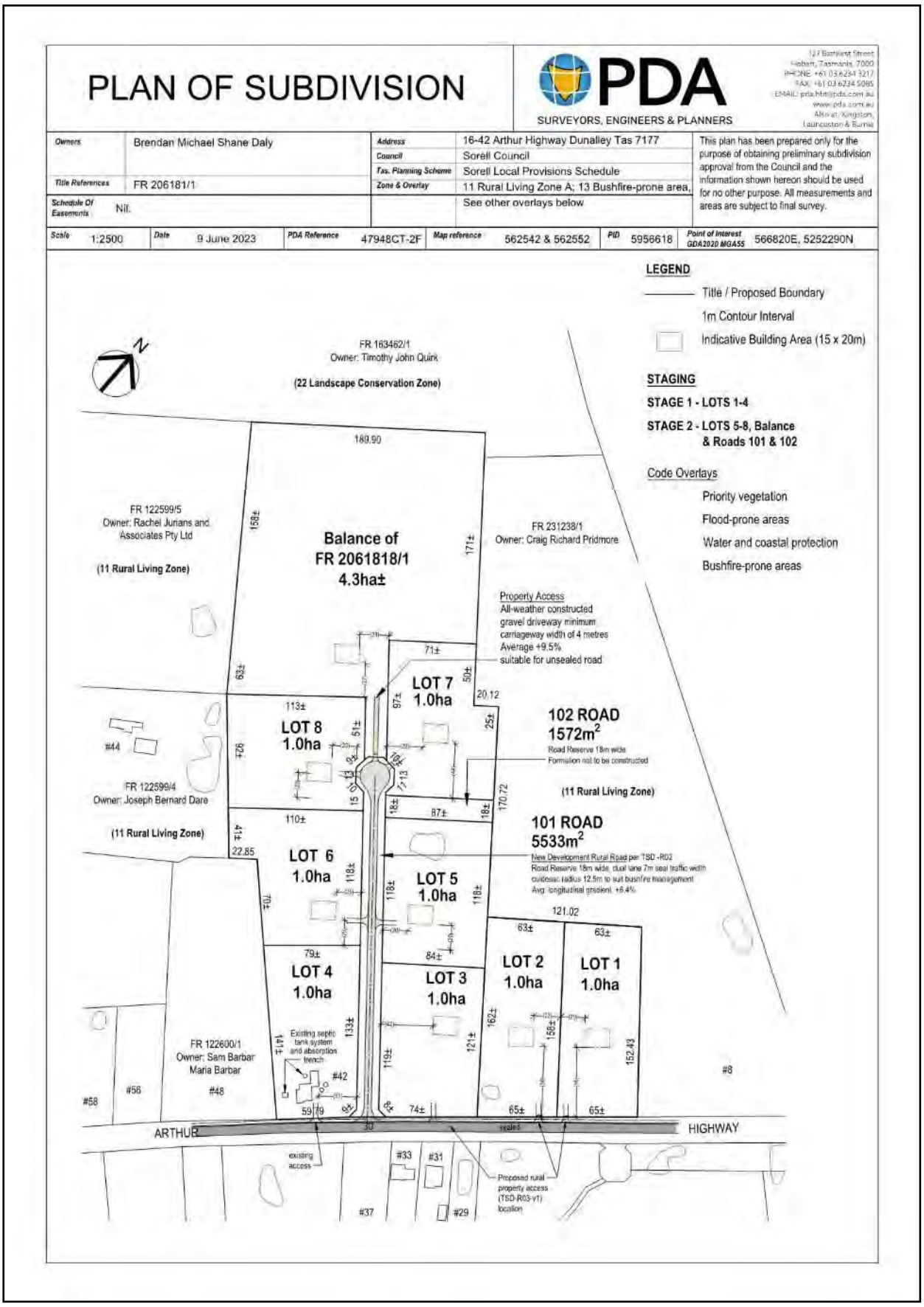
Standards Australia 2018, *Construction of buildings in bushfire prone areas,* Standards Australia, Sydney.

Tasmanian Planning Commission 2017, *Planning Directive No.5.1 – Bushfire prone Areas Code*. Tasmanian Planning Commission, Hobart. 1st September 2017.

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

Sorell Interim Planning Scheme 2015.

Appendix A - Site Plan



Appendix B – Bushfire Attack Level assessment tables

Table 1. Bushfire Attack Level Assessment for the Lot 4 (Existing development)

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
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	--	--	--		
	--	--	--		
South-east	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 22 metres	10 metres	**BAL-12.5**
	Grassland^	>0 to 5º downslope	22 to >100 metres		
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	--	--	--		
South-west	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
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	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
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^ Vegetation classification as per AS3959-2018 and Figures 2.4(A) to 2.4 (H).
* Low threat vegetation as per Bushfire Prone Areas Advisory Note (BHAN) No.1-2014, version 3, 8/11/2017.
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Table 2. Bushfire Attack Level Assessment for Lot 1

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
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	--	--	--		
	--	--	--		
South-east	Grassland^	>0 to 5º downslope	0 to 20 metres	16 metres	**BAL-12.5**
	Exclusion 2.2.3.2 (e, f)^	flat 0º	20 to 32 metres		
	Grassland^	>0 to 5º downslope	32 to >100 metres		
	--	--	--		
South-west	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
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^ Vegetation classification as per AS3959-2018 and Figures 2.4 (A) to 2.4 (H).
* Low threat vegetation as per Bushfire Prone Areas Advisory Note (BHAN) No.1-2014, version 3, 8/11/2017.
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Table 3. Bushfire Attack Level Assessment for Lot 2

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-east	Grassland^	>0 to 5º downslope	0 to 20 metres	16 metres	**BAL-12.5**
	Exclusion 2.2.3.2 (e, f)^	flat 0º	20 to 32 metres		
	Grassland^	>0 to 5º downslope	32 to >100 metres		
	--	--	--		
South-west	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
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	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
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^ Vegetation classification as per AS3959-2018 and Figures 2.4 (A) to 2.4 (H).
* Low threat vegetation as per Bushfire Prone Areas Advisory Note (BHAN) No.1-2014, version 3, 8/11/2017.
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Table 4. Bushfire Attack Level Assessment for Lot 3

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
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	--	--	--		
	--	--	--		
South-east	Grassland^	>0 to 5º downslope	0 to 20 metres	16 metres	**BAL-12.5**
	Exclusion 2.2.3.2 (e, f)^	flat 0º	20 to >100 metres		
	--	--	--		
	--	--	--		
South-west	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
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	--	--	--		
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^ Vegetation classification as per AS3959-2018 and Figures 2.4 (A) to 2.4 (H).
* Low threat vegetation as per Bushfire Prone Areas Advisory Note (BHAN) No.1-2014, version 3, 8/11/2017.
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Table 5. Bushfire Attack Level Assessment for Lot 5

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-east	Grassland^	>0 to 5º downslope	0 to >100 metres	16 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-west	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
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	--	--	--		
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North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
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^ Vegetation classification as per AS3959-2018 and Figures 2.4 (A) to 2.4 (H).
* Low threat vegetation as per Bushfire Prone Areas Advisory Note (BHAN) No.1-2014, version 3, 8/11/2017.
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Table 6. Bushfire Attack Level Assessment for Lot 6

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-east	Grassland^	>0 to 5º downslope	0 to >100 metres	16 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-west	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		

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

Table 7. Bushfire Attack Level Assessment for Lot 7

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	flat 0º	0 to 45 metres	14 metres	**BAL-12.5**
	Grassland^	>0 to 5º downslope	45 to 100 metres		
	--	--	--		
	--	--	--		
South-east	Grassland^	>5º to 10º downslope	0 to >100 metres	19 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-west	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		

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

Table 8. Bushfire Attack Level Assessment for Lot 8

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-east	Grassland^	>5º to 10º downslope	0 to >100 metres	16 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-west	Grassland^	>0 to 5º downslope	0 to >100 metres	16 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		

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

Table 9. Bushfire Attack Level Assessment for Balance Lot

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North-east	Grassland^	flat 0º	0 to >100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-east	Grassland^	>5º to 10º downslope	0 to >100 metres	19 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
South-west	Grassland^	>0 to 5º downslope	0 to >100 metres	16 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		
North-west	Grassland^	upslope	0 to 100 metres	14 metres	**BAL-12.5**
	--	--	--		
	--	--	--		
	--	--	--		

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

Appendix C

Bushfire Hazard Management Plan

BUSHFIRE HAZARD MANAGEMENT PLAN

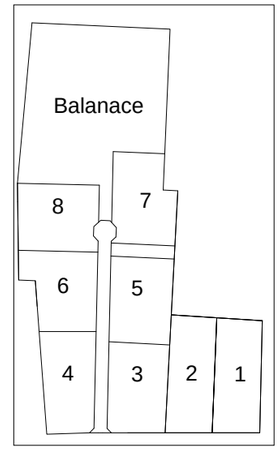
Bushfire Hazard Management Plan, 42 Arthur Highway Dunalley. June 2023. J5353v3 Tasmanian Planning Scheme - Sorell

Sorell Council

Development Application: 7.2023.9.1 - Subdivision Application - 16-42 Arthur Highway, Dunalley.pdf

Plans Reference: P1

Date Received: 15/06/2023



Stage 1 - Lots 1 to 4

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

Note: the requirements of sections 5.1, 5.2, 5.3 of the Bushfire Hazard Report are required to be implemented for Lot 4 prior to the sealing of titles.

Compliance Requirements

Property Access

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

Water Supplies for Firefighting

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

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

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

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

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

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

Hazard Management Areas

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

Building Area

Static Water Supply Point

Hazard Management Area

Hazard Management Area

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

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

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

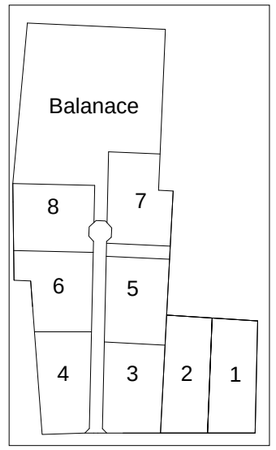
Certification No. J5353

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

Do not scale from these drawings. Dimensions to take precedence over scale. Written specifications to take precedence over diagrammatic representations.	B. Daly 42 Arthur Highway Dunalley TAS 7177	C.T.: 206181/1 PID: 5956618	Date: 09/06/2023	Bushfire Hazard Management Plan 42 Arthur Highway Dunalley. June 2023. J5353v3 Bushfire Management Report 42 Arthur Highway Dunalley. June 2023. J5353v3	Drawing Number: A01	Sheet 1 of 2 Prepared by: MvdB

BUSHFIRE HAZARD MANAGEMENT PLAN

Bushfire Hazard Management Plan, 42 Arthur Highway Dunalley. June 2023. J5353v3 Tasmanian Planning Scheme - Sorell



Stage 2 - Lots 5 to 8

Building Area

Static Water Supply Point

Hazard Management Area

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

Sorell Council

Development Application: 7.2023.9.1 - Subdivision Application - 16-42 Arthur Highway, Dunalley.pdf

Plans Reference: P1

Date Received: 15/06/2023

Compliance Requirements

Property Access

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

Water Supplies for Firefighting

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

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(d) Must be metal, concrete or lagged by non-combustible materials if above ground; and
(e) If a tank can be located so it is shielded in all directions in compliance with Section 3.5 of AS 3959-2009, the tank may be constructed of any material provided that the lowest 400 mm of the tank exterior is protected by:
(i) metal;
(ii) non-combustible material; or
(iii) fibre-cement a minimum of 6 mm thickness.

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(a) Have a minimum nominal internal diameter of 50mm; (2) Be fitted with a valve with a minimum nominal internal diameter of 50mm;
(b) Be fitted with a valve with a minimum nominal internal diameter of 50mm;
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(d) Where buried, have a minimum depth of 300mm (compliant with AS/NZS 3500.1-2003 Clause 5.23);
(e) Provide a DIN or NEN standard forged Storz 65 mm coupling fitted with a suction washer for connection to fire fighting equipment;
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(g) Ensure the coupling is fitted with a blank cap and securing chain (minimum 220 mm length);
(h) Ensure underground tanks have either an opening at the top of not less than 250 mm diameter or a coupling compliant with this Table; and
(i) Where a remote offtake is installed, ensure the offtake is in a position that is:
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A hardstand area for fire appliances must be provided:
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(c) With a minimum width of three metres constructed to the same standard as the carriageway; and
(d) Connected to the property access by a carriageway equivalent to the standard of the property access.

Hazard Management Areas

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

Hazard Management Area

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

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

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

Certification No. J5353

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

Do not scale from these drawings. Dimensions to take precedence over scale. Written specifications to take precedence over diagrammatic representations.	B. Daly 42 Arthur Highway Dunalley TAS 7177	C.T.: 206181/1 PID: 5956618	Date: 09/06/2023	Bushfire Hazard Management Plan 42 Arthur Highway Dunalley. June 2023. J5353v3 Bushfire Management Report 42 Arthur Highway Dunalley. June 2023. J5353v3	Drawing Number: A01	Sheet 2 of 2 Prepared by: MvdB

Appendix D

Planning Certificate

BUSHFIRE-PRONE AREAS CODE

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

1. Land to which certificate applies

The subject site includes property that is proposed for use and development and includes all properties upon which works are proposed for bushfire protection purposes.

Street address:	42 Arthur Highway, Dunalley, TAS, 7177.
Certificate of Title / PID:	206181/1

2. Proposed Use or Development

Description of proposed Use and Development:	Subdivision of land resulting in 8 lots and balance lot
Applicable Planning Scheme:	Tasmanian Planning Scheme - Sorell

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
Subdivision Proposal Lot Layout Plan	PDA surveyors	20/10/2021	47948CT-2F
Bushfire Hazard Report 42 Arthur Highway Dunalley. June 2023. J5353v3	Mark Van den Berg	09/06/2023	3
Bushfire Hazard Management Plan 42 Arthur Highway Dunalley. June 2023. J5353v3	Mark Van den Berg	09/06/2023	3

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

4. Nature of Certificate

The following requirements are applicable to the proposed use and development:

☐	**E1.4 / C13.4 – Use or development exempt from this Code**	
	Compliance test	**Compliance Requirement**
☐	E1.4(a) / C13.4.1(a)	Insufficient increase in risk

☐	**E1.5.1 / C13.5.1 – Vulnerable Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.1 P1 / C13.5.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.1 A2 / C13.5.1 A2	Emergency management strategy
☐	E1.5.1 A3 / C13.5.1 A2	Bushfire hazard management plan

☐	**E1.5.2 / C13.5.2 – Hazardous Uses**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.5.2 P1 / C13.5.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.5.2 A2 / C13.5.2 A2	Emergency management strategy
☐	E1.5.2 A3 / C13.5.2 A3	Bushfire hazard management plan

☒	**E1.6.1 / C13.6.1 Subdivision: Provision of hazard management areas**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.1 P1 / C13.6.1 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.1 A1 (a) / C13.6.1 A1(a)	Insufficient increase in risk
☒	E1.6.1 A1 (b) / C13.6.1 A1(b)	Provides BAL-19 for all lots (including any lot designated as 'balance'.
☐	E1.6.1 A1(c) / C13.6.1 A1(c)	Consent for Part 5 Agreement

☒	**E1.6.2 / C13.6.2 Subdivision: Public and fire fighting access**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.2 P1 / C13.6.2 P1	***Planning authority discretion required. A proposal cannot be certified as compliant with P1.***
☐	E1.6.2 A1 (a) / C13.6.2 A1 (a)	Insufficient increase in risk
☒	E1.6.2 A1 (b) / C13.6.2 A1 (b)	Access complies with relevant Tables

☒	**E1.6.3 / C13.1.6.3 Subdivision: Provision of water supply for fire fighting purposes**	
	Acceptable Solution	**Compliance Requirement**
☐	E1.6.3 A1 (a) / C13.6.3 A1 (a)	Insufficient increase in risk
☐	E1.6.3 A1 (b) / C13.6.3 A1 (b)	Reticulated water supply complies with relevant Table
☐	E1.6.3 A1 (c) / C13.6.3 A1 (c)	Water supply consistent with the objective
☐	E1.6.3 A2 (a) / C13.6.3 A2 (a)	Insufficient increase in risk
☒	E1.6.3 A2 (b) / C13.6.3 A2 (b)	Static water supply complies with relevant Table
☐	E1.6.3 A2 (c) / C13.6.3 A2 (c)	Static water supply consistent with the objective

5. Bushfire Hazard Practitioner

Name:	Mark Van den Berg	**Phone No:**	03 62231839
Postal Address:	29 Kirksway Place Battery Point Tas. 7004	**Email Address:**	mvandenberg@geosolutions.net.au
Accreditation No:	BFP – 108	**Scope:**	1, 2, 3a, 3b & 3c

6. Certification

I certify that in accordance with the authority given under Part 4A of the *Fire Service Act 1979* that the proposed use and development:

☐ Is exempt from the requirement Bushfire-Prone Areas Code because, having regard to the objective of all applicable standards in the Code, there is considered to be an insufficient increase in risk to the use or development from bushfire to warrant any specific bushfire protection measures, or

☒ The Bushfire Hazard Management Plan/s identified in Section 3 of this certificate is/are in accordance with the Chief Officer's requirements and compliant with the relevant **Acceptable Solutions** identified in Section 4 of this Certificate.

Signed:
certifier

Name: Mark Van den Berg **Date:** 09/06/2023

Certificate Number: J5353

(for Practitioner Use only)

Appendix E

Certificate of Others

CERTIFICATE OF QUALIFIED PERSON – ASSESSABLE ITEM

Section 321

Form **55**

To: B. Daly *Owner /Agent*

c/- 42 Arthur Highway *Address*

Dunalley, TAS 7177 *Suburb/postcode*

Qualified person details:

Qualified person: Mark Van den Berg

Address: 29 Kirksway Place

Battery Point TAS 7004

Phone No: 03 6223 1839

Fax No:

Licence No: BFP-108

Email address: mvandenberg@geosolutions.net.au

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

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

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

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

Details of work:

Address: 42 Arthur Highway

Dunalley, TAS. 7177

Lot No: 1 to 8 (inclusive) and balance lot

Certificate of title No: TBA

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

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

Certificate details:

Certificate type: Bushfire Hazard

(description from Column 1 of Schedule 1 of the Director's Determination - Certificates by Qualified Persons for Assessable Items n)

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

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

or

a building, temporary structure or plumbing installation:

In issuing this certificate the following matters are relevant –

Documents:	Bushfire Hazard Report 42 Arthur Highway Dunalley. June 2023. J5353v3 Bushfire Hazard Management Plan 42 Arthur Highway Dunalley. June 2023. J5353v3 and Form 55.
Relevant calculations:	N/A
References:	Determination, Director of Building Control Bushfire Hazard Areas, version 1.1 8th April 2021. Consumer, Building and Occupational Services, Department of Justice, Tasmania. Building Amendment (Bushfire-Prone Areas) Regulations 2014. Standards Australia 2018, Construction of buildings in bushfire prone areas, Standards Australia, Sydney.

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

The Bushfire Attack Level is **12.5** for lots 1 to 6 (inclusive) and the balance lot as marked on the Bushfire Hazard management plan. All specifications of report and BHMP required for compliance.

Scope and/or Limitations

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

I certify the matters described in this certificate.

Qualified person:

Signed:

Certificate No: J5353

Date: 09/06/2023

PDA
SURVEYORS, ENGINEERS & PLANNERS

127 Bathurst Street
Hobart, Tasmania 7000
Phone (03) 6234 3217

ABN 71 217 806 325
pda.hbt@pda.com.au
www.pda.com.au

Our Ref: 47948CT
47948CT - Response to RFI re SW.docx

05 October 2023

Sorell Council
Planning Department
12 Somerville St
Sorell, TAS, 7172

Via Email: sorell.council@sorell.tas.gov.au

Attention: Shane Wells

SA 2023/9 – 1-8 Lot Subdivision: 16-42 Arthur Highway, Dunalley
Response to RFI regarding Stormwater Management

Reference is made to the RFI from Council dated 14 July 2023. This letter responds to Item 2 of the RFI.

2. Please revise the proposed road's general arrangement to include the following:

- *Dimension the minimum rural road reservation width in general accordance with TSD-R02-v3 and TSD-R08-v3 for a sealed road and cul-de-sac, respectively.*
- *The road's stormwater drainage plan detailing indicative grades, falls and directions, to showing the proposed stormwater drainage paths, and the required infrastructure (culverts & headwalls) and denoting their sizing, to demonstrate how stormwater run-off from all contributing catchments will be captured and conveyed to a Lawful Point of Discharge.*
- *A typical cross-section for the proposed road, showing dimensions (design widths) suitable to accommodate the traffic generation identified, and detailing stormwater systems (table drains) with adequate capacity for a 1% AEP event.*

Advice

- *Please incorporate design considerations regarding the developed lots' drainage, including Lot 5's dam overflowing (e.g., spillway, sub-soil drains etc.), impacting the road in a 1% AEP event.*

1.0 Road Cross-section

A two-way cross-fall is proposed, with a table drain on either side. A typical section is shown below. A DN300 road culvert will connect the table drains prior to connection to the State Growth table drain. The roadway will have a 5.5 m sealed traffic width, with 500 mm sealed shoulder and 500 mm verge on either side. The flow estimation and the capacity of the culvert and table drains are discussed later.

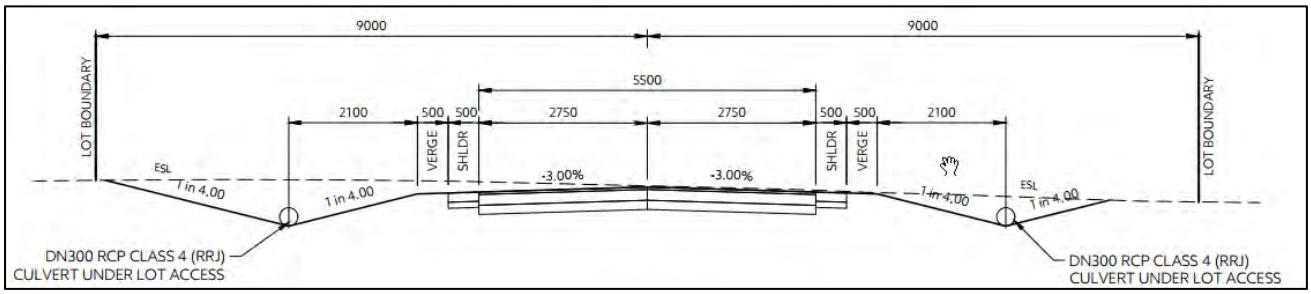

Figure 1 – Typical road cross-section

The proposed road width will satisfy the TIA recommendations to cater for a traffic generation of 45 vehicles per day with 4 vehicles at peak times and with proposed lots generating 9 vehicles per day.

2.0 Dam on Lot 5

The future dwelling(s) on Lot 5 will be located outside of the natural drainage line below the dam overflow.

3.0 Flow estimation

3.1 Pre-development flows

The catchment of the existing culvert under Arthur Highway is shown below.

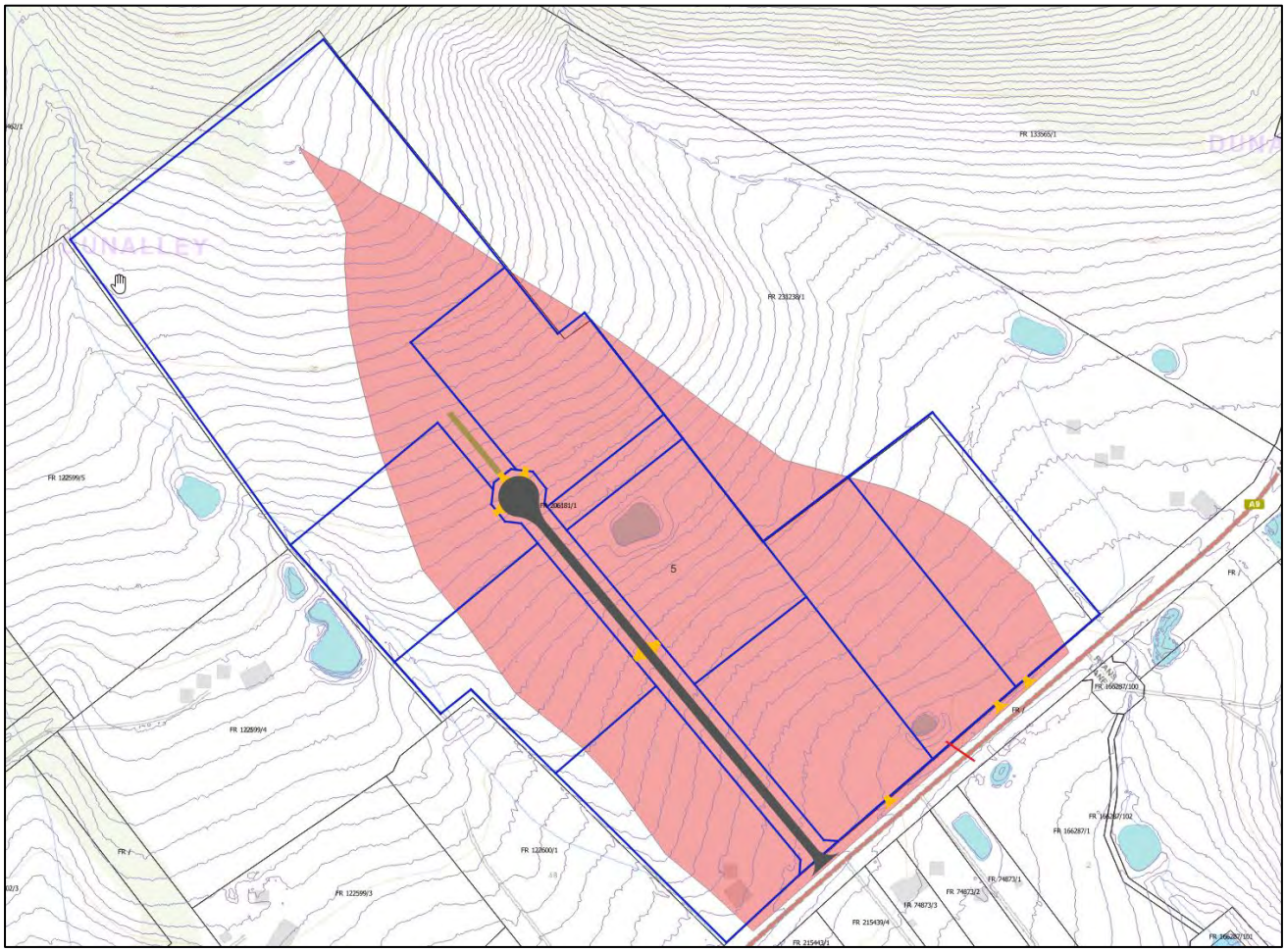

Figure 2 – Catchment area of Arthur Highway culvert

The extent of the catchment was measured to be 87 818 m^2. Note that the areas of the property that do not drain towards the culvert were disregarded in this report, since those are likely to be fully pervious and drain towards the adjacent watercourses. In addition, about 250 m^2 has been subtracted to account for the existing house, as it is understood that the roof areas of the house drain to absorption trenches.

The peak flow was estimated by means of the IL-CL method in Drains, according to the assumptions and parameters tabulated below.

Table 1– Catchment parameters of DN450 culvert pre-subdivision

Parameter	Value	Comment
Area	87 818 m^2	Measured in QGIS
Revised area	87 568 m^2	Subtracted existing house draining to soakaway
Time of concentration	30 min	
Initial loss	29 mm	From ARR
Continuing loss	3.6 mm/h	From ARR

Based on the above parameters, the 5% AEP pre-development peak flow approaching the culvert was estimated to be **101 ℓ/s** and the corresponding 1% AEP peak flow **371 ℓ/s**.

3.2 Post development flows

The breakdown of the post-subdivision catchment is shown below.

Figure 3 – Post-development catchment areas of Arthur Highway culvert

The flows from the post subdivision catchment were calculated using the same IL-CL hydrological model as for the pre-subdivision catchment.

For the subdivided lots, it is estimated that about 300 m² of roof and hard stand will be created on each lot and drained to absorption trenches. However there will be 2 410 m² of new sealed road surface. So the revised post-subdivision catchment areas are as follows:

Table 2– Catchment breakdown post-subdivision

47948CT - Arthur Hwy - Dunalley - Catchment Breakdown

POST DEVELOPMENT											PRE DEVELOPMENT		
Name	Area total	Area effective	Imperv to ground	Contributory imp	Landscaping	EIA	RIA	PA	EIA %	RIA %	PA %	Name	Area total	Area effective
Cat 1	26619	25419	1200	1205	24214	1205	0	24214	4.7%	0.0%	95.3%	Cat 5	87818	87568
Cat 2	5198	5198	0	1205	3993	1205	0	3993	23.2%	0.0%	76.8%			
Cat 3	3349	3099	250	0	3099	0	0	3099	0.0%	0.0%	100.0%			
Cat 4	52652	51152	1500	0	51152	0	0	51152	0.0%	0.0%	100.0%			
	87818	**84868**	**2950**	**2410**	**82458**	**2410**	**0**	**82458**					**87818**	**87568**

The estimated post-subdivision catchment parameters are as follows:

Table 3– Catchment parameters for post-subdivision catchments

Parameter	Value	Comment
Cat 1 time of conc.	Impervious 5 min Pervious 15 min	
Cat 2 time of conc.	Impervious 5 min Pervious 15 min	
Cat 3 time of conc.	5 min	
Cat 4 time of conc.	30 min	
Initial loss	29 mm 1.0 mm	From ARR – pervious areas Adopted for impervious areas
Continuing loss	3.6 mm/h 1.0 mm/h	From ARR – for pervious areas Adopted for impervious areas

The screenshots below show the Drains model setup and the 5% AEP and 1% AEP design flows.

Figure 4 – Drains model setup

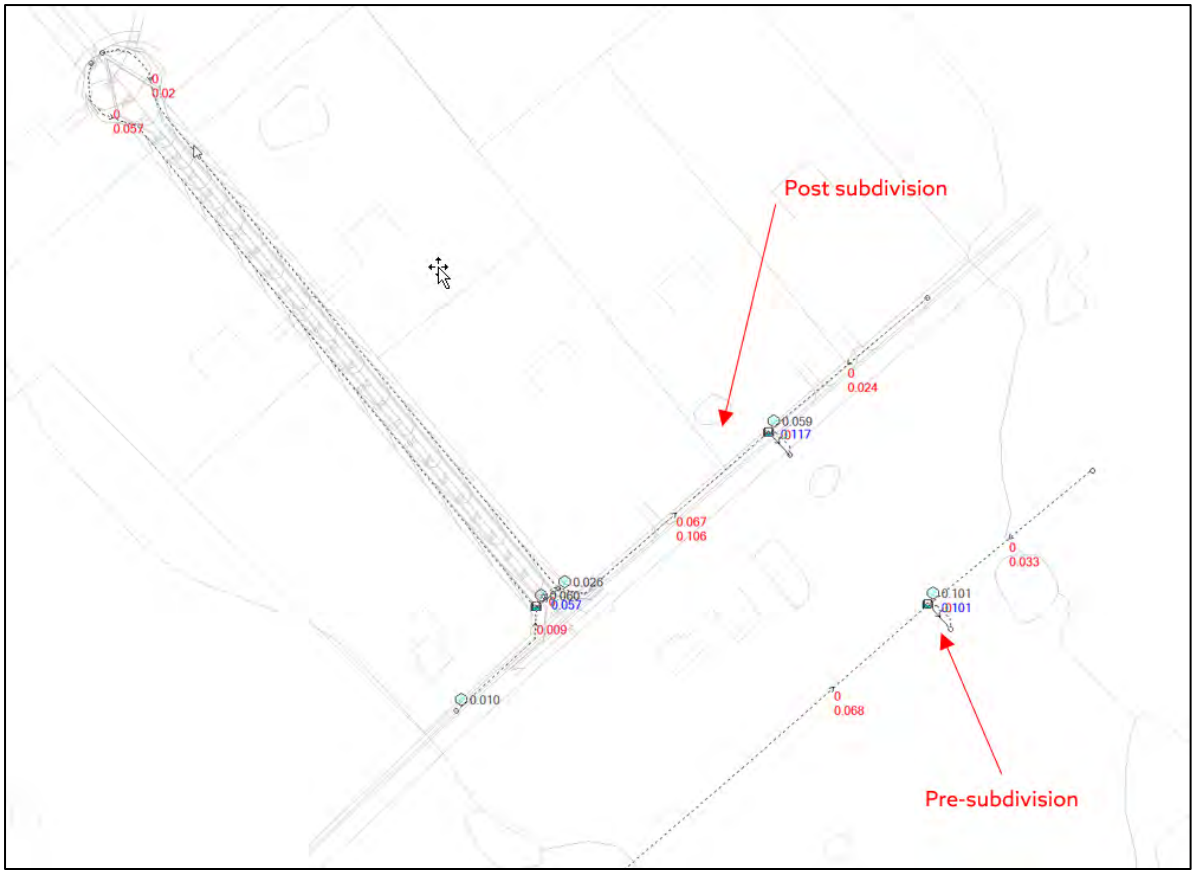

Figure 5 – 5% AEP design flows

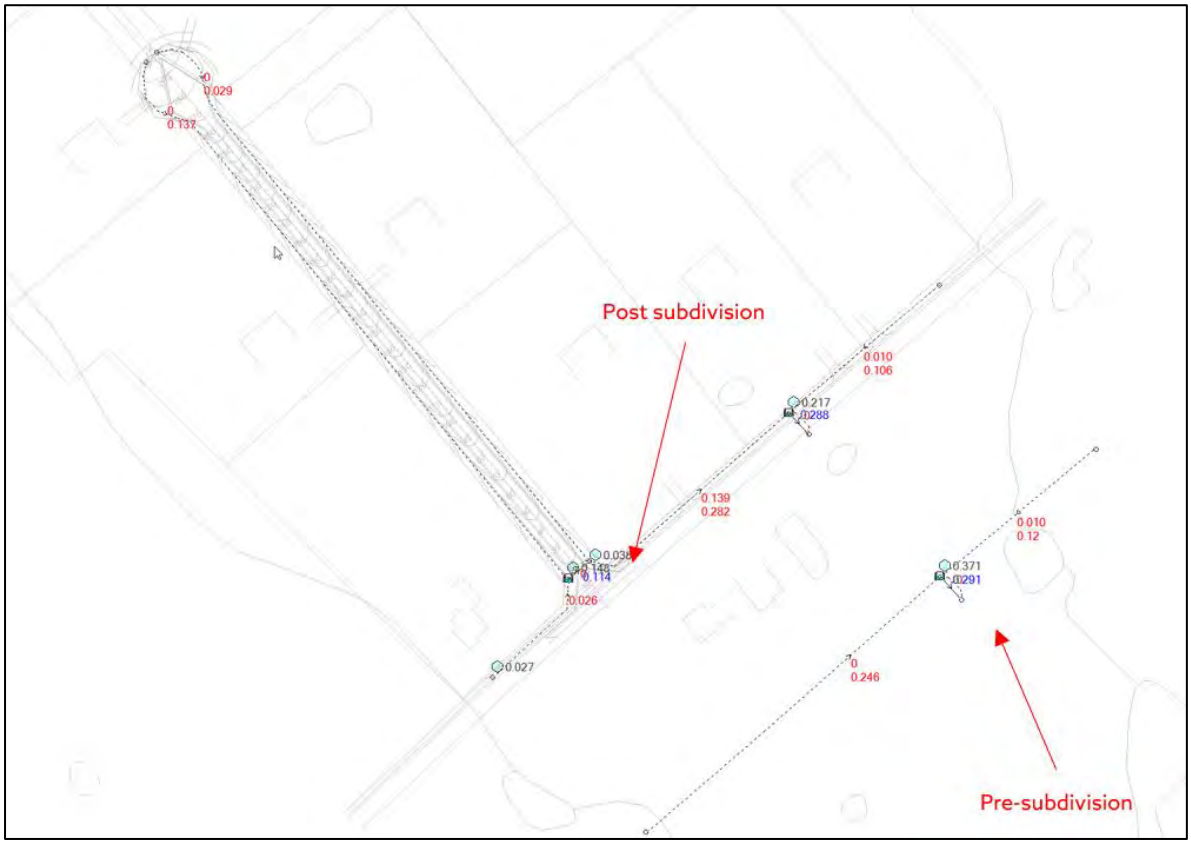

Figure 6 – 1% AEP design flows

It can be seen that the 5% AEP peak flow increases from 101 ℓ/s to 117 ℓ/s. The 1% AEP peak flows are about the same, at 292 ℓ/s and 288 ℓ/s

4.0 Table drains

The 1% AEP design flow in table drain 1 is 137 ℓ/s. The slope will be about 6.4%. Assuming a Manning's n value of 0.06, the flow depth will be 200 mm and the velocity 0.9 m/s. For the purpose of stormwater treatment, the table drain has been designed as a vegetated swale, as discussed below. The table drain will be drained via DN300 under each driveway access as per standard drawing TSD-R03-v3.

5.0 Drainage of lots

5.1 Absorption trenches

It is estimated that the lots will have an average of 300 m^2 impervious area, accounting for roof area, driveways and parking and infiltration measures sized accordingly as a preliminary estimate.

The site was mapped by The List as Jurassic Dolerite with typically clay loam subsoil. A hydraulic conductivity of 36 mm/h was assumed, but this figure is to be confirmed or revised on the basis of a geotechnical investigation. Based on this, the required infiltration trench has been sized as 2 m x 15 m x 0.5 m. Fortunately, there is adequate space available for increasing the size of the trenches if necessary.

5.2 Ground tanks

For the purposes of stormwater attenuation ground tanks for the roofs are optional if infiltration trenches are used. However, it is suggested that the owner of each lot install a tank for rainwater retention for domestic reuse.

6.0 Overland flow paths for 1% AEP

The 1% AEP flow routes are indicated on the attached drawings. The flow in the table drain of Arthur Highway is estimated to increase by at most 40 ℓ/s in a 1% AEP event.

7.0 Stormwater treatment

The stormwater quality management targets set by DPIPWE were adopted. These are as follows:

7.1 Water Quality targets

Table 4 – Stormwater treatment targets

Parameter	Reduction target
Total suspended solids (TSS)	80%
Total nitrogen (TN)	45%
Total phosphorous (TP)	45%

7.2 Proposed treatment

The proposed stormwater treatment system is as follows:

- Drain all new hardstand areas within the lots to absorption trenches;
- 600 m of vegetated swales (table drains).

7.3 Treatment modelling with MUSIC

The required stormwater treatment was modelled using MUSIC. Below is a screenshot of the model configuration. The areas of the residential lots were modelled as draining to a generic node, to represent discharge on site and complete removal of pollutants. The following modelling parameters were used.

- Rainfall station 94029 Ellerslie Road Hobart 1990-2010 6 min;
- Melbourne MUSIC Guidelines (Melbourne Water 2016) utilizing modified percentage impervious area, rainfall threshold, soil properties and pollutant concentrations;
- No drainage routing between nodes.

The achieved reductions are as shown in Figure 7.

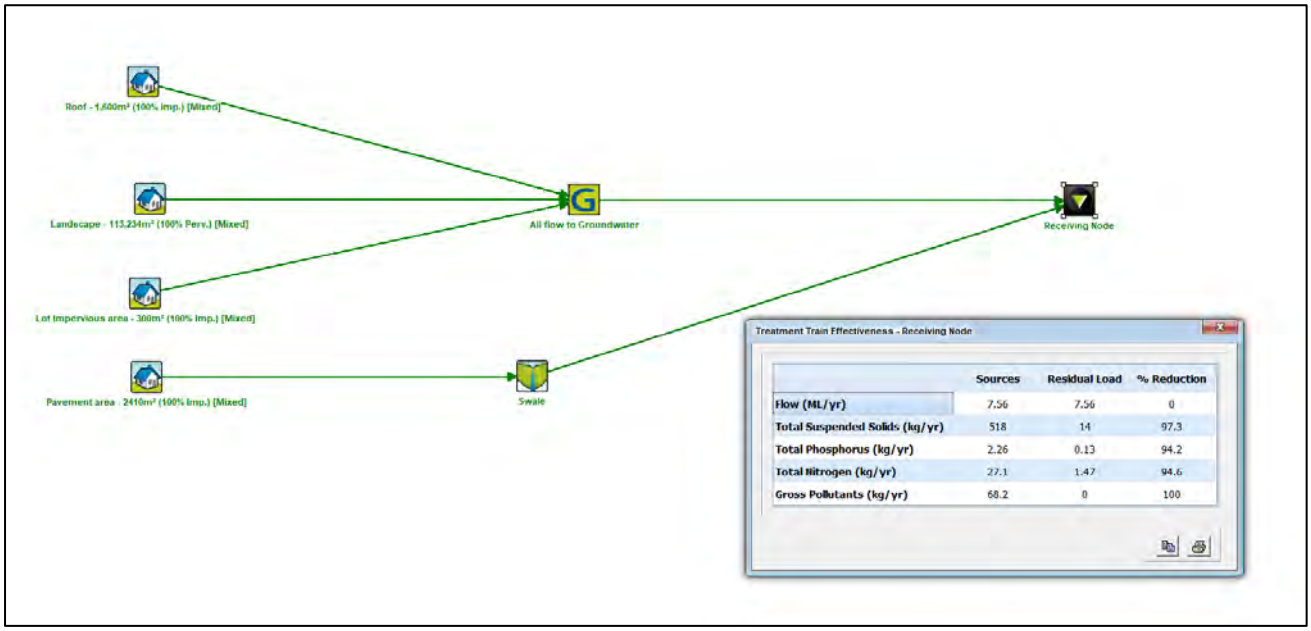

Figure 7 – MUSIC model configuration and achieved pollutant reduction

8.0 Summary

- The access road and cul-de-sac have been dimensioned in accordance with the required LGAT drawings;
- The stormwater drainage plan, including grades, drainage paths and required pipe culverts and table drains have been indicated on the attached drawings;
- A typical road and table drain cross-section has been indicated. This will satisfy the traffic generation and be adequate to manage a 1% AEP flow event;
- It is proposed to manage the stormwater on the individual lots by means of rainwater tanks and infiltration trenches;
- It is proposed to locate the dwelling(s) to be constructed on Lot 5 outside of the natural drainage line downstream of the dam.

Yours faithfully,

PDA Surveyors, Engineers & Planners

Per:

Roderick
CIVIL ENGINEER

ANNEXURE A – ABSORPTION TRENCH CALCULATION

47948CT - Calculation of Dimensions of Soakaways

LOT 1

Location 16-42 Arthur Highway Dunalley

Catchment Area	A	300	m2	Ainf	Infiltration Area	30	
Volumetric Runoff Coefficient	C	0.9		P	Perimeter of infiltration Area	34	
Soil Kh	Kh	36	(assume sandy clay)				
Moderating Factor	U	1					
Width of Infiltration Area		2					
Length of Infiltration Area		15					
Depth of Storage	d	0.5					
Porosity		0.35					
Storage		5.25					

Storm Duration	Storm Mean Intensity	Volume In	Volume Out	Storage Volume Required	Percentage of Storage Provided	D
Minutes -	(mm/hr) I	(m3)	(m3)	(m3)	%	
5	76.2	1.715	0.1155	1.599	328.33	0.08
10	44.5	2.003	0.2310	1.772	296.21	0.17
15	45.2	3.051	0.3465	2.705	194.12	0.25
20	41.4	3.726	0.4620	3.264	160.85	0.33
25	37.4	4.212	0.5775	3.635	144.45	0.42
30	34.0	4.590	0.6930	3.897	134.72	0.50
45	24.4	4.941	1.0395	3.902	134.56	0.75
60	21.3	5.751	1.3860	4.365	120.27	1.00
90	15.9	6.426	2.0790	4.347	120.77	1.50
120	14.0	7.560	2.7720	4.788	109.65	2.00
180	10.6	8.586	4.1580	4.428	118.56	3.00
270	8.6	10.395	6.2370	4.158	126.26	4.50
360	7.9	12.798	8.3160	4.482	117.14	6
540	6.1	14.931	12.4740	2.457	213.68	9
720	5.7	18.603	16.6320	1.971	266.36	12
1080	4.5	21.708	24.9480	-3.240	-162.04	18
1440	4.1	26.595	33.2640	-6.669	-78.72	24
1800	3.7	30.240	41.5800	-11.340	-46.30	30
2160	3.4	32.940	49.8960	-16.956	-30.96	36
2880	2.7	35.100	66.5280	-31.428	-16.70	48
4320	2.0	38.070	99.7920	-61.722		72

ANNEXURE B – PRELIMINARY ENGINEERING DRAWINGS

LOT 4

LOT 6

LOT 8

ARTHUR HIGHWAY

CH15

CH170

CH250

DN300 CLASS 4 RCP CULVERT
WITH DRIVEABLE HEADWALLS PER
D.I.E.R STANDARD DRG 3402-2/P35-2

VEGETATED SWALE

DN300 CLASS 4 RCP CULVERT

DN300 CLASS 4 RCP CULVERT

FLOW

1% FLOW PATH

TIE INTO EXISTING TABLE DRAIN

VEGETATED SWALE

DN300 CLASS 4 RCP CULVERT

DN300 CLASS 4 RCP CULVERT

CH15

CH170

CH250

LOT 3

LOT 5

ROAD
102

LOT 7

DN300 CLASS 4 RCP CULVERT WITH DRIVABLE
HEADWALLS PER D.I.E.R STANDARD DRG 3402-2/P35-2
TABLE DRAIN TO BE RE GRADED TO SUIT NEW CULVERT

EXISTING DN450 CULVERT

LOT 2

FR 231238/1
Owner: Craig Richard Pridmore

DN300 CLASS 4 RCP CULVERT WITH DRIVABLE
HEADWALLS PER D.I.E.R STANDARD DRG 3402-2/P35-2
TABLE DRAIN TO BE RE GRADED TO SUIT NEW CULVERT

LOT 1

Sorell Council
Development Application Response to Request for Information - 16-42 Arthur Highway, Dunalley.pdf
Plan Reference:P3
Date received:20/05/2024

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COORDINATE/ DATUM: LIDAR

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DESIGNED: RP	REVIEWED: MW
DRAWN: RD	REVIEWED: RP
JOB MANAGER: CRAIG TERRY	
ISSUED DATE: 04/10/2023	

CLIENT: BRENDAN MICHAEL SHANE DALY

PROJECT DESCRIPTION: PROPOSED SUBDIVISION

ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY

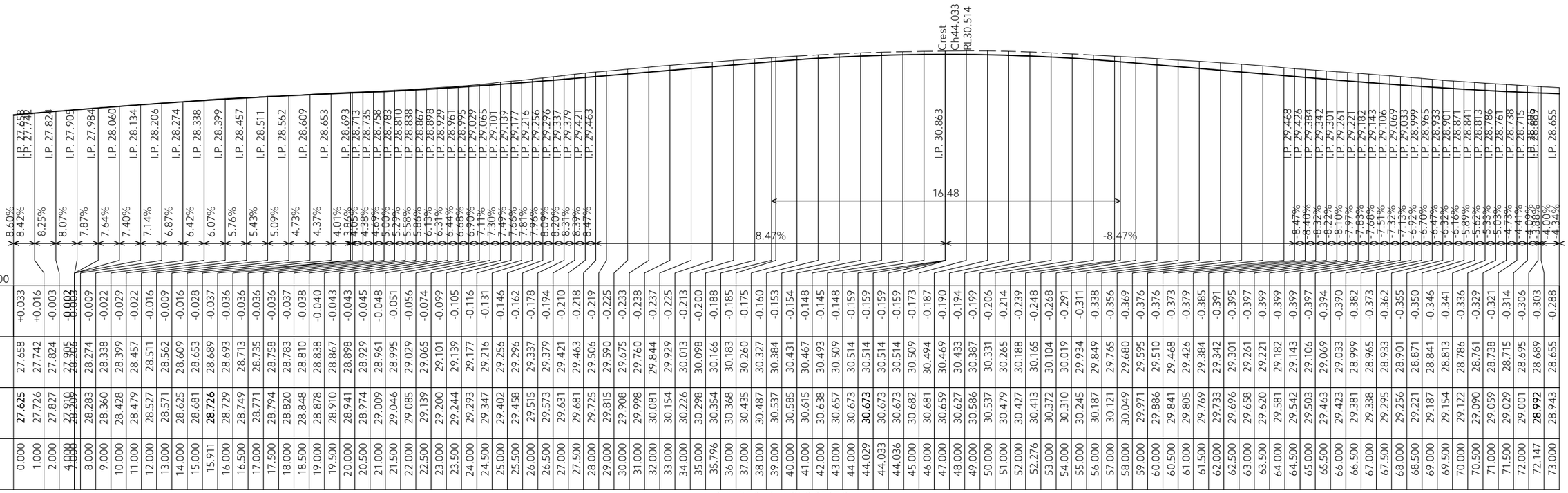
DRAWING TITLE: PROPOSED ROAD & SW LAYOUT

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie

CONTRACT NO.	SCALE		PAPER
------	1: 1000		(A3)
JOB NUMBER	DISCIPLINE	SHEET	REVISION
47948CT	C	100	---

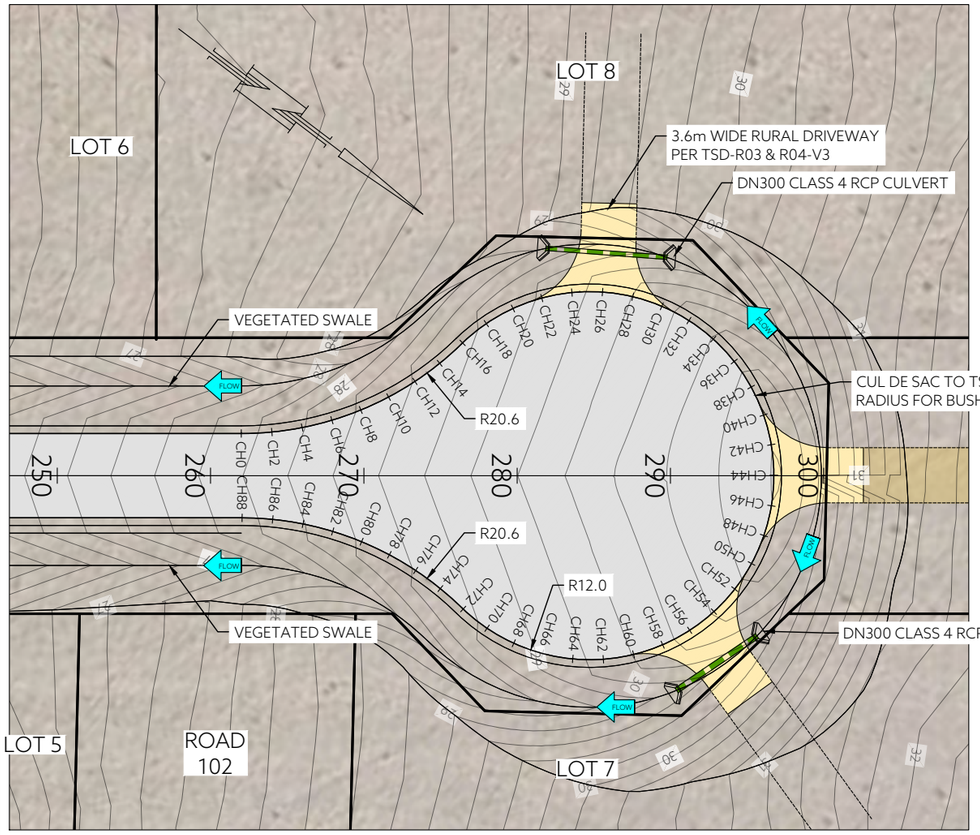
Sorell Council
Development Application Response to Request for Information - 16-42 Arthur Highway, Dunalley.pdf
Plan Reference:P3
Date received:20/05/2024

DATE/TIME: Wednesday, 4 October 2023 4:10:51 PM PLOTTED: ROWAN DEMMER FILE LOCATION: S:\47948CT - BRENDAN DALY - 16-42 ARTHUR HWY, DUNALLEY\ENGINEERING\47948CT-ENG.DWG



CHAINAGE	EXISTING SURFACE	DESIGN E.O.B.	CUT FILL	R.L. 19.600
				I.P. 27.658 8.60%
				I.P. 27.742 8.42%
				I.P. 27.824 8.25%
				I.P. 27.905 8.07%
0.000	**27.625**	27.658	+0.033	I.P. 27.984 7.87%
1.000	27.726	27.742	+0.016	I.P. 28.060 7.64%
2.000	27.827	27.824	-0.003	I.P. 28.134 7.40%
4.000	27.909	27.905	-0.003	I.P. 28.206 7.14%
7.000	28.209	28.206	-0.003	I.P. 28.274 6.87%
8.000	28.283	28.274	-0.009	I.P. 28.338 6.42%
9.000	28.360	28.338	-0.022	I.P. 28.399 6.07%
10.000	28.428	28.399	-0.029	I.P. 28.457 5.76%
11.000	28.479	28.457	-0.022	I.P. 28.511 5.43%
12.000	28.527	28.511	-0.016	I.P. 28.562 5.09%
13.000	28.571	28.562	-0.009	I.P. 28.609 4.73%
14.000	28.625	28.609	-0.016	I.P. 28.653 4.37%
15.000	28.681	28.653	-0.028	I.P. 28.693 4.01%
15.911	**28.726**	28.689	-0.037	I.P. 28.713 3.86%
16.000	28.729	28.693	-0.036	I.P. 28.735 4.05%
16.500	28.749	28.713	-0.036	I.P. 28.758 4.38%
17.000	28.771	28.735	-0.036	I.P. 28.783 4.69%
17.500	28.794	28.758	-0.036	I.P. 28.810 5.00%
18.000	28.820	28.783	-0.037	I.P. 28.838 5.29%
18.500	28.848	28.810	-0.038	I.P. 28.867 5.58%
19.000	28.878	28.838	-0.040	I.P. 28.898 5.86%
19.500	28.910	28.867	-0.043	I.P. 28.929 6.13%
20.000	28.941	28.898	-0.043	I.P. 28.961 6.31%
20.500	28.974	28.929	-0.045	I.P. 28.995 6.44%
21.000	29.009	28.961	-0.048	I.P. 29.029 6.68%
21.500	29.046	28.995	-0.051	I.P. 29.065 6.90%
22.000	29.085	29.029	-0.056	I.P. 29.101 7.11%
22.500	29.139	29.065	-0.074	I.P. 29.139 7.30%
23.000	29.200	29.101	-0.099	I.P. 29.177 7.49%
23.500	29.244	29.139	-0.105	I.P. 29.216 7.66%
24.000	29.293	29.177	-0.116	I.P. 29.256 7.81%
24.500	29.347	29.216	-0.131	I.P. 29.296 7.96%
25.000	29.402	29.256	-0.146	I.P. 29.337 8.09%
25.500	29.458	29.296	-0.162	I.P. 29.379 8.20%
26.000	29.515	29.337	-0.178	I.P. 29.421 8.31%
26.500	29.573	29.379	-0.194	I.P. 29.463 8.39%
27.000	29.631	29.421	-0.210	I.P. 30.863 8.47%
27.500	29.681	29.463	-0.218	
28.000	29.725	29.506	-0.219	
29.000	29.815	29.590	-0.225	
30.000	29.908	29.675	-0.233	
31.000	29.998	29.760	-0.238	
32.000	30.081	29.844	-0.237	
33.000	30.154	29.929	-0.225	
34.000	30.226	30.013	-0.213	
35.000	30.298	30.098	-0.200	
35.796	30.354	30.166	-0.188	
36.000	30.368	30.183	-0.185	
37.000	30.435	30.260	-0.175	
38.000	30.487	30.327	-0.160	
39.000	30.537	30.384	-0.153	
40.000	30.585	30.431	-0.154	
41.000	30.615	30.467	-0.148	
42.000	30.638	30.493	-0.145	
43.000	30.657	30.509	-0.148	
44.000	30.673	30.514	-0.159	
44.029	**30.673**	30.514	-0.159	
44.033	30.673	30.514	-0.159	
44.036	30.673	30.514	-0.159	
45.000	30.682	30.509	-0.173	
46.000	30.681	30.494	-0.187	
47.000	30.659	30.469	-0.190	
48.000	30.627	30.433	-0.194	
49.000	30.586	30.387	-0.199	
50.000	30.537	30.331	-0.206	
51.000	30.479	30.265	-0.214	
52.000	30.427	30.188	-0.239	
52.276	30.413	30.165	-0.248	
53.000	30.372	30.104	-0.268	
54.000	30.310	30.019	-0.291	
55.000	30.245	29.934	-0.311	
56.000	30.187	29.849	-0.338	
57.000	30.121	29.765	-0.356	
58.000	30.049	29.680	-0.369	
59.000	29.971	29.595	-0.376	
60.000	29.886	29.510	-0.376	
60.500	29.841	29.468	-0.373	I.P. 29.468 8.47%
61.000	29.805	29.426	-0.379	I.P. 29.426 8.40%
61.500	29.769	29.384	-0.385	I.P. 29.384 8.32%
62.000	29.733	29.342	-0.391	I.P. 29.342 8.22%
62.500	29.696	29.301	-0.395	I.P. 29.301 8.10%
63.000	29.658	29.261	-0.397	I.P. 29.261 7.97%
63.500	29.620	29.221	-0.399	I.P. 29.221 7.83%
64.000	29.581	29.182	-0.399	I.P. 29.182 7.68%
64.500	29.542	29.143	-0.399	I.P. 29.143 7.51%
65.000	29.503	29.106	-0.397	I.P. 29.106 7.32%
65.500	29.463	29.069	-0.394	I.P. 29.069 7.13%
66.000	29.423	29.033	-0.390	I.P. 29.033 6.92%
66.500	29.381	28.999	-0.382	I.P. 28.999 6.76%
67.000	29.338	28.965	-0.373	I.P. 28.965 6.47%
67.500	29.295	28.933	-0.362	I.P. 28.933 6.32%
68.000	29.256	28.901	-0.355	I.P. 28.901 6.16%
68.500	29.221	28.871	-0.350	I.P. 28.871 5.89%
69.000	29.187	28.841	-0.346	I.P. 28.841 5.62%
69.500	29.154	28.813	-0.341	I.P. 28.813 5.33%
70.000	29.122	28.786	-0.336	I.P. 28.786 5.03%
70.500	29.090	28.761	-0.329	I.P. 28.761 4.73%
71.000	29.059	28.738	-0.321	I.P. 28.738 4.41%
71.500	29.029	28.715	-0.314	I.P. 28.715 4.09%
72.000	29.001	28.695	-0.306	I.P. 28.695 3.88%
72.147	**28.992**	28.689	-0.303	I.P. 28.689 4.00%
73.000	28.943	28.655	-0.288	I.P. 28.655 4.34%

CUL-DE-SAC - LONG SECTION
Scales: (H) 1 in 200 (V) 1 in 200 (A3)



DETAIL PLAN
SCALE 1:400

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Plan Reference:P3
Date received:20/05/2024

CHAINAGE	EXISTING SURFACE	DESIGN E.O.B.	CUT FILL	R.L. 19.600
				I.P. 28.655 -4.00%
				I.P. 28.612 -4.34%
				I.P. 28.565 -4.71%
				I.P. 28.514 -5.07%
				I.P. 28.460 -5.41%
				I.P. 28.403 -5.74%
				I.P. 28.342 -6.06%
				I.P. 28.278 -6.39%
				I.P. 28.210 -6.85%
				I.P. 28.138 -7.13%
				I.P. 28.064 -7.39%
				I.P. 27.988 -7.63%
				I.P. 27.910 -7.85%
				I.P. 27.829 -8.06%
				I.P. 27.747 -8.24%
				I.P. 27.662 -8.41%
				I.P. 27.658 -8.57%
73.000	28.943	28.655	-0.288	
74.000	28.883	28.612	-0.271	
75.000	28.824	28.565	-0.259	
76.000	28.757	28.514	-0.243	
77.000	28.689	28.460	-0.229	
78.000	28.619	28.403	-0.216	
79.000	28.548	28.342	-0.206	
80.000	28.476	28.278	-0.198	
81.000	28.368	28.210	-0.158	
82.000	28.260	28.138	-0.122	
83.000	28.152	28.064	-0.088	
84.000	28.049	27.988	-0.061	
85.000	27.950	27.910	-0.040	
86.000	27.851	27.829	-0.022	
87.000	27.750	27.747	-0.003	
88.000	27.648	27.662	+0.014	
88.058	**27.642**	27.658	+0.016	

CUL-DE-SAC - LONG SECTION
Scales: (H) 1 in 200 (V) 1 in 200 (A3)

REV	AMENDMENTS	DRAWN	DATE	APPR.
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DESIGNED:	REVIEWED:
RP	MW
DRAWN:	REVIEWED:
RD	RP
JOB MANAGER: CRAIG TERRY	
ISSUED DATE: 04/10/2023	

CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 CUL DE SAC DETAIL PLAN

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie
REGISTRATION NUMBER: ----

CONTRACT NO.	SCALE	PAPER
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JOB NUMBER	DISCIPLINE / SHEET	REVISION
47948CT	C 101	---

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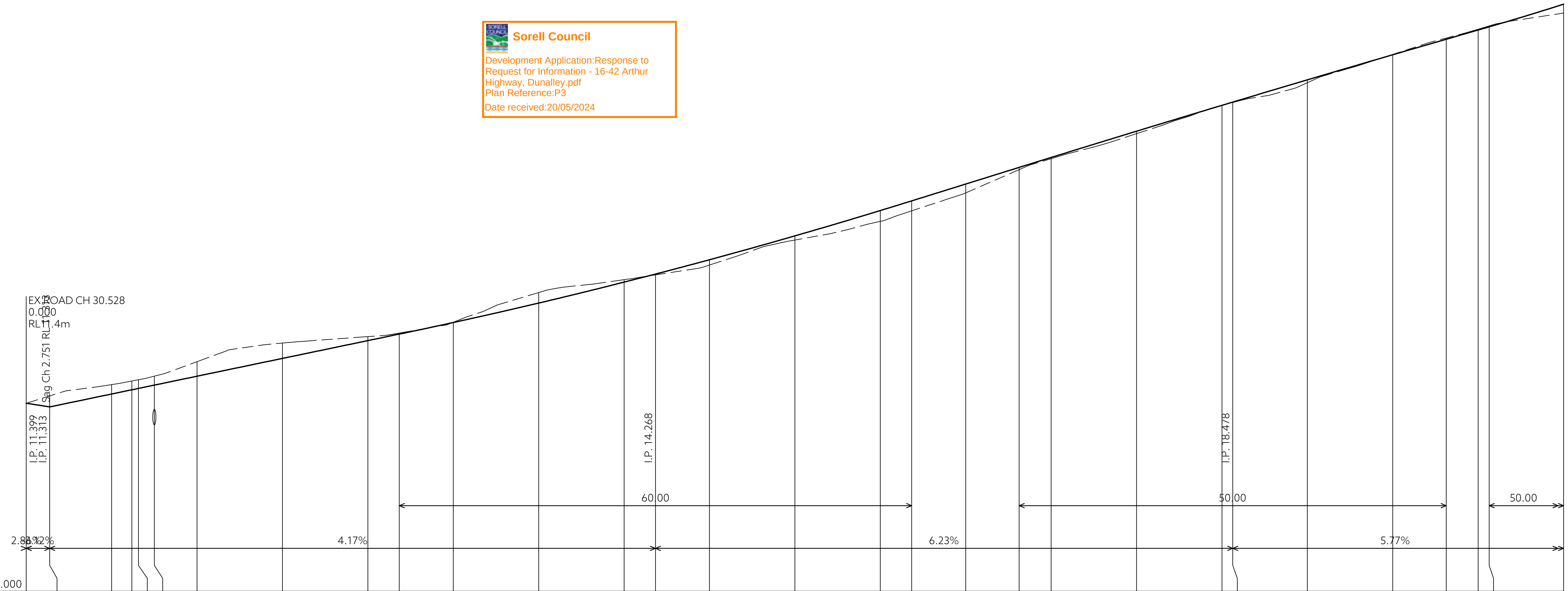

CUT / FILL	-0.001	-0.257	-0.220	-0.206	-0.203	-0.210	-0.341	-0.359	-0.094	-0.023
DESIGN ROAD CENTRELINE	11.398	11.313	11.615	11.713	11.745	11.823	12.031	12.448	12.865	13.018
EXISTING SURFACE	11.399	11.570	11.835	11.919	11.948	12.033	12.372	12.807	12.959	13.041
CHAINAGE	0.000	2.751	10.000	12.372	13.140	15.000	20.000	30.000	40.000	43.674

CUT / FILL	-0.006	-0.246	-0.058	+0.019	+0.123	+0.097	+0.254	+0.232	+0.206	+0.052
DESIGN ROAD CENTRELINE	13.288	13.744	14.234	14.422	14.758	15.317	15.910	16.136	16.530	16.920
EXISTING SURFACE	13.294	13.990	14.292	14.403	14.635	15.220	15.656	15.904	16.324	16.868
CHAINAGE	50.000	60.000	70.000	73.674	80.000	90.000	100.000	103.674	110.000	116.259

CUT / FILL	+0.028	+0.058	+0.000	+0.009	+0.068	-0.007	-0.028	-0.019	-0.022	+0.206
DESIGN ROAD CENTRELINE	17.153	17.768	18.373	18.449	18.970	19.558	19.921	20.137	20.211	20.742
EXISTING SURFACE	17.125	17.710	18.373	18.440	18.902	19.565	19.949	20.156	20.233	20.536
CHAINAGE	120.000	130.000	140.000	141.259	150.000	160.000	166.259	170.000	171.288	180.000

HORIZONTAL GEOMETRY: L=300.184, B=320°18'24"

LONG SECTION -ROAD 1
SCALES: (H) 1:500 (V) 1:100 (A3)

REV	AMENDMENTS	DRAWN	DATE	APPR.
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DRAWING STATUS: PRELIMINARY
COORDINATE/ DATUM: LIDAR
THIS SHEET MAY BE PRINTED USING COLOUR AND MAY BE INCOMPLETE IF COPIED

DESIGNED: RP | REVIEWED: MW
DRAWN: RD | REVIEWED: RP
JOB MANAGER: CRAIG TERRY
ISSUED DATE: 04/10/2023

CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 LONG SECTION
SHEET 1 OF 2

PDA
SURVEYORS, ENGINEERS & PLANNERS

127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie

REGISTRATION NUMBER: ----

CONTRACT NO.	SCALE	PAPER
------	AS SHOWN	(A3)

JOB NUMBER	DISCIPLINE	SHEET	REVISION
47948CT	C	201	---

DATE/TIME: Wednesday, 4 October 2023 4:10:53 PM PLOTTED: ROWAN DEMMER FILE LOCATION: S:\47948CT - BRENDAN DALY - 16-42 ARTHUR HWY, DUNALLEY\ENGINEERING\47948CT-ENG.DWG

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DESIGN ROAD / CENTRELINE	20.742	21.423	21.889	22.178	23.009	23.915	24.037	24.300	24.863	25.789	26.691	27.049	27.568	27.740	28.420	29.247	29.575	30.054	30.859	30.874			
EXISTING SURFACE	20.536	21.015	21.425	21.793	22.757	23.919	24.069	24.385	24.757	25.855	26.667	26.918	27.407	27.612	28.392	29.205	29.529	30.100	30.828	**30.837**			
CHAINAGE	180.000	190.000	196.288	200.000	210.000	220.000	221.288	224.049	230.000	240.000	250.000	254.049	260.000	262.000	270.000	280.000	284.049	290.000	300.000	300.184			
HORIZONTAL GEOMETRY	L=300.184 B=320°18'24"																						

LONG SECTION -ROAD 1
SCALES: (H) 1:500 (V) 1:100 (A3)

REV	AMENDMENTS	DRAWN	DATE	APPR.
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DESIGNED:	REVIEWED:
RP	MW
DRAWN:	REVIEWED:
RD	RP
JOB MANAGER: CRAIG TERRY	
ISSUED DATE: 04/10/2023	

CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 LONG SECTION
SHEET 2 OF 2

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
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47948CT	C	202	---

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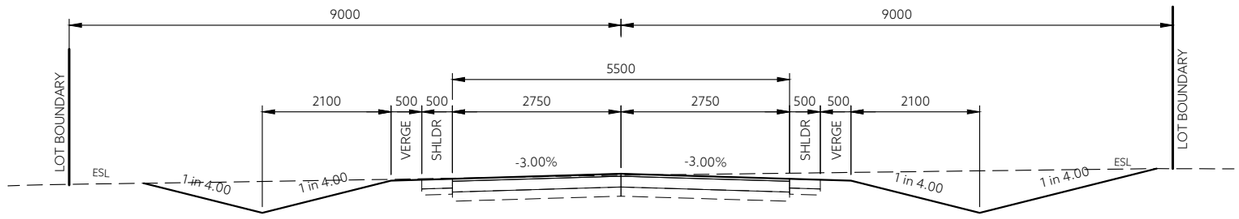

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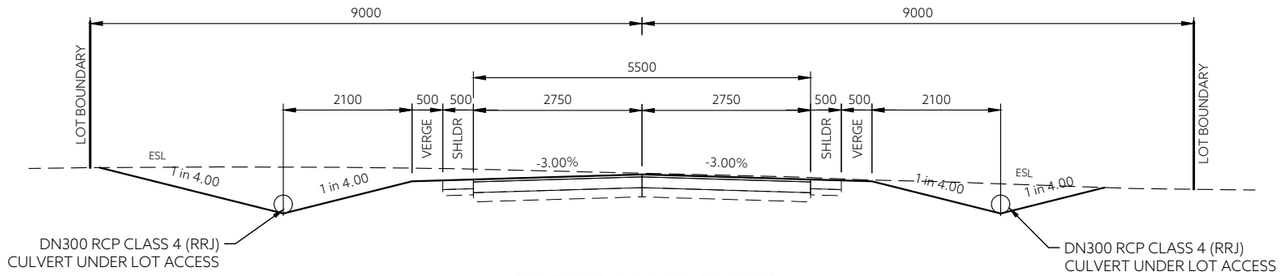

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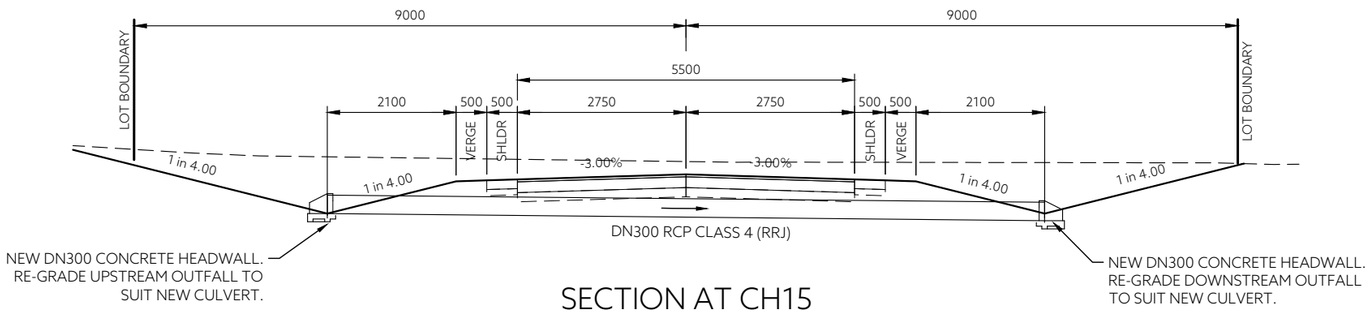

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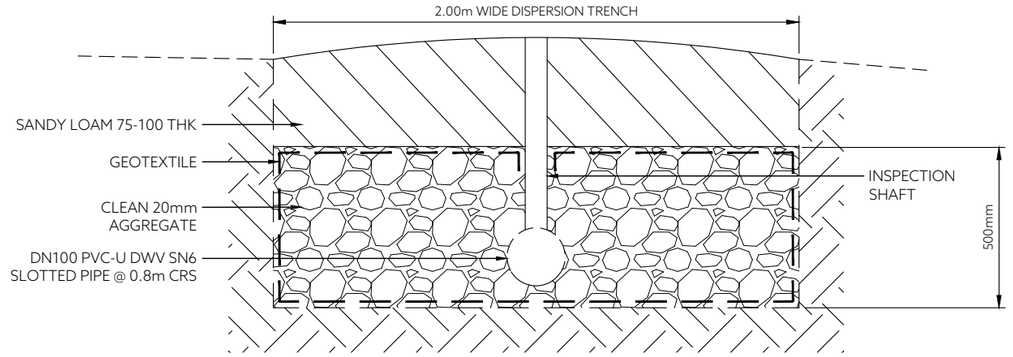
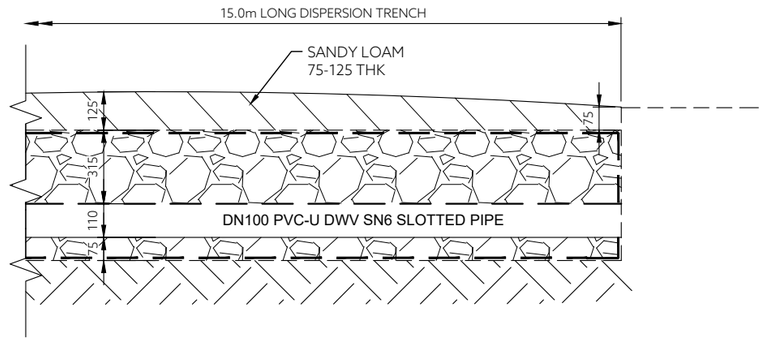


TYPICAL SECTION
2.0m X 15.0m DISPERSION TRENCH
NOT TO SCALE



TYPICAL LONG SECTION
2.0m X 15.0m DISPERSION TRENCH
NOT TO SCALE

Sorell Council

Development Application:Response to Request for Information - 16-42 Arthur Highway, Dunalley.pdf
Plan Reference:P3
Date received:20/05/2024

REV	AMENDMENTS	DRAWN	DATE	APPR.
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DESIGNED:	REVIEWED:
RP	MW
DRAWN:	REVIEWED:
RD	RP

JOB MANAGER: CRAIG TERRY
ISSUED DATE: 04/10/2023

CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 CROSS SECTIONS & DISPERSION TRENCH DETAILS

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
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Department of State Growth

Salamanca Building Parliament Square
4 Salamanca Place, Hobart TAS
GPO Box 536, Hobart TAS 7001 Australia
Email permits@stategrowth.tas.gov.au Web www.stategrowth.tas.gov.au
Ref: SRA-24-10

Tasmanian Government

PDA Surveyors, Engineers and Planners

By email: Gabrielle.Priest@pda.com.au

Dear PDA

Crown Landowner Consent Granted - 16 - 42 Arthur Highway Dunalley Tas 7177

I refer to your recent request for Crown landowner consent relating to the development application at 16 - 42 Arthur Highway Dunalley Tas 7177 for a subdivision and a new local road.

I, Fiona McLeod, Director Asset Management, the Department of State Growth, having been duly delegated by the Minister under section 52 (1F) of the *Land Use Planning and Approvals Act 1993* (the Act), and in accordance with the provisions of section 52 (1B) (b) of the Act, hereby give my consent to the making of the application, insofar as it affects the State road network and any Crown land under the jurisdiction of this Department.

The consent given by this letter is for the making of the application only insofar as that it impacts Department of State Growth administered Crown land and is with reference to your application dated 8 January 2024, and the approved documents, as accessible via the link below:

https://files.stategrowth.tas.gov.au/index.php/s/KULoKgEBZIejyI2

A copy of the Instrument of Delegation from the Minister authorising the delegate to sign under section 52 of the Act can also be accessed via the above link.

Please access and download these documents for your records as soon as possible as this link will expire six months from the date of this letter.

In giving consent to lodge the subject development application, the Department notes the following applicable advice:

Other types of works (pipeline, etc.) OR Construction of infrastructure in the road reserve/on Crown land (Works permit required)

In giving consent to lodge the subject development application, the Department notes that the works in the State road network will require the following additional consent:

The consent of the Minister under Section 16 of the *Roads and Jetties Act 1935* to undertake works within the State road reservation.

For further information please visit https://www.transport.tas.gov.au/roads_and_traffic_management/permits_and_bookings or contact permits@stategrowth.tas.gov.au.

Discharge of Stormwater or drainage into the State road drainage system (Ministerial consent required)

In giving consent to lodge the subject development application, the Department notes that the works in the State road network will require the following additional consent:

The consent of the Minister under Section 17B of the *Roads and Jetties Act 1935* to concentrate and discharge drainage to the State road reserve.

The proponent must submit a drainage plan, including catchment area, flows and drainage design for any area discharging to the State road reserve.

If any enlargement of the existing State road drainage infrastructure is required in order to carry any additional drainage, these works must be undertaken under the supervision and to the satisfaction of an officer designated by the Minister. If such works are required, the costs associated with the works will be payable by the proponent.

The proponent is responsible for the ongoing maintenance of their own infrastructure.

For further information please contact Road Assets at roadassets.utilities@stategrowth.tas.gov.au.

Other:

In accordance with the findings of the Traffic Impact Assessment, the applicant is required to construct a partial rural BAR facility at the junction with the proposed new public road. Details of the design should be provided to the department as part of a works permit application. For further information please visit https://www.transport.tas.gov.au/roads_and_traffic_management/permits_and_bookings or contact permits@stategrowth.tas.gov.au.

The Department reserves the right to make a representation to the relevant Council in relation to any aspect of the proposed development relating to its road network and/or property.

Yours sincerely

Fiona McLeod
DIRECTOR ASSET MANAGEMENT

Delegate of
Minister for Infrastructure and Transport
Michael Ferguson MP

19 March 2024

cc: General Manager, Sorell Council

PDA
SURVEYORS, ENGINEERS & PLANNERS

77 Gunn Street
Devonport, Tasmania 7310
Phone (03) 6423 6875

ABN 71 217 806 325
pda.dpt@pda.com.au
www.pda.com.au

Our Ref: 47948CT

16 May 2024

Shane Wells
Sorell Council
47 Cole Street
Sorell Tasmania 7172

Dear Shane,

RE: Request for additional information – 16-42 Arthur Highway, Dunalley

I write to respond to the request for further information (RFI) from Council on 14 July 2023. The two items the RFI raised are addressed sequentially below with a summary response supporting technical information. Attached supporting documentation is as follows:

- Traffic Impact Assessment
- Crown Landowner Consent
- Stormwater management letter and associated documentation

1. Traffic Impact Assessment

Please provide a Traffic Impact Assessment (prepared by a suitably qualified Traffic Engineer) demonstrating compliance with the Acceptable Solutions and/or Performance Criteria of the Tasmanian Planning Scheme (Sorell) – C3.5.1.

Richard Burke (Traffic and Civil Services) has prepared a Traffic Impact Assessment (TIA) and provided an assessment against *C3.5.1 Traffic generation at a vehicle crossing, level crossing or new junction*. The proposal is unable to demonstrate compliance with the Acceptable Solution (A1.1 – A1.5), predominantly as traffic directed from the proposed development exceeds the acceptable increase (Table C3.1) by 5 vehicles per day (A1.4). However, the proposal has been considered against the associated Performance Criteria (P1) below.

C3.0 Road and Railway Assets Code

C3.5 Use Standards, C3.5.1 Traffic generation at a vehicle crossing, level crossing or new junction

Performance Criteria

P1
A proposed plan of subdivision shows adequate hazard management areas in relation to the building areas shown on lots within a bushfire- prone area, having regard to:
(a) the dimensions of hazard management areas;
(b) a bushfire risk assessment of each lot at any stage of staged subdivision;
(c) the nature of the bushfire-prone vegetation including the type, fuel load, structure and flammability;
(d) the topography, including site slope;
(e) any other potential forms of fuel and ignition sources;
(f) separation distances from the bushfire- prone vegetation not unreasonably restricting subsequent development;
(g) an instrument that will facilitate management of fuels located on land external to the subdivision; and
(h) any advice from the TFS.

The TIA and associated desktop information provides rationale to demonstrate that the proposal satisfies the above on the following basis:

- The increase in traffic due to the proposal is estimated at 45 vehicles per day (vpd) at the Arthur Highway junction and will increase traffic on the Arthur Hwy by some 72 vpd in total. The TIA confirms that the Arthur Highway and the proposed future road are of suitable standard to cope with projected traffic activity in 2033 (a).

- The traffic generated by the use will be 98% light vehicles post residential construction phase and the TIA confirms that the proposed access layout is considered safe and efficient for all road users given light vehicle requirements (b).

- In accordance with the above, increased traffic generation will impact upon the Arthur Hwy, being a State highway, from the proposed future local road. The TIA confirms that both roads are of a suitable standard to cope with projected traffic activity in 2033 of 45 vpd (c).

- Arthur Highway has a posted 60km/h speed limit and annual average daily traffic (AADT) of 2,440vpd in the vicinity of the subdivision, appropriate for the situation. The proposed future road (new road) is within a rural environment and technically the 50km/h General Urban Speed Limit does not apply however a 50km/h speed limit is considered appropriate for the standard, function and length of the road (305m) (d).

- Given the configuration of the subject and there being no alternative road network for the proposed future local road, as the only throughway is the Arthur Highway, no alternative accesses are available (e).

- Although the proposed development is only for subdivision and is therefore not required to be categorised into a use class (C2.6.2), the nature of the lots is likely to be for residential use given the scale of the lots. This is consistent with both the *Sorell Land Supply Strategy 2019* and the *Dunalley and Environs Structure Plan 2013*. The former identifies Dunalley as having a very low growth strategy with a 'consolidation' growth scenario under the Settlement Framework of the *Southern Tasmanian Regional Land Use Strategy* (the STRLUS). The latter shows that the capacity of existing residential land within the township, which includes the subject site, is sufficient to accommodate greater than expected residential growth. It is also noted that the utilisation of existing residential land with access to reticulated sewerage should be maximised, while still providing for a lower density characteristic, more typical of rural towns and desired by the community. A review of population statistics for the township between 2006 and 2021 identifies that although there is a slight overall decrease in the township's population by 2.8%, the decrease occurred after the significant bushfire of 2013. Therefore, supply of subdivided land likely to be used for residential purposes remains consistent with overall strategic directions for the township. On this basis, the need for the use can be demonstrated (f).

- The TIA finds no reason to disallow the proposal (g).

- The TIA was reviewed by the Department of State Growth's engineering department, being the relevant road authority for the Arthur Highway. Department of State Growth written consent was provided for all relevant infrastructure connections proposed. Traffic directions are consistent with these requirements. The proposal does not impact upon any rail infrastructure (h).

2. Revision of the road's general arrangement

Dimension the minimum rural road reservation width in general accordance with TSD-R02-v3 and TSD-R08-v3 for a sealed road and cul-de-sac, respectively.

The TIA specifies that the proposed future road standard satisfies LGAT standard drawing TSD-R02 – Code S3 for a 5.5m wide sealed rural road, with a TSD-R08 rural cul-de-sac (*7.3*). The plan of subdivision cross references development of the new rural road in accordance with TSD-R02 and the proposed rural property accesses in accordance with TSD-R03. Dimensions of the cul-de-sac are assumed to be in accordance with specifications of the TIA, being TSD-R08, and this can be issued as a condition of approval to be carried through to engineering drawings.

The road's stormwater drainage plan detailing indicative grades, falls, and directions, to showing the proposed stormwater drainage paths, and the required infrastructure (culverts & headwalls) and denoting their sizing, to
demonstrate how stormwater run-off from all contributing catchments will be captured and conveyed to a Lawful Point of Discharge.

Please see attached letter providing civil details to address stormwater drainage matters.

The letter contains a plan showing the grades, falls and directions of stormwater drainage indicated by contours and arrows indicating flow. These demonstrate proposed stormwater drainage paths with the flow of the stormwater run-off to the Arthur Highway table drain being the proposed Lawful Point of Discharge. Flow is shown to be filtered via vegetated swales. Required infrastructure is also shown and specified, comprising:

- DN300 Class 4 RCP Culverts under vehicular accesses to properties off of the new local road;
- DN300 Class 4 RCP Culverts with driveable headwalls under both the new road junction and vehicular accesses to properties off of the Arthur Highway.

Flow is shown to connect to, be filtered by and discharge via vegetated swales and graded table drains.

A typical cross section for the proposed road, showing dimensions (design widths) suitable to accommodate the traffic generation identified, and detailing stormwater systems (table drains) with adequate capacity for a 1%
AEP rainfall event.

A long section of the cul-de-sac road has been shown that shows required cut and fill. Three cross sections are shown at chainages along this road which show a 5.5m width and road drainage in accordance with LGAT standard drawings. Figure 6 within the letter shows 1% AEP design flows which are not considered to increase significantly. On this basis, there is considered to be adequate capacity for a 1% AEP event. The TIA confirms that the road can accommodate traffic generation of 45 vpd.

Please incorporate design considerations regarding the developed lots' drainage, including Lot 5's dam overflowing (e.g., spillway, sub-soil drains etc.), impacting the road in a 1% AEP event.

The letter confirms that the table drains and culvert have been sized for a 1% AEP event, based upon flow estimations. These estimations confirm that this infrastructure exceeds capacity for such flow and accounts for the addition to the Arthur Highway table drain.

Conclusion

The above information has been prepared to meet technical requirements of Council and the Department of State Growth. The TIA has been prepared with oversight and sign off from the Department of State Growth. The stormwater report has been prepared to align with Local Government Standard Drawings. Such alignment should ensure that proposed traffic and stormwater requirements address the intent of this request for further information.

Kind regards,

PDA Surveyors, Engineers & Planners

Appendices

Appendix 1: Traffic Impact Assessment

Appendix 2: Stormwater management letter and associated documentation

11th December 2023

1 Cooper Crescent
Riverside TAS 7250
M: 0456 535 746
P: 03 6334 1868
E: Richard.burk@trafficandcivil.com.au

Mr Brendan Day
42 Arthur Highway,
Dunalley, TAS 7177

Dear Brendan,

PROPOSED SUBDIVISION OF 42 ARTHUR HIGHWAY, DUNALLEY

This traffic impact assessment considers the proposed subdivision of 42 Arthur Highway, Dunalley in terms of traffic engineering principles, the Tasmanian Planning Scheme – Sorell, and Department of State Growth (DSG) requirements including:

- site inspection, sight distance and speed environment assessment,
- consideration of property access requirements,
- consideration of traffic safety for all road users.

1) Background

42 Arthur Highway is located 1.9 km Northeast of the Denison Canal Bridge at Dunalley, see Figures 1 and 2.

Figure 1 – Location of 42 Arthur Highway, Dunalley

Source: LISTmap

Figure 2 – Location of 42 Arthur Highway, Dunalley

Source: LISTmap

2) Site

The site consists of flat cleared land, with a few surrounding residences, see Figure 3. Site plans are attached in Appendix B. The property has an existing access (with the Arthur Highway.

Figure 3 – Aerial View of 42 Arthur Highway

Source: LISTmap

3) Proposal

3.1 Description of Proposed Development

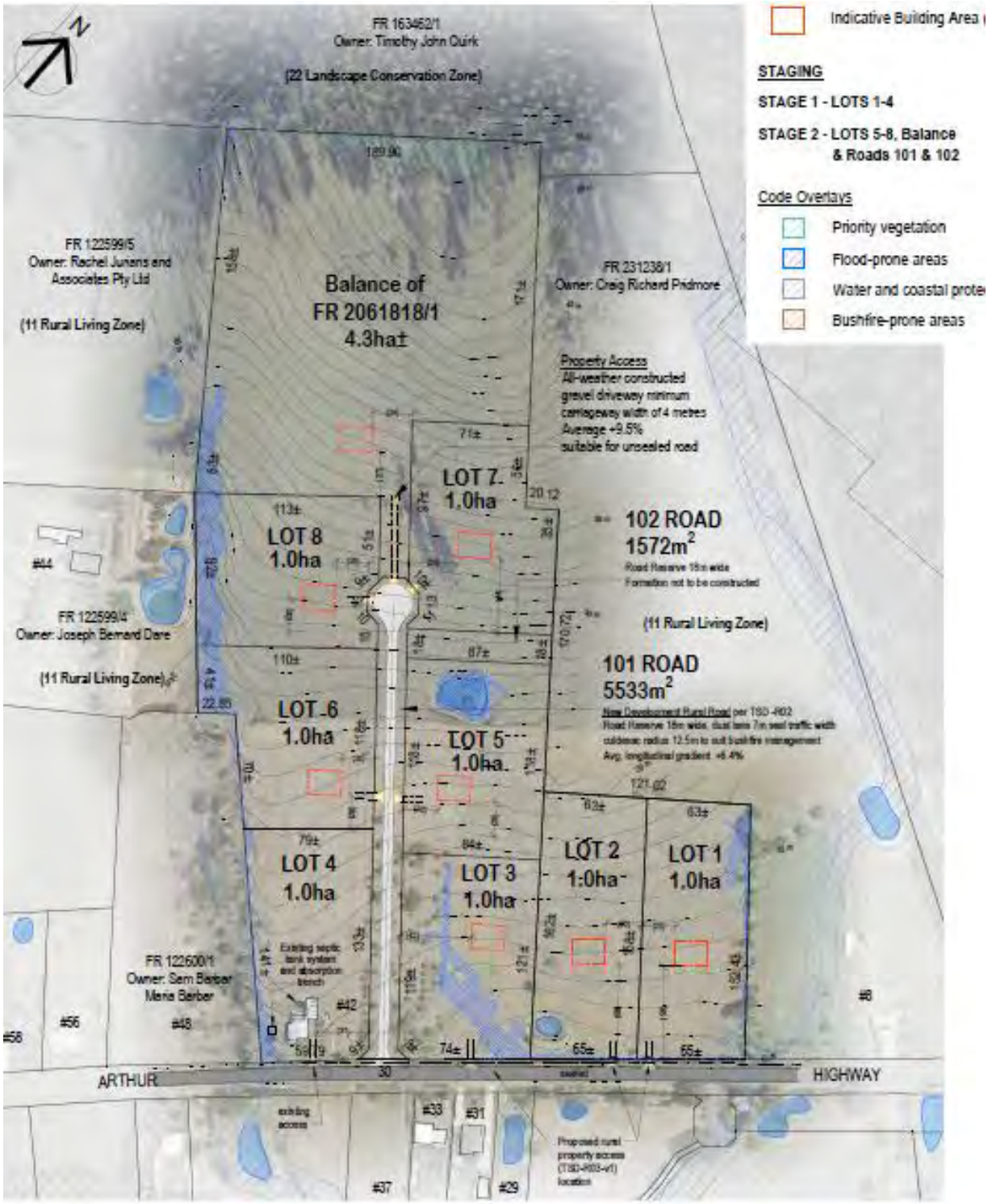
The development footprint is shown in Figure 4 and Appendix B and involves a 9-lot subdivision development including a balance lot with access via:

- existing Arthur Hwy access to lots 5,6,7,8 & the balance lot
- existing Arthur Hwy access to lot 4
- proposed Arthur Hwy accesses to lots 1,2 and 3.

The proposed subdivision staging is as follows:

- Stage 1
  - Lots 1 – 4.
- Stage 2
  - Lots 5 - 8 and the balance lot.
  - Road Lot 101 i.e future road for access to lots 5-8 & the balance lot.
  - Road Lot 102 i.e a separate future road reservation.

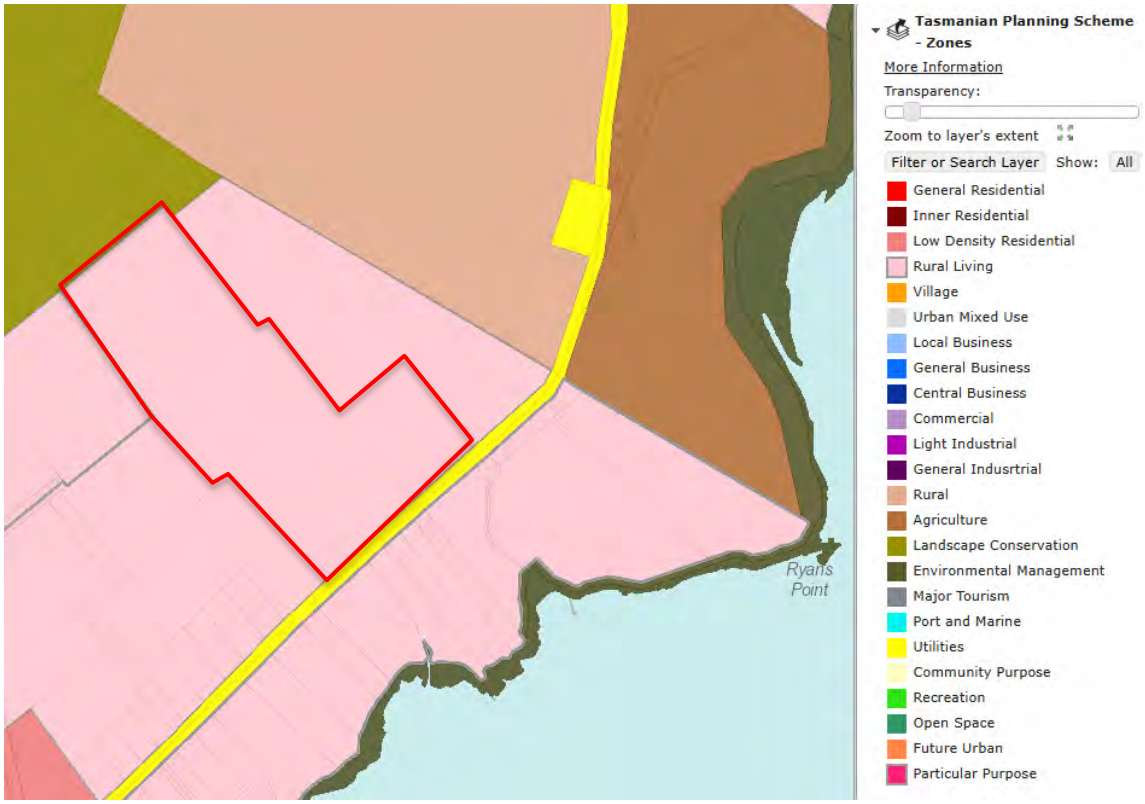
Figure 4 – Proposed subdivision layout



3.2 Tasmanian Planning Scheme

Tasmanian Planning Scheme – Sorell zoning for 42 Arthur Highway, Dunalley is shown in Figure 5.

Figure 5 – 42 Arthur Highway is zoned Rural Living



Source: LISTmap

3.3 State Road Network Owner Objectives

The Department of State Growth (DSG) objectives are to maintain safe and efficient operation of the State Road network. The Arthur Highway is a State Road, see Appendix C.

3.4 Council Road Network Owner Objectives

The Sorell Council objectives are to maintain safe and efficient operation of the Council Road network. The future road would be a Council Road.

4) Existing Conditions

The Arthur Highway is a Category 3 Regional Access Road in the State Road Hierarchy and is not a part of the Tasmanian 26m B Double Network, see Appendix D and not a Limited Access Road, see Appendix E.

The road has an 60km/h speed limit, has a sealed width of 6.0m, has 0.5m gravel shoulders and no footpaths. Delineation is provided with B1 Barrier Line, RRPMs and guideposts. There is no streetlighting.

4.1) Existing access to #42 Arthur Highway (Lot 4)

Figures 6 – 10 show the nature of the existing access.

Figure 6 – Western approach to existing access

Figure 7 – Looking left along Arthur Hwy from existing access

Sight distance left is 400m.

Figure 8 – Looking right along Arthur Hwy from existing access

Sight distance right is 200m.

Figure 9 – Side view of #42 Arthur Hwy existing access

Figure 10 – Elevation view of #42 Tasman Hwy existing access

4.2) Proposed future road junction site

Figures 11 – 15 show the nature of the proposed future road junction.

Figure 11 – Western approach to future road

Indicated road widening for partial rural BAR junction, see Appendix A for layout.

Figure 12 – Looking left along Arthur Hwy from future road

Sight distance left is 350m.

Figure 13 – Looking right along Arthur Hwy from future road

Sight distance right is 200m.

Figure 14 – Side view of the future road junction site

Figure 15 – Elevation view of the future road junction site.

4.3) Proposed access to Lot 3

Figures 16 – 20 show the nature of the proposed access.

Figure 16 – Western approach to proposed access to Lot 3

Figure 17 – Looking left along Arthur Hwy from proposed access

Sight distance left is 280m.

Figure 18 – Looking right along Arthur Hwy from proposed access

Sight distance right is 115m.

Figure 19 – Side view of the proposed access to Lot 3

Figure 20 – Elevation view of the proposed access to Lot 3

4.4) Proposed access to Lot 2

Figures 21 – 25 show the nature of the proposed access.

Figure 21 – Western approach to proposed access to Lot 2

Figure 22 – Looking left along Arthur Hwy from proposed access

Sight distance left is 210m.

Figure 23 – Looking right along Arthur Hwy from proposed access

Sight distance right is 200m.

Figure 24 – Side view of the proposed access to Lot 2

Figure 25 – Elevation view of the proposed access to Lot 2

4.5) Proposed access to Lot 1

Figures 26 – 30 show the nature of the proposed access.

Figure 26 – Western approach to proposed access to Lot 1

Figure 27 – Looking left along Arthur Hwy from proposed access

Sight distance left is 145m.

Figure 28 – Looking right along Arthur Hwy from proposed access

Sight distance right is 270m.

Figure 29 – Side view of the proposed access to Lot 1

Figure 30 – Elevation view of the proposed access to Lot 1

4.6 Traffic Activity

DSG traffic data, Annual Average Daily Traffic (AADT) for the Arthur Highway 1.6km North of the existing access is attached in Appendix C and summarised as follows:

- 1,642 vpd (2001)
- 2,381 vpd (2019)
- 2,514 vpd (2021)
- 2,200 vpd (2022)
- 2,440 vpd (2023) projected.
- 2,970 vpd (2033) projected.
- compound annual growth rate of 2.0%
- Trucks 9% AADT

4.7) Road Safety Review

From road safety review no roadside hazards were identified on either approach to the proposed access to 42 Arthur Highway, Dunalley.

From Austroads Safe System Assessment principles:

- Crash exposure is low with 2,440 vpd (2023) on the Arthur Highway at Dunalley
- Crash likelihood is low as the proposed junction and accesses have adequate sight distance and delineation and the Arthur Hwy is of adequate standard.
- Crash severity is low as the speed environment is 60km/h.

Accordingly, the site is assessed as having a low crash risk.

The 5 year reported crash history for Arthur Hwy (Imlah Street to Ryans Lane) records to crashes in the vicinity of the subdivision site, see Appendix H.

4.8) Sight Distance

The existing and proposed lots along the Arthur Highway are within a 60km/h speed environment, see Figures 17 & 21.

The proposed junction and accesses satisfy sight distance guidelines, see Figure 31.

Figure 31 – Sight distance summary

Junction or access Major Rd - Minor Rd	Speed		Road frontage sight distance			
	Limit (km/h)	Environment (km/h)	Austroads SISD (m)	Available Left(m)	Available Right(m)	AS/NZS 2890.1 SSD (m)
Junctions						
Arthur - future	60	60	123	350	200	
future - Lot 102 reserve	50	40	73	245	35	
Property Accesses						
Lot 4 - Arthur Hwy	60	60	123	400	200	65
Lot 3 - Arthur Hwy	60	60	123	280	115	65
Lot 2 - Arthur Hwy	60	60	123	210	200	65
Lot 1 - Arthur Hwy	60	60	123	145	270	65
Lot 5 - future road	50	50	97	160	140	45
Lot 6 - future road	50	50	97	140	160	45
Lot 7 - future road	50	40	73	290	Cul.	35
Lot 8 - future road	50	40	73	Cul.	290	35
Bal. Lot - future road	50	40	73	305	305	35

Austroads compliant

AS/NZS 2890.1 compliant

Cul-De-Sac (Cul.)

Sight distance ends due to Cul-De-Sac

4.9) Traffic Generation

Traffic generation rates are sourced from the RTA Guide to Traffic Generating Developments 2002.

A compound annual growth rate for Arthur Hwy traffic of 2.0% has been used to estimate 2033 traffic volumes.

For dwelling houses traffic generation rates are 9 daily trips per house with 0.85 peak hour vehicle trips.

Traffic generation is estimated as follows:

- Existing Arthur Hwy access to Lot 4: 9 vpd
- Proposed Arthur Hwy accesses to Lots 1,2 & 3 are assumed to generate 9 vpd each.

Arthur Hwy accesses to Lots 1 to 3 add 27 vpd to the Arthur Hwy

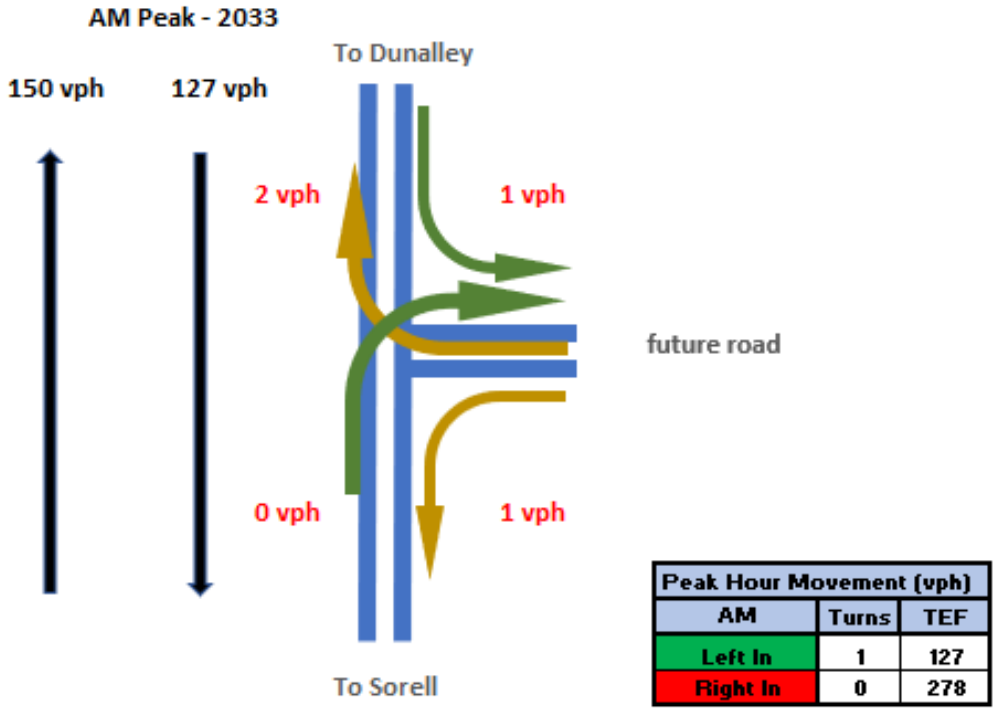
The proposed new road will experience traffic associated with lots 5,6,7,8 and the balance lot i.e 5 lots and add 45vpd with 4 vph at peak times at the proposed Arthur Hwy junction.

In total the proposal is estimated to add 72 vpd to the Arthur Hwy.

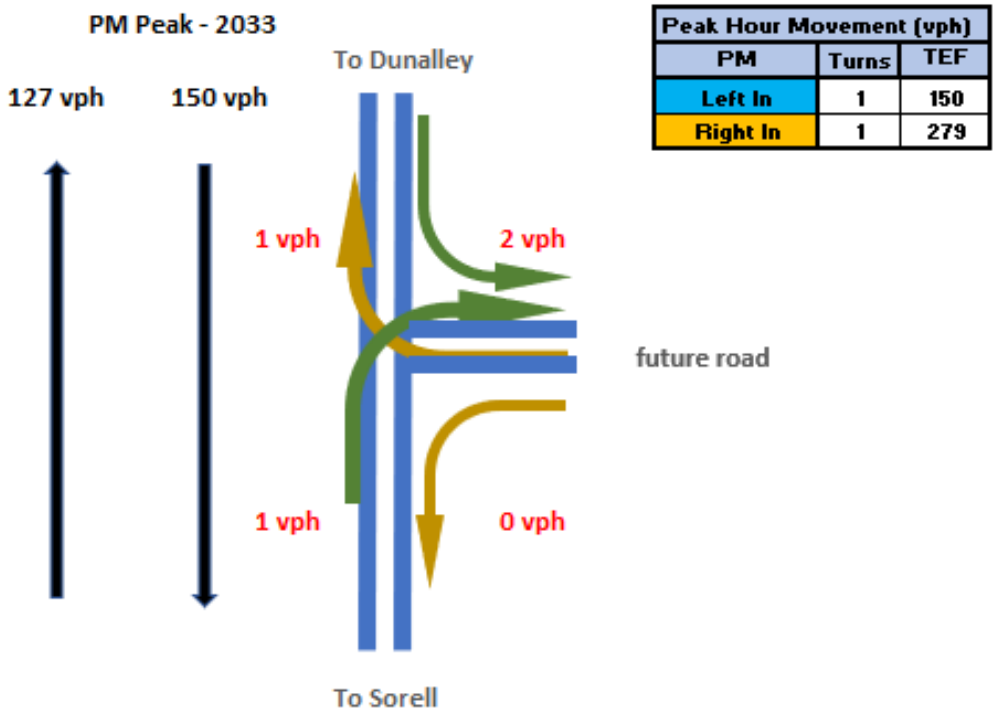
4.10) Traffic Assignment

Figure 32 shows the assigned traffic estimated at the Arthur Hwy / proposed new road junction by 2033.

Figure 32 – Traffic Assignment at Arthur Hwy / future road junction 2033



Peak Hour Movement (vph)		
AM	Turns	TEF
Left In	1	127
Right In	0	278



Peak Hour Movement (vph)		
PM	Turns	TEF
Left In	1	150
Right In	1	279

4.11) Traffic Capacity

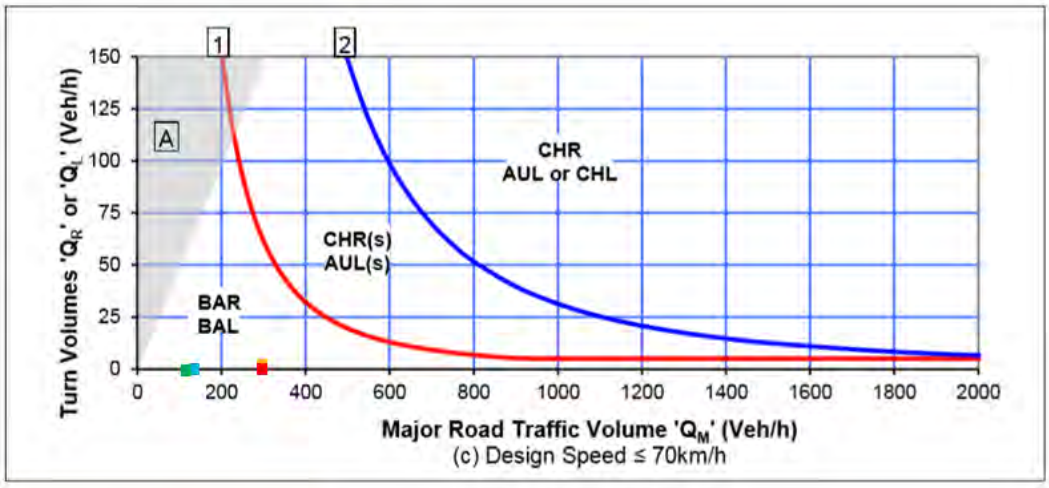
This section considers the performance of the key road infrastructure in 2023 with estimated performance in 2033 based on assumed background traffic growth and the traffic generated by the proposed development.

The proposal will increase traffic on the Arthur Hwy by some 72 vpd in total and by some 45 vpd at the proposed future road junction. Arthur Hwy AADT is estimated at 2,440vpd (2033). There are no traffic capacity issues as the Degree of Saturation on the Arthur Hwy is low and less than 15% with the road will operating at Level of Service is A, see Appendix B for Level of Service descriptions.

4.12) Austroads Guidelines for Junction Layout

The junction layout required is based on Austroads Guidelines which take into account the standard of the road, speed limit and volume of through and side road traffic. Figure 33 shows the Austroads junction warrant for the proposed Arthur Hwy / future road junction in 2033. Whilst technically the proposed junction meets the warrant for a BAR and BAL layout, a partial rural BAR junction layout satisfies DSG guidelines as the through and turning volumes are low and within a low speed environment.

Figure 33 – Austroads Junction warrant - Arthur Hwy/future road



Peak Hour Movement Summary(vph)		
AM	Turns	TEF
Left In	1	127
Right In	0	278

Peak Hour Movement Summary(vph)		
PM	Turns	TEF
Left In	1	150
Right In	1	279

Total Effected Flow | TEF

4.13) Impact on liveability, safety and amenity of the local area

According to Traffic Engineering and Management – KW Ogden and SY Taylor 1999, Chapter 2.2- Design of New Urban Networks:

To maximise the liveability, safety and amenity of the local area, road and street network layout should be such that:

- *A minimum of 60% of lots should abut residential streets with less than 300vpd passing traffic.*
- *A minimum of 80% of lots should abut residential streets with less than 600 vpd passing traffic.*
- *A maximum of 5% of single dwelling lots should abut residential streets with between 1,000-2,000 vpd passing traffic.*
- *A maximum of 1% of single dwelling lots should abut local streets or collectors with less than 3,000 vpd passing traffic, and*
- *No single dwelling lot should abut a route with more than 3,000 vpd passing traffic.*

By 2033 the expected traffic activity on Arthur Hwy is 2,970 vpd so the proposal satisfies all liveability, safety and amenity targets.

4.14) Tasmanian Subdivision Guidelines and Planning

No issues have been identified.

4.15) Provisions for Road Users

Light Vehicles

Traffic safety and capacity requirements for light vehicles have been considered and the proposed access layout is considered safe and efficient for all road users.

Waste Management

Council's Kerbside On-Street Waste Management Service will empty bins from Arthur Hwy and the future road.

Public Transport

Public transport is not disaffected by the proposal.

Vulnerable Road Users

- *Pedestrians*

Arthur Hwy and the future road are within a low-speed rural environment where no pedestrian facilities exist or are proposed. The proposal does not affect pedestrians.

- ***Cyclists***

Arthur Hwy has no cycling facilities. The proposal does not affect cyclists.

- *Motorcyclists*

The proposal does not disaffect motorcyclists.

4.16 Other requirements

Environmental

No adverse environmental impact is anticipated in relation to:

- Noise, Vibration and Visual Impact
- Community Severance and Pedestrian Amenity
- Hazardous Loads, Air Pollution and Dust and Dirt
- Ecological Impacts and Heritage and Conservation

Street Lighting and Furniture

To Council requirements.

Bushfire Prone Area

The subdivision is within a bushfire prone area and a bushfire hazard report has been prepared, see Appendix G for extract from the report summarising public road and property access requirements.

Stormwater Information

The proposed new subdivision road should be constructed to a sealed width of 5.5m and cross section for road drainage consistent with LGAT Standard Drawings TSD − R02 for a Code S3 sealed rural road and Rural Cul − De-Sac consistent with TSD -R08. This is consistent with the stormwater report prepared for the subdivision.

4.17 Property access requirements

Arthur Hwy accesses should be constructed to the DSG standard with driveable culvert endwalls, see standard drawing attached in Appendix A.

The future road accesses should be constructed to the LGAT Rural Roads standard drawings TSD-R03 and R04 including driveway culverts with headwalls, see Appendix A.

5) Tasmanian Planning Scheme – Sorell

Road and Railway Assets Code C3

C3.5.1 Traffic generation at a vehicle crossing, level crossing or new junction.

Acceptable Solution A1.1 – Not applicable as the relevant roads are not Category 1.

Acceptable Solution A1.2 – For a road, excluding a Category 1 road or a limited access road, written consent for a new junction, vehicle crossing, or level crossing to serve the use and development has been issued by the road authority.

The proposal involves new vehicle crossings. Written consent from the road owner (DSG) has not been issued at this point. This TIA has been prepared to assist Council and DSG in assessing the proposal. A1.2 is currently not satisfied.

Acceptable Solution A1.3 – Not applicable as no rail network is involved.

Acceptable solution A1.4: Vehicular traffic to and from the site, using an existing vehicle crossing or private level crossing will not increase by more than:

(a) The amounts in Table C3.1
(b) Allowed by a licence issued under Part IVA of the Roads and Jetties Act 1935 in respect to a limited access road; and

Table C3.1 allows up to 40 vpd increase for vehicles up to 5.5m in length. The proposed Arthur Hwy / future road junction will direct and an estimated 45 vpd onto the Arthur Hwy.

A1.4 is not Satisfied.

Performance Criteria P1: Vehicular traffic to and from the site must minimise any adverse effects on the safety of a junction, vehicle crossing or level crossing or safety or efficiency of the road or rail network, having regard to:

(a) any increase in traffic caused by the use.
(b) the nature of the traffic generated by the use.
(c) the nature of the road.
(d) the speed limit and traffic flow of the road.
(e) any alternative access to a road.
(f) the need for the use.
(g) any traffic impact assessment; and
(h) any advice received from the rail or road authority.

(a) The increase in traffic due to the proposal is estimated at 45vpd at the Arthur Hwy junction with peak traffic flows as indicated in Figure 33. From review of Austroads junction warrants and DSG guidelines a partial rural BAR junction layout is of adequate standard to cope with the projected increase by 2033.

(b) The traffic generated by the use will be 98% light vehicles post residential construction phase.

(c) Arthur Hwy and the proposed future road are of suitable standard to cope with projected traffic activity in 2033 of 45 vpd.

(d) Arthur Hwy has a posted 60km/h speed limit and AADT 2,440vpd in the vicinity of the subdivision, appropriate for the situation. The

proposed future road (new road) is within a rural environment and technically the 50km/h General Urban Speed Limit does not apply however a 50km/h speed limit is considered appropriate for the standard, function and length of the road (305m.)

(e) No alternative accesses are available.

(f) The use is consistent with the Rural Living Zone.

(g) This TIA finds no reason to disallow the proposal.

(h) No rail or road infrastructure is disaffected by the proposal.

In summary there are no traffic safety or capacity issues due to the proposal. P1 is satisfied.

Acceptable solution A1.5: Vehicular traffic must be able to enter and leave a major road in a forward direction. A1.5 is satisfied.

C3.6.1 Habitable buildings for sensitive uses within a road or railway attenuation area.

Acceptable Solution A1

Unless within a building area on a sealed plan approved under this planning scheme, habitable buildings for a sensitive use within a road or railway attenuation area, must be:

(a) within a row of existing habitable buildings for sensitive uses and no closer to the existing or future major road or rail network than the adjoining habitable building;

(b) an extension which extends no closer to the existing or future major road or rail network than:

(i) the existing habitable building; or

(ii) an adjoining habitable building for a sensitive use; or

(c) located or designed so that external noise levels are not more than the level in Table C3.2 measured in accordance with Part D of the *Noise Measurement Procedures Manual, 2nd edition, July 2008*.

Table C3.2 Acceptable noise levels within a road or railway attenuation area

Roads
The arithmetic average of the A-weighted L10 sound pressure levels for each of the one-hour periods between 6:00am and midnight on any day [L10 (18-hour)] of 63 dB(A).

Habitable buildings are not proposed within 50m of a Major Road, see Figure 4. The Arthur Hwy is a Major Road. A1 is satisfied.

C3.7.1 Subdivision for sensitive uses within a road or railway attenuation area

Acceptable Solution A1

A lot, or a lot proposed in a plan of subdivision, intended for a sensitive use must have a building area for the sensitive use that is not within a road or railway attenuation area.

Residential subdivision is proposed within the Rural Living Zone but with building areas not within 50m of a Major Road. The Arthur Hwy is a Major Road. A1 is satisfied.

6) Department of State Growth requirements

DSG review of TIA

These reviews are required to:

- assess whether DSG requirements are satisfied.
- resolve any issues so the TIS can be finalised.
- enable TIA endorsement provided by DSG to be communicated to Council as part of the Development application process.

These reviews are usually arranged by the TIS author. The email address for submissions is:
Development@stategrowth.tas.gov.au

Crown landowner consent

This is to provide DSG to opportunity to check alignment of proposals with DSG objectives for the road. If the proposal aligns with DSG objectives Crown Land Consent is issued by DSG. Crown Landowner Consent is required where there is a proposed change in use of property adjacent to a state road. The website for Crown Landowner Consent is:
https://www.transport.tas.gov.au/road/permits/crown_landownerconsent\

Access works permits

Developers must obtain an access works permit from DSG for proposed work within a state road reservation. Applications need to include:

- suitably design plans detailing the proposal and services affected.
- relevant design calculations for stormwater management and pavement design
- a traffic impact assessment

The website for access works permit applications is:
https://www.transport.tas.gov.au/road/permits/road-access

Summary of DGS requirements

DSG acceptance of this TIA is attached in Appendix F. The developer will need to apply for:

- Crown landowner consent to access Arthur Highway
- Access works permit to construct the proposed junction and accesses.

7) Recommendations and Conclusions

This traffic impact assessment (TIA) has been prepared to assess the operation and safety of the proposed junction and accesses arising from the proposed 9 lot subdivision of 42 Arthur Highway, Dunalley.

Existing road conditions have been reviewed including the speed environment and available sight distances.

It is assessed that the proposal will have minimal impact on traffic safety and capacity for all road users including pedestrians and cyclists.

Evidence is provided to demonstrate the proposal satisfies the Tasmanian Planning Scheme − Sorell Road & Railway Assets Code C3.

7.1) Traffic Safety:

From road safety review, review of 5 year reported crash history and Austroads Safe System assessment it was determined that the Arthur Hwy approaches to the development site :

- Display no roadside hazards.
- Has no evidence of a crash propensity from 5 year reported crash history.
- Have a low crash risk and alignment with the safe system objective *"a forgiving road system where crashes do not result in death or serious injury'.*

7.2) Arthur Hwy

The proposal will contribute 72vpd to the Arthur Hwy including 45 vpd to the Arthur Hwy at the proposed junction once fully developed.

As of 2023 the Arthur Hwy has estimated AADT of some 2,440vpd at the development site. The estimated traffic flows are low, and the roads are estimated to operate at LOS A by 2033. Accordingly, there are not traffic capacity issues with the proposal.

The existing 60km/h speed limit on the Arthur Hwy is considered appropriate.

7.3) Proposed future road.

The proposed future road standard satisfies LGAT standard drawing TSD-R02 – Code S3 for a 5.5m wide sealed rural road with a TSD- R08 rural Cul-De-Sac and exceeds the minimum 9m radius requirement with a 12.5m radius for fire truck access, see Appendix G.

The road alignment is straight and relatively flat and will have an AADT of some 45 vpd once fully developed. There are no traffic capacity issues at this level of traffic activity and with the road operating at LOS A.

The proposed future road is within a rural environment and technically the 50km/h General Urban Speed Limit does not apply however a 50km/h speed limit is considered appropriate for the standard, function and length of the road (305m.)

7.4) Proposed Arthur Hwy / future road junction

The proposed junction has been reviewed in terms of Austroads junction layout requirements, see Figure 33. From DSG guidelines a partial rural BAR junction layout, see Appendix A, is considered adequate as projected through and turning traffic movements by 2033 are low.

7.5) Tasmanian Planning Scheme – Sorell

Evidence is provided to demonstrate requirements of Road and Railway Assets Code C3 are satisfied.

Recommendations (Proponents Responsibility):

- *Obtain Crown landowner consent. The website for Crown Landowner Consent applications is: https://www.transport.tas.gov.au/road/permits/crown_landownerconsent*
- *Obtain a DSG Access works permit to construct the proposed junction and accesses. The website for applications is: https://www.transport.tas.gov.au/road/permits/road-access*

- *Construct the proposed Arthur Hwy / future road junction with a partial rural BAR layout (see DSG standard drawing TSD-84.013 in Appendix A for layout, line marking and signage.) and culvert with driveable endwalls, see DSG standards in Appendix A.*

- *Construct proposed Arthur Hwy accesses to a sealed width of 4m with 20 tonne load bearing capacity and consistent with Appendix G - Bushfire Hazard Report Extract and otherwise consistent with the DSG standard layout with driveable endwalls, see Appendix A.*

- *Construct proposed future road to sealed width of 5.5m consistent with LGAT Standard Drawings TSD – R02 for a Code S3 sealed rural road and Rural Cul – De-Sac consistent with TSD -R08.*

- *Construct proposed future road accesses to a sealed width of 4m with 20 tonne load bearing capacity and consistent with Appendix G - Bushfire Hazard Report Extract and otherwise consistent with the LGAT sealed rural road access standard drawings TSD- R03 & R04 with standard culvert and endwalls standard.*

- *The current version of the LGAT standards is available online at:*

  Tasmanian-Municipal-Standards-Drawings-v3-December-20202.pdf (lgat.tas.gov.au)

Suggestions (For Council consideration):

- *Sorell Council make application to the DSG Transport Commissioner for a 50km/h speed limit for the future subdivision road.*

DSG confirmation of acceptability of this TIA is attached in Appendix F.

Overall, it has been concluded that the proposal will not create any traffic issues and traffic will be able to continue to operate safely and efficiently along the Arthur Highway approaches and within the subdivision. Based on the finding of this report and subject to the recommendations above, the proposal is supported on traffic grounds.

.

8) Assessor Credentials

Richard Burk is a qualified Traffic and Civil Engineer with over 36 years of experience with State and Local Government in the Roads and Traffic industry in Tasmania. Richard has also represented Tasmania on various national committees including Austroads Traffic Management Working Group and the National Pavement Marking Working group. Visit

www.trafficandcivil.com.au .

Yours sincerely

Richard Burk

Director
Traffic and Civil Services
M: 0456 535 746
P: 03 63341868
E: Richard.burk@trafficandcivil.com.au

Appendices:

Appendix A – DSG Access Standards

Appendix B – Site Plans

Appendix C – Arthur Highway Traffic Data

Appendix D – Tasmanian 26m B Double Network

Appendix E – DSG Limited Access Road Network

Appendix F - DSG Endorsement

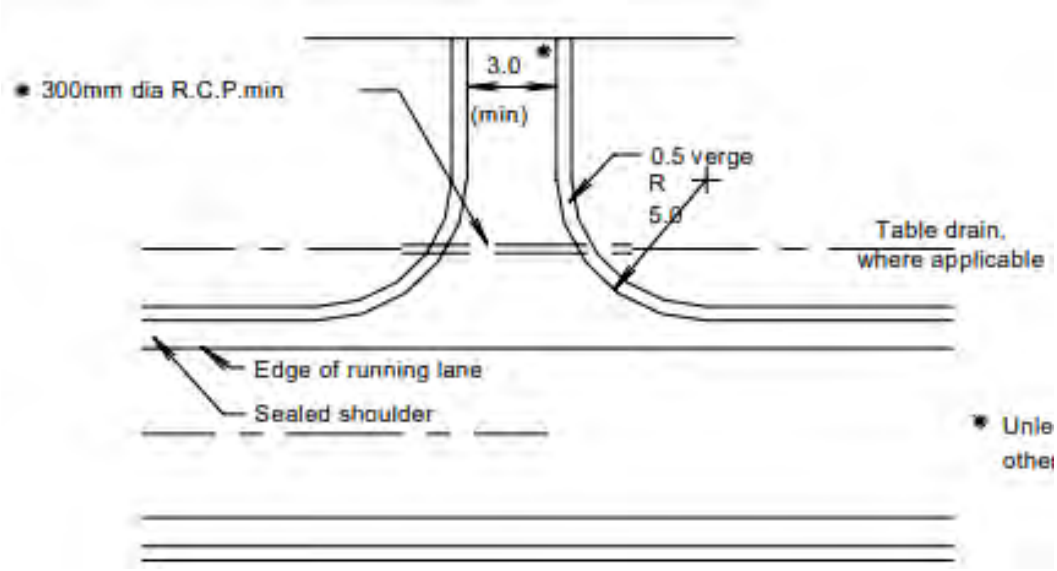
Appendix G - Bushfire Hazard Report Extract

Appendix H – Arthur Hwy 5 Year Reported Crash History

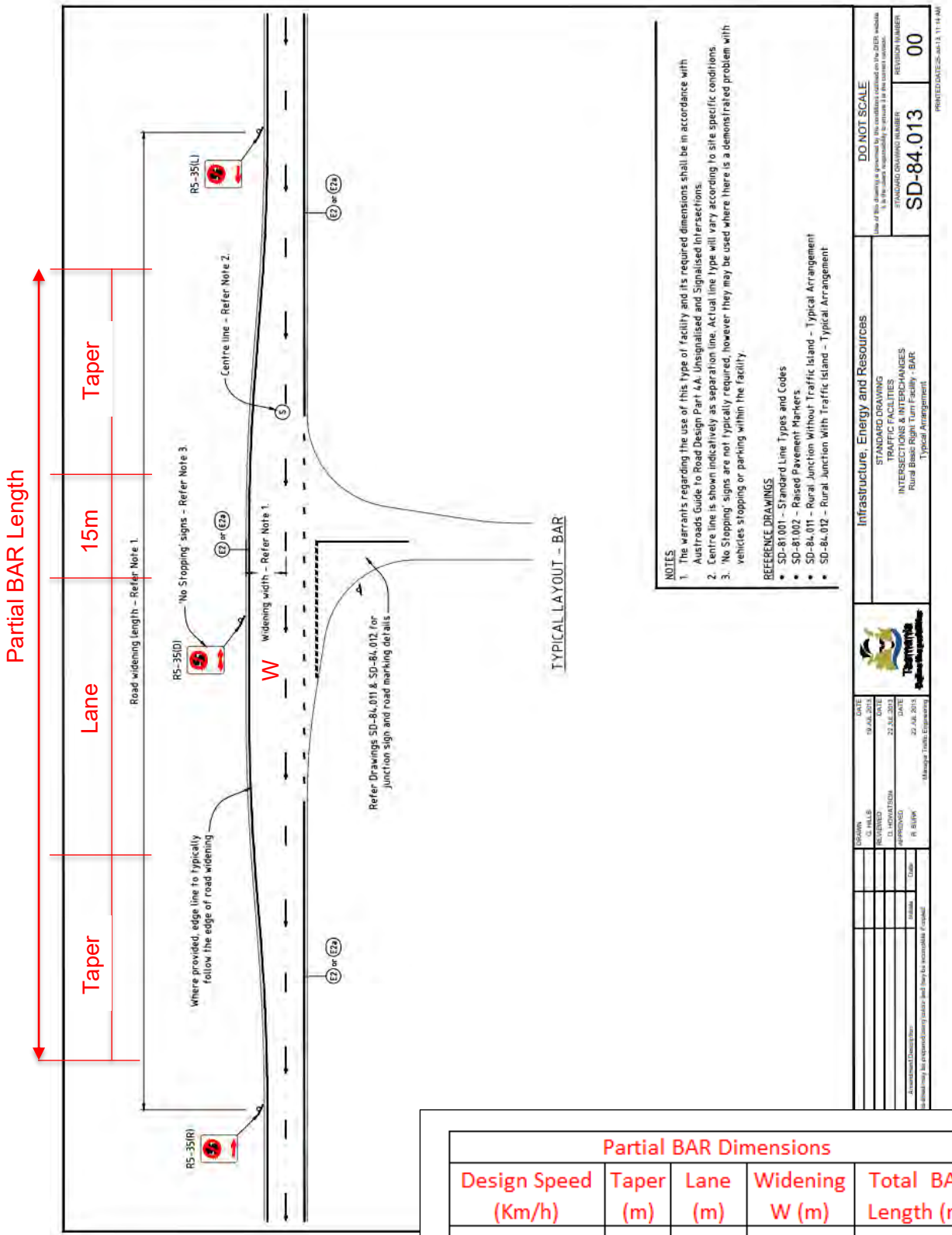
Appendix A – DSG Rural Access and Junction standards

Arthur Hwy Rural Access Standard

Arthur Hwy accesses are to be constructed to DSG rural residential access standard and sealed to the gate, see below . Installation of a driveway culvert is required with driveable culvert endwalls Type 1 as per DSG standard drawing 3402-2/P35-2 attached.

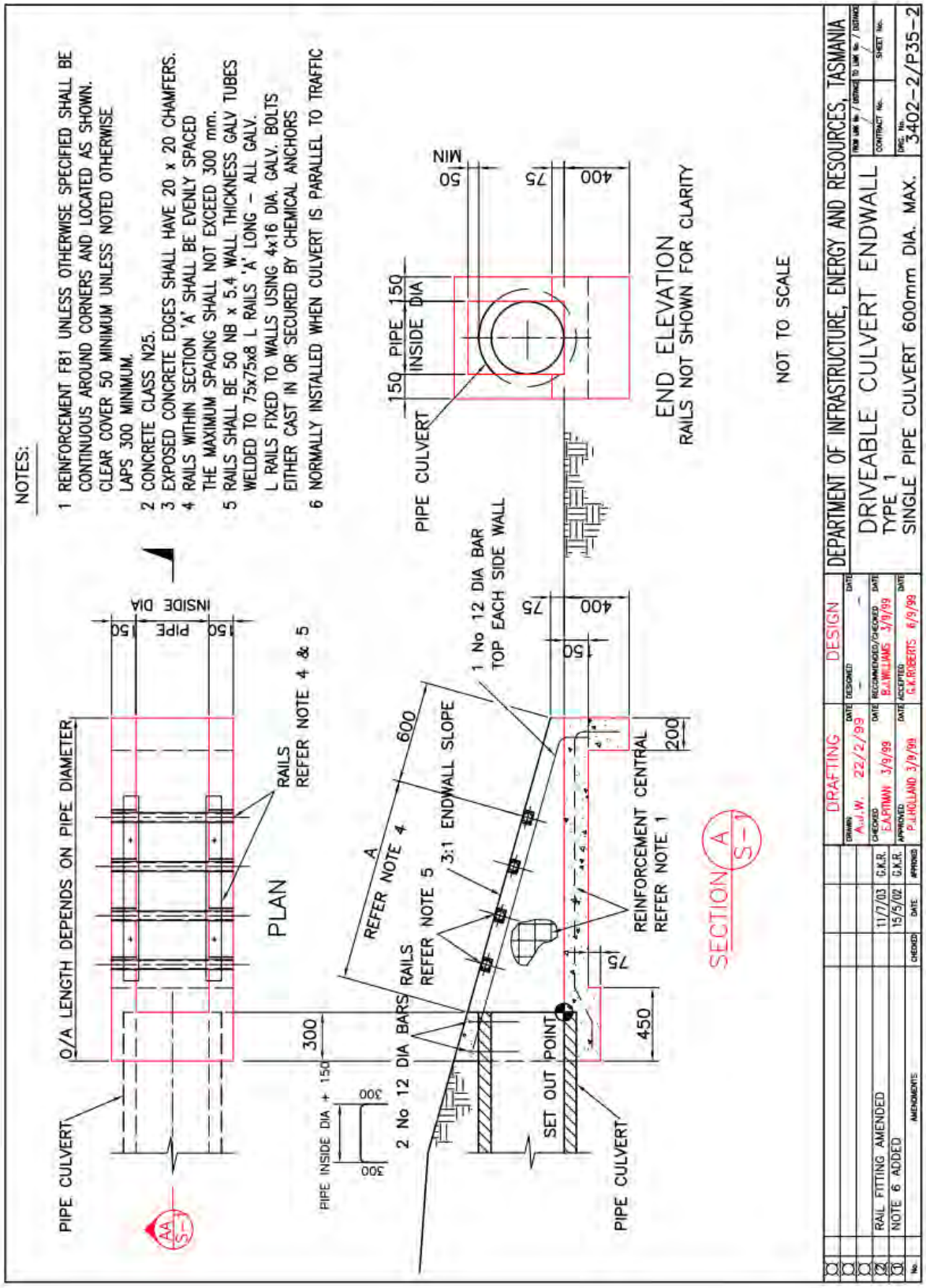


Arthur Hwy – Partial Rural BAR Junction Standard



Partial BAR Dimensions				
Design Speed (Km/h)	Taper (m)	Lane (m)	Widening W (m)	Total BAR Length (m)
60	14	40	5.5	83

Driveable Culvert Endwall Standard



Appendix B –Site Plans

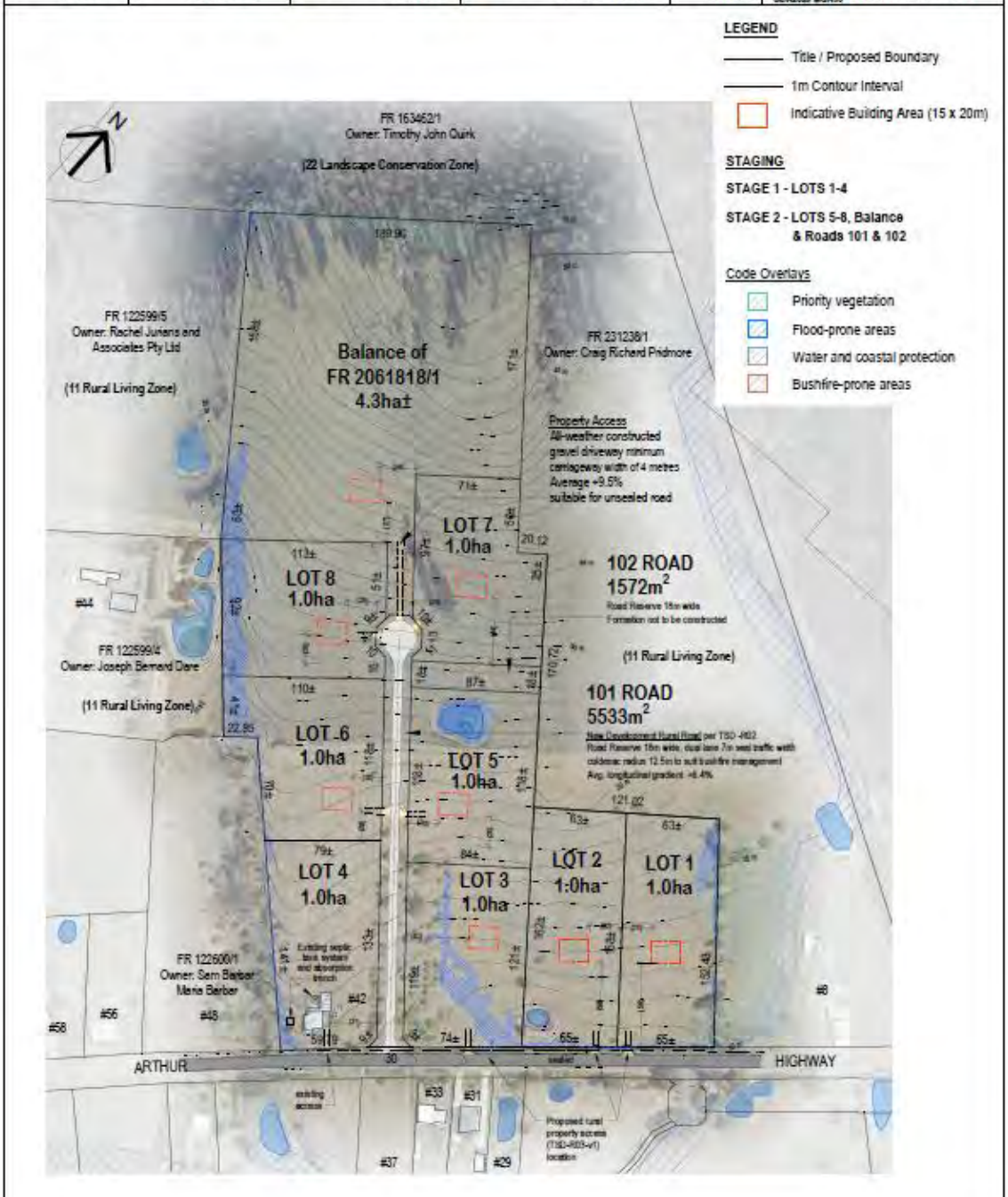
PLAN OF SUBDIVISION

PDA SURVEYORS, ENGINEERS & PLANNERS

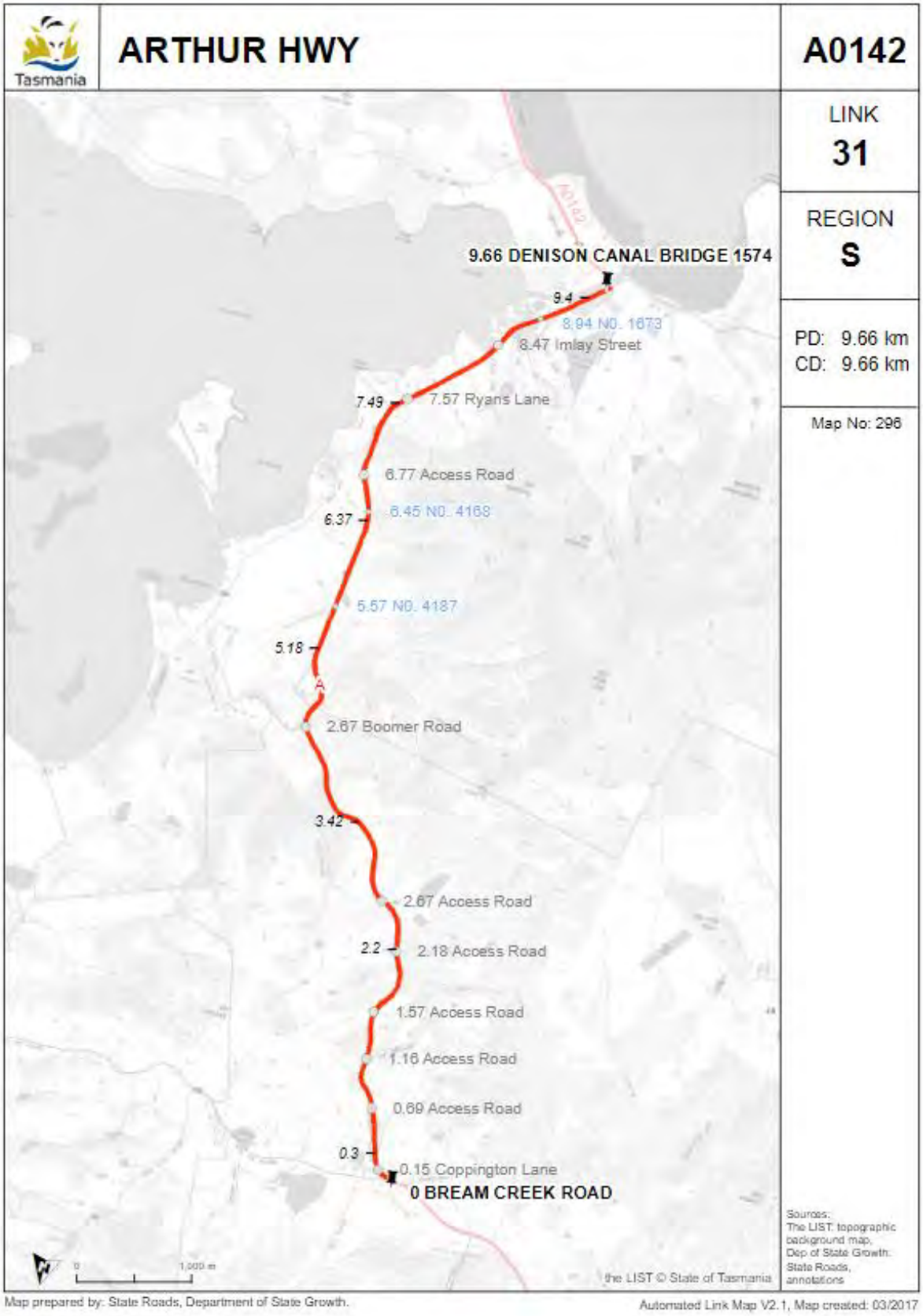
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie

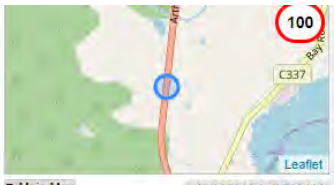
Owners	Brendan Michael Shane Daly	Address	16-42 Arthur Highway Dunalley Tas 7177	This plan has been prepared only for the purpose of obtaining preliminary subdivision approval from the Council and the information shown hereon should be used for no other purpose. All measurements and areas are subject to final survey.
		Council	Sorell Council	
		Tas. Planning Scheme	Sorell Local Provisions Schedule	
Title References	FR 206181/1	Zone & Overlay	11 Rural Living Zone A; 13 Bushfire-prone area; See other overlays below	
Schedule Of Easements	Nil.			

Scale	Date	PDA Reference	Map reference	PID	Point of Interest GDA2020 MGA55
1:2500	9 June 2023	47948CT-2F	562542 & 562552	5956618	566820E, 5252290N



Appendix C –Arthur Highway Traffic Data





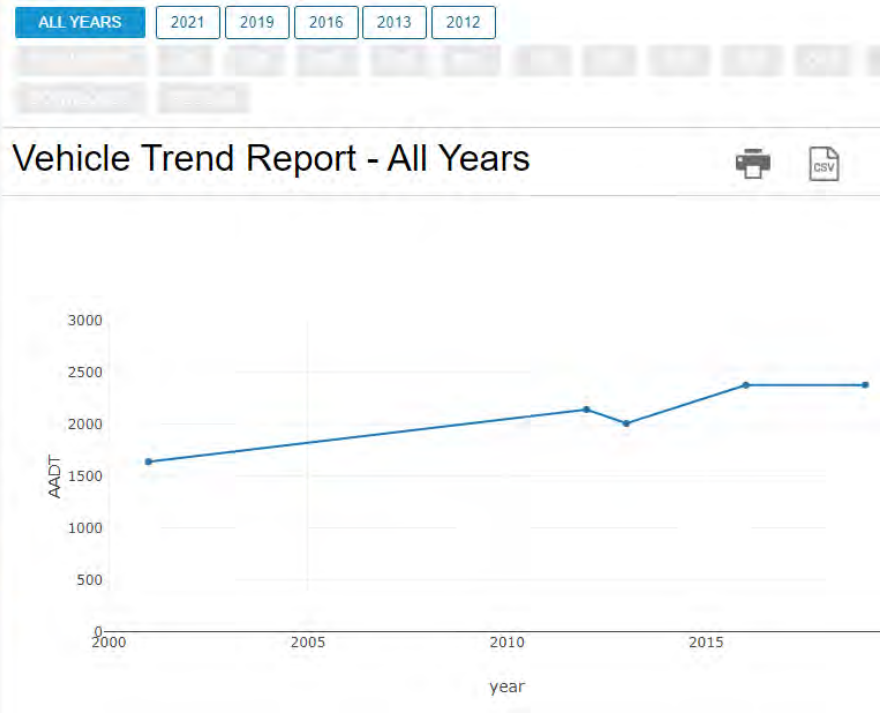
STATION

A0142225

a short term classified counter located at a two way road [N/S] in **Dunalley**, **Sorell** on **A0142**, 430m S Of Little Boomer Creek [UTS L31/ 0.00 - L45 0.31]

Reports Spanning All Available Years

Report Fragments		
XAxis	Value	Series
Vehicle Trend Report		
Change in AADT over time		
HV pct Report		



HV Pct Report - All Years

Percent Trucks by year

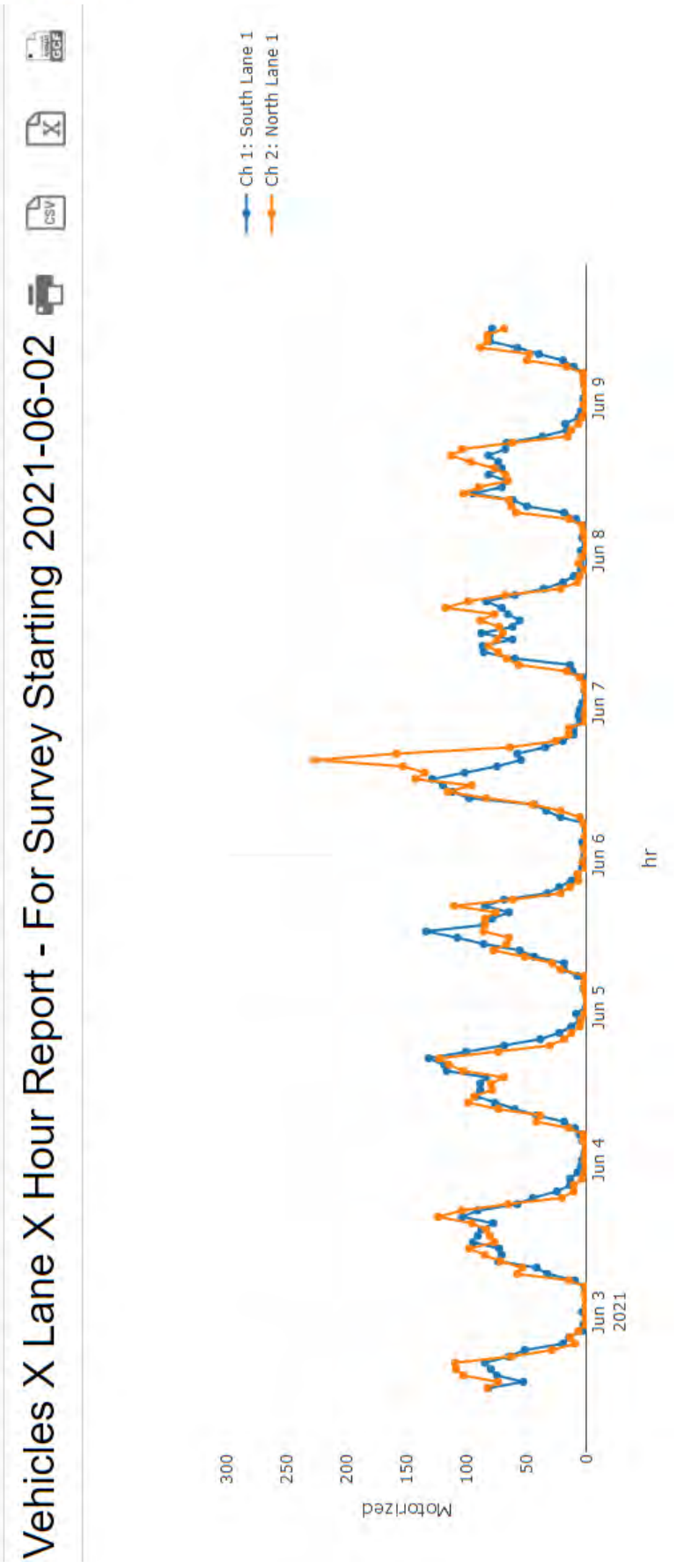
year	Percent Trucks
2001	0
2002	
2003	
2004	
2005	
2006	
2007	
2008	
2009	
2010	
2011	
2012	8.4
2013	10.6
2014	
2015	
2016	9.2
2017	
2018	
2019	8.6

Arthur Hwy AADT
(1.6km North of existing access)

- **2001 – 1,642 vpd**
- **2019 – 2,381 vpd**

2.1% compound annual growth rate

9 % Heavy Commercial Vehicles



Arthur Hwy Peak Flows (vph)

AM 2021

- **Sorell bound - 100.**
- **Dunalley bound - 120.**

PM 2021

- **Sorell bound - 120.**
- **Dunalley bound - 100.**

AM 2033

- **Sorell bound - 127.**
- **Dunalley bound - 150.**

PM 2033

- **Sorell bound - 150.**
- **Dunalley bound - 127.**

Site 0000A0142225

A0142225
Description: Arthur Highway 430m S Of Little Boomer Creek
City: Dunalley
Route number: A0142

Site Data

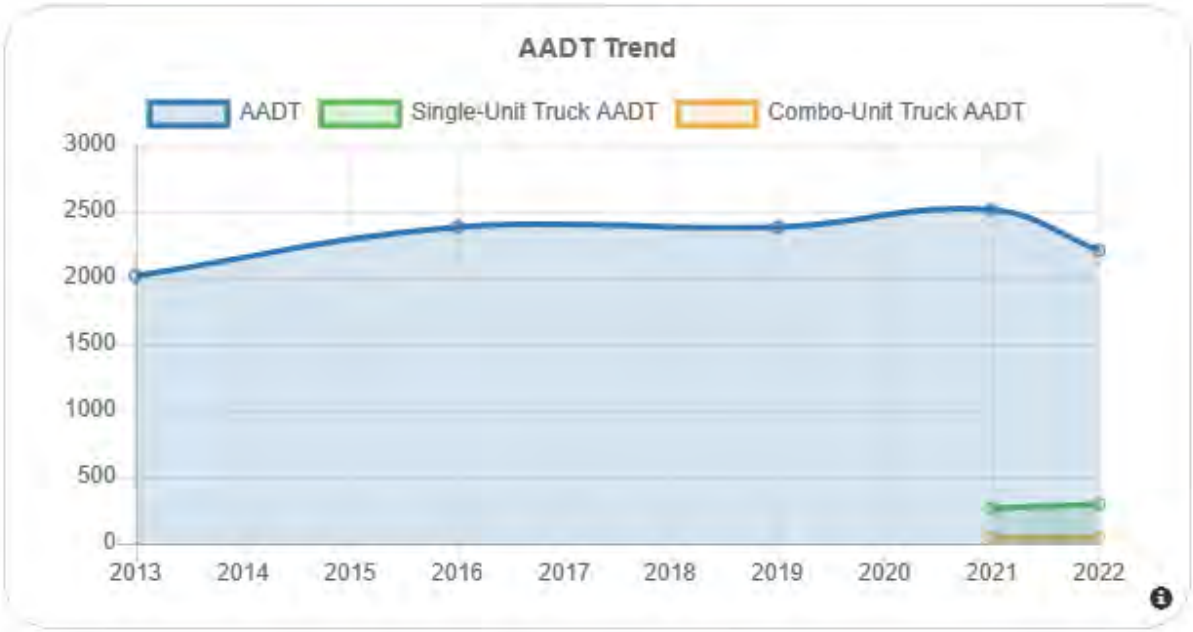
100 km/h

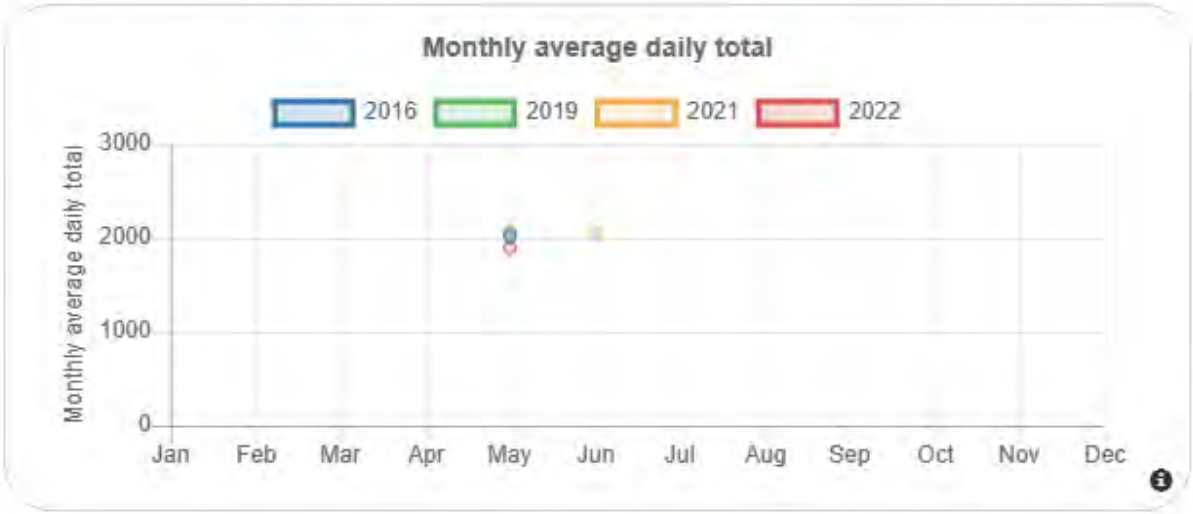
Traffic Statistics by Direction

Direction	Weekday average total traffic	7-day average traffic	Weekly traffic total
North	714	824	5,766
South	718	805	5,635
Total	1,432	1,629	11,401

Annual Statistics

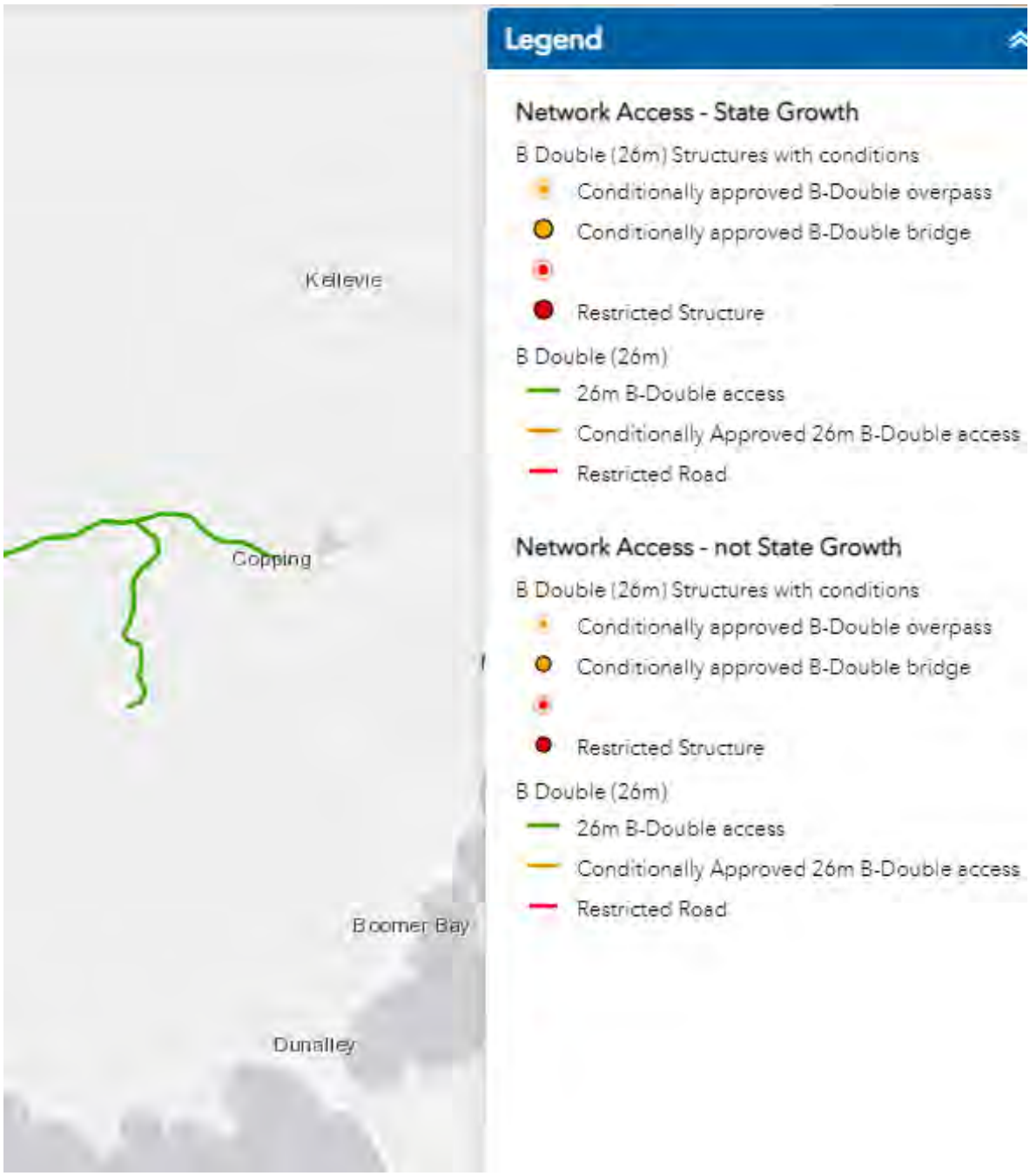
Data Item	2013	2014	2015	2016	2017	2018	2019	2020	2021	2022
AADT	2,011	-	-	2,380	-	-	2,381	-	2,514	**2,200**
% HV	10.6%	-	-	9.2%	-	-	8.6%	-	12.5%	**15.5%**


AADT Trend
AADT
Single-Unit Truck AADT
Combo-Unit Truck AADT
3000
2500
2000
1500
1000
500
0
2013
2014
2015
2016
2017
2018
2019
2020
2021
2022


Monthly average daily total
2016
2019
2021
2022
Monthly average daily total
3000
2000
1000
0
Jan
Feb
Mar
Apr
May
Jun
Jul
Aug
Sep
Oct
Nov
Dec


Daily Volume
Fri
Sat
Sun
Mon
Tue
Wed
Thu
Volume
300
200
100
0
00:00
02:00
04:00
06:00
08:00
10:00
12:00
14:00
16:00
18:00
20:00
22:00
Time

Appendix D – Tasmanian 26m B Double Network



Appendix E – DSG Limited Access Road Network

Appendix F - DSG Endorsement

RE: 42 Arthur Hwy - Revised TIA

Volker, Sam
To: Richard Burk
Attachments: image001.jpg
Sent: 30/08/2023 10:18 AM

Hello Richard

Confirming we accept the Traffic Impact assessments findings and recommendations

Thanks

Sam

Sam Volker | Traffic Engineering Liason

Network Management | Department of State Growth

76 Federal Street, North Hobart TAS 7000 | GPO Box 536, Hobart TAS 7001

Phone: (03) 6165 5205

www.stategrowth.tas.gov.au

Courage to make a difference through

TEAMWORK | INTEGRITY | RESPECT | EXCELLENCE

In recognition of the deep history and culture of this island, I acknowledge and pay my respects to all Tasmanian Aboriginal people; the past, and present custodians of the Land.

From: Richard Burk <richard.burk@trafficandcivil.com.au>
Sent: Tuesday, 29 August 2023 11:51 AM
To: Development <Development@stategrowth.tas.gov.au>; Volker, Sam <Sam.Volker@stategrowth.tas.gov.au>
Subject: 42 Arthur Hwy - Revised TIA

Appendix G - Bushfire Hazard Report Extract

A bushfire hazard report has been prepared for the proposed subdivision by GES dated June 2023

The following extracts from the report summarise public road and property access requirements.

5.2 Public and firefighting Access

5.2.1 Public Roads

One new roadway terminating in a cul-de-sac is proposal for this subdivision. The new roadway will be required to conform with the following design and construction specifications.

Unless the development standards in the zone require a higher standard, the following apply:

- two-wheel drive, all-weather construction;
- load capacity of at least 20t, including for bridges and culverts;
- minimum carriageway width is 7m for a through road, or 5.5m for a dead-end or cul-de-sac road;

Bushfire Hazard Report - 42 Arthur Highway, Dunalley, June 2023, J5353v3.0. Page 8 o f 1 4

- minimum vertical clearance of 4m;
- minimum horizontal clearance of 2m from the edge of the carriageway;
- cross falls of less than 3 degrees (1:20 or 5%);
- maximum gradient of 15 degrees (1:3.5 or 28%) for sealed roads, and 10 degrees (1:5.5 or 18%) for unsealed roads;
- curves have a minimum inner radius of 10m;
- dead-end or cul-de-sac roads are not more than 200m in length unless the carriageway is 7 metres in width;
- dead-end or cul-de-sac roads have a turning circle with a minimum 12m outer radius; and
- carriageways less than 7m wide have 'No Parking' zones on one side, indicated by a road sign that complies with Australian Standard AS1743-2001 Road signs-specifications

5.2.2 Property access (for building compliance)

Property access will be required to be established to access static water supply connection points. Lot 4, with existing residential development, will require property access to be modified to achieve the following standards prior to the sealing of titles.

The following design and construction standards apply to property access:

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

All lots within stage 1 are accessed from an existing roadway, (Arthur Highway), all lots within stage 2 will be accessed from a new road terminating with a cul-de-sac.

Appendix H – Arthur Hwy 5 Year Reported Crash History

Crash Id	Units	Description	Date	Time	Date	Severity	Light	Speed Limit	Location
49124913	LV; LV	111 - Right far	17-FEB-2018	10:40	17/02/2018	Minor	Day	60	Arthur Hwy / Imlay St. jcn.
50450768	LV; LV	130 - Veh. in same lane/ rear end	07-JAN-2020	17:15	7/01/2020	PDO	Day	60	Arthur Hwy
50860826	LV	179 - Other straight	12-NOV-2020	22:00	13/11/2020	PDO	Night	60	Arthur Hwy
51307834	LV; LV; LV	130 - Veh. in same lane/ rear end	11-JUL-2021	13:00	11/07/2021	Minor	Day	60	Arthur Hwy

LV	Light Vehicle
PDO	Property Damage Only

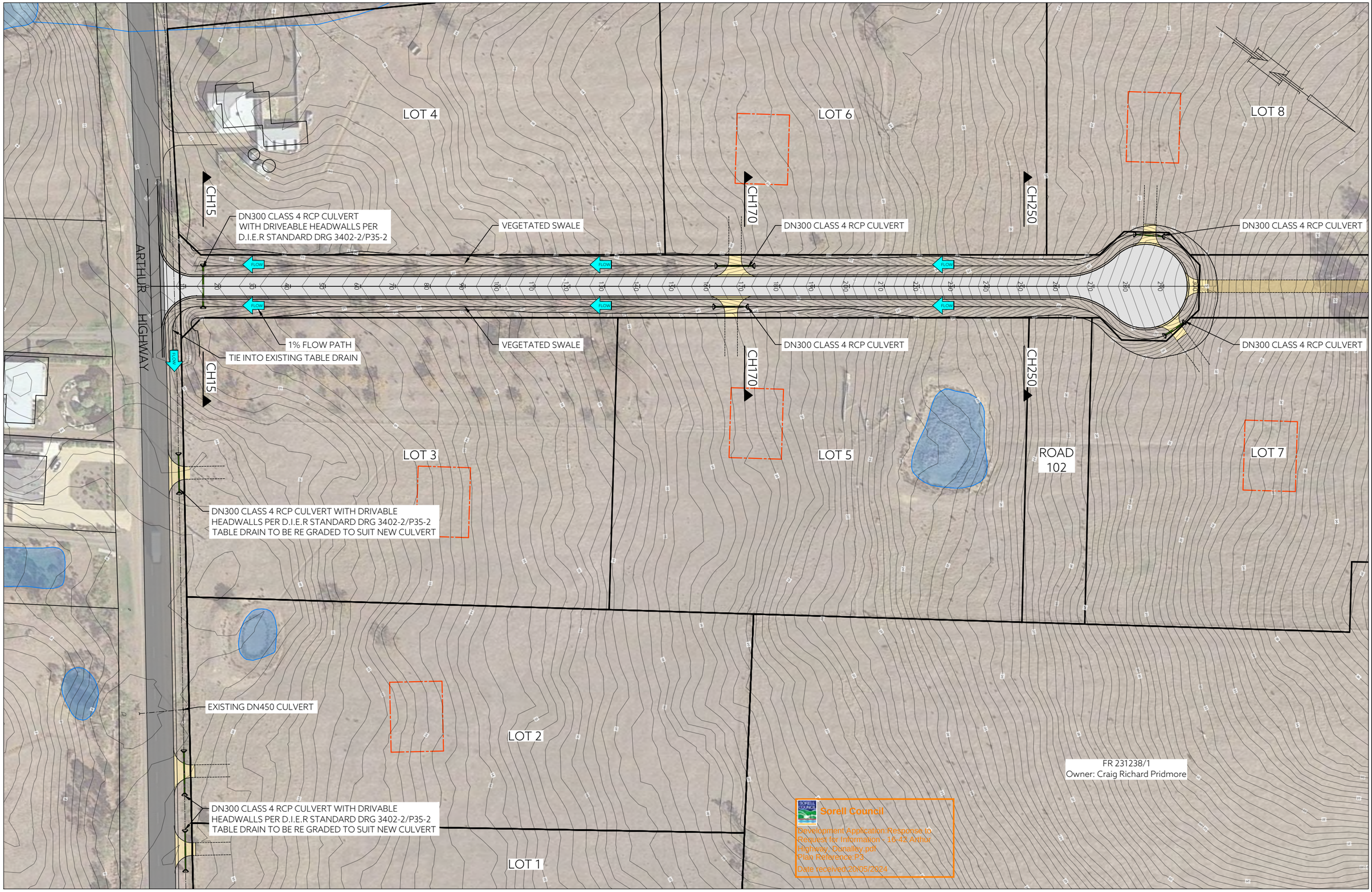
47948CT - Calculation of Dimensions of Soakaways

LOT 1

Location 16-42 Arthur Highway Dunalley

Catchment Area	A	300	m2	Ainf	Infiltration Area	30	
Volumetric Runoff Coefficient	C	0.9		P	Perimeter of infiltration Area	34	
Soil Kh	Kh	36	(assume sandy clay)				
Moderating Factor	U	1					
Width of Infiltration Area		2					
Length of Infiltration Area		15					
Depth of Storage	d	0.5					
Porosity		0.35					
Storage		5.25					

Storm Duration	Storm Mean Intensity	Volume In	Volume Out	Storage Volume Required	Percentage of Storage Provided	D
Minutes -	(mm/hr) I	(m3)	(m3)	(m3)	%	
5	76.2	1.715	0.1155	1.599	328.33	0.08
10	44.5	2.003	0.2310	1.772	296.21	0.17
15	45.2	3.051	0.3465	2.705	194.12	0.25
20	41.4	3.726	0.4620	3.264	160.85	0.33
25	37.4	4.212	0.5775	3.635	144.45	0.42
30	34.0	4.590	0.6930	3.897	134.72	0.50
45	24.4	4.941	1.0395	3.902	134.56	0.75
60	21.3	5.751	1.3860	4.365	120.27	1.00
90	15.9	6.426	2.0790	4.347	120.77	1.50
120	14.0	7.560	2.7720	4.788	109.65	2.00
180	10.6	8.586	4.1580	4.428	118.56	3.00
270	8.6	10.395	6.2370	4.158	126.26	4.50
360	7.9	12.798	8.3160	4.482	117.14	6
540	6.1	14.931	12.4740	2.457	213.68	9
720	5.7	18.603	16.6320	1.971	266.36	12
1080	4.5	21.708	24.9480	-3.240	-162.04	18
1440	4.1	26.595	33.2640	-6.669	-78.72	24
1800	3.7	30.240	41.5800	-11.340	-46.30	30
2160	3.4	32.940	49.8960	-16.956	-30.96	36
2880	2.7	35.100	66.5280	-31.428	-16.70	48
4320	2.0	38.070	99.7920	-61.722		72



REV	AMENDMENTS	DRAWN	DATE	APPR.
-	----	--	--/--/----	--
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DRAWING STATUS: PRELIMINARY

COORDINATE/ DATUM: LIDAR

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DESIGNED: RP	REVIEWED: MW
DRAWN: RD	REVIEWED: RP
JOB MANAGER: CRAIG TERRY	
ISSUED DATE: 04/10/2023	

CLIENT: BRENDAN MICHAEL SHANE DALY

PROJECT DESCRIPTION: PROPOSED SUBDIVISION

ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY

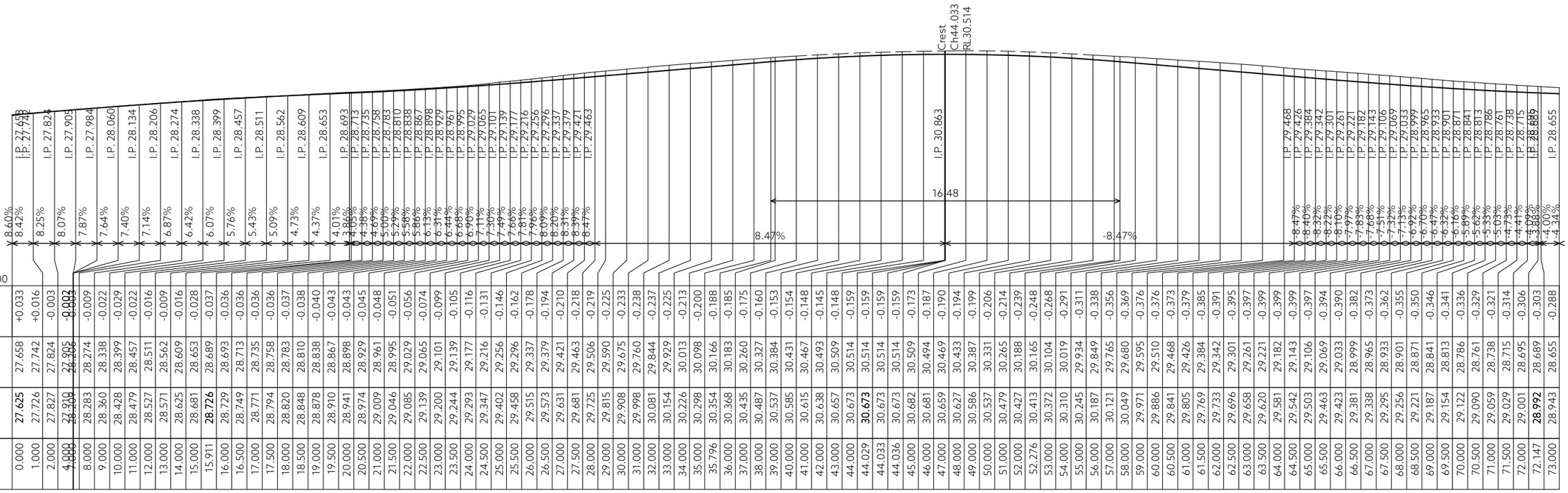
DRAWING TITLE: PROPOSED ROAD & SW LAYOUT

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie

REGISTRATION NUMBER: ----

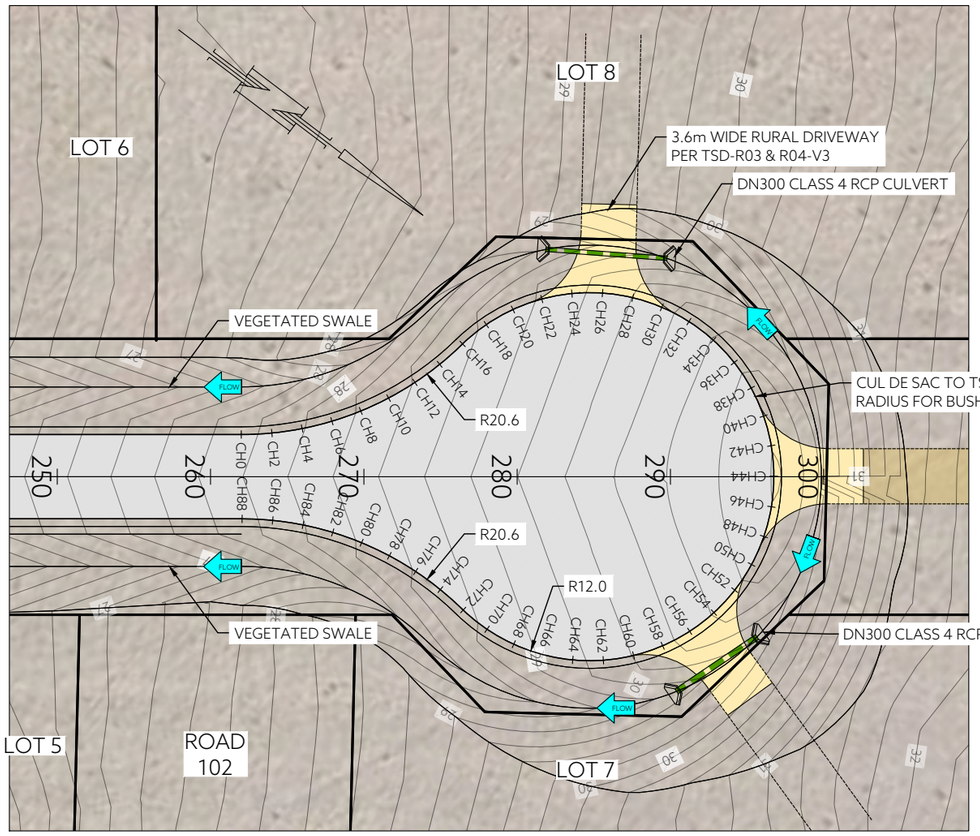
CONTRACT NO.	SCALE		PAPER
------	1: 1000		(A3)
JOB NUMBER	DISCIPLINE	SHEET	REVISION
47948CT	C	100	---

DATE/TIME: Wednesday, 4 October 2023 4:05:52 PM PLOTTED: ROWAN DEMMER FILE LOCATION: S:\47948CT - BRENDAN DALY - 16-42 ARTHUR HWY, DUNALLEY\ENGINEERING\47948CT-ENG.DWG



CHAINAGE	EXISTING SURFACE	DESIGN E.O.B.	CUT FILL	
R.L. 19.600				
0.000	**27.625**	27.658	+0.033	8.60%
1.000	27.726	27.742	+0.016	8.42%
2.000	27.827	27.824	-0.003	8.25%
4.000	28.209	27.905	-0.003	8.07%
7.000	28.209	28.206	-0.003	7.87%
8.000	28.283	28.274	-0.009	I.P. 27.984
9.000	28.360	28.338	-0.022	7.64%
10.000	28.428	28.399	-0.029	7.40%
11.000	28.479	28.457	-0.022	7.14%
12.000	28.527	28.511	-0.016	I.P. 28.206
13.000	28.571	28.562	-0.009	6.87%
14.000	28.625	28.609	-0.016	I.P. 28.274
15.000	28.681	28.653	-0.028	6.42%
15.911	**28.726**	28.689	-0.037	I.P. 28.338
16.000	28.729	28.693	-0.036	6.07%
16.500	28.749	28.713	-0.036	I.P. 28.399
17.000	28.771	28.735	-0.036	5.76%
17.500	28.794	28.758	-0.036	I.P. 28.457
18.000	28.820	28.783	-0.037	5.43%
18.500	28.848	28.810	-0.038	I.P. 28.511
19.000	28.878	28.838	-0.040	5.09%
19.500	28.910	28.867	-0.043	I.P. 28.562
20.000	28.941	28.898	-0.043	4.73%
20.500	28.974	28.929	-0.045	I.P. 28.609
21.000	29.009	28.961	-0.048	4.37%
21.500	29.046	28.995	-0.051	I.P. 28.653
22.000	29.085	29.029	-0.056	4.01%
22.500	29.139	29.065	-0.074	I.P. 28.693
23.000	29.200	29.101	-0.099	3.86%
23.500	29.244	29.139	-0.105	4.05%
24.000	29.293	29.177	-0.116	I.P. 28.713
24.500	29.347	29.216	-0.131	4.38%
25.000	29.402	29.256	-0.146	I.P. 28.735
25.500	29.458	29.296	-0.162	4.69%
26.000	29.515	29.337	-0.178	I.P. 28.758
26.500	29.573	29.379	-0.194	5.00%
27.000	29.631	29.421	-0.210	I.P. 28.783
27.500	29.681	29.463	-0.218	5.29%
28.000	29.725	29.506	-0.219	I.P. 28.810
29.000	29.815	29.590	-0.225	5.58%
30.000	29.908	29.675	-0.233	I.P. 28.838
31.000	29.998	29.760	-0.238	5.86%
32.000	30.081	29.844	-0.237	I.P. 28.867
33.000	30.154	29.929	-0.225	6.13%
34.000	30.226	30.013	-0.213	I.P. 28.898
35.000	30.298	30.098	-0.200	6.31%
35.796	30.354	30.166	-0.188	I.P. 28.929
36.000	30.368	30.183	-0.185	6.44%
37.000	30.435	30.260	-0.175	I.P. 28.961
38.000	30.487	30.327	-0.160	6.68%
39.000	30.537	30.384	-0.153	I.P. 28.995
40.000	30.585	30.431	-0.154	6.90%
41.000	30.615	30.467	-0.148	I.P. 29.029
42.000	30.638	30.493	-0.145	7.11%
43.000	30.657	30.509	-0.148	I.P. 29.065
44.000	30.673	30.514	-0.159	7.30%
44.029	**30.673**	30.514	-0.159	I.P. 29.101
44.033	30.673	30.514	-0.159	7.49%
44.036	30.673	30.514	-0.159	I.P. 29.139
45.000	30.682	30.509	-0.173	7.66%
46.000	30.681	30.494	-0.187	I.P. 29.177
47.000	30.659	30.469	-0.190	7.81%
48.000	30.627	30.433	-0.194	I.P. 29.216
49.000	30.586	30.387	-0.199	7.96%
50.000	30.537	30.331	-0.206	I.P. 29.256
51.000	30.479	30.265	-0.214	8.09%
52.000	30.427	30.188	-0.239	I.P. 29.296
52.276	30.413	30.165	-0.248	8.20%
53.000	30.372	30.104	-0.268	I.P. 29.337
54.000	30.310	30.019	-0.291	8.31%
55.000	30.245	29.934	-0.311	I.P. 29.379
56.000	30.187	29.849	-0.338	8.39%
57.000	30.121	29.765	-0.356	I.P. 29.421
58.000	30.049	29.680	-0.369	8.47%
59.000	29.971	29.595	-0.376	I.P. 29.463
60.000	29.886	29.510	-0.376	
60.500	29.841	29.468	-0.373	
61.000	29.805	29.426	-0.379	
61.500	29.769	29.384	-0.385	
62.000	29.733	29.342	-0.391	
62.500	29.696	29.301	-0.395	
63.000	29.658	29.261	-0.397	
63.500	29.620	29.221	-0.399	
64.000	29.581	29.182	-0.399	
64.500	29.542	29.143	-0.399	8.47%
65.000	29.503	29.106	-0.397	I.P. 29.468
65.500	29.463	29.069	-0.394	8.40%
66.000	29.423	29.033	-0.390	I.P. 29.426
66.500	29.381	28.999	-0.382	8.32%
67.000	29.338	28.965	-0.373	I.P. 29.384
67.500	29.295	28.933	-0.362	8.22%
68.000	29.256	28.901	-0.355	I.P. 29.342
68.500	29.221	28.871	-0.350	8.10%
69.000	29.187	28.841	-0.346	I.P. 29.301
69.500	29.154	28.813	-0.341	7.97%
70.000	29.122	28.786	-0.336	I.P. 29.261
70.500	29.090	28.761	-0.329	7.83%
71.000	29.059	28.738	-0.321	I.P. 29.221
71.500	29.029	28.715	-0.314	7.68%
72.000	29.001	28.695	-0.306	I.P. 29.182
72.147	**28.992**	28.689	-0.303	7.51%
73.000	28.943	28.655	-0.288	I.P. 29.143

CUL-DE-SAC - LONG SECTION
Scales: (H) 1 in 200 (V) 1 in 200 (A3)



DETAIL PLAN
SCALE 1:400

CHAINAGE	EXISTING SURFACE	DESIGN E.O.B.	CUT FILL	
R.L. 19.600				
73.000	28.943	28.655	-0.288	-4.00%
74.000	28.883	28.612	-0.271	-4.34%
75.000	28.824	28.565	-0.259	-4.71%
76.000	28.757	28.514	-0.243	-5.07%
77.000	28.689	28.460	-0.229	-5.41%
78.000	28.619	28.403	-0.216	-5.74%
79.000	28.548	28.342	-0.206	-6.06%
80.000	28.476	28.278	-0.198	-6.39%
81.000	28.368	28.210	-0.158	-6.85%
82.000	28.260	28.138	-0.122	-7.13%
83.000	28.152	28.064	-0.088	-7.39%
84.000	28.049	27.988	-0.061	-7.63%
85.000	27.950	27.910	-0.040	-7.85%
86.000	27.851	27.829	-0.022	-8.06%
87.000	27.750	27.747	-0.003	-8.24%
88.000	27.648	27.662	+0.014	-8.41%
88.058	**27.642**	27.658	+0.016	-8.57%

CUL-DE-SAC - LONG SECTION
Scales: (H) 1 in 200 (V) 1 in 200 (A3)

Sorell Council
Development Application:Response to Request for Information - 16-42 Arthur Highway, Dunalley.pdf
Plan Reference:P3
Date received:20/05/2024

REV	AMENDMENTS	DRAWN	DATE	APPR.
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DRAWING STATUS: PRELIMINARY
COORDINATE/ DATUM: LIDAR
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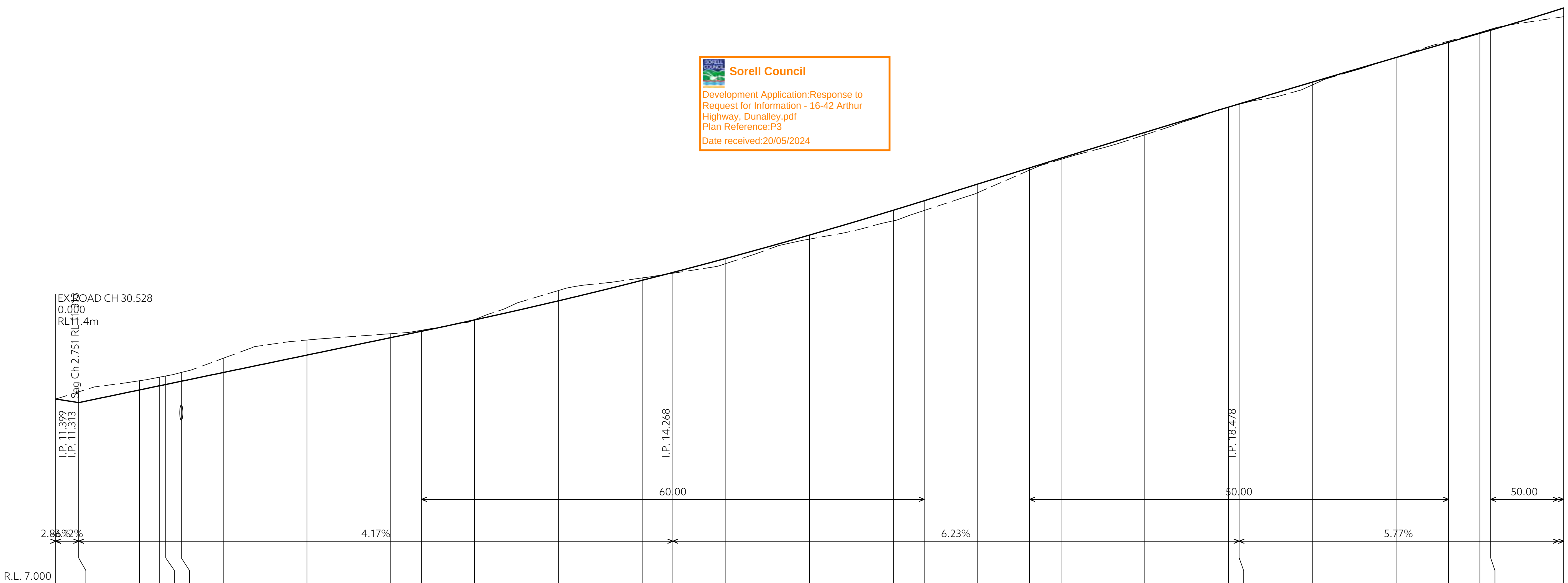
DESIGNED: RP | REVIEWED: MW
DRAWN: RD | REVIEWED: RP
JOB MANAGER: CRAIG TERRY
ISSUED DATE: 04/10/2023

CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 CUL DE SAC DETAIL PLAN

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie
REGISTRATION NUMBER: ----

CONTRACT NO.	SCALE	PAPER
------	AS SHOWN	(A3)
JOB NUMBER	DISCIPLINE / SHEET	REVISION
47948CT	C 101	---

DATE/TIME: Wednesday, 4 October 2023 4:05:53 PM PLOTTED: ROWAN DEMMER FILE LOCATION: S:\47948CT - BRENDAN DALY - 16-42 ARTHUR HWY, DUNALLEY\ENGINEERING\47948CT-ENG.DWG



CUT FILL	-0.001	-0.257	-0.220	-0.206	-0.203	-0.210	-0.341	-0.359	-0.094	-0.023
DESIGN ROAD CENTRELINE	11.398	11.313	11.615	11.713	11.745	11.823	12.031	12.448	12.865	13.018
EXISTING SURFACE	11.399	11.570	11.835	11.919	11.948	12.033	12.372	12.807	12.959	13.041
CHAINAGE	0.000	2.751	10.000	12.372	13.140	15.000	20.000	30.000	40.000	43.674

CUT FILL	-0.006	-0.246	-0.058	+0.019	+0.123	+0.097	+0.254	+0.232	+0.206	+0.052
DESIGN ROAD CENTRELINE	13.288	13.744	14.234	14.422	14.758	15.317	15.910	16.136	16.530	16.920
EXISTING SURFACE	13.294	13.990	14.292	14.403	14.635	15.220	15.656	15.904	16.324	16.868
CHAINAGE	50.000	60.000	70.000	73.674	80.000	90.000	100.000	103.674	110.000	116.259

CUT FILL	+0.028	+0.058	+0.000	+0.009	+0.068	-0.007	-0.028	-0.019	-0.022	+0.206
DESIGN ROAD CENTRELINE	17.153	17.768	18.373	18.449	18.970	19.558	19.921	20.137	20.211	20.742
EXISTING SURFACE	17.125	17.710	18.373	18.440	18.902	19.565	19.949	20.156	20.233	20.536
CHAINAGE	120.000	130.000	140.000	141.259	150.000	160.000	166.259	170.000	171.288	180.000

HORIZONTAL GEOMETRY: L=300.184, B=320°18'24"

LONG SECTION -ROAD 1
SCALES: (H) 1:500 (V) 1:100 (A3)

REV	AMENDMENTS	DRAWN	DATE	APPR.
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-	----	--	--/--/----	--
-	----	--	--/--/----	--
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DESIGNED: RP | REVIEWED: MW
DRAWN: RD | REVIEWED: RP
JOB MANAGER: CRAIG TERRY
ISSUED DATE: 04/10/2023

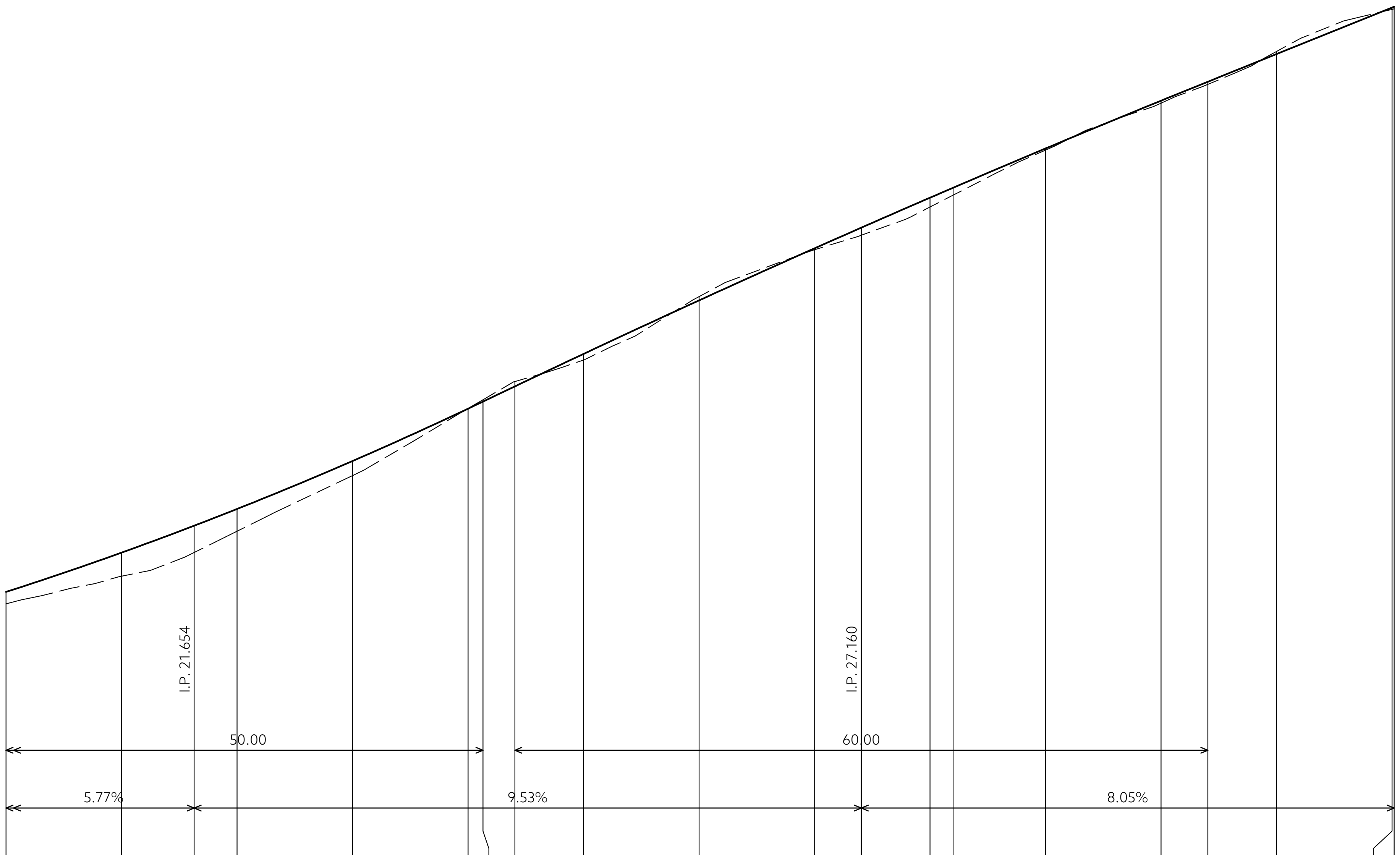
CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 LONG SECTION
SHEET 1 OF 2

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie
REGISTRATION NUMBER: ----

CONTRACT NO.	SCALE	PAPER
------	AS SHOWN	(A3)

JOB NUMBER	DISCIPLINE	SHEET	REVISION
47948CT	C	201	---

DATE/TIME: Wednesday, 4 October 2023 4:05:54 PM PLOTTED: ROWAN DEMMER FILE LOCATION: S:\47948CT - BRENDAN DALY - 16-42 ARTHUR HWY, DUNALLEY\ENGINEERING\47948CT-ENG.DWG



CUT FILL	+0.206	+0.408	+0.464	+0.385	+0.252	-0.004	-0.032	-0.085	+0.106	-0.066	+0.024	+0.131	+0.161	+0.128	+0.028	+0.042	+0.046	-0.046	+0.031	+0.037
DESIGN ROAD CENTRELINE	20.742	21.423	21.889	22.178	23.009	23.915	24.037	24.300	24.863	25.789	26.691	27.049	27.568	27.740	28.420	29.247	29.575	30.054	30.859	30.874
EXISTING SURFACE	20.536	21.015	21.425	21.793	22.757	23.919	24.069	24.385	24.757	25.855	26.667	26.918	27.407	27.612	28.392	29.205	29.529	30.100	30.828	30.837
CHAINAGE	180.000	190.000	196.288	200.000	210.000	220.000	221.288	224.049	230.000	240.000	250.000	254.049	260.000	262.000	270.000	280.000	284.049	290.000	300.000	300.184

HORIZONTAL GEOMETRY
L=300.184
B=320°18'24"

LONG SECTION -ROAD 1
SCALES: (H) 1:500 (V) 1:100 (A3)

REV	AMENDMENTS	DRAWN	DATE	APPR.
-	----	--	--/--/----	--
-	----	--	--/--/----	--
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DESIGNED: RP — REVIEWED: MW
DRAWN: RD — REVIEWED: RP
JOB MANAGER: CRAIG TERRY
ISSUED DATE: 04/10/2023

CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 LONG SECTION
SHEET 2 OF 2

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
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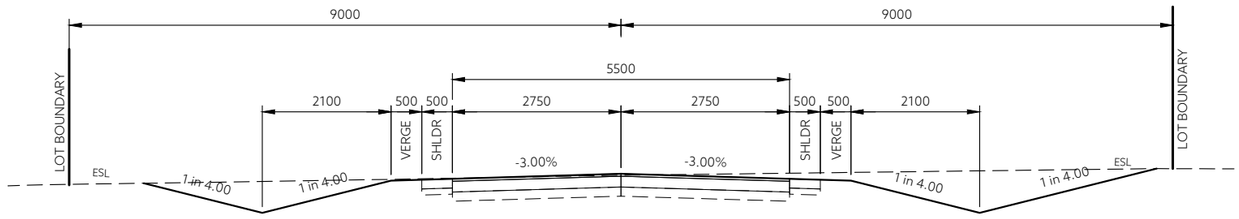
REGISTRATION NUMBER: ----

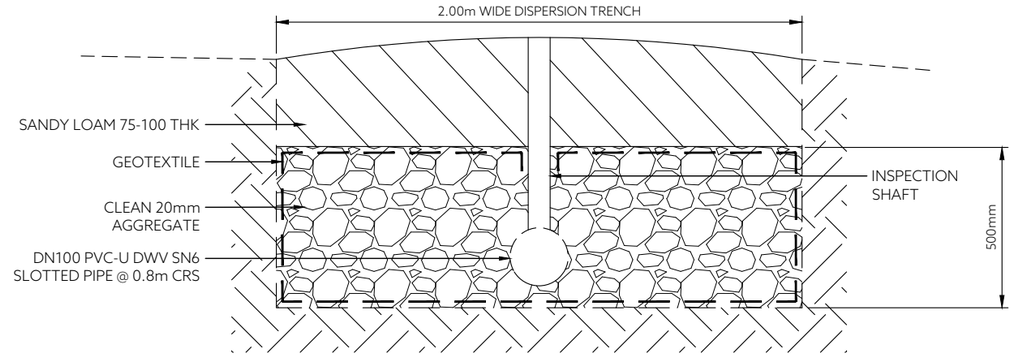
CONTRACT NO.	SCALE	PAPER
------	AS SHOWN	(A3)

JOB NUMBER	DISCIPLINE	SHEET	REVISION
47948CT	C	202	---

DATE/TIME: Wednesday, 4 October 2023 4:05:54 PM PLOTTED: ROWAN DEMMER FILE LOCATION: S:\47948CT - BRENDAN DALY - 16-42 ARTHUR HWY, DUNALLEY\ENGINEERING\47948CT-ENG.DWG



SECTION AT CH250
SCALE 1:100



TYPICAL SECTION
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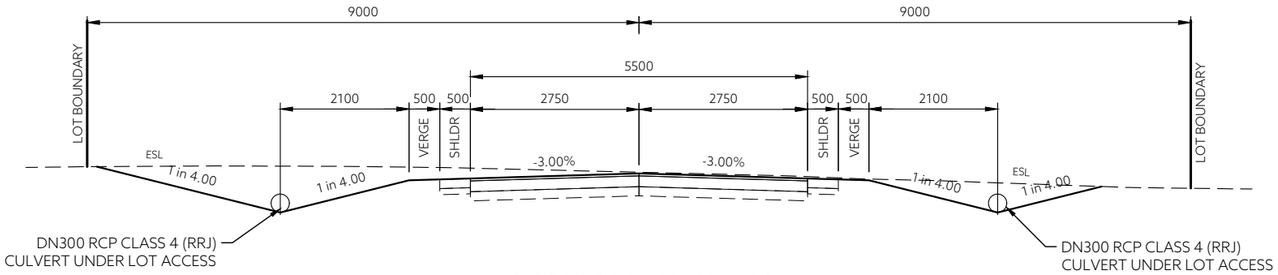
NOT TO SCALE



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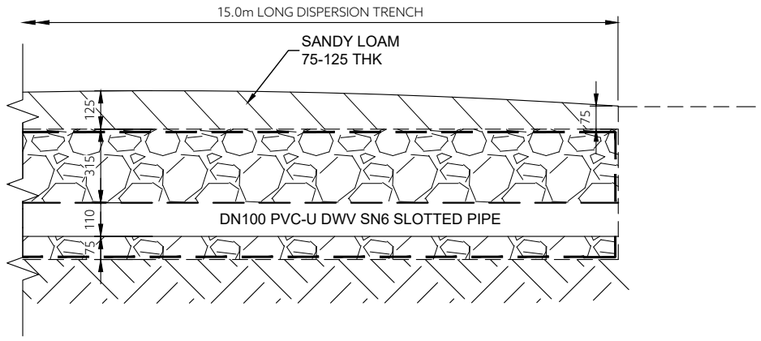
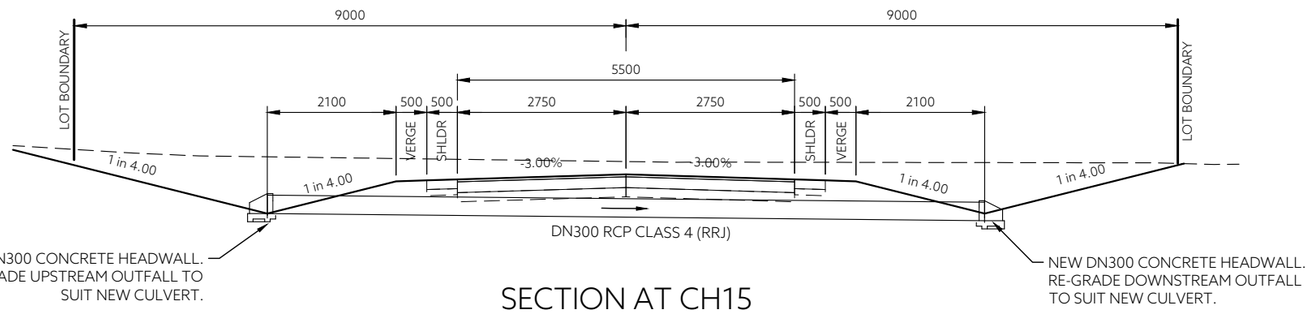


TYPICAL LONG SECTION
2.0m X 18.0m DISPERSION TRENCH
NOT TO SCALE



SECTION AT CH15
SCALE 1:100

REV	AMENDMENTS	DRAWN	DATE	APPR.
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DRAWING STATUS: PRELIMINARY
COORDINATE/ DATUM: LIDAR
THIS SHEET MAY BE PRINTED USING COLOUR AND MAY BE INCOMPLETE IF COPIED

DESIGNED:	RP
REVIEWED:	MW
DRAWN:	RD
REVIEWED:	RP
JOB MANAGER:	CRAIG TERRY
ISSUED DATE:	04/10/2023

CLIENT: BRENDAN MICHAEL SHANE DALY
PROJECT DESCRIPTION: PROPOSED SUBDIVISION
ADDRESS: 16-42 ARTHUR HIGHWAY, DUNALLEY
DRAWING TITLE: ROAD 1 CROSS SECTIONS & DISPERSION TRENCH DETAILS

PDA
SURVEYORS, ENGINEERS & PLANNERS
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie
REGISTRATION NUMBER: ----

CONTRACT NO.	SCALE	PAPER
------	1: 100	(A3)
JOB NUMBER	DISCIPLINE / SHEET	REVISION
47948CT	C 300	---

DATE/TIME: Wednesday, 4 October 2023 4:05:54 PM PLOTTED: ROWAN DEMMER FILE LOCATION: S:\47948CT - BRENDAN DALY - 16-42 ARTHUR HWY, DUNALLEY\ENGINEERING\47948CT-ENG.DWG

PLAN OF SUBDIVISION

PDA
SURVEYORS, ENGINEERS & PLANNERS

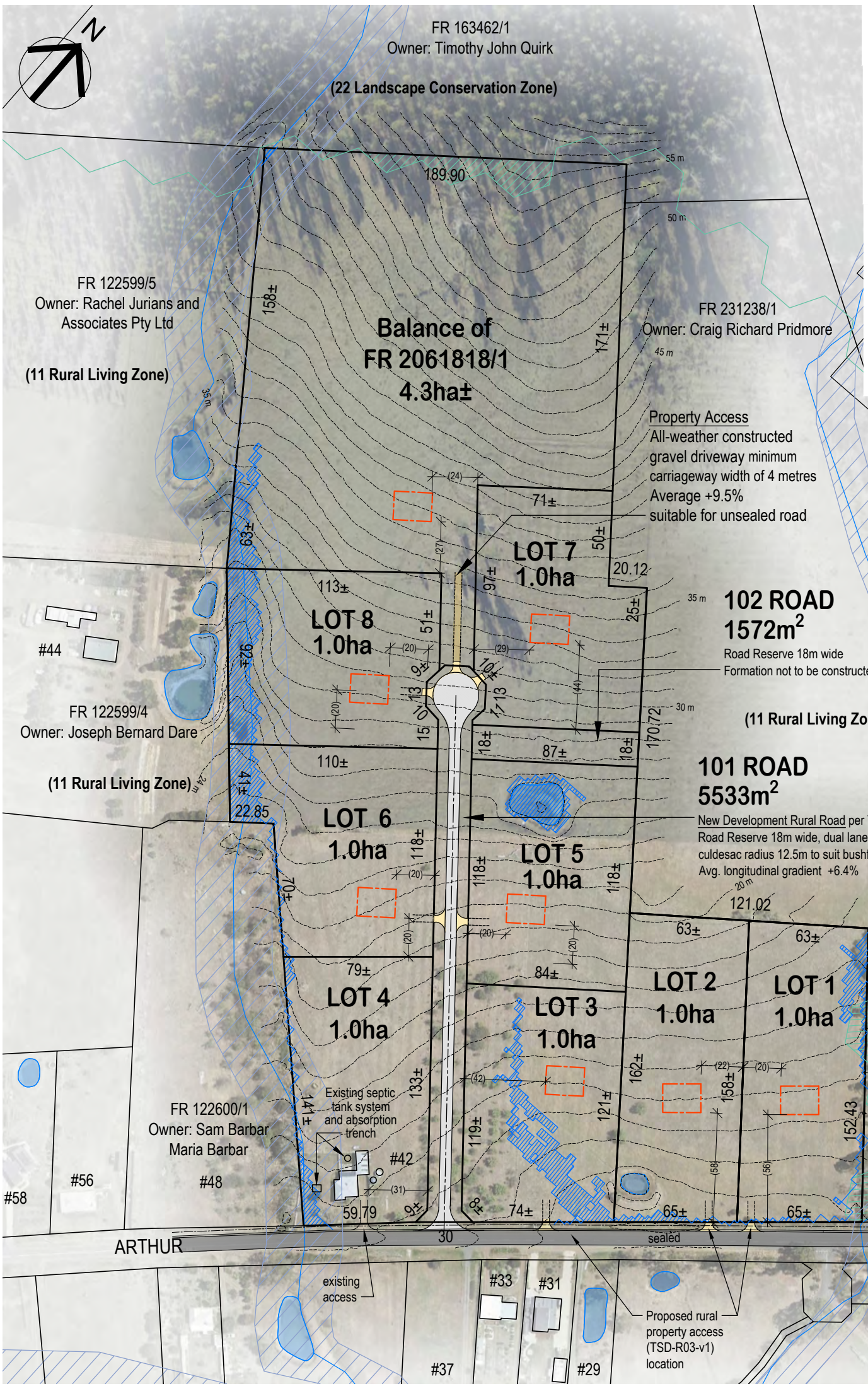
127 Bathurst Street
Hobart, Tasmania, 7000
PHONE: +61 03 6234 3217
FAX: +61 03 6234 5085
EMAIL: pda.hbt@pda.com.au
www.pda.com.au
Also at: Kingston, Launceston & Burnie

Owners	Brendan Michael Shane Daly	***Address***	16-42 Arthur Highway Dunalley Tas 7177
		Council	Sorell Council
Title References	FR 206181/1	***Tas. Planning Scheme***	Sorell Local Provisions Schedule
		Zone & Overlay	11 Rural Living Zone A; 13 Bushfire-prone area,
Schedule Of Easements	Nil.		See other overlays below

This plan has been prepared only for the purpose of obtaining preliminary subdivision approval from the Council and the information shown hereon should be used for no other purpose. All measurements and areas are subject to final survey.

Scale	***Date***	***PDA Reference***	***Map reference***	***PID***	***Point of Interest GDA2020 MGA55***
1:2500	9 June 2023	47948CT-2F	562542 & 562552	5956618	566820E, 5252290N

Sorell Council
Development Application: Response to Request for Information - 16-42 Arthur Highway, Dunalley.pdf
Plans Reference: P2
Date received: 19/12/2023



LEGEND

- Title / Proposed Boundary
- 1m Contour Interval
- Indicative Building Area (15 x 20m)

STAGING

STAGE 1 - LOTS 1-4

STAGE 2 - LOTS 5-8, Balance & Roads 101 & 102

Code Overlays

- Priority vegetation
- Flood-prone areas
- Water and coastal protection
- Bushfire-prone areas