1 RADIUS DRIVE, OLD BEACH

PROPOSED RETIREMENT VILLAGE

TRAFFIC IMPACT ASSESSMENT REPORT

1 RADIUS DRIVE, OLD BEACH PROPOSED RETIREMENT VILLAGE

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1 INTRODUCTION

SALT has been engaged by Ireneinc Planning & Urban Design, on behalf of Savle Pty Ltd, to undertake a traffic engineering assessment in response to the RFI issued by Brighton Council in relation to the proposed retirement living development at 1 Radius Drive in Old Beach – the proposal relates to an expansion of an existing retirement living development known as St Anns Living.

The RFI included the following requirements in terms of traffic engineering:

- *Provide a Traffic Impact Assessment, prepared by a suitably qualified person, addressing C2.0 Parking & Sustainable Transport Code and C3.0 Road and Railway Assets Code of the Tasmanian Planning Scheme.*
  - *The Traffic Impact Assessment (TIA) needs to address the impact on the road network including the existing unsignalised Stanfield Drive junction with the East Derwent Highway and its operation into the future.*
  - *The planning report does not accurately assess the parking requirement nor satisfactorily address the exclusion of any visitor parking.*
  - *Whilst the planning report has addressed the performance criteria for C2.6.5 Pedestrian access, it should be addressed in the TIA.*
  - *Whilst the proposal creates a new access off Stanfield Drive it is also likely that vehicle movements utilising the existing access (Radius Drive) will increase by more than 40 vehicle movements per day. The TIA should address the relevant performance criteria.*
  - *Vehicle turning paths should be provided to demonstrate that vehicles (including service vehicle eg garbage trucks) can access the site in a safe and efficient manner.*

The RFI comments have been addressed in this report. During the preparation of this report, the following tasks have been undertaken:

- Development plans have been reviewed and design advice has been provided.
- Vehicle swept path analyses have been undertaken using AutoTURN for key design vehicles that will access the site.
- The subject site, nearby environs, and surrounding road network have been inspected;
- Traffic volume data was collected at the intersection of Stanfield Drive with East Derwent Highway;
- Spot surveys of on-street parking demand were carried out on the roads in the vicinity of the site;
- Midblock tube counts were commissioned on Stanfield Drive at the access to the overall site;
- The proposal has been assessed against all the relevant Planning Scheme requirements; and
- The expected traffic impacts of the proposal have been assessed.

The following sets out SALT's findings with respect to the traffic engineering matters of the proposed development.

2 EXISTING CONDITIONS

2.1 LOCATION & LAND USE

The subject site is located within a larger land parcel on the western side of East Derwent Highway in Old Beach, which is bordered by residential dwellings in the north, Clarries Creek in the south, East Derwent Highway in the east, and the River Derwent in the west.

The larger land parcel is irregular in shape, about 11.69 hectares in extent, and is occupied by an existing retirement living development known as St Anns Living, which currently provides 119 dwellings for seniors, as well as ancillary land uses within a community centre in the south-eastern corner of the Radius Drive / Stanfield Drive intersection. This community centre has a floor area of ~160 m^2 and is occupied by facilities for residents, a hairdressing salon, reception, residents mail receiving area, and two (2) offices used for the operation and management of St Anns. The community centre is not accessible to the general public (i.e., 'outside' visitors/patrons) and as such is completely ancillary to the retirement living land use. Access to the land is principally provided by Stanfield Drive, and a supporting 'internal' road network services the individual lots.

The surrounding land uses include low-density residential as well as *Respect Aged Care – Wellington Views*, which provides aged care / assisted housing for seniors.

The location of the site with respect to the surrounding road network is shown in **Figure 1**, followed by an aerial view of the site in **Figure 2**.

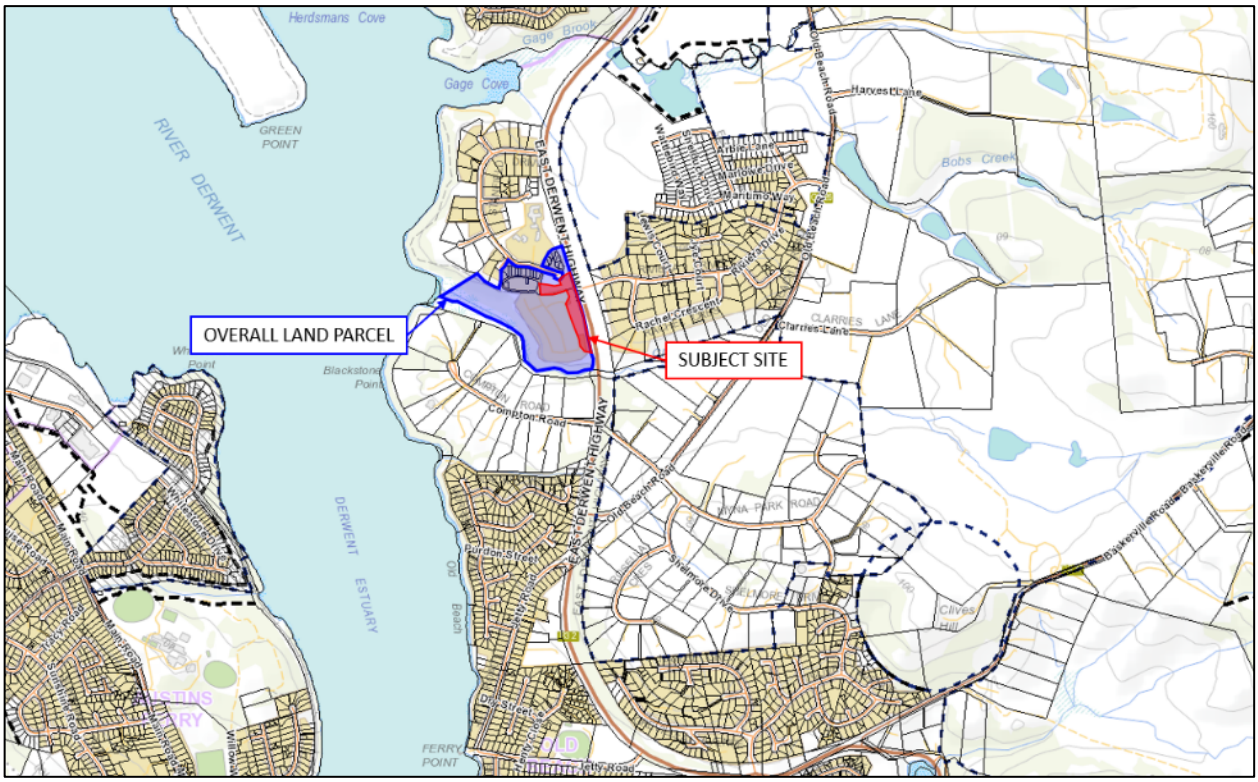


Figure 1 Subject site location (Source: The LIST)

Figure 2 Aerial view of subject site (Source: Nearmap)

2.2 ZONING & OVERLAYS

Brighton Council is the responsible authority, and the zoning of the land is 'Particular Purpose – BRI-P1.0 – St Anns Precinct'. The site is subject to the following overlays and codes:

- Future coastal refugia area (Natural Assets Code);
- Waterway and coastal protection area (Natural Assets Code);
- Priority vegetation area (Natural Assets Code);
- Medium landslip hazard band (Landslip Hazard Code);
- Low – High coastal inundation hazard band (Coastal Inundation Hazard Code);
- Low – High coastal erosion hazard band (Coastal Erosion Hazard Code); and
- Bushfire-prone areas (Bushfire-prone Areas Code).

2.3 ROAD NETWORK

2.3.1 EAST DERWENT HIGHWAY

East Derwent Highway is a sealed National/State Highway that generally follows a north-south alignment and is under the care and management of the Department of State Growth (DSG). The carriageway is ~7.1m wide, provides one lane in each direction, has paved shoulders on both sides that are about 1.0 – 1.3m wide, and channelised turning lanes are provided at intersections along East Derwent Highway. The posted speed limit is 80 km/h.

It is understood that DSG is currently undertaking a corridor study of East Derwent Highway, which includes the possible construction of a roundabout at the East Derwent Highway / Riviera Drive intersection and the provision of a fourth approach to this intersection on the western side of East Derwent Highway that will link to Stanfield Drive; there are however neither concept plans/designs nor funding for improvement works on East Derwent Highway. The proposed development/expansion of St Anns will preclude the construction of the fourth approach to the East Derwent Highway / Riviera Drive intersection.

Views of East Derwent Highway from the Stanfield Drive intersection are provided in **Figure 3** and **Figure 4**.

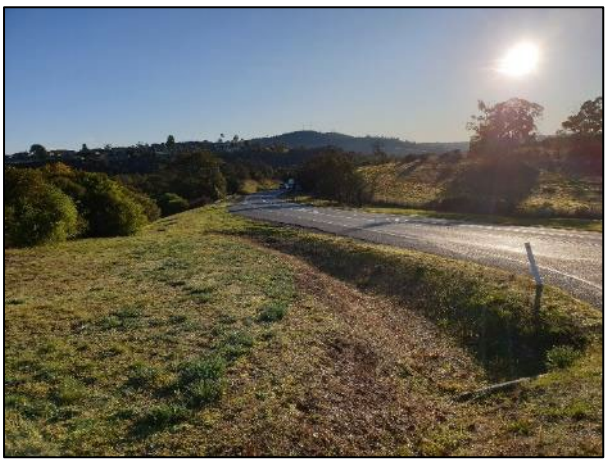


Figure 3 East Derwent Highway looking north

Figure 4 East Derwent Highway looking south

2.3.2 STANFIELD DRIVE

Stanfield Drive is a sealed local road that follows varying alignments (it approximates form of a crescent) and is under the care and management of Council. The carriageway is ~7.3m wide and accommodates two-way vehicular traffic movement with parking permitted on both sides. Paved footpaths that are ~1.5m wide have been provided on both sides along the southern section of Stanfield Drive, between a private access road in the north and the court bowl in the south. There is no posted speed limit, therefore the default speed limit of 50 km/h in urban areas applies.

Views of Stanfield Drive from near the Radius Drive intersection are provided in **Figure 5** and **Figure 6**, while **Figure 7** and **Figure 8** provide view of Stanfield Drive from near the East Derwent Highway intersection.

Figure 5 Stanfield Drive looking north

Figure 6 Stanfield Drive looking south

Figure 7 Stanfield Drive looking east

Figure 8 Stanfield Drive looking west

2.3.3 RADIUS DRIVE

Radius Drive is a sealed private access road that generally follows a north-south alignment. The carriageway width varies between about 5.7 – 6.5m, it accommodates two-way vehicular traffic, and parking is permitted however given the carriageway width it can only be accommodated on one side. A paved footpath that is ~1.4m wide has been provided on the eastern side between Stanfield Drive in the north and Celata Drive in the south. The posted speed limit is 10 km/h.

View of Radius Drive are provided in **Figure 9** and **Figure 10**.

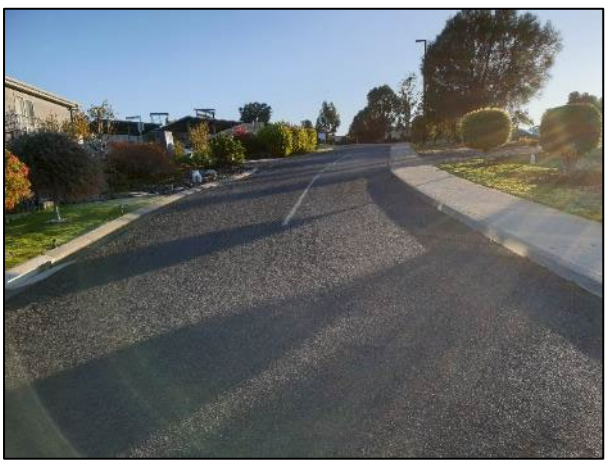


Figure 9 Radius Drive looking north

Figure 10 Radius Drive looking south

2.3.4 CELATA DRIVE

Celata Drive is a sealed private access road that follows varying alignments (it approximates a U-shaped road). The carriageway is ~5.7m wide, it accommodates two-way vehicular traffic, and parking is permitted however given the carriageway width it can only be accommodated on one side. Paved footpaths have not been provided. The posted speed limit is 10 km/h.

View of Celata Drive are provided in **Figure 11** and **Figure 12**.

Figure 11 Celata Drive looking north

Figure 12 Celata Drive looking south

2.4 SUSTAINABLE TRANSPORT

2.4.1 WALKING & CYCLING

The area includes only limited pedestrian and cycling facilities along the public and private roads; walking and cycling generally occur as shared transport modes on the carriageways. Unpaved off-street walking and cycling trails/paths have however been provided in the area, which somewhat improve active transport accessibility.

2.4.2 PUBLIC TRANSPORT

The closest bus stops are in East Derwent Highway at the Stanfield Drive intersection, approximately 850m (~11-minute walk) from the Stanfield Drive court bowl. The following Metro Tasmania bus routes operate in the area:

- 530 – Bridgewater via Glenorchy, Bowen Bridge, Otago, Old Beach, Gagebrook, Herdsmans Cove;
- 696 – Bridgewater via Rosny Park, Risdon Vale, Otago, Old Beach, Gagebrook; and
- X30 – Gagebrook Express via Brooker Highway, Bowen Bridge, Old Beach.

2.5 EXISTING TRAFFIC VOLUMES

Traffic surveys have been undertaken at the East Derwent Highway / Stanfield Drive intersection, as well as on Stanfield Drive immediately west of its intersection with Radius Drive.

2.5.1 EAST DERWENT HIGHWAY / STANFIELD DRIVE INTERSECTION

Vehicle turning movement counts were carried out during typical weekday peak periods at the East Derwent Highway / Stanfield Drive intersection as follows:

- Thursday 4th July 2024 between 3:15 – 4:45pm; and
- Friday 5th July 2024 between 7:00 – 8:30am.

A review of DSG's traffic data portal has indicated a traffic count location on East Derwent Highway near the Stanfield Drive intersection (~1 km to the south). The above time periods were selected given that these periods correlate with the peak periods at this traffic count location. The turning movements were counted in 15-minute intervals and traffic was classified into light vehicles and heavy vehicles.

The weekday AM and PM peak hour turning movement volumes are shown in **Figure 13** and **Figure 14**.

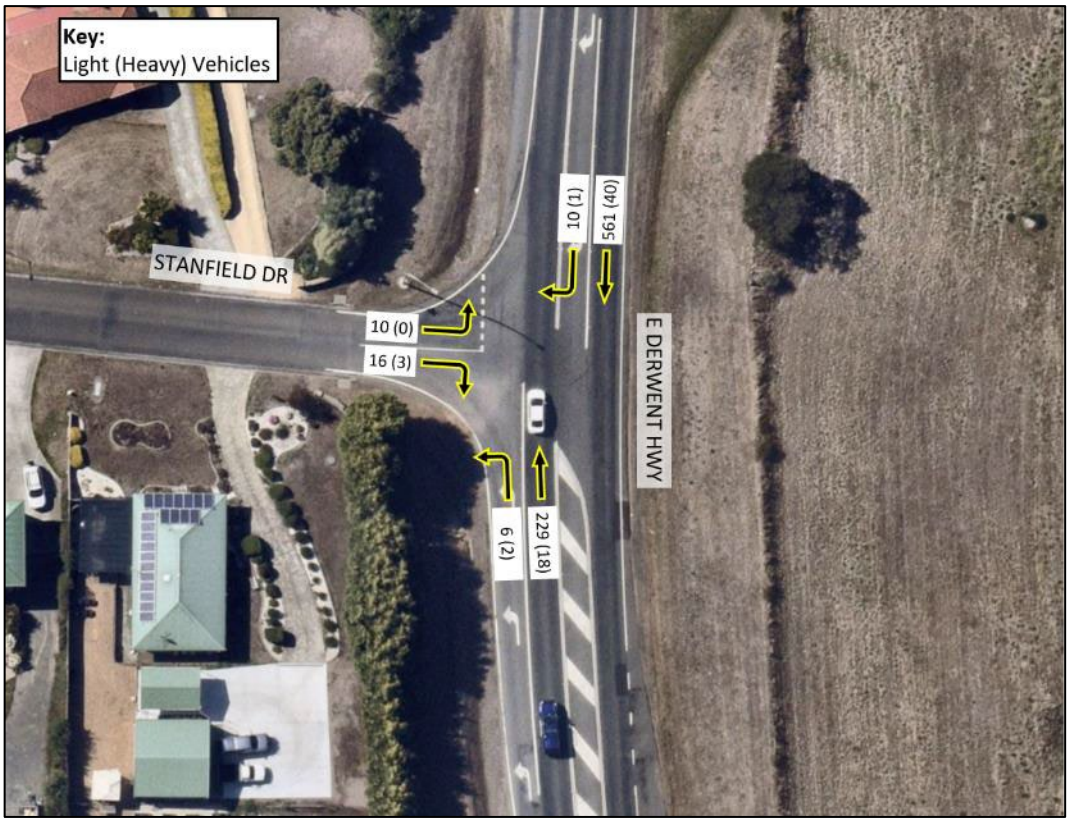


Figure 13 Weekday AM peak hour turning movement volumes (7:15 – 8:15am)

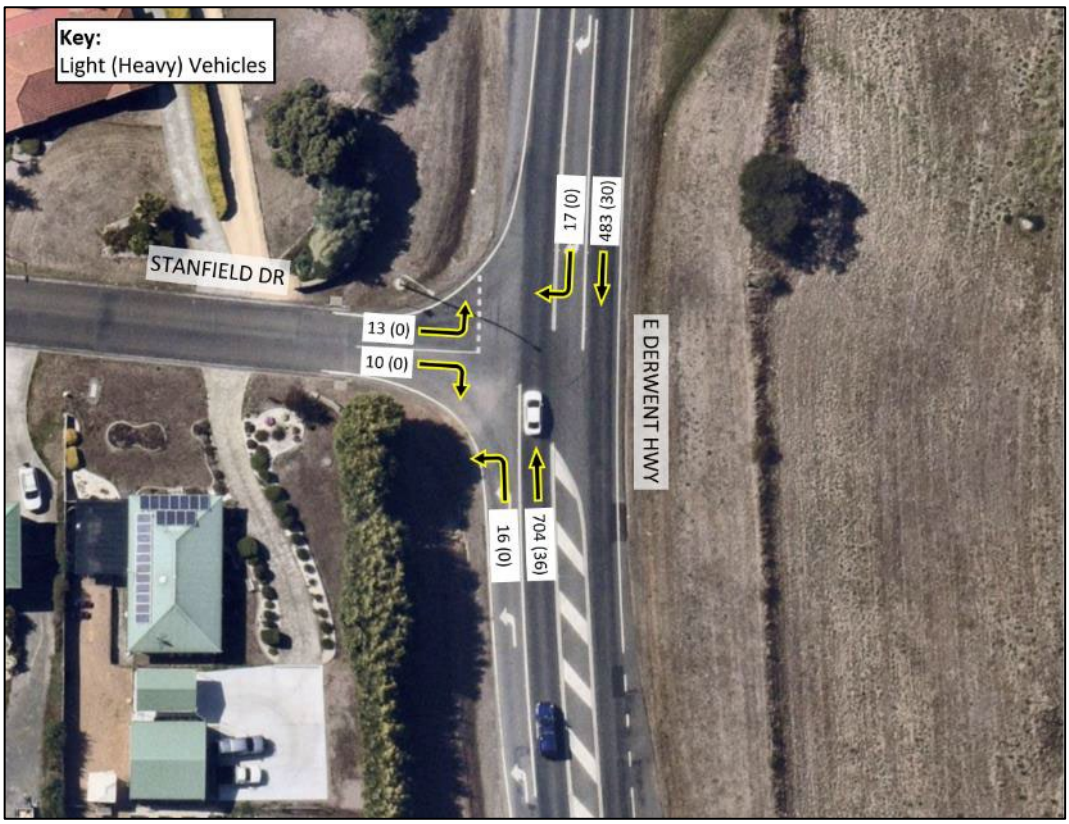


Figure 14 Weekday PM peak hour turning movement volumes (3:30 – 4:30pm)

Occasional lengthy delays were observed on the Stanfield Drive approach, especially for right-turning vehicles. In terms of queue lengths, it was observed that queueing typically comprised mostly 2 – 3 vehicles at a time.

Since this intersection serves as the only access to the residential area between East Derwent Highway and River Derwent, the turning movements into and out of Stanfield Drive can be used to determine the residential area's in/out splits. Accordingly, the in/out splits are approximately 40/60 during the weekday AM peak hour and 60/40 during the weekday PM peak hour.

2.5.2 STANFIELD DRIVE

SALT commissioned Matrix Traffic and Transport Data to carry out a classified midblock tube count on Stanfield Drive immediately west of its intersection with Radius Drive – see **Figure 15** below.

Figure 15 Midblock tube counter location

The midblock traffic survey was carried out from Tuesday 23rd July 2024 to Monday 29th July 2024. The survey was carried out over 24 hours each day in 1-hour intervals. A summary of the survey results is presented below in **Table 1**. It is noted that eastbound traffic represents development inbound traffic, and westbound traffic represents development outbound traffic.

Table 1 Stanfield Drive traffic volumes

Location	Measure	Eastbound	Westbound	Two-way
Stanfield Drive	Average Weekday Volume (vpd)	170	171	341
	Average Weekday AM Peak Hour Volume (vph)	24	17	41
	Average Weekday PM Peak Hour Volume (vph)	21	24	45
	Average Weekend Volume (vpd)	133	134	267
	Average 7-day Volume (vpd)	159	160	319
	Average 7-day % Heavy Vehicles	0.63%	1.88%	1.25%
	Average 7-day 85th % Speed (km/h)	25.4	29.1	27.9

Inspection of **Table 1** shows the following:

- The weekday peak hour volumes represent about 11-12% of the weekday daily traffic volumes;
- During the weekday AM peak hour, most traffic is inbound, whereas a roughly equal inbound/outbound split occurs during the weekday PM peak hour;
- All daily volumes have equal inbound/outbound splits;
- Heavy vehicle percentages are lower than 2%; and
- The 85th %-ile speeds are lower than 30 km/h.

2.6 CRASH HISTORY

A review of the Tasmanian vehicle crash data for the most recent 5-year period, ending 26 June 2024, has shown the following in terms of crashes on East Derwent Highway:

- 5 x property damage only crashes:
  - 1 x DCA 110: Cross traffic (this crash occurred at the Stanfield Drive intersections);
  - 1 x DCA 154: Pulling out (rear end);
  - 1 x DCA 167: Animal (not ridden);
  - 1 x DCA 189: Other curve; and
  - 1 x unknown code/description.
- 1 x first aid crash:
  - 1 x DCA 189: Other curve.

The crash trend during the 5-year period shows a generally low level of severity with most of the crashes being property damage only crashes. It is noted that only one (1) crash occurred at the East Derwent Highway / Stanfield Drive intersection during the 5-year period.

The crash history review area is shown in **Figure 16**. It is noted that the crash history review area includes data that precedes the 5-year period up to 26 June 2024; this data was excluded from the crash history review.

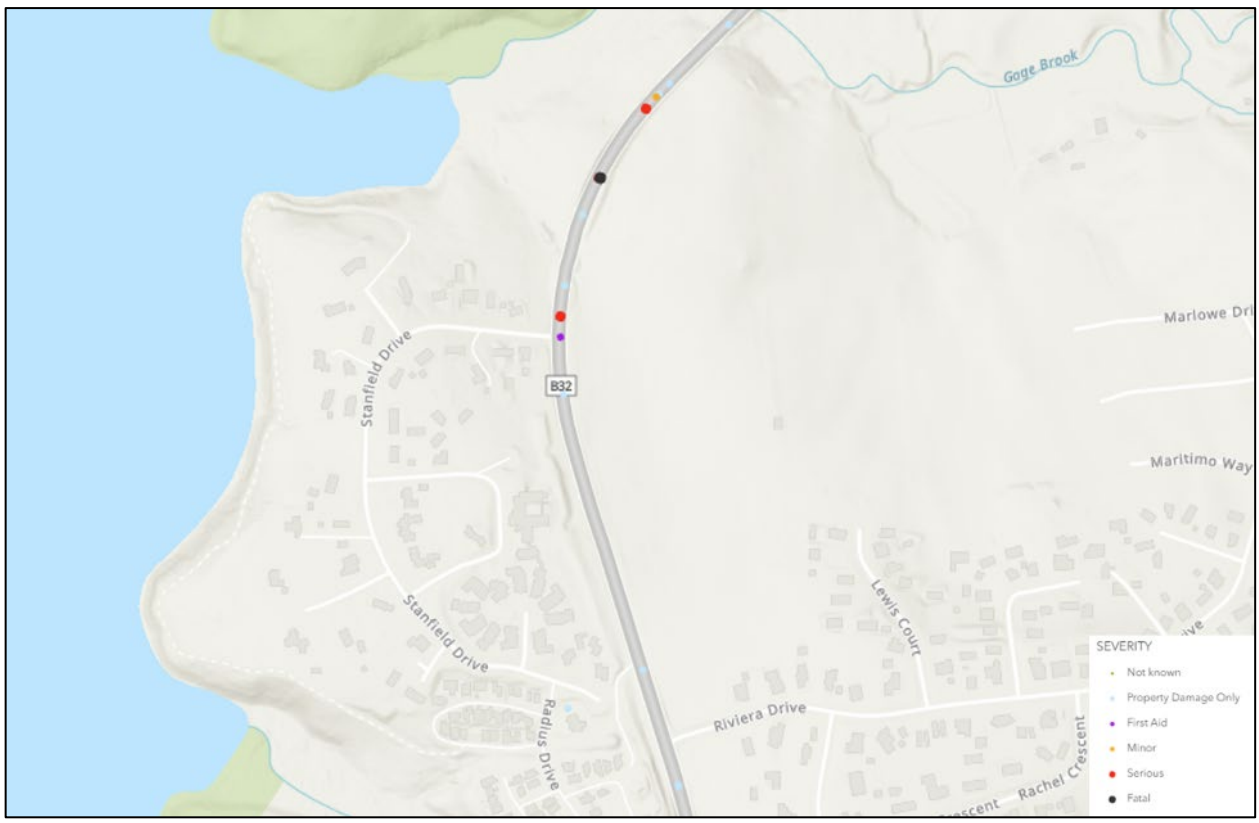


Figure 16 Crashes since 1 January 2009 (Source: ArcGIS / Department of State Growth)

2.7 PARKING AVAILABILITY

SALT has undertaken an assessment of parking availability on Stanfield Drive, Radius Drive, Celata Drive, and Ellipse Circle – spot surveys were carried out during typical weekday AM and PM peak periods to determine the on-street parking demand. At these times, it is typical for the majority of retirement living residents to be at home.

The results of the spot surveys are summarised in **Table 2**. The parking survey area is shown in **Figure 17**.

Table 2 Results of on-street parking surveys

Road	Parking Supply	Thursday 4/7/2024 4:50 – 5:05pm	Friday 5/7/2024 8:35 – 8:50am
Stanfield Drive	60	0	0
Radius Drive	22	0	0
Celata Drive (East)	20	14	11
Celata Drive (West)	21	1	1
Ellipse Circle	26	2	2
Total Occupied	**-**	**17**	**14**
Total Available	**149**	**132**	**135**
% Occupancy	**-**	**11%**	**9%**

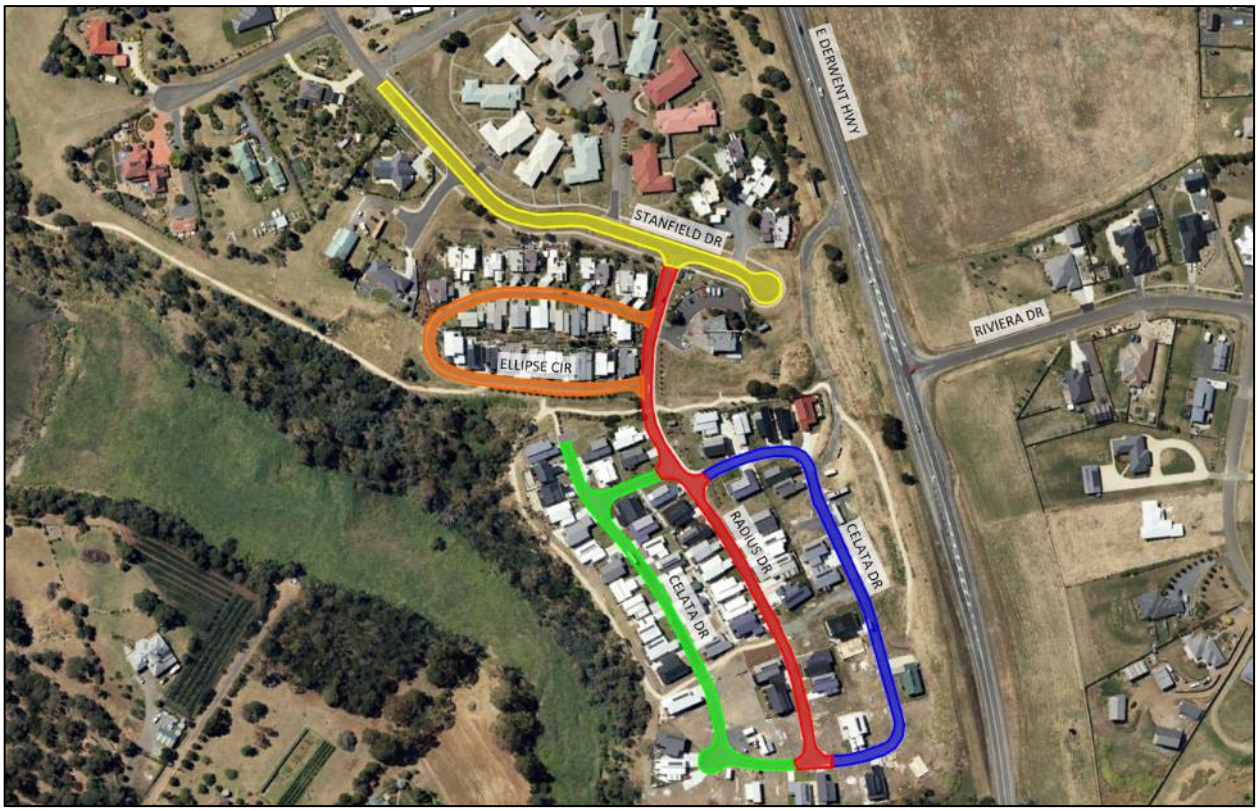


Figure 17 On-street parking survey area (Source: Google Earth Pro)

The results in **Table 2** show that there is abundant on-street parking available in the area – the demand is very low in the relation to the availability, with a maximum of 14 out of 149 (9%) spaces occupied during the weekday AM peak period and 17 out of 149 (11%) spaces occupied during the weekday PM peak period.

3 PROPOSAL

It is proposed to expand the existing St Anns Living development by constructing 26 new dwellings for residents aged over 55 years. The dwellings will be based on a set of identical designs as follows:

- Type A – 3-bedroom dwelling with a floor area of approximately 129.2 m^2 (x8);
- Type B – 2-bedroom dwelling with a floor area of approximately 107.6 m^2 (x4);
- Type C – 2-bedroom dwelling with a floor area of approximately 102.6 m^2 (x10); and
- Type D – 3-bedroom dwelling with a floor area of approximately 120.5 m^2 (x4).

The proposal does not include an expansion/intensification of the existing community centre.

One (1) of the dwellings will obtain access via a new crossover to Radius Drive, 16 dwellings will obtain access via new crossovers to Celata Drive, and nine (9) dwellings will obtain access from a proposed new private link road between the Stanfield Drive court bowl and Radius Drive. The dwellings that will obtain access from Celata Drive include a group of three (3) dwellings and a group of four (4) dwellings that will each be served by common accessways, i.e., these groups of dwellings will each utilise a single crossover to Celata Drive.

Each dwelling will be provided with one (1) carport, which equates to a total parking provision of 26 spaces.

The proposed development masterplan and lot plans are attached as **APPENDIX 1** and **APPENDIX 2** at the end of this report, respectively.

4 CAR PARKING MATTERS

Statutory car parking requirements are specified in Code C2.0 (Parking and Sustainable Transport Code) of the Tasmanian Planning Scheme. The application triggers Clause C2.5 (Use Standards) and Clause C2.6 (Development Standards for Buildings and Works), and accordingly assessments against the relevant Controls under Clause C2.5 and Clause C2.6 are provided in **Table 3** and **Table 4**.

Table 3 Clause C2.5 (Use Standards)

Control C2.5.1 – Car parking numbers	
Objective: That an appropriate level of car parking spaces are provided to meet the needs of the use.	
Acceptable Solution	**Performance Criteria**
A1 The number of on-site car parking spaces must be no less than the number specified in Table C2.1, less the number of car parking spaces that cannot be provided due to the site including container refund scheme, excluding if: ▪ the site is subject to a parking plan for the area adopted by council, in which case parking provision (spaces or cash-in-lieu) must be in accordance with that plan; ▪ the site is contained within a parking precinct plan and subject to Clause C2.7; ▪ the site is subject to Clause C2.5.5; or	**P1.1** The number of on-site car parking spaces for uses, excluding dwellings, must meet the reasonable needs of the use, having regard to: ▪ the availability of off-street public car parking spaces within reasonable walking distance of the site; ▪ the ability of multiple users to share spaces because of: – variations in car parking demand over time; or – efficiencies gained by consolidation of car parking spaces;

- it relates to an intensification of an existing use or development or a change of use where:
  - the number of on-site car parking spaces for the existing use or development specified in Table C2.1 is greater than the number of car parking spaces specified in Table C2.1 for the proposed use or development, in which case no additional on-site car parking is required; or;
  - the number of on-site car parking spaces for the existing use or development specified in Table C2.1 is less than the number of car parking spaces specified in Table C2.1 for the proposed use or development, in which case on-site car parking must be calculated as follows:

    N = A + (C- B)

    N = Number of on-site car parking spaces required

    A = Number of existing on site car parking spaces

    B = Number of on-site car parking spaces required for the existing use or development specified in Table C2.1

    C= Number of on-site car parking spaces required for the proposed use or development specified in Table C2.1.

- the availability and frequency of public transport within reasonable walking distance of the site;
- the availability and frequency of other transport alternatives;
- any site constraints such as existing buildings, slope, drainage, vegetation and landscaping;
- the availability, accessibility and safety of on-street parking, having regard to the nature of the roads, traffic management and other uses in the vicinity;
- the effect on streetscape; and
- any assessment by a suitably qualified person of the actual car parking demand determined having regard to the scale and nature of the use and development.

P1.2

The number of car parking spaces for dwellings must meet the reasonable needs of the use, having regard to:

- the nature and intensity of the use and car parking required;
- the size of the dwelling and the number of bedrooms; and
- the pattern of parking in the surrounding area.

Response

A1

Table C2.1 requires *1 space per bedroom or 2 spaces per 3 bedrooms + 1 visitor space for every 5 multiple dwellings or every 10 bedrooms for a non-dwelling residential use (rounded up to the nearest whole number).* Accordingly, the proposal has a statutory requirement to provide the following in terms of parking spaces:

- 26 x 2-bedroom & 3-bedroom dwellings – 52 resident spaces; and
- 26 x dwellings – 6 visitor spaces.

The proposal therefore has a statutory requirement to provide a total of 58 parking spaces. As 26 spaces will be provided (for residents only), assessment against the performance criteria is required.

P1.1

Not applicable as the proposed development is residential in nature (i.e., dwellings).

P1.2

Of the 119 existing dwellings, only 14 (~12%) provide two (2) parking spaces via either a double carport or a visitor parking space. Furthermore, the driveways of many of the dwellings are of sufficient length that they can be utilised as an additional parking space. Based on the results of the on-street parking utilisation spot surveys (see **Section 2.7**), it is evident that the current demand for on-street parking in the area is very low and thus the proposed provision of one (1) parking space per dwelling is considered appropriate. The availability of on-street parking, as well as some driveways that are sufficiently long, will serve any possible overflow parking demand, although such occurrences are considered unlikely and are expected to occur very infrequently.

As an additional consideration, Section 5 of the Transport for New South Wales (TfNSW, formerly RMS/RTA) Guide to Traffic Generating Developments outlines parking requirements for different land uses. Accordingly, Section 5.4.4 of the Guide (housing for aged and disabled persons) recommends that parking for self-contained units should be provided at *2 spaces per 3 units (residents) plus 1 space per 5 units (visitors)*, which equates

to a recommended parking provision of 17 spaces (residents) plus 5 spaces (visitors), or 22 spaces in total. The proposed parking provision (26 spaces) is thus in line with the TfNSW Guide recommendation for resident parking.

We are thus satisfied that the proposed parking provision of 26 spaces (1 space per dwelling) will adequately accommodate the anticipated resident parking demands of the development, with visitor parking able to be readily accommodated in driveways or on-street. It is however noted that parking should not be permitted on the common accessways that will serve dwellings 13, 13a, and 15, as well as dwellings 17a, 19, 21, and 21a (refer to **APPENDIX 1** and **APPENDIX 2**), and it is recommended that the Planning Permit includes a condition that parking along common accessways shall be prohibited.

Control C2.5.2 – Bicycle parking numbers

Objective:

That an appropriate level of bicycle parking spaces are provided to meet the needs of the use.

Acceptable Solution	Performance Criterion
A1 Bicycle parking spaces must: ▪ be provided on the site or within 50m of the site; and ▪ be no less than the number specified in Table C2.1.	**P1** Bicycle parking spaces must be provided to meet the reasonable needs of the use, having regard to: ▪ the likely number of users of the site and their opportunities and likely need to travel by bicycle; and ▪ the availability and accessibility of existing and any planned parking facilities for bicycles in the surrounding area.

Response

A1

As per Table C2.1, there is no bicycle parking requirement for a retirement village.

Control C2.5.3 – Motorcycle parking numbers

Objective:

That the appropriate level of motorcycle parking is provided to meet the needs of the use.

Acceptable Solution	Performance Criterion
A1 The number of on-site motorcycle parking spaces for all uses must: ▪ be no less than the number specified in Table C2.4; and ▪ if an existing use or development is extended or intensified, the number of on-site motorcycle parking spaces must be based on the proposed extension or intensification, provided the existing number of motorcycle parking spaces is maintained.	**P1** Motorcycle parking spaces for all uses must be provided to meet the reasonable needs of the use, having regard to: ▪ the nature of the proposed use and development; ▪ the topography of the site; ▪ the location of existing buildings on the site; ▪ any constraints imposed by existing development; and ▪ the availability and accessibility of motorcycle parking spaces on the street or in the surrounding area.

Response

A1

The proposal does not include the provision of motorcycle parking spaces.

According to Table C2.4, a use that requires 21–40 car parking spaces is required to provide 1 motorcycle space, and 1 space for every additional 20 car parking spaces required if the car parking requirement is 41 or more spaces. The proposal has a statutory requirement to provide a total of 58 car parking spaces, which means the provision of two (2) motorcycle parking spaces is required. However, given that the proposal comprises self-contained units that will operate independently with each dwelling having its own car parking space (i.e., not shared with other units) instead of a central/communal carpark that serves all dwellings, it is more appropriate to assess the motorcycle parking requirements for each unit separately as opposed to applying the motorcycle parking requirement to the total number of car parking spaces. As such, the proposal does not have a requirement to provide any motorcycle parking spaces, since no individual dwelling has a statutory requirement to provide more than 20 car parking spaces.

We are thus satisfied with the proposal providing 0 motorcycle parking spaces.

Table 4 Clause C2.6 (Development Standards for Buildings and Works)

Control C2.6.1 – Construction of parking areas	
Objective: That parking areas are constructed to an appropriate standard.	
Acceptable Solution	**Performance Criterion**
A1 All parking, access ways, manoeuvring and circulation spaces must: ▪ be constructed with a durable all weather pavement; ▪ be drained to the public stormwater system, or contain stormwater on the site; and; ▪ 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.	**P1** All parking, access ways, manoeuvring and circulation spaces must be readily identifiable and constructed so that they are useable in all weather conditions, having regard to: ▪ the nature of the use; ▪ the topography of the land; ▪ the drainage system available; ▪ the likelihood of transporting sediment or debris from the site onto a road or public place; ▪ the likelihood of generating dust; and ▪ the nature of the proposed surfacing.
Response A1 All parking areas, access ways, and manoeuvring spaces will be constructed with bitumen and concrete surfaces, which will be drained to the public stormwater system. Refer to **APPENDIX 1** and **APPENDIX 2** attached at the end of this report.	

Control 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	**Performance Criterion**
A1.1 Parking, access ways, manoeuvring and circulation spaces must either: ▪ comply with the following: – have a gradient in accordance with Australian Standard AS 2890 – Parking facilities, Parts 1–6; – provide for vehicles to enter and exit the site in a forward direction where providing for more than 4 parking spaces; – have an access width not less than the requirements in Table C2.2; – have car parking space dimensions which satisfy the requirements in Table C2.3; – 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; – have a vertical clearance of not less than 2.1m above the parking surface level; and – excluding a single dwelling, be delineated by line marking or other clear physical means; or ▪ comply with Australian Standard AS 2890–Parking facilities, Parts 1–6. **A1.2** Parking spaces provided for use by persons with a disability must satisfy the following: ▪ be located as close as practicable to the main entry point to the building; ▪ be incorporated into the overall car park design; and ▪ be designed and constructed in accordance with Australian/New Zealand Standards AS/NZS 2890.6:2009 Parking facilities, Off-street parking for people with disabilities.	**P1** All parking, access ways, manoeuvring and circulation spaces must be designed and readily identifiable to provide convenient, safe and efficient parking, having regard to: ▪ the characteristics of the site; ▪ the proposed slope, dimensions and layout; ▪ useability in all weather conditions; ▪ vehicle and pedestrian traffic safety; ▪ the nature and use of the development; ▪ the expected number and type of vehicles; ▪ the likely use of the parking areas by persons with a disability; ▪ the nature of traffic in the surrounding area; ▪ the proposed means of parking delineation; and ▪ the provisions of Australian Standards AS 2890.1:2004 – Parking facilities, Part 1: Off-street car parking and AS 2890.2:2002 – Parking facilities, Part 2: Off-street commercial vehicle facilities.
Response <u>A1.1</u> ▪ SALT has assessed the proposed site layout in terms of gradients, and we are satisfied that suitable gradients in accordance with the relevant parts of AS 2890.1:2004 can be achieved at all parking areas, access ways, and manoeuvring spaces. It is recommended that the Planning Permit includes a condition requiring the detailed designs to show that all final gradients and grade transitions comply with the relevant requirements of AS 2890.1:2004 or otherwise to the satisfaction of the responsible authority;	

- There are only two (2) accessways that will serve potentially more than four (4) parking spaces, and vehicles will be able to enter (from the street) and exit (to the street) in a forward direction in both instances. Refer to the swept path diagrams attached as **APPENDIX 3** at the end of this report.
- Table C2.2 specifies the following access width requirements:

Table C2.2 Internal Access Way Widths for Vehicles

Number of parking spaces served	Internal access way widths	Passing bay dimensions for two-way traffic in addition to the access way width
1 to 5	A width not less than 3m.	2m wide by 5m long, plus entry and exit tapers, every 30m, unless on land within the Rural Zone, Agriculture Zone, Landscape Conservation Zone, Environmental Management Zone or Open Space Zone.
6 to 20	(a) A width not less than 4.5m for the first 7m from the road carriageway and 3m thereafter, and (b) At changes of direction or intersections have: (i) an internal radius of not less than 4m, or (ii) a width more than 4.2m.	2m wide by 5m long, plus entry and exit tapers, every 30m.
21 and over	A width not less than 5.5m.	Not applicable

  - All access ways will be at least 4.0m wide;
  - Only one (1) access way will be longer than 30m and it will serve three (3) dwellings, namely dwellings 13, 13a, and 15 (see **APPENDIX 2**). The anticipated maximum peak hour traffic generation rate of the proposal is 0.31 vehicle trips per dwelling (see **Section 6.1.2**), which equates to, on average, 0.93 vehicle trips along this accessway during the peak hour. This represents an insignificant amount of traffic and as such, the probability of two vehicles meeting on the access way is very low. A passing area is therefore not necessary along this access way.
  - The proposed link road between Stanfield Drive and Radius Drive will be at least 6.0m wide, therefore passing areas are not necessary along this road.
- Table C2.3 specifies the following car parking space dimensions:

Table C2.3 Dimensions of Car Parking Spaces and Combined Access and Manoeuvring Space Adjacent to Parking Spaces

Angle of car spaces to manoeuvring space	Combined access and manoeuvring width	Car park widths	Car park length
Parallel	3.6m	2.3m	6.7m
45 degrees	3.5m	2.6m	5.4m
60 degrees	4.9m	2.6m	5.4m
90 degrees	6.4m	2.6m	5.4m
90 degrees	5.8m	2.8m	5.4m
90 degrees	5.2m	3m	5.4m
90 degrees	4.8m	3.2m	5.4m

Notes to Table C2.3:

(1) If entry to the car space is from a road, the combined access and manoeuvring width may include the road.

  - All carports will be angled at 90° and be approximately 6.0m long x 4.0m wide;
  - Sufficient access and manoeuvring space will be provided at access ways that serve 3 or more car parking spaces. Refer to the swept path diagrams attached as **APPENDIX 3** at the end of this report.
- All carports will have vertical clearances of at least 2.1m above the parking surface level.

A1.2

The dwellings will be detached houses, which the Building Code of Australia classifies as Class 1a buildings. According to the Code, Class 1a buildings do not have a requirement to provide accessible car parking spaces.

Control C2.6.3 – Number of accesses for vehicles

Objective:

That:

- 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;
- accesses do not cause an unreasonable loss of amenity of adjoining uses; and
- the number of accesses minimise impacts on the streetscape.

Acceptable Solutions	Performance Criteria
A1 The number of accesses provided for each frontage must: ▪ be no more than 1; or ▪ no more than the existing number of accesses whichever is the greater. **A2** Within the Central Business Zone or in a pedestrian priority street no new access is provided unless an existing access is removed.	**P1** The number of accesses for each frontage must be minimised, having regard to: ▪ any loss of on-street parking; and ▪ pedestrian safety and amenity; ▪ traffic safety; ▪ residential amenity on adjoining land; and ▪ the impact on the streetscape. **P2** Within the Central Business Zone or in a pedestrian priority street, any new accesses must: ▪ not have an adverse impact on: – pedestrian safety and amenity; or – traffic safety; and ▪ be compatible with the streetscape.

Response

A1

The proposed new private link road will create a new access from Stanfield Drive, therefore assessment against the performance criteria is required.

P1

- The proposed new access will be from the Stanfield Drive court bowl and will at most result in the loss of one (1) on-street parking space – it is noted that on-street parking has not been delineated. As outlined in **Table 2**, no vehicles were parked on Stanfield Drive when the spot parking surveys were carried out and as such the impact of the proposed access on on-street parking will be minimal.
- The existing pedestrian footpath around the court bowl will be reconstructed to accommodate the additional access. The existing pedestrian footpaths, as well as low speed limit environment, contributes to pedestrian safety and amenity in the area.
- The area is characterised by low posted speed limits, good sight distances, street lighting, and a relatively flat topography, which contribute to traffic safety.
- The land immediately north of the site is zoned 'Particular Purpose – BRI-P1.0 – St Anns Precinct' and includes existing retirement living dwellings – the St Anns Living development comprises 119 dwellings and the proposed 26 additional dwellings are not considered to constitute a substantial intensification of the

existing land use. Clarries Creek separates the site from residential land to the south and west, while East Derwent Highway separates the site from residential land to the east.

Therefore, due to the intensification of the existing land use being limited in nature, and the separation between the site and residential land uses in the south, east, and west, the proposal is not expected to adversely affect the residential amenity on adjoining land.

- The proposed acoustic barrier between the site and East Derwent Highway, as well as the natural topographic variance and vegetation in this area will effectively 'screen' the site from East Derwent Highway. In addition, the proposed additional dwellings will be constructed within an established retirement living (residential) development and as such will not result in a significant streetscape impact with respect to Stanfield Drive.

A2

Not applicable to the proposal.

Control C2.6.5 – Pedestrian access

Objective:

That pedestrian access within parking areas is provided in a safe and convenient manner.

Acceptable Solutions	Performance Criterion
A1.1 Uses that require 10 or more car parking spaces must: ▪ have a 1m wide footpath that is separated from the access ways or parking aisles, excluding where crossing access ways or parking aisles, by: – a horizontal distance of 2.5m between the edge of the footpath and the access way or parking aisle; or – protective devices such as bollards, guard rails or planters between the footpath and the access way or parking aisle; and ▪ be signed and line marked at points where pedestrians cross access ways or parking aisles. **A1.2** In parking areas containing accessible car parking spaces for use by persons with a disability, a footpath having a width not less than 1.5m and a gradient not steeper than 1 in 14 is required from those spaces to the main entry point to the building.	**P1** Safe and convenient pedestrian access must be provided within parking areas, having regard to: ▪ the characteristics of the site; ▪ the nature of the use; ▪ the number of parking spaces; ▪ the frequency of vehicle movements; ▪ the needs of persons with a disability; ▪ the location and number of footpath crossings; ▪ vehicle and pedestrian traffic safety; ▪ the location of any access ways or parking aisles; and ▪ any protective devices proposed for pedestrian safety.

Response

A1

Each dwelling will be provided with its own car parking space. As outlined in **Section 2.4.1**, only limited pedestrian facilities have been provided throughout the area, especially along roads. Since footpaths have not been provided along the entire extent of the private roads (i.e., access ways), assessment against the performance criteria is required.

P1

- The site is characterised by a low posted speed limit of 10 km/h, as well as good sight distances and street lighting. This low vehicle speed environment and maximisation of visibility contributes to safe and efficient pedestrian access throughout the site.

- The proposed use is an expansion of an existing development, which already provide shared zones without delineated/segregated footpaths along the private roads/access ways – the proposal therefore intends to be a continuation of these existing arrangements. As the proposal is not anticipated to generate significant volumes of traffic (see **Section 6**), the low speed, 'quiet' (in terms of vehicular traffic) environment of the shared zones is considered appropriate for facilitating safe and convenient pedestrian access.
- Each dwelling will be provided with its own car parking space, meaning the car parking provision will be spread out across the entire site instead of being concentrated within a single smaller area. This arrangement avoids 'high traffic' areas by distributing the traffic demand over a large area, which improves the safety and convenience of pedestrian access.
- As outlined in **Section 6**, the proposal is expected to generate low levels of traffic volumes. Furthermore, retirement dwellings generate significantly fewer vehicle movements compared to standard residential dwellings.
- Each dwelling will be provided with a parking space adjoining its front, which will provide safe and convenient access for all users.
- One footpath crossing will be provided at the proposed new crossover at the Stanfield Drive court bowl.
- The site includes shared zones that comprise low speed and high visibility environments, which benefit the safety of both vehicular and pedestrian traffic.
- The internal private roads/access ways have been designed to ensure safe and convenient shared environments for all users.
- No protective devices are proposed given the nature of the site, which comprises a low speed and low levels of vehicular traffic volumes environment.

A1.2

Not applicable to the proposal.

5 LOADING & WASTE COLLECTION

The proposed new private link road between the Stanfield Drive court bowl and Radius Drive will be constructed to comply with all the relevant requirements of AS 2890.1:2004 and the Tasmanian Planning Scheme. More specifically, the link road will comply with the relevant clauses under Code C13.0 Bushfire-Prone Areas Code. The following design matters are noted in relation to Table C13.2: Standards for Property Access:

- The link road will be constructed to the same standard as the existing private roads and will have a surface suitable for all-weather use and a load bearing capacity of at least 20t;
- The carriageway will be 6.0m wide, and suitable minimum clearances (0.5m horizontally and 4.0m vertically) will be provided;
- It is recommended that the Planning Permit includes a condition requiring the detailed designs to show the following:
  - Cross falls along the link road not exceeding 3 degrees (1:20 or 5%); and
  - Entry and exit angles at dips not exceeding 7 degrees (1:8 or 12.5%).
- Curves will have inner radii of at least 10m;
- The gradient along the link road will be less than 15 degrees (1:3.5 or 28%); and
- A turning area is not required since the link road will be open at both ends.

In terms of waste collection, the existing arrangement comprises kerbside waste collection by a Council truck, and this arrangement will continue for the proposal.

Vehicle swept path analyses have been undertaken that demonstrate that the proposed new private link road can adequately accommodate the turning paths of vehicle sizes up to 8.8m long (an Australian Standard Medium Rigid Vehicle or MRV for short). The swept path diagrams are attached as **APPENDIX 3** at the end of this report.

6 TRAFFIC IMPACT

6.1 TRAFFIC GENERATION

6.1.1 EMPIRICAL TRAFFIC GENERATION RESOURCES

Traffic generation parameters for various land uses are specified in the Transport for New South Wales (TfNSW, formerly RMS/RTA) *Guide to Traffic Generating Developments, October 2002* (the Guide), as well as in *Technical Direction TDT 2013/04a* (the TD), as follows:

- Guide (Section 3.3.4):
  - Daily vehicle trips = 1 – 2 per dwelling
  - Evening peak hour vehicle trips = 0.1 – 0.2 per dwelling
- TD:
  - Weekday daily vehicle trips = 2.1 per dwelling
  - Weekday peak hour vehicle trips = 0.4 per dwelling (it is noted that the development morning peak hour does not generally coincide with the road network peak hour)

6.1.2 SURVEYED DEVELOPMENT-SPECIFIC TRAFFIC GENERATION

As outlined in in **Section 2.5.2**, a midblock tube count was carried out on Stanfield Drive immediately west of its intersection with Radius Drive – this location serves as the access to the St Anns Living development and therefore captures all traffic generated by the existing development.

Based on the results of the traffic surveys, the existing development's traffic generation characteristics are as follows:

- During weekdays, the development has, on average, only one (1) peak period that occurs around midday. A total of 37 vehicle movements were recorded (weekday average), which translates into an average peak hour traffic generation rate of 0.31 vehicle trips per dwelling (development peak).
- During the full week period (7 days), the same holds true; although the total vehicle movements were lower at 35 vehicle movements (7-day average), which translates into an average peak hour traffic generation rate of 0.29 vehicle trips per dwelling (development peak).
- The vehicle turning movements counts at the East Derwent Highway / Stanfield Drive intersection showed that the weekday AM and PM peak hours are typically 7:15 – 8:15am and 3:30 – 4:30pm. During the road network peak periods, the total traffic generation of the development (weekday average) was 20 and 28 vehicle movements, respectively, which translate into average peak hour traffic generation rates of 0.17 and 0.23 vehicle trips per dwelling (road network peak).
- During the full week period, a total of 319 vehicle movements were recorded (7-day average), which translates into an average daily traffic generation rate of 2.68 vehicle trips per dwelling. It is noted that there is some ongoing construction activity in the area, as well as employees of the aged care / assisted housing for seniors in the north that travel to/from the Stanfield Drive court bowl for regular smoke breaks. These traffic movements have also been recorded by the traffic counter, which artificially elevates the actual traffic generation of the St Anns Living development – the actual traffic generation rate would thus be lower than 2.68 vehicle trips per dwelling.

6.1.3 PROPOSAL TRAFFIC GENERATION

As mentioned in **Section 6.1.2**, vehicular traffic unrelated to the St Anns Living development were recorded using the development's 'access point' on Stanfield Drive, which results in an elevated traffic generation rate for the development. As such, it is considered more appropriate to base the proposal's expected daily traffic generation on the rate specified in the TD, namely 2.1 trips per dwelling. This means that the proposed 26 additional dwellings are expected to result in approximately 55 additional daily vehicle movements.

In terms of the peak period traffic generation, the observed rates during the weekday AM and PM road network peak hours have been adopted, which is a conservative approach for the purpose of intersection analyses (refer to **Section 6.3.2**). The expected peak hour traffic generation for 26 additional dwellings is therefore as follows:

- Weekday AM peak hour: 0.17 vehicle trips per dwelling – 4 additional peak hour vehicle movements
  - This represents one (1) vehicle movement, on average, every 15 minutes
- Weekday PM peak hour: 0.23 vehicle trips per dwelling – 6 additional peak hour vehicle movements
  - This represents one (1) vehicle movement, on average, every 10 minutes

The anticipated traffic generation of the proposal as outlined above is negligible in traffic engineering terms.

6.2 TRAFFIC DISTRIBUTION

It is anticipated that the traffic distribution towards the north and south on East Derwent Highway will be the same as the current distributions, given that the subject site is within an area that mostly comprises residential land uses. The current north/south traffic distributions on East Derwent Highway are as follows:

- Weekday AM peak hour:
  - North of Stanfield Drive – 44%
  - South of Stanfield Drive – 56%
- Weekday PM peak hour:
  - North of Stanfield Drive – 54%
  - South of Stanfield Drive – 46%

As has also been mentioned in **Section 2.5.1**, the in/out splits for the area at the East Derwent Highway / Stanfield Drive intersection are as follows:

- Weekday AM peak hour:
  - In – 40%
  - Out – 60%
- Weekday PM peak hour:
  - In – 60%
  - Out – 40%

Applying the above distributions and directional splits to the expected traffic generation during the respective peak hours results in the additional turning volumes as shown below in **Figure 18**.

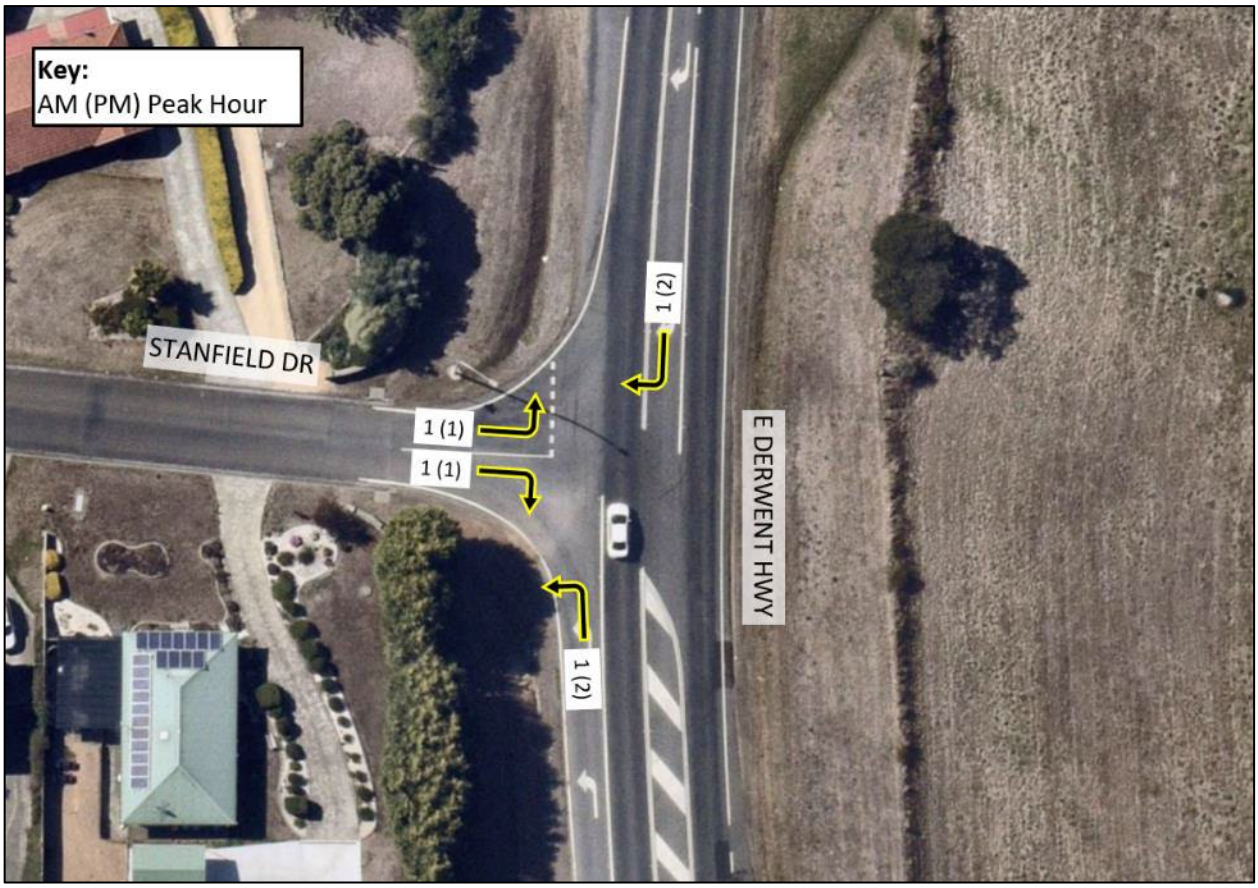


Figure 18 Additional turning volumes

6.3 TRAFFIC IMPACT

To assess the likely impact of the proposal on the road network, a SIDRA model was developed to analyse the current and future operational performance of the East Derwent Highway / Stanfield Drive intersection.

6.3.1 SIDRA INTERSECTION SOFTWARE

SIDRA Intersection 9.1 is a traffic modelling package that measures the performance of an intersection using a range of parameters, as described below:

Degree of Saturation (D.O.S.) is the ratio of the volume of traffic observed making a particular movement compared to the maximum capacity for that movement. Where an intersection is oversaturated, this indicates that not all traffic can pass through the control mechanism. Under such conditions, the degree of saturation would be greater than 1.0 (100%).

AustRoads *"Guide to Traffic Management Part 3: Transport Study and Analysis Methods* (AGTM3)" states that:

> *"In practice the target degrees of saturation of 0.90 for signals, 0.85 for roundabouts and 0.80 for unsignalised intersections are generally agreed to.*
>
> *These are usually called 'practical degrees of saturation'."*

The *95th Percentile (95%ile) Queue* represents the maximum queue length, in metres, that could be expected to be observed on 95% of occasions during the analysis period. (i.e., it is the queue length that only has a 5% chance of being exceeded during the analysis period).

Level of Service (L.O.S.) is a qualitative measure which can be based on traffic factors such as speed, volume of traffic, delays, and freedom to manoeuvre.

AustRoads *"Guide to Traffic Management Part 3: Transport Study and Analysis Methods* (AGTM3)" states that the performance measure for defining LOS at roundabouts and two-way stop intersections is delay.

SIDRA 9.1 assigns the Levels of Service shown in **Table 5** to roundabout and two-way stop controlled intersections based on the average delay for all vehicle movements.

For comparison, the Levels of Service assigned to all intersection types by the Roads and Maritime Services of New South Wales (formerly RTA, now RMS) are presented in the far right column. These parameters generally result in higher levels of service being determined.

Table 5 Rating of Level of Service at roundabouts and unsignalised intersections (SIDRA Method)

L.O.S.	Average Delay per Vehicle (sec/veh)		
	SIDRA 9.1 Values		RMS Values
	Roundabout	Unsignalised Intersection	All Intersections
A	$d \leq 10$	$d \leq 10$	$d \leq 14$
B	$10 < d \leq 20$	$10 < d \leq 15$	$15 < d \leq 28$
C	$20 < d \leq 35$	$15 < d \leq 25$	$29 < d \leq 42$
D	$35 < d \leq 50$	$25 < d \leq 35$	$43 < d \leq 56$
E	$50 < d \leq 70$	$35 < d \leq 50$	$57 < d \leq 70$
F	$70 < d$	$50 < d$	$70 < d$

SIDRA does note however that Intersection LOS and Major Road Approach LOS values are not applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements. On this basis it only applies to minor (give-way or stop controlled) approaches. We have nevertheless adopted the worst/critical approach/movement LOS value as the intersection LOS.

6.3.2 ANALYSIS RESULTS

The future traffic conditions include the added development traffic as shown above in **Figure 18**, as well as traffic growth of 3.0% per annum over a 10-year period applied to through traffic on East Derwent Highway. It is noted that 3.0% has been adopted as a conservatively high estimate (growth is typically ~2.0%). DSG's traffic data portal

was reviewed to determine the traffic growth trend along East Derwent Highway, and it was found that between 2021 and 2022 (the most recent datasets available at the time of writing), a slight decrease in terms of total traffic volumes occurred.

The results of the existing conditions assessment are summarised in **Table 6**, and **Table 7** provides a summary of the future conditions assessment results. Detailed results are attached as **APPENDIX 4** at the end of this report.

Table 6 SIDRA results – existing traffic conditions

Approach	Weekday AM Peak Hour				Weekday PM Peak Hour			
	Degree of Saturation	95th %ile Q. Length (m)	Average Delay (sec)	Level of Service	Degree of Saturation	95th %ile Q. Length (m)	Average Delay (sec)	Level of Service
East Derwent Highway (S)	0.140	0.0	0.3	-	0.412	0.0	0.2	-
East Derwent Highway (N)	0.335	0.3	0.3	-	0.284	0.8	0.5	-
Stanfield Drive (W)	0.117	2.7	17.5	C	0.132	2.8	23.2	C
Intersection	*0.335*	*2.7*	*0.8*	*C*	*0.412*	*2.8*	*0.7*	*C*

Table 7 SIDRA results – future traffic conditions

Approach	Weekday AM Peak Hour				Weekday PM Peak Hour			
	Degree of Saturation	95th %ile Q. Length (m)	Average Delay (sec)	Level of Service	Degree of Saturation	95th %ile Q. Length (m)	Average Delay (sec)	Level of Service
East Derwent Highway (S)	0.188	0.0	0.2	-	0.553	0.0	0.3	-
East Derwent Highway (N)	0.450	0.4	0.3	-	0.382	1.6	0.6	-
Stanfield Drive (W)	0.286	5.9	39.2	E	0.491	10.0	89.6	F
Intersection	*0.450*	*5.9*	*1.3*	*E*	*0.553*	*10.0*	*1.7*	*F*

Table 6 shows that the intersection currently exhibits good DOS and LOS parameters, although it is noted that the right-turn movement on the Stanfield Drive approach is currently operating at LOS E (refer to **APPENDIX 4**). **Table 7** shows that in the design year, the Stanfield Drive approach is expected to exhibit poor LOS parameters. The poor LOS conditions are however attributed to the traffic growth on Stanfield Drive, which reduces the available gaps for traffic on Stanfield Drive – the proposal will add very little additional traffic to the road network (refer to **Figure 18**) and as such is not considered as being responsible for the deterioration of the operational performance.

The give-way line on the Stanfield Drive approach is set back approximately 4.0m from the 'left edge' of East Derwent Highway. According to Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections, however, the holding line on the minor road approach is typically placed in prolongation of the edge line. As such, it is recommended that the give-way line be relocated by ~2.5m towards the east (i.e., closer to the left edge of East Derwent Highway), which will increase the lateral clearance at the give-way line and allow two (2) cars to hold side-by-side, effectively creating additional storage space on this approach. Although this recommendation is unlikely to result in significant improvements to the LOS, it is nevertheless expected to provide a notable improvement in practice.

The recommended improvement is shown in **Figure 19**. The proponent will be responsible for implementing this improvement and it is recommended that this be included as a condition of the Planning Permit.

Figure 19 Recommended East Derwent Highway / Stanfield Drive intersection improvement

6.4 ROAD AND RAILWAY ASSETS CODE

The application triggers Clause C3.5 (Use Standards) under Code C3.0 Road and Railway Assets Code since it relates to a sensitive use in an area that is within 50m of the boundary of a major road with a speed limit higher than 60 km/h (i.e., East Derwent Highway), and an assessment against Clause C3.5 is provided in **Table 8**.

Table 8 Clause C3.5 (Use Standards)

Control 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	**Performance Criterion**
A1.1 For a category 1 road or a limited access road, vehicular traffic to and from the site will not require: ▪ a new junction; ▪ a new vehicle crossing; or ▪ 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,	**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: ▪ any increase in traffic caused by the use; ▪ the nature of the traffic generated by the use; ▪ the nature of the road; ▪ the speed limit and traffic flow of the road; ▪ any alternative access to a road;

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: ▪ the amounts in Table C3.1; or ▪ 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.	▪ the need for the use; ▪ any traffic impact assessment; and ▪ any advice received from the rail or road authority.

Response

A1.1

No new junction or vehicle crossing is proposed along East Derwent Highway.

A1.2

Stanfield Drive is a road under the jurisdiction of Council and written consent is being sought from Brighton Council for an additional access from Stanfield Drive.

A1.3

Not applicable.

A1.4

Table C3.1 specifies the following acceptable increases in traffic volumes to and from the site – it is noted that according to Clause C3.3, annual average daily traffic *means the number of vehicles per day averaged over all days in a calendar year.*

Table C3.1 Acceptable increase in annual average daily traffic to and from the site (total of ingress and egress)

Location of vehicular traffic	Amount of acceptable increase in annual average daily traffic to and from the site (total of ingress and egress)	
	Vehicles up to 5.5m long	Vehicles longer than 5.5m long
Vehicle crossing on major roads and private level crossings	10% or 10 vehicle movements per day, whichever is the greater	10%
Vehicle crossings on other roads	20% or 40 vehicle movements per day, whichever is the greater	20% or 5 vehicle movements per day, whichever is the greater

The part of Table C3.1 that is relevant to the proposal is vehicle crossings on other roads, for vehicles up to 5.5m long, thus *20% or 40 vehicle movements per day, whichever is the greater*. As outlined in Section 6.1.2 and Section 6.1.3, the development currently generates on average approximately 319 vehicle movements per day, and the proposal is expected to result in an additional 55 daily vehicle movements, which represents a ~17.2% increase in annual average daily traffic to and from the site. The proposal therefore falls within the acceptable parameters in terms of the permitted increase in traffic generation as per Table C3.1.

A1.5 Vehicles will be able to enter and exit East Derwent Highway in a forward direction via its existing intersection with Stanfield Drive.

7 RESPONSE TO COUNCIL RFI

As outlined in Section 1, Council issued an RFI that requires the preparation of a Traffic Impact Assessment that addresses the relevant Clauses under Code C2.0 Parking & Sustainable Transport Code and Code C3.0 Road and Railway Assets Code of the Tasmanian Planning Scheme. The preceding sections of this report comprehensively address these Clauses and Codes, as summarised in **Table 9**.

Table 9 Response to RFI

Concern	Response
The Traffic Impact Assessment (TIA) needs to address the impact on the road network including the existing unsignalised Stanfield Drive junction with the East Derwent Highway and its operation into the future.	The traffic generation of the existing St Anns Living development was determined through traffic surveys during a typical week (7-day period) on Stanfield Drive near its intersection with Radius Drive. Given that the proposal is an expansion of the existing development, it is reasonable to conclude that the additional retirement dwellings will exhibit the same traffic generation characteristics of the existing dwellings, which were determined to be insignificant in traffic engineering terms. SIDRA analysis of the East Derwent Highway / Stanfield Drive intersection has shown that the right-turn movement on the Stanfield Drive approach is already operating at LOS E and will deteriorate into the future. This deterioration is however ascribed to the anticipated traffic growth on East Derwent Highway and not the additional traffic resulting from the proposal, as the level of traffic generation is negligible. Nevertheless, an improvement of the Stanfield Drive approach that involves modified line marking has been recommended.
The planning report does not accurately assess the parking requirement nor satisfactorily address the exclusion of any visitor parking.	The proposal is an expansion of an existing development, and the proposed parking provision is a continuation of the current parking provision. Spot surveys of on-street parking demand have shown that an abundance of on-street parking is available to accommodate any possible overflow parking demand, although such occurrences are considered unlikely and are expected to occur very infrequently. Several of the driveways will also be sufficiently long to accommodate a car, effectively increasing the provision of on-site parking spaces. As an additional consideration, the proposed parking provision is appropriate based on the parking requirements specified in the TfNSW Guide.
Whilst the planning report has addressed the performance criteria for C2.6.5 Pedestrian access, it should be addressed in the TIA.	An assessment against the performance criteria under Control C2.6.5 has been provided in this report.

Whilst the proposal creates a new access off Stanfield Drive it is also likely that vehicle movements utilising the existing access (Radius Drive) will increase by more than 40 vehicle movements per day. The TIA should address the relevant performance criteria.	Whilst the proposal is anticipated to generate more than 40 vehicle movements per day, the level of additional average daily traffic will represent an increase of only ~17.2% (i.e., less than 20%), which falls within the acceptable parameters in terms of the permitted increase in traffic generation as per Table C3.1 to Clause C3.5 (Use Standards) under Code C3.0 Road and Railway Assets Code. As such, the proposal complies with all the acceptable solutions under Control C3.5.1 and assessment against the performance criteria is not required.
Vehicle turning paths should be provided to demonstrate that vehicles (including service vehicle eg garbage trucks) can access the site in a safe and efficient manner.	Vehicle turning path diagrams have been prepared for key vehicles likely to access the site and are attached as **APPENDIX 3** at the end of this report.

8 CONCLUSION

Based on the considerations outlined in this report, it is concluded that:

- The proposed development has a statutory requirement to provide a total of 58 car parking spaces.
- With 26 car parking spaces provided on site, the proposed parking provision falls short of the statutory requirement by 32 spaces.
- Based on the parking trends of the existing development, the availability of on-street parking, and parking provision recommendations as per the TfNSW Guide, the development satisfies the relevant performance criteria under Control C2.5.1 to Clause C2.5 of the Tasmanian Planning Scheme.
- It is recommended that the Planning Permit includes a condition that parking along common accessways shall be prohibited.
- The proposed development does not have a statutory requirement to provide bicycle parking.
- The proposed parking, accessways, manoeuvring, and circulation areas comply with the relevant requirements of the Planning Scheme and Australian Standards and will provide for convenient and efficient access.
- It is recommended that the Planning Permit includes a condition requiring the detailed designs to show that all final gradients and grade transitions comply with the relevant requirements of AS 2890.1:2004.
- The proposed new private link road between the Stanfield Drive court bowl and Radius Drive will be constructed to comply with all the relevant requirements of AS 2890.1:2004 and the Tasmanian Planning Scheme and will adequately accommodate the appropriate design vehicle.
- It is recommended that the Planning Permit includes a condition requiring the detailed designs to show that acceptable cross falls as well as acceptable entry and exit angles at dips will be achieved along the private link road.
- Based on traffic surveys at the site access and the provisions of the TfNSW TD, it has been determined that the level of traffic that is likely to be generated by the proposed development is low and will be readily accommodated by Stanfield Drive, East Derwent Highway, and the surrounding road network and intersections without resulting in any detrimental impacts.
- Although LOS deterioration is expected at the East Derwent Highway / Stanfield Drive intersection, this is ascribed to the likely traffic growth along East Derwent Highway since the proposed development will contribute very little volumes of additional traffic at this intersection during the road network peak periods.
- It is recommended that the give-way line on the Stanfield Drive approach be relocated by ~2.5m towards the east to increase the available lateral clearance and allow two (2) cars to hold side-by-side, which will create additional storage space on this approach.
- Based on the anticipated traffic generation of the proposed development, it has been determined that the proposal complies with all the acceptable solutions under Control C3.5.1 to Clause C3.5 of the Planning Scheme.

Accordingly, there are no traffic engineering reasons why a Planning Permit should not be issued for the proposed development.

APPENDIX 1 PROPOSED DEVELOPMENT MASTERPLAN

PATH NETWORK

RICHARD HAMMOND ARCHITECT
1B LITTLE HOWARD ST, FREMANTLE, 6150
0438 918 753 | RICHARD@HRARCHITECTS.COM.AU

No.	Description	Date
5	FFLs UPDATED	23.05.2024
6	HOUSE DESIGNS UPDATED, FFLs ADJUSTED	11.06.2024
7	LOT 8 REMOVED	11.07.2024
8	CROSSOVERS, ROAD REALIGNED & INTERSECT ALTERED	22.07.2024

St Ann's

Lifestyle Village
99-88, 28 Stanfield Drive,
Old Beach Tas 7017

Masterplan

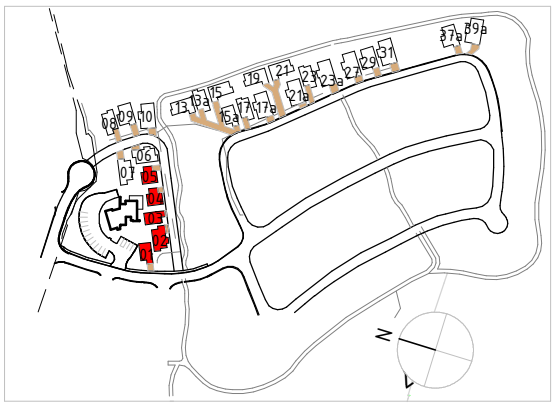
Project number	-
Date	22.07.2024
Drawn by	RHA
Checked by	RHA

A100

Scale@A3 1 : 1000

24/07/2024 3:37:47 PM

APPENDIX 2 PROPOSED DEVELOPMENT LOT PLANS



REFER TO SHEET A-202 FOR LOT 6

FFL 29.00

FFL 28.05

FFL 27.25

FFL 26.35

FFL 26.00

05

04

03

02

01

A

B

C

RL 28.50

RL 28.00

RL 27.50

RL 27.00

RL 26.50

RL 26.00

RL 25.50

RL 25.00

4.0 m

EXISTING COMMUNITY BUILDING

OUT 1.31

IN 23.94

RADIUS DRIVE

N

1 LOTS 1 - 5

1 : 200

RICHARD HAMMOND ARCHITECT
1b LITTLE HOWARD STREET, FREMANTLE
0438 918 753 | RICHARD@HRARCHITECTS.COM.AU

No.	Description	Date
6	HOUSE DESIGNS UPDATED, FFLs ADJUSTED	11.06.2024
7	LOT 8 REMOVED	11.07.2024
8	CROSSOVERS, ROAD REALIGNED & INTERSECT ALTERED	22.07.2024

St Ann's

Lifestyle Village

99-88, 28 Stanfield Drive, Old Beach Tas 7017

LOTS 1 - 5

Project number	-
Date	22.07.2024
Drawn by	RHA
Checked by	RHA

A-201

Scale @ A3 **As indicated**

24/07/2024 3:49:03 PM

LOTS 6, 7 & 9 – 11

1 : 200

RICHARD HAMMOND ARCHITECT
1b LITTLE HOWARD STREET, FREMANTLE
0438 918 753 | RICHARD@HRARCHITECTS.COM.AU

No.	Description	Date
6	HOUSE DESIGNS UPDATED, FFLs ADJUSTED	11.06.2024
7	LOT 8 REMOVED	11.07.2024
8	CROSSOVERS, ROAD REALIGNED & INTERSECT ALTERED	22.07.2024

St Ann's

Lifestyle Village

99-88, 28 Stanfield Drive,
Old Beach Tas 7017

LOTS 6 - 10

Project number	-	A-202
Date	22.07.2024	
Drawn by	RHA	
Checked by	RHA	Scale @ A3 As indicated

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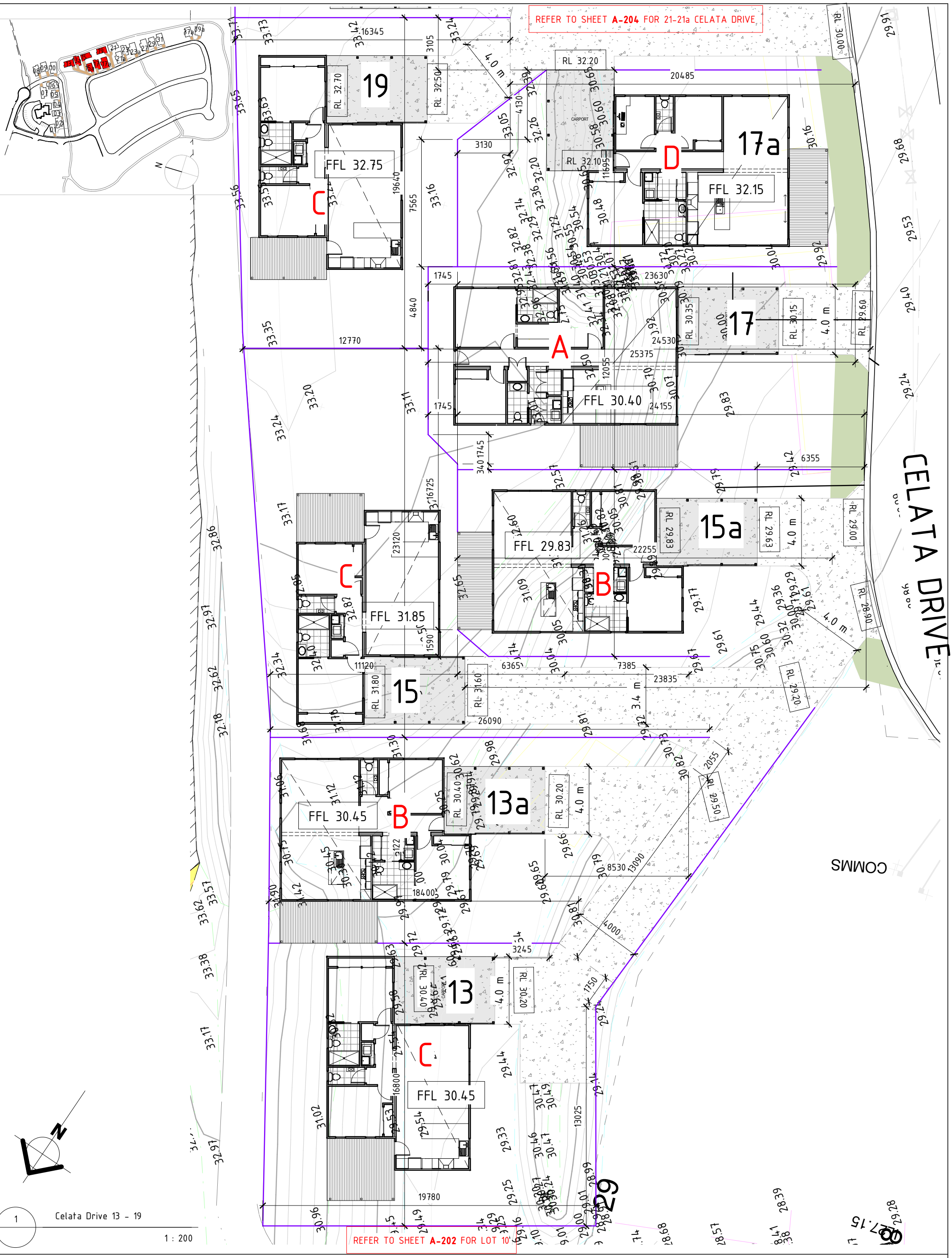

RICHARD HAMMOND ARCHITECT
1b LITTLE HOWARD STREET, FREMANTLE
0438 918 753 | RICHARD@HRARCHITECTS.COM.AU

No.	Description	Date
6	HOUSE DESIGNS UPDATED, FFLs ADJUSTED	11.06.2024
7	LOT 8 REMOVED	11.07.2024
8	CROSSOVERS, ROAD REALIGNED & INTERSECT ALTERED	22.07.2024

St Ann's

Lifestyle Village

99-88, 28 Stanfield Drive,
Old Beach Tas 7017

Celata Drive 13-19

Project number	-
Date	22.07.2024
Drawn by	RHA
Checked by	RHA

A-203

Scale @ A3 **As indicated**

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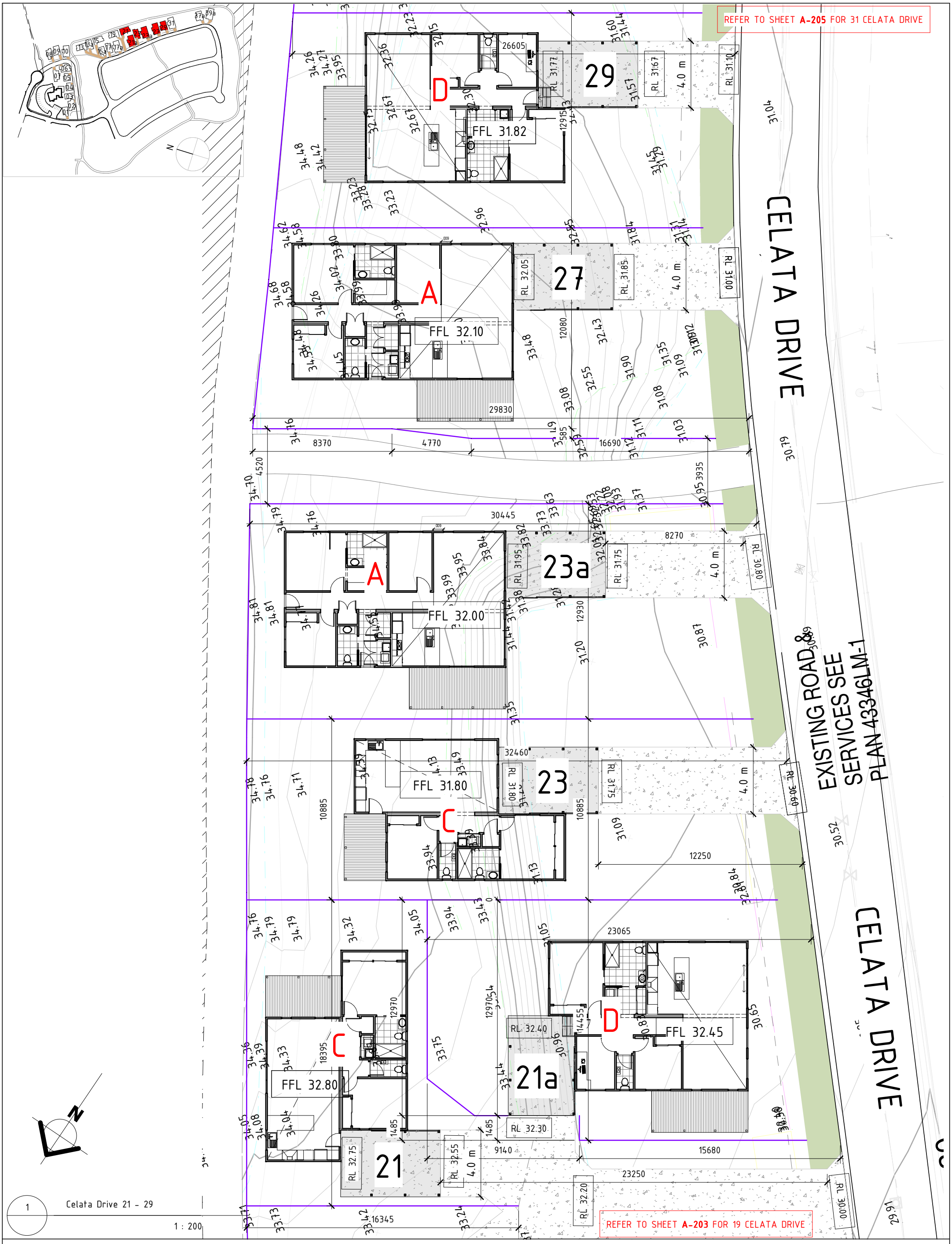

1 Celata Drive 21 – 29

1 : 200

RICHARD HAMMOND ARCHITECT
1b LITTLE HOWARD STREET, FREMANTLE
0438 918 753 | RICHARD@HRARCHITECTS.COM.AU

No.	Description	Date
6	HOUSE DESIGNS UPDATED, FFLs ADJUSTED	11.06.2024
7	LOT 8 REMOVED	11.07.2024
8	CROSSOVERS, ROAD REALIGNED & INTERSECT ALTERED	22.07.2024

St Ann's

Lifestyle Village

99-88, 28 Stanfield Drive, Old Beach Tas 7017

Celata Drive 21-29

Project number	-
Date	22.07.2024
Drawn by	RHA
Checked by	RHA

A-204

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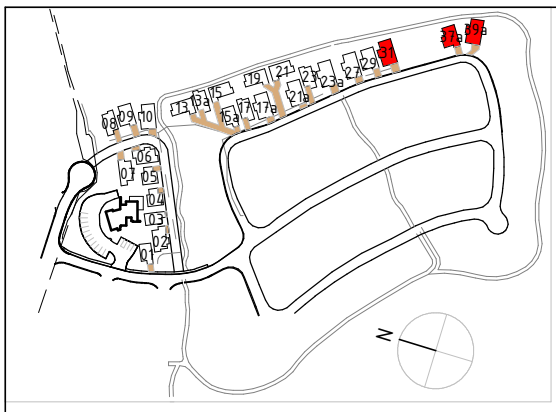

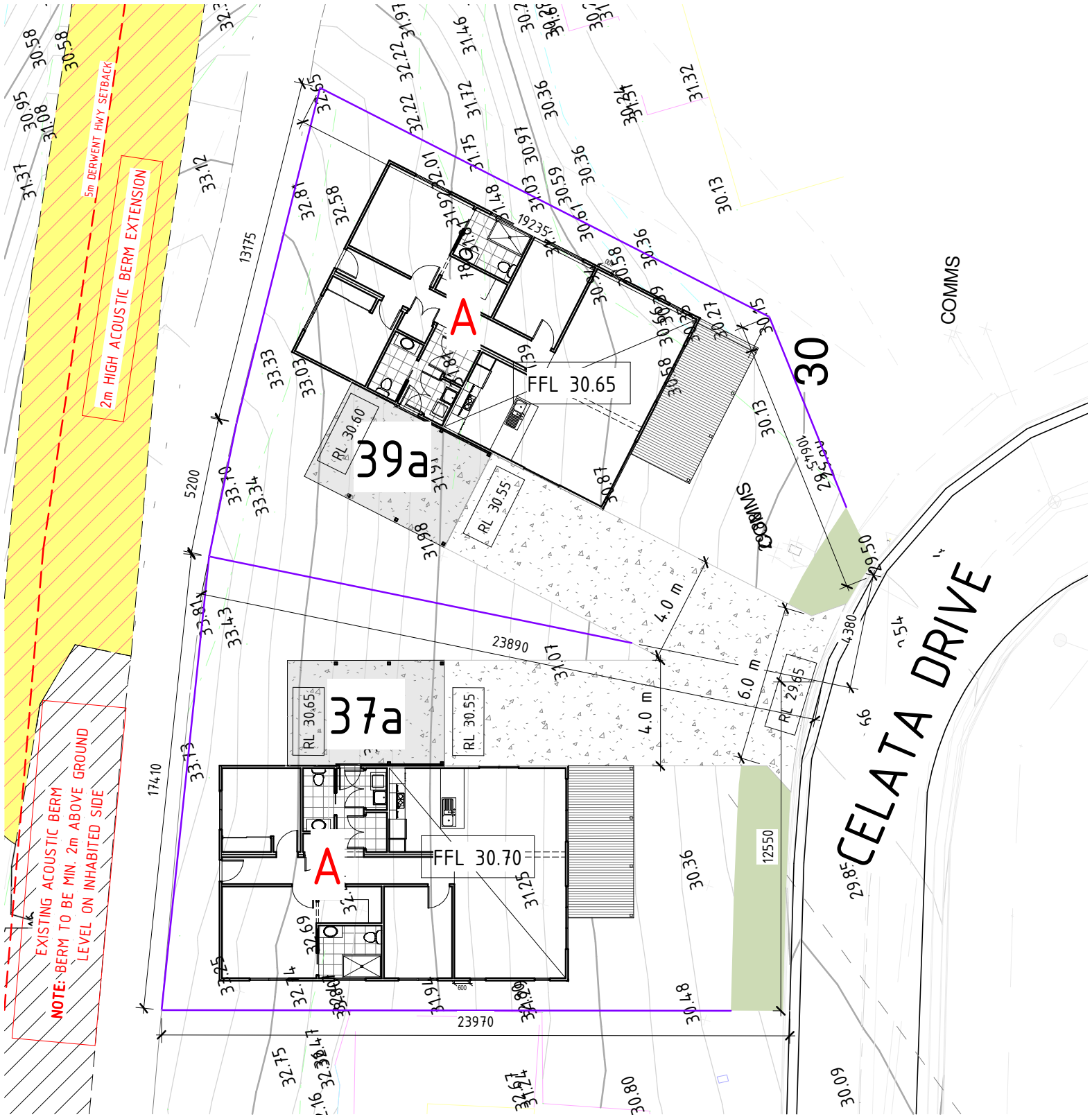

1 Celata Drive 31, 37a & 39a

1 : 200

REFER TO SHEET **A-204** FOR 29 CELATA DRIVE

RICHARD HAMMOND ARCHITECT
1b LITTLE HOWARD STREET, FREMANTLE
0438 918 753 | RICHARD@HRARCHITECTS.COM.AU

No.	Description	Date
6	HOUSE DESIGNS UPDATED, FFLs ADJUSTED	11.06.2024
7	LOT 8 REMOVED	11.07.2024
8	CROSSOVERS, ROAD REALIGNED & INTERSECT ALTERED	22.07.2024

St Ann's

Lifestyle Village

99-88, 28 Stanfield Drive, Old Beach Tas 7017

Celata Drive 31-39a

Project number	-
Date	22.07.2024
Drawn by	RHA
Checked by	RHA

A-205

Scale @ A3 As indicated

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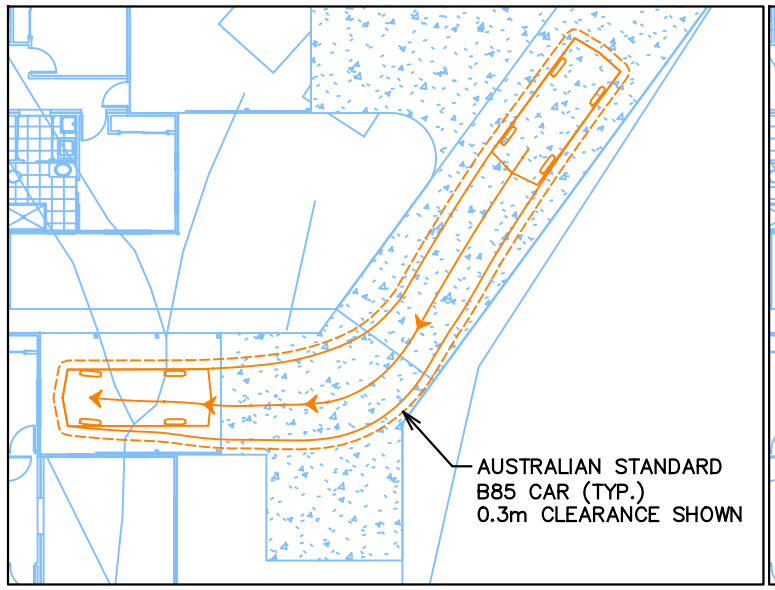
APPENDIX 3 SWEPT PATH DIAGRAMS



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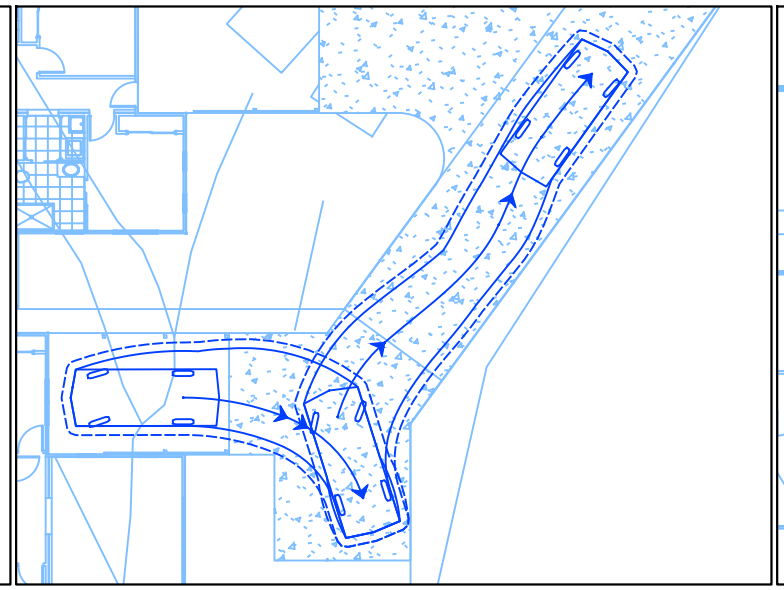

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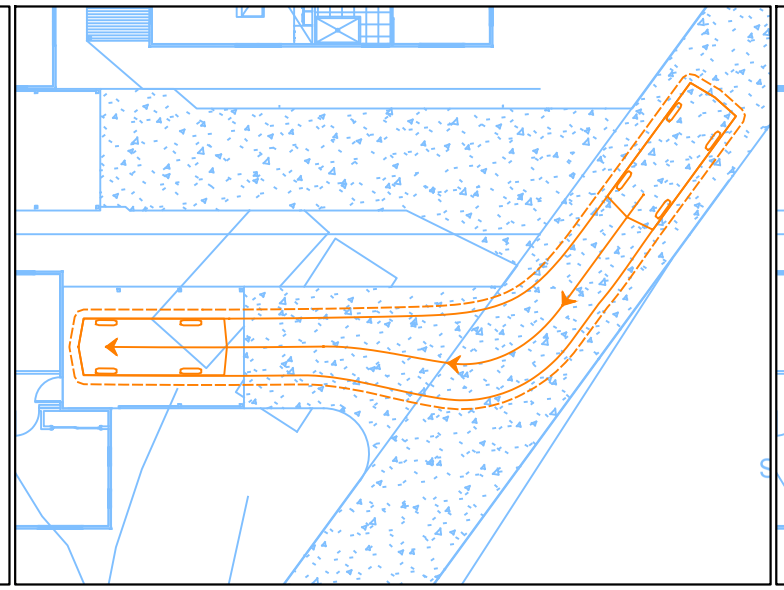

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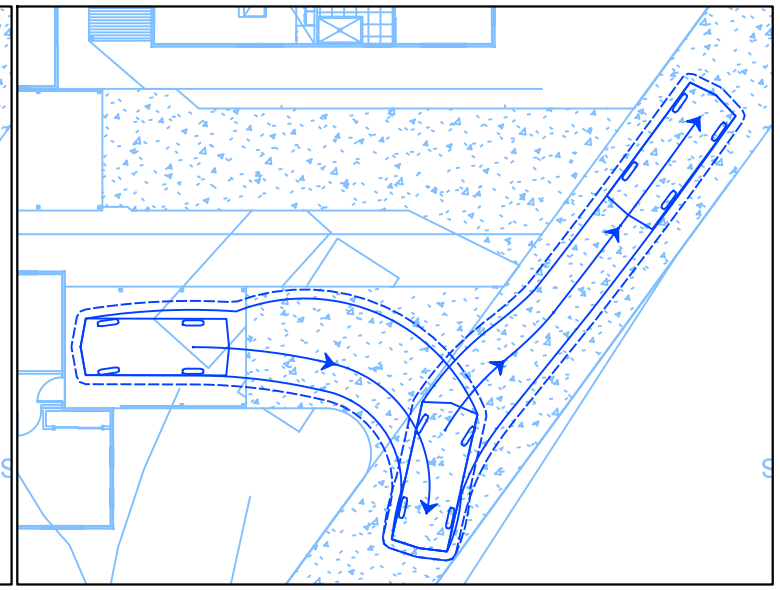

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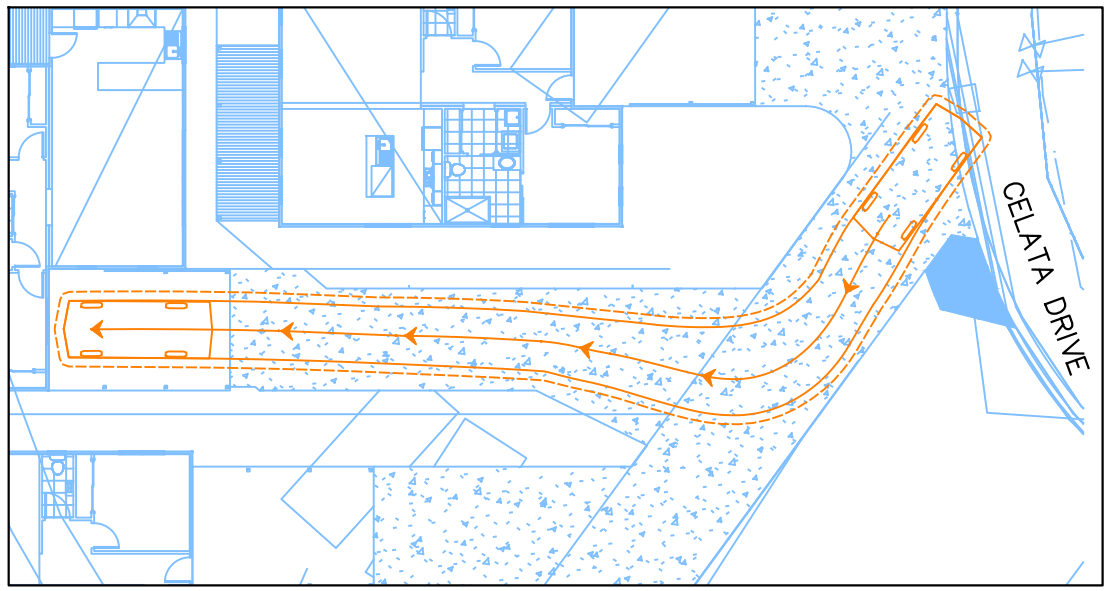

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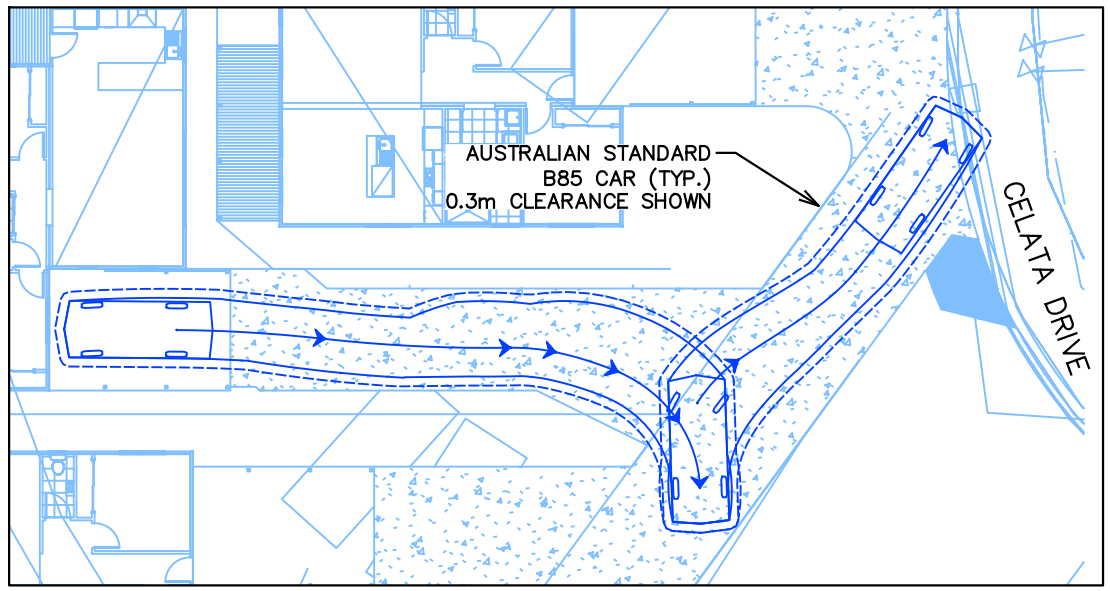

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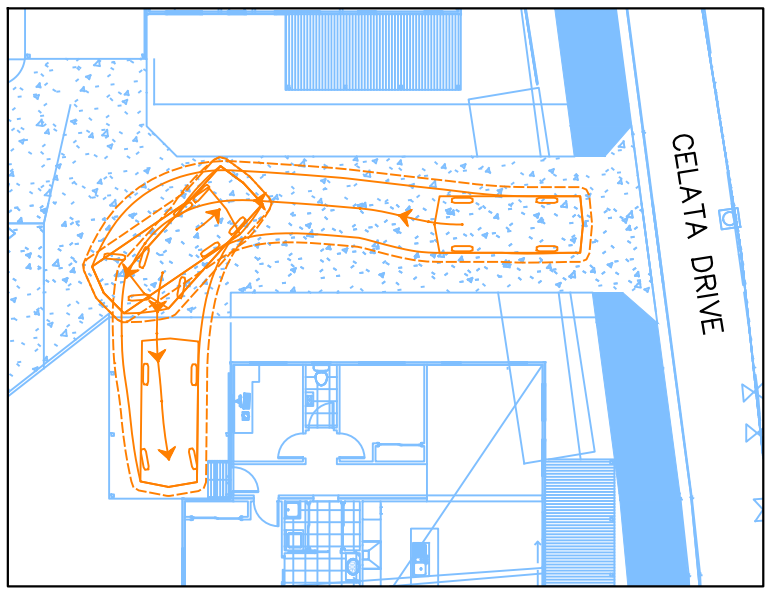

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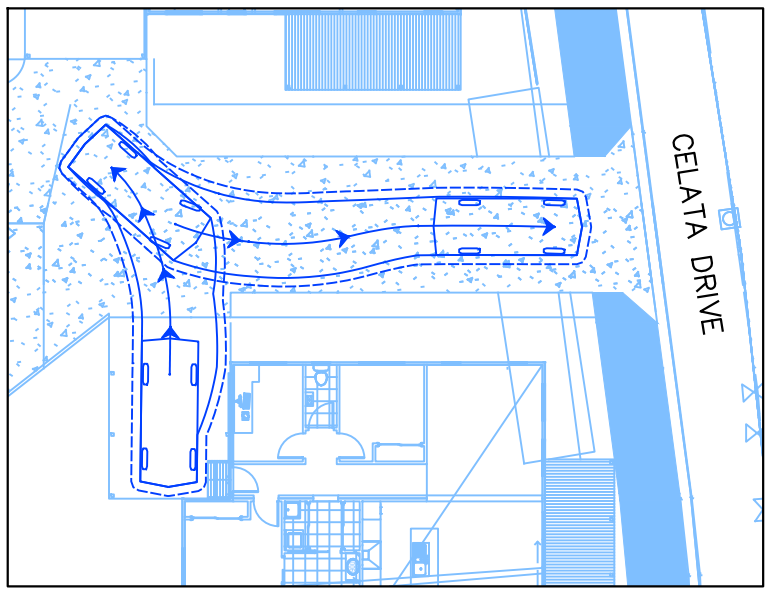

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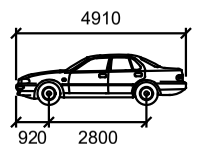

B85

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Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

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PROPOSED RETIREMENT VILLAGE

1 RADIUS DRIVE

OLD BEACH

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0 1.25 2.5 5

SCALE: 1:250 @ A3

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DRAWING NUMBER		REVISION
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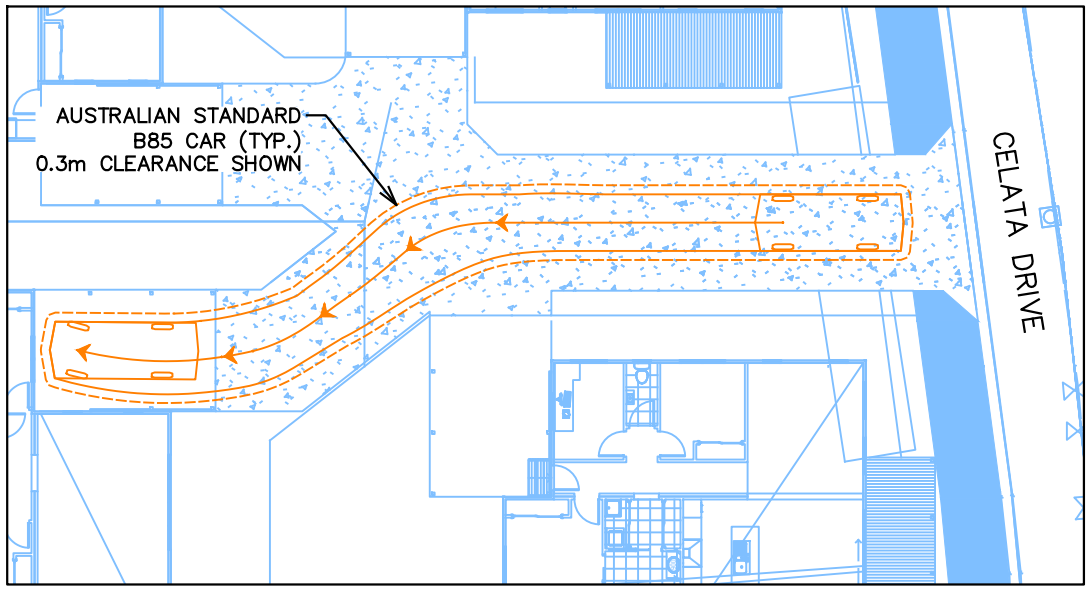

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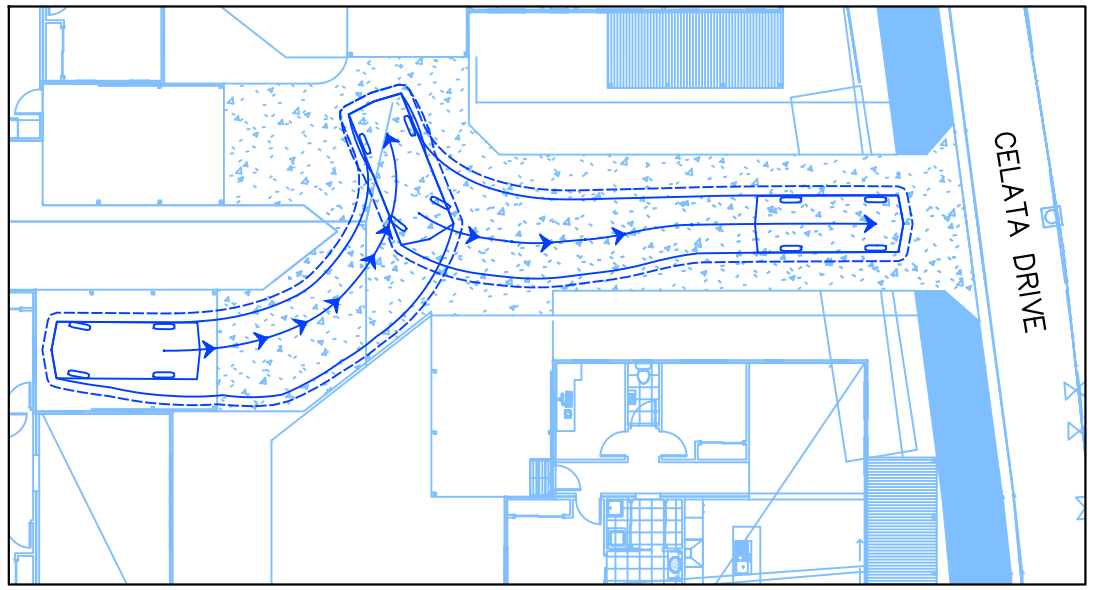

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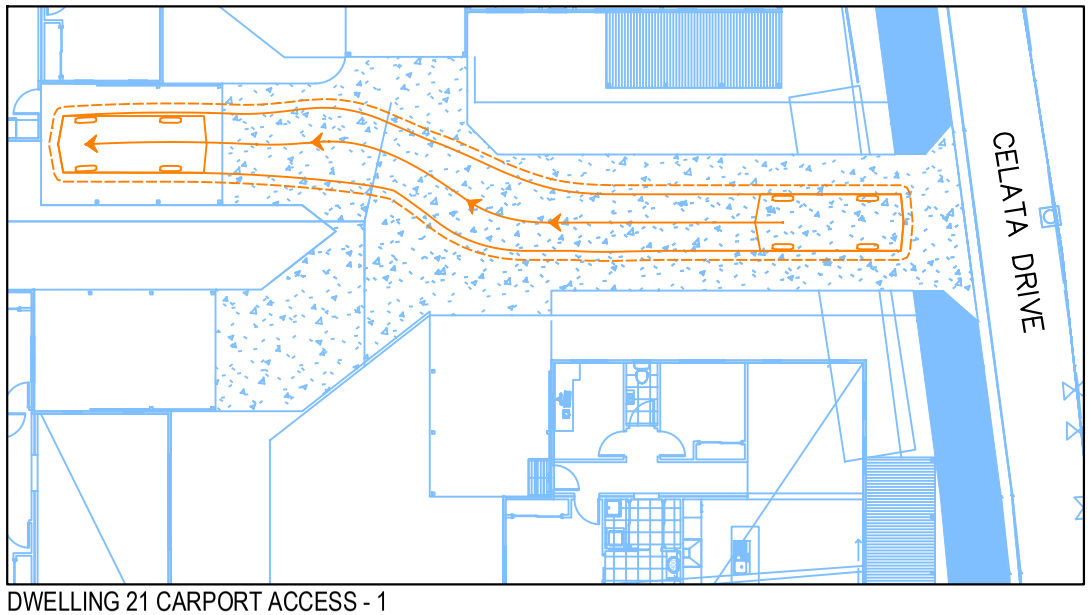

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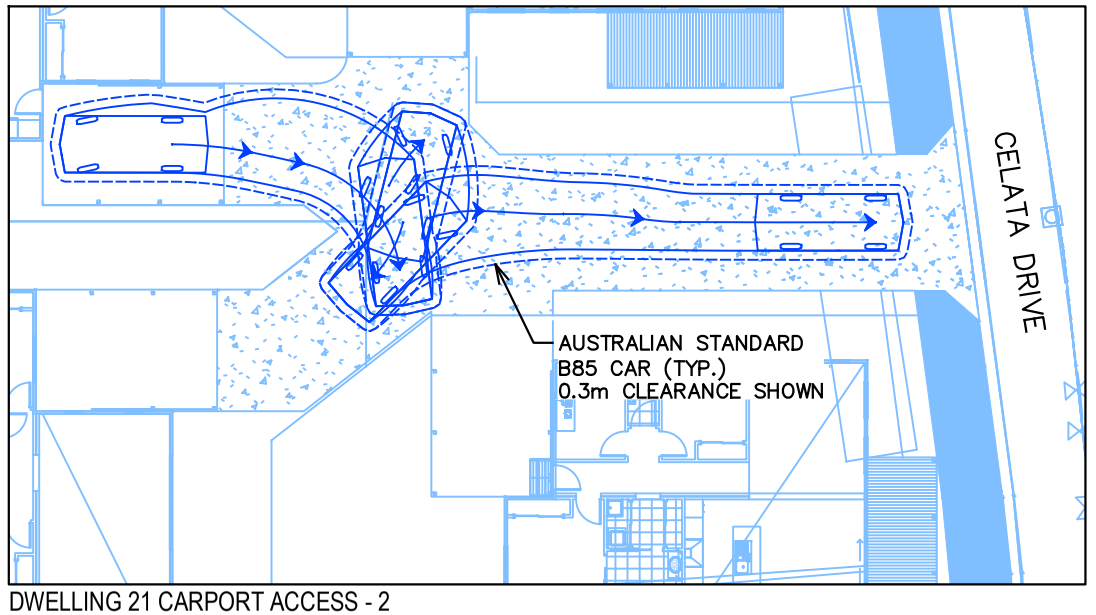

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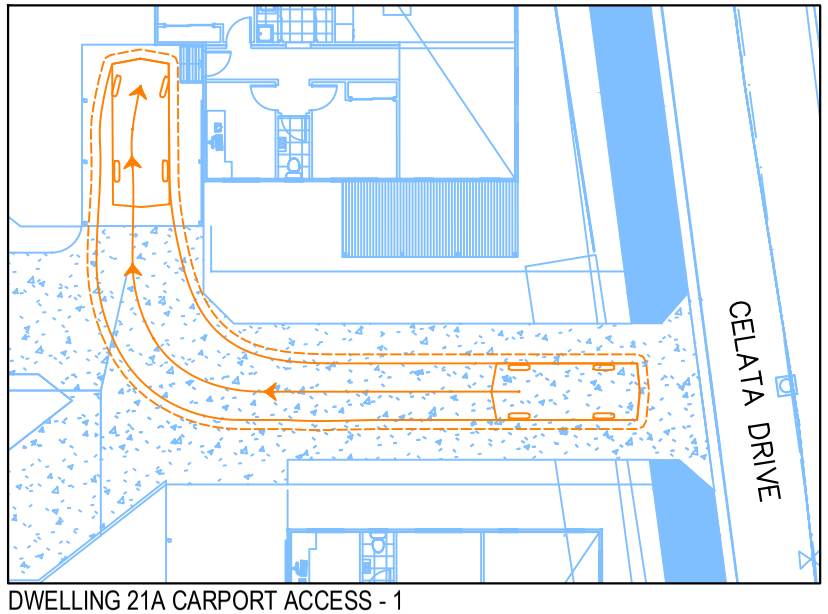

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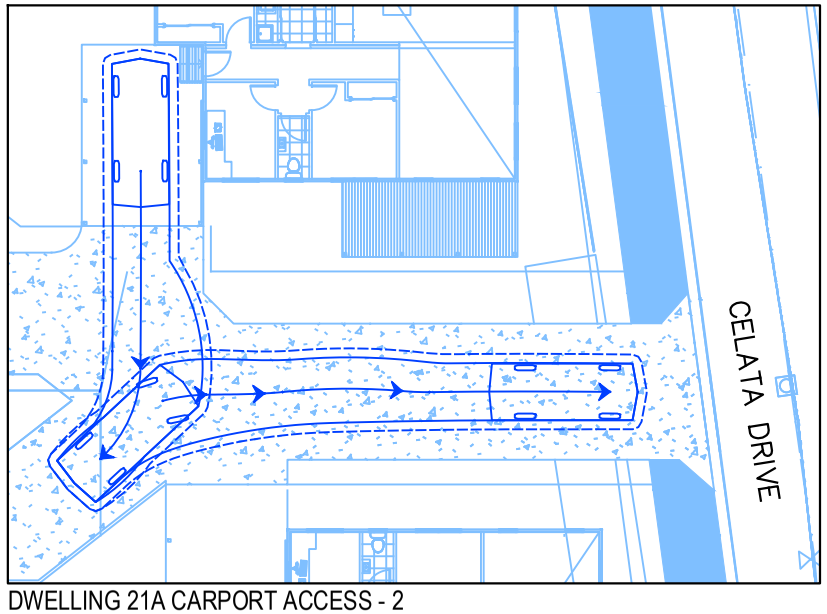

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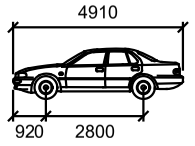

B85

	mm
Width	: 1870
Track	: 1770
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

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0 1.25 2.5 5

SCALE: 1:250 @ A3

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DRAWING NUMBER		REVISION
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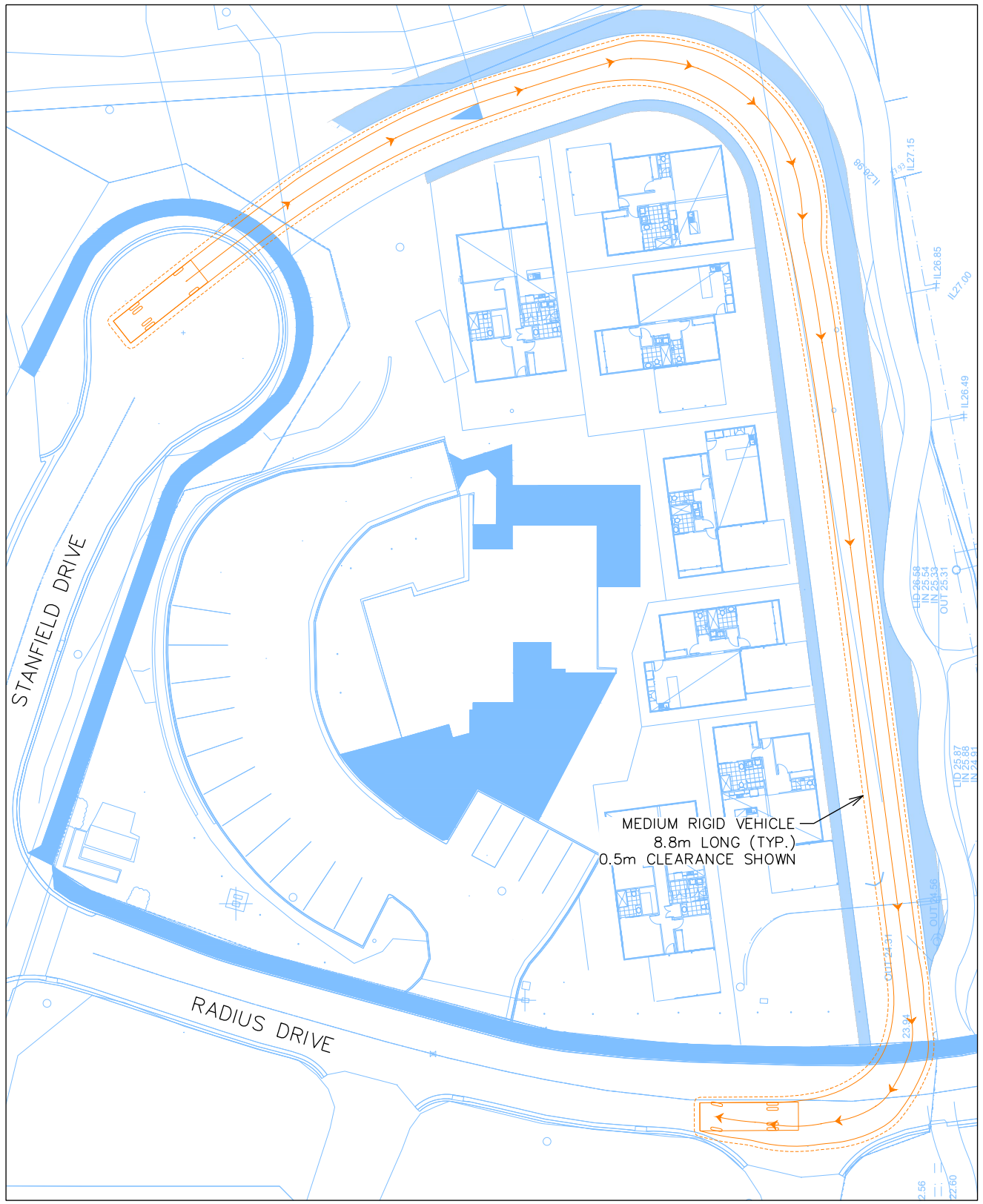

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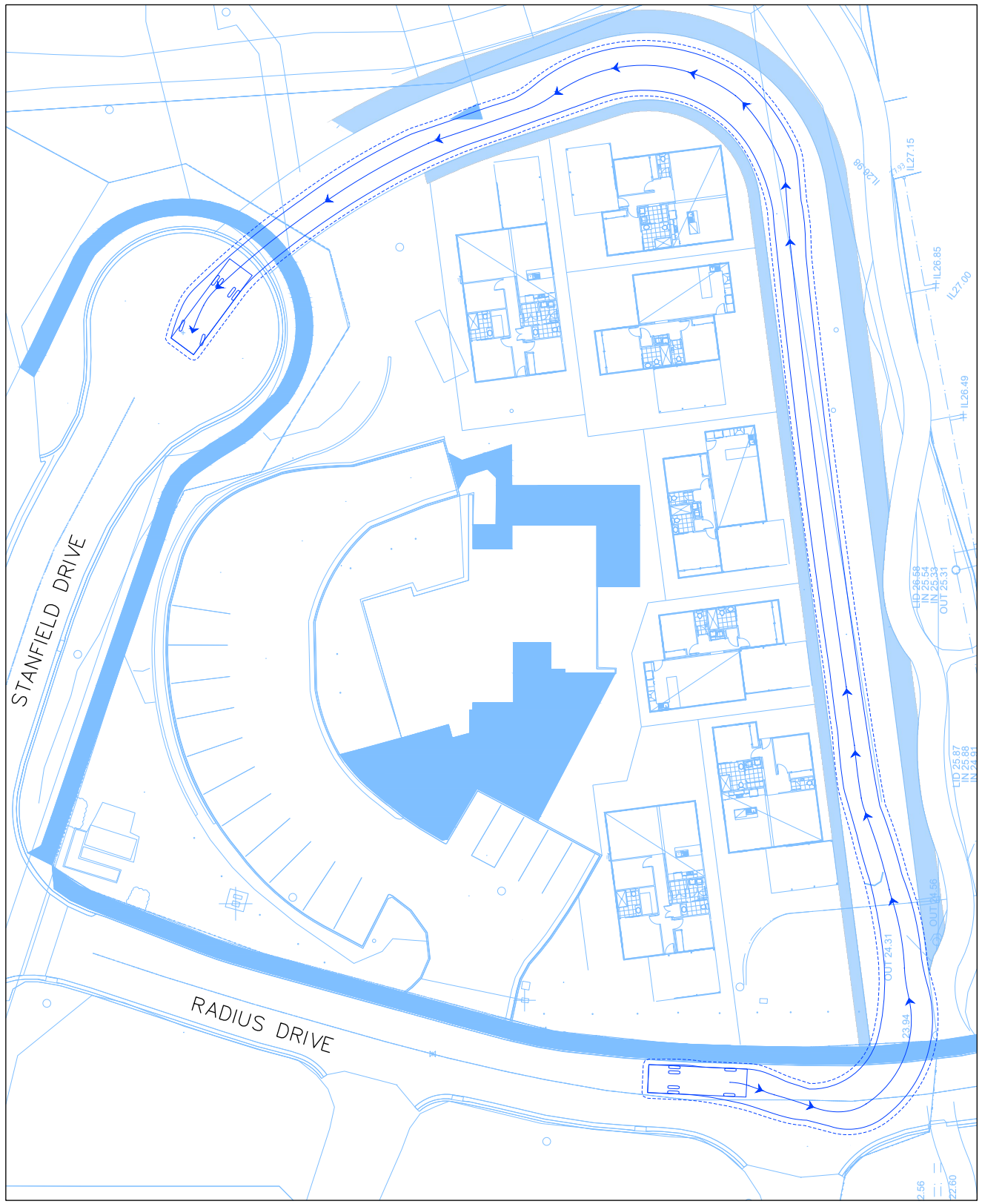

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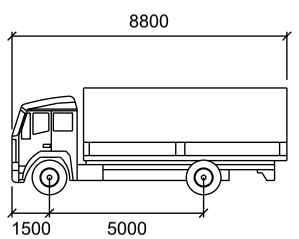

MRV

	mm
Width	: 2500
Track	: 2500
Lock to Lock Time	: 6.0
Steering Angle	: 34.0

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PROPOSED RETIREMENT VILLAGE

1 RADIUS DRIVE

OLD BEACH

SWEPT PATH ANALYSIS

0 2.5 5 10

SCALE: 1:500 @ A3

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DRAWN / CHECKED	DATE	SIZE
BW / JW	08-08-2024	A3

DRAWING NUMBER	REVISION
SALT-24413-SK-003	1

APPENDIX 4 SIDRA RESULTS

MOVEMENT SUMMARY

Site: 101 [E Derwent Hwy / Stanfield Dr - Sc.1 AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Scenario 1: 2024 Existing AM Peak Hour
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: East Derwent Highway															
1	L2	All MCs	8	25.0	8	25.0	0.005	7.4	LOS A	0.0	0.0	0.00	0.63	0.00	55.8
2	T1	All MCs	260	7.3	260	7.3	0.140	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			268	7.8	268	7.8	0.140	0.3	NA	0.0	0.0	0.00	0.02	0.00	79.4
North: East Derwent Highway															
8	T1	All MCs	633	6.7	633	6.7	0.335	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
9	R2	All MCs	12	9.1	12	9.1	0.011	8.0	LOS A	0.0	0.3	0.36	0.62	0.36	61.2
Approach			644	6.7	644	6.7	0.335	0.3	NA	0.0	0.3	0.01	0.01	0.01	79.4
West: Stanfield Drive															
10	L2	All MCs	11	0.0	11	0.0	0.117	5.7	LOS A	0.4	2.7	0.70	0.82	0.70	52.0
12	R2	All MCs	20	15.8	20	15.8	0.117	23.7	LOS C	0.4	2.7	0.70	0.82	0.70	39.5
Approach			31	10.3	31	10.3	0.117	17.5	LOS C	0.4	2.7	0.70	0.82	0.70	44.4
All Vehicles			943	7.1	943	7.1	0.335	0.8	NA	0.4	2.7	0.03	0.04	0.03	78.2

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [E Derwent Hwy / Stanfield Dr - Sc.1 PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Scenario 1: 2024 Existing PM Peak Hour
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: East Derwent Highway															
1	L2	All MCs	17	0.0	17	0.0	0.009	6.9	LOS A	0.0	0.0	0.00	0.63	0.00	58.5
2	T1	All MCs	779	4.9	779	4.9	0.412	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
Approach			796	4.8	796	4.8	0.412	0.2	NA	0.0	0.0	0.00	0.01	0.00	79.4
North: East Derwent Highway															
8	T1	All MCs	540	5.8	540	5.8	0.284	0.1	LOS A	0.0	0.0	0.00	0.00	0.00	79.8
9	R2	All MCs	18	0.0	18	0.0	0.035	12.2	LOS B	0.1	0.8	0.65	0.84	0.65	57.5
Approach			558	5.7	558	5.7	0.284	0.5	NA	0.1	0.8	0.02	0.03	0.02	79.0
West: Stanfield Drive															
10	L2	All MCs	14	0.0	14	0.0	0.132	10.3	LOS B	0.4	2.8	0.85	0.93	0.85	48.3
12	R2	All MCs	11	0.0	11	0.0	0.132	40.0	LOS E	0.4	2.8	0.85	0.93	0.85	38.6
Approach			24	0.0	24	0.0	0.132	23.2	LOS C	0.4	2.8	0.85	0.93	0.85	44.7
All Vehicles			1378	5.0	1378	5.0	0.412	0.7	NA	0.4	2.8	0.02	0.03	0.02	78.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
Vehicle movement LOS values are based on average delay per movement.
Minor Road Approach LOS values are based on average delay for all vehicle movements.
NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).
Two-Way Sign Control Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [E Derwent Hwy / Stanfield Dr - Sc.2 AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Scenario 2: 2034 Design Year AM Peak Hour
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: East Derwent Highway															
1	L2	All MCs	9	22.2	9	22.2	0.006	7.4	LOS A	0.0	0.0	0.00	0.63	0.00	56.1
2	T1	All MCs	349	7.2	349	7.2	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			359	7.6	359	7.6	0.188	0.2	NA	0.0	0.0	0.00	0.02	0.00	79.5
North: East Derwent Highway															
8	T1	All MCs	851	6.7	851	6.7	0.450	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
9	R2	All MCs	13	8.3	13	8.3	0.014	8.5	LOS A	0.1	0.4	0.43	0.65	0.43	60.7
Approach			863	6.7	863	6.7	0.450	0.3	NA	0.1	0.4	0.01	0.01	0.01	79.3
West: Stanfield Drive															
10	L2	All MCs	12	0.0	12	0.0	0.286	9.0	LOS A	0.8	5.9	0.86	0.98	1.01	40.4
12	R2	All MCs	21	15.0	21	15.0	0.286	55.9	LOS F	0.8	5.9	0.86	0.98	1.01	29.2
Approach			33	9.7	33	9.7	0.286	39.2	LOS E	0.8	5.9	0.86	0.98	1.01	33.6
All Vehicles			1255	7.0	1255	7.0	0.450	1.3	NA	0.8	5.9	0.03	0.04	0.03	77.7

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [E Derwent Hwy / Stanfield Dr - Sc.2 PM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Scenario 2: 2034 Design Year PM Peak Hour
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: East Derwent Highway															
1	L2	All MCs	19	0.0	19	0.0	0.010	6.9	LOS A	0.0	0.0	0.00	0.63	0.00	58.5
2	T1	All MCs	1046	4.8	1046	4.8	0.553	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.4
Approach			1065	4.7	1065	4.7	0.553	0.3	NA	0.0	0.0	0.00	0.01	0.00	79.1
North: East Derwent Highway															
8	T1	All MCs	725	5.8	725	5.8	0.382	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.7
9	R2	All MCs	20	0.0	20	0.0	0.071	18.4	LOS C	0.2	1.6	0.81	0.94	0.81	52.8
Approach			745	5.6	745	5.6	0.382	0.6	NA	0.2	1.6	0.02	0.03	0.02	78.8
West: Stanfield Drive															
10	L2	All MCs	15	0.0	15	0.0	0.491	37.7	LOS E	1.4	10.0	0.97	1.04	1.16	26.6
12	R2	All MCs	12	0.0	12	0.0	0.491	155.7	LOS F	1.4	10.0	0.97	1.04	1.16	18.7
Approach			26	0.0	26	0.0	0.491	89.6	LOS F	1.4	10.0	0.97	1.04	1.16	23.4
All Vehicles			1837	5.0	1837	5.0	0.553	1.7	NA	1.4	10.0	0.02	0.03	0.03	77.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options tab).
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Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [E Derwent Hwy / Stanfield Dr - Sc.3 AM (Site Folder: General)]

Output produced by SIDRA INTERSECTION Version: 9.1.1.200

Scenario 3: 2034 Design Year AM Peak Hour - Mitigation Added
Site Category: Future Conditions 1
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: East Derwent Highway															
1	L2	All MCs	9	22.2	9	22.2	0.006	7.4	LOS A	0.0	0.0	0.00	0.63	0.00	56.1
2	T1	All MCs	349	7.2	349	7.2	0.188	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach			359	7.6	359	7.6	0.188	0.2	NA	0.0	0.0	0.00	0.02	0.00	79.5
North: East Derwent Highway															
8	T1	All MCs	851	6.7	851	6.7	0.450	0.2	LOS A	0.0	0.0	0.00	0.00	0.00	79.6
9	R2	All MCs	13	8.3	13	8.3	0.014	8.7	LOS A	0.1	0.4	0.43	0.64	0.43	60.8
Approach			863	6.7	863	6.7	0.450	0.3	NA	0.1	0.4	0.01	0.01	0.01	79.3
West: Stanfield Drive															
10	L2	All MCs	12	0.0	12	0.0	0.013	6.1	LOS A	0.0	0.3	0.39	0.57	0.39	61.1
12	R2	All MCs	21	15.0	21	15.0	0.274	55.7	LOS F	0.7	5.5	0.93	1.00	1.03	24.4
Approach			33	9.7	33	9.7	0.274	38.1	LOS E	0.7	5.5	0.74	0.85	0.81	34.1
All Vehicles			1255	7.0	1255	7.0	0.450	1.3	NA	0.7	5.5	0.02	0.03	0.03	77.7

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Scenario 3: 2034 Design Year PM Peak Hour - Mitigation Added
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Approach			1065	4.7	1065	4.7	0.553	0.3	NA	0.0	0.0	0.00	0.01	0.00	79.1
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9	R2	All MCs	20	0.0	20	0.0	0.071	18.5	LOS C	0.2	1.6	0.81	0.93	0.81	52.8
Approach			745	5.6	745	5.6	0.382	0.7	NA	0.2	1.6	0.02	0.03	0.02	78.8
West: Stanfield Drive															
10	L2	All MCs	15	0.0	15	0.0	0.057	16.8	LOS C	0.2	1.2	0.82	0.91	0.82	52.5
12	R2	All MCs	12	0.0	12	0.0	0.434	165.8	LOS F	1.2	8.3	0.99	1.02	1.09	11.8
Approach			26	0.0	26	0.0	0.434	82.3	LOS F	1.2	8.3	0.89	0.96	0.94	24.7
All Vehicles			1837	5.0	1837	5.0	0.553	1.6	NA	1.2	8.3	0.02	0.03	0.02	77.4

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St Anns Lifestyle

Noise Assessment

Ref: 23005-2_01 St Anns Lifestyle Noise Assessment

08 October 2024

NVC

NOISE VIBRATION CONSULTING

St Anns Lifestyle
Noise Assessment

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Document Control

Reference	Date	Author	Reviewed	Comments
23005 St Anns Lifestyle Noise Assessment	01/03/2023	S Williamson	J Pitt	Issued
23005-2 St Anns Lifestyle Noise Assessment	04/10/2024	S Williamson	J Parry	Minor Amendments
23005-2_01 St Anns Lifestyle Noise Assessment	08/10/2024	S Williamson	J Parry	Minor Amendments

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1. BACKGROUND

1.1. Project Background

An expansion of an existing retirement village, St Ann's Lifestyle Village, is proposed at 1 Radius Drive, Old Beach. The site is within an attenuation area under the *Tasmanian Planning Scheme - Brighton* (the Scheme), due to its proximity to the East Derwent Highway, and thus the proposal requires a noise assessment against clause 3.6.1 of the Scheme.

NVC previously conducted a noise assessment (23005) in January/February 2023. It comprised site noise measurements, acoustic modelling of the site and proposed development, and the resulting recommended noise mitigation measures.

This version of the noise assessment (23005-2) has been amended to include the updated site plan and proposed extension to the existing acoustic berm between lots 8 - 39a, located adjacent the East Derwent Highway.

1.2. Site and Surrounding Area

The site, outlined in orange in Figure 1.1, is located in Old Beach and shares its eastern boundary with the East Derwent Highway, a single-carriageway with one lane in each direction. The nearest boundary of the proposed development site to the highway is nominally 33m from the highway verge.

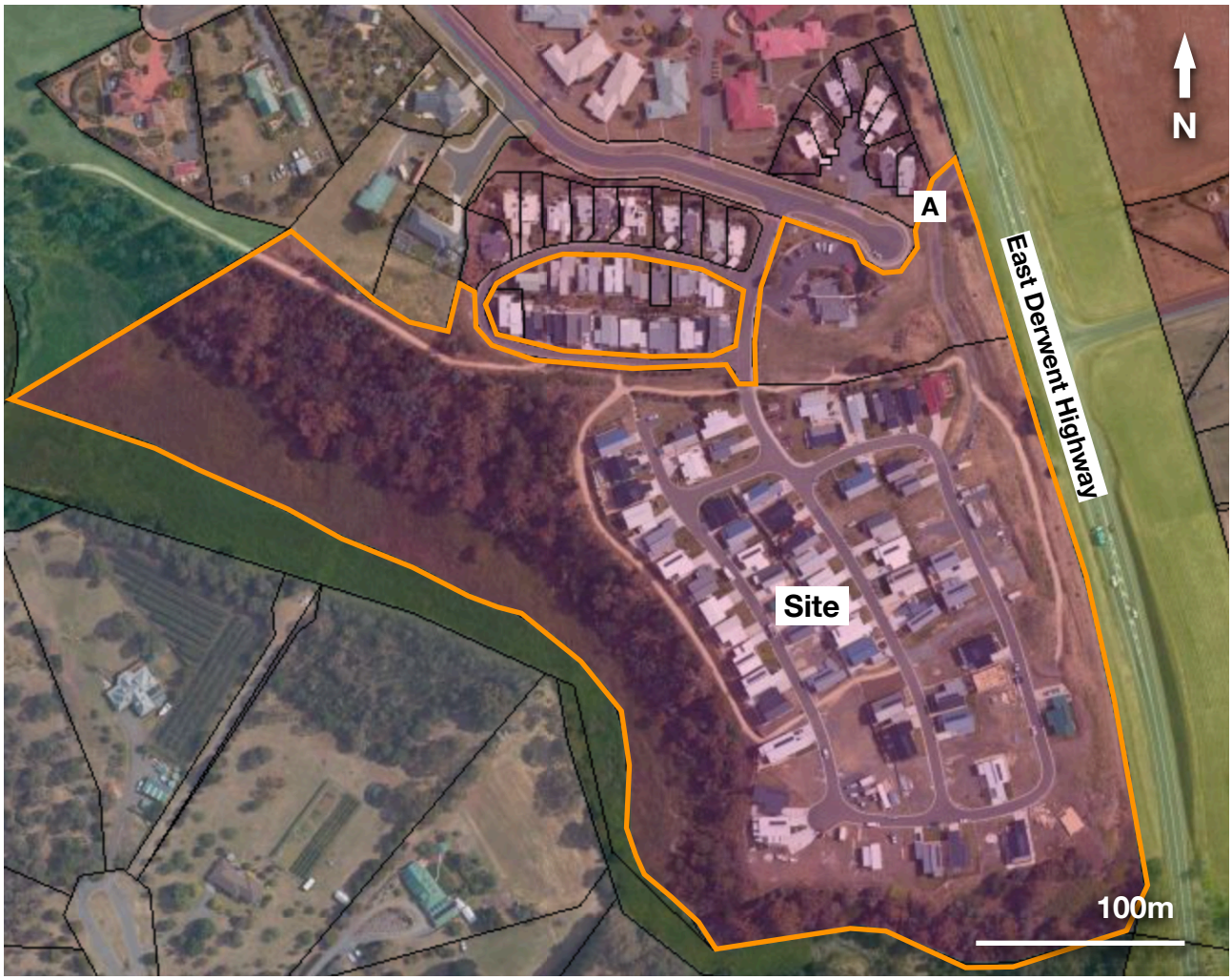


FIGURE 1.1: SITE AND SURROUNDING AREA

1.3.Proposed Development

The proposed development comprises 25 residential lots, with lots 8 to 39a located adjacent the East Derwent Highway. There is currently no solid fence or barrier between the proposed site and the East Derwent Highway. However, there is an existing earthen berm that blocks the direct line of sight between the Highway and the portion of the site to the south of Location A (see Figure 1.1). The site is zoned Particular Purpose (pink overlay in Figure 1.1) under the Tasmanian Planning Scheme - Brighton, with Utilities zone to the east (yellow overlay), Low Density Residential zoning to the north-west and south-west (tan overlay), Environmental Management zoning on the south-west border (brown overlay), and Open Space zoning on the north-west border (green overlay). Figure 1.2 below shows the proposed site plan.

FIGURE 1.2: PROPOSED SITE PLAN

2. CRITERIA

Section C3.0 of the *Tasmanian Planning Scheme - Brighton* comprises the *Road and Railways Assets Code*. Relevant to noise, section C3.6.1 comprises criteria for *'Habitable buildings for sensitive uses within a road or railway attenuation area'*, which is reproduced below.

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

Objective:	
To minimise the effects of noise, vibration, light and air emissions on sensitive uses within a road or railway attenuation area, from existing and future major roads and the rail network.	
Acceptable Solutions	**Performance Criteria**
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*.	**P1** Habitable buildings for sensitive uses within a road or railway attenuation area, must be sited, designed or screened to minimise adverse effects of noise, vibration, light and air emissions from the existing or future major road or rail network, having regard to: (a) the topography of the site; (b) the proposed setback; (c) any buffers created by natural or other features; (d) the location of existing or proposed buildings on the site; (e) the frequency of use of the rail network; (f) the speed limit and traffic volume of the road; (g) any noise, vibration, light and air emissions from the rail network or road; (h) the nature of the road; (i) the nature of the development; (j) the need for the development; (k) any traffic impact assessment; (l) any mitigating measures proposed; (m) any recommendations from a suitably qualified person for mitigation of noise; and (n) any advice received from the rail or road authority.

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

Roads	**Railways**
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).	A 24-hour Leq and Lmax noise level of 65 dB(A) and 87dB(A) Lmax assessed as a single event maximum sound pressure level.

AS2107[1] provides 'design sound levels for building interiors'. Relevant to this development, Table 2.1 reproduces, in part, these levels, with an acceptable maximum internal noise level determined to be ≤ 40 dBA during the night, and ≤ 45 dBA during the day.

[1] *AS/NZS 2107:2016 Acoustics - Recommended design sound levels and reverberation times for building interiors*, Standards Australia, 2016.

TABLE 2.1: EXCERPT FROM TABLE 1 OF AS2107

Item	Type of occupancy/activity	Design sound level ($L_{Aeq,t}$) range	Design reverberation time (T) range, s
7	RESIDENTIAL BUILDINGS (see Note 5 and Clause 5.2)		
	Houses and apartments in inner city areas or entertainment districts or near major roads—		
	Apartment common areas (e.g. foyer, lift lobby)	45 to 50	—
	Living areas	35 to 45	—
	Sleeping areas (night time)	35 to 40	—
	Work areas	35 to 45	—

2.1. Adopted Criteria

As such, the applicable criteria for this project are taken as:

Design Target	$L10_{18\text{-hour}}$	≤ 63 dBA
Indoor Design Sound Level	Leq	≤ 40 dBA (night time) & ≤ 45 dBA (day time)

3. TRAFFIC NOISE LEVELS

3.1. Existing Noise Levels

Unattended noise measurements were made on site between the 17th and the 23rd of January 2023, to quantify existing noise emissions from the East Derwent Highway. Measurements used a Svan Type 1 sound level meter, logging in A-weighted decibels with a *Fast* response time. The data set comprised overall levels, one-third octave spectra and full statistical data at 10-minute intervals, with spectra and overall level data also recorded at 1s intervals. The measurements were made at location A, which was chosen as being representative of the noise levels on the most exposed portion of site as a result of noise emissions from the East Derwent Highway. This location was nominally 33 m from the road verge.

The highest noise levels occur during the day time, as expected, with an $L10_{18\text{-hour}}$ of 63.2 dBA at location A. Figure 3.1 shows the measured one-third octave spectrum. It is noted that mid-high frequency broad-band noise is dominant. This is typical of traffic noise, and thus the measured noise is deemed representative of typical emissions from traffic on the East Derwent Highway.

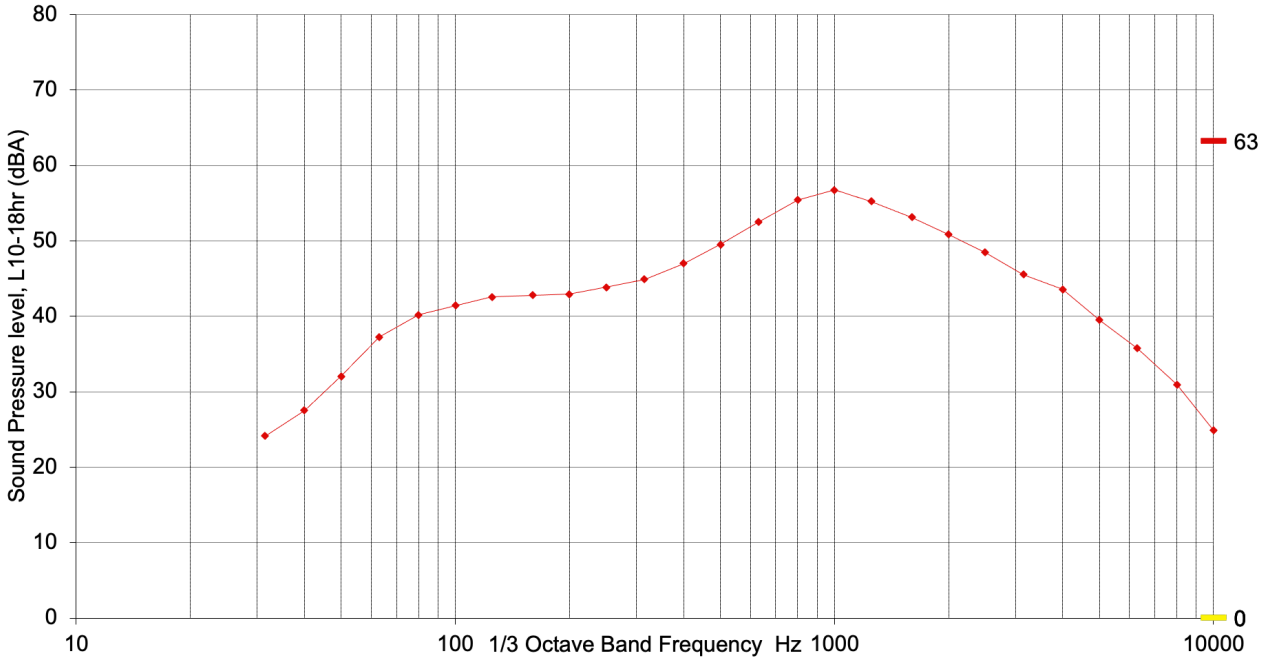


FIGURE 3.1: MEASURED ONE-THIRD OCTAVE SPECTRUM

3.2. Software Noise Model

Software noise modelling has been conducted using *iNoise*[2] software. This has been used to construct an acoustic software model of the site and adjacent roadways. The model implements the ISO9613 algorithms for environmental noise propagation. The model accounts for geometric divergence, topographical screening, atmospheric absorption, reflections/ screening from buildings/ structures, and ground absorption.

Two scenarios were modelled - one without any barrier fencing along the boundary closest to the East Derwent Highway and another with a barrier fence for noise control (see section 5 for details). The following factors are relevant across both acoustic models:

- 2m topographical contours (from LIDAR data) have been used for the site and surrounding area.

[2] iNoise V2022.1 Pro, DGMR Software

- The vehicle sound power level used in the model is calculated from the measured traffic noise levels at location A. It is thus specific to the road surface, traffic volumes, vehicle speeds and vehicle types experienced on this section of road. It is noted that the resultant vehicle sound power level is 107 dBA, which is slightly higher than would typically be expected, indicating a relatively high proportion of heavy and/or fast moving vehicles.
- The ground has been assumed to have a ground reflection factor of 0 (100% reflective) across the site. This is conservative.
- All barriers are modelled with a reflection factor of 0.8 (80% reflective).
- All building facades are modelled with a reflection factor of 0.8% (80% reflective).
- As per the Tasmanian Noise Measurements Procedures Manual, noise levels across the area are predicted at 1.2 m above the ground level.
- Receivers are placed in locations that are predicted to see the highest noise levels to allow for detailed spectral analysis of those areas.

3.3. Model Results & Discussion

The software noise model demonstrated that traffic noise levels along the boundary of the site were between 64 and 67 dBA $L10_{18\text{-hour}}$ between lots 8 to 10. As such, a minimum reduction in traffic noise of 4 dB is required in this section. The existing berm provides sufficient screening for the remaining lots along the East Derwent Highway.

To achieve this reduction, a 1.8m high, 115m long noise barrier was added to the model on the boundary of lots 8 to 10 adjacent the highway. See section 4 for the construction details of the barrier.

The predicted traffic noise level along this boundary, following the inclusion of this barrier, is between 59 and 61 dBA, $L10_{18\text{-hour}}$. This barrier is thus predicted to provide sufficient attenuation of noise emissions from the East Derwent Highway.

A combination of the existing berm and the recommended noise barrier can be used to provide screening between the highway and lots 8 to 39a.

In order to provide a sufficient level of residential amenity for habitable space within dwellings adjacent the highway, the facade construction requires suitable sound isolation performance. A minimum recommended facade sound isolation of Rw 30 is applicable to any facades facing the highway (lots 8 to 39a).

Section 4, below, details construction requirements for the noise barrier and facades for lots 8 - 39a adjacent the East Derwent Highway.

4. CONSTRUCTION REQUIREMENTS

In order to demonstrate likely compliance with the criteria outlined in section 2, the following noise mitigation measures are required.

4.1.Acoustic Barrier

A 2m barrier is recommended along the eastern boundary of the site boarding the East Derwent Highway. Currently, there is an existing berm between the site and the highway, from lots 13 to 39a, providing acoustic screening, sufficient to protect the residential amenity of these dwellings. Additional screening is required to achieve a suitable level of amenity, extending beyond the existing earthen berm. This barrier should have the following specifications:

- A minimum height of 2m above ground level on the inhabited side of the barrier.
- Have no gaps, including along the bottom of the barrier.
- A minimum surface mass of 15kg/sq. m. Examples of appropriate construction include 20mm thick ship-lapped timber, 12mm cement sheet, or commercial noise barrier products.
- Re-shaping and/or adding to the existing earthen berm to achieve the required height is an appropriate alternative to the construction of a barrier fence.

NVC has been informed that the proponent will likely use an earthen berm to provide the aforementioned additional screening required.

Figure 4.1 below shows the location of the existing berm (green line in the figure), and the proposed location of the berm extension (red line in the figure).

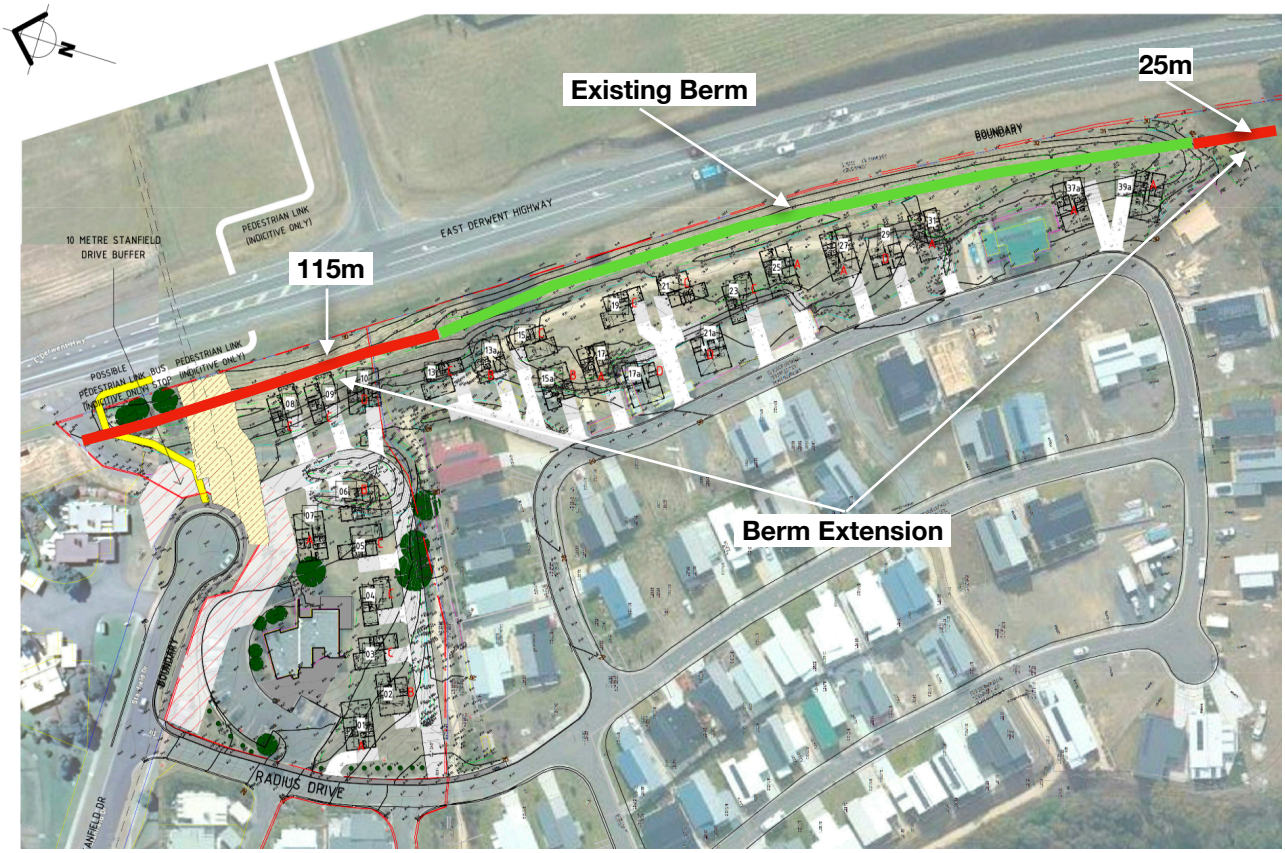


FIGURE 4.1: EXISTING AND PROPOSED BERM LOCATION

4.2.Facade Requirements

All dwellings adjacent to the East Derwent Highway (lots 8 to 39a) require their facades to achieve a minimum sound isolation of Rw 30. Note that this applies to all habitable spaces (i.e. bedrooms, living room (including kitchen when open plan), studies, etc), but does not include bathrooms or other non-

habitable spaces. These recommendations apply to any facade facing the highway or perpendicular to it (i.e. rear and side walls from the perspective of the internal road).

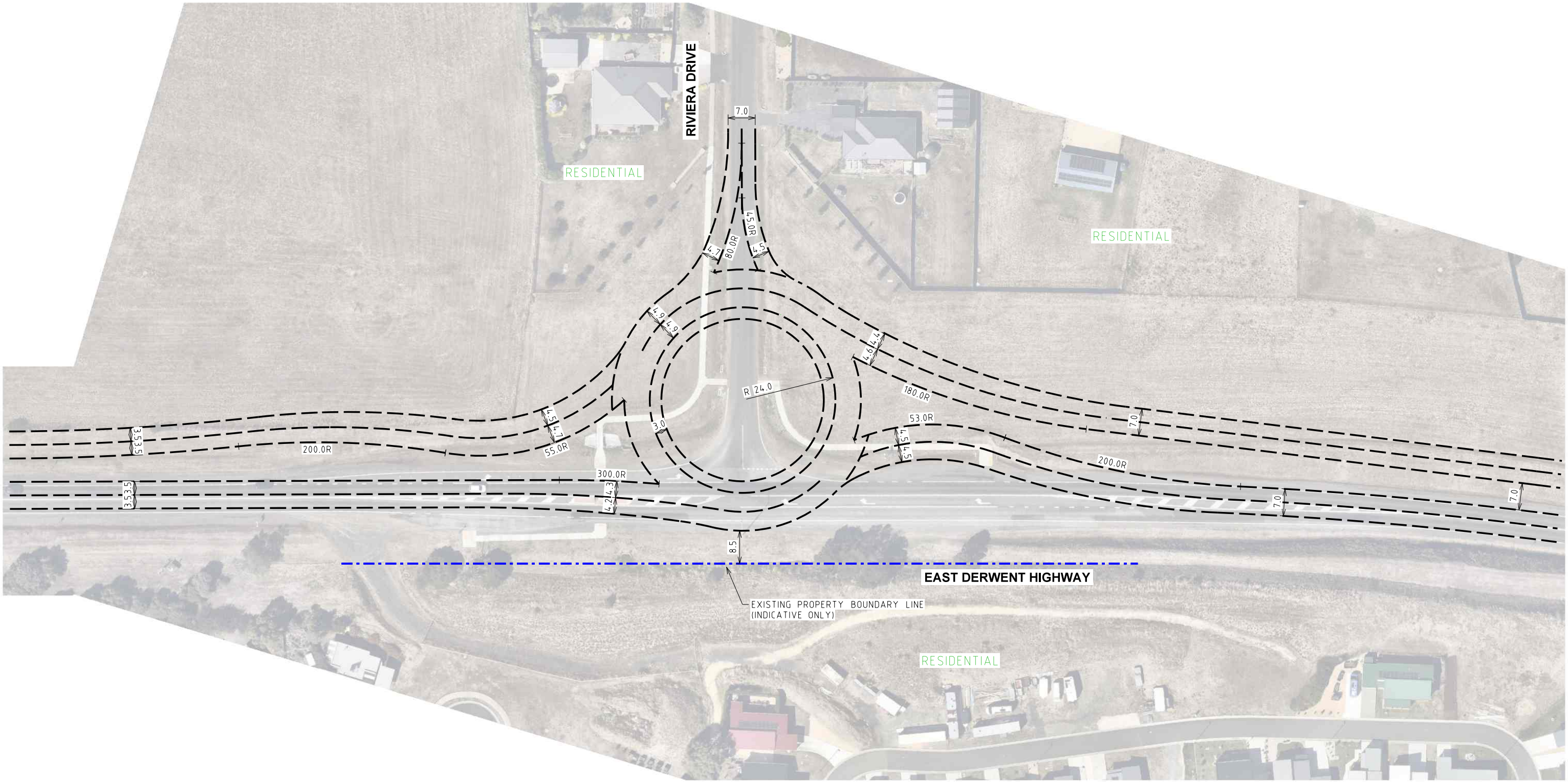
This may be achieved by various combinations of the building construction and layout, with the following constructions appropriate.

- All glazing units are to be manufacturer-certified to achieve a minimum sound isolation of Rw 30.
- Typical wall construction with Colorbond, timber or cement sheet external linings, cavity with insulation, and 10 mm plasterboard internal linings will achieve this rating.
- Any masonry construction will achieve this rating.
- Doors facing the highway are to be solid core and fitted with acoustic seals.

It is recommended that outdoor entertainment areas be on the opposite side of the dwelling to the highway.

5. ASSESSMENT

Provided the construction requirements outlined in section 4 are implemented along with the extension to the acoustic berm proposed, it is concluded that the site satisfies the external and internal noise level criteria. The proposal is thus deemed to comply, relevant to noise, with clause C3.6.1-A1 of the Tasmanian Planning Scheme - Brighton.



DRAFT CONCEPT PLAN
FOR DISCUSSION PURPOSES ONLY
This draft plan has been prepared to show a concept for discussion purposes only and has no formal or official status.

IRENEINC PLANNING & URBAN DESIGN

PROJECT RESIDENTIAL DEVELOPMENT
1 RADIUS DRIVE, OLD BEACH (TAS)
PROPOSED ROUNDABOUT AT THE INTERSECTION OF EAST DERWENT HIGHWAY & RIVIERA DRIVE

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DRAWN / CHECKED	DATE	SIZE
CS / JW	26.09.2024	A3
DRAWING NUMBER		REVISION
SALT-24413-SK-004		1

Tom O'Connor
Senior Planning & Assessment Officer
On behalf of the Chief Officer,
Tasmania Fire Service
20/07/24

Endorsed for the purposes of C13.5.1 A2.

GES
GEO-ENVIRONMENTAL
SOLUTIONS

Emergency Management Strategy
(Vulnerable Use)

St Ann's Lifestyle Village, 1 Radius Drive, Old Beach

Applicant: Irene Inc.

July 2024 J10369v1

Geo-Environmental Solutions 29 Kirksway Place, Battery Point, Tas. 7004.
www.geosolutions.net.au - 03 6223 1839 – office@geosolutions.net.au

Contents

1.0 Introduction

1.1 Background

Geo-environmental Solutions has been engaged by Irene Inc to prepare a Bushfire Emergency Strategy relating to the construction of new units within an existing lifestyle village for persons aged 55 and over. St. Ann's Lifestyle Village (a retirement village for planning application purposes) is located within a Bushfire Prone Area, the use of the site is classified as a Vulnerable Use under the Tasmanian Planning Scheme - Brighton (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 Irene Inc.

1.2 Proposal:

The proposal is for the construction of an additional 26 separate retirement dwellings (class 1a with attached class 10a). The new dwellings will be a mix of 1, 2 and 3 bedroom buildings with attached carport and private open space. Access to each dwelling is provided by an existing private roadway with crossovers providing access to driveways and carports for each building (site plans located in Appendix 1).

2.0 Occupancy

The dwellings will be available for occupancy through land leases and are intended primarily for individuals aged 55 and over, although spouses and dependents of any age are also permitted. The new buildings can accommodate up to 77 individuals, the majority of whom are expected to be over 55.

While the specific needs of the occupants are not known, no services are provided to support residents with daily living or medical requirements. Therefore, it is assumed that any such services needed by the residents are arranged independently with no association with the organisation responsible for the Land Lease.

3.0 Emergency Management

There is no existing emergency control organisation and there is no plan establish one. The village is a group of independent leases between individuals and the lessor, there is no organisation responsible for the wellbeing of lessors beyond that conferred through the lease agreements.

4.0 Building and Site Vulnerability

4.1 Buildings

New buildings will be constructed to conform with the specifications of AS3959 for the bushfire attack level determined for the building. The bushfire attack level has been determined in compliance with simplified procedure (method 1) of AS3959. There is a mix of buildings which will require construction to BAL-12.5 and BAL-LOW specifications.

4.2 Site

The proposal is located on a ~10 Ha parcel of land that comprises existing residential development and community centre (selected site images located at appendix 2). It is serviced by a private road network with a private reticulated water supply system which includes firefighting water connection points. Residential areas of the lifestyle village are landscaped and carry low threat vegetation and hazard management areas, the lot also includes patches and strips of native forest, an area of Saltmarsh and patches and strips of grassland vegetation.

4.3 Adjacent Infrastructure and Use

Adjacent lands to the north carry low threat vegetation in the form of residential development, lands to the east carry grassland vegetation, separated from the site by the East Derwent Highway. Lands to the south and west carry a mosaic of fragmented forest, grassland, and low threat vegetation (saltmarsh) with relatively sparse residential development and associated low threat vegetation.

5.0 Bushfire protection Strategies

5.1 Access

The sites have existing property access via a private sealed road network from Stanfield Drive which provides:

- sealed 2-wheel drive access to all buildings;
- carriageways a minimum of 4 metres wide with horizontal clearances of 0.5m and vertical clearances of at least 4m capable of a load capacity of 20 tonnes;
- Cross falls are less than 3°, dips less than 7°, curves have an inner radius greater than 10 metres and gradients are less than 15°;
- ‘T’ and ‘Y’ turning heads suitable for medium ridge vehicles which exceed 4m wide and 8m long; and
- locations to pass

5.2 Water supplies for firefighting

The sites are serviced by an existing private reticulated water supply system which includes water connection points which are located within 120 metres of proposed building areas. The private reticulated system is connected to a TasWater reticulated water supply. A new extension to the private reticulated water supply with a new water connection point is proposed. To ensure firefighting water supplies are fit for purpose the following specifications will be required for compliance on the bushfire hazard management plan:

- The building area to be protected must be located within 120 metres of a fire hydrant;
- The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area.
- Hydrants to be relied upon must achieve flows of 10 L/s @ 200kPa;
- Flow and pressure will be verified through an appropriate test by appropriately qualified individuals.

5.3 Hazard Management

Common areas of the village are landscaped and maintained in a minimum fuel condition. Buildings with a Bushfire Attack Level greater than BAL-LOW will have hazard management areas which have been defined to ensure alignment with the construction standards required for the building. It will be the responsibility of the property owner to establish and maintain hazard management areas. Unit 39a has a hazard management area which extends beyond the lease area, the hazard management area outside the lease area is to be established and maintained by the property owner.

5.4 Bushfire Scenarios

The proposal is located in a slightly elevated position above the River Derwent which occurs to the west of the sites. This area carries saltmarsh and a relatively narrow strip of forest vegetation on steep slopes. Lands to the north are developed for residential use and do not constitute a bushfire risk. Land east of the site carries grassland vegetation within the East Derwent Highway corridor which is managed by Brighton council on behalf of DIER, management results in low threat vegetation (correspondence attached appendix 3). Vegetation to the south of the site comprises grassland and forest vegetation before transitioning into rural lifestyle lots with residential development.

More broadly the local area is dominated by grassland vegetation with relatively small patches and strips of remnant native woodland and forest vegetation. Due to the convoluted nature of fire paths to the sites is anticipated that the likelihood of a fully developed head fire impacting the sites is low. This is largely due to the fragmented, mosaic nature of the

bushfire-prone vegetation and the requirement for specific weather conditions to coincide with a bushfire event.

The highest risk bushfire attack occurs from the south of the unit 39a. Bushfire-prone vegetation in this location is a mosaic of forest, scrub and grassland vegetation types with a potential fire run of greater than 100 metres. A head-fire burning under typically cooler more humid southerly wind conditions would advance through scrub vegetation on moderate to steep slopes with the final approach through grassland vegetation on gentler slopes closest to the site. The sites are most likely to be impacted by local bushfire outbreaks, with ignition sources stemming from escaped fires, arson, and accidents. The narrow strip of forest vegetation to the west of the site, which is accessible to the public, may become a source of local bushfire ignitions.

6.0 Emergency Actions

As lease holders are not associated with or under the care and direction of an emergency control organisation, individuals will make decisions about their personal safety independently, unless directed by emergency services. The choice to evacuate to a safer location or to shelter on site by lease holders is not know at this time. Either option is likely to be viable under normal bushfire conditions.

7.0 Firefighting and Specific Hazards

Access to the sites for firefighting purposes will be achieved using the existing private road network which is suitable for fire appliance access and egress and provides access to the buildings to be protected. Firefighting water supplies are provided via a private reticulated water supply system with connection points connected to a TasWater reticulated water supply system. The nearest fire brigade is Old Beach Volunteer Fire Brigade located 3.4km south of the site via the Easte Derwent Highway. Bridgwater Fire Brigade is located to the north of the site approximately 4.9km via the East Derwent Highway. The use and development is domestic residential in nature, it is unlikely that significant quantities, if any, of potentially hazardous materials of explosives will be stored of created within this development.

8.0 Emergency Management Response

The emergency management response to ensure a tolerable level of residual risk from bushfire for occupants and assets is documented on the Bushfire Hazard Management Plan (BHMP). Construction standards have been determined through a BAL assessment (appendix 4) in accordance with AS3959. Units 1 & 2, 31, 37a and 39a will require construction to BAL-12.5 and the establishment and ongoing maintenance of specific hazard

management areas as shown on the BHMP (appendix 5). All other Units have been assessed and assigned BAL-LOW.

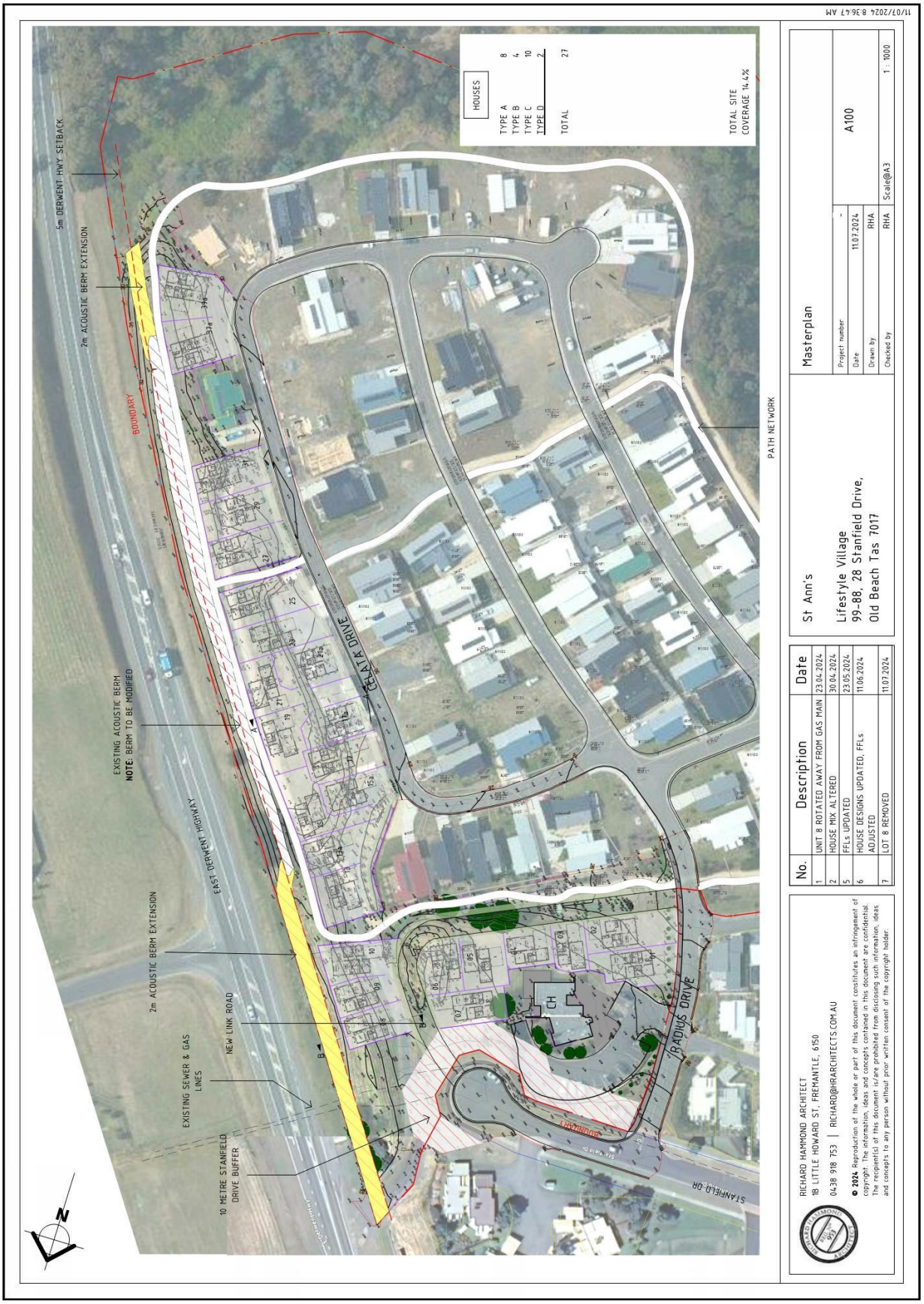
The proposal is for new and existing access to be used to access sites and firefighting water supplies and to provide safe egress to the public road network. Minimum design and construction standards for property access are required and detailed on the BHMP.
New and existing private reticulated water supply systems with hydrants are proposed to be relied upon to provide dedicated firefighting water supplies to the sites in the event of bushfire. The new and existing hydrants are shown on the BHMP along with requirements for minimum water flow and pressure and proximity of hydrants to building areas.

9.0 Justification

The landscape scale bushfire risk to the sites is considered lower due to surrounding land use, the classification of the dominant bushfire-prone vegetation (grassland) and the proximity of landscape scale woodland and forest vegetation classifications to the sites. The local bushfire risk is mitigated by the convoluted nature of potential fire paths around the sites, bushfire hazard management areas adjacent to sites

Standard provisions for property access and firefighting water supplies for class 1a buildings as required for building compliance will ensure safe access and egress for occupants and emergency services personnel, as well as access to firefighting water supplies. Construction standards applied to buildings consistent with the BAL determined for the site will provide an increased level or resistance to ignition from bushfire. Buildings do not have a bushfire attack level which exceeds BAL-12.5.

Appendix 1 – Site Plan



Appendix 2 – Site images

Figure 1. Managed low threat vegetation along the East Derwent Highway looking north from vicinity of Unit 39a and 37a.

Figure 2. Low threat vegetation adjacent to, and to the north of Units 1 & 2. (Community centre background right of frame).

Figure 3. Managed low threat vegetation within the East Derwent Highway casement to the east unit 25.

Figure 4. Low threat vegetation to the south of proposed units 1 & 2, adjacent to Radius Drive.

Appendix 3 – Council Correspondence

From: Callum Pearce-Rasmussen <Callum@brighton.tas.gov.au>
Sent: Thursday, October 5, 2023 1:24 PM
To: Mark Van den Berg <mvandenberg@geosolutions.net.au>
Subject: RE: 41 Celata Drive, Old Beach

Hi Mark,
Thank you for the email and trust the same for you.
Council do maintain the area highlighted in your email below.
Generally this reserve will receive two cuts per year during the warmer months. Sometimes additional depending on fuel load, weather and seasonal conditions.
Trust that will assist and please let me know if we can assist with any further information.
Kind regards,

CALLUM PEARCE-RASMUSSEN
DIRECTOR ASSET SERVICES

Brighton Council
Brighton going places
Click here to view the 2050 VISION

1 Tivoli Road, Old Beach TAS 7017
Tel: (03) 6268 7000
Mob: 0456 685 463
www.brighton.tas.gov.au

Appendix 4 – Bushfire Attack Level (BAL) tables

Appendix 4 – Bushfire Attack Level Assessment

The following assessment tables represent building areas which are within 50 metres of grassland vegetation and or within 100 metres of other vegetation classifications not subsumed into Grassland in accordance with AS3959.

Unit 1

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North	Exclusion 2.2.3.2 (e, f)^	upslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
East	Exclusion 2.2.3.2 (e, f)^	upslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
South	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
West	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 85 metres	as shown on BHMP	**BAL-12.5**
	Forest^	>10º to 15º downslope	85 to 100 metres		
	--	--	--		
	--	--	--		

^ Vegetation classification as per AS3959-2018 Table 2.3 and Figures 2.4(A) to 2.4 (G).
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Unit 2

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North	Exclusion 2.2.3.2 (e, f)^	upslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
East	Exclusion 2.2.3.2 (e, f)^	upslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
South	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
West	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 95 metres	as shown on BHMP	**BAL-12.5**
	Forest^	>10º to 15º downslope	95 to 100 metres		
	--	--	--		
	--	--	--		

^ Vegetation classification as per AS3959-2018 Table 2.3 and Figures 2.4(A) to 2.4 (G).
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Unit 31

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North	Exclusion 2.2.3.2 (e, f)^	upslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
East	Exclusion 2.2.3.2 (e, f)^	flat 0º	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
South	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 30 metres	as shown on BHMP	**BAL-12.5**
	Grassland^	>0 to 5º downslope	30 to 90		
	Scrub^	>5º to 10º downslope	90 to 100 metres		
	--	--	--		
West	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		

^ Vegetation classification as per AS3959-2018 Table 2.3 and Figures 2.4(A) to 2.4 (G).
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Unit 37a

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North	Exclusion 2.2.3.2 (e, f)^	upslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
East	Exclusion 2.2.3.2 (e, f)^	flat 0º	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
South	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 20 metres	as shown on BHMP	**BAL-12.5**
	Grassland^	>0 to 5º downslope	20 to 54		
	Scrub^	>5º to 10º downslope	54 to 70 metres		
	Forest^	flat 0º	70 to 100 metres		
West	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		

^ Vegetation classification as per AS3959-2018 Table 2.3 and Figures 2.4(A) to 2.4 (G).
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

To further minimise the impacts of bushfire on the proposal separation distances of table 2.4.2 of AS3959-2018 (FDI 100) have been used to determine separation distance and BAL's. `

Unit 39a

Azimuth	Vegetation Classification	Effective Slope	Distance to Bushfire-prone vegetation	Hazard management area width	Bushfire Attack Level
North	Exclusion 2.2.3.2 (e, f)^	upslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
East	Exclusion 2.2.3.2 (e, f)^	flat 0º	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		
South	Grassland^	>0 to 5º downslope	0 to 34 metres	35 metres	**BAL-12.5**
	Scrub^	>5º to 10º downslope	34 to 50		
	Forest^	flat 0º	50 to 100 metres		
	--	--	--		
West	Exclusion 2.2.3.2 (e, f)^	>0 to 5º downslope	0 to 100 metres	as shown on BHMP	**BAL-LOW**
	--	--	--		
	--	--	--		
	--	--	--		

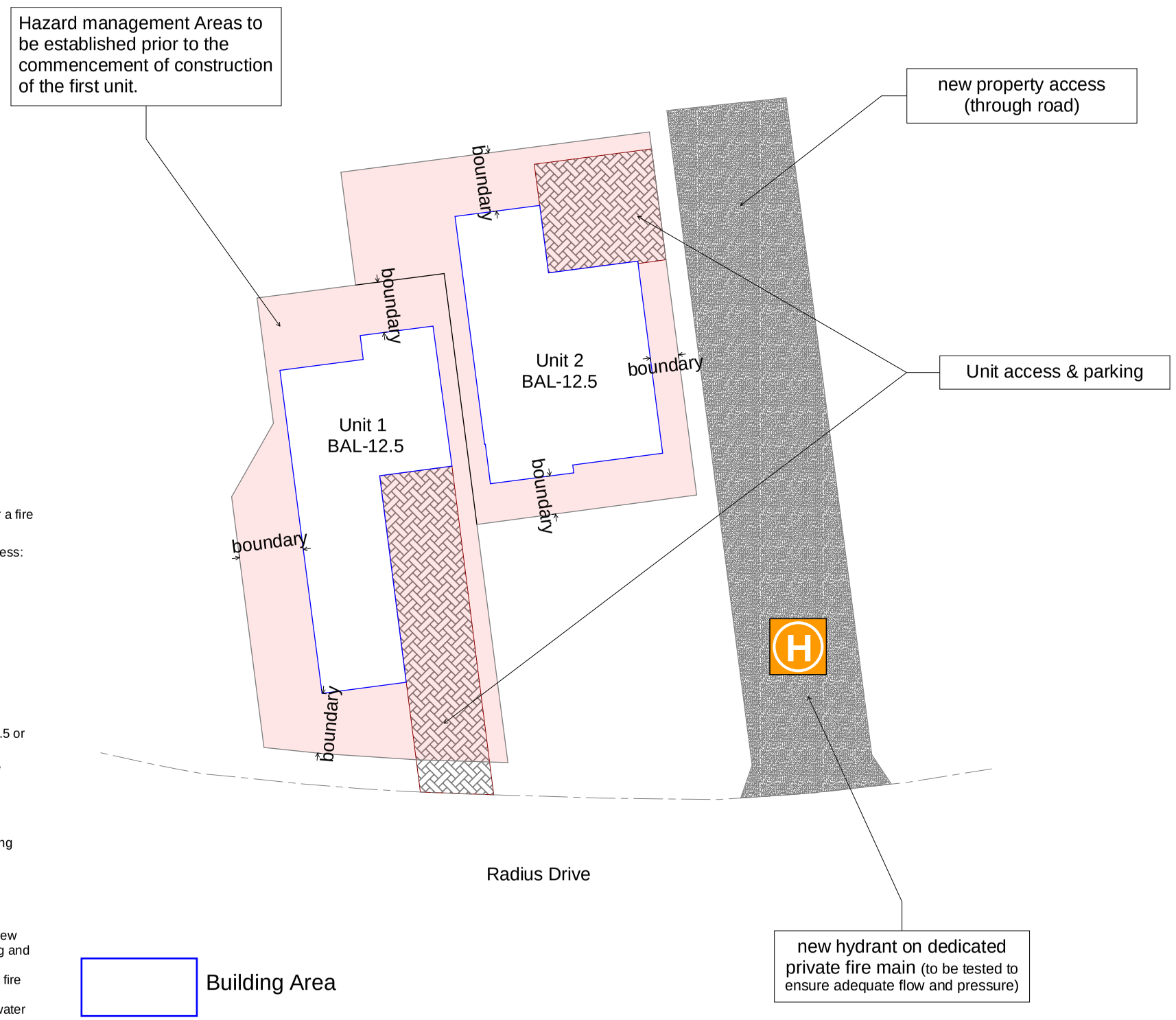
^ Vegetation classification as per AS3959-2018 Table 2.3 and Figures 2.4(A) to 2.4 (G).
^^ Exclusions as per AS3959-2018, section 2.2.3.2, (a) to (f).

Appendix 5 – Bushfire Hazard Management Plan

BUSHFIRE HAZARD MANAGEMENT PLAN

Bushfire Hazard Management Plan, 1 Radius Drive, Old Beach.
July 2024. J10369v1
Tasmanian Planning Scheme - Brighton

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



Compliance Requirements

Standards for 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

Dedicated water supplies for firefighting will be provided by existing and new fire hydrants connected to a reticulated water supply system. The existing and new hydrants will be required to conform with the following specifications;
•The building area to be protected must be located within 120 metres of a fire hydrant;
•The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area.
•Hydrants to be relied upon must achieve flows of 10 L/s @ 200kPa;
•Flow and pressure will be verified through an appropriate test by appropriately qualified individuals.

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

Approx. new hydrant location

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. J10369

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.	St Anne's Life Style Village 1 Radius Drive, Old beach, Tas., 7017	C.T.: 174199/0,2,3	Date : 11/07/2024	Bushfire Hazard Management Plan 1 Radius Drive, Old Beach. July 2024. J10369v1	Drawing Number: A01	Sheet 1 of 3 Prepared by: MvdB

BUSHFIRE HAZARD MANAGEMENT PLAN

Bushfire Hazard Management Plan, 1 Radius Drive, Old Beach.
July 2024. J10369v1
Tasmanian Planning Scheme - Brighton

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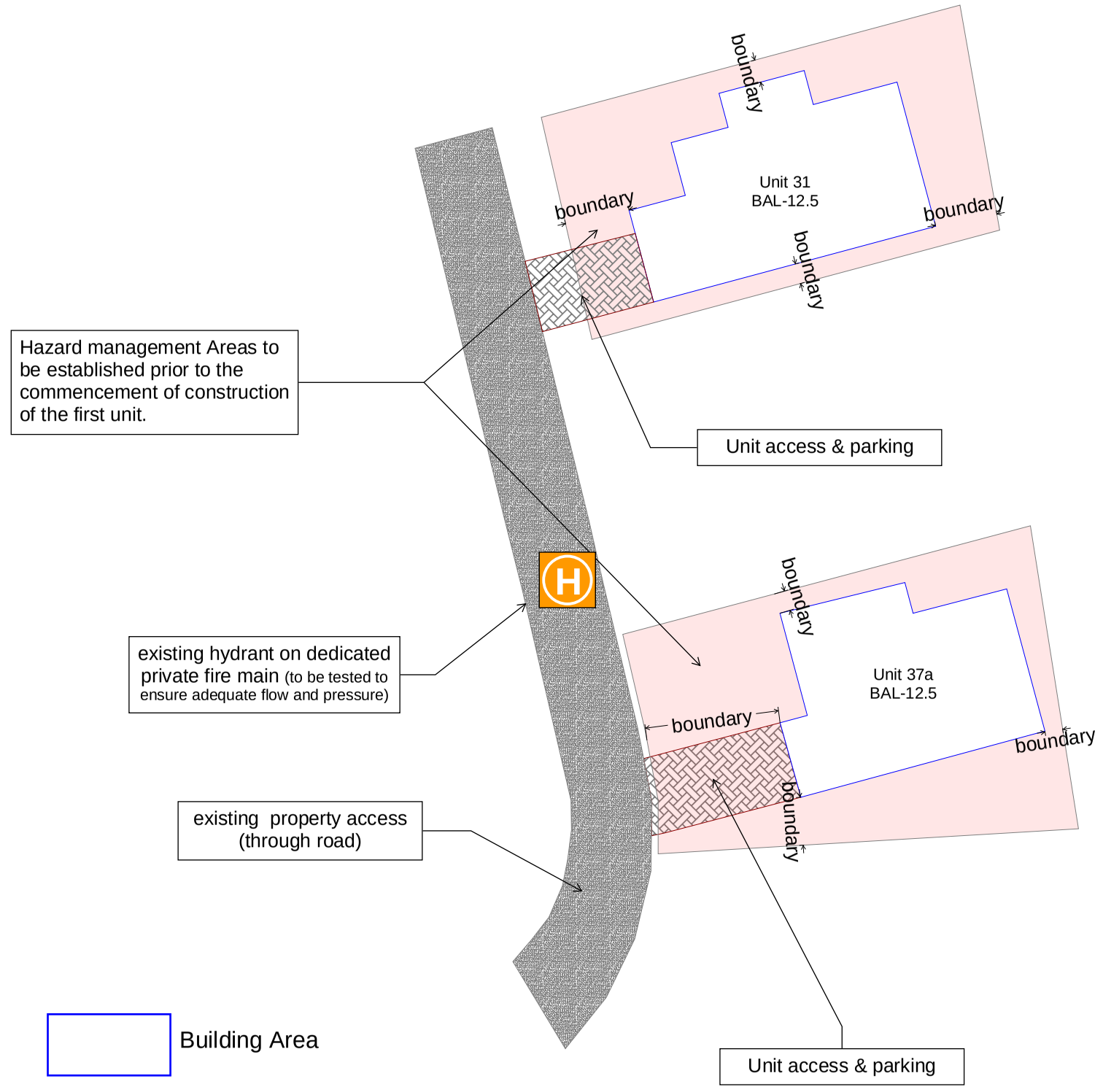

Compliance Requirements

Standards for 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.

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Dedicated water supplies for firefighting will be provided by existing and new fire hydrants connected to a reticulated water supply system. The existing and new hydrants will be required to conform with the following specifications;
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•The distance must be measured as a hose lay, between the firefighting water point and the furthest part of the building area.
•Hydrants to be relied upon must achieve flows of 10 L/s @ 200kPa;
•Flow and pressure will be verified through an appropriate test by appropriately qualified individuals.

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. J10369

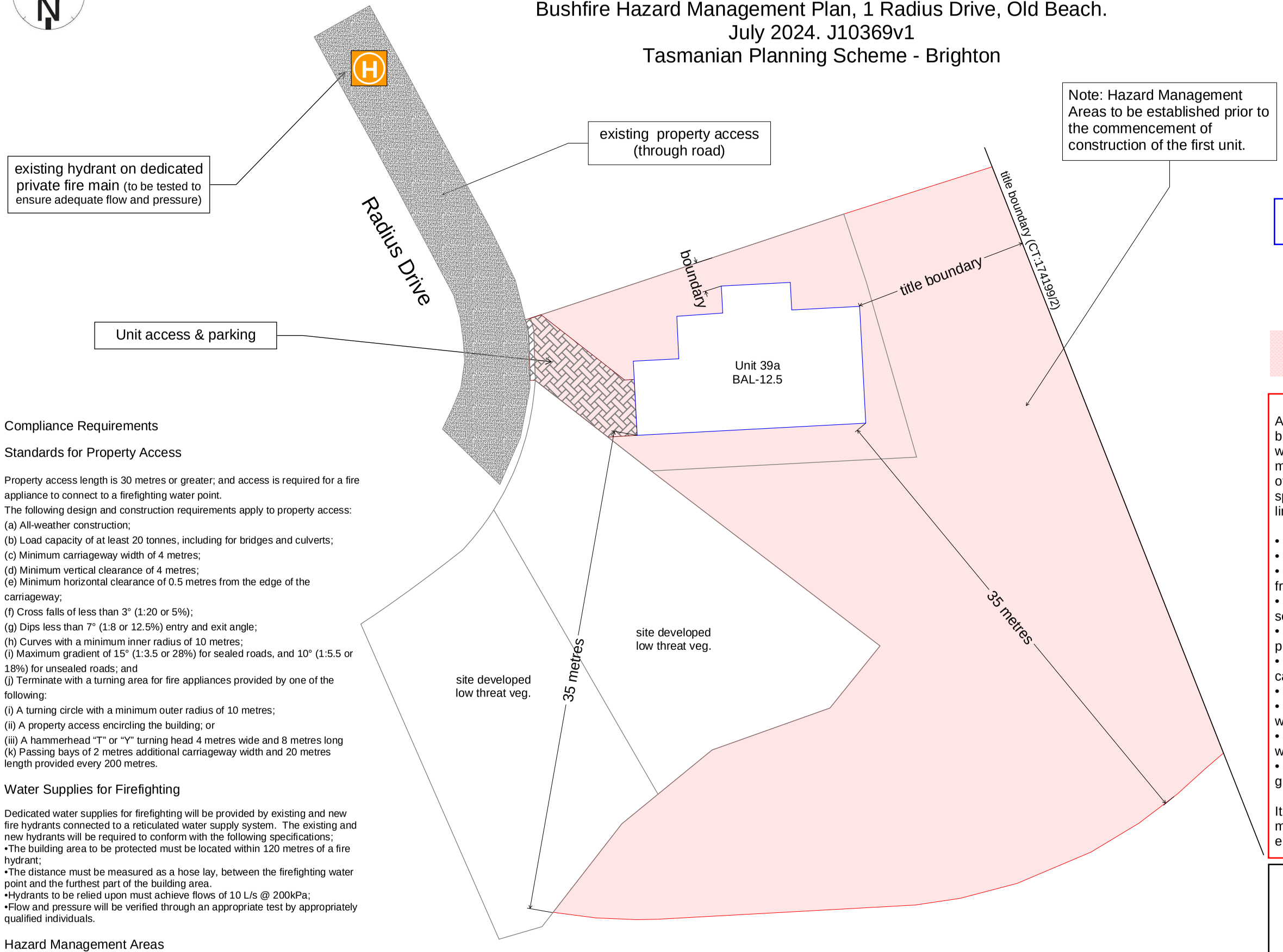
Mark Van den Berg
Acc. No. BFP-108
Scope 1, 2, 3A, 3B, 3C.

Do not scale from these drawings. Dimensions to take precedence over scale. Written specifications to take precedence over diagrammatic representations.	St Anne's Life Style Village 1 Radius Drive, Old beach, Tas., 7017	C.T.: 174199/0,2,3	Date : 11/07/2024	Bushfire Hazard Management Plan 1 Radius Drive, Old Beach. July 2024. J10369v1	Drawing Number: A01	Sheet 2 of 3 Prepared by: MvdB

BUSHFIRE HAZARD MANAGEMENT PLAN

Bushfire Hazard Management Plan, 1 Radius Drive, Old Beach.
July 2024. J10369v1
Tasmanian Planning Scheme - Brighton

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



Building Area

Approx. existing hydrant location

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;

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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.

Compliance Requirements

Standards for 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

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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:	1 Radius Drive, Old Beach, Tas. 7017
Certificate of Title / PID:	174199/2, 174199/0, 174199/3

2. Proposed Use or Development

Description of proposed Use and Development:	Retirement Village
Applicable Planning Scheme:	Tasmanian Planning Scheme - Brighton

3. Documents relied upon

This certificate relates to the following documents:

Title	Author	Date	Version
Master Plan – St Ann's Lifestyle Village, Old Beach. A100, rev 7, 11/07/2024.	Richard Hammond Architect	11/07/2024	Rev 7.
Emergency Management Strategy (Vulnerable Use), St Ann's Lifestyle Village, 1 Radius Drive Old Beach. July 2024. J10369v1.	Geo- Environmental Solutions – Mark Van den Berg	22/07/2024	1.
Bushfire Hazard Management Plan, 1 Radius Drive Old Beach. July 2024. J10369v1.	Geo- Environmental Solutions – Mark Van den Berg	22/07/2024	1.

[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:**	622318939
Postal Address:	29 Kirksway Place, Battery Point, Tasmania, 7005	**Email Address:**	mvandenberg@geosolutions.net.au
Accreditation No:	BFP – 108	**Scope:**	1, 2, 3a, 3b & 3C.

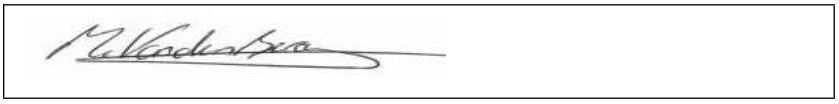
6. Certification

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:** 22/07/2024

Certificate Number: J10369

(for Practitioner Use only)