rytenskild
Traffic Engineering

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2021/1181

Date: 8 December 2021

Queensland
Government

TRAFFIC IMPACT ASSESSMENT

PROPOSED AGED CARE FACILITY

48 VILLAGE BOULEVARD, SOUTHPORT

(RESPONSE TO INFORMATION REQUEST DATED 23 JUNE 2021)

Prepared for

INFIN8CARE

24 AUGUST 2021

DOCUMENT REGISTER

RTE Reference 21048

Prepared by Luke Rytenskild, Dare Janzekovic

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1.0 INTRODUCTION

Rytenskild Traffic Engineering (RTE) has been engaged by Infin8care to prepare a Traffic Engineering Assessment of its proposed Aged Care Facility at Southport.

This is an amended version of the report submitted with the application and responds to transport related items raised by EDQ in its letter dated 23 June 2021. A brief response to each item is provided below with further details provided throughout the report.

Servicing:

29. The proposal provides for one MRV service bay for refuse collection, however Council's Transport Code (Table 9.4.13-9) requires a HRV as the minimum class of service vehicle for a retirement facility. Additionally, service vehicle provisions for the office (Van), food and drink outlet, and shop (SRV) have not been provided, and the traffic assessment report has not determined the service vehicle needs for these uses.
    i) Update the traffic assessment report to demonstrate how the proposed servicing arrangements comply with the Council's Transport Code. Alternatively, provide a service management plan demonstrating a reduction of service vehicle bays is acceptable.
    ii) Provide a separate swept path plan and analysis to clearly demonstrate the 'design service vehicle' (MRV, or as otherwise determined above) is able to access the internal servicing roadways and loading bay and enter and leave the site in a forward gear. The swept path analysis shall comply with AS2890.2, be certified by an RPEQ, and shall include the following:
        - Swept path analysis generated by AutoTurn, AutoTrack or similar.
        - Demonstrate vehicle specifications in accordance with the 'City Plan Policy – Solid Waste Management' including the kerb-to-kerb turning radius as nominated in Appendix C of SC6.15 City plan policy – solid waste management code
        - Manoeuvring clearances in accordance with AS2890.2 must be clearly depicted on drawings and demonstrate no obstructions exist for all waste servicing manoeuvres.
        - Reversing movements on-site are to be kept to a minimum and access to the development from the road is to comply with AS2890.2.

Response:

The proposed loading facilities have been designed to cater for the expected types and sizes of service vehicles, which are:

- Rear lift waste collection vehicle (refer to letter from JJ Richards provided as Appendix A).
- Delivery vehicles. The only delivery vehicles that are expected to access the facility are medical supplies (SRV), general cleaning and paper supplies (Toll contractor – SRV), food deliveries (PFD – small – medium rigid truck).

Typical vehicle sizes are provided as Appendix B.

Vertical Clearance

30. There is insufficient vertical clearance above the loading bay. A minimum clearance of 4.5m is required in accordance with Australian Standards AS2890.2:2018 Parking facilities – Part 2: Off-street commercial vehicle facilities. Amend the plans and traffic assessment report to reflect this.

Response:

The proposed head clearance of 4.2 metres will comfortably allow for the required delivery vehicles, which have a maximum height of 3.8 metres. Refer to Appendix B for typical truck sizes.

Car parking supply

31. Provide the following additional information about car parking:
    i) Provide an updated plan which allocates the tandem car parking spaces to particular land uses, demonstrating that parking in tandem spaces will not cause parking inconvenience to residents, staff and visitors.
    ii) Update the traffic assessment report to provide justification on the breakdown of car park spaces for employees, residents and visitors.
    iii) Amend the parking plan to identify the number and location of visitor car parking bays.
    iv) Demonstrate that the number of PWD spaces proposed, complies with the Building Code of Australia (Amendment 1), dated 2019, Table D3.5. Amend the plan(s) if required.

Response:

The proposal is a high care facility and as such residents will not require a car parking space.

Ground level parking will be allocated to visitors, and visitors will be able to circulate into the basement if there is not a space available at ground level. It is proposed that spaces 1-8 at ground and 12-17 and 38-44 in the basement will be available to visitors (ie a total of 21 spaces). The rest of the spaces in the basement (ie 47 spaces).

The tandem spaces will be allocated to staff of the development. Other land uses such as the food and drink outlet and hair salon will be ancillary to the aged care facility. It is considered that there is no need to allocate the parking to those sub-activities at this stage. However, adequate parking will be available to ensure that all staff will be able to park on-site.

Car Parking, Driveways and Swept Path Design

32. Update the plans to provide additional design information for the car parking and driveways:

i) Provide swept paths to demonstrate:
   i) that two vehicles are able to pass at the top of the basement ramp, while maintaining minimum 300mm clearances at all times.
   ii) that two vehicles can pass between the bottom of the ramp and the parking aisle within the vicinity of parking spaces #1-10, while maintaining minimum 300mm clearances at all times. Revisions may be required to the geometry at the bottom of the ramp

   Note: a B85 and B99 vehicle shall be used for the swept path assessments

ii) Identify all ramp grades and transitions. Demonstrate that grades, and changes in grade, comply with AS2890.1.
iii) EDQ notes pedestrian sight triangles are proposed as 2m wide x 3m deep. These may be reduced to 2.5m deep if desired (meeting AS2890.1).
iv) Amend plans to show wheel stops for each car parking space fronting a pedestrian walkway ('circulation' areas).
v) A bollard and line marking shall be shown in the area located next to the PWD parking space (basement level) in accordance with Australian Standards AS2890.6:2009 Parking facilities – Part 6: Off-street parking for people with disabilities.
vi) Provide a kerb ramp to allow transit from the ground level PWD parking space to the adjoining 'circulation' area (given that a standard 'shared area' is not shown adjacent to the parking space) OR provide line marking and a bollard to delineate a 'shared area' next to the PWD parking space in accordance with AS2890.6:2009.

Response:

i) The proposed ramp has been adjusted to allow vehicles to pass at the top and bottom whilst maintaining 0.3 metres clearance to obstructions. Revised circulation paths are provided in Section 4 of the report.
ii) As shown in Figure 1.1., the proposed ramp has been designed with a maximum gradient of 1:5, with 3 metre long 1:10 transitions of either side of the maximum grade. Such satisfies AS2890.1:2004 and is considered to be appropriate for the proposed plan of development.
iii) As shown in Section 6, the pedestrian sight splays have been adjusted to conform with Figure 3.3 of AS2890.1:2004.
iv) Wheel stops have been provided at the end of each space fronting a pedestrian pathway.
v) Spaces for people with a disability (PWD) have been marked appropriately in accordance with AS2890.6:2009.
vi) A kerb ramp is provided in the shared zone of the ground level PWD space joining to the adjacent pedestrian circulation area.

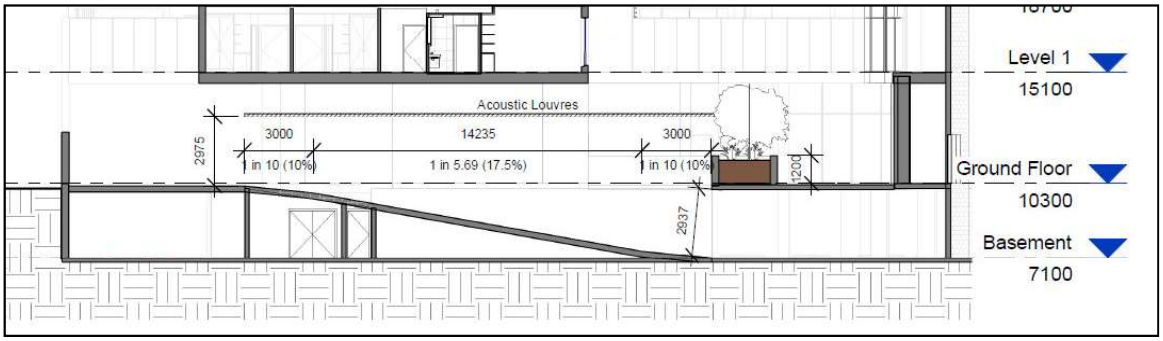


FIGURE 1.1 – PROPOSED RAMP GRADES

Trip generation

33. Update the trip generation assessment to include all proposed uses, specifically the food and drink outlet / shop uses, as it is expected that these uses would attract a proportion of external patronage.

34. EDQ does not support the indented pedestrian loading zone along Innovation Drive. Amend the plans to delete the loading zone.

Response:

It is noted that the proposal includes a shop and food and beverage uses, however as discussed in 5, these are not expected to generate a demand during peak operating periods. Whilst the café might attract visitors from the local catchment it is expected that such would walk to the site from the surrounding area, rather than arrive by private vehicle for the primary purpose of visiting the café. Similarly, the proposed shop is not intended to service a wider community given its size and location within the site. It is proposed that access to the shop will be gained from inside the building, therefore generally servicing the residents of the proposed facility.

The pedestrian loading zone on Innovation Drive has been removed from the proposed plan of development.

2.0 SUBJECT SITE

As shown in Figure 2.1, the subject site is located on the south east corner of the Village Boulevard / Innovation Drive intersection. The site is identified as Lot 16 on SP275512 and has an area of 3,311. The site is located inside the Parklands Priority Development Area (PDA). and is currently used as a car park.

FIGURE 2.1 – LOCATION OF SUBJECT SITE

3.0 DEVELOPMENT PROPOSAL

The proposed plan of development is for an aged care facility, which will provide a total of 142 rooms (beds). It is intended that the facility will provide high level of patient care. The proposal will also provide an office (540m^2 GFA) on level 5, and a shop and a food and drink outlet to service the site and its immediate vicinity.

A total of 68 car parking spaces are proposed to be provided over the ground and basement level as follows:

Ground level:	8 spaces
Basement Level:	59 spaces

Access to the site will be gained from Innovation Drive, approximately 70 metres south of the Village Boulevard / Innovation Drive intersection.

The proposed ground and basement floor plans are provided in Figure 3.1 and 3.2.

FIGURE 3.1 - PROPOSED GROUND LEVEL PLAN

FIGURE 3.2 - PROPOSED BASEMENT LEVEL PLAN

4.0 CAR PARKING

4.1 Car Parking Supply

The In accordance with Parklands Priority Development Area Development Scheme, the following car parking rates are prescribed as an Acceptable Outcome for the proposed development:

0.25 spaces per studio dwelling;
1 space per 20 dwellings for visitors; plus
1 space per 100m^2 of non-residential GFA.

Application of the above rate to the proposed development yields a minimum car parking requirement of 51 spaces as follows:

Table 1: Carparking requirement (Transport Code)

Component (Aged Care)	Car parking requirement
Aged Care (142 beds / rooms) Resident - Visitor -	35.5 spaces 7.1 spaces
Food and Drink (169m^2)	1.69 spaces
Shop (42m^2)	0.42 spaces
Office (540m^2)	5.40 spaces
TOTAL	**51 (50.11) spaces**

The proposal provides a total of 67 car parking spaces and therefore exceeds the minimum parking required under the PDA Development Scheme. It is noted that that the proposed increased provision of car parking also satisfies the maximum allowable requirement specified in the scheme.

4.2 Car Parking Design

The geometric layout of the proposed parking facilities has been designed to comply with the relevant requirements specified in the Transport Code and AS2890.1: 2004.

The proposed car parking layout has the following dimensions:

Table 4.1 – Car Parking Design Characteristics

Design Aspect	Minimum AS2890.1 Standard	Proposed Provision	Compliance
Parking space length:			
- Visitor	5.4 metres	5.4 metres	Compliant
- Resident	5.4 metres	5.4 metres	Compliant
Parking space width:			
- Visitor	2.5 metres	2.7 metres	Compliant
- Resident	2.4 metres	2.7 metres	Compliant
Aisle Width:			
- Parking aisle	5.8 metres	6.0 metres	Compliant
- Circulation aisle	5.8 metres	6.0 metres	Compliant
Maximum Gradient			
- Parking Bay	1:20 (5.0%)	<1:20 (5.0%)	Compliant
- Parking Aisle	1:16 (6.25%)	<1:20 (5.0%)	Compliant
- PWD Bay	1:40 (2.5%)	<1:40 (2.5%)	Compliant
- Ramp	1:5 (20%)	1:5 (20%)	Compliant
Maximum Change in Grade	1:8 (12.5%) summit 1:6.67 (15.0%) sag	<1:8 (12.5%) summit <1:8 (12.5%) sag	Compliant Compliant
Height Clearance			
- General Min.	2.2 metres	2.2 metres	Compliant
- PWD Min.	2.3 metres	2.3 metres	Compliant
Parking Aisle Extension	1 metre beyond last bay / 8 metre reversing allowance	Not Applicable	N/A

The dimensioned ground and basement level plans are shown in Figures 4.1 and 4.2.

A swept path analysis of the proposed car park indicates that the required design vehicle will be able to access and manoeuvre within the facility satisfactorily. Swept path diagrams for a representative number of car parking spaces are provided in Figures 4.3 and 4.4, with B99 circulation paths shown in Figures 4.5 and 4.6.

FIGURE 4.1 – DIMENSIONED CAR PARKING PLAN (GROUND LEVEL)

FIGURE 4.2 – DIMENSIONED CAR PARKING PLAN (BASEMENT LEVEL)

FIGURE 4.3 – 85TH PERCENTILE VEHICLE SWEPT PATH

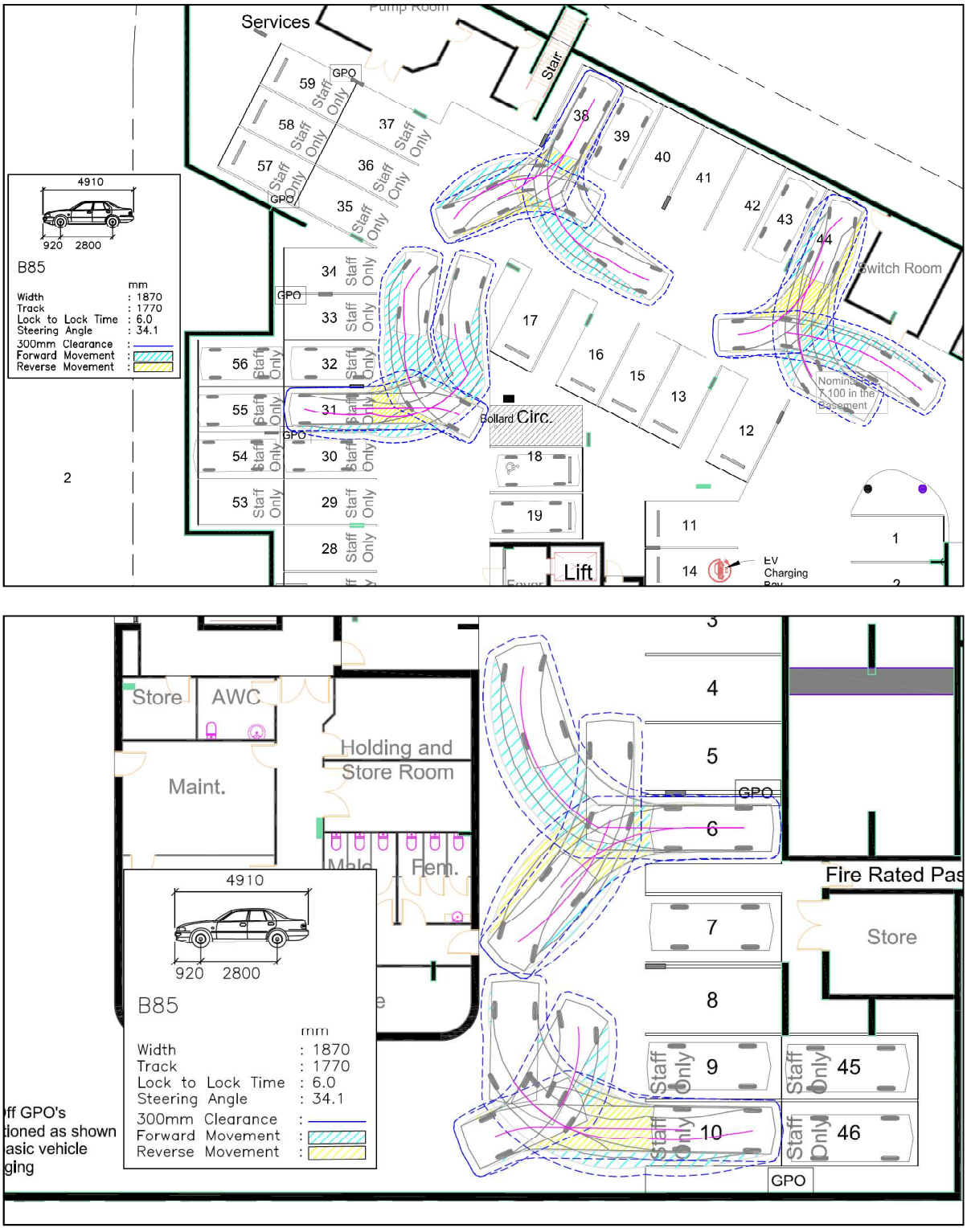


FIGURE 4.4 – 85TH PERCENTILE VEHICLE SWEPT PATH

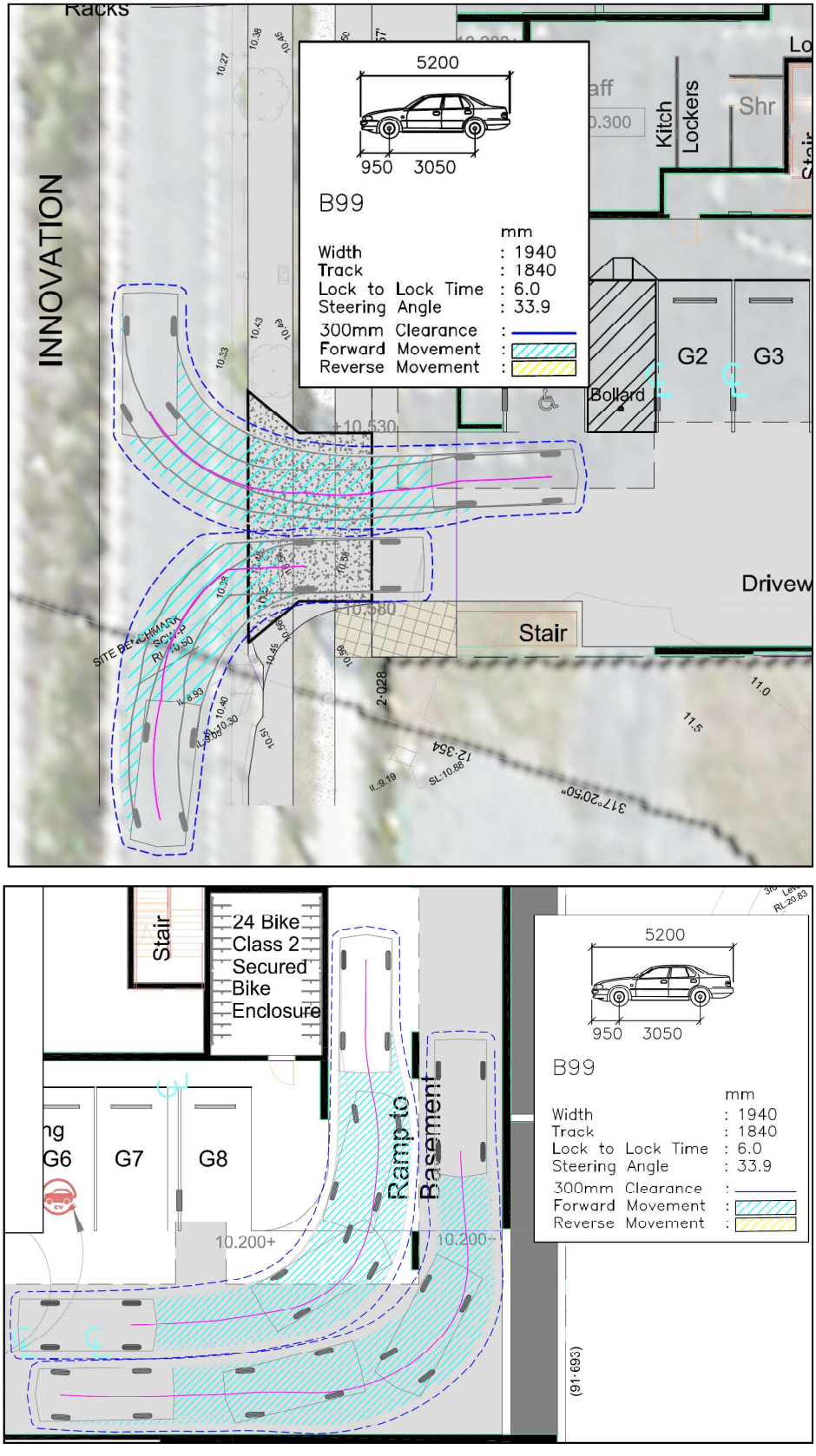


FIGURE 4.5 – 99TH PERCENTILE VEHICLE SWEPT PATH (ACCESS & RAMP)

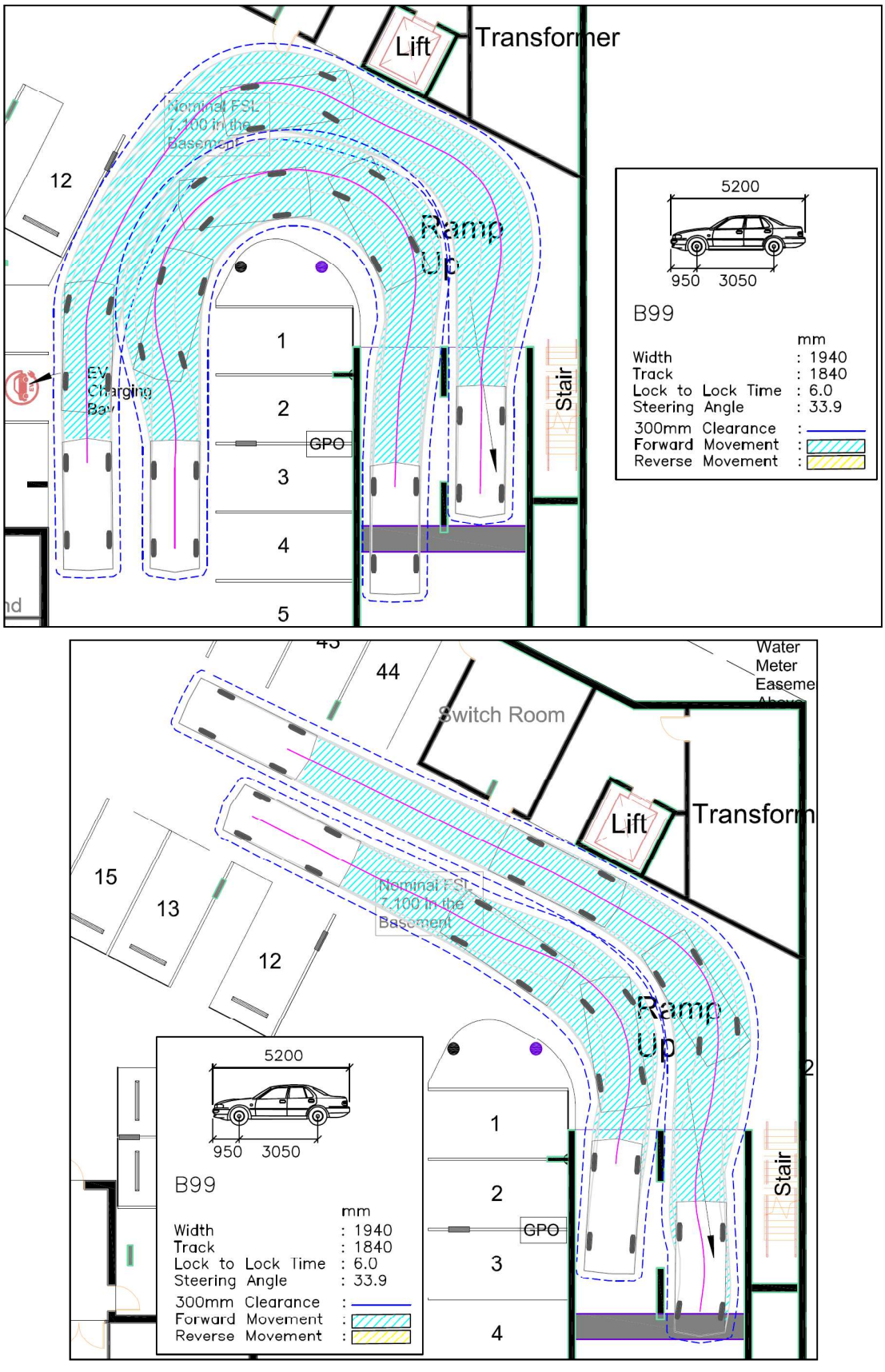


FIGURE 4.6 – 99TH PERCENTILE VEHICLE SWEPT PATH (BASEMENT RAMP)

5.0 DEVELOPMENT TRAFFIC ESTIMATES

Development traffic generation rates have been sourced from the *Department of Main Roads Road Planning and Design Manual, Appendix 3A Trip generation rates.* The following trip generation rates are considered to be appropriate for the proposed development:

Retirement / Aged homes
Daily rate 1 - 2 per dwelling
Peak rate 0.1 - 0.2 per dwelling

Office
Daily Rate 10 trips per 100m^2
Peak rate 2 trips per 100m^2

The above 'lower' end of the range for the retirement / aged home facility is applicable given that the proposal provides 'high care' services. The higher range generally applies to developments where the residents require 'low care' service by staff.

Application of the above rate to the proposed development results in a peak hour trip generation of 25 trips, as follows:

Table 5.1 - Estimated Development Traffic Generation

Component	Daily Trips	Morning Peak Hour			Afternoon Peak Hour		
		In	Out	Total	In	Out	Total
Proposed Development (142 dwellings)	142	7	7	**14**	7	7	**14**
Office (540m^2)	54	7	4	**11**	4	7	**11**
TOTAL	**196**	**14**	**11**	**25**	**11**	**14**	**25**

Peak Hour Distribution: Aged Care 50/50, Office AM-60/40, PM-40/60

As shown above, the estimated traffic generation generation potential of the proposed development is low in the context of the surrounding road network, and therefore is not expected to adversely impact the safety and operation of the frontage road.

It is noted that the proposal also provides shop and food and drink tenancies. Such will service the proposal and local catchment, therefore visitor associated with the uses will generally be on foot or self-contained within the precinct.

6.0 ACCESS ARRANGEMENTS

Access to the development is proposed to be gained from the southern end of the Innovation Drive frontage. Traffic movement to and from the site are restricted to left turns by the central median on Innovation Drive. As shown in Figure 6.1, the proposed access crossover has been designed to a general wide splay arrangement in accordance with the IPWEA Standard Drawing RS-051. The proposed access achieves approximately 70 metres separation from the Village Boulevard / Innovation Drive intersection. As shown, the existing gully pit along the frontage of the site will be relocated clear of the proposed crossover.

It is proposed that a pedestrian sight splay be provided on the departure side of the crossover in accordance with Figure 3.3 of AS2890.1:2004. Such will ensure that a clear sight line is maintained between a driver exiting the site and pedestrian walking along the frontage of the development.

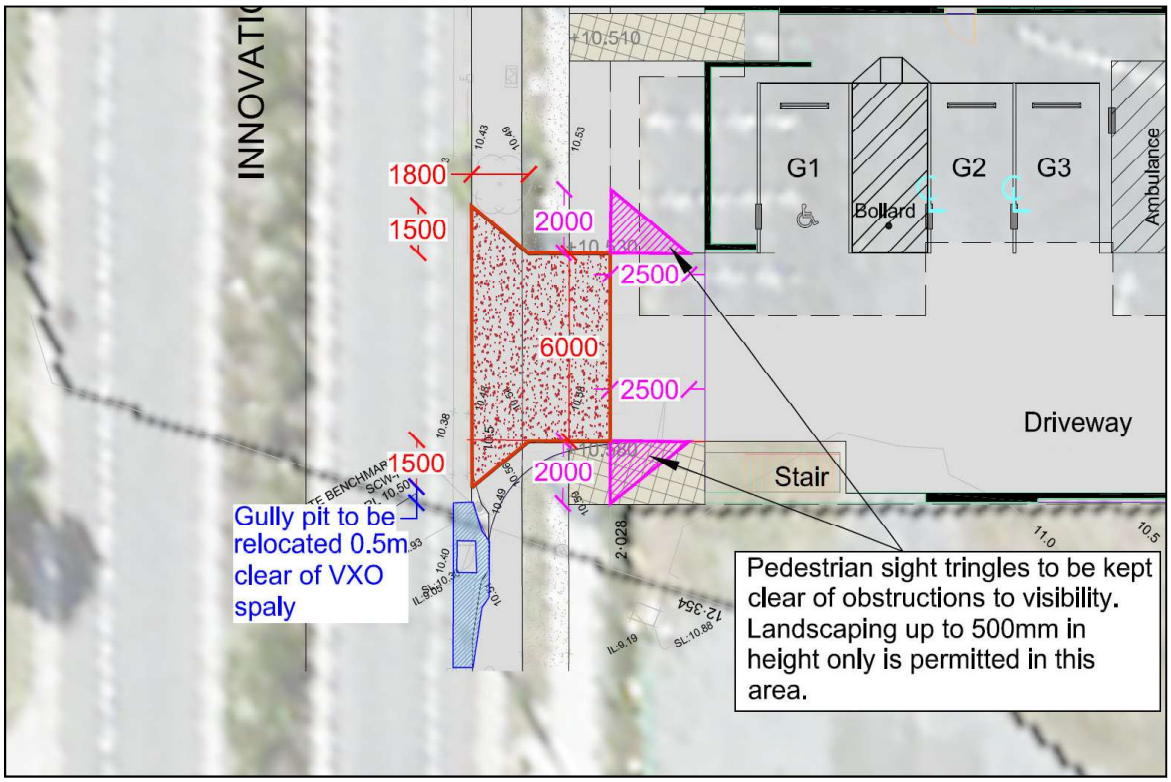


FIGURE 6.1 – PROPOSED ACCESS ARRANGEMENTS

7.0 PROVISION FOR SERVICE VEHICLES

The proposal has been designed to allow servicing by a private contractor. As shown in Figures 7.1 and 7.2, the proposed service area is suitable for an 9.8 metre long rear loading refuse truck to reverse into the loading bay to service the site and exit the development in a forward gear, whilst maintaining adequate clearance to obstruction at all times.

A separate parking space has been provided for emergency vehicles (ambulance). As shown in Figure 7.3, such can satisfactorily negotiate the car park and enter and exit the development in a forward gear.

It is proposed that a minimum height clearance of 4.2 metres will be provided over the loading area and service vehicle manoeuvring path.

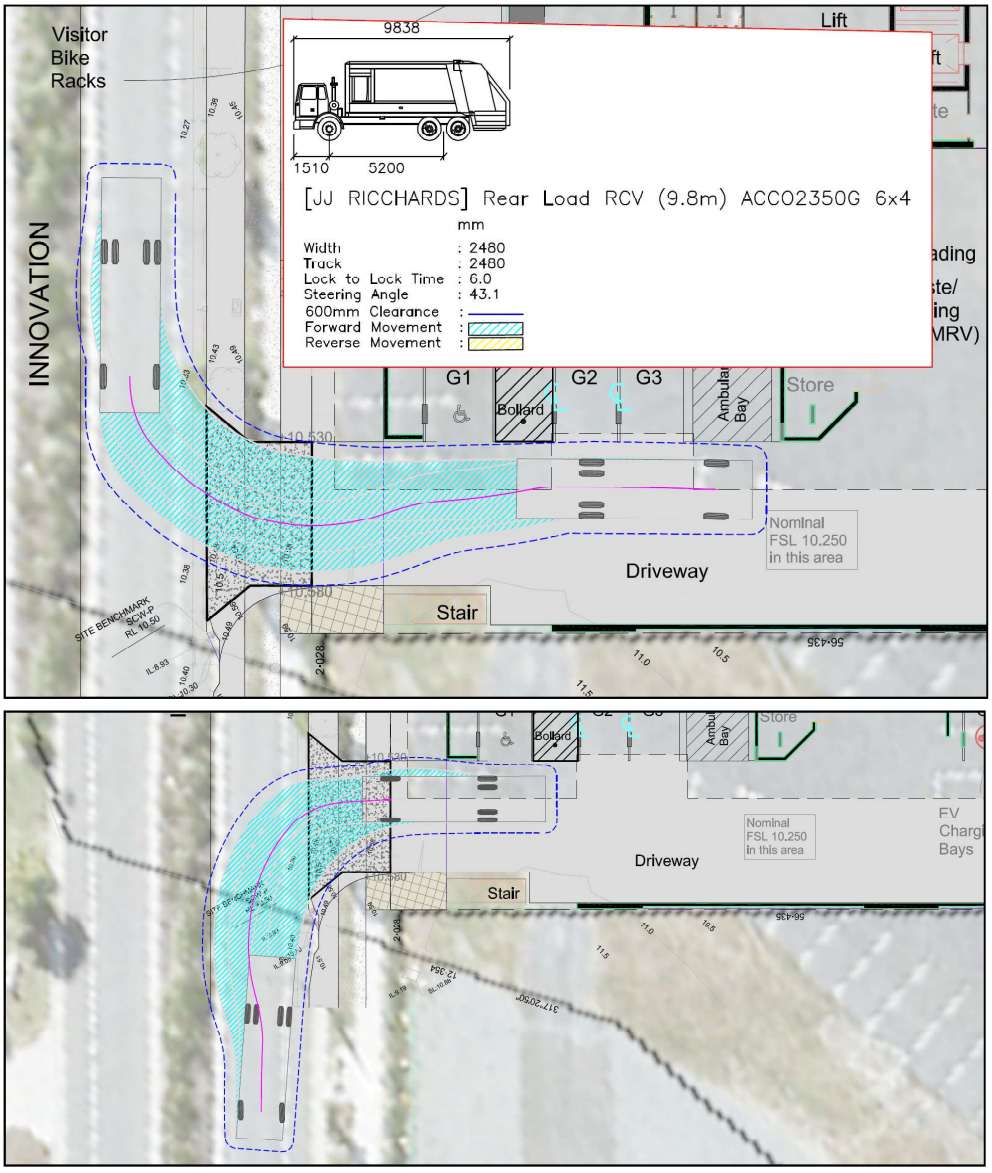


FIGURE 7.1 – REFUSE COLLECTION VEHICLE (RCV) MANOEUVRING (ACCESS)

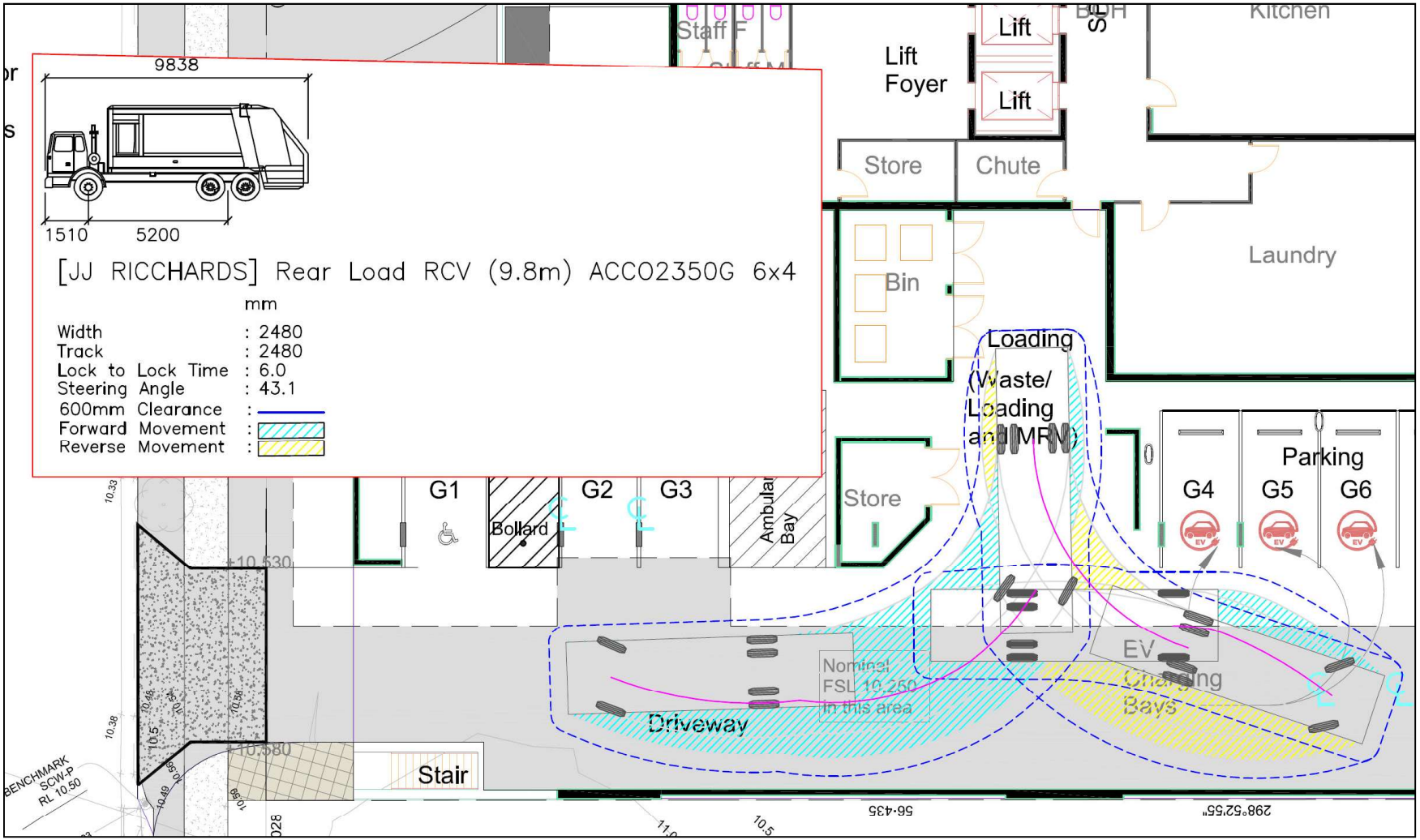


FIGURE 7.2 – REFUSE COLLECTION VEHICLE (RCV) MANOEUVRING (INTERNAL)

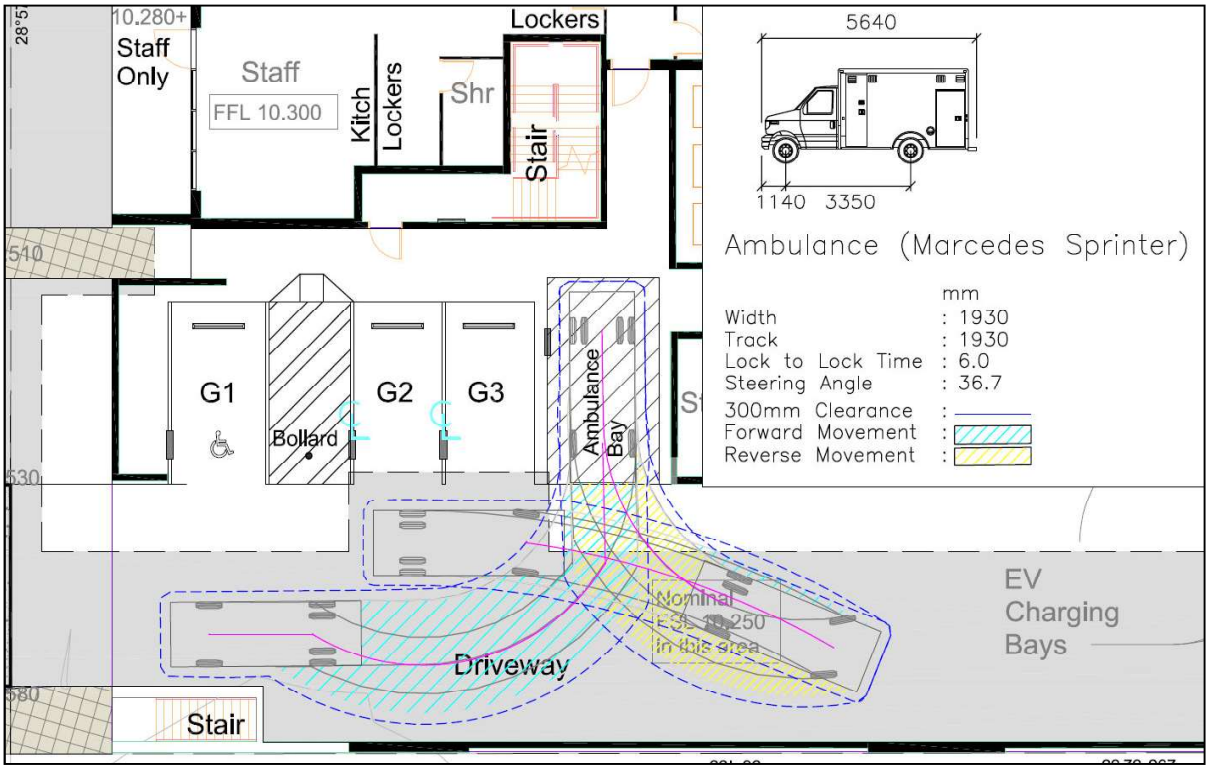


FIGURE 7.3 –AMBULANCE VEHICLE MANOEUVRING

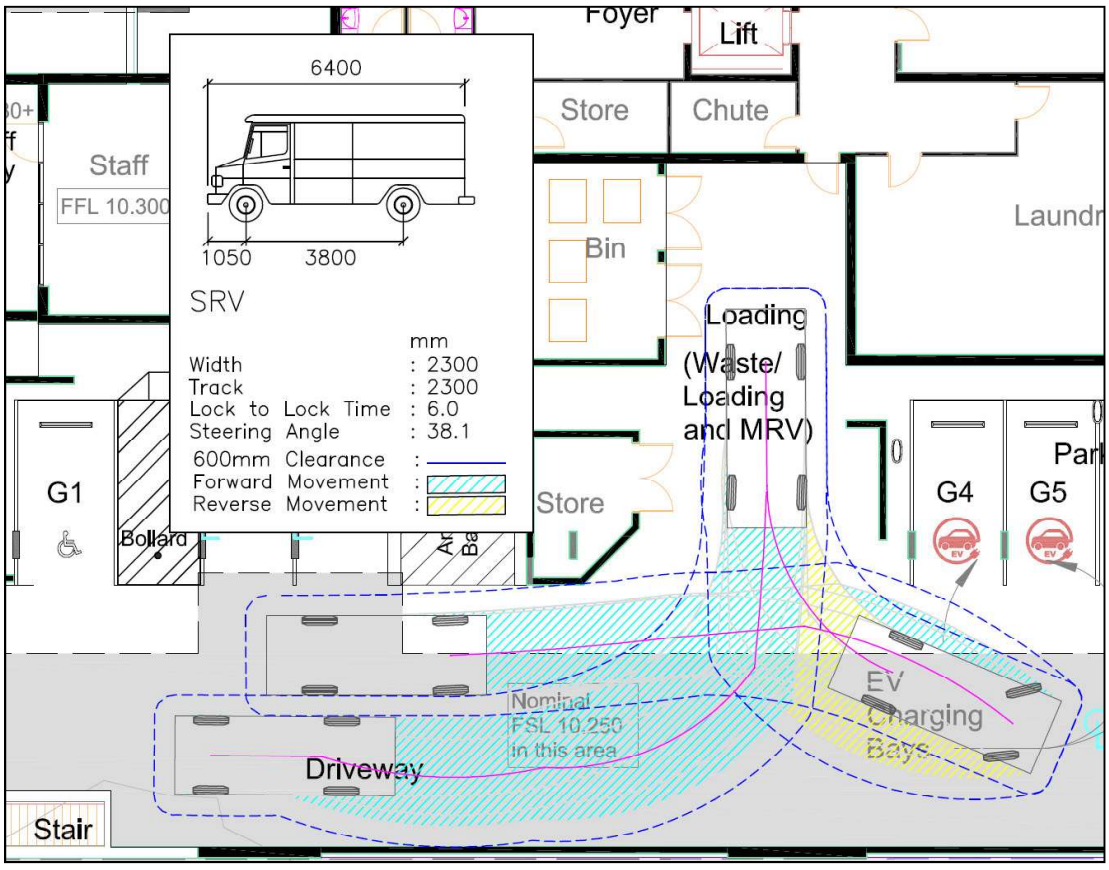


FIGURE 7.4 –SMALL RIGID VEHICLE MANOEUVRING

8.0 PROVISION FOR PEDESTRIANS AND CYCLISTS

The proposed plan of development provides a pedestrian connection from both the Innovation Drive and Village Boulevard frontages. A pedestrian loading zone is also proposed to be provided along Innovation Drive at the front of the building foyer.

In accordance with Table 9.4.13-10 of the Transport Code, the following bicycle parking rates are applicable to the proposed development.

Shop
Staff: 1 space per 100m^2
Visitor: 1 space per 50m^2

Office
Staff: 1 space per 100m^2
Visitor: 1 space per 500m^2

Food and Drink
Staff: 1 space per 100m^2
Visitor: 1 space per 50m^2

Given the high level of care provided for the proposed aged care component, it is not expected that residents at the facility will require bicycles.

Application of the above rate to the proposed development yields a requirement for 14 bicycle spaces. The proposal provides facilities for up to 27 bicycles, of which a visitor bicycle facility suitable for 3 bikes is provided on the ground level. The proposed bicycle provision is considered to be satisfactory to accommodate the demand generated by the proposed development.

9.0 SUMMARY OF CONCLUSIONS & RECOMMENDATIONS

- The subject site is located on the south east corner of the Village Boulevard / Innovation Drive intersection. The site is identified as Lot 16 on SP275512 and has an area of 3,311. The site is located inside the Parklands Priority Development Area (PDA). and is currently used as a car park.

- The proposed plan of development is for an aged care facility, which will provide a total of 142 rooms (beds). It is intended that the facility will provide high level of patient care. The proposal will also provide an office (540m^2 GFA) on level 5, and a shop and a food and drink outlet to service the site and its immediate vicinity.

- In accordance with Parklands Priority Development Area Development Scheme the proposed development yields a minimum car parking requirement of 51 spaces. The proposal provides a total of 67 car parking spaces and therefore exceeds the minimum parking required under the PDA Development Scheme.

- The geometric layout of the proposed parking facilities has generally been designed in accordance with *AS2890.1:2004*.

- As discussed in Section 5, the estimated traffic generation potential of the proposed development is low in the context of the surrounding road network, and therefore is not expected to adversely impact the safety and operation of the frontage road.

- The proposed access crossover has been designed to a general wide splay arrangement in accordance with the IPWEA Standard Drawing RS-051. The proposed access achieves approximately 70 metres separation from the Village Boulevard / Innovation Drive intersection. The existing gully pit along the frontage of the site will be relocated clear of the proposed crossover.

- It is proposed that waste will be serviced from the site by a private contractor. As demonstrated in Section 7, an 8 metre long refuse collection vehicle can satisfactorily service the development and exit in a forward gear. The proposal also provides a separate parking space for emergency vehicles (ambulance).

- The proposed plan of development provides a pedestrian connection from both the Innovation Drive and Village Boulevard frontages. A pedestrian loading zone is also proposed to be provided along Innovation Drive at the front of the building foyer.

- In accordance with the Transport Code, the proposal yields a minimum bicycle parking requirement of 14 spaces. The proposal provides a total of 27 bicycle spaces, of which a visitor bicycle facility suitable for 3 bikes is provided on the ground level. The proposed bicycle provision is considered to be satisfactory to accommodate the demand generated by the proposed development.

APPENDICES

APPENDIX A - PROPOSED WASTE COLLECTION VEHICLE

13 August 2021

JJ'S Waste & Recycling

ABN 40 000 805 425

6 Industrial Avenue Molendinar QLD 4214
PO Box 897 Ashmore QLD 4214

T 07 5539 4226 F 07 5597 1355

admin.nerang@jjswaste.com.au
www.jjswaste.com.au

To whom it may concern

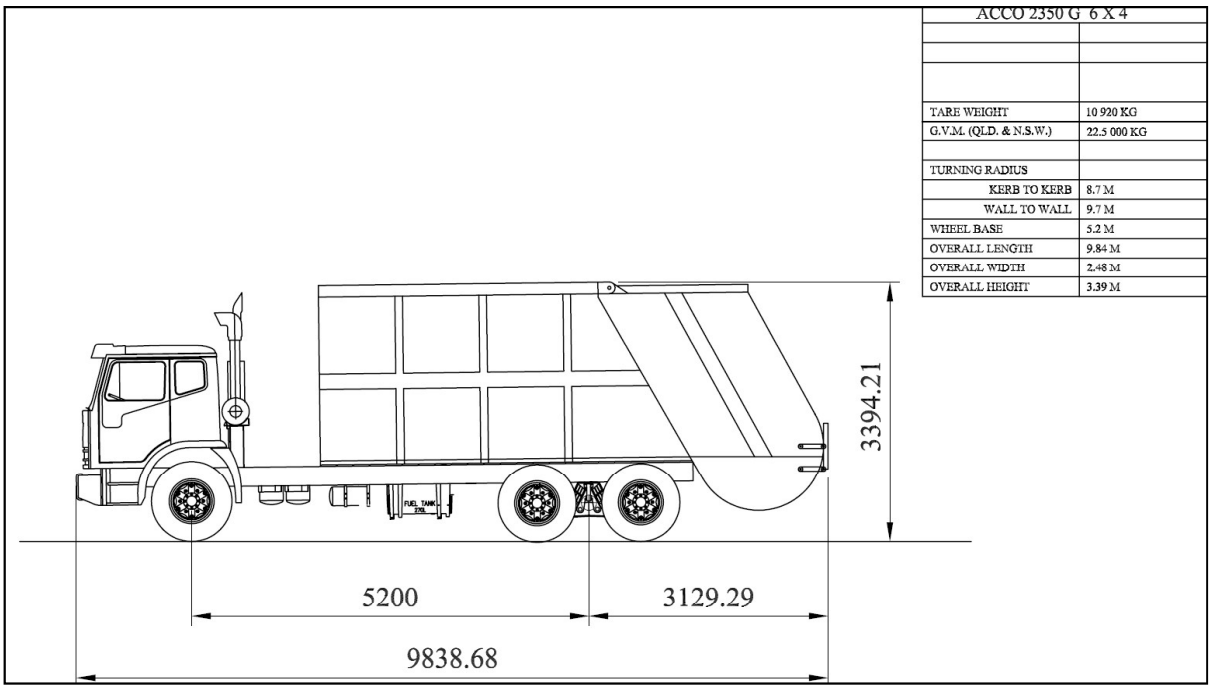
JJ Richards will be able to provide a private waste collection in the basement in the Gold Coast region utilising a rear lift truck and can operate in a height under 4.2 metres.

Regards

Troy Jenkyns

Account Manager

JJS Waste & Recycling



APPENDIX B - TYPICAL DELIVERY VEHICLES

PFD Medium Rigid Vehicle (3.6m height)

PFD Small Rigid Vehicle (3.4m height)

Toll SRV (3.4m height)