

Appendix 5: Traffic Impact Assessment

South Bunbury Aged Care Traffic & Transport Assessment

Final Report

Prepared for: Croft Development Pty Ltd

Date: 13 October 2024

Ref: 300304736

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Revision

Revision	Date	Comment	Prepared By	Approved By
D01	18 December 2019	Draft Traffic Report	Callum Thomas	Eric Kydd
F02	14 February 2020	Final Traffic Report	Callum Thomas	Eric Kydd
F03	18 January 2024	Final for Submission	Emma Linacre	
F04	18 January 2024	Update Final	Emma Linacre	
F05	12 August 2024	Update Final	Mustafa Farah	Herman Lai
F06	13 October 2024	Update Final	Mustafa Farah	Margeaux Hawkins

Margeaux Hawkins

For and on behalf of

Stantec Australia Pty Ltd

L28, 600 Bourke Street, Melbourne VIC 3000

Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

Limitations

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CONTENTS

TRAFFIC & TRANSPORT ASSESSMENT

South Bunbury Aged Care

1.	Introduction	1
2.	Background and Existing Conditions.....	2
2.1	Location and Land Use	2
2.2	Planning Controls.....	3
2.3	Road Network	4
2.4	Sustainable Transport.....	5
3.	Proposed Development.....	6
3.1	General	6
3.2	Access and Parking	6
3.3	Loading and Waste Collection	6
4.	Design Considerations	7
4.1	Car Parking and Access	7
4.2	Bicycle Parking.....	7
4.3	Access Arrangements.....	7
5.	Parking Considerations	8
5.1	Car Parking Requirements.....	8
5.2	Car Parking Adequacy	8
5.3	Bicycle Parking Requirements	9
6.	Traffic Considerations	10
6.1	Traffic Generation	10
6.2	Traffic Distribution	10
6.3	Traffic Impact	10
7.	Conclusions.....	12

Appendices

- Appendix A. Swept Path Analysis
- Appendix B. Staffing Matrix

1. Introduction

Stantec was engaged by Croft Developments Pty Ltd to undertake a traffic and transport assessment of the proposed aged care development at 15 & 21 Holywell Street and Lot 180 and Lot 30 Jarvis Street, South Bunbury, WA. The previously proposed 144 bed aged care facility has planning approval and Croft Developments propose to increase the aged care facility to 180 beds. This report has been updated to reflect the impacts and requirements for the increased size of the aged care facility.

In the course of preparing this assessment, plans of the development have been reviewed as provided by Croft Developments, relevant staffing level data and traffic survey data collected and analysed.

At a meeting held on 18 May 2020, the Regional JDAP resolved to approve a RACF comprising 144 high care beds, resident and staff amenities, access, landscaping and car parking on the subject site. Cardno (now Stantec) prepared the traffic assessment and have updated the traffic impact assessment report to reflect the increased number of beds at this aged care development.



2. Background and Existing Conditions

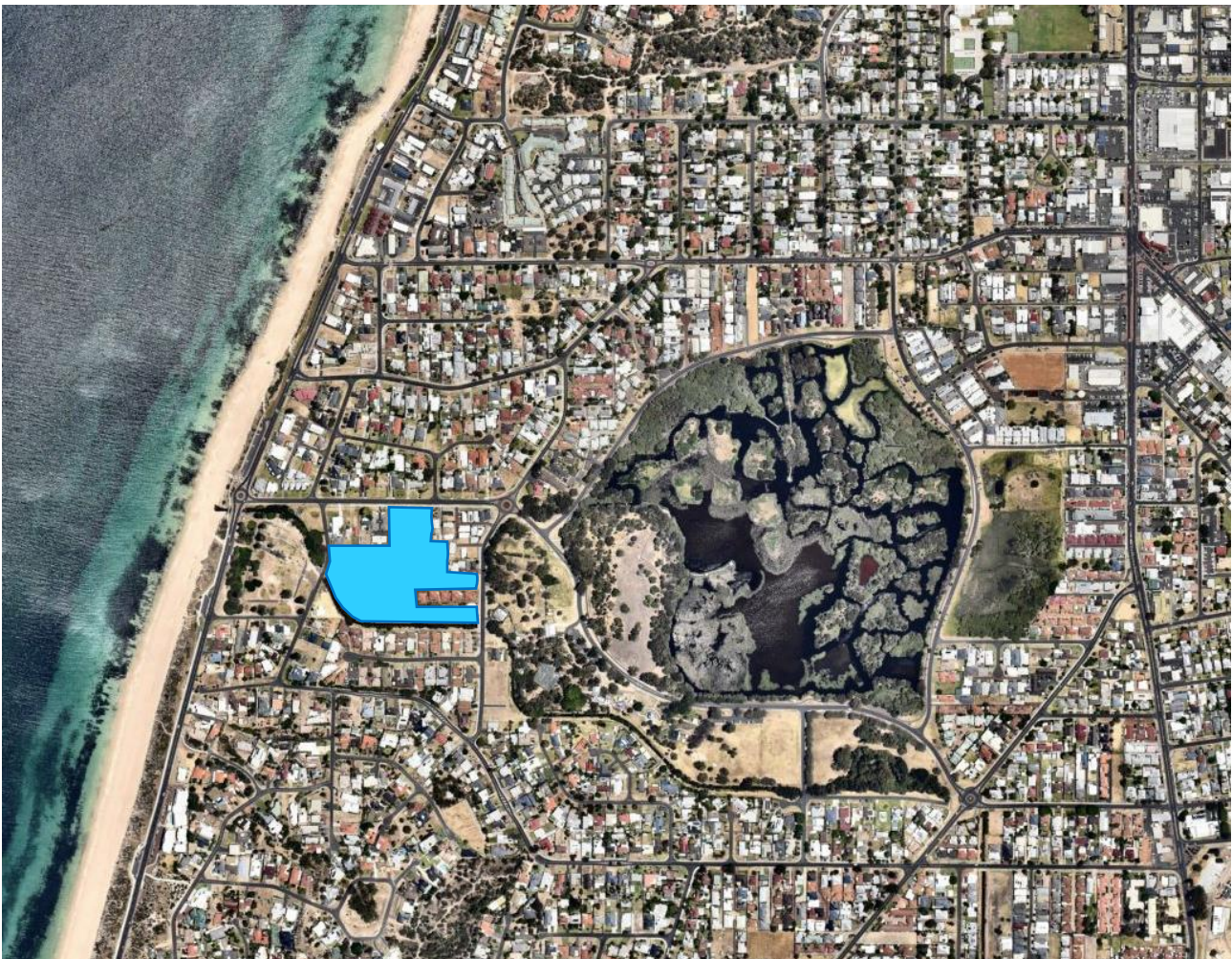
2.1 Location and Land Use

The subject site is located in South Bunbury, on the south side of Hayward Street and adjacent to Holywell Street as shown in Figure 2-1.

The site is made up of the following lots:

- Lots 1 & 18 Hayward Street, South Bunbury, WA 6230.
- Lots 1, 13, 18, 19 (15) & 213 (21) Holywell Street, South Bunbury, WA 6230.
- Lots 180 (180) and 20 (30) Jarvis Street, South Bunbury, WA 6230.

Figure 2.1 – Site Location



Source: Nearmap

The overall site is approximately 2.75 hectares. There are currently three temporary vehicular access points to the subject site. One access location is on the southeast corner of the site where the existing drain meets Jarvis Street, and the other two are on the road frontages of Hayward Street and Holywell Street.

The Hayward Street frontage of the site is approximately 70 metres long; the Holywell Street frontage is approximately 50 metres long.

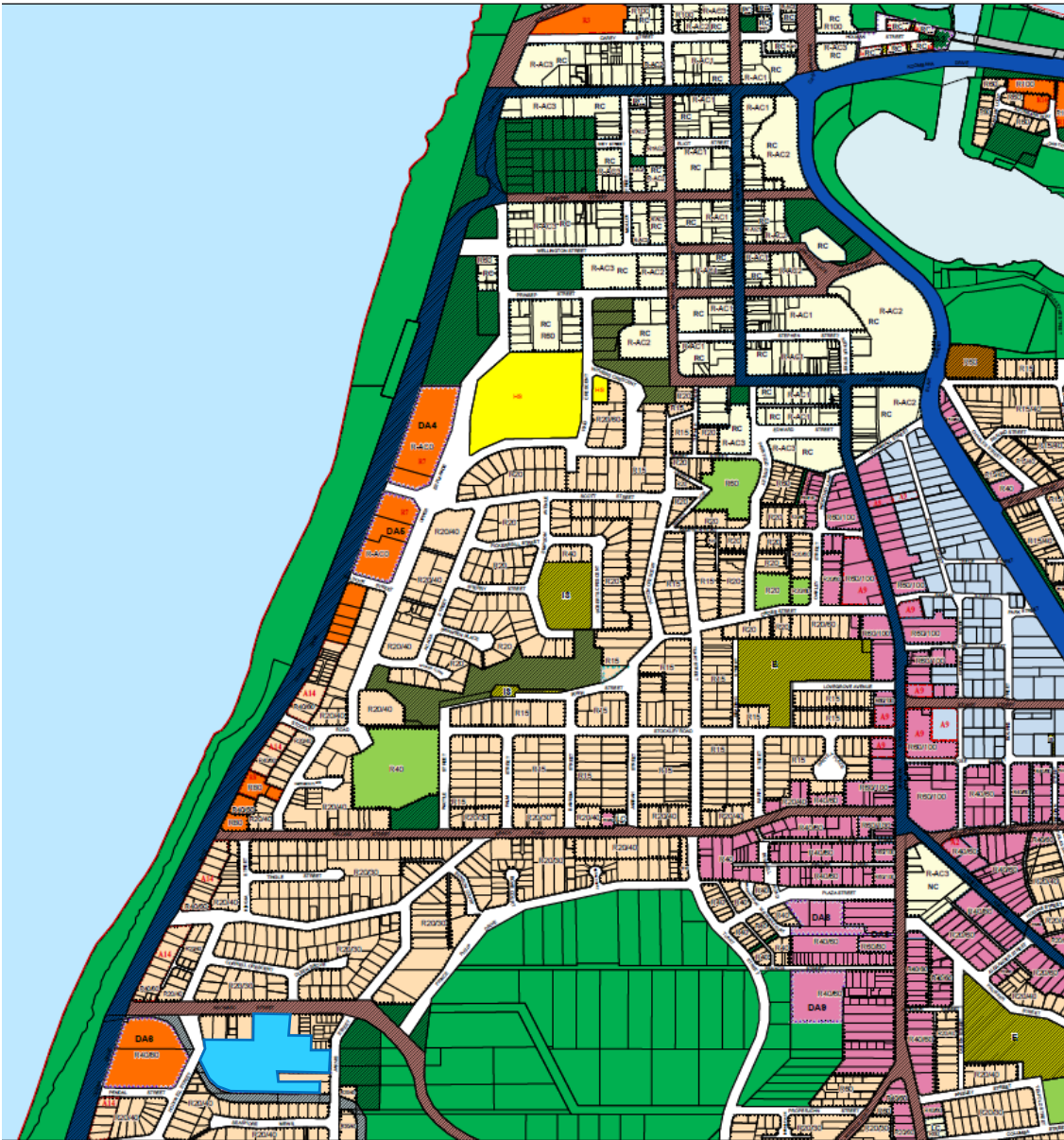
Of note, Big Swamp Reserve and Bunbury Wildlife Park are located to the east of the site; the local beach is 250 metres to the west; other land uses surrounding the site are predominantly residential in nature.



2.2 Planning Controls

The South Bunbury Aged Care development is zoned as *Urban* under the Western Australia Planning Commission's Greater Bunbury Region Scheme, as shown in Figure 2-2.

Figure 2.2 – Planning Controls



Source: Department of Planning, Lands and Heritage, Western Australia

2.3 Road Network

2.3.1 Hayward Street

Hayward Street generally runs in an east-west direction between Jarvis Street to the east and Ocean Drive to the west. Hayward Street is an 8 metre wide unlinemarked road accommodating for two way travel and unrestricted kerbside parallel parking available on both sides of the carriageway.

Figure 2.3 – Hayward Street looking west along the site frontage



2.3.2 Holywell Street

Holywell Street generally runs in a north-south direction between Beach Road to the north and terminating at Hoylake Avenue to the south. Holywell Street is a 7 metre wide unlinemarked road accommodating for two way travel and unrestricted kerbside parallel parking available on both sides of the carriageway.

Figure 2.4 – Holywell Street looking north along the site frontage



2.3.3 Jarvis Street

Jarvis Street generally runs in a north-south direction between Beach Road to the north and terminating at Hoylake Avenue to the south. Jarvis Street is a 7 metre wide unlinemarked road accommodating for two way travel and unrestricted kerbside parallel parking available on both sides of the carriageway.

Figure 2.5 – Jarvis Street looking north past the drain

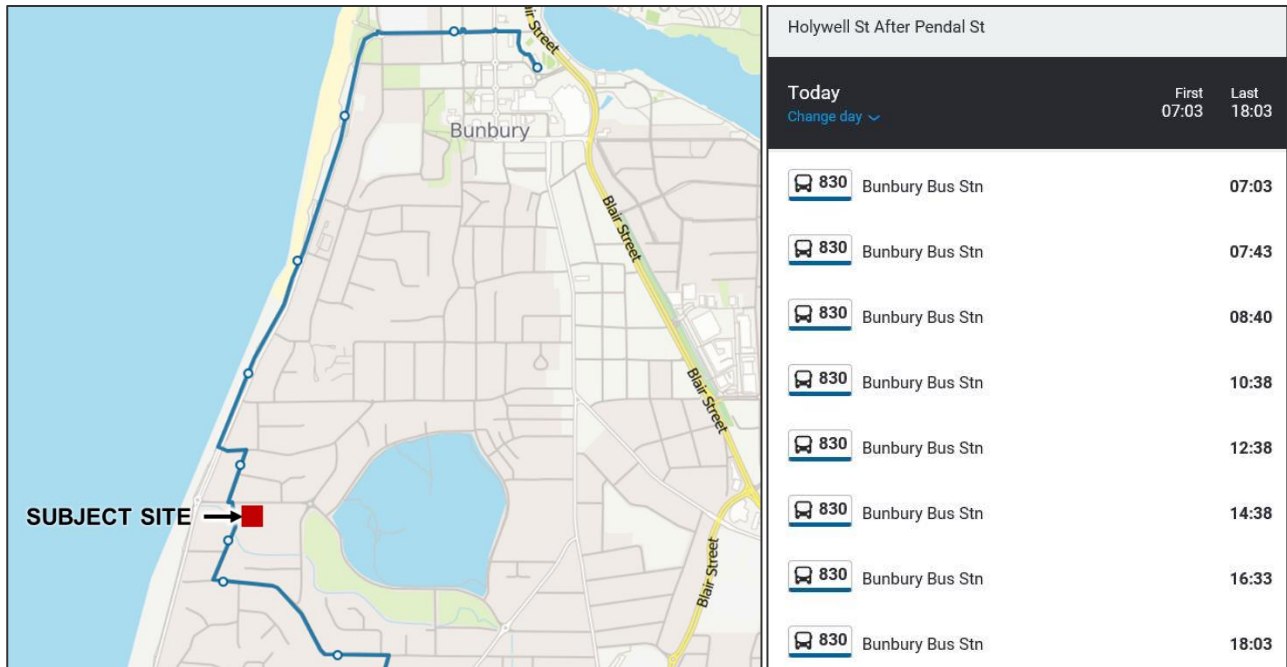


2.4 Sustainable Transport

2.4.1 Public Transport

The site has access to public transport services, with bus route 830 operating between College Grove and Bunbury Bus Station Stand 1. The nearest bus stop is located approximately 60 metres walking distance from the Holywell Street frontage of the subject site. 0 shows the proximity of the bus service to the site. An example of the timetable for the 'Holywell St after Pental St' bus stop on a weekday is indicated in the figure below. This demonstrates the expected frequency of the service and availability of public transport to the subject site.

Figure 2.6 – Public Transport Map and Example Timetable



Source: Moovitapp.com

3. Proposed Development

3.1 General

It is proposed to develop the existing site for the purpose of a 180 room aged care facility. Modifications are proposed to the approved crossover locations and access configurations.

3.2 Access and Parking

The proposed aged care facility incorporates two access and two egress points, an access and egress on Hayward Street and one an access and egress crossover on Jarvis Street.

A total of 90 on-site car parking spaces are proposed for the development. The northern car park will have 50 car parking spaces, including four disabled parking bays, with access from Hayward Street. The eastern car park will be accessed via Jarvis Street, and will provide 40 car parking spaces, three motorcycle spaces, a truck space and a bus space.

A porte cochere is proposed within the northern car park adjacent to the main entrance, to cater for short term drop off and pick up for residents.

3.3 Loading and Waste Collection

Waste collection will occur at the service loading area along the southern boundary of the eastern car park, accessed from Jarvis Street. Swept paths provided at Appendix A demonstrate the spatial requirements for an 8.8 metre service vehicle accessing the loading bay. It is noted that this vehicles will need to utilise the bus parking area, therefore staff of the site will need to schedule waste collection to occur while the bus is off-site. On occasion, when loading needs to occur while the bus is parked, it is considered acceptable for the truck to prop within the access aisle, without causing excessive disruption. Access to all parking spaces would still be possible under this scenario, and circulation around the car park would not be impacted.



4. Design Considerations

4.1 Car Parking and Access

The car park and access design has been assessed against the requirements of the Australian Standard for Off Street Car Parking (AS/NZS 2890.1). All standard car spaces meet or exceed the minimum dimension requirement of the Australian Standard, being 2.6 metres wide and 5.4 metres long, with an aisle width of not less than 5.8 metres. Four disabled parking spaces are provided in close proximity of the porte cochere entrance, with shared areas provided to the side of all bays, in accordance with the Australian Standard for Off Street Parking for People with Disabilities (AS/NZS 2890.6).

The porte cochere has been designed to allow for pick up and drop off of residents in close proximity to the Hayward Street entrance. It is proposed that movements in the porte cochere are one way only with sufficient area to accommodate a single drop off / pick up lane.

4.2 Bicycle Parking

Bicycle parking at rails is to be provided at 1.0 metre spacing and at least a 1.5 metre aisle in line with the Australian Standards (AS/NZS 2890.3). A total of four (4) bike racks are to be provided on the interface between the eastern car park and the facility to allow up to eight (8) bicycle parking spaces.

4.3 Access Arrangements

There are two access and two egress points providing vehicular access to the subject site. The primary access is located on Hayward Street opposite Cornell Crescent and the secondary access is located on Jarvis Street, approximately 110m south of the intersection with Hayward Street and Prince Philip Drive.

The proposed accesses from Hayward Street and Jarvis Street will have minimum trafficable widths of 5.8 metres between kerbs in line with minimums set out in AS2890.1-2004.

Swept path diagrams confirm that an 8.80 metre MRV can access the site via the proposed access from Jarvis Street and a 7.20 metre vehicle (ambulance) via the proposed access from Hayward Street.

Pedestrian sight triangles have been provided on the exit side of the proposed access location, measuring at least 2 metres along the frontage road and 2.5 metres along the access into the site, in accordance with Figure 3.3 of AS2890.1-2004.

The acoustic report prepared by Lloyd George Acoustics indicates that parking for overnight staff should occur in the eastern car park. It will be the responsibility of the site's management team to ensure that this is communicated to staff and facilitated.



5. Parking Considerations

5.1 Car Parking Requirements

The City of Bunbury Local Planning Scheme No.8, Table 7 – Car Parking Table, specifies the provision of car parking required for different land uses of the proposed development.

Based on previous 144 bed aged care facilities assessed by Stantec for Croft Developments, and staffing matrix data provided by Croft, a maximum of 88 staff are expected to be on site at any given time. The maximum staffing numbers are based upon shift changeover times, when greater than the normal number of staff are present on site, albeit for a short period of time. The staffing matrix is supplied in Appendix B.

Table 5.1 shows the minimum car parking requirements as per the City of Bunbury Local Planning Scheme (Table 7) for the proposed 180 bed aged care development.

Table 5.1 – Car Parking Requirements

Use	No	Rate	Car Parking Measure	Requirement (Spaces)
Residential Aged Care	180 beds	1	For each 4 beds	45 spaces
	88 staff	1	For each employee	88 spaces
Total				133 spaces

Considering the above information, the minimum car parking provision under the statutory requirements is 133 spaces. The proposed onsite parking provision of 90 car parking spaces including four accessible spaces results a statutory shortfall of 43 parking spaces. A justification for the parking dispensation is outlined below in Section 5.2.

It is considered that if an ambulance is required, it can be accommodated in the porte cochere as required as demonstrated by swept path in Appendix A.

5.2 Car Parking Adequacy

5.2.1 Planning Scheme Interpretation

The City of Bunbury Local Planning Scheme specifies a car parking requirement proportional to both employees and beds (residents).

It is well understood and accepted that car parking is necessary for staff (fulltime, part time and visiting) and visitors, while car parking demand generated by residents of the facility is expected to be very low. The RACF is known to be a *high care* facility, further indicating that very few residents will utilise car parking spaces and that staff and visitors will be the primary users.

Due to the nature of the Residential Aged Care Facility (RACF) in question, a provision for 0.25 parking spaces per bed for *visitors* is deemed excessive, when combined with a factor of one car parking space per employee. Hence, a dispensation is considered appropriate for the shortfall of 43 parking spaces based on the car parking requirements in the City of Bunbury Local Planning Scheme No.8.

5.2.2 Case Study Data

Stantec has been provided case study data by Signature Care, residential aged care facility operators, who have prepared a staffing matrix for 180 bed facilities. The staffing matrix is based on actual operation of various sites of similar size and includes parking demand and trip generation for all persons on site, including full time staff, part time staff, visiting medical personnel and general visitors. The shift times and expected visitors are based on normal, everyday operation of the site. The staffing matrix is provided in with outlined peak periods are shown in Appendix B.

In calculating the parking demand and trip generation, the 24 hour shift cycle has been broken down into 15 minute periods. Maximum parking demand is calculated by the total number of staff on site at any one time, while peak hour trip generation is calculated for each staff start and finish time in four consecutive 15 minute periods (totalling one hour). The data identifies that the maximum car parking demand is for 84 staff parking spaces between 2:45pm and 3:15pm, coinciding with the PCA Morning / PCA Evening shift changeover. The peak parking demand of 84 staff spaces allows for six visitor parking spaces to be accommodated at the busiest time.



Additionally, the car parking demand calculation takes a conservative approach. Under realistic conditions some staff are expected to cycle, car pool, travel by public transport or walk to work, easing demand on parking at the RACF.

The proposed 90 car parking spaces onsite would therefore satisfy the anticipated peak demand of 84 staff parking spaces, with the remaining six spaces available for visitors. The dispensation from the statutory requirement is therefore considered appropriate, as parking demand is met from an operational perspective.

5.3 Bicycle Parking Requirements

The City of Bunbury has no minimum requirement for bicycle parking facilities for a residential aged care facility. Nevertheless, an area for bicycle parking has been provided capable of accommodating up to eight (8) bicycles.



6. Traffic Considerations

6.1 Traffic Generation

The following traffic generation discussion draws on staffing matrix data provided by Signature Care and based on the operation of 180 bed aged care developments. The data is considered applicable and appropriate to South Bunbury Residential Aged Care Facility.

The peak level of traffic expected to be generated by the proposed aged care development is linked to the staffing matrix roster. Each staff shift generates two vehicle trips, one upon arrival, and one on departure. Peak hour traffic generation for the RACF occurs during shift changeover periods.

The shift staffing requirements are the same 7 days a week and comprise three main shifts, generally occurring between:

- 7:00am – 3:00pm;
- 3:00pm – 10:00pm; and
- 10:00pm – 7:00am.

The highest staff requirements typically occur during shift changeover between the hours of 6:45am and 3:45pm, with up to 84 staff on site at any one time within a 15-minute interval. Calculations are based on the conservative assumption that all shift workers drive independently, and trips occur within 15 minutes of shift start and finish times. Table 6.1 outlines the peak traffic movements of the AM and PM peak hours taken at 15-minute intervals.

Table 6.1 – Table 1-1 Peak Hour Trip Generation

Period	Total Trips	In	Out	Time
AM Peak Hour	54	46	8	6:45am – 7:45am
PM Peak Hour	63	27	36	2:45pm – 3:45pm

The morning peak hour occurs with the shift changeover between the PCA Night shift and PCA Day shift. The morning peak hour occurs between 06:45am and 7:45am, which is typically outside of the commuter peak traffic period. As such, traffic impact from facility staff is expected to be low.

The afternoon peak hour occurs with the shift changeover between the PCA Day shift and PCA Evening shift. The afternoon peak hour occurs between 2:45 and 3:45pm, which is typically outside of the commuter peak traffic period. As such, the traffic impact from facility staff and visitors is expected to be low.

The above trip generation calculation takes a conservative approach. Under realistic conditions some staff are expected to cycle, car pool, travel by public transport or walk to work, easing traffic on the immediate road network.

6.2 Traffic Distribution

Considering the existing and anticipated future characteristics of the surrounding area, in particular the location of surrounding residential catchments, schools, employment zones and the wider road network, the following assumptions have been adopted with regard to directional distributions:

- 70% of all inbound and outbound movements during the AM and PM peak periods will be generated from/to the west via Ocean Drive; and
- The remaining 30% of all inbound and outbound movements during the AM and PM peak periods will be generated from/to the east towards East Bunbury.

The above assumptions consider the subject site location being constructed in an already developed residential area, with the ocean only 250 metres to the west of the subject site. The main connector road between the subject site and Bunbury City Centre is Ocean Drive which generally runs in a north-south direction along the coast.

6.3 Traffic Impact

In traffic engineering terms, the level of traffic expected to be generated by the proposed aged care development is considered to be very low.



A total of 63 vehicle movements in the afternoon peak hour, including both arrivals and departures, is equivalent to an average one vehicle movement per minute. This level of traffic generation is low and is not expected to have any discernible effect of the operations of Hayward Street, Jarvis Street and the surrounding road network.

Additionally, both peak hours for the RACF occur outside the normal road network peak hour, which further reduces the likelihood of a discernible traffic impact.



7. Conclusions

Based on the foregoing analysis it is concluded that:

- It is proposed to develop the site at 15 & 21 Holywell Street, South Bunbury for the purposes of a 180 bed aged care facility.
- The carpark and access design is generally in accordance with the Australian Standard for off street car parking (AS/NZS 2890.1).
- A total of 90 car parking spaces including four DDA accessible bays are proposed onsite.
- There is a requirement for 133 car parking spaces based on the City of Bunbury Planning Scheme. A dispensation is considered appropriate for the shortfall of 43 parking spaces.
- The proposed provision of 90 car parking spaces satisfies the anticipated car parking demand associated with the site, based upon staffing data which predicts a peak staff parking demand for approximately 84 parking spaces.
- Up to 54 and 63 traffic movements in each of the AM and PM peak hours, respectively, are anticipated to be generated by the proposed aged care development. Both peak hours for the RACF occur outside the normal road network peak hour. This level of traffic generation is not expected to have any discernible impact on the normal operation of the surrounding road network.
- When compared to the previous 144 bed aged care facility proposal there is a small increase of 19 and 14 respectively in each peak period and this isn't expected to generate any significant additional impacts to the normal operation of the surrounding road network.
- All parking, deliveries and traffic movements are to comply with the acoustic requirements as set out in the Acoustic Report..

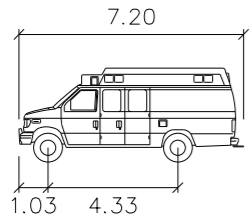


We design with community in mind



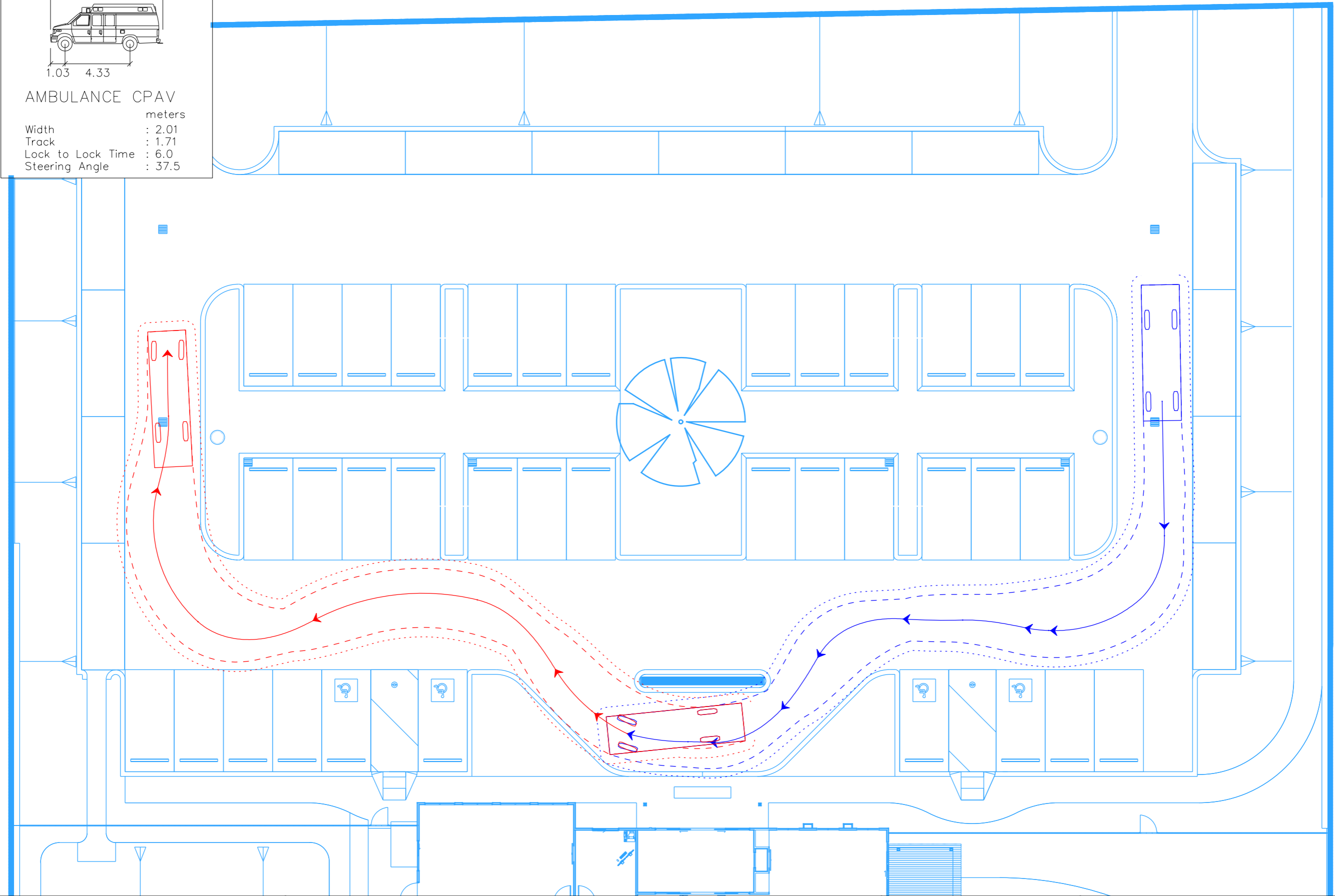
Appendix A. Swept Path Analysis

CHECKING VEHICLE



AMBULANCE CPAV

	metres
Width	: 2.01
Track	: 1.71
Lock to Lock Time	: 6.0
Steering Angle	: 37.5



DN 10/11/2024 AT 9:31:59 AM

PLOTTED BY : mfarah



PRELIMINARY PLAN
FOR DISCUSSION PURPOSES
ONLY SUBJECT TO CHANGE
WITHOUT NOTIFICATION

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE
APPROXIMATE ONLY AND THEIR EXACT POSITION
SHOULD BE PROVEN ON SITE. NO GUARANTEE IS
GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

DESIGNED
M. FARAH

APPROVED BY
M.HAWKINS

DESIGN CHECK

DATE ISSUED
10 OCTOBER 2024

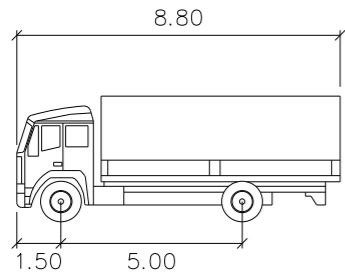
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SOUTH BUNBURY AGED CARE FACILITY
11 HAYWARD STREET, SOUTH BUNBURY

SWEPT PATH ASSESSMENT
DRAWING NO. 300304736-01

SHEET 01 OF 03 ISSUE P2

DESIGN VEHICLE



MRV

meters

- Width : 2.50
- Track : 2.50
- Lock to Lock Time : 6.0
- Steering Angle : 34.0

DN 10/11/2024 AT 9:44:58 AM

PLOTTED BY : mfarah



PRELIMINARY PLAN
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WARNING
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 GIVEN THAT ALL EXISTING SERVICES ARE SHOWN

DESIGNED
M. FARAH

DESIGN CHECK

APPROVED BY
M.HAWKINS

DATE ISSUED
10 OCTOBER 2024

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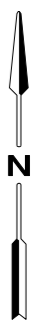
SOUTH BUNBURY AGED CAR FACILITY
 11 HAYWARD STREET, SOUTH BUNBURY

SWEPT PATH ASSESSMENT

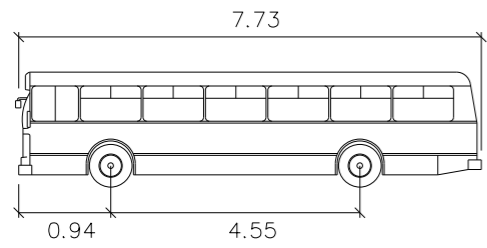
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SHEET 02 OF 03

ISSUE P2



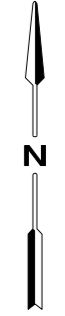
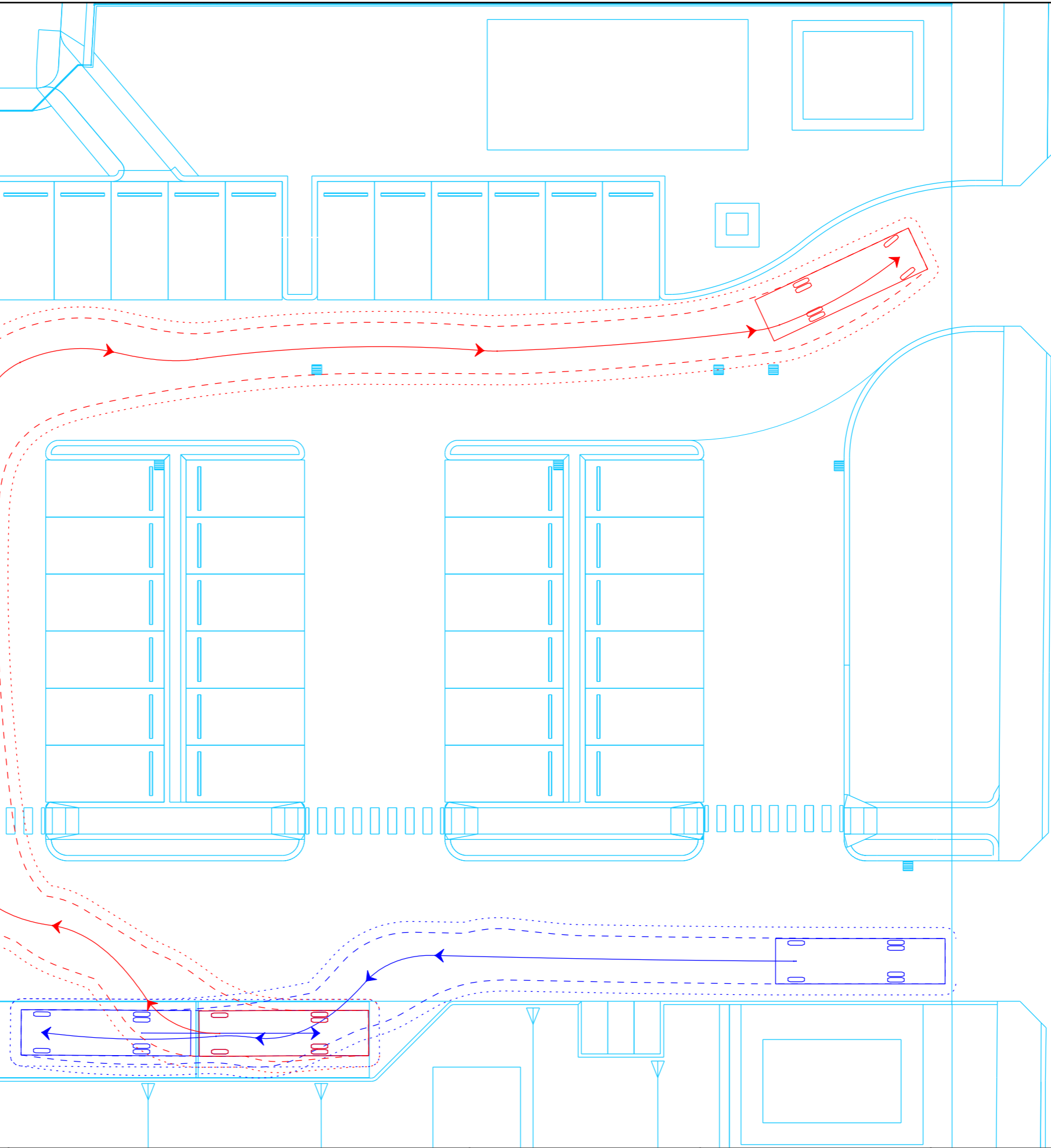
DESIGN VEHICLE



Minibus – Rosa – 7.73m meters

- Width : 2.07
- Track : 1.91
- Lock to Lock Time : 6.0
- Steering Angle : 44.0

DN 10/11/2024 AT 9:45:40 AM
PLOTTED BY : mfarrah



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WARNING
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DESIGNED
M. FARAH

APPROVED BY
M.HAWKINS

DESIGN CHECK

DATE ISSUED
10 OCTOBER 2024

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SOUTH BUNBURY AGED CAR FACILITY
11 HAYWARD STREET, SOUTH BUNBURY

SWEPT PATH ASSESSMENT
DRAWING NO. 300304736-03

SHEET 03 OF 03

ISSUE P2

Appendix B. Staffing Matrix



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Appendix 6: Acoustic Report