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- Traffic & Parking Impact Assessment -
For the Proposed Residential development at
No. 10-12 Parmal Ave, Padstow.

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Document Control

Date	*Revision History*	*Prepared By:*	*Reviewed and Authorised by:*
12/09/2023	Initial Report	Thai Do	Moussa Zaioor
12/09/2023	Final Report	Thai Do	Moussa Zaioor

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1. INTRODUCTION

ANA Civil Pty Ltd has been commissioned to prepare a Traffic & Parking Report to accompany the Development Application to City of Canterbury – Bankstown Council for the proposed residential development at No. 10-12 Parmal Ave, Padstow. The site is located on the northern side of Parmal Ave see Figures 1 & 2 - Site Location. The proposal consists of the demolition of 2 single residential dwellings and the construction of a four storey building with a basement (See Figure 3). Architectural plans are by Colin De Lore & Assoc. Pty. Ltd.

This study is in accordance with the requirements of Canterbury - Bankstown DCP 2023, Austroads Guide to Traffic Management Part 3: Traffic Studies and Analysis, and the RTA Guide to Traffic Generating Developments Version 2.2 (October 2002).

2. SCOPE

The purpose of this report is to investigate and examine the traffic and parking requirements and implications of the proposed residential building at No. 10-12 Parmal Ave, Padstow on the surrounding residences and traffic network and to recommend any necessary measures to reduce these impacts if required. The proposed residential development consists of the following:

- A 4 storey residential building – Twenty-two (22) Units ;
- One level of Basement Parking to accommodate thirty-two (32) off-street parking spaces;

3. SITE LOCATION AND ENVIRONMENT

The site is located on the Parmal Ave. The local precinct is primarily of residential nature.

Parmal Ave is an east to west running road with vehicles travelling in both directions. It is four (4) lanes wide in total with one (1) lane for travel and one (1) lane for kerbside parking on each side. The site has approximately 28.6m wide street frontage on Parmal Ave. The site occupies an area of approximately 1690m^2. The existing site is occupied by two single residential dwellings, existing access driveways on Parmal Ave.

4. EXISTING CONDITIONS

4.1. Existing Vehicle Access & Egress to Proposed Parking Area

The existing access driveways located on Parmal Ave along the southern boundary of the property. This access driveways to be removed and replaced with a new access driveway located on the Parmal Ave frontage. The proposed parking is to accommodate 32 basement parking spaces and is to be accessed via a 5.5m wide driveway.

4.2. Road Network & Nearby Intersections

The site is located on the northern side of Parmal Ave. The site is on the block bound by Davies Rd to the East, Parmal Ave to the South, and Banks St to the North and Howard Rd to the West as shown in Figures 1 & 2.

Parmal Ave is orientated east to west and is four (4) lanes wide along the site frontage with two (2) lanes for travel and two (2) lanes for unrestricted kerbside parking. Parmal Ave intersects with Ryan Rd to the West and ends with a cul-de-sac to the East.

4.3. Existing Traffic Volumes

Parmal Ave is a Local Road. Traffic volume is less than 20,000 Annual Average Daily Traffic (AADT) using the Map 15 of the Traffic Volume Maps for Noise Assessment for Building on Land Adjacent to Busy Roads by the RTA (Refer to Figure 6). The speed limit on Parmal Ave is 50km/hr.

4.4. Existing Traffic Flows

Traffic counts were undertaken by ANA Civil Pty Ltd at the front of site on Parmal Ave;

The traffic counts were undertaken at peak times on Tuesday July 25, 2023 to represent a typical weekday. The peak hours on a typical weekday we found to be 8:15am-9:15am in the morning and 4:30pm-5:30pm in the afternoon.

Peak hour traffic flows are as follows:

Table 1 – Existing Peak Hour Traffic Volumes (Vehicles/hour) on Parmal Ave

Peak Time	*Parmal Ave* (1)	*Parmal Ave* (2)
8:15AM – 9:15AM	16	24
4:30PM – 5:30PM	20	18

Notes:
(1) Vehicles travelling along Parmal Ave – Travelling East
(2) Vehicles travelling along Parmal Ave – Travelling West

From the above, we have found that Parmal Ave is catering for a very low traffic volume and is free flowing. Parmal Ave services the local residential allotments and accommodated a Cul-De-Sac to the east.

It is determined that the existing level of service in Parmal Ave is classified as Level A, in accordance with Table 4.4 'Urban Peak Hour Flows per Direction' of the RMS' Guide to Traffic Generating Developments (2002). See the table below.

Table 2 – Urban Peak Hour Flows per Direction

Level of Service	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Also the roadway of Parmal Ave is extremely low volume and free flowing with little to no delays at all with an average delay of less than 14 seconds per vehicle is considered to be in 'Good Operation' with a Level of Service 'A', in accordance with Table 4.2 'Level of Service Criteria for Intersections' of the RMS' Guide to Traffic Generating Developments (2002). See the table below.

Table 3 – Level of Service Criteria for Intersections

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way & Stop Signs
A	< 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity

C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays Roundabouts require other control mode	At capacity, requires other control mode

4.5. Existing Public Parking Conditions

The existing parking restrictions which apply to the road network in the vicinity of the site comprise of the following:

- Unrestricted kerbside parking along the full length of the northern side of Parmal Ave;
- Unrestricted kerbside parking along the full length of the southern side of Parmal Ave;

See image attached in Figures 6-7 for relevant parking arrangements and signage on Parmal Ave.

Street parking in the vicinity of the proposed development consists of the following:

- Approximately nineteen (19) car spaces on the norther side of Parmal Ave
- Approximately sixteen (16) car spaces on the Southern of Parmal Ave

On a typical weekday a parking survey was conducted by this office in order to assess the existing on-street parking levels in the vicinity of the site. The parking survey was conducted at 15-minute intervals on Tuesday July 25, 2023 10:00am-11:00am period Upon inspection we found the following number of car spaces unoccupied:

Table 4 – Summary of On Street Parking Survey Tuesday July 25, 2023 10:00am-11:00am

Location	**Minimum % Unoccupied**
Northern side of Parmal Ave	79% (15/19) spaces unoccupied)
Southern side of Parmal Ave	75%

	(12/16) spaces unoccupied)

As can be seen from the above sufficient on-street parking can be found in the vicinity of the development even during peak times should street parking be required. It is to be noted that the surrounding vicinity of the subject property is of primarily single residential dwellings which each provide adequate on-site parking per dwelling. The vehicles to utilise the kerbside parking as observed above will be mostly visitors and of short-term parking.

4.6. Public Transport

There are a several bus stops within the vicinity of the site with the nearest being located only 350m (or 5 minutes walk) to the south.

Buses travelling to these stops include the following:

Table 5 – Bus Routes

Bus Number	Bus Travelling To/From
962	East Hills to Miranda
963	Alfords Point to Menai
965	Sutherland to Woronora
M92	Sutherland to Parramatta

The site also serviced by Padstow train station (approximately 600m or 8m minute walk). This station serves the T8-Airport & South Line with frequent train services in the day and evening periods.

As can be seen from the above, the site is serviced by public transport, and we expect these serviced to be utilized by the occupants of the proposed development.

4.7. Pedestrian Amenity

Pedestrian footpaths are available throughout the study area. A pedestrian footpath is located along the site frontage for occupants wishing to travel along Parmal Ave in either direction.

5. PROPOSED CONDITIONS

5.1. Proposed Traffic Conditions

The proposed land use is changing from 2 residential dwellings to a 22 Unit residential building. The traffic generation of a one-bedroom and two-bedroom residential unit are considered to be the same.

The trip rates for Medium Density Residential Flat Building as per Section 3.3.2 of the RTA Guide to Traffic Generating Developments Version 2.2 (October 2002) are as follows:

One/Two Bedroom Units

- Daily vehicle trips = 4 per dwelling
- Morning peak hour vehicle trips = 0.4 per dwelling

Table 6 – RTA Trip Rates for the proposed Medium density RFB

Land Use	Time	Traffic Generation for the site (22x2-Bedroom Units)
Medium Density RFB	Daily vehicle trips	88 trips per day
	Morning Peak Hour	8.8 trips per hour

As can be seen above, the application of the above trip rates yields a traffic generation potential of approximately eighty-eight (88) vehicle trips per day, or approximately nine (9) vehicle trips per hour during peak morning hours for the proposed land use. The existing The existing land-use comprises of two single residential dwellings, which generate approximately 18 vehicle trips per day, or approximately 2 vehicle trip per hour during the morning peak hour.

The proposed development therefore increases the traffic volume as per the following:

- Daily Vehicle Trips: 88 - 18 = 70 additional trips per day, and
- Morning Peak Hour: 9-2 = 7 additional trips per hour

Comparing the results above to the figures produced in *Table – Existing Peak Hour Traffic Volumes* it can be seen that the proposed residential building to the existing residential flat building will increase the peak hour traffic volumes on Parmal Ave. Considering the extremely low existing volume of Parmal Ave and the performance level of service category 'A' with <14s delay per vehicle, the increase in traffic volume will not cause any nuisance to the surround road network.

5.2. Proposed Parking Conditions

5.2.1. Off-Street Parking Provisions

5.2.1.1. Off-Street Car Parking

Off-street parking provisions for residential flat buildings are to be in accordance with *Canterbury – Bankstown DCP 2023 - Part 3.2 – Parking* and RTA Guide to Traffic Generating Developments Version 2.2 (October 2002).

Canterbury – Bankstown DCP 2023 - Part 3.2 states the following is required:

Table 3 – Canterbury - Bankstown Council Parking Requirements for the Proposed Development

Land Use	**Off-street Parking Requirements**
Residential flat dwelling	1.2 space per 2 bedroom dwelling 1 visitor car space per 5 dwellings 2 disable parking spaces

The proposed development consists of twenty-two (22) two bedroom dwellings, therefore the parking requirements as outlined above yields an off-street parking requirement as follows:

- Twenty-six (26) car parking spaces for all 22 residential units (i.e 1.2 Parking spaces each dwelling)
- Four (4) Visitor parking spaces
- Two (2) Disabled parking spaces

As can be seen on the architectural plans, the proposal consists of **Thirty-two (32) car spaces including two (2) disabled parking spaces with shared zones, and four (4) visitor spaces.**

In this regard, the proposal will provide the parking spaces at the required rate of 1.2 spaces per unit. With this, the site has adequate access to public transport, amenities, and with the abundant on-Street parking availability, this proposal meets this requirement of the DCP and RMS Guidelines.

5.2.2. Proposed Off-Street Parking Area Layout

5.2.2.1. Geometric Layout of Parking Modules

The proposed geometric layout of the off-street parking modules have been checked and are in accordance with the requirements of AS2890.1 (Parking Facilities-Off Street Parking).

5.2.2.2. Minimum Line of Sight

As per Figure 3.3 'Minimum Sight Lines for Pedestrian Safety' of AS2890.1 (Parking Facilities-Off Street Parking), a triangular area with 2.5m (adjacent to the driveway) by 2.0m (adjacent to the street) will be kept clear of obstructions to visibility. Sight triangles have been accommodated on the primary entry driveway crossing along the Parmal Ave frontage. The entry driveways cross a pedestrian footway and therefore satisfy the pedestrian minimum line of sight.

5.2.2.3. Proposed Entry/Exit Driveway

The proposed entrance/exit driveways fronting both Parmal Ave have been designed to accommodate for two-way traffic flow with access in a both directions at any time. The proposed driveways are 5.5m wide on Parmal Ave which is compliant with AS2890.1 (Parking Facilities-Off Street Parking). Figures 7 - 10 show a Swept Path Analysis of a B85 vehicle entering/exiting each Off Street Carpark Facility in a forward direction.

6. CONCLUSION

This report has examined the existing traffic volume, traffic characteristics and parking requirements with the potential traffic and parking implications of the proposed residential development at No. 10-12 Parmal Ave, Padstow. The proposal will provide thirty-two (32) on-site parking spaces. This meets the requirements of *City of Canterbury – Bankstown DCP 2023 - Part 3 – Parking.*

In conclusion, it is our opinion that the proposed development will not have a negative impact to the existing traffic network nor will it have any unacceptable parking implications.

Should you require any help or further explanations, please do not hesitate to contact us.

Yours faithfully,

M. Zaioor
B.S Civil Eng'g (A.U.B).
M.S.Structural Eng'g (UNSW).
M.I.E.(Aust), CPEng.

APPENDIX

Figure 1 – Site Location (1)
Source: Imagery from SIX Maps accessed on July, 2023

Figure 2 – Site Location (2)
Source: Imagery from Google Earth, Imagery Map Data 2023 accessed on July, 2023

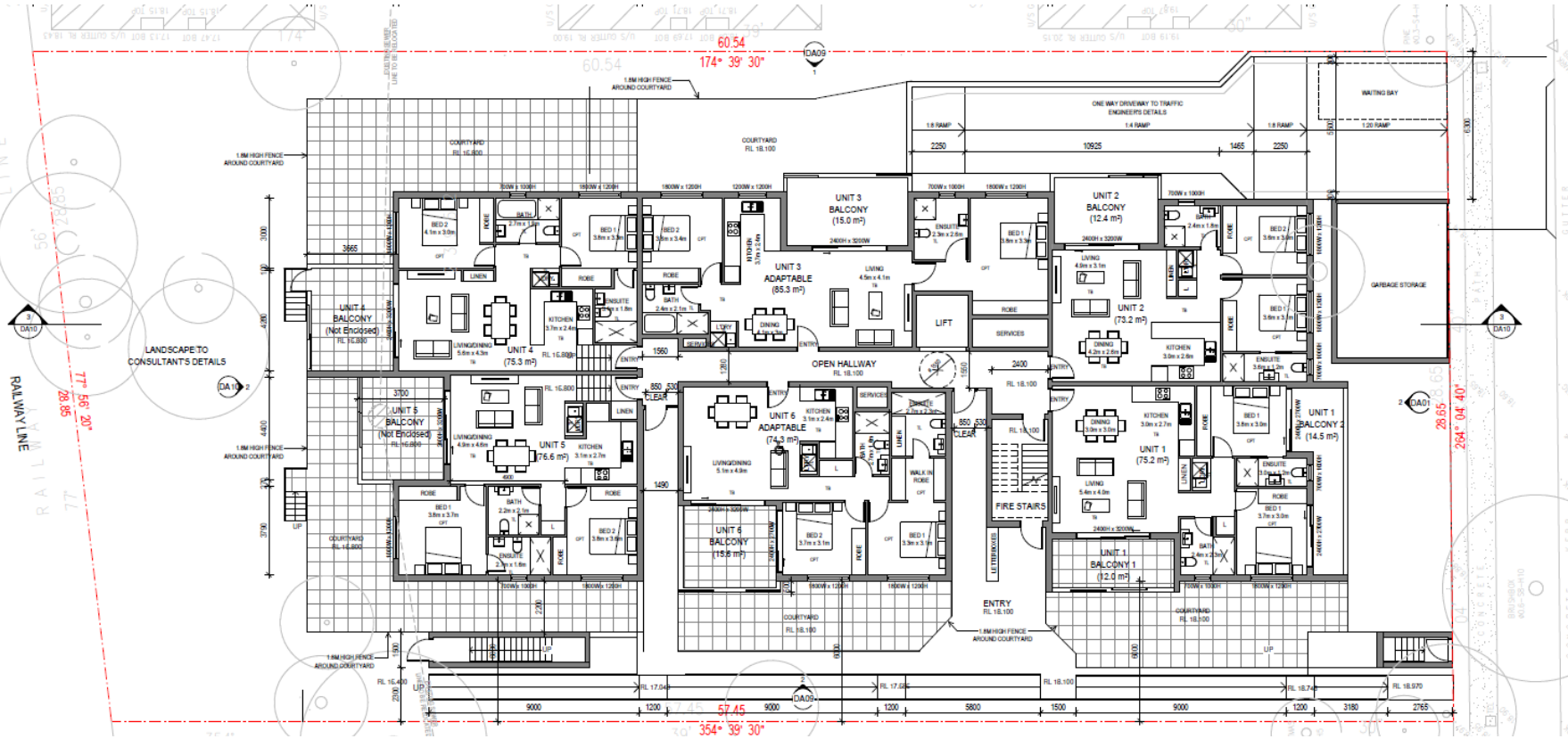

Figure 3 - Proposed Site Plan

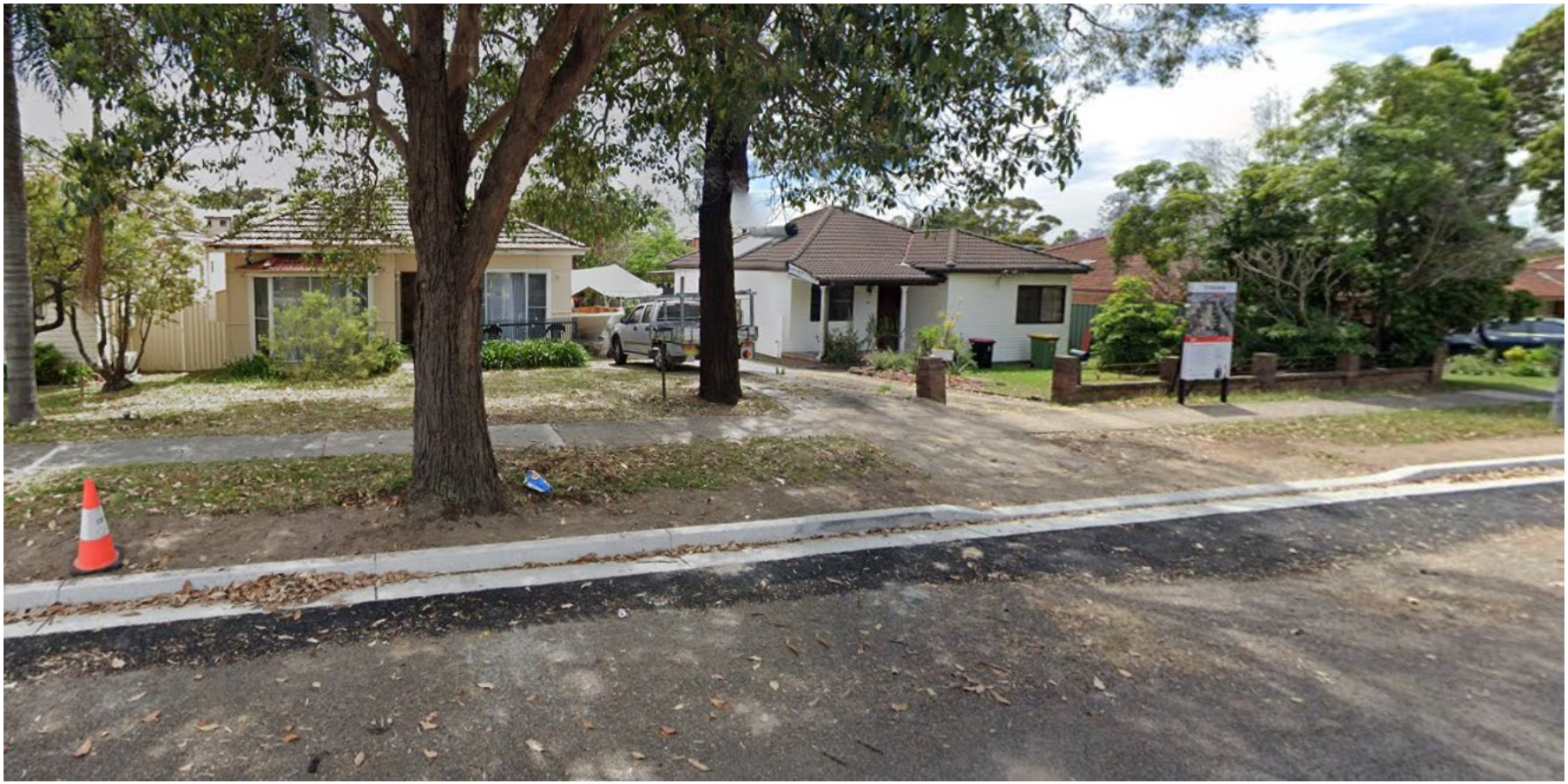

Figure 4 – Front of Site

Figure 5 – Existing unrestricted parking along Parmal Ave

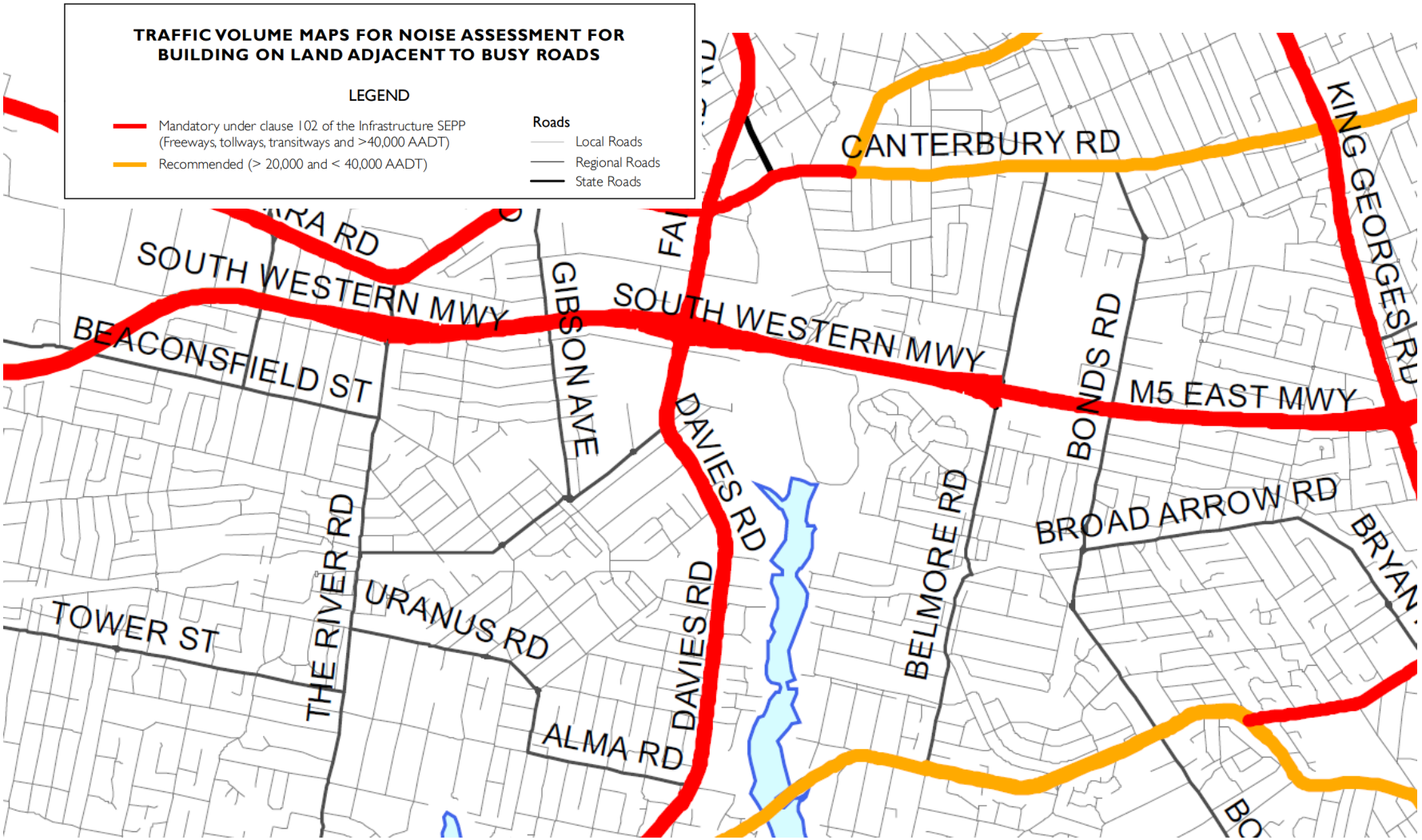

Figure 6 – RMS Traffic Volume Map 15

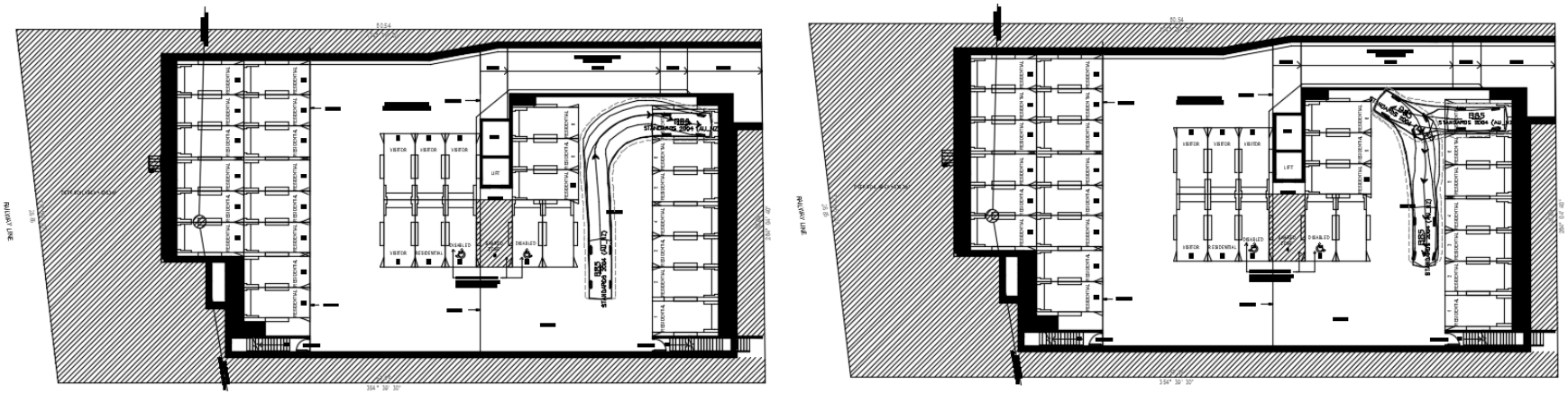

Figure 7 - Swept Path Analysis B85 Entering/Existing car space 7 in a Forward Direction

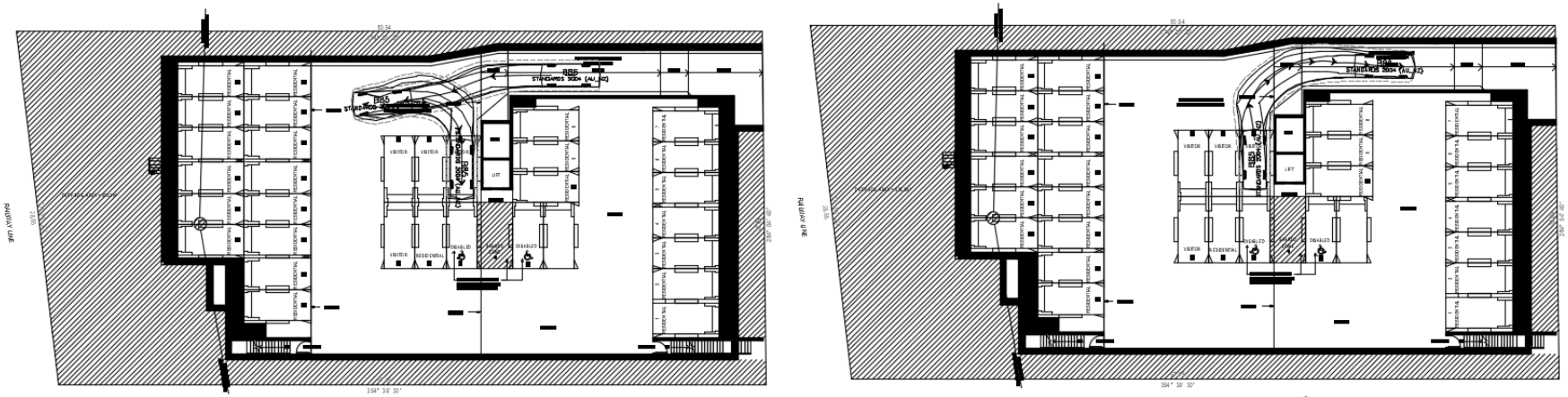

Figure 8 - Swept Path Analysis B85 Entering/Existing car space 16 in a Forward Direction

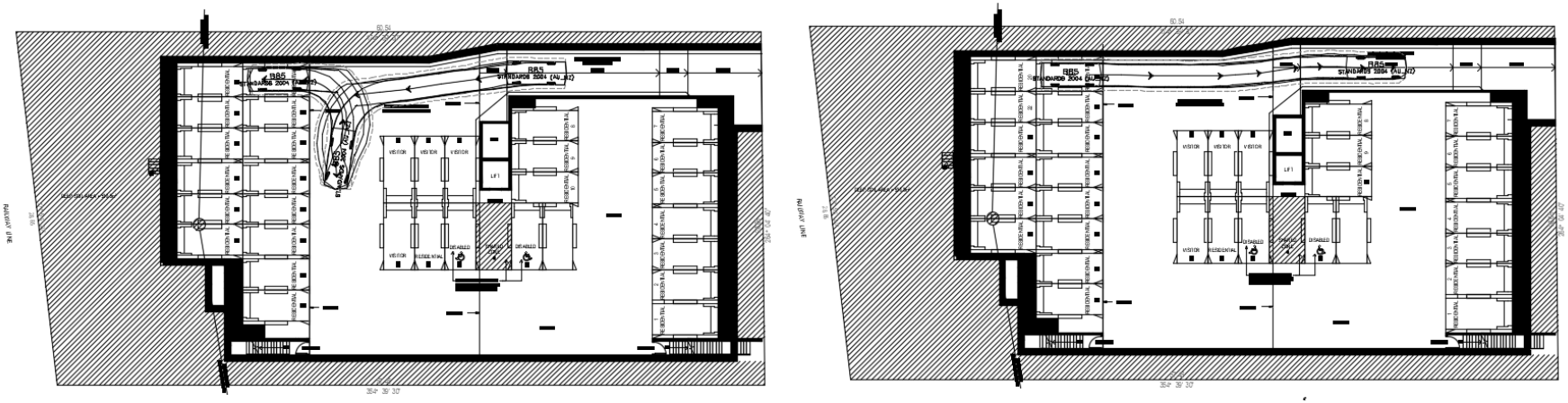

Figure 9 - Swept Path Analysis B85 Entering/Existing car space 19 in a Forward Direction

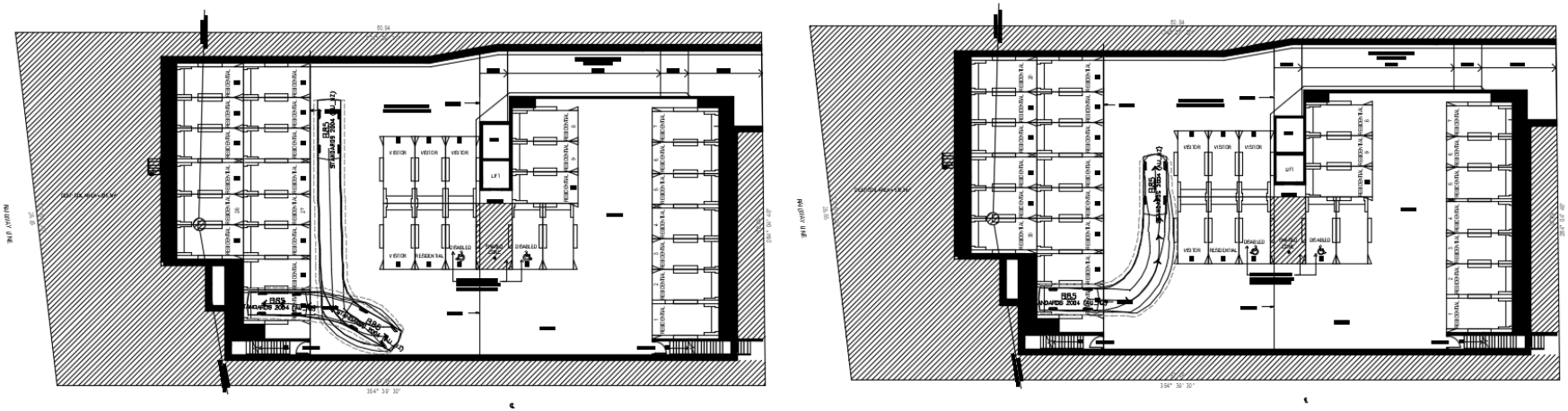

Figure 10 - Swept Path Analysis B85 Entering/Existing car space 32 in a Forward Direction

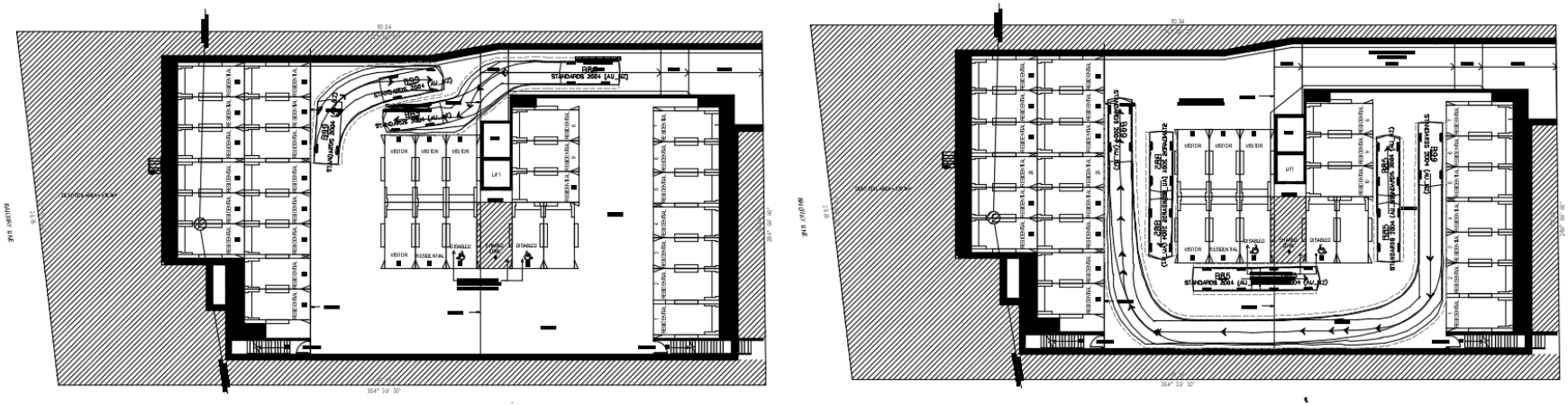

Figure 11 - Swept Path Analysis B85 - B99 passing each other at basement.

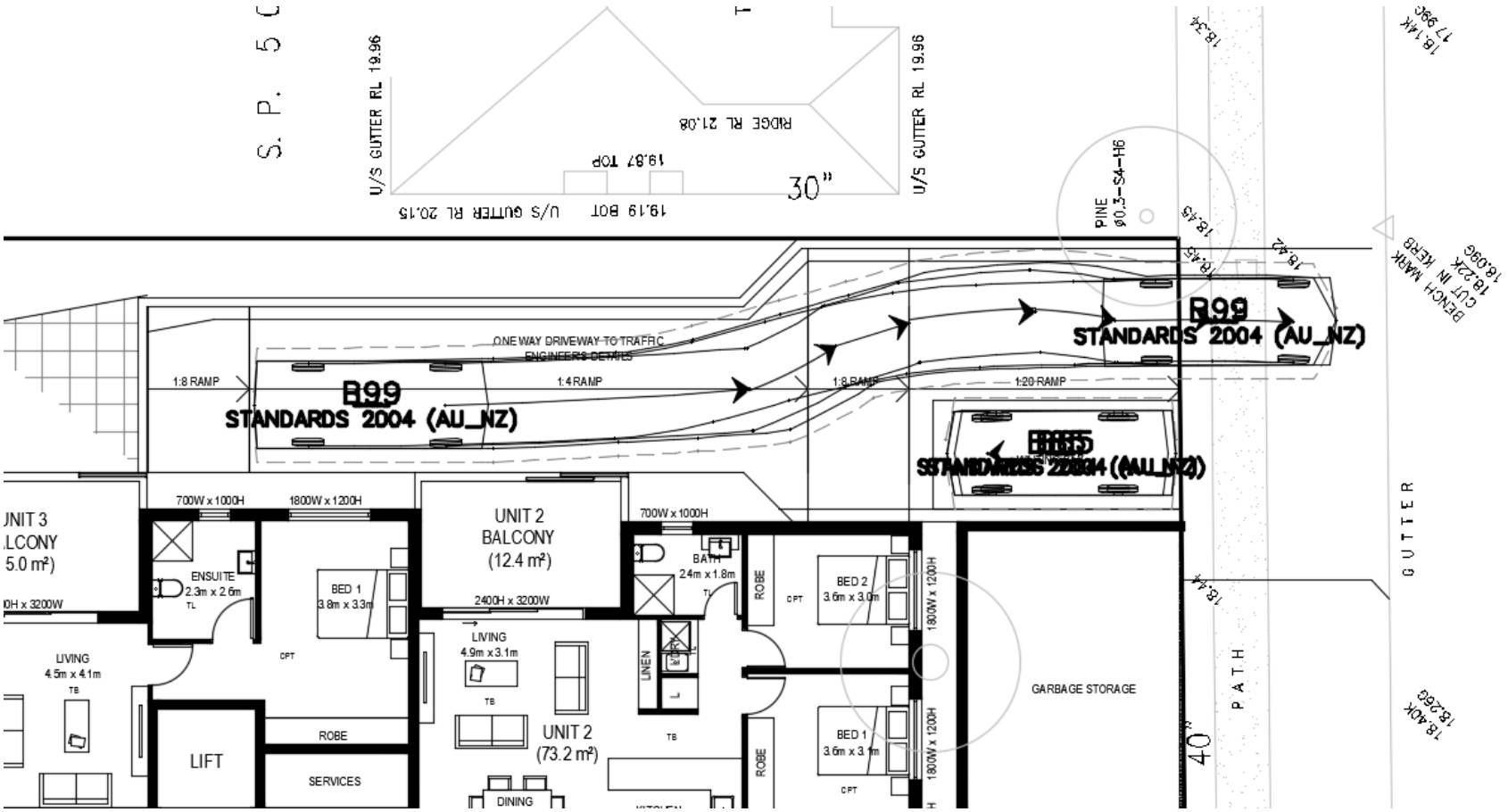

Figure 12 - Swept Path Analysis B85 - B99 passing each other at entry.