fernway
engineering

Traffic Impact Assessment

10-16 Albert Street, Casino
NSW 2470

May 2023

traffic engineering and planning

Type of Report: Traffic Impact Assessment

Site Location: 10-16 Albert Street, Casino NSW 2470

Prepared for: Barry Rush and Associates Pty Ltd

Prepared by: Fernway Engineering

ACN 642 585 546

www.fernway.net.au

Disclaimer

This report has been prepared based on information available at the date of publication. Fernway Engineering will not be liable for any loss, damage, cost or expense incurred or arising because of any person relying on information in this report. Reproduction of this report or any part is not permitted without the prior written consent of Fernway Engineering.

© Copyright 2023 by Fernway Engineering

Table of Contents

1. Introduction 4
2. Background 5
   2.1 Site Context 5
   2.2 Public and Active Transport Accessibility 5
3. Proposed Development 7
4. Parking Requirements 8
   4.1 Car Parking 8
   4.2 Bicycle Parking 9
5. Parking and Access Design Review 10
   5.1 Car Space Dimensions 10
   5.2 Blind Aisle Clearance 11
   5.3 Gradients within Parking Modules 11
   5.4 Gradient of Access Driveway 11
   5.5 Driveway Ramp Gradient 12
   5.6 Driveway Width 12
   5.7 Pedestrian Sight Distance Provision 13
   5.8 Driveway location 14
6. Traffic Impact 17
7. Conclusions 18

1. Introduction

Fernway Engineering has been engaged by Barry Rush and Associates Pty Ltd to provide a traffic impact assessment as a part of the development application for the proposed multi-dwelling residential development (carried out by the Land and Housing Corporation under the Housing SEPP 2021), located at 10-16 Albert Street in Casino ('subject site').

The scope of this report is as follows:

- Review the project background along with the existing traffic and parking conditions in the vicinity of the subject site;
- Assess the sufficiency of the proposed on-site car parking provisions, based on the statutory parking provision requirements applicable to the proposal;
- Review the proposed on-site car parking and site access designs with reference to the relevant Australian Standard requirements;
- Identify the anticipated traffic impact likely to be generated from the proposal; and
- Make a conclusion on the proposed development from a traffic and parking perspective, based on the above findings.

2. Background

2.1 Site Context

The subject site is located at 10-16 Albert Street in Casino and includes approx. 3,784 sqm of land area across four lots currently occupied by residential dwellings. The locality of the subject site is characterised by low-density residential uses.

The site fronts Albert Street which is a local road that is approx 185m long. It runs in the north-south direction, with the intersection with McDougall Street to the north and a dead-end to the south (approx 75m south of the subject site).
It includes an undivided sealed carriageway that is approx. 5.5m wide.

Figure 1 provides an aerial view of the subject site.
Figure 2 shows Albert Street as seen at the site frontage.

2.2 Public and Active Transport Accessibility

Albert Street does not include any formal footpaths on either side.

Bus service 672 (Casino to Northwest Casino via Hospital Loop Service) is accessible from the bus stops located at McDougall Street / Colches Street North intersection, approx. 200m from the subject site. This service operates between 6.45am to 12.55pm on weekdays with an hourly frequency. It does not operate on weekends.

Figure 1: Location of the Subject Site

Figure 2: Albert Street at the Frontage of the Subject Site

3. Proposed Development

The subject proposal involves the construction of a multi-dwelling residential development (carried out by the Land and Housing Corporation under the Housing SEPP 2021) at the subject site. It includes a total of 17 dwellings (10 x 2 bedroom dwellings and 7 x 3 bedroom dwellings) and provides 21 on-site car spaces. The proposed site includes three vehicular access points – two driveways are provided at each end of the site for access into two single dwellings, each with two open car spaces in tandem configuration and one driveway is provided centrally along the site's frontage to Albert Street for access into the main car park that includes 17 car spaces (including two disability accessible car spaces). **Figure 3** shows the proposed site layout plan.

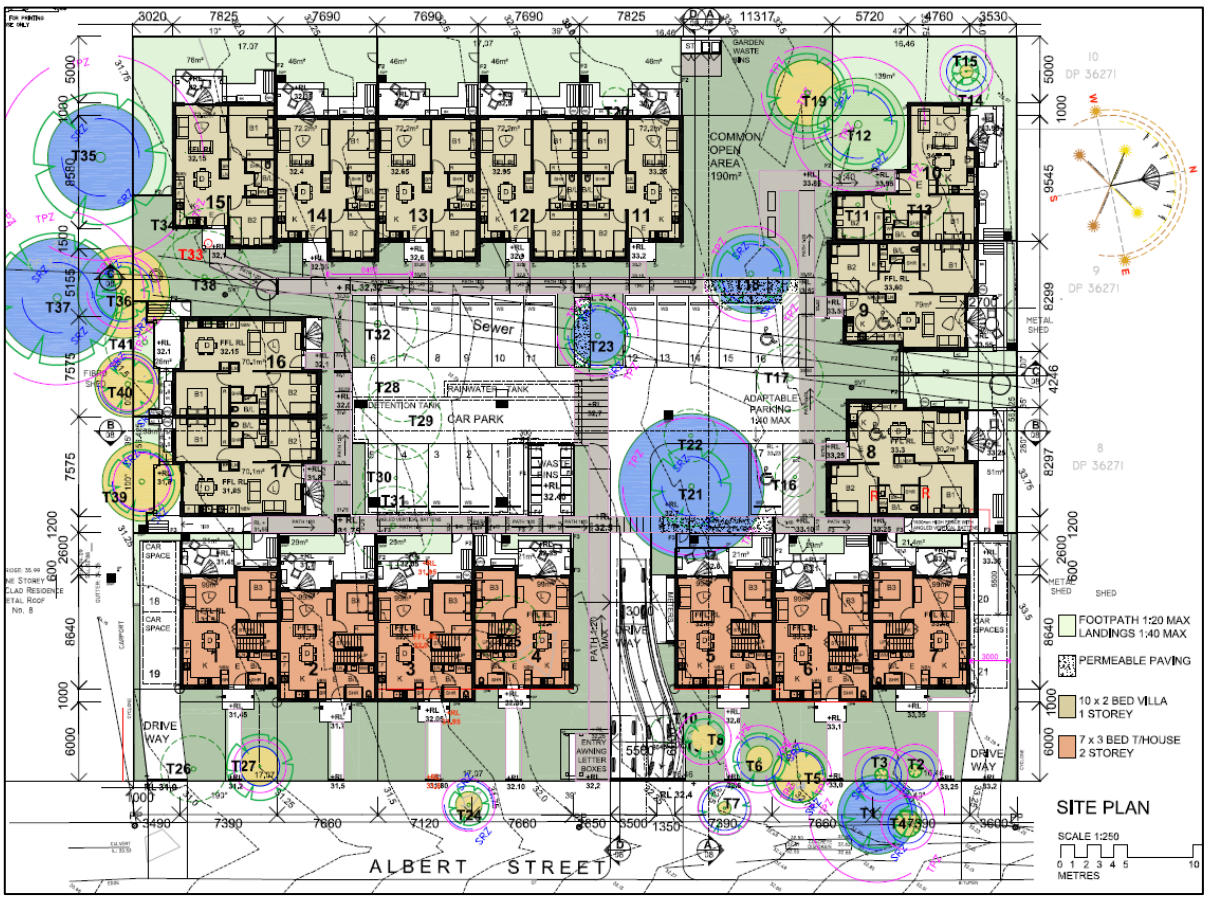


Figure 3: Proposed Site Layout Plan

4. Parking Requirements

4.1 Car Parking

In relation to residential developments by the Land and Housing Corporation, Division 6, Clause 40(1)(a) of the State Environmental Planning Policy (Housing) 2021 provides the following car parking requirements:

- For development on land in an accessible area – 0.4 parking spaces for each dwelling containing 1 bedroom, 0.5 parking spaces for each dwelling containing 2 bedrooms and 1 parking space for each dwelling containing 3 or more bedrooms; or
- For development that is not in an accessible area – 0.5 parking spaces for each dwelling containing 1 bedroom, 1 parking space for each dwelling containing 2 bedrooms and 1.5 parking spaces for each dwelling containing 3 or more bedrooms.

State Environmental Planning Policy (Housing) 2021 defines an accessible area as land that is within:

(a) 800m walking distance of a public entrance to—

(i) a railway station, or

(ii) a wharf from which a Sydney Ferries ferry service operates, or

(b) 400m walking distance of—

(i) a public entrance to a light rail station, or

(ii) for a light rail station with no entrance—a platform of the light rail station, or

(c) 400m walking distance of a bus stop used by a regular bus service, within the meaning of the Passenger Transport Act 1990, that has at least 1 bus per hour servicing the bus stop between—

(i) 6am and 9pm each day from Monday to Friday, both days inclusive, and

(ii) 8am and 6pm on each Saturday and Sunday.

As per the discussion in **Section 2.2**, it is evident that the subject site is not within an accessible area. Although the site is accessible by a single bus service, it does not meet the serviceability criteria in Clause (c) above.

As such, applying the non-accessible area parking rate to the proposed development which includes 10 x 2 bedroom dwellings and 7 x 3 bedroom dwellings, a parking requirement of 21 car parking spaces is obtained (rounded up). The proposed development includes provision for a total of 21 car spaces, including two disability-accessible car spaces. Therefore, the proposed development satisfies the relevant minimum car parking requirement.

4.2 Bicycle Parking

Based on Objective 2.4N-2 of the Low Rise Housing Diversity Design Guide (July 2020, Department of Planning, Industry and Environment), covered space is to be provided for the secure storage of at least 1 bicycle per dwelling within multi-dwelling housing developments. The proposal seeks to accommodate bicycle parking requirements for each dwelling within the private open space of that dwelling.

5. Parking and Access Design Review

Figure 4 illustrates the layouts of the proposed on-site car parking area, with the key dimensions outlined.

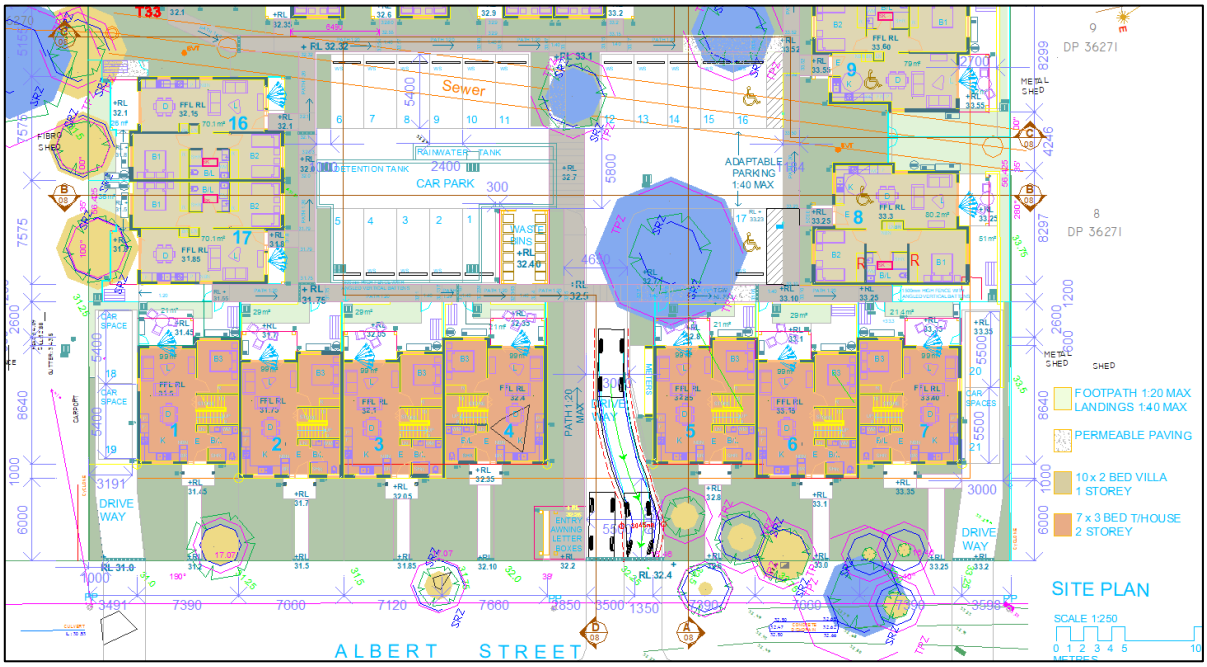


Figure 4: Proposed On-Site Car Parking Layout

5.1 Car Space Dimensions

Regular Parking Spaces

The proposed regular 90-degree car parking spaces can be categorized under user class 1A (residential parking) in AS 2890.1:2004. The minimum car bay and aisle requirements provided in AS 2890.1:2004 for user class 1A spaces are 2.4m width, 5.4m length and 5.8m aisle width. The proposed regular car spaces comply with the above dimensional requirements.

Disability Accessible Parking Spaces

The proposed disability-accessible parking spaces have been designed in accordance with AS 2890.6:2009, as follows:

- The disability-accessible car parking space is designed at 2.4m width and 5.4m length (with a minimum of 5.8m aisle width);
- A shared space of equal dimensions has been provided adjacent to the car parking space; and
- Both the car parking space and the shared space indicate appropriate line-markings. The shared space includes a bollard to prevent motorists from parking at this location.

5.2 Blind Aisle Clearance

When car spaces are located adjacent to a blind aisle (end of the aisle), AS 2890.1 requires the aisle to be extended by an additional 1m in order to allow reverse exit maneuvers by the vehicles parked in these spaces. This requirement has been satisfied at the end of both aisles in the main car park.

5.3 Gradients within Parking Modules

AS 2890.1 stipulates that parking modules, at maximum, should have a grade of 1 in 16 (measured in any direction other than parallel to the angle of parking). In addition, AS 2890.6 stipulates that the disability-accessible car parking spaces and the shared areas shall not exceed the grade of 1 in 40 in any direction. The proposed parking modules are capable of complying with the above-identified grade requirements.

5.4 Gradient of Access Driveway

In relation to the gradient of the access driveway for the main car park, AS 2890.1 requires the first 6m into the car park to include a maximum grade of 5% (1 in 20). The proposed driveway is graded at <5% for the first 6m from the site boundary, which complies with the maximum allowable grade limit.

5.5 Driveway Ramp Gradient

AS 2890.1-2004 states the grade requirements for straight ramps at private or residential car parks as follows:
(i) Longer than 20 m—1 in 5 (20%) maximum.
(ii) Up to 20 m long—1 in 4 (25%) maximum. The allowable 20 m maximum length shall include any parts of grade change transitions at each end that exceed 1 in 5 (20%).
(iii) A stepped ramp comprising a series of lengths each exceeding 1 in 5 (20%) grade shall have each two lengths separated by a grade of not more than 1 in 8 (12½%) and at least 10 m long.

Furthermore, where the difference in grade between two sections of ramp or floor is greater than 1:8 (12.5 percent) for a summit grade change, or greater than 1:6.7 (15 percent) for a sag grade change, the ramp must include a transition section of at least 2 metres to prevent vehicles scraping or bottoming.

All three proposed driveways include gradients below 12.5% - which complies with the maximum allowable grade limit and does not require any transitions.

5.6 Driveway Width

A passing bay is provided at the boundary of the site on the driveway to the main car park (i.e. the first 6m into the site's main car park has been designed at 5.5m width + 300mm clearance on either side, in accordance with passing bay design requirements in AS 2890.1:2004). This passing bay will enable a vehicle entering the site's main car park to wait and give way to another vehicle simultaneously exiting the site along the driveway, without waiting on the frontage road (**Figure 4** shows the swept path of this scenario).

The remaining length of the driveway is designed to cater for one-way movements, at a width of 3m (with 300mm clearance on either side). This arrangement complies with the relevant AS 2890.1 requirement.

The two one-way driveways at each end of the site's frontage on Albert Street are designed at a width of 3m (with 300mm clearance on either side). This arrangement complies with the relevant AS 2890.1 requirement.

5.7 Pedestrian Sight Distance Provision

AS 2890.1 requires sight triangles of 2.5m length by 2m width, to be provided at the vehicle egress location, in order to ensure sufficient sight distance availability for pedestrians. This requirement is illustrated below in **Figure 5**.

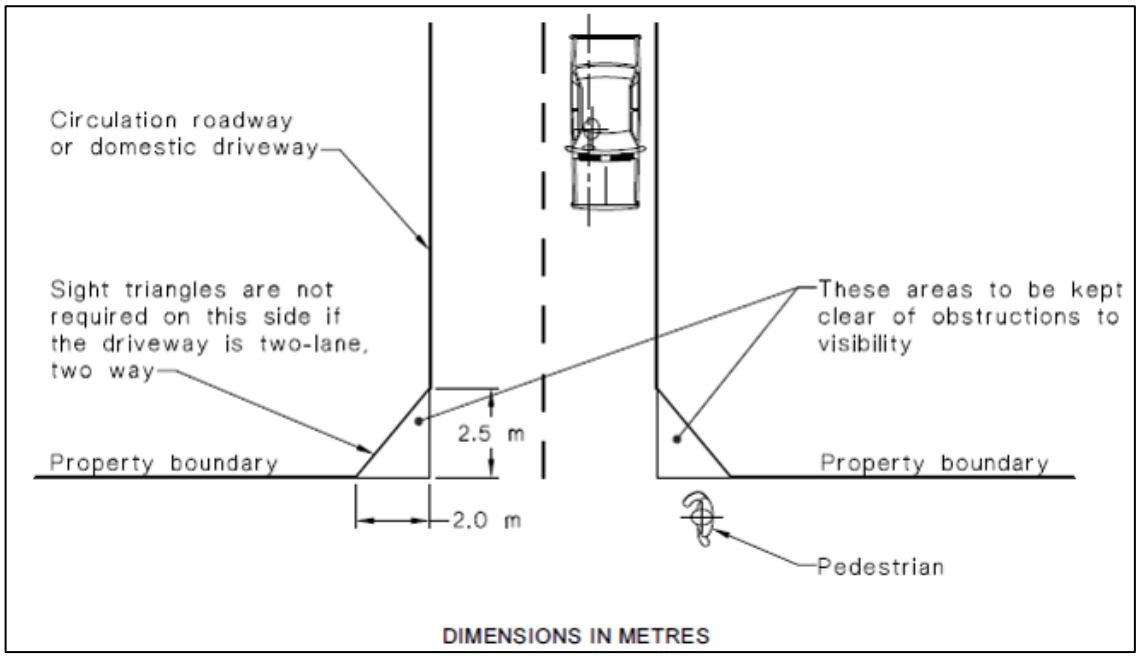


Figure 5: Pedestrian Sight Distance Requirement (AS 2890.1)

While there is no formal footpath at the site frontage, it is considered important to preserve the pedestrian sight distance at the site's vehicular access points. It is noted that since the driveway to the main car park is two-way for the first 6m

from the site boundary, the sight triangle to the right-hand side of a driver exiting the site is not required.

Figure 6 shows the preservation of pedestrian sight envelop at the vehicle egress points. As can be seen, these pedestrian sight envelopes are clear of obstructions within the site boundary (see **Figure 7**).

AS 2890.1 states a driver eye height of 1.15m – as such, any boundary fencing within this pedestrian sight envelop area should be conditioned to have a maximum height of 1.15m.

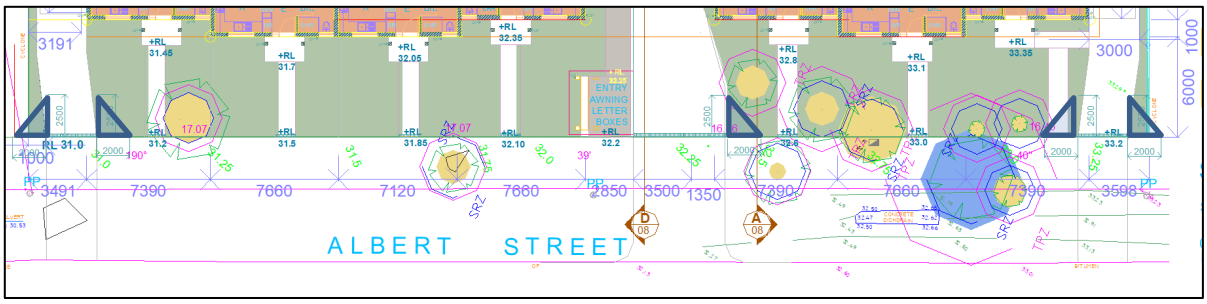


Figure 6: Pedestrian Sight Triangles at the Vehicle Egress Points

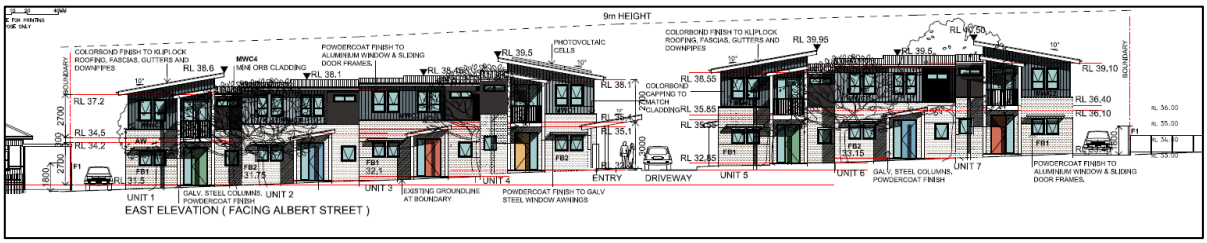
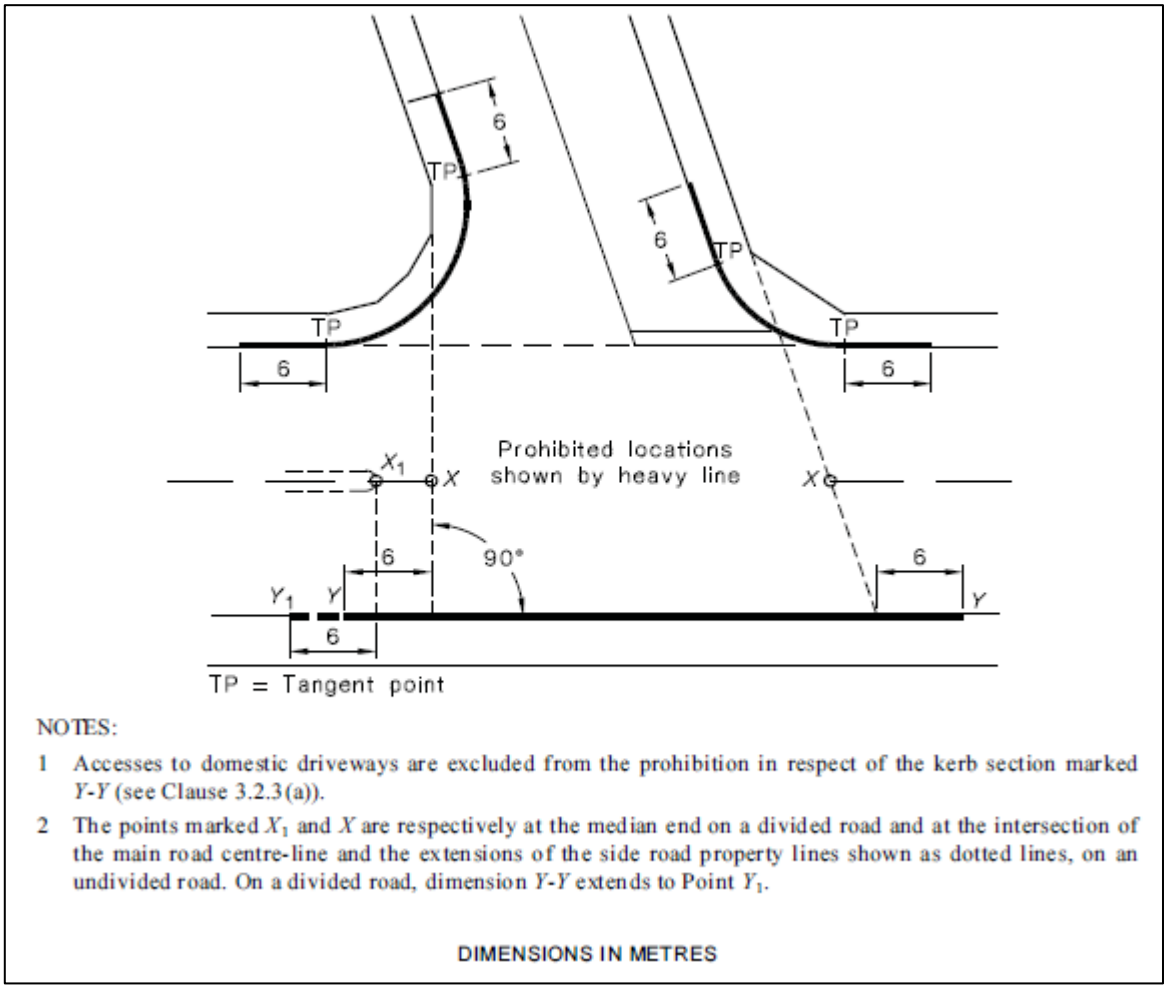


Figure 7: Site Frontage Design as seen from Albert Street

5.8 Driveway location

AS 2890.1 requires driveways near intersections to be located with a 6m offset from the tangent point of the kerbline of the frontage road. This requirement is extracted in **Figure 8**.

Note that the requirement shown in **Figure 8** does not apply to the two one-way driveways at each end of the site's frontage on Albert Street as they are considered domestic driveways (serving only a single residential dwelling).



NOTES:

1 Accesses to domestic driveways are excluded from the prohibition in respect of the kerb section marked *Y-Y* (see Clause 3.2.3(a)).

2 The points marked X_1 and X are respectively at the median end on a divided road and at the intersection of the main road centre-line and the extensions of the side road property lines shown as dotted lines, on an undivided road. On a divided road, dimension *Y-Y* extends to Point Y_1.

DIMENSIONS IN METRES

Figure 8: Prohibited locations of access driveways (AS 2890.1:2004)

The driveway to the main car park of the site is located 36m from the site's boundary with Lot 8 on Albert Street. As shown in **Figure 9**, this driveway is clear of the prohibited locations under AS 2890.1.

Figure 9: Location of the main driveway with respect to the prohibited locations of access driveways

6. Traffic Impact

The anticipated traffic generation potential of the proposed development was determined using the trip rates presented in the *Guide to Traffic Generating Developments (RMS 2002)* document in relation to residential dwelling houses:

- *Daily vehicle trips = 9.0 per dwelling*
- *Weekday peak hour vehicle trips = 0.85 per dwelling*

It is noted that the RMS Guide states that *the above rates are based on surveys conducted in areas where new residential subdivisions are being built. Public transport accessibility in such areas is often limited.* Accordingly, the above-adopted trip rates are deemed suitable for the proposed multi-dwelling residential development which does not have good access to public transport.

The current proposal is for a total of 17 residential dwellings. However, the subject site currently includes 4 residential dwellings. Therefore, the net additional number of dwellings at the subject site will be 13. Applying the above-identified trip rates to the proposed 13 net additional residential dwellings leads to the following daily and peak-hour trips:

- Daily Trips: **117 vehicles (in and out)**
- Peak Hour Trips: **12 vehicles (in and out)**

The above trips will be realised into/out of the subject site as midblock turning movements on Albert Street at the site frontage and at Albert Streett / McDougall Street intersection.

The above-determined level of additional daily and peak period trips are not considered significant and are not expected to have any material impacts on the existing traffic conditions of the local road network which mainly cater for low-density residential uses.

7. Conclusions

Based on this assessment, the following can be concluded in relation to the proposed development:

- The site locality, including Albert Street, does not include any formal footpaths. Bus service 672 (Casino to Northwest Casino via Hospital Loop Service) is accessible from the bus stops located at McDougall Street / Colches Street North intersection, approx. 200m from the subject site. This service operates between 6.45am to 12.55pm on weekdays with an hourly frequency. It does not operate on weekends.
- Under Division 6, Clause 40(1)(a) of the State Environmental Planning Policy (Housing) 2021, the proposed development has a statutory parking requirement of 21 car spaces (based on the non-accessible area parking rate).
- The proposed development includes provision for a total of 21 car spaces, which includes two disability-accessible car spaces. Therefore, the proposed development satisfies the relevant minimum car parking requirement.
- Based on Objective 2.4N-2 of the Low Rise Housing Diversity Design Guide (July 2020, Department of Planning, Industry and Environment), covered space is to be provided for the secure storage of at least 1 bicycle per dwelling within multi-dwelling housing developments. The proposal seeks to accommodate bicycle parking requirements for each dwelling within the private open space of that dwelling.
- The proposed car parking design is generally in accordance with the AS 2890.1 and AS 2890.6 requirements. The location of the driveway to the main car park is clear of the prohibited locations identified under AS 2890.1.

- The proposed development is expected to generate some 117 additional daily vehicle trips and 12 additional peak-hour vehicle trips. This level of peak period trips is not considered significant and is not expected to have any material impacts on the existing traffic conditions of the local road network which mainly caters for low-density residential uses.

fernway
engineering

ABN 38 475 511 899

traffic engineering and planning

PO Box 75
Artarmon NSW 1570

1300 651 258
info@fernway.net.au
www.fernway.net.au