TRAFFIC & TRANSPORT ENGINEERING

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17 August 2026

BCC DS
RECEIVED
19-10-2026
APPLICATION REF
A007134393

Core Property Partners
Level 11, 260 Queen Street
Brisbane QLD 4000

Attention: Bikram Kaler

Dear Bikram,

RE: 56-60 ALBION ROAD, ALBION
TRAFFIC ENGINEERING ASSESSMENT

INTRODUCTION

This report has been prepared by Pekol Traffic and Transport (PTT), as requested by Core Property partners, to assess the traffic engineering aspects of a proposed residential development comprising 77 units at 56-60 Albion Road, Albion.

The aim of this assessment is to review the proposed development layout in terms of its site access arrangements, parking provision and design, servicing arrangements, pedestrian / cyclist facilities and likely traffic impact, with respect to the Brisbane City Council's (BCC) 2014 City Plan requirements.

EXISTING CONDITIONS

SUBJECT SITE

The subject site is formally identified as Lot 2 on RP52675, RP85610, RP85611 and RP85612 and within a Character zone, according to BCC's 2014 City Plan. The site is currently vacant and as shown in Figure 1, is bound by:

- Albion Road and bikeway to the north
- a rail corridor to the west
- McDonald Road to the east
- Albion Road overpass to the south

The surrounding area consists primarily of residential and commercial / centre uses.

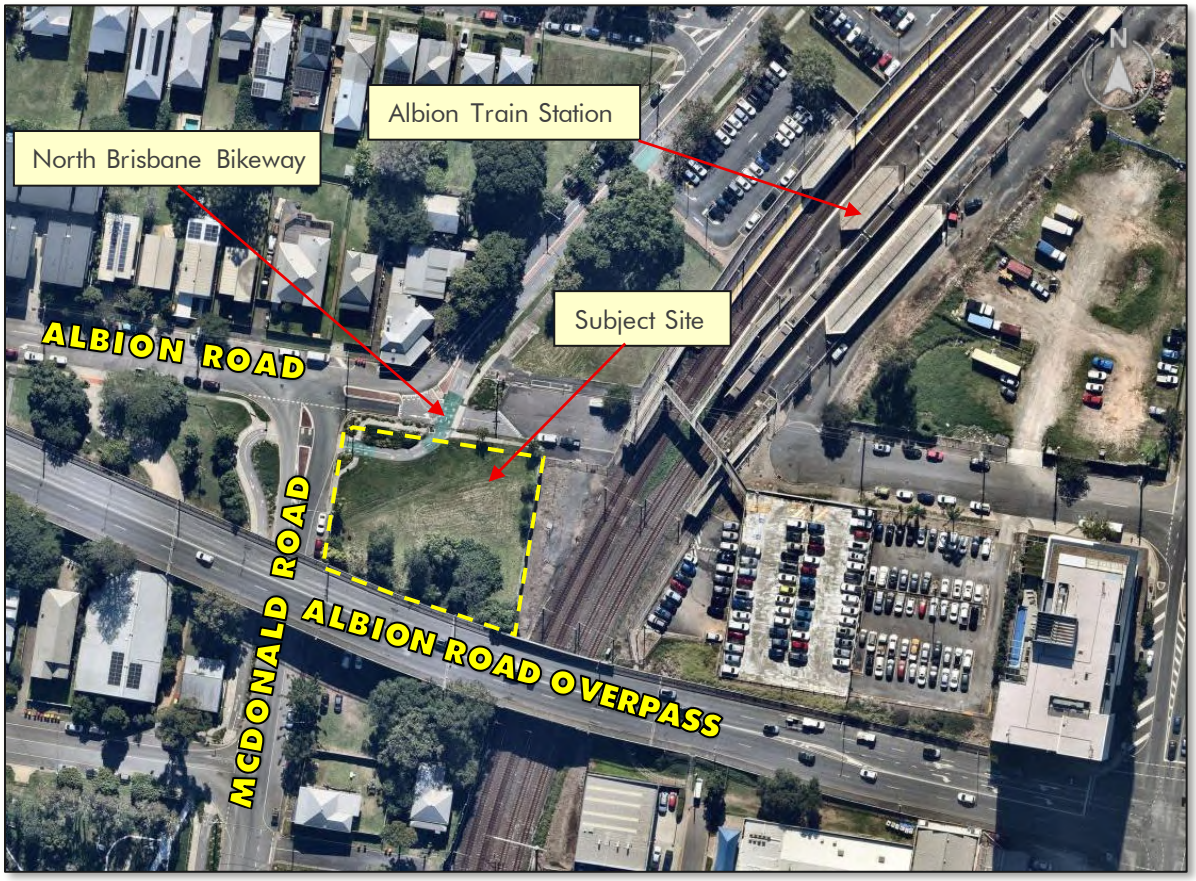
The site currently has no formal access.

ROAD NETWORK

Both McDonald Road and Albion Road (to the north of the site) are classified as neighbourhood roads (ie minor roads) and have a default urban speed of 50km/h. McDonald Road intersects Albion Road adjacent to the site, as shown in Figure 1.

ECAAS
ISO 9001
CERTIFIED
QUALITY
MANAGEMENT

Figure 1: SITE LOCALITY



ACTIVE TRANSPORT

Pedestrian footpaths are located on the northern and western site frontages.

The North Brisbane Bikeway is located adjacent to the site, as indicated in Figure 1. This is a major cycle corridor that connects Chermside with Brisbane City.

PUBLIC TRANSPORT

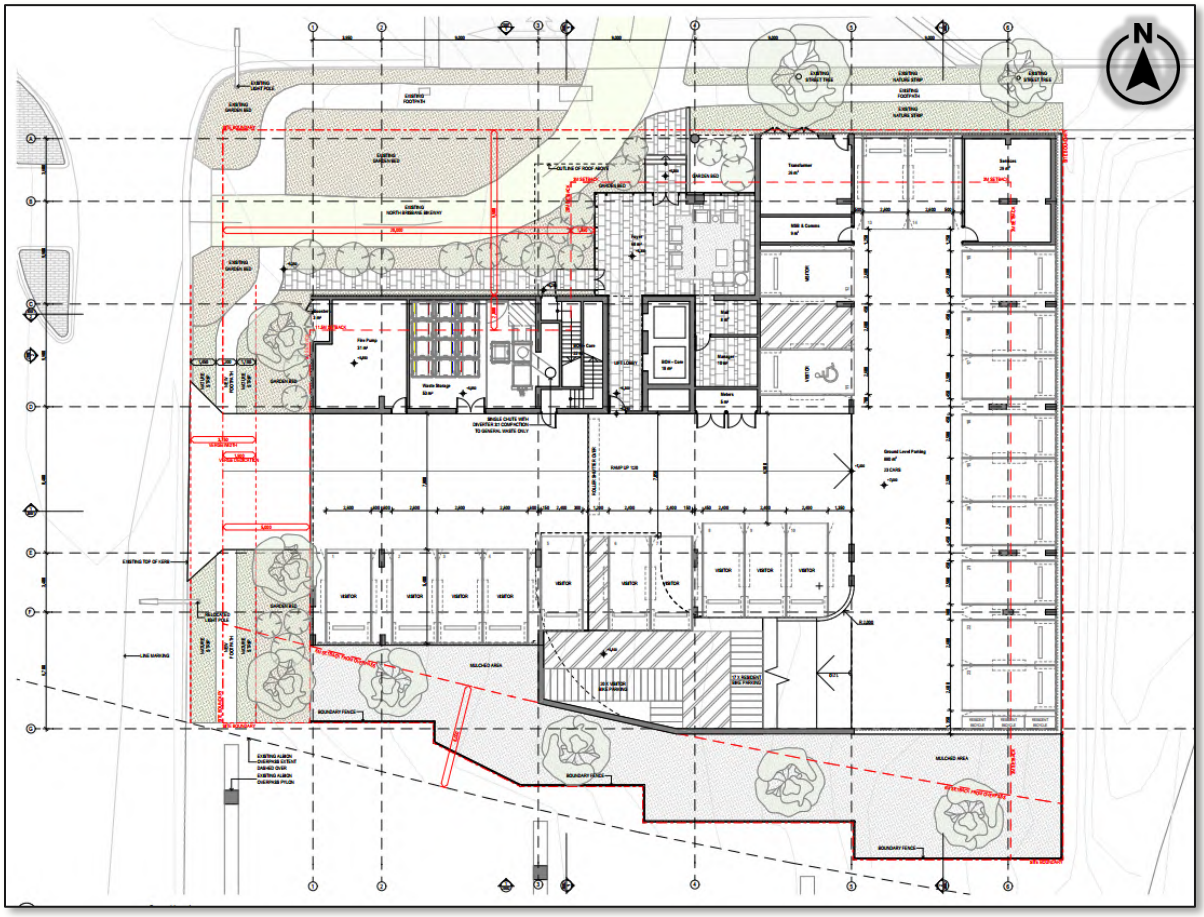
Albion Train Station is located within 150m walking distance of the subject site. This train station is served by the Shorncliffe, Cleveland and Airport train lines. Accordingly, the site is within a walkable (400m) catchment of multiple frequent train services (ie every 15 minutes during commuter peak times and every 30 minutes during off peak times) and as such, is very well serviced by public transport.

PROPOSED DEVELOPMENT

OVERVIEW

The development application seeks approval for a Material Change of Use (MCU) for a residential development comprising 77 units (ie 55 two-bedroom and 22 three-bedroom units). The development would be supported by 116 parking spaces, including 104 residential parking spaces and 12 visitor parking spaces. The proposed ground floor layout is shown in Figure 2, with dimensioned plans attached.

Figure 2: PROPOSED SITE LAYOUT



ACCESS

LOCATION

The proposed development would be accessed via a single all-movements driveway on McDonald Road. The driveway would be located approximately 20m south of the McDonald Road / Service Road intersection (measured to the Service Road southern kerb alignment), which accords with BCC's Transport, Access, Parking and Servicing (TAPS) Policy and Australian Standards AS2890.1 Parking Facilities Part 1: Off-Street Car Parking

DESIGN

The proposed access would be 7.8m wide, which would sufficiently cater for:

- two-way vehicle movements, in accordance with BCC's TAPS Policy
- Refuse Collection Vehicle (RCV) access and egress
- Occasional furniture delivery vehicle (ie Medium Rigid Vehicle) access and egress
- on-site small grocery delivery vehicle (ie Small Rigid Vehicle) without impeding two-way traffic flow

A swept path drawing of two opposing B85 (medium) cars passing a Small Rigid Vehicle standing on-site is attached.

The proposed access has been designed in accordance with a Type B1 crossover as per BCC Standard Drawing BSD-2021. An existing light pole on McDonald Road would be relocated to cater for the proposed crossover. The proposed exit taper would achieve sufficient clearance (ie 1.0m) to

The existing concrete traffic island adjacent to the proposed access (associated with the nearby pedestrian crossing refuge on McDonald Road) would be reduced to allow an RCV to exit the site to the north. The revised traffic island generally accords with BCC Standard Drawing BSD-2061.

SIGHT DISTANCE

For a 50km/h speed environment (ie on McDonald Road), Table 7 in BCC's TAPS Policy requires a minimum sight distance of 70m at driveways on minor roads and carrying less than 100 vehicles per hour. The proposed access would achieve well in excess of 70m sight distance to the south on McDonald Road. Approximately 25m sight distance would be available to the north (ie to the Service Road T-intersection). Vehicles approaching the proposed site access from the north, having just turned left/right into McDonald Road, would be travelling at lower speeds (ie 20 – 30 km/h). Accordingly, the available sight distance to the north is considered acceptable.

QUEUING

BCC's TAPS Policy recommends that sufficient on-site queuing be provided to allow a free influx of traffic which will not adversely affect traffic or pedestrian flows on the frontage road (ie McDonald Road). The 95th percentile queue at the site access is considered to be an adequate measure of an acceptable queueing provision.

The predicted 95th percentile queue at the proposed site access has been calculated based on 30 vehicles (ie the predicted peak hour arrivals) arriving in the peak hour, using the queuing theory outlined in the attached PTT Queuing Practice Note.

The results of the analysis indicate a 95th percentile queue of approximately 0.6 vehicles (ie 3.6m) at the site access. The proposed layout incorporates 4.0m of queuing space (ie around 0.7 vehicles), measured between the site boundary and first on-site visitor parking space. Therefore, the proposed queuing provision is sufficient to accommodate the predicted 95th percentile queue.

CAR PARKING

REQUIREMENT

The minimum on-site parking requirement has been determined based on rates included in Table 14 of the TAPS Policy for multiple dwellings at a key location. As shown in Table 1, a minimum of 122 parking spaces are required to support the proposal.

Table 1: CURRENT PARKING REQUIREMENT

USER	SCALE	PARKING RATE	REQUIRED
Resident (2-bedroom dwellings)	55 dwellings	1.2 spaces per unit	66 spaces
Resident (3-bedroom dwellings)	22 dwellings	1.6 spaces per unit	36 spaces
Visitor	77 dwellings	0.25 spaces per unit	20 spaces
Total			**122 spaces**

PROVISION

A total of 104 residential parking spaces are proposed on-site, which exceeds BCC's minimum residential parking requirement (102 spaces).

A total of 12 visitor parking spaces are proposed, which equates to a shortfall of eight parking spaces compared to BCC's acceptable outcome. The proposed provision equates to an approximate provision rate of 0.15 spaces per dwelling, which is BCC's minimum visitor parking rate for multiple dwellings located within the City Frame.

The subject site is located approximately 390m from the boundary of the City Frame, as prescribed in Figure A of BCC's TAPS Code. The location of the subject site relative to the boundary of the City Frame is shown in Figure 3.

Figure 3: SUBJECT SITE RELATIVE TO CITY FRAME



The parking demands associated with the proposal is expected to be similar to equivalent uses within the City Frame, noting that surrounding sites within the City Frame are equally as accessible via public transport. Furthermore, the site is within walking distance to Albion Train Station and four bus stops (served by routes 306, 320, 321 and 322). The site is also located adjacent to the North Brisbane bikeway and is therefore very accessible via active transport (like many residential uses located within the City Frame). Accordingly, the proposed visitor parking provision, which accords with BCC's minimum parking requirement for multiple dwellings located in the City Frame, is considered acceptable.

PERSONS WITH DISABILITIES (PWD) PARKING

One visitor parking space would be designed as a persons with disability (PWD) bay, which accords with BCC's TAPS Policy.

DESIGN

The proposed parking facilities have been designed generally in accordance with BCC's TAPS Policy and AS2890.1 in terms of bay dimensions, aisle widths, ramp grades, vehicle circulation and manoeuvring, this is typified by:

- residential parking spaces dimensioned 2.4m – 2.6m wide by 5.4m long
- tandem residential parking spaces dimensioned 2.5m wide by 10.8m long
- visitor parking spaces dimensioned 2.4m – 2.6m wide by 5.4m long
- PWD parking space dimensioned 2.6m wide by 5.4m long, with an adjacent shared bay dimensioned 2.4m wide by 5.4m long
- parking aisles dimensioned 6.2m wide or greater
- circulation ramps dimensioned 6.2m – 6.7m wide
- podium ramp grade at 1:5
- podium transition grades at 1:10 for 2.0m
- end of aisle extension dimensioned 0.85m wide or greater
- height clearance dimensioned minimum 2.3m
- parking clearance adjacent to walls / structure dimensioned 0.3m wide

Each podium parking level is accessed via a 6.2m wide curved ramp. The proposed curved ramp would cater for less than 100 two-way vehicle movements per hour and comprises a minimum 2.0m inside curve radius and 4.0m outside curve radius. The proposed ramp design therefore accords with Figure J in BCC's TAPS Policy. Thus, the proposed ramp design is considered adequate.

A swept path of a B85 car egressing residential bay 7 and 17 on the podium level is attached. The proposed reduce end of aisle extensions are not expected to limit vehicle manoeuvring.

Seven visitor parking spaces would be located behind the proposed security gate. With respect to the proposed security gate location, reference is made to a residential development of similar scale at 185 Wharf Street, Spring Hill, which was recently approved in the Planning and Environmental Court (Appeal Number 2158 of 2023). This development was approved with a security gate located in front of all visitor

parking. This arrangement is also consistent with multiple inner-city residential development sites including 36 Duncan Street, West End and 52A Jephson Street, Toowong.

It is recommended that an intercom is proposed on approach to the security gate to facilitate bona fide visitor access, as shown in attached drawing 26-057-001. Sufficient storage would be provided to allow one car to queue at the intercom.

Should a visitor be unable to gain access to parking behind the security gate, sufficient aisle width would be provided to allow a B85 car to turnaround on-site, in front of the security gate, as shown in attached drawing 26-057-001.

COMMERCIAL VEHICLE SERVICING

BCC's TAPS Policy nominates a Refuse Collection Vehicle (RCV) as the regular service vehicle for a residential (multiple dwelling) use. A bulk bin store comprising 1,100L bulk bins is located on-site. A swept path of a 10.2m long BCC rear-lift RCV accessing and egressing the site is shown in attached drawing 26-057-002. An existing concrete traffic island adjacent to the proposed access (associated with the nearby pedestrian crossing refuge on McDonald Road) would be reduced to allow an RCV to exit the site to the north. Furthermore, sufficient aisle width (ie 7.8m) would be provided to allow cars to access / egress the residential parking area while an RCV momentarily stands on-site.

A minimum height clearance of 4.0m would be achieved over the RCV standing area, in accordance with TAPS Policy, as shown in attached drawing 26-057-003.

It is expected that furniture and grocery delivery vehicles (ie medium or small rigid vehicles) would follow a similar path to the RCV when servicing the site. A Small Rigid Vehicle (SRV) standing on-site would not impede two-way traffic flow at the proposed site access, as demonstrated in attached drawing 26-057-004.

ACTIVE TRANSPORT

PEDESTRIAN FACILITIES

A dedicated pedestrian access, separate to the vehicular driveway, is proposed on the northern site frontage. This would provide a safe and direct connection between the building lift lobby and external pedestrian footpaths.

A 3.75m wide verge, comprising a new pedestrian footpath, is proposed on the McDonald Road frontage.

CYCLISTS

The bicycle parking requirements for the site have been determined based on the bicycle parking provision rates provided in BCC's TAPS Policy. As shown in Table 2, 77 residential and 20 visitor bicycle parking spaces are required. The proposed layout includes 97 bicycle spaces (ie 77 residential and 20 visitor spaces), which complies with BCC's TAPS Policy.

Australian Standards AS2890.3:2015 Parking Facilities Part 3: Bicycle Parking requires bicycle parking be dimensioned 0.5m wide by 1.8m long. The proposed bicycle parking has been designed generally in accordance with these requirements. The proposed residential bicycle parking, located adjacent to car

parking bays, would be located outside of the parking bay envelope required by AS2890.1. Thus, the proposed bicycle parking is not expected to impact vehicle manoeuvring / accessibility.

TRAFFIC OPERATIONS

TRAFFIC GENERATION

The peak hour traffic generation for the proposed development has been estimated using a trip rate of 0.5 vehicles per hour (vph) per two-bedroom dwellings and 0.65vph per three-bedroom dwellings, based on published trip generation rates from the TfNSW (formerly RTA) Guide to Traffic Generating Developments for medium density residential buildings.

As demonstrated in Table 3, the proposed development is expected to generate in the order of 41 trips (9 in and 32 out) during the morning peak hour, with the reverse during the evening.

Table 2: MORNING PEAK HOUR TRIP GENERATION

USER	SCALE	TRIP RATE	IN:OUT SPLIT	TRIPS	IN:OUT (VPH)
Two Bedroom Units	55 units	0.5 trips per unit	30% : 70%	28 trips	8 : 20
Three Bedroom Units	22 units	0.65 trips per unit	30% : 70%	14 trips	4 : 10
			Total	**42 trips**	**12 : 30**

TRAFFIC GENERATION

The proposal is expected to generate 42vph during peak hours. Given the sites close proximity to frequent public transport services, this is considered a conservative estimate. Furthermore, approaching / departing development traffic would be equally split across the surrounding road network (ie to/from the north via the Service Road and Albion Road and to / from the south via McDonald Road). Thus, the additional development generated traffic is not expected to have a significant adverse impact on the operation of the surrounding road network and detailed analysis of the proposed traffic is not considered necessary.

CONCLUSIONS AND RECOMMENDATIONS

The proposed development has been evaluated in terms of its site access arrangements, parking provision and design, servicing arrangements, pedestrian / cyclist facilities and likely traffic impact. The main points to note are:

- the development application seeks approval for 77 residential units, comprising 55 two-bedroom and 22 three-bedroom units
- the subject site is at a key location defined in the TAPS Policy and is in close proximity to the City Frame
- vehicular access to the site is proposed via a 7.8m wide type B1 crossover on McDonald Road
- the proposed access design and location is considered acceptable and accords with BCC's TAPS Policy
- adequate sight distance is available at the proposed access location
- sufficient queue storage would be provided at the proposed access to cater for the expected 95th percentile queue
- a total of 116 parking spaces are proposed, comprising 104 residential and 12 visitor parking spaces, which is expected to be adequate to cater for the anticipated parking demand
- the proposed on-site parking facilities have been designed generally in accordance with BCC's TAPS Policy and AS2890.1 requirements
- the proposed layout adequately caters for on-site RCV servicing, in accordance with BCC's TAPS Policy
- the occasional delivery vehicle is expected to stand on the access driveway when servicing the site
- sufficient bicycle parking is proposed on-site, in accordance with BCC's TAPS Policy
- the proposed development is expected to generate 42 trips during the weekday morning and evening peak hours
- the addition of development generated traffic is not expected to have significant adverse impact on the operation of the surrounding road network

Based on the above, it is recommended that an intercom is proposed on approach to the security gate to facilitate bona fide visitor access, as shown in attached drawing 26-057-001.

If you have any questions regarding the issues discussed above, please do not hesitate to contact us.

Yours sincerely,

Casey Glover
Principal Engineer (RPEQ 34450)



1 Ground Level
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PROJECT

Novair Albion
56-60 Albion Road
Albion, QLD

DATE OF THIS REVISION	**07/08/2026**		
ISSUED BY	**PRAX**	REVIEWED BY	**SP**
PROJECT NUMBER	**0055**	SHEET SIZE	**A1**
DRAWING STATUS	**DEVELOPMENT APPLICATION**		

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DRAWING TITLE

GENERAL ARRANGEMENT PLANS

GROUND LEVEL

DRAWING NUMBER	REVISION
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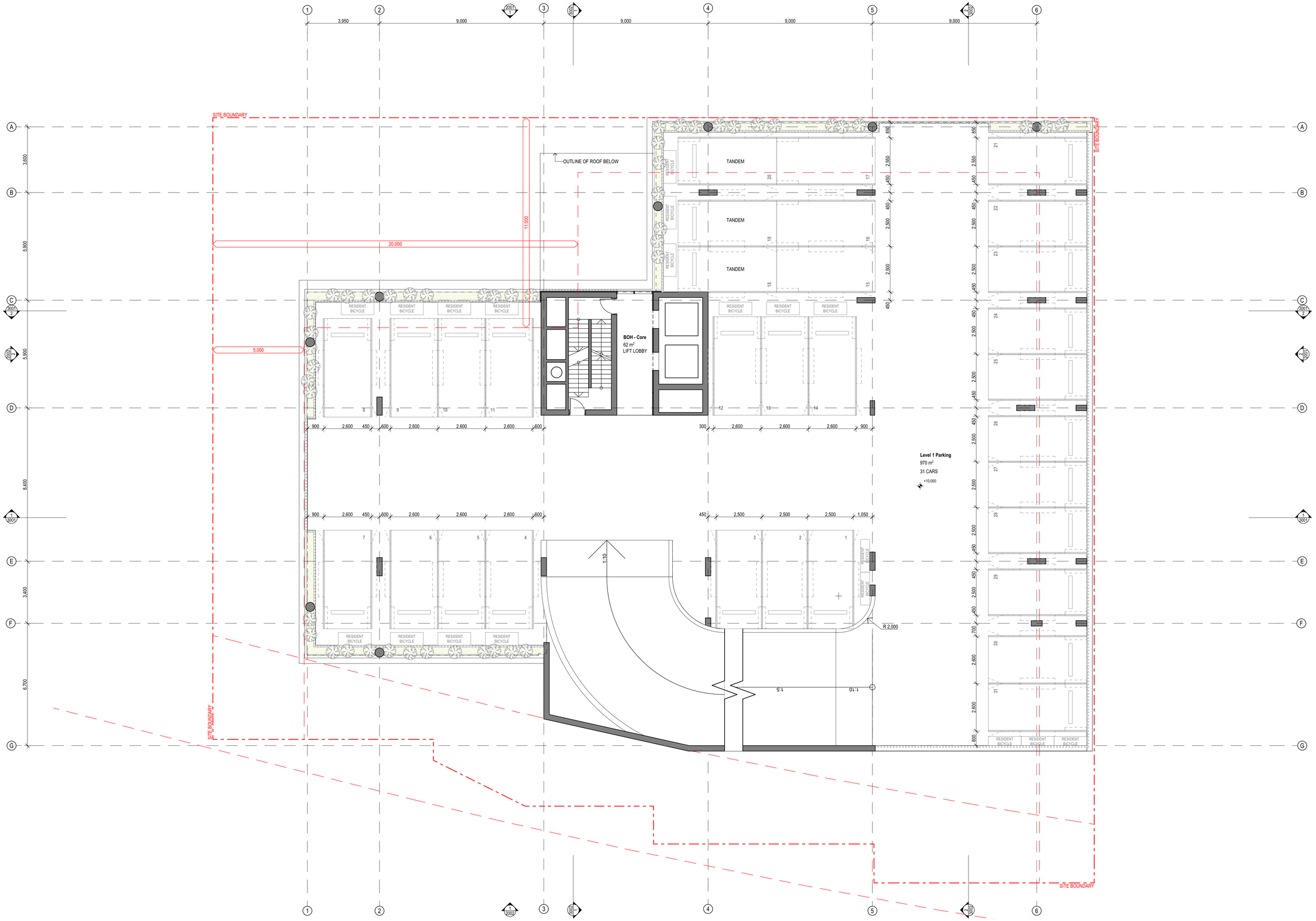

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GENERAL ARRANGEMENT PLANS

LEVEL 1

DRAWING NUMBER	REVISION
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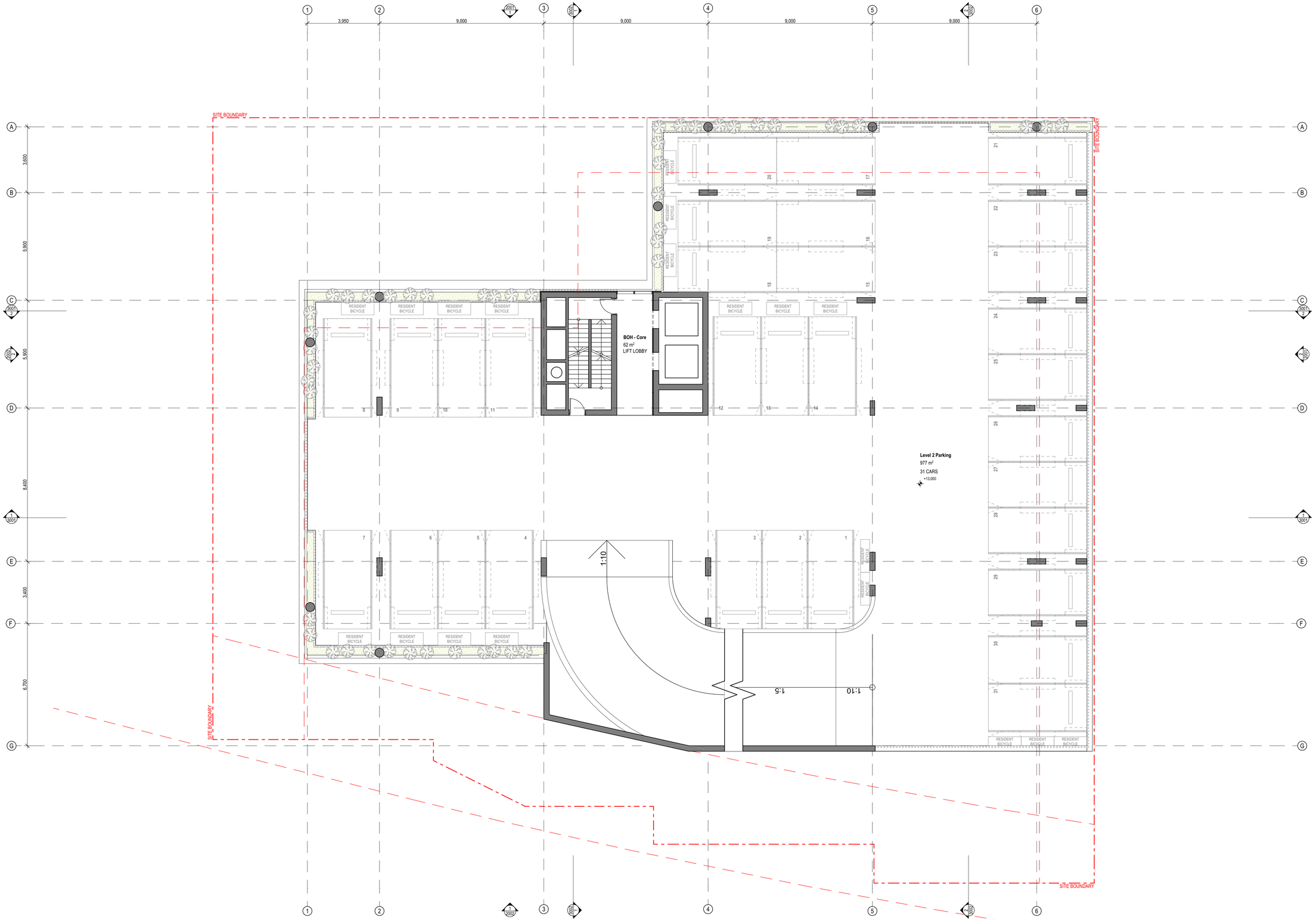

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GENERAL ARRANGEMENT PLANS

LEVEL 2

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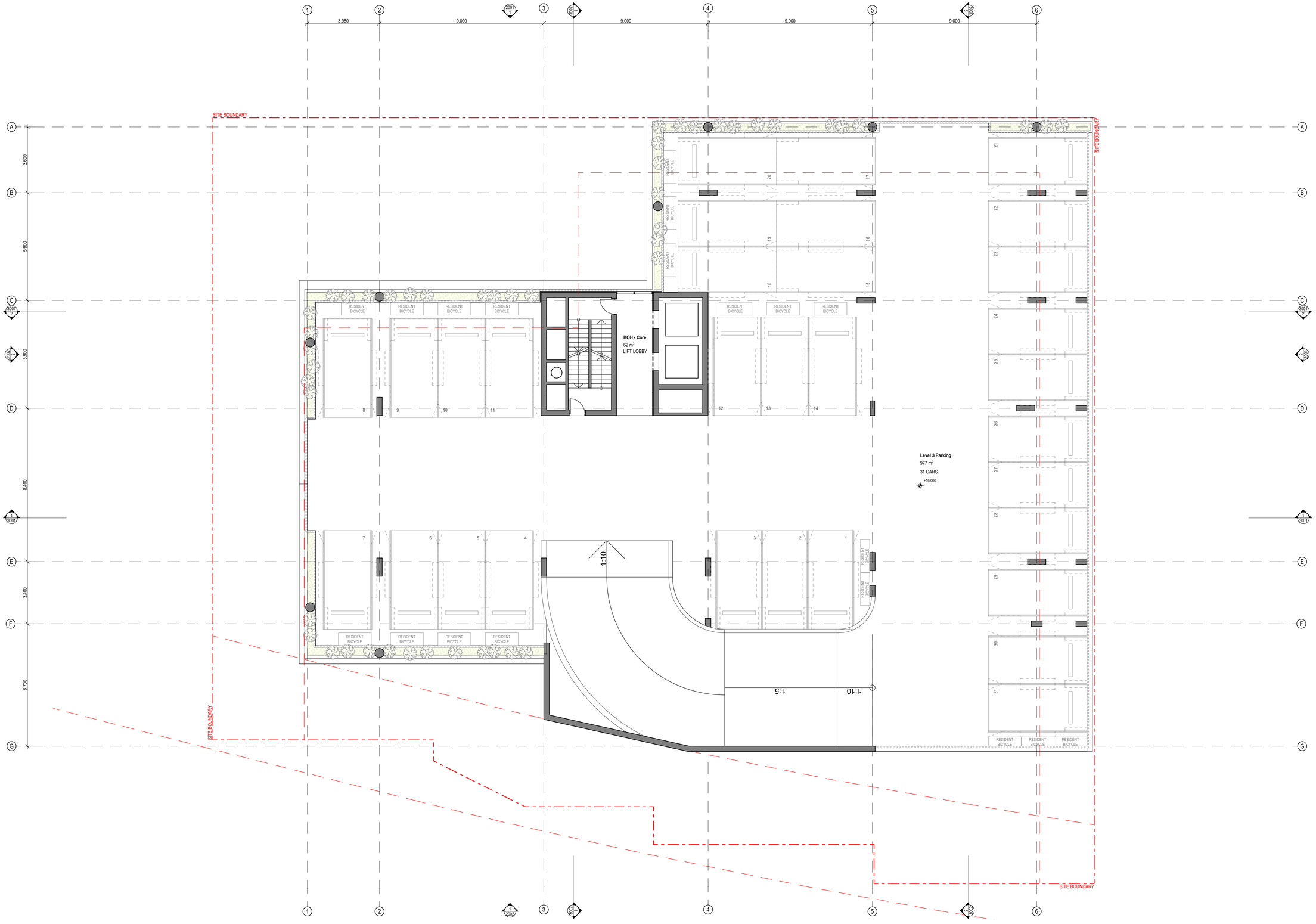
1002	**03**



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GENERAL ARRANGEMENT PLANS

LEVEL 3

DRAWING NUMBER	REVISION
1003	**03**

PRACTICE NOTE

QUEUING CHARACTERISTICS AT SITE ACCESSES



BACKGROUND

On-site queuing areas are required at site access locations to ensure that vehicles do not queue across pedestrian paths or back onto the frontage road.

However, with queuing requirements in planning scheme policies becoming increasingly onerous, the usage of these figures can result in excessive queuing areas which can unnecessarily have an adverse effect construction costs and development yields.

This practice note demonstrates how conventional queuing theory can be used in traffic engineering to determine the anticipated queue length at access locations as a function of local conditions.

QUEUING THEORY

To calculate the amount of queuing space required, we must estimate the probability of a number of vehicles in a queue (n) exceeding a specified number of vehicles (N) at any instant. This is calculated using the following formula:

$$Pr\ (n>N) = \rho^{N+1} \leq \alpha$$

Where:

- ρ is the queue utilisation factor
- α is the probability of a queue of N vehicles being exceeded

Rearranging this formula enables the calculation of the design queue length in terms of the number of vehicles as follows:

$$N = \frac{\log(\alpha)}{\log(\rho)} - 1$$

The **minimum** design queue would be calculated as N vehicles, which may include a fraction of a vehicle (eg 1.2 vehicles). This design queue could be applied subject to engineering judgment.

The **desirable** design queue would be the smallest integer which contains the value, N (ie rounded up to the nearest integer).

Application of a standard vehicle length of 6m per vehicle results in a design queue length in metres.

QUEUE UTILISATION FACTOR

The utilisation factor, ρ, is the ratio of the mean arrival rate (r) and the mean service rate (s), ie:

$$\rho = \frac{r}{s}$$

The mean arrival rate (veh/hr) varies for each situation. It is calculated using the peak hour trip generation for the facility. This is expressed in vehicles per hour.

The mean service rate (veh/hr) is determined by observing the operations of similar facilities.

PTT has calculated the mean service rate for a non-controlled (ie no boom gate) parking facility by surveying the average time taken for cars to enter and leave from visitor parks in a residential development.

This survey was undertaken at a recently approved and constructed mixed use commercial/residential development at Nundah on a Wednesday in July 2014 between 4:30-6:00pm. A minimum of 30 observations were made for both "parking" and "unparking" manoeuvres The results of this analysis are shown in Table 1.

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PRACTICE NOTE

QUEUING CHARACTERISTICS AT SITE ACCESSES



Table 1: MEAN VEHICLE MANOEUVRING TIME (seconds/vehicle)

MANOEUVRE	MEAN TIME	STD DEV	MIN	MAX
Parking	12.2	13.8	1.1	69.5
Unparking	14.7	7.1	2.1	37.2

The application of the mean "unparking" value from Table 1 assumes that each vehicle which enters the access will be waiting for a car to "unpark" from the space nearest to the access. This is an extremely conservative assumption, which will result in an over-estimate of queue lengths.

The mean service time for car parks with entrance controls such as boom gates, ticket dispensing machines, car stackers and mechanical parking installations can usually be provided by the supplier of the product.

PROBABILITY OF EXCEEDANCE

The queuing formula is used to calculate the queue length given a specified probability (α).

Generally, the 95th percentile queue is considered an adequate measure of an acceptable queue at access driveways. This infers that there is a 5% probability that the queue length will be exceeded (ie α=0.05).

Australian Standards, AS2890.1, outlines the requirement to provide a 98th percentile queue for situations where mechanical parking installations such as car stackers are used (ie α=0.02).

EXAMPLE

A development with a mean peak hour trip generation of 100 veh/hr and a 80:20 in:out split results in a vehicle arrival rate of 80 veh/hr.

The service rates from Table 1 can be applied to calculate the queue utilisation factor. However common units are required to find a ratio.

Therefore, the service rate, s, is:

$$\frac{vehicle}{hour} = 3{,}600\left(\frac{seconds}{vehicle}\right)^{-1}$$

$$s = \frac{3{,}600}{14.7} = 244.9 \text{ vehicles per hour}$$

The queue utilisation factor is:

$$\rho = \frac{r}{s} = \frac{80}{244.9} = 0.327$$

The 95th percentile design queue:

$$N = \frac{\log(\alpha)}{\log(\rho)} - 1$$

$$N = \frac{\log(0.05)}{\log(0.327)} - 1$$

$$N = 1.68 \text{ vehicles}$$

Therefore, desirably, the development should be designed to allow for an entrance queue of two vehicles (ie 12m). However, an available queuing distance of 1.68 vehicles (ie 10.1m) would be considered acceptable to cater for the 95th percentile queue, subject to engineering judgment.

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PRACTICE NOTE

QUEUING CHARACTERISTICS AT SITE ACCESSES



CONCLUSION

Conventional traffic engineering queuing theory can be used to determine the anticipated queue length at access locations. This ensures that queuing does not adversely impact on nearby traffic or pedestrian flows whilst ensuring that the queuing area is not excessive.

REFERENCES

Bennett, DW and Rose, G (1988), *Unsignalised Intersection Analysis,* University of Melbourne

Institute of Transport Studies Monash University (2003), *Traffic Engineering and Management,* Volume 2, Caufield East

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DISCLAIMER

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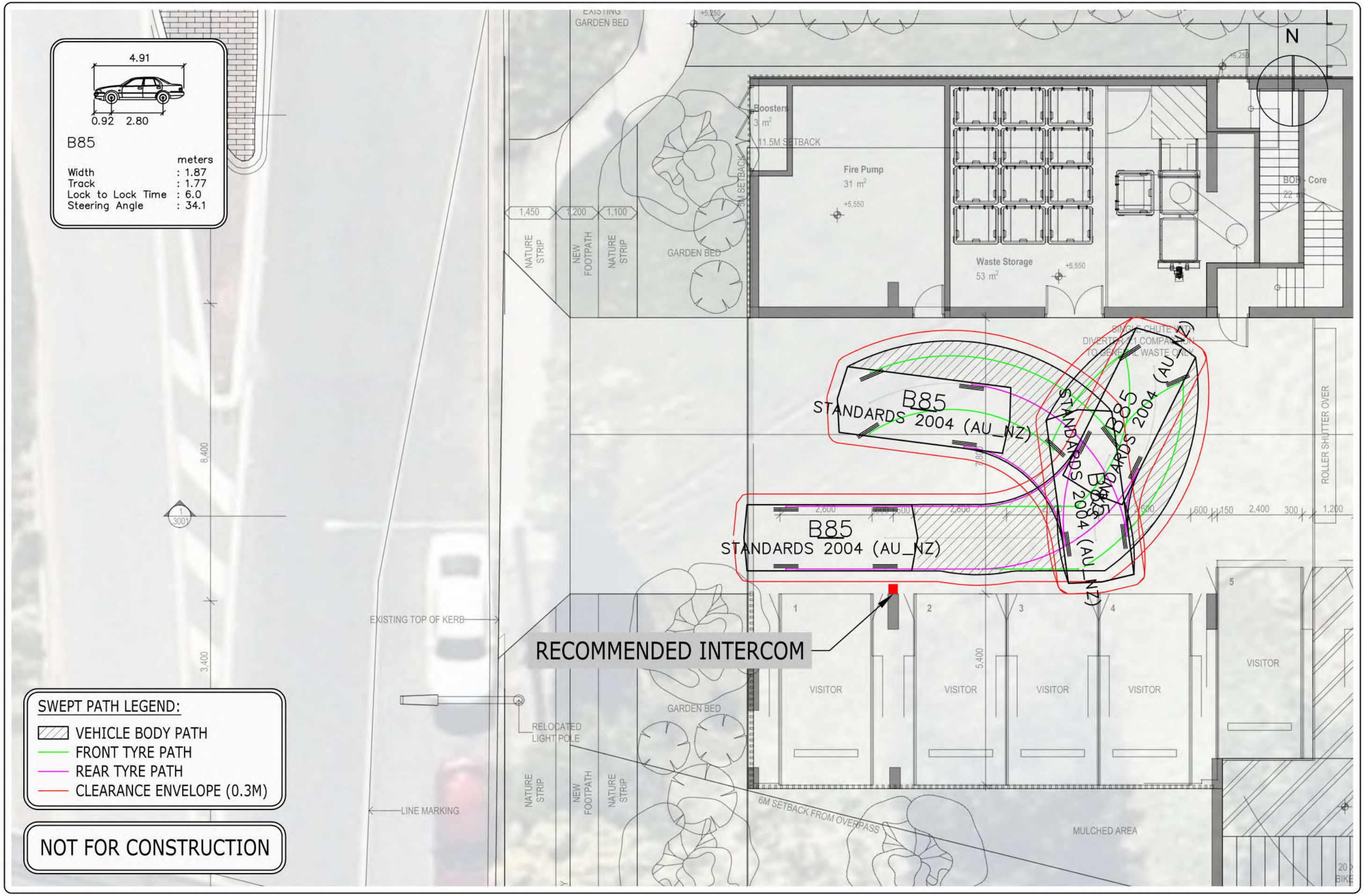

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REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CG	11/08/26

DRAWING TITLE: B85 CAR TURNAROUND	DRAWING NO: 26-057-001	REV: A	SCALE: 1:100 @ A3	APPROVED BY: CG (RPEQ 34450)
PROJECT TITLE: 56-60 ALBION ROAD, ALBION	CLIENT: CORE PROPERTY			

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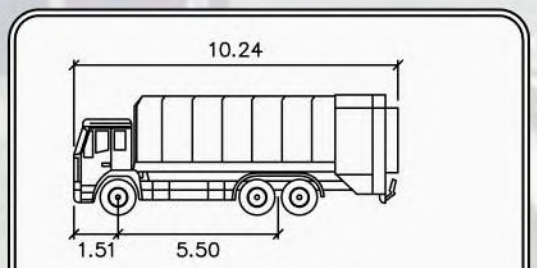

REAR LIFT ACCO 2350

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 40.3
Kerb to Kerb Radius	: 9.76

REAR LIFT ACCO 2350 Custom

REDUCED TRAFFIC ISLAND

REAR LIFT ACCO 2350 Custom

REAR LIFT ACCO 2350 Custom

N

SWEPT PATH LEGEND:

- VEHICLE BODY PATH
- FRONT TYRE PATH
- REAR TYRE PATH
- CLEARANCE ENVELOPE (0.3M)

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REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CG	11/08/26

DRAWING TITLE:	DRAWING NO:	REV:	SCALE:	APPROVED BY:
RCV SERVICING	26-057-002	A	1:200 @ A3	CG (RPEQ 34450)
PROJECT TITLE: 56-60 ALBION ROAD, ALBION	CLIENT: CORE PROPERTY			

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REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CG	11/08/26

DRAWING TITLE: RCV VERTICAL CLEARANCE	DRAWING NO: 26-057-003	REV: A	SCALE: 1:100 @ A3
PROJECT TITLE: 56-60 ALBION ROAD, ALBION	CLIENT: CORE PROPERTY		APPROVED BY: CG (RPEQ 34450)

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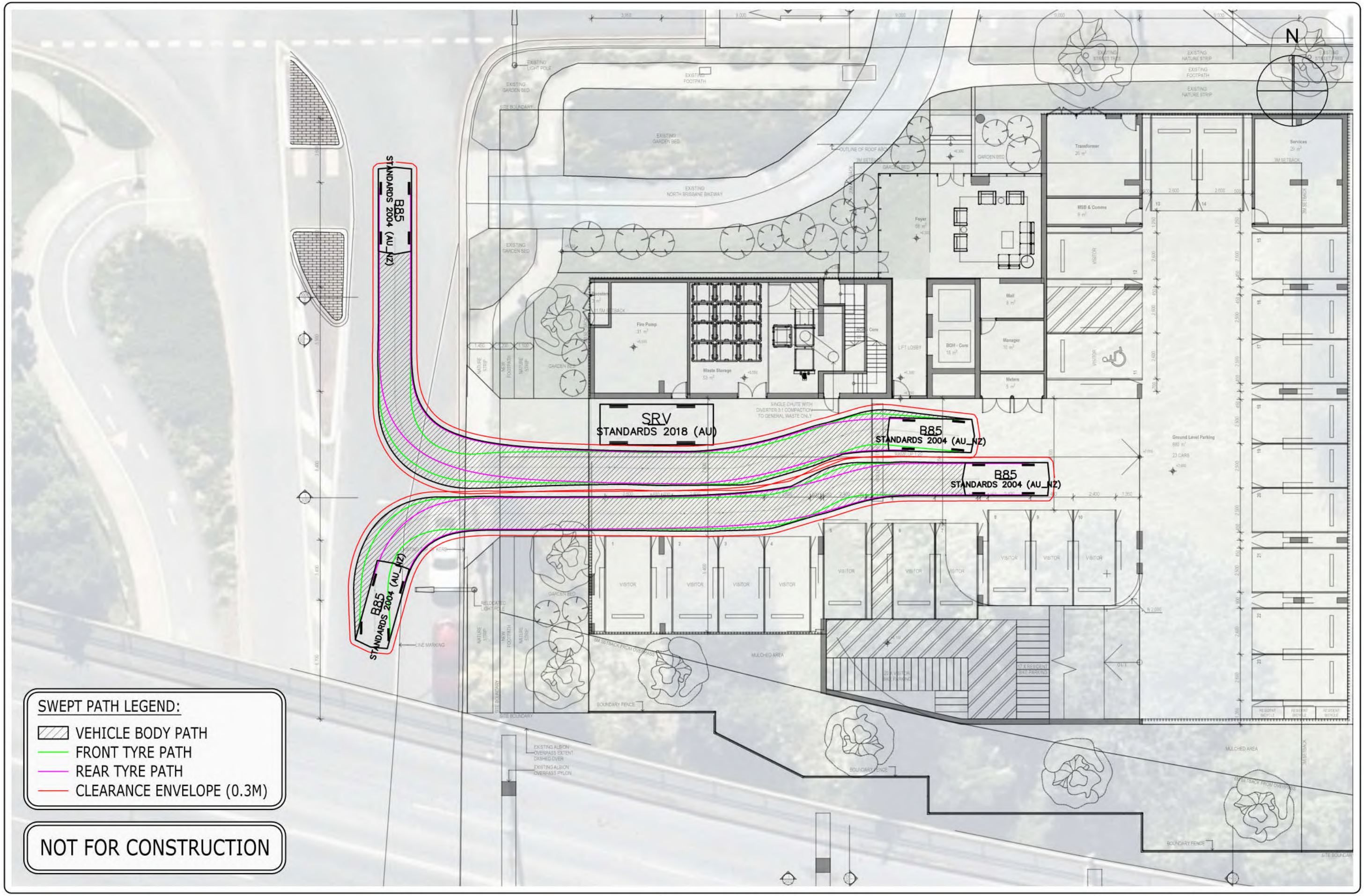

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REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CG	11/08/26

DRAWING TITLE: SRV SERVICING	DRAWING NO: 26-057-004	REV: A	SCALE: 1:200 @ A3	APPROVED BY: CG (RPEQ 34450)
PROJECT TITLE: 56-60 ALBION ROAD, ALBION	CLIENT: CORE PROPERTY			

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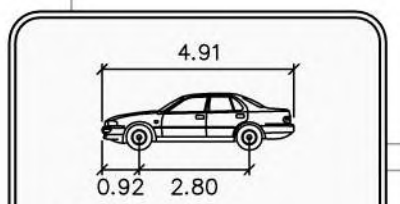

B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

RESIDENT BICYCLE

8 9 10 11

900 2,600 450 600 2,600 2,600 2,600

B85 STANDARDS 2004 (AU_NZ)

B85 STANDARDS 2004 (AU_NZ)

6 5 4

B85 STANDARDS 2004 (AU_NZ)

RESIDENT BICYCLE

SWEPT PATH LEGEND:

- VEHICLE BODY PATH
- FRONT TYRE PATH
- REAR TYRE PATH
- CLEARANCE ENVELOPE (0.3M)

NOT FOR CONSTRUCTION

N

9,000 9,000

TANDEM

TANDEM

B85 STANDARDS 2004 (AU_NZ)

B85 STANDARDS 2004 (AU_NZ)

B85 STANDARDS 2004 (AU_NZ)

B85 STANDARDS 2004 (AU_NZ)

RESIDENT BICYCLE

12 13 14

2,600 2,600 2,600 900

850 2,550 450 2,500 450 2,500 450 2,500 450 2,500 450

19 16 18 15 20 22 23 24 25 26

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REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CG	11/08/26

DRAWING TITLE: B85 CAR MANOEUVRING	DRAWING NO: 26-057-005	REV: A	SCALE: 1:100 @ A3	APPROVED BY: CG (RPEQ 34450)
PROJECT TITLE: 56-60 ALBION ROAD, ALBION	CLIENT: CORE PROPERTY			

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9.4.11 Transport, access, parking and servicing code

9.4.11.1 Application

1. This code applies to assessing:
    a. operational work which is assessable development if this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for operational work (section 5.8); or
    b. a material change of use or reconfiguring a lot if:
        i. assessable development where this code is identified as a prescribed secondary code in the assessment benchmarks column of a table of assessment for a material change of use (section 5.5) reconfiguring a lot (section 5.6), or an overlay (section 5.10); or
        ii. impact assessable development, to the extent relevant.
2. When using this code, reference should be made to section 1.5 and section 5.3.3.

Note—The following purpose, overall outcomes, performance outcomes and acceptable outcomes comprise the assessment benchmarks of this code.

Note—Where this code contains performance outcomes or acceptable outcomes that relate to:

- crime prevention through environmental design principles, guidance is included in the Crime prevention through environmental design planning scheme policy;
- design for the reduction of graffiti, guidance is provided and the Graffiti prevention planning scheme policy;
- infrastructure design and construction works, guidance is provided in the Infrastructure design planning scheme policy;
- refuse and recycling, guidance is provided in the Refuse planning scheme policy;
- transport, access, parking and servicing standards and guidelines are contained in the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.

Note—If involving a standard format lot with common property such as requiring a community management scheme under the *Body Corporate and Community Management Act 1997*, the development contains a reconfiguring a lot aspect of development and the Subdivision code will apply.

9.4.11.2 Purpose

1. The purpose of the Transport, access, parking and servicing code is to assess the suitability of the transport, access, parking and servicing aspects of development.
2. The purpose of the code will be achieved through the following overall outcomes:
    a. Development provides for access, circulation, parking and vehicle-based services for all relevant transport modes, including walking, cycling and public transport relevant to the nature of the proposed development and its location in relation to the transport network and surrounding existing and future land uses.
    b. Development enhances the potential for trip making other than by private vehicle.
    c. Development provides safe access for all transport modes that does not impact adversely on the efficiency and safety of the transport network or diminish the amenity of nearby land uses.
    d. Development ensures that impacts on amenity caused by traffic generation is consistent with the community's reasonable expectations for the intended use.
    e. Development provides site access arrangements to ensure that any adverse impacts on other development, the transport network and those who use it, are

minimised to maintain amenity of the area and the safety and efficiency of the transport system.

f. Development ensures that access, parking and servicing arrangements and impacts such as noise, are consistent with the community's reasonable expectations and avoid risk of damage to people, property and vehicles.
g. Development maximises safety in the use of the transport network, particularly for the most vulnerable users (children, pedestrians, persons with disabilities and cyclists) so that all transport modes are safe and convenient.
h. Development provides for walking and cycling routes and end-of-trip facilities for pedestrians and cyclists, designed and located to make walking and cycling attractive and viable transport options.
i. Development envisaged by the planning scheme, which will potentially have an adverse impact on the operation of the transport network, is designed and of a scale that maintains the safety and efficiency of the transport network.
j. Development provides for on-site parking and manoeuvring areas for cars, motorcycles, bicycles and service vehicles which:
    i. are safe and convenient to use;
    ii. if outside the City core and the City frame identified in Figure a are adequate to meet the design peak-parking demands without significant overflow to adjacent premises or the generation of excessive on-street car parking demand, taking into account the requirements of other road users.
k. Development provides for on-site servicing that is safe, convenient to use, but discrete, and adequate to meet the reasonably expected demands generated by the development, without significant adverse impacts on the external road system or adjacent premises.
l. Development accommodates future road upgrades and widenings ensuring the ongoing capacity, efficiency and safety of the transport network.

9.4.11.3 Performance outcomes and acceptable outcomes

Table 9.4.11.3—Performance outcomes and acceptable outcomes

Performance outcomes	Acceptable outcomes	Comments
PO1 Development is designed: a. to include a technically competent and accurate response to the transport and traffic elements of the development; b. in accordance with the standards in the Transport, access, parking and servicing planning scheme policy; c. to ensure the efficient operation and safety of the development and its surrounds. Note—The acceptable outcome and performance outcome can be	**AO1** Development complies with the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with PO1. The proposed development has been designed in accordance with BCC' TAPS Policy and the relevant Australian Standards, or performance solutions have been provided as demonstrated in the PTT Traffic Report.

demonstrated through a development application that: • is accompanied by sufficient information, including computer modelling input and output data, to allow the proposed development to be properly assessed against the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; • is certified by a Registered Professional Engineer Queensland that all plans, documents and dimensioned drawings comply with the requirements of this code and the standards and guidelines of the Transport, access, parking and servicing planning scheme policy; • ensures that any computer modelling input and output data are accurate, reasonable and carried out in accordance with sound traffic engineering practices.		
PO2 Development of a major size incorporates on-site provision for integration with the public transport network and the management of vehicles, public transport, pedestrians and cyclists, including providing appropriate pedestrian and cyclist linkages to adjoining uses, public areas and the transport network consistent with the planning by the Queensland Government and Council.	**AO2** No acceptable outcome is prescribed.	Not applicable.
PO3 Development provides vehicle access that is located and designed so as to have no significant impact on the safety, efficiency, function, convenience of use or capacity of the road network.	**AO3.1** Development provides site access that is located and designed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. **AO3.2** Development provides an easement for a vehicular access benefiting all adjoining landowners and the Council if the vehicular access services more than an individual development or premises.	Complies with PO3 The proposed access location and design on McDonald Road complies with BCC's TAPS Policy.
PO4 Development provides walking and cycle routes through	**AO4.1** Development provides walking and cycle routes which are	Complies with PO4. Dedicated pedestrian accesses are provided, separate to the vehicular driveways, which connect to the

the site which: a. link to the external network and pedestrian and cyclist destinations such as schools, shopping centres, open space, public transport stations, shops and local activity centres along the safest, most direct and convenient routes; b. encourage walking and cycling; c. ensure pedestrian and cyclist safety; d. provide a direct and legible network. Note—The Infrastructure design planning scheme policy provides additional guidance on how to comply with this performance outcome.	constructed on the carriageway or through the site to: a. create a walking or cycle route along the full frontage of the site; b. connect to public transport and existing cycle and walking routes at the frontage or boundary of the site. **AO4.2** Development provides walking and cycle routes that are constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy. **AO4.3** Development provides walking and cycle routes which do not include a potential entrapment area, blind corner or sudden change in level that restrict sightlines.	external pedestrian network,
PO5 Development provides secure and convenient bicycle parking which: a. for visitors is obvious and located close to the building's main entrance; b. for employees is conveniently located to provide secure and convenient access between the bicycle storage area, end-of-trip facilities and the main area of the building; c. is easily and safely accessible from outside the site; d. does not impact adversely on visual amenity; e. does not impede the movement of pedestrians or other vehicles; f. is designed to comply with a recognised standard for the construction of bicycle facilities. Note—For a performance outcome relating to the number of bicycle	**AO5.1** Development provides on-site bicycle parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. **AO5.2** Development provides bicycle parking spaces for employees which are co-located with end-of-trip facilities (shower cubicles and lockers) in compliance with the Transport, access, parking and servicing planning scheme policy and AS 2890.3-1993 Bicycle parking facilities. **AO5.3** Development ensures that the location of visitor bicycle parking is discernible either by direct view or using signs from the street. **AO5.4**	Complies with PO5. Sufficient bicycle parking would be provided on-site to support the proposed use. This parking would be designed and located in accordance with AS2890.3 and the TAPS Policy. Bicycle parking would not impede pedestrian movements. Visitor parking would be located on the ground floor adjacent to the vehicular security gate.

parking spaces provided, the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.	Development provides visitor bicycle parking which does not impede pedestrian movement. **AO5.5** Development provides bicycle parking which is constructed in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	
PO6 Development provides shower cubicles and lockers in sufficient numbers to meet the needs and volume of predicted pedestrian and cyclist users. Note—For a performance outcome the application must demonstrate how the needs of the intended users of the site differ from the standard rates in the Transport, access, parking and servicing planning scheme policy.	**AO6** Development provides shower cubicles and lockers for pedestrians and cyclists in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	Not applicable. End of trip facilities are not required for the proposed use.
PO7 Development provides pedestrian and cyclist access to the site which is designed to provide safe movement and avoid unnecessary conflict between pedestrians, cyclists and motor vehicles.	**AO7** Development provides pedestrian and cycle access that is designed and constructed in compliance with the site access design guidelines, pedestrian facilities standards and cyclist facilities standards in the Transport, access, parking and servicing planning scheme policy.	Complies with PO7. The development adequately caters for pedestrian and cyclists via dedicated footpaths along the site frontages and pedestrian accesses which are separated from vehicular access driveways.
PO8 Development provides pedestrian and cyclist access to and from the site which is located to take advantage of safe crossing points of the adjacent road system, key destinations and public transport facilities.	**AO8** No acceptable outcome is prescribed.	Complies with PO8. The development adequately caters for pedestrian and cyclists via dedicated footpaths along the site frontages and pedestrian accesses which are separated from vehicular access driveways.
PO9 Development provides access driveways in the road area that are located, designed and controlled to: a. minimise adverse impacts on the safety and operation of the transport network, including the	**AO9.1** No acceptable outcome for access is prescribed, for a major development (as described in the Transport, access, parking and servicing planning scheme policy). **AO9.2**	Not applicable.

movement of pedestrians and cyclists; b. ensure the amenity of adjacent premises, from impacts such as noise and light.	Development which is not a major development (as described in the Transport, access, parking and servicing planning scheme policy) provides a single site access driveway in the road area to the lowest order road to which the site has frontage.	Complies with AO9.3 – 9.5. The available sight distance at the proposed access is considered adequate. One vehicular access is proposed from a minor neighborhood road.
	AO9.3 Development ensures that sight distances to and from all proposed access driveways in the road area and intersections are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	
	AO9.4 Development provides access driveways in the road area which: a. are located, designed and controlled in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; b. are not provided through a bus stop, taxi rank or pedestrian crossing or refuge.	
	AO9.5 Development makes provision for shared access arrangements particularly where it is necessary to limit access points to a major road.	
PO10 Redevelopment provides for: a. the closure of all access driveways in the road area that no longer comply with the standards in the Transport, access, parking and servicing planning scheme policy; b. the reinstatement of adjacent footpaths.	**AO10** No acceptable outcome is prescribed.	Not applicable.

PO11 Development provides that an internal approach to an access driveway in the road area is designed and located to provide for the safety of pedestrians and cyclists using paths adjacent to the frontage of the site, and motorists.	**AO11.1** Development provides sight distances to and from all proposed access driveways in the road area and intersections which are in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. **AO11.2** Development ensures that convex mirrors are only used in a site: a. as a secondary support at access driveways; b. in addition to acceptable sight splays that comply with the sight distances standards in the Transport, access, parking and servicing planning scheme policy.	Complies with AO11. The available sight distance at the proposed access is considered adequate.
PO12 Development in the City core and City frame as identified in Figure a provides car parking spaces at rates to discourage private car use and encourage walking, cycling and the use of public transport.	**AO12** Development in the City core and City frame as identified in Figure a provides maximum car-parking rates in compliance with the standards in the Transport, access, parking and servicing planning scheme policy. Note—For accepted development subject to compliance with identified requirements including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	The site is not located within the City Frame. However, a parking relaxation is proposed, given the sites proximity to the City Frame.
PO13 Development outside of the City core and City frame as identified in Figure a provides on-site car parking spaces to accommodate the design peak parking demand without any overflow of car parking to an adjacent premises or adjacent street.	**AO13** Development outside of the City core and City frame as identified in Figure a: a. provides on-site car parking spaces in compliance with the standards in the Transport, access, parking and servicing planning scheme policy; or b. for accepted development subject to compliance with identified requirements, does not result in on-street car parking if no parking standard is identified in the Transport, access, parking and servicing planning scheme policy.	Complies with PO13. The proposed residential uses are expected to operate similarly to equivalent uses located within the City Frame, noting that the site is located in close proximity to the City Frame. Sufficient residential parking is proposed on-site in accordance with the TAPS Policy. The proposed on-site visitor parking provision accords with the City Frame minimum requirement.

	Note—For accepted development subject to compliance with identified requirements including an existing premises, no reduction to existing car parking is required to comply with a maximum car-parking rate in the Transport, access, parking and servicing planning scheme policy.	
PO14 Development ensures that the number of car parking spaces and design of the car parking area: a. meet the combined design peak parking demand for residential, visitor and business parking; b. allow for the temporal sharing of car-parking spaces for uses with different peak parking demands. Note—In order to demonstrate that adequate car parking is provided, a traffic impact assessment prepared in compliance with the Transport, access, parking and servicing planning scheme policy is to identify the appropriate number of car parking spaces to be provided.	**AO14.1** Development provides a number of car parking spaces on site equalling the sum of the maximum design peak parking demand for the individual uses at any point in time. **AO14.2** Development involving mixed use provides a non-residential car parking area with shared parking for all the businesses in the development.	Complies with PO14. Sufficient parking would be provided on-site to cater for the expected peak parking demands associated with the proposed use.
PO15 Development provides a car park layout which allows for on-site vehicle parking that: a. is clearly defined, safe and easily accessible; b. is designed to contain potential adverse impacts within the site; c. does not detract from the aesthetics or amenity of an area; d. discourages on-street parking if parking has an adverse traffic management safety or amenity impact; e. is consistent with safe and convenient pedestrian and cyclist movement.	**AO15** Development provides parking bays, queue areas and manoeuvring areas which are designed for the design service vehicle to the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with PO15. The on-site parking areas have been designed generally in accordance with the TAPS Policy and or AS2890.1.
PO16 Development creates a safe environment by incorporating the key elements of crime prevention through environmental design.	**AO16** Development incorporates the key elements of crime prevention through environmental design in its layout, building and structure design and landscaping by:	Not applicable (not a traffic engineering item).

	a. facilitating casual surveillance opportunities and including good sightlines to publicly accessible areas such as car parks, pathways, public toilets and communal areas; b. defining different uses and ownerships through design and restricting access from non-residential uses into private residential dwellings; c. promoting safety and minimising opportunities for graffiti and vandalism through exterior building design and orientation of buildings and use of active frontages; d. ensuring publicly accessible areas such as car parks, pathways, public toilets and communal areas are well lit; e. including way-finding cues; f. minimising predictable routes and entrapment locations near public spaces such as car parks, public toilets, ATMs and communal areas. Note—For guidance in achieving the key elements of crime prevention through environmental design, refer to the Crime prevention through environmental design planning scheme policy.	
PO17 Development minimises the potential for graffiti and vandalism through access control, canvas reduction and easy maintenance selection.	**AO17** Development incorporates graffiti and vandalism prevention techniques in its layout, building and structure design and landscaping, by: a. denying access to potential canvases through access control techniques; b. reducing potential canvases through canvas reduction techniques; c. ensuring graffiti can be readily and quickly removed through easy maintenance selection techniques. Note—For guidance on graffiti and vandalism prevention techniques, refer to the Graffiti prevention planning scheme policy.	Not applicable (not a traffic engineering item).

PO18 Development is serviced by an adequate number and size of service vehicles.	**AO18** Development ensures that the number and size of design service vehicles selected for the site is in compliance with the standards in the Transport, access, parking and servicing planning scheme policy.	Complies with PO18. The proposed development would adequately cater for on-site MRV, RCV and SRV Servicing, which would meet the servicing demands of the proposed development.
PO19 Development layout provides for services which: a. are wholly within the site, other than service vehicle manoeuvring areas which may overhang the verge on a minor road where use of the footpath is not adversely affected; b. are clearly defined, safe and easily accessible; c. are designed to contain potential adverse impacts of servicing within the site; d. do not detract from the aesthetics or amenity of the surrounding area.	**AO19.1** Development ensures that a service bay provided on site: a. is provided and designed to comply with the design vehicle table and service area design standards in the Transport, access, parking and servicing planning scheme policy; b. is located away from street frontages and screened from adjoining premises. **AO19.2** Development provides on-site servicing facilities and associated on-site vehicle manoeuvring areas which are designed in compliance with the service area design standards in the Transport, access, parking and servicing planning scheme policy. **AO19.3** Development provides service areas for refuse collection in compliance with the standards in the Refuse planning scheme policy, Transport, access, parking and servicing planning scheme policy and the Infrastructure design planning scheme policy.	Not applicable. No dedicated service bay is proposed. The proposed refuse collection arrangement accords with BCC's TAPS Policy and Refuse Policy.
PO20 Development provides service vehicle access routes to and from the site which minimise the impact on: a. amenity and safety in residential areas; b. streets not constructed to a standard that accommodate increased heavy vehicle movements.	**AO20** Development ensures that service vehicles use the shortest and most direct route to the major road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy.	Complies with PO20. No service vehicles are required to access the site via local residential streets.

If for development which is required to be serviced by a b-double (Austroad class 10 vehicle), multi-combination vehicle, over-dimensioned vehicle or any other vehicle identified by the Queensland Government as requiring a permit to operate on the road (freight-dependent development)		
PO21 Development which is freight-dependent development ensures that the traffic generated by the development does not impact on: a. the operation of the transport network; b. the safety and amenity of a residential area; c. a road not constructed to accommodate a non-standard vehicle such as a road only constructed to accommodate a vehicle that has a legal right of access to all roads including Austroads vehicles classes 1—9.	**AO21.1** Development which is freight-dependent development is located on a site which: a. has frontage to or direct access to the freight network in the Road hierarchy overlay via roads in a zone in the Industry zones category; or b. can be serviced by a route that can act as a primary freight access route and connect to an existing primary freight route without impacting on the safe operation of the road network in compliance with the heavy vehicle standards in the Transport, access, parking and servicing planning scheme policy. **AO21.2** Development which is freight-dependent development provides any necessary upgrade to a road used as an access route in compliance with the Infrastructure design planning scheme policy.	Not applicable. Not applicable.

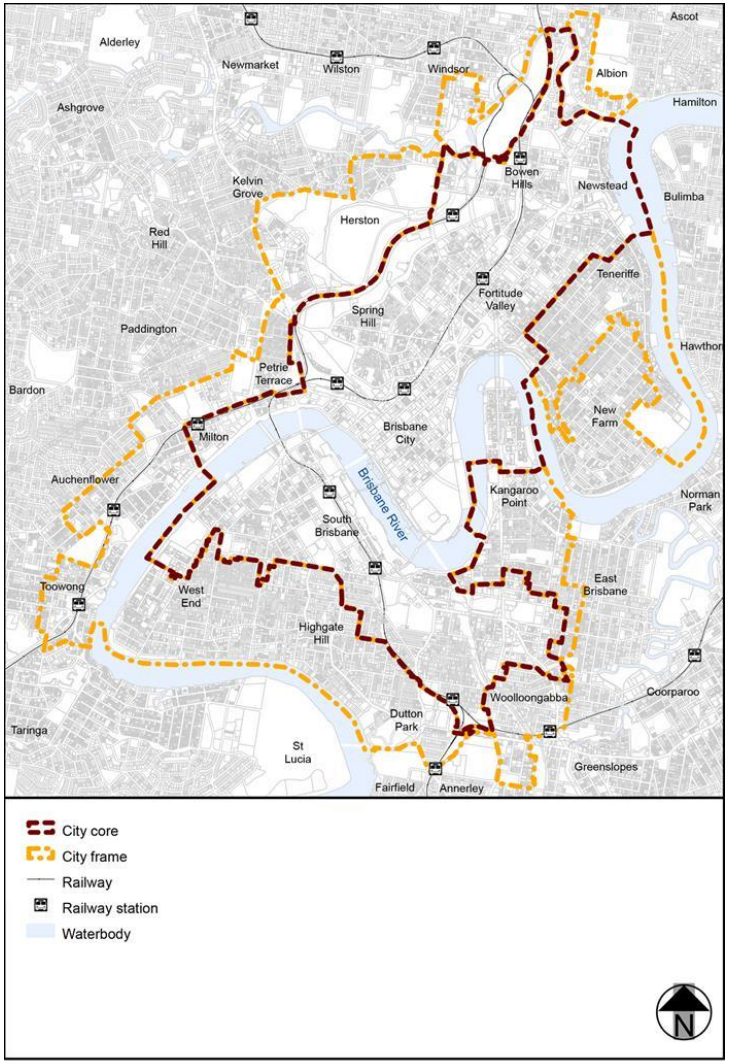

Figure a—City core and City frame

View the high resolution of Figure a-City core and City frame

State code 2: Development in a railway environment

Guide to Development in a Transport Environment: Rail which provides direction on how to address this code.

Table 2.1 Development in general

Performance outcomes	Acceptable outcomes	Response
Building, structures, infrastructure, services and utilities		
PO1 Development does not create a safety hazard within the **railway corridor**.	No acceptable outcome is prescribed.	Complies with PO1 The proposal would be wholly contained on-site and would not interfere with the adjacent railway corridor.
PO2 Development does not cause damage to the **railway corridor, rail transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	Complies with PO2. The proposal would be wholly contained on-site and would not interfere with the adjacent railway corridor.
PO3 Development does not interfere with, or obstruct, the **rail transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	Complies with PO3. The proposal would be wholly contained on-site and would not interfere with the adjacent railway corridor.
PO4 Development does not adversely impact the **structural integrity** or physical condition of the **railway**, **other rail infrastructure** or the **railway corridor** by adding or removing **loading**.	No acceptable outcome is prescribed.	Complies with PO4. The proposal would be wholly contained on-site and would not interfere with the adjacent railway corridor.
PO5 Development above a **railway** is designed to enable natural ventilation and smoke dispersion in the event of a fire emergency.	No acceptable outcome is prescribed.	Not applicable.
PO6 Development does not adversely impact the operating performance of the **railway corridor**.	No acceptable outcome is prescribed.	Complies with PO4. The proposal would be wholly contained on-site and would not interfere with the adjacent railway corridor.
PO7 Buildings and **structures** in a **railway corridor** are designed and constructed to protect persons in the event of a derailed train.	No acceptable outcome is prescribed.	Not applicable.
PO8 Buildings and **structures** in **high risk locations** and where also located within 10 metres	**AO8.1** Buildings and **structures**, in a **railway corridor**, including foundations, retaining and other	Not applicable.

Performance outcomes	Acceptable outcomes	Response
of the centreline of the nearest **railway** track are design and constructed to protect persons in the event of a derailed train.	support elements, are designed and constructed in accordance with Civil Engineering Technical Requirement CIVIL-SR-012 Collision protection of supporting elements adjacent to **railways**, Queensland Rail, 2011, AS5100 Bridge design, and AS1170 Structural design actions.	
PO9 Buildings and **structures** are designed and constructed to protect people from electrocution.	**AO9.1** The outermost projection of development is set back horizontally a minimum of 3 metres from the outermost projection of **overhead line equipment**.	Not a traffic engineering item.
PO10 Development in the **railway corridor** is designed and constructed to prevent projectiles being thrown onto the **railway**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO11 Buildings, and **structures** with publicly accessible or communal areas within 20 metres from the centreline of the nearest **railway** track are designed and constructed to prevent projectiles from being thrown onto a **railway**.	**AO11.1** Publicly accessible areas located within 20 metre from the centreline of the nearest **railway** do not overlook a **railway**. OR **AO11.2** Buildings and **structures** are designed to ensure publicly accessible areas located within 20 metres from the centreline of the nearest **railway** track and that overlook the **railway** may include throw protection screens in accordance with the relevant provisions of the Civil Engineering Technical Requirement – CIVIL-SR005 Design of buildings over or near **railways**, Queensland Rail, 2011, and the Civil Engineering Technical Requirement – CIVIL-SR008 Protection screens, Queensland Rail.	Not a traffic engineering item.
Stormwater and overland flow		
PO12 Stormwater run-off or overland flow from the development site does not create or exacerbate a safety hazard in a **railway corridor**.	No acceptable outcome is prescribed.	Not applicable.
PO13 Stormwater run-off or overland flow from the development site does not result in a material	No acceptable outcome is prescribed.	Not applicable.

Performance outcomes	Acceptable outcomes	Response
worsening of operating performance of the **railway corridor**, **rail transport infrastructure** or **other rail infrastructure**.		
PO14 Stormwater run-off or overland flow from the development site does not interfere with the **structural integrity** or physical condition of the **railway corridor, rail transport infrastructure** or **other rail infrastructure**.	No acceptable outcome is prescribed.	Not applicable.
Flooding		
PO15 Development does not result in a material worsening of flooding impacts within a **railway corridor**.	No acceptable outcome is prescribed.	Not applicable.
Drainage Infrastructure		
PO16 Drainage infrastructure does not create a safety hazard in a **railway corridor**.	**AO16.1** Drainage infrastructure is wholly contained within the development site. AND **AO16.2** Drainage infrastructure can be maintained without requiring access to a **railway corridor**.	Not applicable.
Construction Impacts		
PO17 Construction activities do not cause ground movement or vibration impacts in a **railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
Access		
PO18 Development prevents unauthorised access to the **railway corridor**.	**AO18.1** Development abutting the **railway corridor** incorporates fencing along the property boundary with the **railway corridor** in accordance with the **railway manager's** standards. AND **AO18.2** A road barrier designed in accordance with Queensland Rail Civil Engineering Technical	Complies with PO18. Vehicle manoeuvring areas and access driveways would not be located in proximity to the railway corridor.

Performance outcomes	Acceptable outcomes	Response
	Requirement CIVIL-SR-007 – Design Criteria for Road Rail Barriers. AND **AO18.3** Vehicle manoeuvring areas, driveways, **loading** areas and carparks abutting the **railway corridor** incorporate **rail interface barriers** along the boundary to the **railway corridor**.	
PO19 Development maintains existing maintenance and authorised access to the **railway corridor**.	**AO19.1** Development does not obstruct existing authorised access points and access routes for maintenance and emergency works to the **railway corridor** at all times.	Complies with PO19. The proposal would not impact accessibility to the railway corridor.
PO20 Development does not impede the maintenance of a **railway bridge** or authorised access to a **railway bridge**.	**AO20.1** Buildings and other **structures** are set back horizontally a minimum of 3 metres from a **railway bridge**. AND **AO20.2** Permanent **structures** are not located below or abutting a **railway bridge**. AND **AO20.3** Temporary activities below or abutting a **railway bridge** do not impede access to a **railway corridor**.	Not a traffic engineering item.
Public passenger transport and active transport		
PO21 Development does not compromise the safety of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO21. The proposal does not seek to alter any exiting public and active transport infrastructure.
PO22 Development maintains pedestrian and cycle access to a **railway** station or other **public passenger transport infrastructure** and **active**	No acceptable outcome is prescribed.	Complies with PO22. The proposal does not seek to alter any exiting public and active transport infrastructure.

Performance outcomes	Acceptable outcomes	Response
transport infrastructure associated with the **railway**.		
PO23 Development does not adversely impact the **structural integrity** or physical condition of **public passenger transport infrastructure** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO23. The proposal does not seek to alter any exiting public and active transport infrastructure.
PO24 Development does not adversely impact the operating performance of **public passenger transport infrastructure, public passenger services** and **active transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO24. The proposal does not seek to alter any exiting public and active transport infrastructure.
Planned upgrades		
PO25 Development does not impede delivery of **planned upgrades** of **rail transport infrastructure**.	No acceptable outcome is prescribed.	Complies with PO25. The proposal does not seek to alter any exiting public and active transport infrastructure and therefore would not impede any future upgrades to infrastructure.
Network safety		
PO26 Development involving **dangerous goods** does not adversely impact on the safety or operations of the **railway** and **rail transport infrastructure**.	**AO26.1** Development does not involve handling or storage of hazardous chemicals above the threshold quantities listed in table 5.2 of the Model Planning Scheme Development Code for Hazardous Industries and Chemicals, Office of Industrial Relations, Department of Justice and Attorney-General, 2016.	Not applicable.

Table 2.2 Filling, excavation, building foundations and retaining structures

Performance outcomes	Acceptable outcomes	Response
PO27 Development does not create a safety hazard for users of the **railway** or **other rail infrastructure**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO28 Development does not adversely impact on the operating performance of the **railway** or **other rail infrastructure** within the **railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.

PO29 Development does not undermine, damage, or cause subsidence of, the **railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO30 Development does not adversely impact the **structural integrity** or physical condition of the **railway**, **other rail infrastructure** or the **railway corridor** by adding or removing **loading**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO31 Development does not cause ground water disturbance in the **railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO32 Development does not adversely impact the **railway** or **other rail infrastructure** within the **railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO33 Excavation, boring, piling, blasting, drilling, fill compaction or similar activities does not adversely impact the operating performance of the **railway** or **other rail infrastructure** within the **railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO34 Filling and excavation material does not cause an obstruction or nuisance in the **railway corridor**.	**AO34.1** Fill, spoil or any other material is not stored in, or adjacent to, the **railway corridor**.	Not a traffic engineering item.

Table 2.3 Railway crossings

Performance outcomes	Acceptable outcomes	Response
PO35 Development does not require a new level **railway crossing**.	No acceptable outcome is prescribed.	Not applicable.
PO36 Development does not adversely impact on the operating performance of an existing **railway crossing**.	No acceptable outcome is prescribed.	Not applicable.
PO37 Development does not adversely impact on the safety of an existing **railway crossing**.	No acceptable outcome is prescribed.	Not applicable.
PO38 Development is designed and constructed to allow for on-site circulation to ensure vehicles do not queue in a **railway crossing**.	No acceptable outcome is prescribed.	Not applicable.

Table 2.4 Environmental emissions

Statutory note: Where development is adjacent to a **railway** with 15 or fewer passing trains per day, compliance with table 2.4 is not required.

Performance outcomes	Acceptable outcomes	Response
Reconfiguring a Lot		
Involving the creation of 5 or fewer new residential lots adjacent to a railway or type 2 multi-modal corridor		
PO39 Development minimises free field noise intrusion from a **railway**.	**AO39.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO39.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound. OR **AO39.3** Development provides a **solid gap-free fence** or other **solid gap-free structure** along the full extent of the boundary closest to a **railway**.	Not applicable.
Involving the creation of 6 or more new residential lots adjacent to a railway or type 2 multi-modal corridor		

PO40 Reconfiguring a lot minimises free field noise intrusion from a **railway**.	**AO40.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO40.2** Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	Not applicable.
Material change of use (accommodation activity)		
Ground floor level requirements adjacent to a railway or type 2 multi-modal corridor		
PO41 Development minimises noise intrusion from a **railway** in **private open space** at the ground floor.	**AO41.1** Development provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.2) for **private open space** at the ground floor level; 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;	Not a traffic engineering item.

	c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO41.2** Development achieves the maximum free field acoustic level in reference table 2 (item 2.2) for **private open space** at the ground floor level by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	
PO42 Development (excluding a **relevant residential building** or **relocated building)** minimises noise intrusion from the **railway** in **habitable rooms** at the facade of the ground floor level.	**AO42.1** Development (excluding a **relevant residential building** or **relocated building**) provides a noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum building facade acoustic level in reference table 1 (item 1.1) for **habitable rooms** at the ground floor level; 2. in accordance with: a. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019;. c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR **AO42.2** Development (excluding a **relevant residential building** or **relocated building**) achieves the maximum building facade acoustic level in reference table 1 (item 1.1) for **habitable rooms** at the ground floor level by **alternative noise**	Not a traffic engineering item.

	attenuation measures where it is not practical to provide a noise barrier or earth mound.	
PO43 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in Table 3 (item 3.1).	No acceptable outcome is prescribed.	Not a traffic engineering item.
Above ground floor level requirements (accommodation activity) adjacent to a railway or type 2 multi-modal corridor		
PO44 Balconies, podiums and roof decks include: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums and roof decks	No acceptable outcome is prescribed.	Not a traffic engineering item.
PO45 Habitable rooms (excluding a **relevant residential building** or **relocated building**) are designed and constructed using materials to achieve the maximum internal acoustic level in reference table 3 (item 3.1).	No acceptable outcome is prescribed.	Not a traffic engineering item.
Material change of use (other uses)		
Ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a railway or type 2 multi-modal corridor		
PO46 Development: 1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum free field acoustic level in reference table 2 (item 2.3) for all **outdoor education areas** and **outdoor play areas**; b. in accordance with: i. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018;	No acceptable outcome is prescribed.	Not a traffic engineering item.

ii. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; iii. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020; or 2. achieves the maximum free field acoustic level in reference table (item 2.3) for all **outdoor education areas** and **outdoor play areas** by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.		
PO47 Development involving a **childcare centre** or **educational establishment**: 1. provides a noise barrier or earth mound that is designed, sited and constructed: a. to achieve the maximum building facade acoustic level in reference table 1 (item 1.2); b. in accordance with: i. Civil Engineering Standard Specification QR-CTS-Part 41 – Part 41, Design and Construction of Noise Fences/Barriers, Queensland Rail, 2018; or 2. achieves the maximum building facade acoustic level in reference table 1 (item 1.2) by **alternative noise attenuation measures** where it is not practical to provide a noise barrier or earth mound.	No acceptable outcome is prescribed.	Not applicable.
PO48 Development involving: 1. **indoor education areas** and **indoor play areas**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital**; achieves the maximum internal acoustic level in reference table 3 (items 3.2, 3.3 and 3.4).	No acceptable outcome is prescribed.	Not applicable.

Above ground floor level requirements (childcare centre, educational establishment, hospital) adjacent to a railway or **type 2 multi-modal corridor**		
PO49 Development involving a **childcare centre**; or **educational establishment** which have balconies, podiums or elevated **outdoor play areas** predicted to exceed the maximum free field acoustic level in reference table 2 (item 2.3) due to noise from the **railway** are provided with: 1. a continuous **solid gap-free structure** or balustrade (excluding gaps required for drainage purposes to comply with the Building Code of Australia); and 2. highly acoustically absorbent material treatment for the total area of the soffit above balconies, podiums and elevated **outdoor play areas**.	No acceptable outcome is prescribed.	Not applicable.
PO50 Development including: 1. **indoor education areas** and **indoor play areas** in a **childcare centre** or **educational establishment**; or 2. sleeping rooms in a **childcare centre**; or 3. **patient care areas** in a **hospital** located above ground level, is designed and constructed to achieve the maximum internal acoustic level in reference table 3 (items 3.2-3.4).	No acceptable outcome is prescribed.	Not applicable.
Air, light and vibration		
PO51 Private open space, **outdoor education areas** and **outdoor play areas** are protected from air quality impacts from a **railway**.	**AO51.1** Each dwelling or unit has access to a **private open space** which is shielded from a **railway** by a building, noise barrier, **solid gap-free fence**, or other **solid gap-free structure**. OR **AO51.2** Each **outdoor education area** and **outdoor play area** is shielded from a **railway** by a building, noise barrier, **solid gap-free fence,** or other **solid gap-free structure**.	Not applicable.

PO52 Patient care areas within **hospitals** are protected from vibration impacts from a **railway**.	**AO52.1 Hospitals** are designed and constructed to ensure vibration in the patient treatment area does not exceed a vibration dose value of 0.1m/s$^{1.75}$. AND **AO52.2 Hospitals** are designed and constructed to ensure vibration in the ward of a **patient care area** does not exceed a vibration dose value of 0.4m/s$^{1.75}$.	Not applicable.
PO53 Development is designed and sited to ensure light from infrastructure within, and use of, a **railway** does not: 1. intrude into buildings during night hours (10pm to 6am); and 2. create unreasonable disturbance during evening hours (6pm to 10pm).	No acceptable outcomes are prescribed.	Not applicable.

Table 2.5 Development in a future railway corridor

Performance outcomes	Acceptable outcomes	Response
PO54 Development does not impede the planning, design and delivery of **rail transport infrastructure** in a **future railway corridor**.	**AO54.1** Development is not located in a **future railway corridor**. OR both of the following acceptable outcomes apply: **AO54.2** The intensification of lots does not occur within a **future railway corridor**. AND **AO54.3** Development does not result in the landlocking of parcels once a **future railway corridor** is delivered.	Complies with PO54. The proposal does not seek to alter any exiting public transport infrastructure and therefore would not impede any future upgrades to infrastructure.
PO55 Development, including filling, excavation, building foundations and **retaining structures** do not undermine or cause subsidence of a **future railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.

Performance outcomes	Acceptable outcomes	Response
PO56 Development does not result in a material worsening of stormwater, flooding, overland flow or drainage impacts in a **future railway corridor**.	No acceptable outcome is prescribed.	Not a traffic engineering item.