TRAFFIC AND PARKING IMPACT ASSESSMENT OF MIXED-USE DEVELOPMENT AT 253 COWARD STREET, MASCOT

Address: Shop 7, 720 Old Princes Highway Sutherland NSW 2232
Postal: P.O Box 66 Sutherland NSW 1499

Telephone: +61 2 8355 2440
Fax: +61 2 9521 7199
Web: www.mclarentraffic.com.au
Email: admin@mclarentraffic.com.au

Division of RAMTRANS Australia ABN: 45067491678 RPEQ: 19457

Transport Planning, Traffic Impact Assessments, Road Safety Audits, Expert Witness

190362.01FB - 9 August 2019

Development Type: **Mixed-Use Development**

Site Address: **253 Coward Street, Mascot**

Prepared for: **Skylife Coward Pty Limited**

Document reference: **190362.01FB**

Status	Issue	Prepared By	Checked By	Date
Draft	A	AT / ME	TS	17th July 2019
Draft	B	ME	TS	31st July 2019
Draft	C	ME	TS	1st August 2019
Final	A	ME	TS	9th August 2019
Final	B	ME	TS	9th August 2019

Please be aware that all information and material contained in this report is the property of McLaren Traffic Engineering. The information contained in this document is confidential and intended solely for the use of the client for the purpose for which it has been prepared and no representation is made or if to be implied as being made to any third party. Any third party wishing to distribute this document in whole or in part for personal or commercial use must obtain written confirmation from McLaren Traffic Engineering prior to doing so. Failure to obtain written permission may constitute an infringement of copyright and may be liable for legal action.

TABLE OF CONTENTS

1 INTRODUCTION 1

1.1 Description and Scale of Development 1
1.2 State Environmental Planning Policy (Infrastructure) 2007 1
1.3 Site Description 1
1.4 Site Context 2
1.5 Development Controls 3

2 EXISTING TRAFFIC AND PARKING CONDITIONS 5

2.1 Road Hierarchy 5
2.1.1 Kent Road (South) 5
2.1.2 Kent Road (North) 5
2.1.3 Coward Street (East) 5
2.1.4 Coward Street (West) 5
2.1.5 Existing Traffic Management 6

2.2 Existing Traffic Environment 6
2.2.1 Intersection Performances 6

2.3 Public Transport 7
2.4 Future Road and Infrastructure Upgrades 7

3 PARKING ASSESSMENT 9

3.1 Council Car Parking Requirements 9
3.1.1 Proximity to Mascot Station Town Centre Precinct 9
3.1.2 Comparative Strategic Centre Parking Rates 10

3.2 Parking Allocation 11
3.3 Disabled Parking 11
3.4 Bicycle & Motorcycle Parking Requirements 12
3.5 Servicing & Loading 12
3.6 Car Park Design & Compliance 13

4 TRAFFIC ASSESSMENT 14

4.1 Traffic Generation 14
4.2 Expected Traffic Generation 15
4.3 Trip Assignment 18
4.4 Traffic Impact 19

5 CONCLUSION 20

1 INTRODUCTION

M^C^Laren Traffic Engineering (MTE) was commissioned by *Skylife Coward Pty Limited* to provide a Traffic and Parking Impact Assessment of the proposed Mixed-Use Development at 253 Coward Street, Mascot.

1.1 Description and Scale of Development

The proposed mixed-use development includes both retail and commercial components, with the floor plans and area schedule provided in **Annexure A** to this report. The scale of the development relevant to traffic and parking impacts includes:

- The demolition and removal of a commercial vehicle sales yard of 4047m^2 site area;
- 914m^2 gross floor area (GFA) retail/commercial area on the ground floor including a café;
- 16,998m^2 gross floor area (GFA) commercial area over nine (9) floors.

The proposal details parking and vehicular access as follows:

- Four (4) levels of parking, including one (1) basement level and three (3) above ground parking levels, containing a total of 257 car parking spaces;
- Access is provided to the ground level via a proposed two-way driveway from Kent Road;
- A ground level loading dock catering for two (2) vehicles up to 8.8m in length and 4.0m in height (equivalent to a Medium Rigid Vehicle) and two (2) courier vehicles (i.e. Australian Standard B99 vehicle), with access via the proposed driveway from Kent Road.

1.2 State Environmental Planning Policy (Infrastructure) 2007

The proposed development does qualify as a development with relevant size and/or capacity under *Clause 104* of the *SEPP (Infrastructure) 2007*. Accordingly, formal referral to the Roads and Maritime Services (RMS) is required for Bayside City Council officers to determine this proposal accordingly.

Further, the proposed development fronts an RMS classified road (Coward Street) and as such, *Clause 101* of the *SEPP (Infrastructure) 2007* is activated. As such, consideration is made to proposed access arrangements with access provided via Kent Street, the lower order road. This acts to alleviate any effects on safety, efficiency and ongoing operations to the RMS road arising from the proposal, resulting in a favourable access outcome.

1.3 Site Description

The subject site is located on the corner of Kent Road and Coward Street, with access to the site currently provided via two (2) separate one-way driveways to Kent Road. The site is currently zoned *B5 – Business Development* under the *Botany Bay Local Environmental Plan 2013* and is currently used as a commercial vehicle sales premises.

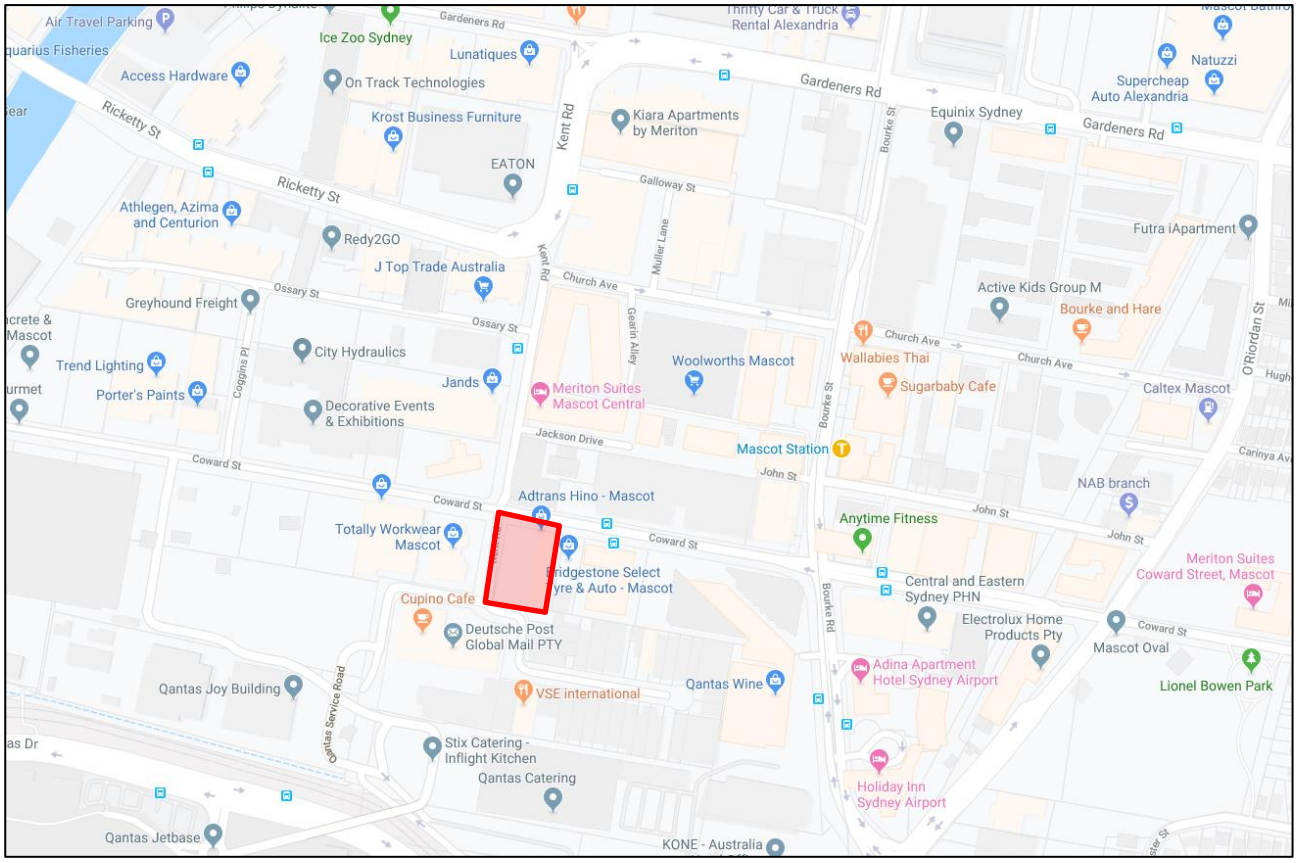
The site is generally surrounded by commercial warehouses to the south-west of the site, with commercial office developments to the east. To the north of the site significant development is taking place with the construction of multiple new residential and mixed-use developments. Mascot Station is located approximately 300m to the north-east and the northern boundary of the Kingsford Smith Sydney International Airport is located approximately 300m to the south of the site.

1.4 Site Context

The location of the site is shown on aerial imagery and a map in **Figure 1** and **Figure 2**.

Site Location

FIGURE 1: SITE CONTEXT – AERIAL PHOTO



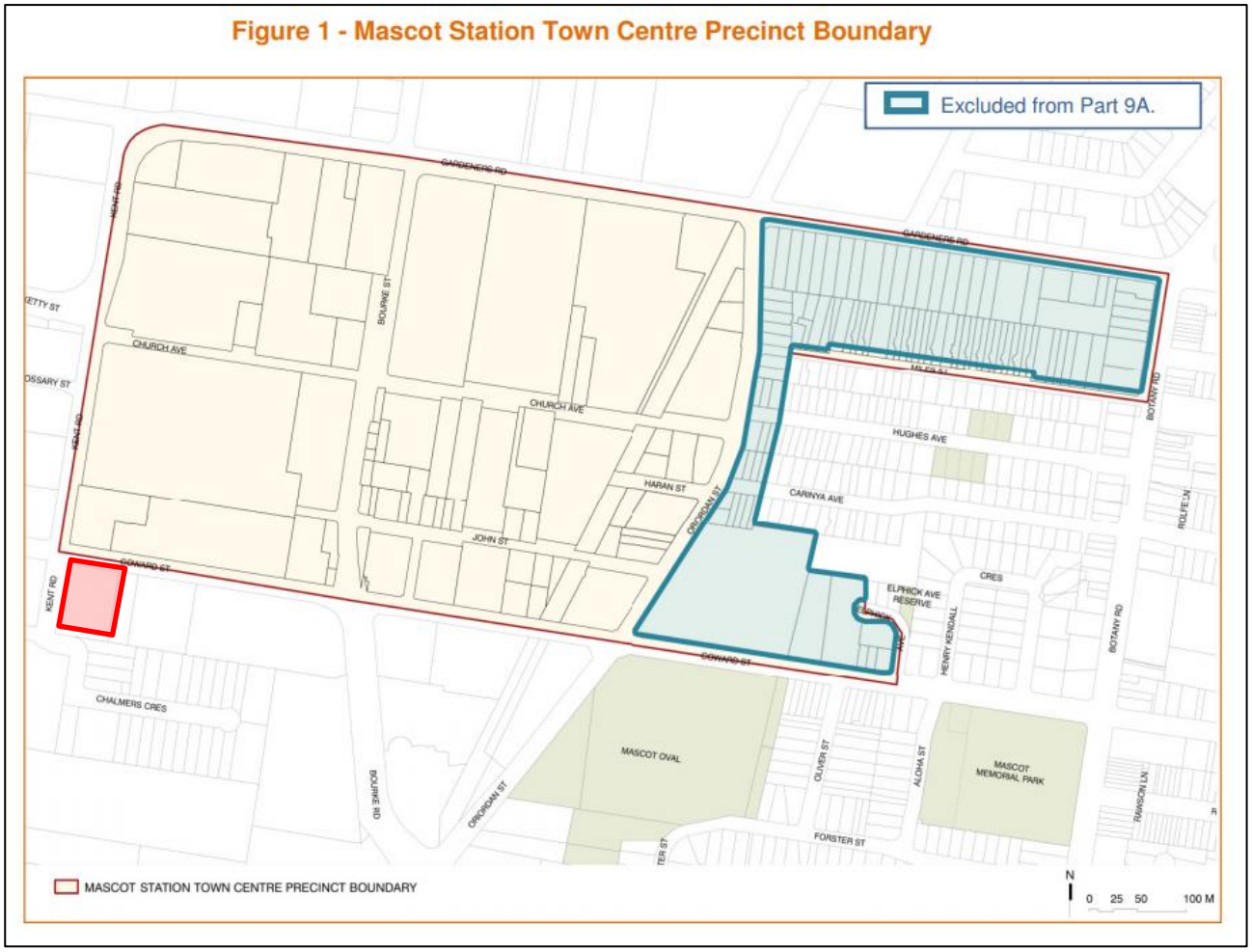
Site Location

FIGURE 2: SITE CONTEXT – STREET MAP

1.5 Development Controls

The subject site is within the Local Government Area of Bayside Council and is subject to controls of the *Botany Bay Development Control Plan 2013* (BBDCP) as adopted by Bayside Council. *Part 6 – Employment Zones* of the BBDCP places the subject site within the '*Mascot Business Development Precinct*', which incorporates warehouse, distribution and other industrial developments as well as newer commercial and office developments.

Directly adjacent to the subject site is the Mascot Station Town Centre Precinct. Controls relevant to this precinct are outlined within *Part 9A – Mascot Station Town Centre Precinct* of the *Botany Bay Development Control Plan*. The location of the site compared to the bounds of the Mascot Station Town Centre Precinct, extracted from Part 9A of the BBDCP, is shown in **Figure 3**.



Site Location

FIGURE 3: SITE CONTEXT - MASCOT STATION TOWN CENTRE PRECINCT

2 EXISTING TRAFFIC AND PARKING CONDITIONS

2.1 Road Hierarchy

The road network servicing the site has the following relevant characteristics:

2.1.1 Kent Road (South)

- Unclassified LOCAL Road;
- Approximately 13m in width facilitating two-way traffic flow with one (1) lane in each direction plus one (1) parking lane in both directions;
- Unrestricted kerbside parking permitted on both sides of the road along and opposite the frontage of the site;
- Default 50km/h speed restriction applies.

2.1.2 Kent Road (North)

- Classified STATE MAIN road (No. 659);
- Approximately 16m in width facilitating two (2) traffic flow lanes in both directions and a southbound parking lane;
- '*No Stopping, 6–10AM, 3–7PM, Mon - Fri*' parking restrictions on the western side of the road;
- Unrestricted kerbside parking permitted on the eastern side of the road where three lanes exist, otherwise, '*No Stopping*' restrictions apply;
- Default 50km/h speed restriction applies.

2.1.3 Coward Street (East)

- Classified STATE MAIN Road (No. 659);
- Approximately 13m in width facilitating two (2) traffic flow lanes in both directions;
- *'No Stopping*' restrictions apply on either side of the road, with intermittent bus zones;
- Default 50km/h speed limit applies.

2.1.4 Coward Street (West)

- Unclassified LOCAL Road;
- Approximately 13m in width facilitating one (1) traffic flow and one (1) parking lane in each direction;
- Unrestricted parking permitted on both sides of the road;
- Default 50km/h speed restriction applies.

2.1.5 Existing Traffic Management

- Signal controlled intersection of Coward Street/Kent Road;
- Signal controlled intersection of Kent Road/Ricketty Street;
- Signal controlled intersection of Coward Street/Bourke Road;
- Signal controlled intersection of Coward Street/O'Riordan Street;
- Signal controlled intersection of Bourke Road/O'Riordan Street.

2.2 Existing Traffic Environment

Traffic counts were completed at the intersections of Coward Street/Kent Road, Coward Street/Bourke Road and Kent Road/Church Avenue/Ricketty Street from 6:00am to 9:00am and 4:00pm to 7:00pm on Thursday 7th February 2019, representing a typical weekday commuter peak. Full surveys have been reproduced in **Annexure B** for reference.

2.2.1 Intersection Performances

Existing intersection performances have been assessed using SIDRA INTERSECTION 8.0, the results of this analysis are summarised in **Table 1** with full results reproduced within **Annexure C**.

TABLE 1: INTERSECTION PERFORMANCES (SIDRA INTERSECTION 8.0)

Intersection	Peak Hour	Degree of Saturation(1)	Average Delay(2) (sec/vehicle)	Level of Service(3)	Control Type	Worst Movement
EXISTING PERFORMANCE						
Kent Road / Coward Street	AM	0.57	29.1	**C**	Signals	RT from Coward Street
	PM	0.36	32.3	**C**		RT from Kent Road
Bourke Street / Coward Street	AM	0.50	28	**B**	Signals	RT from Bourke Road
	PM	0.42	31.3	**C**		RT from Bourke Road
Kent Road / Ricketty Street / Church Avenue	AM	0.45	24.3	**B**	Signals	T from Kent Road
	PM	0.54	25.6	**B**		RT from Ricketty Street

NOTES:
(1) Degree of Saturation is the ratio of demand to capacity for the most disadvantaged movement.
(2) Average delay is the delay experienced on average by all vehicles. The value in brackets represents the delay to the most disadvantaged movement.
(3) Level of Service is a qualitative measure of performance describing operational conditions. There are six levels of service, designated from A to F, with A representing the best operational condition and level of service F the worst. The LoS of the intersection is shown in bold, and the LoS of the most disadvantaged movement is shown in brackets.
(4) The phase time applied to the modelling of the signalised intersections is 110 seconds.

As shown above, the three (3) relevant intersections are currently performing efficiently, with a level of service "B" or "C" conditions in both the AM & PM peak hour periods. The level of service "B" performance is characterised by low approach delays and spare capacity and the level of service "C" reflects satisfactory performance.

2.3 Public Transport

The subject site is within a reasonable walking distance of stops serving existing bus routes 305 and 418 provided by Sydney Buses which runs along Coward Street, with the nearest bus stop located approximately 70m to the east of the site. These two (2) bus services provide access to Kingsford, Burwood, Sydenham, Dulwich Hill and Redfern.

The site is located approximately 400m (5 minutes) walking distance from Mascot Train Station, which provides access to the T8 – Airport and South Line, with direct links to the Sydney CBD, Kingsgrove and Campbelltown.

The location of the site relative to the surrounding public transport infrastructure is presented in **Figure 4**.

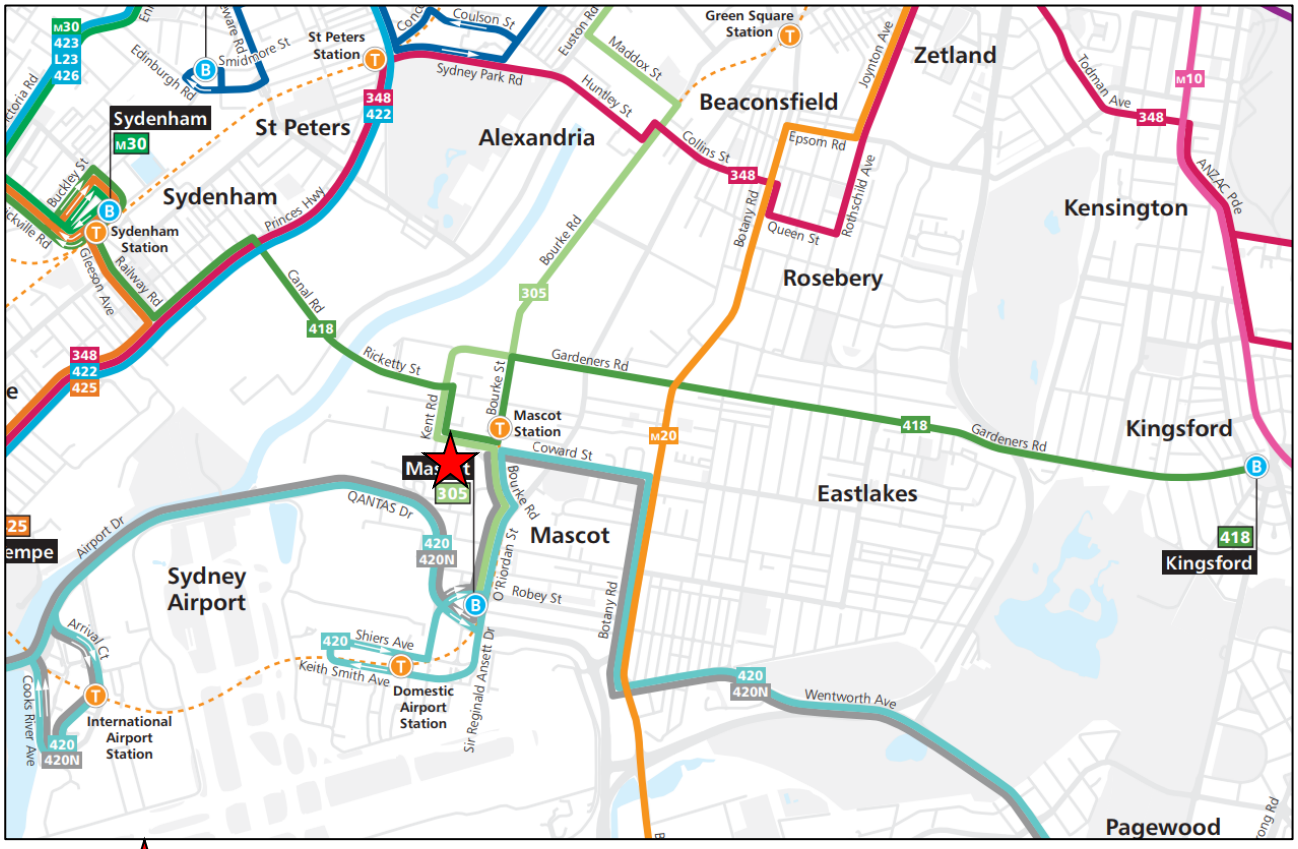


FIGURE 4: PUBLIC TRANSPORT CONTEXT

2.4 Future Road and Infrastructure Upgrades

From the Bayside Council Development Application tracker and website, it appears that there are no future planned road or public transport changes that will affect traffic conditions within the immediate vicinity of the subject site.

The WestConnex project is currently under construction and will significantly alter the capacity and efficiency of the road network surrounding the site. There are multiple road projects set to open in the coming years, including the nearby St Peters interchange and surrounding road upgrades such as two new bridges over Alexandria Canal, linking both Gardeners Road and Bourke Road to Campbell Road and the proposed St Peters interchange. Scheduled to open in 2020, these upgrades will greatly increase the capacity of the existing road network and alleviate congestion surrounding the site.

It should also be noted that the RMS plans to upgrade multiple intersections in close proximity to the site, with construction commencing in mid-2019. The upgrades are being completed to reduce congestion and improve safety in the Mascot local road network, according to the *Mascot intersection upgrades Community update December 2018*.

3 PARKING ASSESSMENT

3.1 Council Car Parking Requirements

Reference is made to the *City of Botany Bay Development Control 2013* (BBDCP), as adopted by Bayside Council, which designates the following parking rates applicable to the proposed development:

> ***Part 3 – General Provisions***
>
> *3A – Parking & Access*
>
> ***Table 1 - Car Parking Provisions by Land Use***
>
> *Food and drink premises*
>
> *a) Restaurants and café:*
>
> *For developments with a gross floor area greater than 100m², the parking provision is to be provided as follows:*
>
> *1 space / 2 employees; plus*
>
> *1 space / 3 seats (internal and external); or*
>
> *1 space / 10m² GFA, whichever is greater*
>
> *Office premises*
>
> *1 space / 40m² GFA*
>
> *Shops*
>
> *1 space / 25m² GFA*

Table 2 presents the parking requirements of the proposal according to the Council's above car parking rates.

TABLE 2: BBDCP PARKING RATES

Land Use	Type	Scale	Rate	Parking Required
Commercial	Office	16,998m² GFA	1 per 40m² GFA	**424.95**
Retail	Shop	914m² GFA	1 per 25m² GFA	**36.56**
TOTAL				**462 (461.51)**

As shown above, a strict application of the DCP results in a requirement for a total **462** car parking spaces. The proposed plans detail a total of **257** car parking spaces.

3.1.1 Proximity to Mascot Station Town Centre Precinct

As outlined within **Section 1.5**, the site is within the *Mascot Business Development Precinct* as defined by the *Botany Bay Development Control Plan 2013 – Part 6 – Employment Zones* adopted by Bayside Council. This section of the BBDCP references the general parking rates provided within *Part 3A – Parking and Access* of the BBDCP, as outlined within **Section 3.1**.

Part 9A – Mascot Station Town Centre Precinct of the *Botany Bay Development Control Plan*, which applies to lots on the north side of Coward Street, states the following with regards to the provision of parking:

> ***9A.4.4.9 Car Parking Rates***
>
> *C1 Existing developments must comply with the following car parking rates:*
>
> > *Office development: 1 space per 80m² GFA*
> >
> > *Commercial and retail development: 1 space per 60m² GFA within 800m of Mascot Station*

Due to the site's close proximity to the Mascot Station Town Centre Precinct, with access to the facilities of the town centre precinct including Mascot Train Station located 5 minutes (400m) walking distance to the east, it is reasonable to apply a car parking rate of 1 space per 80m^2 GFA.

3.1.2 Comparative Strategic Centre Parking Rates

Mascot is designated as a Strategic Centre under the *Greater Sydney Region Plan 2018* and it is reasonable to examine the parking requirements of other Strategic Centres with similar proximity to the Sydney CBD, as listed in **Table 3**.

TABLE 3: PARKING REQUIREMENTS OF OTHER STRATEGIC CENTRES

Strategic Centre	Parking Requirements	
	Office	**Retail**
Chatswood	1 space per 110m^2 GFA	1 space per 25m^2 GFA
Burwood	1 space per 120m^2 GFA	1 space per 40m^2 GFA
Bondi Junction	Minimum: 0 spaces Maximum: 1 space per 151.5m^2 GFA	Minimum: 0 spaces Maximum: 1 space per 50m^2 GFA
Green Square	Maximum: 1 space per 75m^2 GFA	Maximum: 1 space per 50m^2 GFA

Based on the comparative rates provided above, it is reasonable and conservative to apply a parking requirement of 1 space per 80m^2 GFA for the office component and 1 space per 40m^2 GFA for the retail component of the development. **Table 4** presents the parking requirements of the proposal according to these parking rates.

TABLE 4: REASONABLE PARKING RATES

Land Use	Type	Scale	Rate	Parking Required
Commercial	Office	16,998m^2 GFA	1 per 80m^2 GFA	212.48
Retail	Shop	914m^2 GFA	1 per 40m^2 GFA	22.85
TOTAL				**236 (235.33)**

Application of the above rates requires a total of **236** car parking spaces. The proposed plans detail a total of **257** car parking spaces, exceeding the expected parking demand of the proposed development.

3.2 Parking Allocation

As the provided parking exceeds the likely parking demands of the proposal, the excess parking will be allocated appropriately. As such, the parking allocation of the proposed **257** spaces and the resulting equivalent parking rates for each use are as presented in **Table 5**.

TABLE 5: APPLIED PARKING RATES

Land Use	Type	Percentage of Total Parking	Parking Provided	Scale	Equivalent Parking Rate
Commercial	Office	90%	231	16,998m^2 GFA	1 per 73.58m^2
Retail	Shop	10%	26	914m^2 GFA	1 per 35.15m^2

It can be seen that the equivalent, effective parking rates for each use are higher than the likely demands of each land use as were presented previously in **Table 4**. As such, the proposed parking quantum is expected to adequately meet the parking needs of the proposed development.

It noted that of the **257** car parking spaces provided seven (7) are tandem spaces. The BBDCP allows for tandem parking arrangements as long as a maximum of two (2) spaces are part of each tandem arrangement, no small car space is in tandem and tandem spaces are not used for visitor parking. These conditions are met and as such, the seven (7) tandem car parking spaces are acceptable.

3.3 Disabled Parking

Reference is made to the *Building Code of Australia's* (BCA's) *Table D3.5* which classifies an office as a Class 5 building and a shop as a Class 6 building and as such, requires the provision of disabled parking at the rates of:

Class 5 — *1 space for every 100 carparking spaces or part thereof.*

Class 6 — *1 space for every 50 carparking spaces or part thereof.*

In accordance with the above BCA requirements, three (**3**) disabled car parking spaces are to be provided. The site proposes four (**4**) disabled car parking spaces, designed as per *AS2890.6*:*2009*, complying with BCA requirements.

3.4 Bicycle & Motorcycle Parking Requirements

Reference is made to the BBDCP which outlines the following requirements for bicycle and motorcycle parking spaces.

> ***Bicycle Parking***
> *C7 In every new building, where the floor space exceeds 600m² GFA (except for houses and multi unit housing) bicycle parking equivalent to 10% of the required car spaces or part therefore as required in Table 1 shall be provided.*

Applying the above rates results in a total requirement of **45** bicycle spaces which have been provided onsite within the basement 1 level, meeting BBDCP requirements.

The BBDCP does not require the provision of motorcycle parking. No motorcycle parking has been provided, satisfying Council requirements.

3.5 Servicing & Loading

Reference is made to the *City of Botany Bay Development Control 2013 - Part 3A - Car Parking* as adopted by Bayside Council which outlines requirements for the required loading and servicing vehicle facilities for developments.

Table 2 – Loading/Unloading Facilities

Business & Office premises		*Retail premises*	
15,000 – 19,999 GFA (m²)		*600 – 999 GFA (m²)*	
For MRV	*3*	*For MRV*	*1*
For SRV	*2*	*For SRV*	*1*
For Courier Van	*5*	*For Courier Van*	*1*

As such, the DCP requires a total of four (4) service bays able to accommodate Medium Rigid Vehicles (MRV), three (3) service bays for Small Rigid Vehicles (SRV) and six (6) service bays for courier vans. This requirement, which requires a total of 13 loading bays, is excessive for a development of the proposed scale and it is unclear how the DCP should be applied to mixed-use developments.

The proposed plan details two (2) loading bays able to accommodate two (2) separate 8.8m length MRVs. Two (2) dedicated courier vehicle (up to Australian Standard B99 vehicle, i.e. Van) loading bays have been provided within the ground floor loading area.

Although this provision does not strictly meet DCP requirements, it has been advised by the applicant that the proposed servicing and loading areas are sufficient to meet the demands of the proposed development. Notwithstanding, to ensure that any external impacts of the loading and servicing operations of the site are minimised, it is recommended all deliveries be managed through the implementation of an Operational Traffic Management Plan (OTMP) to be completed by a suitably qualified professional.

Waste Collection requirements for the site are outlined in the *Botany Bay DCP Section 3A – Parking and Access*, which states the following with regards to the Waste Collection Point location for multistorey commercial (and office) buildings.

> *C42 For Multi-unit residential buildings and multi-storey commercial buildings, waste collection points shall be located inside the building, for example – in an underground car park, as this reduces noise impact on surrounding residents.*

Waste collection operations are to take place within the proposed loading area by a truck up to an 8.8m length Medium Rigid Vehicle (MRV), by a private waste contractor as advised by the client. It is noted that service vehicles accessing the service area are to be restricted to 4m in height, with service vehicle circulation areas to be signposted "*4.0m low clearance*" accordingly. This height restriction is to be managed under the OTMP.

3.6 Car Park Design & Compliance

The car parking layout as depicted in **Annexure A,** have been assessed to achieve the relevant clauses and objectives of *AS2890.1:2004*, *AS2890.2:2018* and *AS2890.6:2009*. Swept path testing has been undertaken, with the results reproduced in **Annexure D** for reference.

The proposed car park design achieves:

- 6.7m width two-way driveway facilitating access to Kent Road;
- Minimum 5.8m width parking aisles;
- Compliant ramp grades not exceeding 25% and no grade change greater than 12.5%;
- Two-way passing of an Australian Standard B99 and B85 vehicle generally available throughout circulation areas, including at ramp access points;
- Two-way passing of an 8.8m length MRV and B85 vehicle on ground level;
- Minimum 5.4m length, 2.4m width spaces;
- Minimum 5.4m length, 2.4m width disabled spaces with adjacent associated 5.4m length, 2.4m width shared space;
- Minimum 5.0m length, 2.3m width small car space;
- Minimum headroom of 2.2m for general circulation and 2.5m headroom clearance provided over disabled and adaptable parking areas;
- Minimum 8.8m length, 3.5m width for Medium Rigid Vehicle (MRV) loading bays;
- Minimum 4.0m head clearance over areas accessible by service vehicles and managed under an Operational Traffic Management Plan (OTMP);
    - "*4.0m Low Clearance*" signs to be placed accordingly.

Whilst the plans have been assessed to generally comply with the relevant standards, it is usual and expected that a design certificate be required at the Construction Certificate stage to account for any changes following the development application.

4 TRAFFIC ASSESSMENT

The impact of the expected traffic generation levels associated with the subject proposal is discussed in the following sub-sections.

4.1 Traffic Generation

Traffic generation rates for the relevant land uses are provided in the *Roads and Maritime Services (RMS) Guide to Traffic Generating Developments (2002)* and recent supplements and are as follows:

RMS Guide

3.6 Retail.

3.6.1 Specialty Shops

5.6 trips per 100m^2 gross floor area

3.6.3 Motor showrooms.

Evening peak hour vehicle trips = 0.7 per 100m2 site area

TDT 2013/04a

Office blocks

Morning peak hour vehicle trips = 1.6 per 100 m2 gross floor area.

Evening peak hour vehicle trips = 1.2 per 100 m2 gross floor area.

The traffic generation resulting from the application of the above rates is summarised in **Table 6**. It is noted that, in order to provide a conservative result, it has been assumed that the retail rate is the same for the AM and PM peak period.

The traffic generated by the existing development has been subtracted from the traffic generation of the proposed development in order to determine the net change in traffic expected.

TABLE 6: RMS TRAFFIC GENERATION

Land Use	Type	Scale	Peak	Rate	Traffic Generation
EXISTING					
Retail	Motor showroom	4047m^2 Site Area	AM	0.7 per 100m^2	28 (1) (14 in, 14 out)
			PM		28 (1) (14 in, 14 out)
FUTURE					
Commercial	Office	16,998m^2 GFA	AM	1.6 per 100m^2	272 (2) (218 in, 54 out)
			PM	1.2 per 100m^2	204 (2) (40 in, 164 out)
Retail	Shop	914m^2 GFA	AM	5.6 per 100m^2	51 (1) (26 in, 25 out)
			PM		51 (1) (25 in, 26 out)
TOTAL			AM		323 (244 in, 79 out)
			PM		255 (65 in, 190 out)
NET CHANGE			**AM**		**+295 (230 in, 65 out)**
			PM		**+227 (51 in, 176 out)**

Note: (1) Assumes 50% inbound & 50% outbound during AM peak: Vice versa for PM.
(2) Assumes 80% inbound & 20% outbound during AM peak. Vice versa for AM.

As shown, the net increase in traffic generation associated with the proposed development is in the order of an additional **295** vehicle trips in the AM (230 IN, 65 OUT) and an additional **227** vehicle trips in the PM (51 IN, 176 OUT) peak periods.

4.2 Expected Traffic Generation

Although the RMS Guide specifies the aforementioned rates, it does not consider specific site context, nature of users or the parking provision of site. The site is located in an area with a high accessibility to public transport services, people who work in Mascot have a lower private vehicle usership than the NSW average (57.5% compared to 64.6%). Further, there is a strong correlation between the supply and demand for parking; with the reduction in the provision of parking for development users, a lesser traffic generation is expected as a result of the development. As such, a reduction in traffic generation correlated to the provision of parking is acceptable.

As outlined in **Section 3.2** the proposed development is providing a total of **257** spaces, with **231** for office use and **26** for retail use. This equates to the following parking rates:

- Office use 1 space per 73.58m^2 GFA
- Retail Shop use 1 space per 35.15m^2 GFA

There is a strong correlation between the number of parking spaces provided and the peak AM and PM traffic generation of commercial developments. In addition to rates of traffic generation, the *RMS Guide to Traffic Generating Developments* provides suggested rates for the provision of car parking. It is reasonable then to discount the traffic generation rate provided by the RMS based on the proportionally lower provision of parking that the site proposes compared to the suggested rates of parking provision in the RMS Guide. This process has been detailed in **Table 7**.

TABLE 7: APPLICABLE TRAFFIC GENERATION RATE

Land Use	Parking Rate		Reduction Factor (1)
	RMS	Development	
Office – AM	1 per 40m^2	1 per 73.58m^2	54%
Office - PM	1 per 40m^2	1 per 73.58m^2	54%
Retail – Shop	1 per 25m^2	1 per 35.15m^2	71%

Notes: (1) Reduction factor equals development parking rate divided by RMS parking rate.

The traffic generation resulting from the application of the RMS rates and the above reduction factor is summarised in **Table 8**.

TABLE 8: APPLICABLE TRAFFIC GENERATION RATE

Land Use	Type	Scale	Peak	Rate	Reduction Factor	Traffic Generation
EXISTING						
Retail	Motor showroom	4047m^2 Site Area	AM	0.7 per 100m^2	N/A	28 (1) (14 in, 14 out)
			PM			28 (1) (14 in, 14 out)
FUTURE						
Commercial	Office	16,998m^2 GFA	AM	1.6 per 100m^2	54%	147 (2) (118 in, 29 out)
			PM	1.2 per 100m^2	54%	111 (2) (22 in, 89 out)
Retail	Shop	914m^2 GFA	AM	5.6 per 100m^2	71%	36 (1) (18 in, 18 out)
			PM			36 (1) (18 in, 18 out)
TOTAL			AM			183 (136 in, 47 out)
			PM			147 (40 in, 107 out)
NET CHANGE			**AM**			**+155 (122 in, 33 out)**
			PM			**+119 (26 in, 93 out)**

Note: (1) Assumes 50% inbound & 50% outbound during AM peak: Vice versa for PM.
(2) Assumes 80% inbound & 20% outbound during AM peak. Vice versa for AM.

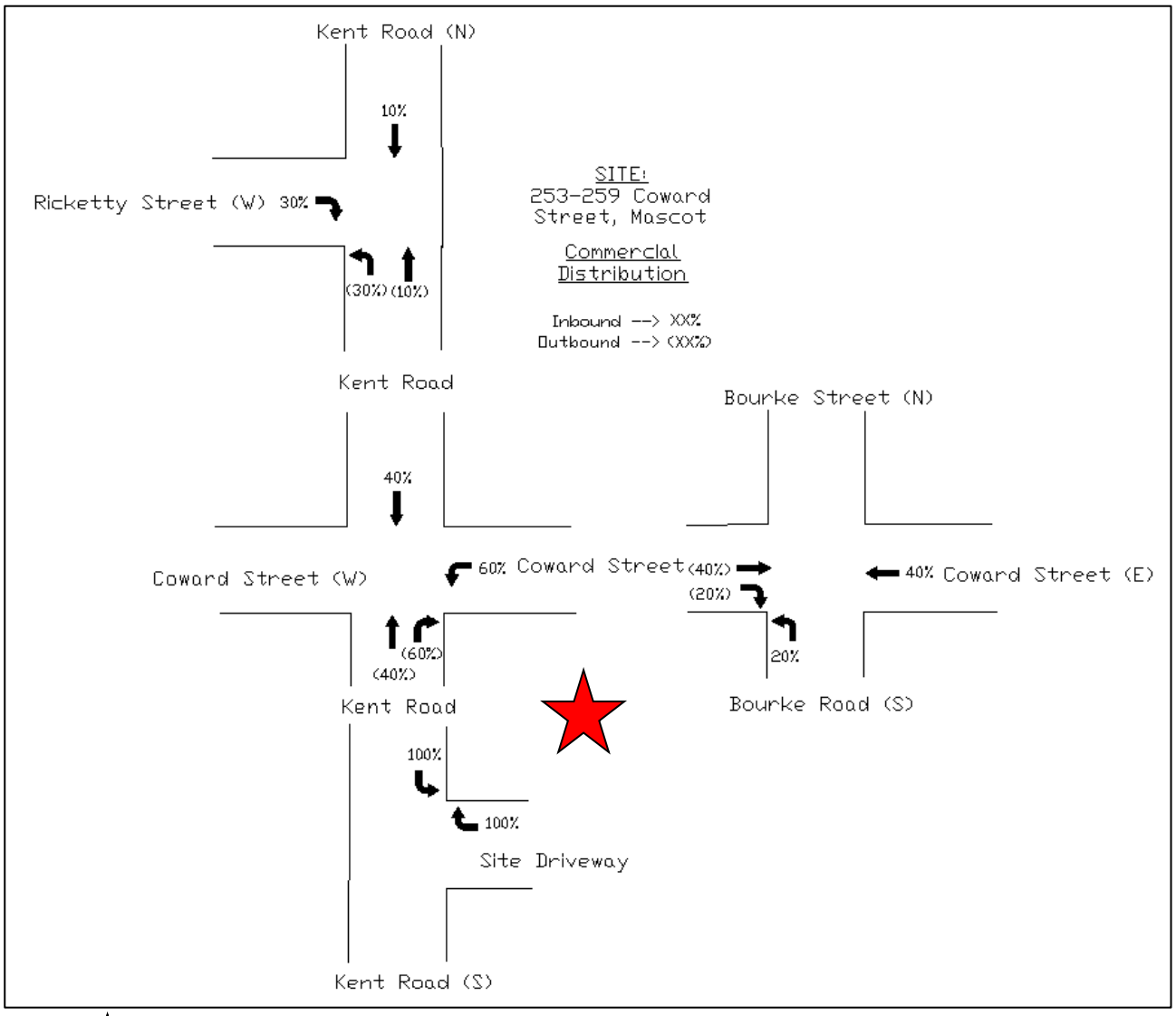
As shown, the net increase in traffic generation associated with the proposed development with the application of RMS rates is in the order of an additional **155** vehicle trips in the AM (122 IN, 33 OUT) and an additional **119** vehicle trips in the PM (26 IN, 93 OUT) peak periods.

4.3 Trip Assignment

The road network and the locations of residential areas surrounding the site have been assessed and the following traffic assignment has been assumed for all traffic to and from the site:

- 30% to/from the west via Ricketty Street and Kent Road;
- 10% to/from the north via Kent Road;
- 40% to/from the east via Coward Street and Kent Road;
- 20% to/from the south via Bourke Road, Coward Street and Kent Road.

The adopted traffic assignment to key intersections is summarised in **Figure 5**.



Site Location

FIGURE 5: TRIP DISTRIBUTION

4.4 Traffic Impact

The traffic generation outlined in **Section 4.2** & **4.3** above has been added to the existing traffic volumes recorded. SIDRA INTERSECTION 8.0 was used to assess the intersections performance. The purpose of this assessment is to compare the existing intersection operations to the future scenario under the increased traffic load. The results of this assessment are shown in **Table 9** with full results reproduced within **Annexure C**.

TABLE 9: INTERSECTION PERFORMANCE (SIDRA INTERSECTION 8.0)

Intersection	Peak Hour	Degree of Saturation(1)	Average Delay(2) (sec/vehicle)	Level of Service(3)	Control Type	Worst Movement
EXISTING PERFORMANCE						
Kent Road / Coward Street	AM	0.57	29.1	**C**	Signals	RT from Coward Street
	PM	0.36	32.3	**C**		RT from Kent Road
Bourke Street / Coward Street	AM	0.50	28	**B**	Signals	RT from Bourke Road
	PM	0.42	31.3	**C**		RT from Bourke Road
Kent Road / Ricketty Street / Church Avenue	AM	0.45	24.3	**B**	Signals	T from Kent Road
	PM	0.54	25.6	**B**		RT from Ricketty Street
FUTURE PERFORMANCE						
Kent Road / Coward Street	AM	0.65	30.4	**C**	Signals	RT from Coward Street
	PM	0.41	34.7	**C**		RT from Kent Road
Bourke Street / Coward Street	AM	0.52	28.2	**B**	Signals	RT from Bourke Road
	PM	0.44	32	**C**		RT from Bourke Road
Kent Road / Ricketty Street / Church Avenue	AM	0.48	24.7	**B**	Signals	T from Kent Road
	PM	0.55	26.2	**B**		RT from Ricketty Street

Notes: Refer to Table 1 notes.

As shown, the intersections of Kent Road/Coward Street, Bourke Street/Coward Street and Kent Road/Ricketty Street/Church Avenue all retain the same overall Level of Service of 'B' or 'C' under future conditions with minimal delays and additional capacity, indicating that there will be no noticeable impact on the existing road network as a result of the proposed development.

5 CONCLUSION

The traffic and parking impacts of the proposed mixed-use development at 253 Coward Street, Mascot, as shown in reduced plans in **Annexure A** to this report, have been assessed.

The proposed design includes some **257** car parking spaces including four (**4**) disabled car parking spaces, over four (4) separate parking levels with one (1) level below ground and three (3) above ground. Whilst the provision of parking does not meet the strict requirements of the Botany Bay Development Control Plan, this quantum of car parking spaces meets and exceeds the expected demand of the development based on its proximity to public transport services and the Mascot Town Centre.

Council's DCP requires a total of **45** bicycle parking spaces to be provided onsite. An adequate provision of bicycle parking spaces has been provided within a designated end-of-trip facility within the basement level, satisfying Council DCP requirements.

The proposed plan details two (2) loading bays able to accommodate two (2) separate 8.8m length MRVs. Two (2) dedicated courier vehicle (up to Australian Standard B99 vehicle, i.e. Van) loading bays have been provided within the ground floor loading area. Although this provision does not strictly meet DCP requirements, it has been advised by the applicant that the proposed servicing and loading areas are sufficient to meet the demands of the proposed development. It is recommended all deliveries be managed through the implementation of an Operational Traffic Management Plan (OTMP).

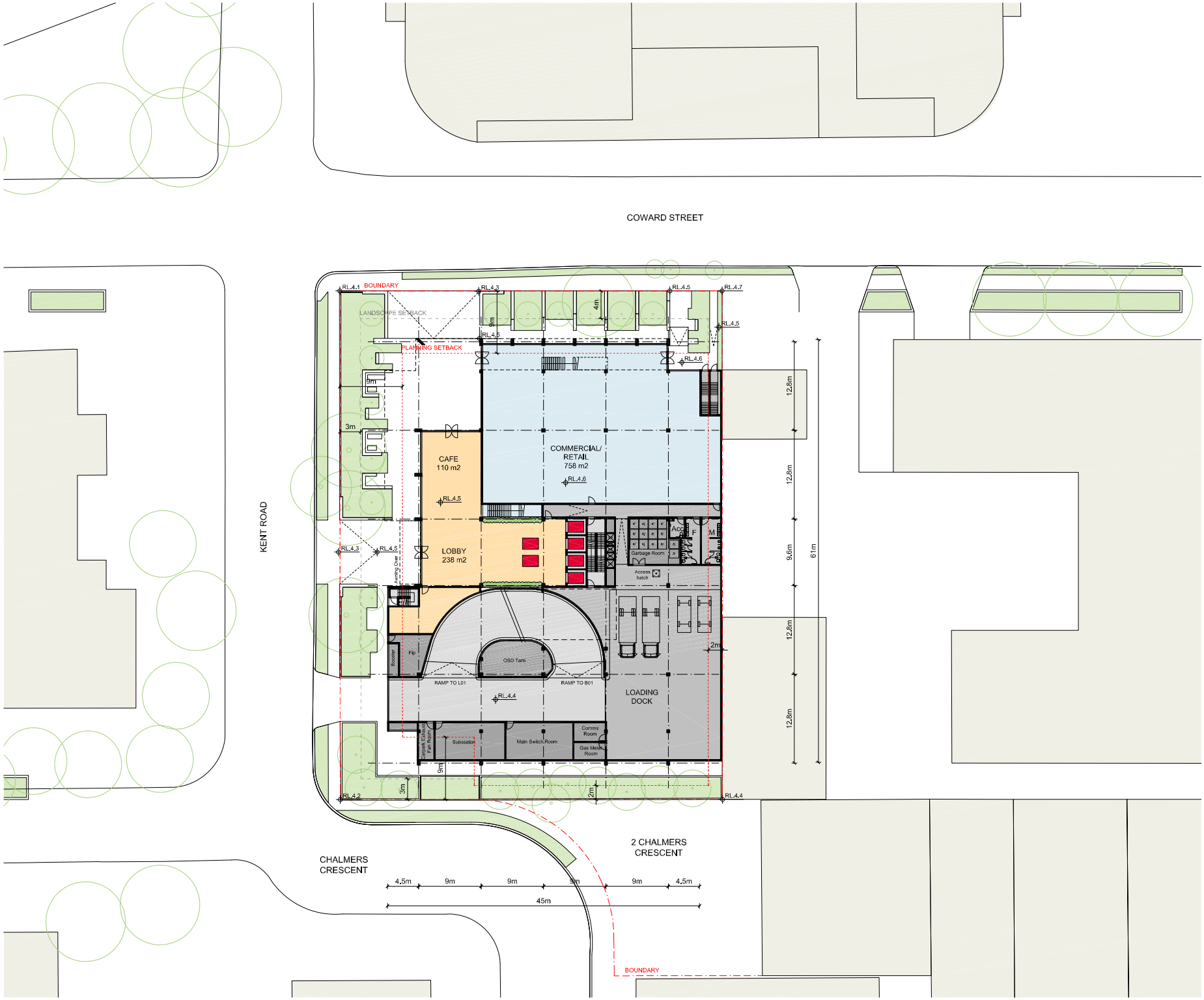
The car parking and access areas have been assessed to generally comply with the relevant objectives and requirements of *AS2890.1:2004*, *AS2890.2:2018* and *AS2890.6:2009*. Swept path testing has been undertaken, with the results reproduced within **Annexure D**.

The net increase of traffic generation of the site due to the proposal, estimated at some **155** trips in the AM (122 IN/ 33 OUT) and **119** trips in the PM (26 IN/ 93 OUT) commuter peak hours has been shown to have no noticeable impact on the surrounding road network in terms of both traffic flow efficiency and residential amenity concerns.

In view of the foregoing, the traffic and parking impacts of the proposed mixed-use development are fully supported.

ANNEXURE A: REDUCED PLANS

(6 SHEETS)



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and/or the fabrication of any components.

All drawings to be read in conjunction with all architectural documents and all other consultants documents.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.

All drawings may not be reproduced or distributed without prior permission from the architect.

Revision	Date	Description	Initial	Checked

253 Coward Street Mascot

Ground Level Floor Plan

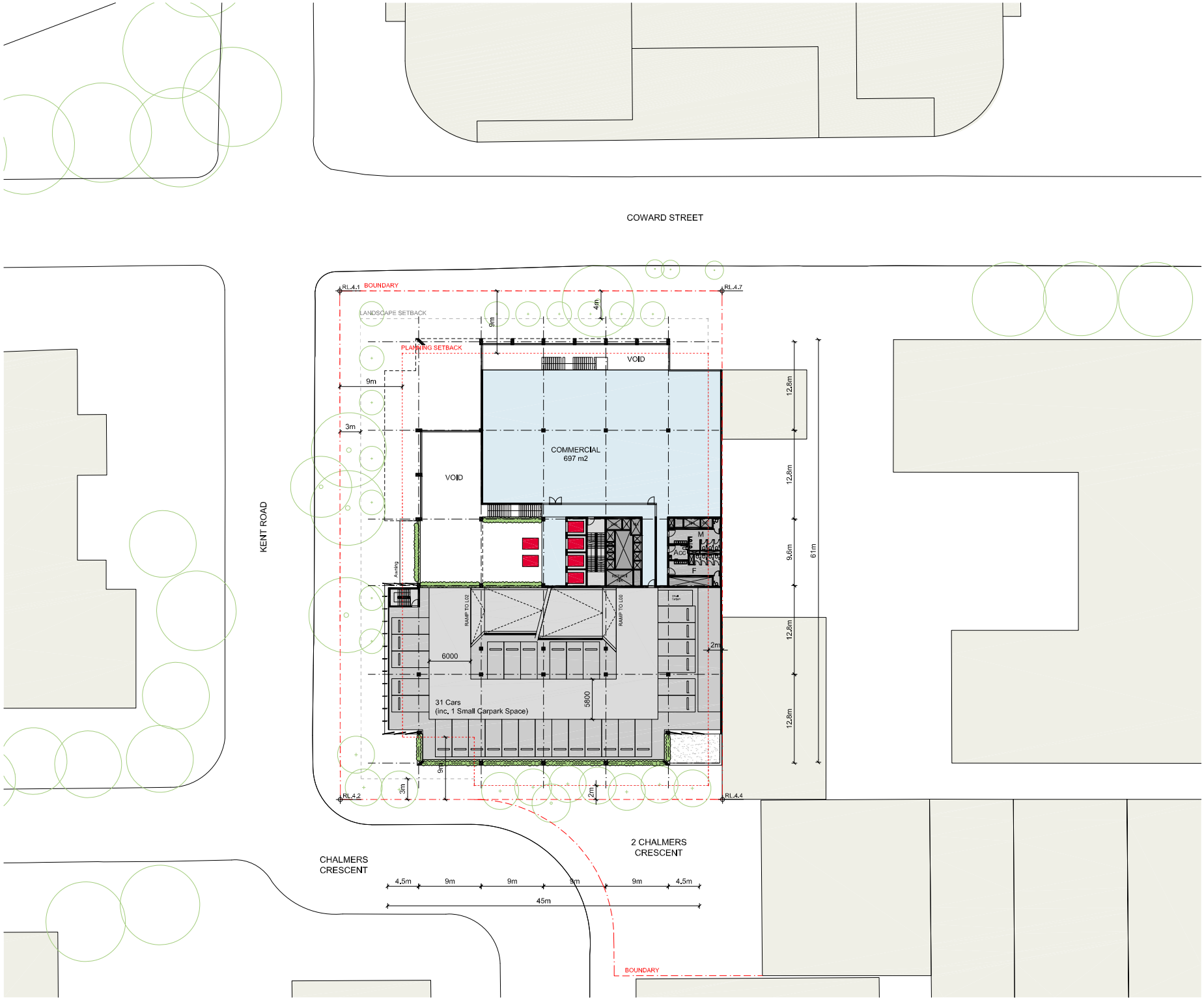
Scale	1:250 @ A1 / 1:500 @ A3
Drawn	FLB
Checked	JS
Project No.	S12325
Status	Development Application
Plot Date	2/8/2019 12:22 PM
Plot File	S:\12300-12399\s12325_podia_253cowardstmascot\70_CAD\Pl... ...z\S\DA\A03.000.dwg
Drawing No.	A03.000
[Revision]	

Melbourne 1 Nicholson Street
Melbourne VIC 3000 Australia
T 03 8664 6200 F 03 8664 6300
email melb@batessmart.com.au
http://www.batessmart.com.au

Sydney 43 Brisbane Street
Surry Hills NSW 2010 Australia
T 02 8354 5100 F 02 8354 5199
email syd@batessmart.com.au
http://www.batessmart.com.au

Bates Smart Architects Pty Ltd ABN 68 094 740 986

BATESSMART



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and/or the fabrication of any components.

All drawings to be read in conjunction with all architectural documents and all other consultants documents.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.

All drawings may not be reproduced or distributed without prior permission from the architect.

Revision	Date	Description	Initial	Checked

253 Coward Street
Mascot

Level 01 Floor Plan

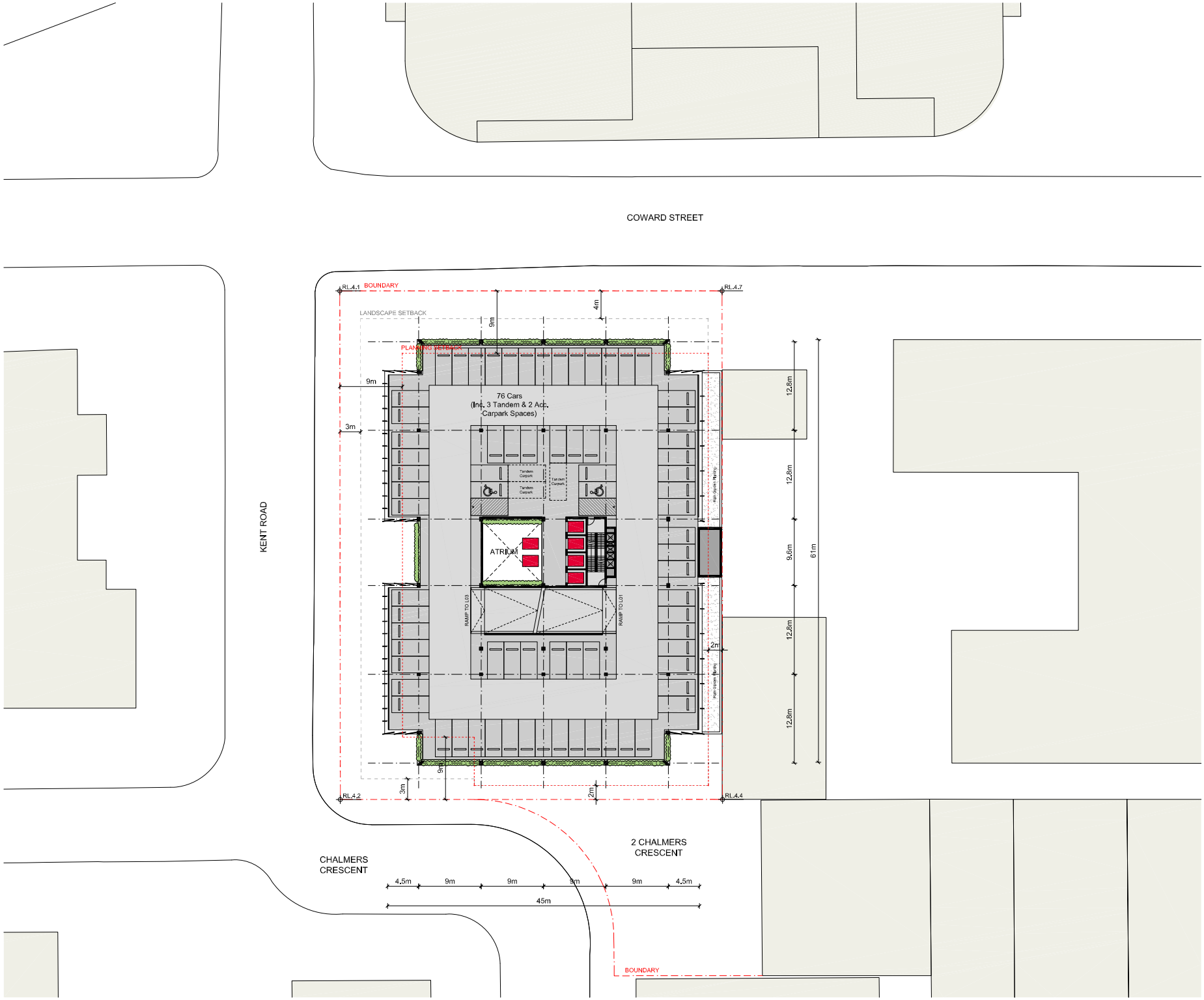
Scale	1:250 @ A1 / 1:500 @ A3
Drawn	FLB
Checked	JS
Project No.	S12325
Status	Development Application
Plot Date	2/8/2019 12:22 PM
Plot File	S:\12300-12399\s12325_podia_253cowardstmascot\70_CAD\Pl... ...esDWA03.001.dwg
Drawing No.	A03.001
[Revision]	

Melbourne 1 Nicholson Street
Melbourne VIC 3000 Australia
T 03 8664 6200 F 03 8664 6300
email melb@batessmart.com.au
http://www.batessmart.com.au

Sydney 43 Brisbane Street
Surry Hills NSW 2010 Australia
T 02 8354 5100 F 02 8354 5199
email syd@batessmart.com.au
http://www.batessmart.com.au

Bates Smart Architects Pty Ltd ABN 68 094 740 986

BATESSMART™



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and/or the fabrication of any components.

All drawings to be read in conjunction with all architectural documents and all other consultants documents.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.

All drawings may not be reproduced or distributed without prior permission from the architect.

Revision	Date	Description	Initial	Checked

253 Coward Street Mascot

Level 02 Floor Plan

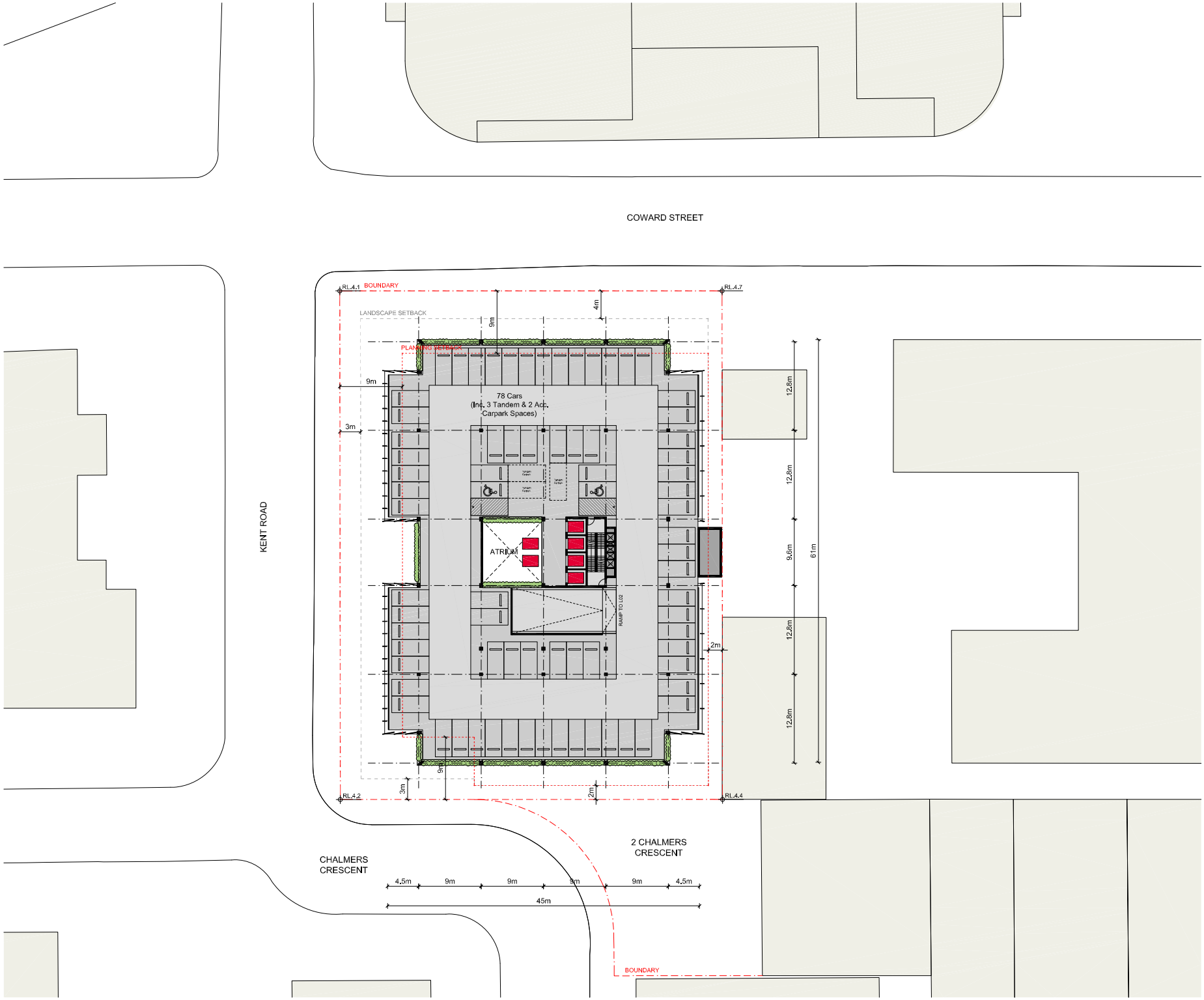
Scale	1:250 @ A1 / 1:500 @ A3
Drawn	FLB
Checked	JS
Project No.	S12325
Status	Development Application
Plot Date	2/8/2019 12:28 PM
Plot File	S:\12300-12399\s12325_podia_253cowardstmascot\70_CAD\Pl... ...ev02\A03.002.dwg
Drawing No.	A03.002
[Revision]	

Melbourne 1 Nicholson Street
Melbourne VIC 3000 Australia
T 03 8664 6200 F 03 8664 6300
email melb@batessmart.com.au
http://www.batessmart.com.au

Sydney 43 Brisbane Street
Surry Hills NSW 2010 Australia
T 02 8354 5100 F 02 8354 5199
email syd@batessmart.com.au
http://www.batessmart.com.au

Bates Smart Architects Pty Ltd ABN 68 094 740 986

BATESSMART™



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and/or the fabrication of any components.

All drawings to be read in conjunction with all architectural documents and all other consultants documents.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.

All drawings may not be reproduced or distributed without prior permission from the architect.

Revision	Date	Description	Initial	Checked

253 Coward Street Mascot

Level 03 Floor Plan

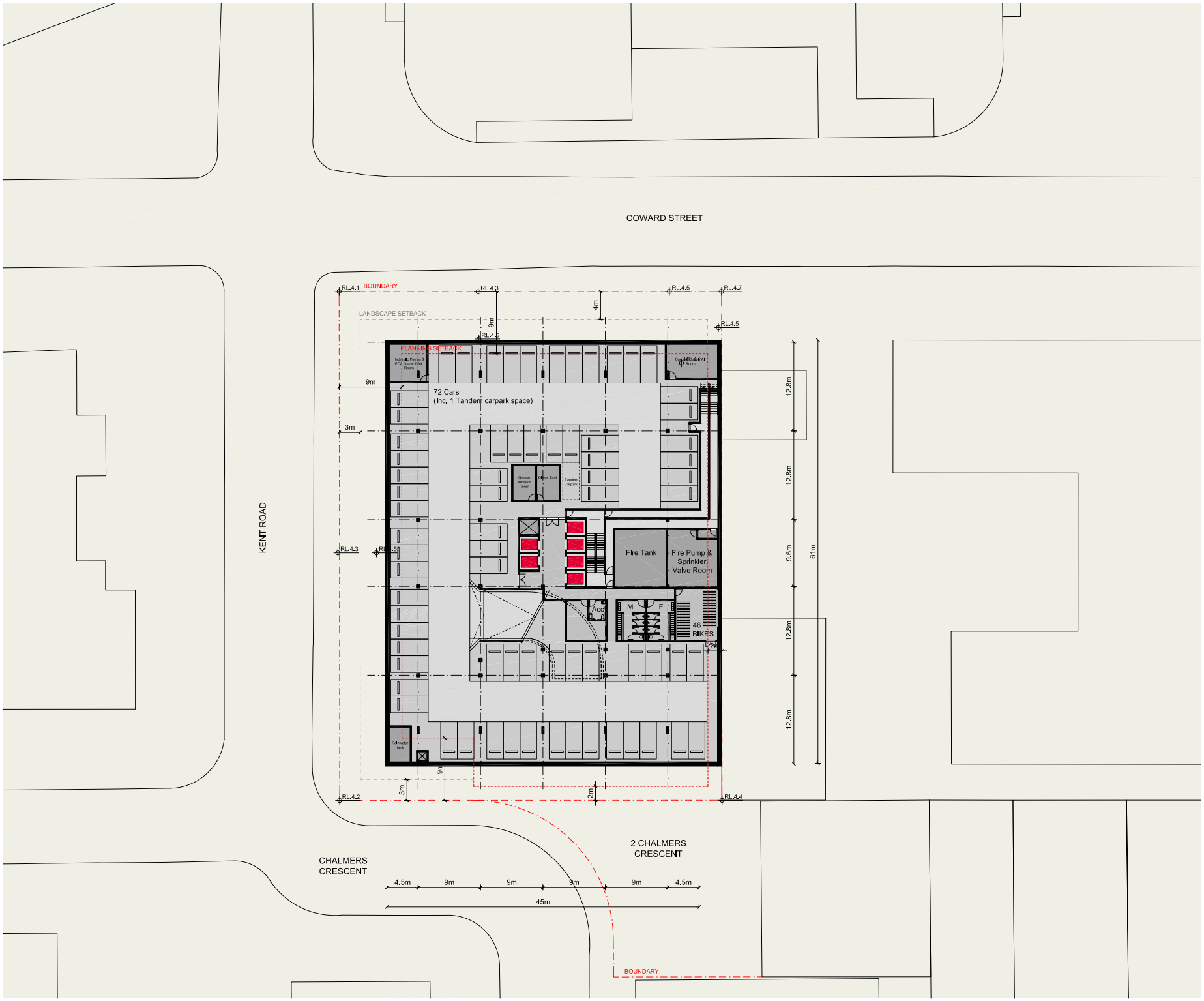
Scale	1:250 @ A1 / 1:500 @ A3
Drawn	FLB
Checked	JS
Project No.	S12325
Status	Development Application
Plot Date	2/8/2019 12:28 PM
Plot File	S:\12300-12399\s12325_podia_253cowardstmascot\70_CAD\Pl... ...ev5\A\A03.003.dwg
Drawing No.	A03.003
[Revision]	

Melbourne 1 Nicholson Street
Melbourne VIC 3000 Australia
T 03 8664 6200 F 03 8664 6300
email melb@batessmart.com.au
http://www.batessmart.com.au

Sydney 43 Brisbane Street
Surry Hills NSW 2010 Australia
T 02 8354 5100 F 02 8354 5199
email syd@batessmart.com.au
http://www.batessmart.com.au

Bates Smart Architects Pty Ltd ABN 68 094 740 986

BATESSMART



Check all dimensions and site conditions prior to commencement of any work, the purchase or ordering of any materials, fittings, plant, services or equipment and the preparation of shop drawings and/or the fabrication of any components.

All drawings to be read in conjunction with all architectural documents and all other consultants documents.

Do not scale drawings - refer to figured dimensions only. Any discrepancies shall immediately be referred to the architect for clarification.

All drawings may not be reproduced or distributed without prior permission from the architect.

Revision	Date	Description	Initial	Checked

253 Coward Street Mascot

Basement 01 Floor Plan

Scale	1:250 @ A1 / 1:500 @ A3
Drawn	FLB
Checked	JS
Project No.	S12325
Status	Development Application
Plot Date	9/8/2019 10:11 AM
Plot File	S:\12300-12399\12325_pcdla_253cowardstmascot\70_CAD\Pl... ...\B\DA\A03.B01.dwg
Drawing No.	A03.B01
[Revision]	

Melbourne 1 Nicholson Street
Melbourne VIC 3000 Australia
T 03 8664 6200 F 03 8664 6300
email melb@batessmart.com.au
http://www.batessmart.com.au

Sydney 43 Brisbane Street
Surry Hills NSW 2010 Australia
T 02 8354 5100 F 02 8354 5199
email syd@batessmart.com.au
http://www.batessmart.com.au

Bates Smart Architects Pty Ltd ABN 68 094 740 986

BATESSMART™

Level	Function	AHD	Height	GBA	Commercial GFA	Commercial / Retail GFA	Lobby GFA	NLA	Cars Standard	Cars Small	Cars Tandem	Bikes
B01	Carparking / EOT	1.4	3.1	2,978	61				71		1	46
Ground	Lobby / Loading	4.5	4.5	2,580		914	238	868				
Level 1	Carparking / Co working	9	3.8	2,177	836			697	30	1		
Level 2	Carparking	12.8	3	2,511					73		3	
Level 3	Carparking	15.8	3	2,511					75		3	
Level 4	Office	18.8	3.8	2,511	2,368			2,308				
Level 5	Office	22.6	3.8	2,464	2,299			2,234				
Level 6	Office	26.4	3.8	2,464	2,299			2,234				
Level 7	Office	30.2	3.8	2,464	2,299			2,234				
Level 8	Office	34	3.8	2,464	2,299			2,234				
Level 9	Office	37.8	3.8	2,464	2,299			2,234				
Level 10	Office	41.6	3.8	2,464	2,299			2,234				
Level 11	Plant	45.4	5.6									
Top of Plant/Lift over run		51										
Total					17059	914	238		249	1	7	46

Total	**46.5**	**18,211**	**257**
FSR		**4.50**	

ANNEXURE B: TRAFFIC SURVEY RESULTS

(2 SHEETS)

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Coward St and Kent Rd, Mascot

GPS -33.92384, 151.18388

Date:	Thu 07/02/19	***North:***	Kent Rd	***Survey***	AM:	6:00 AM-9:00 AM
Weather:	Overcast	***East:***	Coward St	***Period***	PM:	4:00 PM-7:00 PM
Suburban:	Mascot	***South:***	Kent Rd	***Traffic***	AM:	7:45 AM-8:45 AM
Customer:	McLaren	***West:***	Coward St	***Peak***	PM:	4:15 PM-5:15 PM

All Vehicles

Time		North Approach Kent Rd				East Approach Coward St				South Approach Kent Rd				West Approach Coward St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
6:00	6:15	0	22	8	73	0	65	39	12	0	9	4	1	0	0	22	11	1159	
6:15	6:30	0	30	12	85	0	87	30	4	0	12	2	3	0	0	12	13	1170	
6:30	6:45	0	21	14	91	0	63	30	7	0	10	1	2	0	1	19	10	1219	
6:45	7:00	0	24	21	116	0	88	23	7	0	18	6	1	0	1	18	11	1329	
7:00	7:15	0	15	3	96	0	68	33	6	0	18	8	2	0	0	14	14	1375	
7:15	7:30	0	21	22	123	0	86	21	13	0	24	6	0	0	1	13	9	1497	
7:30	7:45	0	35	20	125	0	101	28	9	0	24	4	0	0	0	17	16	1573	
7:45	8:00	0	25	30	126	0	111	28	5	0	30	6	1	0	1	13	4	1651	Peak
8:00	8:15	0	36	39	117	0	97	33	7	0	29	7	0	0	0	25	9	1635	
8:15	8:30	0	43	22	146	0	88	45	16	0	24	9	0	0	0	16	6		
8:30	8:45	0	51	39	149	0	79	56	16	0	20	9	2	0	0	22	14		
8:45	9:00	0	39	26	112	0	80	41	12	0	18	7	2	0	0	14	13		
16:00	16:15	0	15	11	54	0	94	22	17	0	18	14	2	0	1	25	6	1284	
16:15	16:30	0	10	8	74	0	106	13	37	0	25	35	1	0	0	26	18	1285	Peak
16:30	16:45	0	8	5	84	0	113	10	19	0	4	26	1	0	1	19	27	1276	
16:45	17:00	0	8	4	87	0	121	9	20	0	9	25	1	0	0	28	23	1247	
17:00	17:15	0	8	7	83	0	98	12	10	0	9	14	0	0	1	18	20	1235	
17:15	17:30	0	8	6	48	0	140	10	30	0	16	35	0	0	2	21	28	1243	
17:30	17:45	0	8	8	50	0	107	6	21	0	15	35	0	0	0	21	17	1193	
17:45	18:00	0	10	7	77	0	110	9	20	0	13	22	2	0	0	20	33	1194	
18:00	18:15	0	6	8	70	0	93	5	28	0	17	14	0	0	0	29	18	1097	
18:15	18:30	0	7	4	76	0	122	8	20	0	10	10	0	0	0	24	13		
18:30	18:45	0	6	5	66	0	127	8	13	0	7	14	0	0	1	23	19		
18:45	19:00	0	5	5	49	0	100	9	9	0	4	14	0	0	0	19	12		

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Coward St and Bourke Rd, Mascot

GPS -33.92435, 151.18712

Date:	Thu 07/02/19	***North:***	Bourke Rd	***Survey***	AM:	6:00 AM-9:00 AM
Weather:	Overcast	***East:***	Coward St	***Period***	PM:	4:00 PM-7:00 PM
Suburban:	Mascot	***South:***	Bourke Rd	***Traffic***	AM:	7:45 AM-8:45 AM
Customer:	McLaren	***West:***	Coward St	***Peak***	PM:	5:45 PM-6:45 PM

All Vehicles

Time		North Approach Bourke Rd				East Approach Coward St				South Approach Bourke Rd				West Approach Coward St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
6:00	6:15	0	19	15	12	0	6	19	4	0	6	24	79	0	62	33	9	1272	
6:15	6:30	0	16	20	17	0	15	30	7	0	4	23	76	0	50	51	8	1305	
6:30	6:45	0	11	20	14	0	9	16	7	0	2	36	75	0	62	50	8	1388	
6:45	7:00	0	13	23	12	0	13	35	10	0	4	24	71	0	78	68	6	1496	
7:00	7:15	0	8	31	9	0	19	29	5	0	5	16	71	0	69	52	7	1567	
7:15	7:30	0	20	31	18	0	15	23	18	0	10	28	77	0	64	88	8	1675	
7:30	7:45	0	22	26	20	0	24	29	15	0	6	23	87	0	75	82	9	1728	
7:45	8:00	0	30	36	12	0	18	28	18	0	7	23	87	0	69	95	5	1764	Peak
8:00	8:15	0	26	37	17	0	18	22	17	0	8	23	90	0	78	88	5	1732	
8:15	8:30	0	22	38	19	0	10	36	18	0	9	22	93	0	64	114	8		
8:30	8:45	0	23	30	10	0	16	37	13	0	14	28	92	0	81	96	14		
8:45	9:00	0	20	34	21	0	23	42	6	0	13	20	73	0	63	73	8		
16:00	16:15	0	9	27	9	0	18	46	8	0	11	21	79	0	25	40	7	1438	
16:15	16:30	0	7	29	12	0	17	50	10	1	16	42	100	0	37	73	15	1472	
16:30	16:45	0	3	21	5	0	14	46	7	0	11	39	94	0	25	61	21	1441	
16:45	17:00	0	8	20	6	0	24	42	7	0	7	44	100	0	43	61	20	1423	
17:00	17:15	0	12	8	6	0	10	31	10	0	19	50	78	0	36	55	19	1400	
17:15	17:30	0	1	16	8	0	20	58	7	0	14	47	122	0	29	38	18	1407	
17:30	17:45	0	5	12	6	0	15	35	4	0	8	63	95	0	36	34	16	1439	
17:45	18:00	0	7	21	5	0	18	52	13	0	16	36	81	0	52	29	29	1488	Peak
18:00	18:15	0	5	13	8	0	12	30	9	0	8	49	91	0	64	20	32	1478	
18:15	18:30	0	13	35	17	0	18	46	12	0	17	50	92	0	42	41	27		
18:30	18:45	0	10	22	11	0	27	58	12	0	24	37	81	0	46	19	31		
18:45	19:00	0	6	30	28	0	19	29	14	0	25	43	83	0	29	18	25		

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Church Ave and Kent Rd, Mascot

GPS	*-33.9218, 151.18436*						
Date:	Thu 07/02/19	***North:***	Kent Rd	***Survey***	AM:	6:00 AM-9:00 AM
Weather:	Overcast	***East:***	Church Ave	***Period***	PM:	4:00 PM-7:00 PM
Suburban:	Mascot	***South:***	Kent Rd	***Traffic***	AM:	7:45 AM-8:45 AM
Customer:	McLaren	***West:***	Ricketty St	***Peak***	PM:	4:15 PM-5:15 PM

All Vehicles

Time		North Approach Kent Rd				East Approach Church Ave				South Approach Kent Rd				West Approach Ricketty St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
6:00	6:15	0	110	17	9	0	0	0	0	0	0	8	55	0	66	20	181	2127	
6:15	6:30	0	122	10	12	0	0	0	0	0	7	11	49	0	80	29	224	2240	
6:30	6:45	0	133	14	16	0	0	0	0	0	0	9	58	0	79	35	215	2293	
6:45	7:00	0	98	28	27	0	0	0	0	0	5	17	52	0	79	41	211	2351	
7:00	7:15	0	153	17	16	0	0	0	0	0	2	14	51	0	75	34	217	2423	
7:15	7:30	0	144	26	15	0	0	0	0	0	5	13	59	0	100	30	205	2459	
7:30	7:45	0	145	22	14	0	0	0	0	0	3	6	72	0	110	18	227	2453	
7:45	8:00	0	140	28	13	0	0	0	0	1	6	15	57	0	108	24	238	2464	Peak
8:00	8:15	0	139	42	11	0	0	0	0	0	5	16	58	0	97	23	224	2439	
8:15	8:30	0	140	41	19	0	0	0	0	0	2	20	48	0	103	18	200		
8:30	8:45	0	133	45	24	0	0	0	1	0	5	14	62	0	110	17	217		
8:45	9:00	0	133	34	22	0	0	0	0	1	2	15	55	0	106	22	215		
16:00	16:15	0	231	19	19	0	0	0	0	0	6	24	72	0	46	13	132	2609	
16:15	16:30	0	253	23	33	0	0	0	0	0	9	31	91	0	56	24	170	2677	Peak
16:30	16:45	0	239	19	20	0	0	0	1	0	4	23	104	0	40	16	194	2639	
16:45	17:00	0	269	25	25	0	0	0	2	0	5	33	97	0	37	30	174	2651	
17:00	17:15	0	267	21	25	0	0	0	0	0	7	29	85	0	29	19	148	2572	
17:15	17:30	0	246	32	27	0	0	0	0	0	4	29	102	0	21	30	161	2583	
17:30	17:45	0	299	17	29	0	0	0	0	0	4	34	105	0	25	13	146	2591	
17:45	18:00	0	232	25	23	0	0	0	0	0	0	29	96	0	32	25	156	2559	
18:00	18:15	0	252	32	42	0	0	0	0	0	2	18	97	0	30	17	151	2516	
18:15	18:30	0	256	27	37	0	0	0	0	0	2	17	112	0	42	16	151		
18:30	18:45	0	233	11	24	0	0	0	0	1	9	21	112	0	37	26	166		
18:45	19:00	0	226	19	28	0	0	0	0	0	2	7	103	0	49	23	118		

ANNEXURE C: SIDRA RESULTS

(12 SHEETS)

MOVEMENT SUMMARY

Site: 102 [Coward / Kent AM Peak]

Network: N101 [AM]

Coward / Kent
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	3	33.3	3	33.3	0.173	47.9	LOS D	0.9	7.4	0.94	0.70	1.02	34.2
2	T1	31	12.9	31	12.9	0.173	42.0	LOS C	0.9	7.4	0.94	0.70	1.02	25.3
3	R2	103	4.9	103	4.9	0.540	57.6	LOS E	3.3	24.4	0.99	0.78	0.99	20.9
Approach		137	7.3	137	7.3	0.540	53.8	LOS D	3.3	24.4	0.98	0.76	1.00	22.1
East: Coward Street														
4	L2	44	2.3	44	2.3	0.571	39.2	LOS C	7.5	58.0	0.81	0.74	0.81	33.7
5	T1	162	14.8	162	14.8	0.571	33.7	LOS C	7.5	58.0	0.81	0.74	0.81	34.4
6	R2	375	12.0	375	12.0	0.571	40.9	LOS C	7.5	58.0	0.83	0.79	0.83	18.7
Approach		581	12.0	581	12.0	0.571	38.8	LOS C	7.5	58.0	0.83	0.77	0.83	25.6
North: Kent Road														
7	L2	538	10.6	538	10.6	0.497	11.6	LOS A	4.9	37.4	0.30	0.67	0.30	34.3
8	T1	130	6.9	130	6.9	0.560	18.5	LOS B	5.3	39.7	0.60	0.64	0.60	40.7
9	R2	155	7.7	155	7.7	0.560	24.2	LOS B	5.3	39.7	0.60	0.64	0.60	39.4
Approach		823	9.5	823	9.5	0.560	15.1	LOS B	5.3	39.7	0.41	0.66	0.41	37.6
West: Coward Street														
10	L2	33	24.2	33	24.2	0.331	54.9	LOS D	1.9	18.1	0.95	0.75	0.95	22.2
11	T1	76	55.3	76	55.3	0.331	51.1	LOS D	1.9	18.1	0.96	0.74	0.96	22.2
12	R2	1	0.0	1	0.0	0.331	57.9	LOS E	1.5	15.8	0.97	0.73	0.97	31.7
Approach		110	45.5	110	45.5	0.331	52.3	LOS D	1.9	18.1	0.96	0.74	0.96	22.3
All Vehicles		1651	12.6	1651	12.6	0.571	29.1	LOS C	7.5	58.0	0.64	0.71	0.64	29.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Coward / Kent PM Peak]

Network: N102 [PM]

Coward / Kent
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	6	50.0	6	50.0	0.335	52.1	LOS D	2.2	16.4	0.96	0.75	1.01	32.8
2	T1	98	1.0	98	1.0	0.335	47.0	LOS D	2.3	16.4	0.96	0.75	1.00	23.5
3	R2	46	0.0	46	0.0	0.335	55.0	LOS D	2.3	16.4	0.96	0.75	0.96	22.1
Approach		150	2.7	150	2.7	0.335	49.7	LOS D	2.3	16.4	0.96	0.75	0.99	23.6
East: Coward Street														
4	L2	86	1.2	86	1.2	0.362	27.1	LOS B	5.6	42.0	0.64	0.73	0.64	37.8
5	T1	44	27.3	44	27.3	0.362	21.5	LOS B	5.6	42.0	0.64	0.73	0.64	38.7
6	R2	438	5.9	438	5.9	0.362	27.6	LOS B	6.0	43.8	0.67	0.76	0.67	23.9
Approach		568	6.9	568	6.9	0.362	27.0	LOS B	6.0	43.8	0.67	0.75	0.67	28.6
North: Kent Road														
7	L2	328	7.9	328	7.9	0.311	21.1	LOS B	7.1	52.9	0.71	0.79	0.71	25.3
8	T1	24	12.5	24	12.5	0.321	50.8	LOS D	1.9	15.6	0.99	0.76	0.99	27.5
9	R2	34	26.5	34	26.5	0.321	56.6	LOS E	1.9	15.6	0.99	0.76	0.99	26.6
Approach		386	9.8	386	9.8	0.321	26.0	LOS B	7.1	52.9	0.76	0.78	0.76	25.9
West: Coward Street														
10	L2	88	10.2	88	10.2	0.350	48.0	LOS D	3.2	24.9	0.91	0.77	0.91	23.8
11	T1	91	22.0	91	22.0	0.350	48.0	LOS D	3.2	24.9	0.95	0.75	0.95	23.2
12	R2	2	0.0	2	0.0	0.350	55.4	LOS D	2.2	18.4	0.96	0.74	0.96	32.5
Approach		181	16.0	181	16.0	0.350	48.1	LOS D	3.2	24.9	0.93	0.76	0.93	23.6
All Vehicles		1285	8.6	1285	8.6	0.362	32.3	LOS C	7.1	52.9	0.76	0.76	0.77	26.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Coward / Bourke AM Peak]

Network: N101 [AM]

Coward / Bourke
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Bourke Road														
1	L2	362	14.4	362	14.4	0.394	21.2	LOS B	6.8	53.6	0.62	0.75	0.62	35.9
2	T1	96	9.4	96	9.4	0.479	51.6	LOS D	3.1	23.4	0.98	0.77	0.98	32.5
3	R2	38	13.2	38	13.2	0.246	56.3	LOS D	1.2	9.3	0.95	0.74	0.95	30.6
Approach		496	13.3	496	13.3	0.479	29.8	LOS C	6.8	53.6	0.72	0.75	0.72	34.2
East: Coward Street														
4	L2	66	13.6	66	13.6	0.484	50.9	LOS D	4.5	34.4	0.95	0.78	0.95	33.0
5	T1	123	7.3	123	7.3	0.484	45.5	LOS D	4.5	34.4	0.95	0.78	0.95	23.5
6	R2	62	9.7	62	9.7	0.484	51.8	LOS D	3.2	23.8	0.95	0.78	0.95	32.5
Approach		251	9.6	251	9.6	0.484	48.5	LOS D	4.5	34.4	0.95	0.78	0.95	29.0
North: Bourke Road														
7	L2	58	12.1	58	12.1	0.390	40.1	LOS C	5.3	40.0	0.85	0.74	0.85	36.8
8	T1	141	7.8	141	7.8	0.390	34.5	LOS C	5.3	40.0	0.85	0.74	0.85	37.7
9	R2	101	12.9	101	12.9	0.502	56.7	LOS E	3.2	25.2	0.98	0.78	0.98	21.2
Approach		300	10.3	300	10.3	0.502	43.0	LOS D	5.3	40.0	0.90	0.75	0.90	32.4
West: Coward Street														
10	L2	32	21.9	32	21.9	0.371	15.0	LOS B	5.1	37.4	0.40	0.38	0.40	47.7
11	T1	393	3.6	393	3.6	0.371	9.2	LOS A	5.1	37.4	0.40	0.38	0.40	50.1
12	R2	292	28.4	292	28.4	0.403	18.5	LOS B	4.9	42.9	0.73	0.78	0.73	41.7
Approach		717	14.5	717	14.5	0.403	13.3	LOS A	5.1	42.9	0.53	0.54	0.53	46.2
All Vehicles		1764	12.8	1764	12.8	0.502	28.0	LOS B	6.8	53.6	0.71	0.67	0.71	36.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P1B	South Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P2	East Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		200	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Coward / Bourke PM Peak]

Network: N102 [PM]

Coward / Bourke
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Bourke Road														
1	L2	345	11.6	345	11.6	0.357	19.7	LOS B	6.1	47.1	0.59	0.74	0.59	37.0
2	T1	172	2.9	172	2.9	0.410	39.2	LOS C	4.8	34.8	0.90	0.73	0.90	36.5
3	R2	65	9.2	65	9.2	0.216	43.6	LOS D	1.8	13.4	0.85	0.75	0.85	34.3
Approach		582	8.8	582	8.8	0.410	28.1	LOS B	6.1	47.1	0.71	0.74	0.71	36.4
East: Coward Street														
4	L2	46	10.9	46	10.9	0.423	46.0	LOS D	5.0	35.8	0.91	0.76	0.91	34.9
5	T1	186	0.5	186	0.5	0.423	40.5	LOS C	5.0	35.8	0.91	0.76	0.91	25.4
6	R2	75	1.3	75	1.3	0.423	46.3	LOS D	3.9	27.3	0.91	0.77	0.91	34.3
Approach		307	2.3	307	2.3	0.423	42.7	LOS D	5.0	35.8	0.91	0.77	0.91	29.8
North: Bourke Road														
7	L2	41	17.1	41	17.1	0.215	33.7	LOS C	3.1	23.0	0.76	0.66	0.76	39.3
8	T1	91	3.3	91	3.3	0.215	28.0	LOS B	3.1	23.0	0.76	0.66	0.76	40.4
9	R2	35	14.3	35	14.3	0.381	64.0	LOS E	1.2	9.4	1.00	0.73	1.00	19.5
Approach		167	9.0	167	9.0	0.381	36.9	LOS C	3.1	23.0	0.81	0.67	0.81	35.6
West: Coward Street														
10	L2	119	5.9	119	5.9	0.224	29.2	LOS C	6.1	44.8	0.89	0.79	0.89	37.7
11	T1	109	3.7	109	3.7	0.224	23.6	LOS B	6.1	44.8	0.89	0.79	0.89	38.7
12	R2	204	9.3	204	9.3	0.301	23.7	LOS B	4.2	32.1	0.87	0.80	0.87	39.2
Approach		432	6.9	432	6.9	0.301	25.2	LOS B	6.1	44.8	0.88	0.79	0.88	38.7
All Vehicles		1488	6.9	1488	6.9	0.423	31.3	LOS C	6.1	47.1	0.81	0.75	0.81	35.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P1B	South Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P2	East Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		200	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Kent / Ricketty / Church AM Peak No RT]

Network: N101 [AM]

Kent / Ricketty / Church
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	225	10.7	225	10.7	0.243	30.3	LOS C	6.1	46.5	0.89	0.82	0.89	35.0
2	T1	65	12.3	65	12.3	0.305	49.3	LOS D	2.0	15.5	0.95	0.72	0.95	28.9
Approach		290	11.0	290	11.0	0.305	34.6	LOS C	6.1	46.5	0.90	0.80	0.90	33.4
North: Kent Road														
7	L2	67	9.0	67	9.0	0.223	18.9	LOS B	3.7	27.8	0.54	0.54	0.54	47.5
8	T1	156	10.3	156	10.3	0.223	13.2	LOS A	3.7	27.8	0.54	0.54	0.54	40.8
9	R2	552	11.4	552	11.4	0.453	35.1	LOS C	7.0	53.7	0.82	0.80	0.82	37.5
Approach		775	11.0	775	11.0	0.453	29.3	LOS C	7.0	53.7	0.74	0.72	0.74	38.7
West: Ricketty Street														
10	L2	879	3.4	879	3.4	0.325	10.5	LOS A	4.8	34.3	0.36	0.69	0.36	49.9
11	T1	82	2.4	82	2.4	0.443	30.2	LOS C	6.3	46.1	0.82	0.76	0.82	38.6
12	R2	418	5.3	418	5.3	0.443	35.9	LOS C	6.3	46.1	0.82	0.78	0.82	28.2
Approach		1379	3.9	1379	3.9	0.443	19.4	LOS B	6.3	46.2	0.53	0.72	0.53	43.0
All Vehicles		2444	7.0	2444	7.0	0.453	24.3	LOS B	7.0	53.7	0.64	0.73	0.64	40.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Kent / Ricketty / Church PM Peak No RT]

Network: N102 [PM]

Kent / Ricketty / Church
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	377	5.3	377	5.3	0.522	37.6	LOS C	8.6	62.8	0.84	0.81	0.84	32.2
2	T1	116	8.6	116	8.6	0.522	54.4	LOS D	5.1	38.3	1.00	0.81	1.00	27.0
Approach		493	6.1	493	6.1	0.522	41.6	LOS C	8.6	62.8	0.88	0.81	0.88	30.8
North: Kent Road														
7	L2	103	6.8	103	6.8	0.140	9.3	LOS A	1.6	12.2	0.28	0.46	0.28	53.2
8	T1	88	11.4	88	11.4	0.140	3.6	LOS A	1.6	12.2	0.28	0.46	0.28	49.5
9	R2	1028	3.5	1028	3.5	0.538	23.9	LOS B	11.0	79.6	0.71	0.79	0.71	42.6
Approach		1219	4.3	1219	4.3	0.538	21.2	LOS B	11.0	79.6	0.64	0.74	0.64	43.6
West: Ricketty Street														
10	L2	686	2.8	686	2.8	0.266	11.6	LOS A	4.0	28.4	0.38	0.69	0.38	49.2
11	T1	89	1.1	89	1.1	0.531	50.0	LOS D	4.1	29.0	0.98	0.79	0.98	32.5
12	R2	162	3.1	162	3.1	0.531	55.7	LOS D	4.1	29.0	0.98	0.79	0.98	21.8
Approach		937	2.7	937	2.7	0.531	22.9	LOS B	4.1	29.0	0.54	0.72	0.54	41.9
All Vehicles		2649	4.1	2649	4.1	0.538	25.6	LOS B	11.0	79.6	0.65	0.75	0.65	40.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Coward / Kent AM Peak]

Network: N101 [AM]

Coward / Kent
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	3	33.3	3	33.3	0.217	51.5	LOS D	1.4	10.4	0.94	0.72	1.08	33.1
2	T1	44	9.1	44	9.1	0.217	45.6	LOS D	1.4	10.4	0.94	0.72	1.08	24.2
3	R2	123	4.1	123	4.1	0.627	57.4	LOS E	4.0	29.1	0.99	0.81	1.03	21.0
Approach		170	5.9	170	5.9	0.627	54.2	LOS D	4.0	29.1	0.98	0.78	1.04	22.0
East: Coward Street														
4	L2	117	0.9	117	0.9	0.652	39.5	LOS C	8.9	67.5	0.84	0.77	0.84	33.4
5	T1	162	14.8	162	14.8	0.652	34.0	LOS C	8.9	67.5	0.84	0.77	0.84	34.1
6	R2	375	12.0	375	12.0	0.652	42.9	LOS D	8.9	67.5	0.87	0.82	0.87	18.0
Approach		654	10.7	654	10.7	0.652	40.1	LOS C	8.9	67.5	0.86	0.80	0.86	26.1
North: Kent Road														
7	L2	538	10.6	538	10.6	0.504	12.2	LOS A	5.3	40.1	0.32	0.68	0.32	33.5
8	T1	179	5.0	179	5.0	0.649	18.6	LOS B	6.8	49.9	0.65	0.65	0.65	40.9
9	R2	155	7.7	155	7.7	0.649	24.3	LOS B	6.8	49.9	0.65	0.65	0.65	39.6
Approach		872	8.9	872	8.9	0.649	15.7	LOS B	6.8	49.9	0.45	0.67	0.45	37.6
West: Coward Street														
10	L2	33	24.2	33	24.2	0.331	54.9	LOS D	1.9	18.1	0.95	0.75	0.95	22.2
11	T1	76	55.3	76	55.3	0.331	51.1	LOS D	1.9	18.1	0.96	0.74	0.96	22.2
12	R2	1	0.0	1	0.0	0.331	57.9	LOS E	1.5	15.8	0.97	0.73	0.97	31.7
Approach		110	45.5	110	45.5	0.331	52.3	LOS D	1.9	18.1	0.96	0.74	0.96	22.3
All Vehicles		1806	11.5	1806	11.5	0.652	30.4	LOS C	8.9	67.5	0.68	0.73	0.69	29.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 102 [Coward / Kent PM Peak]

Network: N102 [PM]

Coward / Kent
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	6	50.0	6	50.0	0.404	49.3	LOS D	3.6	26.1	0.93	0.75	1.01	33.6
2	T1	135	0.7	135	0.7	0.404	43.3	LOS D	3.6	26.1	0.93	0.75	1.00	24.8
3	R2	101	0.0	101	0.0	0.404	49.5	LOS D	3.5	24.3	0.93	0.78	0.93	23.2
Approach		242	1.7	242	1.7	0.404	46.1	LOS D	3.6	26.1	0.93	0.76	0.97	24.4
East: Coward Street														
4	L2	102	1.0	102	1.0	0.396	28.8	LOS C	6.1	45.5	0.67	0.74	0.67	37.0
5	T1	44	27.3	44	27.3	0.396	23.2	LOS B	6.1	45.5	0.67	0.74	0.67	37.8
6	R2	438	5.9	438	5.9	0.396	29.7	LOS C	6.4	47.1	0.71	0.77	0.71	22.8
Approach		584	6.7	584	6.7	0.396	29.1	LOS C	6.4	47.1	0.70	0.76	0.70	27.9
North: Kent Road														
7	L2	328	7.9	328	7.9	0.331	23.2	LOS B	7.4	55.2	0.74	0.80	0.74	23.9
8	T1	34	8.8	34	8.8	0.402	52.3	LOS D	2.3	18.3	1.00	0.77	1.00	27.2
9	R2	34	26.5	34	26.5	0.402	58.2	LOS E	2.3	18.3	1.00	0.77	1.00	26.3
Approach		396	9.6	396	9.6	0.402	28.7	LOS C	7.4	55.2	0.79	0.79	0.79	24.9
West: Coward Street														
10	L2	88	10.2	88	10.2	0.405	51.2	LOS D	3.4	26.2	0.94	0.78	0.94	22.9
11	T1	91	22.0	91	22.0	0.405	50.5	LOS D	3.4	26.2	0.97	0.76	0.97	22.4
12	R2	2	0.0	2	0.0	0.405	57.9	LOS E	2.2	18.5	0.98	0.75	0.98	31.8
Approach		181	16.0	181	16.0	0.405	50.9	LOS D	3.4	26.2	0.96	0.77	0.96	22.8
All Vehicles		1403	7.8	1403	7.8	0.405	34.7	LOS C	7.4	55.2	0.80	0.77	0.80	25.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P4	West Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Coward / Bourke AM Peak]

Network: N101 [AM]

Coward / Bourke
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Bourke Road														
1	L2	387	13.4	387	13.4	0.433	22.7	LOS B	7.7	60.3	0.66	0.76	0.66	34.9
2	T1	96	9.4	96	9.4	0.522	52.9	LOS D	3.1	23.7	0.99	0.78	0.99	32.1
3	R2	38	13.2	38	13.2	0.262	57.5	LOS E	1.2	9.5	0.96	0.74	0.96	30.3
Approach		521	12.7	521	12.7	0.522	30.8	LOS C	7.7	60.3	0.74	0.76	0.74	33.5
East: Coward Street														
4	L2	66	13.6	66	13.6	0.512	49.5	LOS D	5.3	39.9	0.95	0.79	0.95	33.5
5	T1	172	5.2	172	5.2	0.512	44.1	LOS D	5.3	39.9	0.95	0.79	0.95	24.1
6	R2	62	9.7	62	9.7	0.512	50.2	LOS D	3.8	28.1	0.94	0.79	0.94	33.1
Approach		300	8.0	300	8.0	0.512	46.5	LOS D	5.3	39.9	0.95	0.79	0.95	28.8
North: Bourke Road														
7	L2	58	12.1	58	12.1	0.403	41.1	LOS C	5.4	40.6	0.87	0.74	0.87	36.5
8	T1	141	7.8	141	7.8	0.403	35.4	LOS C	5.4	40.6	0.87	0.74	0.87	37.4
9	R2	101	12.9	101	12.9	0.502	56.7	LOS E	3.2	25.2	0.98	0.78	0.98	21.2
Approach		300	10.3	300	10.3	0.502	43.6	LOS D	5.4	40.6	0.90	0.76	0.90	32.2
West: Coward Street														
10	L2	32	21.9	32	21.9	0.377	14.2	LOS A	5.0	36.4	0.38	0.36	0.38	48.3
11	T1	406	3.4	406	3.4	0.377	8.4	LOS A	5.0	36.4	0.38	0.36	0.38	50.8
12	R2	299	27.8	299	27.8	0.419	18.2	LOS B	4.7	40.5	0.69	0.77	0.69	41.9
Approach		737	14.1	737	14.1	0.419	12.6	LOS A	5.0	40.5	0.51	0.53	0.51	46.7
All Vehicles		1858	12.1	1858	12.1	0.522	28.2	LOS B	7.7	60.3	0.71	0.67	0.71	36.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P1B	South Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P2	East Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		200	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 103 [Coward / Bourke PM Peak]

Network: N102 [PM]

Coward / Bourke
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Bourke Road														
1	L2	350	11.4	350	11.4	0.362	19.7	LOS B	6.2	47.9	0.59	0.74	0.59	37.0
2	T1	172	2.9	172	2.9	0.429	40.2	LOS C	4.9	35.2	0.91	0.74	0.91	36.2
3	R2	65	9.2	65	9.2	0.224	44.5	LOS D	1.8	13.6	0.86	0.76	0.86	34.0
Approach		587	8.7	587	8.7	0.429	28.5	LOS B	6.2	47.9	0.71	0.74	0.71	36.1
East: Coward Street														
4	L2	46	10.9	46	10.9	0.440	46.2	LOS D	5.2	37.4	0.91	0.76	0.91	34.9
5	T1	196	0.5	196	0.5	0.440	40.7	LOS C	5.2	37.4	0.91	0.77	0.91	25.4
6	R2	75	1.3	75	1.3	0.440	46.6	LOS D	4.0	28.1	0.91	0.77	0.91	34.3
Approach		317	2.2	317	2.2	0.440	42.9	LOS D	5.2	37.4	0.91	0.77	0.91	29.7
North: Bourke Road														
7	L2	41	17.1	41	17.1	0.221	34.5	LOS C	3.1	23.4	0.77	0.67	0.77	39.0
8	T1	91	3.3	91	3.3	0.221	28.8	LOS C	3.1	23.4	0.77	0.67	0.77	40.1
9	R2	35	14.3	35	14.3	0.381	64.0	LOS E	1.2	9.4	1.00	0.73	1.00	19.5
Approach		167	9.0	167	9.0	0.381	37.6	LOS C	3.1	23.4	0.81	0.68	0.81	35.4
West: Coward Street														
10	L2	119	5.9	119	5.9	0.254	29.7	LOS C	7.3	53.0	0.91	0.81	0.91	37.7
11	T1	146	2.7	146	2.7	0.254	24.1	LOS B	7.3	53.0	0.91	0.81	0.91	38.7
12	R2	222	8.6	222	8.6	0.321	28.4	LOS B	5.2	38.8	0.99	0.84	0.99	36.9
Approach		487	6.2	487	6.2	0.321	27.4	LOS B	7.3	53.0	0.95	0.82	0.95	37.6
All Vehicles		1558	6.6	1558	6.6	0.440	32.0	LOS C	7.3	53.0	0.84	0.76	0.84	35.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P1B	South Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P2	East Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		200	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Kent / Ricketty / Church AM Peak No RT]

Network: N101 [AM]

Kent / Ricketty / Church
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	Demand Flows HV %	Arrival Flows Total veh/h	Arrival Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Aver. Back of Queue Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	235	10.2	235	10.2	0.245	30.1	LOS C	6.5	49.3	0.91	0.83	0.91	35.1
2	T1	68	11.8	68	11.8	0.318	49.4	LOS D	2.1	16.3	0.96	0.73	0.96	28.9
Approach		303	10.6	303	10.6	0.318	34.4	LOS C	6.5	49.3	0.92	0.81	0.92	33.5
North: Kent Road														
7	L2	67	9.0	67	9.0	0.242	20.1	LOS B	4.1	30.7	0.57	0.55	0.57	46.8
8	T1	168	9.5	168	9.5	0.242	14.4	LOS A	4.1	30.7	0.57	0.55	0.57	39.8
9	R2	552	11.4	552	11.4	0.478	36.9	LOS C	7.2	55.3	0.84	0.81	0.84	36.9
Approach		787	10.8	787	10.8	0.478	30.6	LOS C	7.2	55.3	0.76	0.73	0.76	38.0
West: Ricketty Street														
10	L2	879	3.4	879	3.4	0.325	10.5	LOS A	4.8	34.3	0.36	0.69	0.36	49.9
11	T1	82	2.4	82	2.4	0.474	28.9	LOS C	6.7	48.6	0.81	0.76	0.81	39.1
12	R2	455	4.8	455	4.8	0.474	34.5	LOS C	6.7	48.6	0.81	0.78	0.81	28.8
Approach		1416	3.8	1416	3.8	0.474	19.3	LOS B	6.7	48.6	0.53	0.72	0.53	42.9
All Vehicles		2506	6.8	2506	6.8	0.478	24.7	LOS B	7.2	55.3	0.65	0.74	0.65	40.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Average Back of Queue Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

MOVEMENT SUMMARY

Site: 101 [Kent / Ricketty / Church PM Peak No RT]

Network: N102 [PM]

Kent / Ricketty / Church
Site Category: (None)
Signals - Fixed Time Coordinated Cycle Time = 110 seconds (Network Optimum Cycle Time - Minimum Delay)

Movement Performance - Vehicles

Mov ID	Turn	Demand Flows Total veh/h	HV %	Arrival Flows Total veh/h	HV %	Deg. Satn v/c	Average Delay sec	Level of Service	Aver. Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate	Aver. No. Cycles	Average Speed km/h
South: Kent Road														
1	L2	405	4.9	405	4.9	0.540	37.2	LOS C	8.5	62.3	0.79	0.80	0.79	32.4
2	T1	125	8.0	125	8.0	0.540	54.2	LOS D	5.6	41.8	1.00	0.82	1.00	27.1
Approach		530	5.7	530	5.7	0.540	41.2	LOS C	8.5	62.3	0.84	0.81	0.84	31.0
North: Kent Road														
7	L2	103	6.8	103	6.8	0.142	9.3	LOS A	1.6	12.4	0.28	0.45	0.28	53.2
8	T1	91	11.0	91	11.0	0.142	3.6	LOS A	1.6	12.4	0.28	0.45	0.28	49.5
9	R2	1028	3.5	1028	3.5	0.547	24.6	LOS B	11.3	81.2	0.72	0.80	0.72	42.2
Approach		1222	4.3	1222	4.3	0.547	21.8	LOS B	11.3	81.2	0.65	0.74	0.65	43.2
West: Ricketty Street														
10	L2	686	2.8	686	2.8	0.269	12.0	LOS A	4.1	29.3	0.40	0.69	0.40	48.9
11	T1	89	1.1	89	1.1	0.548	50.1	LOS D	4.2	30.0	0.99	0.79	0.99	32.5
12	R2	170	2.9	170	2.9	0.548	55.8	LOS D	4.2	30.0	0.99	0.79	0.99	21.7
Approach		945	2.6	945	2.6	0.548	23.5	LOS B	4.2	30.0	0.56	0.72	0.56	41.5
All Vehicles		2697	4.0	2697	4.0	0.548	26.2	LOS B	11.3	81.2	0.66	0.75	0.66	40.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Network tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

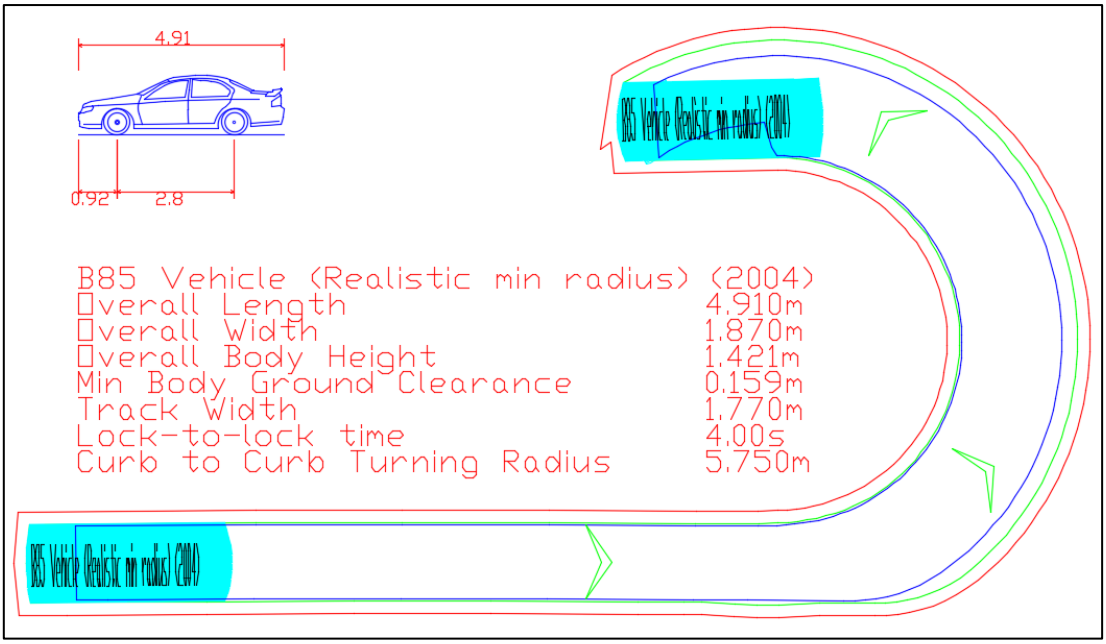
Movement Performance - Pedestrians

Mov ID	Description	Demand Flow ped/h	Average Delay sec	Level of Service	Average Back of Queue Pedestrian ped	Distance m	Prop. Queued	Effective Stop Rate
P1	South Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3	North Full Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
P3B	North Slip/Bypass Lane Crossing	50	49.3	LOS E	0.1	0.1	0.95	0.95
All Pedestrians		150	49.3	LOS E			0.95	0.95

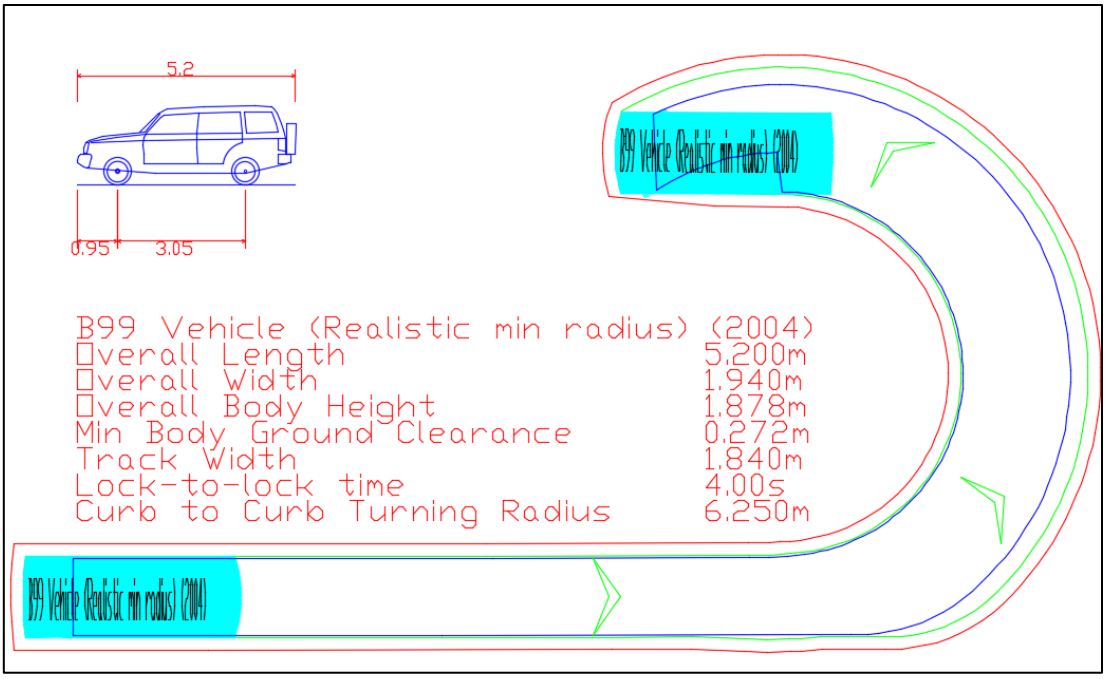
Level of Service (LOS) Method: SIDRA Pedestrian LOS Method (Based on Average Delay)
Pedestrian movement LOS values are based on average delay per pedestrian movement.
Intersection LOS value for Pedestrians is based on average delay for all pedestrian movements.

ANNEXURE D: SWEPT PATH TESTING

(12 SHEETS)



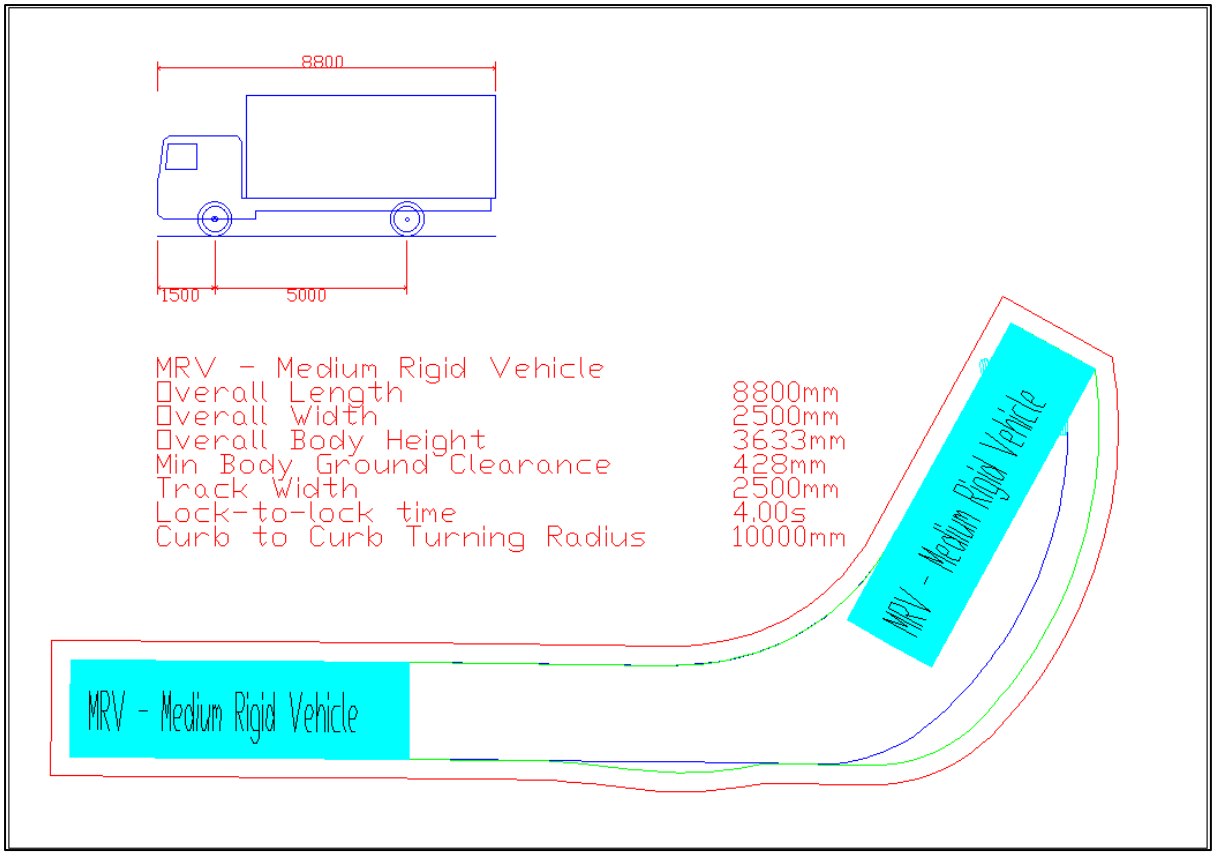
AUSTRALIAN STANDARD 85TH PERCENTILE SIZE VEHICLE (B85)



AUSTRALIAN STANDARD 99TH PERCENTILE SIZE VEHICLE (B99)

Blue – Tyre Path
Green – Vehicle Body
Red – 300mm Clearance

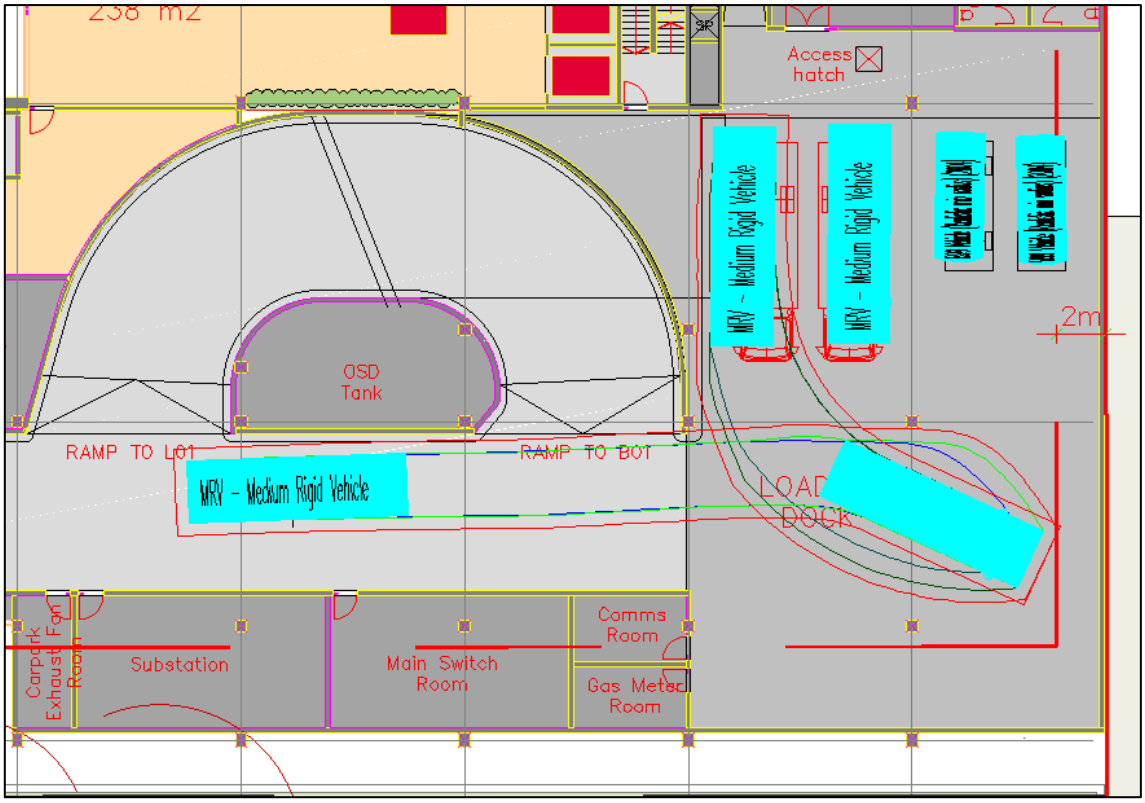
All tests performed at 5 km/h forwards and 2.5km/h reverse

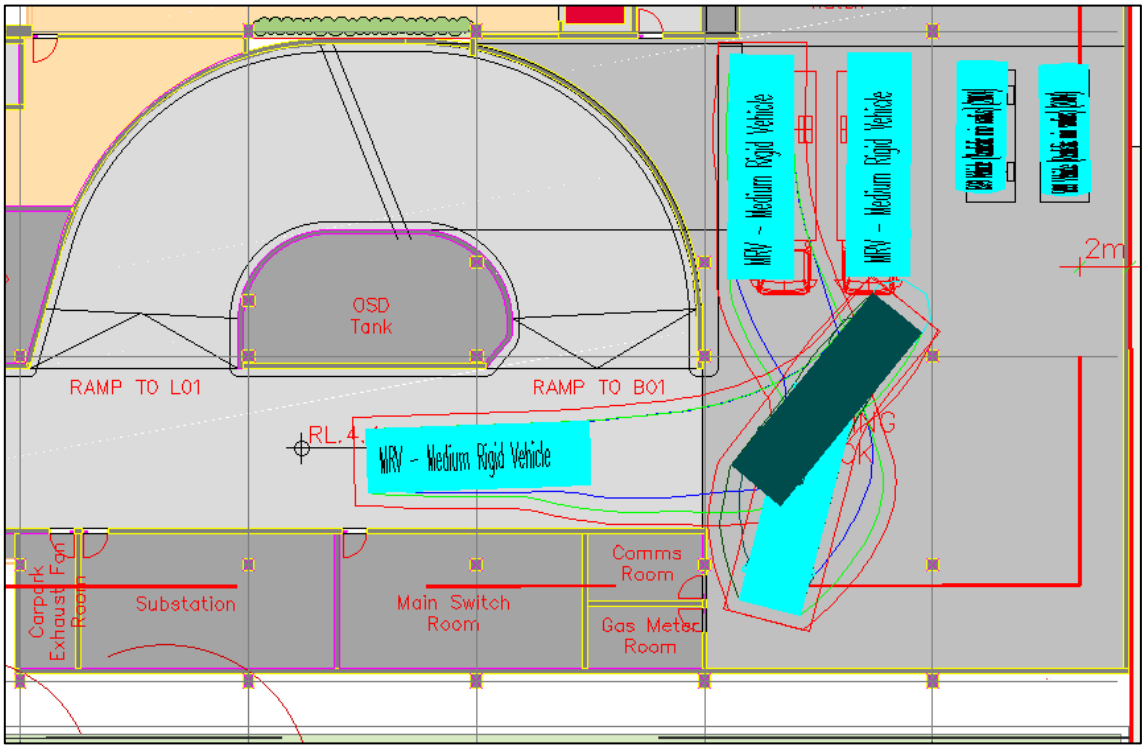


AUSTRALIAN STANDARD MEDIUM RIGID VEHICLE (MRV)

Blue – Tyre Path
Green – Vehicle Body
Red – 500mm Clearance

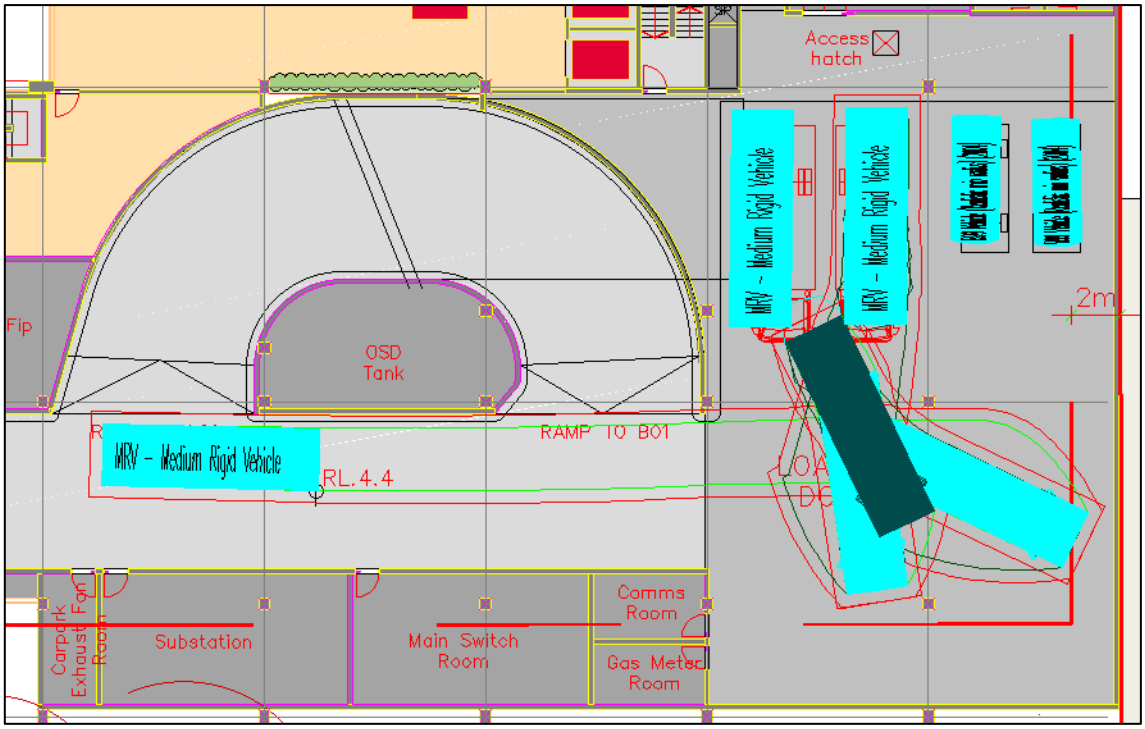
All tests performed at 5 km/h forwards and 2.5km/h reverse

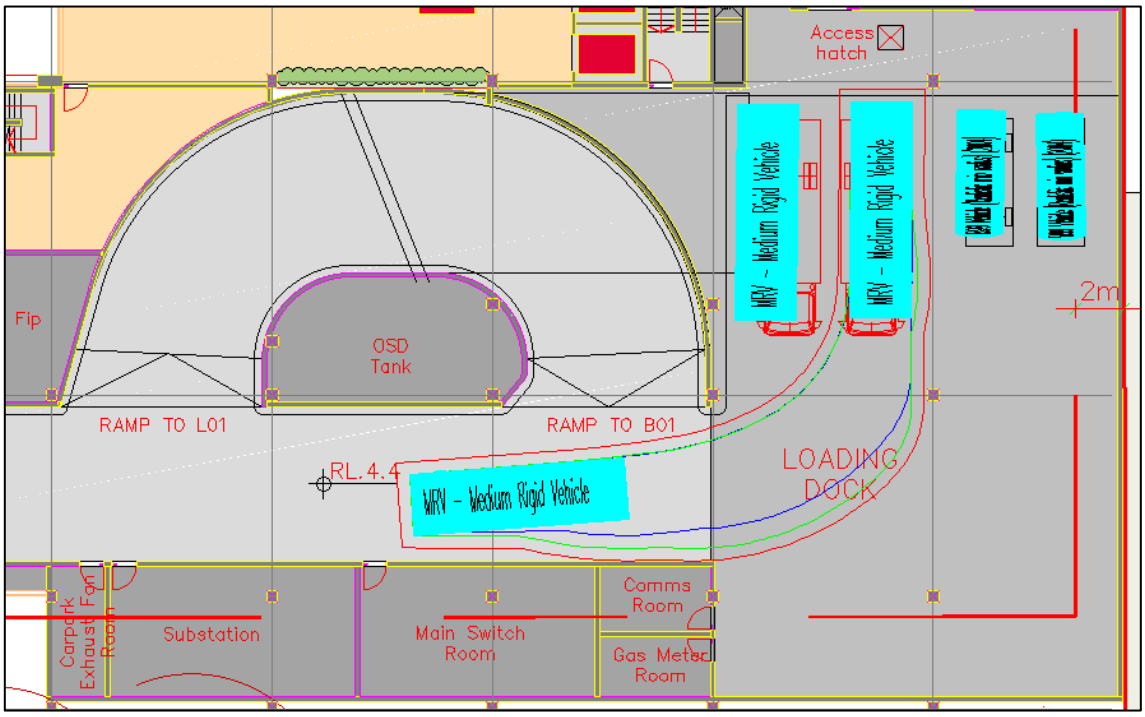




MRV ENTRY / EXIT FROM LOADING DOCK (LHS)

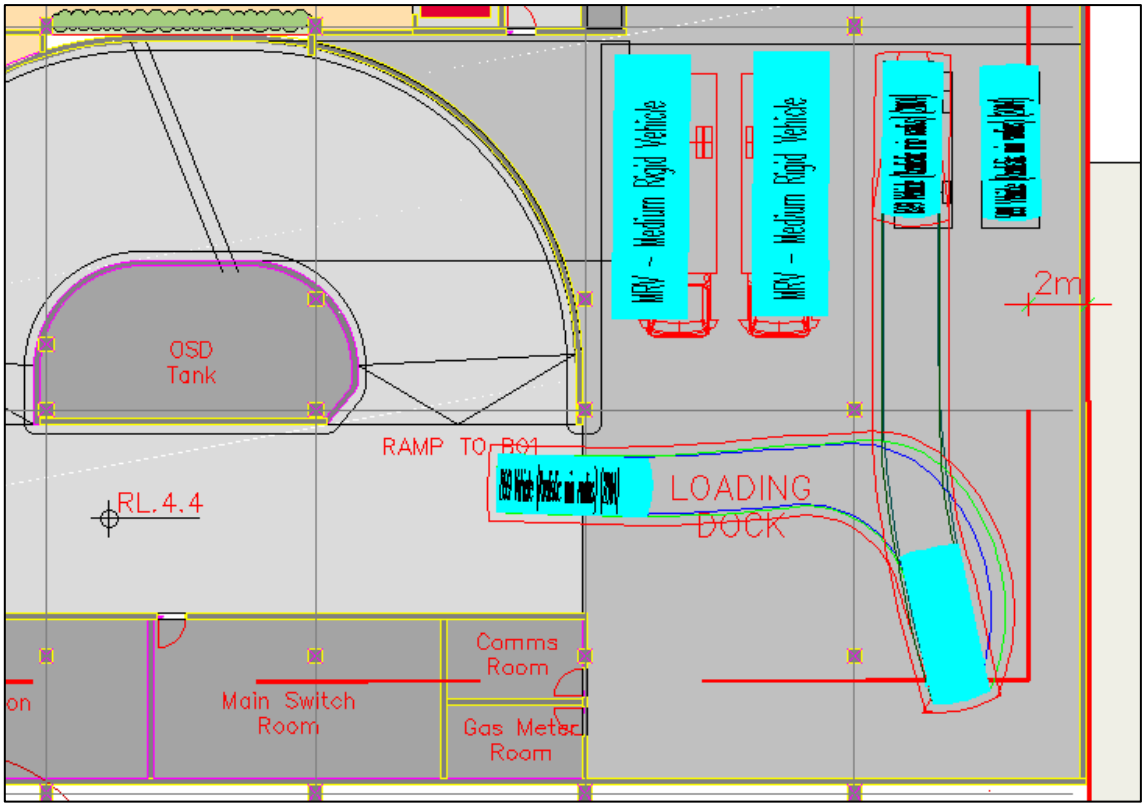
Successful – 2 Manoeuvres REVERSE IN / 3 Manoeuvres FORWARD OUT





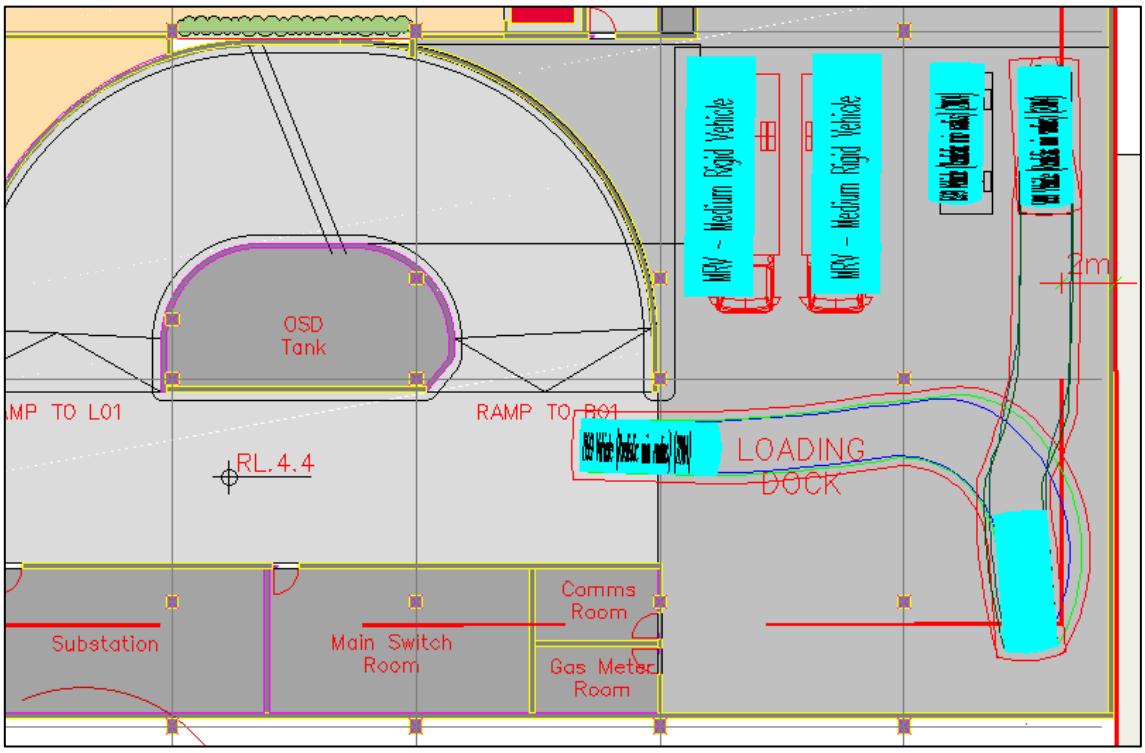
MRV ENTRY / EXIT FROM LOADING DOCK (RHS)

Successful – 4 Manoeuvres REVERSE IN / 1 Manoeuvre FORWARD OUT



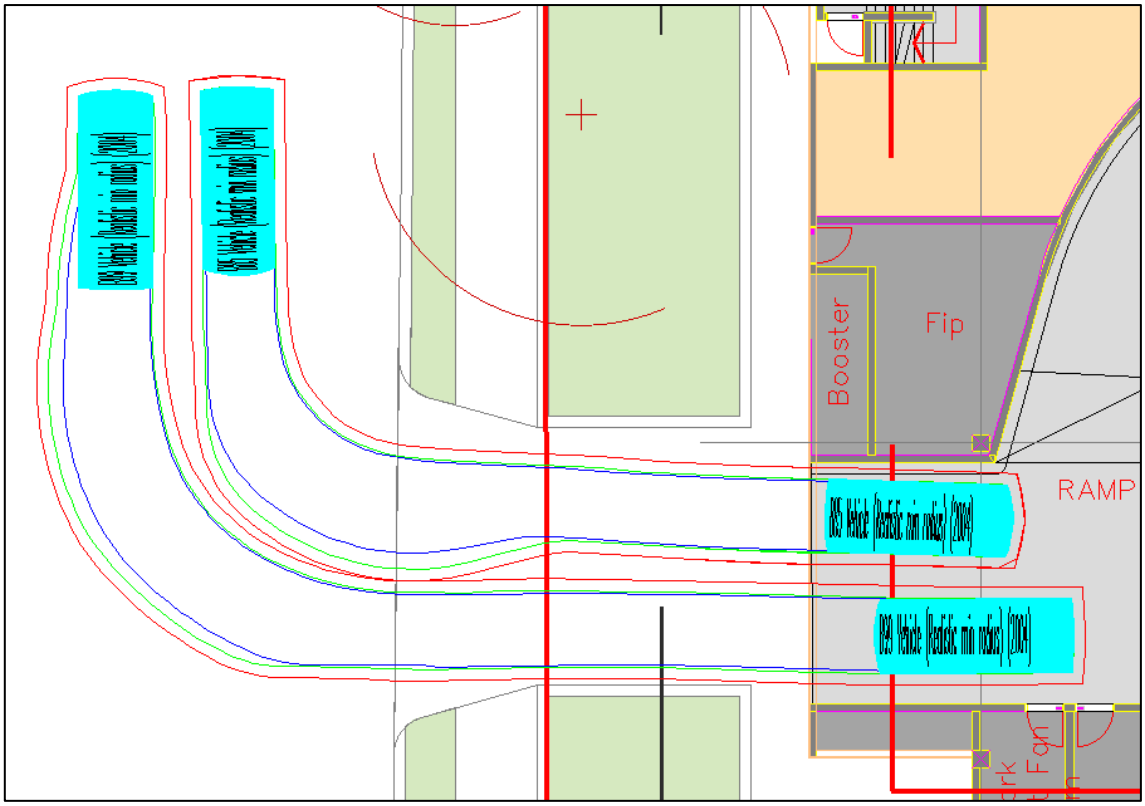
B99 ENTRY TO LOADING DOCK (LHS)

Successful – 2 Manoeuvres REVERSE IN



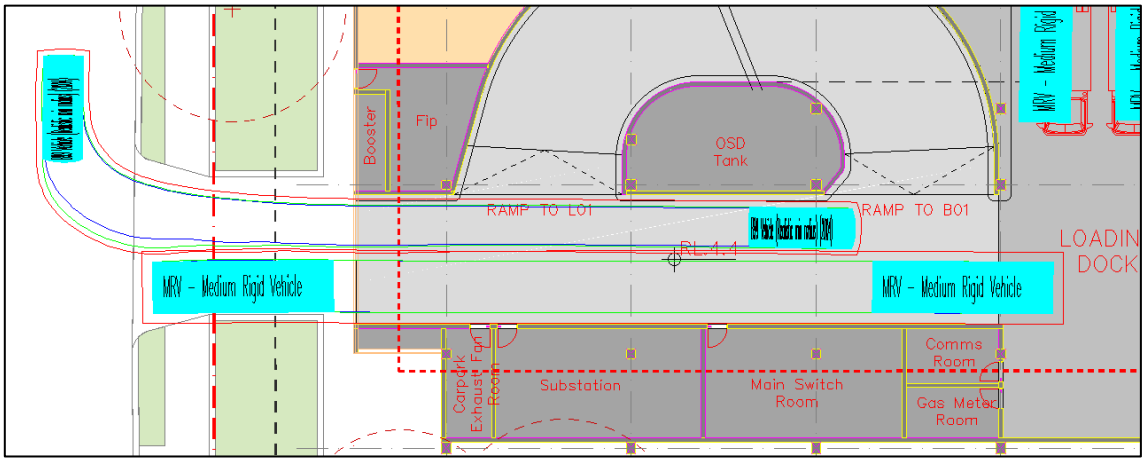
B99 ENTRY TO LOADING DOCK (RHS)

Successful – 2 Manoeuvres REVERSE IN



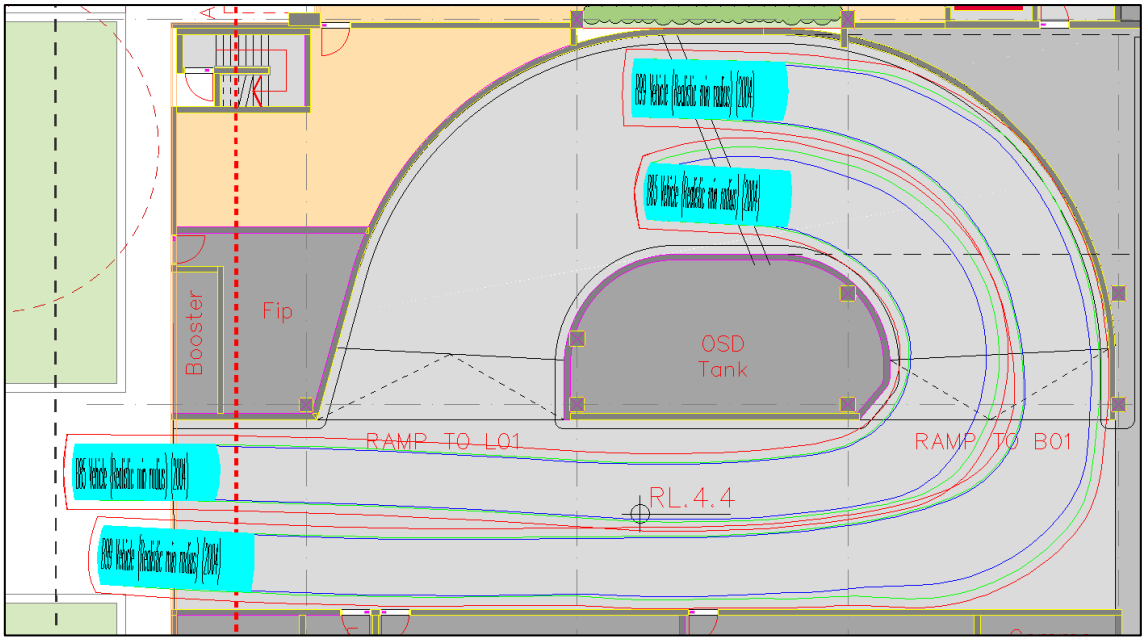
B85 / B99 PASSING AT DRIVEWAY

Successful



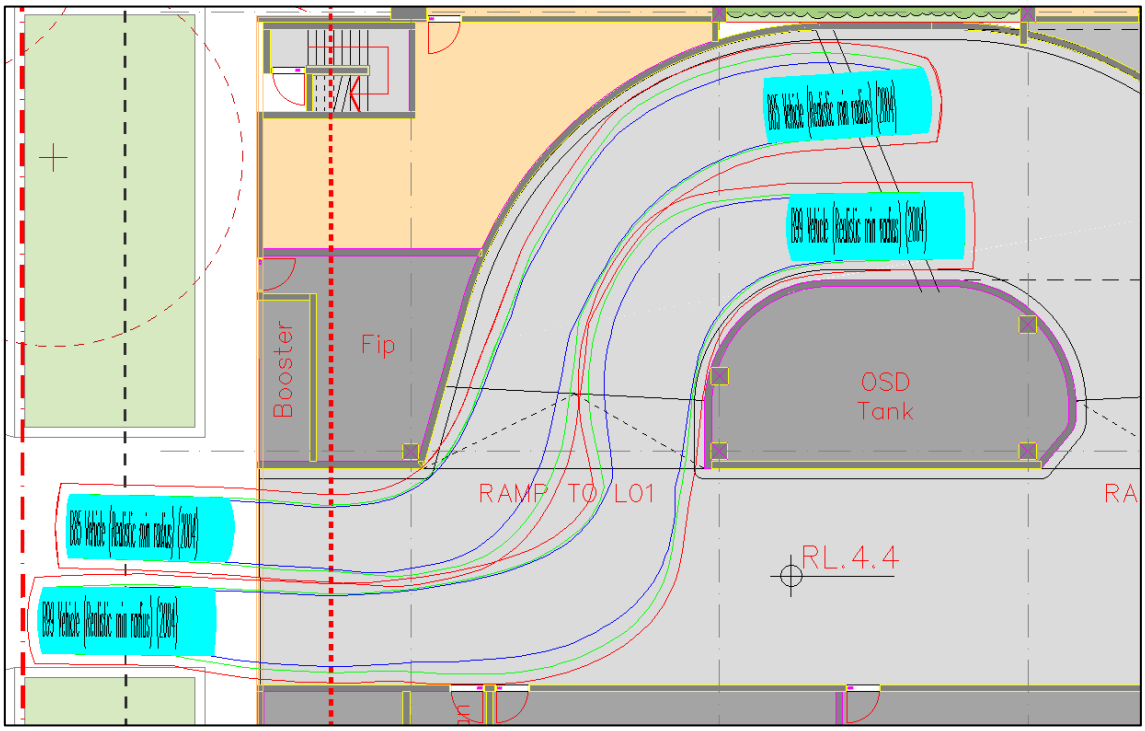
B99 / MRV PASSING ON GROUND

Successful



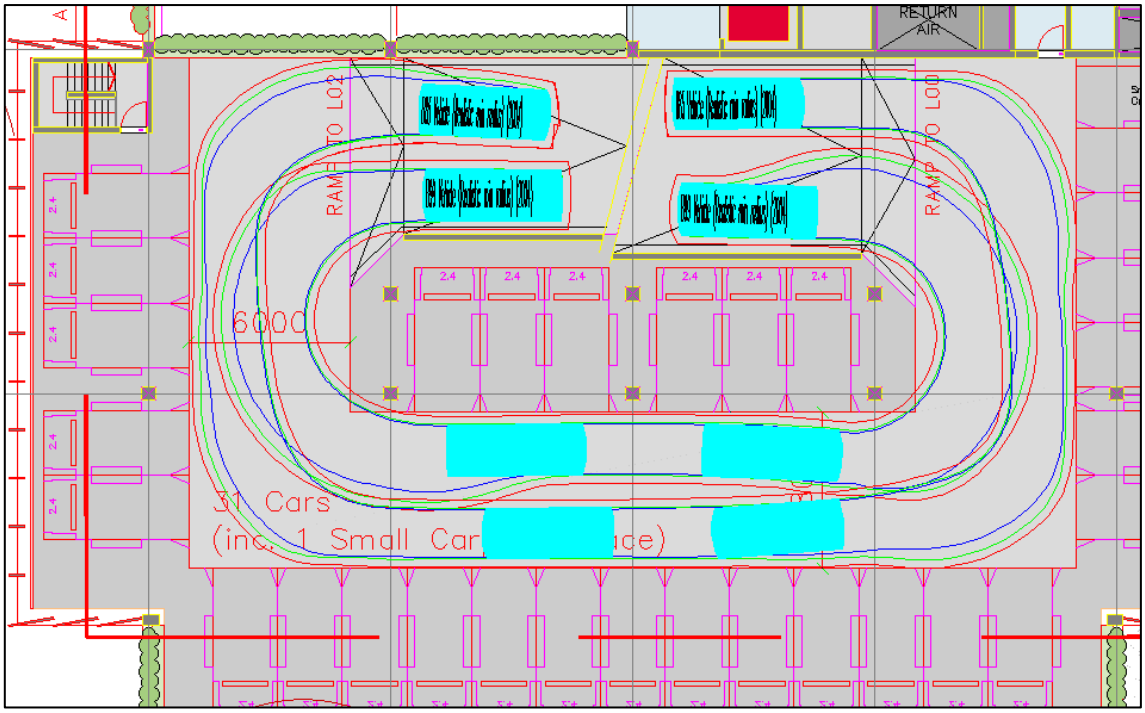
B85 / B99 PASSING ON GROUND AND RAMP (DOWN)

Successful



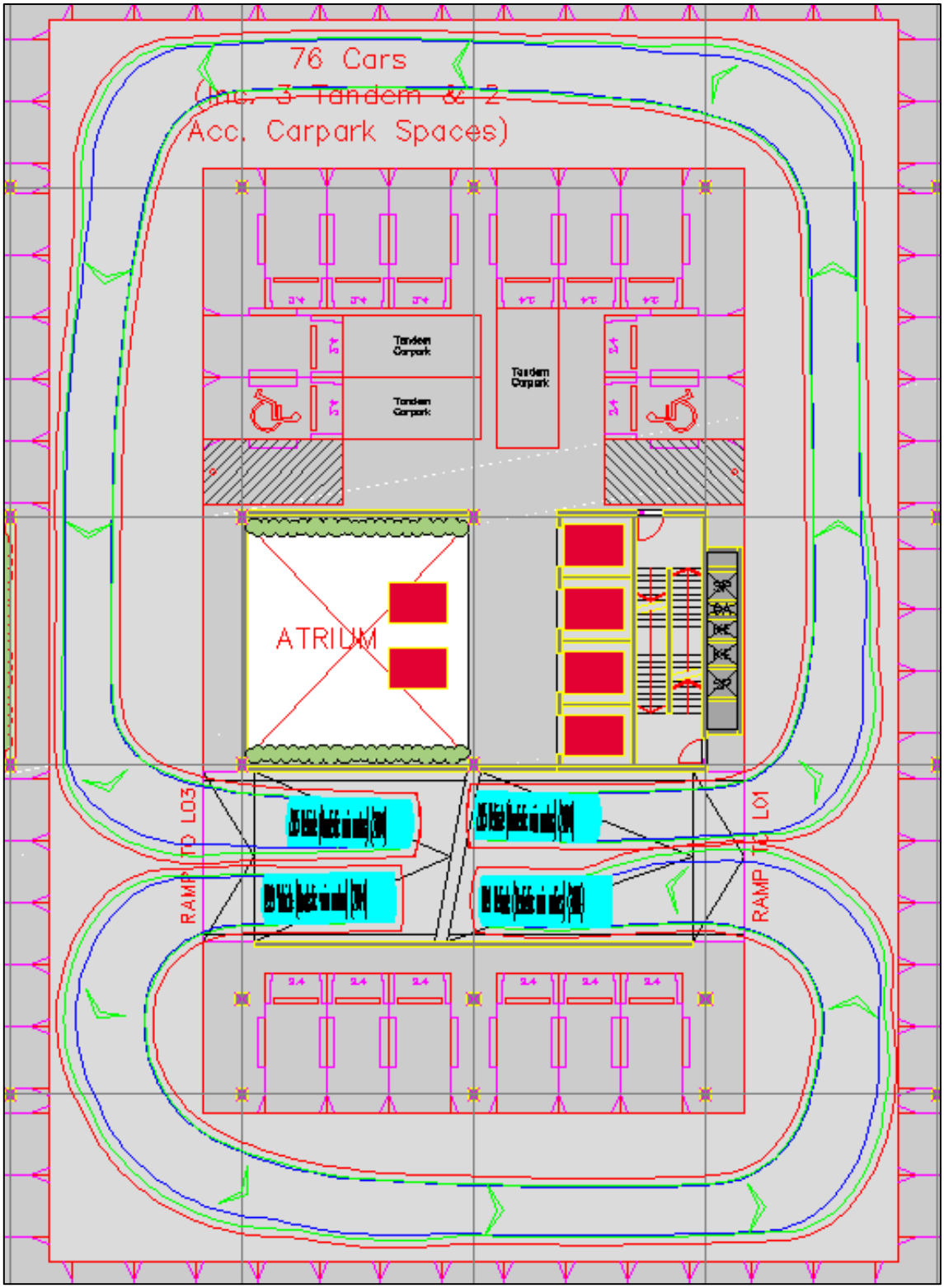
B85 / B99 PASSING ON GROUND AND RAMP (UP)

Successful



B85 / B99 CIRCULATION AND PASSING ON LEVEL 1

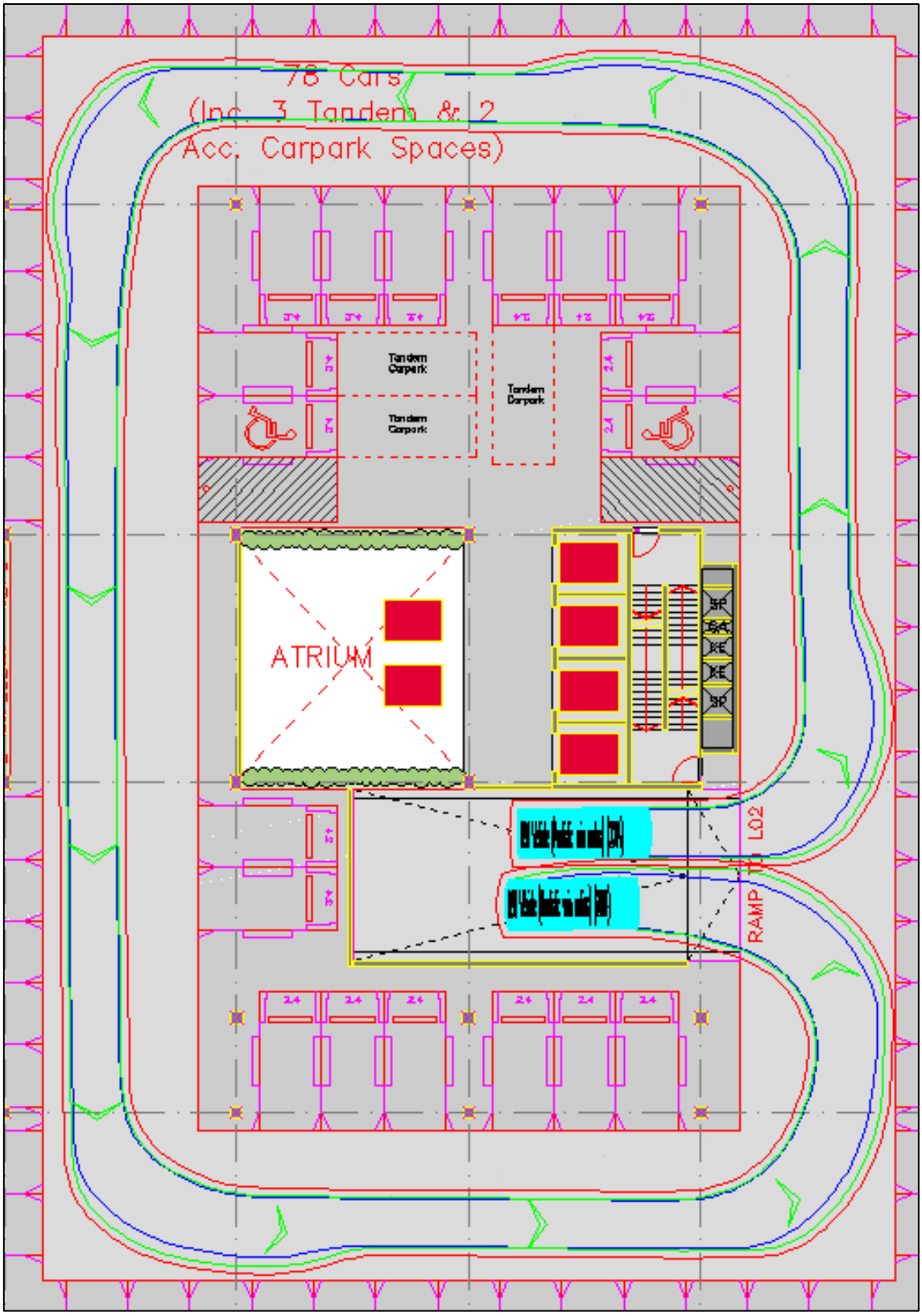
Successful



B85 / B99 CIRCULATION AND PASSING ON LEVEL 2

Successful

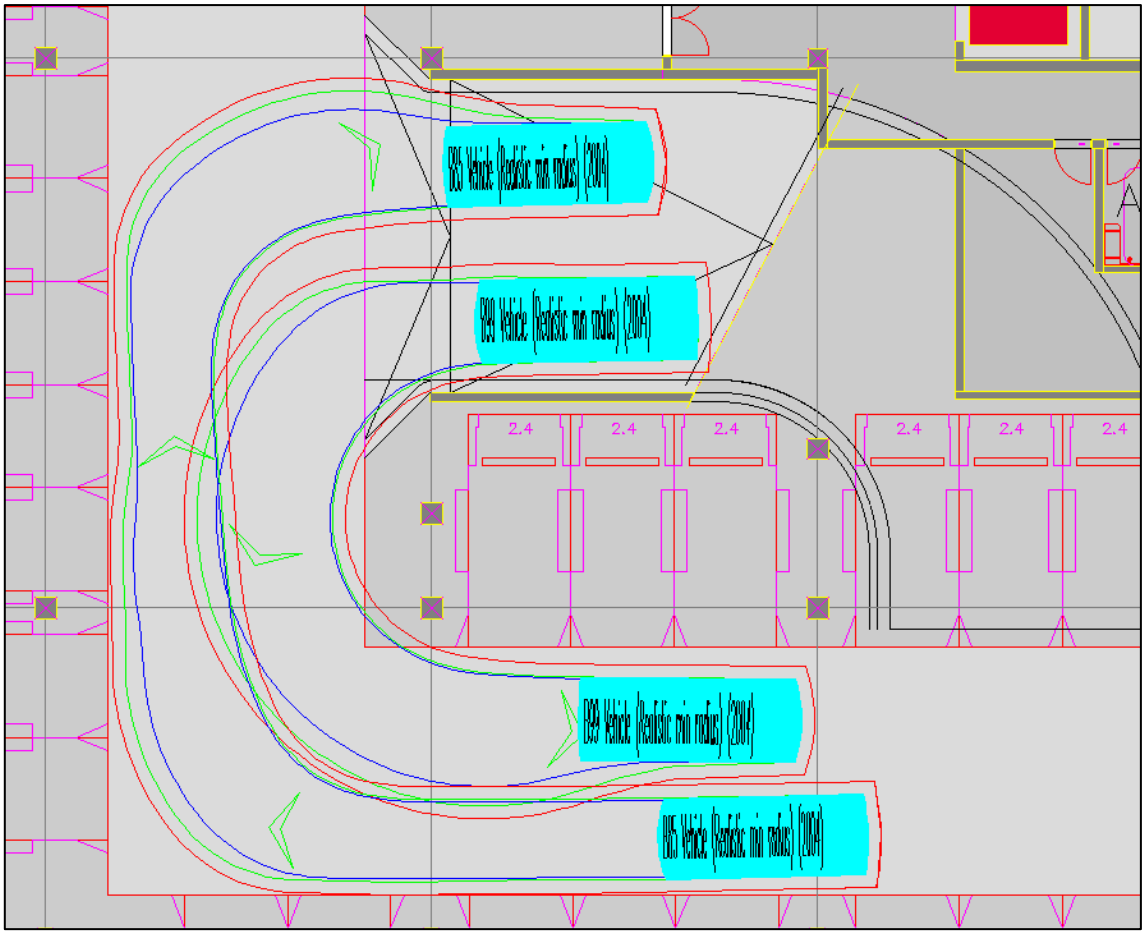
Subject to implementation of one-way anti-clockwise circulation- recommended.



B99 CIRCULATION AND PASSING AT RAMP ON LEVEL 3

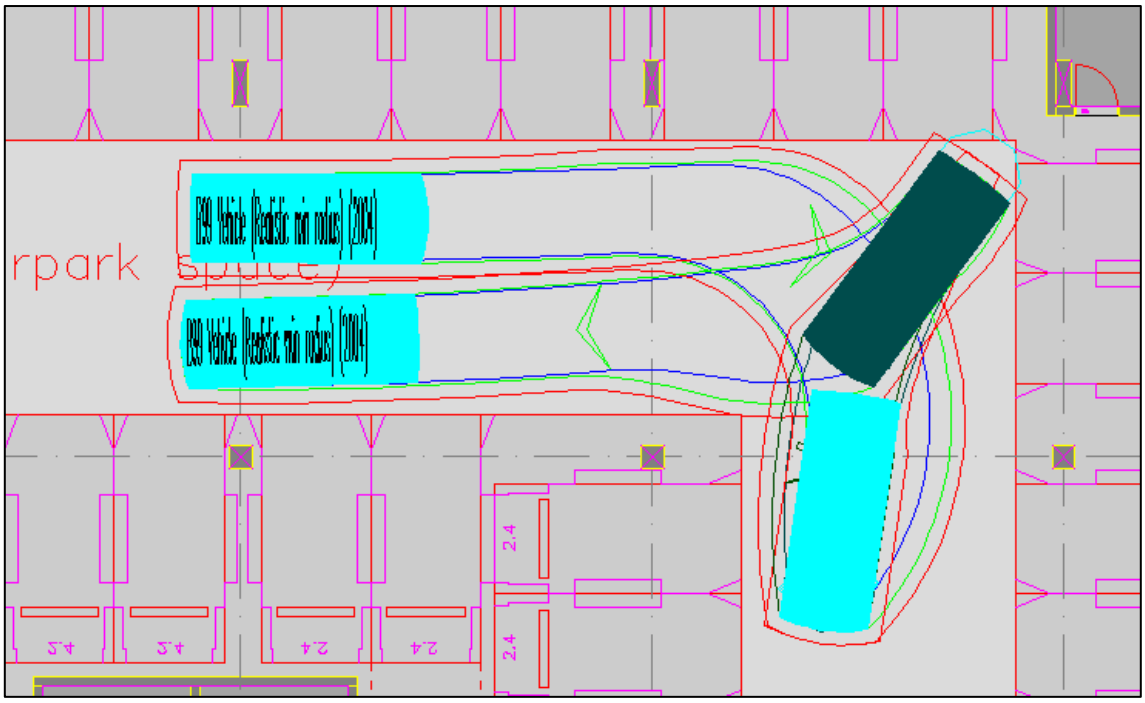
Successful

Subject to implementation of one-way anti-clockwise circulation- recommended.



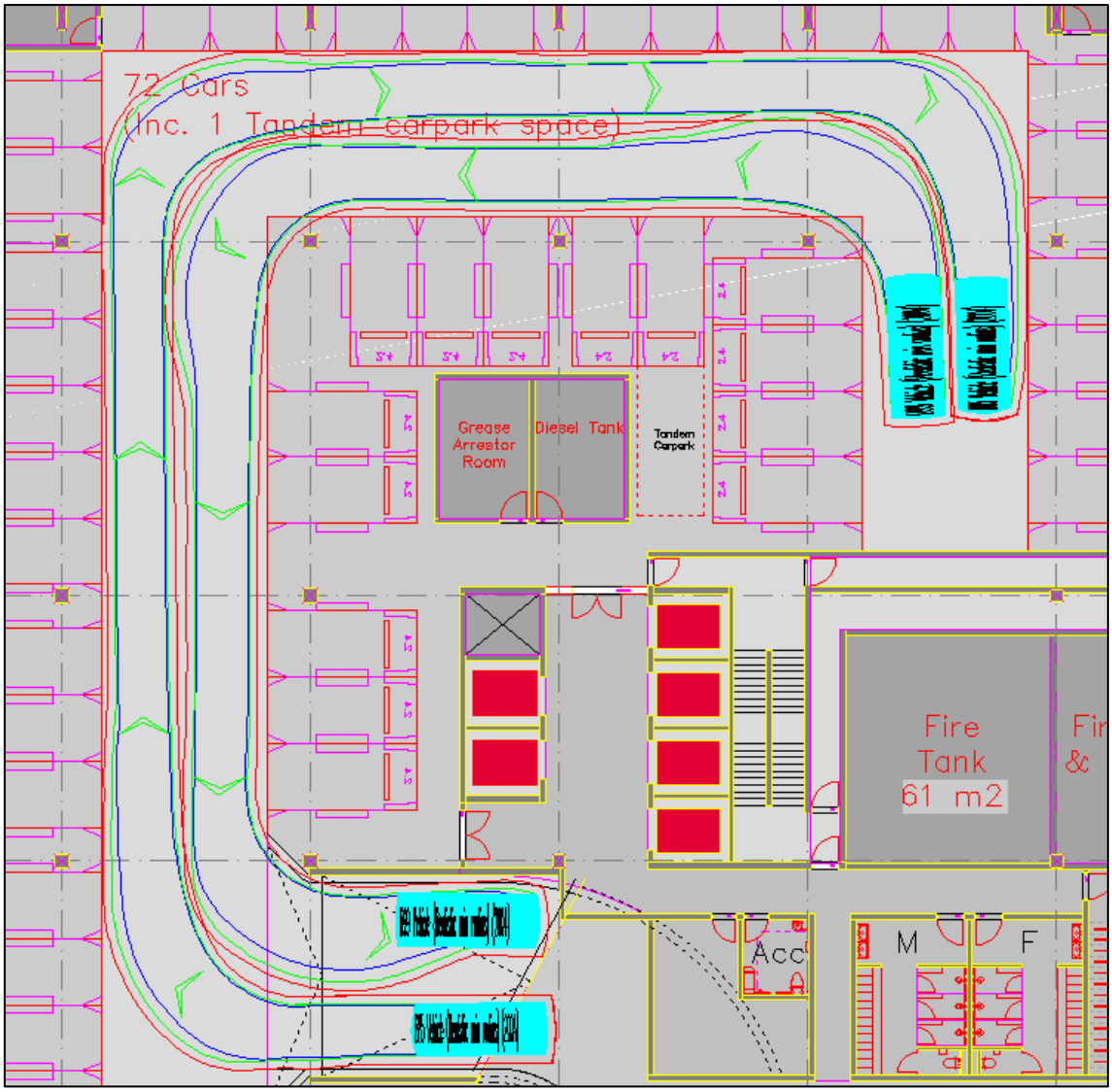
B85 / B99 CIRCULATION AND PASSING ON BASEMENT 1 LEVEL

Successful



B99 CIRCULATION ON BASEMENT 1 LEVEL

Successful – Three (3) Point Turn



B85 / B99 CIRCULATION AND PASSING ON BASEMENT 1 LEVEL

Successful