

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

Approval no: DEV2021/1249

Date: 17 March 2022



Traffic Engineering Report

50 First Avenue, Maroochydore

Commercial Development



About TTM

For 30 years, we've been at the centre of the Australian development and infrastructure industry. Our unique combination of acoustics, data, traffic and waste services is fundamental to the success of any architectural or development project.

We have over 50 staff, with an unrivalled depth of experience. Our industry knowledge, technical expertise and commercial insight allow us to deliver an exceptional and reliable service.

T: (07) 3327 9500

F: (07) 3327 9501

E: ttmbris@ttmgroup.com.au



Revision Record

No.	Author	Reviewed/Approved	Description	Date
1.	T. Lingard		Draft Report	27/10/21
2.	T. Lingard	A. Riddles 	Final Report	17/11/21
3.				
4.				

**PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL**

Approval no: DEV2021/1249

Date: 17 March 2022



Contents

1	Introduction	5
1.1	Background	5
1.2	Scope.....	5
1.3	Site Location	6
2	Proposed Development	7
2.1	Development Profile	7
2.2	Access.....	7
2.3	Parking.....	7
2.4	Servicing	7
3	Existing Transport Infrastructure	8
3.1	The Road Network.....	8
3.2	Road Planning.....	9
3.3	Public Transport and Pedestrian Facilities.....	9
3.3.1	Existing Public and Active Transport.....	9
3.3.2	Future PDA Public Transport Facilities.....	11
3.3.3	Summary	12
4	Car Parking Arrangements	13
4.1	Development Scheme Parking Supply Requirement	13
4.2	Car Park Layout	13
5	Site Access Arrangements	15
5.1	Overview	15
5.2	Passenger Vehicle Access	15
5.2.1	Pedestrian Visibility Splay	16
5.3	Summary	17
6	Service Vehicle Arrangements.....	18
6.1	Requirements.....	18
6.1.1	General servicing.....	18
6.1.2	Refuse Collection.....	18
6.2	Proposed Provisions	18
6.2.1	Service Bay Provisions	18

6.2.2	Service Vehicle Manoeuvring	19
7	Active Transport	21
7.1	Public Transport	21
7.2	Pedestrians.....	21
7.3	Cyclist Requirements.....	21
8	Traffic Impact Assessment	22
9	Summary and Conclusions	23
9.1	Car Parking Arrangements.....	23
9.2	Access Arrangements	23
9.3	Service Vehicle Arrangements.....	23
9.4	Active Transport Facilities	23
9.5	Impact on Surrounding Road Network.....	23
9.6	Conclusion	23
Appendix A	Development Plans.....	24
Appendix B	Swept Path Drawings.....	25

Table Index

Table 2.1: Development Profile	7
Table 3.1: Local Road Hierarchy	8
Table 3.2: Bus Route Timetable Summary	10
Table 4.1: Parking Supply Requirement	13
Table 4.2: Parking Design Requirements	14
Table 5.1: Design Characteristics for the Driveway Crossover	16
Table 7.1: Cyclist provisions	21

Figure Index

Figure 1.1: Site Location (Source: Nearmap Aerial Imaging)	6
Figure 3.1: Road Hierarchy (Source: PDA Development Scheme).....	8
Figure 3.2: Bus Stop Summary	9
Figure 3.3: Cycle Network Surrounding the Subject Site	11
Figure 3.4: Sunshine Coast Light Rail Route Options - Maroochydore.....	12
Figure 5.1: Map 5 Precinct Development Principles Plan - PDA Development Scheme.....	15
Figure 5.2: Review of Pedestrian Visibility	17
Figure 6.1: Proposed Warning System - Reversing Vehicle	20

1 Introduction

1.1 Background

TTM Consulting has been engaged by Walker Maroochydore Developments Pty Ltd to prepare a traffic engineering report investigating a proposed commercial development located at 50 First Avenue, Maroochydore. It is understood that a traffic assessment is required as part of a Development Application submission to Economic Development Queensland (EDQ).

1.2 Scope

This report investigates the transport aspects associated with the proposed development. The scope of the transport aspects investigated includes:

- Parking supply required to cater for development demand;
- Parking layout to provide efficient and safe on-site manoeuvring;
- Access configuration to provide efficient and safe manoeuvring between the site and the public road network;
- Service vehicle provisions and on-site manoeuvring;
- Access to a suitable level of public transport;
- Suitability of internal pedestrian and cyclist provisions; &
- Identification of likely traffic volumes generated by the development and possible impacts on the surrounding road network.

To assess the proposed transport arrangements, the development plans have been assessed against the following guidelines and planning documents:

- Maroochydore City Centre, Priority Development Area (PDA) Development Scheme;
- Prescribed Waste Infrastructure Standards (PWIS);
- Sunshine Coast Council Planning Scheme Policy (SCC PSP)
- Australian Standards for Parking Facilities (AS2890 series), namely;
 - Part 1: Off-Street Car Parking Facilities (AS2890.1:2004);
 - Part 2: Off-Street Commercial Vehicle Facilities (AS2890.2:2018);
 - Part 3: Bicycle Parking (AS2890.3:2015); &
 - Part 6: Off-Street Parking for People with Disabilities (AS2890.6:2009).
- Building Code of Australia (BCA)

1.3 Site Location

The site is located within Precinct 3 of the Maroochydore Priority Development Area (PDA) at 50 First Avenue, Maroochydore, and is described as Lot 71 as shown in Figure 1.1. The site has an approximate site area of 1,407m².



Figure 1.1: Site Location (Source: Nearmap Aerial Imaging)

The site has frontages to Lightning Lane, South Sea Islander Way and First Avenue.

2 Proposed Development

2.1 Development Profile

The development proposal comprises mostly commercial uses with retail tenancies located on the ground floor. The scale of the land uses is summarised in Table 2.1.

A site plan prepared by Cox Architecture is provided within Appendix A.

Table 2.1: Development Profile

Use	GFA (m ²)
Commercial	10,418m ²
Retail	431m ²
Total	10,849m²

2.2 Access

The development is to be accessed directly from Lightning Lane on the western frontage of the site.

The access arrangements are described as follows:

- 6.5m wide access to the podium parking levels;
- 5.0m wide access to the loading dock; &
- A shared crossover along verge facilitating access to both the podium parking levels and the loading dock.

2.3 Parking

The development proposal includes 144 car parking spaces at podium level and 66 bicycle parking spaces at ground level.

Further details regarding the car and bicycle parking provisions are included in Sections 4 and 7, respectively.

2.4 Servicing

The development proposal includes the following service vehicle provisions:

- 1 medium rigid vehicle (MRV) bay.

Further details in relation to the proposed service vehicle provisions is included in Section 6.

3 Existing Transport Infrastructure

3.1 The Road Network

In accordance with the Development Scheme for the PDA the hierarchy and characteristics of roads in the immediate vicinity of the site are shown below in Table 3.1 and Figure 3.1.

Table 3.1: Local Road Hierarchy

Road	Speed Limit	Lanes	Classification
Lightning Lane	50kph	1 lane, southbound	Laneway
South Sea Islander Way	50kph	2 lanes, undivided (incl. on-street parking)	Town Centre Avenue
First Ave	50kph	4 lanes, divided (incl. cycle lanes)	Town Centre Boulevard

*Default speed limit on unsigned roads is 50 kph in built-up areas in Queensland

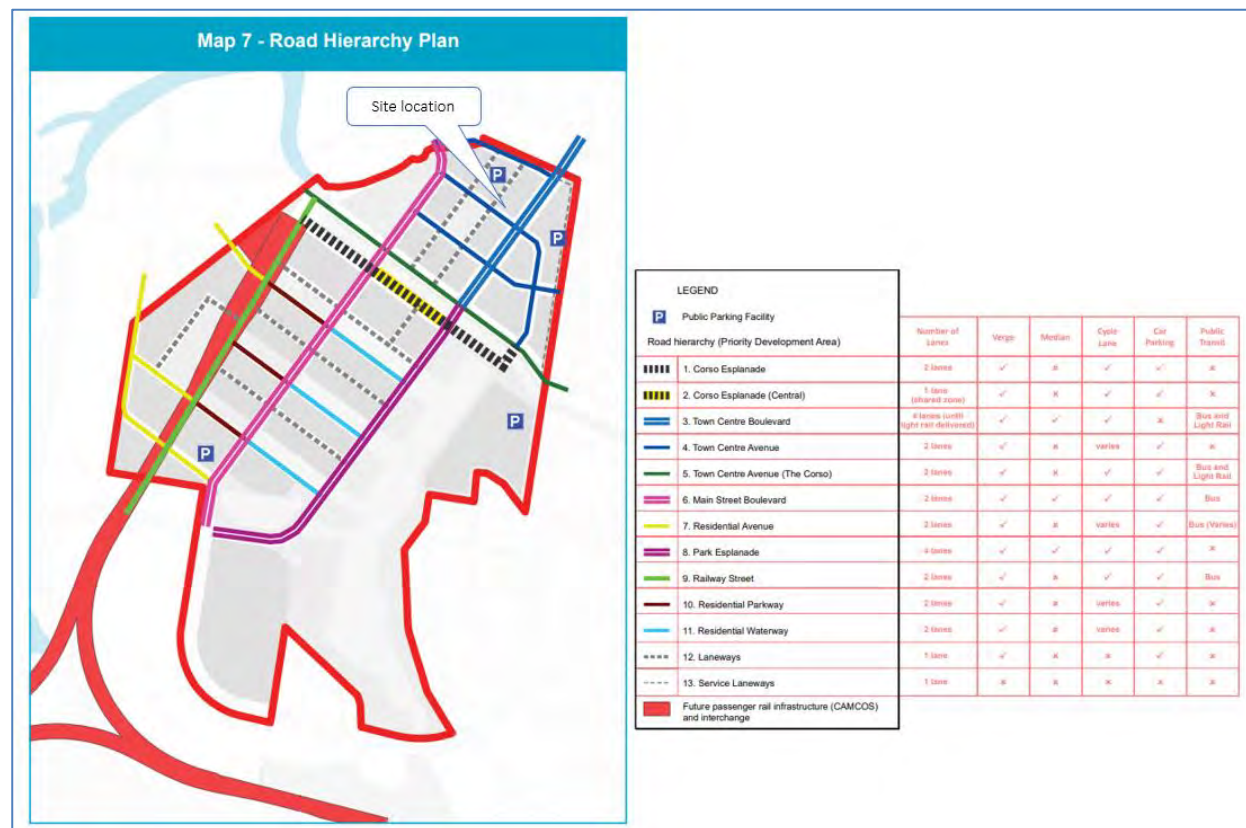


Figure 3.1: Road Hierarchy (Source: PDA Development Scheme)

3.2 Road Planning

Inspection of SCC's Local Government Infrastructure Plan (LGIP) indicates that there are currently no plans for trunk infrastructure upgrades in the vicinity of the site.

3.3 Public Transport and Pedestrian Facilities

3.3.1 Existing Public and Active Transport

Bus

The subject site is located within close proximity to several bus stops adjacent to the PDA. The closest existing bus stop is 280m walking distance (3 minutes) north-east of the subject site along Aerodrome Road. Additional bus stops servicing the same bus routes are located further along Aerodrome Road, First Avenue and Second Avenue. These bus stops are utilised by Translink Service No.'s 600, 611, 614, 615, 616 and 619. All bus stops provide suitable connectivity to the public transport network. A summary of the bus stop locations and the services available (at the bus stops) are shown in Figure 3.2.

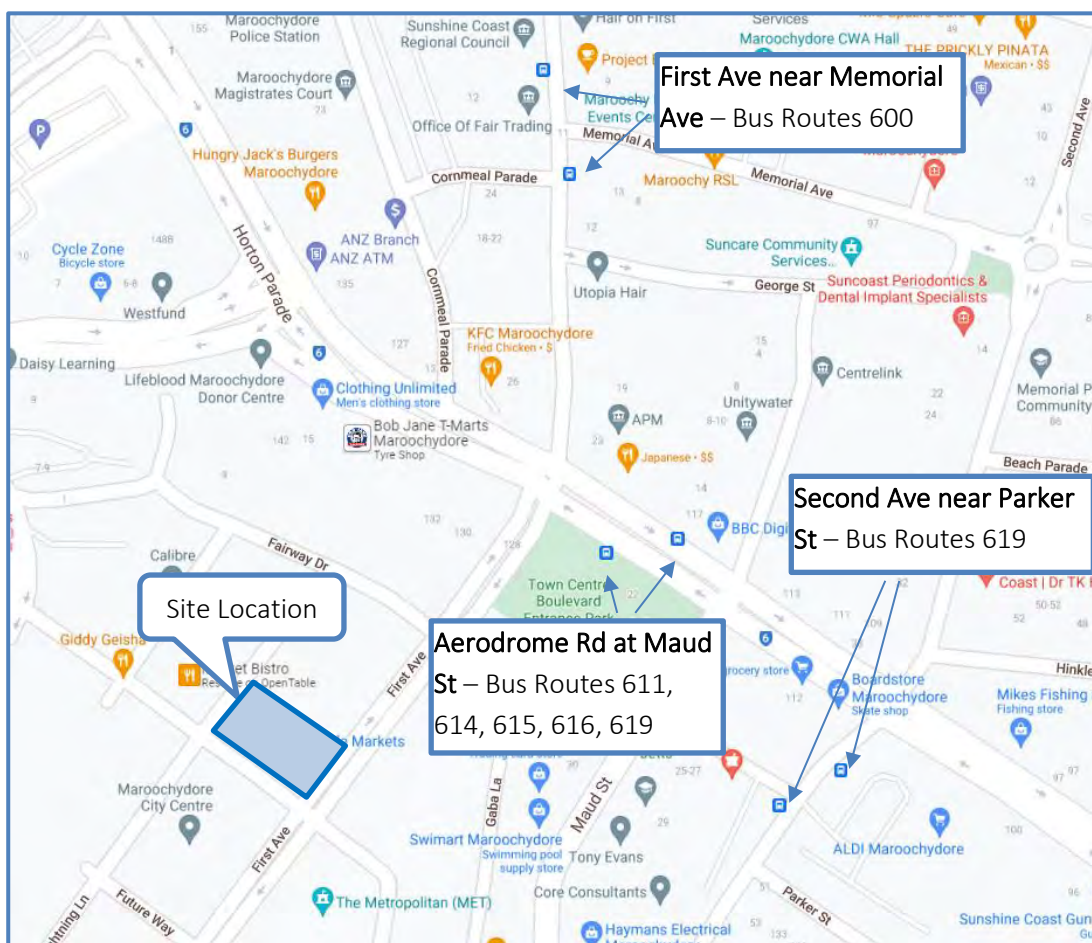


Figure 3.2: Bus Stop Summary

A summary of the areas served by the bus routes and the frequency of the services is provided in Table 3.2.

Table 3.2: Bus Route Timetable Summary

Bus Route	Servicing	Operating Times	Service Alignment	Frequency (Approx.)
600	Caloundra to Maroochydore via Kawana and Mooloolaba	5:25AM – 9:40PM (Monday – Friday) 6:25AM – 11:10PM (Saturday) 6:55AM – 8:40PM (Sunday)	Aerodrome Road <-> First Avenue <-> The Esplanade	15 min (peak) (weekdays) 30 – 60 min (off-peak and weekends)
611	Maroochydore to SCUH via Mooloolaba and Kawana	7:48AM – 9:48PM (Monday – Friday) 7:48AM – 9:48PM (Weekends)	Aerodrome Road <-> Alexandra Parade	30 min (peak and off peak) (weekdays and weekends)
614	Kawana to Maroochydore via Mountain Creek	7:25AM – 6:25PM (Monday – Friday) 8:25AM – 5:25PM (Weekends)	Aerodrome <-> Maud Street	60 min (peak and off peak) (weekdays and weekends)
615	Maroochydore to Landsborough via University	5:00AM – 9:13PM (Monday – Friday) 5:41AM – 9:34PM (Saturday) 7:11AM – 8:41PM (Sunday)	Aerodrome <-> Alexandra Parade	25 min (peak) (weekdays) 60 min (off peak) (weekdays) 90 – 180 minutes (weekends)
616	Maroochydore to University via Alexandra Headland	6:55AM – 9:05PM (Monday – Friday) 7:25AM – 7:25PM (Weekends)	Aerodrome Road <-> Alexandra Parade	30 min (peak and off peak) (weekdays) 60 min (weekends)
619	Kawana to Maroochydore via Alexandra Headland	7:45AM – 6:45PM (Monday – Friday) 7:45AM – 5:45PM (Saturday) 8:45AM – 5:45PM (Sunday)	Aerodrome Road <-> Second Avenue	60 min (peak and off peak) (weekdays) 60 min (weekends)

Pedestrians

Formal footpaths are provided along the eastern, southern and western frontages of the site.

The closest formal pedestrian crossing facility is located directly adjacent to the subject site at the intersection of South Sea Islander way and First Avenue.

Cyclists

The 2031 Strategic Network of Pedestrian and Cycle Links (Pathways) and 2031 Strategic Network of Pedestrian and Cycle Links (On Road Cycleways) within SCC's PSP do not provide bicycle network overlays with respect to the subject site. The Department of Transport and Main Roads (DTMR's) Principal Cycle Network Plan (2016) and Priority Route Maps (2017) however do indicate existing and future cycle routes surrounding the subject site. Figure 3.3 below demonstrates these routes as well as the PDA's Active Transport Plan.

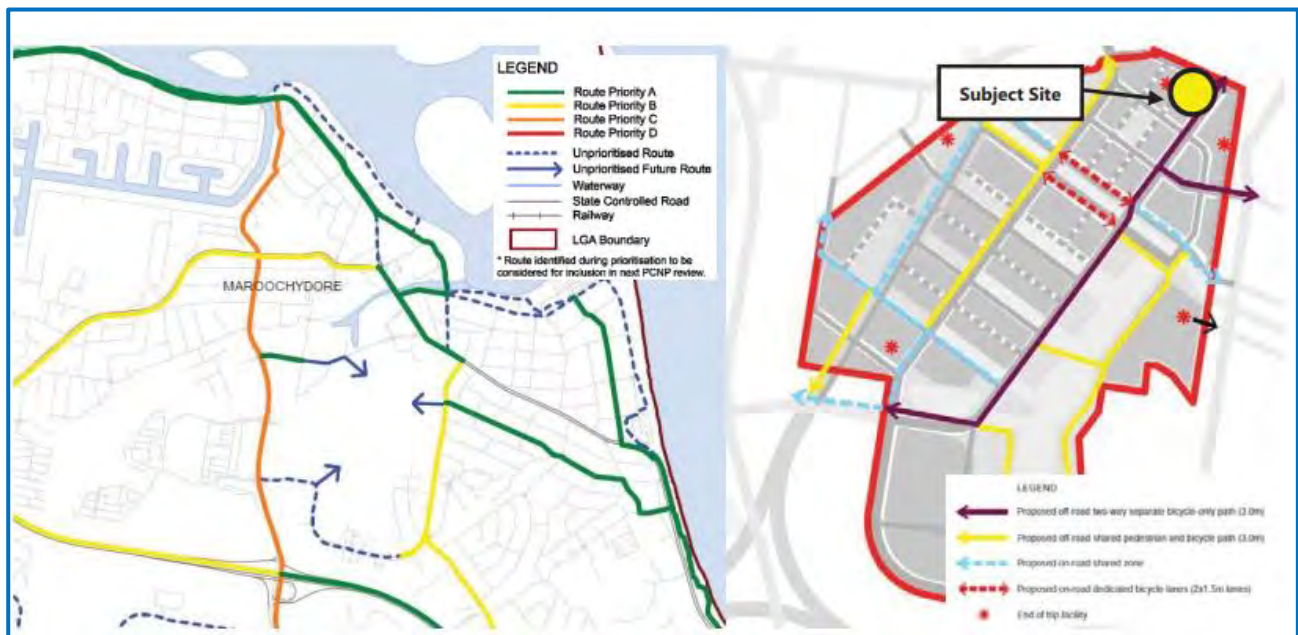


Figure 3.3: Cycle Network Surrounding the Subject Site

As illustrated in Figure 3.3, there are currently several high-priority routes surrounding the subject site, with unprioritized future routes planned to connect the Maroochydore PDA to the surrounding road network. The PDA Development Scheme provides the Active Transport Plan as illustrated in Figure 3.3, including publicly accessible end-of-trip facilities (EOTF), which will be sited to connect with the principal cycle network at several points along the boundary of the PDA.

As illustrated in Figure 3.3, a two-way off-road bicycle-only path, which has already been constructed, is provided along the subject site's eastern frontage (First Avenue) with a publicly accessible EOTF proposed within the public car park immediately to the west.

3.3.2 Future PDA Public Transport Facilities

Sunshine Coast Light Rail Project

Feasibility studies have been conducted for a Sunshine Coast Light Rail System and the construction is subject to funding. This light rail system will run between Maroochydore and Caloundra, with several route options being investigated for each major section of the route (Maroochydore, Mooloolaba, Kawana and Caloundra). The 3 options proposed for the Maroochydore section are illustrated in Figure 3.4 below.



Figure 3.4: Sunshine Coast Light Rail Route Options - Maroochydore

Option A has been ultimately selected as the preferred route and will service a wide pedestrian catchment area and support the Maroochydore PDA and transit interchange with future transport systems. Based on review of the available documents, stop locations for the light rail have yet to be finalised.

CAMCOS

The Caboolture to Maroochydore Corridor Study (CAMCOS) is a future passenger rail infrastructure that is located within the PDA which provides access from the south terminates to the north of the PDA. The rail line will run near the western boundary of the PDA.

3.3.3 Summary

Overall, the subject site is located in close proximity to a significant volume (and range) of existing and proposed public and active transport facilities.

4 Car Parking Arrangements

4.1 Development Scheme Parking Supply Requirement

The PDA Development Scheme specifies a maximum car parking rate for the PDA based on the type of land use and precinct. Table 4.1 below sets out the car parking requirements for a 'non-residential' building located within Precincts 1-7 in accordance with Table 2 – On-site Parking of the PDA Development Scheme.

Table 4.1: Parking Supply Requirement

Land Use	PDA Development Scheme Requirement	Extent	Requirement (maximum)	Provision
Commercial (non-residential within precincts 1-7)	First 20,000m ² GFA approved - Maximum 1 space per 60m ² GFA	10,418m ²	174	144
Retail (non-residential within precincts 1-7)	First 20,000m ² GFA approved - Maximum 1 space per 60m ² GFA	431m ²	8	
Total			182	144

The development proposes to provide 144 parking spaces, 34 below the maximum permitted by EDQ. Consequently, the proposed parking supply aligns with EDQ requirements.

In accordance with the Building Code of Australia (BCA) requirements, Class 5 buildings are required to provide PWD parking spaces at a rate of 1 space for every 100 car parking spaces or part thereof. The development proposes 2 PWD parking spaces located at podium level 1, and therefore satisfies this requirement.

It is proposed that 21 of the 144 parking spaces will be designated as small car bays, which equates to 14.6% of reserved parking provision.

Whilst the PDA Development Scheme does not provide specific requirements for motorcycle parking, the development proposes to provide 8 motorcycle spaces located across podium levels 1-4.

Overall, the parking supply for the proposed development complies with the requirements set out in the PDA Development Scheme is therefore considered acceptable.

4.2 Car Park Layout

Table 4.2 identifies the characteristics of the proposed car parking area with respect to AS2890.1. The last column identifies the compliance of each design aspect.

Table 4.2: Parking Design Requirements

Design Aspect	AS2890.1 Requirement	Proposed Provision	Compliance
Parking Space Length: - Standard Space - PWD Space - Small Car Space	5.4m 5.4m 5.0m	5.4m 5.4m 5.0m – 5.4m	Compliant Compliant Compliant
Parking Space Width: - Staff (Class 1A) - Visitor (Class 3) - Small Car - PWD Space - Clearance to obstruction	2.4m 2.6m 2.3m 2.4m + 2.4m 'Shared Area' 0.3m	2.4m 2.6m 2.3m – 2.4m 2.4m + 2.4m 'Shared Area' 0.3m	Compliant Compliant Compliant Compliant
Parking Envelope Clearance	Space 0.3m clear of wall or large columns	Space 0.3m clear of wall or large columns	Compliant
Aisle Width: - Staff & Visitor (Class 1A & Class 3) - Ramp	5.8m 6.1m (including 0.3mm clearance to walls)	6.4 – 6.8m 6.8m between walls	Compliant Compliant
Parking Aisle Extension	1m beyond last bay	1m beyond last bay	Compliant
Maximum Gradient: - PWD parking - Parking bay - Parking aisle - Ramps	1:40 (2.5%) 1:20 (5.0%) 1:16 (6.25%) 1:5 (25%)	At Grade At Grade 1:84 (1.2%) max 1:5 (25%)	Compliant Compliant Compliant Compliant
Maximum Change in Grade	1:8 (12.5%) summit 1:6.67 (15.0%) sag	1:8 (12.5%) 1:8 (12.5%)	Compliant Compliant
Height Clearance: - General Min - Over PWD Space	2.2m 2.5m	2.4m 2.5m	Compliant Compliant

In general, the proposed design provisions for the car parking areas generally comply with the requirements set out in the AS2890.1.

Overall, the design of the car parking areas for the proposed development is considered acceptable.

5 Site Access Arrangements

5.1 Overview

As per Map 5 Precinct Development Principles Plan, illustrated in Table 5.1 below, the Development Scheme only permits vehicular access to the subject site via Lightning Lane and a small portion of South Sea Islander Drive.

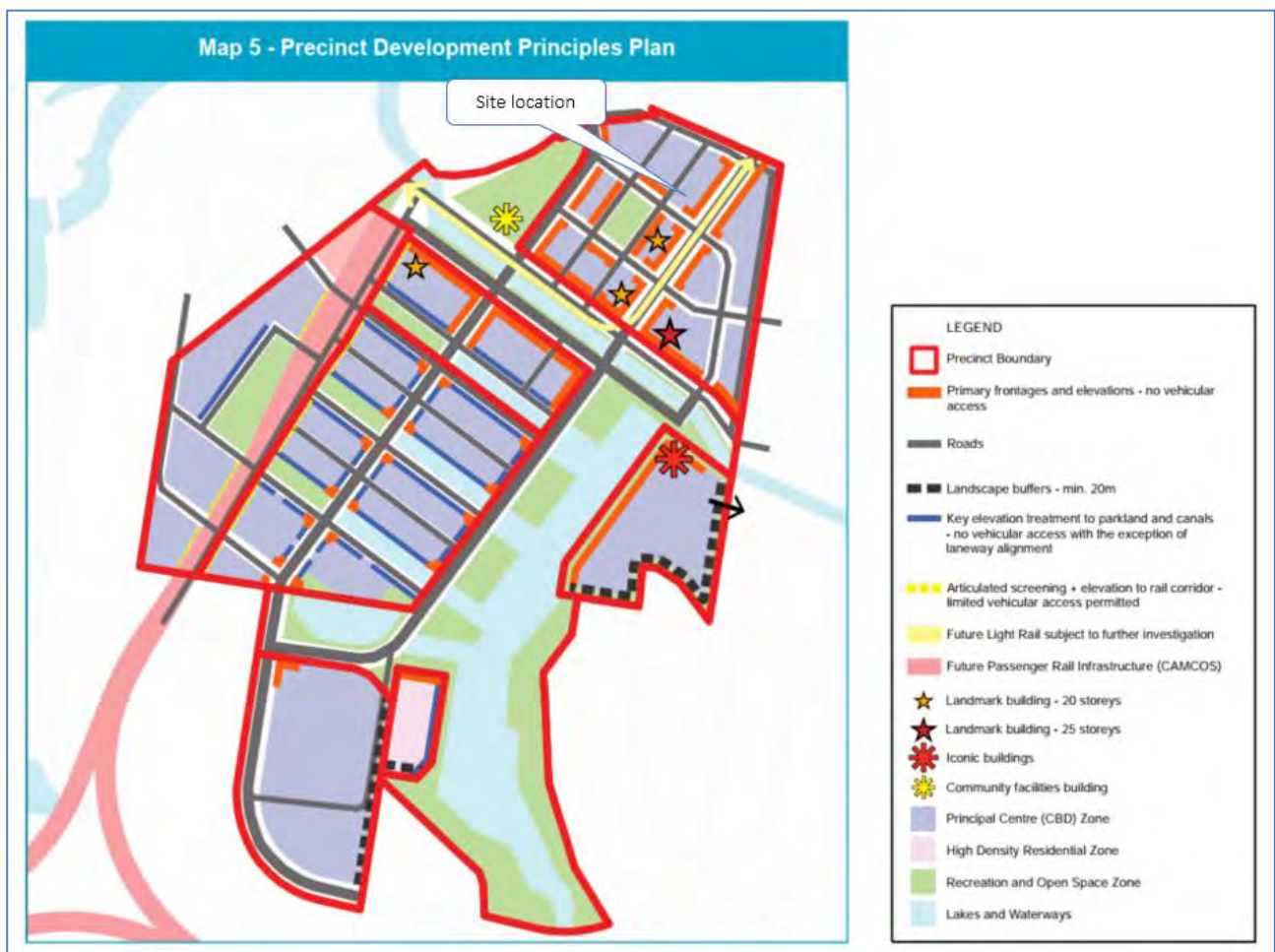


Figure 5.1: Map 5 Precinct Development Principles Plan - PDA Development Scheme

The development proposes to provide separate accesses to the podium parking levels and the loading dock at Lightning Lane. As noted previously, Lightning lane is provided as a one-way, southbound laneway.

5.2 Passenger Vehicle Access

It is proposed that vehicular access to the podium parking levels will be provided via a 6.0m wide driveway crossover to Lightning Lane.

The crossover facilitating to podium parking level will be extended across the access to the loading dock to ensure a consistent grade is achieved along the verge to address pedestrian circulation and accessibility. Appropriate line marking and delineation between the accesses will be resolved as part of the detailed design stage.

The proposed crossover has been designed generally in accordance with Public Works Engineering Australia, Queensland (IPWEAQ) Standard Drawing No. RS-051.

Regarding other key access parameters, AS2890.1 has been referred to. Table 5.1 details the design parameters in accordance with the requirements outlined in AS2890.1 and IPWEAQ Standard Drawing No. RS-051. Where compliance is not achieved, further information is provided below.

Table 5.1: Design Characteristics for the Driveway Crossover

Design Aspect	AS2890.1 Requirement	Proposed Provision	Compliance
Crossover Width	6.0-9.0m access driveway (combined entry & exit)	6.5m (Combined entry exit)	Compliant
Minimum Intersection Separation	6m from tangent point of kerb	13m	Compliant
Sight Distance	Ideally 69m, minimum 45m (50kph)	Approx. 69m sight distance to Lightning Lane / Fairway Dr intersection (north: one-way southbound traffic)	Compliant
Pedestrian Visibility Splays	2m x 2.5m	Convex mirror	Performance Solution
Entry Queue Capacity	36m (6 cars)	36m (6 cars) (including ramp)	Compliant
Gradient of first 6m	1:20 (5%)	1:20 (5%)	Compliant

The design of the proposed crossover generally complies with AS2890.1 requirements; however, the following aspect of the design has been resolved with an alternative solution:

5.2.1 Pedestrian Visibility Splay

It is acknowledged that the pedestrian visibility splay for exiting vehicles at the building alignment is compromised as a result of the fire exit wall. However, when assessed against the comparative, minimum requirements for a 4.25m wide verge and 6.1m wide ramp (wall to wall) in accordance with AS2890.1 only a small portion of the visibility splay is impeded, as illustrated in Figure 5.2 below.

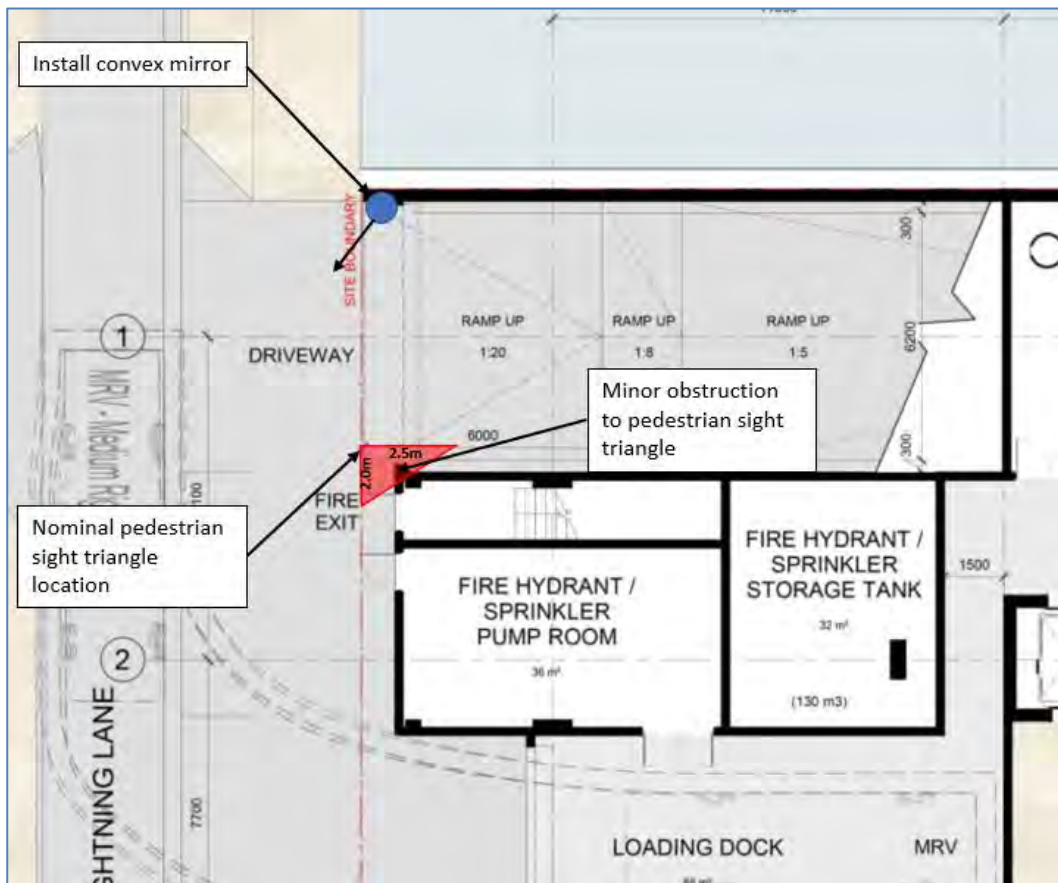


Figure 5.2: Review of Pedestrian Visibility

To ensure pedestrian safety is adequately addressed it is proposed that a convex mirror will be installed on the northern wall to enhance driver to pedestrian visibility (and vice versa). It is proposed that the convex mirror will be supplemented with “Watch for Pedestrians” signage installed at the top of the roller door to notify exiting drivers of the potential for pedestrians walking along Lightning Lane. This treatment is consistent with what is provided at other developments at CBD locations and exceeds that provided at the access to Lot 120 (on Lightning Lane) previously accepted by EDQ.

5.3 Summary

Overall, the location and design of the access arrangements for the proposed development are considered acceptable.

6 Service Vehicle Arrangements

The PDA development Scheme does not specify specific servicing requirements. Consequently, SCC's PSP has therefore been referred to as a guide.

6.1 Requirements

6.1.1 General servicing

Table 9.4.8.3.5 of the SCC's PSP dictates that the following service vehicle bays should be provided for a commercial development with GFA between 10,000m² and 14,999m².

- 4 x VAN bays (5.4m x 3.0m & 2.3m clear height)
- 2 x Small Rigid Vehicle (SRV) bays (7.0m x 3.5m & 3.5m clear height)
- 1 x MRV bay (9.0m x 3.5m & 4.5m clear height)

And the following service vehicle bays should be provided for a retail development with GFA between 200m² and 599m².

- 1 x VAN bays (5.4m x 3.0m & 2.3m clear height)
- 1 x MRV bays (9.0m x 3.5m & 4.5m clear height)

6.1.2 Refuse Collection

Waste collection is proposed to generally occur via the Automated Waste Collection System (AWCS), which transports waste and recycling via underground pipes and infrastructure. However, it is noted that some waste and recycling cannot be accommodate by the AWCS and provision for a Waste Collection Vehicle (WCV) should be provided for on-site. As per the requirements outlined in the PWIS, provision should be made for an 8.8m MRV sized WCW.

6.2 Proposed Provisions

6.2.1 Service Bay Provisions

As illustrated on the development plans included in Appendix A, it is proposed that a single MRV bay will be provided within the loading dock provided at ground level. A 4.0m clear height is provided to the loading dock.

Number of bays

Given the constraints of the site and to limit the frequency of heavy vehicle movement throughout the PDA a single MRV bay has been proposed. This is similar with the provisions accepted by EDQ at Lot 120.

It is intended that the operation of the loading dock will be managed by on-site management or through an online system such as mobileDOCK, to manage service vehicle access and arrival times. Application of such a

system would assist the efficient servicing of the development, ensure correct vehicle size and manage potential conflicts.

It is expected that courier and small parcel deliveries via VANs will occur on-street in the event that the loading dock is occupied as indicated by on-site management.

Height clearance

With respect to service vehicle height clearances, TTM have previously researched the dimensions of delivery vehicles which represent typical MRV's (approximately 8.5m in length in the upper end of the MRV range), as well as a range of storage unit assemblies. The results have found that while the height of vehicles can vary based on type of storage unit assembled on the truck by various operators, the highest combination of truck body height plus storage unit height was 3.676m. TTM's experience that delivery companies in urban areas typically use vehicles requiring less than 3.8m vertical height clearance as it is common for developments of this nature not to have full 4.5m vertical height clearance.

With respect to waste collection, it is noted the approved traffic report prepared by MRCagney for the Holiday Inn Express Hotel that *"The Maroochydore City Centre PDA area will employ an automated waste collection system (AWCS), which transports waste and recycling using underground vacuum pipes, eliminating the requirements for typical on-site refuse collection. In the event that system maintenance or malfunction requires servicing of the site, access for a medium rigid truck (Austroads MRV 8.8m length body, with a **reduced height clearance requirement of 3.5m**) would need to be catered for as per the requirements of the Sunshine Coast Regional Council Prescribed Waste Infrastructure Standards (No 3) 2019"*.

To ensure vehicles with clear height greater than 4.0m do not attempt to enter the building, appropriate warning signage will be provided on the outside of the building prior to the entrance of the loading dock. As service vehicles are expected to enter the site in a forward motion it is expected that all drivers will be aware of the height restrictions within the loading dock.

6.2.2 Service Vehicle Manoeuvring

TTM has undertaken a swept path analysis (using Autotrack software) to determine the suitability of the service vehicle arrangements. Drawing No. 21BRT0351-01 included in Appendix B, confirms that the design of the loading dock is adequate to facilitate vehicular entry and exit via by the largest vehicle expected to access the loading dock, an MRV.

Given the constraints of the site, the interaction with Lightning Lane and the restrictions on vehicular access as specified in the Development Scheme, access to and from the loading dock is proposed to occur via forward entry and reverse exit manoeuvre to and from Lightning Lane. This arrangement has been "agreed in principle" with SCC.

To address the reverse out manoeuvre and the potential conflict with pedestrians it is proposed that flashing lights/sirens will be installed on the outside of the entrance to alert pedestrians of a reversing vehicle. This will also be accompanied by 'Watch for Reversing Vehicle' signage.

It is intended that drivers will activate the system prior to exiting to ensure that the warning system is triggered.

The proposed warning system is illustrated in Figure 6.1 below.

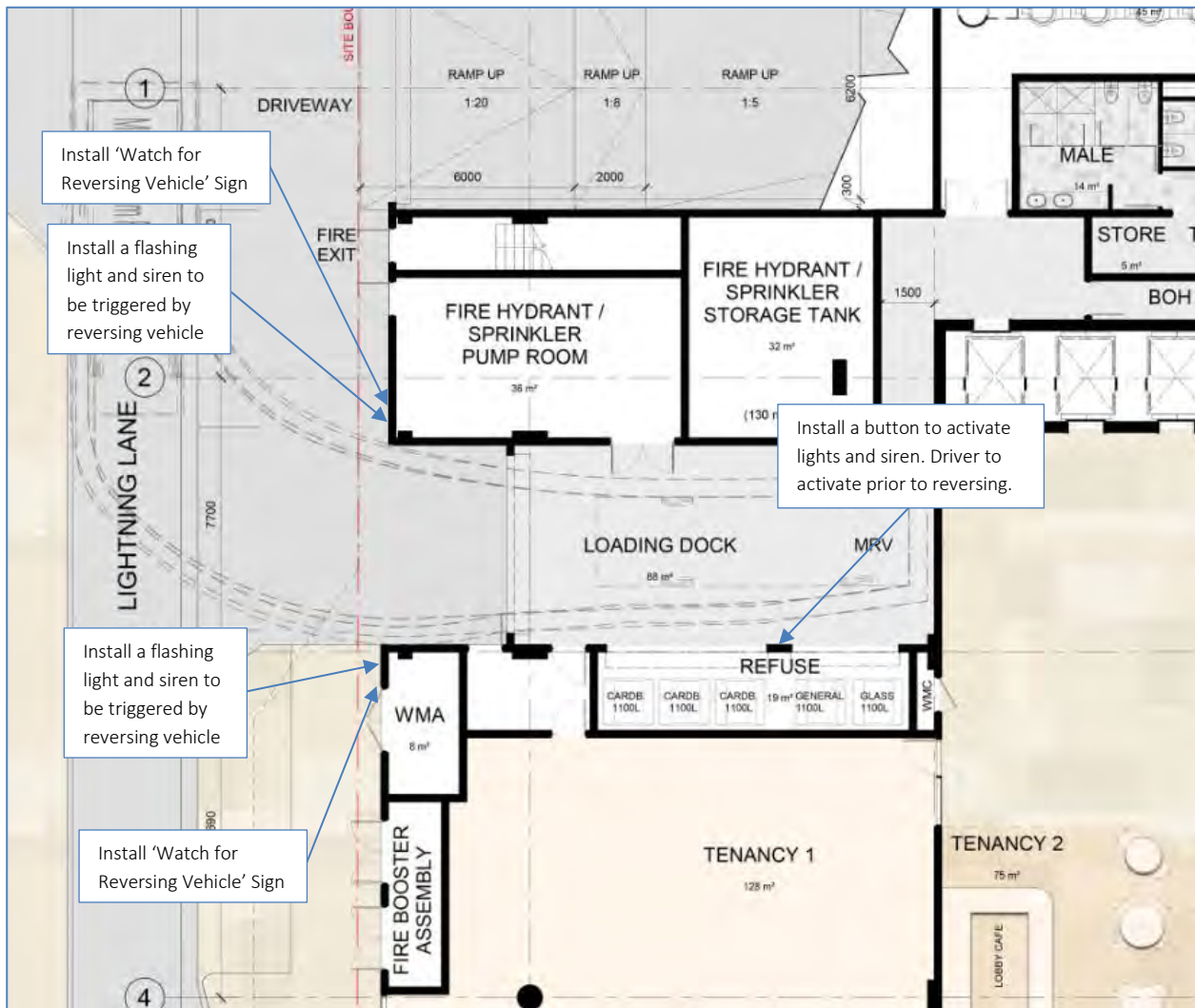


Figure 6.1: Proposed Warning System - Reversing Vehicle

The specifics of the proposed warning system will be addressed during the detailed design stage by the relevant contractors.

Overall, the service vehicle design provisions for the development are considered acceptable and fit-for-purpose.

7 Active Transport

7.1 Public Transport

The proposed development is located within close proximity to several bus stops outside of the PDA area and the future proposed light rail is expected to provide a high level of public transport serviceability to all developments within the PDA.

7.2 Pedestrians

Formal footpaths are provided along the eastern, southern and western frontage of the site.

The closest formal pedestrian crossing facility is located directly adjacent to the subject site at the intersection of South Sea Islander way and First Avenue.

Pedestrian access to the development is provided at the corner of First Avenue and South Sea Islander Way.

7.3 Cyclist Requirements

The approved Maroochydore City Centre PDA, Precinct Plan, Precinct 3 stipulates that bicycle storage facilities should be provided in accordance with Queensland Development Code (QDC) MP4.1 – Sustainable Buildings. Schedule 3 of the QDC provides bicycle parking rates for commercial office buildings as detailed in Table 7.1 below.

Table 7.1: Cyclist provisions

Building Type	Requirement	Extent	Requirement	Provision
Commercial Office Building	1 per 30 occupants	1,100*	37	66
Total			37	66

*Occupant numbers calculated by Knisco Building Certifier .

A bicycle parking area and EOTF is provided at the ground floor level. It is proposed that the 66 bicycle parking spaces will be provided, which adequately satisfies the requirements outlined in the QDC.

It is intended that the design of the bicycle parking area, which take cognisance of the requirements outlined in AS2890.3, will be resolved as part of the detailed design stage.

8 Traffic Impact Assessment

It is understood that SCC traffic models were utilised to assess the PDA development traffic impacts on the surrounding Maroochydore area and the local road network with detailed traffic analysis for the PDA undertaken by Cardno.

The traffic assessment undertaken estimated that zone “C1” (including the proposed development, noted as zone “C1d”) will have a total daily traffic generation of 9,048 vehicles per day (vpd).

The RTA’s Guide to Traffic Generating Developments recommends, for planning purposes, adopting a daily traffic generation of 10vpd/100m² GFA for commercial developments and 60vpd/ 100m² GFA for restaurants. The 10,381m² GFA commercial component and 448m² GFA of restaurant is therefore expected to generate 1,289vpd.

Zone “C1d”, which refers to the proposed development, is approximately 20.7% of the total GFA for the entire “C1” zone, equating to approximately 1,873vpd.

The traffic generation for the proposed development, which occupies the entire of “C1d” zone is approximately 14% of the total (9,048vpd) for the entire “C1” zone.

Therefore, the traffic generation and corresponding impacts determined by the previous traffic analysis undertaken by Cardno represent a “worst case” scenario and are higher than the expected traffic generation of the proposed development. Consequently, no additional traffic analysis is considered necessary.

9 Summary and Conclusions

9.1 Car Parking Arrangements

The parking provisions for the proposed development are considered suitable.

The design of the car parking areas for the proposed development is considered acceptable.

9.2 Access Arrangements

The access arrangements for the proposed development are considered suitable.

9.3 Service Vehicle Arrangements

The service vehicle arrangements are considered adequate to meet the needs of the proposed development.

9.4 Active Transport Facilities

The current and proposed public and active transport infrastructure is of a high standard to service the proposed development.

9.5 Impact on Surrounding Road Network

The traffic generation and corresponding impacts determined by the previous traffic analysis undertaken by Cardno represent a “worst case” scenario and are higher than the expected traffic generation of the proposed development. Consequently, no additional traffic analysis is considered necessary.

9.6 Conclusion

Based on the assessment contained within this report, TTM see no traffic engineering reason why the relevant approvals should not be granted.

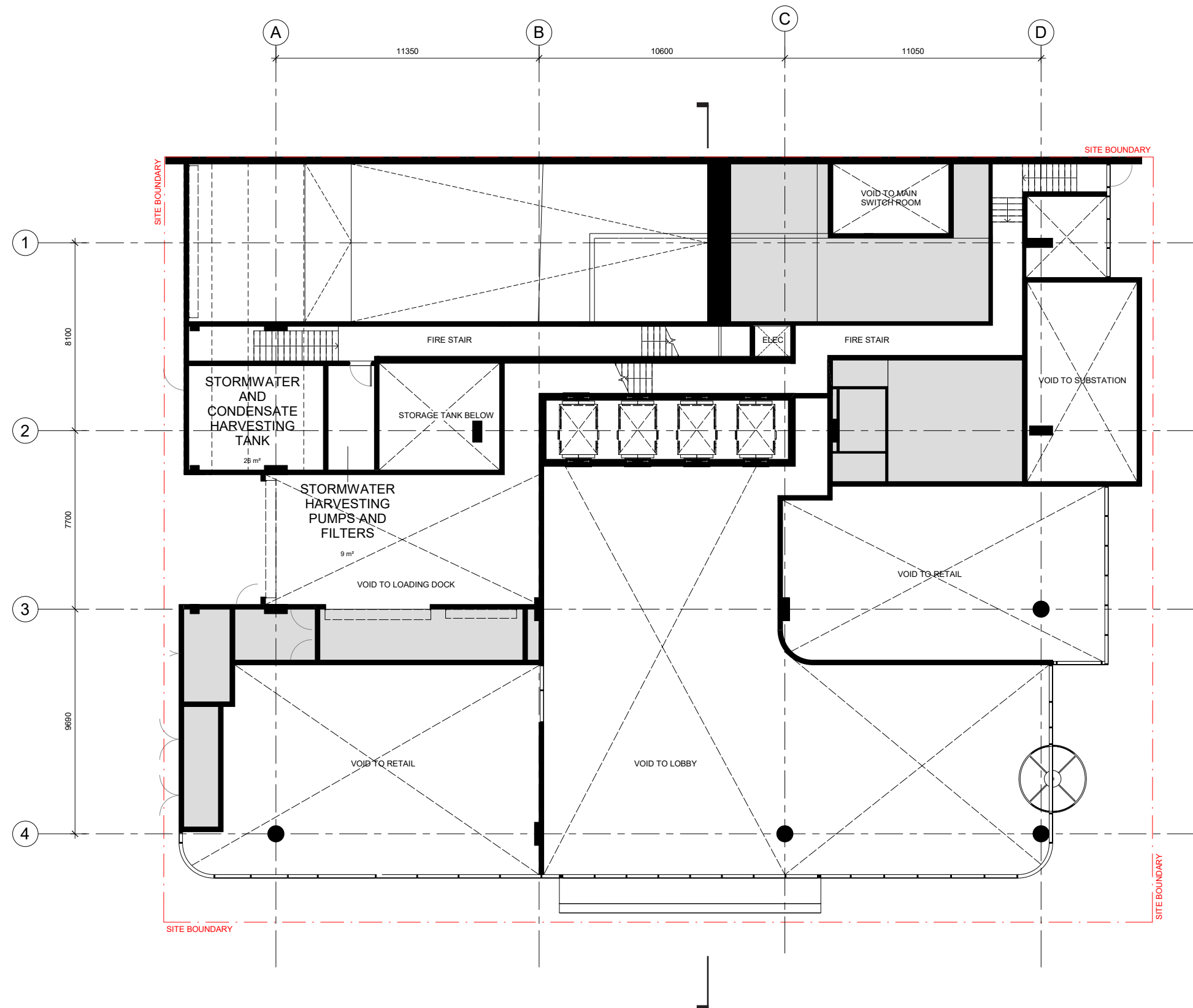


Appendix A Development Plans

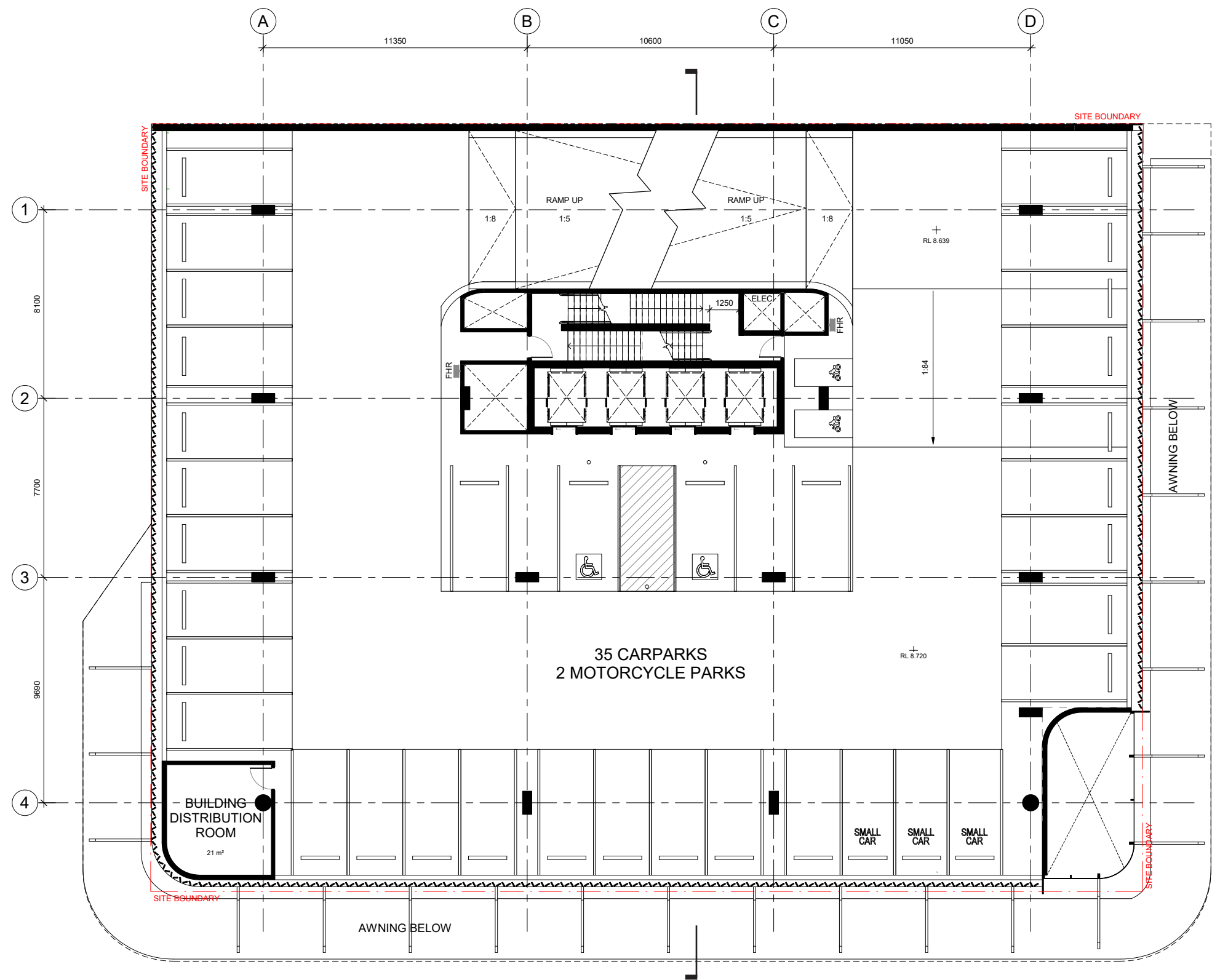
Ground Floor Plan



Mezzanine Level Floor Plan



Level 1 Floor Plan



PARKING SCHEDULE	
CAR PARK TYPE	NUMBER OF SPACES

PODIUM 1	
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 PWD	2
5400x2600 Standard Car	3
35	

PODIUM 2	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	3
36	

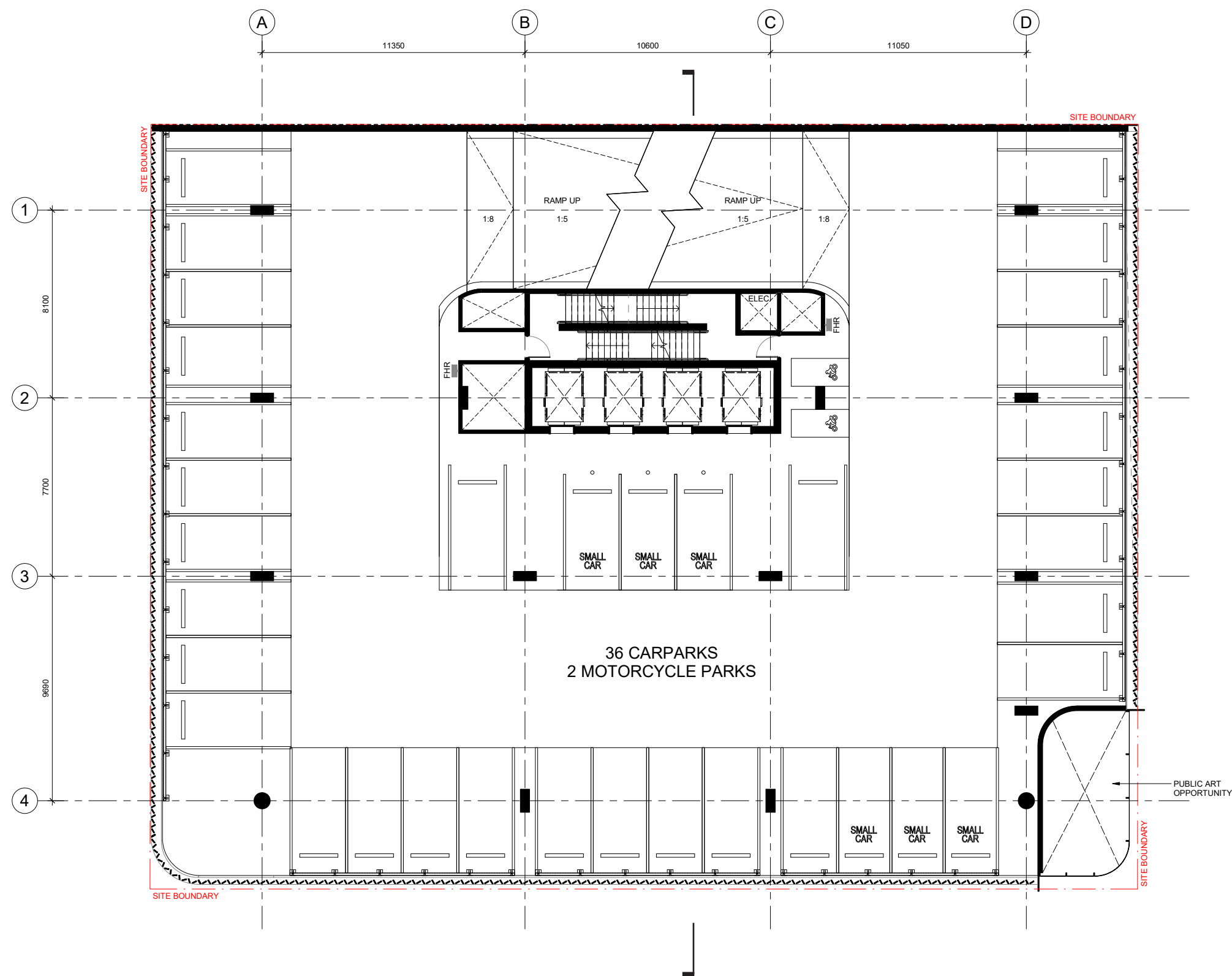
PODIUM 3	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	3
36	

PODIUM 4	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	4
37	

Grand total	144
-------------	-----

Parking Ratio = 1:75

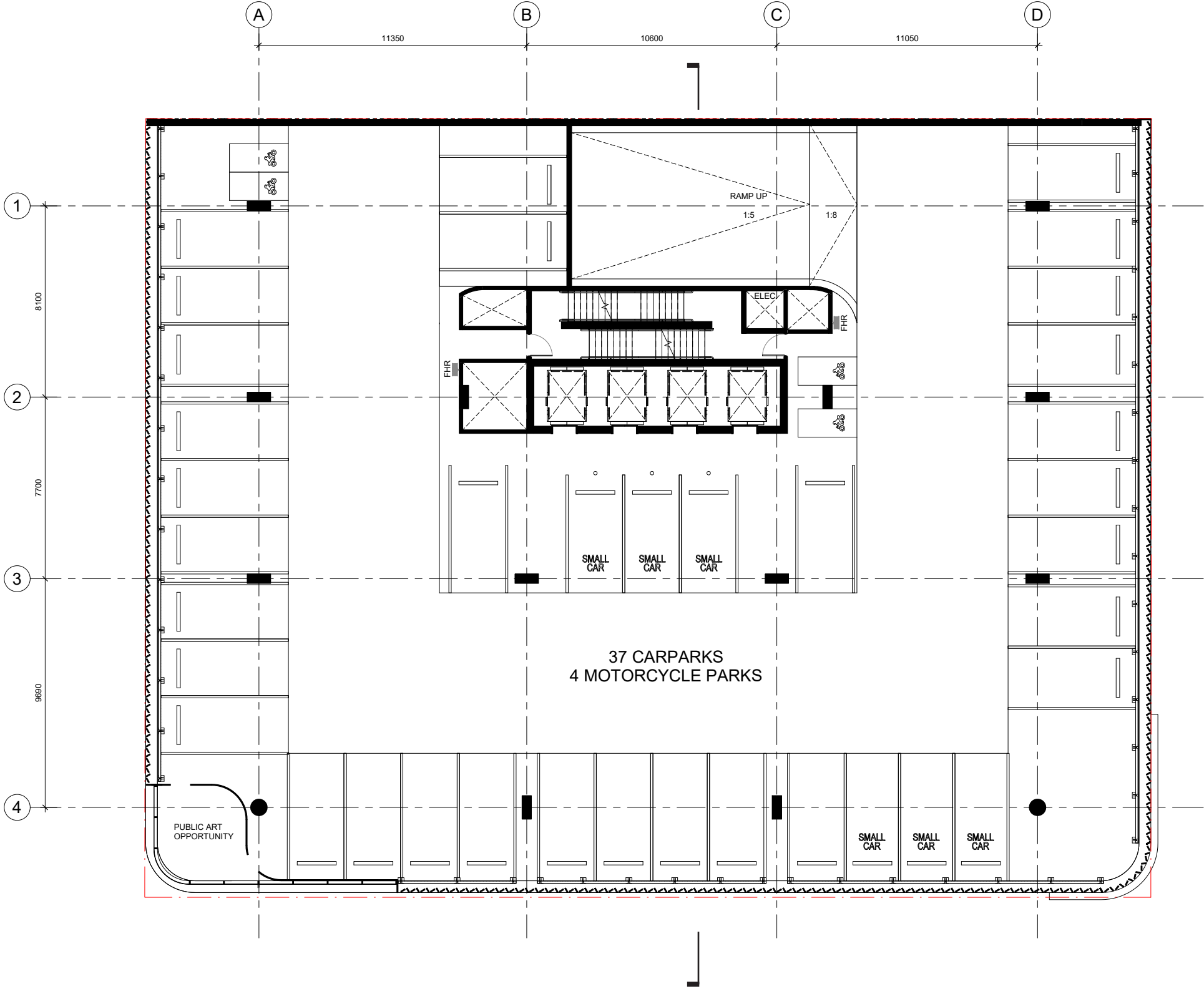
Level 2-3 Floor Plan



PARKING SCHEDULE	
CAR PARK TYPE	NUMBER OF SPACES
PODIUM 1	
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 PWD	2
5400x2600 Standard Car	3
	35
PODIUM 2	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	3
	36
PODIUM 3	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	3
	36
PODIUM 4	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	4
	37
Grand total	144

Parking Ratio = 1:75

Level 4 Floor Plan



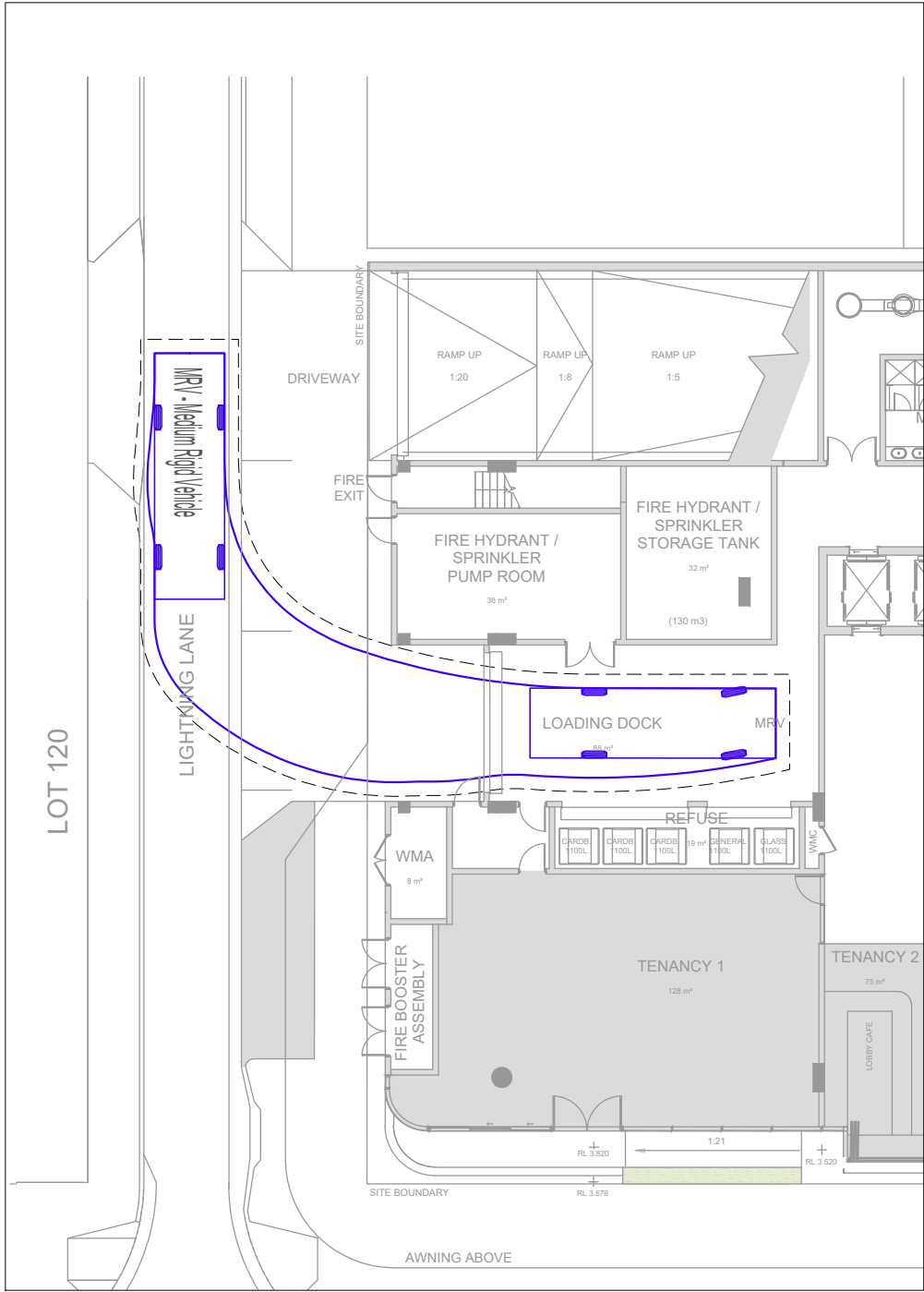
PARKING SCHEDULE	
CAR PARK TYPE	NUMBER OF SPACES
PODIUM 1	
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 PWD	2
5400x2600 Standard Car	3
	35
PODIUM 2	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	3
	36
PODIUM 3	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	3
	36
PODIUM 4	
5000x2400 Small Car	3
5400x2300 Small Car	3
5400x2400 Standard Car	27
5400x2600 Standard Car	4
	37
Grand total	144

Parking Ratio = 1:75

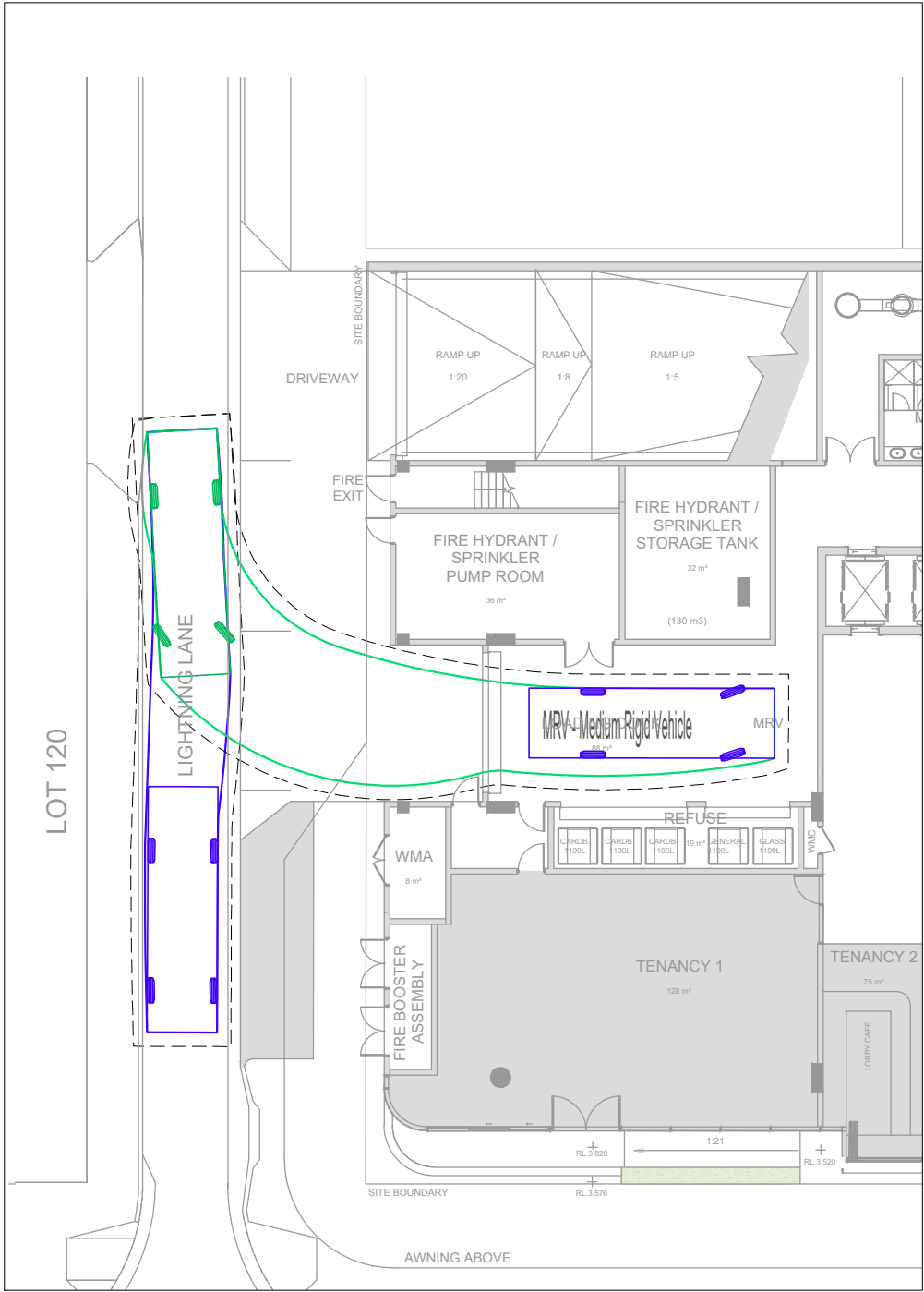


Appendix B Swept Path Drawings

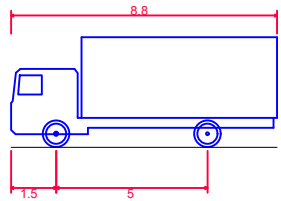
\\ttm\fs1\itm\local\synergy\brnsynergy\projects\2021\21btr0351 lot 71 maroochydhore pda3 - plans\itm\21 11 16\21btr0351_dwg



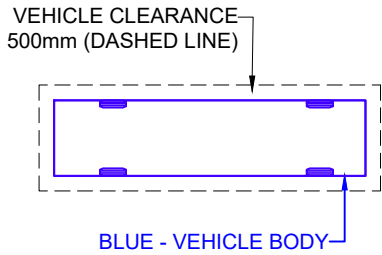
MRV - LOADING BAY ACCESS



MRV - LOADING BAY EGRESS



MRV - Medium Rigid Vehicle
Overall Length 8.800m
Overall Width 2.500m
Overall Body Height 3.633m
Min Body Ground Clearance 0.428m
Track Width 2.500m
Lock-to-lock time 4.00s
Curb to Curb Turning Radius 10.000m



REV.	DATE	AMENDMENT DESCRIPTION	DRAWN	CHECKED	APPROVED
B	16-11-21	BASE PLAN UPDATED	SM	TB	TB
A	20-10-21	ORIGINAL ISSUE	SM	TL	TL

SCALE 0 2.5 5 7.5 10 12.5m SCALE 1:250 AT ORIGINAL SIZE	NORTH 	CLIENT WALKER MAROOCHYDORE DEVELOPMENT PTY LTD
---	-----------	--



TTM CONSULTING PTY LTD
ABN 65 010 868 621
LEVEL 8, 369 Ann Street, BRISBANE, QLD, 4000
P.O. BOX 12015, BRISBANE, QLD, 4003
T: (07) 3327 9500 F: (07) 3327 9501
E: ttmbri@ttmgroup.com.au W: www.ttmgroup.com.au

PROJECT 50 FIRST AVE. MAROOCHYDORE	PROJECT NUMBER 21BRT0351	ORIGINAL SIZE A3
DRAWING TITLE SWEPT PATH ANALYSIS 8.8m MRV - DESIGN VEHICLE	DRAWING NUMBER 21BRT0351-01	REVISION B
	DATE 16 Nov 2021	SHEET 1 OF 1