2 Delmar Parade, Dee Why
Traffic Impact Assessment

Prepared for:

Landmark Group

20 February 2020

The Transport Planning Partnership

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2 Delmar Parade, Dee Why
Traffic Impact Assessment

Client: Landmark Group

Version: V02

Date: 20 February 2020

TTPP Reference: 19494

Quality Record

Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	13/02/20	Oasika Faiz	Ken Hollyoak	Ken Hollyoak	-
V02	20/02/20	Oasika Faiz	Ken Hollyoak	Ken Hollyoak	

Table of Contents

Tables

Figures

APPENDICES

1 Introduction

A Section 4.55 (S4.55) application is to be submitted to Northern Beaches Council (Council) in relation to a proposed mixed-use development at 2 Delmar Parade, Dee Why.

An approved development at the site includes the provision of 71 residential apartments and 348m^2 of retail shops over a basement car park with 109 car spaces, one service vehicle bay and 80 bicycle parking spaces.

This S4.55 proposal includes a provision of 71 residential apartments, 340m^2 of commercial floor and 208m^2 of retail over a basement car park with 109 car spaces, two service vehicle bays and 84 bicycle parking spaces.

The Transport Planning Partnership (TTPP) Pty Ltd has prepared this traffic and parking impact assessment report on behalf of Landmark Group relating to the proposed S4.55 application.

The remainder of the report is set out as follows:

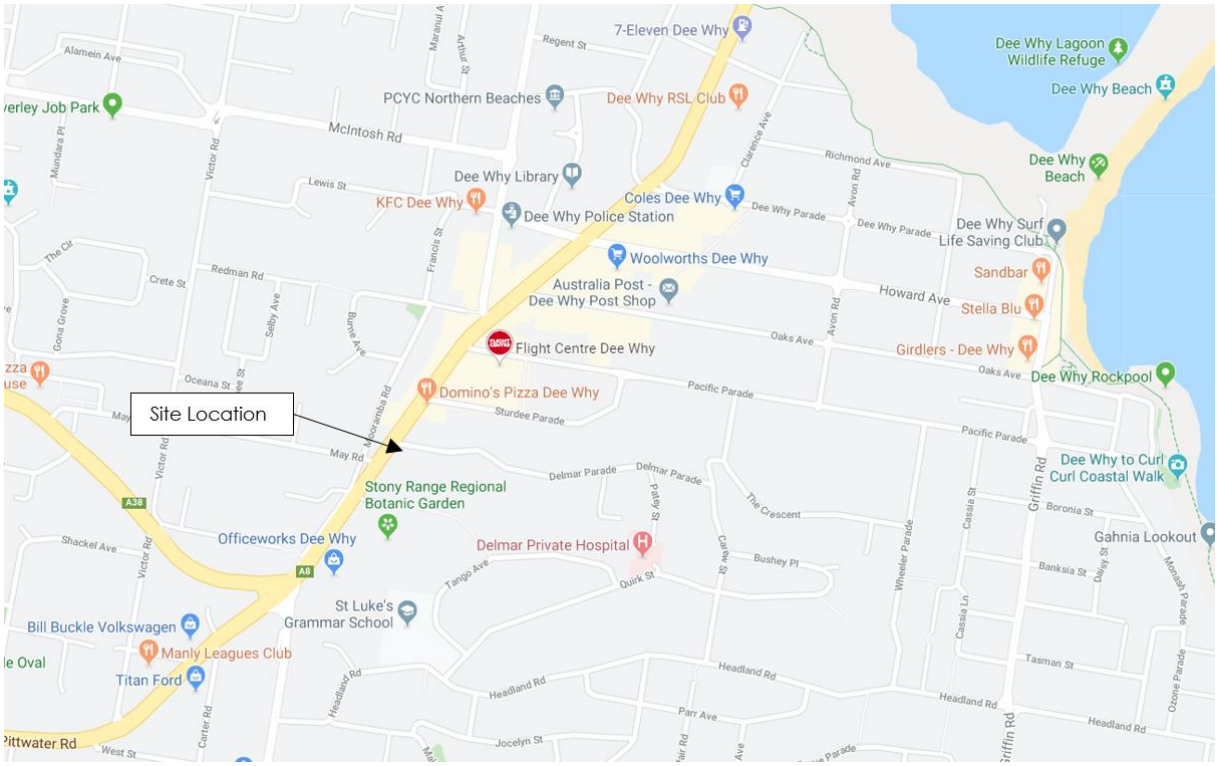
- Chapter 2 discusses the existing conditions including a description of the subject site
- Chapter 3 provides a brief description of the proposed development
- Chapter 4 assesses the proposed on-site parking provision and internal layout
- Chapter 5 examines the traffic generation and its impacts
- Chapter 6 presents the conclusions of the assessment.

2 Existing Conditions

2.1 Site Location

The proposed development site is located at 2 Delmar Parade, Dee Why. It is located within the Dee Why Town Centre as defined in the Warringah Local Environmental Plan and is zoned as a B4 Mixed Use Zone.

Figure 2.1: Site Location



Source: Google Australia

The existing site is occupied by a commercial building with an auto parts store and other commercial/retail tenancies. At grade parking is provided with access off Delmar Parade.

The site bound by Pittwater Road to the west and Delmar Parade to the north.

2.2 Road Network

2.2.1 Pittwater Road

Pittwater Road is a two-way State Road with a dual carriageway (plus auxiliary turning lanes) and bus lane on both sides of the road.

Pittwater Road is the primary route along the Northern Beaches between Mona Vale and Brookvale and extends in a north-south direction.

On street parking is permitted along Pittwater Road outside of the bus lane operating hours which are:

- 6am – 10am Monday to Friday southbound
- 3pm – 7pm Monday to Friday northbound.

The posted speed limit along Pittwater Road is 60km/hr in the vicinity of the site.

2.2.2 Delmar Parade

Delmar Parade is a local road and is aligned in east-west direction along the northern boundary of the site. It is a two-way, two lane road, on an approximately 12m wide carriageway within a 18m road reserve. Kerbside parking is permitted on both sides and is typically time restricted to two hours. It is sign posted with a 50km/h speed limit.

2.3 Public Transport

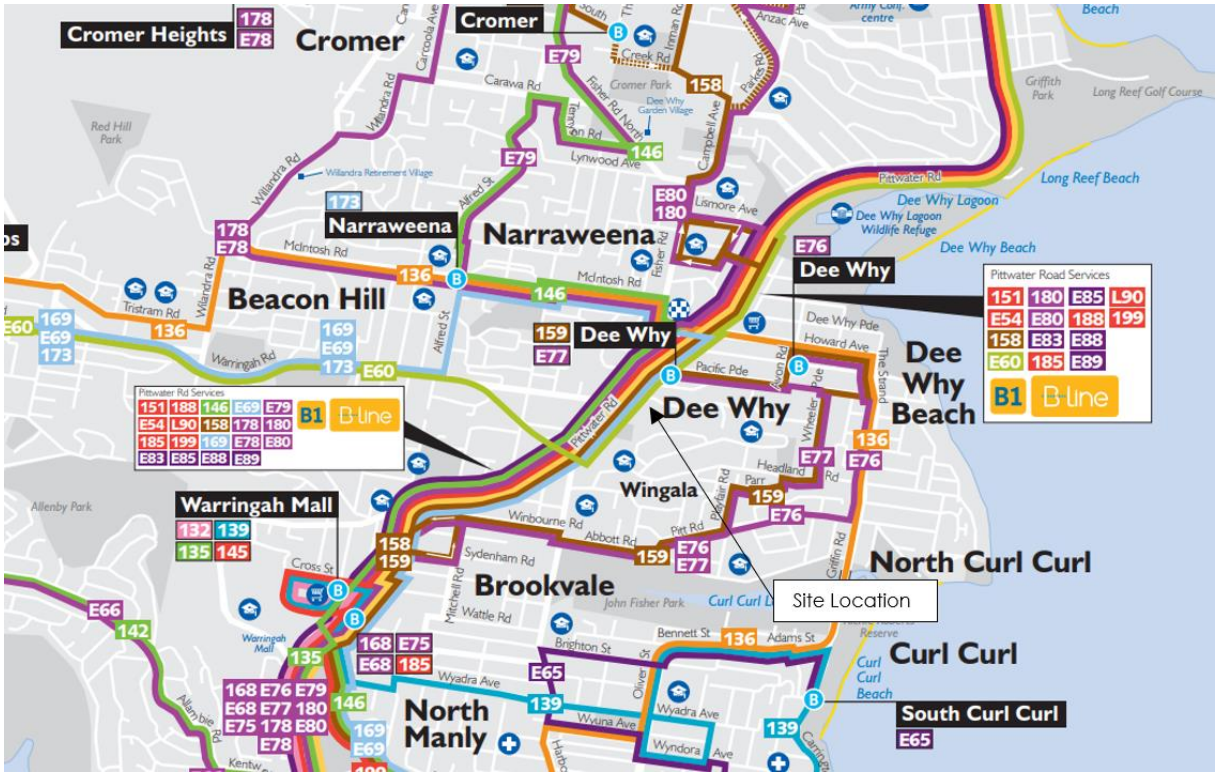
An extensive number of bus services are available in the vicinity of the site. The nearest bus stops are located 190m to the north along Pittwater Road.

Several bus services, including express services, operate from these stops and provide connections to all destinations north and south of Dee Why between Palm Beach and Manly and the Sydney CBD. Services typically operate at 15 to 30-minute intervals during the peak.

In addition to this, the B-Line services the bus stop located 500m north of the site on both sides of Pittwater Road. The B-Line is a frequent express service that provides connections between Mona Vale and Wynyard and operates between 4:30am until 12:30am. Service frequency on the B-line is typically two to 10 minutes.

The bus network surrounding the site is shown in Figure 2.2, with a summary of relevant routes provided in Figure 2.2.

Figure 2.2: Bus Network Map



Source: transportnsw.info, accessed 11/02/20

Table 2.1: Bus Services

Route	Route Description	Site Proximity	Frequency (peak / off peak)
B1	B-Line Mona Vale to City Wynyard	500m	2-7 mins / 10 mins
146	Manly to Wheeler Heights	190m	30 mins / 60 mins
151	Mona Vale to City QVB		10-30 mins (off peak only)
158	Cromer to Manly		1 service (PM) only
169	Manly to City Wynyard via Narraweena		30 mins
178	Cromer Heights to City Wynyard		30 mins
180	Collaroy Plateau to City Wynyard		30 mins
185	Mona Vale to Warringah Mall via Warriewood		30 mins
188	Mona Vale to City Wynyard		30 mins
199	Palm Beach to Manly		15 mins
E54	Mona Vale to Milsons Point (Express Service)		5-15 mins / 30 mins
E60	Chatswood to Mona Vale (Express Service)		20-30 mins (5 services (AM) only)
E78	Cromer Heights to City Wynyard (Express Service)		15 mins
E79	Wheeler Heights to City Wynyard (Express Service)		15 mins (8 services (AM) only)
E80	Collaroy Plateau to City Wynyard (Express Service)		7-15 mins (AM services only)
E83	North Narrabeen to City Wynyard (Express Service)		15-30 mins (AM services only)
E85	Mona Vale to City Wynyard via Warriewood (Express Service)		15-30 mins (AM services only)
E88	North Avalon Beach to City Wynyard (Express Service)		10-25 mins
E89	Avalon Beach to City Wynyard (Express Service)		20 mins (4 services (AM) only)
L90	Palm Beach to City Wynyard (Limited Stops)		60 mins

Source: Transportnsw.info, accessed 11/02/20

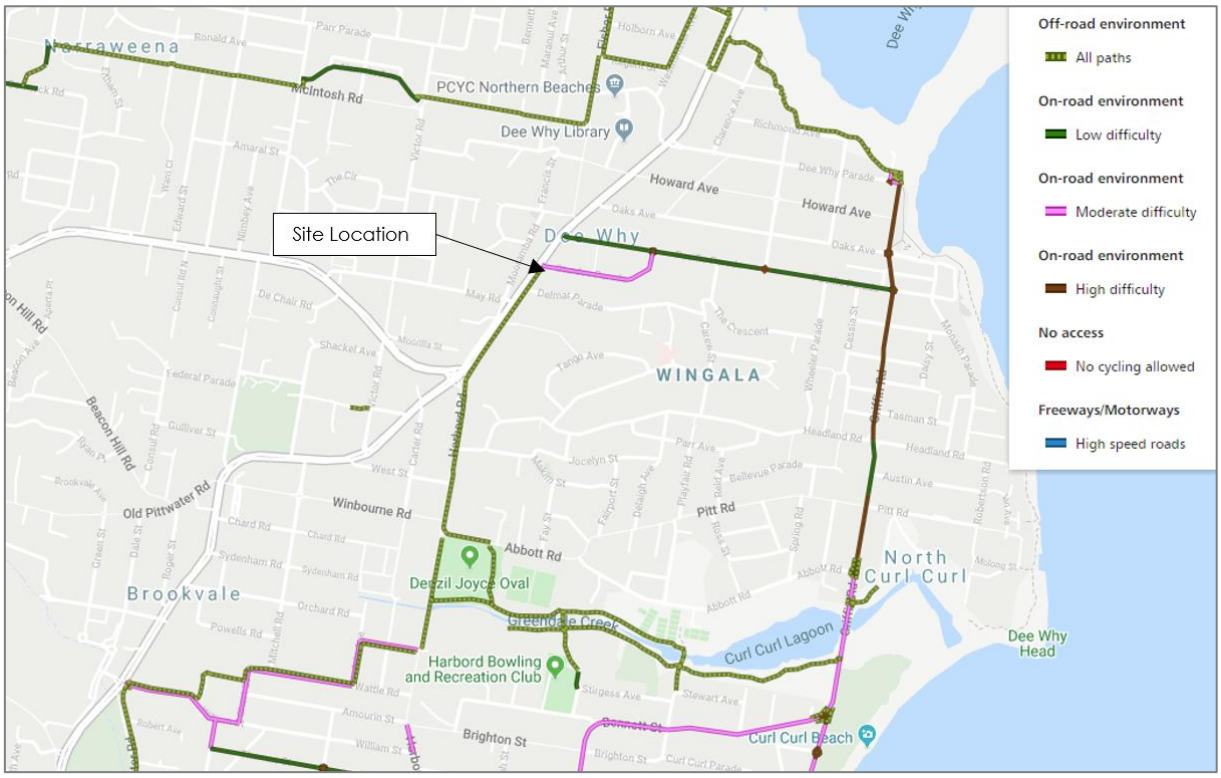
2.4 Pedestrian and Cycling Infrastructure

Pedestrian footpaths are generally provided on all surrounding streets to the subject site.

Formal pedestrian crossings are provided on Pittwater Road at its intersection with Sturdee Parade, approximately 100m north of the site.

The path fronting the subject site, along Pittwater Road is a Shared Path. The cycle routes in the vicinity of the site are illustrated in the Roads and Maritime Services Cycleway Finder as shown in Figure 2.3.

Figure 2.3: Cycling Network



Source: Roads and Maritime Services Cycleway Finder (last viewed 28/01/2020)

3 Proposed Development

3.1 Land Uses

The S4.55 proposal includes a mixed-use development with the comprising the following land uses:

- 71 residential apartments including:
  - 32 one-bedroom units
  - 35 two-bedroom units
  - 4 three-bedroom units.
- 347m^2 commercial (x2 tenancies), and
- 191m^2 retail.

The proposal also includes the provision of a basement car park accommodating 109 car parking spaces, two service vehicle bays and 84 bicycle spaces. The proposed development plans are provided in Appendix A.

3.2 Access and Loading Arrangements

The site access and loading arrangements have generally be maintained as per the approved development. The stamped architectural plans are provided in Appendix B.

Site access is provided off Delmar Parade via a two-way vehicular crossover along the northern boundary of the site (at the location of the existing access). The access accommodates up to a Small Rigid Vehicle (SRV) which would access the loading bay area located on the ground floor, adjacent to the waste collection rooms.

In addition, one courier space has been provided for smaller servicing requirements (e.g. maintenance, small removalists, plumbers etc.).

All vehicles are to enter and exit the site in a forward direction.

Swept path analysis of the proposed car park and access is provided in Appendix C.

4 Parking Assessment

4.1 Car Parking Assessment

Parking requirements for the subject site have been assessed against the Warringah Development Control Plan (DCP) 2011. The parking requirements relevant to the proposed development are summarised in Table 4.1.

Table 4.1: DCP Car Parking Assessment

Parking User	Size	Car Parking Rate	Parking Requirement
Residents			
1-bedroom	32	0.6 spaces per dwelling	19
2-bedroom	35	0.9 spaces per dwelling	32
3-bedroom	4	1.4 spaces per dwelling	6
Visitors	-	1 space per 5 units	14
Sub-Total	**71**		**71**
Commercial	340m²	1 space per 40sqm	9
Retail	208m²	4.2 spaces per 100sqm GLFA	9
Sub-Total	**538m²**		**18**
Total			**89**

Table 4.1 indicates that the proposed development is required to provide 89 car parking spaces.

4.1.1 Residential Parking

The development is to provide 109 car parking spaces including 78 residential spaces, 14 residential visitor spaces and 17 non-residential spaces.

The DCP does not specify the above parking rates as a minimum nor a maximum requirement. However, it is noted that the DCP rates for residential directly match the parking rates recommended by the Apartment Design Guidelines (i.e. from the Roads and Maritime *Guide to Traffic Generating Developments 2002*), which is a minimum requirement.

The parking provision exceeds the DCP requirement for residents by 21 car spaces. It is considered that this level of parking is acceptable with consideration for the minimum requirements of the Apartment Design Guidelines. Additionally, the proposed parking provision of 109 spaces is in line with the approved development.

4.1.2 Non-Residential Parking

The development is to provide 17 non-residential spaces, including one accessible space, that would be shared between the non-residential tenancies (two commercial and one retail tenancy is provided).

The proposed provision has a shortfall of one space compared to the DCP requirement for non-residential parking, which is considered a negligible shortfall.

However, the proposed non-residential parking provision is to be dedicated to employees only, with the exception of the accessible parking space on the ground floor, which visitors would be able to use. The proposed provision is considered acceptable for the following reasons:

- the retail tenancy is part of the wider town centre shopping strip along Pittwater Road therefore, future visitors are also expected to be existing visitors already in the Dee Why town centre
- therefore, an increase of visitors to the town centre is not expected as a result of this development
- on-street parking near the site is generally time restricted with 1 or 2-hour restrictions
- visitors currently utilise surrounding on-street/off-street public car parks to access the town centre shops.

On this basis, no on-street parking impacts are anticipated as a result of the proposal.

4.2 Accessible Parking

Warringah DCP does not provide car parking requirements for accessible spaces. However, it is proposed to provide seven adaptable dwellings. .

The Australian Standard for Adaptable Housing (AS4299) requires at least one accessible car parking space (3.8m wide) to be provided for each adaptable apartment. In addition, accessible car parking spaces provided in accordance with the design requirements set out in AS2890.6:2009 (i.e. 2.4m wide spaces plus 2.4m wide shared area) would also meet the intent of AS4299 in this regard.

The development includes seven accessible spaces for residents and one accessible space for residential visitors.

The DCP does not provide accessible parking requirements for non-residential uses. However, the Building Code of Australia specifies a requirement of one accessible space per 50m^2 for retail and one accessible space per 100m^2 for commercial land uses. With a proposed non-residential parking provision of 17 spaces, one accessible space is considered sufficient with consideration for BCA recommended rates.

4.3 Bicycle Parking

The parking assessment based on the Councils DCP is summarised in Table 4.2.

Table 4.2: Bicycle Parking

Land Use	Size	DCP Bicycle Rate		Bicycle Parking Required	
		Employee/ Resident	Visitor	Employee/ Resident	Visitor
Residential	71 units	1 per dwelling	1 per 12 dwellings	71	6
Retail	191m²	1 per 200m²	1 per 600m²	1	0
Commercial	347m²	1 per 200m²	1 per 750m² over 1,000m²	2	0
Total	**-**	**-**	**-**	**74**	**6**

The proposed development is required 80 bicycle parking spaces including 74 spaces for employees and residents and 6 spaces for residential visitors.

It is proposed to provide 84 secure bicycle parking spaces within basement two. On this basis, the development is compliant with DCP bicycle parking requirements.

4.4 Car Share

In line with the approved development, no car share spaces are proposed.

4.5 Motorcycle Parking

In line with the approved development, no motorcycle spaces are proposed.

4.6 Car Park Layout and Access

The basement car park and associated access arrangements have been reviewed for compliance with Australian Standard design requirements, namely AS2890.1:2004, AS2890.2:2002, AS2890.3:2015 and AS2890.6:2009. The review included assessment of the following:

- access ramp into the basement car park
- car park circulation,
- parking space and aisle dimensions, and
- bicycle parking.

The review indicates the development is compliant with the Australian Standard AS2890.

The access off Delmar Parade is compliant with AS2890.1 with a minimum 3m wide entry and 3m wide exit roadway on either side of the median island/intercom..

The residential and employee car parking spaces are designed to comply with Australian Standard Class 1A parking facilities for residents and employees. Class 1A requires car spaces to have dimensions of 2.4m wide by 5.4m long with an aisle width of 5.8m.

The accessible car spaces have been designed in to include a 2.4m wide shared area adjacent to a 2.4m wide car space which accords with AS2890.6.

Swept path analysis of the proposed car park and access is provided in Appendix C.

4.7 Queueing Assessment

An assessment of the entry queue lengths and queuing provisions was undertaken to ascertain whether there is suitable queuing capacity at the proposed control gate to ensure that would not extend onto the external road system.

Australia Standard, AS2890.1:2004 states that a single control gate at an access with an automatic ticket issue and boom gate would have a capacity of around 300 vehicle per hour (vph) per lane. Its anticipated that residents and staff with a key pass to open the car park doors would have a similar capacity to a boom gate controlled access. This has been adopted as the service rate.

The potential queue lengths arising from a car park control system have been determined using traffic queueing theory based on probability principles for a multi-channel queuing system as described in the Transportation and Traffic Engineering Handbook (ITE), together with the above Australian Standard service rate.

The assessment was undertaken assuming a 6m length for each vehicle within the queuing lane (AS2809.1). Based on Section 5.2, the development would generate up to 39 vehicle trips per hour. It's anticipated that in one direction, this would generate up to 32 vph.

On this basis, the 50th (average) and 98th percentile queues on the access from Delmar Parade, has been calculated as follows:

Table 4.3: Estimated Queues at Entry Boom Gates

Peak Hour Flow (vph)§	No. of Control Gates	Gate Capacity (vph)	Average Queue (Veh)	98th Percentile Queue (Veh)	Available Queue Space (Veh)
PM peak = 39 32 inbound/ 7 outbound	1	300	0.012	1	1

From the analysis, there would be sufficient queue storage space on approach to the car park door to accommodate the 50th (<1 vehicle) and 98th percentile (1 vehicle) queues.

5 Traffic Assessment

5.1 Approved Development

The approved development included a provision of 71 residential apartments and 348m^2 of retail shops.

The traffic study prepared for the approved development (by Transport & Urban Planning Pty Ltd, November 2017) estimated that the proposed development would generate:

- 23 vtph in the morning peak period, and
- 55 vtph in the afternoon peak period.

It was estimated the above traffic generation would result in an increase of 11-13 vtph compared to the existing site.

SIDRA intersection modelling of Pittwater Road and Delmar Parade indicated that the proposed development traffic would have a negligible impact to the surrounding road network.

5.2 Proposed Development

The S4.55 proposal includes a provision of 71 residential apartments, 340m^2 of commercial floor and 208m^2 of retail.

Traffic generation estimates for the proposed development have been sourced from the Roads and Maritime Services' *Guide to Traffic Generating Developments* (RMS Guide) and the updated surveys as detailed in the Technical Direction 2013/04a. The adopted rates match the rates used in the traffic study for the approved development.

The traffic generation assessment for the development is summarised in Table 5.1.

Table 5.1: Proposed Traffic Generation

Land Use	Size	Trip Rate (per unit/ 100m^2)		Trips (vehicle trips per hour)	
		AM	PM	AM	PM
Residential	71 units	0.19	0.15	13	11
Commercial	340m^2	1.6	1.2	5	4
Retail	208m^2	20% of PM trips [1]	12.5	5	26
Total	-	-	-	**23**	**41**

[1] As adopted in the traffic study for the approved development

Based on Table 5.1, the S4.55 proposal would generate a similar volume of traffic to the approved development in the morning peak period and a lower volume of traffic in the afternoon peak period by 14vtph.

Therefore, the proposed S4.55 proposal will not result in any adverse traffic impacts compared to the approved scheme.

6 Conclusion

This traffic and parking impact assessment has been undertaken to assess the traffic implications of the proposed S4.55 modification to a proposed high-density residential development at 2 Delmar Parade, Dee Why. The key findings of the report are presented below.

- The approved development included a provision of 71 residential apartments and 348m^2 of retail shops over a basement car park with 109 car spaces and 80 bicycle spaces.
- The S4.55 proposal includes a provision of 71 residential apartments, 340m^2 of commercial floor and 208m^2 of retail.
- Vehicle access to the subject site would be provided via a single two-way driveway off Delmar Parade.
- Car parking and access has been designed in accordance with AS2890.1:2004. Accessible parking spaces have been designed to satisfy the requirements of AS2890.6:2009.
- The DCP requires the development to provide 89 spaces including 59 resident spaces, 14 residential visitor spaces, 9 commercial spaces and 9 retail spaces.
- The proposed development would provide 109 parking spaces including 78 resident spaces, 14 residential visitor spaces and 17 non-residential spaces. The proposed provision is considered satisfactory for the subject development.
- The DCP also requires the development to provide nine accessible spaces and 80 bicycle parking spaces. The proposed development is to provide nine accessible parking spaces and 84 secure bicycle parking facilities. On this basis, accessible and bicycle parking provisions are compliant with DCP requirements.
- The modified development is to generate 23 and 41 vehicle trips per hour in the morning and evening peaks respectively.
- The S4.55 proposal would generate a similar volume of traffic to the approved development in the morning peak period and a lower volume of traffic in the afternoon peak period by 14vtph.

Overall, there would be no adverse traffic implications resulting from the proposed S4.55 modification.

Appendix A

Proposed Architectural Plans

PRELIMINARY

Revisions			
	P5	23.01.2020	FOR REVIEW
	P6	24.01.2020	FOR REVIEW
	P7	05.02.2020	FOR REVIEW
	P8	12.02.2020	s4.55 Submission review
	P9	19.02.2020	s4.55 Submission

20/02/2020 6:35:33 AM

Project: 2 DELMAR PARADE

2 Delmar Pde
Dee Why, NSW

Drawing: BASEMENT LEVEL 2

Project No.: 219132

Date: 19.02.2020

Author: RIC

Scale: @ A1: 1 : 100

Drawing No.: TP01.08 P9

rothelowman

Brisbane, Melbourne, Sydney
www.rothelowman.com.au

PRELIMINARY

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Project: 2 DELMAR PARADE

2 Delmar Pde
Dee Why, NSW

Drawing: BASEMENT LEVEL 1

Project No.: 219132

Date: 19.02.2020

Author: BR

Scale: @ A1: 1 : 100

Drawing No.: TP01.09 P9

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P9	12.02.2020	s4.55 Submission review
P10	19.02.2020	s4.55 Submission

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Project / **2 DELMAR PARADE** Drawing / **GROUND LEVEL** Project No. / **219132** Date / **19.02.2020** Author / **BR** Scale: @ A1 / **1 : 100** Drawing No. / **TP01.10 P10**

2 Delmar Pde
Dee Why, NSW

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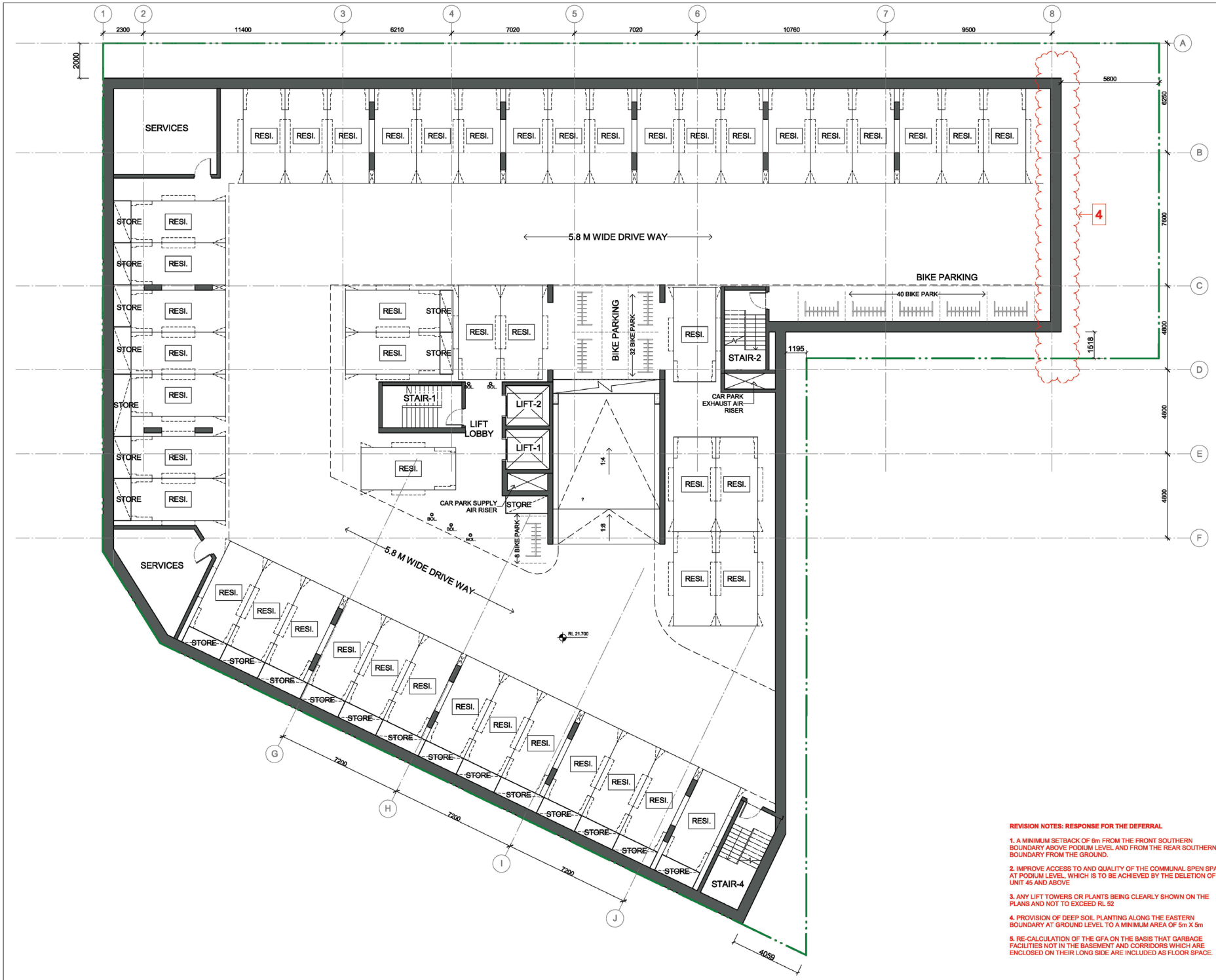
Appendix B

Stamped Architectural Plans



REVISION NOTES: RESPONSE FOR THE DEFERRAL

1. A MINIMUM SETBACK OF 6m FROM THE FRONT SOUTHERN BOUNDARY ABOVE PODIUM LEVEL AND FROM THE REAR SOUTHERN BOUNDARY FROM THE GROUND.

2. IMPROVE ACCESS TO AND QUALITY OF THE COMMUNAL SPEN SPACE AT PODIUM LEVEL, WHICH IS TO BE ACHIEVED BY THE DELETION OF UNIT 45 AND ABOVE

3. ANY LIFT TOWERS OR PLANTS BEING CLEARLY SHOWN ON THE PLANS AND NOT TO EXCEED RL 52

4. PROVISION OF DEEP SOIL PLANTING ALONG THE EASTERN BOUNDARY AT GROUND LEVEL TO A MINIMUM AREA OF 5m X 5m

5. RE-CALCULATION OF THE GFA ON THE BASIS THAT GARBAGE FACILITIES NOT IN THE BASEMENT AND CORRIDORS WHICH ARE ENCLOSED ON THEIR LONG SIDE ARE INCLUDED AS FLOOR SPACE.

DEVELOPMENT APPLICATION

PARKING SCHEDULE	
Level	Count
BASEMENT 2	48
BASEMENT 1	47
GROUND LEVEL	14
Grand total	109

REVISION	DATE	DESCRIPTION	BY
1	01/12/2017	DEVELOPMENT APPLICATION	PM
2	09/07/2018	S34 UPDATE	PM

THIS PLAN TO BE READ IN CONJUNCTION WITH

DA2017/1183

NORTHERN BEACHES COUNCIL

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CLIENT
GANNET DEVELOPMENTS

PROJECT
2 DELMAR PARADE, DEE WHY, NSW

DRAWING TITLE
BASEMENT LEVEL-2

SCALE	DATE	DRAWN	CHECKED
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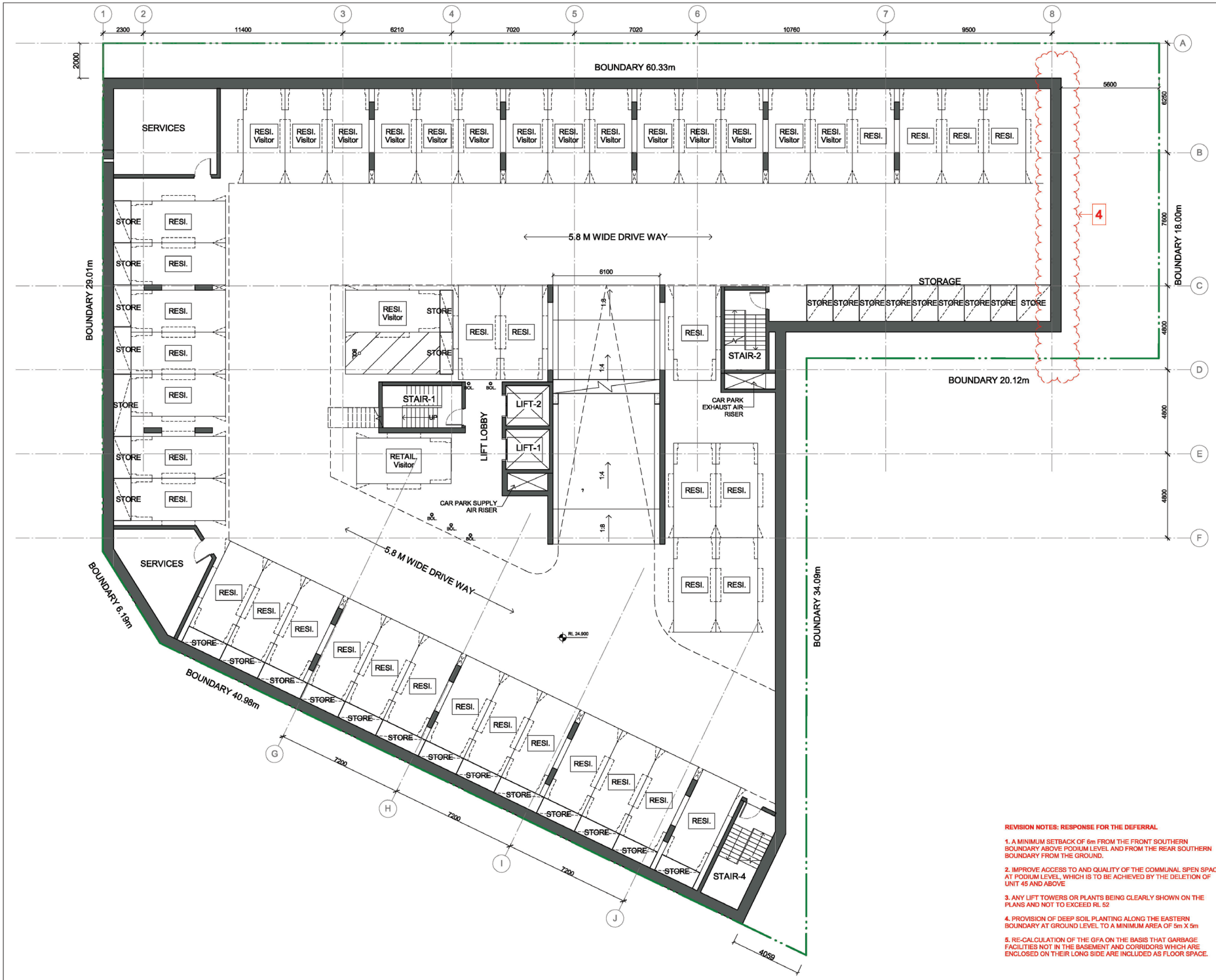
JOB	DRAWING	REVISION
17079	DA2-01	2



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GANNET DEVELOPMENTS

PROJECT
2 DELMAR PARADE, DEE WHY, NSW

DRAWING TITLE
BASEMENT LEVEL-1

SCALE	DATE	DRAWN	CHECKED
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JOB	DRAWING	REVISION
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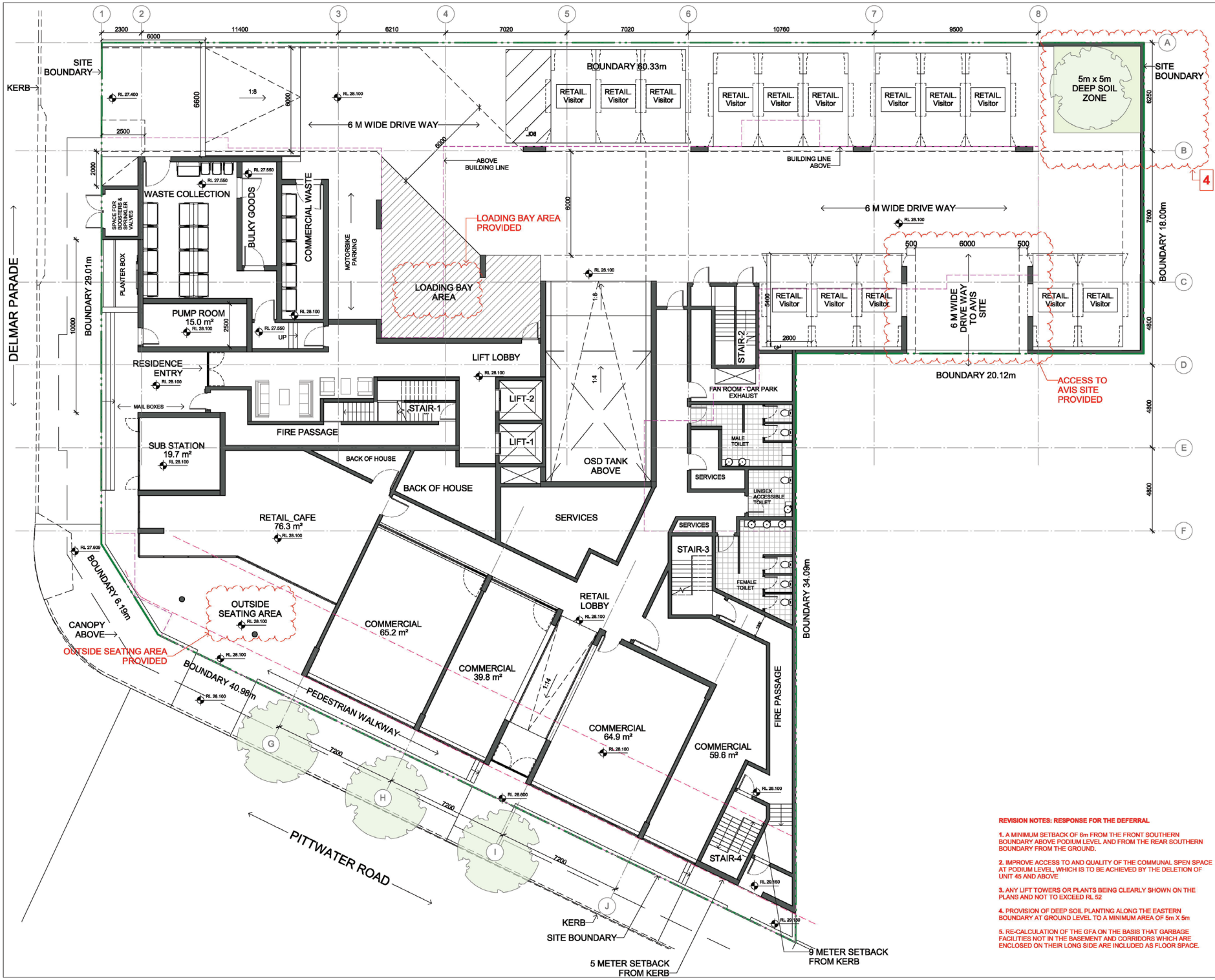

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GANNET DEVELOPMENTS

PROJECT
2 DELMAR PARADE, DEE WHY, NSW

DRAWING TITLE
GROUND LEVEL

SCALE	DATE	DRAWN	CHECKED
1 : 100 @A1	09/07/2018	PM	PD

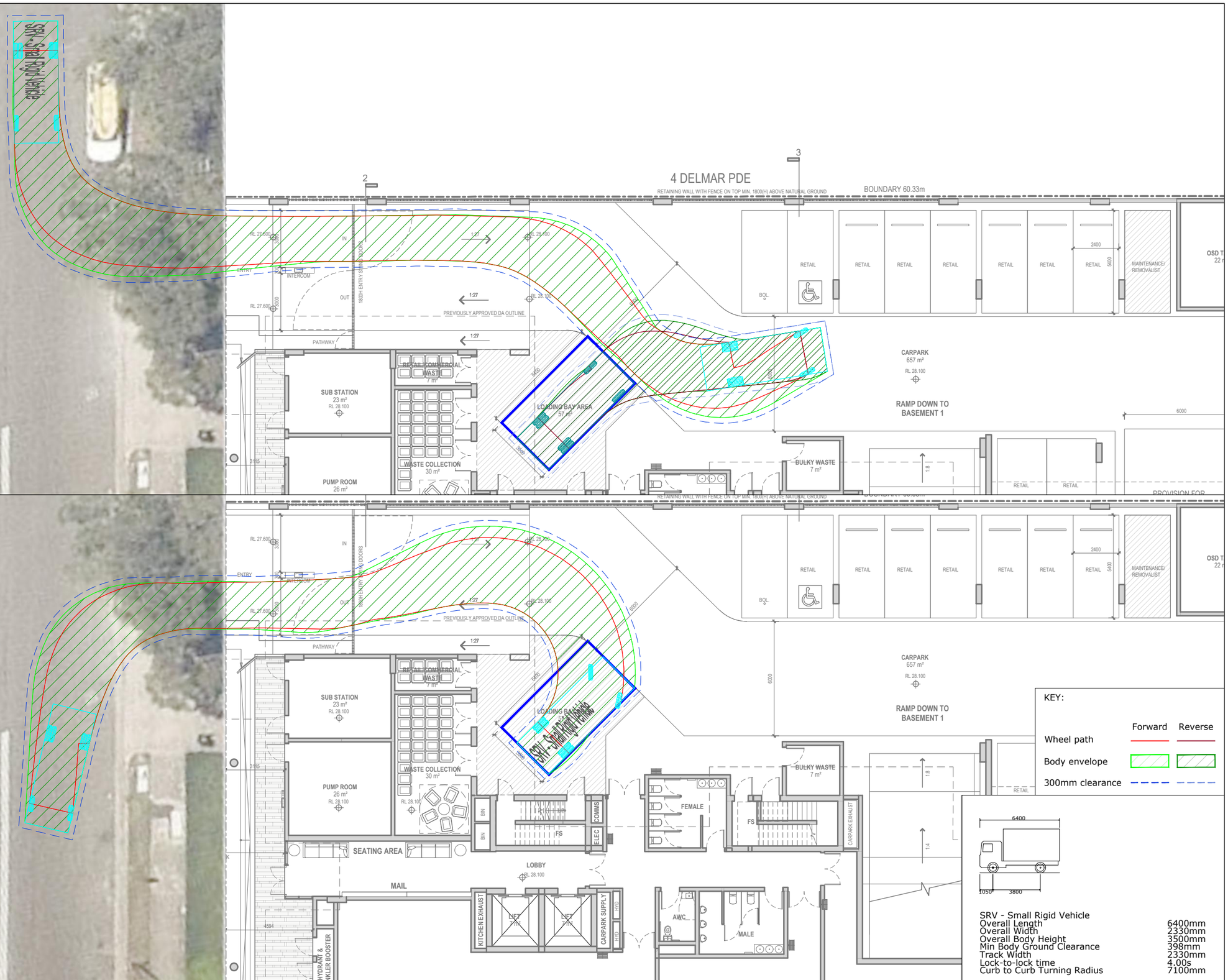
JOB	DRAWING	REVISION
17079	DA2-03	2

Appendix C

Swept Paths

VEHICLE ENTERING

VEHICLE EXITING



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	LM	OF	KH	20/02/20

ttpp transport planning

PROJECT

2 DELMAR PARADE, DEE WHY

TITLE

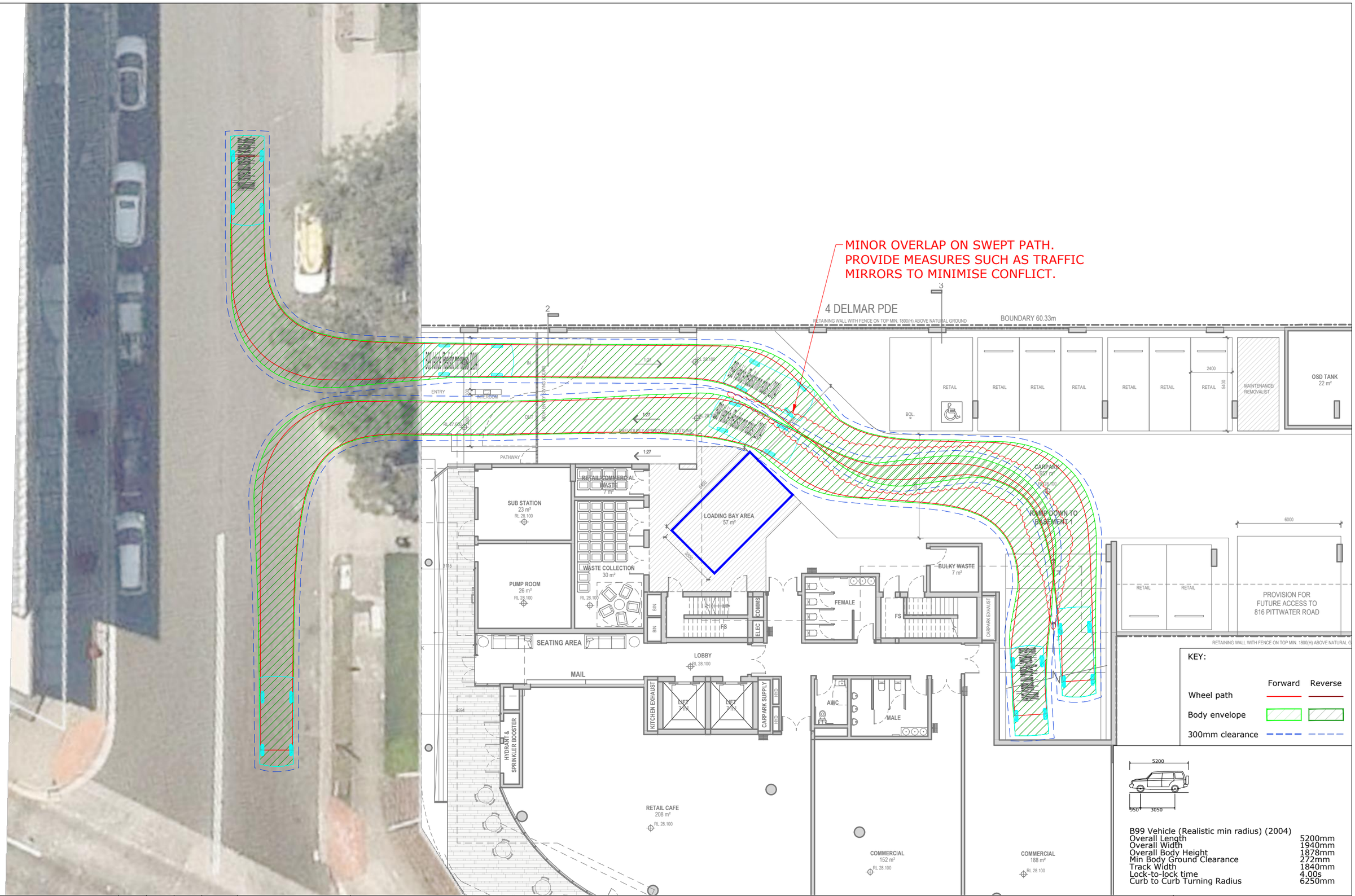
6.4m SMALL RIGID VEHICLE SWEPT PATH
GROUND LEVEL

DWG No. 19494CAD005
FIGURE 1

DATE STAMP 20 FEBRUARY 2020

PROJECT No.	SCALE	REV.
19494	1:200 @A3	A

Filename: 19494CAD005-200220-SWEPT PATH.dwg Date: 20 February 2020 By: Lalaine.malakian



REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	LM	OF	KH	20/02/20

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PROJECT

2 DELMAR PARADE, DEE WHY

TITLE

B99 VEHICLE SWEPT PATH
GROUND LEVEL

DWG No. 19494CAD005 FIGURE 2

DATE STAMP 20 FEBRUARY 2020

PROJECT No.	SCALE	REV.
19494	1:200 @A3	A

Filename: 19494CAD005-200220-SWEPT PATH.dwg Date: 20 February 2020 By: Lafaine mafakan

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