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Issue: D



Proposed Residential Development 5-9 Croydon Street, Lakemba

S4.55 Traffic & Parking Assessment

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1.0 Introduction

This report has been prepared to accompany an S4.55 Development Application to the City of Canterbury Bankstown Council for the construction of 144 residential apartments over 3 buildings. The site will be located at 5-9 Croydon Street, Lakemba.

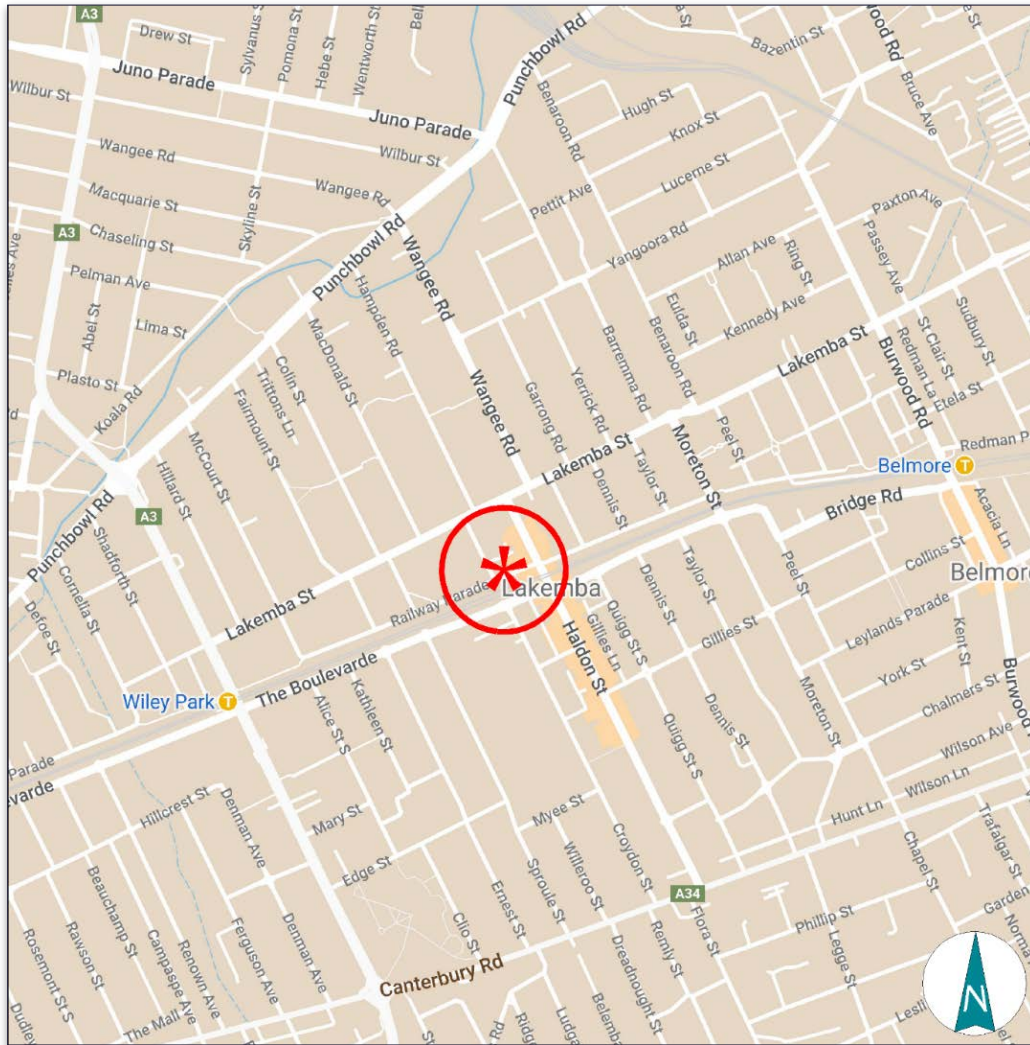


Figure 1 - Site Location

The industrial areas of Lakemba are continuously undergoing upgrades, which aim to enhance the quality of the existing circumstances. Innovative design is encouraged, while the land use conflict between residential and non-residential uses is being reduced. The area is also home to a railway station which aims to serve Lakemba's many residents and businesses.

The purpose of this report is to:

- describe the site, its context and the proposed development scheme
- describe the road network serving the site and the prevailing traffic conditions
- assess the adequacy of the proposed parking provision
- assess the proposed vehicle access arrangements and the potential traffic implications
- assess the suitability of the proposed internal circulation and servicing arrangements

2.0 Approved Development

2.1 Site, Context & Existing Circumstances

The site (Figure 2) is a consolidation of Lot B of DP365853 and Lot B of DP 357959 at 5-9 Croydon Street and occupies an area of 4020 m². The site has frontages of 45m on the eastern boundary on Croydon Street and a further 7m on the southern boundary at Railway Parade

The site has been an unoccupied block of land. The land is located next to more residential, multi storey buildings and commercial buildings.



Figure 2 - Site Boundary

2.2 Approved Development

It has been approved to conduct excavation works for a high-density residential apartment development with associated 2-level basement. The basement level also includes Bicycle parking and storage spaces. The approved development has a parking structure as follows:

- Basement 2: 93 spaces
 - Visitor: 0
 - Accessible: 7
 - Residential: 86
- Basement 1: 70 spaces
 - Visitor: 29
 - Accessible: 8
 - Residential: 33

The approved development will provide 144 residential apartments over 3 buildings as follows:

- 7 Studios
- 12 x 1 Bedroom apartments
- 109 x 2 Bedroom apartments
- 16 x 3 Bedroom apartments

The approved development will contain 3 buildings with heights as follows:

- Building A – 7 Storeys + 1 Storey as Lower Ground
- Building B – 7 Storeys
- Building C – 10 Storeys

2.3 S4.55 Modification

An S4.55 proposal has been developed to change the parking structure and apartment schedule of the development.

The new proposed will provide 144 apartments and the breakdown is as follows:

- 7 x Studio
- 11 x 1 Bedroom apartments
- 110 x 2 Bedroom apartments
- 16 x 3 Bedroom apartments

The new proposed parking layout is as follows:

- Basement 2: 87 spaces
 - Visitor: 0
 - Accessible: 15
 - Residential: 72
- Basement 1: 75 spaces
 - Visitor: 29
 - Accessible: 0
 - Residential: 46

Architectural details of the proposed development are provided on the plans prepared by Team2 Architects and Eloura which are reproduced in part in Appendix A.

3.0 Existing Road Network and Traffic Conditions

3.1 Road Network

The road network servicing the site (Figure 3) comprises:

- King Georges Road - a State Road and arterial route providing a major link between the M5 and Punchbowl Road
- Canterbury Road Road – a State Road and arterial route running east-west connecting Punchbowl with the Inner Western Suburbs of Dulwich Hill and Summer Hill.
- Punchbowl Road – a State Road linking the suburb of Punchbowl to Georges River Road with the suburbs of Enfield and Burwood.
- Wangee Road - a collector road linking Punchbowl Road with Canterbury Road, passing through Lakemba
- The Boulevard – a collector road linking King Georges Road with Lakemba Train Station
- Lakemba Street – a Regional Road which links the suburb with Burwood Road and King Georges Road
- Burwood Road – a Regional Road which links the suburb of Canterbury with Georges River Road

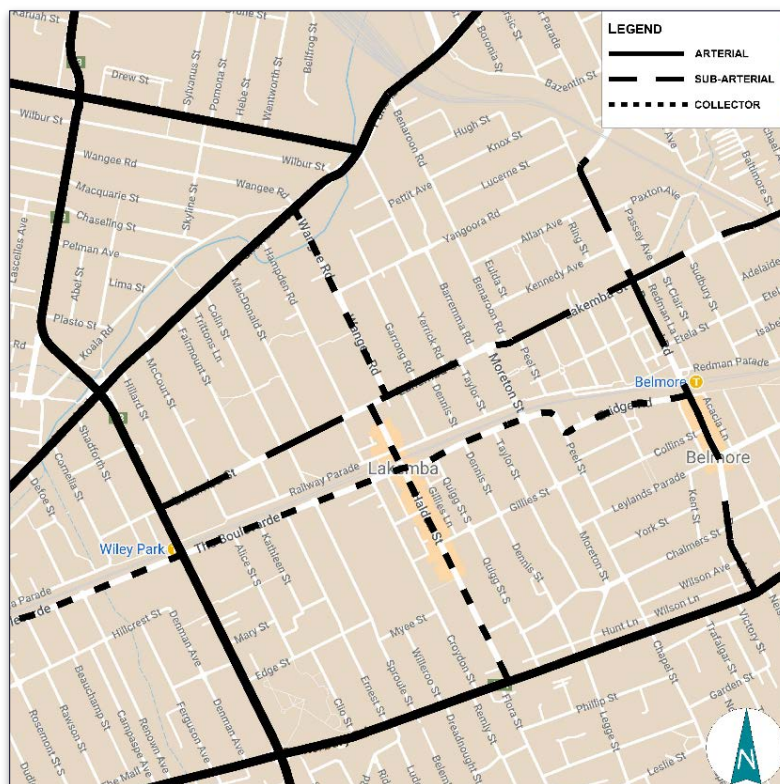


Figure 3 - Road Network

3.2 Traffic Controls

The existing traffic controls on the road network (Figure 4) comprise:

- two traffic signals on Lakemba Street on the corner of Haldon Street and Wangee Road
- the traffic signals at the Boulevard/Haldon Street and another on The Boulevard which services the pedestrians accessing the train station
- the many speed bumps that are placed on Railway Parade, The Boulevard, Lakemba Street and Haldon Street
- left turn only signals on the corner of Railway Parade and Haldon Street. These signs are present on both sides of the road as there is a barrier in the middle of the Street.
- three pedestrian crossings near the site, at the north side of Haldon Street at Railway Parade, west side of Railway parade at Haldon Street and Railway Parade in front of the north entrance to the station.
- Give Way signals on both sides of railway Parade at Haldon Street
- the five roundabouts on The Boulevard

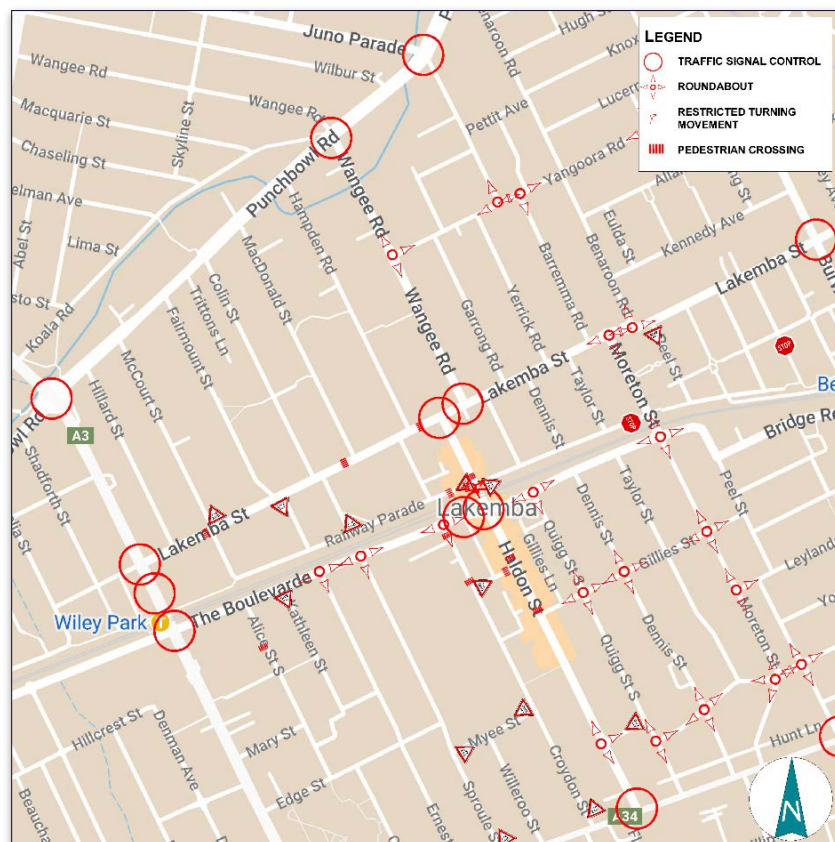


Figure 4 - Traffic Controls

3.3 Traffic Conditions

An indication of traffic conditions on the road system serving the site is provided by TfNSW for the intersection of King George Road and The Boulevarde. Annual Average Daily Traffic data for the intersection was taken in 2021 and only the Northbound trips were surveyed.

	AADT
King George Road, 40m North of The Boulevarde (Northbound)	31,712

Observations of the traffic activity along Croydon Street were shown to be calm and flowing freely.

3.4 Transport Services

3.4.1 Train

Lakemba Train Station is located 170 metres from our site with regular train services that arrive 3-10 minutes apart off peak and 2-9 minutes during peak. Services that stop at this Station include:

- T3 Bankstown Line

3.4.2 Bus

Access to the Bus network is provided by three bus stops near our site:

- Lakemba Station, Railway Pde, Stand C which is 170 metres from the site
- Lakemba Station, Haldon St, Stand B which is 270 metres away
- Lakemba Station, Haldon St, Stand A which is 250 metres from the site.

Details of the available public transport services are provided in Appendix B.

4.0 Parking & Traffic

4.1 Parking

The TfNSW Guide to Traffic Generating Developments outline the following rates for high density residential flat buildings in Metropolitan Sub-Regional Centres.

Development Type	Car Parking Rate
High Density Residential Flat Building (Metropolitan Sub-Regional Centre)	0.6 car space per 1 bedroom dwelling; 0.9 car spaces per 2-bedroom dwellings; 1.4 car spaces per 3 or more-bedroom dwellings; 1 visitor car space per 5 dwellings.

Application of the criteria to the proposed development would indicate the following requirements:

Unit	Car Parking Required
1 Bedroom	11 spaces
2 Bedroom	99 spaces
3 Bedroom	23 spaces
Visitor	29 spaces
Total	162 spaces

It is proposed to provide a total of 118 residential spaces, 29 visitor spaces and 15 accessible spaces. This results in 162 provided parking spaces, and aligns with TfNSW rates. Indication of this criteria to the proposed development would suggest that the proposed parking provision will be satisfactory and will comply with the TfNSW rates.

It can be noted that the development was previously approved with very similar parking provisions of 163 spaces, the proposed S4.55 application only seeks to adjust the parking structure.

The Council's DCP specifies the required bike parking facilities for high density residential developments as 1 space per 10 dwellings.

It is proposed to provide 30 resident bicycle parking spaces in full compliance with the DCP criteria.

4.2 Traffic

TfNSW Development Guidelines specify a peak traffic generation for High residential flat dwellings

	Peak Hour Vehicle Trips
AM Peak	0.19 per unit
PM Peak	0.15 per unit

Application of this criteria to the proposed number of units would indicate the following traffic generation:

	Peak Hour Vehicle Trips
AM Peak	28 vtp/h
PM Peak	22 vtp/h

The high-density residential use anticipates the average peak traffic movement rates from the TfNSW Development Guidelines on a conservative basis. It is assumed that the actual generation rate will be far lower due to the proximity of the site to the Lakemba Railway Station and bus services. Nevertheless, the applied rate results in almost 1 traffic movement per 2 minutes, this additional traffic volume distributed across the local network is not anticipated impact on the existing road operations. As such, there will be no undue implications resulting from the proposal.

5.0 Access, Internal Circulation & Servicing

5.1 Access

The proposed vehicle access arrangements will involve the access driveway which circulates the site via an ingress driveway on the eastern boundary of the site at Croydon Street and an egress driveway on the southern boundary of the site at Railway Parade.

These access arrangements have good sight distances available and complying with the design requirements of AS 2890.1 and will accommodate all vehicles requiring access to the site as indicated in the Appendix C turning path assessment.

5.2 Internal Circulation

The design of the car park, including access driveways, aisles, bays and grades etc. will comply with the requirements of AS2890.1,2 and 6, and there will be quite generous manoeuvring available. Details of the turning path assessment are provided in Appendix C.

The circulation laneway will service the site and parking arrangements, a proposed signage and line marking system has been included in Appendix D.

5.3 Servicing

Refuse will be removed from the ground floor loading bay by a small contract collection vehicle while other small service/delivery vehicles will be able to use the visitor spaces.

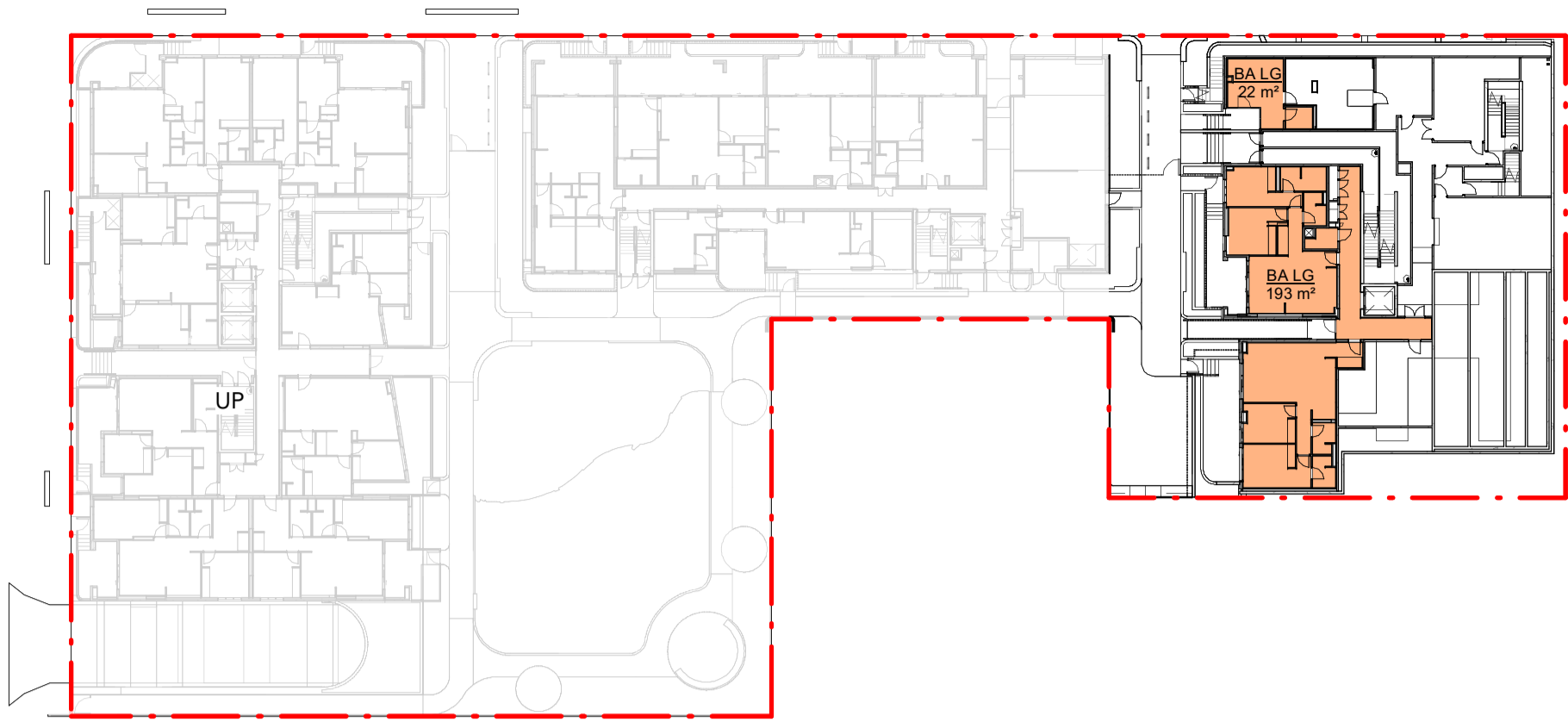
6.0 Conclusion

Assessment of the envisaged traffic circumstances at 5-9 Croydon Street, Lakemba, has concluded that:

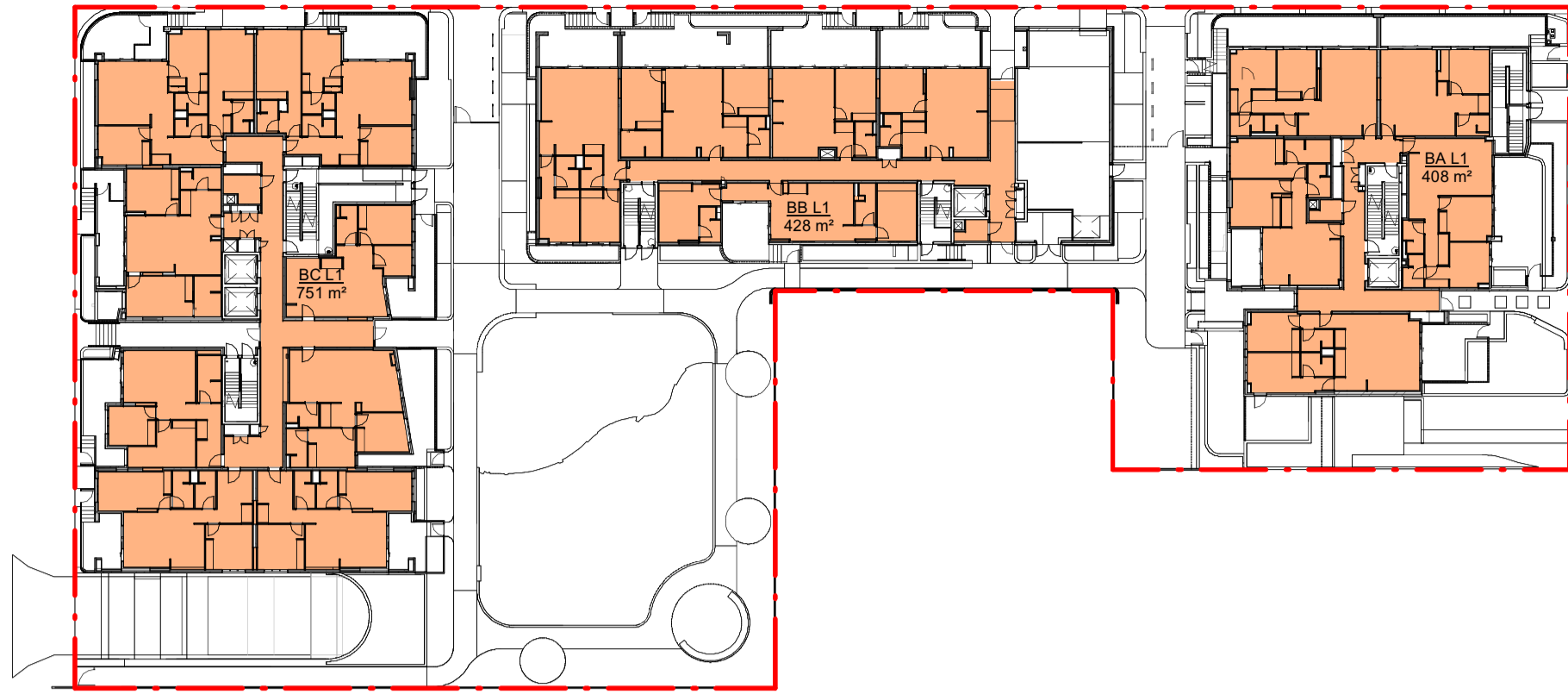
- there will not be any adverse traffic implications
- the proposed car parking provision will be adequate and comply with the TfNSW criteria
- the vehicle access and internal circulation arrangements will be quite suitable and appropriate in compliance with AS2890.1, 2 & 6

Appendix A

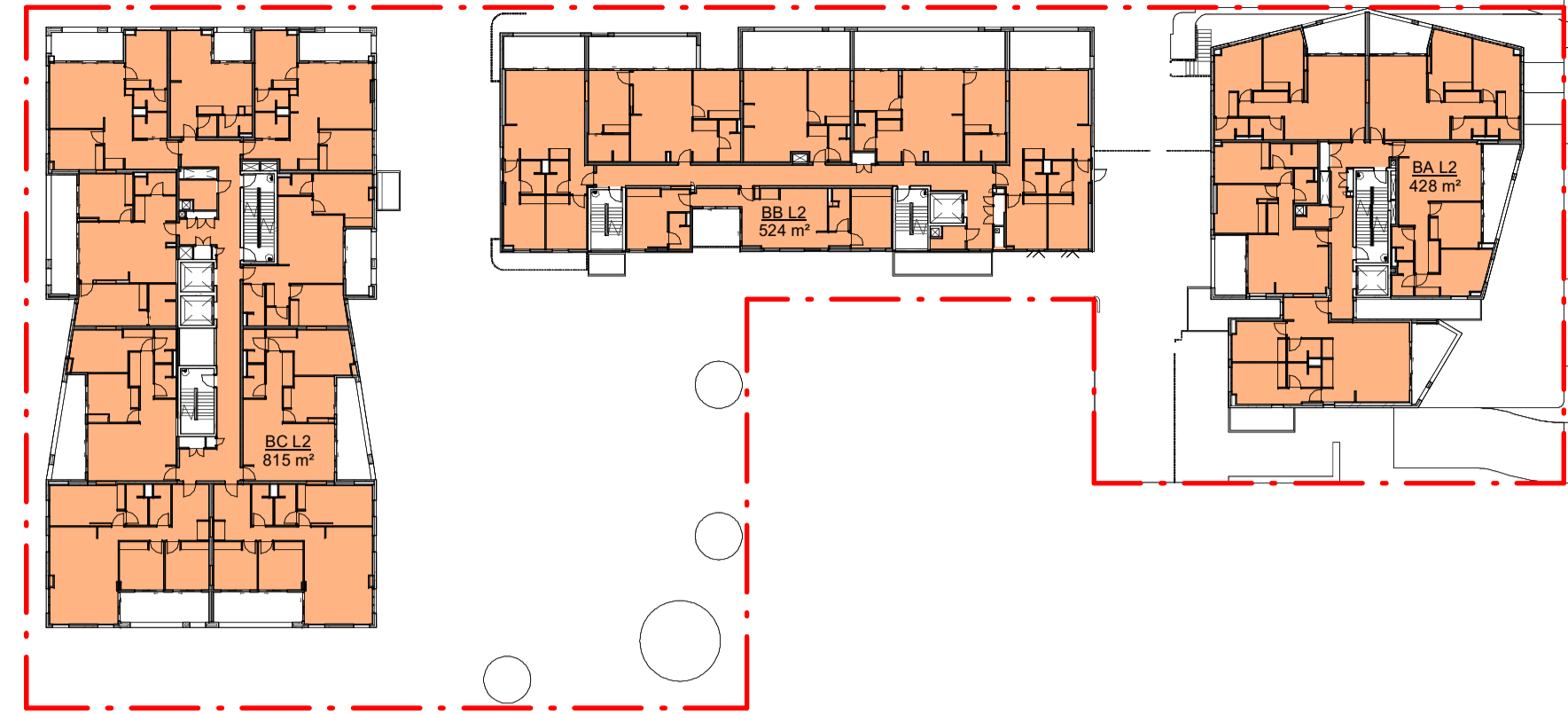
Proposed Plans



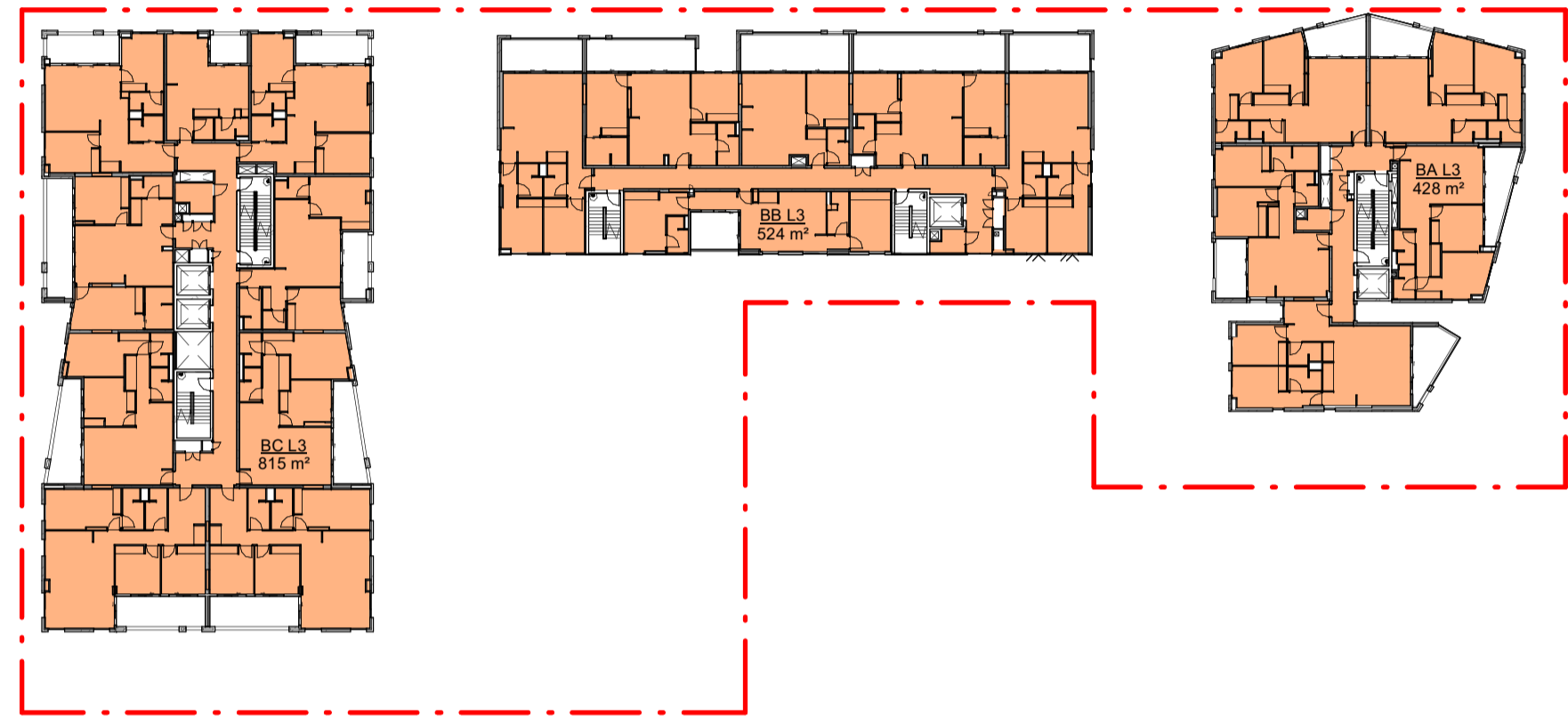
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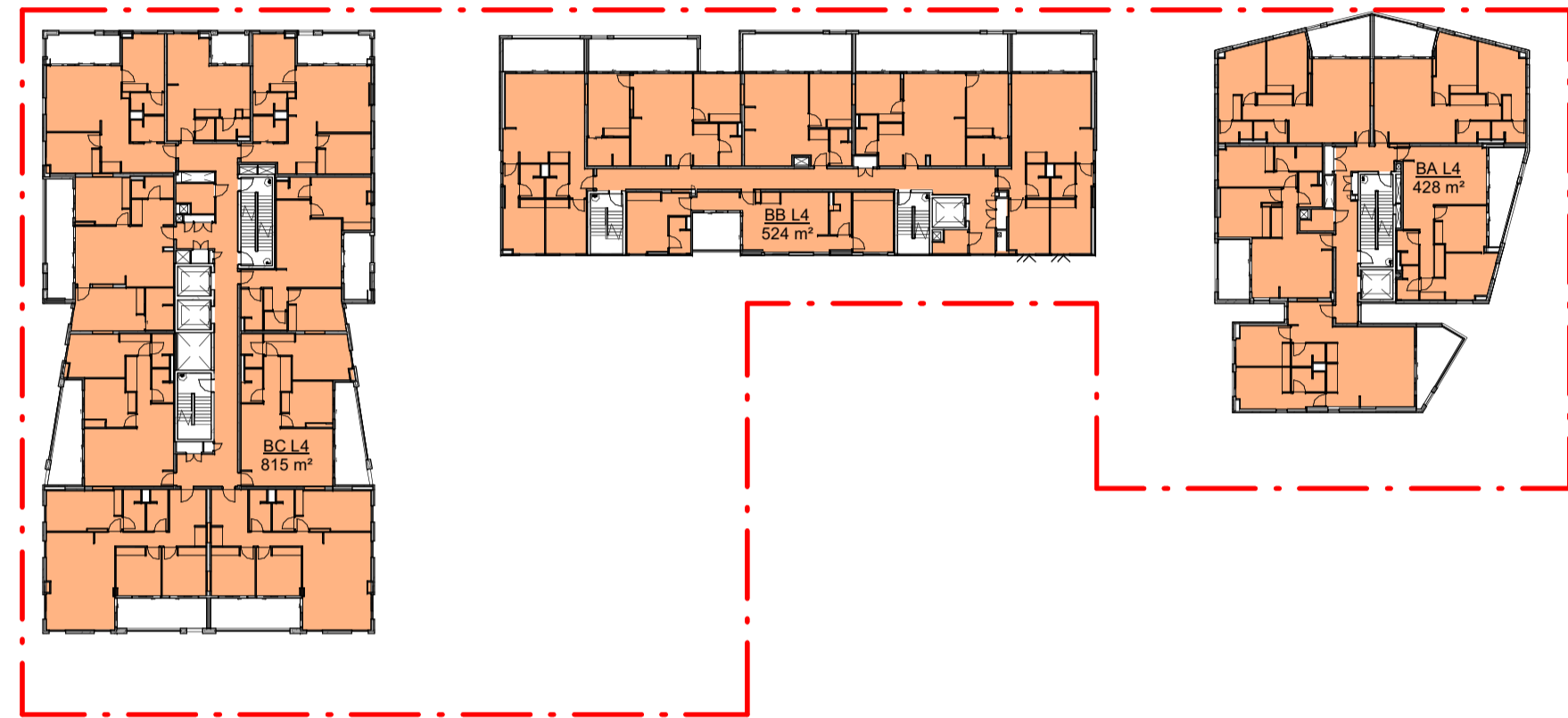
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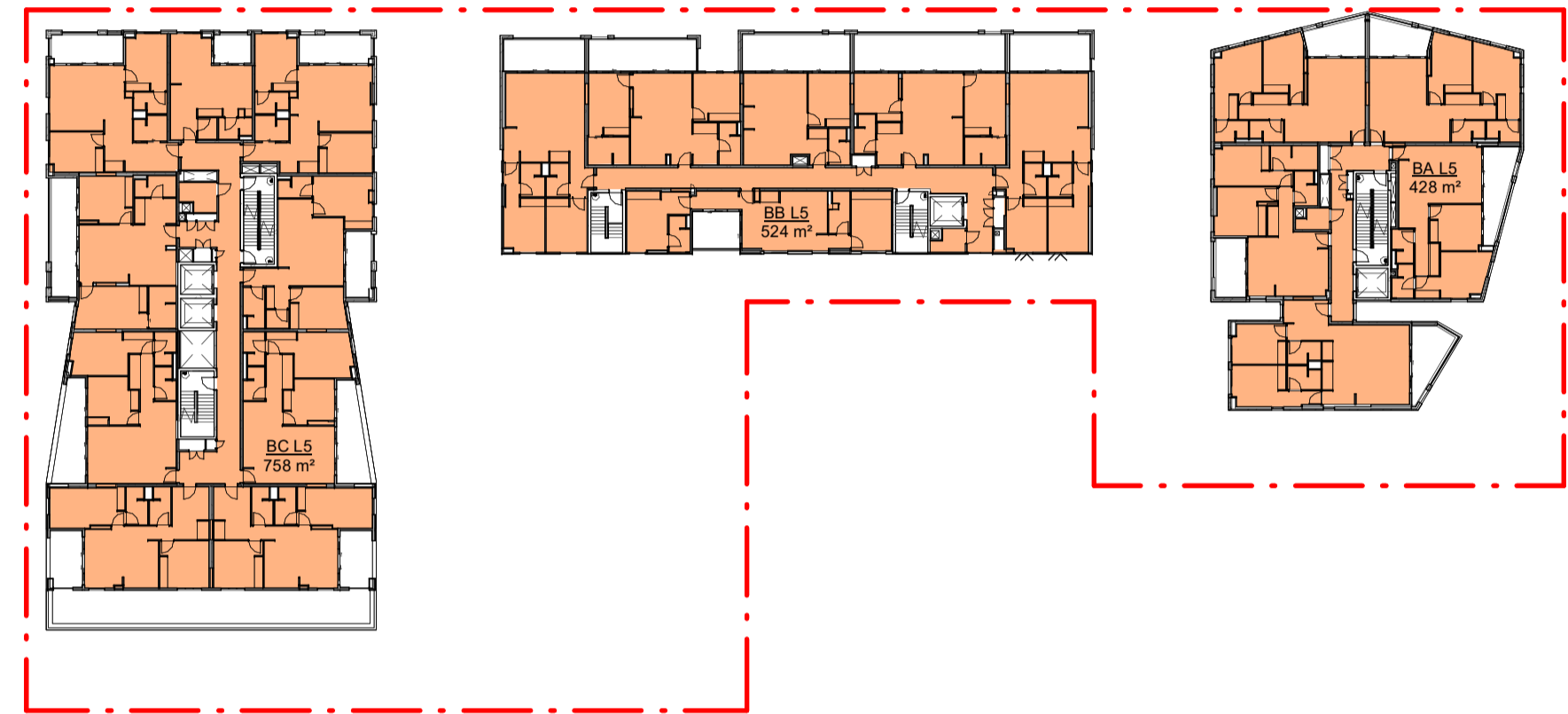
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4 LEVEL 3 - GFA CALCULATION
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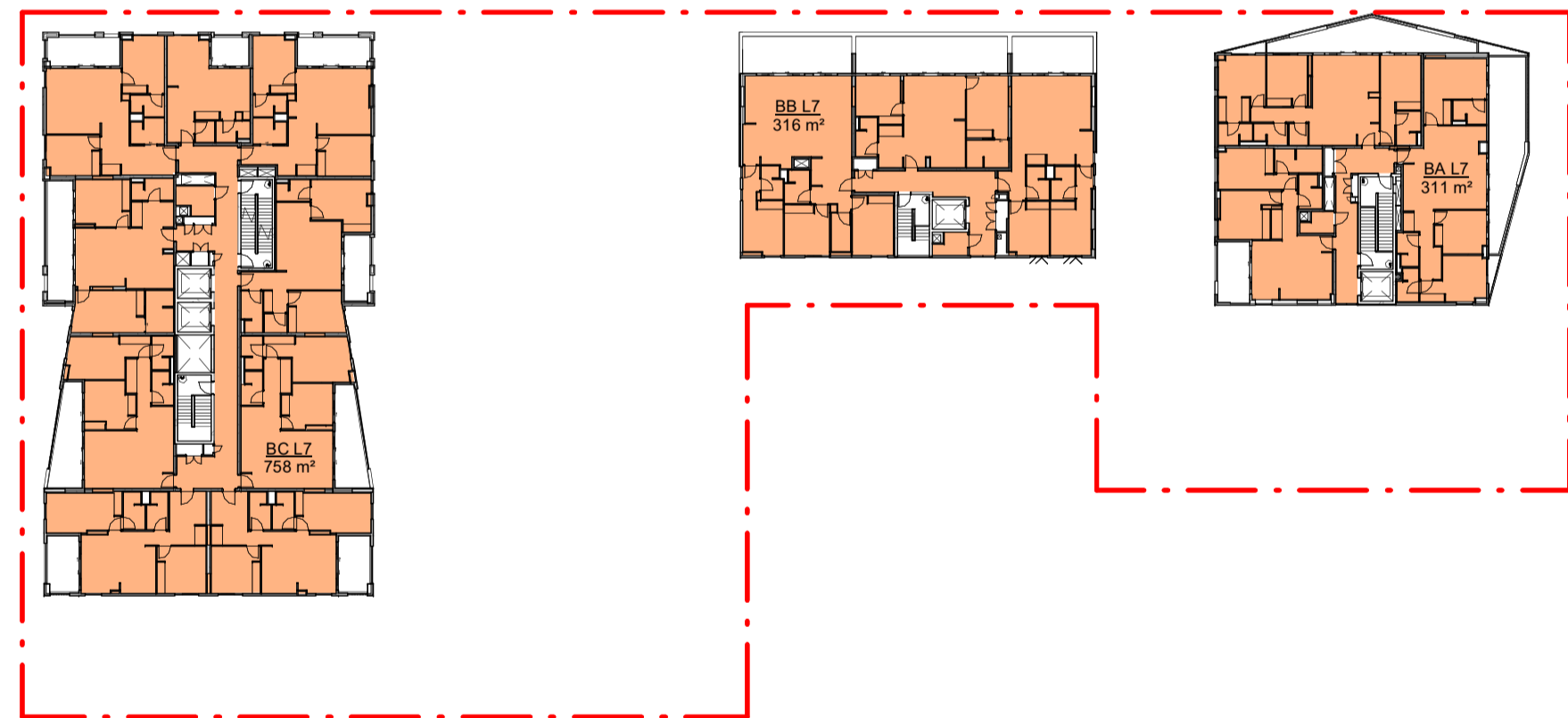
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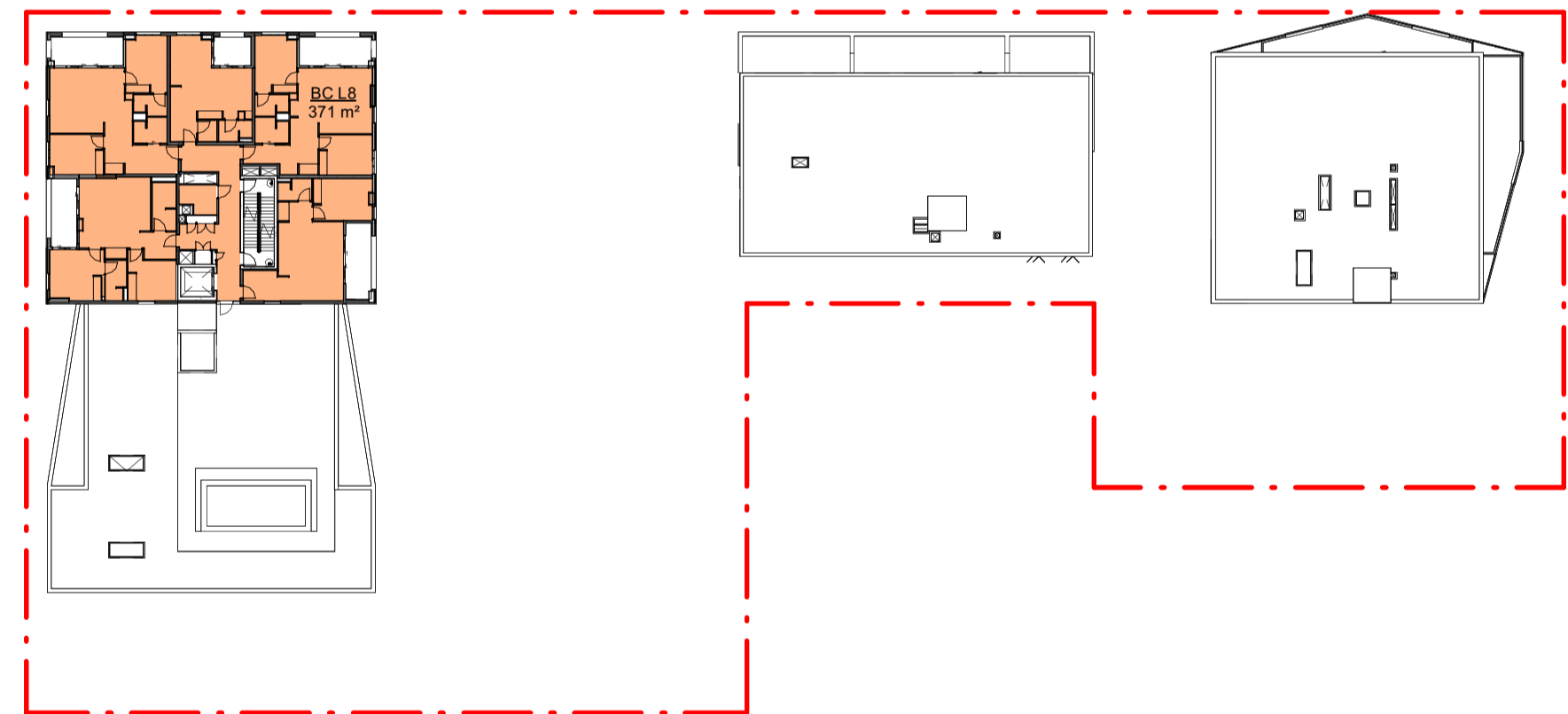
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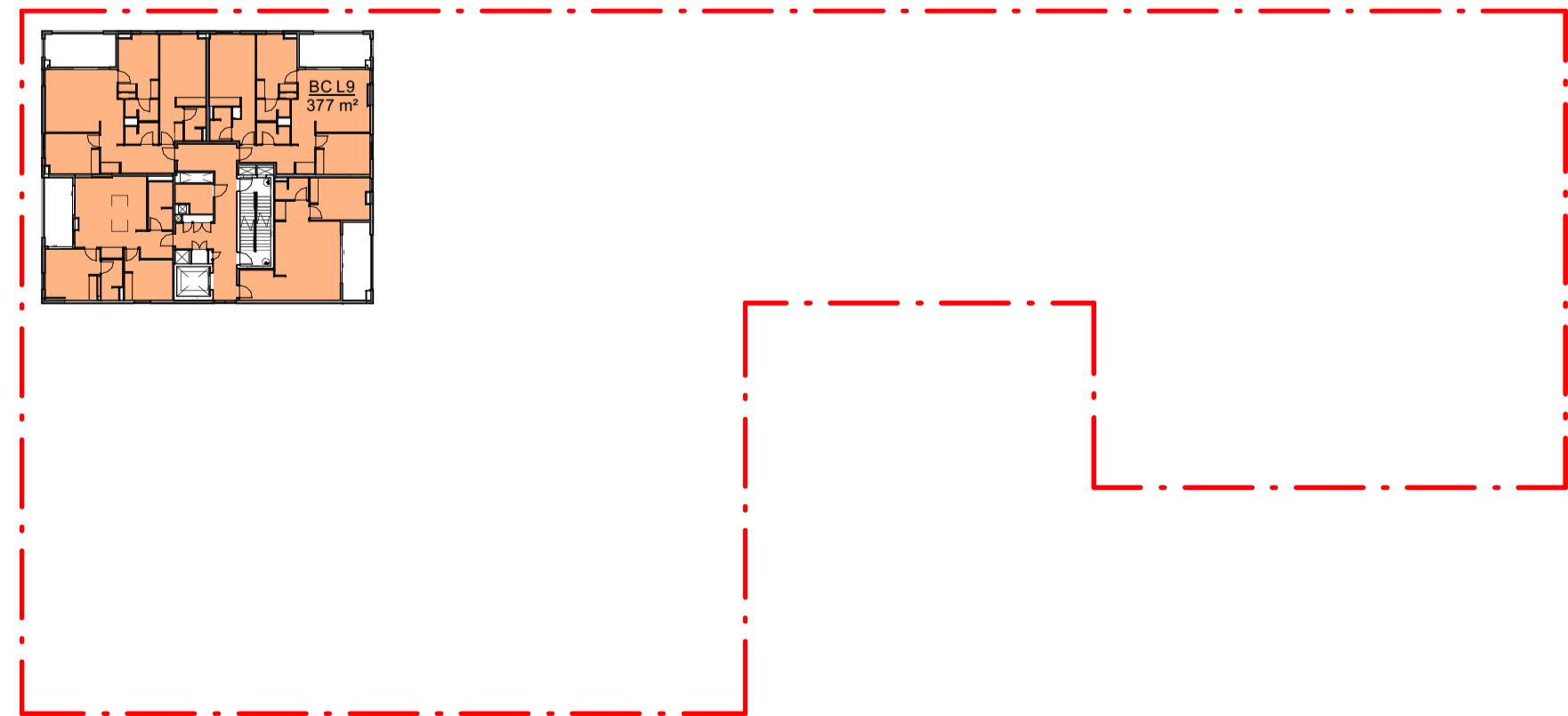
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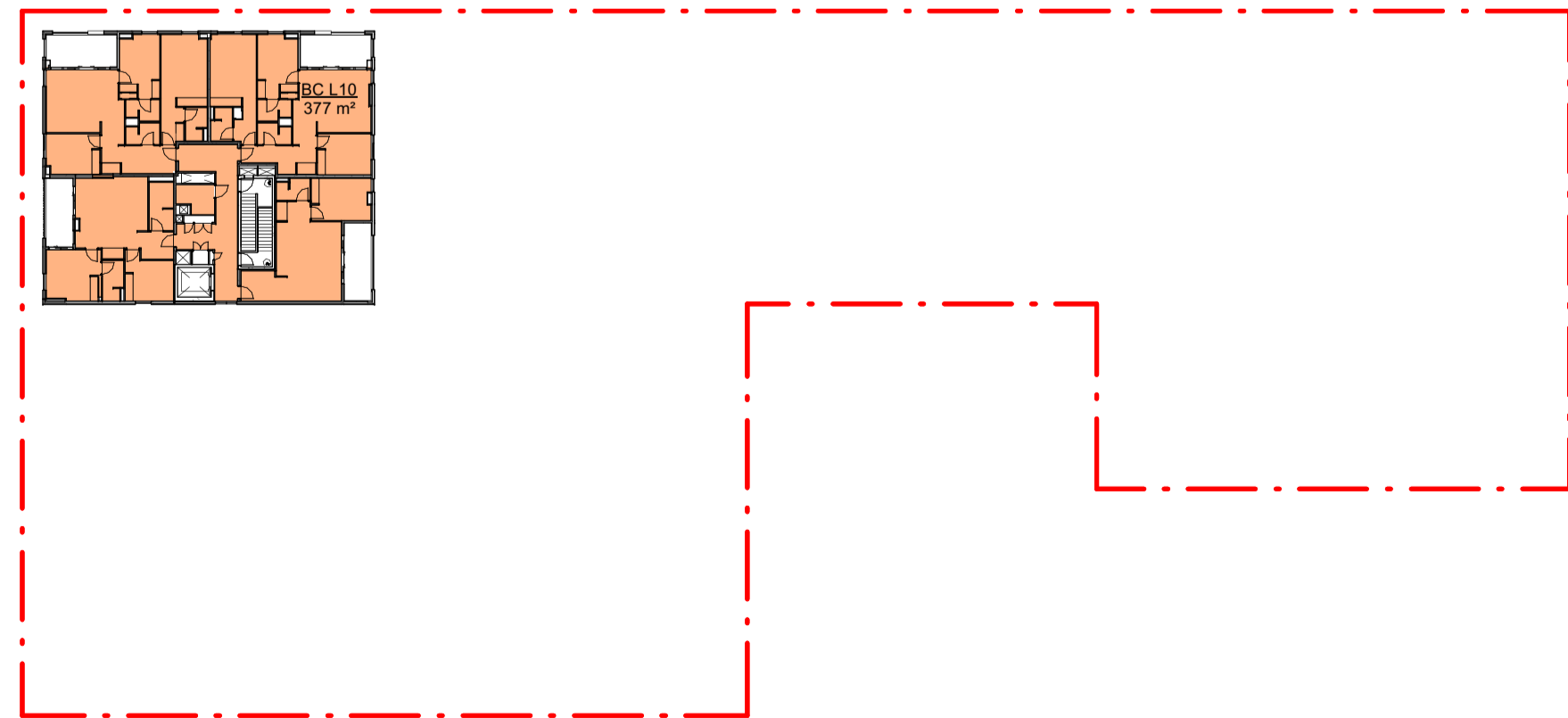
8 LEVEL 7 - GFA CALCULATION
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9 LEVEL 8 - GFA CALCULATION
Scale: 1 : 500



10 LEVEL 9 - GFA CALCULATION
Scale: 1 : 500



11 LEVEL 10 - GFA CALCULATION
Scale: 1 : 500

GFA BREAKDOWN			
Level	Block A	Block B	Block C
Level LG	215m²	0m²	0m²
Level 1	408m²	428m²	751m²
Level 2	428m²	524m²	815m²
Level 3	428m²	524m²	815m²
Level 4	428m²	524m²	815m²
Level 5	428m²	524m²	758m²
Level 6	337m²	316m²	758m²
Level 7	311m²	316m²	758m²
Level 8	0m²	0m²	371m²
Level 9	0m²	0m²	377m²
Level 10	0m²	0m²	377m²
Proposed Totals	2983m²	3156m²	6595m²
Proposed Grand Total GFA	12734m²		

AREA SCHEDULE		
SITE AREA	6,367m ²	
MAX PERMISSIBLE GFA	12,734m ²	
PROPOSED TOTAL GFA	12,734m ²	
PROPOSED FSR	2:1	
APARTMENT SCHEDULE		
Type	Count	%
Studio	7	4.9%
1 Bed	11	7.6%
2 Bed	110	76.4%
3 Bed	16	11.1%
Total	144	100%

*COMPLIED

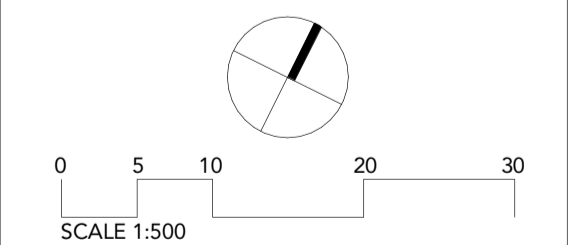
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S4.55 SUBMISSION		
Rev	Revision Description	Date
A	DA Issue	07/10/2020
B	Amended DA	29/11/2021
C	Amended DA	16/05/2022
D	S4.55 Submission - Facade Upgrade	19/05/2023
E	Draft S4.55 Set For Review	09/02/2024
F	Draft S4.55 Set For Review	19/04/2024
G	S4.55 Submission	10/12/2024

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Croydon Street Apartments
5 Croydon Street
Lakemba NSW 2195

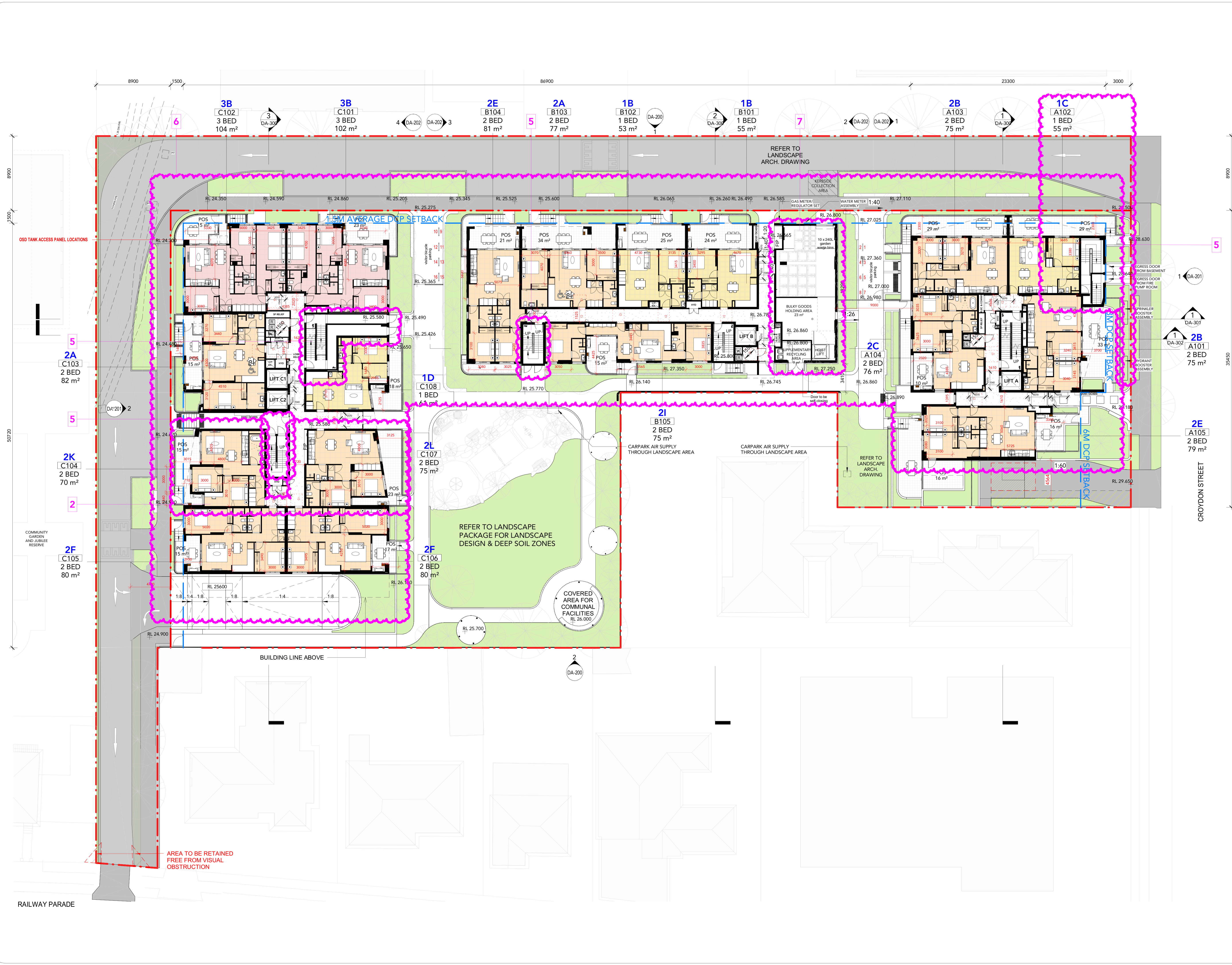
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G	S4.55 Submission	10/12/2024

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INDICATIVE GAS INSTANTANEOUS

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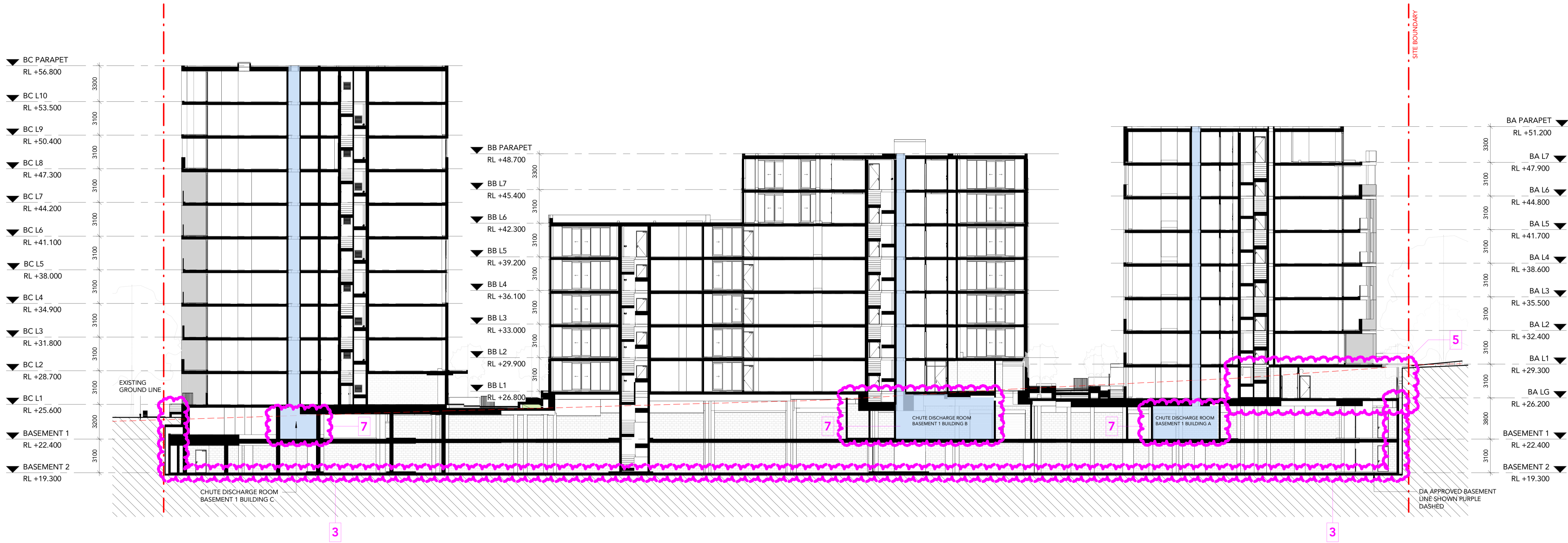
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PLAN - LEVEL 1

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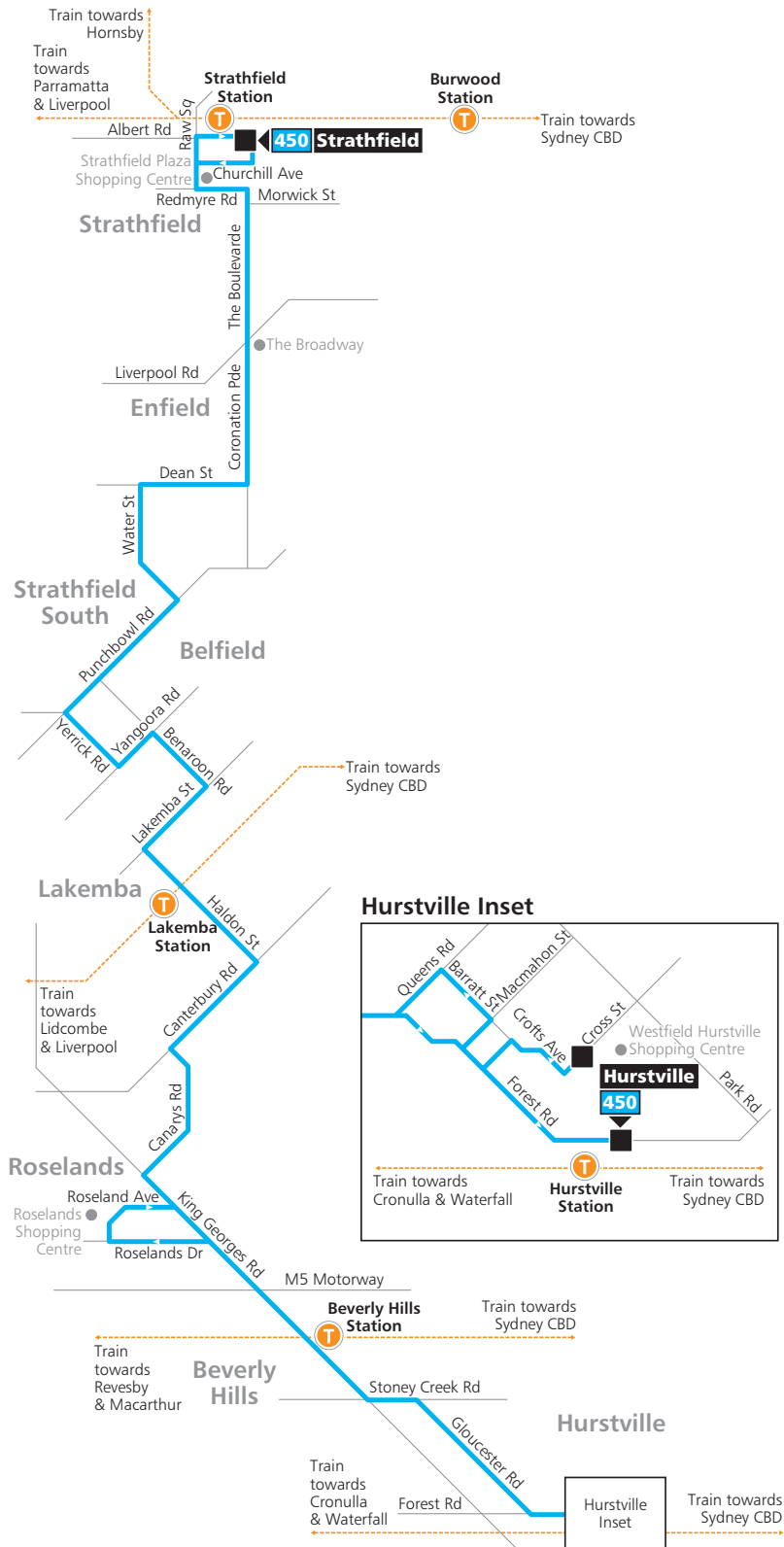
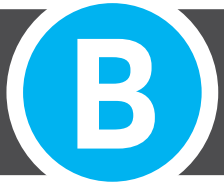
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Appendix B

Public Transport Maps

Route 450

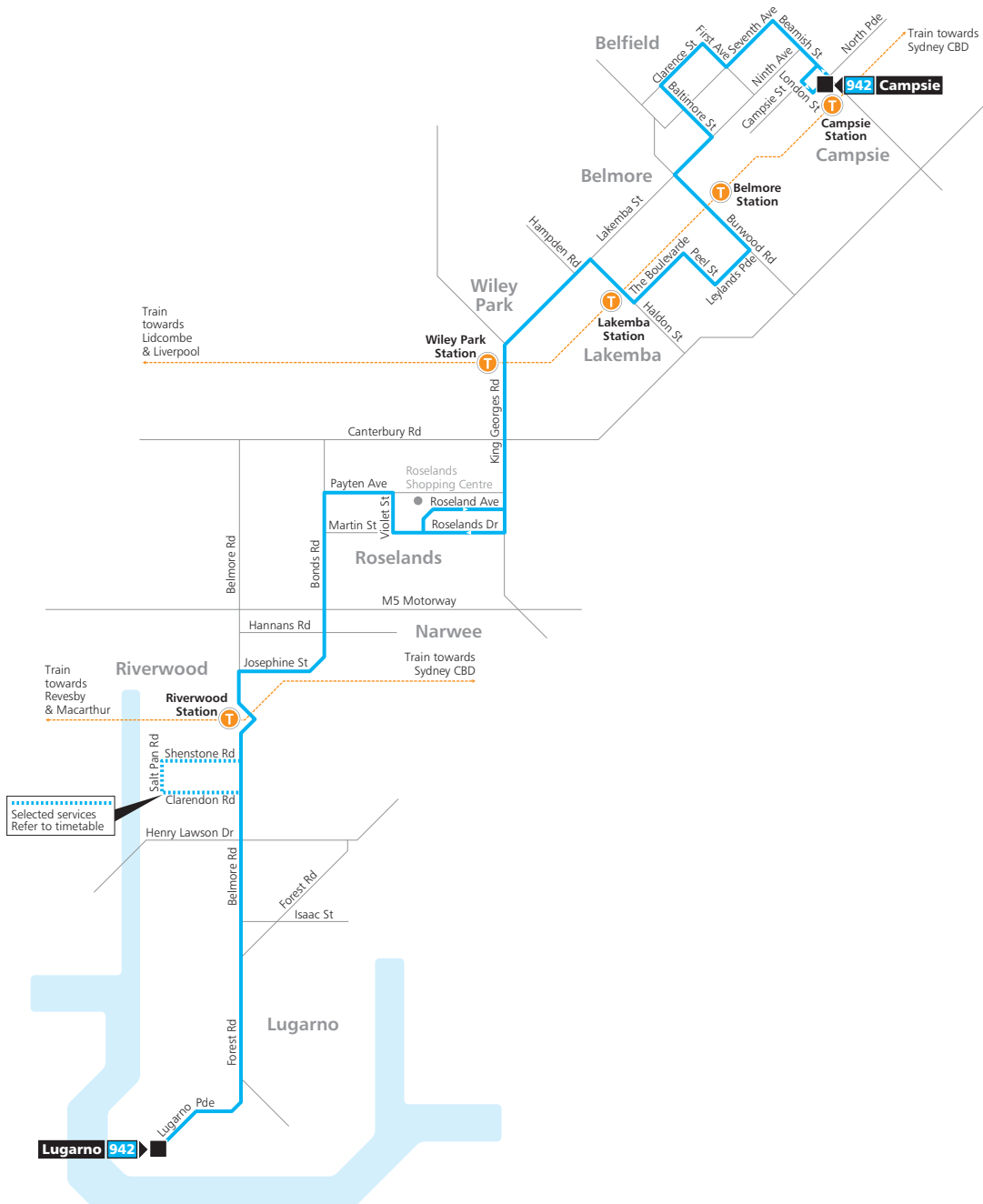
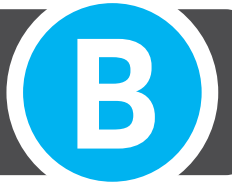


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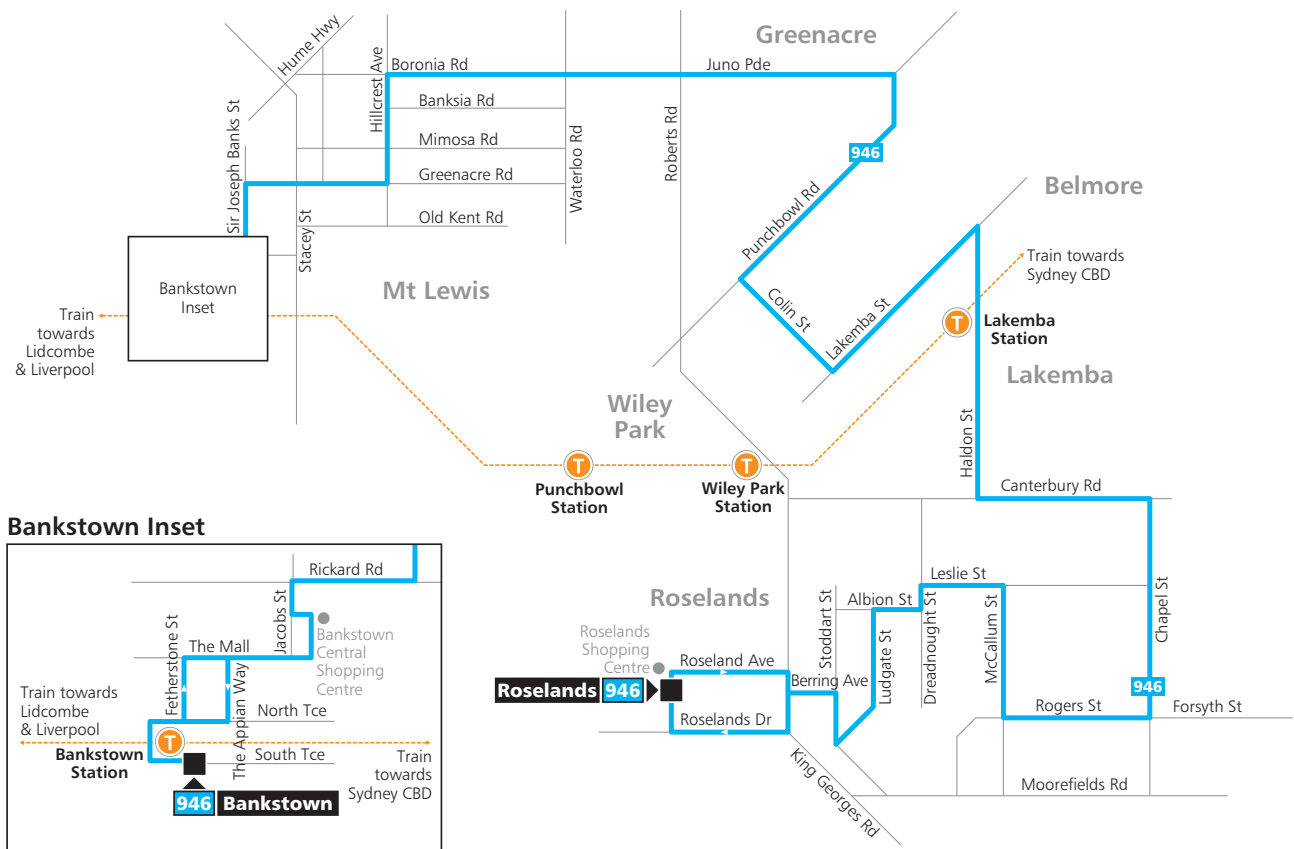
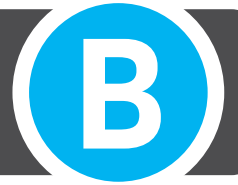
- Bus route
- 450 Bus route number
- Bus route start/finish
- T- Train line/station

Diagrammatic Map
North
Not to Scale

Route 942



Route 946

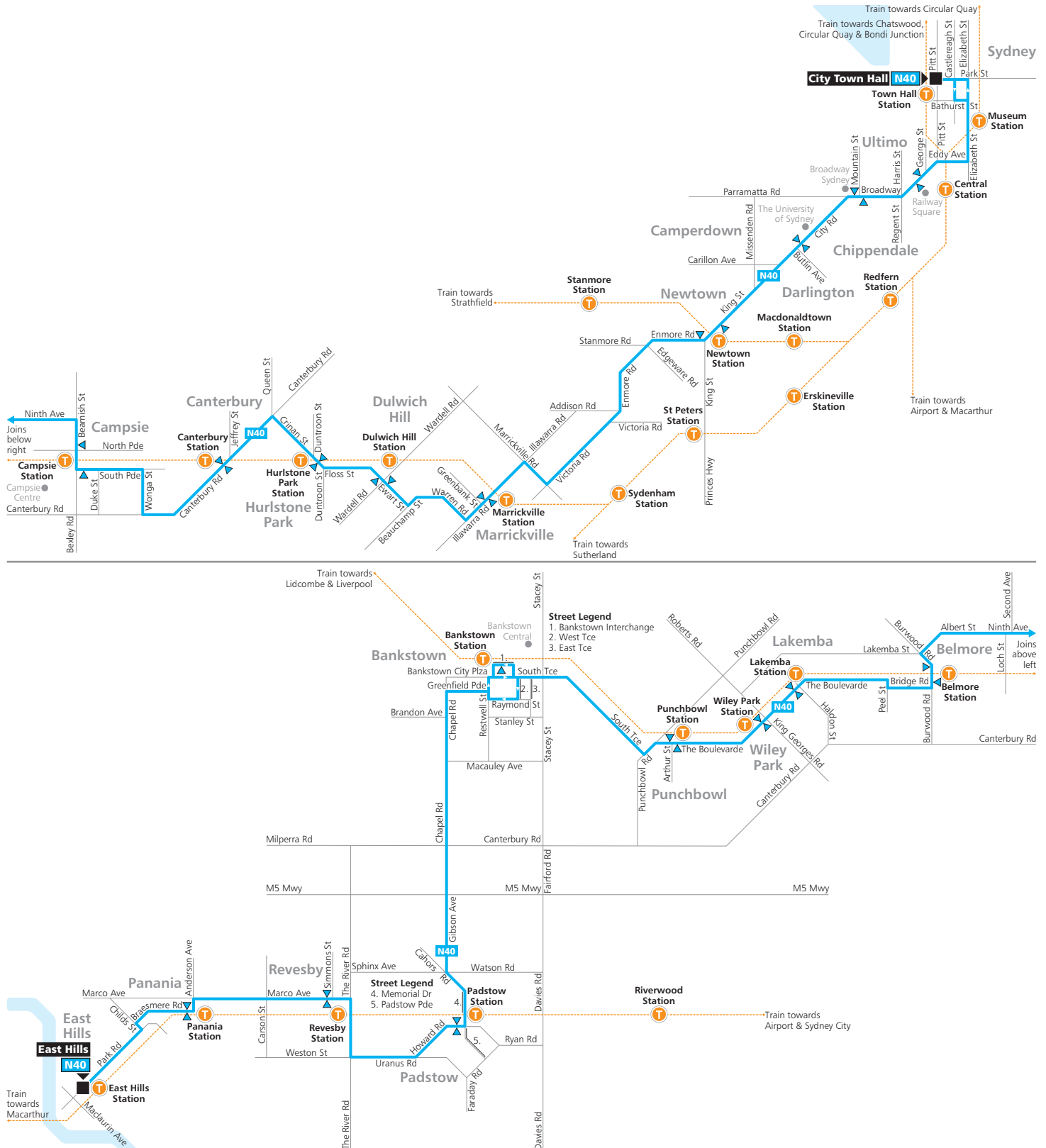


Legend

- Bus route
- Bus route start/finish
- Bus route number
- Train line/station

Diagrammatic Map
Not to Scale

Route N40



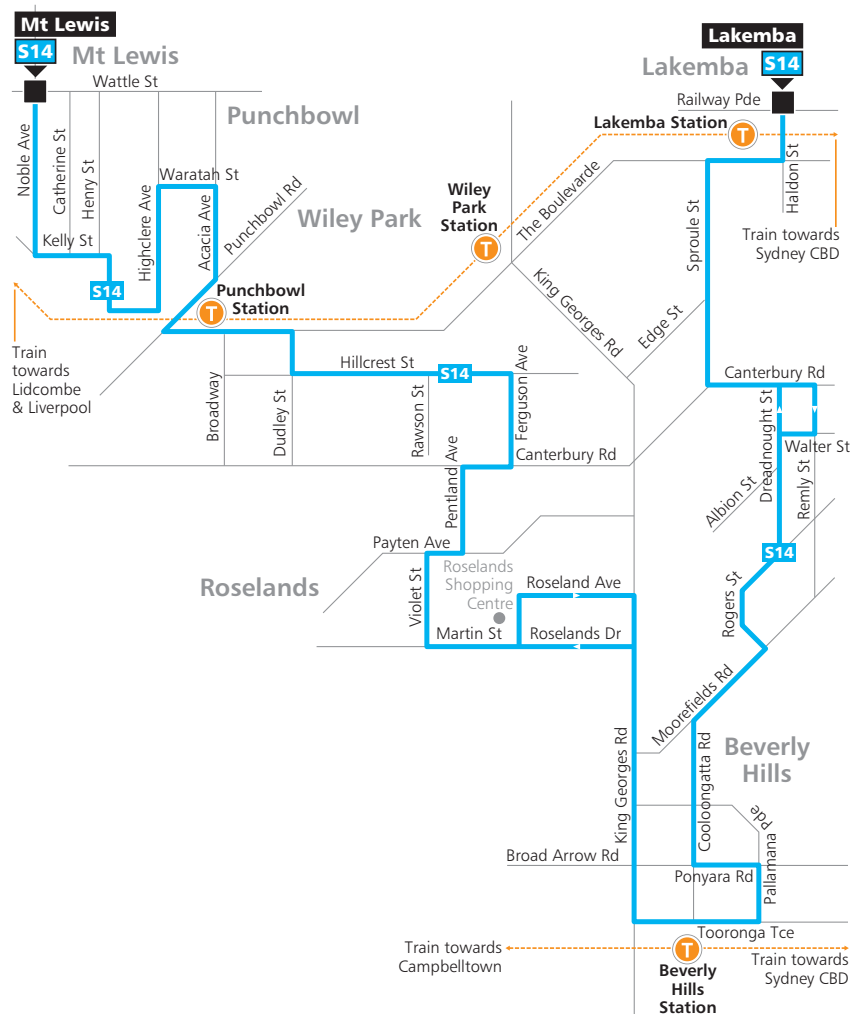
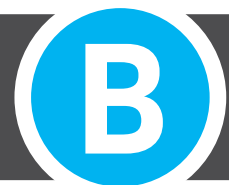
- Legend**
- Bus route
 - Stops for limited stops services
 - Bus route number
 - Train line/station
 - Bus route start/finish

Diagrammatic Map
Not to Scale



transportnsw.info

Route S14



Legend

- Bus route
- Bus route start/finish
- Bus route number
- Train line/station

Diagrammatic Map
Not to Scale



The diagram shows a horizontal line representing the bus route. It starts at a station icon on the left. Above the line, the word "Stop" is written above the first stop, "Interchange" is written above the second stop, and "End of line" is written above the third stop. Below the line, there are two rows of dashed lines representing bus services. The first row is labeled "Line under conversion - bus services" and shows a sequence of bus icons. The second row is labeled "Line under construction" and shows a sequence of bus icons, including one with a construction cone.

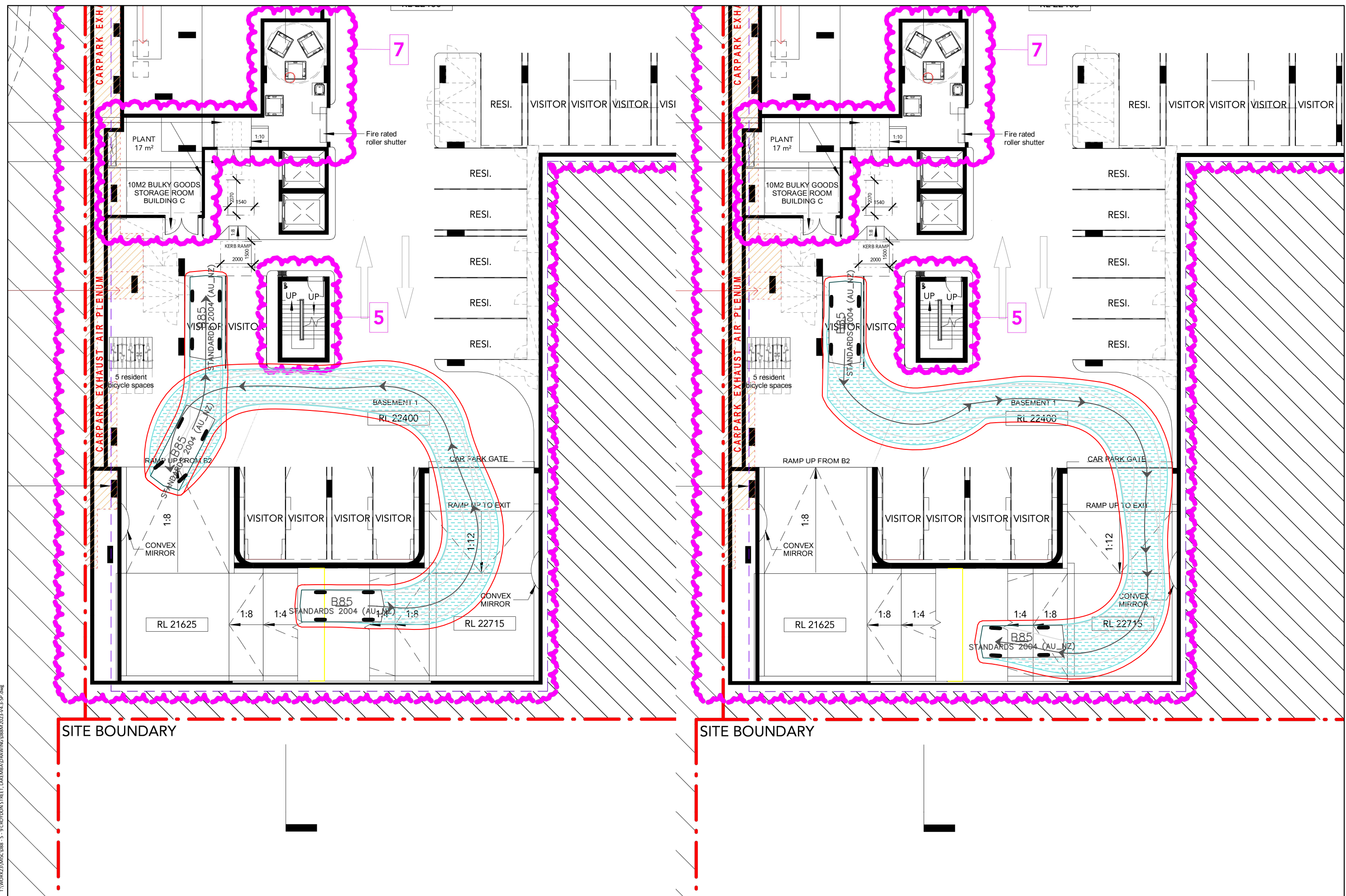
Diagram showing the 11 stations of the Leppington to Inner West Line:

- T1** North Shore & Western Line
- T2** Leppington & Inner West Line
- T3** Liverpool & Inner West Line
- T4** Eastern Suburbs & Illawarra Line
- T5** Cumberland Line
- T6** Lidcombe & Bankstown Line
- T7** Olympic Park Line
- T8** Airport & South Line
- T9** Northern Line
- M1** Metro North West & Bankstown Line

Visit transportnsw.info

Appendix C

Swept Path Assessment



5-9 CROYDON STREET, LAKEMBA INGRESS AND EGRESS OF 85TH PERCENTILE VEHICLE SWEPT PATH ASSESSMENT

SHEET NO. 01 OF 15

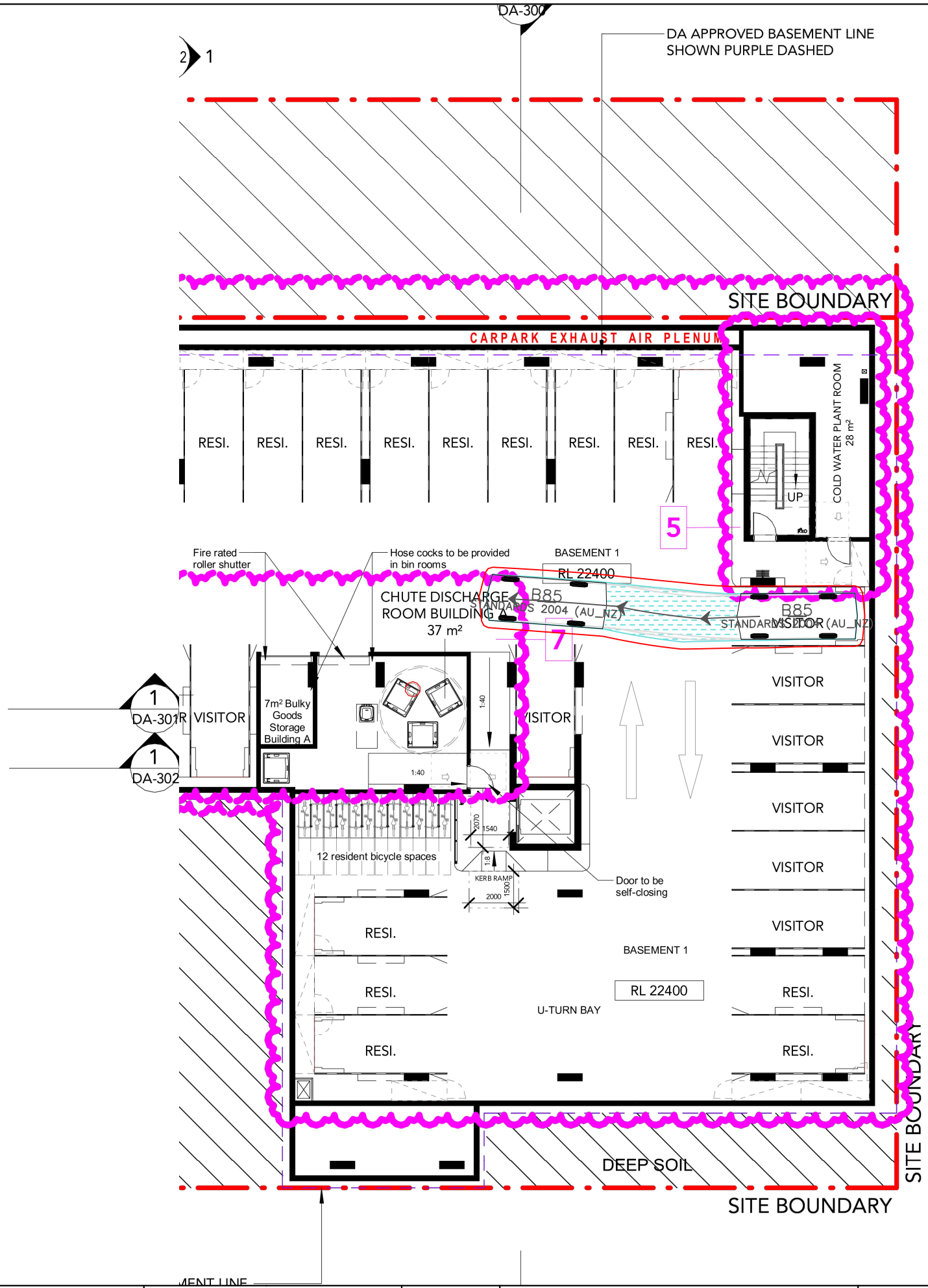
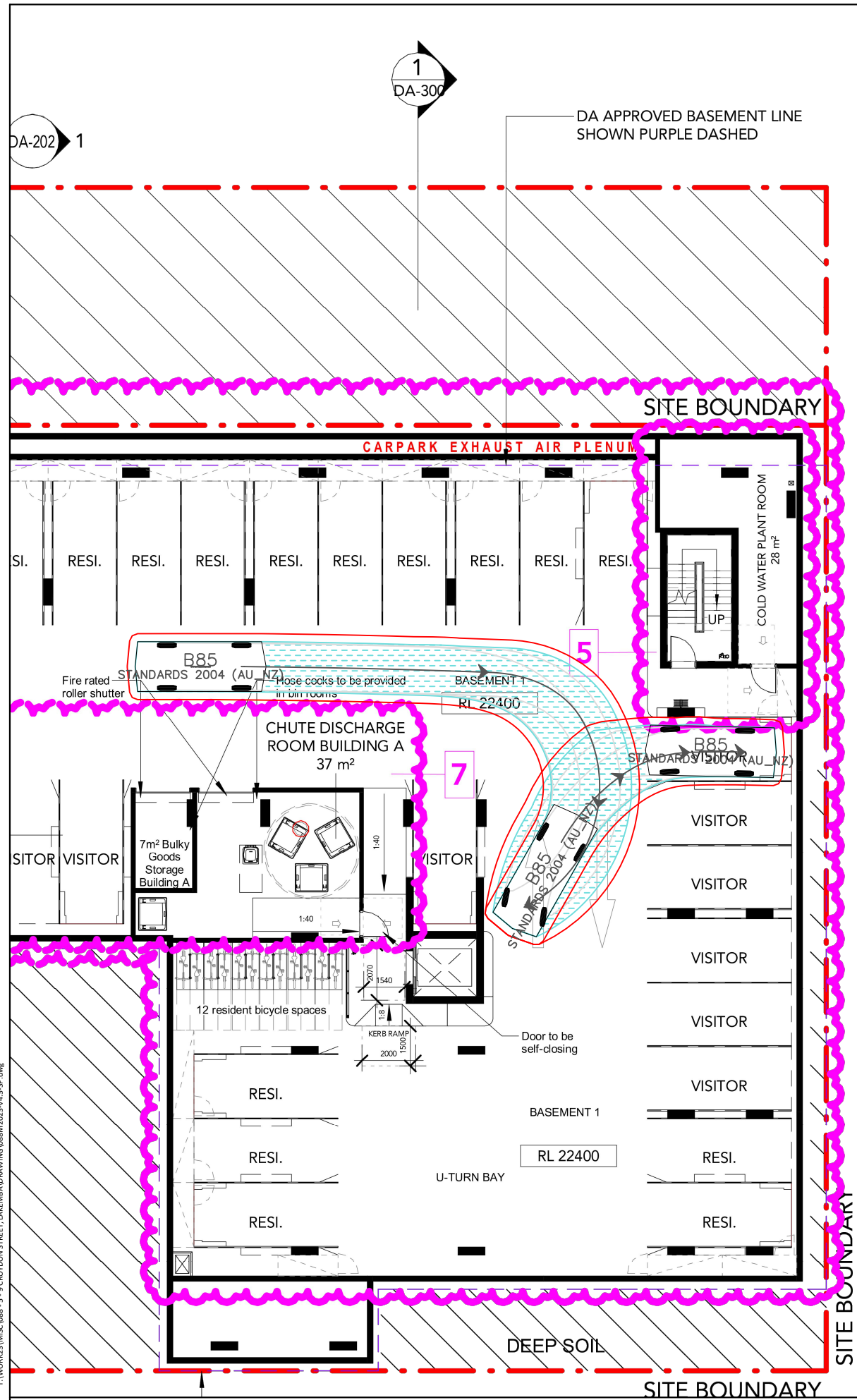
ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL



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5-9 CROYDON STREET, LAKEMBA
INGRESS AND EGRESS OF 85TH PERCENTILE VEHICLE
SWEEP PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4.3-SP

SHEET NO. 02 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

SCALE A3 0 2.0 4.0 1:200

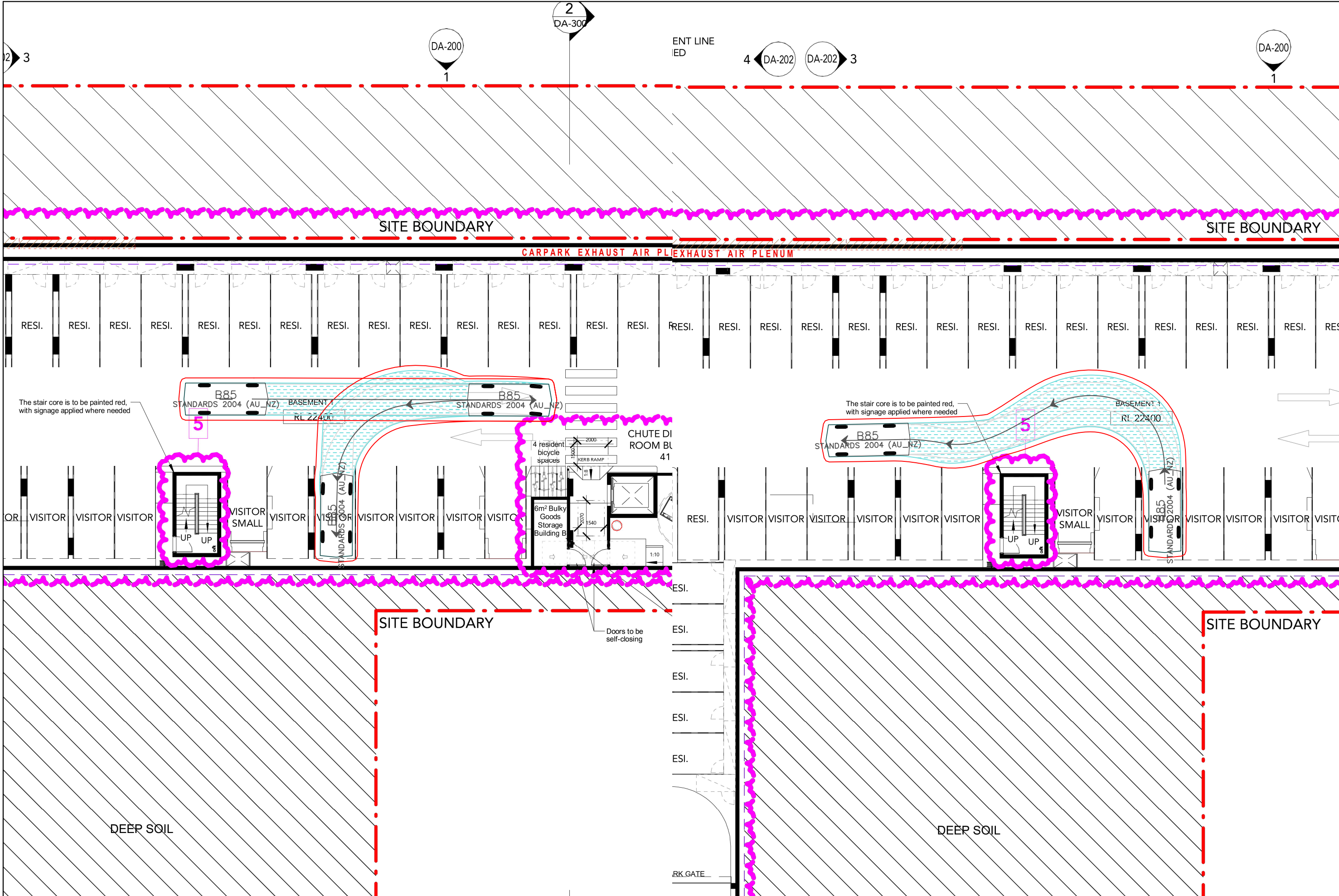


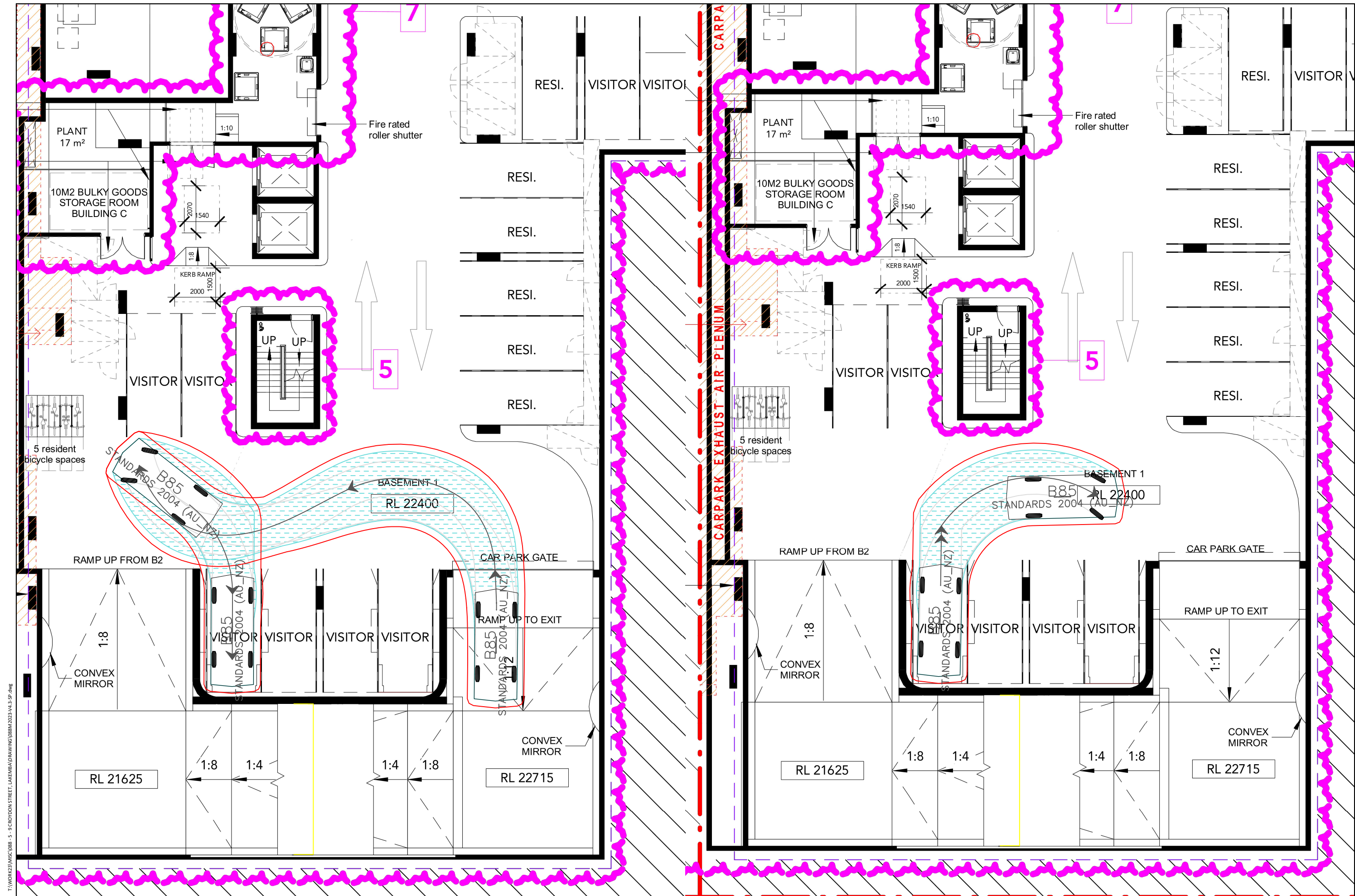
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Plotted by Aidan

5-9 CROYDON STREET, LAKEMBA
INGRESS AND EGRESS OF 85TH PERCENTILE VEHICLE
SWEEP PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4-3-SP

SHEET NO. 04 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

SCALE
A3
0 1.5 3.0
1:150



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Printed by Aidan

5-9 CROYDON STREET, LAKEMBA
INGRESS AND EGRESS OF 85TH PERCENTILE VEHICLE
SWEEP PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4.3-SP

SHEET NO. 06 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

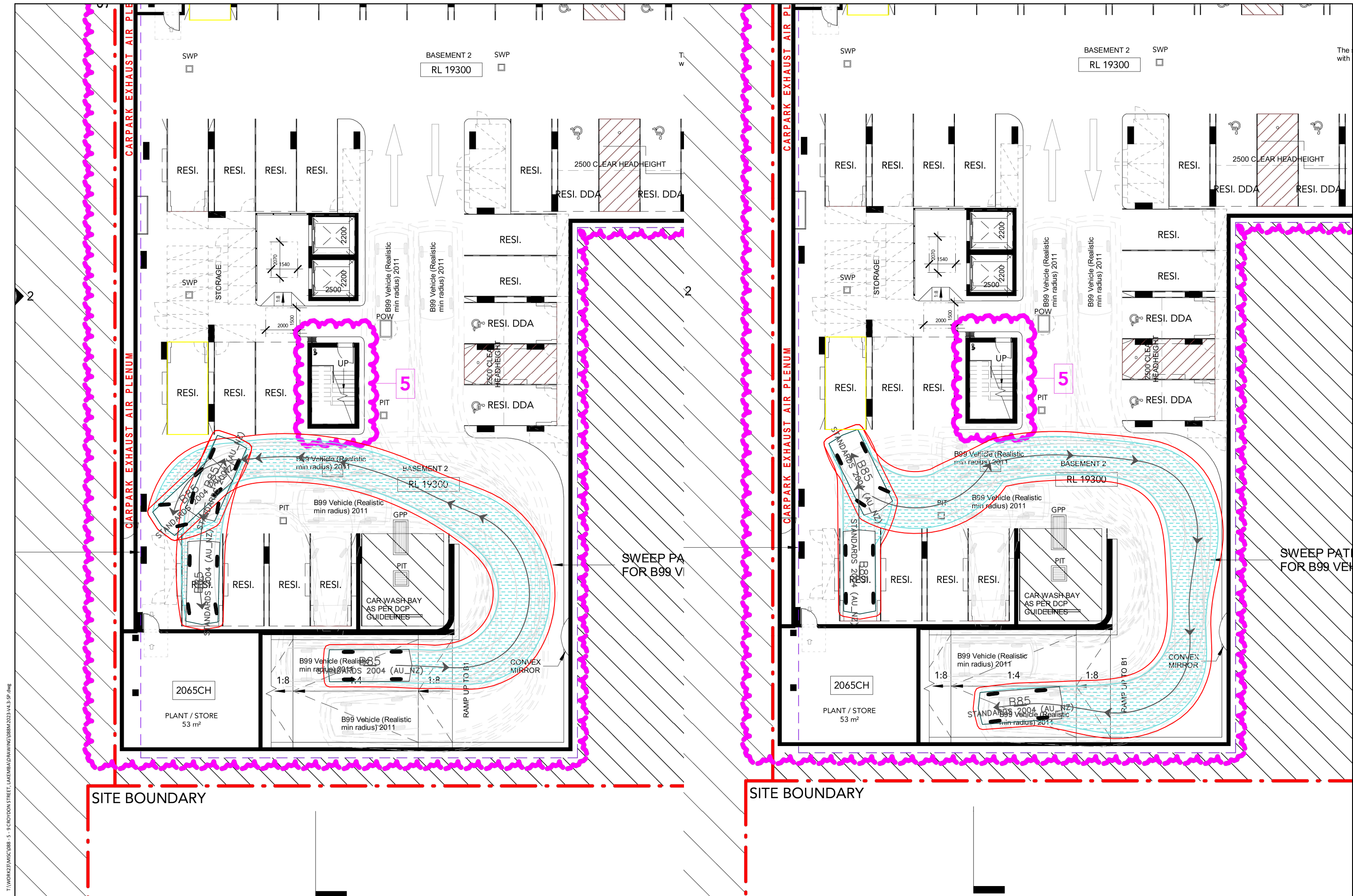
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5-9 CROYDON STREET, LAKEMBA
INGRESS AND EGRESS OF 85TH PERCENTILE VEHICLE
SWEEP PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4.3-SP

SHEET NO. 07 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

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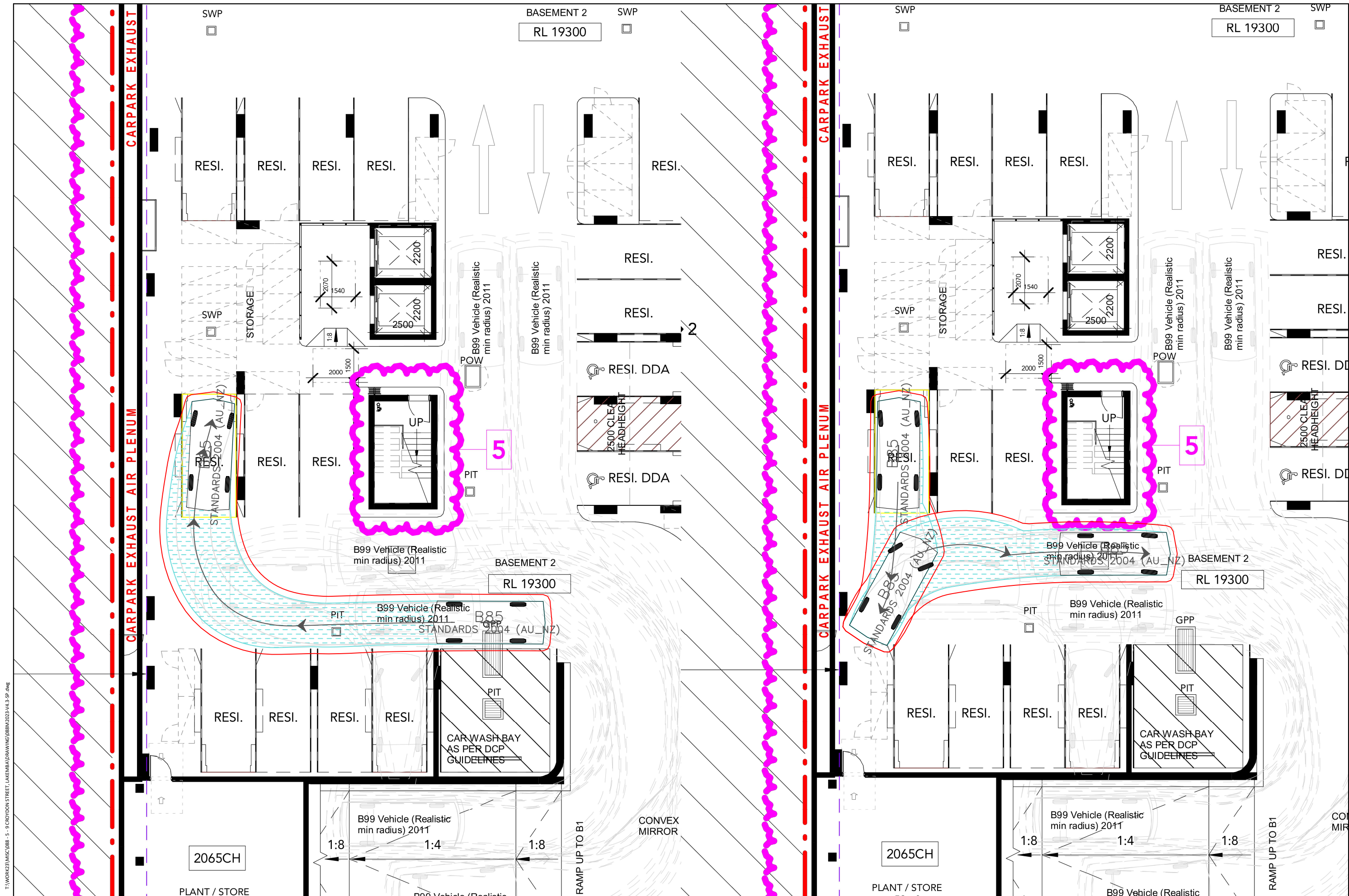


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Plotted by Aidan

5-9 CROYDON STREET, LAKEMBA
INGRESS AND EGRESS OF 85TH PERCENTILE VEHICLE
SWEEP PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4-3-SP

SHEET NO. 08 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

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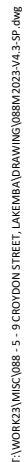


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DRAWING REF NO. 088M2023-V4.3-SP

SHEET NO. 09 OF 15

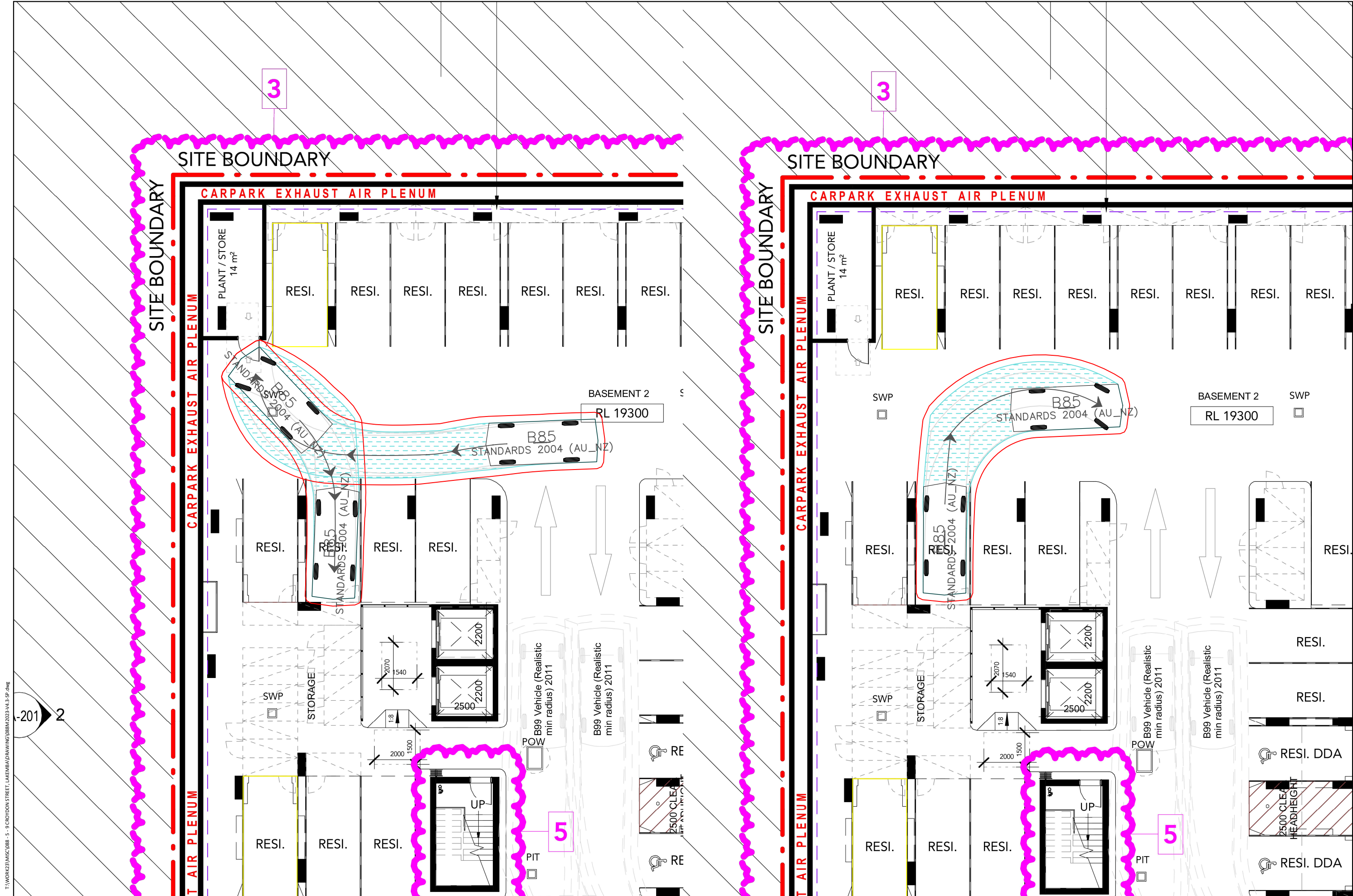
ISSUE DATE 16 December 2024

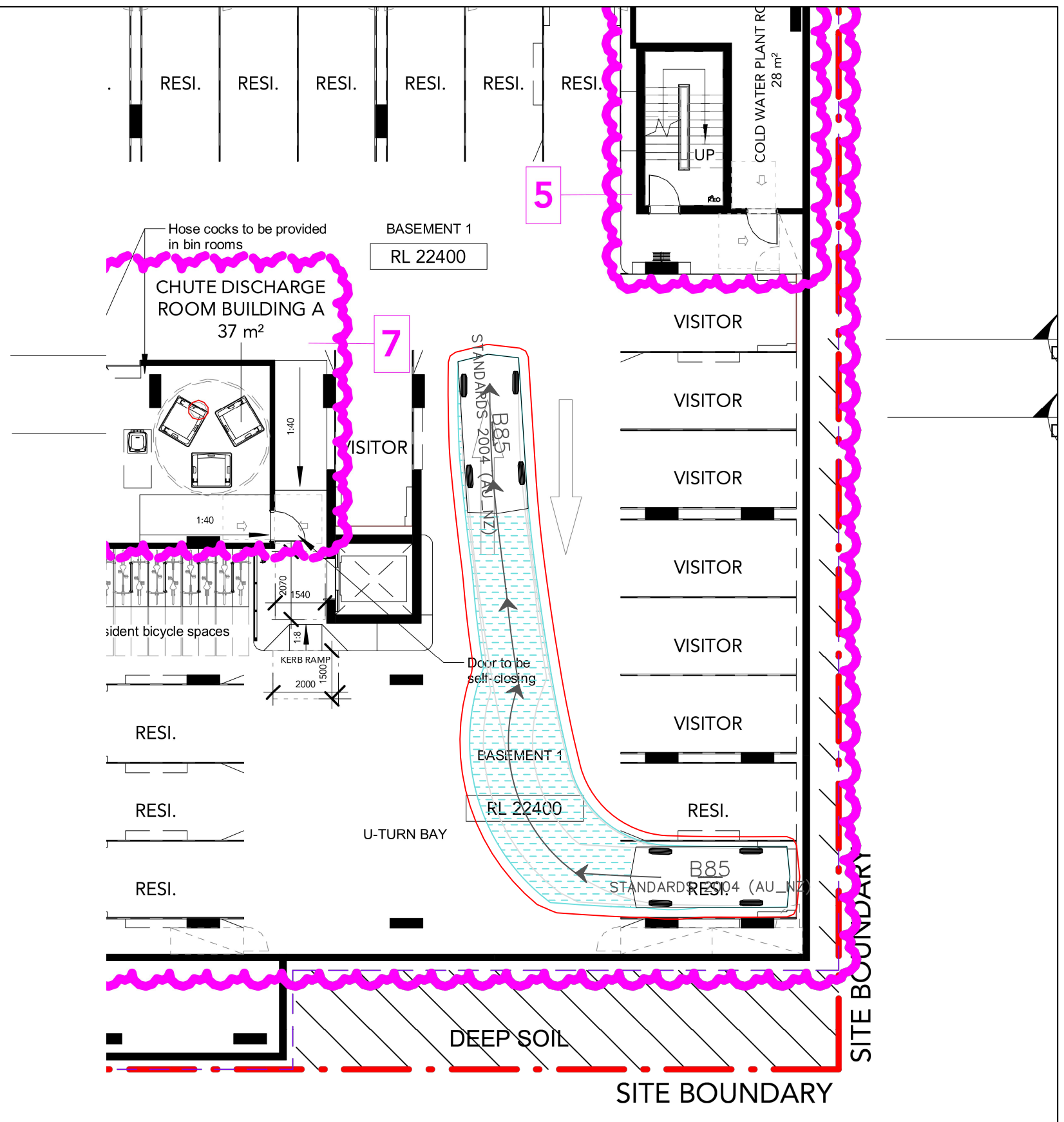
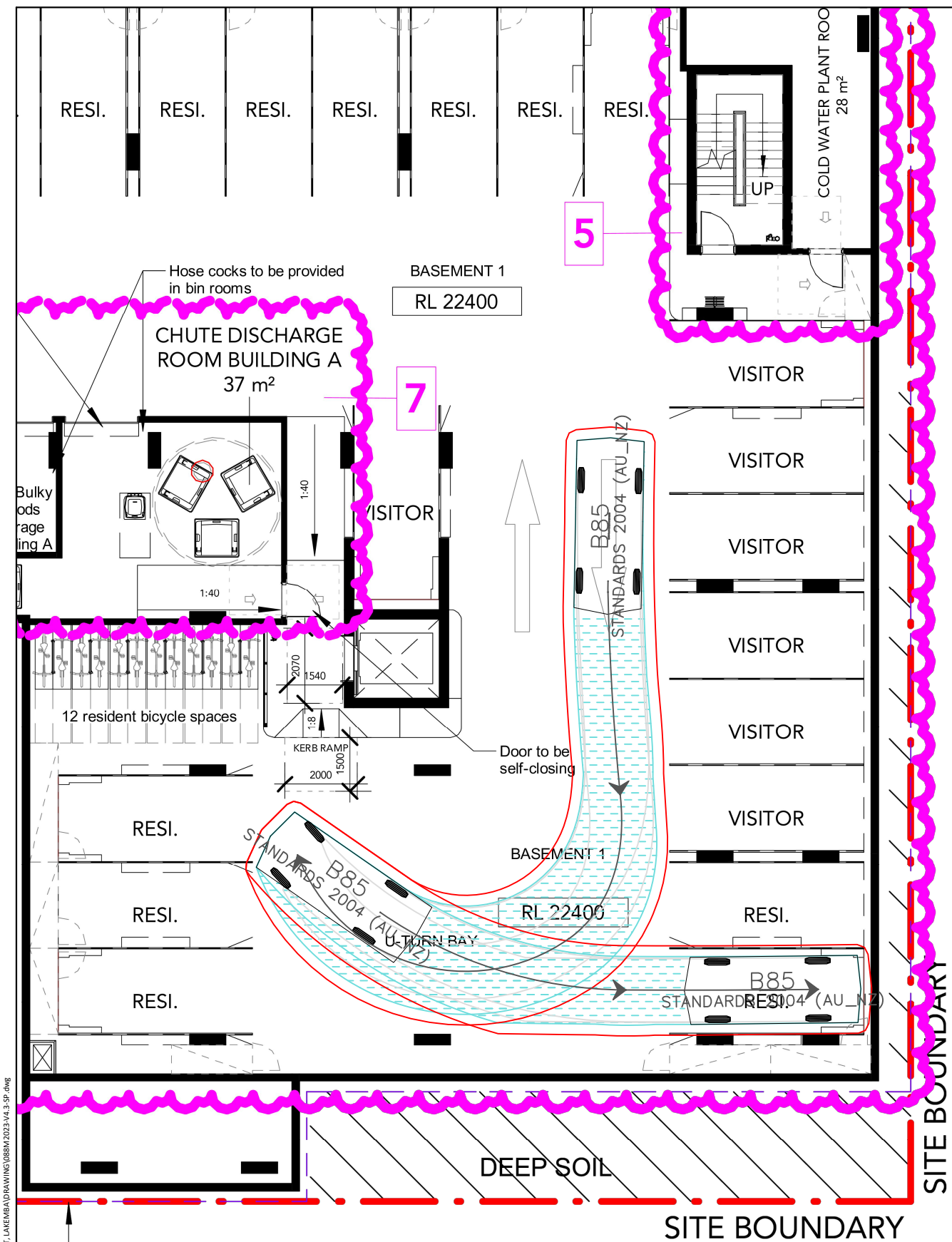
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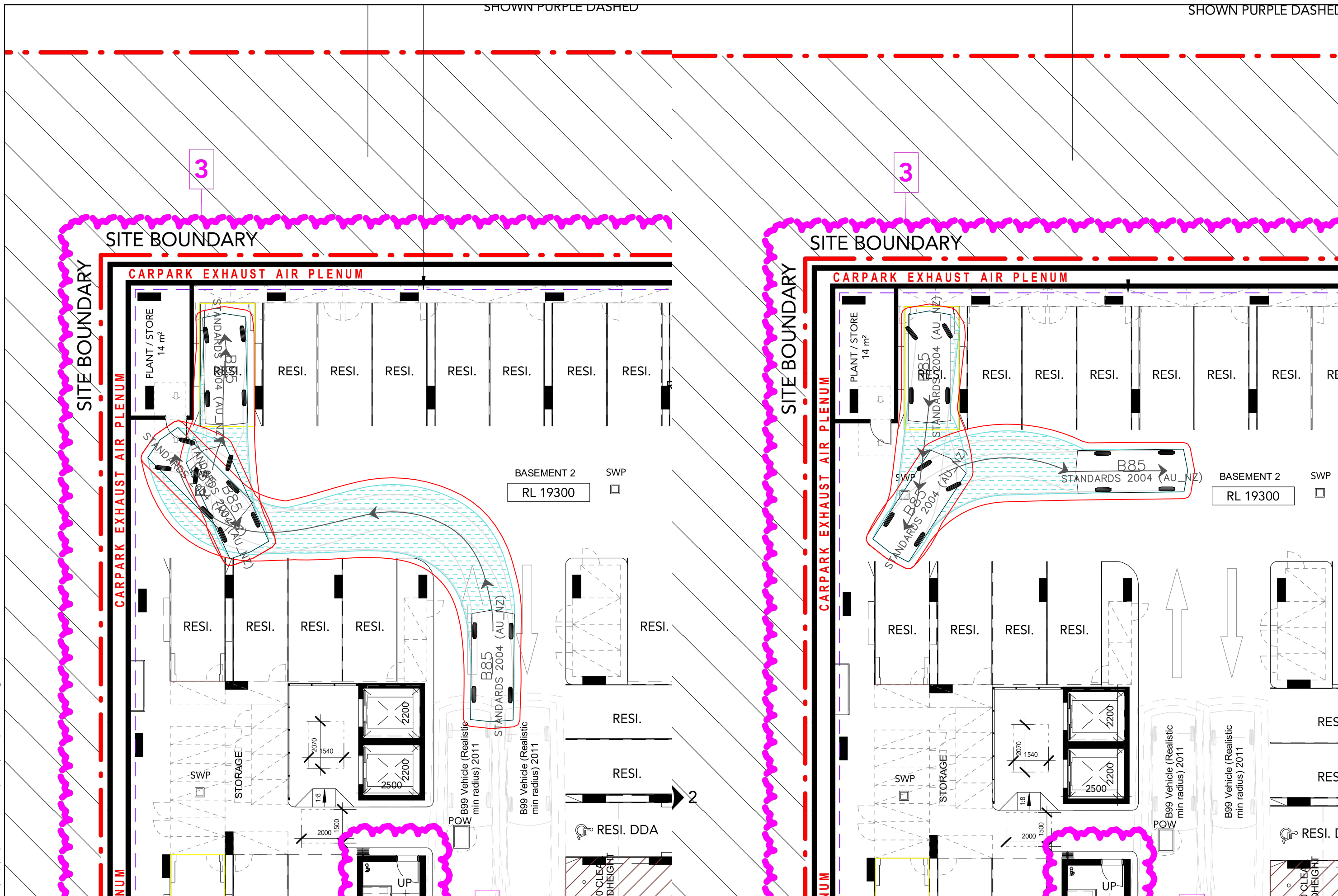
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Plotted by Aidan



5-9 CROYDON STREET, LAKEMBA
INGRESS AND EGRESS OF 85TH PERCENTILE VEHICLE
SWEEP PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4.3-SP

SHEET NO. 12 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

SCALE A3 0 1.5 3.0 1:150



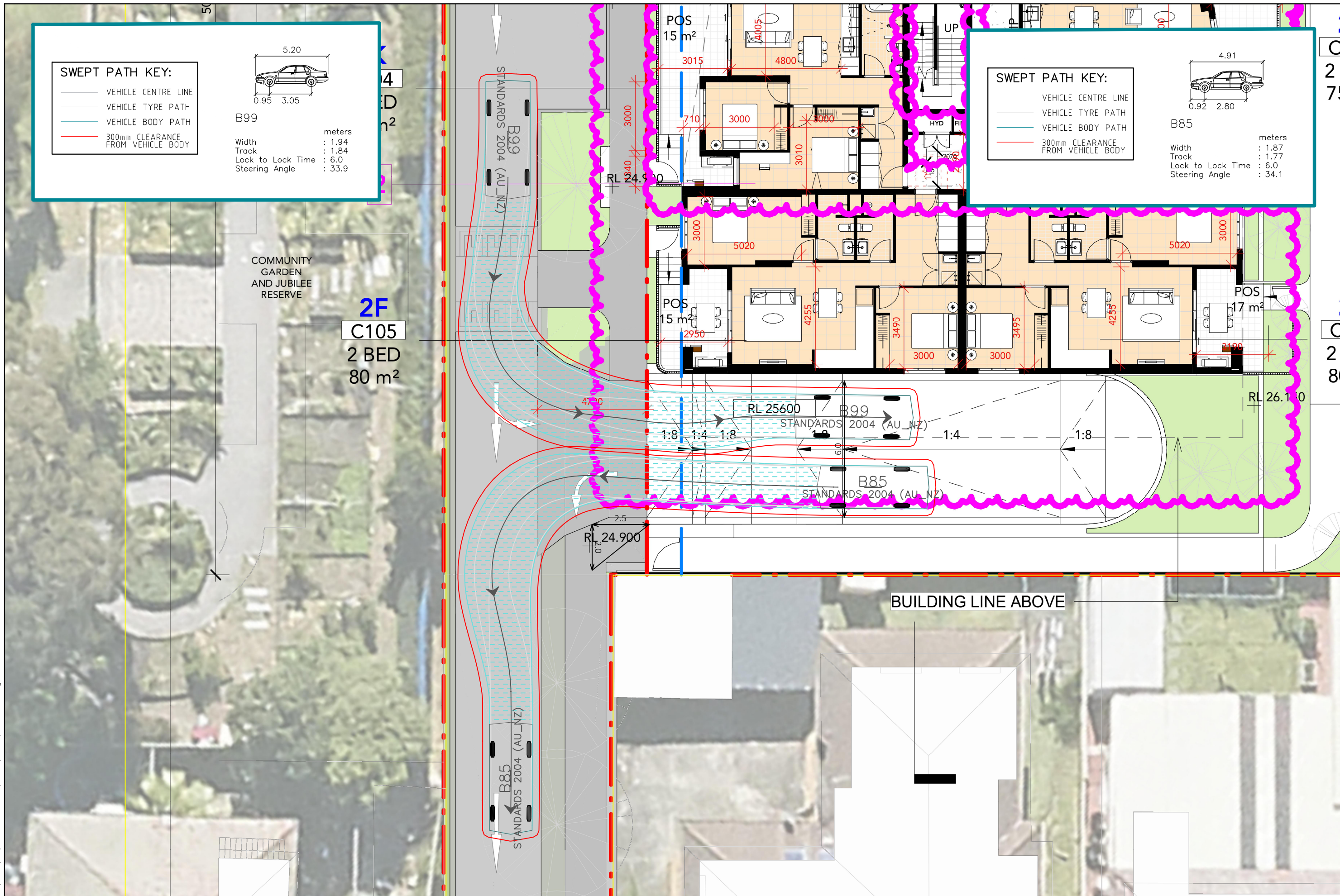
DISCLAIMER

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Plotted by Aidan



5-9 CROYDON STREET, LAKEMBA
PASSING MOVEMENTS OF AN 85TH & 99TH PERCENTILE VEHICLE IN THE BASEMENT DRIVEWAY + SIGHT TRIANGLE
SWEEP PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4-3-SP

SHEET NO. 14 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

SCALE A3 0 1.5 3.0 1:150

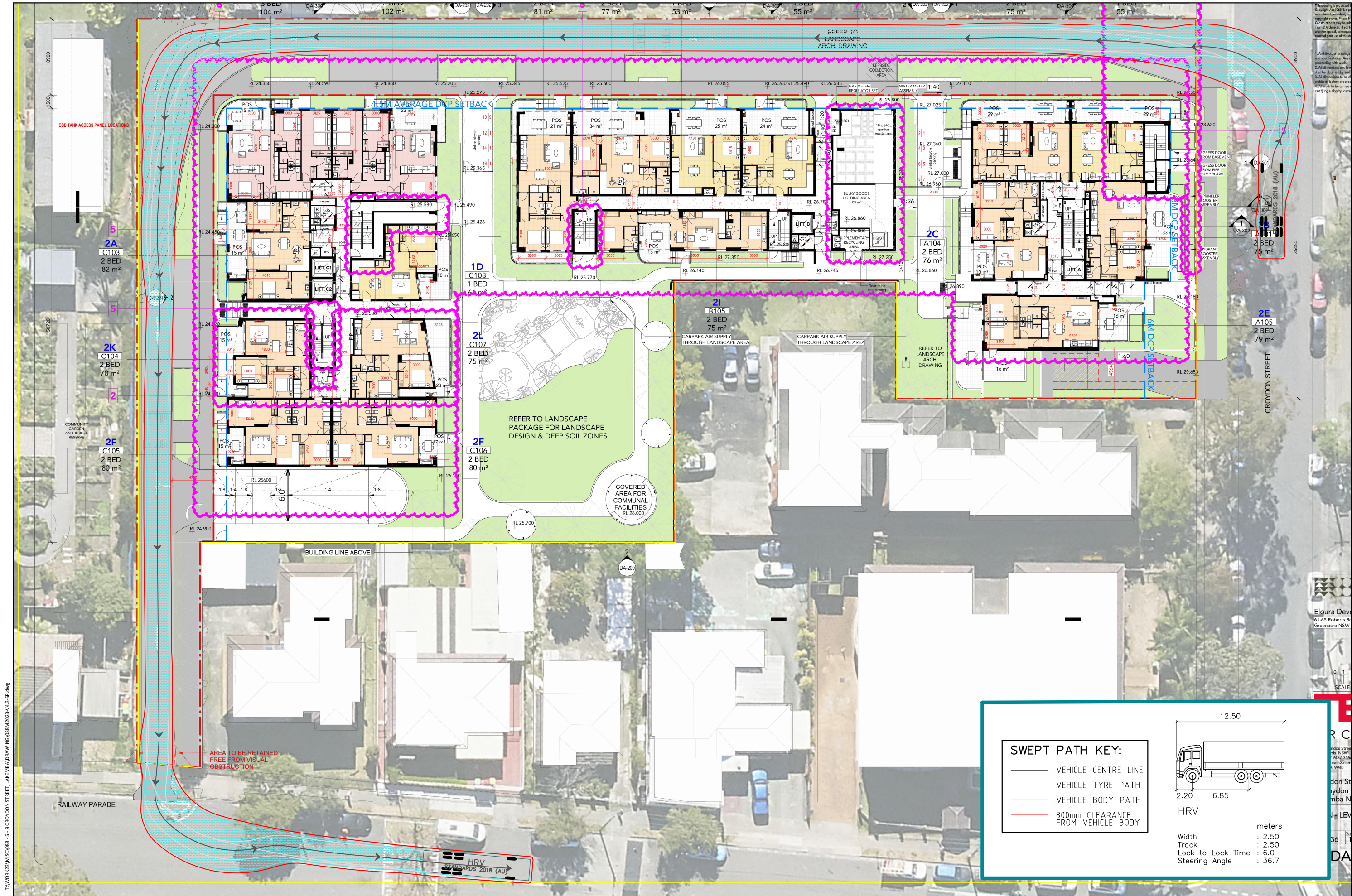


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5-9 CROYDON STREET, LAKEMBA
CIRCULATION MOVEMENTS OF A 12.5m HEAVY RIGID VEHICLE IN AND OUT OF THE LANEWAY
SWEPT PATH ASSESSMENT

DRAWING REF NO. 088M2023-V4-3-SP

SHEET NO. 15 OF 15

ISSUE DATE 16 December 2024

DESIGNED BY L.DANIEL

SCALE A3 0 4.0 8.0 1:400



DISCLAIMER

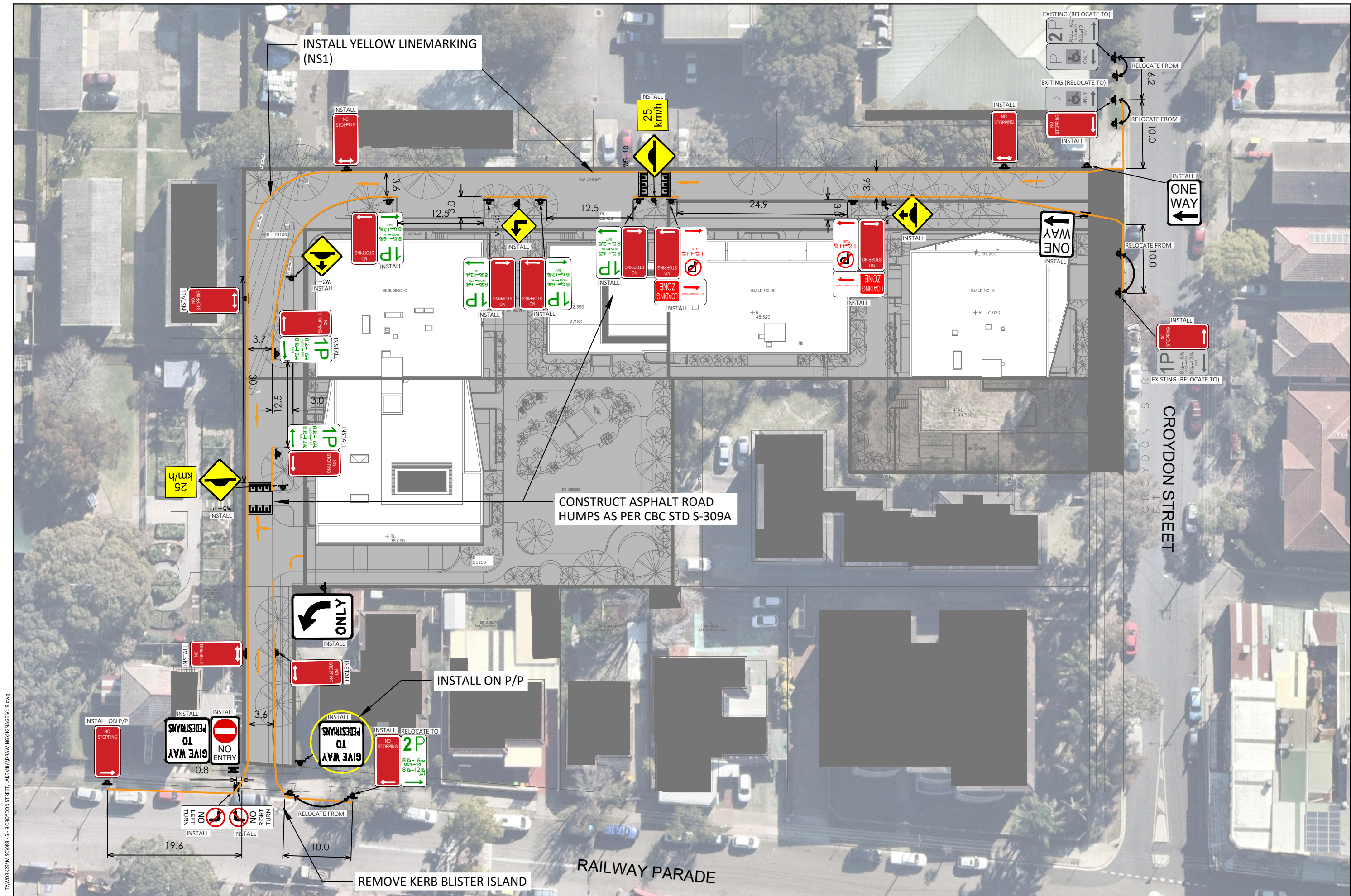
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Appendix D

Signage Plan



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Plotted by Lachlan

5-9 CROYDON STREET, LAKEMBA
PROPOSED SIGNAGE
SWEEP PATH ASSESSMENT

DRAWING REF NO. SIGNAGE V1.9

SHEET NO. 01 OF 01

ISSUE DATE 16 October 2024

DESIGNED BY L. ELLSON

SCALE
A3 0 5.0 10.0 1:500



LEGEND
NO STOPPING LINE

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