

TRAFFIC AND PARKING IMPACTS REPORT
FOR A DEVELOPMENT APPLICATION
FOR A PROPOSED RESIDENTIAL FLAT BUILDING
AT NO. 2-4 VIMY STREET, BANKSTOWN NSW 2200

Property address	2-4 Vimy Street, Bankstown NSW 2200
Client	ABCON
Prepared by	O. Sannikov, MEngSc (Traffic Engineering), MIEAust, PEng, FAITPM
Date	01/04/24
Job No.	23104
Report No.	23104 Rep 01a

Item	Report
Site location	<ul style="list-style-type: none"> 2-4 Vimy Street, Bankstown NSW 2200 Refer to Figure 1

Existing land use	<ul style="list-style-type: none"> Two (2) single storey residential dwellings Zoned R4, high density residential
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Proposed development	<ul style="list-style-type: none"> Residential flat building <ul style="list-style-type: none"> 12 units <ul style="list-style-type: none"> 3 one-bedroom units <ul style="list-style-type: none"> Including 2 affordable units (under SEPP (Housing) 2021) 9 two-bedrooms units <ul style="list-style-type: none"> Including 1 affordable unit Basement parking <ul style="list-style-type: none"> 11 car parking spaces <ul style="list-style-type: none"> includes one (1) space for people with disabilities 2 motorcycle spaces
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Figure 1. Site Location.

Item	Report
	Existing traffic and parking situation
Street characteristics	<ul style="list-style-type: none"> ● Refer to Figure 2 ● The key roads around the proposed development are described below.
	<ul style="list-style-type: none"> ● Vimy Street <ul style="list-style-type: none"> ◆ Local road ◆ 2 travel lanes and parking opportunities on both sides (9.2 m carriageway)
	<ul style="list-style-type: none"> ● Ross Street <ul style="list-style-type: none"> ◆ Local road ◆ 2 travel lanes and 2 parking lanes (with angle parking on the northern side)
	<ul style="list-style-type: none"> ● Restwell Street <ul style="list-style-type: none"> ◆ Local collector road ◆ 2 travel lanes and parking opportunities on both side
	<ul style="list-style-type: none"> ● Macauley Avenue <ul style="list-style-type: none"> ◆ Regional Road (7124) ◆ 4 travel lanes and no parking opportunities on both side
	<ul style="list-style-type: none"> ● Chapel Road <ul style="list-style-type: none"> ◆ Regional Road (7122) ◆ 4 travel lanes and no parking opportunities on both side
	<ul style="list-style-type: none"> ● Other streets in the surrounding area are local/local collector roads. Street conditions are typical for a residential area, with low to moderate traffic volumes.
	Public transport
Bus	<ul style="list-style-type: none"> ● There are four bus stops within short walking distance (approximately 250 and 400 meters from the site) which serves bus routes 922, 923, 924, 925, 926, 945, 960, M90, M91 and 487
	<ul style="list-style-type: none"> <ul style="list-style-type: none"> ▪ Refer to Figure 3
	<ul style="list-style-type: none"> ● Bus Route 922, 923, 924, 926, 945 and 960 <ul style="list-style-type: none"> ◆ From Bankstown <ul style="list-style-type: none"> ▪ 40 services during the morning peak hours. ▪ 45 services during the afternoon peak hours. ◆ To Bankstown <ul style="list-style-type: none"> ▪ 40 services during the morning peak hours. ▪ 45 services during the afternoon peak hours.
	<ul style="list-style-type: none"> ● Bus Route 925 <ul style="list-style-type: none"> ◆ Lidcombe to East Hills via Bankstown <ul style="list-style-type: none"> ▪ 6 services during the morning peak hours. ▪ 7 services during the afternoon peak hours. ◆ East Hills to Lidcombe via Bankstown <ul style="list-style-type: none"> ▪ 6 services during the morning peak hours. ▪ 5 services during the afternoon peak hours.
	<ul style="list-style-type: none"> ● Bus Route M90 <ul style="list-style-type: none"> ◆ Burwood to Liverpool <ul style="list-style-type: none"> ▪ 17 services during the morning peak hours. ▪ 17 services during the afternoon peak hours. ◆ Liverpool to Burwood <ul style="list-style-type: none"> ▪ 17 services during the morning peak hours.

Item	Report
	<ul style="list-style-type: none"> ▪ 17 services during the afternoon peak hours.
	<ul style="list-style-type: none"> ● Bus Route M91 <ul style="list-style-type: none"> ◆ Parramatta to Hurstville via Chester Hill & Padstow <ul style="list-style-type: none"> ▪ 17 services during the morning peak hours. ▪ 17 services during the afternoon peak hours. ◆ Hurstville to Parramatta via Padstow & Chester Hill <ul style="list-style-type: none"> ▪ 17 services during the morning peak hours. ▪ 17 services during the afternoon peak hours.
	<ul style="list-style-type: none"> ● Bus Route 487 <ul style="list-style-type: none"> ◆ Canterbury to Bankstown Central <ul style="list-style-type: none"> ▪ 5 services during the morning peak hours. ▪ 6 services during the afternoon peak hours. ◆ Bankstown Central to Canterbury <ul style="list-style-type: none"> ▪ 4 services during the morning peak hours. ▪ 6 services during the afternoon peak hours.
Train	<ul style="list-style-type: none"> • The Bankstown train station is located approximately 750 m from the site. Which severs T1, T2 and T3 lines. <ul style="list-style-type: none"> ▪ Refer to Figure 4
	<ul style="list-style-type: none"> ● T1 North Shore & Western Line <ul style="list-style-type: none"> ◆ Berowra to City via Gordon <ul style="list-style-type: none"> ▪ 18 services during the morning peak hours. ▪ 18 services during the afternoon peak hours. ◆ City to Berowra via Gordon <ul style="list-style-type: none"> ▪ 36 services during the morning peak hours. ▪ 36 services during the afternoon peak hours.
	<ul style="list-style-type: none"> ● T2 Inner West & Leppington Line <ul style="list-style-type: none"> ◆ Parramatta or Leppington to City <ul style="list-style-type: none"> ▪ 23 services during the morning peak hours. ▪ 18 services during the afternoon peak hours. ◆ City to Parramatta or Leppington <ul style="list-style-type: none"> ▪ 42 services during the morning peak hours. ▪ 42 services during the afternoon peak hours.
	<ul style="list-style-type: none"> ● T3 Bankstown Line <ul style="list-style-type: none"> ◆ Liverpool or Lidcombe to City via Bankstown <ul style="list-style-type: none"> ▪ 27 services during the morning peak hours. ▪ 27 services during the afternoon peak hours. ◆ City to Liverpool or Lidcombe via Bankstown <ul style="list-style-type: none"> ▪ 19 services during the morning peak hours. ▪ 19 services during the afternoon peak hours.
	<ul style="list-style-type: none"> ● The morning peak hours were considered to be between 06:30 and 09:30. and the afternoon peak hours were considered to be between 15:30 and 18:30.

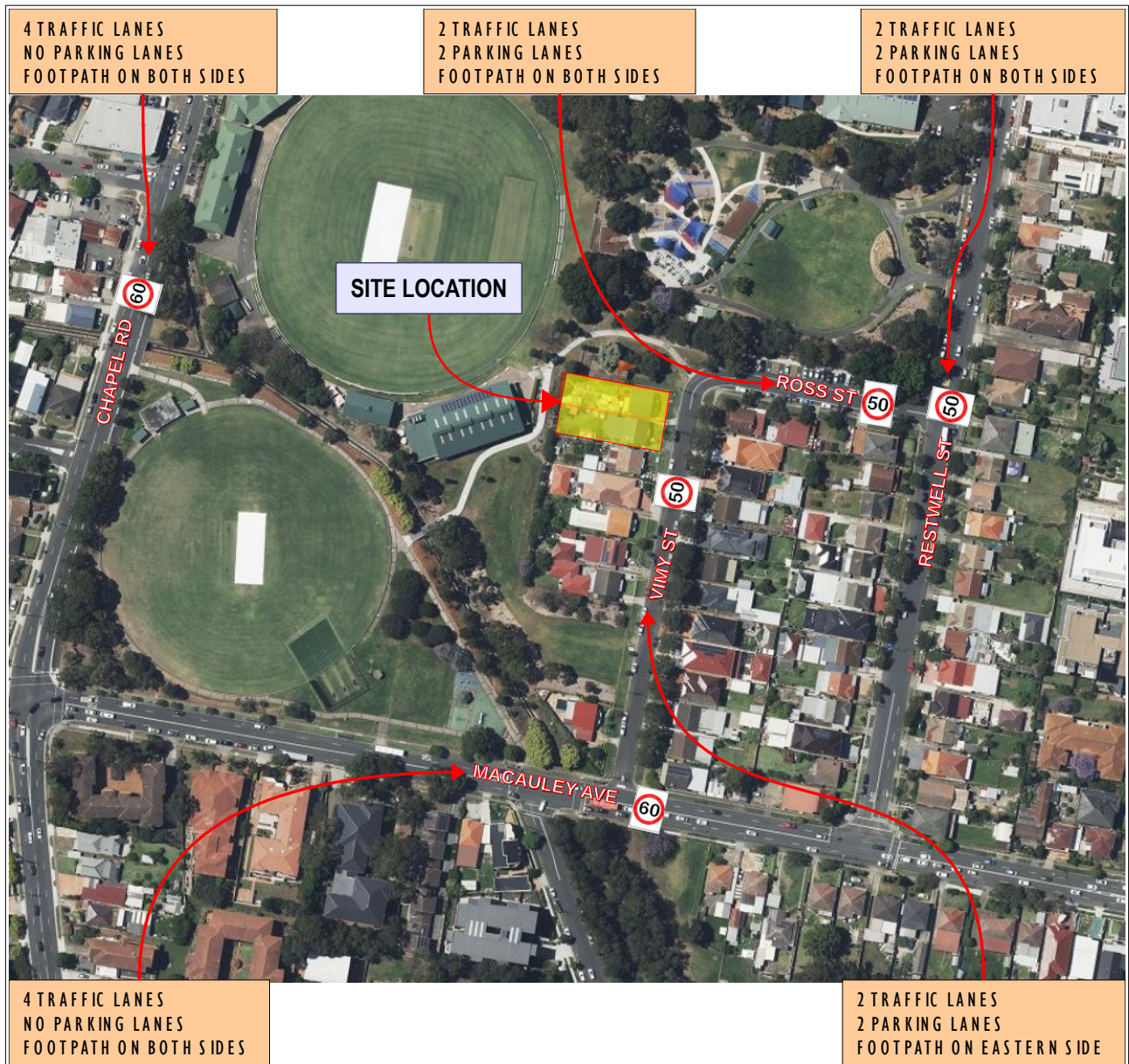


Figure 2. Street characteristics.

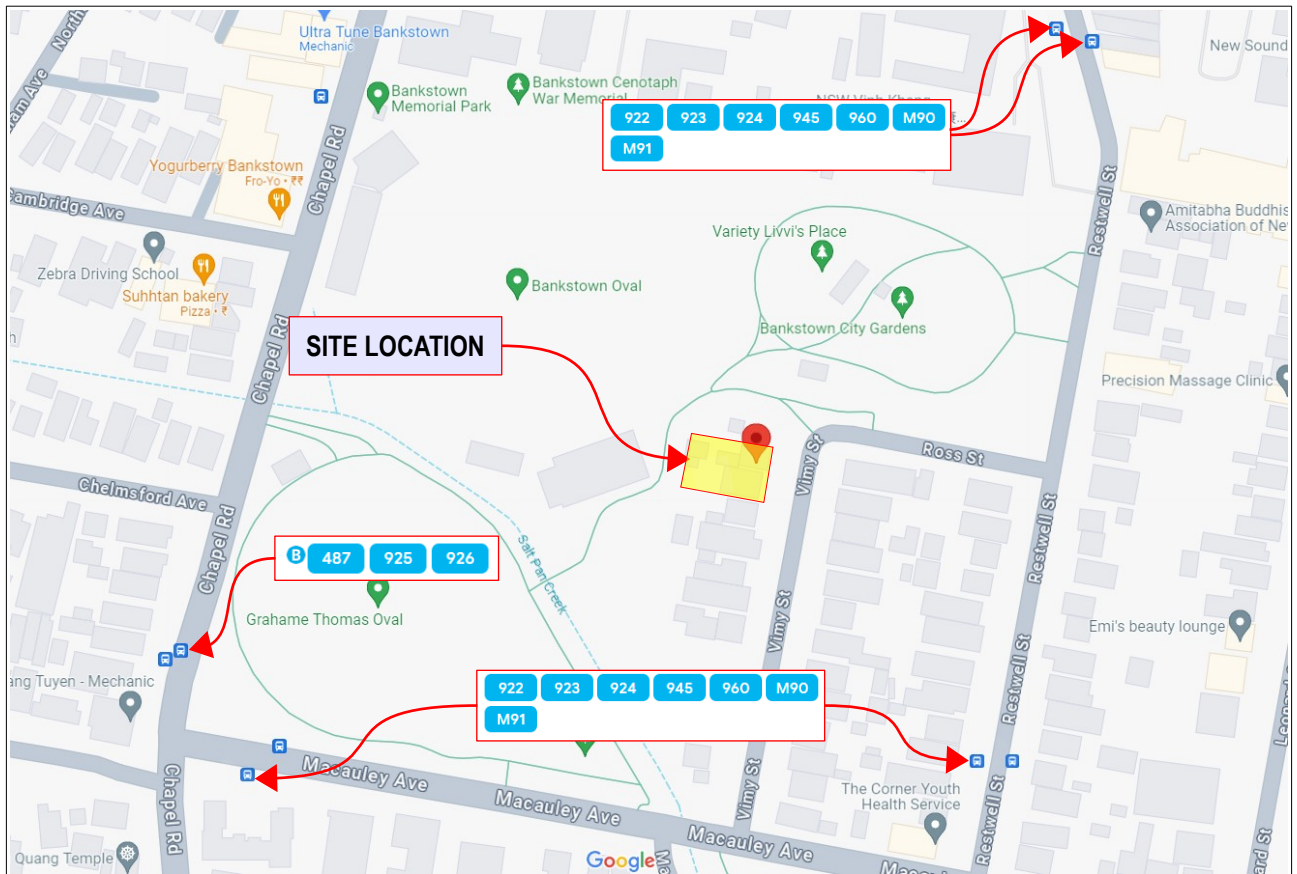


Figure 3. Public transport-bus.

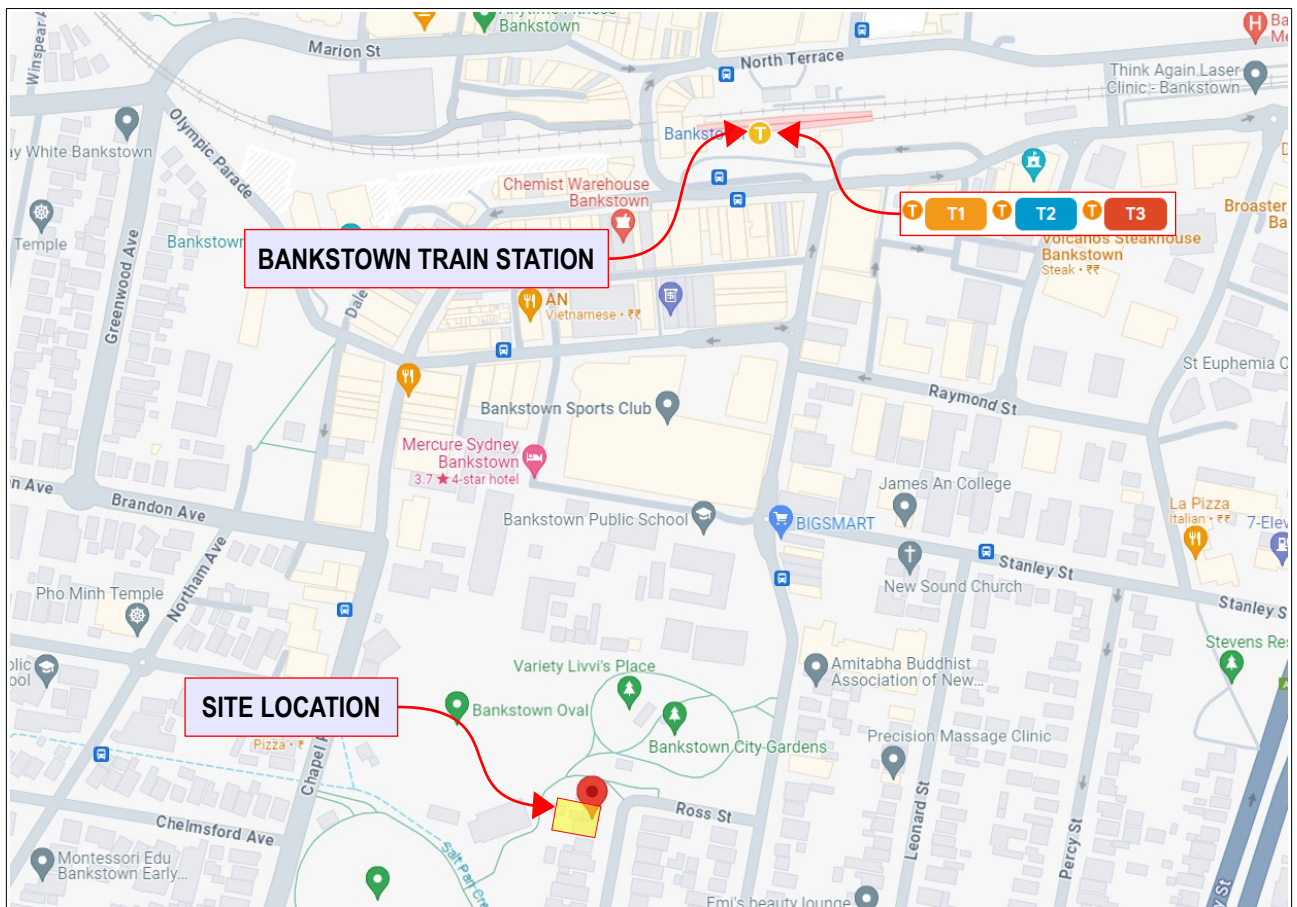


Figure 4. Public transport-train.

Item	Report
Surveys and survey results	
Parking survey	<ul style="list-style-type: none"> • A parking demand survey was conducted on Thursday 07/12/2023 (evening) and Tuesday 12/12/2023 (morning). <ul style="list-style-type: none"> ◦ The morning survey was between 6:30 and 09:30 ◦ The afternoon survey was between 16:00 and 19:00 • Refer to Figure 5 for survey locations <ul style="list-style-type: none"> ◦ Areas in red represent a convenient walking distance of up to 150 metres from the site. ◦ Areas in blue represent a close walking distance of 150 – 250 metres from the site.
Survey results	<ul style="list-style-type: none"> • Refer to Table 1 for survey results • Areas 1a-4 (within 150 metres walking distance) <ul style="list-style-type: none"> ◦ The morning peak occurred at 09:30 ◦ The afternoon peak occurred at 17:00 ◦ The survey results indicated that there were at least 21 spaces vacant throughout the day (to a maximum of 38) in the survey area. • Areas 5-8 (between 150 to 250 metres walking distance) <ul style="list-style-type: none"> ◦ The morning peak occurred between 06:30 to 07:00 ◦ The afternoon peak occurred at between 16:00 to 16:30 ◦ The survey results indicated that there were at least 16 spaces vacant throughout the day (to a maximum of 25) in the survey area. • In total, the survey results indicated that there were at least 42 spaces vacant throughout the day (to a maximum of 58) in the survey area. <ul style="list-style-type: none"> ◦ There are ample on-street parking opportunities within walking distance from the site.

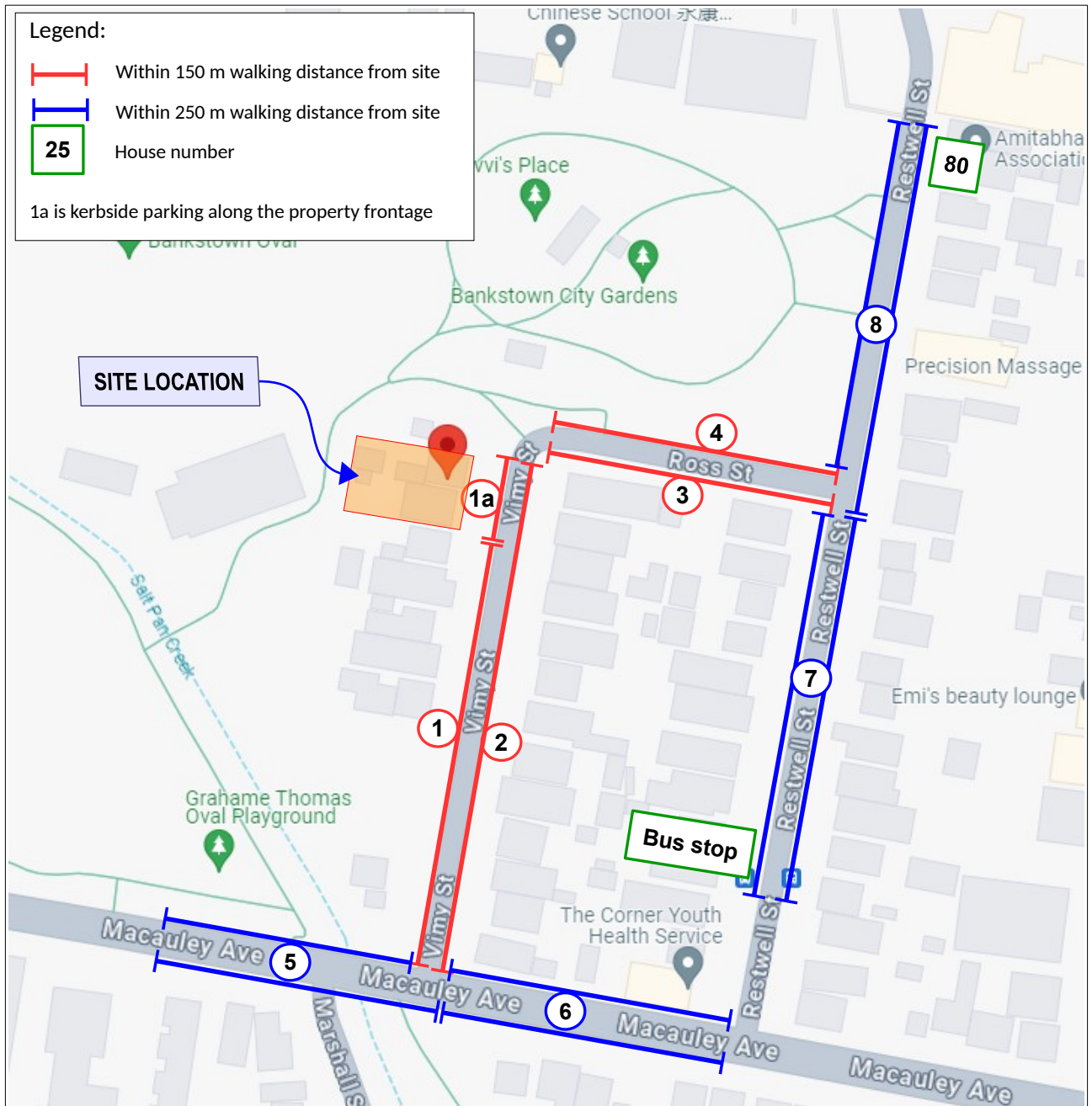


Figure 5. Parking accumulation survey area map.

Table 1. Parking accumulation survey results.

14/12/2023	Number of parked cars											
Thursday	Parking Location											
Time	1a	1	2	3	4	5	6	7	8	1a-4	5-8	Total
6:30	1	9	6	5	2	No stopping	No stopping	15	19	23	34	57
7:00	1	10	5	5	3			15	19	24	34	58
7:30	1	9	6	5	3			15	15	24	30	54
8:00	1	8	6	6	8			15	15	29	30	59
8:30	1	8	7	7	10			14	15	33	29	62
9:00	1	13	8	7	9			14	15	38	29	67
9:30	0	17	8	7	8			13	15	40	28	68
No of spaces	2	16	14	12	17	0	0	22	29	61	51	112

14/12/2023	Number of vacant parking spaces											
Thursday	Parking Location											
Time	1a	1	2	3	4	5	6	7	8	1a-4	5-8	Total
6:30	1	7	8	7	15	No stopping	No stopping	7	10	38	17	55
7:00	1	6	9	7	14			7	10	37	17	54
7:30	1	7	8	7	14			7	14	37	21	58
8:00	1	8	8	6	9			7	14	32	21	53
8:30	1	8	7	5	7			8	14	28	22	50
9:00	1	3	6	5	8			8	14	23	22	45
9:30	2	-1	6	5	9			9	14	21	23	44

07/12/2023	Number of parked cars											
Thursday	Parking Location											
Time	1a	1	2	3	4	5	6	7	8	1a-4	5-8	Total
16:00	0	9	6	7	10	No stopping	No stopping	15	20	32	35	67
16:30	0	9	6	9	11			15	20	35	35	70
17:00	0	10	5	9	10			14	18	34	32	66
17:30	1	10	4	8	9			13	16	32	29	61
18:00	1	9	3	7	8			12	14	28	26	54
18:30	1	8	3	7	9			11	15	28	26	54
19:00	0	8	3	8	9			12	16	28	28	56
No of spaces	2	16	14	12	17	0	0	22	29	61	51	112

07/12/2023	Number of vacant parking spaces											
Thursday	Parking Location											
Time	1a	1	2	3	4	5	6	7	8	1a-4	5-8	Total
16:00	2	7	8	5	7	No stopping	No stopping	7	9	29	16	45
16:30	2	7	8	3	6			7	9	26	16	42
17:00	2	6	9	3	7			8	11	27	19	46
17:30	1	6	10	4	8			9	13	29	22	51
18:00	1	7	11	5	9			10	15	33	25	58
18:30	1	8	11	5	8			11	14	33	25	58
19:00	2	8	11	4	8			10	13	33	23	56

Note: negative numbers indicate vehicles parked illegally

Item	Report	
Intersection traffic volume counts	Traffic counts	
	Location / type of control	Macauley Avenue / Vimy street (T-intersection, Give way control)
		Macauley Ave / Restwell St (T-intersection, Signal control)
		Restwell Street / Ross St (T-intersection, Give way control)
	Date / Day of the week	Thursday 07/12/2023 (evening) and Tuesday 12/12/2023 (morning)
	Time period (morning)	06:30 to 09:30; peak hour occurred at 08:15–09:15
Intersection operation	Time period (afternoon)	16:00 to 19:00; peak hour occurred at 16:30–17:30
	<ul style="list-style-type: none"> Refer to Figure 6 and 7 	
	<ul style="list-style-type: none"> All intersections operated smoothly in both peak commuter periods, with spare capacity. 	

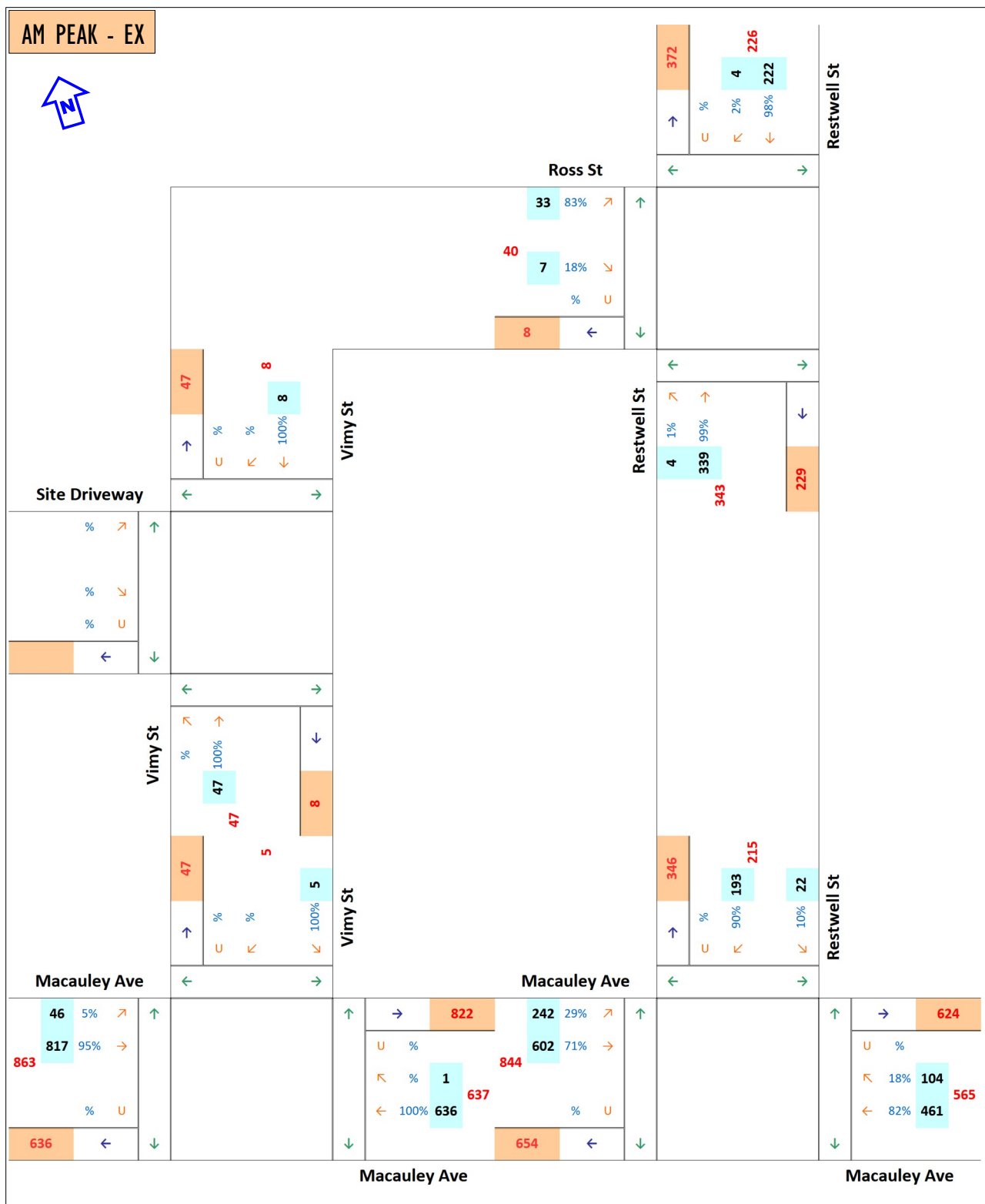


Figure 6. Existing traffic volumes - morning.

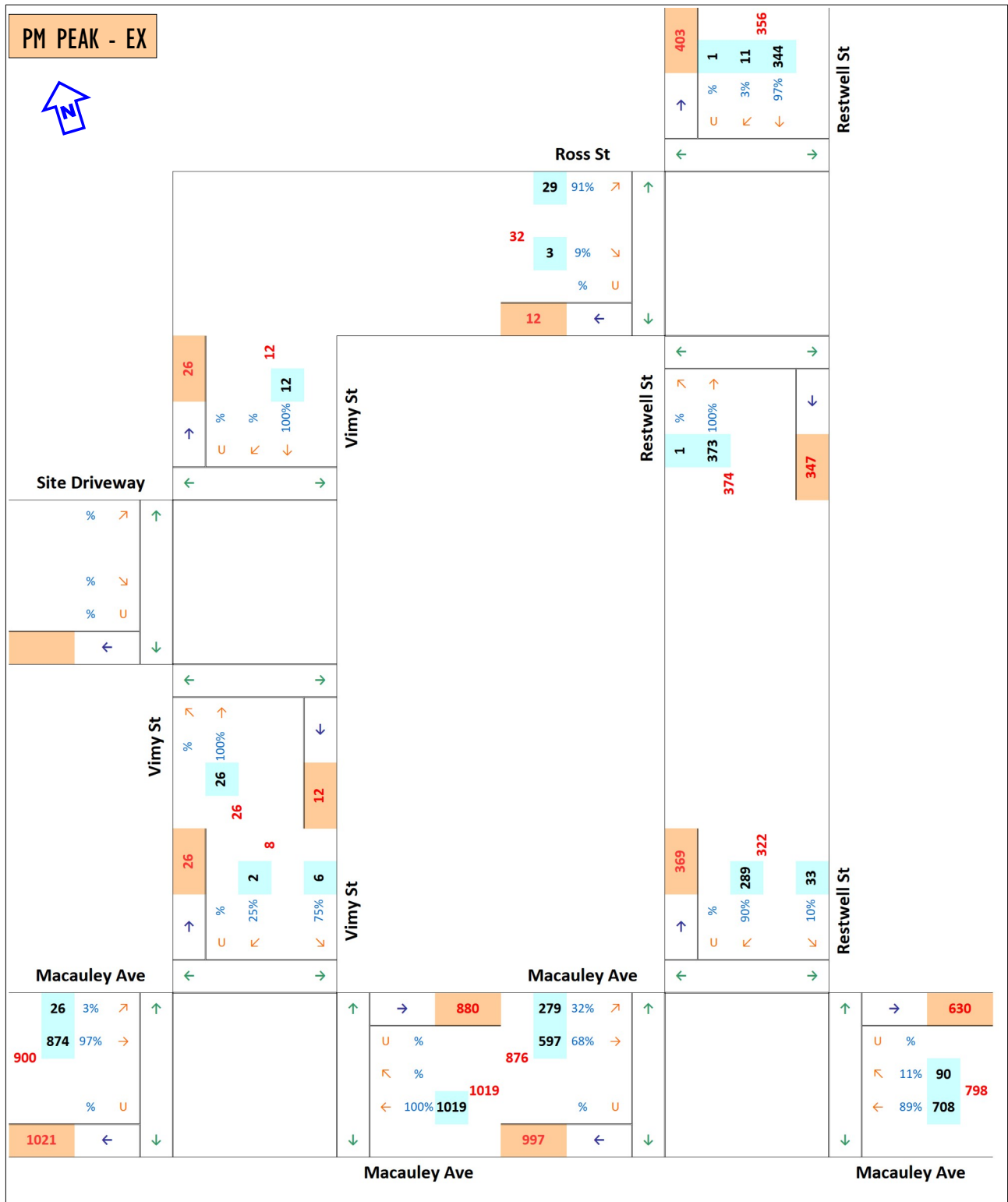


Figure 7. Existing traffic volumes - afternoon.

Item	Report
Planning control documents	<ul style="list-style-type: none"> State Environmental Planning Policy (Housing) 2021 Bankstown City Council <ul style="list-style-type: none"> Bankstown Development Control Plan 2015 <ul style="list-style-type: none"> Part B1 Residential development Part B 5 Parking

	Requirement	Compliance
Planning control document 1	SEPP (Housing) 2021	

Chapter 2: Affordable housing

Part 2 - Development for affordable housing

Division 1: In-fill affordable housing

19 Non-discretionary development standards—the Act, s 4.15

(1) The object of this section is to identify development standards for particular matters relating to residential development under this division that, if complied with, prevent the consent authority from requiring more onerous standards for the matters

(2) The following are non-discretionary development standards in relation to the residential development to which this division applies—

- (e) the following number of parking spaces for dwellings used for affordable housing—
 - (i) for each dwelling containing 1 bedroom—at least 0.4 parking spaces,
 - (ii) for each dwelling containing 2 bedrooms—at least 0.5 parking spaces,
 - (iii) for each dwelling containing at least 3 bedrooms— at least 1 parking space,
- (f) the following number of parking spaces for dwellings not used for affordable housing—
 - (i) for each dwelling containing 1 bedroom—at least 0.5 parking spaces,
 - (ii) for each dwelling containing 2 bedrooms—at least 1 parking space,
 - (iii) for each dwelling containing at least 3 bedrooms—at least 1.5 parking spaces,

Car parking required

Unit type (affordable units)	Number	Rate		Required parking	
1-bed	2	0.4	spaces per unit	0.8	spaces
2-bed	1	0.5	spaces per unit	0.5	spaces
			Total	1.3	spaces
Unit type (non-affordable units)	Number	Rate		Required parking	
1-bed	1	0.5	spaces per unit	0.5	spaces
2-bed	8	1	spaces per unit	8.0	spaces
			Total	8.5	spaces
Total				9.8	spaces

10 spaces rounded up

Car parking provided

11 spaces

Complies and exceed by one (1) space.

Item	Report	
	Requirement	Compliance
Planning control document 2	Bankstown Development Control Plan 2015	
	Section 9 Residential Flat Buildings, Serviced Apartments and 45 Shop Top Housing	
	Building design (car parking)	
	9.21 Development must locate the car parking spaces behind the front building line	Complies
	PART B5-PARKING	
	Section 2-Off Street Parking	
	2.1 Development must calculate the amount of parking required using the schedule of off-street parking requirements.	Non-discretionary development standards set out in SEPP (Housing) 2021 take precedence over the DCP requirements. Refer to the previous page of this report.
	2.2 Development not included in the schedule of car parking standards must submit a parking study for Council's consideration. A qualified traffic consultant must prepare the parking study.	Not applicable
	2.3 Car parking and driveway access in flood liable land in the City of Bankstown must be in accordance with Part B12-Flood Risk Management of this DCP.	Not a traffic matter, to be addressed by others.
	Parking requirements for people with disabilities	
	2.7 Development should provide special parking spaces for people with disabilities at the rate of at least one car space per 100 car spaces provided. Council may require a higher proportion of car spaces for land uses which generate high volumes of sick and infirm visitors such as in medical centres and hospitals.	One (1) space is proposed for people with disabilities. Complies
	Calculation of parking spaces	
	2.8 In calculating the total number of car parking spaces required for a development, these must be: (a) rounded down if the fraction of the total calculation is less than half (0.5) a space; or (b) rounded up if the fraction of the total calculation is equal or more than half (0.5) a space; and (c) must include a room that is capable of being converted to a bedroom.	Complies
	SECTION 3-OFF STREET PARKING DESIGN AND LAYOUTS	
	Parking location	
	3.1 Refer to Part B1 of this DCP for information on the location of garages and carports in the residential areas	Not applicable
	3.2 Parking areas for people with disabilities should be close to an entrance to development. Access from the parking area to the development should be by ramps or lifts where there are separate levels	Complies
	Minimum parking bay dimensions	
	3.3 The following minimum dimensions are generally required for each parking space.	Complies

Item	Report
Requirement	Compliance

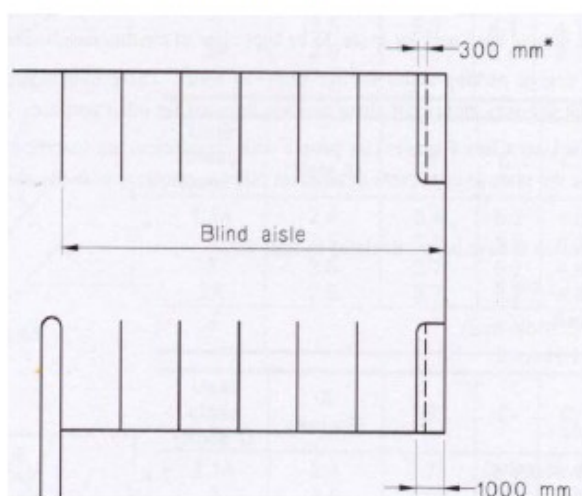
Parking type	L (m)	W (m)	Aisle width			
			90°	60°	45°	30°
Open parking	5.4	2.5	6.2*	4.6	3.7	3

Parking bay dimensions for people with disabilities and residential garages

3.4 Parking bay dimensions for people with disabilities and residential garages are as follows

Parking type	L (m)	W (m)	Comments
Disabled (90°)	6.0	3.2	
Basement parking and single garage	5.5	3	Clear door opening of 2.4m between door jambs.
Double garage in residential development	5.5	5.4	Clear door opening of 4.8m between door jambs.

Diagram: Blind Aisle Extension



* Additional widening required if there is a wall or fence at the side of the last space.
See clause 2.4 (b)(ii) of AS/NZS 2890.1:2004

Service restriction and small car bay dimensions Not applicable

Service bay dimensions Not applicable

Parallel Parking Not applicable

Stack parking Not applicable

SECTION 4-OFF STREET PARKING ACCESS AND CIRCULATION

Access driveway width and design

4.1 The location of driveways to properties should allow the shortest, most direct access over the nature strip from the road

Complies

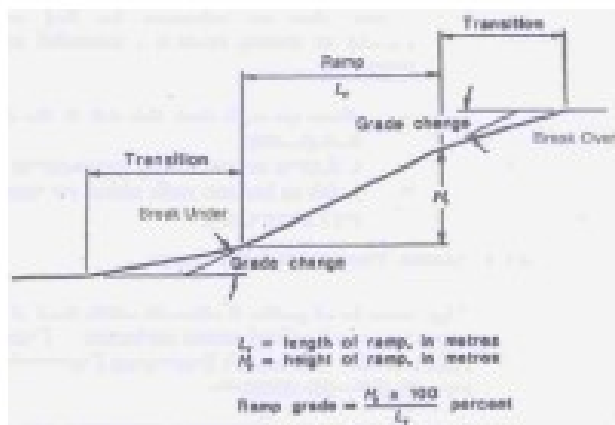
Item	Report												
	<table><tr><th>Requirement</th><th>Compliance</th></tr></table>	Requirement	Compliance										
Requirement	Compliance												
	<div><div>4.2 The appropriate driveway width is dependent on the type of parking facility, whether entry and exit points are combined or separate, the frontage road type and the number of parking spaces served by the access facility.</div><div>Noted</div></div>												
	<div><div>4.3 Driveway widths for existing dwellings and extensions to the existing properties are assessed on their merits.</div><div>Not applicable</div></div>												
	<div><div>4.4 For new residential development, necessary clear driveway widths are provided in the following table:</div><div>Complies</div></div> <table><tr><th>Driveway width</th><th>Minimum Clear Width</th></tr><tr><td>One-way</td><td>3.0 m</td></tr><tr><td>Two-way</td><td>5.5m</td></tr></table>	Driveway width	Minimum Clear Width	One-way	3.0 m	Two-way	5.5m						
Driveway width	Minimum Clear Width												
One-way	3.0 m												
Two-way	5.5m												
	<div><div>4.5 Driveway widths will need to be increased adjacent to parking bays according to AS 2890.1 to provide adequate turning circles.</div><div>Complies</div></div>												
	<div><div>Queuing distance</div><div>4.6 Parking studies are necessary to determine minimum queuing length for developments fronting state roads.</div><div>Not applicable</div></div>												
	<div><div>4.7 The queuing area between the vehicular control point and the property boundary should be sufficient to allow a free influx of traffic which will not adversely affect traffic or pedestrian flow in the frontage road.</div><div>Complies</div></div>												
	<div><div>Circulation roadway and ramp gradients</div><div>4.8 Limiting requirements for grades on circulation roadways and ramps shall be as follows:</div><div>Complies</div></div> <table><tr><th>Maximum Gradient</th><th>Straight ramps longer than 20m</th><th>Straight ramps up to 20m</th></tr><tr><td>Public car parks</td><td>1 in 6 (16.7%)</td><td>1 in 5 (20%)</td></tr><tr><td>Private or residential car parks</td><td>1 in 5 (20%)</td><td>1 in 4(25%)</td></tr><tr><td>Domestic driveways</td><td>1 in 4 (25%)</td><td></td></tr></table>	Maximum Gradient	Straight ramps longer than 20m	Straight ramps up to 20m	Public car parks	1 in 6 (16.7%)	1 in 5 (20%)	Private or residential car parks	1 in 5 (20%)	1 in 4(25%)	Domestic driveways	1 in 4 (25%)	
Maximum Gradient	Straight ramps longer than 20m	Straight ramps up to 20m											
Public car parks	1 in 6 (16.7%)	1 in 5 (20%)											
Private or residential car parks	1 in 5 (20%)	1 in 4(25%)											
Domestic driveways	1 in 4 (25%)												
	<div><div>Note: Gradient of access driveway, grade change and grade transition is to be in accordance with AS 2890.1.</div><div>Gradient within parking module</div><div>4.9 The maximum gradients within a parking module including a motorcycle parking area shall be as follows:</div><div>Not applicable</div><div>(a) Measured parallel to the angle of parking-1 in 20 (5%).</div><div>(b) Measured in any other direction-1 in 16(6.25%).</div><div>(c) Within parking spaces for people with disabilities-see AS/ANZ 2890.6.</div></div>												
	<div><div>Vehicular footway crossing</div><div>4.10 Design and construction of vehicular footway crossing is to be in accordance the Bankstown Development Engineering Standards</div><div>Complies</div></div>												

Item	Report
Requirement	Compliance

Internal circulation

4.11 'Dead end' aisles longer than 15 metres should be avoided. Internal vehicular movements should be able to take place wholly within the site. Circulation patterns which involve the use of a public street are to be avoided

Complies



SECTION 5--OTHER CONSIDERATIONS

Minimum headroom dimensions

5.1 Clear headroom dimension is necessary to make sure that vehicles are clear of mechanical or service obstructions such as fire sprinklers, lighting fixtures and signs. Following minimum headroom dimension has to be maintained in all development.

Complies

Minimum headroom	Dimension
Car and light vans	2.4m
People with disabilities	2.3m
Small rigid vehicles	3.6m

Loading and unloading facilities

5.2 Mixed use development must provide appropriate loading/unloading or furniture pick-up spaces. If no provision is made for the facilities, development applications must provide justification why they are not necessary.

Not applicable

5.3 Where rear lane access is not available and the commercial/retail gross floor area of a building is greater than 500 m², Council requires:

Not applicable

- (a) at least one off-street parking space for delivery/service vehicles; and
- (b) additional off-street parking spaces or a loading dock depending on the size, number, and frequency of delivery/service vehicles likely to visit the premises.

5.4 The design of loading docks must:

Not proposed

- (a) be separate from parking circulation or exit lanes to ensure safe pedestrian movement and uninterrupted flow of other vehicles in the circulation roadways;
- (b) allow vehicles to enter and leave an allotment in a safe manner; and

Item	Report
	Requirement Compliance
	(c) have minimum dimensions of 4 metres by 7 metres per space
	Column location and spacing
	5.5 Columns should not be located at the edge of a parking aisle as they increase the difficulty of manoeuvring into a parking space. It is also desirable to avoid locating a column directly opposite a car door. The dimensions for locating columns in a short span structure are illustrated in the adjoining diagram. Not applicable
	Safety and security
	5.6 Car parking safety can be enhanced with good visibility, security, lighting and good pedestrian and car parking layouts. Noted
	5.7 Sloping ramps from car parks, garages and other communal areas are to have at least one full car length of level driveway before they intersect pavements and carriageways. Not applicable
	Sight distance requirement
	5.8 For all development, adequate sight distance must be provided for vehicles exiting driveways. Clear sight lines are to be provided at the street boundary to ensure adequate visibility between vehicles on the driveway and pedestrians on the footway and vehicles on the roadway. Refer to Australian Standard 2890.1 for minimum sight distance requirements. Complies with AS/NZS 2890.1:2004
	Pedestrian access
	5.9 Parking areas should be designed so that through-traffic is excluded, and pedestrian entrances and exits are separate from vehicular entrances and exits. Complies
	5.10 Lifts and stair lobbies should be prominently marked to help users find them and to increase personal security. Noted
	5.11 In split-level/ multi-level car parks, a stairway should be located at the split-level, to provide pedestrian access between these levels and eliminate pedestrians having to use vehicular ramps. Not applicable
	Sign posting and line marking
	5.12 All car parking spaces should be clearly line marked consistently as illustrated in Australian Standard 2890.1. Capable of compliance at the operational stage
	5.13 Where customer or visitor parking is provided, signposting should be provided to indicate the location of these spaces. Not applicable
	5.14 Where a one-way circulation pattern is adopted, direction of flow should be indicated by signposting and arrow markings on the surface of aisles and driveways. Segregated entries and exits are to be signposted to that effect. Not applicable
	5.15 In large car parks, means of egress should be indicated by directional signs which need to be shown on application plans. Not applicable
	5.16 Parking for people with disabilities should be clearly marked with signs and stencilled disabled symbol on the surface. The space should be painted blue. Capable of compliance at the occupation certificate stage.

Item	Report
	<div>Requirement</div> <div>Compliance</div>
	<div> <div>Car wash bay</div> <div>Not required</div> </div> <div> <p>5.17 Where residential development are required to provide a car wash bay as a condition of development consent, the following requirements apply:</p> <p>(a) the car wash bay pavement must be bunded and isolated from the stormwater drainage system so that car wash runoff does not discharge into the Sydney Water sewer system;</p> <p>(b) the car wash bay must be covered or located in the basement and protected so that stormwater does not collect in the wash bay and discharge into the sewer system; and</p> <p>(c) the car wash bay space may also be used as a visitor space.</p> </div>
	<div> <div>Bicycle parking</div> <div>Not proposed</div> </div> <div> <p>5.18 Council may require development to provide appropriate bicycle parking facilities either on-site or close to the development as identified in Australian Standard 2890.3-Bicycle Parking Facilities.</p> </div>

Item	Report																																																								
Traffic impacts																																																									
Traffic generation	<ul style="list-style-type: none">Base traffic generation rates<ul style="list-style-type: none">From RMS (2002) Guide to Traffic Generating Developments<ul style="list-style-type: none">Updated statistics from TDT 2013 / 04a																																																								
	<ul style="list-style-type: none">Existing traffic generation<ul style="list-style-type: none">Two (2) single story dwelling houses<ul style="list-style-type: none">Peak hour morning vehicle trips = 0.95 per unitPeak hour evening vehicle trips = 0.99 per unit																																																								
	<table><tr><td colspan="2"></td><td colspan="2">Number of dwellings</td><td>2</td></tr><tr><td colspan="2"></td><td colspan="2">morning peak hour</td><td>afternoon peak hour</td></tr><tr><td>trips per unit</td><td></td><td colspan="2">0.95</td><td>0.99</td></tr><tr><td>number of trips</td><td></td><td colspan="2">1.9</td><td>2.0</td></tr><tr><td>distribution</td><td></td><td>IN</td><td>OUT</td><td>IN</td><td>OUT</td></tr><tr><td>%</td><td></td><td>26%</td><td>74%</td><td>66%</td><td>34%</td></tr><tr><td>number of trips</td><td></td><td>0.49</td><td>1.41</td><td>1.31</td><td>0.67</td></tr><tr><td>rounded</td><td></td><td>0</td><td>1</td><td>1</td><td>1</td></tr></table>			Number of dwellings		2			morning peak hour		afternoon peak hour	trips per unit		0.95		0.99	number of trips		1.9		2.0	distribution		IN	OUT	IN	OUT	%		26%	74%	66%	34%	number of trips		0.49	1.41	1.31	0.67	rounded		0	1	1	1												
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rounded		0	1	1	1																																																				
	<ul style="list-style-type: none">Traffic generated by the proposed development<ul style="list-style-type: none">Medium density residential flat building<ul style="list-style-type: none">12 units up to two bedroomsAssumption<ul style="list-style-type: none">Weekday peak hour vehicle trip = 0.4 to 0.5 per unit (small units and flats-up to two bedroom units)																																																								
	<table><tr><td colspan="2"></td><td colspan="2">Number of units (up to two bedrooms)</td><td>12</td></tr><tr><td colspan="2"></td><td colspan="2">morning peak hour</td><td>afternoon peak hour</td></tr><tr><td>trips per unit</td><td></td><td colspan="2">0.4</td><td>0.4</td></tr><tr><td>number of trips</td><td></td><td colspan="2">4.8</td><td>4.8</td></tr><tr><td>distribution</td><td></td><td>IN</td><td>OUT</td><td>IN</td><td>OUT</td></tr><tr><td>%</td><td></td><td>26%</td><td>74%</td><td>66%</td><td>34%</td></tr><tr><td>number of trips</td><td></td><td>1.25</td><td>3.55</td><td>3.17</td><td>1.63</td></tr><tr><td>rounded</td><td></td><td>1</td><td>4</td><td>3</td><td>2</td></tr><tr><td colspan="2">Total</td><td>1.25</td><td>3.55</td><td>3.17</td><td>1.63</td></tr><tr><td colspan="2"></td><td>1</td><td>4</td><td>3</td><td>2</td></tr></table>			Number of units (up to two bedrooms)		12			morning peak hour		afternoon peak hour	trips per unit		0.4		0.4	number of trips		4.8		4.8	distribution		IN	OUT	IN	OUT	%		26%	74%	66%	34%	number of trips		1.25	3.55	3.17	1.63	rounded		1	4	3	2	Total		1.25	3.55	3.17	1.63			1	4	3	2
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Total		1.25	3.55	3.17	1.63																																																				
		1	4	3	2																																																				
	<ul style="list-style-type: none">Additional traffic generated by proposed development																																																								
	<table><tr><td colspan="2">morning peak hour</td><td colspan="2">afternoon peak hour</td></tr><tr><td>IN</td><td>OUT</td><td>IN</td><td>OUT</td></tr><tr><td>1</td><td>3</td><td>2</td><td>1</td></tr></table>	morning peak hour		afternoon peak hour		IN	OUT	IN	OUT	1	3	2	1																																												
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IN	OUT	IN	OUT																																																						
1	3	2	1																																																						
Traffic distribution	<ul style="list-style-type: none">Trip generation and attraction is assumed to be equal in all directions, with trip distribution taking into account the surrounding street network, connections and turn restrictions.<ul style="list-style-type: none">Refer to Figures 8 and 9.																																																								
Traffic impacts	<ul style="list-style-type: none">The above additional traffic is within the hourly and daily fluctuations of the existing traffic flows during commuter peak hours. The likely additional traffic volumes are very low and will have no discernible effect on the existing traffic conditions.The proposed development is supportable on traffic grounds.																																																								

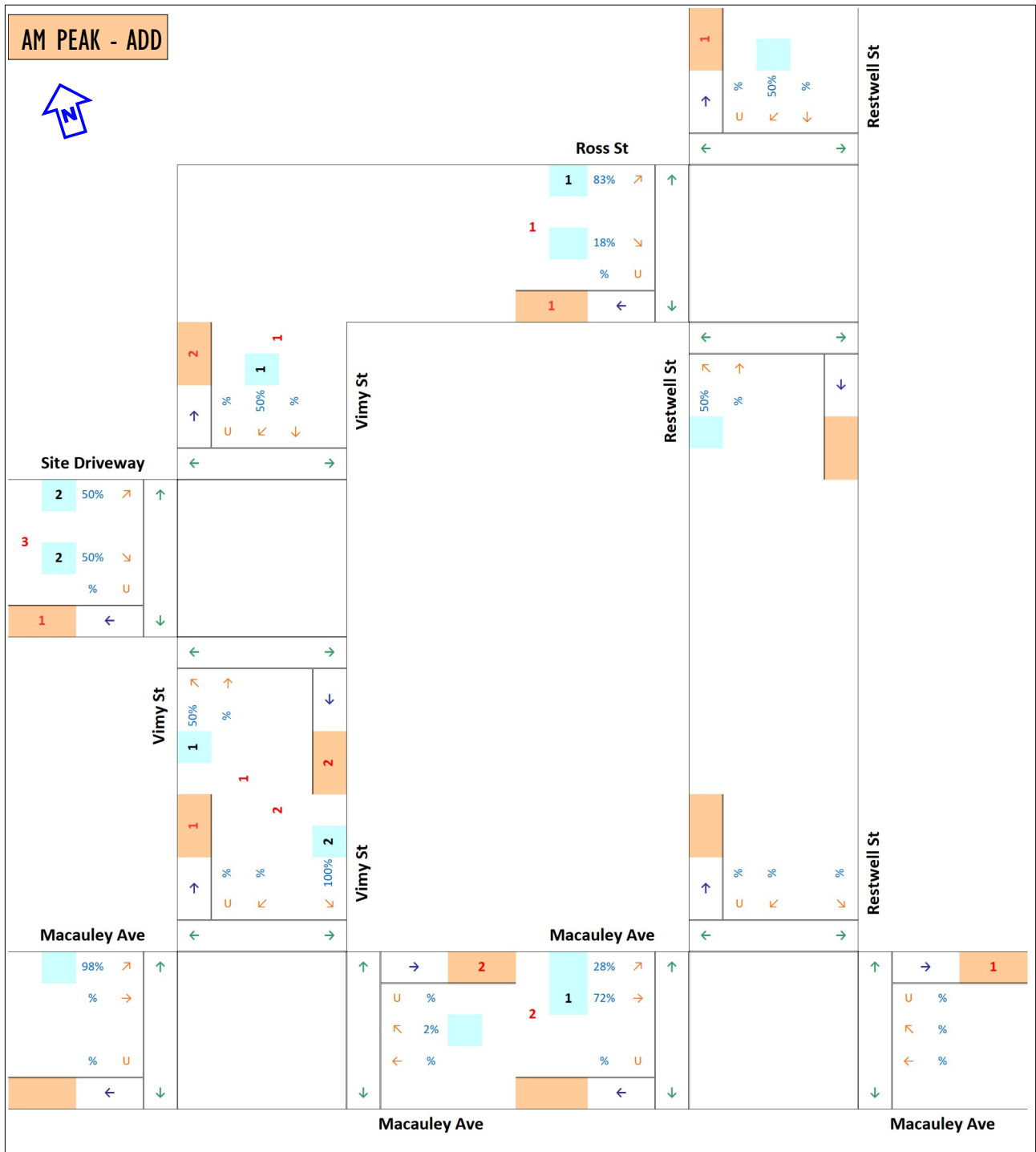


Figure 8. Additional traffic volumes - morning.

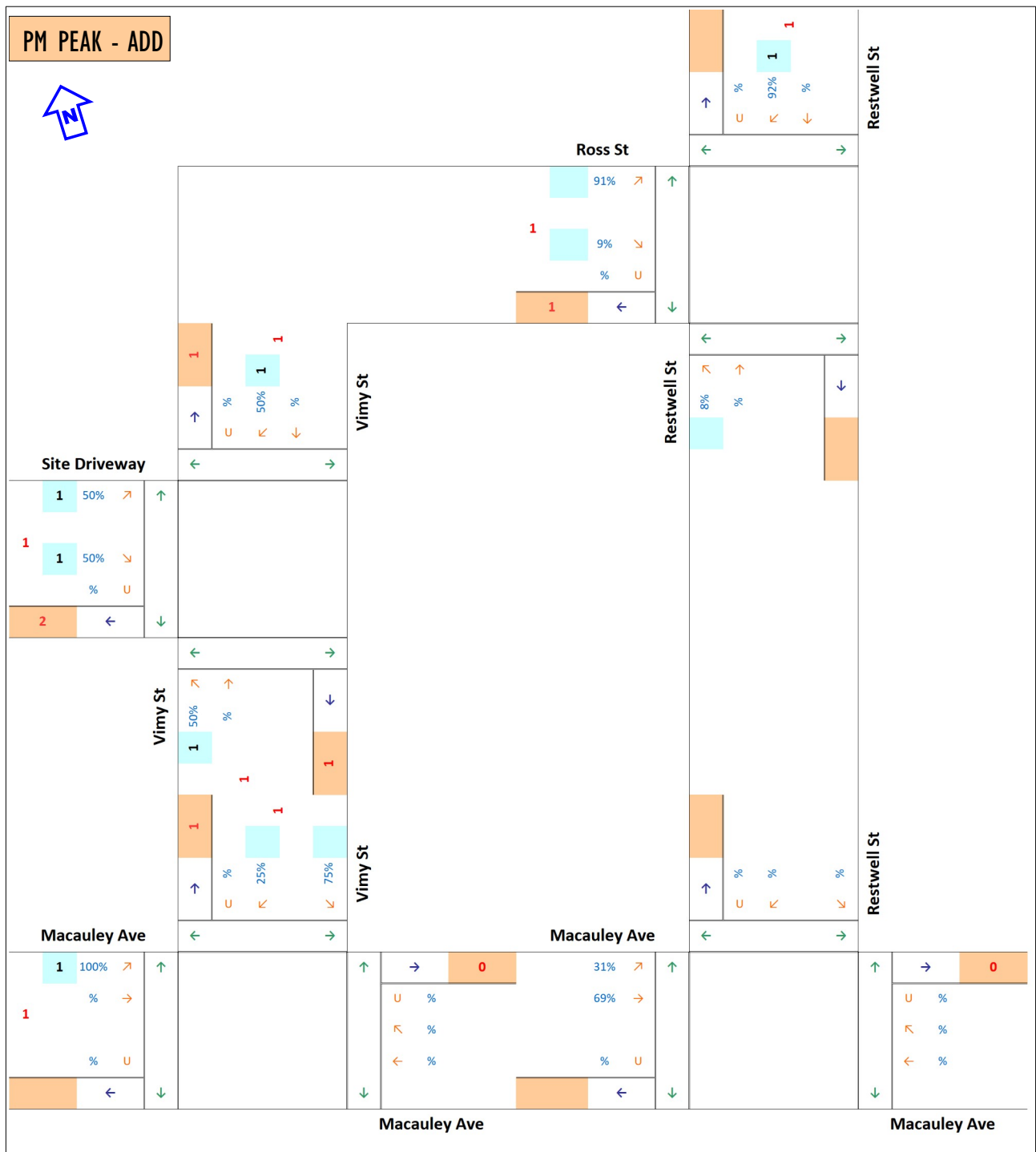


Figure 9. Additional traffic volumes - afternoon.

Conclusions	Proposed parking provision
	<ul style="list-style-type: none"> ◦ Provides 11 car parking spaces that comply with the requirements of SEPP (Housing) 2021 and Bankstown Development Control Plan 2015. ◦ In addition, there are ample on-street parking opportunities within walking distance from the site.
	Traffic impacts
	<ul style="list-style-type: none"> ◦ There will be no noticeable additional traffic generated by the proposed development.
	Design of access, car parking and servicing facilities
	<ul style="list-style-type: none"> ◦ Complies with the relevant standards.
	The proposed development is supportable on traffic and parking grounds.



Oleg I. Sannikov
 Director
 MEngSc (Traffic Engineering)
 MIEAust, PEng
 FAITPM

References:

State Environmental Planning Policy (Housing) 2021

Bankstown Development Control Plan 2015

Guide to Traffic Generating Developments RMS (2002)

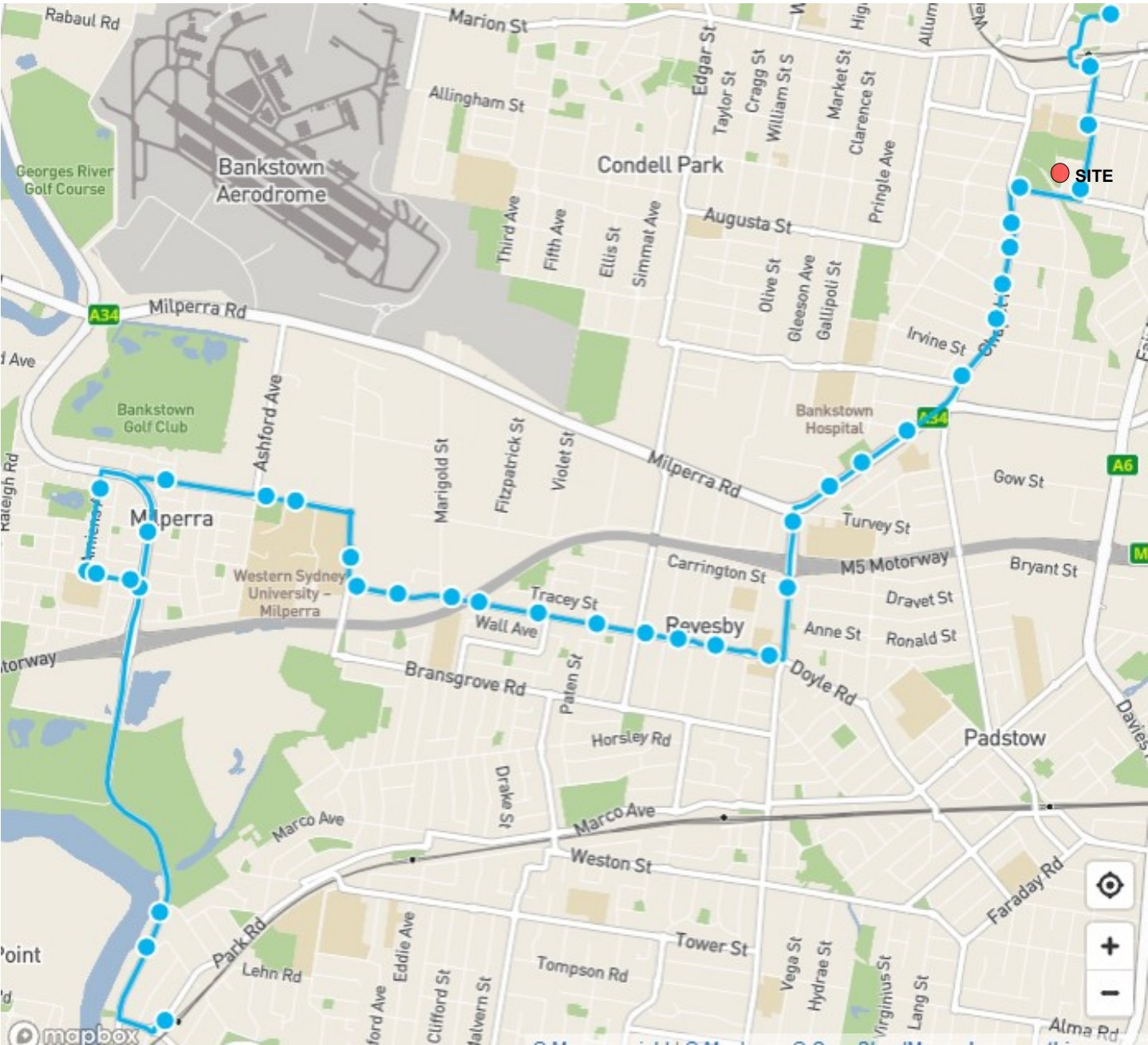
Australian Standard AS/NZS 2890.1:2004: Parking Facilities - Off-street car parking

Australian Standard AS 2890.3:2015: Parking Facilities - Bicycle parking

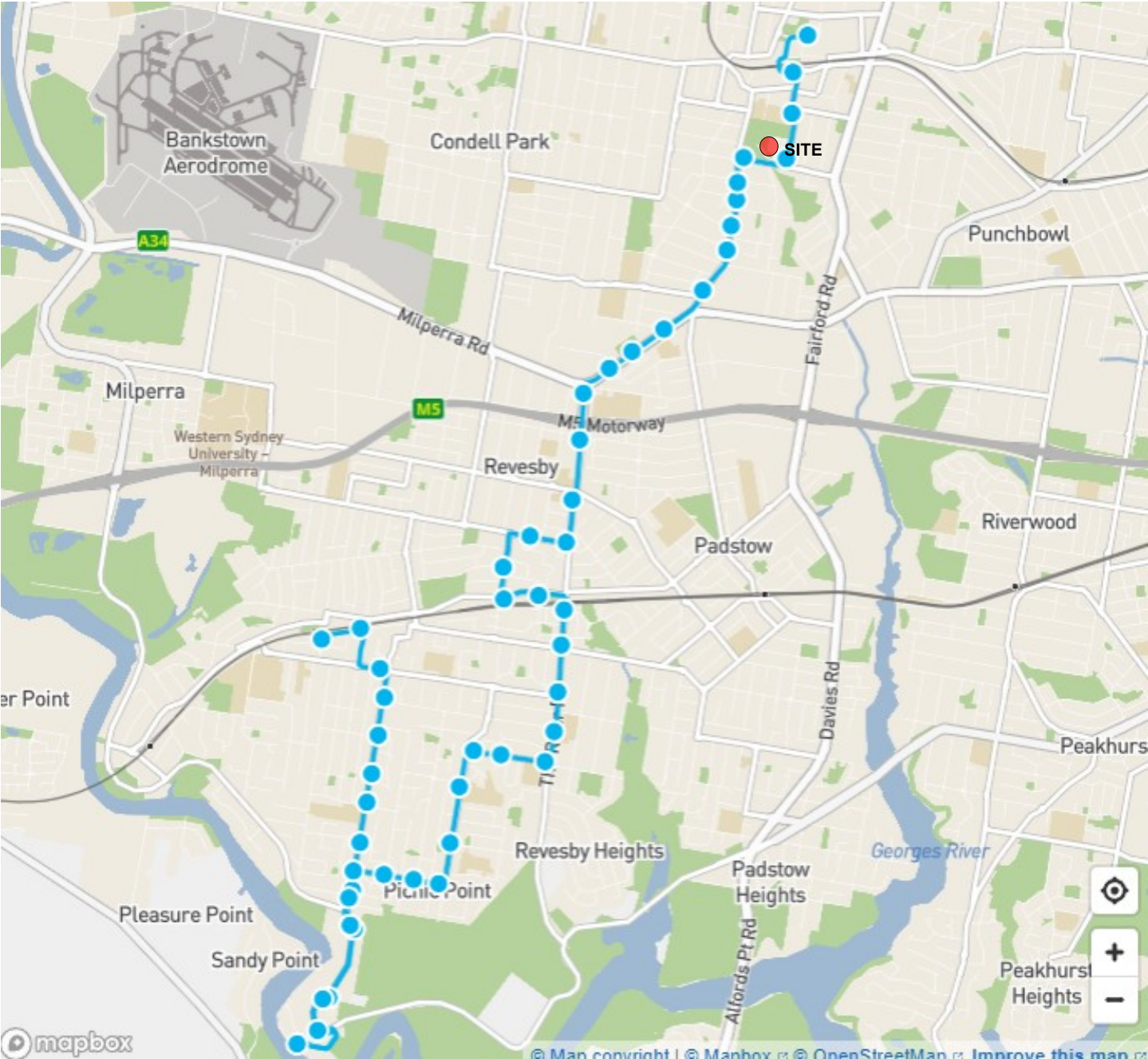
Australian Standard AS/NZS 2890.6:2009: Parking Facilities - Off-street parking for people with disabilities

Appendix
Public transport routes
Car park design checks and vehicle turning diagrams

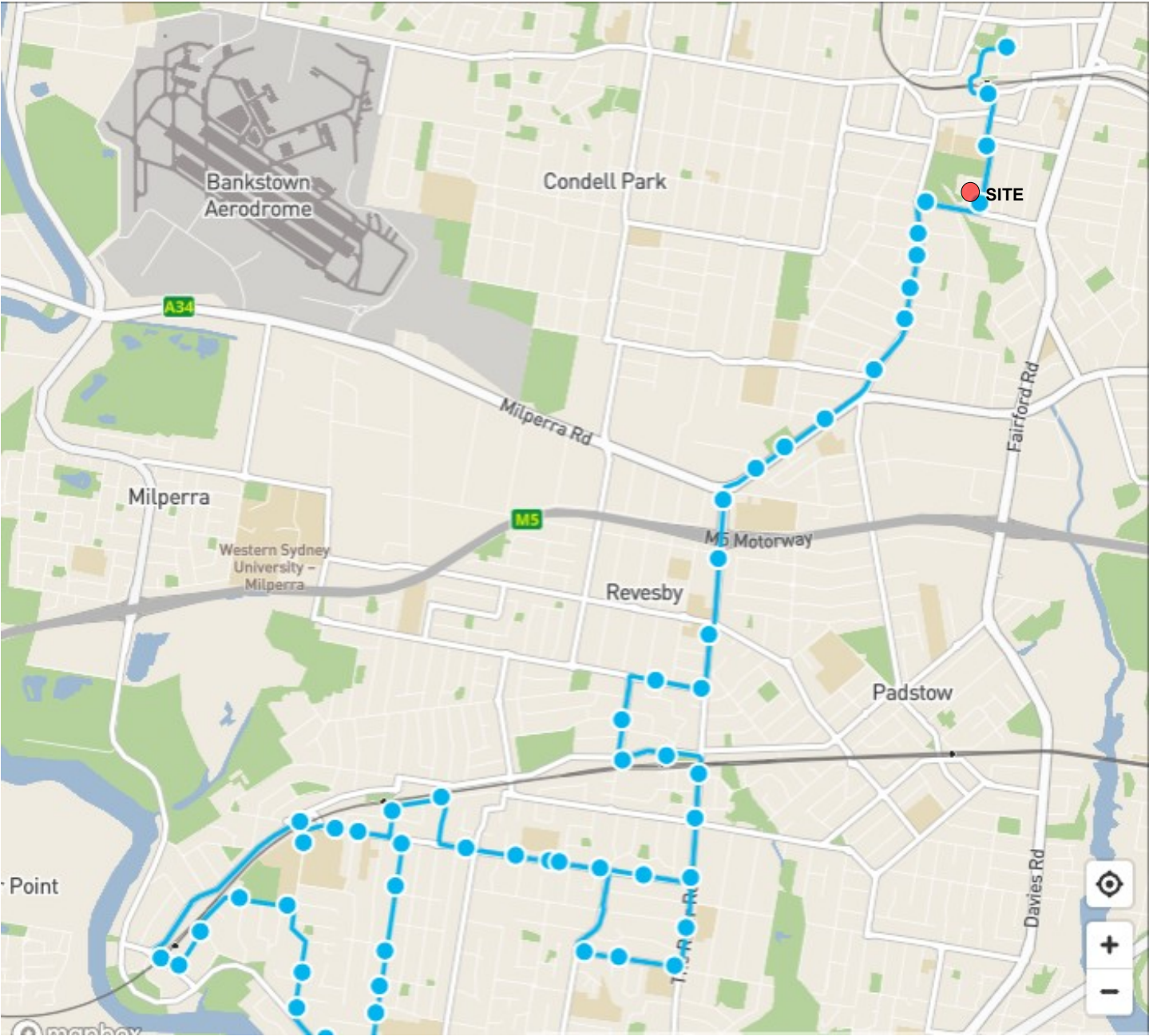
Bus Route 922



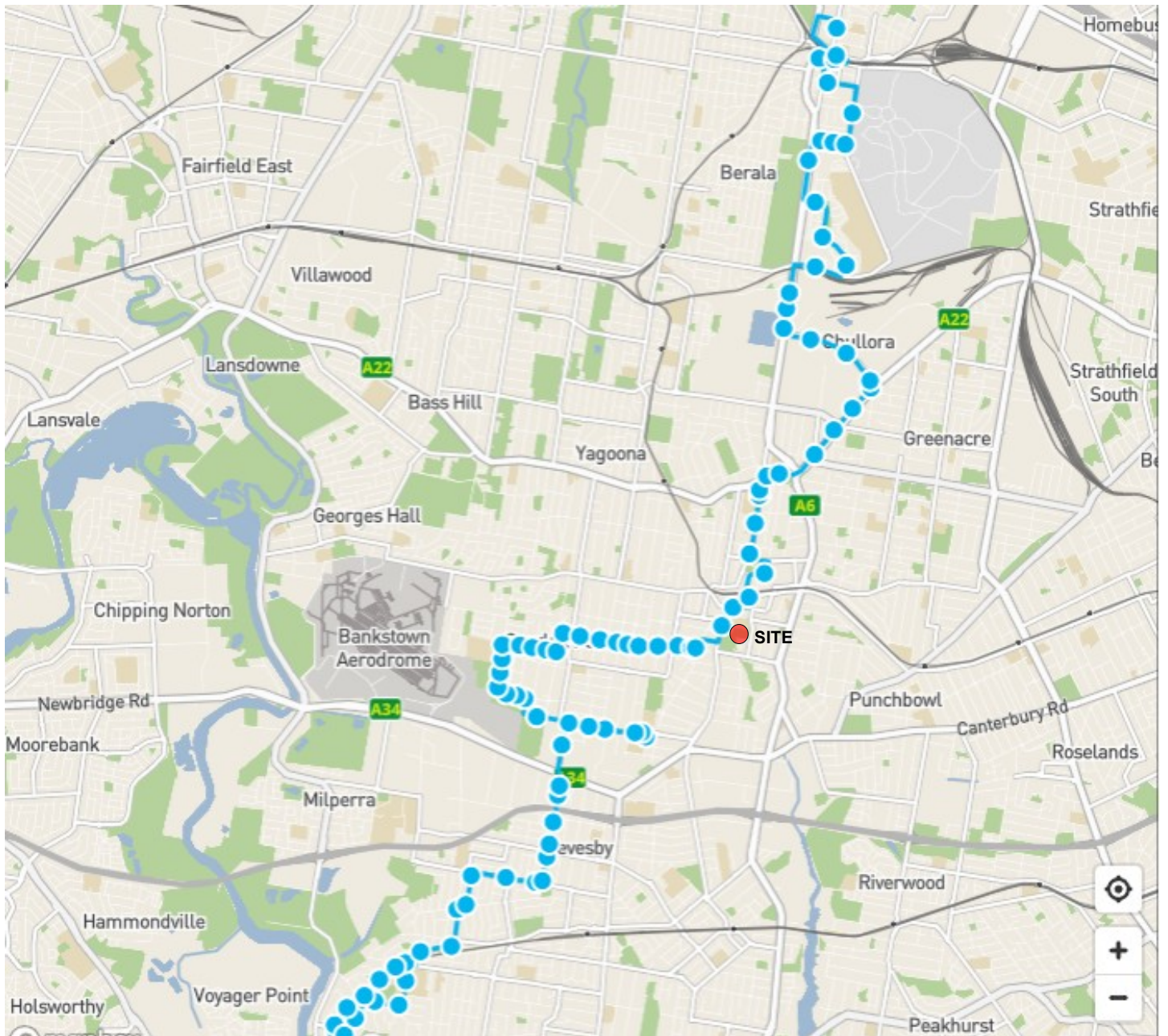
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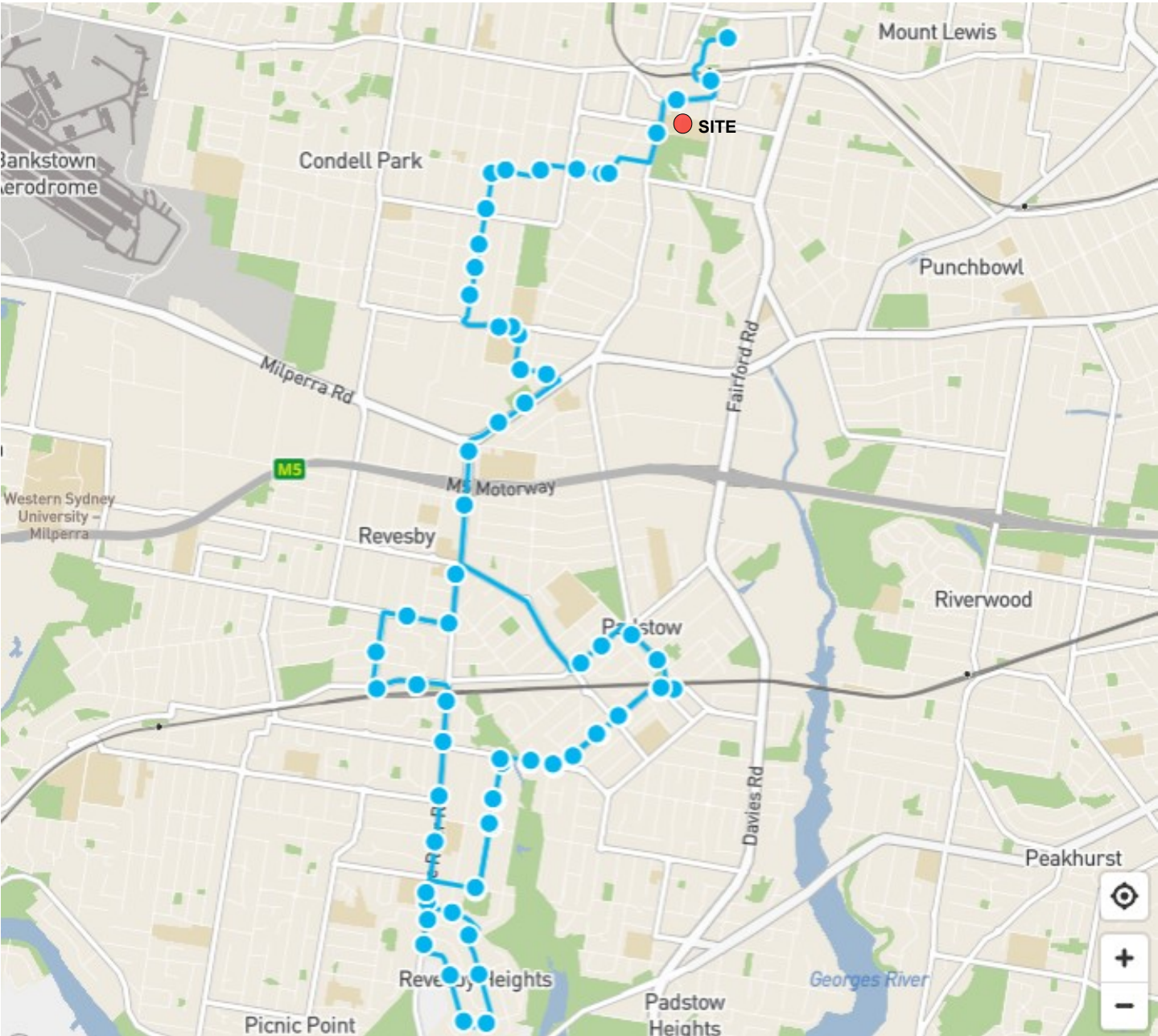
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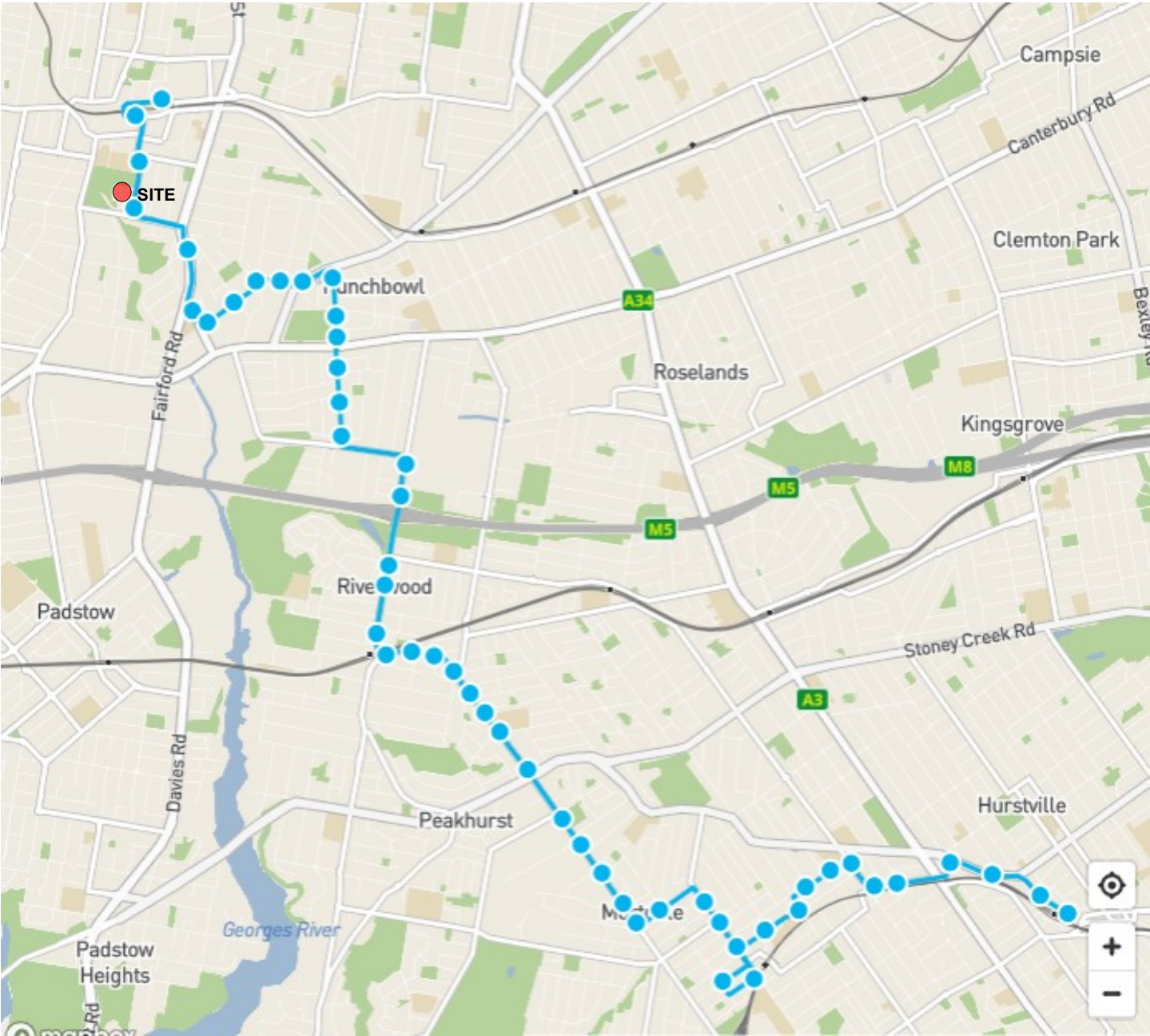
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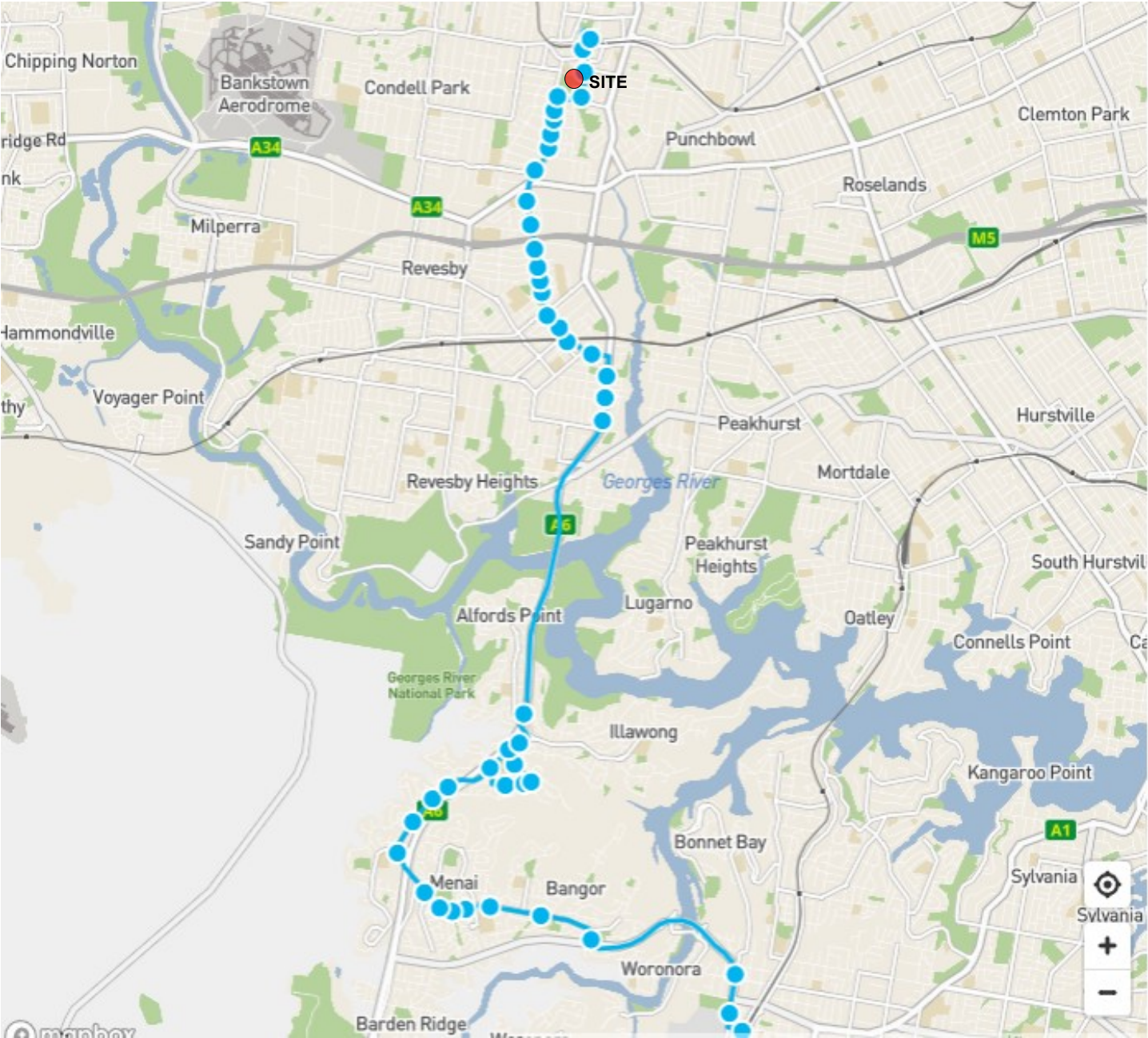
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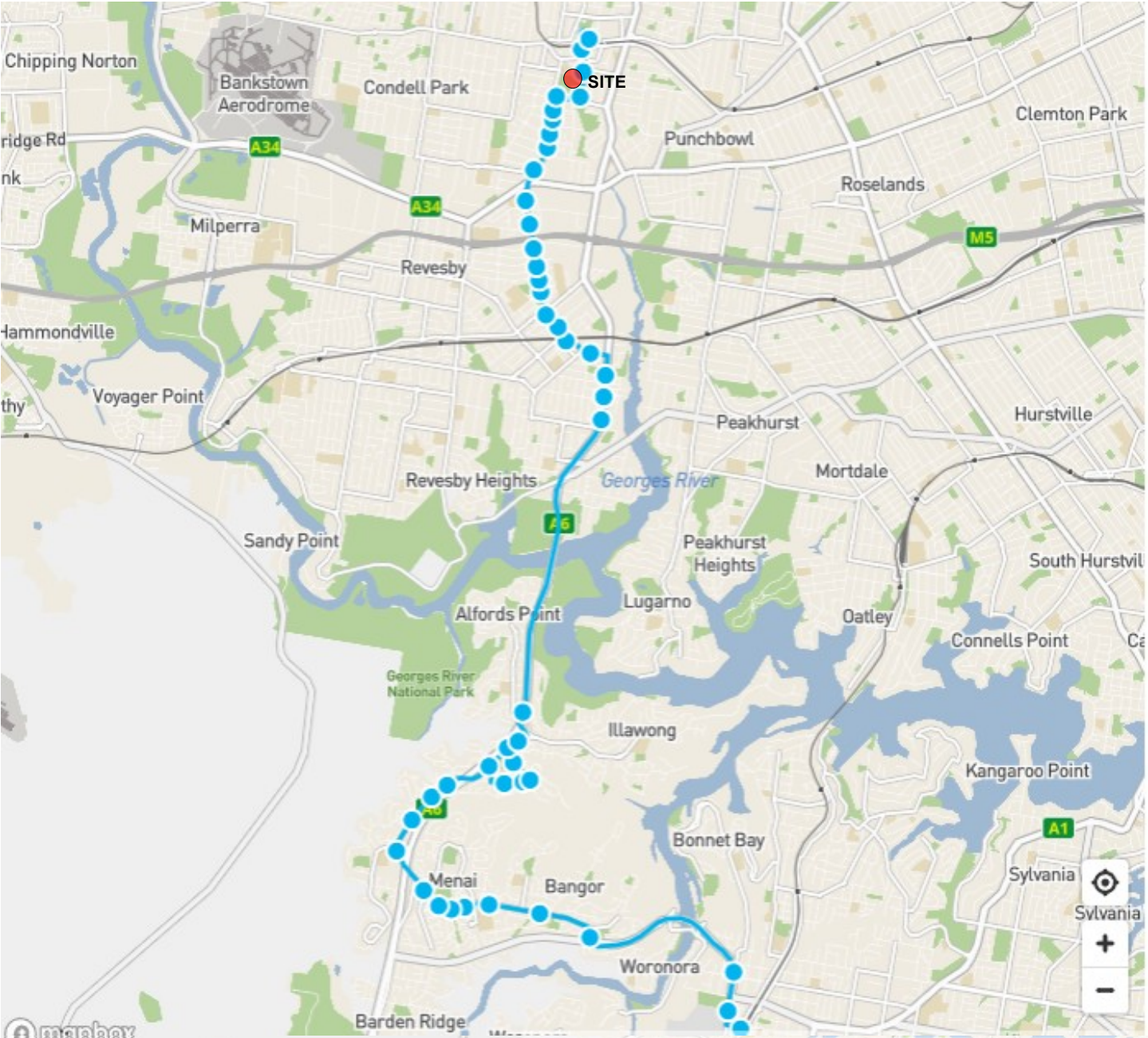
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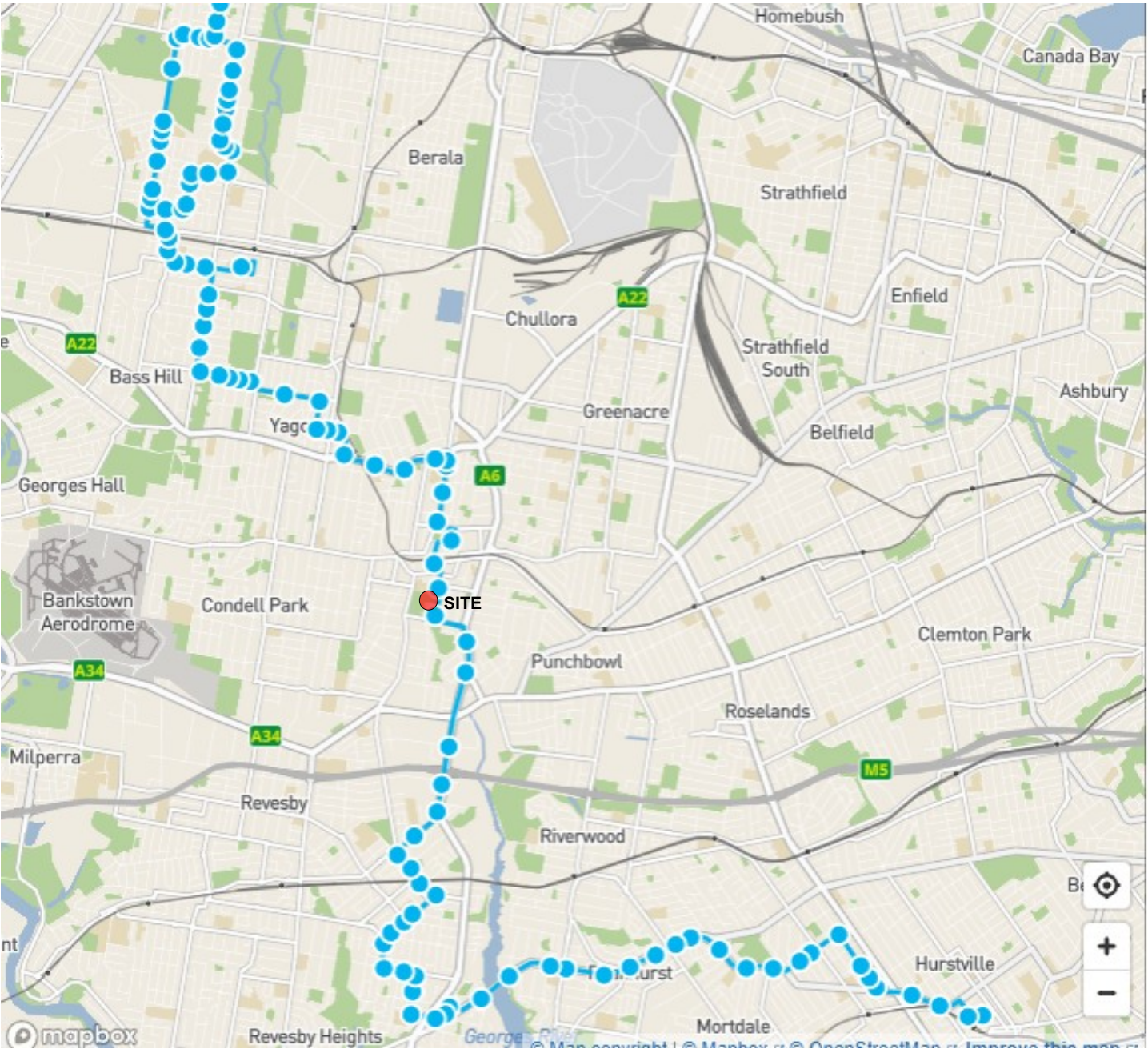
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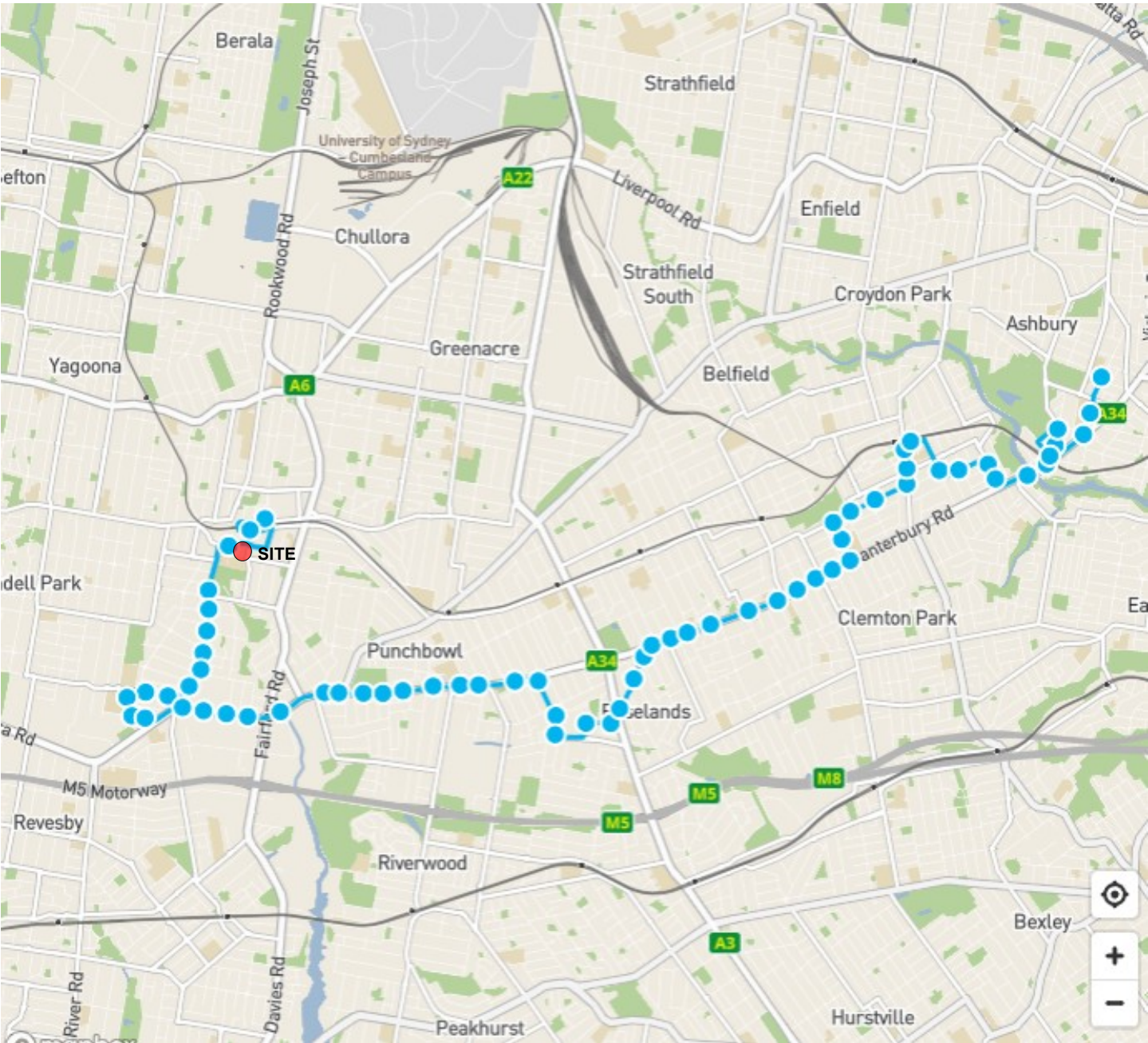
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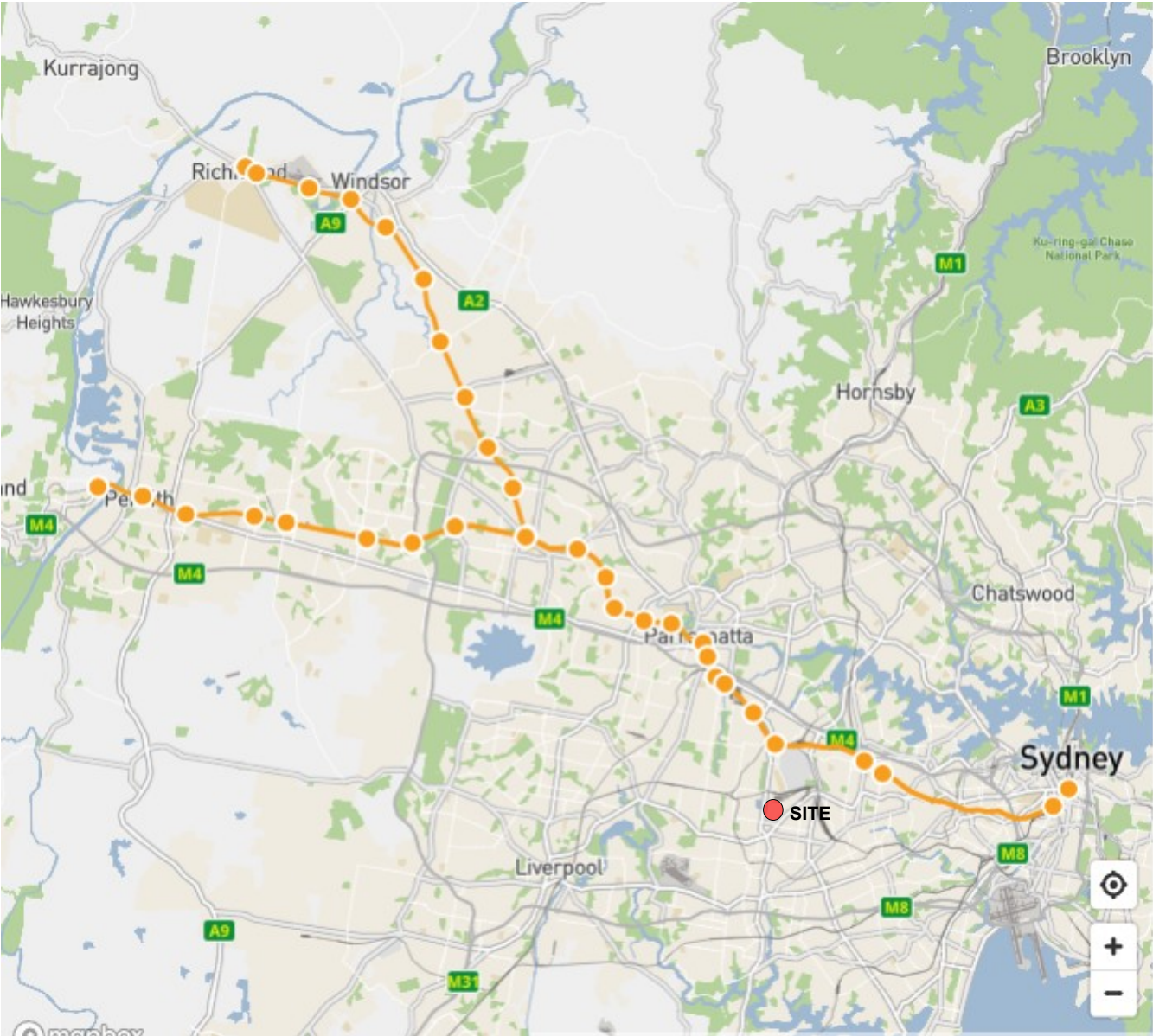
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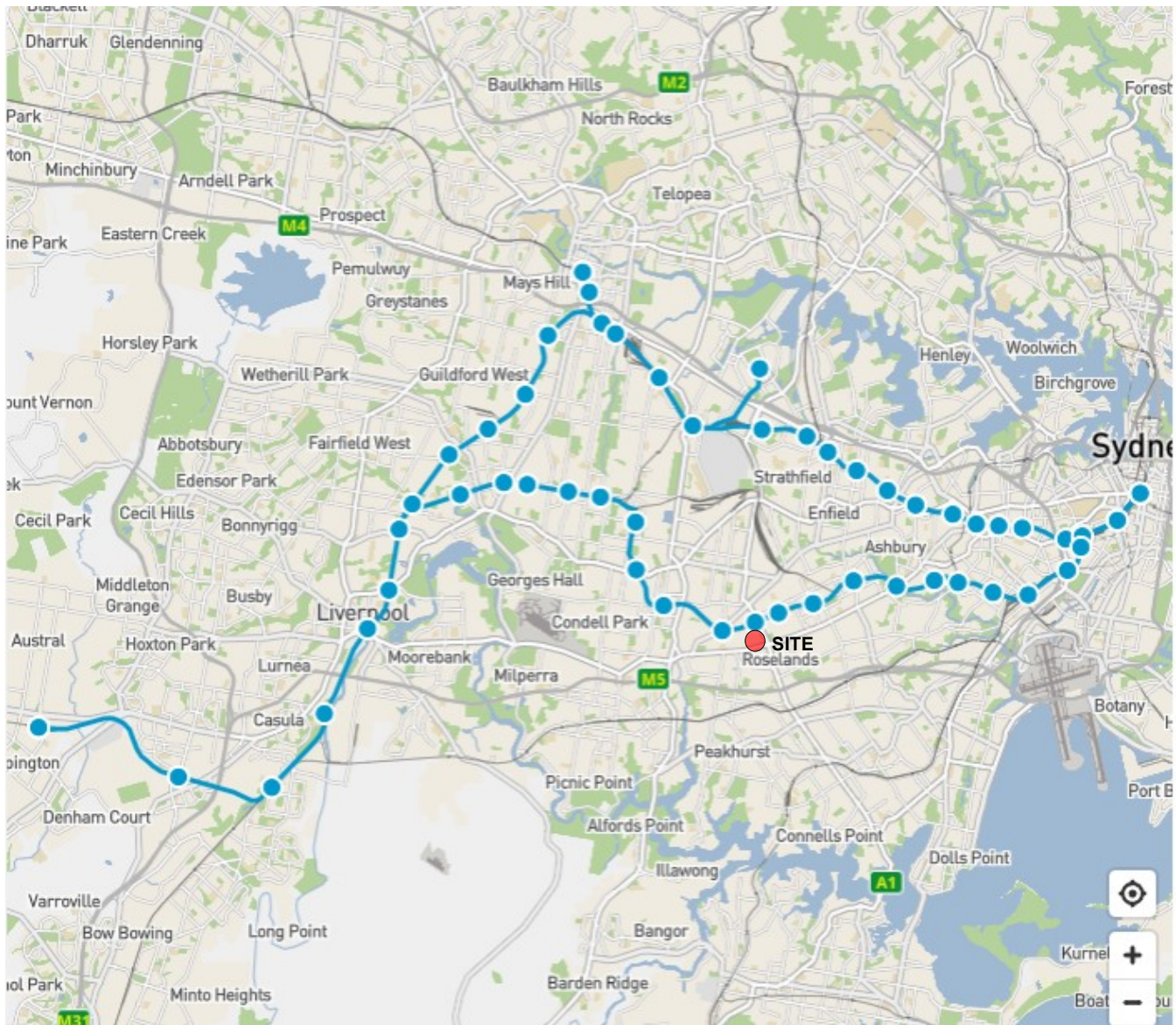
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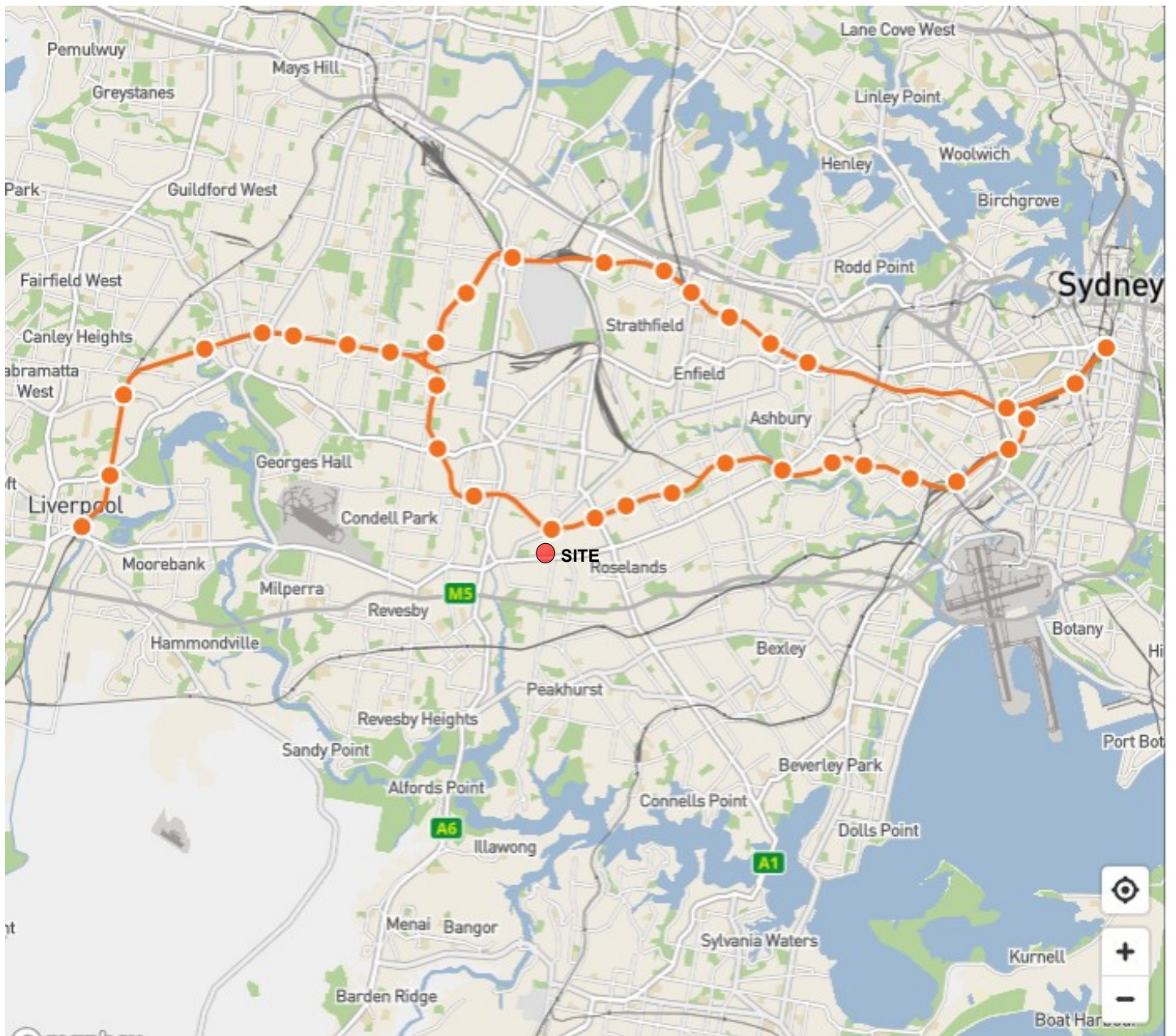
Train route T1

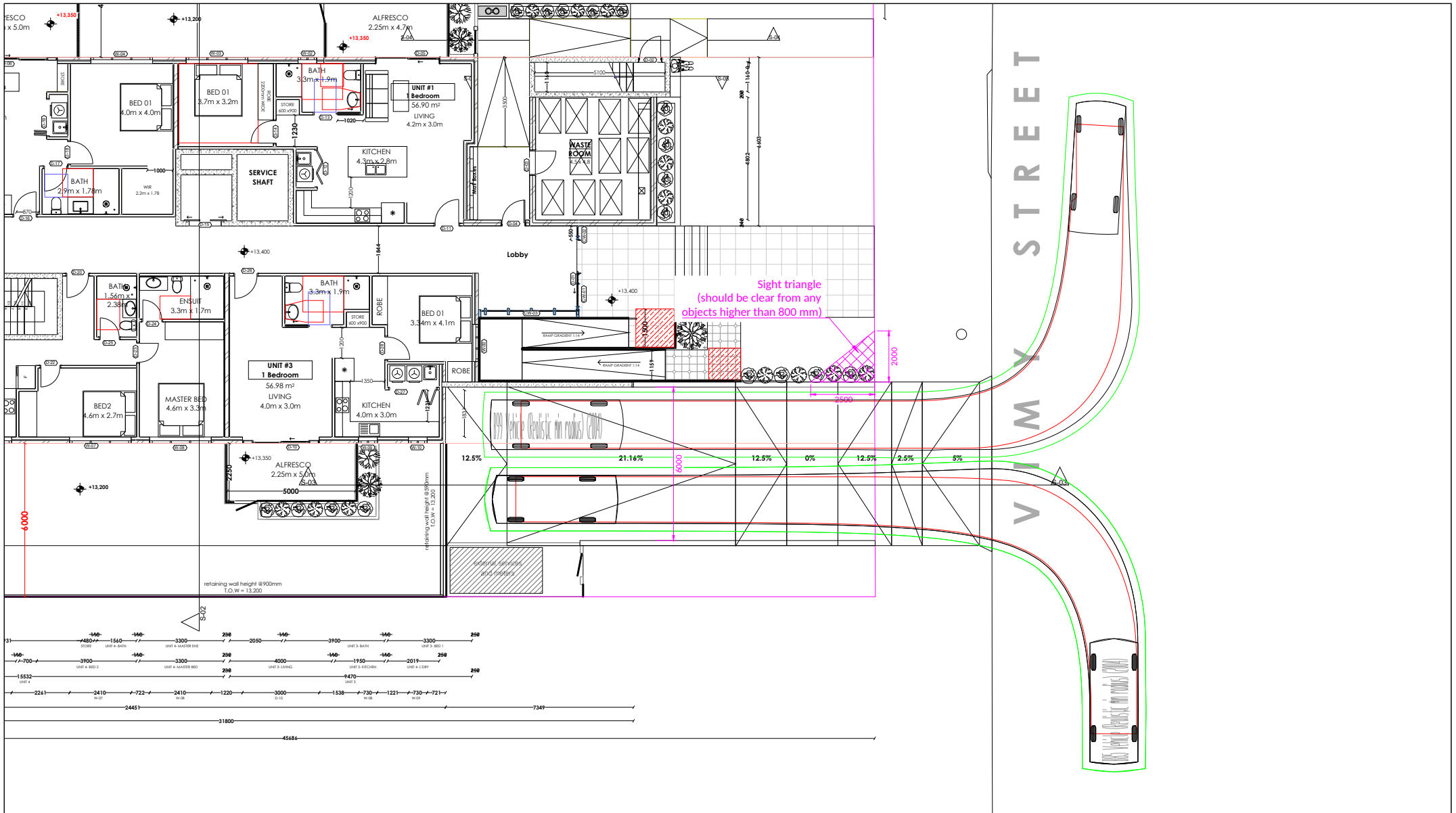


Train route T2

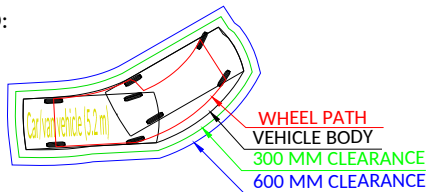


Train route T3





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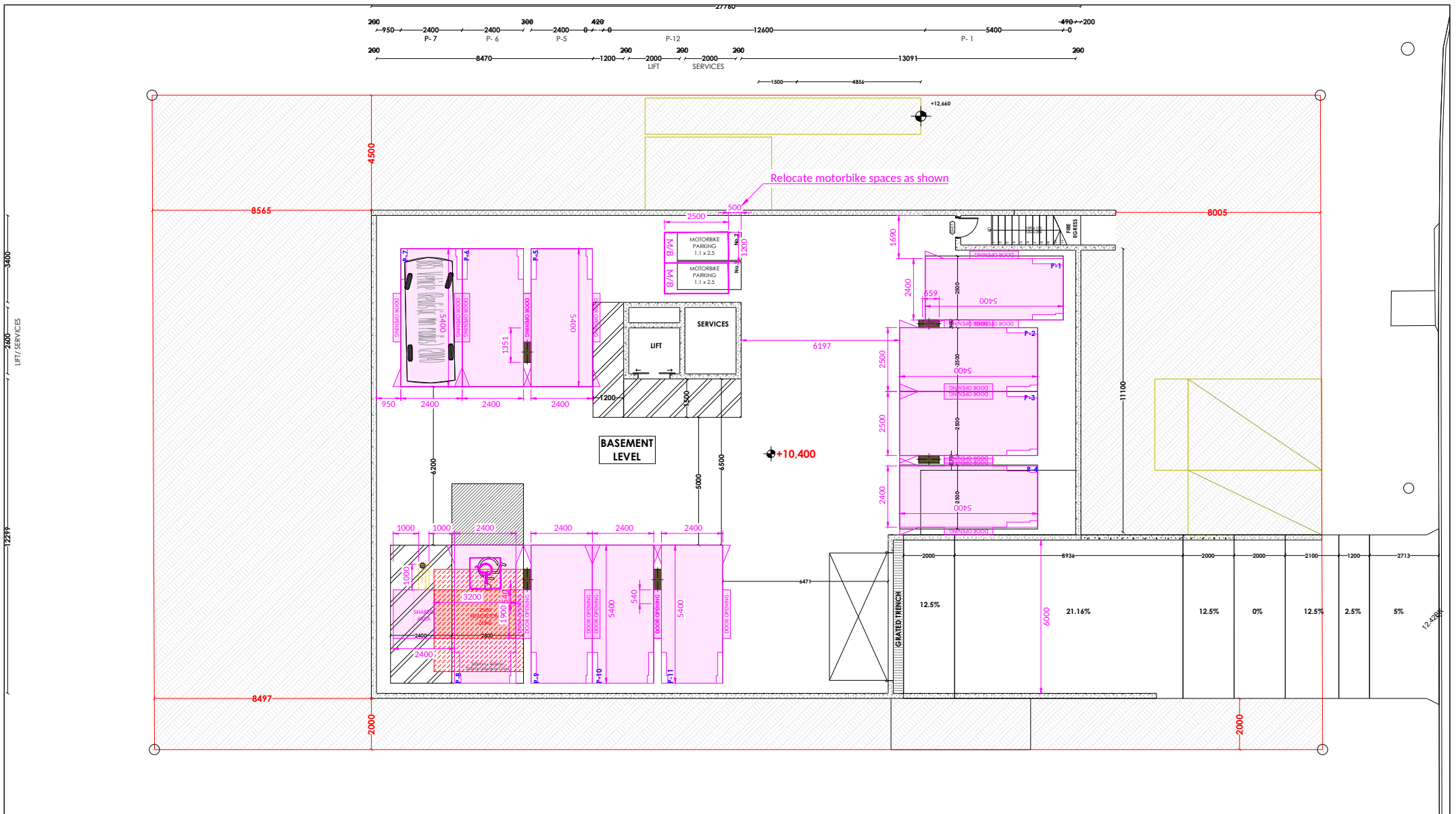


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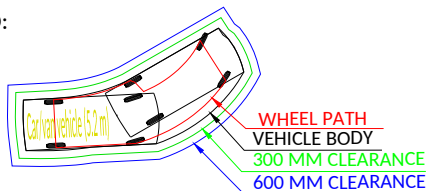
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Proposed car park layout
Design checks as per AS/NZS 2890 series



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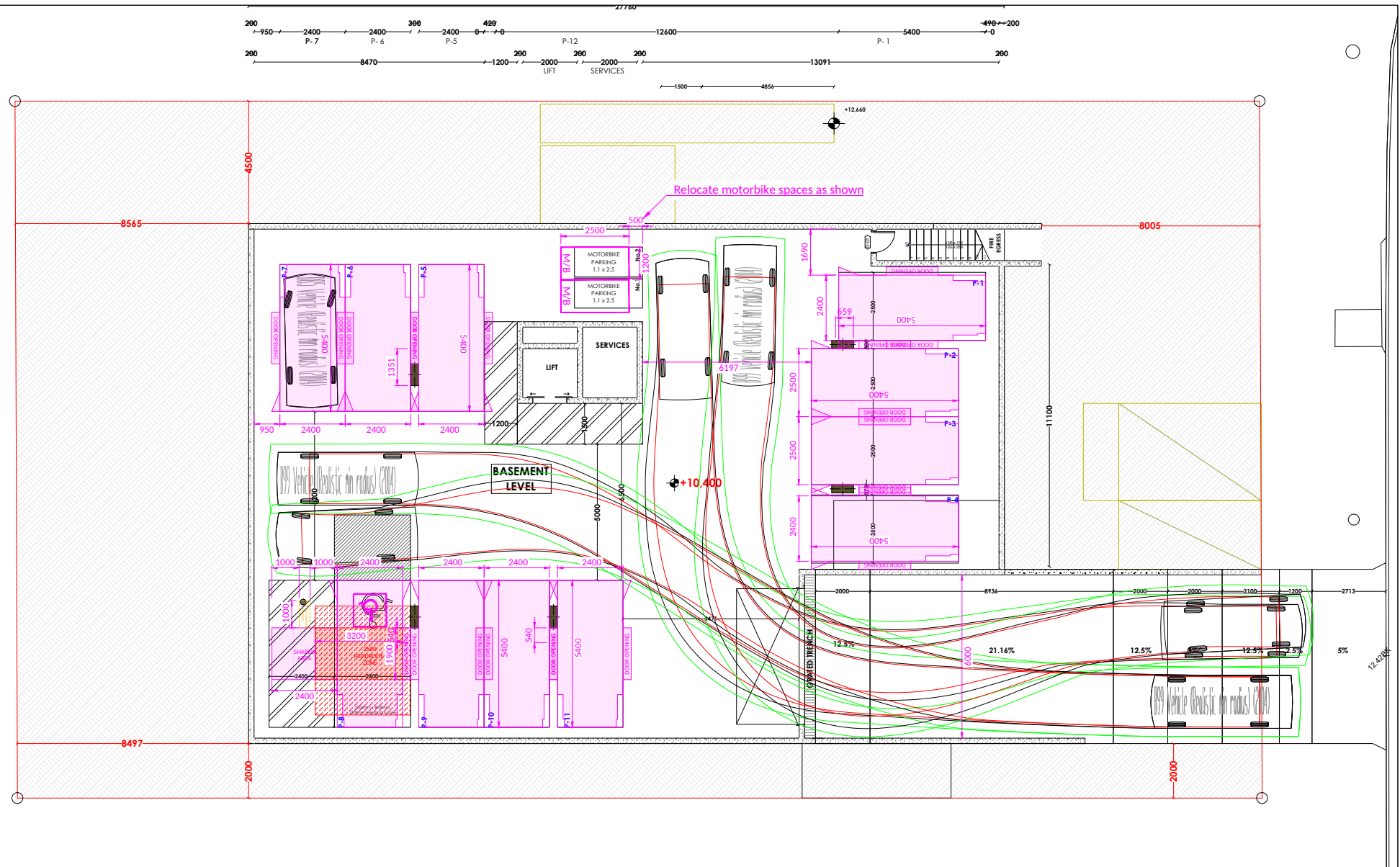
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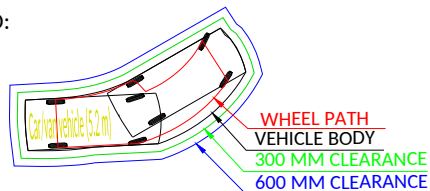
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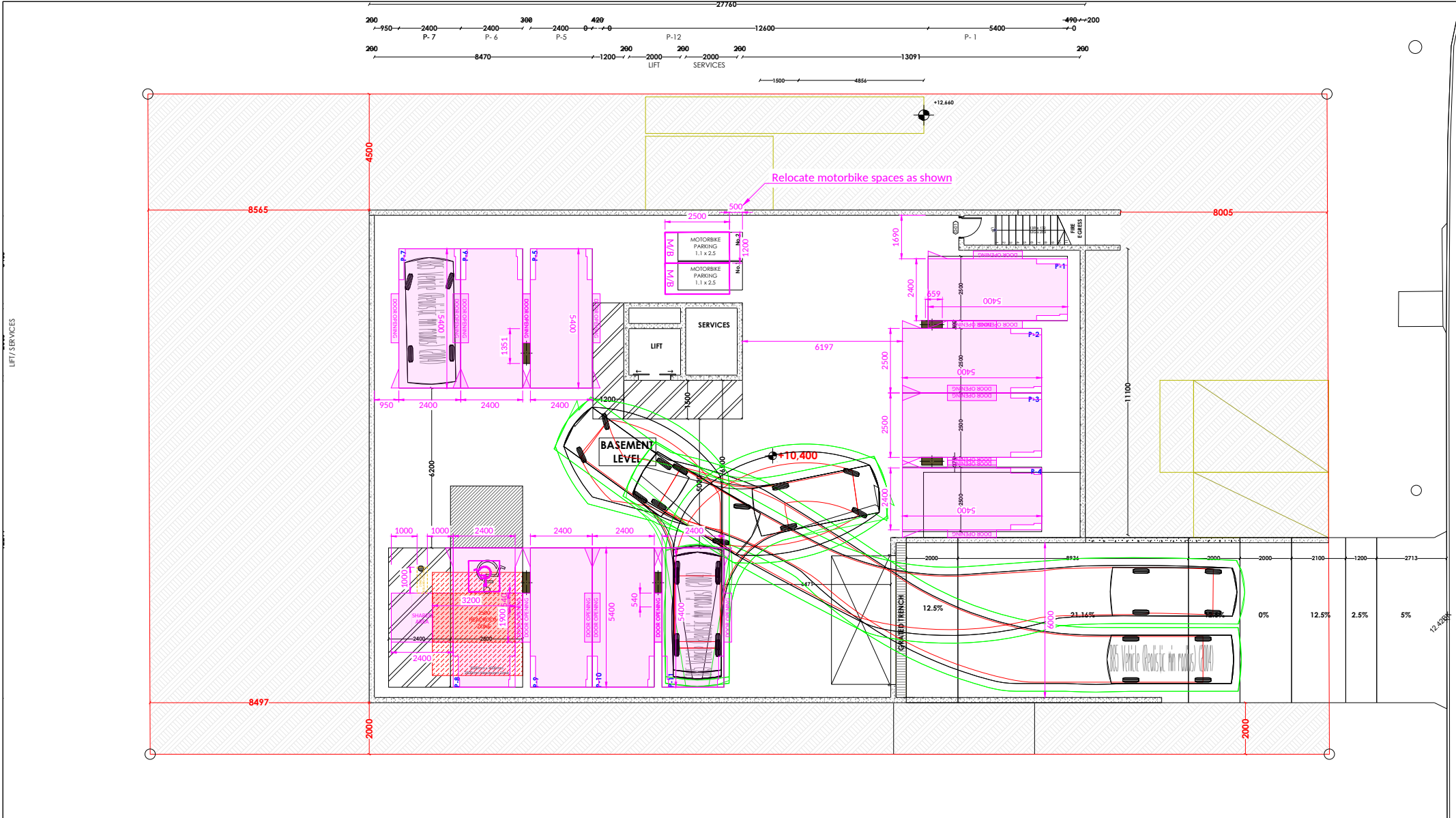
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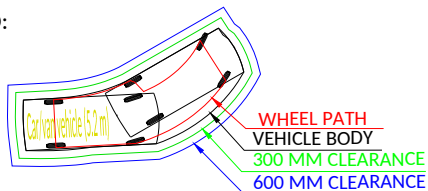
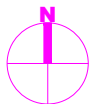
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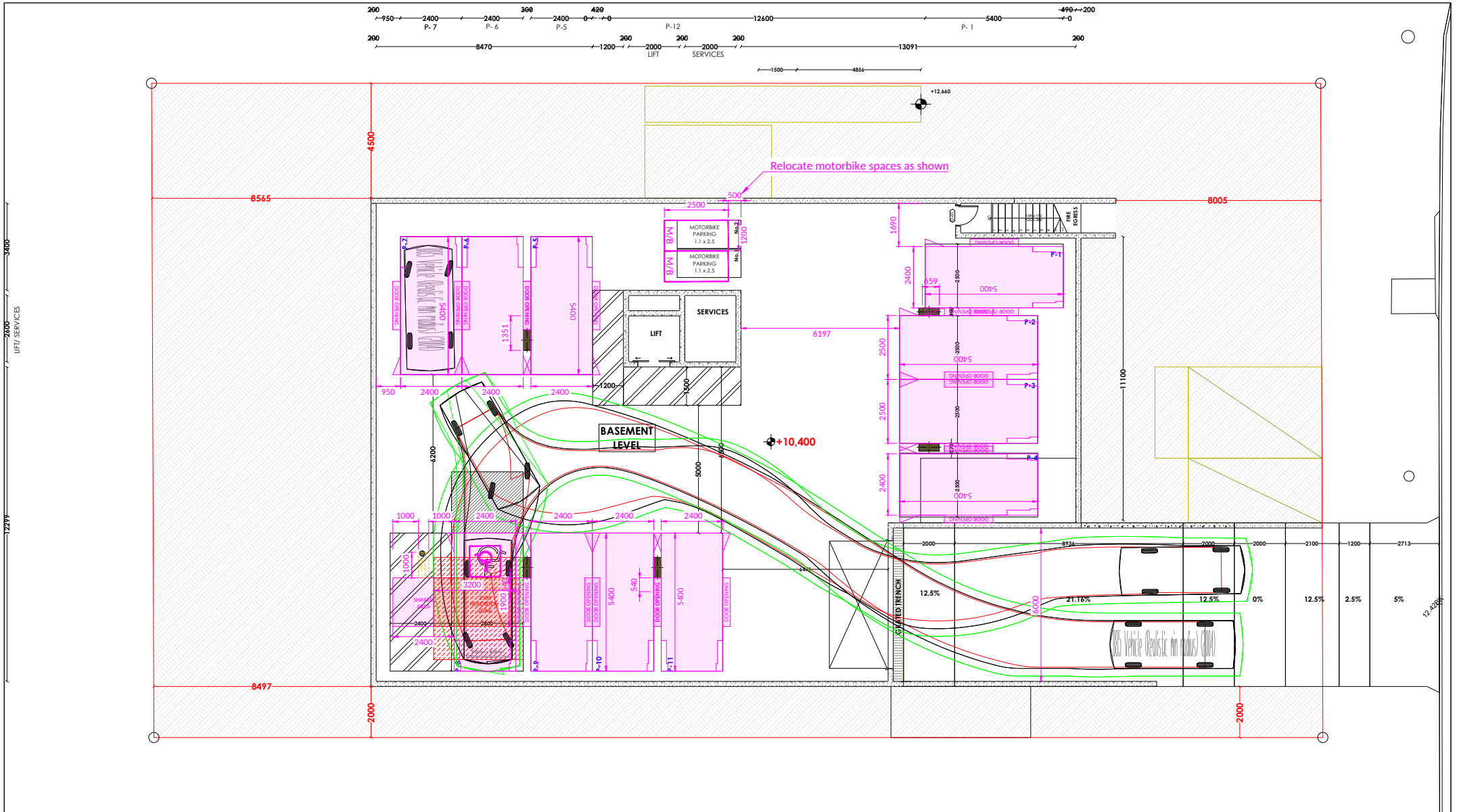


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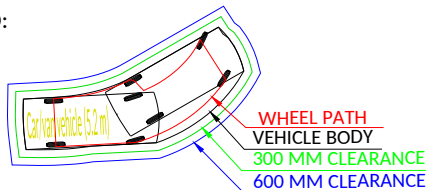
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Proposed car park layout
Design checks as per AS/NZS 2890 series

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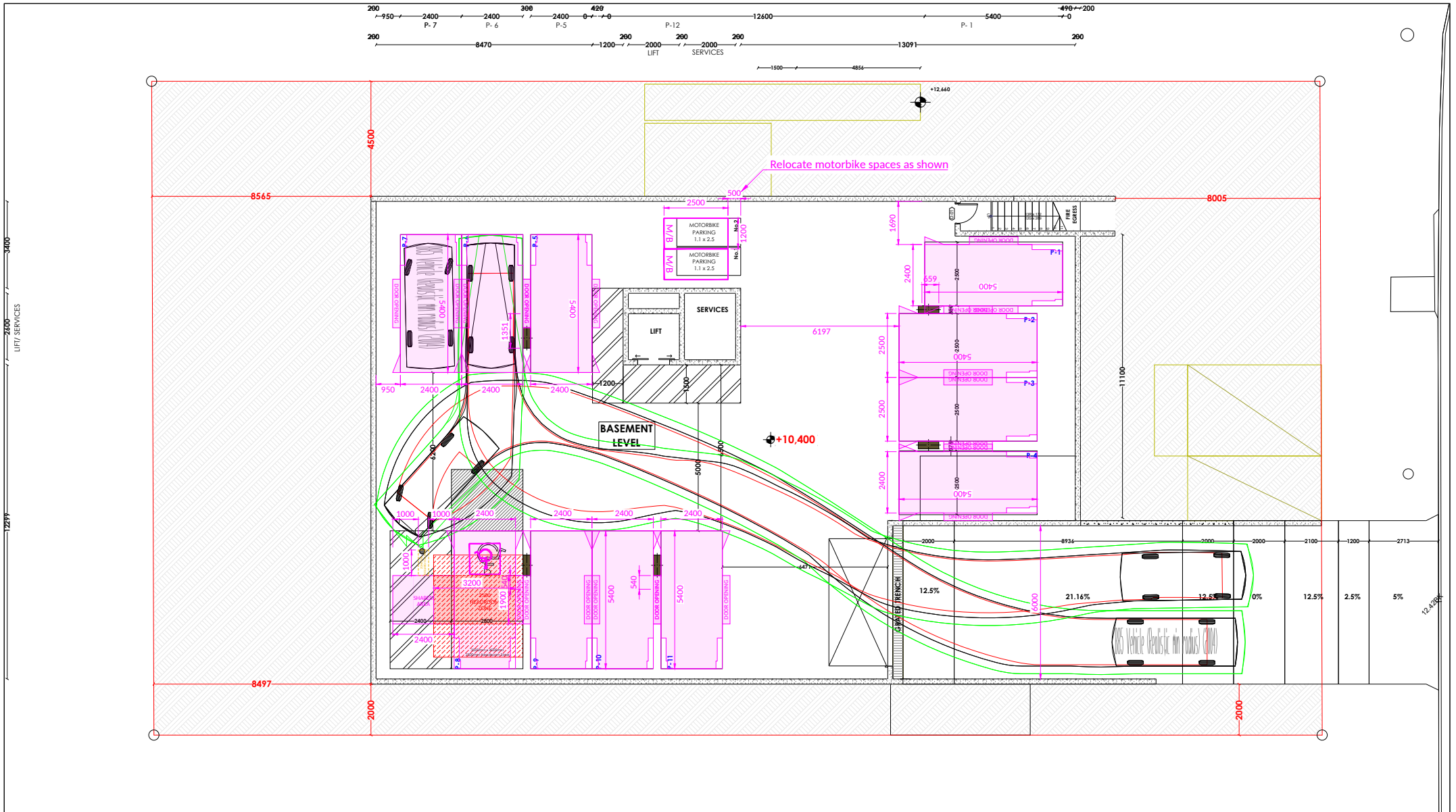


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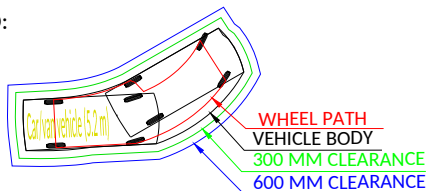
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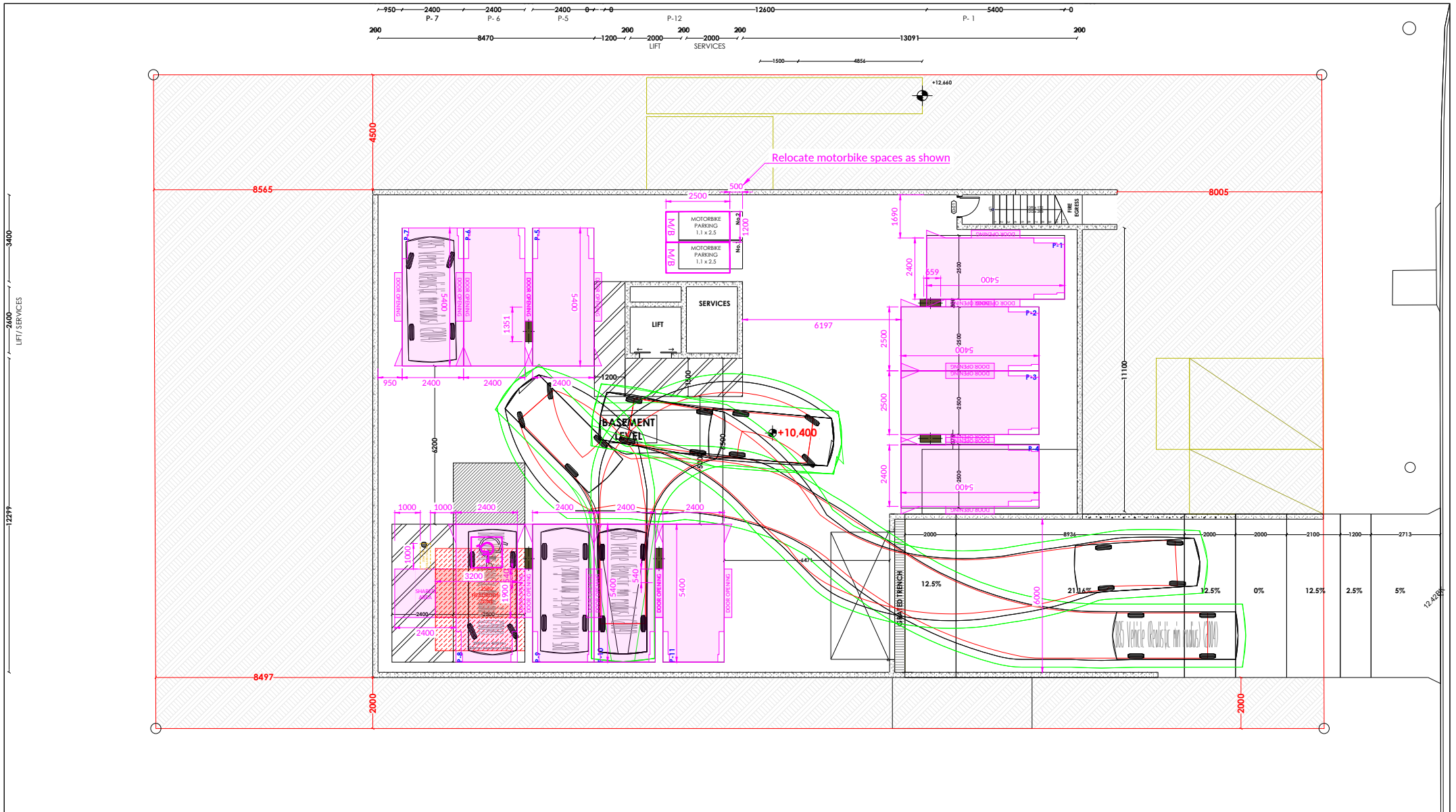
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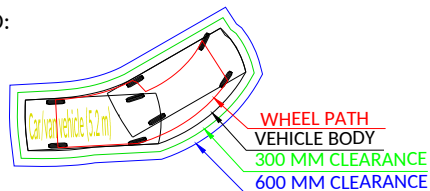
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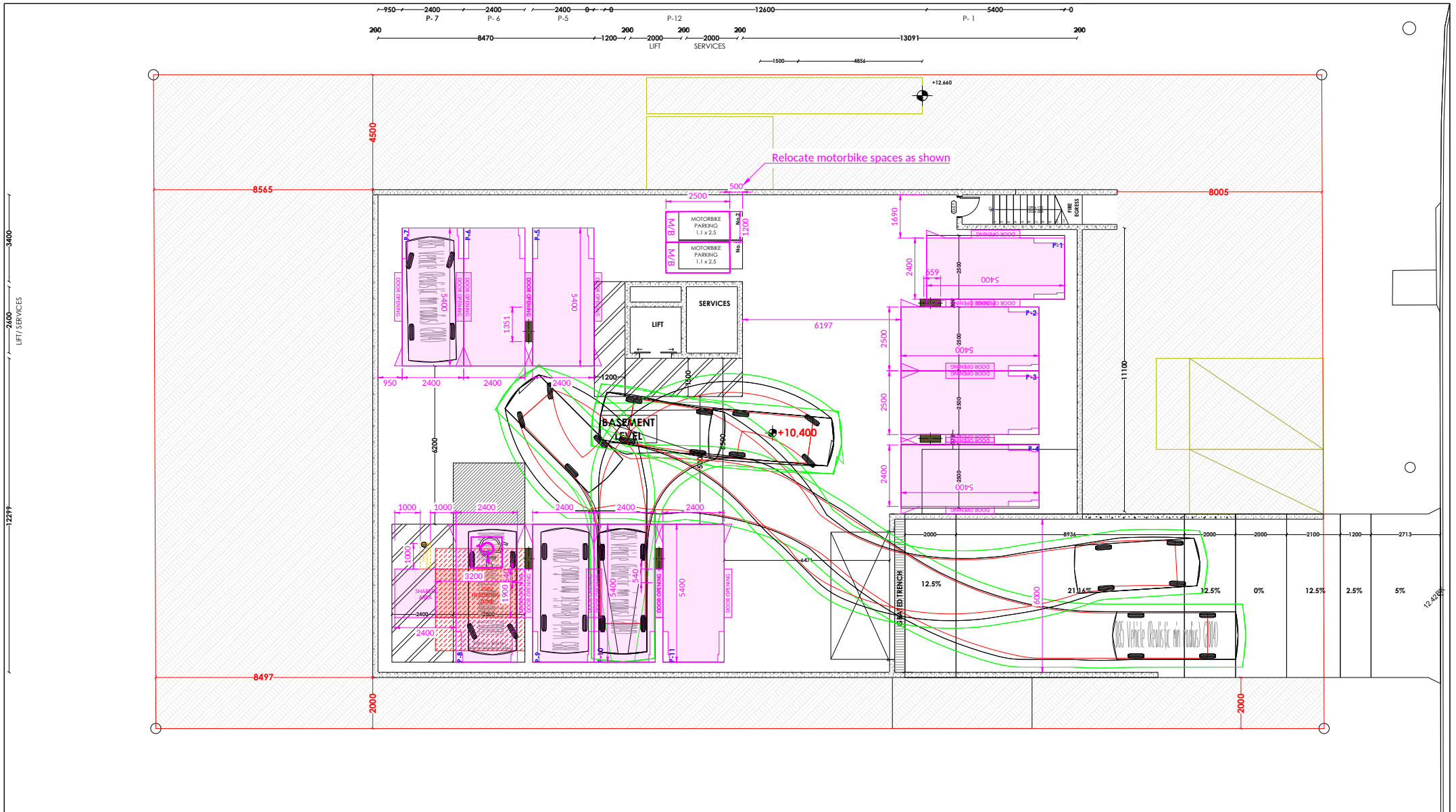
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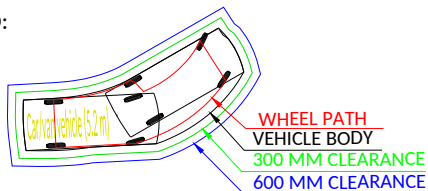
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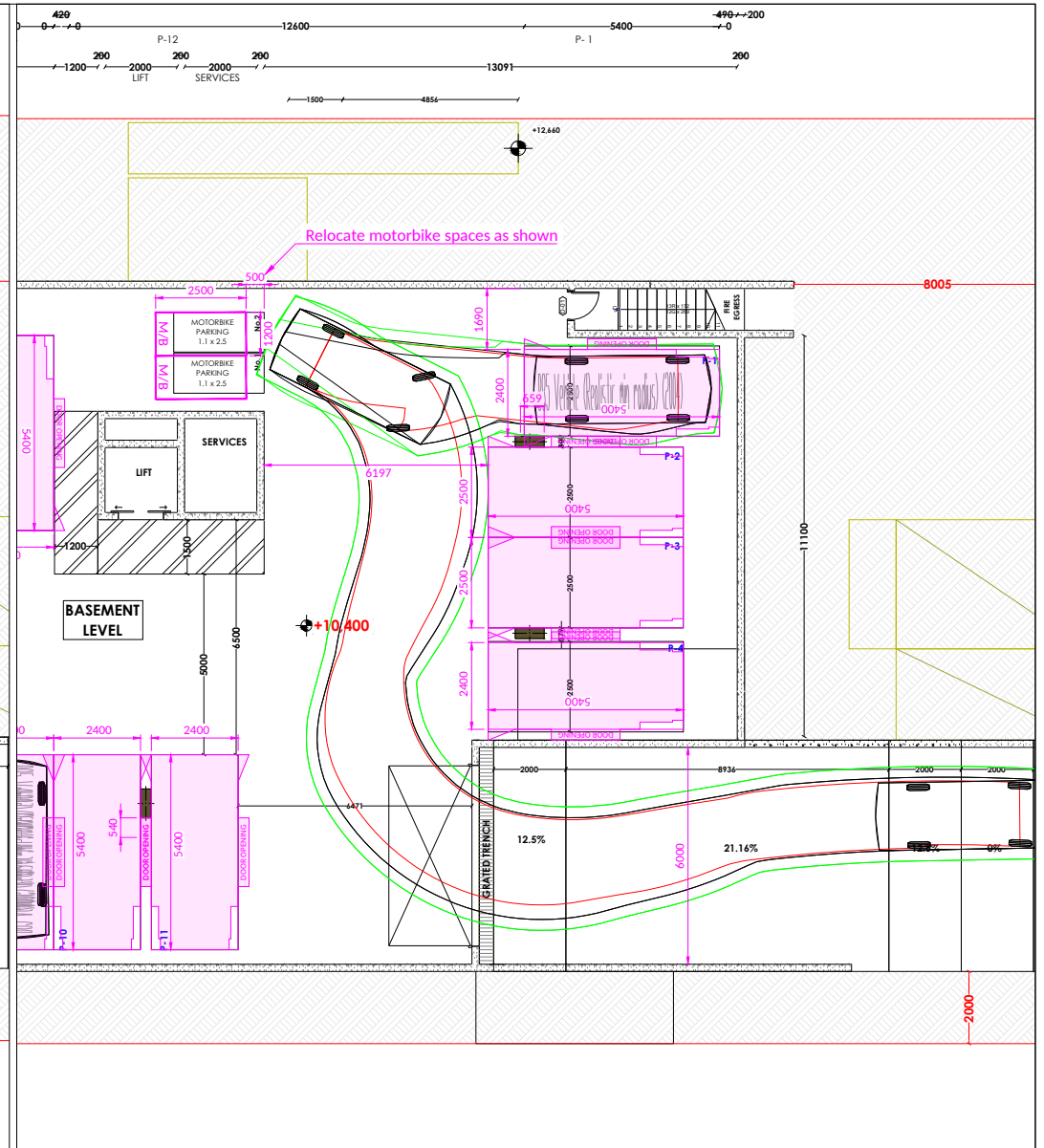
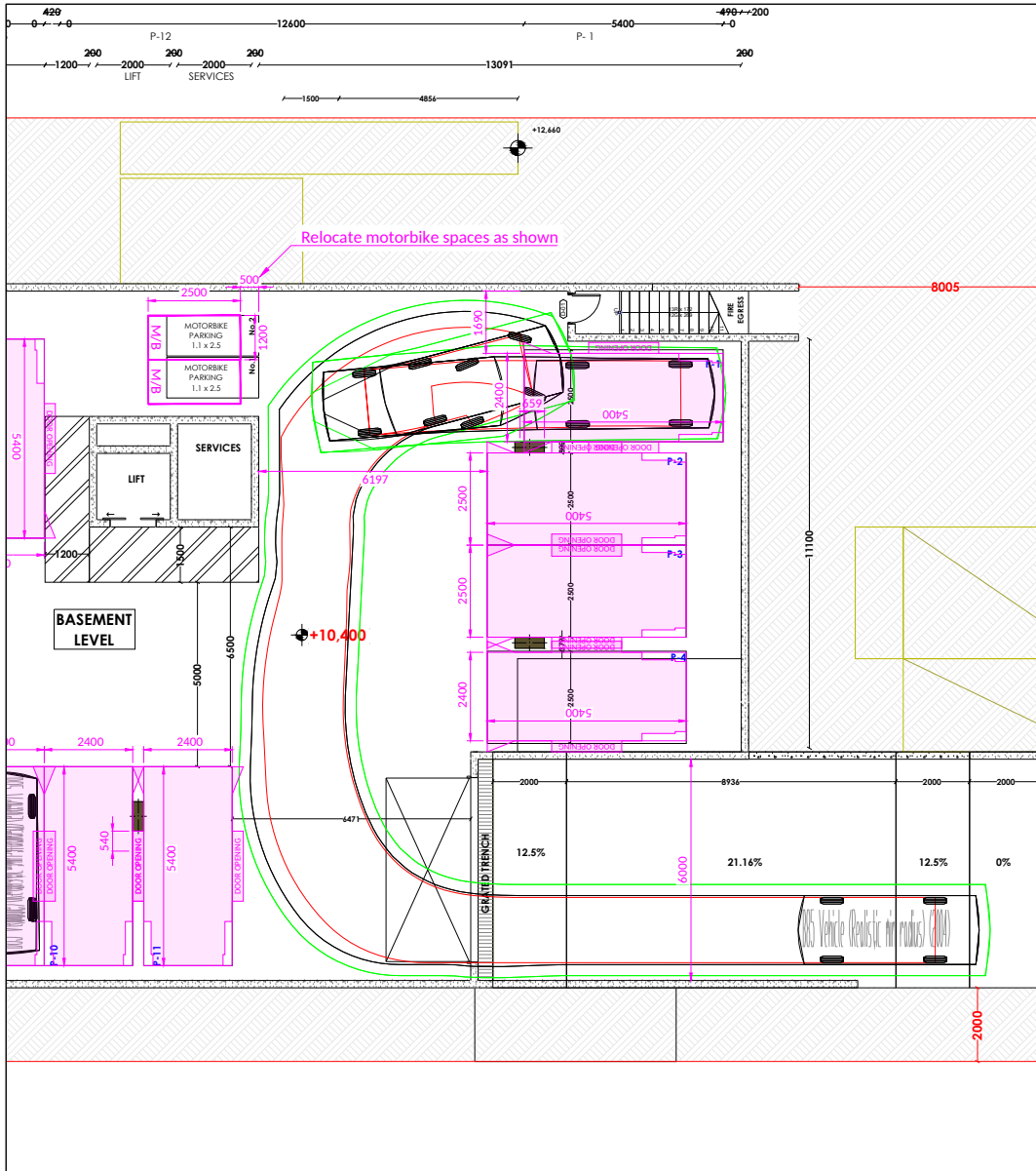
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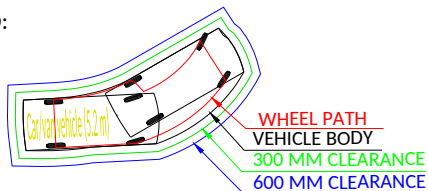
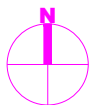
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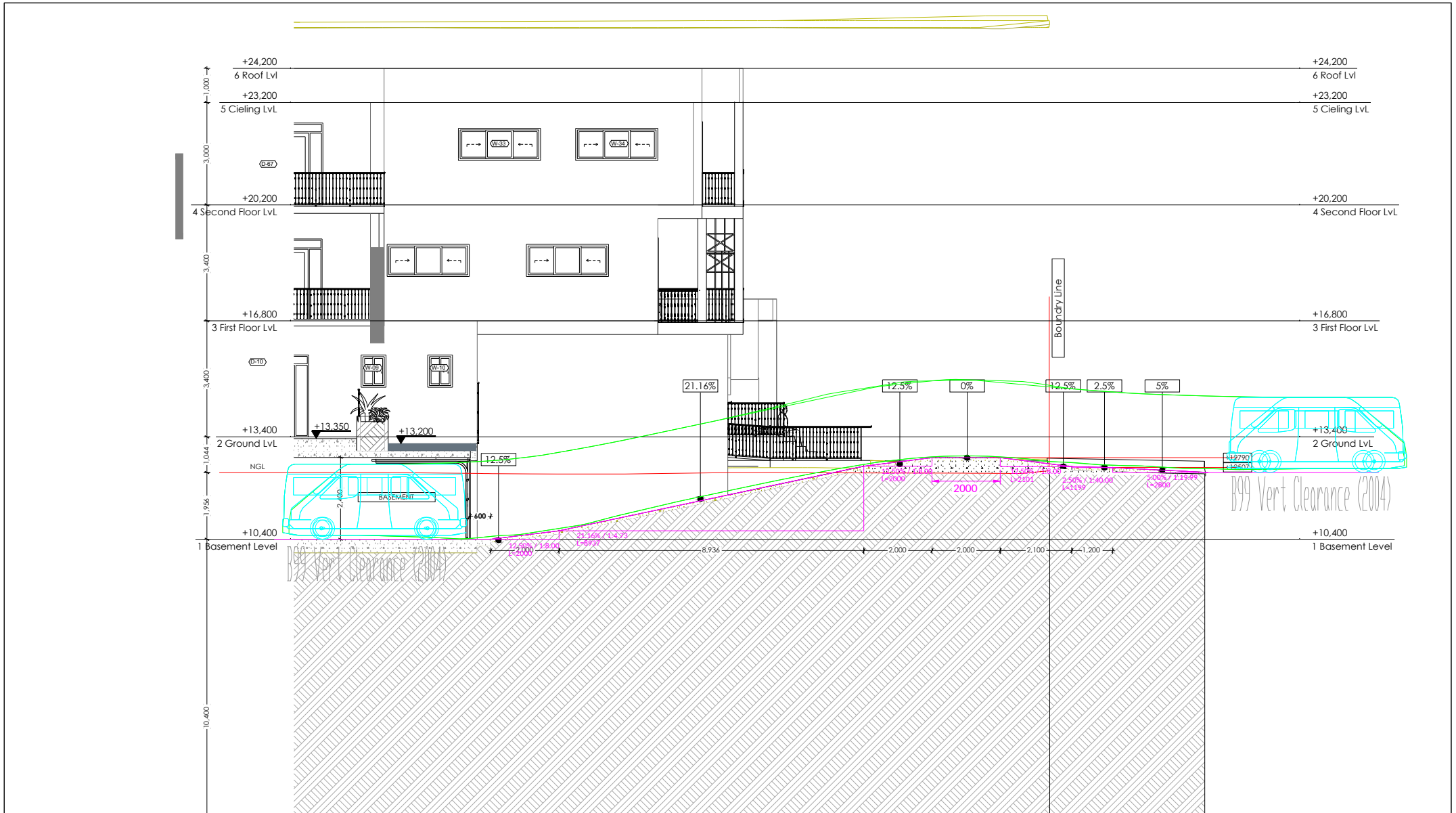
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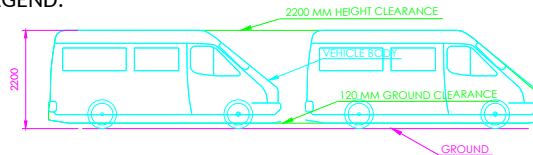
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Proposed car park layout
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Proposed car park layout
Design checks as per AS/NZS 2890 series

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