86 The Avenue, Bankstown

Proposed Child Care Centre

Transport and Parking Impact Assessment

Client Name: Envision Group Pty Ltd
Reference: 22074
Issue: Final D (July 2024)

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Transport Strategies

Contents

APPENDICES

1.0 Introduction

1.1 Background

Transport Strategies Alliance has been commissioned by Envision Building Design Pty Ltd to undertake a transport and parking impact assessment of a proposed child care centre at 86 The Avenue, Bankstown.

1.2 Purpose of this Report

This report has been prepared to seek a Development Application (DA) approval from Canterbury-Bankstown Council to demolish an existing residential dwelling unit and construct a two-storey child care centre with a basement carpark.

This report sets out an assessment of the anticipated transport and parking implications of the proposed development.

The structures of the report are as follows:

- Chapter 2: Describes the existing site and transport conditions
- Chapter 3: Describes the proposed development
- Chapter 4: Assesses the parking requirements and adequacy of the proposed parking provision
- Chapter 5: Assesses transport impacts
- Chapter 6: Assesses vehicle access and car parking layout
- Chapter 7: Summarises the study's findings

1.3 References

- Canterbury-Bankstown Development Control Plan (DCP) 2023
- AS 2890.1:2004 - Parking Facilities Off-Street Car Parking
- AS 2890.3:2015 - Parking Facilities Bicycle Parking
- AS 2890.6:2022 - Parking Facilities Off-street Parking for People with Disabilities
- Other documents and data as referenced in this report.

2.0 Existing Transport Conditions

2.1 Existing Site

The site is Lot 47, Section A in DP 110163, located at 86 The Avenue, Bankstown. It is currently zoned as R2 Low Density Residential within the local government area of Canterbury-Bankstown. The site is rectangular in shape, with an area of 1,195 m^2.

The site is primarily surrounded by low-density residential uses. There are 4 schools within 1 km from the site, which are Wattawa Heights Public School, Christ the King Catholic School, Bass Hill Public School and Bankstown West Public School. The site is currently occupied by a single-storey residential dwelling with vehicle driveway access via The Avenue.

The site layout and surrounding environs are shown in Figure 2.1.

Figure 2.1: Site Layout and Surrounding Environs

2.2 Road Network

- Edgar Street - a Regional Road which connects to Milperra Road/Queen Street to the south and Hume Highway/Remembrance Driveway to the north. In the vicinity of the site, the road runs in a north-south direction with one traffic lane and one parking lane in each direction. Kerbside parking is permitted along both sides of Edgar Street. It has a posted speed limit of 60km/hr.

- Glassop Street - a local road which connects to Allum Street to the east and Bertram Street to the west. In the vicinity of the site, it runs in an east-west direction with one traffic lane and one parking lane in each direction. Kerbside parking is allowed on both sides of the road. It has a posted speed limit of 50km/hr.

- Waruda Street - a local road which connects to Edgar Street to the east and Georgina Street/Suncroft Avenue to the west. In the vicinity of the site, it runs in an east-west direction with one traffic lane and one parking lane in each direction. Kerbside parking is permitted along both sides of Waruda Street. It has a posted speed limit of 50km/hr.

- The Avenue - a local road which connects to Hume Highway/Remembrance Driveway to the north and Warburton Street/Simmat Avenue to the south. In the vicinity of the site, it runs in a north-south direction with one traffic lane and one parking lane in each direction. Kerbside parking is permitted along both sides of The Avenue. It has a posted speed limit of 50km/hr and 40km/hr through school zones.

The surrounding road network is shown in Figure 2.2.

Figure 2.2: Surrounding Road Network

2.3 Key Intersections

The key intersections in the vicinity of the site comprise:

- the give-way intersection at Edgar Street/Waruda Street
- the roundabout at Edgar Street/Glassop Street
- the stop-controlled intersections at
  - The Avenue/Waruda Street
  - The Avenue/Glassop Street

2.4 Existing Traffic Conditions

An indication of the existing traffic conditions in the vicinity of the site is provided by surveys undertaken as part of this study. The results of traffic surveys at the Edgar Street/Glassop Street roundabout and give-way intersection at Edgar Street/Waruda Street on Wednesday, 11 October 2023, during the AM (7 am – 9 am) and PM (2:30 pm – 6 pm) peak periods are provided in Appendix A.

The surveys indicate the following peak hours for the 2 key intersections:

- 8:00 am - 9:00 am
- 3:30 pm - 4:30 pm

The performance of the key intersections has been analysed using the SIDRA intersection computer program. SIDRA modelling outputs a range of performance measures, in particular:

- Average Vehicle Delay (AVD) – The AVD (or average delay per vehicle in seconds) for intersections also provides a measure of the operational performance of an intersection and is used to determine an intersection's Level of Service (see below). For signalised intersections, the AVD reported relates to the average of all vehicle movements through the intersection. For priority (Give Way, Stop & Roundabout controlled) intersections, the AVD reported is for the movement with the highest AVD.
- Level of Service (LOS) – This is a comparative measure that provides an indication of the operating performance based on AVD.

Table 2.1 provides a recommended baseline for assessment as per the RMS Guide:

Table 2.1: Intersection Baseline Assessment

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	Less than 14	Good operations	Good operations
B	15 to 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity & accident study required
E	57 to 70	At capacity; at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

The SIDRA network layout is illustrated in Figure 2.3, with the existing AM and PM peak hour intersection turning volumes illustrated in Figure 2.4 and Figure 2.5, respectively.

Figure 2.3: SIDRA Network Layout

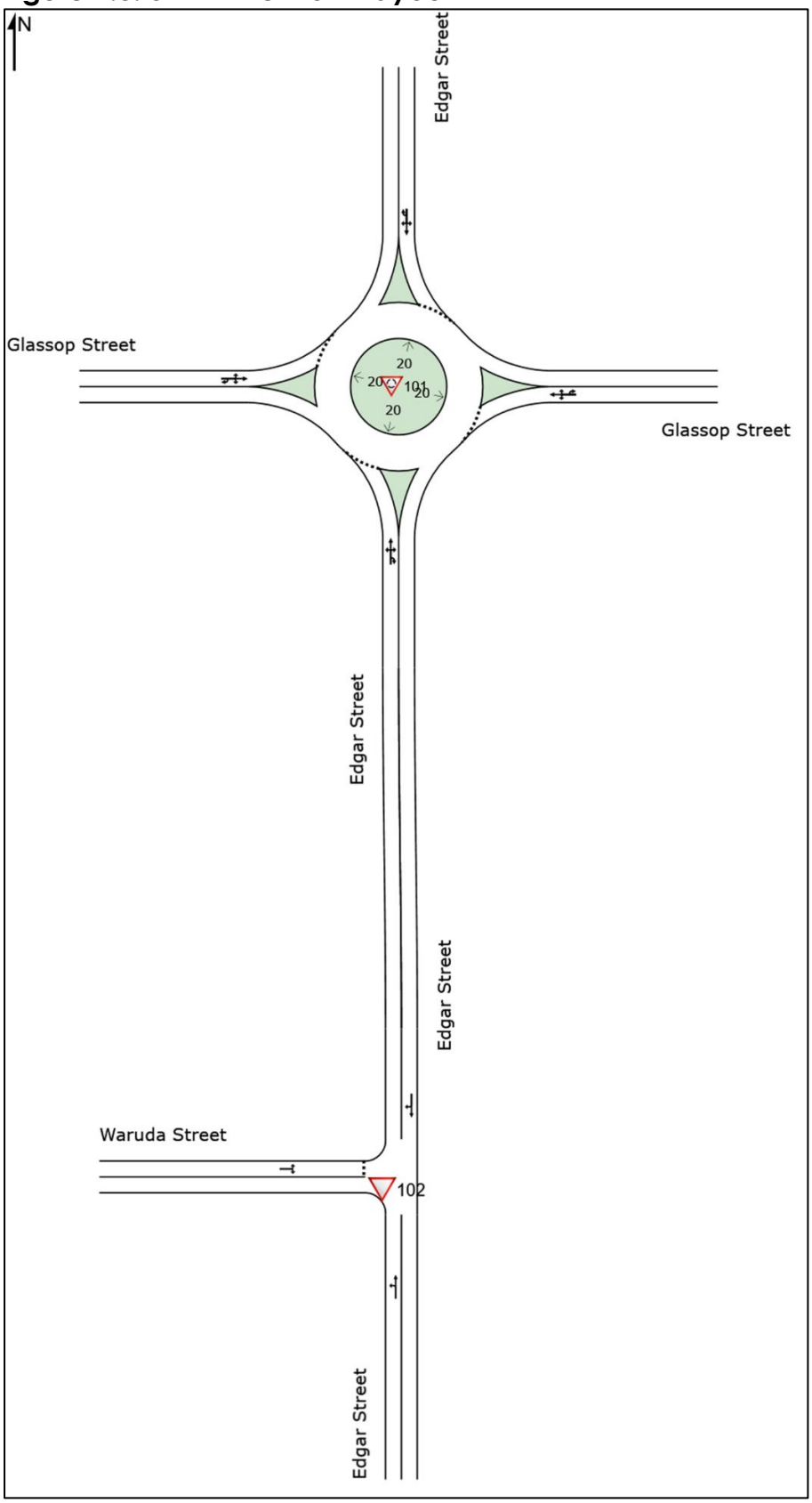


Figure 2.4: Existing AM Peak Hour Intersection Turning Volumes

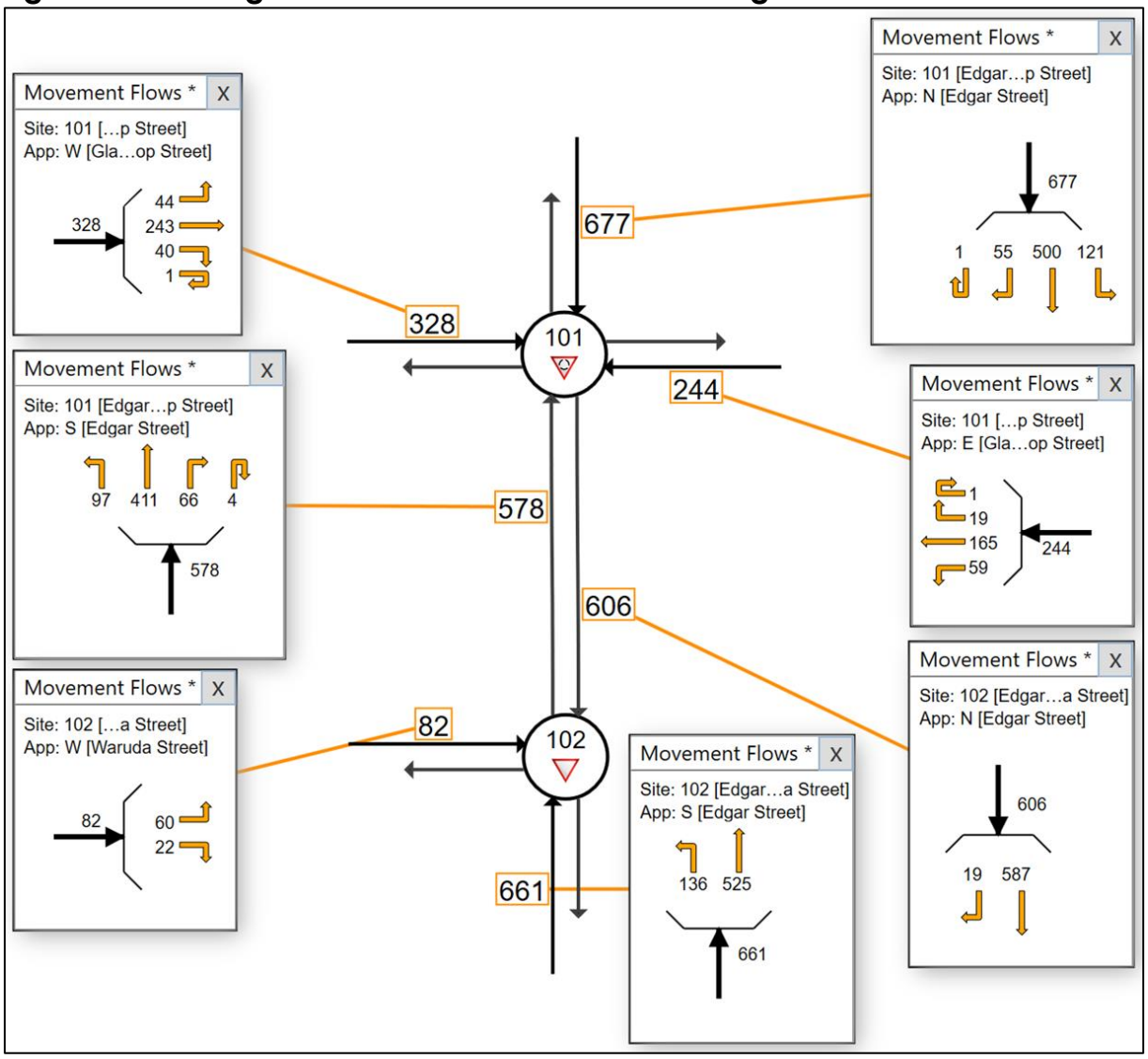
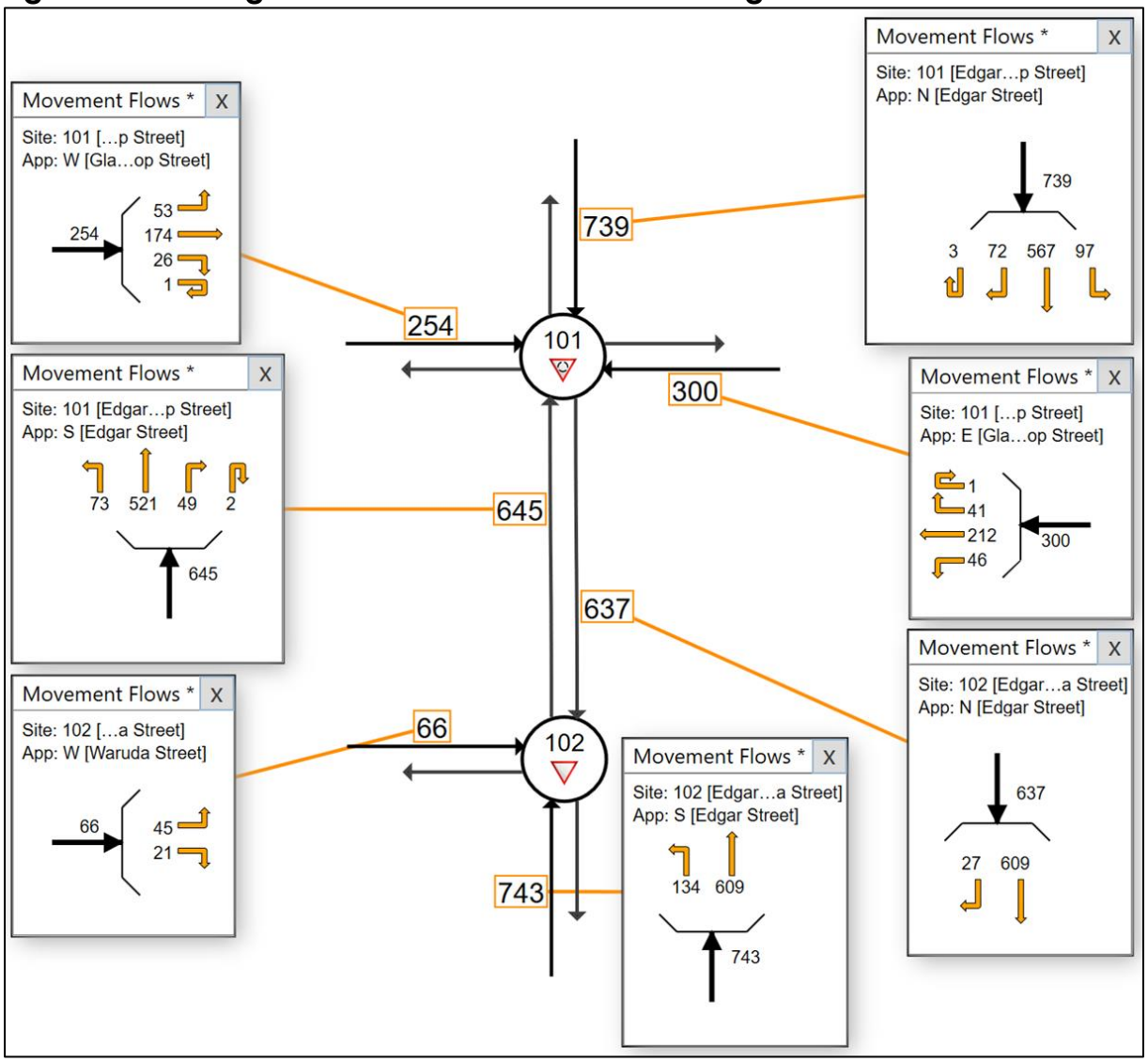


Figure 2.5: Existing PM Peak Hour Intersection Turning Volumes



The results are provided in Appendix B and summarised in Table 2.2.

Table 2.2: Existing Intersection Performance

Intersection	Peak	Average Delay (sec)	Level of Service (LOS)
Edgar Street / Glassop Street *	AM	17.7	B
	PM	16.3	B
Edgar Street / Waruda Street *	AM	22.8	B
	PM	20.1	B

** Worst movement reported for a non-signalised intersection.*

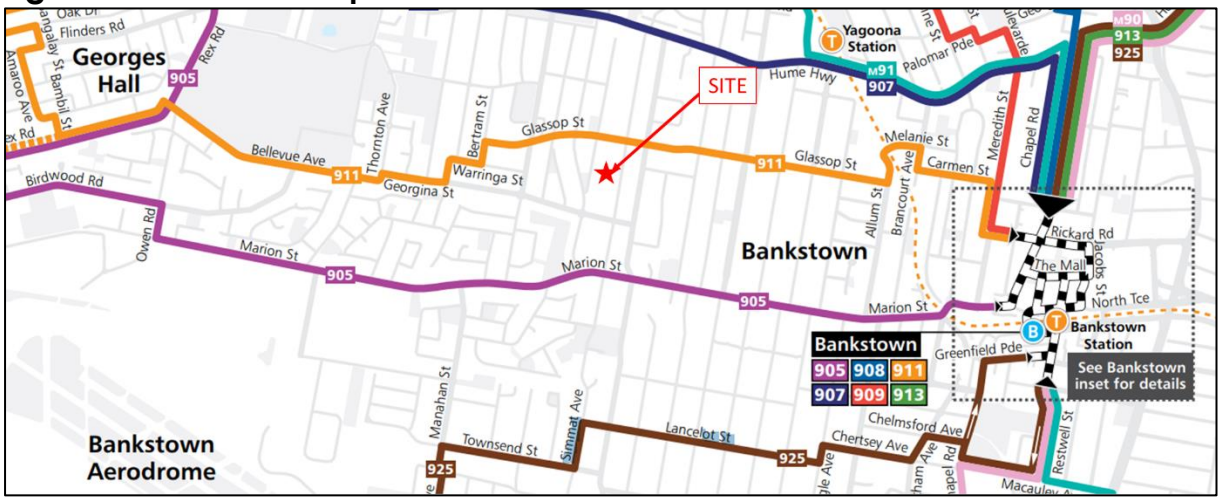
The results indicate acceptable levels of service in the local network under the prevailing peak circumstances during the peak hours.

2.5 Public Transport

The nearest bus stop from the site is located about 250m northeast of the site along Glassop Street. The stop is serviced by bus route no. 911 (Auburn to Bankstown via Georges Hall) with a frequency of 30 minutes during the peak hours. There is another bus stop located about 400 meters southeast of the site along Marion Street. The stop is serviced by bus route no. 905 (Bankstown to Fairfield) with a frequency of 15 minutes during the peak hours.

The site is also located 2.1km northwest of the Bankstown Train Station. The train station is serviced by T3 – Bankstown Line. The public transport network is shown in Figure 2.6 and detailed in Appendix C.

Figure 2.6: Public Transport Network



2.6 Cycling and Pedestrian Infrastructures

Footpaths are provided on the western side of The Avenue. In the vicinity of the site, there are on-road bicycle routes along Glassop Street. The surrounding bicycle routes are shown in Figure 2.7.

Figure 2.7: Surrounding Cycling Routes

3.0 Proposal

It is proposed to demolish an existing single-storey residential dwelling to construct a new two-storey child care centre with a basement carpark.

The proposed child care centre will accommodate:

- Up to 68 children and 10 staff
- 17 car parking spaces (including 1 accessible parking space)
- 1 service bay which can accommodate up to 6.35m long private waste vehicle (for on-site waste collection option)
- 3 bicycle parking spaces

Vehicle access driveway is located on the southeastern side of the site's boundary on The Avenue frontage. A separate pedestrian access will be provided on the northern side of the vehicle access driveway.

Details of the proposed development prepared by Envision Building Design are provided in Appendix D.

4.0 Parking Requirements

4.1 Council's DCP Parking Rates

The Canterbury-Bankstown DCP provides the following criteria in terms of parking requirements for child care centres:

- 1 car space per 4 children and 2 additional car spaces for the exclusive use of any associated dwelling.
- 1 bicycle space per 4 staff

Application of the DCP criteria reveals the following requirements:

Type of Parking Space	Development Proposal	Space Required
Car	68 children	17 spaces
Bicycle	10 staff	3 spaces

4.2 Adequacy of Parking Provision

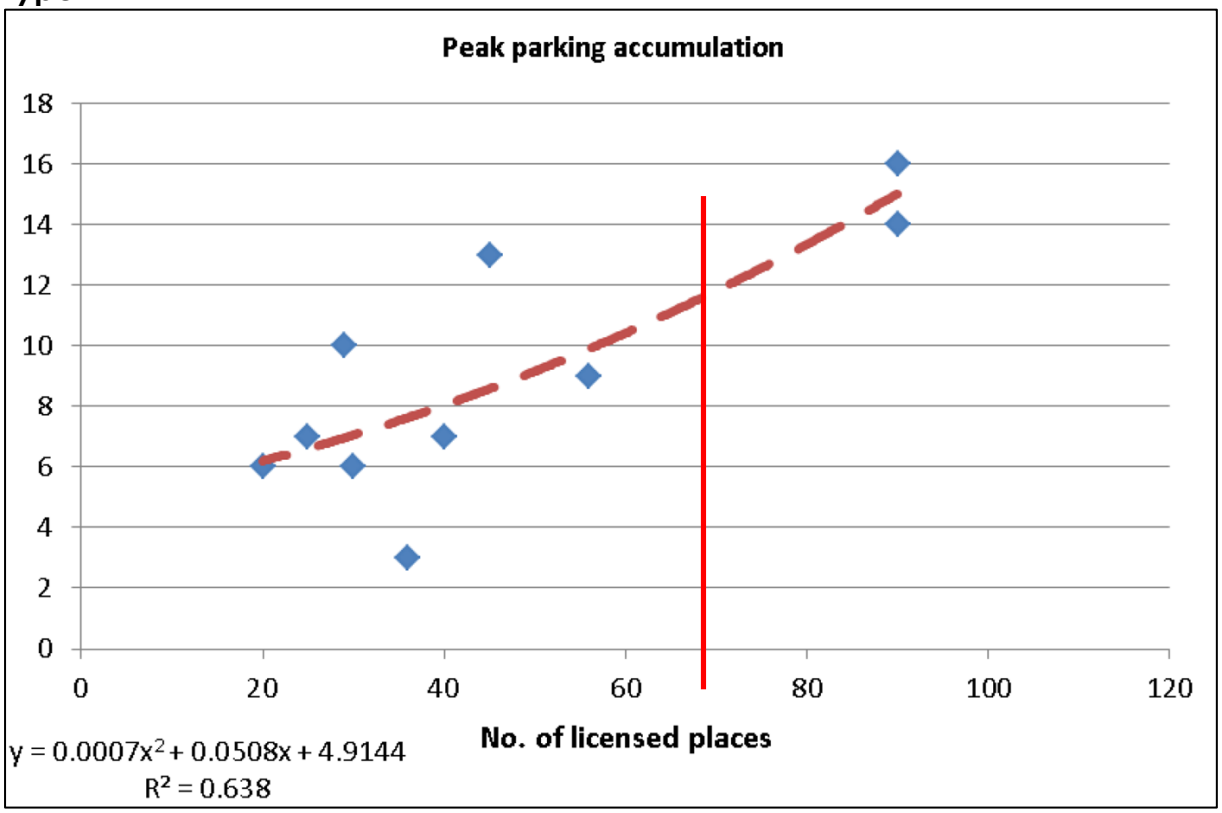
The proposal will provide 17 car parking spaces in the basement in accordance with Council's DCP requirements, with the following allocations:

- 8 tandem staff spaces
- 9 visitor spaces (including 1 accessible space)

The proposed child care centre will also provide 3 staff bicycle parking spaces in the basement in accordance with Council's DCP requirements.

In addition, a recent study of child care centres undertaken for RMS as part of the process of revising the former RTA Guidelines established a "peak parking accumulation" by linear regression analysis, as indicated in the following graph.

Figure 4.1: Peak Parking Accumulation vs Number of Licensed Places - Non-linear Type



On the basis of this RMS assessment, it is apparent the peak parking (for staff and parents/carers) accumulation at the proposed child care centre with 68 children is only likely to be some 12 spaces. As such, the proposed provision of 17 spaces will be adequate to accommodate the car parking demand associated with the employees and visitors with no reliance on the on-street parking.

Based on the above, it is unlikely that a parent/carer vehicle arriving is presented with a scenario where all set-down and pick-up spaces are occupied. As such, the visitors will not require a turning bay to exit the site.

4.3 DCP Accessible Parking Rate

Council's DCP requires BCA Class 9 buildings with more than 10 car parking spaces to provide 1 accessible car parking space for every 25 car parking spaces.

Based on the above, the development proposes 1 accessible car parking space for visitors in accordance with Council's DCP and BCA requirements.

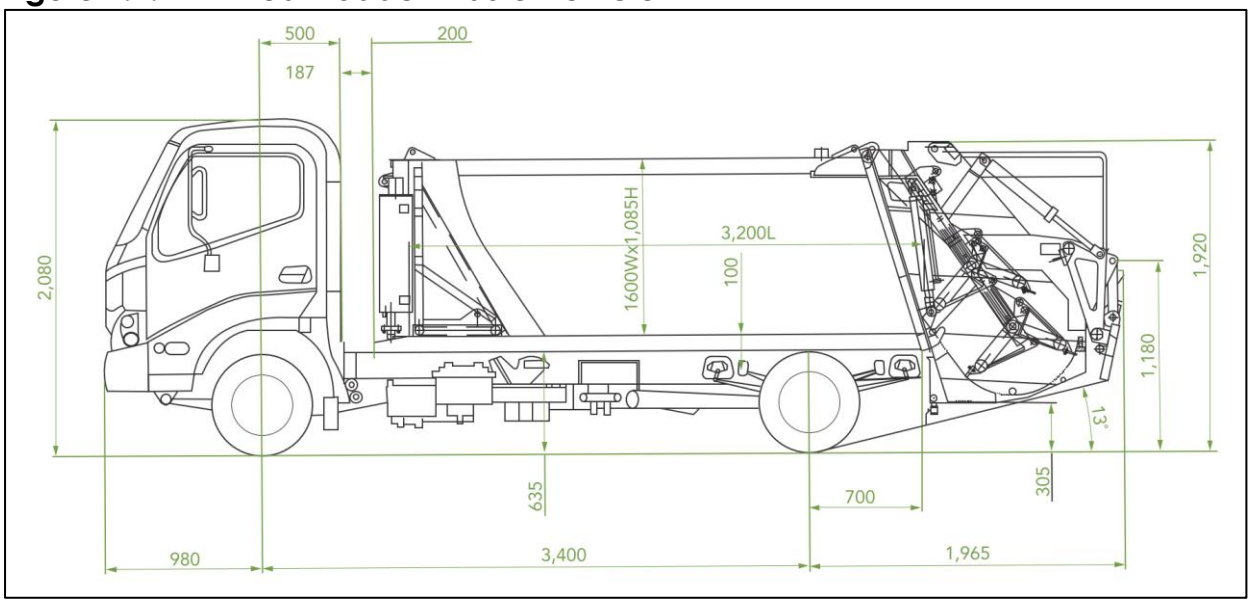
4.4 Service Vehicle Parking

Refuse will be removed from either:

- The waste collection will occur from the kerb of The Avenue, with bins wheeled to the kerb for collection by private contractor.

- Within the site by a 6.35m private contractor's mini rear loader waste vehicle. While the mini rear loader vehicle is 6.35m long, it is not similar to the 6.4m-long small rigid vehicle (SRV) as illustrated in the AS 2890.2. The private waste vehicle is only 2.08m high (as compared to a 3.5m-high SRV). Due to the mini loader vehicle being 2.08m high, it can enter and exit a carpark with a headroom of 2.1m (Figure 4.2).

Figure 4.2: Mini Rear Loader Waste Vehicle



The waste truck will arrive from The Avenue in a forward direction. The waste truck will reverse into the service bay, with the waste collection personnel wheeling the bins out to the rear of the service bay for collection. On departure, the truck will exit onto The Avenue in a forward direction.

The waste collection takes place outside of peak hours when there are minimal visitor parking activities. Given that the activity will occur outside of the peak hours, the refuse collection activities will have no impact on the child care centre activities.

Other small service vehicles (e.g., deliveries, courier activity, maintenance and service personnel, etc.) will be able to use the available visitor parking space.

Any occasional need for large delivery vehicles will be satisfied by the available kerbside parking provisions along The Avenue, consistent with the surrounding low-density residential developments and is normal for neighbourhood child care centre of this nature.

5.0 Transport Impacts

5.1 Traffic Generation

The most recently published child care centre study undertaken for RMS, which assessed 12 sites in the Sydney Metropolitan Area and 2 Regional sites, included 4 Long Day Care (LDC). The remaining sites were Pre-School, Before/After School Care, and Occasional Care, which operate very differently from the subject proposal; as such, they are not considered in the context of this assessment.

The results of the 4 metropolitan LDC sites are summarised in Table 5.1 in terms of generated vehicle trips per hour (vtph) per child for the road network peak periods.

Table 5.1: LDC Trip Rate

Site	AM Peak	PM Peak
S1 (LDC)	0.40 vtph	0.51 vtph
S2 (LDC)	0.80 vtph	0.30 vtph
S3 (LDC)	0.70 vtph	0.25 vtph
S4 (LDC)	0.64 vtph	0.56 vtph
Average	**0.64 vtph**	**0.41 vtph**

On this basis, applying the above study outcome to the proposed 68-place Centre would indicate a peak outcome of 44 vtph in the AM peak and 28 vtph in the PM peak.

5.2 Distribution and Assignment

The directional distribution and assignment of traffic generated by the proposed development will be influenced by a number of factors, including the:

- configuration of the arterial road network in the immediate vicinity of the site
- existing operation of intersections providing access between the local and arterial road network
- surrounding residential, retail centres and schools in relation to the site

Having consideration to the above, for the purposes of estimating vehicle movements, the following directional distributions have been assumed:

- The Avenue (north) - 60%
- The Avenue (south) - 40%

In addition, the directional split of traffic during peak hours (i.e., the ratio between the inbound and outbound traffic movements) has been assumed to be 50% inbound and 50% outbound in peak hours.

The projected vehicle generation of the development during the peak traffic periods is shown in Table 5.2.

Table 5.2: Trip Distribution

AM		PM	
IN	**OUT**	**IN**	**OUT**
22	22	14	14

The projected intersection turning volumes with the proposed development are illustrated in Figure 5.1 and Figure 5.2 for the AM and PM peak hours, respectively.

Figure 5.1: Projected Intersection Turning Volumes in AM Peak Hour

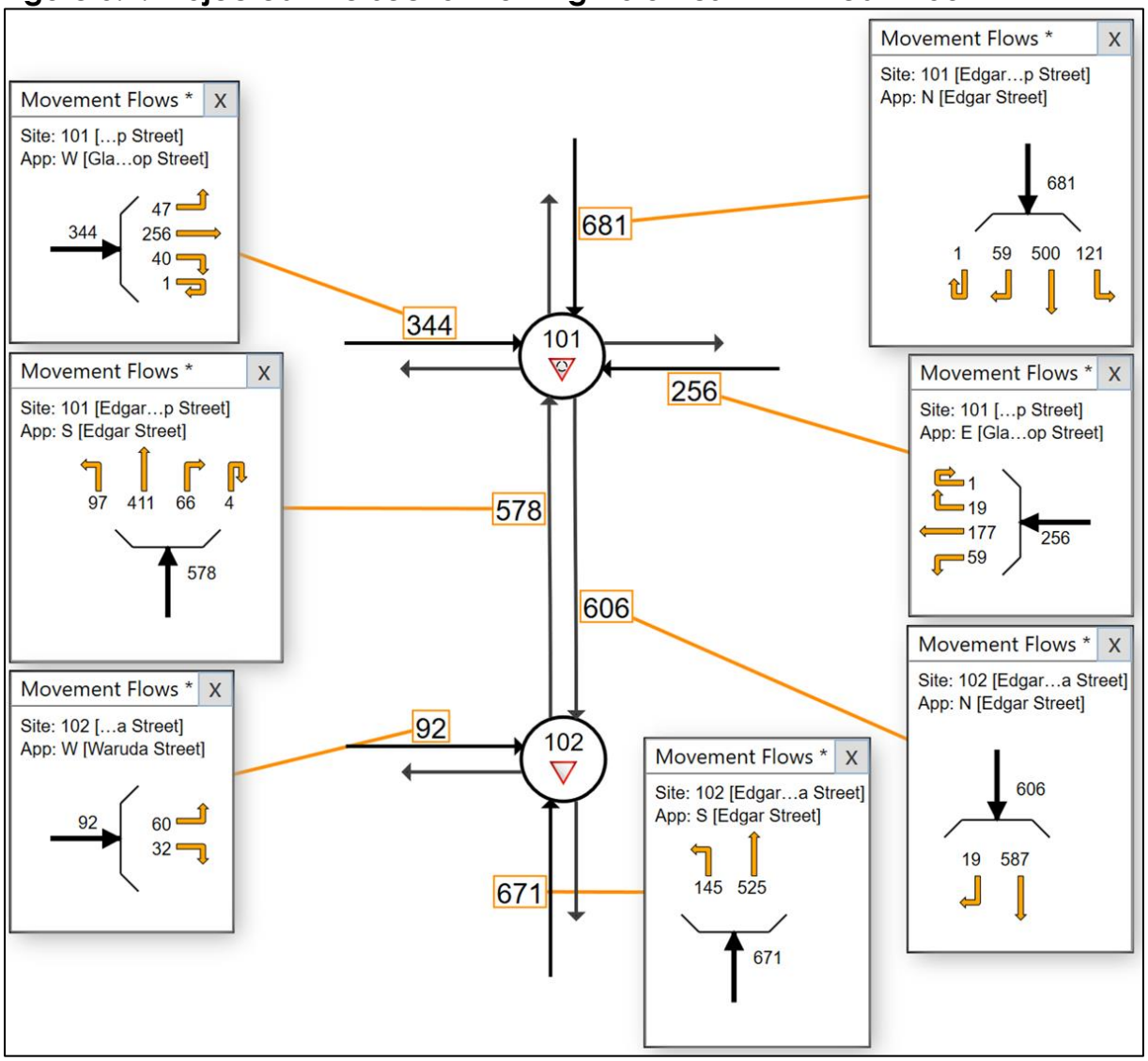
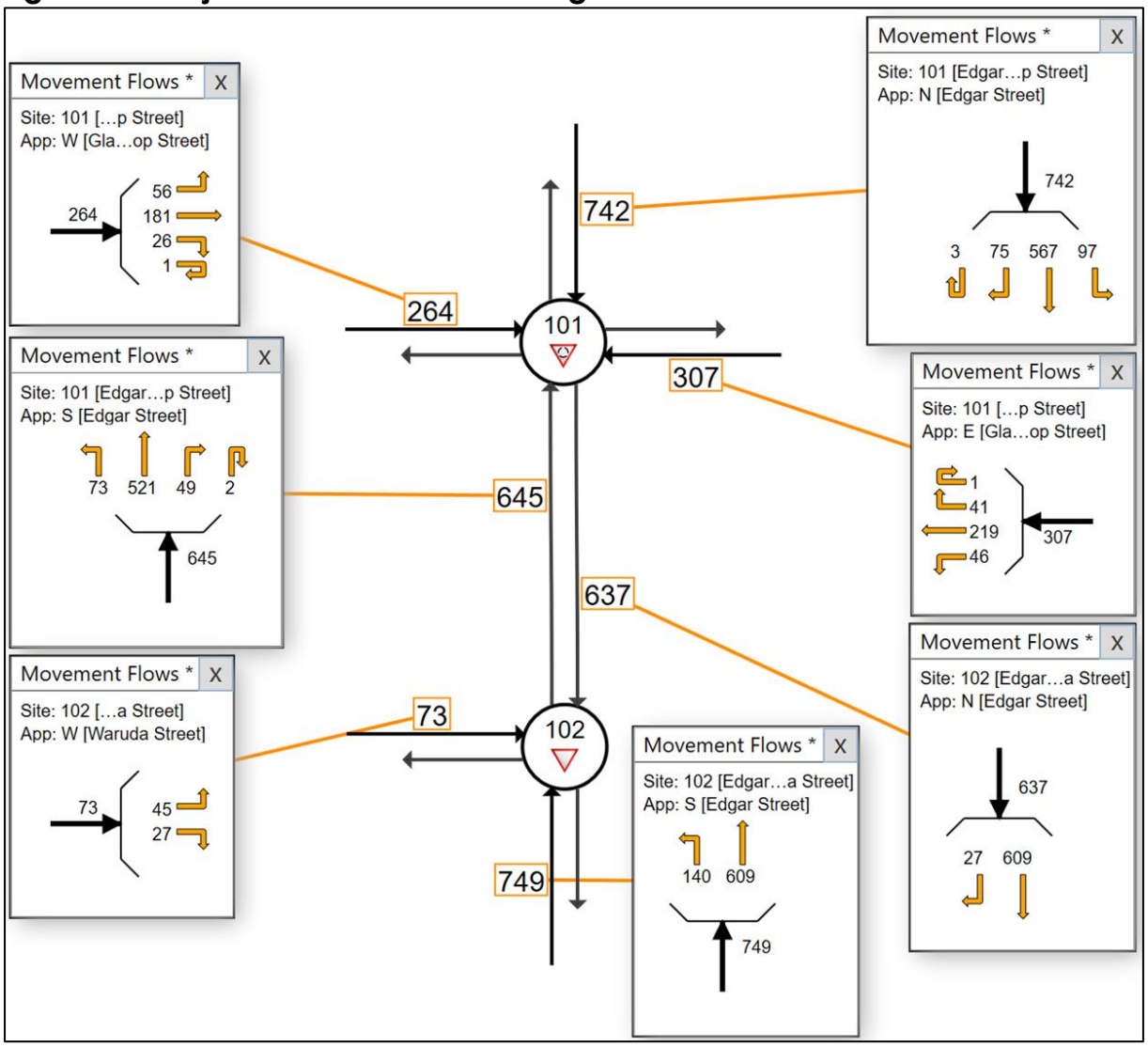


Figure 5.2: Projected Intersection Turning Volumes in PM Peak Hour



5.3 Traffic Impact

The key intersections near the site were analysed with the inclusion of traffic generated by the proposed development to confirm the future intersection operation under the existing intersection configurations. The outcome of the assessment is summarised in Table 5.3 with SIDRA outputs provided in Appendix B.

Table 5.3: Future Year Intersection Performance

Intersection	Peak	Average Delay (sec)	Level of Service (LOS)
Edgar Street / Glassop Street *	AM	18.5	B
	PM	16.7	B
Edgar Street / Waruda Street *	AM	21.2	B
	PM	20.4	B

** Worst movement reported for a non-signalised intersection.*

The assessment shows that the proposed development would have a nominal impact on the operation of the key intersections, with a minor increase in queuing and delays (additional 0.8 seconds delays per vehicle during the AM peak periods and additional 0.4 seconds delays per vehicle during the PM peak periods). The LOS of the two key intersections will remain as per the existing condition.

It is noted that this level of traffic activity represents a worst-case circumstance as it assumes that all trips associated with the child care centre are new and does not take into account existing movements past the site generated by parents/guardians who, irrespective of whether or not they had a child attending the Centre would generally travel through the area when commuting to/from work. This circumstance is further advantaged by the 4 schools in the surrounding area (with the nearest being 330m south of the site), which provide further dual-purpose trip opportunities for families with siblings.

If conservatively estimated that these 'dual-purpose' trips could account for 20% of the total trips generated by the child care centre, the new or background trips on The Avenue would be reduced accordingly.

Discounting the dual-purpose trips and the trip associated with the existing dwelling at the RMS rate of 0.85 vtph (i.e., 1 vtph), this level of activity represents a reduction to 35 and 22 vtph in the existing AM and PM peak traffic flows, respectively.

In summary, vehicle movements of this small magnitude (1 vehicle trip every 2 to 3 minutes) will have no perceptible impact on traffic capacity or safety on the road system in the vicinity of the site. This small number would also not present any unsatisfactory traffic-related environmental implications for the local access road system.

6.0 Site Access and Car Parking Layout

6.1 Site Access

The existing driveway will be removed, and a new 5.6m-wide combined ingress/egress driveway will be provided on the southeastern side of the site's frontage along The Avenue. There is adequate sight distance, particularly for egressing drivers. The proposed driveway is adequate and is in accordance with AS 2890.1 and AS 2890.6.

Separate pedestrian walkway ranges from 2m at boundary to first entry and waste room, then 1.5m wide clearance with handrail to the second entrance is proposed on the northern side of the access driveway to provide access to/from the Centre from/to the street frontage.

The proposed ingress and egress manoeuvring arrangements at the driveway will be satisfactory, as confirmed by the swept path assessments for B85 and B99 vehicles, provided in Appendix E. The existing regular gaps in the traffic flow along The Avenue will allow vehicles to ingress and egress the proposed driveway without any undue difficulty and delay.

6.2 Parking Layout

The parking layout has been reviewed against the requirements of the AS 2890. This assessment included a review of the following:

- bay and aisle width
- adjacent structures
- circulation aisles and ramps
- ramp grades
- height clearances
- parking for persons with disabilities
- bicycle parking

A review indicates that the proposed car parking layout is expected to operate satisfactorily, with all parking spaces, aisle widths, ramp grades/ transitions and height clearances to be provided in accordance with the requirements of AS2890.1 and 6.

Parking bays are provided at 2.4 x 5.4m for staff, and 2.7 x 5.4m for visitor spaces with 6.2m-wide aisle width, in accordance with AS2890.1. There will be adequate manoeuvring areas within the carpark for set-down and pick-up activities.

Tandem spaces are often considered appropriate for staff use at child care centres due to predictable schedules where staff members typically have predictable work hours, and they will be very familiar with each other's travel patterns. As such, these drivers will typically use the parking spaces in a more consistent manner rather than 'shuffling' their activities each day. Some staff, such as the teacher/centre manager, will be likely to park all day or a good part of the day with very low turnover.

The swept path assessment demonstrating satisfactory provision for turning and manoeuvring is provided in Appendix E. All vehicles will be able to enter and exit the site via The Avenue in a forward direction.

3 bicycle parking spaces with dimension of 0.5 x 1.8m for staff has been designed in accordance with AS2890.3.

7.0 Conclusions

The proposed child care centre at 86 The Avenue, Bankstown, is compatible with the adjacent uses.

The transport and parking assessment provided in this report confirms that:

- The proposed development will generate an additional 35 vehicle trips during the AM Peak and 22 vehicle trips during the PM Peak and will have minimal impacts on the surrounding road network.

- The proposed 17 off-street car parking will be in accordance with Council's DCP to accommodate the parking demand associated with the staff and visitors.

- The proposed accessible space is in accordance with Council's DCP requirements.

- The proposed access and car parking layout have been designed in accordance with AS2890.1 and 6 requirements, considering that an on-site turning bay will not be required as the visitors will not be presented with a scenario where all set-down and pick-up spaces are occupied.

- The proposed bicycle parking spaces have been provided and designed in accordance with Council's DCP and AS2890.3 requirements.

- The proposed loading/servicing arrangement will be suitable and adequate for the proposed development.

It is therefore concluded that the proposed development is supportable on traffic planning grounds.

Transport Strategies

Appendix A
Traffic Surveys

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

TURNING MOVEMENT SURVEY

Intersection of Glassop St and Edgar St, Bankstown

GPS *-33.910575, 151.014803*

Date:	Wed 11-10-23
Weather:	Fine
Suburban:	Bankstown
Customer:	N/A

North:	Edgar St
East:	Glassop St
South:	Edgar St
West:	Glassop St

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	2:30 PM-6:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	3:30 PM-4:30 PM

All Vehicles

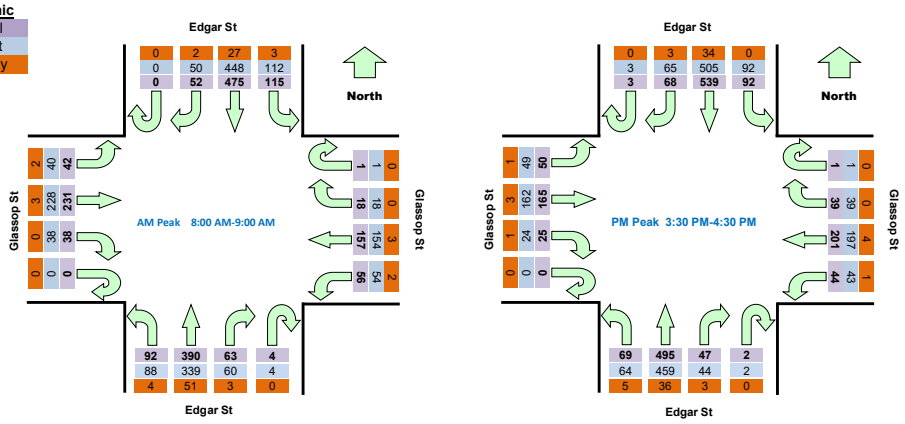
Time		North Approach Edgar St				East Approach Glassop St				South Approach Edgar St				West Approach Glassop St				Hourly Total	
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	Hour	Peak
7:00	7:15	0	4	136	14	0	3	12	5	0	5	85	11	0	9	16	15	1337	
7:15	7:30	0	5	93	14	0	2	12	3	0	3	85	9	0	9	21	13	1417	
7:30	7:45	0	9	118	15	0	1	17	6	2	10	98	19	0	5	37	10	1578	
7:45	8:00	2	9	126	21	0	4	17	13	1	15	114	22	0	7	40	15	1686	
8:00	8:15	0	15	106	22	0	3	29	15	2	19	87	17	0	6	63	11	1734	Peak
8:15	8:30	0	10	111	34	0	4	37	15	1	14	94	25	0	10	66	9		
8:30	8:45	0	12	139	32	0	9	46	14	0	14	98	25	0	10	46	10		
8:45	9:00	0	15	119	27	1	2	45	12	1	16	111	25	0	12	56	12		
14:30	14:45	1	8	101	18	0	4	22	6	0	10	141	21	0	7	38	9	1702	
14:45	15:00	3	21	136	24	0	6	38	8	0	20	119	22	0	10	38	11	1786	
15:00	15:15	0	12	114	19	0	12	47	12	1	19	101	22	0	14	51	12	1780	
15:15	15:30	0	8	116	19	0	5	51	10	1	13	110	21	0	9	48	13	1774	
15:30	15:45	1	24	129	25	0	12	53	8	0	11	120	15	0	3	56	13	1840	Peak
15:45	16:00	1	15	134	29	0	8	51	13	1	13	112	14	0	6	42	11	1756	
16:00	16:15	1	18	134	15	0	8	47	7	0	8	129	15	0	10	27	11	1748	
16:15	16:30	0	11	142	23	1	11	50	16	1	15	134	25	0	6	40	15	1746	
16:30	16:45	1	12	119	18	0	7	37	18	2	9	104	14	0	6	30	9	1676	
16:45	17:00	0	5	122	14	0	9	41	23	1	8	139	21	0	11	39	9	1738	
17:00	17:15	0	12	129	20	0	8	43	13	2	14	120	19	0	11	27	10	1700	
17:15	17:30	1	12	147	23	0	4	33	7	1	11	128	13	0	5	26	9		
17:30	17:45	0	18	141	23	0	8	41	20	1	9	121	22	0	13	28	3		
17:45	18:00	0	14	143	15	0	3	40	4	1	16	121	17	0	9	17	4		

Peak Time		North Approach Edgar St				East Approach Glassop St				South Approach Edgar St				West Approach Glassop St				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:00	9:00	0	52	475	115	1	18	157	56	4	63	390	92	0	38	231	42	1734
15:30	16:30	3	68	539	92	1	39	201	44	2	47	495	69	0	25	165	50	1840

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy



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Light Vehicles

Time		North Approach Edgar St				East Approach Glassop St				South Approach Edgar St				West Approach Glassop St			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	4	120	14	0	3	11	5	0	4	72	11	0	8	14	12
7:15	7:30	0	5	82	13	0	2	12	3	0	3	73	9	0	8	21	12
7:30	7:45	0	7	102	15	0	1	16	6	2	10	89	19	0	5	37	10
7:45	8:00	2	9	122	21	0	4	17	13	1	15	99	22	0	6	39	15
8:00	8:15	0	15	104	21	0	3	29	13	2	19	77	16	0	6	63	11
8:15	8:30	0	10	105	32	0	4	36	15	1	14	81	24	0	10	64	8
8:30	8:45	0	12	132	32	0	9	45	14	0	13	80	25	0	10	45	9
8:45	9:00	0	13	107	27	1	2	44	12	1	14	101	23	0	12	56	12
14:30	14:45	1	8	93	18	0	4	22	6	0	10	131	21	0	7	37	9
14:45	15:00	3	21	120	23	0	6	38	8	0	20	109	19	0	10	38	11
15:00	15:15	0	12	108	18	0	12	44	12	1	19	96	19	0	13	51	12
15:15	15:30	0	8	103	18	0	5	50	7	1	13	99	20	0	8	48	13
15:30	15:45	1	24	122	25	0	12	52	8	0	11	109	14	0	3	55	13
15:45	16:00	1	14	130	29	0	8	49	13	1	12	104	14	0	6	41	10
16:00	16:15	1	18	122	15	0	8	47	7	0	7	121	14	0	9	27	11
16:15	16:30	0	9	131	23	1	11	49	15	1	14	125	22	0	6	39	15
16:30	16:45	1	12	113	17	0	7	36	18	2	9	97	14	0	6	30	9
16:45	17:00	0	4	120	14	0	9	41	22	1	8	136	21	0	11	37	9
17:00	17:15	0	12	124	20	0	8	41	12	2	14	114	19	0	11	26	9
17:15	17:30	1	11	144	23	0	4	33	7	1	11	125	12	0	5	26	9
17:30	17:45	0	18	135	23	0	8	41	20	1	8	119	22	0	13	26	3
17:45	18:00	0	14	139	15	0	3	40	4	1	16	115	17	0	9	17	4

Peak Time		North Approach Edgar St				East Approach Glassop St				South Approach Edgar St				West Approach Glassop St				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:00	9:00	0	50	448	112	1	18	154	54	4	60	339	88	0	38	228	40	1634
15:30	16:30	3	65	505	92	1	39	197	43	2	44	459	64	0	24	162	49	1749

Heavy Vehicles

Time		North Approach Edgar St				East Approach Glassop St				South Approach Edgar St				West Approach Glassop St			
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L
7:00	7:15	0	0	16	0	0	0	1	0	0	1	13	0	0	1	2	3
7:15	7:30	0	0	11	1	0	0	0	0	0	0	12	0	0	1	0	1
7:30	7:45	0	2	16	0	0	0	1	0	0	0	9	0	0	0	0	0
7:45	8:00	0	0	4	0	0	0	0	0	0	0	15	0	0	1	1	0
8:00	8:15	0	0	2	1	0	0	0	2	0	0	10	1	0	0	0	0
8:15	8:30	0	0	6	2	0	0	1	0	0	0	13	1	0	0	2	1
8:30	8:45	0	0	7	0	0	0	1	0	0	1	18	0	0	0	1	1
8:45	9:00	0	2	12	0	0	0	1	0	0	2	10	2	0	0	0	0
14:30	14:45	0	0	8	0	0	0	0	0	0	0	10	0	0	0	1	0
14:45	15:00	0	0	16	1	0	0	0	0	0	0	10	3	0	0	0	0
15:00	15:15	0	0	6	1	0	0	3	0	0	0	5	3	0	1	0	0
15:15	15:30	0	0	13	1	0	0	1	3	0	0	11	1	0	1	0	0
15:30	15:45	0	0	7	0	0	0	1	0	0	0	11	1	0	0	1	0
15:45	16:00	0	1	4	0	0	0	2	0	0	1	8	0	0	0	1	1
16:00	16:15	0	0	12	0	0	0	0	0	0	1	8	1	0	1	0	0
16:15	16:30	0	2	11	0	0	0	1	1	0	1	9	3	0	0	1	0
16:30	16:45	0	0	6	1	0	0	1	0	0	0	7	0	0	0	0	0
16:45	17:00	0	1	2	0	0	0	0	1	0	0	3	0	0	0	2	0
17:00	17:15	0	0	5	0	0	0	2	1	0	0	6	0	0	0	1	1
17:15	17:30	0	1	3	0	0	0	0	0	0	0	3	1	0	0	0	0
17:30	17:45	0	0	6	0	0	0	0	0	0	1	2	0	0	0	2	0
17:45	18:00	0	0	4	0	0	0	0	0	0	0	6	0	0	0	0	0

Peak Time		North Approach Edgar St				East Approach Glassop St				South Approach Edgar St				West Approach Glassop St				Peak
Period Start	Period End	U	R	SB	L	U	R	WB	L	U	R	NB	L	U	R	EB	L	total
8:00	9:00	0	2	27	3	0	0	3	2	0	3	51	4	0	0	3	2	100
15:30	16:30	0	3	34	0	0	0	4	1	0	3	36	5	0	1	3	1	91

TRANS TRAFFIC SURVEY

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TURNING MOVEMENT SURVEY

Intersection of Waruda St and Edgar St, Bankstown

GPS *-33.913893, 151.014140*

Date:	Wed 11-10-23
Weather:	Fine
Suburban:	Bankstown
Customer:	N/A

North:	Edgar St
East:	N/A
South:	Edgar St
West:	Waruda St

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	2:30 PM-6:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	4:45 PM-5:45 PM

All Vehicles

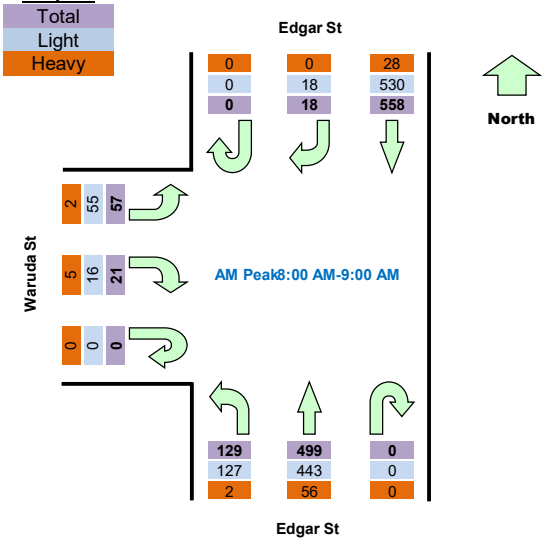
Time		North Approach Edgar St			South Approach Edgar St			West Approach Waruda St			Hourly Total	
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	Hour	Peak
7:00	7:15	0	1	153	0	92	21	0	2	6	1126	
7:15	7:30	0	1	103	0	92	22	0	3	3	1144	
7:30	7:45	0	5	125	0	114	33	0	1	14	1239	
7:45	8:00	0	4	148	0	148	24	0	2	9	1277	
8:00	8:15	0	3	126	0	109	33	0	4	18	1282	Peak
8:15	8:30	0	4	135	0	126	34	0	8	12		
8:30	8:45	0	6	151	0	125	30	0	5	13		
8:45	9:00	0	5	146	0	139	32	0	4	14		
14:30	14:45	0	2	117	0	168	26	0	1	11	1306	
14:45	15:00	0	6	136	0	140	29	0	7	13	1304	
15:00	15:15	0	6	138	0	133	31	0	11	18	1299	
15:15	15:30	0	11	127	0	140	23	0	4	8	1310	
15:30	15:45	0	6	136	0	143	30	0	3	5	1374	
15:45	16:00	0	12	144	0	134	24	0	6	6	1353	
16:00	16:15	0	3	141	0	146	41	0	5	12	1387	
16:15	16:30	0	5	158	0	156	32	0	6	20	1391	
16:30	16:45	1	4	140	0	125	23	0	4	5	1363	
16:45	17:00	1	7	152	0	158	33	0	3	6	1422	Peak
17:00	17:15	0	10	145	0	154	30	0	6	7	1409	
17:15	17:30	0	3	156	1	144	34	0	3	8		
17:30	17:45	0	3	174	0	141	29	0	4	10		
17:45	18:00	0	0	153	1	149	30	0	5	9		

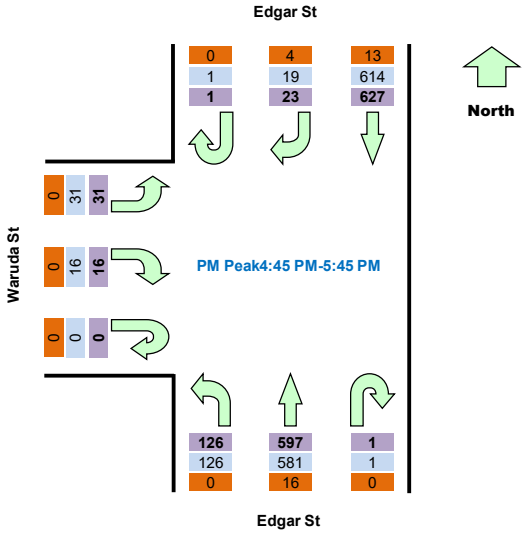
Peak Time		North Approach Edgar St			South Approach Edgar St			West Approach Waruda St			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
8:00	9:00	0	18	558	0	499	129	0	21	57	1282
16:45	17:45	1	23	627	1	597	126	0	16	31	1422

Note: Site sketch is for illustrating traffic flows. Direction is indicative only, drawing is not to scale and not an exact streets configuration.

Graphic

Total
Light
Heavy





TRANS TRAFFIC SURVEY

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TURNING MOVEMENT SURVEY

Intersection of Waruda St and Edgar St, Bankstown

GPS *-33.913893, 151.014140*

Date:	Wed 11-10-23
Weather:	Fine
Suburban:	Bankstown
Customer:	N/A

North:	Edgar St
East:	N/A
South:	Edgar St
West:	Waruda St

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	2:30 PM-6:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	4:45 PM-5:45 PM

Light Vehicles

Time		North Approach Edgar St			South Approach Edgar St			West Approach Waruda St		
Period Start	Period End	U	R	SB	U	NB	L	U	R	L
7:00	7:15	0	1	135	0	76	21	0	2	5
7:15	7:30	0	0	92	0	82	20	0	3	3
7:30	7:45	0	5	110	0	106	32	0	1	14
7:45	8:00	0	4	142	0	133	24	0	2	9
8:00	8:15	0	3	123	0	98	33	0	3	18
8:15	8:30	0	4	130	0	113	34	0	6	11
8:30	8:45	0	6	144	0	106	28	0	3	12
8:45	9:00	0	5	133	0	126	32	0	4	14
14:30	14:45	0	2	109	0	158	26	0	1	11
14:45	15:00	0	6	121	0	127	25	0	7	13
15:00	15:15	0	6	130	0	126	29	0	11	18
15:15	15:30	0	11	110	0	126	22	0	4	8
15:30	15:45	0	6	129	0	133	27	0	3	5
15:45	16:00	0	12	140	0	123	23	0	6	6
16:00	16:15	0	3	128	0	137	40	0	5	10
16:15	16:30	0	5	146	0	146	32	0	6	19
16:30	16:45	1	4	133	0	118	23	0	4	5
16:45	17:00	1	7	151	0	155	33	0	3	6
17:00	17:15	0	7	140	0	147	30	0	6	7
17:15	17:30	0	3	153	1	141	34	0	3	8
17:30	17:45	0	2	170	0	138	29	0	4	10
17:45	18:00	0	0	149	1	145	30	0	5	7

Peak Time		North Approach Edgar St			South Approach Edgar St			West Approach Waruda St			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
8:00	9:00	0	18	530	0	443	127	0	16	55	1189
16:45	17:45	1	19	614	1	581	126	0	16	31	1389

TRANS TRAFFIC SURVEY

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TURNING MOVEMENT SURVEY

Intersection of Waruda St and Edgar St, Bankstown

GPS *-33.913893, 151.014140*

Date:	Wed 11-10-23
Weather:	Fine
Suburban:	Bankstown
Customer:	N/A

North:	Edgar St
East:	N/A
South:	Edgar St
West:	Waruda St

Survey Period	AM:	7:00 AM-9:00 AM
	PM:	2:30 PM-6:00 PM
Traffic Peak	AM:	8:00 AM-9:00 AM
	PM:	4:45 PM-5:45 PM

Heavy Vehicles

Time		North Approach Edgar St			South Approach Edgar St			West Approach Waruda St		
Period Start	Period End	U	R	SB	U	NB	L	U	R	L
7:00	7:15	0	0	18	0	16	0	0	0	1
7:15	7:30	0	1	11	0	10	2	0	0	0
7:30	7:45	0	0	15	0	8	1	0	0	0
7:45	8:00	0	0	6	0	15	0	0	0	0
8:00	8:15	0	0	3	0	11	0	0	1	0
8:15	8:30	0	0	5	0	13	0	0	2	1
8:30	8:45	0	0	7	0	19	2	0	2	1
8:45	9:00	0	0	13	0	13	0	0	0	0
14:30	14:45	0	0	8	0	10	0	0	0	0
14:45	15:00	0	0	15	0	13	4	0	0	0
15:00	15:15	0	0	8	0	7	2	0	0	0
15:15	15:30	0	0	17	0	14	1	0	0	0
15:30	15:45	0	0	7	0	10	3	0	0	0
15:45	16:00	0	0	4	0	11	1	0	0	0
16:00	16:15	0	0	13	0	9	1	0	0	2
16:15	16:30	0	0	12	0	10	0	0	0	1
16:30	16:45	0	0	7	0	7	0	0	0	0
16:45	17:00	0	0	1	0	3	0	0	0	0
17:00	17:15	0	3	5	0	7	0	0	0	0
17:15	17:30	0	0	3	0	3	0	0	0	0
17:30	17:45	0	1	4	0	3	0	0	0	0
17:45	18:00	0	0	4	0	4	0	0	0	2

Peak Time		North Approach Edgar St			South Approach Edgar St			West Approach Waruda St			Peak
Period Start	Period End	U	R	SB	U	NB	L	U	R	L	total
8:00	9:00	0	0	28	0	56	2	0	5	2	93
16:45	17:45	0	4	13	0	16	0	0	0	0	33

Transport Strategies

Appendix B
SIDRA Modelling Results

MOVEMENT SUMMARY

Site: 101 [Edgar Street/Glassop Street (Site Folder: BYAM)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYAM (Network Folder: General)]

Edgar Street/Glassop Street
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	97	4.3	97	4.3	0.562	6.2	LOS A	5.2	39.4	0.73	0.58	0.73	43.4
2	T1	All MCs	411	13.1	411	13.1	0.562	6.8	LOS A	5.2	39.4	0.73	0.58	0.73	50.4
3	R2	All MCs	66	4.8	66	4.8	0.562	11.1	LOS A	5.2	39.4	0.73	0.58	0.73	44.4
3u	U	All MCs	4	0.0	4	0.0	0.562	13.0	LOS A	5.2	39.4	0.73	0.58	0.73	43.8
Approach			578	10.6	578	10.6	0.562	7.2	LOS A	5.2	39.4	0.73	0.58	0.73	49.0
East: Glassop Street															
4	L2	All MCs	59	3.6	59	3.6	0.358	7.8	LOS A	2.7	19.3	0.86	0.71	0.86	34.8
5	T1	All MCs	165	1.9	165	1.9	0.358	7.7	LOS A	2.7	19.3	0.86	0.71	0.86	36.6
6	R2	All MCs	19	0.0	19	0.0	0.358	12.1	LOS A	2.7	19.3	0.86	0.71	0.86	46.2
6u	U	All MCs	1	0.0	1	0.0	0.358	13.9	LOS A	2.7	19.3	0.86	0.71	0.86	39.1
Approach			244	2.2	244	2.2	0.358	8.1	LOS A	2.7	19.3	0.86	0.71	0.86	37.6
North: Edgar Street															
7	L2	All MCs	121	2.6	121	2.6	0.723	11.0	LOS A	9.9	72.3	0.93	0.81	1.16	44.8
8	T1	All MCs	500	5.7	500	5.7	0.723	11.4	LOS A	9.9	72.3	0.93	0.81	1.16	43.9
9	R2	All MCs	55	3.8	55	3.8	0.723	15.9	LOS B	9.9	72.3	0.93	0.81	1.16	29.0
9u	U	All MCs	1	0.0	1	0.0	0.723	17.7	LOS B	9.9	72.3	0.93	0.81	1.16	48.9
Approach			677	5.0	677	5.0	0.723	11.7	LOS A	9.9	72.3	0.93	0.81	1.16	42.3
West: Glassop Street															
10	L2	All MCs	44	4.8	44	4.8	0.421	7.3	LOS A	3.2	22.8	0.82	0.68	0.82	45.9
11	T1	All MCs	243	1.3	243	1.3	0.421	7.1	LOS A	3.2	22.8	0.82	0.68	0.82	36.9
12	R2	All MCs	40	0.0	40	0.0	0.421	11.5	LOS A	3.2	22.8	0.82	0.68	0.82	24.7
12u	U	All MCs	1	0.0	1	0.0	0.421	13.4	LOS A	3.2	22.8	0.82	0.68	0.82	18.1
Approach			328	1.6	328	1.6	0.421	7.7	LOS A	3.2	22.8	0.82	0.68	0.82	37.9
All Vehicles			1827	5.8	1827	5.8	0.723	9.1	LOS A	9.9	72.3	0.84	0.70	0.92	43.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 102 [Edgar Street/ Waruda Street (Site Folder: BYAM)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYAM (Network Folder: General)]

Edgar Street/ Waruda Street
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	136	1.6	136	1.6	0.363	5.6	LOS A	0.0	0.0	0.00	0.12	0.00	26.2
2	T1	All MCs	525	11.2	525	11.2	0.363	0.1	LOS A	0.0	0.0	0.00	0.12	0.00	55.1
Approach			661	9.2	661	9.2	0.363	1.2	NA	0.0	0.0	0.00	0.12	0.00	42.9
North: Edgar Street															
8	T1	All MCs	587	5.0	587	5.0	0.334	0.0	LOS A	0.3	2.0	0.06	0.08	0.06	59.1
9	R2	All MCs	19	0.0	19	0.0	0.334	17.1	LOS B	0.3	2.0	0.06	0.08	0.06	52.6
Approach			606	4.9	606	4.9	0.334	0.5	NA	0.3	2.0	0.06	0.08	0.06	58.9
West: Waruda Street															
10	L2	All MCs	60	3.5	60	3.5	0.180	7.1	LOS A	0.6	4.2	0.64	0.82	0.64	19.2
12	R2	All MCs	22	23.8	22	23.8	0.180	22.8	LOS B	0.6	4.2	0.64	0.82	0.64	30.6
Approach			82	9.0	82	9.0	0.180	11.3	LOS A	0.6	4.2	0.64	0.82	0.64	24.2
All Vehicles			1349	7.3	1349	7.3	0.363	1.5	NA	0.6	4.2	0.07	0.14	0.07	51.1

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Edgar Street/Glassop Street (Site Folder: BYPM)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYPM (Network Folder: General)]

Edgar Street/Glassop Street
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	73	7.2	73	7.2	0.684	9.8	LOS A	8.5	63.4	0.89	0.75	1.05	41.3
2	T1	All MCs	521	7.3	521	7.3	0.684	10.0	LOS A	8.5	63.4	0.89	0.75	1.05	49.1
3	R2	All MCs	49	6.4	49	6.4	0.684	14.6	LOS B	8.5	63.4	0.89	0.75	1.05	42.7
3u	U	All MCs	2	0.0	2	0.0	0.684	16.3	LOS B	8.5	63.4	0.89	0.75	1.05	41.4
Approach			645	7.2	645	7.2	0.684	10.3	LOS A	8.5	63.4	0.89	0.75	1.05	48.1
East: Glassop Street															
4	L2	All MCs	46	2.3	46	2.3	0.477	10.1	LOS A	4.1	29.4	0.94	0.81	1.04	31.9
5	T1	All MCs	212	2.0	212	2.0	0.477	10.0	LOS A	4.1	29.4	0.94	0.81	1.04	34.1
6	R2	All MCs	41	0.0	41	0.0	0.477	14.4	LOS A	4.1	29.4	0.94	0.81	1.04	44.3
6u	U	All MCs	1	0.0	1	0.0	0.477	16.2	LOS B	4.1	29.4	0.94	0.81	1.04	37.1
Approach			300	1.8	300	1.8	0.477	10.7	LOS A	4.1	29.4	0.94	0.81	1.04	36.1
North: Edgar Street															
7	L2	All MCs	97	0.0	97	0.0	0.698	8.0	LOS A	8.9	65.4	0.86	0.67	0.94	46.6
8	T1	All MCs	567	6.3	567	6.3	0.698	8.5	LOS A	8.9	65.4	0.86	0.67	0.94	46.4
9	R2	All MCs	72	4.4	72	4.4	0.698	13.0	LOS A	8.9	65.4	0.86	0.67	0.94	29.9
9u	U	All MCs	3	0.0	3	0.0	0.698	14.9	LOS B	8.9	65.4	0.86	0.67	0.94	50.4
Approach			739	5.3	739	5.3	0.698	8.9	LOS A	8.9	65.4	0.86	0.67	0.94	44.0
West: Glassop Street															
10	L2	All MCs	53	2.0	53	2.0	0.379	8.0	LOS A	2.9	20.6	0.88	0.72	0.88	45.6
11	T1	All MCs	174	1.8	174	1.8	0.379	7.9	LOS A	2.9	20.6	0.88	0.72	0.88	36.4
12	R2	All MCs	26	4.0	26	4.0	0.379	12.6	LOS A	2.9	20.6	0.88	0.72	0.88	23.9
12u	U	All MCs	1	0.0	1	0.0	0.379	14.2	LOS A	2.9	20.6	0.88	0.72	0.88	17.8
Approach			254	2.1	254	2.1	0.379	8.4	LOS A	2.9	20.6	0.88	0.72	0.88	38.4
All Vehicles			1938	4.9	1938	4.9	0.698	9.6	LOS A	8.9	65.4	0.88	0.72	0.98	44.2

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 102 [Edgar Street/ Waruda Street (Site Folder: BYPM)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYPM (Network Folder: General)]

Edgar Street/ Waruda Street
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	134	3.9	134	3.9	0.401	5.6	LOS A	0.0	0.0	0.00	0.11	0.00	26.3
2	T1	All MCs	609	6.9	609	6.9	0.401	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	55.8
Approach			743	6.4	743	6.4	0.401	1.1	NA	0.0	0.0	0.00	0.11	0.00	44.4
North: Edgar Street															
8	T1	All MCs	609	6.2	609	6.2	0.362	0.0	LOS A	0.5	3.7	0.09	0.11	0.10	58.5
9	R2	All MCs	27	0.0	27	0.0	0.362	20.1	LOS B	0.5	3.7	0.09	0.11	0.10	52.0
Approach			637	6.0	637	6.0	0.362	0.9	NA	0.5	3.7	0.09	0.11	0.10	58.2
West: Waruda Street															
10	L2	All MCs	45	7.0	45	7.0	0.142	7.8	LOS A	0.5	3.4	0.66	0.84	0.66	19.4
12	R2	All MCs	21	0.0	21	0.0	0.142	18.0	LOS B	0.5	3.4	0.66	0.84	0.66	33.8
Approach			66	4.8	66	4.8	0.142	11.1	LOS A	0.5	3.4	0.66	0.84	0.66	26.2
All Vehicles			1446	6.1	1446	6.1	0.401	1.5	NA	0.5	3.7	0.07	0.14	0.07	51.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 101 [Edgar Street/Glassop Street (Site Folder: BYAM + Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYAM + Dev (Network Folder: General)]

Edgar Street/Glassop Street
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	97	4.3	97	4.3	0.574	6.5	LOS A	5.3	40.6	0.75	0.60	0.75	43.3
2	T1	All MCs	411	13.1	411	13.1	0.574	7.0	LOS A	5.3	40.6	0.75	0.60	0.75	50.3
3	R2	All MCs	66	4.8	66	4.8	0.574	11.3	LOS A	5.3	40.6	0.75	0.60	0.75	44.2
3u	U	All MCs	4	0.0	4	0.0	0.574	13.2	LOS A	5.3	40.6	0.75	0.60	0.75	43.6
Approach			578	10.6	578	10.6	0.574	7.5	LOS A	5.3	40.6	0.75	0.60	0.75	48.9
East: Glassop Street															
4	L2	All MCs	59	3.6	59	3.6	0.379	7.9	LOS A	2.9	20.7	0.87	0.71	0.87	34.7
5	T1	All MCs	177	1.8	177	1.8	0.379	7.7	LOS A	2.9	20.7	0.87	0.71	0.87	36.6
6	R2	All MCs	19	0.0	19	0.0	0.379	12.2	LOS A	2.9	20.7	0.87	0.71	0.87	46.1
6u	U	All MCs	1	0.0	1	0.0	0.379	14.0	LOS A	2.9	20.7	0.87	0.71	0.87	39.1
Approach			256	2.1	256	2.1	0.379	8.1	LOS A	2.9	20.7	0.87	0.71	0.87	37.5
North: Edgar Street															
7	L2	All MCs	121	2.6	121	2.6	0.740	11.7	LOS A	10.5	76.9	0.96	0.84	1.22	44.3
8	T1	All MCs	500	5.7	500	5.7	0.740	12.1	LOS A	10.5	76.9	0.96	0.84	1.22	43.2
9	R2	All MCs	59	3.6	59	3.6	0.740	16.6	LOS B	10.5	76.9	0.96	0.84	1.22	28.7
9u	U	All MCs	1	0.0	1	0.0	0.740	18.5	LOS B	10.5	76.9	0.96	0.84	1.22	48.4
Approach			681	4.9	681	4.9	0.740	12.4	LOS A	10.5	76.9	0.96	0.84	1.22	41.5
West: Glassop Street															
10	L2	All MCs	47	4.4	47	4.4	0.443	7.5	LOS A	3.5	24.7	0.84	0.69	0.85	45.8
11	T1	All MCs	256	1.2	256	1.2	0.443	7.3	LOS A	3.5	24.7	0.84	0.69	0.85	36.8
12	R2	All MCs	40	0.0	40	0.0	0.443	11.7	LOS A	3.5	24.7	0.84	0.69	0.85	24.6
12u	U	All MCs	1	0.0	1	0.0	0.443	13.5	LOS A	3.5	24.7	0.84	0.69	0.85	18.1
Approach			344	1.5	344	1.5	0.443	7.8	LOS A	3.5	24.7	0.84	0.69	0.85	37.8
All Vehicles			1859	5.7	1859	5.7	0.740	9.4	LOS A	10.5	76.9	0.86	0.72	0.96	43.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 102 [Edgar Street/ Waruda Street (Site Folder: BYAM + Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYAM + Dev (Network Folder: General)]

Edgar Street/ Waruda Street
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	145	1.4	145	1.4	0.368	5.6	LOS A	0.0	0.0	0.00	0.13	0.00	26.2
2	T1	All MCs	525	11.2	525	11.2	0.368	0.1	LOS A	0.0	0.0	0.00	0.13	0.00	54.9
Approach			671	9.1	671	9.1	0.368	1.3	NA	0.0	0.0	0.00	0.13	0.00	42.3
North: Edgar Street															
8	T1	All MCs	587	5.0	587	5.0	0.334	0.0	LOS A	0.3	2.1	0.06	0.08	0.06	59.1
9	R2	All MCs	19	0.0	19	0.0	0.334	17.4	LOS B	0.3	2.1	0.06	0.08	0.06	52.6
Approach			606	4.9	606	4.9	0.334	0.5	NA	0.3	2.1	0.06	0.08	0.06	58.9
West: Waruda Street															
10	L2	All MCs	60	3.5	60	3.5	0.213	7.4	LOS A	0.7	5.1	0.66	0.86	0.70	18.3
12	R2	All MCs	32	16.7	32	16.7	0.213	21.2	LOS B	0.7	5.1	0.66	0.86	0.70	30.7
Approach			92	8.0	92	8.0	0.213	12.2	LOS A	0.7	5.1	0.66	0.86	0.70	24.7
All Vehicles			1368	7.2	1368	7.2	0.368	1.7	NA	0.7	5.1	0.07	0.15	0.07	50.5

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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MOVEMENT SUMMARY

Site: 101 [Edgar Street/Glassop Street (Site Folder: BYPM + Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYPM + Dev (Network Folder: General)]

Edgar Street/Glassop Street
Site Category: Existing Design
Roundabout

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	73	7.2	73	7.2	0.694	10.2	LOS A	8.8	65.6	0.91	0.77	1.09	40.9
2	T1	All MCs	521	7.3	521	7.3	0.694	10.4	LOS A	8.8	65.6	0.91	0.77	1.09	48.8
3	R2	All MCs	49	6.4	49	6.4	0.694	15.0	LOS B	8.8	65.6	0.91	0.77	1.09	42.4
3u	U	All MCs	2	0.0	2	0.0	0.694	16.7	LOS B	8.8	65.6	0.91	0.77	1.09	40.9
Approach			645	7.2	645	7.2	0.694	10.8	LOS A	8.8	65.6	0.91	0.77	1.09	47.7
East: Glassop Street															
4	L2	All MCs	46	2.3	46	2.3	0.493	10.5	LOS A	4.4	31.1	0.94	0.82	1.07	31.6
5	T1	All MCs	219	1.9	219	1.9	0.493	10.4	LOS A	4.4	31.1	0.94	0.82	1.07	33.8
6	R2	All MCs	41	0.0	41	0.0	0.493	14.8	LOS B	4.4	31.1	0.94	0.82	1.07	44.0
6u	U	All MCs	1	0.0	1	0.0	0.493	16.6	LOS B	4.4	31.1	0.94	0.82	1.07	36.8
Approach			307	1.7	307	1.7	0.493	11.0	LOS A	4.4	31.1	0.94	0.82	1.07	35.8
North: Edgar Street															
7	L2	All MCs	97	0.0	97	0.0	0.708	8.3	LOS A	9.3	68.3	0.87	0.69	0.98	46.5
8	T1	All MCs	567	6.3	567	6.3	0.708	8.8	LOS A	9.3	68.3	0.87	0.69	0.98	46.2
9	R2	All MCs	75	4.2	75	4.2	0.708	13.4	LOS A	9.3	68.3	0.87	0.69	0.98	29.9
9u	U	All MCs	3	0.0	3	0.0	0.708	15.2	LOS B	9.3	68.3	0.87	0.69	0.98	50.3
Approach			742	5.2	742	5.2	0.708	9.2	LOS A	9.3	68.3	0.87	0.69	0.98	43.7
West: Glassop Street															
10	L2	All MCs	56	1.9	56	1.9	0.396	8.0	LOS A	3.0	21.7	0.88	0.72	0.88	45.6
11	T1	All MCs	181	1.7	181	1.7	0.396	8.0	LOS A	3.0	21.7	0.88	0.72	0.88	36.4
12	R2	All MCs	26	4.0	26	4.0	0.396	12.6	LOS A	3.0	21.7	0.88	0.72	0.88	23.8
12u	U	All MCs	1	0.0	1	0.0	0.396	14.2	LOS A	3.0	21.7	0.88	0.72	0.88	17.8
Approach			264	2.0	264	2.0	0.396	8.5	LOS A	3.0	21.7	0.88	0.72	0.88	38.4
All Vehicles			1959	4.9	1959	4.9	0.708	9.9	LOS A	9.3	68.3	0.90	0.74	1.01	43.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).
Vehicle movement LOS values are based on average delay per movement.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Roundabout Capacity Model: SIDRA Standard.
Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).
Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.
Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.
Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

MOVEMENT SUMMARY

Site: 102 [Edgar Street/ Waruda Street (Site Folder: BYPM + Dev)]

Output produced by SIDRA INTERSECTION Version: 9.1.3.210

Network: N101 [BYPM + Dev (Network Folder: General)]

Edgar Street/ Waruda Street
Site Category: Existing Design
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	Mov Class	Demand Flows [Total veh/h	HV] %	Arrival Flows [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% Back Of Queue [Veh. veh	Dist] m	Prop. Que	Eff. Stop Rate	Aver. No. of Cycles	Aver. Speed km/h
South: Edgar Street															
1	L2	All MCs	140	3.8	140	3.8	0.404	5.6	LOS A	0.0	0.0	0.00	0.11	0.00	26.3
2	T1	All MCs	609	6.9	609	6.9	0.404	0.1	LOS A	0.0	0.0	0.00	0.11	0.00	55.7
Approach			749	6.3	749	6.3	0.404	1.1	NA	0.0	0.0	0.00	0.11	0.00	44.0
North: Edgar Street															
8	T1	All MCs	609	6.2	609	6.2	0.363	0.0	LOS A	0.5	3.8	0.09	0.11	0.10	58.5
9	R2	All MCs	27	0.0	27	0.0	0.363	20.4	LOS B	0.5	3.8	0.09	0.11	0.10	51.9
Approach			637	6.0	637	6.0	0.363	0.9	NA	0.5	3.8	0.09	0.11	0.10	58.2
West: Waruda Street															
10	L2	All MCs	45	7.0	45	7.0	0.168	7.9	LOS A	0.5	4.0	0.69	0.86	0.69	18.6
12	R2	All MCs	27	0.0	27	0.0	0.168	18.2	LOS B	0.5	4.0	0.69	0.86	0.69	33.1
Approach			73	4.3	73	4.3	0.168	11.8	LOS A	0.5	4.0	0.69	0.86	0.69	26.4
All Vehicles			1459	6.1	1459	6.1	0.404	1.6	NA	0.5	4.0	0.07	0.15	0.08	51.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Network Data dialog (Override Site Data tab).

Vehicle movement LOS values are based on average delay per movement.

Minor Road Approach LOS values are based on average delay for all vehicle movements.

NA (TWSC): Level of Service is not defined for major road approaches or the intersection as a whole for Two-Way Sign Control (HCM LOS rule).

Two-Way Sign Control Capacity Model: SIDRA Standard.

Delay Model: SIDRA Standard (Control Delay: Geometric Delay is included).

Queue Model: SIDRA queue estimation methods are used for Back of Queue and Queue at Start of Gap.

Gap-Acceptance Capacity Formula: SIDRA Standard (Akçelik M3D).

HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Arrival Flows used in performance calculations are adjusted to include any Initial Queued Demand and Upstream Capacity Constraint effects.

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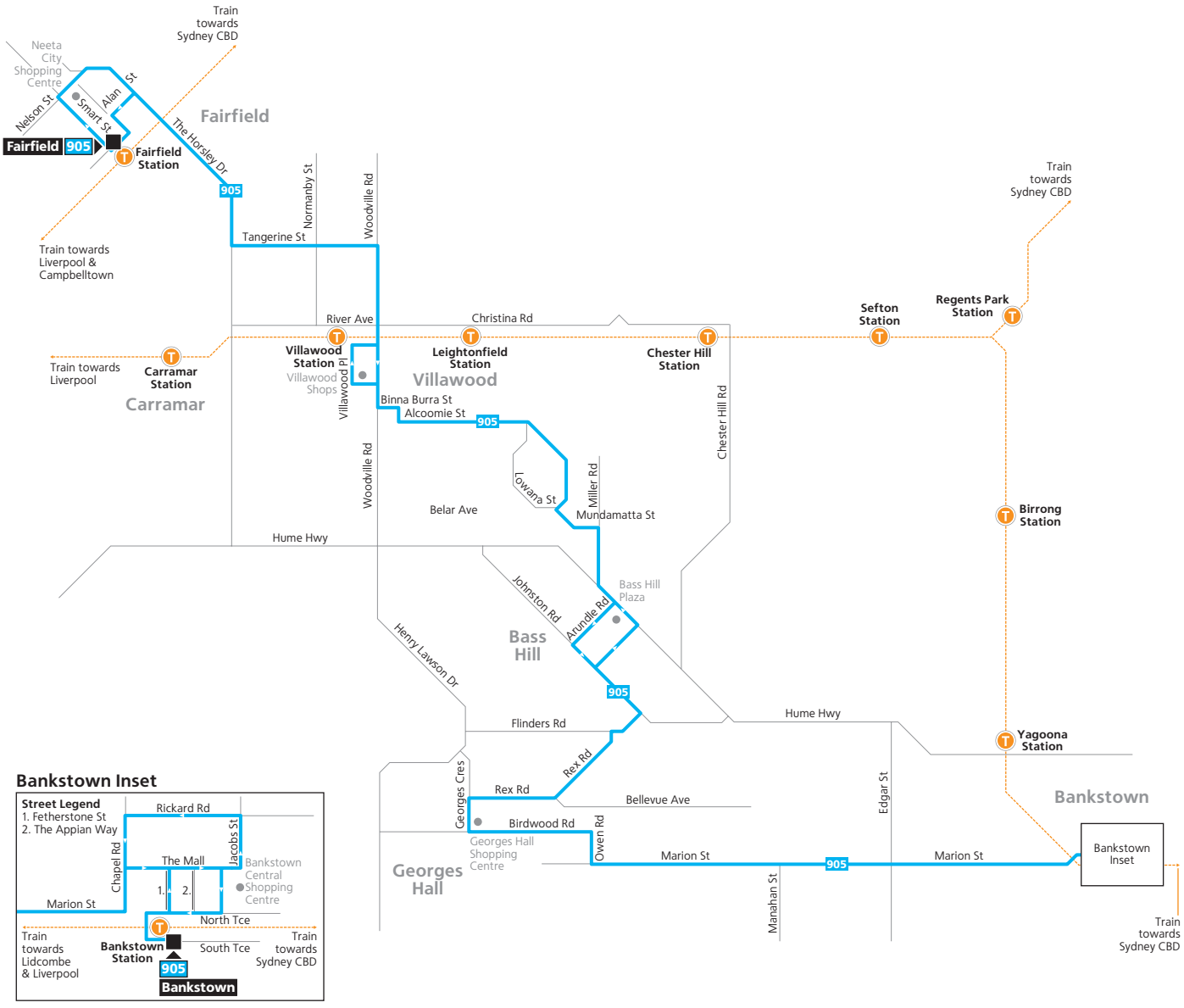
Transport Strategies

Appendix C
Public Transport Provisions

Route 905



Bankstown Inset

Legend

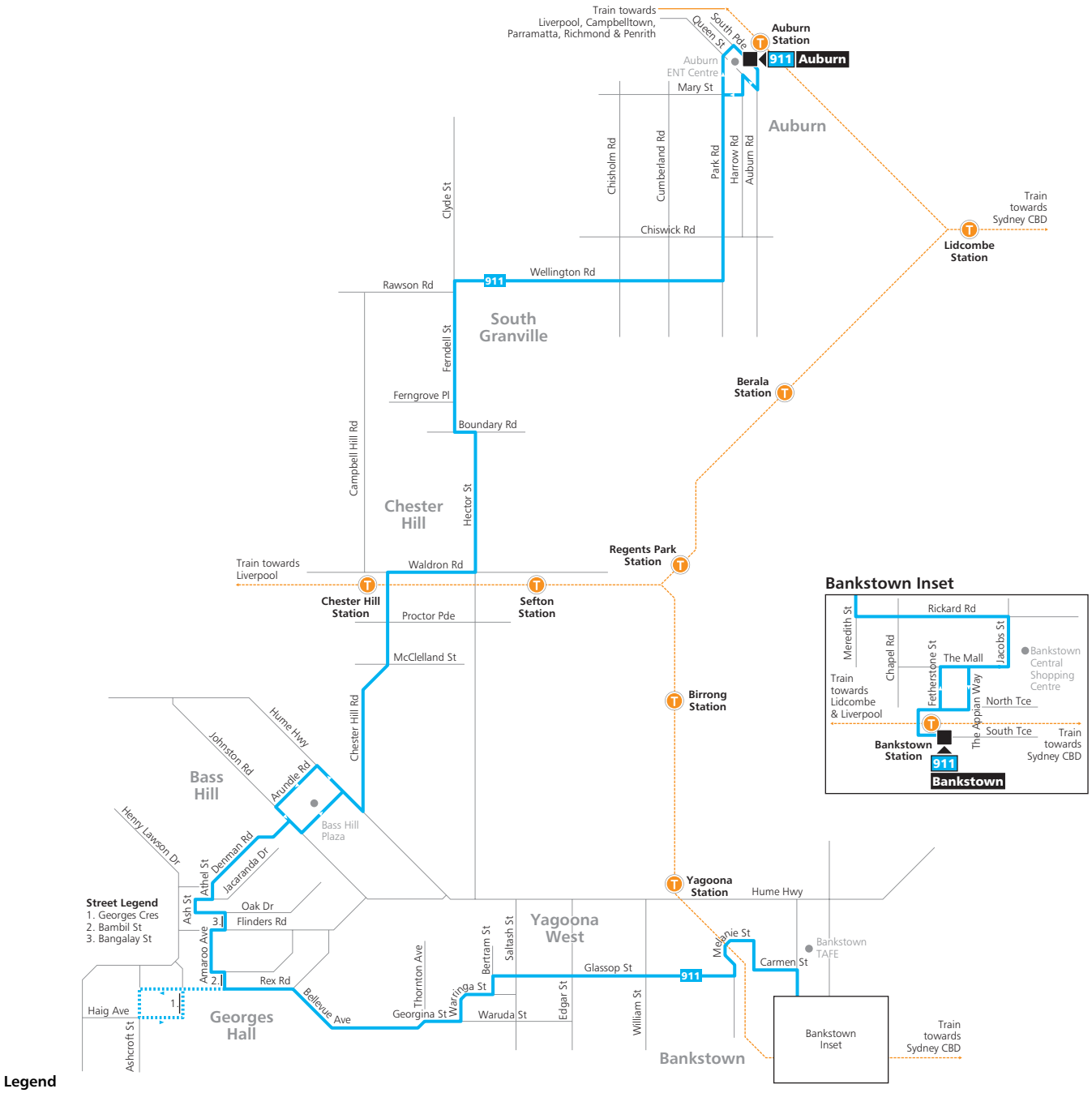
- Bus route
- 905 Bus route number
- Bus route start/finish
- Train line/station

Diagrammatic Map
Not to Scale
North

NSW GOVERNMENT Transport

transportnsw.info

Route 911



Legend

- Bus route
- Limited service
- 911 Bus route number
- Bus route start/finish
- Train line/station

Diagrammatic Map
Not to Scale
North

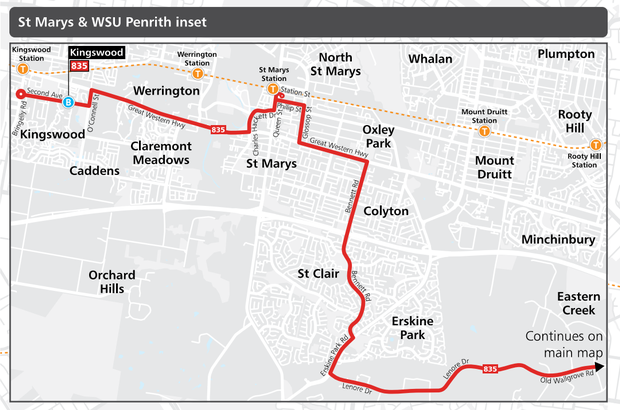
NSW GOVERNMENT Transport

transportnsw.info

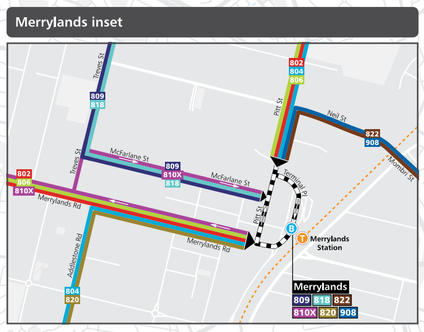
Parramatta, Fairfield, Liverpool & Bankstown region network effective 6 August 2023

B

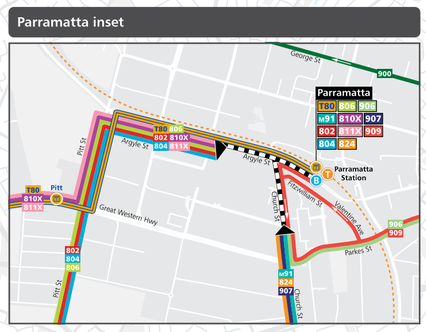
St Marys & WSU Penrith inset



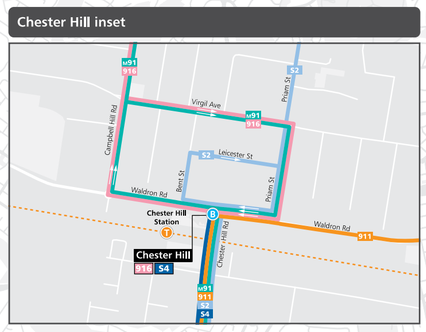
Merrylands inset



Parramatta inset

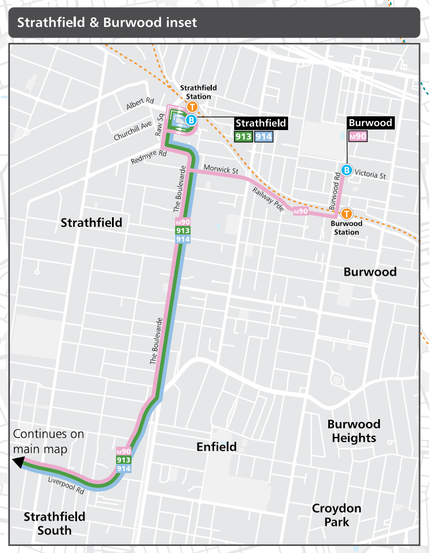


Chester Hill inset



Auburn inset

Strathfield & Burwood inset



TRANSIT SYSTEMS

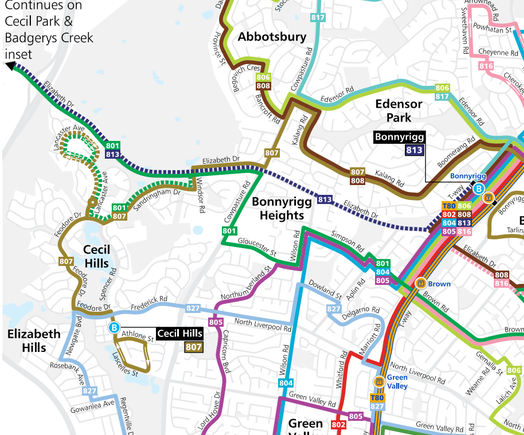
Legend

- Bus Route
- Diversion/Extended Route
- Liverpool-Parramatta T-way
- Multiple Routes on Corridor
- 800 Bus Route Number
- Train Station
- Bus Route Terminus
- T-way Stop
- Ferry Wharf

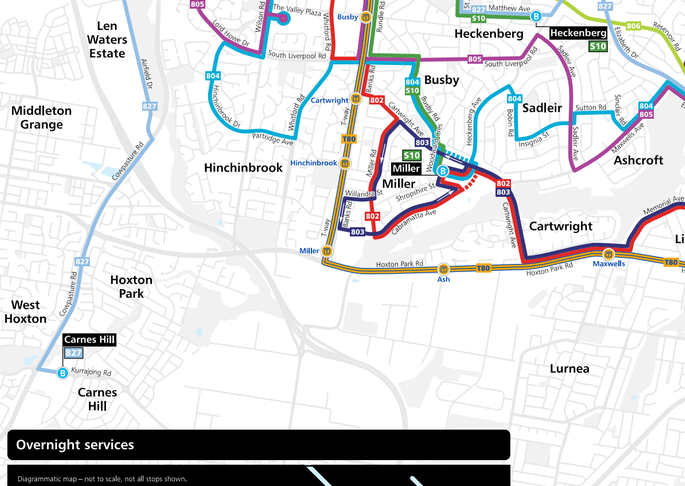
North

Kings Park
Marayong Station
Blacktown
Seven Hills
Seven Hills Station
Rooty Hill
Minchinbury
Arndell Park
Huntingwood
Prospect
Toongabbie
Toongabbie Station
Old Toongabbie
Winston Hills
Constitution Hill
Northmead
Westmead
Westmead Station
Wentworthville
Wentworthville Station
Pendle Hill
Pendle Hill Station
Girraween
Pemulwuy
Eastern Creek
Horsley Park
Western Sydney Parklands
Bossley Park
Prairiewood
Wetherill Park
Smithfield
Fairfield Heights
Fairfield West
Fairfield
Fairfield East
Yennora
Yennora Station
South Wentworthville
Greystanes
Merrylands West
Merrylands
Woodpark
Guildford West
Guildford
Pendle Hill
Telopea
Oatlands
North Parramatta
Dundas
Rydalmere
Parramatta
Camellia
Rosehill
Harris Park
Granville
Clyde
Silverwater
Auburn
Lidcombe
Homebush West
Homebush
Flemington Station
Olympic Park Station
Sydney Olympic Park
Newington
Ermington
Melrose Park
Wentworth Point
Strathfield
Strathfield South
Enfield
Burwood Heights
Croydon Park
Rookwood
Belfield
Greenacre
Chullora
Lakemba
Wiley Park
Punchbowl
Roselands
Beverly Hills
Riverwood
Narwee
Penshurst
Mortdale
Peakhurst
Peakhurst Heights
Mount Lewis
Bankstown Aerodrome
Condell Park
Bankstown
Padstall
Revesby
Padstow
Padstow Heights
Revesby Heights
Picnic Point
Panania
Milperra
Chipping Norton
Georges Hall
Lansdowne
Lansvale
Bass Hill
Potts Hill
Sefton
Regents Park
Birrong
Yagoona
Villawood
Carramar
Cabramatta
Cabramatta West
Canley Vale
Canley Heights
Wakeley
Edensor Park
Bonnyrigg
Bonnyrigg Heights
St Johns Park
Greenfield Park
Abbotsbury
Cecil Hills
Elizabeth Hills
Green Valley
Mount Pritchard
Busby
Sadleir
Miller
Ashcroft
Cartwright
Liverpool
Hoxton Park
West Hoxton
Carnes Hill
Hinchinbrook
Middleton Grange
Len Waters Estate
Heckenberg
Lurnea
Casula
Glenfield
Wattle Grove
Hammondville
Holsworthy
Voyager Point
East Hills
Pleasure Point
Sandy Point
Prospect Reservoir
Georges River
Duck River
Haslams Creek
Salt Pan Creek
Continues on Cecil Park & Badgerys Creek inset
Continues on St Marys & WSU Penrith inset
Continues on Strathfield & Burwood inset
Continues on Hurstville inset

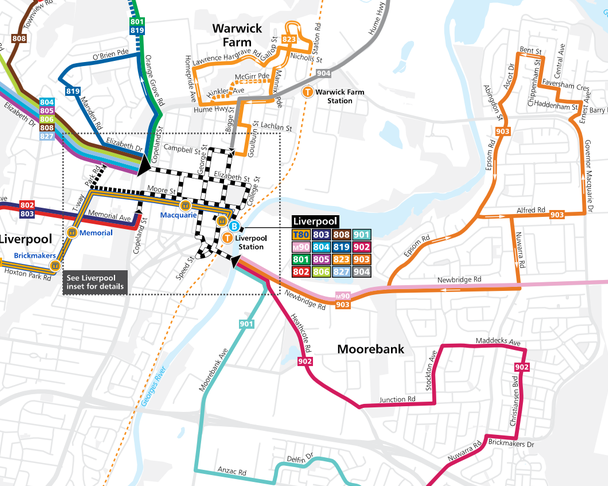
Overnight services



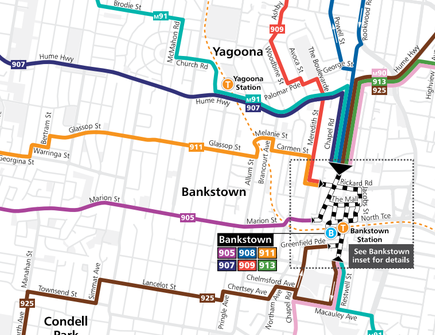
Liverpool inset



Cecil Park & Badgerys Creek inset



Fairfield inset



Bankstown inset

Cabramatta inset

Hurstville inset

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Transport Strategies

Appendix D
Architectural Plans

DEVELOPMENT DATA

SITE ADDRESS	LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200
SITE AREA	1195.1 m2 (BY TITLE)
ZONE	R2 LOW DENSITY RESIDENTIAL
TOTAL BUILDING AREA	379.0m2
GFA (MAX.478m2)	447.1m2
FSR	0.37:1
TOTAL NO. OF PLACEMENTS	**68 CHILDREN**

CARPARKING

REQUIRED SPACES 68/4	17
PROVIDED SPACES	17

GROSS FLOOR AREA

BASEMENT	
SHED	4.85 m²
LNDRY	10.40 m²
GROUND FLOOR	
GROUND FLOOR	280.58 m²
SHED	2.50 m²
WSA	8.45 m²
FIRST FLOOR	
FIRST FLOOR A	72.98 m²
FIRST FLOOR B	67.32 m²
TOTAL GFA	447.10 m²

EXTERNAL PLAYSPACE CALCS.

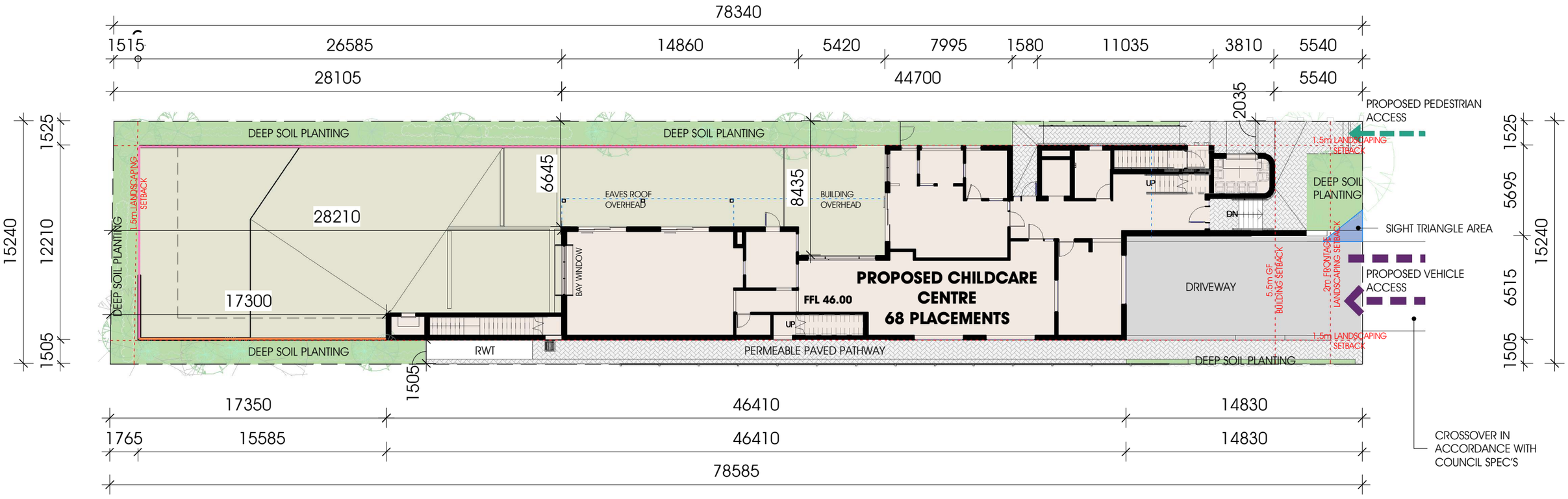
EXT. PLAY AREA 01	41m2
EXT. PLAY AREA 02	376m2
EXT. PLAY AREA 03	75m2
TOTAL	**492.0m2**

INTERNAL PLAYSPACE AREA SCHEDULE

Name	Comments	Area Required	Area Provided	Staff Ratio	No. of Staff
PLAYROOM 01	8 - 0-2 YO	26	26.79 m²	1:4	2
PLAYROOM 02	20 - 3-6 YO	65	70.23 m²	1:10	2
PLAYROOM 03	20 - 3-6 YO	65	66.87 m²	1:10	2
PLAYROOM 04	20 - 2-3YO	65	53.33 m²	1:5	4
UNENCUMBERED INDOOR PLAYROOM 04			12.69 m²		
		221	229.92 m²		10

ACOUSTIC RECOMMENDATIONS

- 1.44m HIGH ACOUSTIC BARRIER
- 1.52m HIGH ACOUSTIC BARRIER - 1.0 VERTICAL BARRIER WITH 1.1m CANTILEVERED INWARDS AT 63° ANGLE
- 1.84m HIGH ACOUSTIC BARRIER - 1.0m VERTICAL BARRIER WITH 1.3m CANTILIVERED INWARDS AT 51° ANGLE



SITE PLAN

SCALE 1 : 250 (A3)

0 12.5 25 m

FOR DEVELOPMENT APPLICATION

ENVISION GROUP PTY. LTD.
P: 0455 025 207
projects@envisiongroup.com.au
6a/27 Justin Street, Smithfield, NSW, 2164
PO Box 3371, Wetherill Park, NSW, 2164
envisiongroup.com.au

bdaa ACCREDITED BUILDING DESIGNER

AMENDMENTS:

E	ISSUED TO COUNCIL FOR DEVELOPMENT APPLICATION	03.07.24

PROJECT NO.: #186

ENTITY 8886

PROPOSED CHILDCARE CENTRE

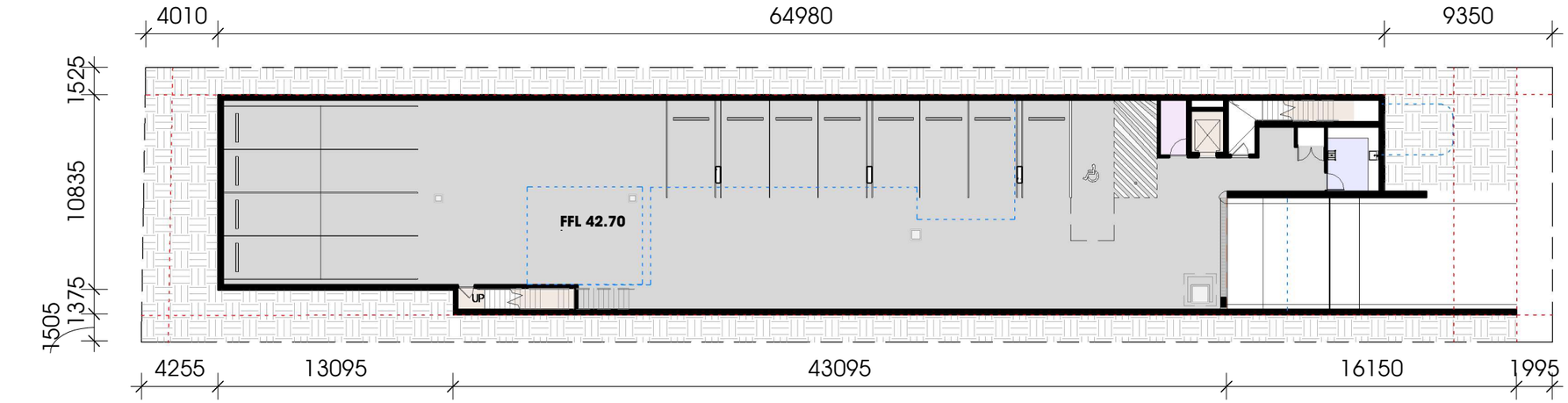
DA 03

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200

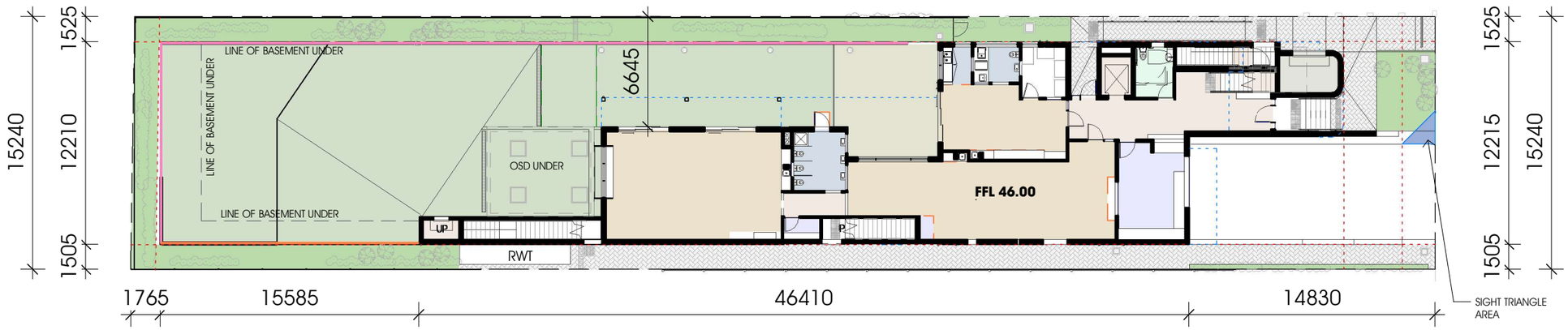
BASEMENT PLAN

SCALE 1 : 300 (A3)



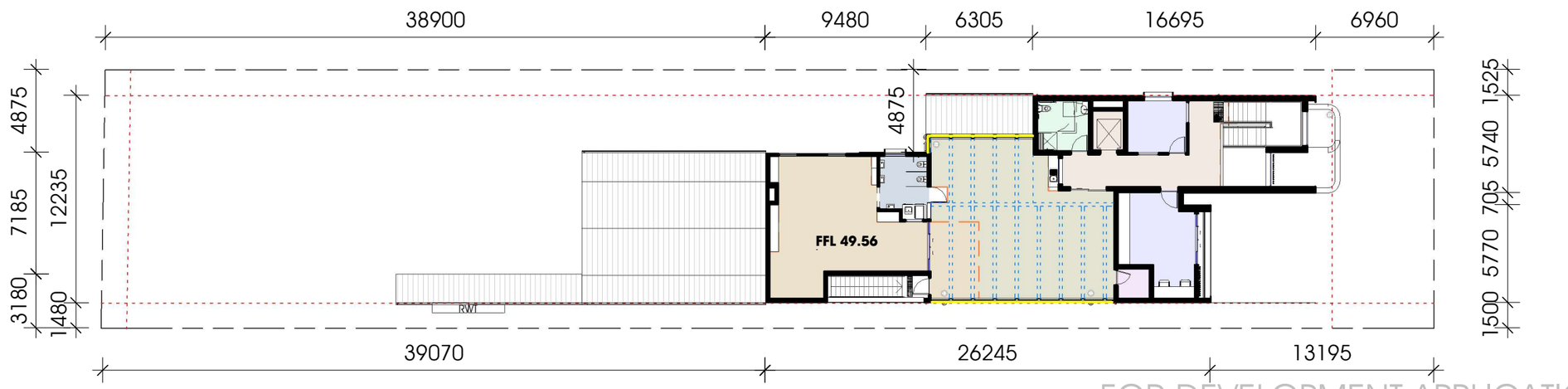
GROUND FLOOR PLAN

SCALE 1 : 300 (A3)



FIRST FLOOR PLAN

SCALE 1 : 300 (A3)



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PROJECT NO.: #186

DA 05

ENTITY 8886

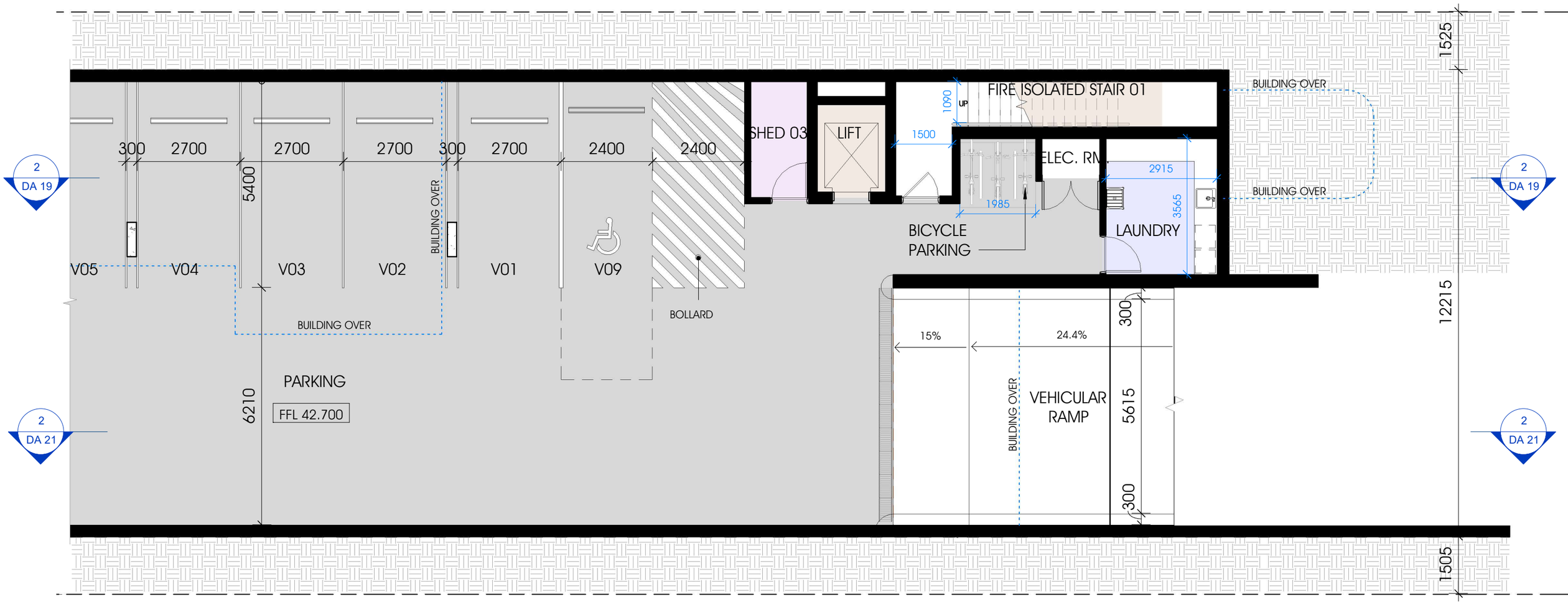
PROPOSED CHILDCARE CENTRE

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200

PARKING SCHEDULE

STAFF	8
VISITOR	8
VISITOR ACCESSIBLE	1
TOTAL CARPARKING SPACES	**17**



BASEMENT PLAN

SCALE 1 : 100 (A3)

FOR DEVELOPMENT APPLICATION

0 5 10 m

AMENDMENTS:

PROJECT NO.:

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#186

DA 06

ENTITY 8886

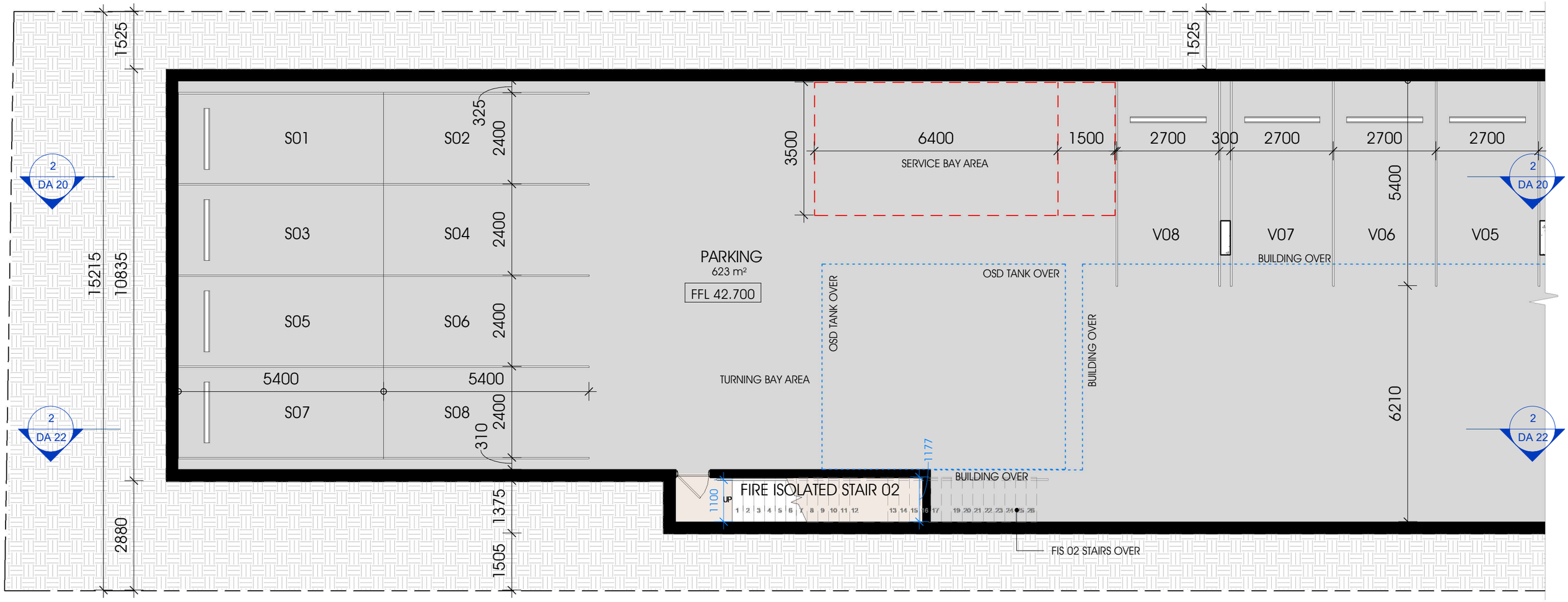
PROPOSED CHILDCARE CENTRE

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200

PARKING SCHEDULE

STAFF	8
VISITOR	8
VISITOR ACCESSIBLE	1
TOTAL CARPARKING SPACES	**17**



BASEMENT PLAN

SCALE 1 : 100 (A3)

0 5 10 m

FOR DEVELOPMENT APPLICATION

AMENDMENTS: PROJECT NO.:

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#186

DA 07

ENTITY 8886

PROPOSED CHILDCARE CENTRE

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200

SECTION A-A

SCALE 1 : 100 (A3)

FOR DEVELOPMENT APPLICATION

0 5 10 m

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AMENDMENTS:

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PROJECT NO.: #186

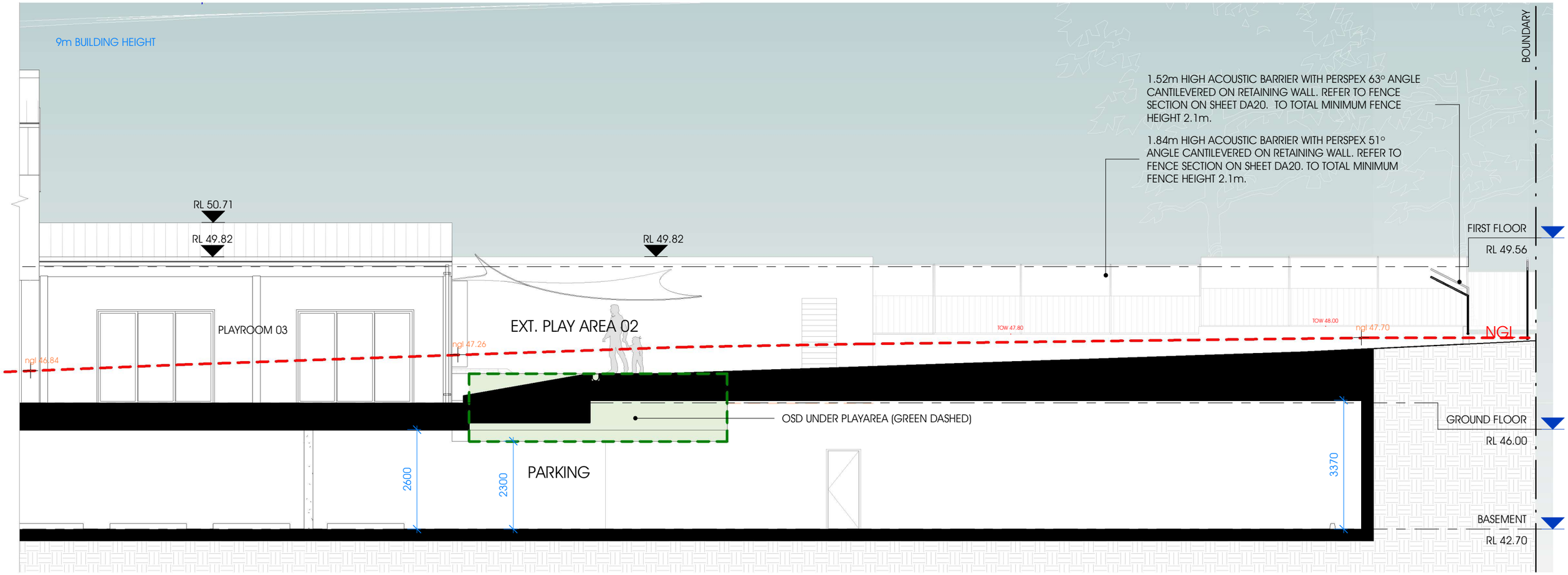
ENTITY 8886

PROPOSED CHILDCARE CENTRE

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200

DA 19



SECTION A-A

SCALE 1 : 100 (A3)

0 5 10 m

FOR DEVELOPMENT APPLICATION

AMENDMENTS: PROJECT NO.: #186

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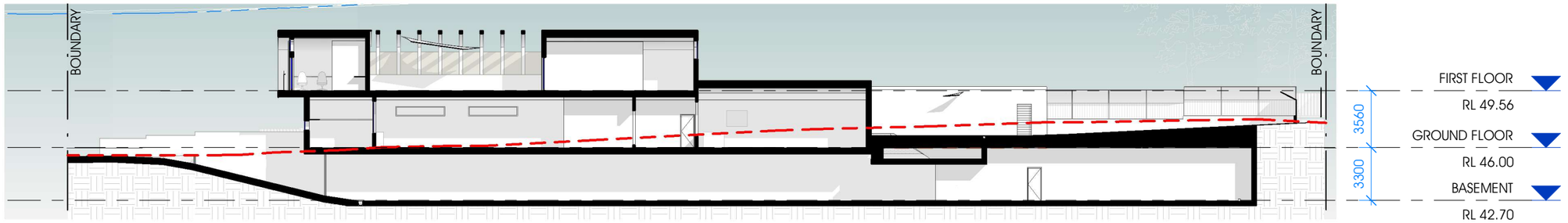
DA 20

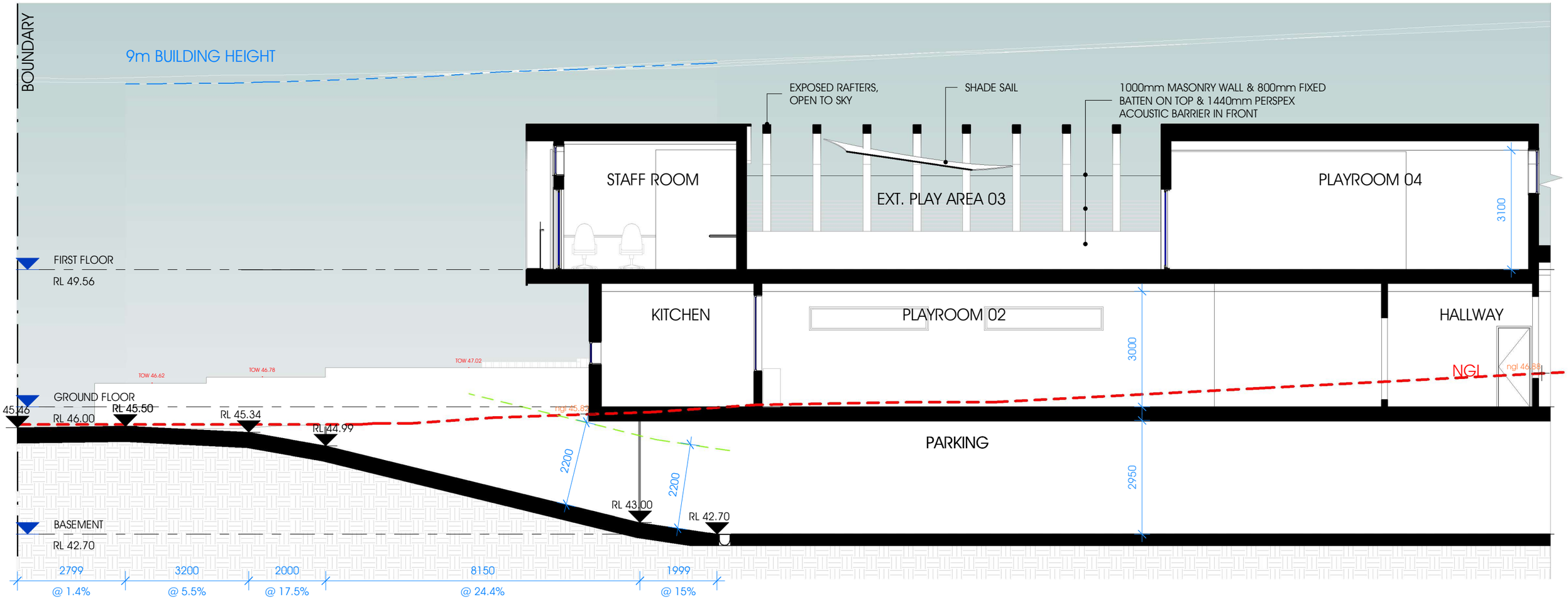
ENTITY 8886

PROPOSED CHILDCARE CENTRE

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200





SECTION B-B

SCALE 1 : 100 (A3)

FOR DEVELOPMENT APPLICATION

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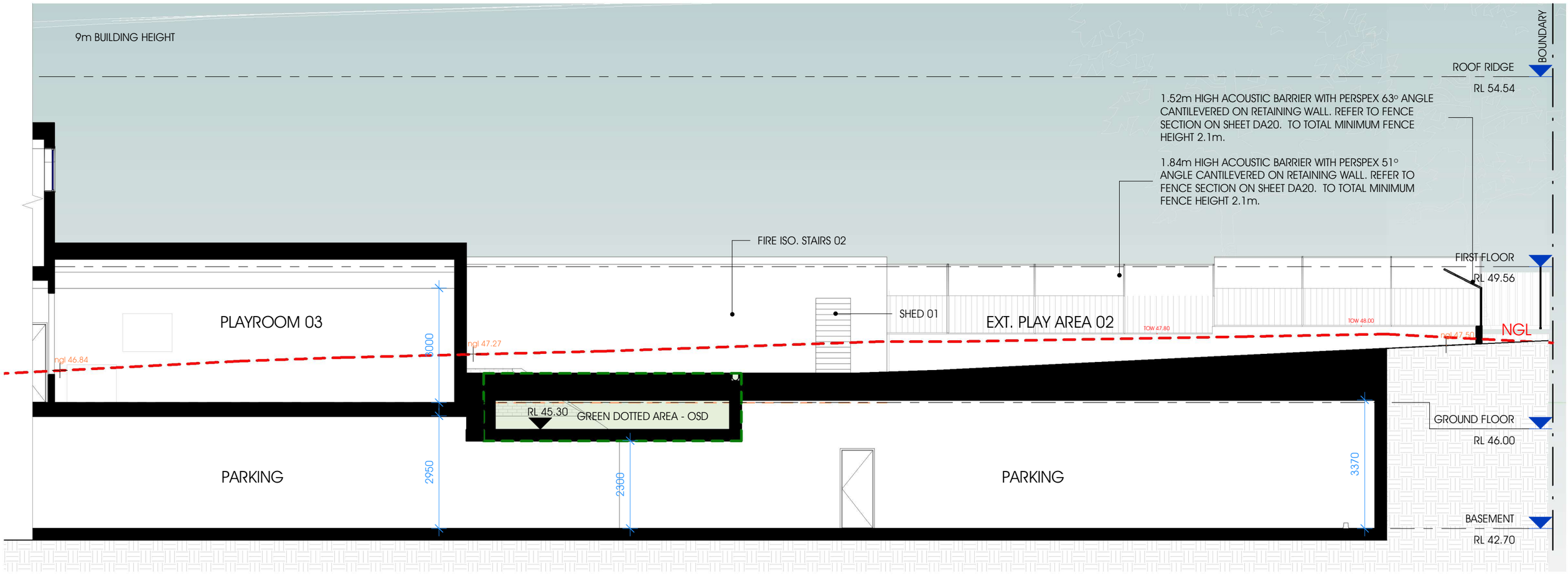
ENTITY 8886

PROPOSED CHILDCARE CENTRE

DA 21

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200



SECTION B-B

SCALE 1 : 100 (A3)

0 5 10 m

FOR DEVELOPMENT APPLICATION

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ENTITY 8886

PROPOSED CHILDCARE CENTRE

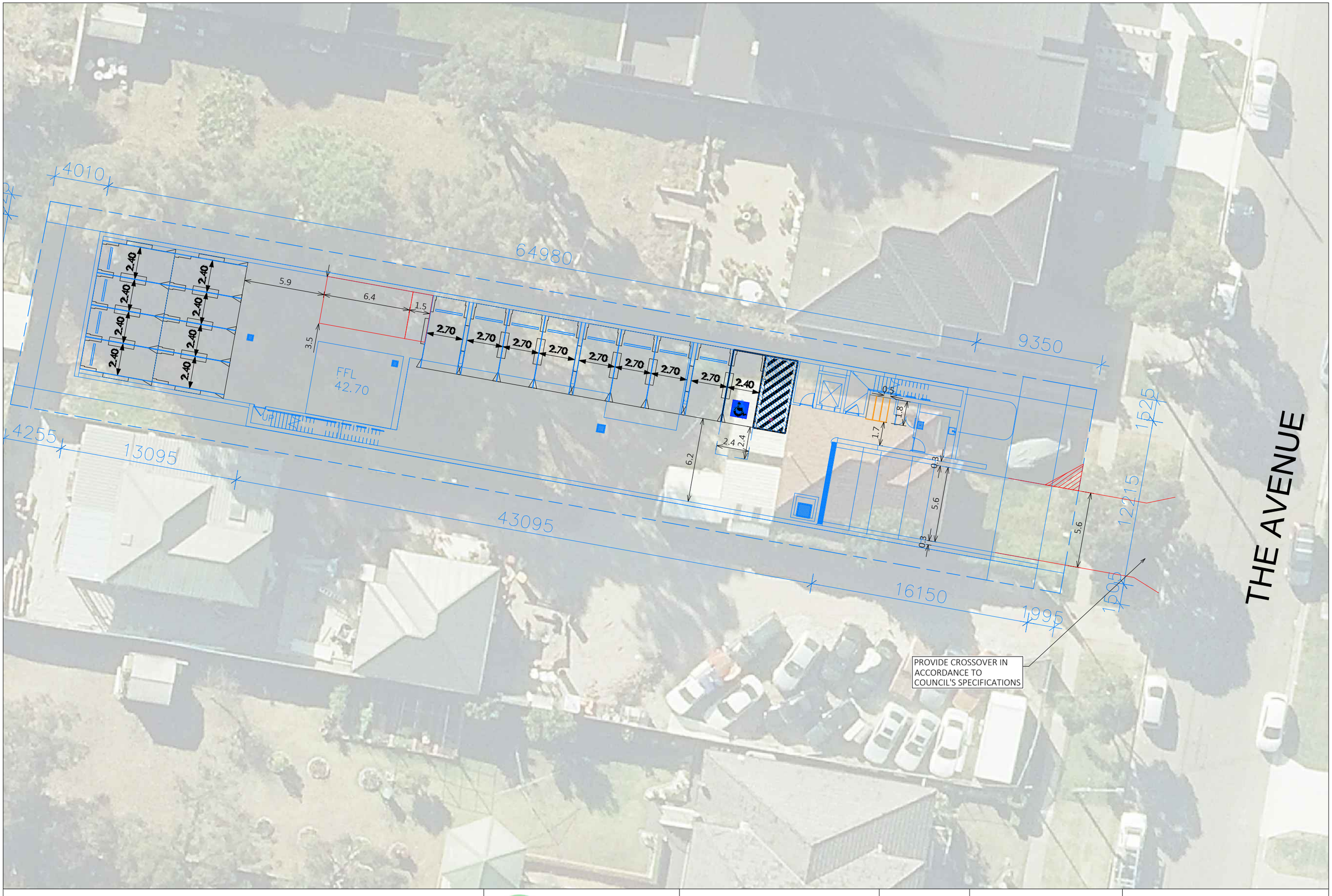
DA 22

0 1 2m

LOT 47, SEC. A, DP110163, 86 THE AVENUE, BANKSTOWN NSW 2200

Transport Strategies

Appendix E
Swept Path and Vertical Path Assessments



86 THE AVENUE, BANKSTOWN

SWEPT PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148

ABN 13 254 028 433

PHONE 0424 007 141

PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

22074-01-V4_SP

01 OF 06

10 July 2024

DESIGNED BY A.DERWINA

APPROVED BY M.KONG

SCALE A3 0 2.5 5.0 1:250

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Plotted by: NEW PC

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

B99

	meters
Width	: 1.94
Track	: 1.84
Lock to Lock Time	: 6.0
Steering Angle	: 33.9

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Plotted by NEW PC

86 THE AVENUE, BANKSTOWN

SWEPT PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148

ABN 13 254 028 433

PHONE 0424 007 141

PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

22074-01-V4_SP

02 OF 06

10 July 2024

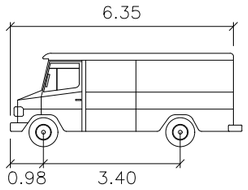
DESIGNED BY A.DERWINA

APPROVED BY M.KONG

SCALE A3 0 2.5 5.0 1:250

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



6.35 Waste Truck

	meters
Width	: 2.14
Track	: 1.85
Lock to Lock Time	: 4.0
Steering Angle	: 36.2

C:\Users\NEW PC\Transport Strategies Dropbox\siew hwee kong\PC\Desktop\TS PROJECT\2022\22074 - 86-88 The Avenue, Bankstown\DRAWING\22074-01-V4_SP.dwg

Plotted by NEW PC

86 THE AVENUE, BANKSTOWN

SWEPT PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148
ABN 13 254 028 433
PHONE 0424 007 141

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

22074-01-V4_SP
03 OF 06
10 July 2024

DESIGNED BY A.DERWINA
APPROVED BY M.KONG

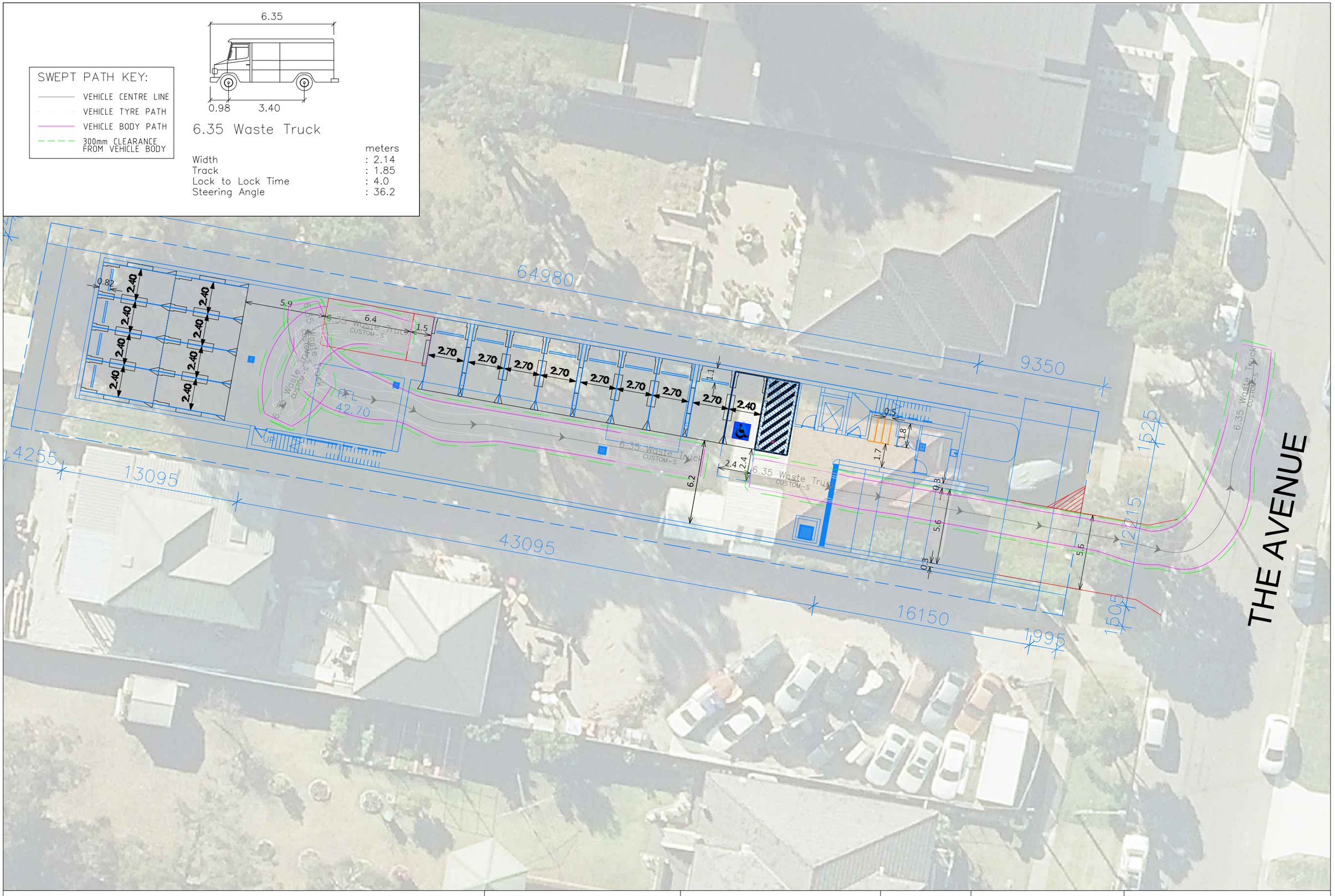
SCALE A3 0 2.5 5.0 1:250

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

6.35 Waste Truck

	meters
Width	: 2.14
Track	: 1.85
Lock to Lock Time	: 4.0
Steering Angle	: 36.2



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Plotted by: NEW PC

86 THE AVENUE, BANKSTOWN

SWEPT PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148
ABN 13 254 028 433
PHONE 0424 007 141

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

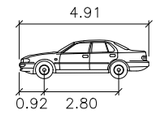
22074-01-V4_SP
04 OF 06
10 July 2024

DESIGNED BY A.DERWINA
APPROVED BY M.KONG

SCALE A3 0 2.5 5.0 1:250

SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY



B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

86 THE AVENUE, BANKSTOWN

SWEPT PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148

ABN 13 254 028 433

PHONE 0424 007 141

PRELIMINARY PLAN

FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

22074-01-V4_SP

05 OF 06

10 July 2024

DESIGNED BY A.DERWINA

APPROVED BY M.KONG

SCALE A3 1:250

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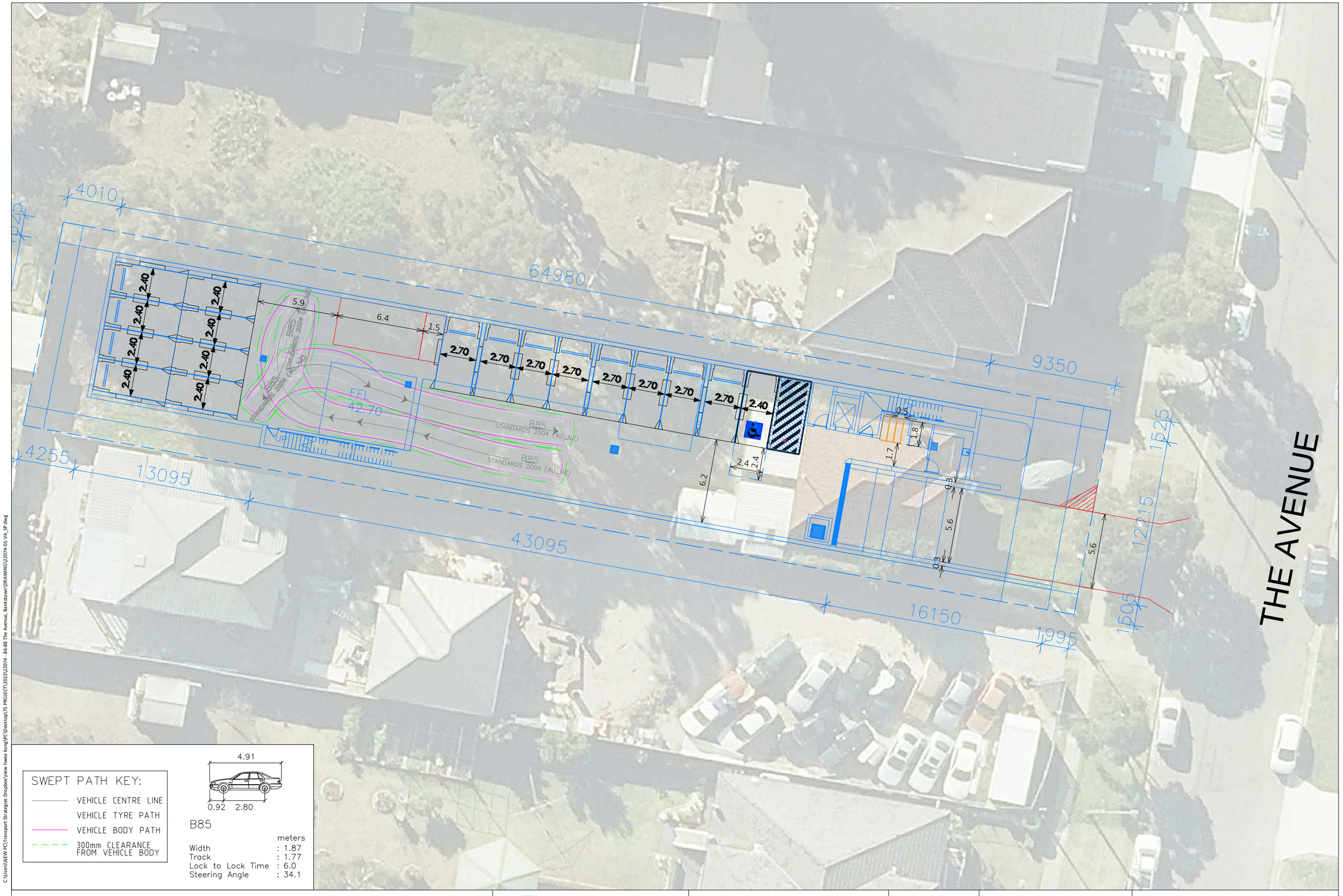
Plotted by NEW PC



SWEPT PATH KEY:

- VEHICLE CENTRE LINE
- VEHICLE TYRE PATH
- VEHICLE BODY PATH
- 300mm CLEARANCE FROM VEHICLE BODY

B85

	meters
Width	: 1.87
Track	: 1.77
Lock to Lock Time	: 6.0
Steering Angle	: 34.1

86 THE AVENUE, BANKSTOWN

SWEPT PATH ASSESSMENT

Transport Strategies
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ABN 13 254 028 433
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PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

22074-01-V4_SP
06 OF 06
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DESIGNED BY A.DERWINA
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SCALE A3 1:250

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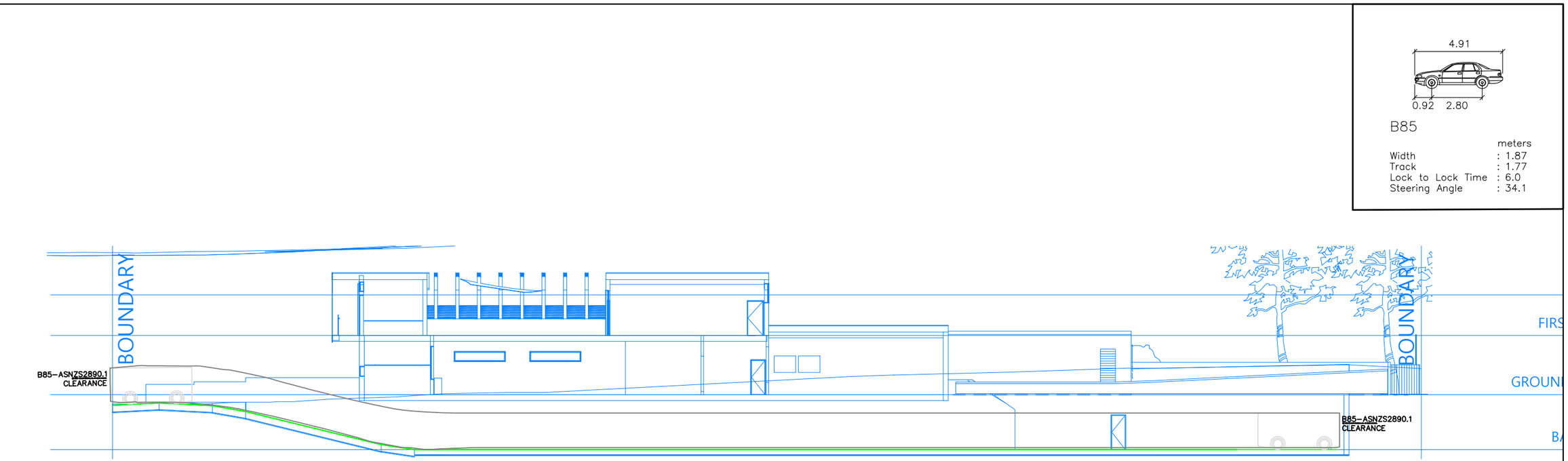
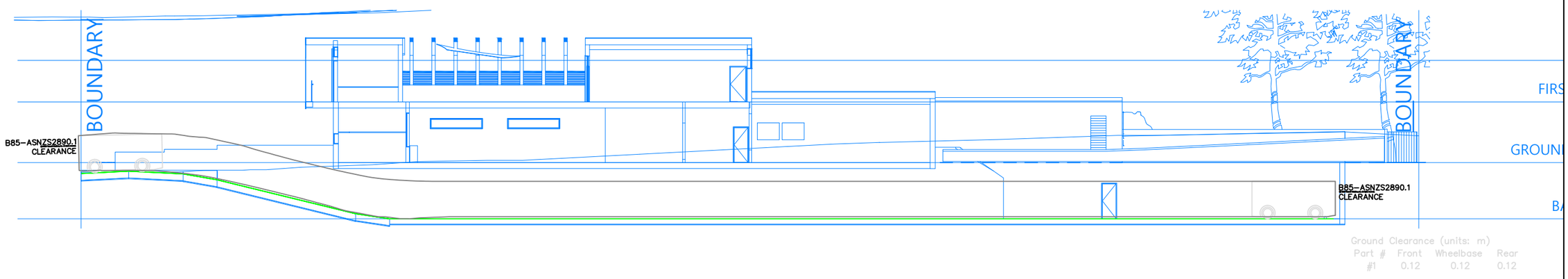
Plotted by NEW PC





86 THE AVENUE, BANKSTOWN
B85 INGRESS AND EGRESS
VERTICAL PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148
ABN 13 254 028 433
PHONE 0424 007 141

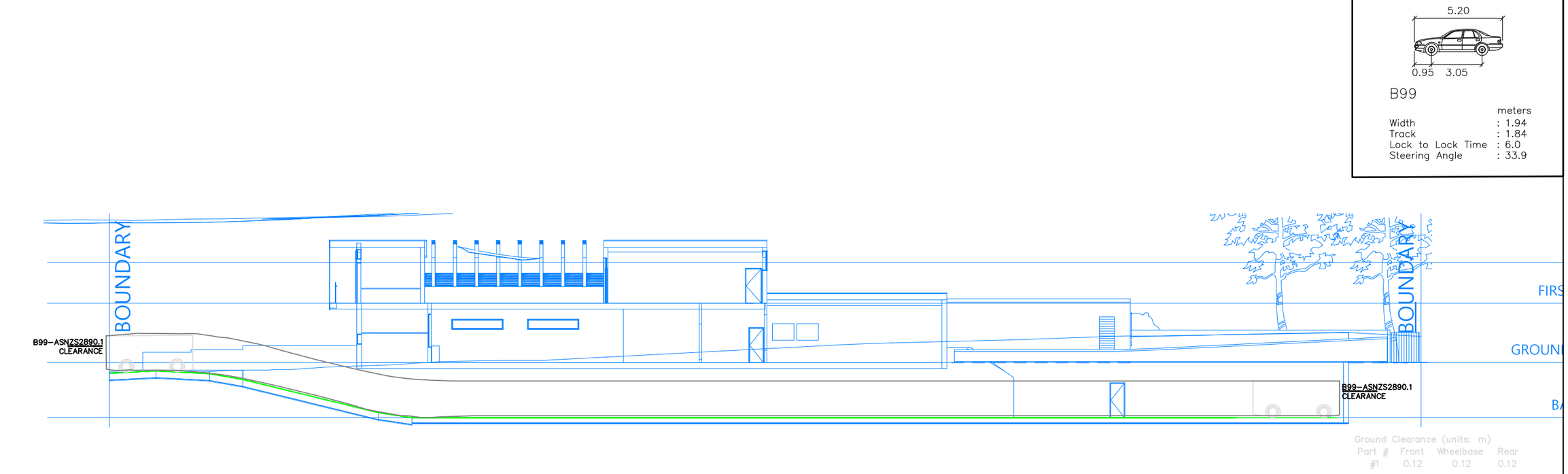
PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

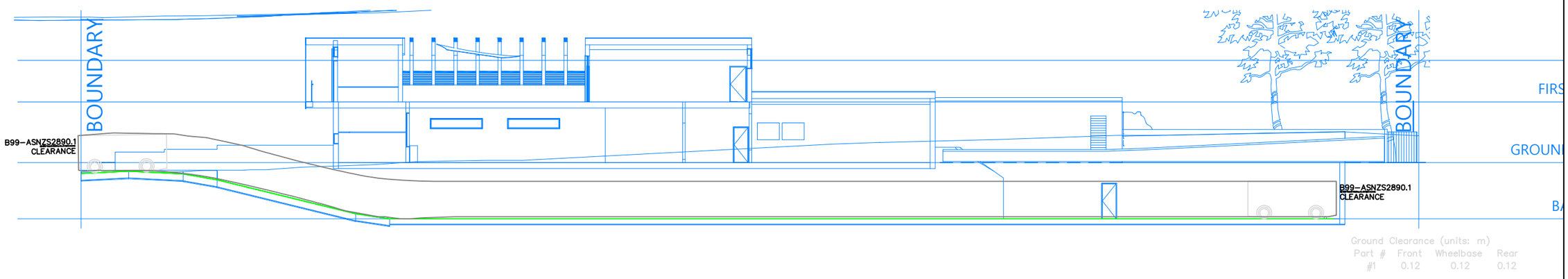
22074-01-V1_VP
01 OF 03
17 April 2024

DESIGNED BY A.SYAFIQ
APPROVED BY M.KONG

SCALE A3 0 2.5 5.0 1:250

Plotted by Anthony Nawnia C:\Users\Visitor\Transport Strategies Dropbox\siew hwee kong\PC\Desktop\TS PROJECT\2022\22074 - 86-88 The Avenue, Bankstown\DRAWING\22074-01-V1_VP.dwg





86 THE AVENUE, BANKSTOWN
B99 INGRESS AND EGRESS
VERTICAL PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148
ABN 13 254 028 433
PHONE 0424 007 141

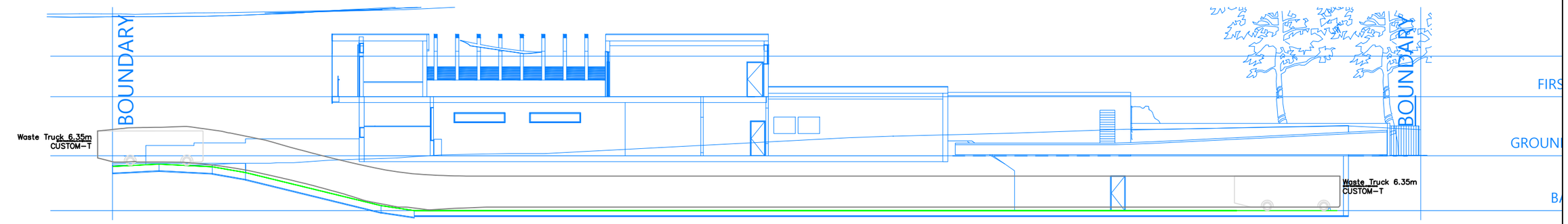
PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

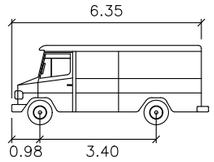
22074-01-V1_VP
02 OF 03
17 April 2024

DESIGNED BY A.SYAFIQ
APPROVED BY M.KONG

SCALE A3 0 2.5 5.0 1:250

Plotted by Anthony Nawnia C:\Users\Visitor\Transport Strategies Dropbox\siew hwee kong\PC\Desktop\TS PROJECT\2022\22074 - 86-88 The Avenue, Bankstown\DRAWING\22074-01-V1_VP.dwg



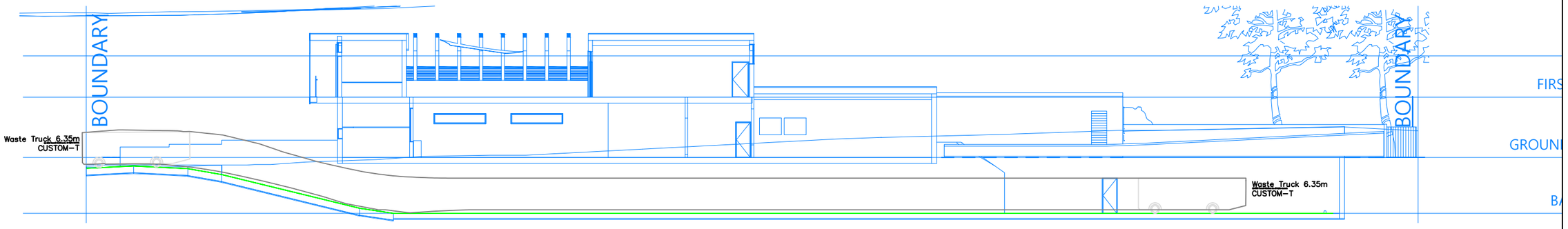


6.35 Waste Truck

	meters
Width	: 2.14
Track	: 1.85
Lock to Lock Time	: 4.0
Steering Angle	: 36.2

Ground Clearance (units: m)

Part #	Front	Wheelbase	Rear
#1	0.21	0.21	0.21



Ground Clearance (units: m)

Part #	Front	Wheelbase	Rear
#1	0.21	0.21	0.21

86 THE AVENUE, BANKSTOWN
6.35M WASTE TRUCK INGRESS AND EGRESS
VERTICAL PATH ASSESSMENT

Transport Strategies

207A/30 CAMPBELL STREET, BLACKTOWN NSW 2148
ABN 13 254 028 433
PHONE 0424 007 141

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY SUBJECT TO CHANGE WITHOUT NOTIFICATION

22074-01-V1_VP
03 OF 03
17 April 2024

DESIGNED BY A.SYAFIQ
APPROVED BY M.KONG

SCALE A3 0 2.5 5.0 1:250

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