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Traffic Management Report for **10 Wickfield Circuit, Ambarvale, NSW**

Prepared by

LOKA CONSULTING ENGINEERS

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Accredited Certifier

Director

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1. Introduction

Loka Consulting Engineers Pty Ltd has been engaged by Architex Pty Ltd to provide Traffic Management Report for the site at 10 Wickfield Cct, Ambarvale, NSW (refer to Figure 1 and Figure 2).

A Traffic Management Plan and Report is required for the proposed development to identify the impacts of the proposal on the local street network and mitigation measures required to ameliorate any impacts, describes the site and provides details of the development proposal.

- Reviews the road network in the vicinity of the site, and traffic conditions on that road network.
- Reviews the geometric design features of the proposed car parking facilities for compliance with the relevant codes and standards.
- Assesses the adequacy and suitability of the quantum of off-street car parking provided on site.

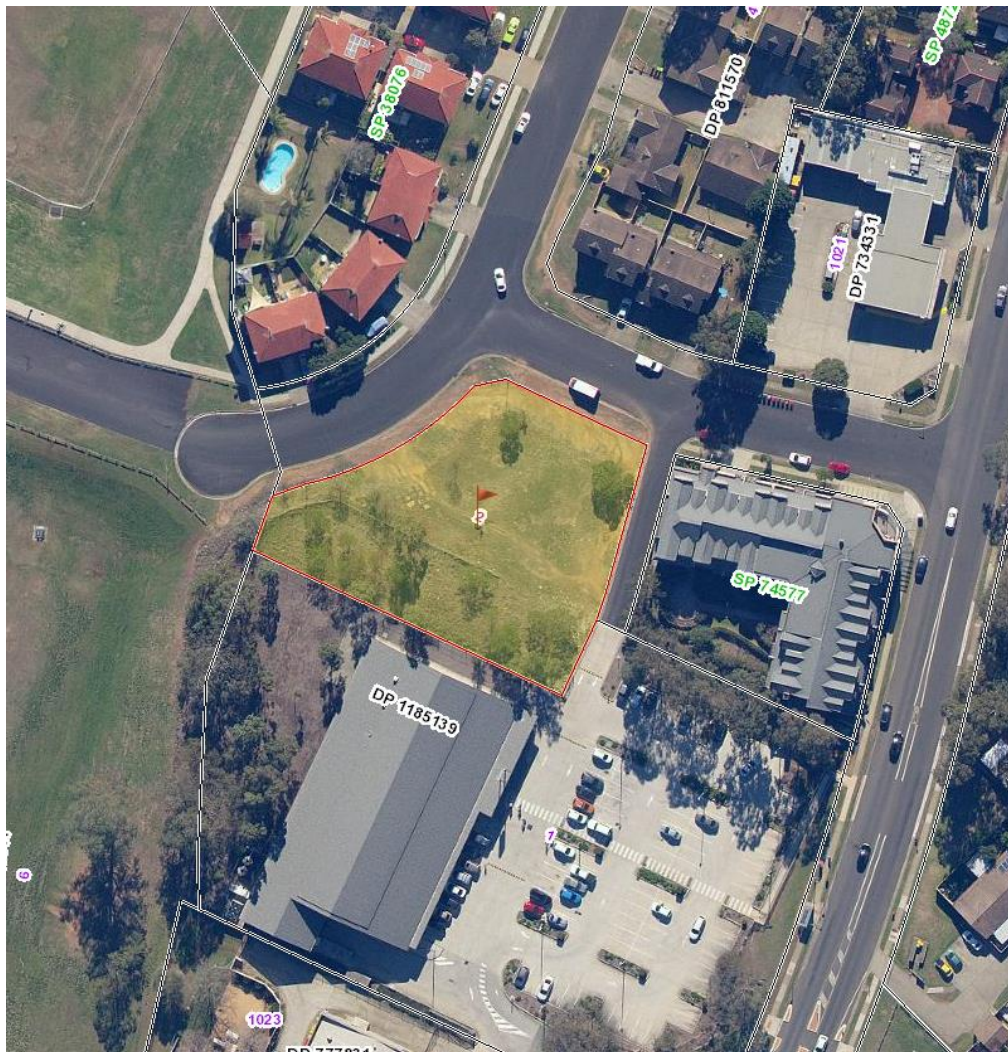


Figure 1 - The Subject Site (from SIX Maps)



Figure 2 - Site location map (from SIX Maps)

2. Existing Conditions

2.1. Existing Development

The existing site is a vacant land.

2.2. Public Transport, Pedestrians and Cyclists

According to Google Maps,

1. It takes 3 minutes walking (220m) from the site to Woodhouse Dr before Wickfield Cct bus stop (refer to Figure 2-1).

Table 2-1 shows the bus line name; routes and the time between two successive trips. Refer to Transport NSW for accurate details.

Location	Line Name	Route	Interval
Bus stop 1	887	Wollongong to Campbelltown via Appin	1 hr
	888	Campbelltown to St Helens Park via Ambarvale & Rosemeadow (Loop Service)	15 min

Table 2-1 Bus line, route, and time

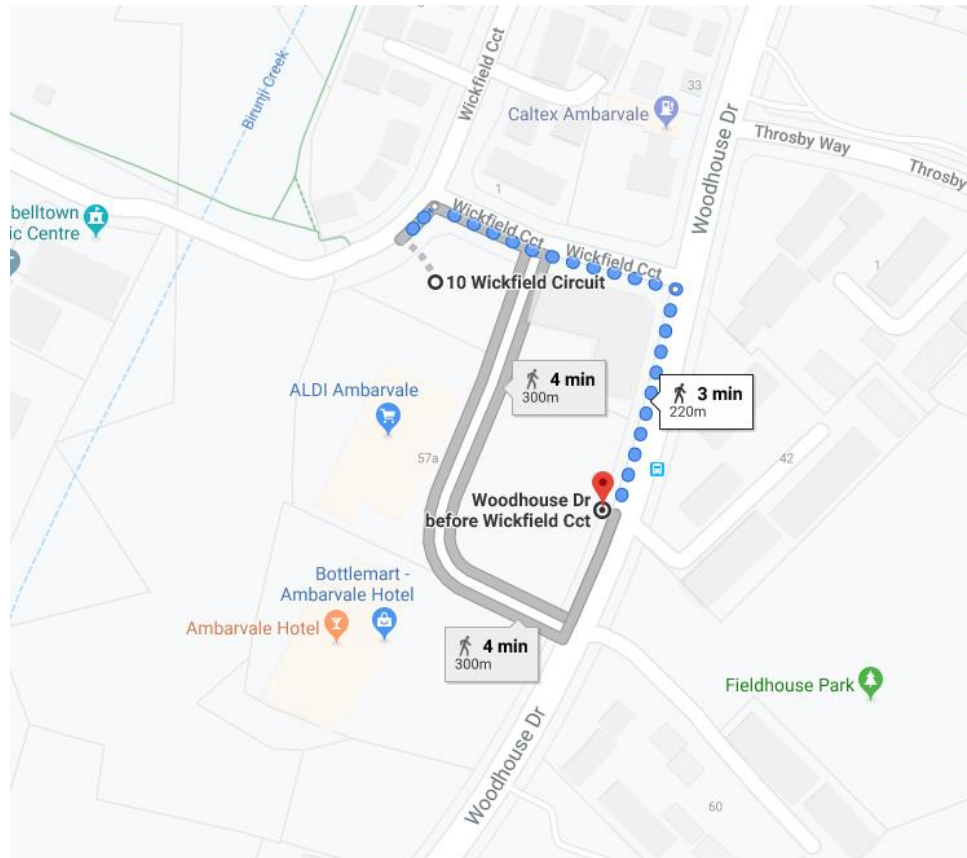


Figure 2-1 Subject Site to nearest bus stop

2.3. Existing Road Conditions

The proposed development is bounded by:

- ALDI service lane on the East
- Wickfield Cct on the West
- Wickfield Cct on the North,
- ALDI Ambarvale on the South.

Wickfield Cct

Wickfield Cct is an unclassified local road by NSW Roads & Maritime Services.

It is approximately 12 metres wide with kerbs and gutters on both sides. It is a cul-de-sac at one end and provides linkage to Woodhouse Dr. It has one travel lane in each direction with parallel parking on each side.

Woodhouse Dr

Woodhouse Dr is an unclassified local road by NSW Roads & Maritime Services.

It is approximately 12 metres wide with kerbs and gutters on both sides. It provides linkage from Copperfield Dr to Therry Rd. It has one travel lane in each direction with parallel parking on each side.

3. Proposed Development

3.1. Development Description

The proposed development will facilitate the construction of 2 blocks of 4-storey mixed use development over 2 levels of shared basement car parking within a site area of approximately 2697m². A child care centre is proposed on ground floor with 4 indoor playrooms and an outdoor play area to accommodate 91 *children*. A total of 29 residential units are proposed across Level 1 to 3.

3.2. Access

The proposed vehicular entry/exit to the site will be from the western Wickfield Cct.

By walking and bicycling, occupants also have 5 access points from the western Wickfield Cct.

4. Off Street Car Parking Provision

4.1. Car parking

Table 3-1 shows the minimum space required according to Campbelltown (Sustainable City) Development Control Plan 2015 (CSCDCP 2015).

Land use	Minimum spaces required
Mixed use (Residential)	1 space each dwelling
Mixed use (Commercial)	1 space per 25m ² GFA at ground level 1 space per 35m ² GFA at upper levels
Child care	1 space per 4 children
Café	1.5 spaces per 10m ² GFA

Table 3-1 Off-street parking space rates

Required parking is shown in Table 3-2

Parking type	Rate	Quantity	Parking required	Parking proposed
Mixed use (residential)	1 per unit	29	29	29
Café	1.5 per 10sqm	68m ²	(10)	(10)
Child care	1 per 4 children	91	23	23
Total			(62)	(62)

Table 3-2 - Minimum number of off-street parking spaces

The design complies with CSCDCP 2015.

4.2. Bicycle parking

6 bicycle spaces are proposed on Basement 1.

5. Car Park and Driveway Layout

5.1. Driveway and Ramp Design

Feature	Australian Standard 2890.1, 2 & 6	Architectural Plan	Compliance
Driveway Width	<ul style="list-style-type: none"> 3.0m to 5.5m for Category 1 	6m for two-way main driveway serves cars 4.5m for one-way main driveway serves MRV	The design is complied with AS2890.1
Ramp Grades	<ul style="list-style-type: none"> 1:20 (5%) for 1st 6m up to footpath OR 1:8 (12.5%) down to footpath. >20m 1:5 (20%) maximum <20m 1:4 (25%) max. 	<u>BDY to Loading Bay (serves MRV)</u> 1:50 @ 4.185 m <u>BDY to B1 (serves car)</u> 1:20 @ 6.35 m Flat @ 2.0 m 1:8 @ 4.0 m Flat @ 2.7 m 1:8 @ 2.0 m 1:5 @ 16.75 m 1:8 @ 2.0 m <u>B1 to B2 (serves car)</u> 1:8 @ 2.0 m 1:4 @ 9.8 m 1:8 @ 2.0 m	The design is complied with AS2890.1 & 2
Ramp Widths	Two-way 5.5m wide with two 300mm kerbs on both sides.	<u>BDY to B1 (serves car)</u> 6.1m + 300mm kerbs both sides <u>B1 to B2 (serves car)</u> 6.1 + 300mm kerbs on each side	The design is complied with AS2890.1 & 2
Head clearance	2.2m 2.5m disabled space and shared zone 4.5m MRV	<u>Loading bay</u> 4.5m <u>B1 & B2</u> Ensure 2.2m overall and 2.5m at disabled space and shared zone at C.C. stage	The design is complied with AS2890.1, 2 & 6

5.2. Dimensions of Parking Spaces

Feature	Australian Standard 2890.1, 2, 3 & 6	Architectural Plan	Compliance
Residential parking	5.4m X 2.4m	Min. 5.4m x 2.4m	The design is complied with AS2890.1
Visitor/ child care parking	5.4m x 2.6m	5.4m x 2.7m Class 3A With 6.2m one-way aisle	The design is complied with AS2890.1
Commercial parking	5.4m x 2.6m	5.4m x 2.6m Class 3A With 6.2m one-way aisle	The design is complied with AS2890.1
Disabled parking	5.4m x 2.4m with shared zone 2.4m.	Min. 5.4m x 2.4m adjacent a 5.4m x 2.4m shared zone	The design is complied with AS2890.6
Aisle width	5.8m minimum	Min. 5.8m	The design is complied with AS2890.1
Blind aisle	Shall be extended a minimum of 1m beyond the last parking	Minimum 1.0m	The design is complied with AS2890.1
Loading bay	8.8m x 3.5m MRV	8.8m x 3.5m minimum	The design is complied with AS2890.2
Bicycle Parking	1800mm x 500mm	1800mm x 500mm	The design is complied with AS2890.3
Bicycle Aisle	1500mm	1850mm	The design is complied with AS2890.3

5.3. Sight Clearance

As required in AS 2890.1:2004, a triangular area with 2.5m (face to driveway) by 2.0m (face to street) will be kept clear of obstructions to visibility (referring to Figure 5-1).

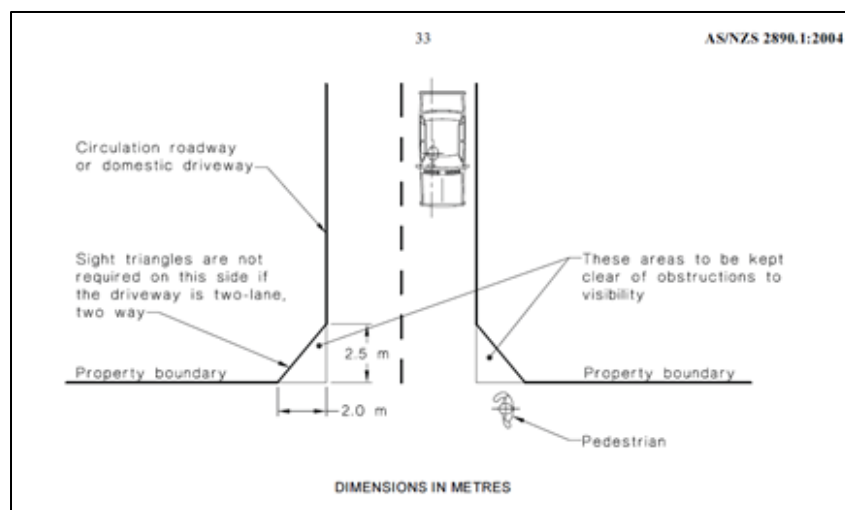


Figure 5-1 AS 2890.1:2004 Requirement

In accordant to AS 2890.1:2004 requirements, sight triangle is hatched in red and shown in the following Figure 5-2.

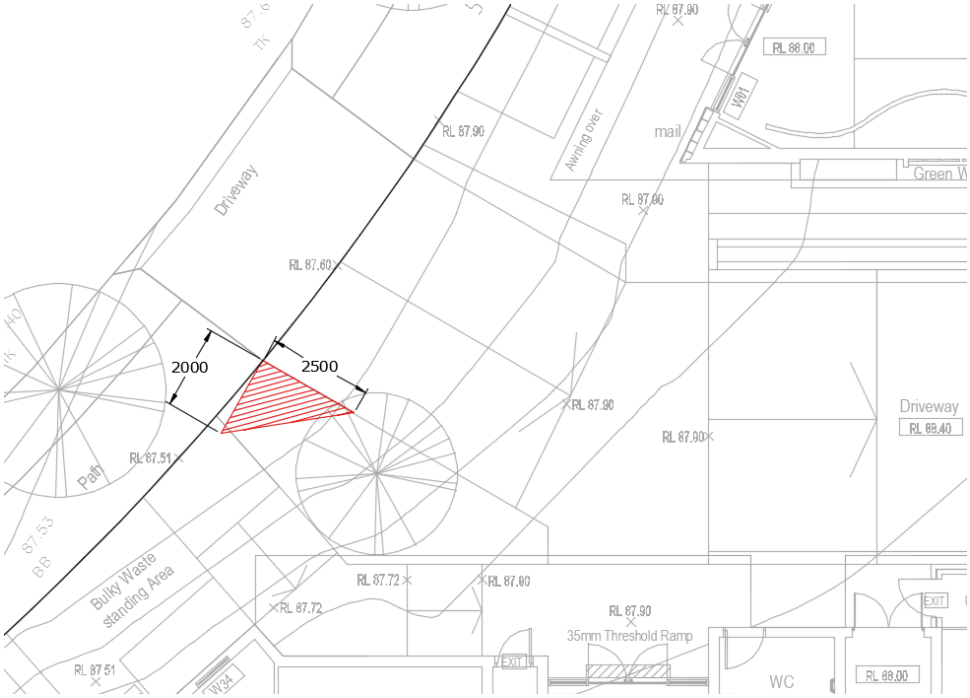


Figure 5-2 - Sight Triangle for Childcare, Commercial and Residential

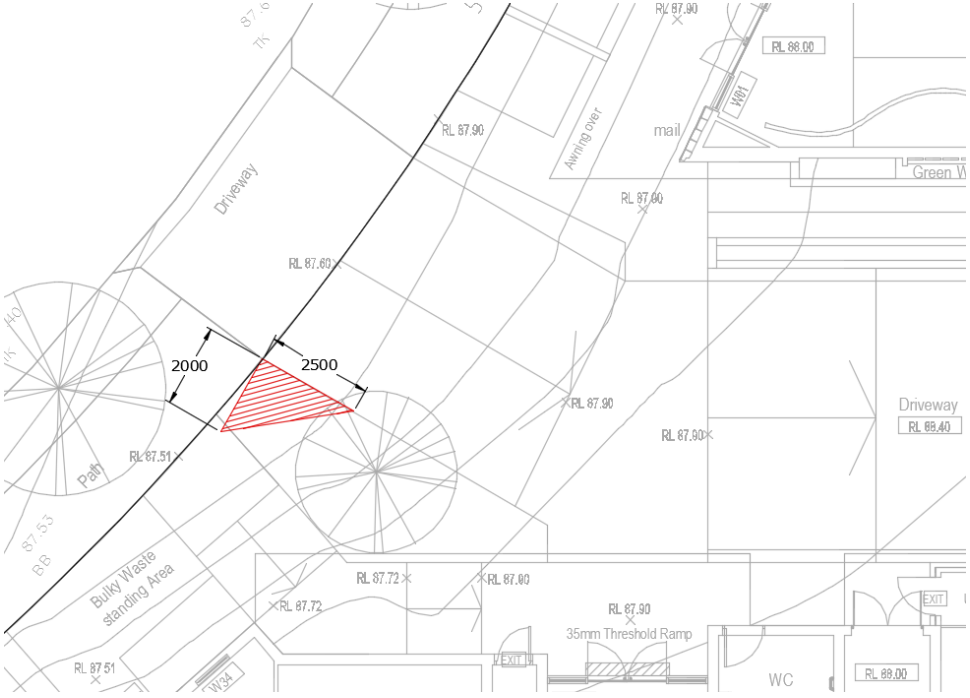


Figure 5-3 - Sight Triangle for Loading Bay

Ensure any object within the sight triangle is max. 1.15m high or 50% transparent above 0.9m if higher than 1.15m.

It is our opinion that the sight triangle complies with the requirement.

6. Traffic Flows and Volumes

6.1. Daily Traffic Data

Road and Maritime Service (RMS) collect traffic volume information from roadside traffic collection devices across the NSW network.

From RMS's average daily traffic volume map the nearest traffic counting station is station ID 7104-PR at 10m North of Moore Street, Campbelltown 2560 located approximately 2.5km North East of the subject site.

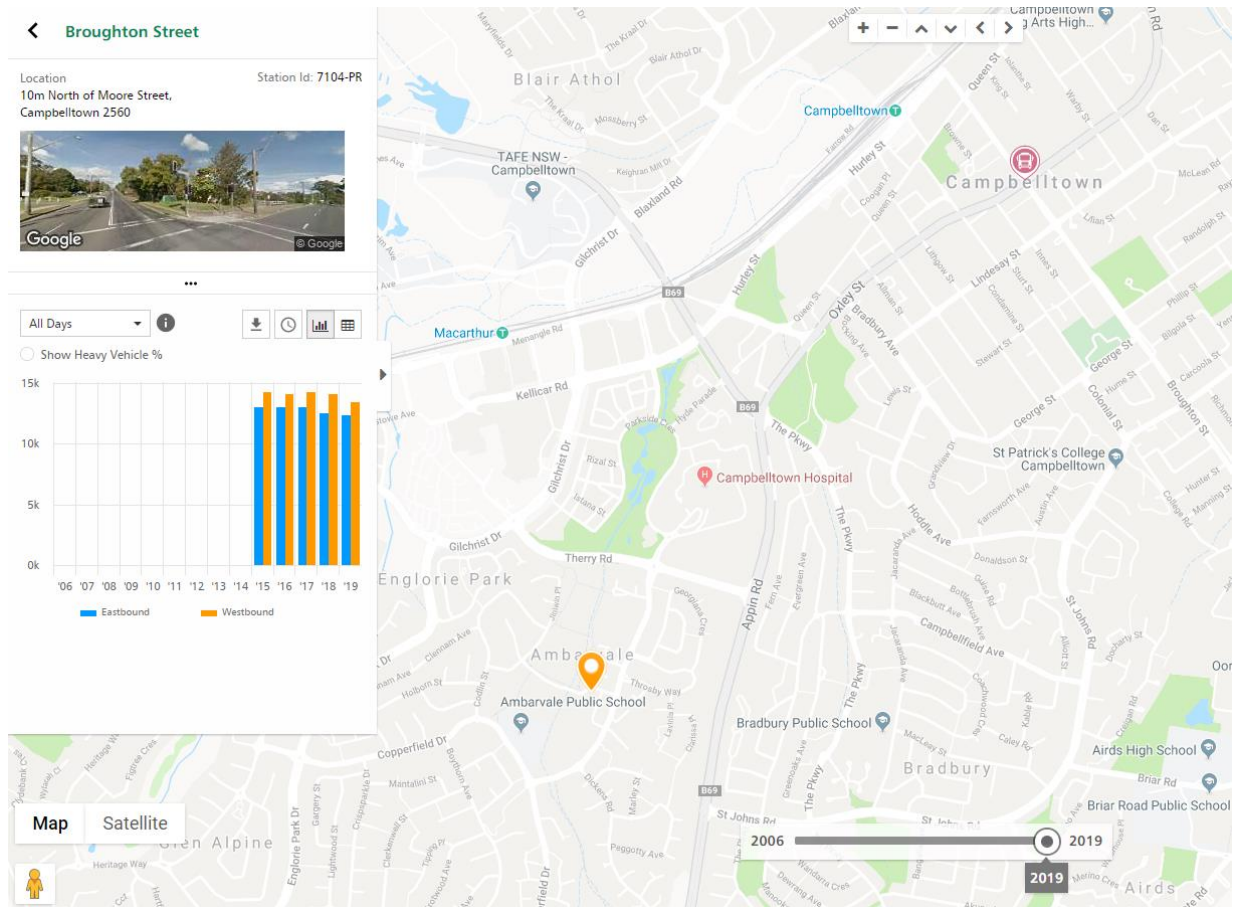


Figure 6-1 Traffic Count Station

From the counts undertaken at this station in 2019 all day's total of 12414 vehicles Eastbound and 13555 vehicles Westbound were counted on average per day passing across Oxley St.

6.2. Traffic Survey

Traffic Counts were undertaken during the morning and afternoon peak periods to gauge the performance of the current road system.

Traffic Survey is performed by Trans Traffic Survey Pty Ltd on Thursday 21st of November, 2019 at two (2) locations in the morning between 7:00am to 9:00am and in the afternoon between 4:00pm to 8:00pm:

- T-junction at Woodhouse Dr – Wickfield Cct
- T-junction at Wickfield Cct – Wickfield Cct

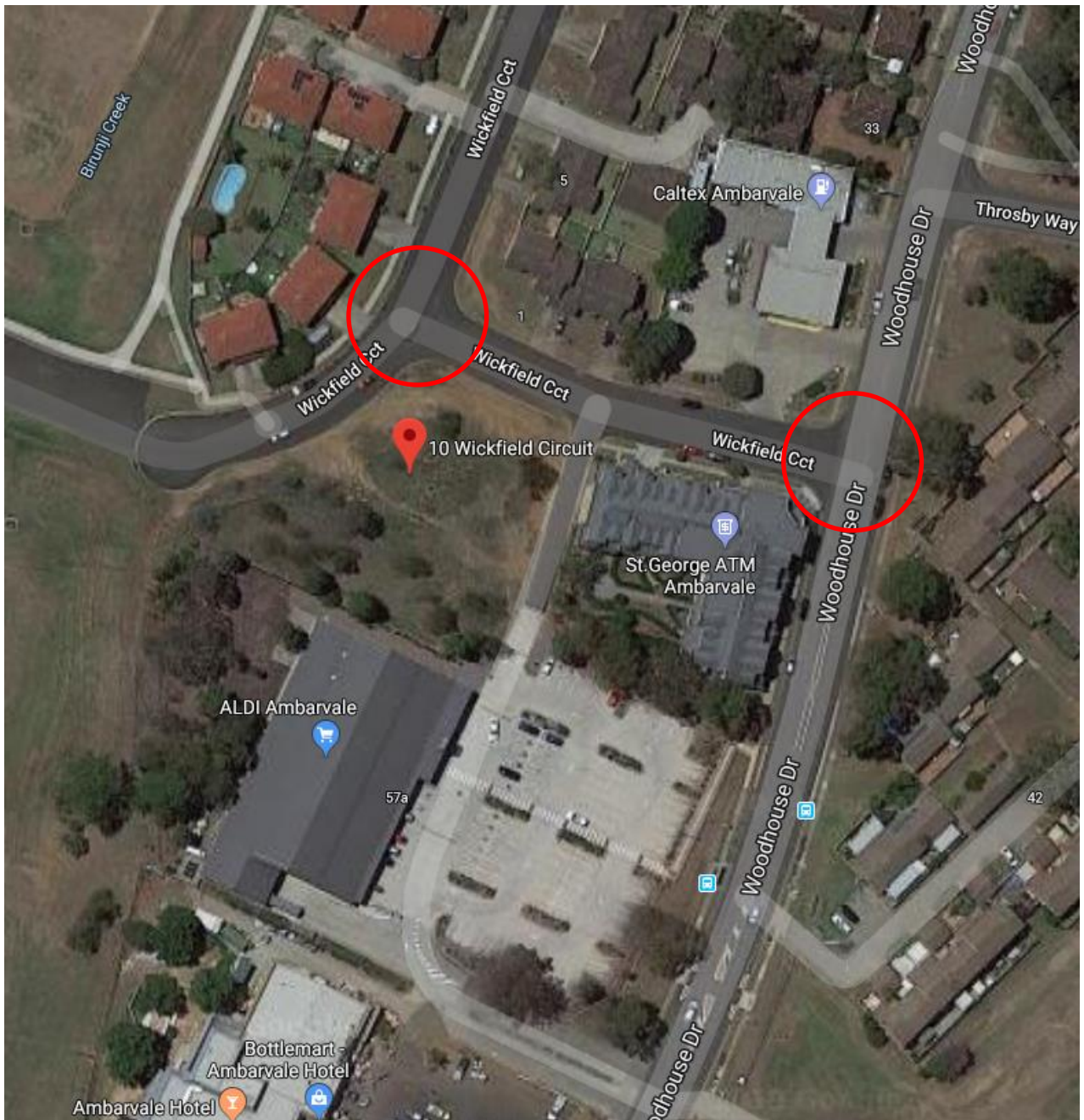


Figure 6-2 Locations of Traffic Survey

The full result of the traffic analysis is summarised in Figure 6-3 to 6-4 below.

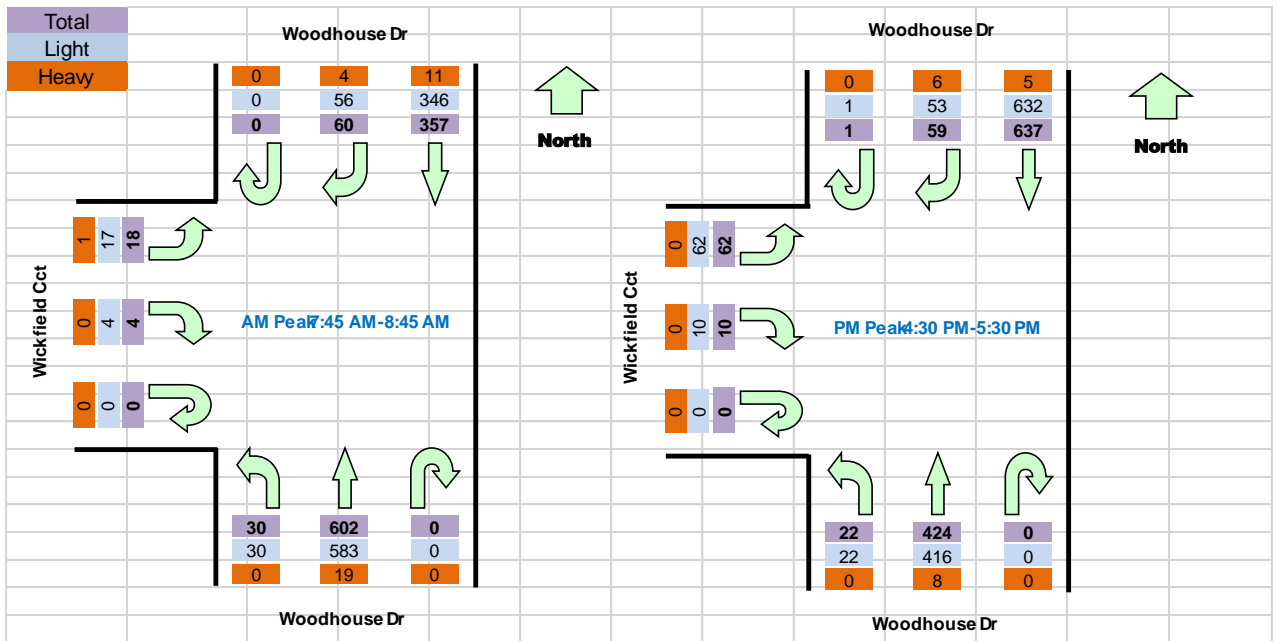


Figure 6-3 Traffic Survey at Woodhouse Dr – Wickfield Circuit T-junction

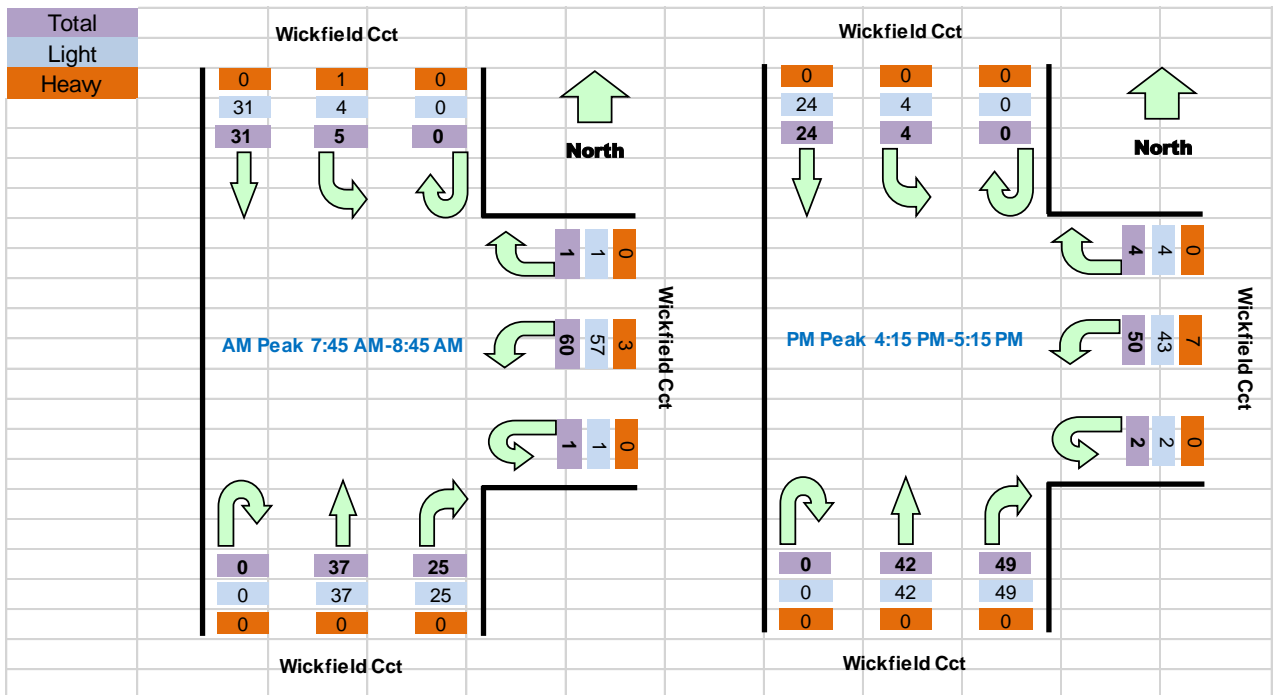


Figure 6-4 Traffic Survey at Wickfield Circuit – Wickfield Circuit T-junction

6.3.Existing Road Service Level

The capacity of the urban road is generally determined by the capacity of intersections. Table 4.3 and 4.4 of the RMS's 'Guide to Traffic Generating Developments' provide guidance on mid-block capacities for urban roads and likely levels of service. The tables are reproduced below.

Type of Road	One-Way Mid-block Lane Capacity (pcu/hr)	
Median or inner lane	Divided Road	1000
	Undivided Road	900
Outer or kerb lane	With Adjacent Parking Lane	900
	Clearway Conditions	900
	Occasional Parked Cars	600
4 lane undivided	Occasional Parked Cars	1500
	Clearway Conditions	1800
4 lane divided	Clearway Conditions	1900

Level of Service (per direction)	One Lane (veh/hr)	Two Lanes (veh/hr)
A	200	900
B	380	1400
C	600	1800
D	900	2200
E	1400	2800

Wickfield Circuit

Based on the traffic analysis and roadside environment (occasional parked cars), it is considered that the road operates within the mid-block capacity for an urban road with interrupted flow. It is currently functioning at a level of service **A** in peak hour conditions (at maximum **91 vehicles in one lane at peak hour**).

The RMS guide states a service level A, '*This, the top level is a condition of free flow in which individual drivers are virtually unaffected by the presence of others in the traffic stream. Freedom to select desired speeds and to manoeuvre within the traffic stream is extremely high, and the general level of comfort and convenience provided is excellent.*'

Woodhouse Drive

Based on the traffic analysis and roadside environment (occasional parked cars), it is considered that the road operates within the mid-block capacity for an urban road with interrupted flow. It is currently functioning at a level of service **D** in peak hour conditions (at maximum **697 vehicles in one lane at peak hour**).

The RMS guide states a service level A, '*This level is close to the limit of stable flow but is approaching unstable flow. All drivers are severely restricted in their freedom to select their desired speed and to manoeuvre within the traffic stream. The general level of comfort and convenience is poor, and small increases in traffic flow will generally cause operational problems.*'

6.4. Intersection Assessment

The existing intersection operating performance of the surveyed intersection for the weekday morning and afternoon peak hours were assessed using the SIDRA software package (version 7.0) to determine the Degree of Saturation (DS), Average Delay (AVD in seconds) and Level of Service (LoS).

SIDRA program provides Level of Service Criteria Table as below.

LoS	Traffic Signal / Roundabout	Give Way / Stop Sign / T-Junction control
A	Good operation	Good operation
B	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	Satisfactory	Satisfactory, but accident study required
D	Operating near capacity	Near capacity & accident study required
E	At capacity, at signals incidents will cause excessive delays.	At capacity, requires other control mode
F	Unsatisfactory and requires additional capacity, Roundabouts require other control mode	At capacity, requires other control mode

The Average Vehicle Delay (AVD) provides a measure of the operational performance of an intersection as indicated below, which relates AVD to LOS. The AVD's should be taken as a guide only as longer delays could be tolerated in some locations (i.e. inner-city conditions) and on some roads (i.e. minor side street intersecting with a major arterial route). For traffic signals, the average delay over all movements should be taken. For roundabouts and priority control intersections (sign control) the critical movement for level of service assessment should be that movement with the highest average delay.

LoS	Average Delay per Vehicles (seconds/vehicle)
A	Less than 14
B	15 to 28
C	29 to 45-49
D	43 to 56
E	57 to 70
F	>70

The degree of saturation (DS) is another measure of the operational performance of individual intersections. For intersections controlled by traffic signals, both queue length and delay increase rapidly as DS approaches 1. It is usual to attempt to keep DS to less than 0.9. Degrees of Saturation in the order of 0.7 generally represent satisfactory intersection operation. When DS exceed 0.9 queues can be anticipated.

The full SIDRA outputs are presented in the Appendix B for the existing conditions as well as proposed conditions.

7. Traffic Generation

An indication of the traffic generation potential of the development proposal is provided in accordance with Roads and Maritime Services (RMS) publication 'Guide to Traffic Generating Developments – Updated traffic surveys (August 2013)'.

RMS guidelines are based on an extensive survey of a wide range of land uses.

The existing site is a vacant land with no traffic generation.

The proposed site is identified as child care centre, retail & residential

Child care centre

Centre type	Peak Vehicle Trips / Child		
	7:00 – 9:00 AM	2:30 – 4:00 PM	4:00 – 6:00 PM
Pre-school	1.4	0.8	-
Long-day care	0.8	0.3	0.7
Before/after care	0.5	0.2	0.7

For the subject site, the total number of children accommodated is 91, consists of 40 children from Pre-school, 3 to 5 years old and 51 children from long-day care, 0 to 3 years old. The expected traffic generation is shown as following:

Centre type	Peak Vehicle Trips		
	7:00 – 9:00 AM	2:30 – 4:00 PM	4:00 – 6:00 PM
Pre-school	1.4 x 40 = 56	0.8 x 40 = 32	-
Long-day care	0.8 x 51 = 41	0.3 x 51 = 16	0.7 x 51 = 36
Before/after care	-	-	-

Café

Evening peak hour vehicle trips = 5 per 100 m² gross floor area

Peak hour vehicle trips = (5 x 68)/100 = 3.4 ≈ 4 vehicle trips

Residential

High density metropolitan sub-regional centres

Peak hour vehicle trips = 0.29 trips per unit = 0.29x29 = 8.4 ≈ 9 vehicle trips

This value should be discounted by the expected existing volume of traffic, to determine the net increase (or decrease) in future expected traffic. This is shown in Table 7-1 below.

Traffic Generation Potential	Land Use	7:00 – 9:00 AM	2:30 – 4:00 PM	4:00 – 6:00 PM
Future	Child care	$(56+41)/2 = 48.5/\text{hr}$	$(32+16)/2 = 24/\text{hr}$	$36/2 = 18/\text{hr}$
	Café	-	-	4/hr
	Residential	8.4/hr	-	8.4/hr
Existing	Vacant	-	-	-
Net increase		+57/hr	+24/hr	+31/hr

Table 7-1 Project Net Increase in Peak Hour Traffic Generation Potential

According to the Table above, it is likely that the proposed development will result in a change in the traffic generation by approximately **57 additional** vehicle trips/hr during morning peak & **24 additional** vehicle trips/hr during afternoon peak and **31 additional** vehicle trips/hr for evening peak.

The child care and retail trips will be split into half in morning/evening to account for parents/ visitors entry and exit.

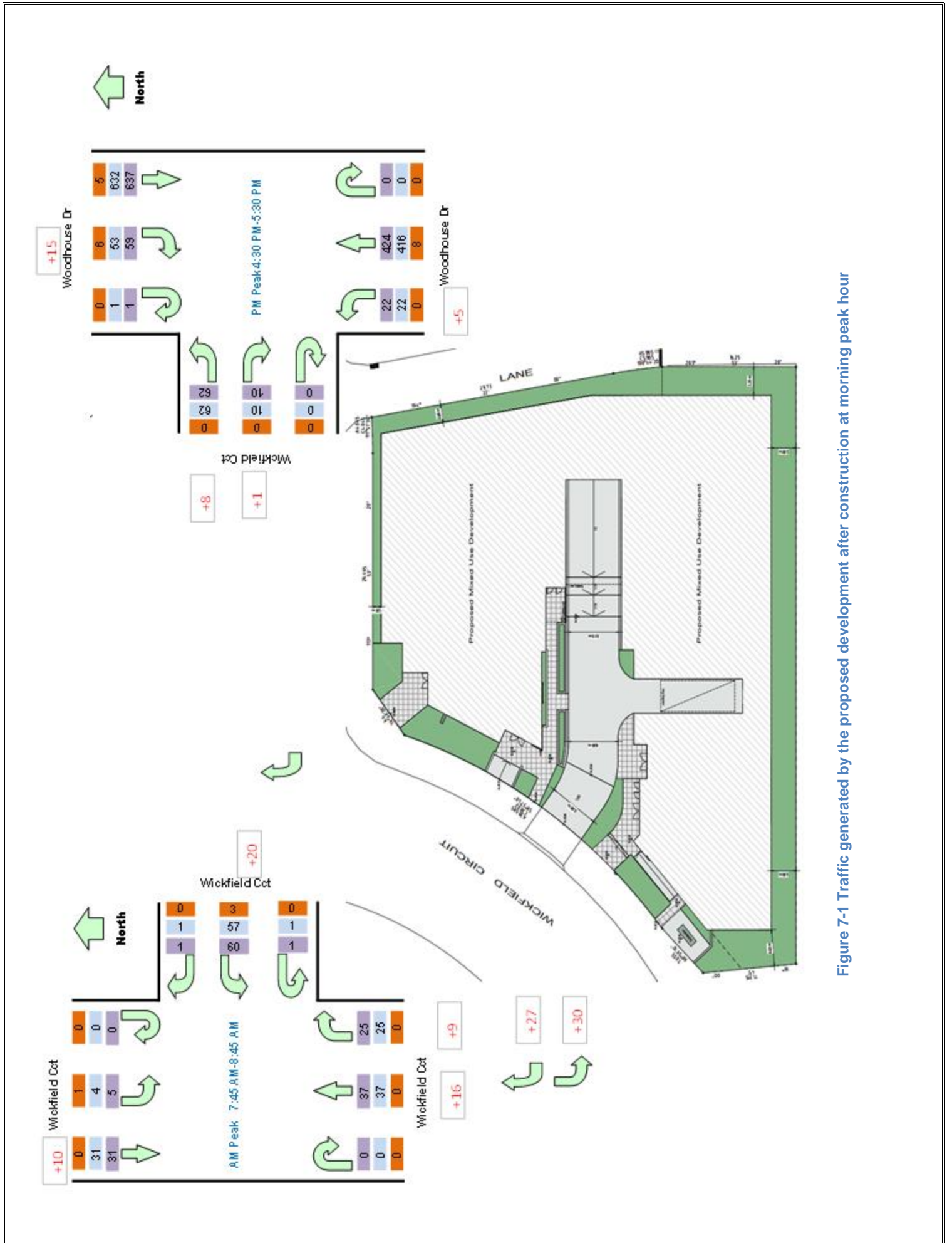


Figure 7-1 Traffic generated by the proposed development after construction at morning peak hour

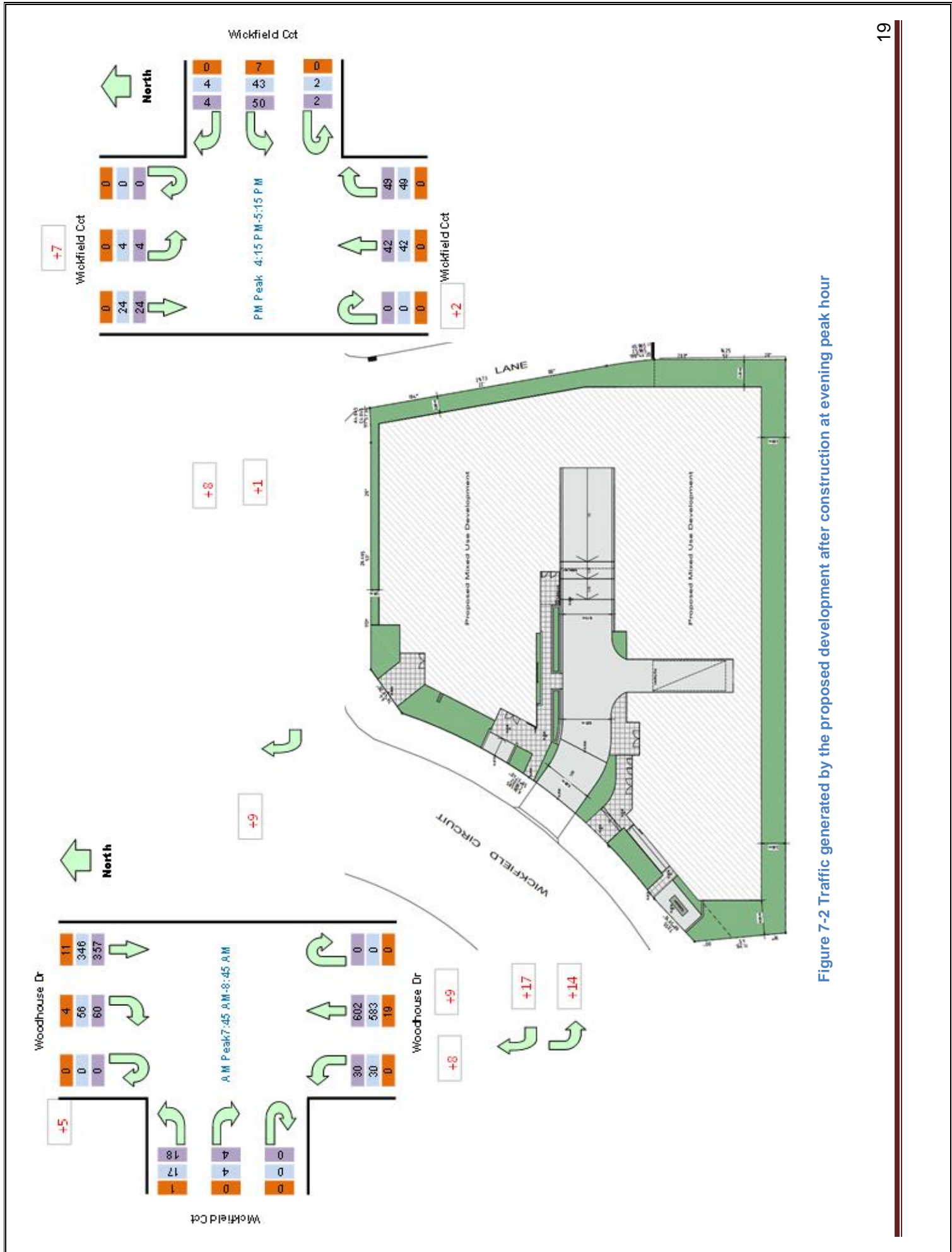


Figure 7-2 Traffic generated by the proposed development after construction at evening peak hour

All Movement Classes

Delay (Control)	Southwest	Northeast	Southwest	Intersection
LOS	A	NA	NA	NA
	5.6	0.7	1.6	2.9

All Movement Classes

Delay (Control)	Southwest	Northeast	Southwest	Intersection
LOS	A	NA	NA	NA
	5.6	0.8	1.8	3.0

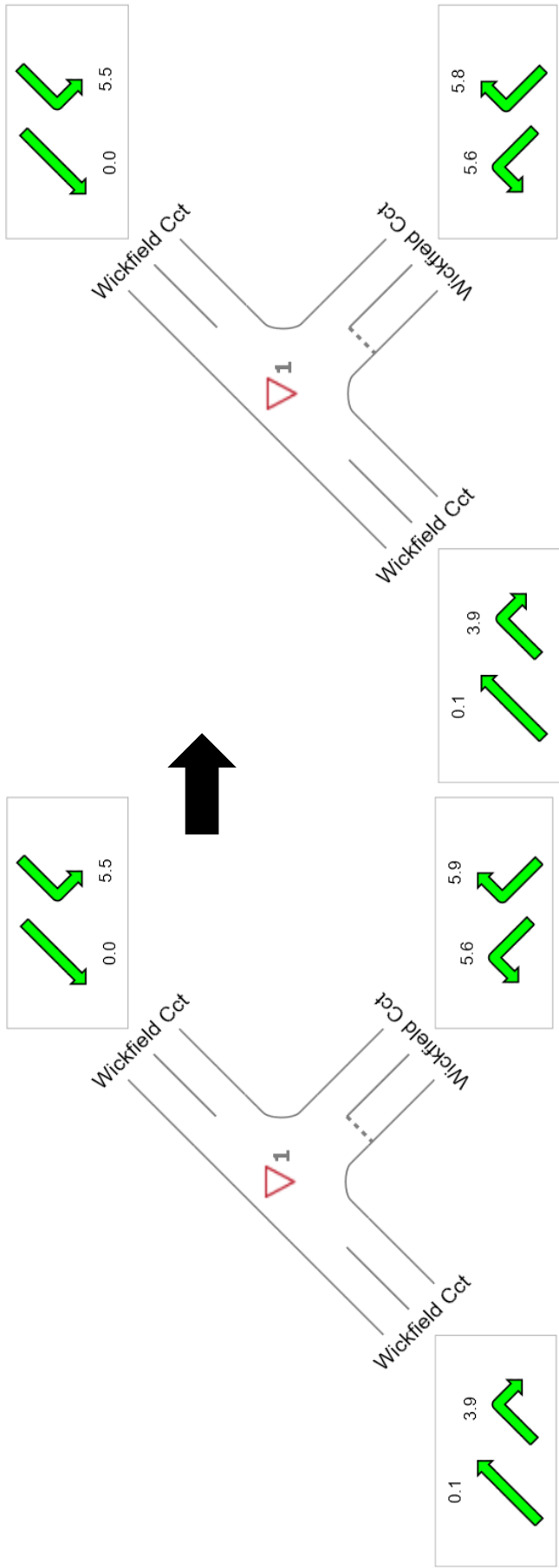
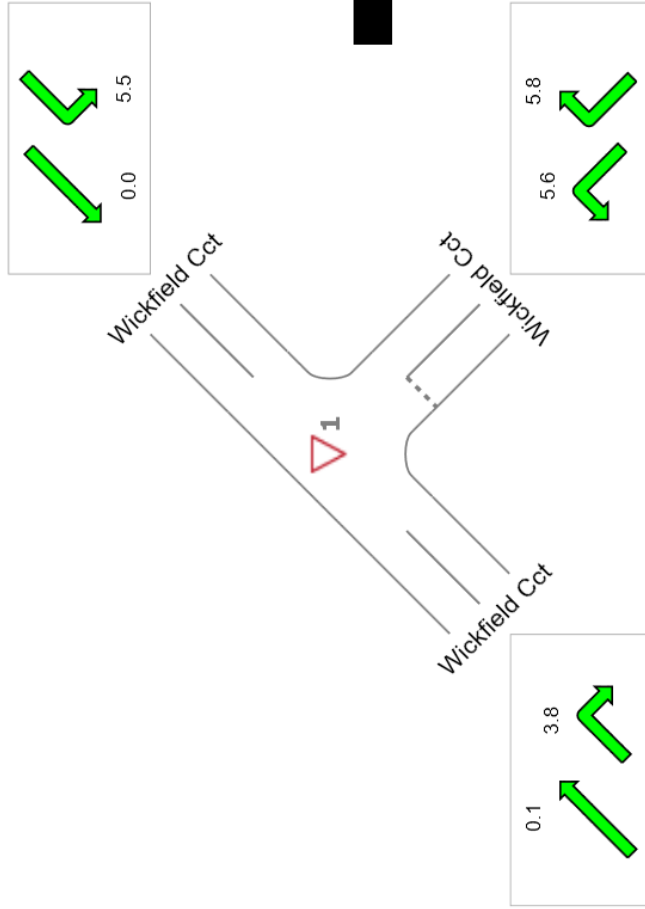


Figure 7-3: Level of Service pre and post construction at Wickfield Cct – Wickfield Cct in the morning peak hour

All Movement Classes

Delay (Control)	Southwest	Southwest	Southwest	Southwest	Intersection
5.6	0.8	2.1	NA	NA	3.0
LOS	A	NA	NA	NA	NA

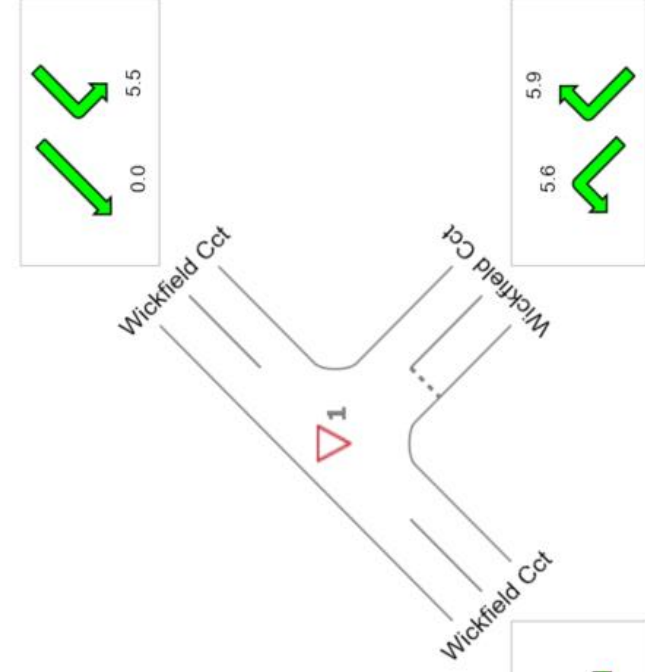


Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
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All Movement Classes

Delay (Control)	Southwest	Northeast	Southwest	Southwest	Intersection
5.6	0.7	2.1	NA	NA	3.0
LOS	A	NA	NA	NA	NA



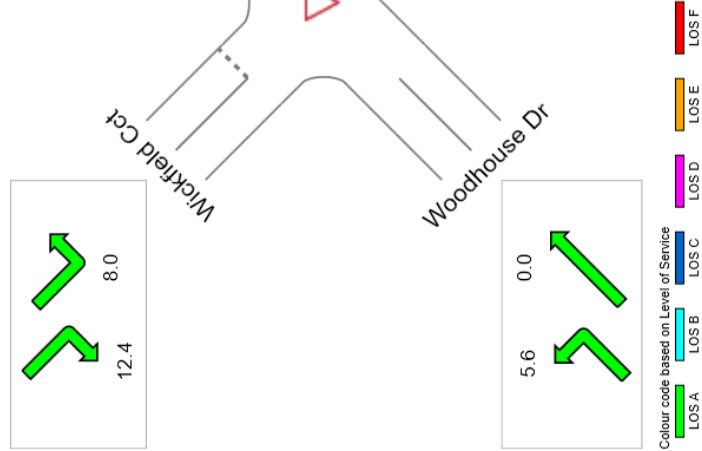
Colour code based on Level of Service

LOS A	LOS B	LOS C	LOS D	LOS E	LOS F
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Figure 7-4: Level of Service pre and post construction at Wickfield Cct – Wickfield Cct in the evening

All Movement Classes

Delay (Control)	Northwest	Northwest	Southwest	Southwest	Intersection
LOS	NA	A	NA	NA	NA
	2.2	8.8	0.3	1.2	



All Movement Classes

Delay (Control)	Northwest	Northwest	Southwest	Southwest	Intersection
LOS	NA	A	NA	NA	NA
	2.3	8.9	0.3	1.4	

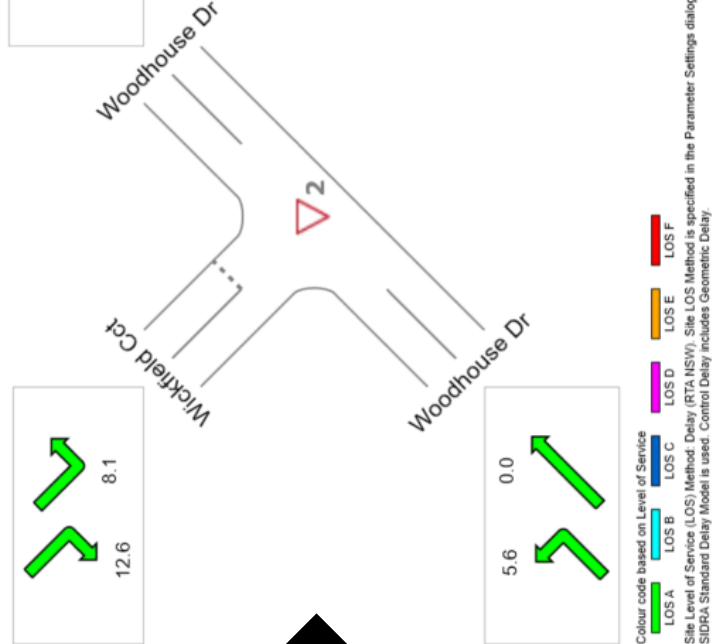
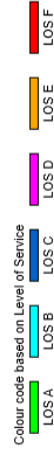
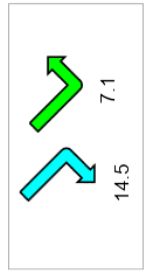


Figure 7-5: Level of Service pre and post construction at Woodhouse Dr – Wickfield Cct in the morning

All Movement Classes

Delay (Control)	Northwest	Southwest	Intersection
LOS	1.1	0.3	1.2
	NA	A	NA



All Movement Classes

Delay (Control)	Northwest	Southwest	Intersection
LOS	1.2	0.4	1.4
	NA	A	NA

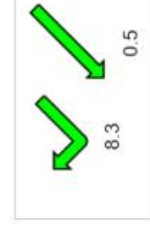
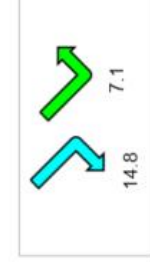


Figure 7-6: Level of Service pre and post construction at Woodhouse Dr – Wickfield Cct in the evening

For the proposed development, Traffic Generation by the development does not affect the level of service at all intersections.

Detailed results from SIDRA are attached in Appendix B.

8. Additional Requirement.

Convex mirrors and give-way line markings as shown in T02 & T04 must be provided for safe vehicular circulation.

9. Swept Path Analysis

To ensure all vehicles enter and exit the site in a forward direction, swept path analysis have been conducted (See Appendix "C").

It is our opinion that the proposed driveway and basement is compiled with Australia Standard.

10. Conclusion

This traffic impact assessment has been prepared in accordance with the requirement of the RMS 'Guide to Traffic Generating Developments'.

Traffic Generation by the development does not affect the level of service at all intersections.

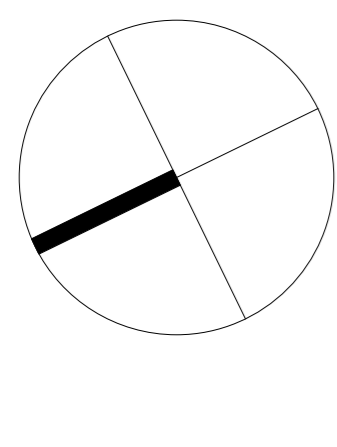
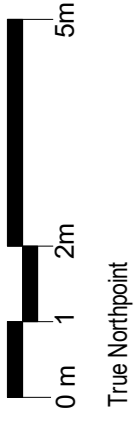
The site is well located to public bus transportation. This would minimise the need for staff and visitors of the proposed development to drive their own vehicles to and from their various activities.

The Traffic Management Report concludes that the proposed mixed-use development is suitable in relation to internal traffic according to AS2890 and is suitable for the subject location in relation to the impact of traffic.

APPENDIX A

Architectural Plan

WICKFIELD CIRCUIT



LEGEND

- STORAGE
- RESIDENTIAL PARKING SPACES
2400 X 5400mm
- COMMERCIAL PARKING SPACES
2400 X 5400mm
- CHILDCARE VISITOR PARKING SPACES
2700 X 5400mm
- CHILDCARE STAFF PARKING SPACES
2400 X 5400mm
- SHARED ZONE 1
2400 X 5400mm

PARKING CLASSIFICATION

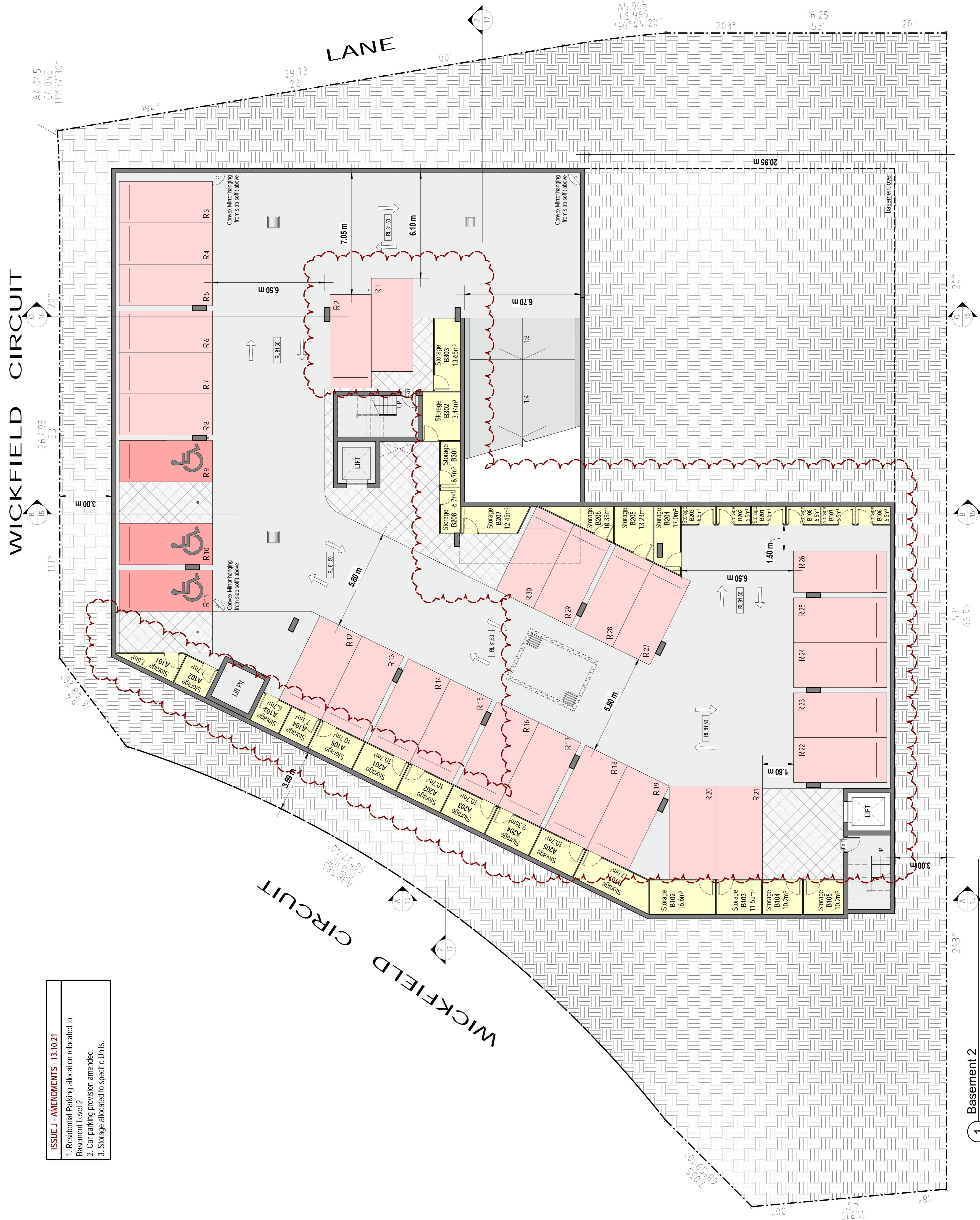
- R1 RESIDENTIAL PARKING SPACES
- C1 COMMERCIAL / RETAIL PARKING SPACES
- CV1 CHILD CARE VISITOR PARKING SPACES
- CS1 CHILD CARE STAFF PARKING SPACES

Issue	Issue description	Date
J	Amendments to address Council Comments	13.10.21
I	Amendments to address Council Comments	14.03.21
H	Amendments to address Council Comments	24.03.21
G	Stormwater Pits Updated - Waste management details updated	23.03.21
F	Amendments to address Council Comments	16.03.21
E	Basement Parking Layouts Amended to address Traffic Issues	12.03.21
D	Basement Amended to address traffic comments	09.03.21

Ryeikon Pty Ltd as Architect
 Level 3, 7/K Pacific Street
 Parramatta NSW 2150
 Nominated Architect:
 Robert Del Pizzo
 NSW Reg. No. 5972

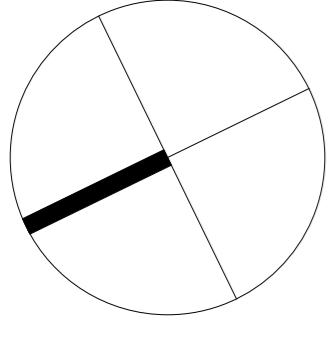
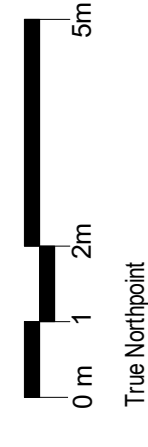
Project	PROPOSED MIXED USE DEVELOPMENT
Project Address	10 Wickfield Circuit, Ambarvale
Client	
Title	Basement 2
Drawn	A.S
Scale	1:200 @A3
Checked	
Checker	
Job No	2451
Drawing No.	03
Issue	J

DEVELOPMENT APPLICATION



ISSUE J - AMENDMENTS - 13.10.21	
1.	Residential Parking allocation relocated to Basement Level 2.
2.	Car parking provision amended.
3.	Storage allocated to specific Units.

WICKFIELD CIRCUIT



Do not scale, check and verify all dimensions before commencing new work, ground levels may vary due to site conditions.

LEGEND

- STORAGE
- RESIDENTIAL PARKING SPACES
2400 X 5000mm
- COMMERCIAL PARKING SPACES
2600 X 5000mm
- CHILDCARE VISITOR PARKING SPACES
2700 X 5000mm
- CHILDCARE STAFF PARKING SPACES
2400 X 5000mm
- SHARED ZONE 1
2400 X 5000mm

PARKING CLASSIFICATION

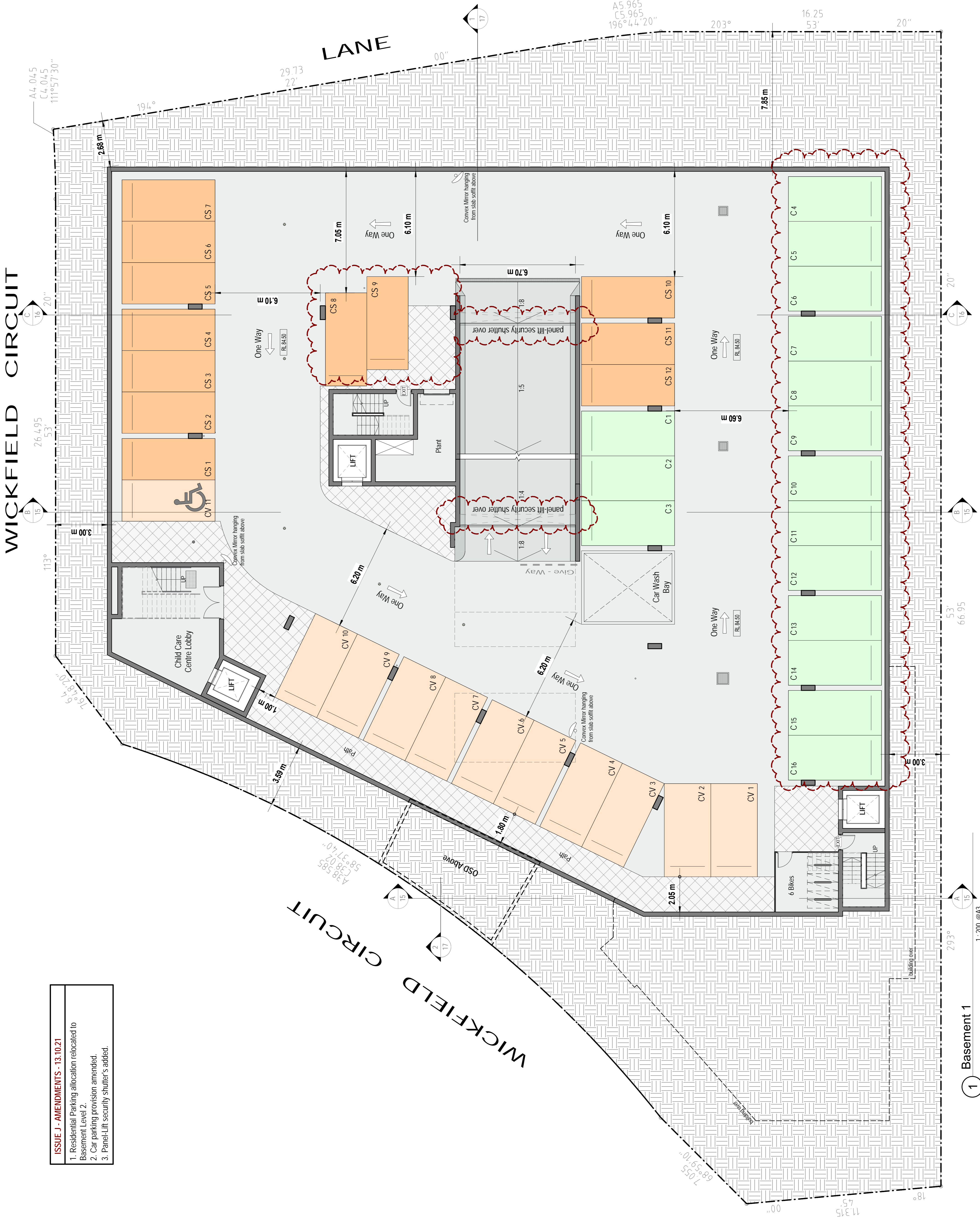
- R1 RESIDENTIAL PARKING SPACES
- C1 COMMERCIAL / RETAIL PARKING SPACES
- CV1 CHILD CARE VISITOR PARKING SPACES
- CS1 CHILD CARE STAFF PARKING SPACES

Issue	Issue description	Date
J	Amendments to address Council Comments	13.10.21
I	Amendments to address Council Comments	14.04.21
H	Amendments to address Council Comments	24.03.21
G	Stormwater Pits Updated - Waste management details updated	23.03.21
F	Panel-Lift security shutters Amended to address Traffic Issues	16.03.21
E	Basement Parking Layouts Amended to address Traffic Issues	12.03.21
D	Basement Amended to address traffic comments	09.03.21

architex
 Ryelion Pty Ltd is ArchiTex
 Level 3, 7K Pacific Street
 Parramatta NSW 2150
 Normalised Architect:
 Robert Del Pozo
 NSW Reg. No. 3972

Project	PROPOSED MIXED USE DEVELOPMENT
Project Address	10 Wickfield Circuit, Ambarvale
Client	
Title	Basement 1
Drawn	A.S
Scale	1:200 @A3
Checked	
Checker	
Job No	2451
Drawing No.	04
Issue	J

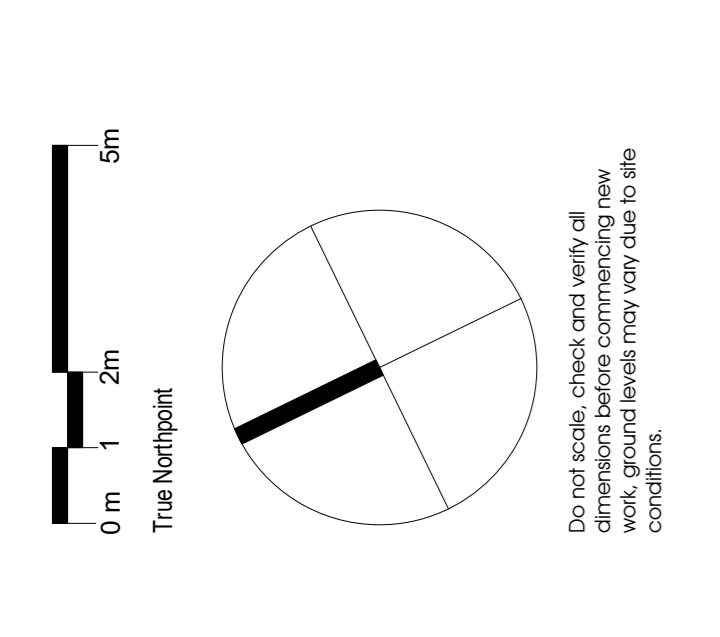
DEVELOPMENT APPLICATION



ISSUE J - AMENDMENTS - 13.10.21
1. Residential Parking allocation relocated to Basement Level 2.
2. Car parking provision amended.
3. Panel-Lift security shutter's added.

- ISSUE J - AMENDMENTS - 13.10.21**
1. Waste collection area turntable amended to be clear of all obstructions.
 2. Bin wash down area added to Waste collection area.
 3. Garbage exhaust added.
 4. Cafe & Child care centre Bin storage areas amended to accommodate more bins.
 5. Block A Residential Bin storage area increased.
 6. Floor waste's added to all bin storage rooms.
 7. Grease trap added.
 8. Kitchen exhaust added to block A.
 9. Fence along wickfield circuit amended.
 10. Child care centre outdoor play areas amended to accommodate AC Enclosures.

WICKFIELD CIRCUIT



Internal Play areas

playroom #	age	area	children
1	2-3	49.0sqm	15
2	2-3	67.0sqm	20
3	3-5	68.0sqm	20
4	3-5	68.0sqm	20
5	0-2	65.0sqm	16
TOTAL		317.0sqm	91

Outdoor Play areas

area	children
TOTAL	91

LEGEND

- CAFE
- CHILDCARE
- OUTDOOR PLAY AREA
- STORAGE

Issue	Issue description	Date
1	Amendments to address Council Comments	13.10.21
1	Amendments to address Council Comments	14.01.21
1	Final Brief removed to address play area	31.03.21
G	Amendments to address Council Comments	24.03.21
F	Stormwater Pits Updated - Waste management	23.03.21
E	Loading Bay - Block B Residential Floor Levels	08.03.21
D	Car-Added Parking Amendments - General Amendments	02.03.21

architex
 Ryelion Pty Ltd as Architect
 Level 3, 7K Paces Street
 Paramatta NSW 2150
 Nominated Architect:
 Robert Del Pazo
 NSW Reg. No. S972

Project
PROPOSED MIXED USE DEVELOPMENT
 Project Address
 10 Wickfield Circuit, Ambarvale
 Client
 Title
Ground Floor Level

Drawn: A.S. Scale: 1:200 @A3 Checked: Issue
 Job No: 2451 Drawing No: 05 Checker: J

DEVELOPMENT APPLICATION



APPENDIX B

Table A-1: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 1 [Wickfield Cct - Wickfield Cct morning pre]

Wickfield Cct - Wickfield Cct
Gateway / Yield (Two-Way)

Mov ID	OD Mov	Demand Flows HV %	Total veh/h	Des. Sign v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Wickfield Cct											
4	L2	5.0	60	0.039	5.6	LOSA	0.2	1.2	0.10	0.54	24.6
6	R2	0.0	1	0.039	5.8	LOSA	0.2	1.2	0.10	0.54	41.7
Approach		4.9	61	0.039	5.6	LOSA	0.2	1.2	0.10	0.54	24.9
NorthEast: Wickfield Cct											
7	L2	20.0	5	0.019	5.8	LOSA	0.0	0.0	0.00	0.08	49.5
8	T1	0.0	31	0.019	0.0	LOSA	0.0	0.0	0.00	0.08	57.7
Approach		2.8	36	0.019	0.8	NA	0.0	0.0	0.00	0.08	56.2
SouthWest: Wickfield Cct											
2	T1	0.0	37	0.034	0.1	LOSA	0.1	0.9	0.08	0.22	54.0
3	R2	0.0	25	0.034	3.9	LOSA	0.1	0.9	0.08	0.22	40.2
Approach		0.0	62	0.034	1.6	NA	0.1	0.9	0.08	0.22	49.0
All Vehicles		2.5	159	0.039	3.0	NA	0.2	1.2	0.07	0.31	38.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik, M3D).

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

Table A-2: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 1 Wickfield Cct - Wickfield Cct morning post

Wickfield Cct - Wickfield Cct
Giveaway / Yield (Two-Way)

Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Wickfield Cct											
4	L2	80	5.0	0.053	5.7	LOSA	0.2	1.6	0.11	0.54	24.5
6	R2	1	0.0	0.053	5.9	LOSA	0.2	1.6	0.11	0.54	41.6
Approach		81	4.9	0.053	5.7	LOSA	0.2	1.6	0.11	0.54	24.7
NorthEast: Wickfield Cct											
7	L2	5	0.0	0.024	5.5	LOSA	0.0	0.0	0.00	0.06	51.1
8	T1	41	0.0	0.024	0.0	LOSA	0.0	0.0	0.00	0.06	57.8
Approach		46	0.0	0.024	0.6	NA	0.0	0.0	0.00	0.06	56.8
SouthWest: Wickfield Cct											
2	T1	53	0.0	0.047	0.1	LOSA	0.2	1.2	0.10	0.22	54.0
3	R2	34	0.0	0.047	3.9	LOSA	0.2	1.2	0.10	0.22	40.2
Approach		87	0.0	0.047	1.6	NA	0.2	1.2	0.10	0.22	49.2
All Vehicles		214	1.9	0.053	2.9	NA	0.2	1.6	0.08	0.31	39.0

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Table A-3: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 1 [Wickfield Cct - Wickfield Cct evening pre]

Wickfield Cct - Wickfield Cct
Giveaway / Yield (Two-Way)

Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Wickfield Cct											
4	L2	50	0.0	0.035	5.6	LOS A	0.1	1.0	0.08	0.55	24.7
6	R2	4	0.0	0.035	5.8	LOS A	0.1	1.0	0.08	0.55	41.8
Approach											
		54	0.0	0.035	5.6	LOS A	0.1	1.0	0.08	0.55	26.1
NorthEast: Wickfield Cct											
7	L2	4	0.0	0.014	5.5	LOS A	0.0	0.0	0.00	0.09	50.7
8	T1	24	0.0	0.014	0.0	LOS A	0.0	0.0	0.00	0.09	57.1
Approach											
		28	0.0	0.014	0.8	NA	0.0	0.0	0.00	0.09	55.9
SouthWest: Wickfield Cct											
2	T1	42	0.0	0.050	0.1	LOS A	0.2	1.5	0.09	0.30	52.4
3	R2	49	0.0	0.050	3.8	LOS A	0.2	1.5	0.09	0.30	38.8
Approach											
		91	0.0	0.050	2.1	NA	0.2	1.5	0.09	0.30	45.7
All Vehicles											
		173	0.0	0.050	3.0	NA	0.2	1.5	0.07	0.34	39.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

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

Table A-4: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 1 [Wickfield Cct - Wickfield Cct evening post]

Wickfield Cct - Wickfield Cct
 Giveway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Demand Flows HV %	Total veh/h	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
SouthEast: Wickfield Cct											
4	L2	0.0	59	0.040	5.6	LOSA	0.2	1.1	0.09	0.55	24.7
6	R2	0.0	4	0.040	5.9	LOSA	0.2	1.1	0.09	0.55	41.8
Approach											
		0.0	63	0.040	5.6	LOSA	0.2	1.1	0.09	0.55	25.9
NorthEast: Wickfield Cct											
7	L2	0.0	4	0.017	5.5	LOSA	0.0	0.0	0.00	0.07	51.0
8	T1	0.0	29	0.017	0.0	LOSA	0.0	0.0	0.00	0.07	57.5
Approach											
		0.0	33	0.017	0.7	NA	0.0	0.0	0.00	0.07	56.5
SouthWest: Wickfield Cct											
2	T1	0.0	50	0.059	0.1	LOSA	0.3	1.8	0.10	0.30	52.3
3	R2	0.0	58	0.059	3.9	LOSA	0.3	1.8	0.10	0.30	38.8
Approach											
		0.0	108	0.059	2.1	NA	0.3	1.8	0.10	0.30	45.7
All Vehicles											
		0.0	204	0.059	3.0	NA	0.3	1.8	0.08	0.34	39.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

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

Table A-4: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 2 [Woodhouse Dr - Wickfield Cct morning pre]

Woodhouse Dr - Wickfield Cct
Giveaway / Yield (Two-Way)

Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
NorthEast: Woodhouse Dr											
8	T1	357	0.0	0.251	1.0	LOSA	0.9	6.0	0.25	0.10	57.9
26	R2	60	0.0	0.251	9.1	LOSA	0.9	6.0	0.25	0.10	52.6
Approach											
		417	0.0	0.251	2.2	NA	0.9	6.0	0.25	0.10	57.4
NorthWest: Wickfield Cct											
27	L2	18	0.0	0.030	8.0	LOSA	0.1	0.7	0.54	0.72	46.7
29	R2	4	0.0	0.030	12.4	LOSA	0.1	0.7	0.54	0.72	46.0
Approach											
		22	0.0	0.030	8.8	LOSA	0.1	0.7	0.54	0.72	46.6
SouthWest: Woodhouse Dr											
30	L2	30	0.0	0.325	5.6	LOSA	0.0	0.0	0.00	0.03	31.6
2	T1	602	0.0	0.325	0.0	LOSA	0.0	0.0	0.00	0.03	59.7
Approach											
		632	0.0	0.325	0.3	NA	0.0	0.0	0.00	0.03	58.2
All Vehicles											
		1071	0.0	0.325	1.2	NA	0.9	6.0	0.11	0.07	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Table A-5: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 2 [Woodhouse Dr - Wickfield Cct morning post]

Woodhouse Dr - Wickfield Cct
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn w/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
NorthEast: Woodhouse Dr											
8	T1	357	0.0	0.256	1.1	LOSA	0.9	6.5	0.27	0.11	57.8
26	R2	64	0.0	0.256	9.2	LOSA	0.9	6.5	0.27	0.11	52.4
Approach											
		421	0.0	0.256	2.3	NA	0.9	6.5	0.27	0.11	57.2
NorthWest: Wickfield Cct											
27	L2	28	0.0	0.047	8.1	LOSA	0.2	1.1	0.54	0.73	46.6
29	R2	6	0.0	0.047	12.6	LOSA	0.2	1.1	0.54	0.73	46.0
Approach											
		34	0.0	0.047	8.9	LOSA	0.2	1.1	0.54	0.73	46.5
SouthWest: Woodhouse Dr											
30	L2	35	0.0	0.328	5.6	LOSA	0.0	0.0	0.00	0.03	31.6
2	T1	602	0.0	0.328	0.0	LOSA	0.0	0.0	0.00	0.03	59.6
Approach											
		637	0.0	0.328	0.3	NA	0.0	0.0	0.00	0.03	57.9
All Vehicles		1092	0.0	0.328	1.4	NA	0.9	6.5	0.12	0.08	57.3

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akçelik MSD).

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

Table A-6: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 2 [Woodhouse Dr - Wickfield Cct morning post]

Woodhouse Dr - Wickfield Cct
 Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
NorthEast: Woodhouse Dr											
8	T1	357	0.0	0.255	1.1	LOSA	0.9	6.4	0.27	0.11	57.8
26	R2	64	0.0	0.255	9.2	LOSA	0.9	6.4	0.27	0.11	52.4
Approach											
		421	0.0	0.255	2.3	NA	0.9	6.4	0.27	0.11	57.2
NorthWest: Wickfield Cct											
27	L2	28	0.0	0.047	8.1	LOSA	0.2	1.1	0.54	0.73	46.6
29	R2	6	0.0	0.047	12.6	LOSA	0.2	1.1	0.54	0.73	46.0
Approach											
		34	0.0	0.047	8.9	LOSA	0.2	1.1	0.54	0.73	46.5
SouthWest: Woodhouse Dr											
30	L2	32	0.0	0.326	5.6	LOSA	0.0	0.0	0.00	0.03	31.6
2	T1	602	0.0	0.326	0.0	LOSA	0.0	0.0	0.00	0.03	59.6
Approach											
		634	0.0	0.326	0.3	NA	0.0	0.0	0.00	0.03	58.0
All Vehicles											
		1089	0.0	0.326	1.4	NA	0.9	6.4	0.12	0.08	57.4

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Table A-7: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 2 [Woodhouse Dr - Wickfield Cct evening post]

Woodhouse Dr - Wickfield Cct
 Giveaway / Yield (Two-Way)

Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
NorthEast: Woodhouse Dr											
8	T1	637	0.0	0.386	0.5	LOSA	1.0	7.2	0.16	0.06	58.8
26	R2	66	0.0	0.386	8.3	LOSA	1.0	7.2	0.16	0.06	53.8
Approach											
		703	0.0	0.386	1.2	NA	1.0	7.2	0.16	0.06	58.5
NorthWest: Wickfield Cct											
27	L2	70	0.0	0.097	7.1	LOSA	0.3	2.4	0.48	0.69	47.3
29	R2	11	0.0	0.097	14.8	LOS B	0.3	2.4	0.48	0.69	46.7
Approach											
		81	0.0	0.097	8.2	LOSA	0.3	2.4	0.48	0.69	47.2
SouthWest: Woodhouse Dr											
30	L2	27	0.0	0.232	5.6	LOSA	0.0	0.0	0.00	0.04	31.6
2	T1	424	0.0	0.232	0.0	LOSA	0.0	0.0	0.00	0.04	59.6
Approach											
		451	0.0	0.232	0.4	NA	0.0	0.0	0.00	0.04	57.7
All Vehicles											
		1235	0.0	0.386	1.4	NA	1.0	7.2	0.12	0.09	57.6

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

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

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

Table A-7: Traffic Movement Performance

MOVEMENT SUMMARY

▽ Site: 2 [Woodhouse Dr - Wickfield Cct evening pre]

Woodhouse Dr - Wickfield Cct
Gateway / Yield (Two-Way)

Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
NorthEast: Woodhouse Dr											
8	T1	637	0.0	0.379	0.4	LOS A	0.9	6.3	0.14	0.06	58.9
26	R2	59	0.0	0.379	8.2	LOS A	0.9	6.3	0.14	0.06	54.0
Approach											
		696	0.0	0.379	1.1	NA	0.9	6.3	0.14	0.06	58.6
NorthWest: Wickfield Cct											
27	L2	62	0.0	0.086	7.1	LOS A	0.3	2.1	0.48	0.68	47.4
29	R2	10	0.0	0.086	14.5	LOS B	0.3	2.1	0.48	0.68	46.7
Approach											
		72	0.0	0.086	8.1	LOS A	0.3	2.1	0.48	0.68	47.3
SouthWest: Woodhouse Dr											
30	L2	22	0.0	0.229	5.6	LOS A	0.0	0.0	0.00	0.03	31.6
2	T1	424	0.0	0.229	0.0	LOS A	0.0	0.0	0.00	0.03	59.7
Approach											
		446	0.0	0.229	0.3	NA	0.0	0.0	0.00	0.03	58.1
All Vehicles											
		1214	0.0	0.379	1.2	NA	0.9	6.3	0.11	0.08	57.9

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

Gap-Acceptance Capacity: SIDRA Standard (Akcelik, M3D).

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

Table A-8: Traffic Movement Performance

MOVEMENT SUMMARY

Site: 2 [Woodhouse Dr - Wickfield Cct evening post]

Woodhouse Dr - Wickfield Cct
Giveaway / Yield (Two-Way)

Movement Performance - Vehicles											
Mov ID	OD Mov	Total veh/h	Demand Flows HV %	Deg. Satn v/c	Average Delay sec	Level of Service	95% Back of Queue Vehicles veh	Distance m	Prop. Queued	Effective Stop Rate per veh	Average Speed km/h
NorthEast: Woodhouse Dr											
8	T1	637	0.0	0.385	0.5	LOSA	1.0	7.2	0.16	0.06	58.8
26	R2	66	0.0	0.385	8.2	LOSA	1.0	7.2	0.16	0.06	53.8
Approach											
		703	0.0	0.385	1.2	NA	1.0	7.2	0.16	0.06	58.5
NorthWest: Wickfield Cct											
27	L2	70	0.0	0.097	7.1	LOSA	0.3	2.4	0.48	0.69	47.3
29	R2	11	0.0	0.097	14.8	LOS B	0.3	2.4	0.48	0.69	46.7
Approach											
		81	0.0	0.097	8.2	LOSA	0.3	2.4	0.48	0.69	47.2
SouthWest: Woodhouse Dr											
30	L2	24	0.0	0.230	5.6	LOSA	0.0	0.0	0.00	0.03	31.6
2	T1	424	0.0	0.230	0.0	LOSA	0.0	0.0	0.00	0.03	59.7
Approach											
		448	0.0	0.230	0.3	NA	0.0	0.0	0.00	0.03	58.0
All Vehicles											
		1232	0.0	0.385	1.4	NA	1.0	7.2	0.12	0.09	57.7

Site Level of Service (LOS) Method: Delay (RTA NSW). Site LOS Method is specified in the Parameter Settings dialog (Site 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: Intersection LOS and Major Road Approach LOS values are Not Applicable for two-way sign control since the average delay is not a good LOS measure due to zero delays associated with major road movements.

SIDRA Standard Delay Model is used. Control Delay includes Geometric Delay.

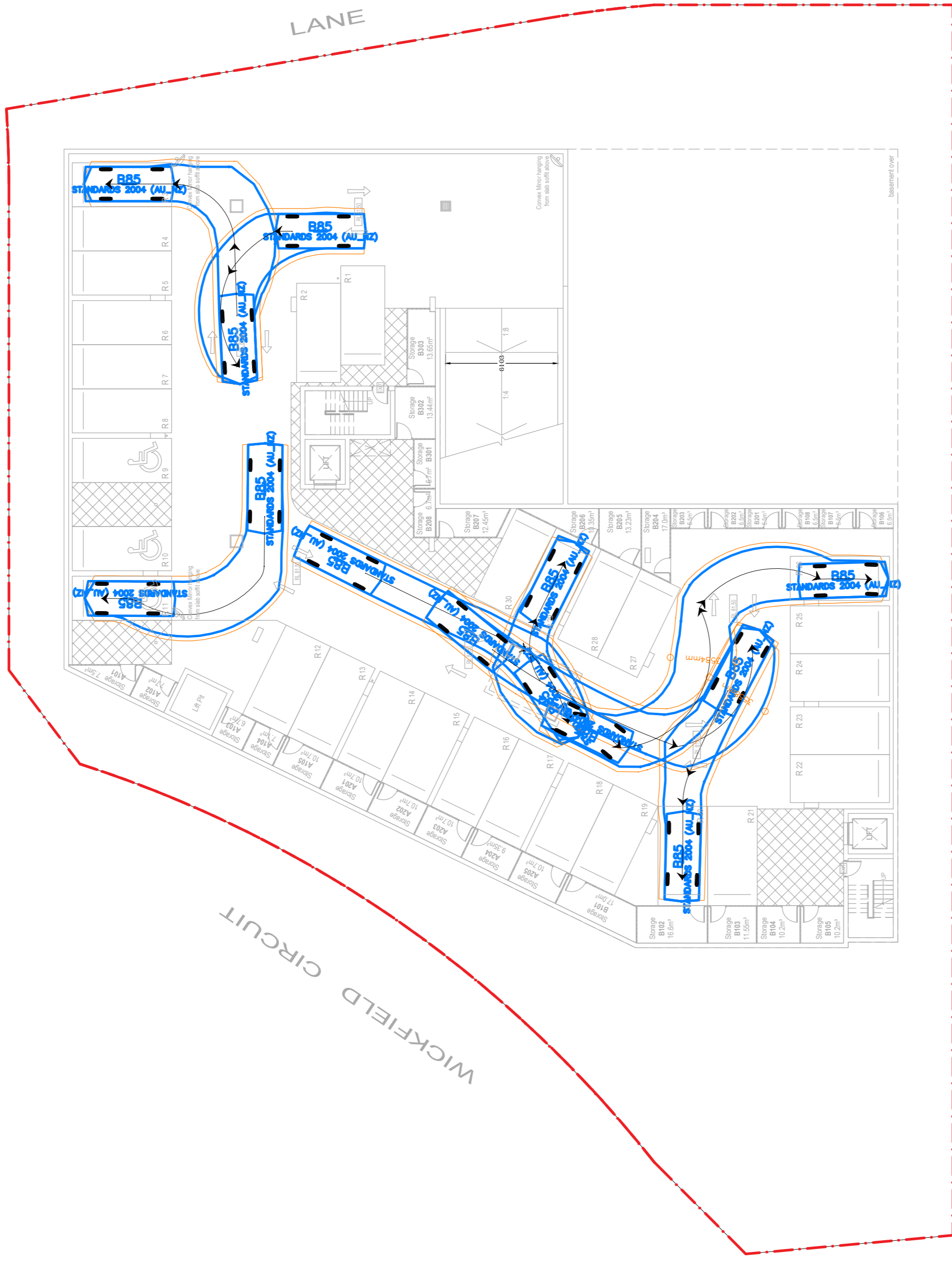
Gap-Acceptance Capacity: SIDRA Standard (Akcelik M3D).

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

APPENDIX C

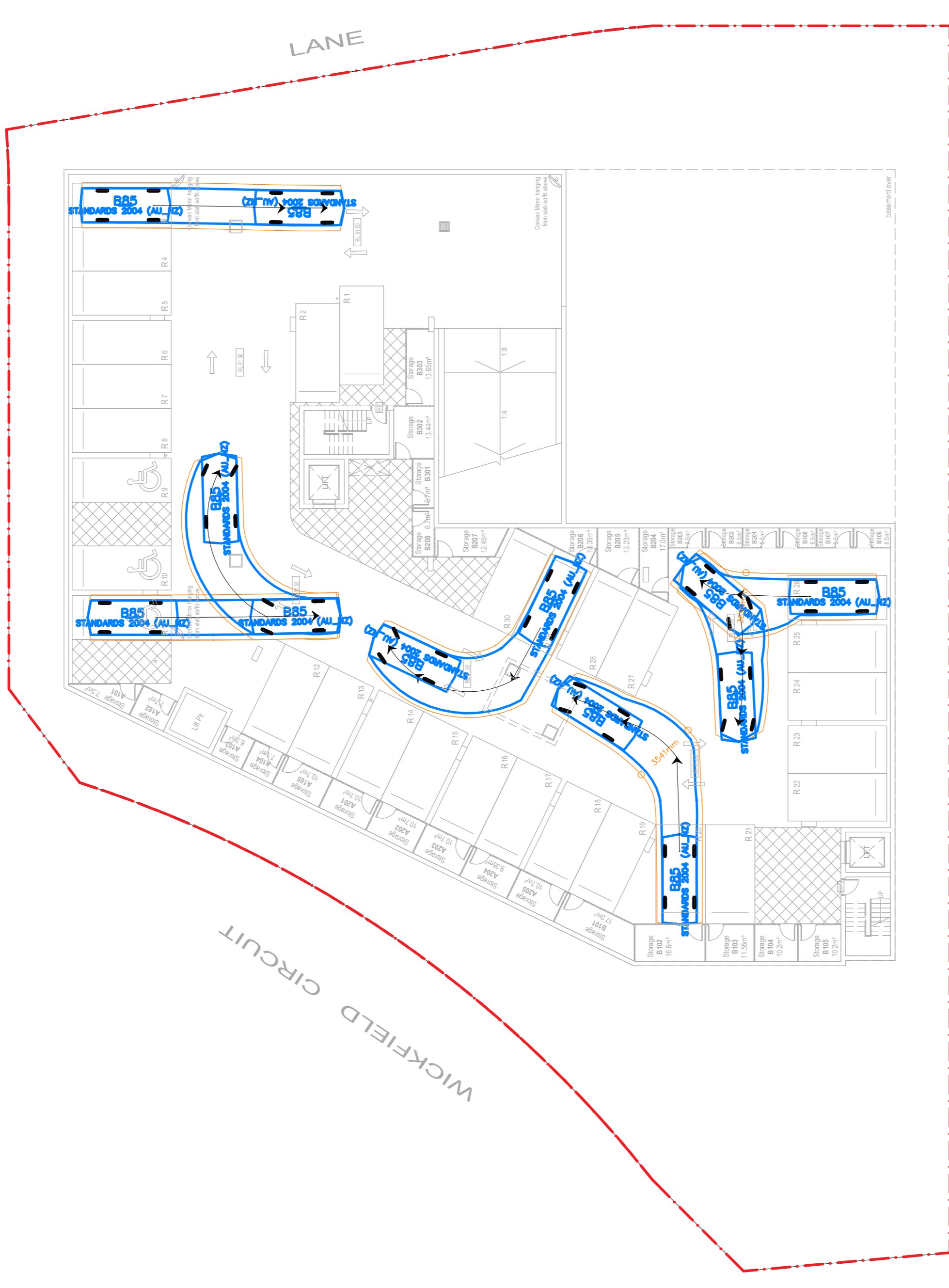
Swept Path Analysis

WICKFIELD CIRCUIT



BASEMENT LEVEL 2

WICKFIELD CIRCUIT



BASEMENT LEVEL 2

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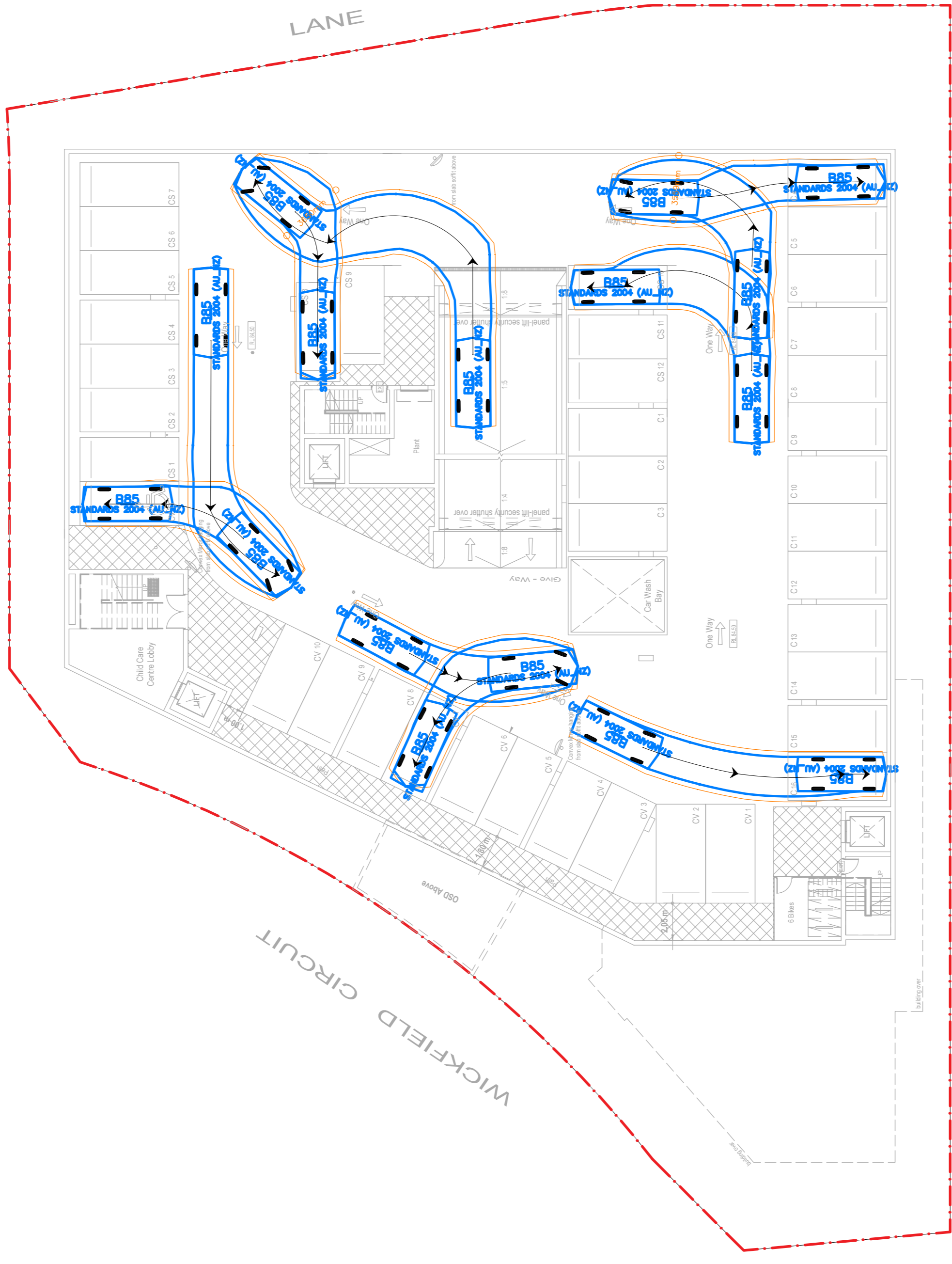
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SWEEP PATH ANALYSIS
BASEMENT 2
ENTRY & EXIT 1

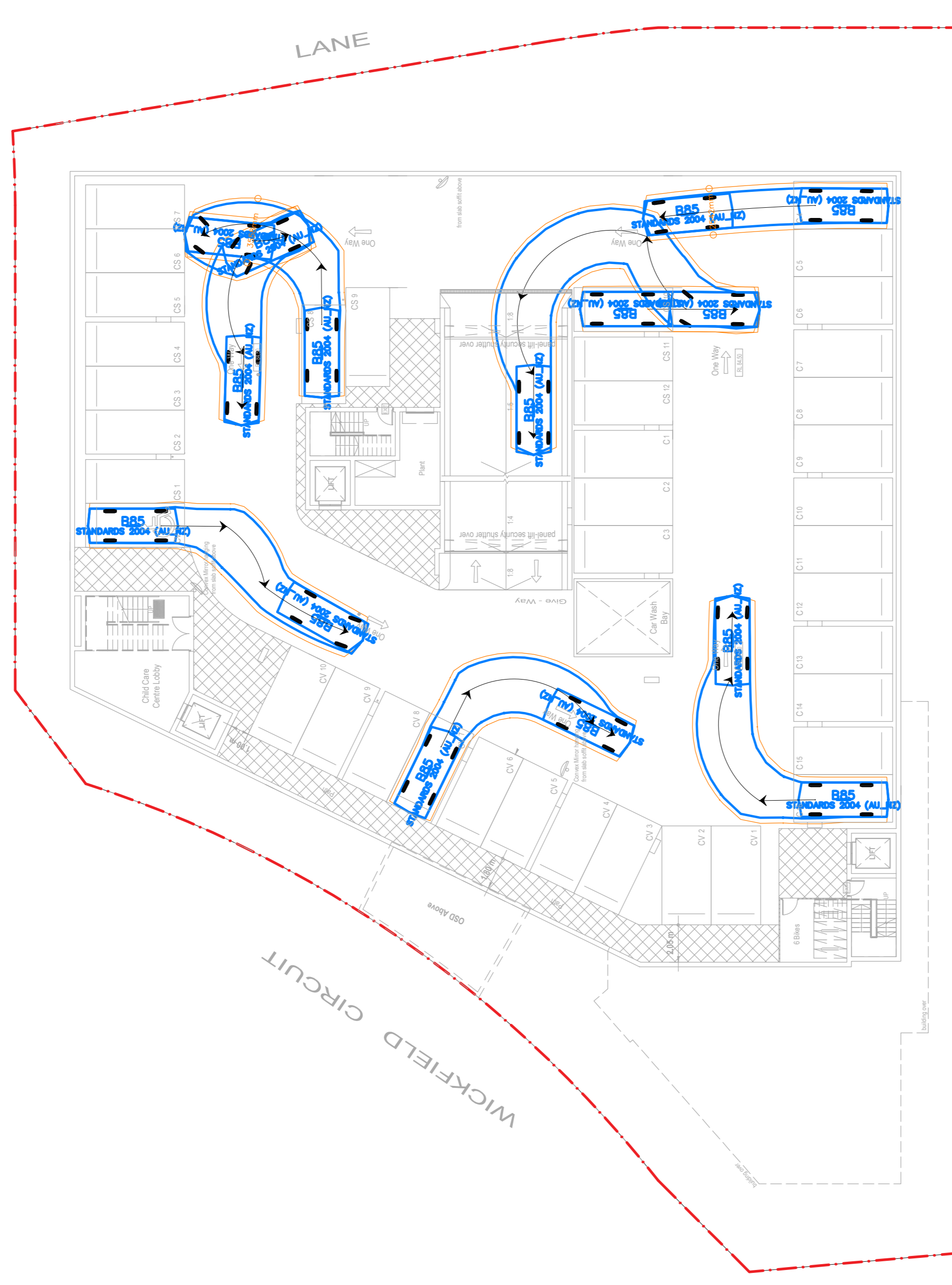
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WICKFIELD CIRCUIT



BASEMENT LEVEL 1

WICKFIELD CIRCUIT



BASEMENT LEVEL 1

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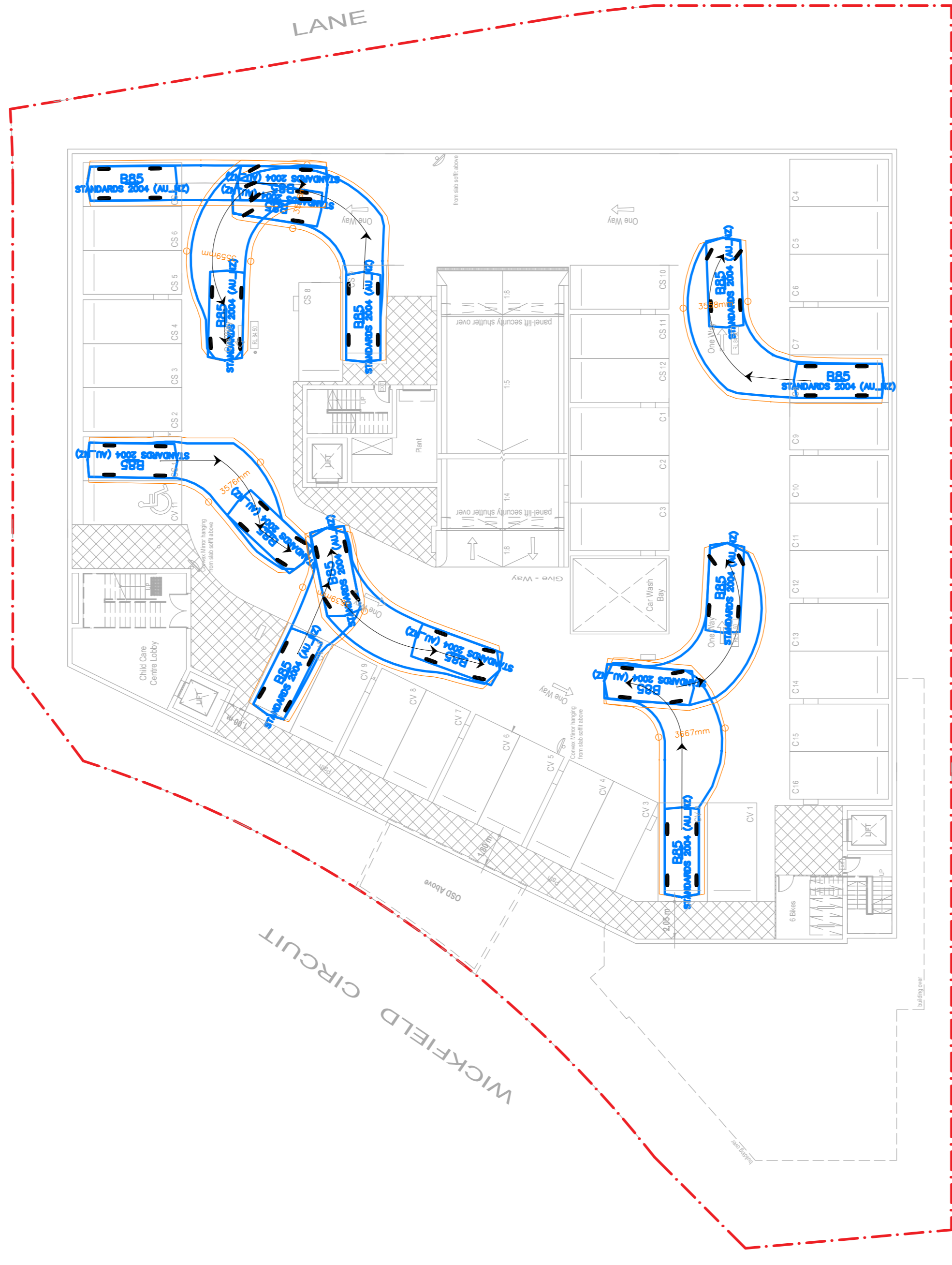
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AMBARVALE, NSW**



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BASEMENT 1
ENTRY & EXT 1**

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WICKFIELD CIRCUIT



BASEMENT LEVEL 1

WICKFIELD CIRCUIT



BASEMENT LEVEL 1

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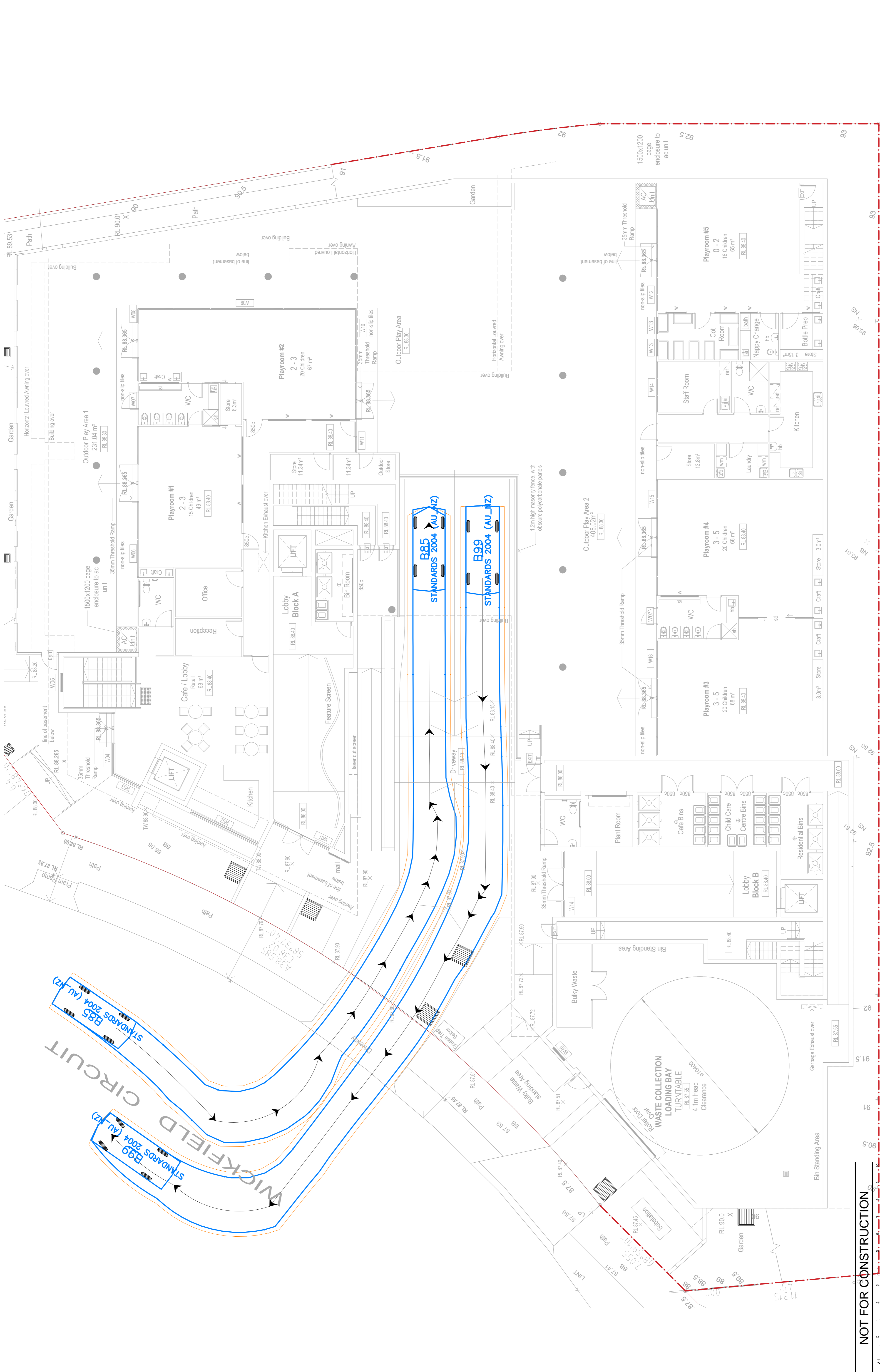
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 BASEMENT 1
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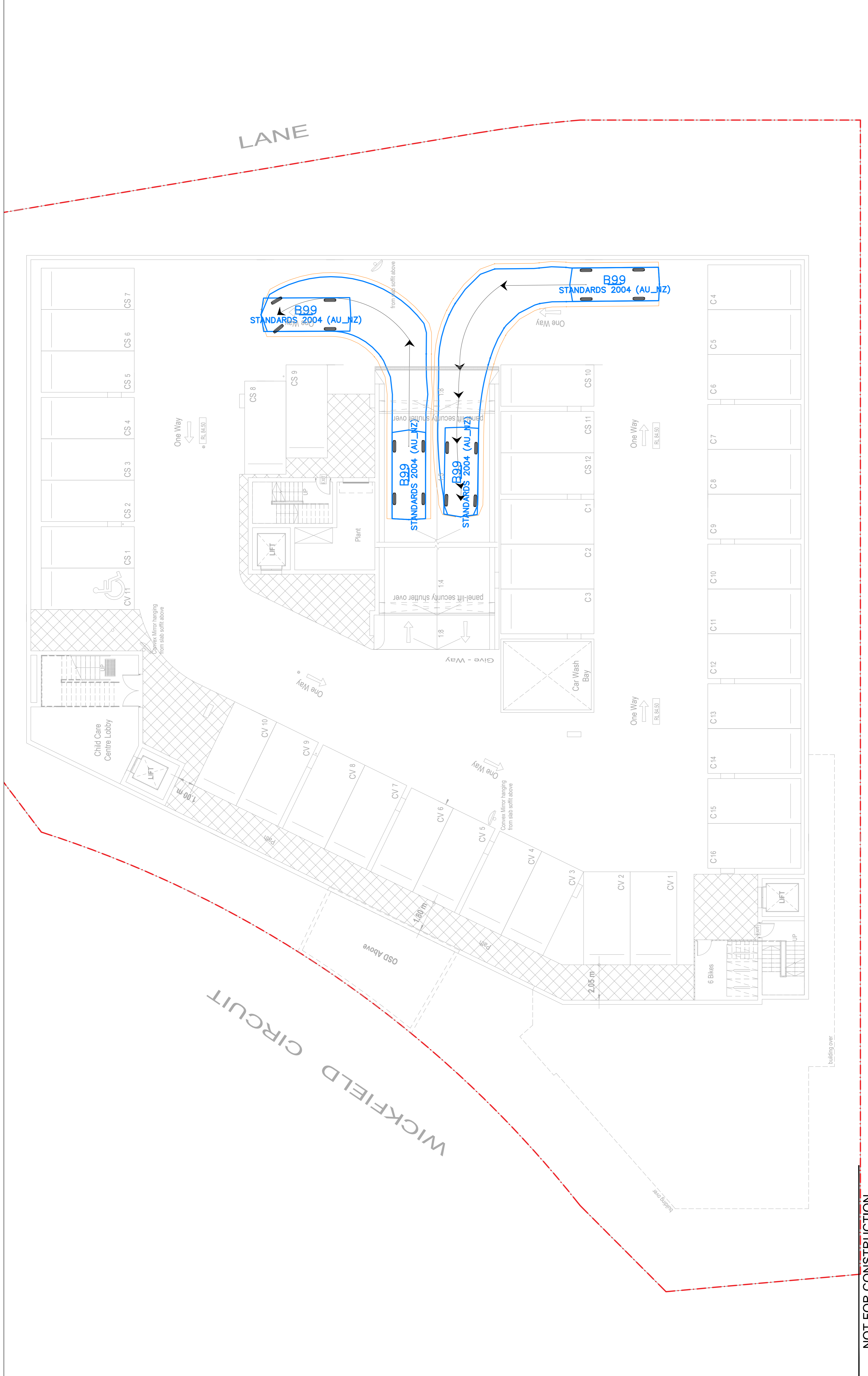
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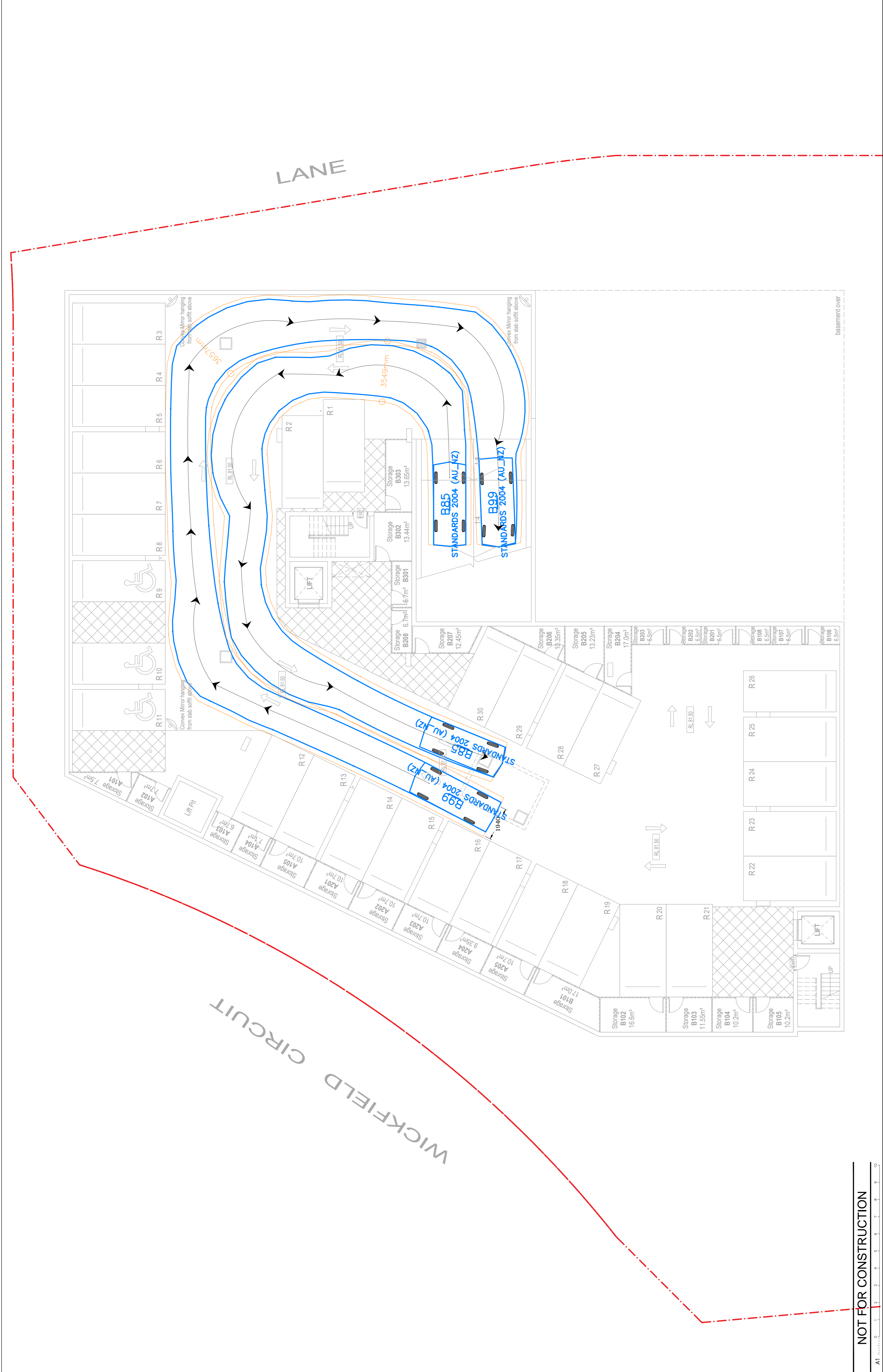
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MIXED USE DEVELOPMENT
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SHEET SUBJECT
 SWEEP PATH ANALYSIS B85
 PASSING B99 BASEMENT 1
 CIRCULATION ENTRY & EXT

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**SWEEP PATH ANALYSIS B85
 PASSING B99 BASEMENT 2
 CIRCULATION ENTRY & EXT**

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