TRAFFIC & TRANSPORT ENGINEERING

Level 2 | 62 Astor Terrace | Spring Hill QLD 4000
PO Box 272| Spring Hill QLD 4004
ABN 96 067 593 962
P 07 3839 6771
E mail@ptt.com.au
WWW.**PTT**.COM.AU

15 June 2026

Gemlife
C/- Innovative Planning Solutions
PO Box 1043
Maroochydore QLD 4558

Attention: Curtis McMillan

Dear Curtis,

RE: RETIREMENT FACILITY, GOWRIE JUNCTION ROAD, COTSWOLD HILLS PROPOSED OTHER CHANGE TO APPROVAL

INTRODUCTION

This letter has been prepared by PTT, as requested by Innovative Planning Solutions, to assess the traffic engineering aspects of a proposed Other Change application to an approved retirement facility at Lot 902 on SP263388 in Cotswold Hills. A minor change to an approved Material Change of Use (MCU) development application for 205 retirement lots was approved by Toowoomba Regional Council (Council) in February 2025 (Reference: MCUI/2020/1802).

The proposed Other Change seeks to include the adjacent lot to the south (ie Lot 3 on SP33843) within the development site. The increased site area would cater for a total of 229 retirement lots (ie a net increase of 24 lots). The proposed Other Change plans are attached.

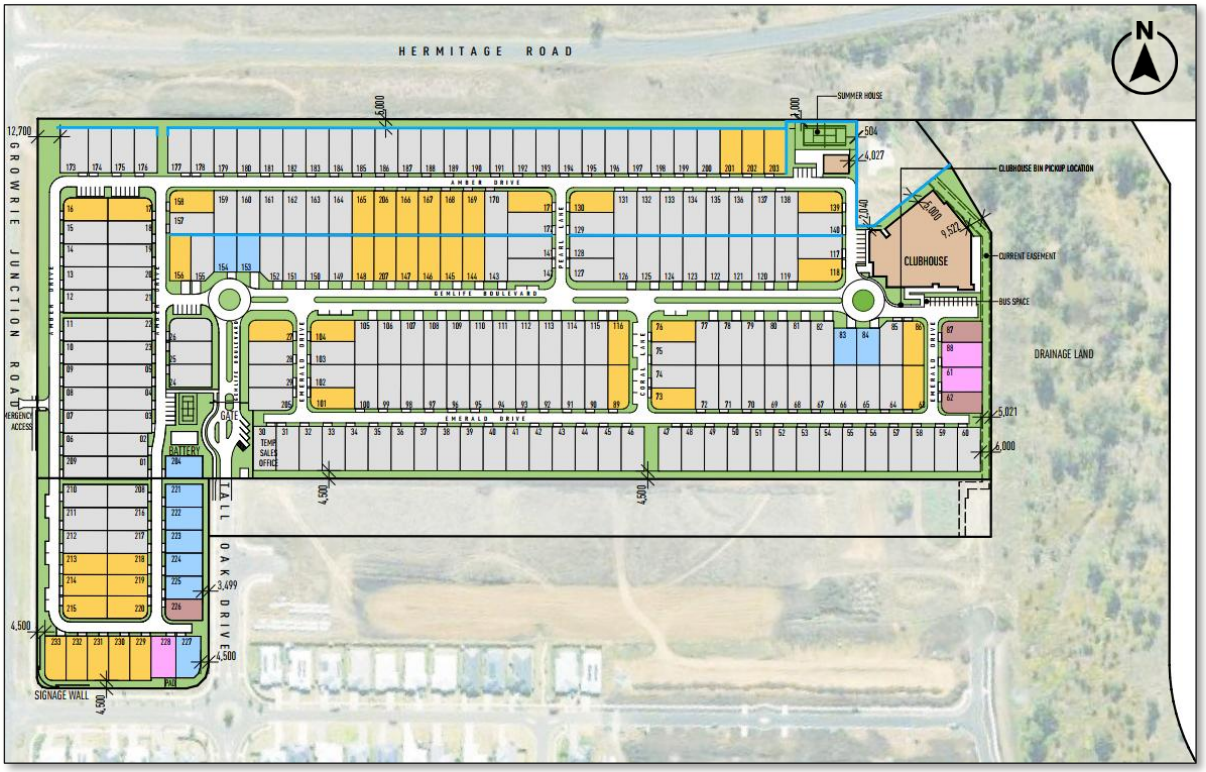
The aim of this assessment is to review the proposed Other Change in terms of its site access arrangements, parking provision and design, servicing arrangements and active transport facilities with respect to the approved development, Council's Planning Scheme and Australian Standards AS2890.1 Parking Facilities Part 1: Off-Street Car Parking. The likely impact on traffic operations on the surrounding road network is also assessed quantitatively.

PROPOSED DEVELOPMENT

OVERVIEW

The proposed Other Change scheme comprises 229 retirement dwellings and would be supported by 458 residential (within double garages) and 69 visitor parking spaces. The proposed site layout is shown in Figure 1, with architectural plans attached.

Figure 1: PROPOSED SITE LAYOUT



ACCESS

Consistent with the approved development, vehicular access is proposed via a single driveway at the northern end of Flame Tree Road. The proposed access arrangement is considered acceptable because:

- the access location is consistent with the approval
- it would be 6.5m wide, which would adequately cater for two-way traffic flow in accordance with AS2890.1
- it would cater for a Refuse Collection Vehicle (ie the design vehicle)
- approximately 43m (ie seven car lengths) of queue storage is proposed between the access driveway and internal security gate

It is recommended that the site access crossover be of General Flare design, in accordance with the Institute of Public Works Engineering Australasia (IPWEA) Standard Drawing RS-102.

No additional changes to the proposed access design and location are considered necessary.

PARKING

Requirement

As per Table 9.4.6.3 in Council's Transport, Access and Parking Code, the following minimum parking rates apply for a retirement facility:

- residential parking: one space per dwelling
- visitor parking: one space per five dwellings

Based on the proposed number of retirements lots (ie 229 lots), a minimum of 229 residential and 46 visitor spaces are required on-site.

Provision

The proposed layout provides a total of 458 residential spaces (ie within double garages) and 69 visitor parking spaces. Thus, the proposed parking provision exceeds Council's minimum requirement.

Persons with Disability Parking

It is recommended that one additional persons with a disability (PWD) bay be provided on-site to cater for the proposed additional dwellings.

Design

In accordance with the most recent approval, it is recommended that on-site parking be designed in accordance with Council's Transport, Access and Parking Code and AS2890.1. This is typified by:

- double garages – minimum dimensions 5.6m wide by 6.0m long, with a door opening width of 4.8m (apron width at least 5.6m wide)
- single garages – minimum dimensions 3.2m wide by 6.0m long, with a door opening width of 3.0m (apron width at least 5.6m wide)
- visitor parking – dimensioned 2.6m wide by 5.4m long
- parallel parking – dimensioned 2.5m wide by 6.0 long
- 45-degree angled visitor parking – dimensioned 2.6m wide by 5.4m long
- PWD bays – dimensioned 2.4m wide by 5.4m long with an adjacent shared bay dimensioned 2.4m wide by 5.4m long
- parking aisles – dimensioned 6.0m wide or greater

INTERNAL ROAD NETWORK

The internal private road network is generally typified by the following:

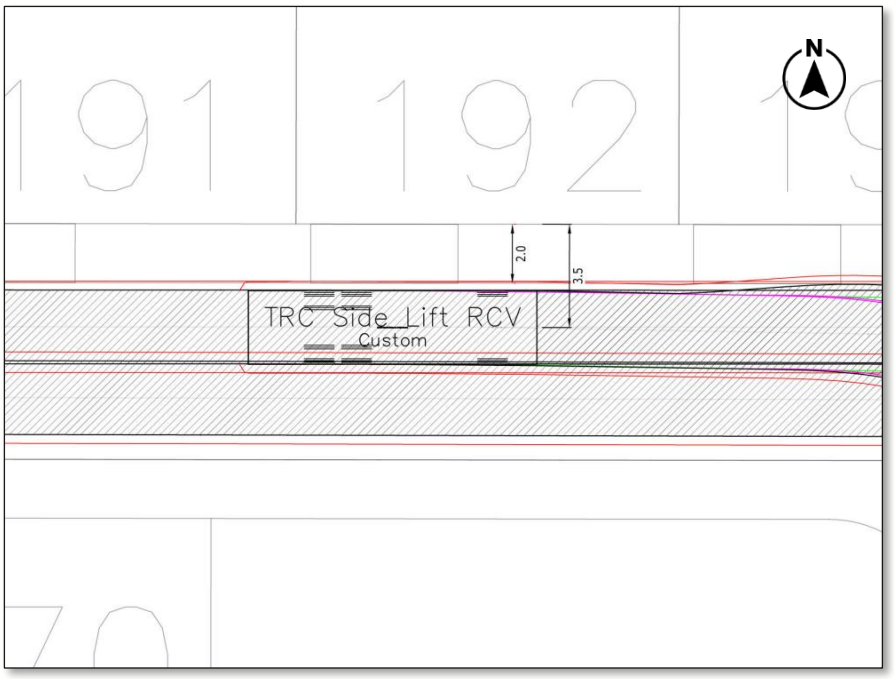
- a minimum 8.0m wide road reserve
- a minimum 6.0m wide two-way carriageway
- a minimum 4.5m wide one-way carriageway
- a minimum 2.0m wide verge

COMMERICAL VEHICLE SERVICING

Council's Transport, Access and Parking Code does not specify a minimum commercial servicing design vehicle for a retirement facility. The largest vehicle expected to access the proposed development is a 9.5m long RCV (ie the dimensions for a side-lift recycle refuse collection vehicle as specified in Appendix D of Council's Technical Guideline for New Developments - General Waste and Recyclable Waste Storage and Collection document). It is expected that wheelie bins would be placed in front of each lots, adjacent to internal private roads. Swept path drawings of a Council RCV circulating through the site are attached.

A minimum 2.0m wide nominal verge area would be provided between the internal driveways and the developable area of each lot. Figure 13A in TRC's Technical Guideline for New Developments – General Waste and Recyclable Waste Storage and Collection requires a minimum distance of 3.2m be provided between the centre of the RCV and any obstruction within the verge. This is to ensure the side arm of the RCV can access each wheelie bin. As shown in Figure 2, approximately 3.5m of clearance would be provided between the centre of the RCV and the developable area of each lot. Thus, sufficient clearance would be provided to cater for side arm movements of an RCV, in accordance with TRC's minimum requirements.

Figure 2: AVAILABLE RCV SIDE ARM CLEARANCE



Councils' Transport, Access and Parking Code does not specify a minimum commercial service vehicle for a retirement facility. However, it is expected that the occasional service vehicle for the proposed scale of development would be either a small or medium rigid vehicle (ie for furniture deliveries). It is expected that these vehicles would follow a similar path to the RCV, noting that both small and medium rigid vehicle are smaller than an RCV.

ACTIVE TRANSPORT

Pedestrians

A dedicated pedestrian access is proposed adjacent and separate to the Flame Tree Road site access. This would connect with the existing pedestrian footpath on the western side of Flame Tree Road.

The proposed layout does not include dedicated pedestrian footpaths throughout the internal road network, to connect the residential sites to main communal facilities. Instead, a private road network consisting of 6m wide shared roadways is proposed. Similar to a typical parking aisle or circulation aisle in a parking area, pedestrians and vehicles traversing the site would share the driveway. It is recommended that adequate signage and appropriate traffic calming treatments are installed throughout the internal road network to advise pedestrians and drivers of the shared arrangement and manage vehicular speeds.

The development layout would include 229 retirement homes which would generate approximately 50 peak vehicle trips based on a peak rate of 0.22 trips per home. These trips would be distributed across the internal road network. By comparison, a standard residential lot sub-division of an equal scale would generate approximately 195 peak trips, based on a peak rate of 0.85 trips per detached dwelling. Thus, vehicular volumes on the proposed internal road network are expected to be significantly lower (ie approximately 75% less) than that of a typical residential development of similar scale.

The proposed arrangement is also consistent with the current development approval and other recently approved large scale retirement facilities in Cotswold Hills.

Based on the above, we are of the view that proposed internal pedestrian arrangements are adequate.

Cyclists

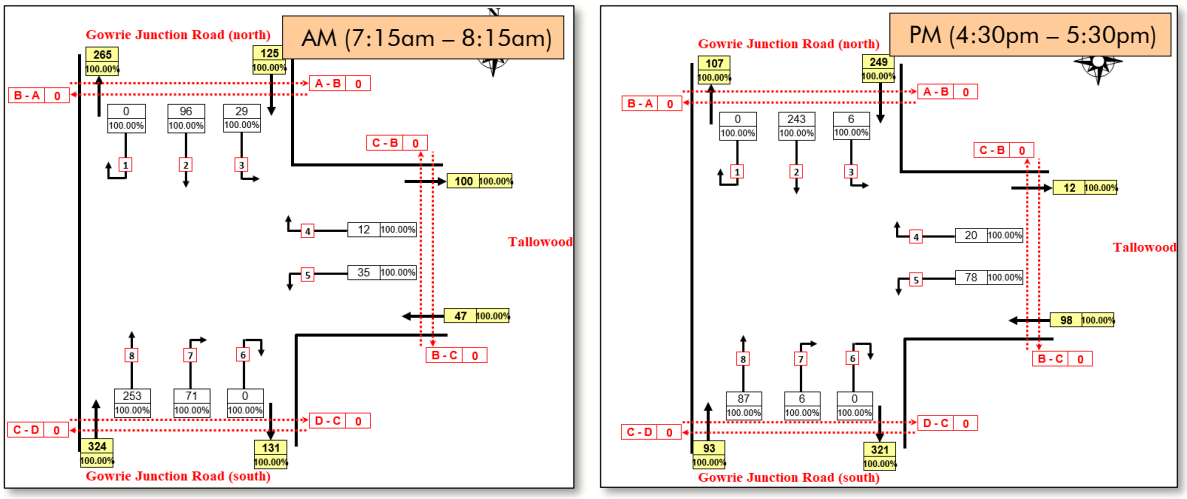
Council's Transport, Access and Parking Code requires bicycle parking be provided in accordance with Austroads Guide to Traffic Management Part 11: Parking Management Techniques. Austroads does not prescribe a minimum bicycle parking requirement for retirement facilities. However, it is expected that each double garage constructed on each lot would adequately cater for at least one residential bicycle.

TRAFFIC IMPACT

TRAFFIC COUNT DATA

To assist in the quantification of existing road network operations proximate to the site, turning movement surveys were conducted at the Gowrie Junction Road / Tallowood Boulevard intersection, from 7:00am – 10:00am and 2:30pm – 5:30pm on Wednesday 20 May 2026. The survey data is attached, with observed peak turning movements summarised in Figure 3.

Figure 3: PEAK TRAFFIC COUNT DATA



TRAFFIC GENERATION

For previous retirement facility development applications, Councils has requested that traffic impact assessments be undertaken in accordance with the Department of Transport and Main Roads's (TMR) Guide to Traffic Impact Assessment (GTIA). Section 8 of TMR's GTIA outlines a preferred hierarchy of data sources to be used when determining peak traffic generation. The top five most preferred data sources are as follows:

1. site specific traffic generation survey data
2. TMR traffic generation data (2006-2019)
3. Guide to Traffic Generation Developments Updated Traffic Surveys, RMS (2013)
4. Guide to Traffic Generating Developments, RTA (2002) (superseded by TfNSW Guide to Transport Impact Assessment)
5. New Zealand Database Bureau (2010)

In the absence of site-specific data, TMR's traffic generation data is the most preferred source. This dataset includes surveys from 51 retirement villages throughout Queensland collected between 2006 and 2019. Separate rates representing weekday morning and evening peak traffic have been derived by taking the 85th percentile rate across all sites during the commuter peak hours (ie 7:15am – 8:15am and 4:30pm – 5:30pm). The adopted rates and resulting traffic generation for each period is summarised in Table 1.

The adopted directional split is consistent with the split of entering and exiting traffic to/from Tallowood Boulevard during each peak period, as reported in the traffic count surveys.

We note that the adopted traffic generation rates are consistent with other recently approved retirement facilities in the Cotswold Hills area.

Table 1: PROPOSED TRAFFIC GENERATION – COMMUTER PEAK HOURS

PEAK	TRIP RATE	SCALE	TRIPS	IN:OUT SPLIT	IN:OUT GENERATION
Morning	0.16 trips/lot	229 lots	37 trips/hour	10 : 90	4 : 33
Evening	0.22 trips/lot	229 lots	50 trips/hour	70 : 30	35 : 15

DIRECTIONAL DISTRIBUTION

The directional split of development traffic at the Gowrie Junction Road / Tallowood Boulevard intersection has been determined based on the directional split inherent from the traffic count surveys. The adopted directional distribution is summarised in the attached traffic flow diagrams.

BACKGROUND TRAFFIC GROWTH

A background traffic growth rate of 1.0% per annum has been adopted. This exceeds population projection data published by the Office of Economic and Statistical Research, Queensland Treasury, which indicates that the Cotswold Hills area is projected to grow at rate of 0.74% per annum. The proposed development would be constructed in a single stage and would open in 2029. A ten-year design horizon has been adopted to assess impact to the surrounding road network. The application of the adopted rate equates to a 13.0% increase in local background traffic volumes over the next 13 years (ie 2026 – 2039).

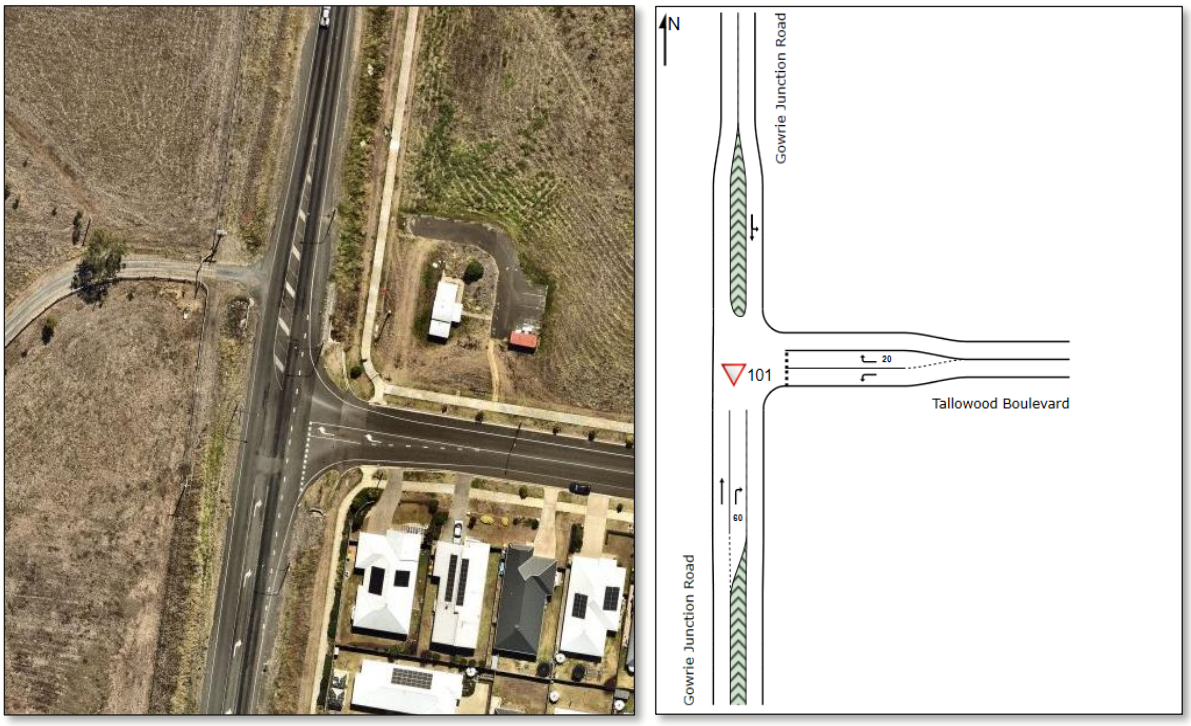
INTERSECTION OPERATIONS

The existing intersection layout and equivalent SIDRA representation is shown in Figure 4. The results are summarised in Table 2, with peak hour turning movement forecasts and detailed SIDRA results attached. As demonstrated, additional development traffic is expected to have a negligible impact on degree of saturation, average delay and queuing during the opening and future year peaks, with the intersection operating well under capacity in all pre and post development scenarios.

Table 2: INTERSECTION OPERATIONS

PEAK HOUR	DOS	AVG DELAY	95% QUEUE	CRITICAL MOVEMENT
Morning				
2026 Existing	14.7%	1.7s	0.3veh	Northern Leg – Through
2029 Pre-Development	15.1%	1.7s	0.3veh	Northern Leg – Through
2029 Post-Development	15.3%	2.1s	0.4veh	Northern Leg – Through
2039 Pre-Development	16.8%	1.8s	0.3veh	Northern Leg – Through
2039 Post-Development	16.9%	2.1s	0.4veh	Northern Leg – Through
Evening				
2026 Existing	13.4%	1.8s	0.2veh	Southern Leg – Through
2029 Pre-Development	13.8%	1.8s	0.2veh	Southern Leg – Through
2029 Post-Development	13.8%	2.2s	0.3veh	Southern Leg – Through
2039 Pre-Development	15.3%	1.9s	0.2veh	Southern Leg – Through
2039 Post-Development	15.3%	2.2s	0.3veh	Southern Leg – Through

Figure 4: GOWRIE JUNCTION ROAD / TALLOWOOD BOULEVARD INTERSECTION



TURN WARRANTS

The existing intersection is currently supported by a Channelised Right (CHR) and Basic Auxiliary Left (BAL) turn treatments. We have applied the Normal Design Domain (NDD) warrants included in Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings Management to determine if these existing treatments would adequately cater for additional traffic generated by the proposed development. This assessment is based on peak turning movement surveys (for the 2039 future year), attached, and a design speed less than or equal to 70km/h.

The results of the analyses are attached and indicate that a CHR(s) and BAL are warranted for cater for post-development turning movements at the intersection during the future year peak hours. Thus, no changes to the existing turn treatments are considered necessary to support the proposal.

CONCLUSION & RECOMMENDATIONS

The proposed Other Change has been evaluated in terms of its site access arrangements, parking provision and design, servicing arrangements, pedestrian / cyclist facilities and impact on the external road network. The main points to note are:

- the proposed Other Change scheme comprises 229 retirement lots (ie an increase of 24 lots compared to the approved development)
- the proposed access arrangement is consistent with the approved development and is considered appropriate for the revised scale of development
- the proposal provides 458 residential spaces and 69 visitor parking spaces, which complies with Council's minimum requirement.
- the proposed layout adequately caters for on-site RCV servicing, in accordance with Council's Planning Scheme
- the proposal is expected to generate up to 509 trips during the weekday commuter peak hours
- additional traffic generated by the proposal would have negligible impact on operations at the Gowrie Junction Road / Tallowood Boulevard intersection
- no changes to the existing turn treatments at the Gowrie Junction Road / Tallowood Boulevard intersection

Based on the above, it is recommended that:

- the site access crossover be of General Flare design, in accordance with the IPWEA Standard Drawing RS-102
- one additional PWD parking space be provided on-site in accordance with the NCC.
- on-site parking be designed in accordance with Council's Transport, Access and Parking Code and AS2890.1
- adequate signage and appropriate traffic calming treatments are installed throughout the internal road network to advise pedestrians and drivers of the shared arrangement and manage vehicular speeds

If you have any questions regarding the issues discussed above, please do not hesitate to contact us.

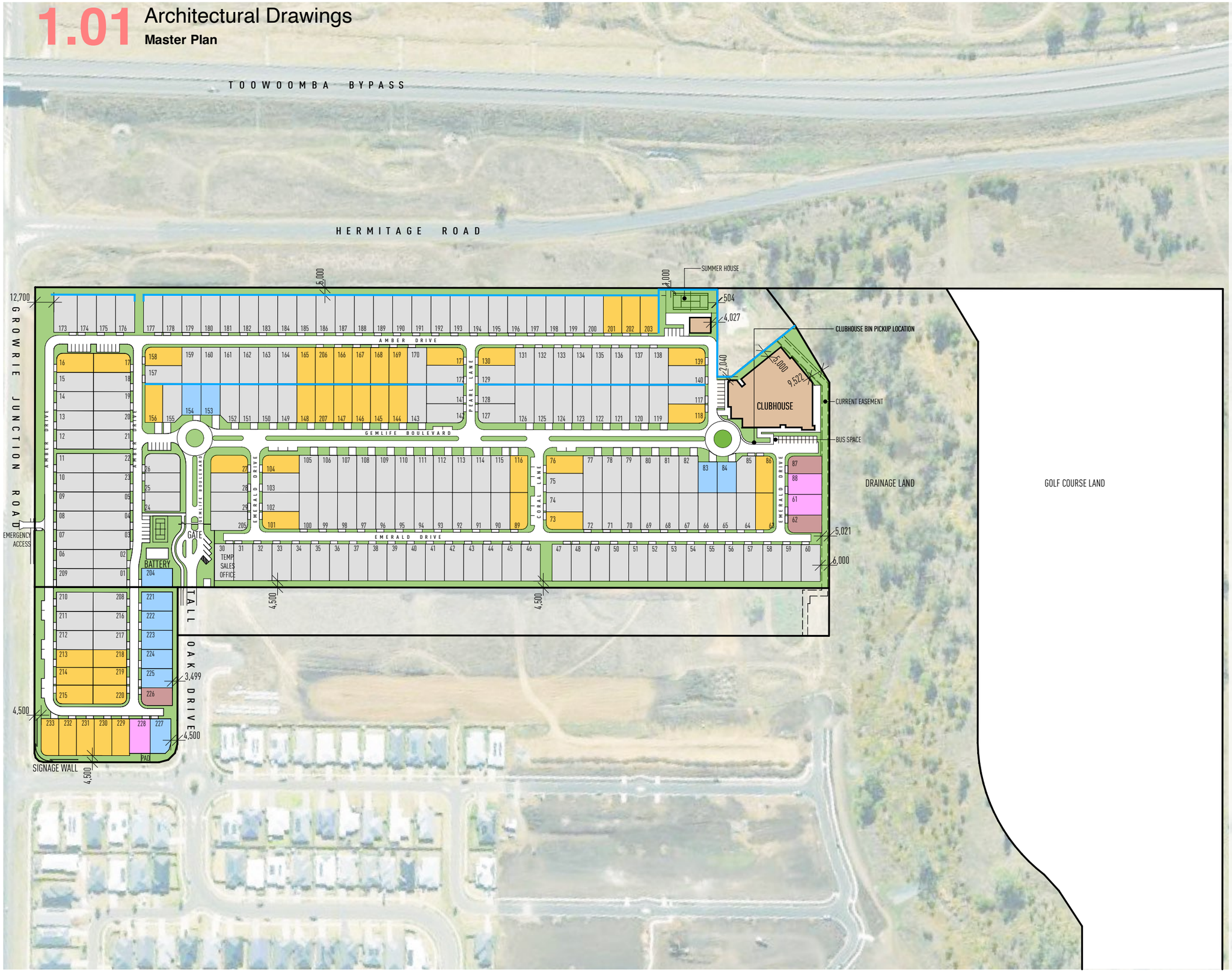
Yours sincerely,

C. Glover

Principal Engineer
(RPEQ 34450)

1.01 Architectural Drawings

Master Plan



SITE 1

TOTAL NUMBER OF LOTS	229
COMMERICAL	1500m2 (4 lots)

LOT SIZE	YIELD
13.0m x 25.0m STANDARD LOTS	175
12.0m x 25.0m SMALL LOTS	41
13.0m x 21.0m SMALL LOTS	12
12.0m x 23.0m SMALL LOTS	2
14.0m x 23.0m SMALL LOTS	3
ACOUSTIC FENCE (REFER STATEMENT OF LANDSCAPE INTENT)	

STATISTICS

VISITOR CAR PARKING	71 + 1 MINI BUS SPACE

VIRAGE ARCHITECTS

LEVEL 1 33 ELKHORN AVENUE
SURFERS PARADISE, QLD. 4217 AUSTRALIA
PO BOX 42. ISLE OF CAPRI, QLD. 4217

TEL 07 5527 5300
EMAIL INFO@JPD.COM.AU
WEB WWW.JPD.COM.AU

GemLife™

ISSUE	DATE	DESCRIPTION
Z4	16.06.26	Road updated
Z3	11.05.26	Master plan updated
Z2	27.04.26	Master plan updated
Z1	30.03.26	Master plan updated
Z	23.03.26	Master plan updated
Y	23.02.26	Master plan updated
X	10.02.26	Master plan updated

PROJECT Proposed New Development
Tall Oak Drive Cotswold QLD

CLIENT GemLife

NORTH

DRAWING TITLE BP1495/1.01

10m 50m 125m

SCALE 1:2500 @ A3

Master Plan

virage

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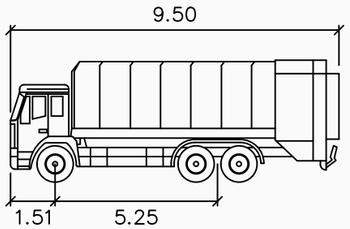
SWEPT PATH LEGEND:

- VEHICLE BODY PATH
- FRONT TYRE PATH
- REAR TYRE PATH
- CLEARANCE ENVELOPE (0.3M)

NOT FOR CONSTRUCTION



TRC Side Lift – Acco 5.0

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Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 30.1
Kerb to Kerb Radius	: 10.3

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REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CJ	264/06/26

DRAWING TITLE:	DRAWING NO:	REV:	SCALE:	APPROVED BY:
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PROJECT TITLE:	CLIENT:
GOWRIE JUNCTION ROAD, COTSWOLD HILLS	GEMLIFE

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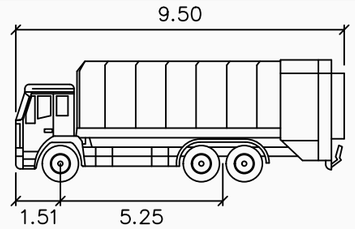

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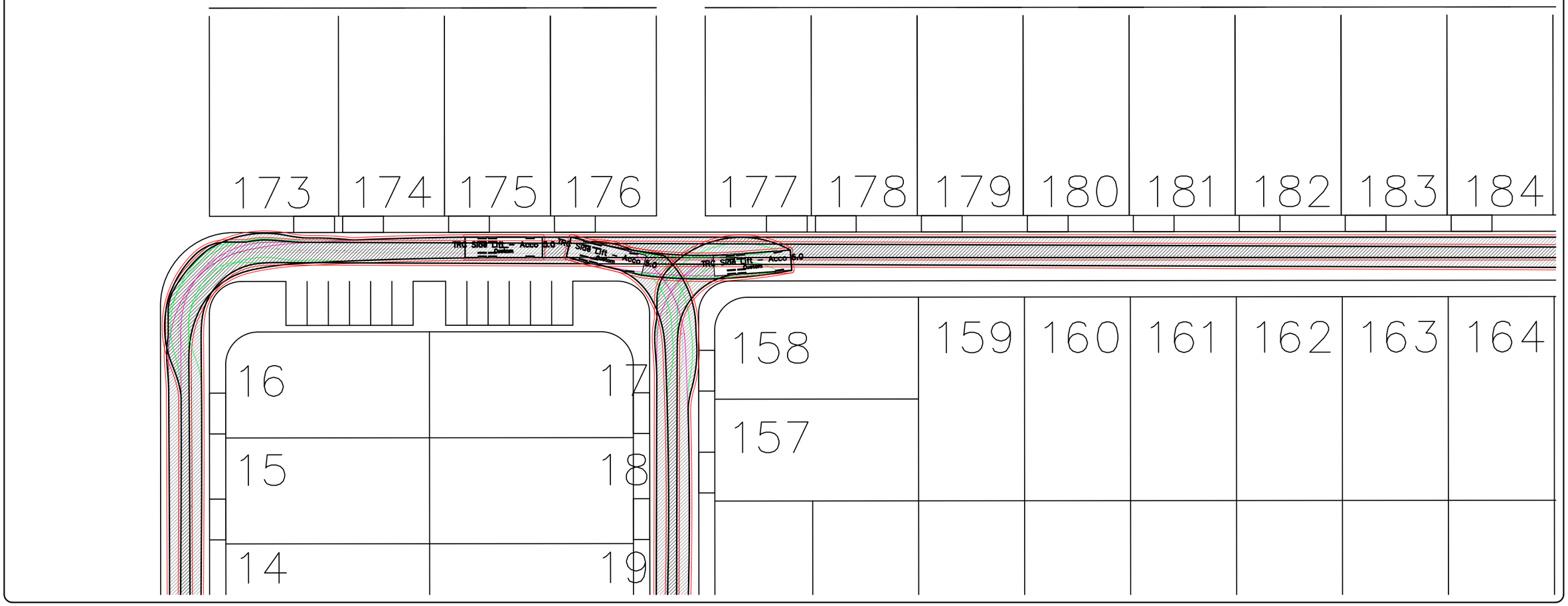

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REV	DESCRIPTION	DRN	DATE
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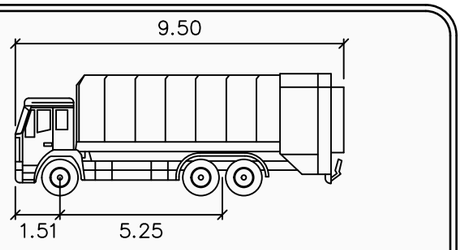

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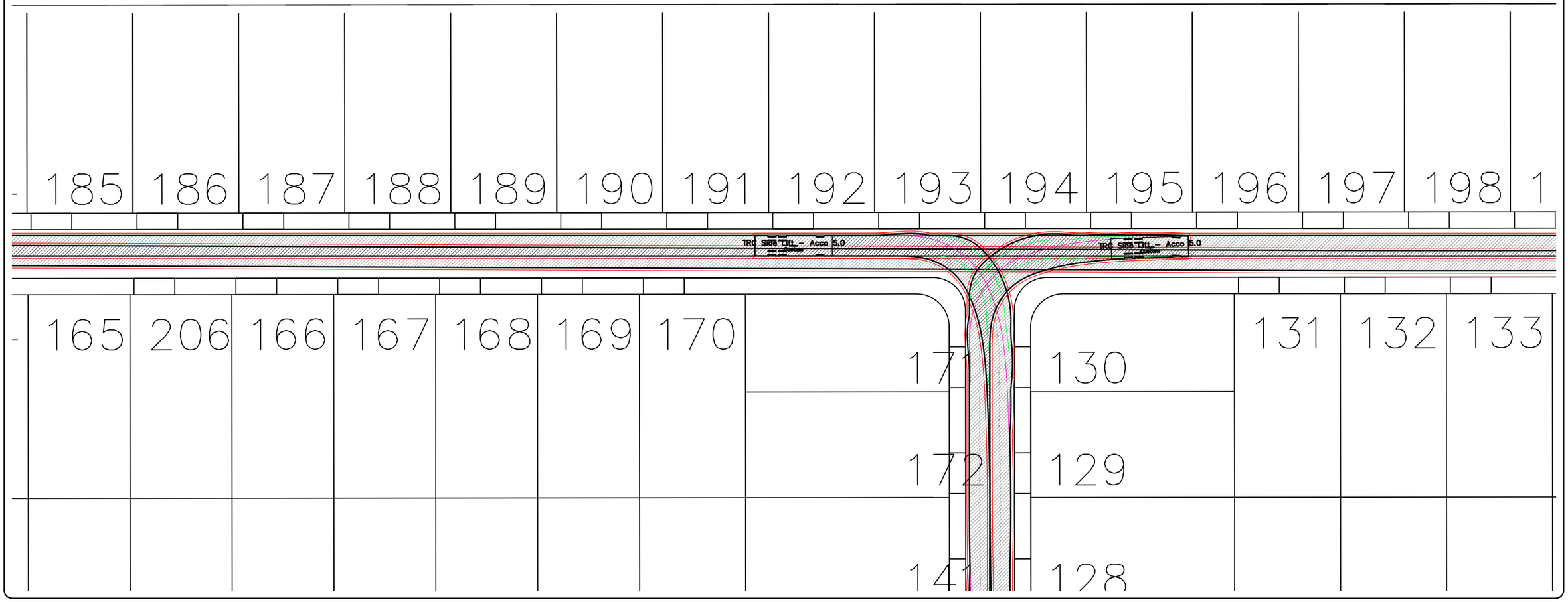

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PROJECT TITLE: GOWRIE JUNCTION ROAD, COTSWOLD HILLS	CLIENT: GEMLIFE			

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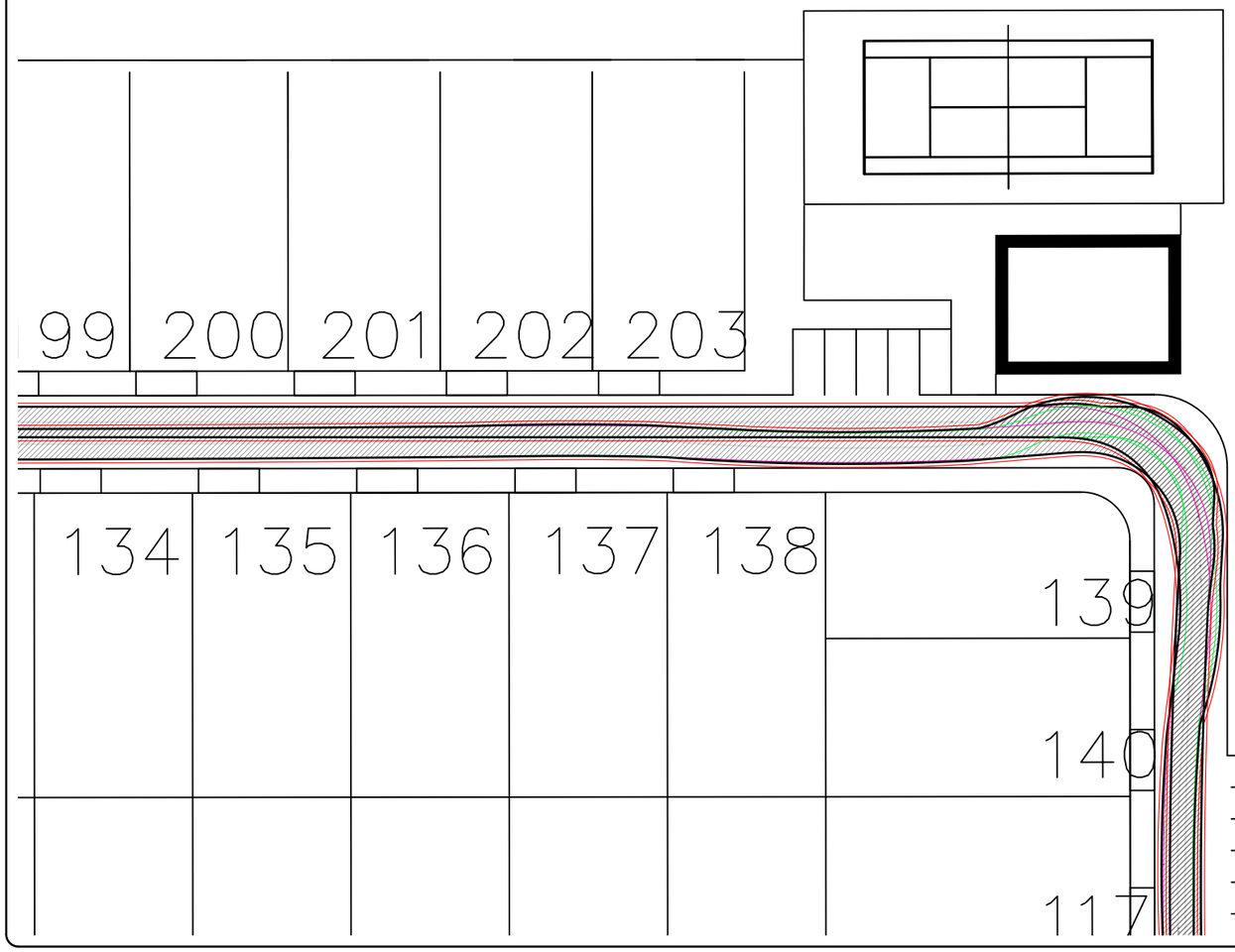

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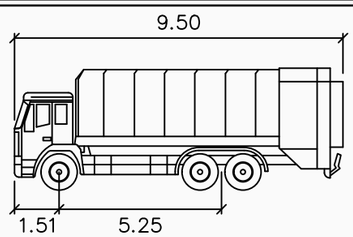

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A	INITIAL ISSUE	CJ	24/06/26

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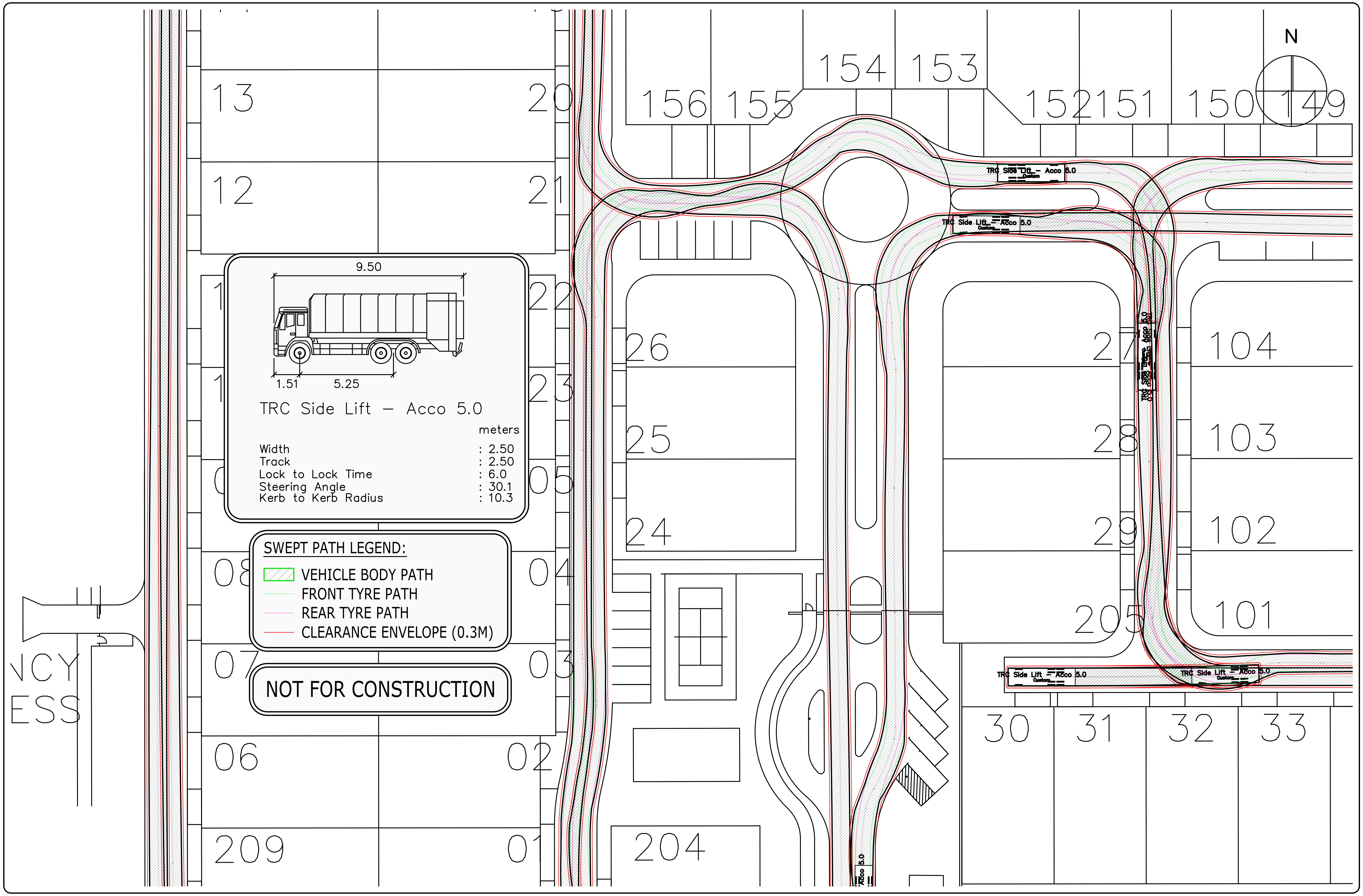

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A	INITIAL ISSUE	CJ	24/06/26

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PROJECT TITLE: GOWRIE JUNCTION ROAD, COTSWOLD HILLS

DRAWING NO: 26-601-005

REV: A

SCALE: 1:500 @ A3

CLIENT: GEMLIFE

APPROVED BY: CG (RPEQ 34450)

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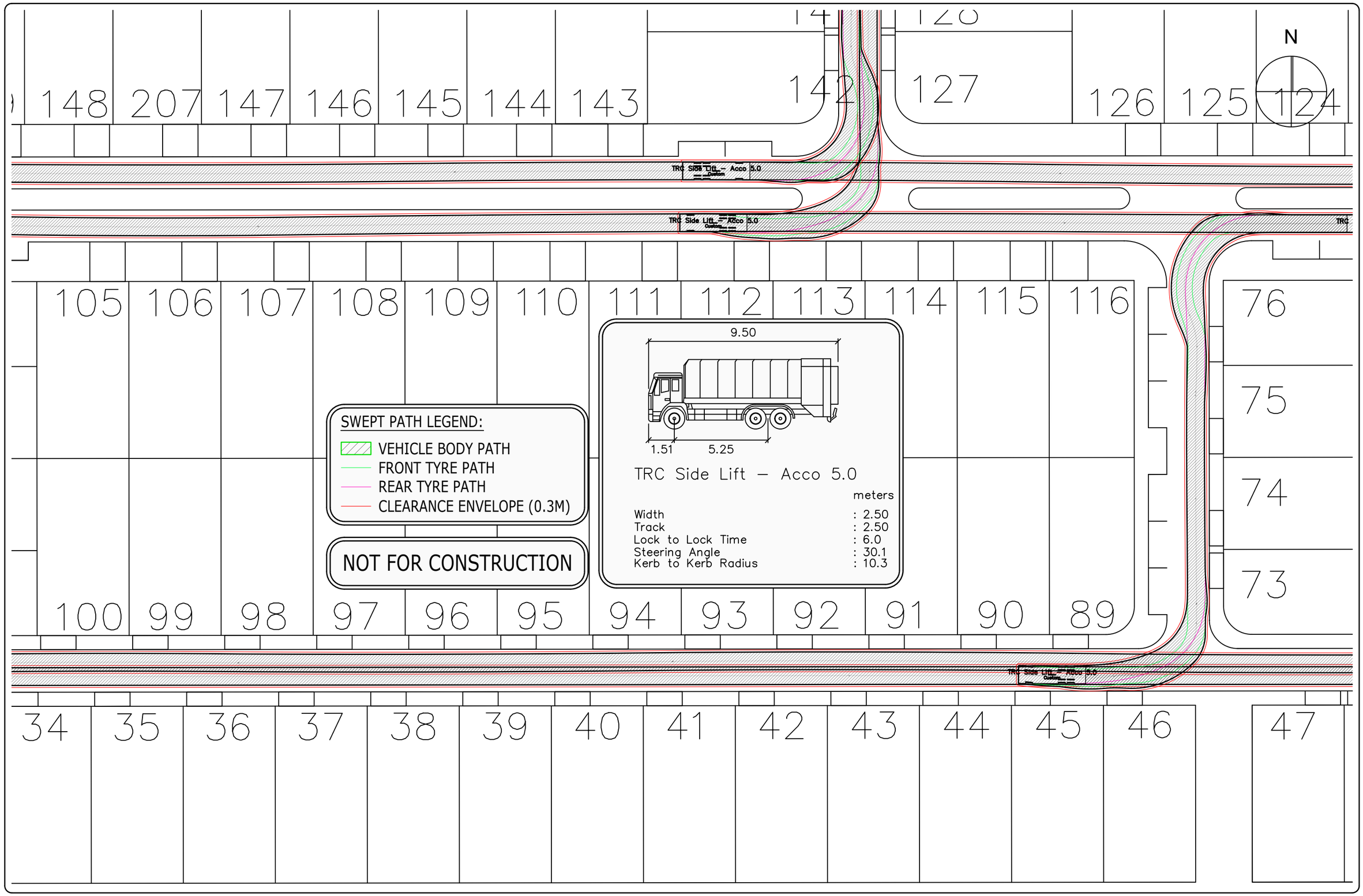

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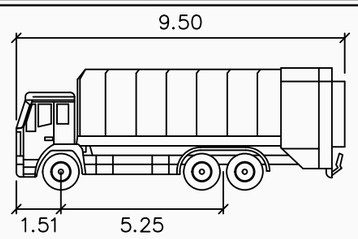
- CLEARANCE ENVELOPE (0.3M)

NOT FOR CONSTRUCTION



TRC Side Lift — Acco 5.0

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 30.1
Kerb to Kerb Radius	: 10.3

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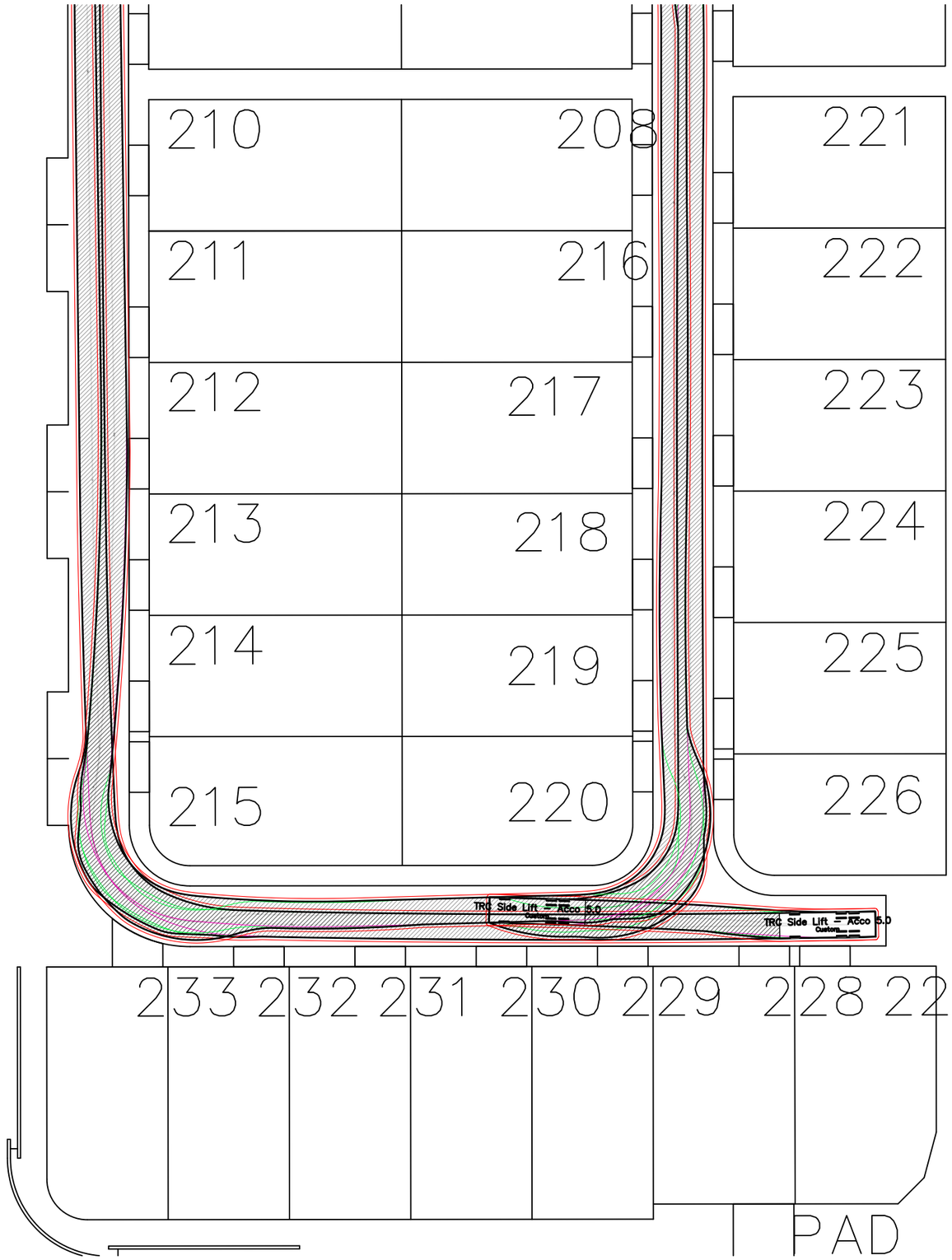
REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CJ	24/06/26

DRAWING TITLE: WCV MANOEUVRING	DRAWING NO: 26-601-007	REV: A	SCALE: 1:500 @ A3	APPROVED BY: CG (RPEQ 34450)
PROJECT TITLE: GOWRIE JUNCTION ROAD, COTSWOLD HILLS	CLIENT: GEMLIFE			

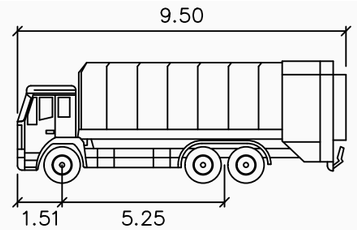
P:\2025-26\26-601 Gowrie Junction Road, Cotswold Hills Revisited\Calcs\26-601



SWEPT PATH LEGEND:

- VEHICLE BODY PATH
- FRONT TYRE PATH
- REAR TYRE PATH
- CLEARANCE ENVELOPE (0.3M)

NOT FOR CONSTRUCTION



TRC Side Lift – Acco 5.0

	meters
Width	: 2.50
Track	: 2.50
Lock to Lock Time	: 6.0
Steering Angle	: 30.1
Kerb to Kerb Radius	: 10.3

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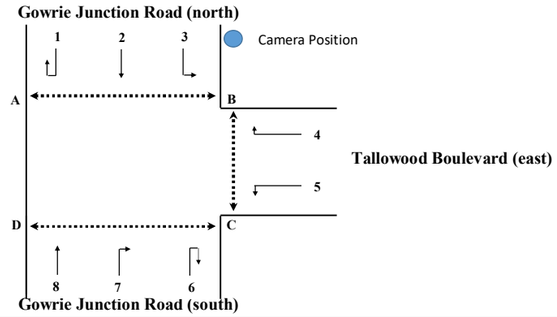
REV	DESCRIPTION	DRN	DATE
A	INITIAL ISSUE	CJ	24/06/26

DRAWING TITLE:	DRAWING NO:	REV:	SCALE:	APPROVED BY:
WCV MANOEUVRING	26-601-008	A	1:500 @ A3	CG (RPEQ 34450)
PROJECT TITLE: GOWRIE JUNCTION ROAD, COTSWOLD HILLS	CLIENT: GEMLIFE			

P:\2025-26\26-601 Gowrie Junction Road, Cotswold Hills Revisited\Calcs\26-601

AUSTRAFFIC VIDEO INTERSECTION COUNT

Site No.: 1 **Weather:** Fine
Location: Gowrie Junction Road/Tallowood Boulevard, Cotswold Hills
Day/Date: Wednesday, 20 May 2026
AM Peak: *Hour ending - 8:15 AM*
PM Peak: *Hour ending - 5:30 PM*



TIME (1/4 hr end)	Movement 1				Movement 2				Movement 3				Movement 4				Movement 5				Movement 6				Movement 7				Movement 8				Pedestrian Movements											
																																	A - B		B - A		B - C		C - B		C - D		D - C	
	Light Vehicles	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*
7:15 AM	0	0	**0**	0	57	1	**58**	0	2	0	**2**	0	2	0	**2**	0	8	0	**8**	0	0	0	**0**	0	0	1	**1**	0	9	7	**16**	0	0	0	0	0	0	0	0	0	0	0	0	0
7:30 AM	0	0	**0**	0	60	3	**63**	0	0	0	**0**	0	3	0	**3**	0	15	0	**15**	0	0	0	**0**	0	0	0	**0**	0	14	5	**19**	0	0	0	0	0	0	0	0	0	0	0	0	0
7:45 AM	0	0	**0**	0	66	3	**69**	0	1	1	**2**	0	6	0	**6**	0	22	0	**22**	0	0	0	**0**	0	2	0	**2**	0	20	2	**22**	0	0	0	0	0	0	0	0	0	0	0	0	0
8:00 AM	0	0	**0**	0	70	1	**71**	0	3	1	**4**	0	6	0	**6**	0	19	1	**20**	0	0	0	**0**	0	1	0	**1**	0	19	2	**21**	0	0	0	0	0	0	0	0	0	0	0	0	0
8:15 AM	0	0	**0**	0	39	1	**40**	0	0	0	**0**	0	5	0	**5**	0	21	0	**21**	0	0	0	**0**	0	3	0	**3**	0	24	1	**25**	0	0	0	0	0	0	0	0	0	0	0	0	0
8:30 AM	0	0	**0**	0	48	3	**51**	0	2	0	**2**	0	5	1	**6**	0	17	0	**17**	0	1	0	**1**	0	2	0	**2**	0	19	1	**20**	0	0	0	0	0	0	0	0	0	0	0	0	0
8:45 AM	0	0	**0**	0	31	1	**32**	0	3	0	**3**	0	3	0	**3**	0	10	0	**10**	0	0	0	**0**	0	6	0	**6**	0	18	0	**18**	0	0	0	0	0	0	0	0	0	0	0	0	0
9:00 AM	0	0	**0**	0	30	4	**34**	0	9	0	**9**	0	4	0	**4**	0	9	0	**9**	0	0	0	**0**	0	11	0	**11**	0	25	2	**27**	0	0	0	0	0	0	0	0	0	0	0	0	0
9:15 AM	0	0	**0**	0	23	2	**25**	0	2	1	**3**	0	6	1	**7**	0	10	0	**10**	0	0	0	**0**	0	4	0	**4**	0	13	3	**16**	0	0	0	0	0	0	0	0	0	0	0	0	0
9:30 AM	0	0	**0**	0	20	0	**20**	0	2	1	**3**	0	1	0	**1**	0	2	0	**2**	0	0	0	**0**	0	9	0	**9**	0	19	0	**19**	0	0	0	0	0	0	0	0	0	0	0	0	0
9:45 AM	0	0	**0**	0	16	0	**16**	0	1	1	**2**	0	1	0	**1**	0	7	0	**7**	0	0	0	**0**	0	3	0	**3**	0	22	3	**25**	0	0	0	0	0	0	0	0	0	0	0	0	0
10:00 AM	0	0	**0**	0	15	2	**17**	0	3	0	**3**	0	1	1	**2**	0	7	0	**7**	0	0	0	**0**	0	5	1	**6**	0	15	1	**16**	0	0	0	0	0	0	0	0	0	0	0	0	0
3 hr Total	**0**	**0**	**0**	**0**	**475**	**21**	**496**	**0**	**28**	**5**	**33**	**0**	**43**	**3**	**46**	**0**	**147**	**1**	**148**	**0**	**1**	**0**	**1**	**0**	**46**	**2**	**48**	**0**	**217**	**27**	**244**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
AM Peak	**0**	**0**	**0**	**0**	**235**	**8**	**243**	**0**	**4**	**2**	**6**	**0**	**20**	**0**	**20**	**0**	**77**	**1**	**78**	**0**	**0**	**0**	**0**	**0**	**6**	**0**	**6**	**0**	**77**	**10**	**87**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

TIME (1/4 hr end)	Movement 1				Movement 2				Movement 3				Movement 4				Movement 5				Movement 6				Movement 7				Movement 8				Pedestrian Movements											
																																	A - B		B - A		B - C		C - B		C - D		D - C	
	Light Vehicles	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Light Vehicles*	*Heavy Vehicles*	***Total***	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*	*Pedestrians*	*Cyclists*
2:45 PM	0	0	**0**	0	12	5	**17**	0	1	0	**1**	0	7	1	**8**	0	9	0	**9**	0	0	0	**0**	0	9	0	**9**	0	33	1	**34**	0	0	0	0	0	0	0	0	0	0	0	0	0
3:00 PM	0	0	**0**	0	22	3	**25**	0	1	1	**2**	0	3	0	**3**	0	4	0	**4**	0	0	0	**0**	0	4	0	**4**	0	38	3	**41**	0	0	0	0	0	0	0	0	0	0	0	0	0
3:15 PM	0	0	**0**	0	23	2	**25**	0	4	0	**4**	0	2	0	**2**	0	6	0	**6**	0	0	0	**0**	0	6	0	**6**	0	33	2	**35**	0	0	0	0	0	0	0	0	0	0	0	0	0
3:30 PM	0	0	**0**	0	30	0	**30**	0	13	0	**13**	0	3	0	**3**	0	5	0	**5**	0	0	0	**0**	0	11	0	**11**	0	44	2	**46**	0	0	0	0	0	0	0	0	0	0	0	0	0
3:45 PM	0	0	**0**	0	28	2	**30**	0	2	0	**2**	0	2	0	**2**	0	4	0	**4**	0	0	0	**0**	0	20	0	**20**	0	40	1	**41**	0	0	0	0	0	0	0	0	0	0	0	0	0
4:00 PM	0	0	**0**	0	12	2	**14**	0	5	0	**5**	0	2	0	**2**	0	5	0	**5**	0	0	0	**0**	0	16	0	**16**	0	56	0	**56**	0	0	0	0	0	0	0	0	0	0	0	0	0
4:15 PM	0	0	**0**	0	16	5	**21**	0	3	0	**3**	0	3	2	**5**	0	10	0	**10**	0	0	0	**0**	0	14	1	**15**	0	47	3	**50**	0	0	0	0	0	0	0	0	0	0	0	0	0
4:30 PM	0	0	**0**	0	18	4	**22**	0	8	0	**8**	0	4	0	**4**	0	8	0	**8**	0	0	0	**0**	0	17	0	**17**	0	61	1	**62**	0	0	0	0	0	0	0	0	0	0	0	0	0
4:45 PM	0	0	**0**	0	22	5	**27**	0	8	0	**8**	0	3	0	**3**	0	9	0	**9**	0	0	0	**0**	0	19	0	**19**	0	50	3	**53**	0	0	0	0	0	0	0	0	0	0	0	0	0
5:00 PM	0	0	**0**	0	21	2	**23**	0	4	0	**4**	0	5	0	**5**	0	9	0	**9**	0	0	0	**0**	0	16	0	**16**	0	69	0	**69**	0	0	0	0	0	0	0	0	0	0	0	0	0
5:15 PM	0	0	**0**	0	24	1	**25**	0	6	0	**6**	0	2	0	**2**	0	7	0	**7**	0	0	0	**0**	0	18	0	**18**	0	63	3	**66**	0	0	0	0	0	0	0	0	0	0	0	0	0
5:30 PM	0	0	**0**	0	21	0	**21**	0	11	0	**11**	0	2	0	**2**	0	10	0	**10**	0	0	0	**0**	0	18	0	**18**	0	62	3	**65**	0	0	0	0	0	0	0	0	0	0	0	0	0
3 hr Total	**0**	**0**	**0**	**0**	**249**	**31**	**280**	**0**	**66**	**1**	**67**	**0**	**38**	**3**	**41**	**0**	**86**	**0**	**86**	**0**	**0**	**0**	**0**	**0**	**168**	**1**	**169**	**0**	**596**	**22**	**618**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**
PM Peak	**0**	**0**	**0**	**0**	**88**	**8**	**96**	**0**	**29**	**0**	**29**	**0**	**12**	**0**	**12**	**0**	**35**	**0**	**35**	**0**	**0**	**0**	**0**	**0**	**71**	**0**	**71**	**0**	**244**	**9**	**253**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**	**0**

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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 1	**Job No.**	26-601

2026 Existing Morning Peak Hour

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Client	Innovative Planning Solutions		**Project**	wrie Junction Road, Cotswold Hills Revis	
Date	12/06/2026	**Figure**	Figure 2	**Job No.**	26-601

2026 Existing Evening Peak Hour

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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 3	**Job No.**	26-601

2029 Pre-Development Morning Peak Hour

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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 4	**Job No.**	26-601

2029 Pre-Development Evening Peak Hour

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Client	Innovative Planning Solutions	**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 5
Job No.	26-601		

2039 Pre-Development Morning Peak Hour

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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 6	**Job No.**	26-601

2039 Pre-Development Evening Peak Hour

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Client	Innovative Planning Solutions	**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 7
Job No.	26-601		

Development Traffic Distribution - Morning Peak Hour

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Client	Innovative Planning Solutions	**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 8
Job No.	26-601		

Development Traffic Distribution - Evening Peak Hour

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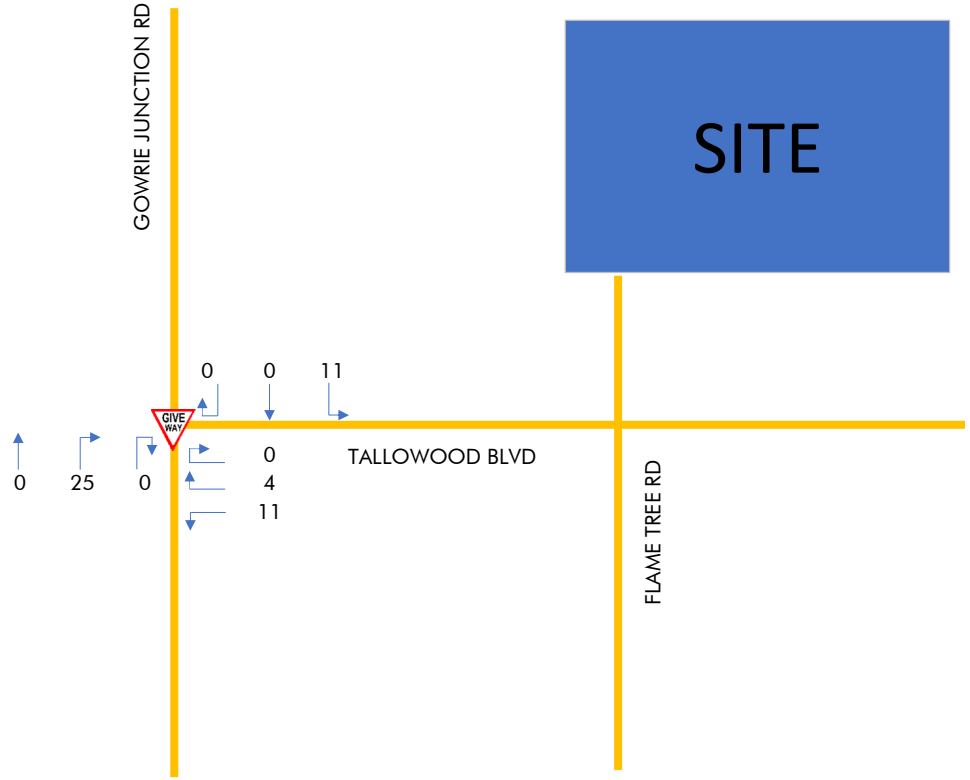
Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 9	**Job No.**	26-601

Development Traffic Generation - Morning Peak Hour



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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 10	**Job No.**	26-601

Development Traffic Generation - Evening Peak Hour

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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 11	**Job No.**	26-601

2029 Post-Development Morning Peak Hour

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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 12	**Job No.**	26-601

2029 Post-Development Evening Peak Hour

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Client	Innovative Planning Solutions			**Project**	wrie Junction Road, Cotswold Hills Revis
Date	12/06/2026	**Figure**	Figure 13	**Job No.**	26-601

2039 Post-Development Morning Peak Hour

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Client	Innovative Planning Solutions		**Project**	wrie Junction Road, Cotswold Hills Revis	
Date	12/06/2026	**Figure**	Figure 14	**Job No.**	26-601

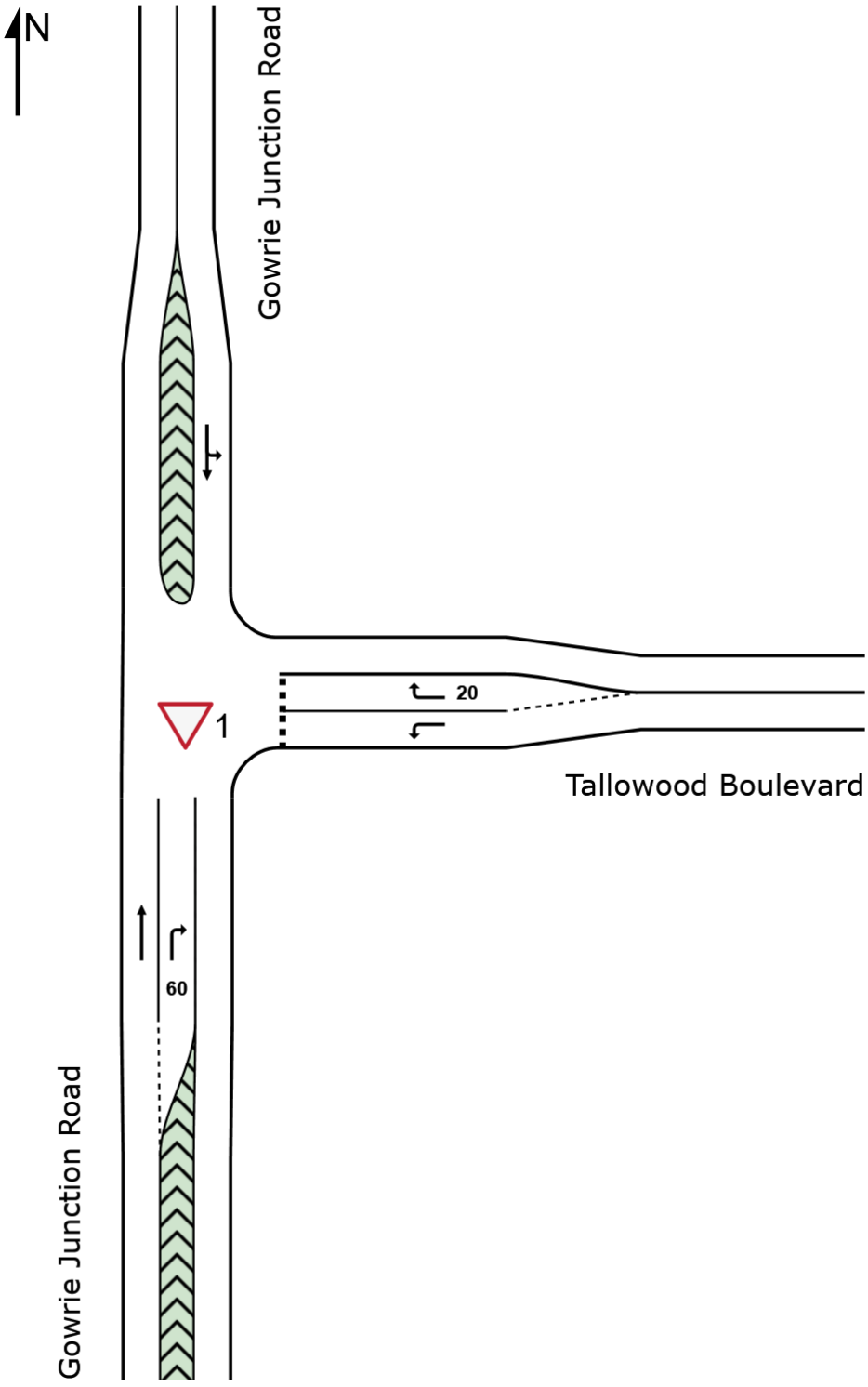
2039 Post-Development Evening Peak Hour

SITE LAYOUT

Site: [1] 2026AM (Morning)

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

Layout pictures are schematic functional drawings reflecting input data. They are not design drawings.



MOVEMENT SUMMARY

Site: [1] 2026AM (Morning)
Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	98	4.1	98	4.1	0.051	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	7	4.1	7	4.1	0.005	6.5	LOS A	0.0	0.2	0.36	0.55	0.36	51.6
Approach			104	4.1	104	4.1	0.051	0.4	NA	0.0	0.2	0.02	0.04	0.02	59.4
East: Tallowood Boulevard															
4	L2	All MCs	87	4.1	87	4.1	0.071	6.6	LOS A	0.3	2.0	0.35	0.60	0.35	51.7
6	R2	All MCs	22	4.1	22	4.1	0.031	8.1	LOS A	0.1	0.8	0.46	0.65	0.46	50.8
Approach			110	4.1	110	4.1	0.071	6.9	LOS A	0.3	2.0	0.37	0.61	0.37	51.5
North: Gowrie Junction Road															
7	L2	All MCs	7	4.1	7	4.1	0.147	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.1
8	T1	All MCs	272	4.1	272	4.1	0.147	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach			279	4.1	279	4.1	0.147	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles			493	4.1	493	4.1	0.147	1.7	NA	0.3	2.0	0.09	0.15	0.09	57.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [2] 2029AM (Morning)
Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	101	4.1	101	4.1	0.053	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	7	4.1	7	4.1	0.005	6.5	LOS A	0.0	0.2	0.37	0.55	0.37	51.5
Approach			108	4.1	108	4.1	0.053	0.4	NA	0.0	0.2	0.02	0.03	0.02	59.4
East: Tallowood Boulevard															
4	L2	All MCs	90	4.1	90	4.1	0.073	6.6	LOS A	0.3	2.1	0.36	0.60	0.36	51.6
6	R2	All MCs	24	4.1	24	4.1	0.033	8.2	LOS A	0.1	0.9	0.47	0.66	0.47	50.7
Approach			113	4.1	113	4.1	0.073	6.9	LOS A	0.3	2.1	0.38	0.61	0.38	51.4
North: Gowrie Junction Road															
7	L2	All MCs	7	4.1	7	4.1	0.151	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.1
8	T1	All MCs	280	4.1	280	4.1	0.151	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach			287	4.1	287	4.1	0.151	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles			508	4.1	508	4.1	0.151	1.7	NA	0.3	2.1	0.09	0.15	0.09	57.6

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [3] 2029AM WD (Morning)

Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	101	4.1	101	4.1	0.053	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	9	4.1	9	4.1	0.007	6.5	LOS A	0.0	0.2	0.37	0.55	0.37	51.5
Approach			110	4.1	110	4.1	0.053	0.5	NA	0.0	0.2	0.03	0.05	0.03	59.2
East: Tallowood Boulevard															
4	L2	All MCs	120	4.1	120	4.1	0.098	6.6	LOS A	0.4	2.8	0.37	0.61	0.37	51.6
6	R2	All MCs	30	4.1	30	4.1	0.042	8.2	LOS A	0.2	1.1	0.47	0.67	0.47	50.6
Approach			150	4.1	150	4.1	0.098	7.0	LOS A	0.4	2.8	0.39	0.62	0.39	51.4
North: Gowrie Junction Road															
7	L2	All MCs	9	4.1	9	4.1	0.153	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.1
8	T1	All MCs	280	4.1	280	4.1	0.153	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.8
Approach			289	4.1	289	4.1	0.153	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.7
All Vehicles			549	4.1	549	4.1	0.153	2.1	NA	0.4	2.8	0.11	0.19	0.11	57.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [4] 2039AM (Morning)
Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	111	4.1	111	4.1	0.058	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	8	4.1	8	4.1	0.006	6.6	LOS A	0.0	0.2	0.39	0.56	0.39	51.5
Approach			119	4.1	119	4.1	0.058	0.4	NA	0.0	0.2	0.03	0.04	0.03	59.3
East: Tallowood Boulevard															
4	L2	All MCs	100	4.1	100	4.1	0.084	6.8	LOS A	0.3	2.4	0.38	0.62	0.38	51.6
6	R2	All MCs	26	4.1	26	4.1	0.038	8.6	LOS A	0.1	1.0	0.49	0.68	0.49	50.4
Approach			126	4.1	126	4.1	0.084	7.1	LOS A	0.3	2.4	0.41	0.63	0.41	51.3
North: Gowrie Junction Road															
7	L2	All MCs	8	4.1	8	4.1	0.168	5.6	LOS A	0.0	0.0	0.00	0.01	0.00	57.1
8	T1	All MCs	311	4.1	311	4.1	0.168	0.0	LOS A	0.0	0.0	0.00	0.01	0.00	59.8
Approach			318	4.1	318	4.1	0.168	0.2	NA	0.0	0.0	0.00	0.01	0.00	59.7
All Vehicles			563	4.1	563	4.1	0.168	1.8	NA	0.3	2.4	0.10	0.16	0.10	57.5

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [5] 2039AM WD (Morning)

Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	111	4.1	111	4.1	0.058	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	60.0
3	R2	All MCs	10	4.1	10	4.1	0.008	6.6	LOS A	0.0	0.2	0.39	0.56	0.39	51.5
Approach			121	4.1	121	4.1	0.058	0.6	NA	0.0	0.2	0.03	0.05	0.03	59.2
East: Tallowood Boulevard															
4	L2	All MCs	129	4.1	129	4.1	0.108	6.8	LOS A	0.4	3.2	0.39	0.62	0.39	51.5
6	R2	All MCs	33	4.1	33	4.1	0.048	8.6	LOS A	0.2	1.3	0.50	0.69	0.50	50.4
Approach			161	4.1	161	4.1	0.108	7.2	LOS A	0.4	3.2	0.41	0.64	0.41	51.3
North: Gowrie Junction Road															
7	L2	All MCs	10	4.1	10	4.1	0.169	5.6	LOS A	0.0	0.0	0.00	0.02	0.00	57.1
8	T1	All MCs	311	4.1	311	4.1	0.169	0.0	LOS A	0.0	0.0	0.00	0.02	0.00	59.7
Approach			321	4.1	321	4.1	0.169	0.2	NA	0.0	0.0	0.00	0.02	0.00	59.7
All Vehicles			603	4.1	603	4.1	0.169	2.1	NA	0.4	3.2	0.12	0.19	0.12	57.1

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [6] 2026PM (Evening)
Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	256	3.4	256	3.4	0.134	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	72	3.4	72	3.4	0.046	5.9	LOS A	0.2	1.5	0.24	0.55	0.24	52.0
Approach			328	3.4	328	3.4	0.134	1.3	NA	0.2	1.5	0.05	0.12	0.05	58.0
East: Tallowood Boulevard															
4	L2	All MCs	35	3.4	35	3.4	0.024	5.9	LOS A	0.1	0.7	0.19	0.54	0.19	52.2
6	R2	All MCs	12	3.4	12	3.4	0.018	8.4	LOS A	0.1	0.5	0.48	0.65	0.48	50.5
Approach			48	3.4	48	3.4	0.024	6.5	LOS A	0.1	0.7	0.26	0.57	0.26	51.7
North: Gowrie Junction Road															
7	L2	All MCs	29	3.4	29	3.4	0.067	5.6	LOS A	0.0	0.0	0.00	0.14	0.00	56.2
8	T1	All MCs	97	3.4	97	3.4	0.067	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	58.7
Approach			127	3.4	127	3.4	0.067	1.3	NA	0.0	0.0	0.00	0.14	0.00	58.1
All Vehicles			502	3.4	502	3.4	0.134	1.8	NA	0.2	1.5	0.06	0.17	0.06	57.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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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Project: Not Saved

MOVEMENT SUMMARY

Site: [7] 2029PM (Evening)
Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	264	3.4	264	3.4	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	74	3.4	74	3.4	0.047	6.0	LOS A	0.2	1.5	0.24	0.55	0.24	51.9
Approach			338	3.4	338	3.4	0.138	1.3	NA	0.2	1.5	0.05	0.12	0.05	58.0
East: Tallowood Boulevard															
4	L2	All MCs	36	3.4	36	3.4	0.025	5.9	LOS A	0.1	0.7	0.19	0.54	0.19	52.2
6	R2	All MCs	12	3.4	12	3.4	0.018	8.6	LOS A	0.1	0.5	0.49	0.66	0.49	50.4
Approach			49	3.4	49	3.4	0.025	6.5	LOS A	0.1	0.7	0.27	0.57	0.27	51.7
North: Gowrie Junction Road															
7	L2	All MCs	30	3.4	30	3.4	0.069	5.6	LOS A	0.0	0.0	0.00	0.14	0.00	56.2
8	T1	All MCs	100	3.4	100	3.4	0.069	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	58.7
Approach			131	3.4	131	3.4	0.069	1.3	NA	0.0	0.0	0.00	0.14	0.00	58.1
All Vehicles			517	3.4	517	3.4	0.138	1.8	NA	0.2	1.5	0.06	0.17	0.06	57.4

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [8] 2029PM WD (Evening)
Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	264	3.4	264	3.4	0.138	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	98	3.4	98	3.4	0.063	6.0	LOS A	0.3	2.1	0.26	0.55	0.26	51.9
Approach			362	3.4	362	3.4	0.138	1.6	NA	0.3	2.1	0.07	0.15	0.07	57.5
East: Tallowood Boulevard															
4	L2	All MCs	48	3.4	48	3.4	0.032	5.9	LOS A	0.1	0.9	0.19	0.54	0.19	52.2
6	R2	All MCs	16	3.4	16	3.4	0.025	8.8	LOS A	0.1	0.7	0.51	0.68	0.51	50.2
Approach			64	3.4	64	3.4	0.032	6.6	LOS A	0.1	0.9	0.27	0.57	0.27	51.7
North: Gowrie Junction Road															
7	L2	All MCs	40	3.4	40	3.4	0.075	5.6	LOS A	0.0	0.0	0.00	0.17	0.00	55.9
8	T1	All MCs	100	3.4	100	3.4	0.075	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	58.4
Approach			141	3.4	141	3.4	0.075	1.6	NA	0.0	0.0	0.00	0.17	0.00	57.7
All Vehicles			567	3.4	567	3.4	0.138	2.2	NA	0.3	2.1	0.07	0.20	0.07	56.8

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [9] 2039PM (Evening)
Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	291	3.4	291	3.4	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	82	3.4	82	3.4	0.053	6.0	LOS A	0.2	1.7	0.26	0.55	0.26	51.9
Approach			373	3.4	373	3.4	0.153	1.3	NA	0.2	1.7	0.06	0.12	0.06	58.0
East: Tallowood Boulevard															
4	L2	All MCs	40	3.4	40	3.4	0.028	5.9	LOS A	0.1	0.8	0.20	0.54	0.20	52.1
6	R2	All MCs	14	3.4	14	3.4	0.023	9.0	LOS A	0.1	0.6	0.52	0.68	0.52	50.1
Approach			55	3.4	55	3.4	0.028	6.7	LOS A	0.1	0.8	0.28	0.58	0.28	51.6
North: Gowrie Junction Road															
7	L2	All MCs	33	3.4	33	3.4	0.076	5.6	LOS A	0.0	0.0	0.00	0.14	0.00	56.2
8	T1	All MCs	110	3.4	110	3.4	0.076	0.0	LOS A	0.0	0.0	0.00	0.14	0.00	58.7
Approach			144	3.4	144	3.4	0.076	1.3	NA	0.0	0.0	0.00	0.14	0.00	58.1
All Vehicles			572	3.4	572	3.4	0.153	1.9	NA	0.2	1.7	0.06	0.17	0.06	57.3

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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: [10] 2039PM WD (Evening)

Output produced by SIDRA INTERSECTION Version: 11.0.2

Gowrie Junction Road / Tallowood Boulevard
Give-Way (Two-Way)
Site Scenario: 1 | Local Volumes

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. Qued	Eff. Stop Rate	Number of Cycles to Depart	Aver. Speed km/h
South: Gowrie Junction Road															
2	T1	All MCs	291	3.4	291	3.4	0.153	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	59.9
3	R2	All MCs	105	3.4	105	3.4	0.069	6.0	LOS A	0.3	2.3	0.27	0.56	0.27	51.9
Approach			397	3.4	397	3.4	0.153	1.6	NA	0.3	2.3	0.07	0.15	0.07	57.6
East: Tallowood Boulevard															
4	L2	All MCs	52	3.4	52	3.4	0.035	5.9	LOS A	0.1	1.0	0.20	0.54	0.20	52.1
6	R2	All MCs	17	3.4	17	3.4	0.028	9.3	LOS A	0.1	0.7	0.53	0.70	0.53	49.9
Approach			69	3.4	69	3.4	0.035	6.8	LOS A	0.1	1.0	0.28	0.58	0.28	51.6
North: Gowrie Junction Road															
7	L2	All MCs	44	3.4	44	3.4	0.082	5.6	LOS A	0.0	0.0	0.00	0.17	0.00	55.9
8	T1	All MCs	110	3.4	110	3.4	0.082	0.0	LOS A	0.0	0.0	0.00	0.17	0.00	58.5
Approach			154	3.4	154	3.4	0.082	1.6	NA	0.0	0.0	0.00	0.17	0.00	57.7
All Vehicles			619	3.4	619	3.4	0.153	2.2	NA	0.3	2.3	0.08	0.20	0.08	56.9

Site Level of Service (LOS) Method: Delay (SIDRA). Site LOS Method is specified in the Parameter Settings dialog (Options 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.

AUSTROADS / DTMR

TURN WARRANT ASSESSMENT TOOL

Version 0.1: 10 Feb 2023

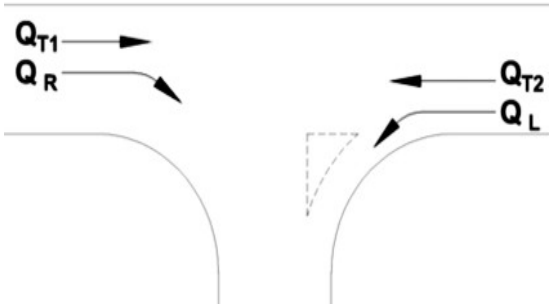
Job Number:	26-601
Date:	12/6/26
Initials:	CG

Assessment Year:	2039
Scenario:	Post

Design Domain:	NDD
Design Speed:	70
Lane Count:	2L2W
Splitter Island:	No

Input Turning Volumes (vph):

AM	PM
99	288
9	104



AM	PM
277	109
9	43

2039 POST DEVELOPMENT				
Design Vols (vph):	Left Turn		Right Turn	
	Q_M	Q_L	Q_M	Q_R
AM:	277	9	385	9
PM:	109	43	440	104

Treatment	BAL	CHR(S)