Transport Assessment

State Significant Development Application at Oakdale East Industrial Estate (SSD-37486043)

Concept Plan Approval, Precinct 1 Expansion & Precinct 3 State Significant Development Application
7/06/2022
Ref: 1546r01v04

Info@asongroup.com.au
+61 2 9083 6601
Suite 17.02, Level 17,
1 Castlereagh Street,
Sydney, NSW 2000

Document Control

Project No	P1546
Project	Concept Plan Approval, Precinct 1 Expansion & Precinct 3 Site Specific Development Application – Oakdale East Industrial Estate
Client	Goodman Property Services (Aust) Pty Ltd
File Reference	P1546r01v04 SSDA TA_OEE Concept Plan, Precinct 1 Expansion & Precinct 3.docx

Revision History

Revision No.	Date	Details	Author	Approved by
-	01/03/2022	Draft	O. Hashmi E. Ye	Ali Rasouli
1	12/04/2022	Issue I	O. Hashmi E. Ye	Ali Rasouli
2	19/04/2022	Issue II	E. Ye	E. Ye
3	24/05/2022	Issue III	E. Ye	E. Ye
4	07/06/2022	Issue IV	E. Ye	E. Ye

This document has been prepared for the sole use of the Client and for a specific purpose, as expressly stated in the document. Ason Group does not accept any responsibility for any use of or reliance on the contents on this report by any third party. This document has been prepared based on the Client's description of its requirements, information provided by the Client and other third parties.

contents

1	**Executive Summary**	**1**
1.1	Project Scope	1
1.2	Executive Summary	2
1.3	Liaison Process	3
2	**Planning History and Context**	**4**
2.1	OEE DCP 2022	4
2.2	Development Application No. 93.1/2019	4
2.3	Oakdale South Estate	5
2.4	Oakdale East Concept Plan	5
3	**Introduction**	**6**
3.1	Overview	6
3.2	Key References	6
3.3	Response to Secretary's Environmental Assessment Report	8
4	**Description of the Proposal**	**10**
4.1	SSD Plans	10
4.2	Proposed SSD Description	11
4.3	Vehicular Access Strategy	11
5	**Existing Conditions**	**13**
5.1	Strategic Context	13
5.2	Existing Road Network	14
5.3	Future Road Network	16
5.4	Existing Intersection Operation	18
5.5	Truck Routes	21
5.6	Public Transport Services	22
5.7	Active Transport	24
6	**Parking Provisions**	**25**
6.1	Car Parking	25
6.2	SSD Parking Assessment	25
6.3	Accessible Parking	26
6.4	Bicycle Parking	27
7	**Traffic Assessment**	**29**
7.1	Background	29
7.2	Trip Generation Rate	29
7.3	Traffic Generation	30
7.4	Cumulative Traffic Impacts	31
7.5	Traffic Distribution	32

7.6 Future Year Models 34
7.7 Modelling Parameters 38
7.8 Modelling Outcomes 39
7.9 Sensitivity Analysis 44
8 Preliminary Construction Traffic Management Plan 45
8.1 Potential Haulage Routes 45
8.2 Proposed Working Hours 45
8.3 Anticipated Construction Program Traffic Generation 46
8.4 Construction Mitigation Measures 46
9 Design Commentary 47
9.1 Relevant Design Standards 47
9.2 Design Vehicles 47
9.3 Access Design 47
9.4 Commercial Hardstand Area 47
9.5 Estate Roads 48
9.6 Car Parking Design 49
9.7 Fire Service Appliance Circulation 49
10 Summary and Conclusions 51
10.1 Key Findings 51
10.2 Conclusions 52

contents continued

Figures

Figure 1: Land to Which this DCP Applies – Shown Blue (Source: OEE DCP, 2022) 4
Figure 2: Proposed SSD Site Plan for the Precinct 1 Expansion 10
Figure 3: Proposed SSD Site Plan for Precinct 3 10
Figure 4: Proposed Vehicular Access Strategy (for Precinct 1 Expansion) 12
Figure 5: Proposed Vehicular Access Strategy (for Precinct 3) 12
Figure 6: BWSEA Precinct Plan (Source: GHD (June 2013)) 13
Figure 7: Site Location and Road Hierarchy 15
Figure 8: Archbold Road Concept (Source: RMS (May 2017)) 16
Figure 9: Proposed Southern Link Road Network and Alignment (Source: AECOM (May 2014)) 17
Figure 10: Proposed Southern Link Road Network and Alignment with Respect to the Site Plan (Source: SBA Architects) 18
Figure 11: Traffic demand – Existing volumes 19
Figure 12: Restricted Vehicle Access Routes (Source: RMS) 21
Figure 13: Existing Public Transport and Cycle Links 23
Figure 14: Existing Footpath Provision at Estate Road 01 24
Figure 15: OEE Traffic Movements prior to SLR Construction 33
Figure 16: Traffic Demand - 2026 Base Case 34
Figure 17: Traffic Demand - 2026 Project Case 35
Figure 18: Traffic Demand - 2031 Project Case 36
Figure 19: Traffic Demand - 2036 Project Case 37
Figure 20: Old Wallgrove Road / Lenore Drive intersection Mitigation 41
Figure 21: Old Wallgrove Road / Millner Avenue intersection Mitigation 41
Figure 22: Potential Construction Travel Route to / from the Site 45
Figure 23: Specific Travel Route to / from the Site – Prior to Potential Future SLR Connection 48
Figure 24: Heavy Vehicle Circulation Route within Precinct 1 – Design for 20m AV 49
Figure 25: Heavy Vehicle Circulation Route within Precinct 3 50

Tables

Table 1 Key Findings of this TA 2
Table 2 Response to SEARs 8
Table 3 Proposal Yield 11
Table 4 SIDRA Level of Service Criteria 20
Table 5 SIDRA Results – 2021 Existing 20
Table 6 RMS Approved Restricted Vehicle Access Routes 21
Table 7 Car Parking Rates 25
Table 8 Car Parking Requirement and Provision for Precinct 1 25
Table 9 Car Parking Requirement and Provision for Precinct 3 26
Table 10 Accesible Car Parking Requirements and Provision 26
Table 11 EoT Facilities Requirements 27
Table 12 Bicycle Parking Requirements 27
Table 13 EoT Facilities Requirements 27
Table 14 Oakdale East Estate Overall Trip Generation – Precincts 1 to 5 31
Table 15 Oakdale East Estate Trip Generation by Precinct 31
Table 16 Nearby Developments Trip Generation 31
Table 17 Intersections Assessed in sidra 34
Table 18 Modelling Scenarios 38
Table 19 SIDRA Results – 2021 Existing 39
Table 20 SIDRA Results – 2026 Base Case 39
Table 21 SIDRA Results – 2026 Project Case 40
Table 22 SIDRA Results – Scenario 3 (2026 Project Case + Mitigation) 42

Table 23 SIDRA Results – Scenario 6 (2036 Project Case) 42
Table 24 SIDRA Results – Scenario 6 (2036 Project Case) 43
Table 25 Oakdale East Estate Trip Generation by Precinct 44
Table 26 SIDRA Results – Scenario 6A (2036 Project Case) Sensitivity Analysis 44
Table 27 Traffic Generation for The Entire Oakdale East Estate 51

APPENDICES

Appendix A. Old Wallgrove Road / Millner Avenue Concept Plan

Appendix B. SIDRA Movement Summaries (0.18/0.16 trip rates)

Appendix C. SIDRA Movement Summaries (0.23/0.24 trip rates)

Appendix D. Swept Path Analysis and Design Commentary

Glossary

Acronym	Description
CC	Construction Certificate
Council	Fairfield City Council
DA	Development Application
DCP	Development Control Plan
DPE	Department of Planning and Environment
GFA	Gross Floor Area
HRV	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
LEP	Local Environmental Plan
LGA	Local Government Area
RMS Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
TDT 2013/04a	TfNSW Technical Direction, Guide to Traffic Generating Developments – Updated traffic surveys, August 2013
TfNSW	Transport for New South Wales
TA	Transport Assessment
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Executive Summary

1.1 Project Scope

This application seeks approval for a Concept Plan across Goodman's Oakdale East Industrial Estate ("Estate") and approval for Stage 2 of works at the Estate. The site is located within the Fairfield Local Government Area and is legally described as Lot 102 and Lot 103 in DP1268366. Stage 1 of the works were completed in September 2021 and included Precinct 1 building and infrastructure works as indicated on the proposed Estate Masterplan. The Concept Plan is proposed to set the development controls for the Estate which will override the Development Control Plan ("DCP") that is currently with Department of Planning and Environment (DPE) for consideration. This DCP has been lodged with DPE to support the Rehabilitation Development Application that is currently with Fairfield City Council for consideration. The Rehabilitation Development Application seeks approval for works only to Precinct 1 expansion, Precincts 2, 3 and 4 and includes the following (this application excludes works to Precinct 5):

- Cut and fill works to provide bulk pad levels;
- Provision of Estate stormwater infrastructure including completion of detention basins and swales;
- Removal of 2.58 ha of vegetation;
- Demolition of the Brick Factory and rehabilitation of the surrounding land;
- Installation of 1 x retaining wall on the eastern portion of Precinct 3; and
- Consideration for Aboriginal Heritage and Geotech assessments.

The proposed Concept Plan approval seeks approval for:

- The proposed Estate masterplan allowing development of 303,330m^2 of GLA;
- 24/7 hours of operation;
- Building Height of 43m for Precinct 3 (excluding roof-top plant and solar) and 15m (excluding roof-top plant and solar) to the remainder of the Estate;
- Estate subdivision;
- Estate wide planning controls as shown in the EIS
- Construction hours 7 am to 6 pm Monday to Friday, 8 am to 1 pm Saturday
- Geotech and Aboriginal heritage considerations for Precinct 5

The Stage 2 works considered under this application include the following:

- Cut and fill works to Precinct 5 only to provide bulk pad level;
- Completion of lead-in infrastructure works including intersection upgrades at Millner Ave / Old Wallgrove Road and Lenore Drive / Old Wallgrove Road
- Clearing of 0.44 ha of native vegetation
- Completion of the internal road network (excl. the proposed private driveway providing access to Precinct 5 but including all other roads shown on the proposed masterplan);
- Reticulation of services infrastructure to provide serviced development pads to all precincts;
- Completion of retaining walls across the entire Estate;
- Completion of Building works to Precinct 1 expansion and Precinct 3 including any ancillary on lot infrastructure and detailed civil works required;

1.1.1 Precinct 1 Expansion

- Construction, operation, fit-out and use approval of a warehouse with ancillary office spanning 3,122 m^2 of GLA;

- 24/7 hours of operation;
- 15m building height (excluding solar and rooftop plant).

1.1.2 Precinct 3 Proposed Works

- Construction, operation, fit-out and use approval of a temperature controlled automated distribution centre;
- Total GLA of 96,810 m^2 including 10,009 m^2 of which is for future expansion;
- In addition to this, 38,050m^2 of mezzanines will be installed within the premises;
- 43m building height (excluding solar and rooftop plant)
- Storage of dangerous goods and flammable goods that exceed the SEPP33 threshold; and
- 24/7 hours of operation.

1.2 Executive Summary

As it relates to this report, the following presents the key findings of this TA:

TABLE 1 KEY FINDINGS OF THIS TA

Area	Precinct 1 Expansion	Precinct 3
Gross Leasable Area (GLA)	Total: 3,122m^2	Total: 96,810m^2 (plus 38,050m^2 of mezzanine)
Car Parking	Provision: 45 spaces Complies with OEE DCP 2022	Provision: 328 spaces Meets operational requirements
Traffic	Traffic modelling has been conducted on an Estate-wide basis to determine the mitigation measures required to support the overall development (Precincts 1 to 5) for conservativeness. Intersection upgrades are required at the Old Wallgrove Road / Millner Avenue and Old Wallgrove Road / Lenore Drive intersections. These upgrades are: • Old Wallgrove Road / Lenore Drive – Widening of the southern side of the intersection to accommodate a second departure lane, allowing for a continuous flow from the East approach; and – Widening and extension of the existing left-turn slip lane from the South approach from the existing 35 metres to 140 metres. • Old Wallgrove Road / Millner Avenue – Widening of the northern side of the intersection to accommodate an additional 100 metres left turn slip lane into Estate Road 02 (eastern arm of intersection); and – Extending the kerbside lane of the East approach from 50 metres to 140 metres (i.e. through No Stopping restrictions or similar). With the proposed intersection upgrades, the intersections are expected to operate at a Level of Service (LoS) D or better in the 2036 horizon year.	
Design	Tested for 20.0m Articulated Vehicles (AVs) at the access as the largest design vehicle.	Tested for 30.0m B-doubles at the access, for conservativenes and 20.0m Articulated Vehicles (AVs) for rear loading.

1.3 Liaison Process

Prior to the issue of SEARs, Ason Group has liaised with TfNSW with regards to the concept plan and stage 2 works for the Proposal (on 25 January 2022, Ref. Syd18/01298/03).

For this Site, consultation was held regarding the land uses, background growth, phasing assumptions and modelling at the Old Wallgrove Road / Millner Avenue and Old Wallgrove Road / Lenore Drive intersections. A detailed summary of this consultation is described in the sections below.

1.3.1 Consultation with TfNSW

During the liaison process, TfNSW noted that Ason Group's previously adopted trip generation rates (0.18 veh/hr per 100m^2 GFA during the AM Peak and 0.16 veh/hr per 100m^2 GFA during the PM Peak) were lower than the TfNSW recommended rates for warehousing (0.23 veh/hr per 100m^2 GFA during the AM Peak and 0.24 veh/hr per 100m^2 GFA during the PM Peak) and preferred the adoption of the higher rates.

However, TfNSW agreed that lower trip generation rates could be considered if sufficient evidence (e.g. surveys) was provided to demonstrate lower trip generation rates within the area.

Ason Group issued an email on 27 January 2022 with the information summarised in **Section 7.2.1**, providing evidence based on prior surveys in 2020 and 2022 to support the 0.18 and 0.16 trip rates adopted.

TfNSW had responded on 1 March 2022 noting a considerable number of surveys (9-10) were relied upon to determine their recommended Trip Generation Rates for the WSEA industrial zoning (IN1) and that the applicant use higher trip generation rates for the proposed development.

Further justification, separate to the email referenced above, based on the comparison to the existing Oakdale Central Estate (OCE) and Oakdale South Estate (OSE) trip generation has been added to this report and is summarised in **Section 7.2.2**. The observed trip generation rates at OCE and OSE are even lower than the 0.18 and 0.16 rates adopted for the OEE assessment.

Nonetheless, a sensitivity assessment has been prepared in **Section 0**, adopting the elevated trip rates of 0.23 and 0.24 trips per 100m^2 during the AM and PM peaks, to demonstrate the suitability of the proposed mitigation measures in a more conservative scenario.

1.3.2 Consultation with TfNSW – Modelling Assumptions

Relating to the Old Wallgrove Road / Millner Avenue intersection, TfNSW noted the standard position to adopt double diamond phasing for greenfield sites.

In response, Ason Group noted that the Old Wallgrove Road / Millner Avenue intersection is an existing intersection with the western leg already constrained (from expansion) by other existing developments. During the meeting, it was noted that the approved Traffic Control Signal (TCS) plan for this intersection (TCS 4656, accepted by TfNSW in 2015) shows a single diamond arrangement. As such, the Millner Avenue / Old Wallgrove Road intersection has been modelled as a single diamond (with the concept plan attached in **Appendix A**) in both the existing and future year modelling scenarios.

TfNSW also commented on the lack of pedestrian crossing at the northern approach of the Old Wallgrove Road / Millner Avenue intersection. The project team has considered this comment and have since updated the intersection concept design to include pedestrian crossings on all approaches. SIDRA modelling has been undertaken with signalised pedestrian crossings on all approaches for this intersection.

2 Planning History and Context

2.1 OEE DCP 2022

The approval for the Oakdale East Development Control Plan (OEE DCP 2022) was granted on 25 May 2022 (and came into force on 26 May 2022) and applies to the Austral Bricks Plant Site Boundary area shown in **Figure 1**.

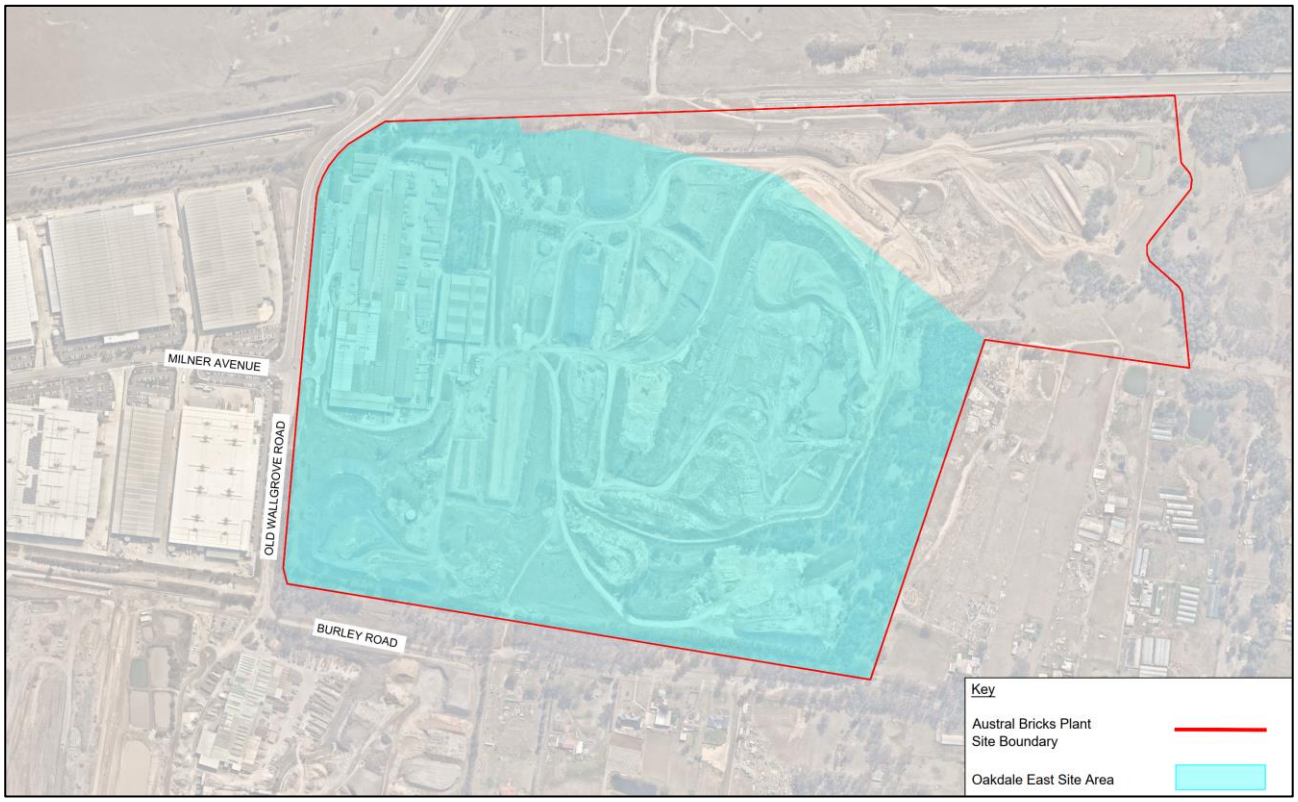


Figure 1: Land to Which this DCP Applies – Shown Blue (Source: OEE DCP, 2022)

The OEE DCP establishes the following rates for car parking requirements:

- Light industry, general industry (excluding masonry plant facilities), warehouse or distribution centre - 1 space per 300m^2 of GFA; and
- Office - 1 space per 40m^2 of GFA.

2.2 Development Application No. 93.1/2019

Precinct 1 within the OEE has already been approved in a previous DA (DA No. 93.1/2019) on 1 April 2020 and encompassed the following works:

- 4 warehouses with a combined Gross Floor Area (GFA) of 21,156m^2;
- Ancillary office space with a GFA of 3,186m^2;
- A Masonry Plant with a GFA of 10,430m^2 and ancillary office space of 1,040m^2;
- A total of 265 car parking spaces, including 6 accessible spaces across the Site,

- The construction of Estate Road 1; and
- A separated light vehicle and truck access point for each lot to Estate Road 1.

Ason Group has undertaken a traffic assessment for this existing approval, which addressed the parking and traffic characteristics of only Precinct 1.

2.3 Oakdale South Estate

The approved and largely operational Oakdale South Estate (OSE) is located some 1.5-2km south west of the subject site. Condition C5 of the development consent (SSD-6917-MOD-16) establishes the following parking rates:

- 1 space per 300m^2 of warehouse GFA;
- 1 space per 40m^2 of office GFA; and
- 2 disabled spaces for every 100 car parking spaces.

2.4 Oakdale East Concept Plan

The Oakdale East Concept Plan sought as part of this application considers the approved parking rates established in the OEE DCP, and development consents from the approved and operational OSE and OCE; and seeks to confirm the development controls for the overall OEE. Details are provided in **Section 6**.

3 Introduction

3.1 Overview

Ason Group has been engaged by Goodman Property Services (Aust) Pty Ltd to prepare a Transport Assessment (TA) to assess the traffic and parking implications from the proposed development of Precinct 3 and proposed expansion of Precinct 1 within the OEE. This TA also reviews traffic assessment and modelling having regard for the revised concept plan prepared by SBA architects:

- SBA Architects, 20201 – *Oak E MP 02 – Oakdale East Industrial Estate – Estate Masterplan – Issue K* (received 7 April 2022);
- SBA Architects, 21144 – *DA301 – Site Plan – Precinct 3 – Issue A* (received 7 April 2022); and
- SBA Architects, 22103 – *DA101 – Site & Warehouse Plan – Precinct 1 – Issue C* (received 12 April 2022).

3.2 Key References

In preparing this TA, Ason Group has referenced key planning documents. These include:

- Oakdale East Development Control Plan (DCP) 2022;
- Fairfield City Wide Development Control Plan (DCP) 2013; and
- Fairfield Local Environmental Plan (LEP) 2013.

This TA also references general access, traffic and parking guidelines, including:

- Roads and Maritime Services, *Guide to Traffic Generating Developments* (RMS Guide 2002);
- Australian Standard 2890.1:2004 - Parking Facilities – Off Street Car Parking (AS 2890.1:2004);
- Australian Standard 2890.2:2018 - Parking Facilities – Off Street Commercial Vehicle Facilities (AS 2890.2:2018);
- Australian Standard 2890.3:2015 – Parking Facilities – Bicycle Parking (AS 2890.3:2015); and

  Australian Standard 2890.6:2009 – Parking Facilities – Off Street Parking for People with Disabilities (AS2890.6:2009).

This TA also references assessments relating to the development within the OEE, the broader Oakdale Industrial Estate in which the OEE lies and the Broader Western Sydney Employment Area, including:

- Ason Group, Traffic Impact Assessment Oakdale East Industrial Precinct – Inform DCP, 21 November 2018 (OEE TA 2018);
- Ason Group, Traffic Impact Assessment Proposed Oakdale East Industrial Estate – State Significant Development Application, 8 March 2019 (OEE TA 2019);
- Ason Group, Transport Assessment ESR Horsley Logistics Park – State Significant Development Application, 20 July 2020 (ESR TA 2020);
- Ason Group, Transport Assessment ESR Horsley Logistics Park – Modification 1, 3 May 2021 (ESR TA Mod 1 2021);
- Ason Group, Transport Statement ESR Horsley Logistics Park – Modification 2, 27 August 2021 (ESR TS Mod 2 2021);
- Ason Group, Transport Assessment Proposed Nu-Pure Warehouse and Industrial Facility – Development Application, 2 February 2019 (Nu-Pure TA 2019);

- Ason Group, Transport Assessment Proposed Oakdale South Business Hub – Modification 12, 8 October 2020 (OSE TA 2020);
- Ason Group, Transport Statement Lot 3A & 3C Oakdale Central Industrial Precinct – Modification 7, 13 September 2016 (OCE TS 2016);
- Ason Group, Transport Assessment 657-769 Mamre Road, Kemps Creek – Modification 1, 29 June 2021 (SSD-9522 TA 2020);
- Ason Group, Transport Accessibility and Management Plan (TMAP) 805-817 Mamre Road, Kemps Creek, 25 November 2021 (805 Mamre Road TA 2021);
- Ason Group, Transport Accessibility and Management Plan (TMAP) 884-928 Mamre Road, Kemps Creek, 19 August 2021 (884 Mamre Road TA 2021);
- GHD, Erskine Park Traffic Modelling – Proposed Western North South Link Road, May 2016 (WNSLR Report);
- AECOM, Broader WSEA SLRN – Options Refinement (2014), 6 May 2014 (SLRN Options Report);
- GHD, Old Wallgrove Road Extension Interim Network Testing, 28 March 2014 (OWR Extension Report);
- GHD, Broader Western Sydney Employment Area – Transport Planning Preliminary Analysis, Exhibition Draft, June 2013 (BWSEA Transport Report);
- GHD, Old Wallgrove Road Upgrade (Roberts Road - M7 Motorway) Traffic and Transport Report, 30 April 2012 (OWR Upgrade Report);
- AECOM, Western Sydney Employment Area – Southern Link Road Network Strategic Transport Assessment, 18 April 2011 (SLRN Report);
- RMS, Southern Link Road / WSEA RNS Key Stakeholder Briefing, July 2019; and
- RMS, Trip Generation Surveys - Business Parks and Industrial Estate Data Report, August 2012.

3.3 Response to Secretary's Environmental Assessment Report

A summary of the relevant SSD-37486043 SEARs relating to the traffic and transport aspects is presented in **Table 2**, which also includes reference to the relevant sections of this TA where each requirement is addressed.

TABLE 2 RESPONSE TO SEARS

	Comment	Ason Response
Traffic and Transport – including		
1	details of all daily and peak traffic volumes likely to be generated during all key stages of construction and operation (using traffic generation rates agreed with Transport for NSW), including a description of key accesses, haul routes, vehicle types, potential queuing impacts, swept paths and sight distance requirements	Details of the daily and peak traffic volumes generated during the operational phase have been described in further detail within **Section 7.** The consultation with TfNSW (regarding the trip rates) have been discussed in further detail within **Section 1.3.1** and a sensitivity assessment has been prepared in **Section 0**, adopting the elevated trip rates of 0.23 and 0.24 trips per 100m^2 during the AM and PM peaks, to demonstrate the suitability of the proposed mitigation measures in a more conservative scenario. A preliminary Construction Traffic Management Plan (CTMP) has been provided within **Section 8.** It is noted that a detailed CTMP for the proposed development can be prepared separately and in response to a condition of consent as part of the Construction Certificate (CC) phase of this SSD. A description of the proposed access points is outlined in **Section 4.3**. The haul routes, vehicle types, potential queuing impacts, swept path assessment and sight distance requirements have been addressed within **Section 9**.
2	detailed justification of proposed access arrangements for Precinct 5 with consideration of future transport corridors, easements and site levels and outcomes of consultation with key stakeholders on the proposed arrangement	This has been addressed within **Section 9.3** of this report. Notwithstanding, this will be addressed in further detail within the Town Planning report and Civil Engineering report, prepared separately.
3	an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model. This is to include the identification and consideration of approved and proposed developments/planning proposals/road upgrades in the vicinity of the site in the 2026, 2031 and 2036 scenarios	Refer to **Section 7** which outlines the proposed development's traffic generation and provides cumulative traffic impacts at nearby key intersections for the proposed years 2026, 2031 and 2036.
4	details of road upgrades, infrastructure works or new roads or access points required for the development, supported by modelling	Refer to **Section 7.8.4** which outlines the mitigation measures required to support the proposed development during the years 2026, 2031 and 2036.

TABLE 2 RESPONSE TO SEARS

	Comment	Ason Response
5	integration with and impacts on the future Southern Link Road and consideration of Clause 33B of the WSEA SEPP	It is noted that the SLR network planning and development process is ongoing and is therefore subject to change due to further refinement of the route alignment and access arrangements. As at the time of this report, SLR was not funded nor committed, hence the Site does not rely on this road for access. Should the SLR be constructed in the future, access to the Site via SLR can be possible via Old Wallgrove Road.
6	plans demonstrating how all vehicles likely to be generated during construction and operation and awaiting loading, unloading or servicing can be accommodated on the site to avoid queuing on public roads, including a loading management plan	A preliminary CTMP has been provided within **Section 8.** It is noted that a detailed CTMP or Loading Dock Management Plan (LDMP) for the proposed development can be prepared separately and in response to a condition of consent as part of the CC phase of this SSD. Refer to **Section 9** which includes details regarding the vehicles expected to load, unload and service the proposed Site.
7	details and plans of the proposed internal road network, loading docks, servicing areas, on-site parking including provisions for electric vehicle charging, pedestrian and cyclist facilities, in accordance with the relevant Australian Standards	Refer to **Section 4** which outlines the proposed access points, loading docks and servicing areas for the proposed Site. Refer to **Section 6** which outlines the car parking, bicycle parking and End-of-Trip (EoT) requirements and provision for the proposed Site. Refer to **Section 9** which outlines compliance of the above facilities with regards to the relevant Australian Standards.
8	details of the largest vehicle anticipated to access and move within the site, including swept path analysis and diagrams depicting vehicles entering, exiting and manoeuvring throughout the site	Refer to **Section 9** which includes details regarding the vehicles expected to load, unload and service the proposed Site. Swept path assessment confirms suitability for a 30.0m Super B-double at the proposed access point and internal commercial area for Precinct 3. However, it is noted that based on the proposed tenant's operational information, the proposal will only require 26.0m B-Double as the design vehicle. Hence, the simulation for 30.0m Super B-double is considered to be conservative. With regards to the Precinct 1 expansion, the largest vehicles at the proposed access point and internal commercial area will be a 20.0m AV.
9	assessment of existing and future transport networks, including buses, and their ability to accommodate the forecast number of trips generated by the development	Refer to **Section 7** which outlines the proposed development's traffic generation and provides cumulative traffic impacts at key intersections for the years 2026, 2031 and 2036.
10	details of sustainable travel initiatives for the development.	A Green Travel Plan (GTP) has been prepared and is submitted as part of this application.

4 Description of the Proposal

Full details of the SSD are provided in the Environmental Impact Statement (EIS) which this TA accompanies.

4.1 SSD Plans

A reduced scale copy of the SSD plan is provided in **Figure 2** and **Figure 3** for context. For detailed plans, refer to the architectural package by SBA Architects.

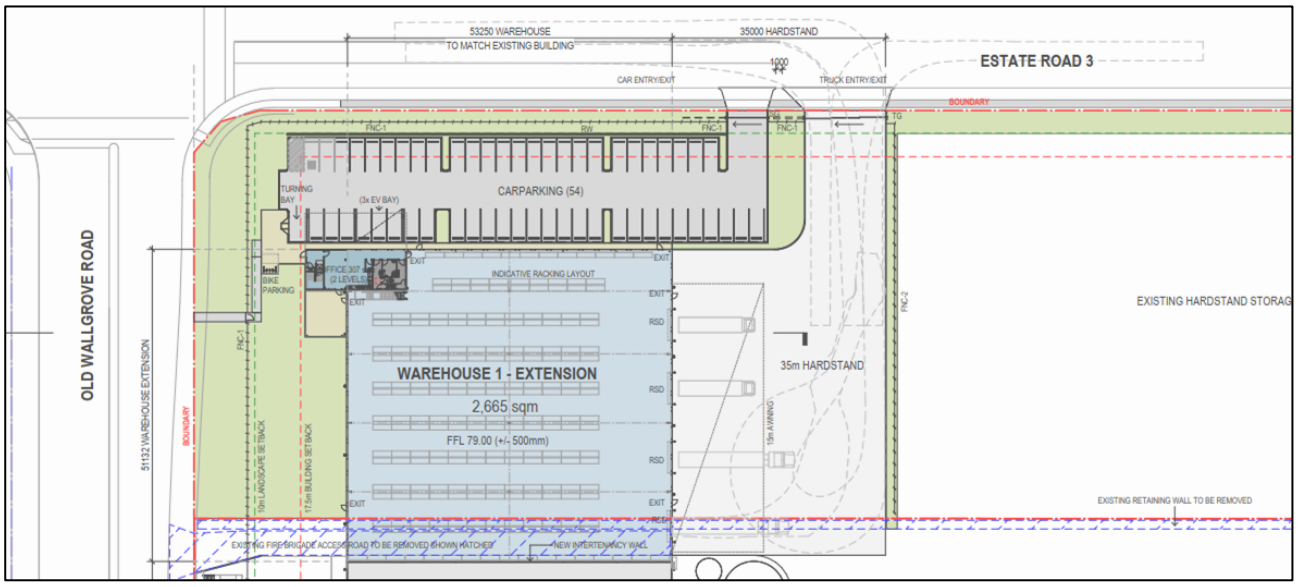


Figure 2: Proposed SSD Site Plan for the Precinct 1 Expansion

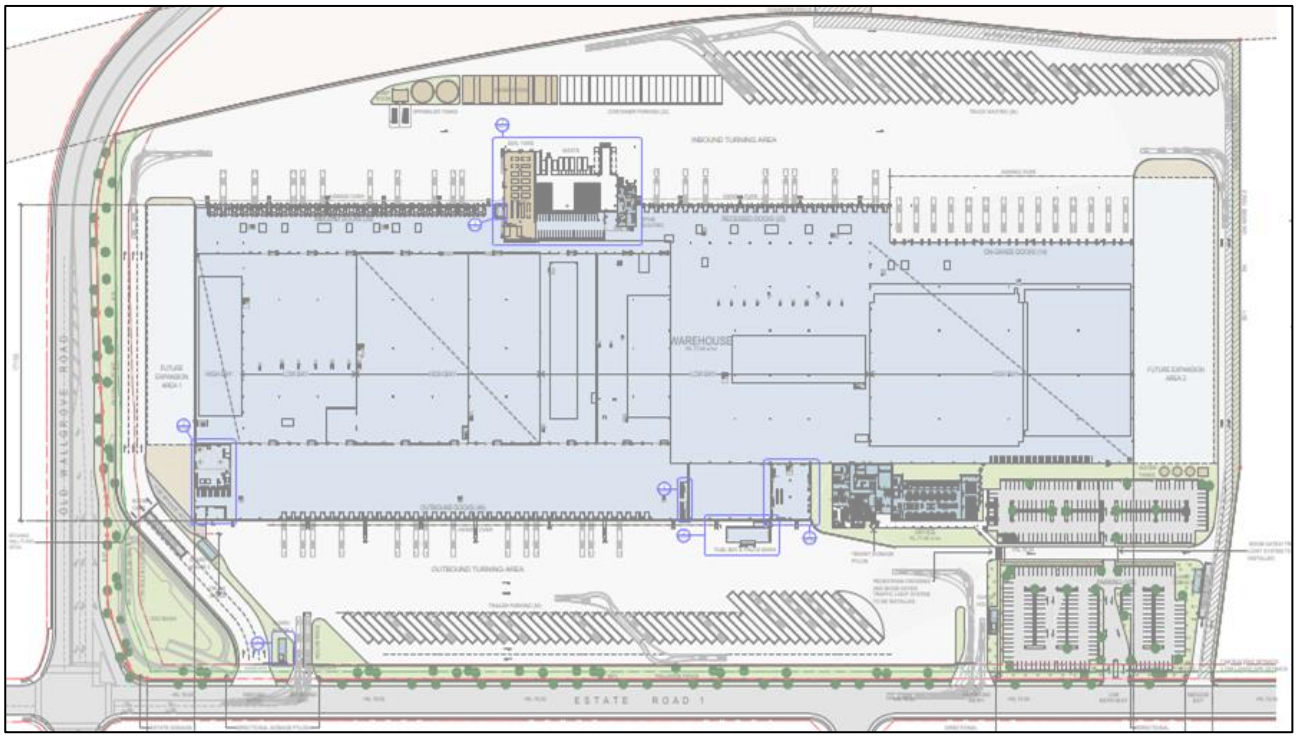


Figure 3: Proposed SSD Site Plan for Precinct 3

4.2 Proposed SSD Description

The application seeks approval for the Concept Plan for OEE and Stage 2 works at OEE.

The Stage 2 works includes the construction, fit-out and use of the Precinct 1 expansion and Precinct 3 of the Oakdale East Estate. The proposed development comprises warehouses, associated car and truck parking, office facilities, loading bays along with landscaping, signage, solar panels, lighting and includes subdivision approval. The proposed development will facilitate warehouse and distribution uses consistent with the IN1 General Industrial zone under the State Environmental Planning Policy (Western Sydney Employment Area) 2009.

The proposed Site encompasses the following summarised in **Table 3**:

TABLE 3 PROPOSAL YIELD

Component	Precinct 1 Expansion	Precinct 3
Warehouse GLA (m^2)	2,815	84,826 (+10,009 m^2 expansion)
Office GLA (m^2)	307	1,975
Total GLA	**3,122**	**96,810**
Loading Dock Provision	4[1]	104[3]
Trailer Parking Provision	-	96
Car Parking Provision (Spaces)	54[2]	328[4]

Note: 1) This provision includes 4 Roller Shutter Doors (RSDs).

2) This provision includes 1 accessible space.

3) This provision includes 12 RSDs and 92 recessed docks.

4) This provision includes 6 accessible spaces.

4.3 Vehicular Access Strategy

4.3.1 Precinct 1 Expansion

The Precinct 1 expansion proposes two (2) new vehicular access points (a car and a truck access off Estate Road 02). This is shown in **Figure 4**.

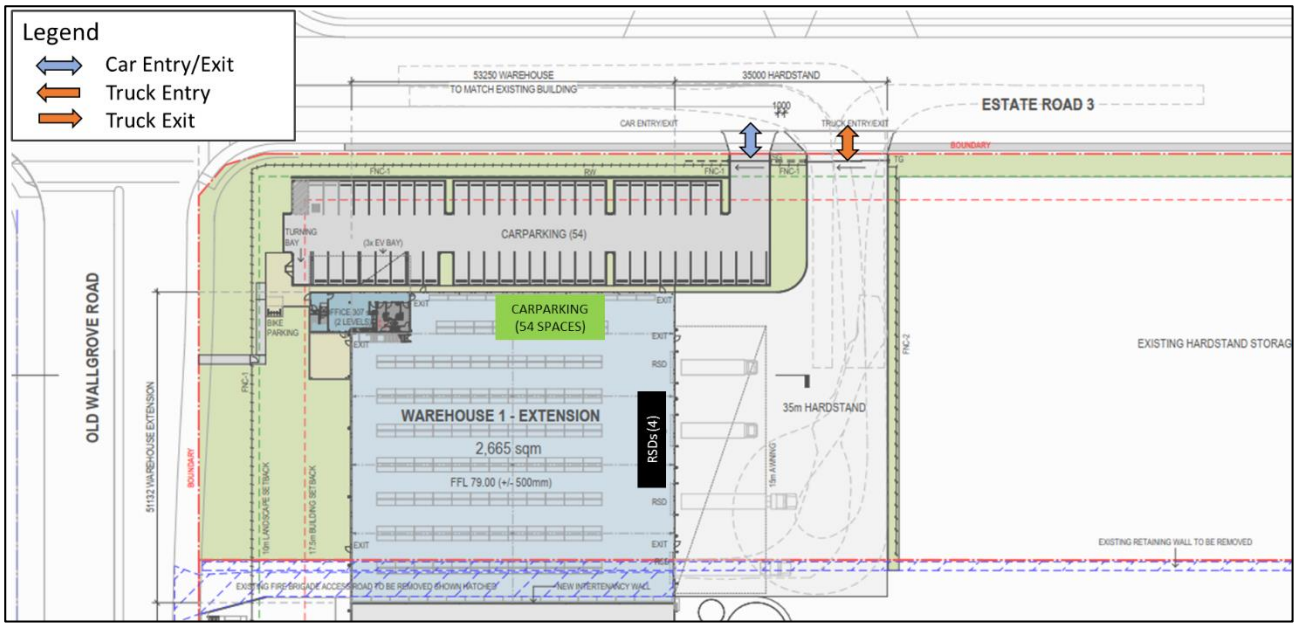


Figure 4: Proposed Vehicular Access Strategy (for Precinct 1 Expansion)

4.3.2 Precinct 3

Precinct 3 has 5 proposed vehicular access points. It has separate car and truck entry / exit points on Estate Road 02. Furthermore, the truck entry and exit points are also separated. This is shown **Figure 5**.

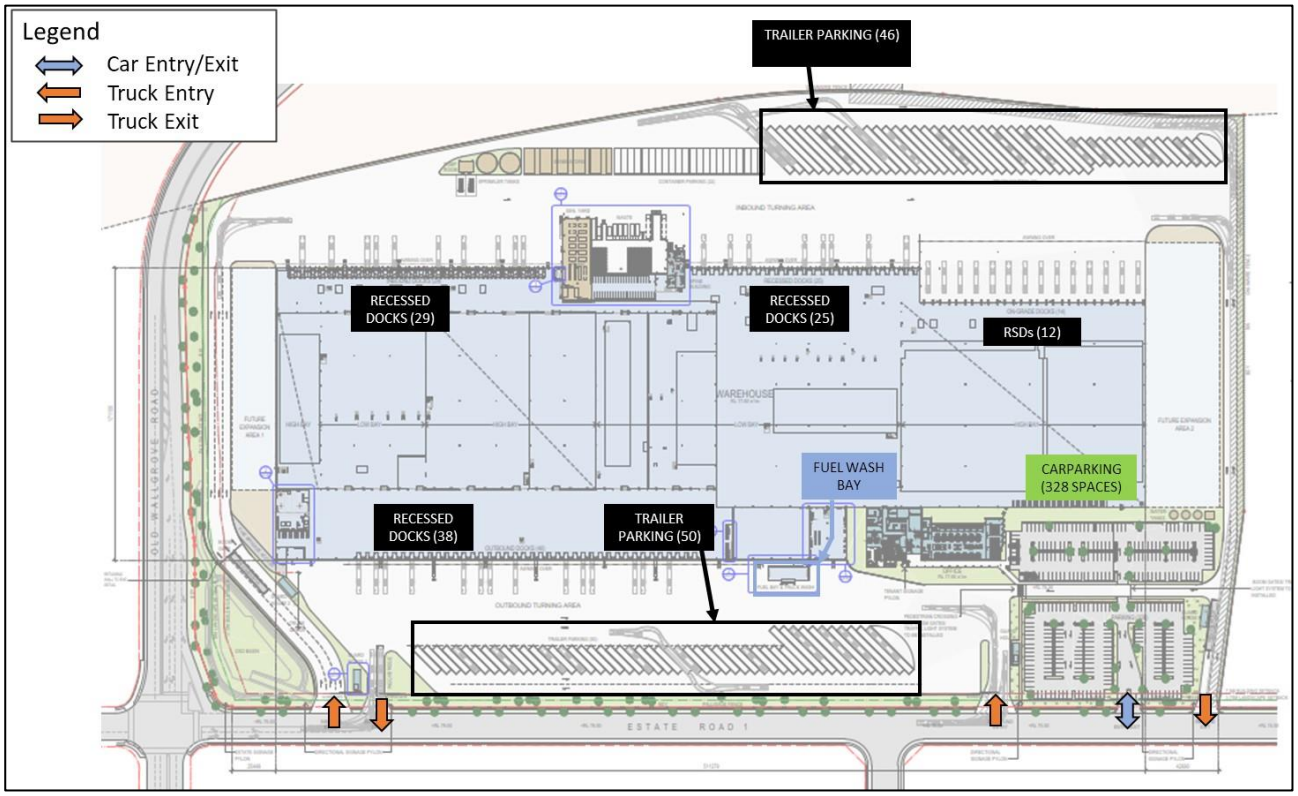


Figure 5: Proposed Vehicular Access Strategy (for Precinct 3)

5 Existing Conditions

5.1 Strategic Context

5.1.1 Western Sydney Employment Area

The WSEA was established by the NSW Government to provide businesses in the region with land for industry and employment, including transport and logistics, warehousing and office space. Centred approximately 50 kilometres west of the Sydney CBD, the WSEA provides for employment generating development further to the provision of significant new transport infrastructure connecting the WSEA to the regional road network and to the future Badgerys Creek Airport.

5.1.2 Broader Western Sydney Employment Area

The Draft Structure Plan for the WSEA proposes the inclusion of lands to the south of the OEE at Kemps Creek. Once implemented, it is anticipated that a future formal Structure Plan for an expanded 'Broader Western Sydney Employment Area' (BWSEA, as shown in **Figure 6**) will provide for changes in the land use zoning and character of these additional lands to an industrial / employment focus consistent with that of the existing WSEA. It is important to note that as with approved development within other Oakdale Industrial Estate precincts, the Proposal is entirely consistent with the goals of the Draft Structure Plan.

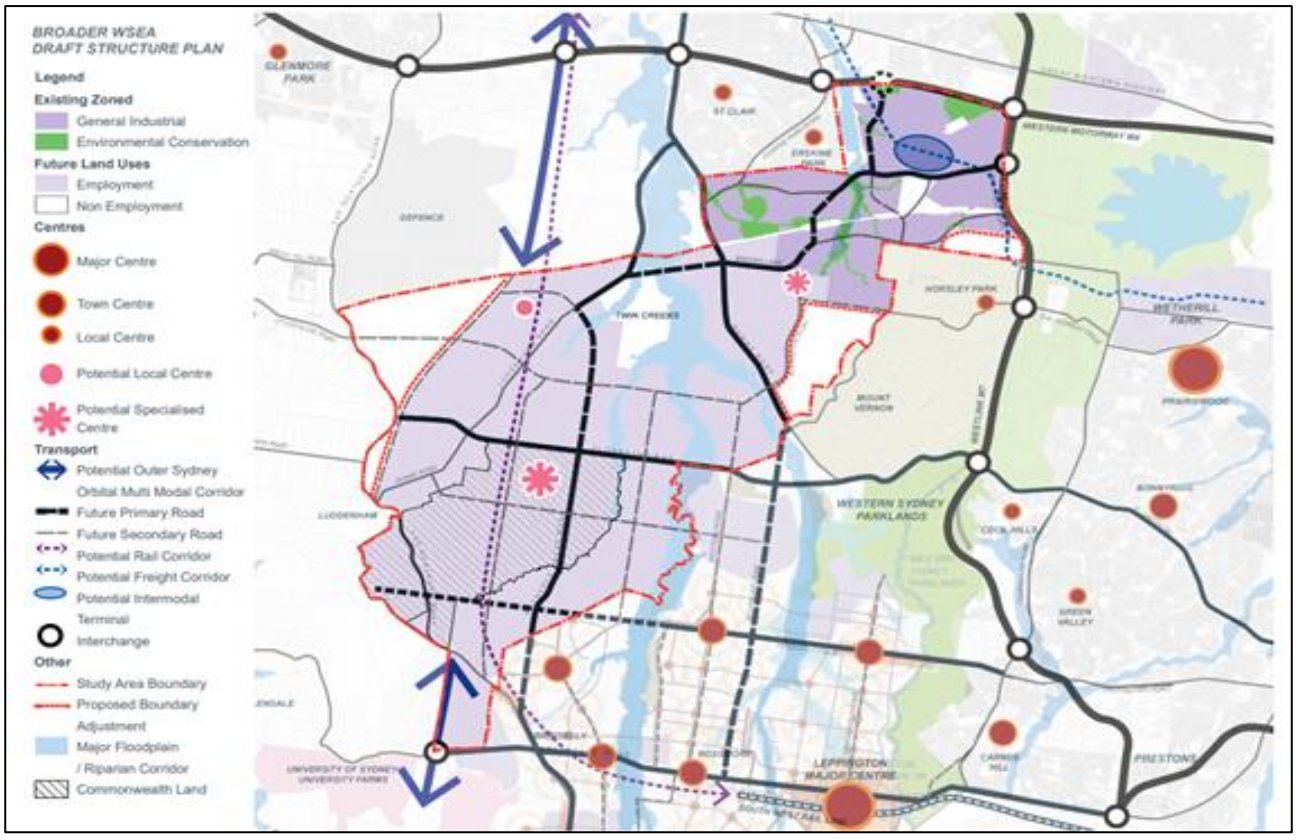


Figure 6: BWSEA Precinct Plan (Source: GHD (June 2013))[1]

[1] Source: https://www.planning.nsw.gov.au/-/media/Files/DPE/Reports/broader-western-sydney-employment-area-structure-plan-transport-planning-preliminary-analysis-report-exhib-draft-2013-06.pdf?la=en

5.2 Existing Road Network

The Site location and existing road network providing access to the Site is shown in **Figure 7**. Key existing roads and recently completed network upgrades are detailed in sections below.

5.2.1 M7 Motorway

The M7 Motorway is a high capacity road link of state significance and was built to accommodate future traffic growth in the Western Sydney region. It provides a key north-south link between the M2 Motorway to the north and the M5 Motorway to the south as part of the Sydney orbital road network. A major interchange between the M7 Motorway and M4 Western Motorway is located approximately 3.5km north of the Site, which connects the Sydney CBD and western Sydney suburbs. The M7 Motorway provides 4 lanes (2 lanes per direction, divided carriageway) and has a posted speed limit of 100km/h.

5.2.2 Wallgrove Road

Wallgrove Road is an arterial road that runs in a north-south direction parallel to the M7 Motorway east of the Site. It provides a link between the Great Western Highway to the north and Elizabeth Drive to the south, as well as a connection to the M7 Motorway, some 2.5k north-west of the Site. North of Russell Road, Wallgrove Road generally provides 4 lanes (2 lanes per direction), while south of Russell Road it generally provides 2 lanes (1 lane per direction). Wallgrove Road in the vicinity of the Site has a posted speed limit of 60km/h.

5.2.3 Lenore Drive

Lenore Drive is a sub-arterial route providing an east-west connection between Old Wallgrove Road to the east and Mamre Road to the west. Lenore Drive provides 4 lanes (2 lanes per direction) along a divided carriageway with a shared path along the northern side of the road and has a posted speed limit of 80km/h.

5.2.4 Old Wallgrove Road

Old Wallgrove Road is a local collector route providing an east-west and north-south connection between Wallgrove Road to the east and Lenore Drive to the west. Old Wallgrove Road provides 4 lanes (2 lanes per direction) along a divided carriageway with a shared path along the western side of the road and has a posted speed limit of 60km/h.

5.2.5 Millner Avenue

Millner Avenue is a local road providing east-west connection between Old Wallgrove Road to the east and Otellia Road to the west. Millner Avenue provides 4 lanes (2 lanes per direction) along a divided carriageway with footpaths along both sides.

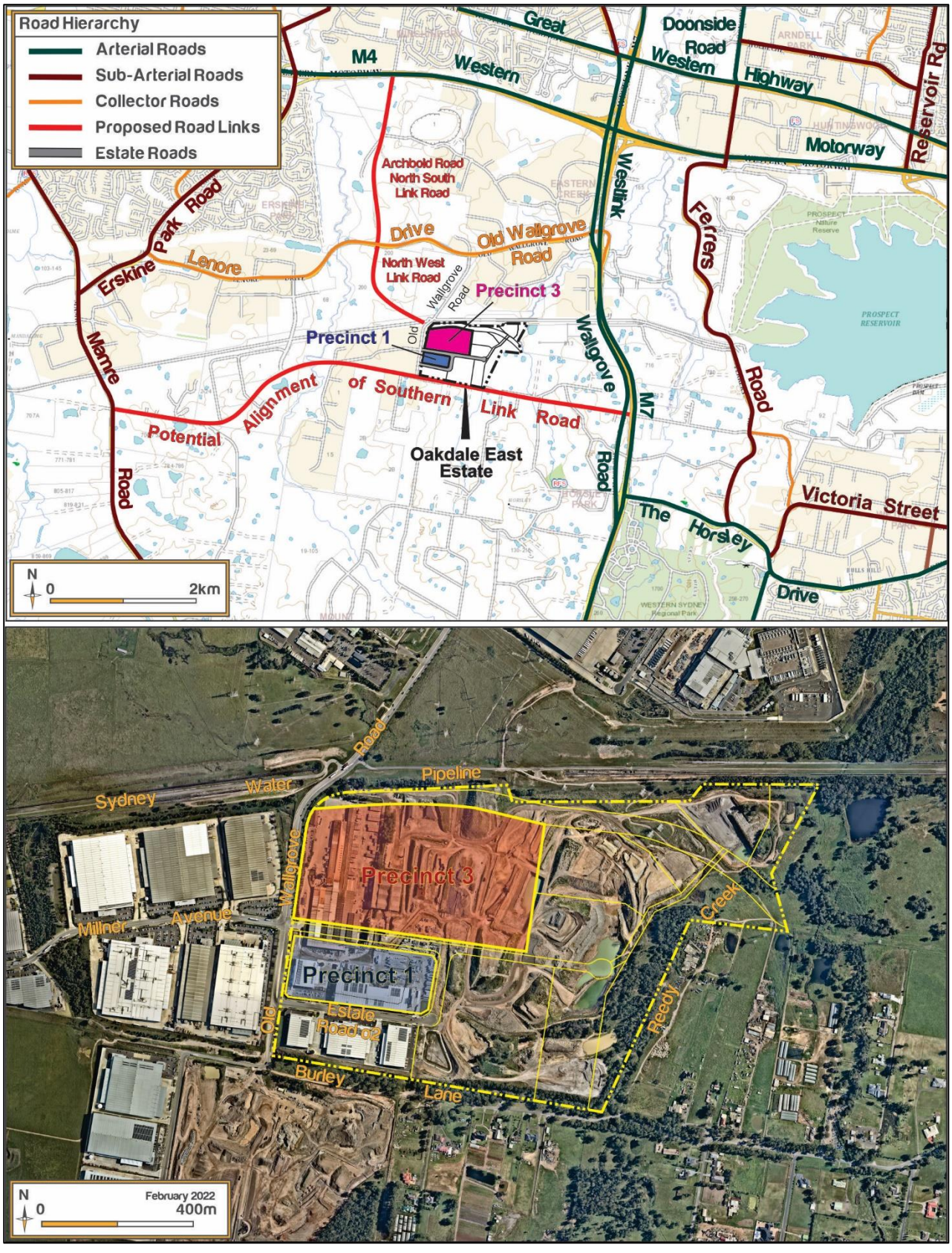


Figure 7: Site Location and Road Hierarchy

5.3 Future Road Network

As it relates to this report, the Southern Link Road (SLR) will provide additional road infrastructure to accommodate travel demand generated by employment areas within the Warragamba Pipeline area. The indicative route alignment for the SLR was initially identified in the SEPP (WSEA) 2009 and has since been refined to the current alignment as shown in **Figure 9**. A key component of the SLR includes:

- A connection to Old Wallgrove Road and then to a future North-South Link Road connection to Archbold Road at Lenore Road. The proposed Archbold Road extension would connect the M4 to Lenore Drive, with a new interchange of M4 Western Motorway and Archbold Road; this extension is currently being progressed by the TfNSW and is expected to be delivered in 5-10 years (subject to further liaison between stakeholder), providing improved WSEA accessibility to the M4 Western Motorway without the need to access either Wallgrove Road or the M7 Motorway.

It is noted that the SLR network planning and development process is ongoing and is therefore subject to change due to further refinement of the route alignment and access arrangements. As at the time of this report, SLR was not funded nor committed, hence the Site does not rely on this road for access. Should the SLR be constructed in the future, access to the Site via SLR can be possible via Old Wallgrove Road.

Furthermore, the same comment also applies to Archbold Road. It is noted that the Archbold Road network planning and development process is ongoing and is therefore subject to change. Furthermore, at the time of this report, Archbold Road has also not been funded nor committed, hence the Site does not rely on this road for access. Should Archbold Road be constructed in the future, access to the Site via Archbold Road can be possible (through Old Wallgrove Road). The most recent update was in 2017, with the concept design shown in **Figure 8**.

Figure 8: Archbold Road Concept (Source: RMS (May 2017))[2]

Furthermore, the proposed Site plan appreciates the potential future delivery of SLR and sets aside land to allow for the NSW Government to implement this road as necessary. A figure depicting the proposed Site plan in appreciation for the potential future delivery of SLR is shown in **Figure 10**.

[2] Source: https://roads-waterways.transport.nsw.gov.au/projects/01documents/archbold-road/archbold-road-community-update-2017-05.pdf

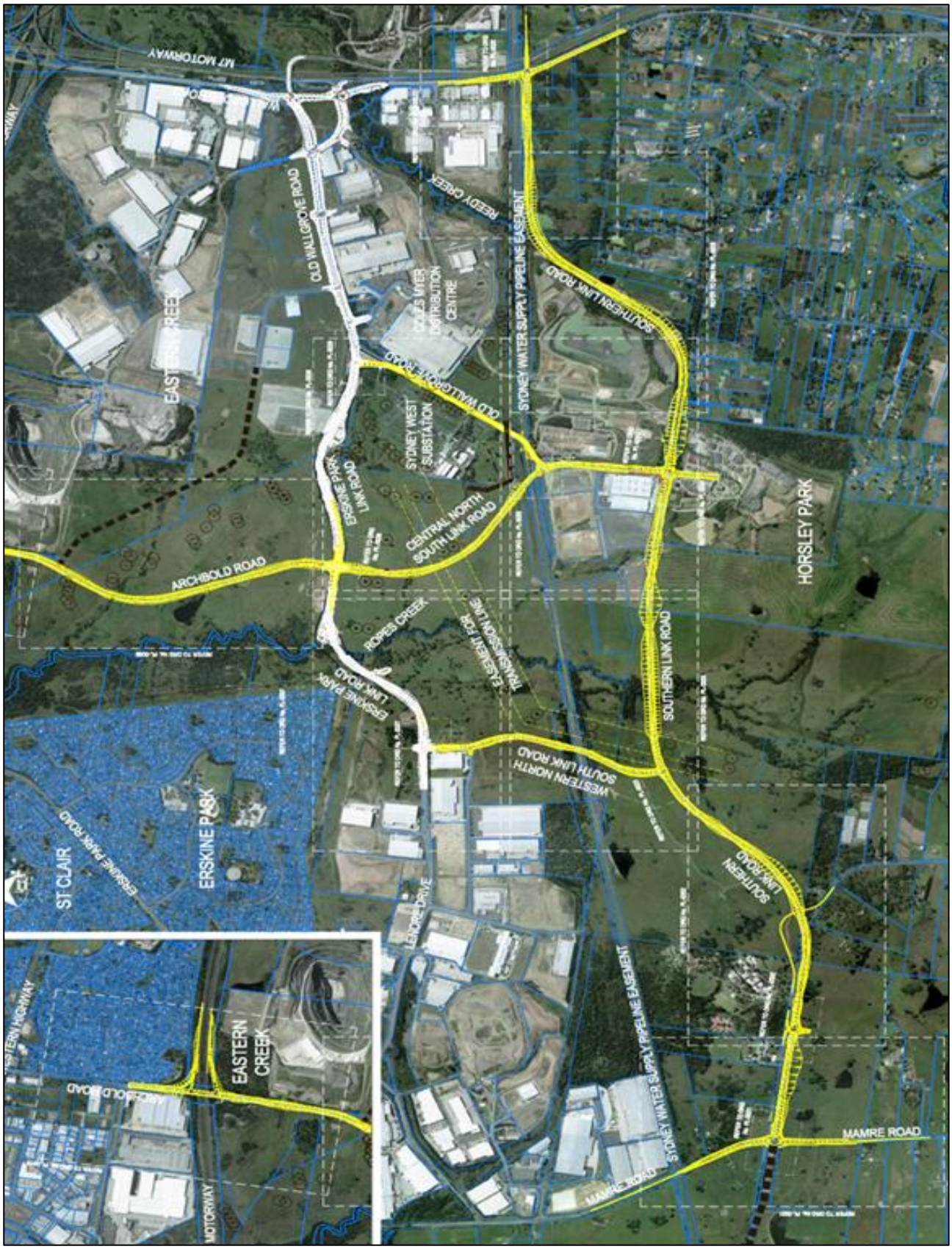


Figure 9: Proposed Southern Link Road Network and Alignment (Source: AECOM (May 2014)) [3]

[3] Source: https://www.planning.nsw.gov.au/-/media/Files/DPE/Reports/broader-wsea-slrn-options-refinement-final-report-2014-05-06.pdf

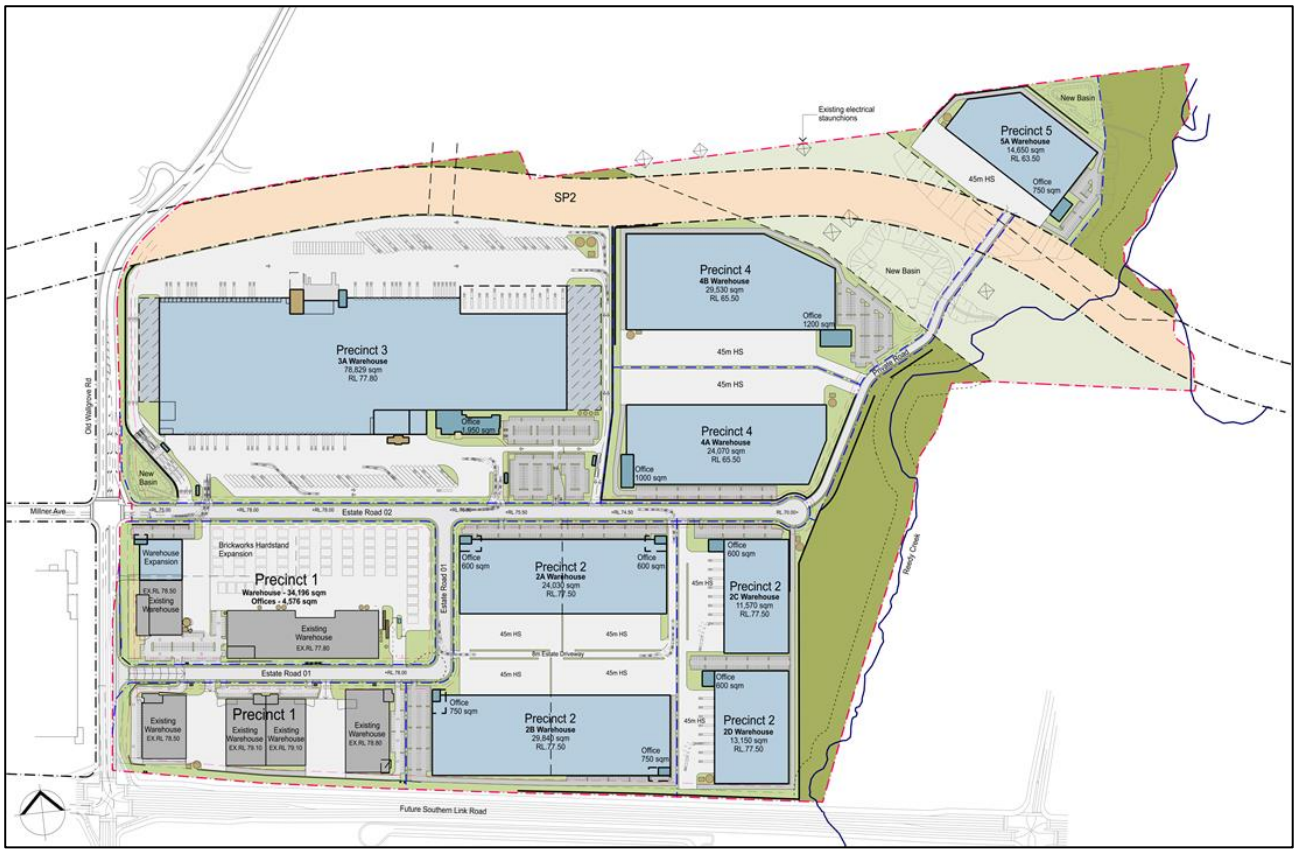


Figure 10: Proposed Southern Link Road Network and Alignment with Respect to the Site Plan (Source: SBA Architects)

5.4 Existing Intersection Operation

The baseline traffic on the surrounding road network was surveyed for 24-hours on Tuesday, 26 October 2021. The network peak hour times (as informed by the Mamre Road Precinct (MRP) AIMSUN transport model, refer to **Section 7.1**) of 7:30 AM to 8:30 AM (AM peak period) and 3:00 PM to 4:00 PM (PM peak period) was adopted for the following key intersections:

- Old Wallgrove Road / Lenore Drive; and
- Old Wallgrove Road / Millner Avenue.

The surveyed traffic flows during the peak periods are shown in **Figure 11**.

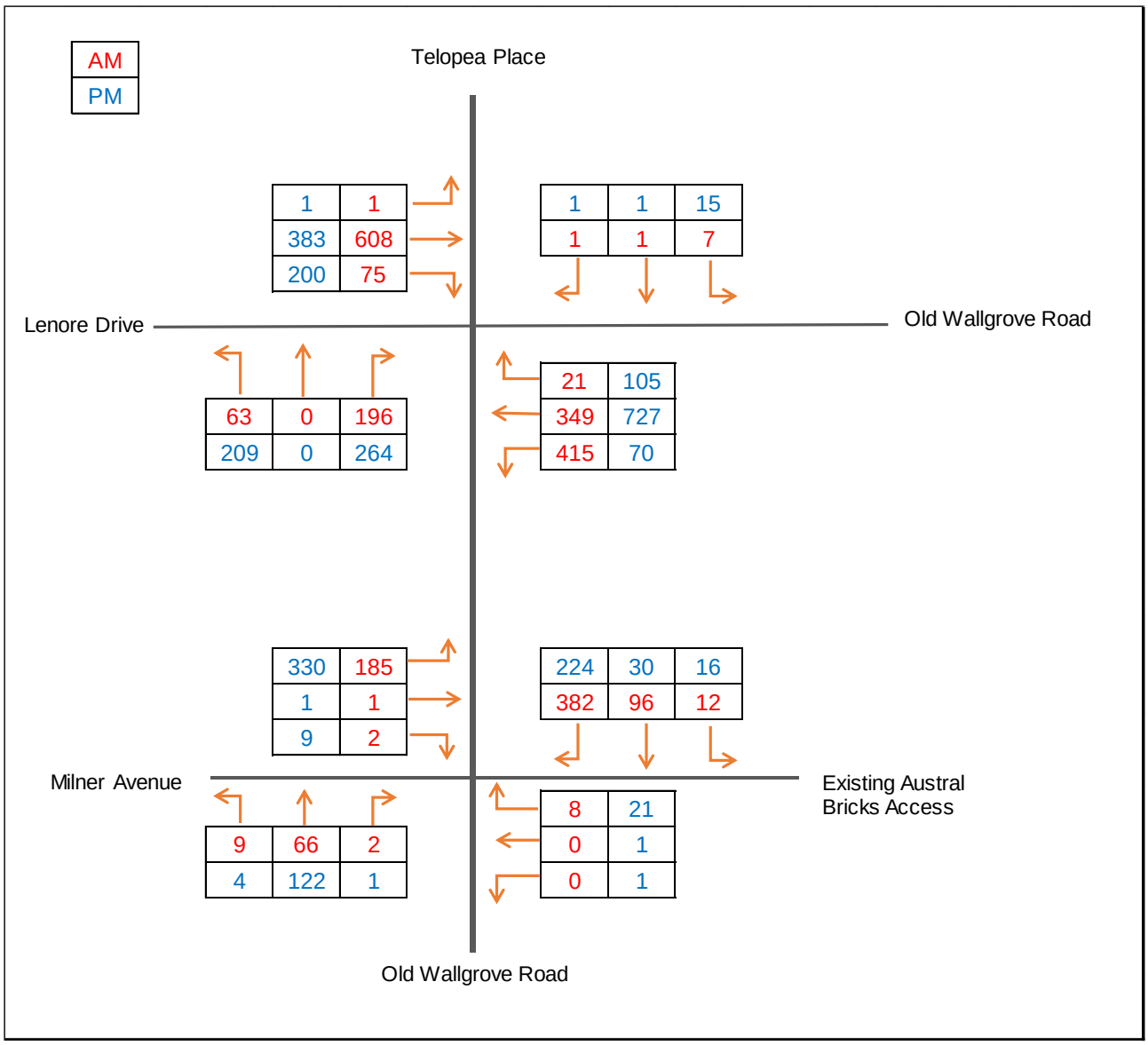


Figure 11: Traffic demand – Existing volumes

5.4.1 Assessment Criteria

SIDRA Intersection modelling has been undertaken to quantify the performance of the existing intersections and – using the same set of parameters – predict the performance of these intersections under future demand scenarios. The SIDRA models provide a number of outputs to measure the performance of an intersection including:

- **Delay:** Also known as Average Vehicle Delay or AVD, which is expressed in seconds. The Delay or AVD is measured across all vehicles in a signalised intersection and for the worst movement in a priority-controlled intersection;
- **Level of Service (LoS):** An indication of critical AVD in any intersection, denoted by the alphabetic letters from A to F. AVD in the range of LoS A up to LoS D are considered acceptable; and
- **Degree of Saturation (DoS):** The ratio of volumes by capacity. The maximum acceptable DoS for signalised and priority-controlled intersections are 0.90 and 0.80, respectively.

Table 4 provides a summary of the SIDRA recommended criteria for the assessment of intersections with reference to AVD and LoS, as outlined in the RMS Guide.

TABLE 4 SIDRA LEVEL OF SERVICE CRITERIA

LoS	Average Vehicle Delay (sec/veh)	Traffic Signals & Roundabout	Give Way & Stop Signs
A	<14	Good Operation	Good operation
B	15 – 28	Good with acceptable delays & spare capacity	Acceptable delays & spare capacity
C	29 – 42	Satisfactory	Satisfactory, but accident study required
D	43 - 56	Operating near capacity	Near capacity & accident study required
E	57 – 70	At capacity: at signals, incidents will cause excessive delays. Roundabouts require other control mode	At capacity, requires other control mode
F	>70	Unsatisfactory and requires additional capacity	Unsatisfactory and requires other control mode or major treatment

When applying the above criteria, it is recommended that for traffic signals, the LoS should be calculated based on the average vehicle delay at the whole intersection, whereas for roundabouts and priority-controlled intersections, the critical measure of LoS is determined by the movement with the highest delay.

5.4.2 2021 Existing Scenario

The SIDRA results for the existing scenario (2021) are shown in the following table:

TABLE 5 SIDRA RESULTS – 2021 EXISTING

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.37	26	B
			PM	0.58	35	C
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.57	19	B
			PM	0.77	13	A

The analysis demonstrates that the existing two intersections currently operate satisfactorily in both peak periods with Level of Service C or better.

5.5 Truck Routes

As is appropriate for a predominately industrial area, all key roads providing access for the Site are designated for Restricted Access Vehicles (RAVs), as summarised in **Table 6** and **Figure 12**.

TABLE 6 RMS APPROVED RESTRICTED VEHICLE ACCESS ROUTES

Road	Section	RMS Approval
Old Wallgrove Road	Entire Length	Approved for 25.0 / 26.0m B-double Routes
Wallgrove Road	Entire Length	
Lenore Drive	Entire Length	
M7 Westlink	Entire Length	
Erskine Park Road	Entire Length	
M4 Western Motorway	Entire Length	
Mamre Road	Entire Length	

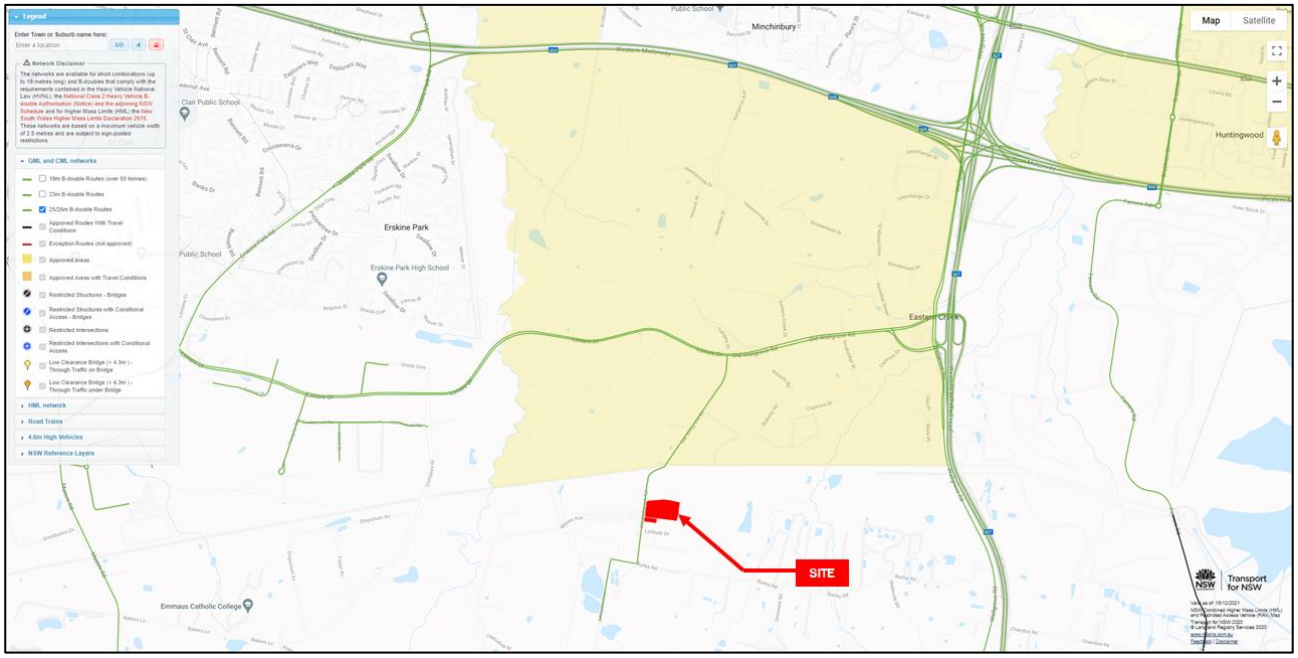


Figure 12: Restricted Vehicle Access Routes (Source: RMS)

The future SLR is also expected to similarly provide for 25.0 / 26.0m B-doubles.

5.6 Public Transport Services

5.6.1 Existing Bus Services

While existing bus services within the vicinity of the OEE are shown in **Figure 13**, it is evident that OEE is not directly serviced by public transport services at this time. Notwithstanding, the opportunities for future connections have been identified and are discussed further below. In particular, the extension of bus route 738 to Oakdale Central Estate (OCE) and Oakdale South Estate (OSE).

5.6.2 Bus Service Opportunities

There are substantial opportunities to provide improvements to public transport connectivity within WSEA (likely via Lenore Drive and Old Wallgrove Road further to a connection to the SLR) and additional provisions for 'localised' services as employment numbers increase and additional road infrastructure becomes available.

The planning of bus services in Sydney is governed by the NSW Service Planning Guidelines, which aim to establish Strategic Transport Corridors and a hierarchy of bus route types that:

- Link to regional centres (such as Penrith and Mt Druitt);
- Pass through patronage generators such as district centres, TAFE colleges, hospitals and universities;
- Connect with other transport modes (trains, ferries and other buses);
- Are multifunctional (serving journeys to work, education, shopping and recreation);
- Are direct and frequent; and
- Meet the network planning principles.

The establishment of public transport services as early as possible in the development stages of the area is important to ensure that a culture of public transport use is achieved from the outset. To make public transport a viable choice in the study area, the services should ideally:

- Integrate with existing bus services in the area;
- Connect to regional centres of Penrith, Mt Druitt and Blacktown; and
- In the longer term, connect to areas such as Leppington in the South West Growth Centre, Prairiewood and the Liverpool to Parramatta T-Way.

It should be noted that the current bus route 738 extends partially into Old Wallgrove Road from the east. There have been discussions between TfNSW and Goodman regarding the extension of the Rooty Hill Bus service through to Oakdale Central, South and East. It is understood that TfNSW are in the process of commencing these services to OCE and OSE in the next few months and the process is currently going through traffic committee approvals for the bus stops.

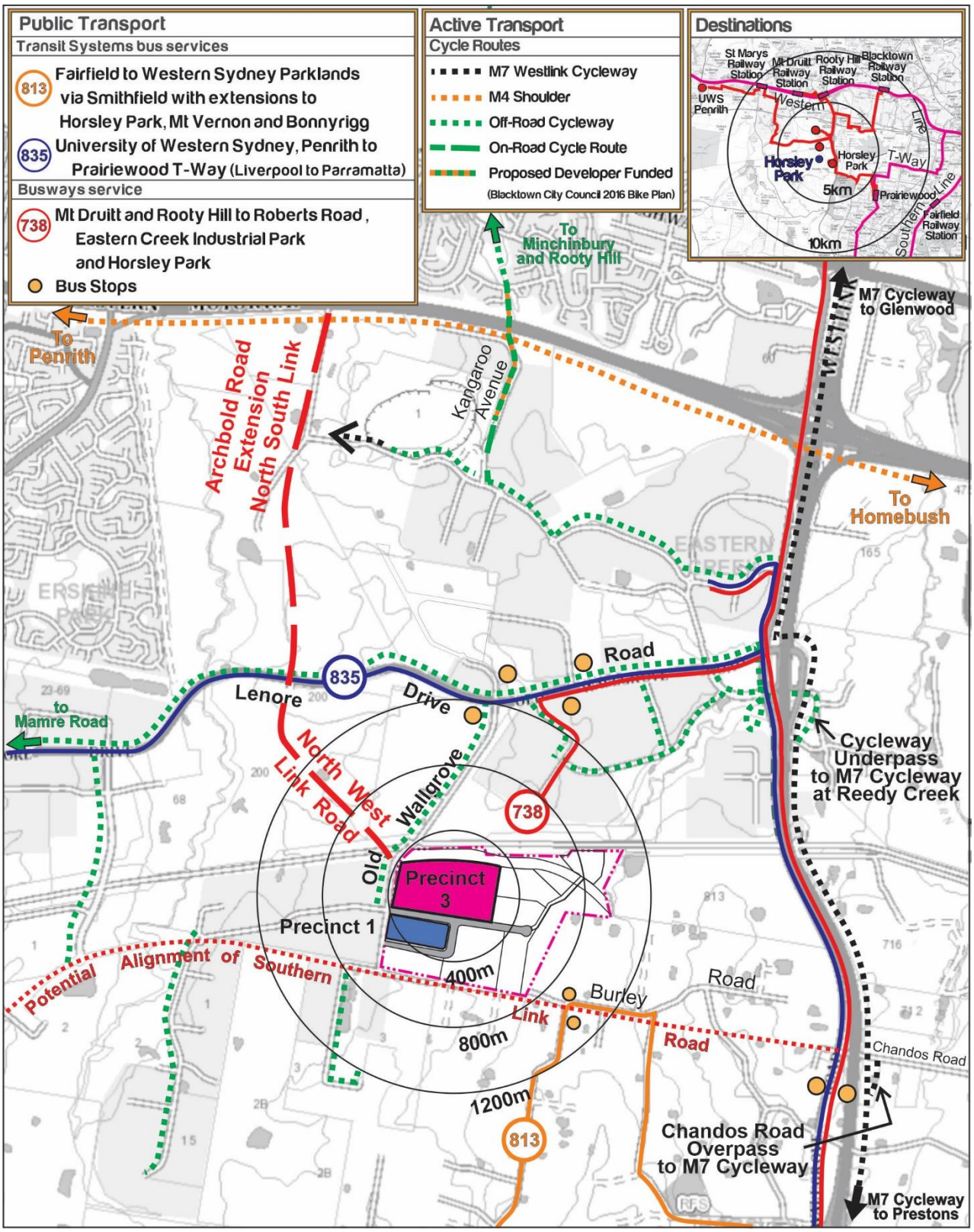


Figure 13: Existing Public Transport and Cycle Links

5.7 Active Transport

Lenore Drive has specifically been designed to provide appropriate cycle infrastructure, linking to the east (to the M7 Motorway cycleway) and the west (to the existing Mamre Road cycle path, which is expected to play a key connector role in the broader framework of cycleways in the sub-region).

As evident in **Figure 13,** there is a shared path on the western side of Old Wallgrove Road that connects to Lenore Drive. Furthermore, Old Wallgrove Road and Lenore Drive provide active transport coverage which will ideally connect to the Estate. Notably, Estate Road 01 currently provides footpaths on both sides (as shown in **Figure 14**).

Figure 14: Existing Footpath Provision at Estate Road 01

The existing signalised intersection of Old Wallgrove Road / Milner Avenue provides for pedestrian crossing facilities on three approaches.

As discussed earlier, the upgraded intersection as part of this SSD will provide pedestrian crossing facilities on all directions at this signal, hence improving the active transport network for the Estate.

6 Parking Provisions

6.1 Car Parking

The Concept Plan seeks to establish the following car parking rates for the Estate. These rates are consistent with the current OEE DCP (which currently comprises Precinct 1 of the OEE) and the approved and operational OCE and OSE. These rates are shown in **Table 7**.

TABLE 7 CAR PARKING RATES

Land Use	Parking Rate[1]
Warehouse	1 space per 300m^2
Office	1 space per 40m^2

Note: 1) Parking calculations are rounded up.

6.2 SSD Parking Assessment

6.2.1 Precinct 1 – OEE DCP 2022

Application of the above car parking rates to the proposed Precinct 1 GLAs result in the following car parking requirements.

TABLE 8 CAR PARKING REQUIREMENT AND PROVISION FOR PRECINCT 1

Land Use	Precinct 1 Yield (m^2)	Car Parking Required	Parking Provided
Warehouse	2,815	18	54[1]
Office	307		

Note: 1) This provision includes 1 accessible space.

Application of the above rates to the Precinct 1 expansion results in the requirement of 18 spaces. In response, the Precinct 1 future expansion provides for 54 on-site car parking spaces, indicating a surplus of 36 car parking spaces and thus satisfying and exceeding the OEE DCP 2022 requirements. It is noted that the additional on-site car parking spaces are mainly provided to allow for flexibility in terms of on-site parking facilities.

6.2.2 Precinct 3 – OEE DCP 2022

Application of the rates set out in **Table 7** to Precinct 3 GLA results in the following car parking requirements.

TABLE 9 CAR PARKING REQUIREMENT AND PROVISION FOR PRECINCT 3

Land Use	Precinct 3 Yield (m^2)	Car Parking Required	Parking Provided
Warehouse	84,826 (+10,009 expansion)	316	328[1]
Office	1,975	50	
Total	**96,810**	**366**	**328**

Note: 1) This provision includes 6 accessible spaces.

Application of the DCP rates to Precinct 3 results in the requirement of 366 spaces. In response, the Proposal provides 328 on-site car parking spaces (90% of the DCP rate). Based on the proposed known tenant's operational requirements, the provision of 328 spaces accommodates their actual expected parking demand.

A GTP also accompanies this TA. This GTP provides measures to reduce dependency on private vehicular travel by providing on-site End of Trip Facilities and bicycle parking. Furthermore, the owner has been in discussion with TfNSW regarding extension of a bus service to OEE (similar to what is currently in motion for OSE and OCE (see **Section 5.6**).

In summary, this TA suggests that the proposed 328 car parking spaces is sufficient to satisfy the proposed operation of the Precinct 3 on the following grounds:

- The current provision is almost 90% of the theoretical DCP rates;
- Future tenant has specifically requested for 328 spaces based on their actual forecast requirements and is comfortable to run their operation based on this provision;
- The Proposal encourages other modes of transport by provision of EoTF; and

A GTP has been prepared for this Site to promote use of other modes of transport

6.3 Accessible Parking

The OEE DCP 2022 does not stipulate accessible car parking requirements. Instead, it defers to the requirements outlined within the National Codes of Construction (NCC) and the respective Australian Standards. In this regard, the NCC rate of 1 space for every 100 carparking spaces or part thereof applies, which results in the following requirements for Precinct 1 and Precinct 3:

TABLE 10 ACCESIBLE CAR PARKING REQUIREMENTS AND PROVISION

Land Use	Car Parking Provision	Accessible Car Parking Required	Accessible Car Parking Proposed
Precinct 1	54	1	1
Precinct 3	328	4	6

This equates to a required provision of 1 accessible space for Precinct 1 and 4 accessible spaces for Precinct 3. In response, 1 space has been provided for Precinct 1 and 6 spaces have been provided for Precinct 3, satisfying and exceeding the NCC requirement.

6.4 Bicycle Parking

6.4.1 Precinct 1

OEE DCP 2022 does not stipulate bicycle parking requirements for developments. In this regard, it is recommended to adhere to the requirements set out in the *Planning Guidelines for Walking and Cycling*. Therefore, the Precinct 1 development should provide bicycle spaces and EoT facilities (as required by the *Planning Guidelines for Walking and Cycling*) to promote the active transport mode share as much as possible.

Therefore, it is recommended that this precinct provide bicycle parking numbers at a rate of 3-5% of staff numbers (for long-term use) and 5-10% of staff numbers (for short-term use) outlined by the *Planning Guidelines for Walking and Cycling*. In this regard, it is estimated the Precinct 1 expansion would have up to 75 staff. Therefore, the operation of the Precinct 1 expansion would require a total of 6-12 spaces. Furthermore, the following table also sets out the minimum requirements for EoT facilities for the Precinct 1 expansion.

TABLE 11 EOT FACILITIES REQUIREMENTS

Staff Numbers	Lockers	Showers	Change Rooms
50-149	1 per 3 racks	4 (2 male and 2 female)	2 (1 male and 1 female)

The current Site plan for the Precinct 1 expansion shows 6 bicycle spaces, multiple lockers and 4 (2 male and 2 female) showers. 2 change rooms (1 male and 1 female) can be provided within the office / amenities area prior to the CC phase of the project.

6.4.2 Precinct 3

The *Planning Guidelines for Walking and Cycling* (2004) requires bicycle parking to be provided at a rate of 3-5% of staff numbers (for long-term use) and 5-10% of staff numbers (for short-term use).

It is noted that detailed staff numbers for Precinct 3 have been provided by the immediate tenant for this Site. As such, at any given time, there would be a maximum of 232 staff on the Site.

Accordingly, the respective bicycle parking requirements for a sum of 232 personnel is outlined in **Table 12**:

TABLE 12 BICYCLE PARKING REQUIREMENTS

Development	Estimated Staff Numbers	Bicycle Parking Requirement (Bicycle Spaces)
Precinct 3	232	7-12

Additionally, the *Planning Guidelines for Walking and Cycling* also provides the following minimum requirements (shown in **Table 13**) for End of Trip (EoT) facilities on-site.

TABLE 13 EOT FACILITIES REQUIREMENTS

Staff Numbers	Lockers	Showers	Change Rooms
150-299	1 per 3 racks	6 (3 male and 3 female)	2 (1 male and 1 female)

The current site plan for Precinct 3 does not show any bicycle parking spaces. Provision of bicycle parking in line with the requirements outlined in **Table 12** are recommended to be provided prior to the CC phase of the project.

The current site plan indicates sufficient space near the proposed offices, and it is expected that adequate bicycle parking spaces facilities can be readily provided as part of the SSD.

Notwithstanding, 130 lockers and 8 change rooms (4 male and 4 female) have been provided within the office / amenities area. 8 showers (4 male and 4 female) will be provided within the area in the future, as outlined within **Table 13**.

7 Traffic Assessment

7.1 Background

An AIMSUN microsimulation model, named the Mamre Road Precinct (MRP) AIMSUN transport model has been prepared by Ason Group previously. This model covers the majority of the Western Sydney Employment Area (WSEA) and provides detailed network coding and land-use assessment for the MRP. Details of inputs, assumptions and outcomes of the base MRP model are documented by Ason Group in *P1316r02 Mamre Road Precinct Base Model Development Report*, dated 11 November 2020.

Future years 2026, 2031 and 2036 base volumes and turning movements have been sourced from the AIMSUN model and input into SIDRA for the purposes of this traffic assessment. This modelling is considered robust and provides a base line for future modelling.

The network peak hours as identified by this model is 7:30 - 8:30 AM (AM Peak) and 3:00 - 4:00 PM (PM Peak), which is adopted for the OEE traffic assessment. The MRP model also identified an inbound / outbound split of 80% / 20% in the AM peak and 20% / 80% in the PM peak.

7.2 Trip Generation Rate

The adopted trip generation rates are based on the previous Mamre Road Precinct Study as detailed below:

- AM Peak: 0.18 peak hour vehicle trips per 100m^2 of industrial GFA including ancillary office floor space;
- PM Peak: 0.16 peak hour vehicle trips per 100m^2 of industrial GFA including ancillary office floor space; and
- Daily: 2.43 vehicle trips per 100m^2 of industrial GFA including ancillary office floor space.

7.2.1 Previous Studies

The Mamre Road Precinct Study included reference surveys for six industrial sites with generally similar functionality to OEE. Surveys were conducted in 2020 for the first 5 sites and in 2018 for the sixth site. The surveys found the road network peak hours to be 7:30 - 8:30AM (AM Peak) and 3:00-4:00 PM (PM Peak) and an average trip generation rate of:

- AM Peak: 0.18 trips per 100m^2 GFA;
- PM Peak: 0.16 trips per 100m^2 GFA; and
- Daily: 2.43 trips per 100m^2 GFA.

Further to this, studies conducted for the 579 Mamre Road & 14A Distribution Drive, Orchard Hills found the following trip generation for the Mamre West Precinct Stage 1 (also known as First Estate Precinct). These surveyed rates are less than those established in the Mamre Road Precinct Study and highlight the suitability of the above rates.

- 2020 survey
  - AM Peak: 0.15 trips per 100m^2 GFA; and
  - PM Peak: 0.11 trips per 100m^2 GFA.
- 2021 survey
  - AM Peak: 0.14 trips per 100m^2 GFA; and
  - PM Peak: 0.15 trips per 100m^2 GFA.

7.2.2 Oakdale South Estate and Oakdale Central Estate comparison

To further validate the adopted trip generation rate, reference is also made to the nearby approved, and largely constructed and operational Oakdale South Estate (OSE) and Oakdale Central Estate (OCE) Developments. Due to the configuration of the existing road network, all traffic from these developments must travel through the Old Wallgrove Road / Millner Avenue intersection as there is no alternate route choice. Thus, an appreciation of the actual traffic generation, and by extension, trip generation rate for OSE and OCE can be obtained.

OCE has a total GFA of 231,012m^2 and OSE has a total GFA of 331,739m^2, for a total of 562,754m^2 GFA. Based on the existing traffic surveys (refer to **Section 1.3**), the total number of vehicle movements entering / exiting the western arm of the Old Wallgrove Road / Millner Avenue intersection is 567 in the AM peak, 554 in the PM peak and 9,683 daily. This correlates to the following observed trip generation rates:

- AM Peak: 0.10 trips per 100m^2 GFA;
- PM Peak: 0.10 trips per 100m^2 GFA; and
- Daily: 1.72 trips per 100m^2 GFA.

7.2.3 Summary

As such, the adopted rates of 0.18 / 0.16 trips per 100m^2 GFA in the AM and PM peaks (and 2.43 trips per 100m^2 daily) is considered an appropriate rate to adopt given comparable building typology and user mix between the sites investigated in the Mamre Road Precinct Study, and the proposed OEE. These rates are conservative and are greater than the observed traffic generation rates as demonstrated in OCE and OSE during road network peak periods.

7.3 Traffic Generation

Application of the above trip generation rates (0.18 / 0.16 / 2.43 trips per 100m^2 GFA AM / PM / Daily) results in the following trip generation for the Concept Plan (i.e. all five Precincts)[4]:

[4] For the purposes of this assessment, it is assumed GLA = GFA

TABLE 14 OAKDALE EAST ESTATE OVERALL TRIP GENERATION – PRECINCTS 1 TO 5

Period	Vehicle Movements
AM Peak Hour	546
PM Peak Hour	485
Daily	7,371

Broken down by Precinct, this relates to a trip generation (during the network peak hour) of:

TABLE 15 OAKDALE EAST ESTATE TRIP GENERATION BY PRECINCT

Precinct	GLA (m^2)	AM		PM		Daily
		LV	HV	LV	HV	
1	38,772	58	12	52	10	942
2	82,490	123	25	110	22	2,005
3	96,810	145	29	129	26	2,352
4	55,800	83	17	74	15	1,356
5	15,400	23	5	20	4	374
Other	14,058	21	4	19	4	342
Total	303,330	453	92	403	82	7,371

The values in **Table 14** and **Table 15** outline the total vehicle movements and include both inbound and outbound movements.

7.4 Cumulative Traffic Impacts

To provide a robust assessment of future road network performance, the cumulative impact of other nearby approved developments has been considered. These include OCE and OSE to the west and ESR and Frasers' Nu Pure to the south. As OCE / OSE are constructed and operational, the quantum of trips has been extracted from the survey data (traffic movements in / out of Millner Avenue). The traffic generation for ESR and Frasers' Nu Pure have been forecasted using a rate of 0.18 / 0.16 trips per $100m^2$ GFA in the AM and PM peaks respectively. This is summarised in **Table 16**.

TABLE 16 NEARBY DEVELOPMENTS TRIP GENERATION

Development	Gross Floor Area (m^2)	AM Peak Trip Generation	PM Peak Trip Generation
Oakdale Central Estate (OCE)	231,012	567	554
Oakdale South Estate (OSE)	331,739		
ESR Site	109,048	196	174
Fraser Nu Pure	20,575	37	33

7.5 Traffic Distribution

The following assumptions have been adopted for the traffic distribution.

7.5.1 Oakdale Central Estate (OCE) and Oakdale South Estate (OSE)

- AM split: 68% in / 32% out (based on the existing survey of OCE and OSE);
- PM split: 40% in / 60% out (based on the existing survey of OCE and OSE);
- All inbound trips turn right from Old Wallgrove Road into Millner Avenue at the Old Wallgrove Road / Millner Avenue (only available route choice) intersection; and
- All outbound trips turn left from Millner Avenue to Old Wallgrove Road at the Old Wallgrove Road / Millner Avenue intersection (only available route choice).

7.5.2 ESR site and Fraser Nu Pure

- AM split: 68% in / 32% out (based on existing survey of OCE and OSE);
- PM split: 40% in / 60% out (based on existing survey of OCE and OSE);
- All inbound trips travel through from Old Wallgrove Road (north) into Old Wallgrove Road (south) at the Old Wallgrove Road / Millner Avenue (only available route choice) intersection; and
- All outbound trips travel through from Old Wallgrove Road (south) into Old Wallgrove Road (both) at the Old Wallgrove Road / Millner Avenue (only available route choice).

7.5.3 Oakdale East Estate (OEE)

- AM split: 80% in / 20% out (assumption based on MRP model);
- PM split: 20% in / 80% out (assumption based on MRP model); and
- **Figure 15** illustrates the relevant turning movements into and out of OEE:
  - At the Old Wallgrove Road / Millner Avenue intersection, inbound trips either turn left from Old Wallgrove Road into Estate Road 02 or continue straight beyond the intersection to turn left into Estate Road 01 (split accordingly based on shortest route to each Precinct); and
  - At the Old Wallgrove Road / Millner Avenue intersection, all outbound trips turn right from Estate Road 02 into Old Wallgrove Road (only available route choice).

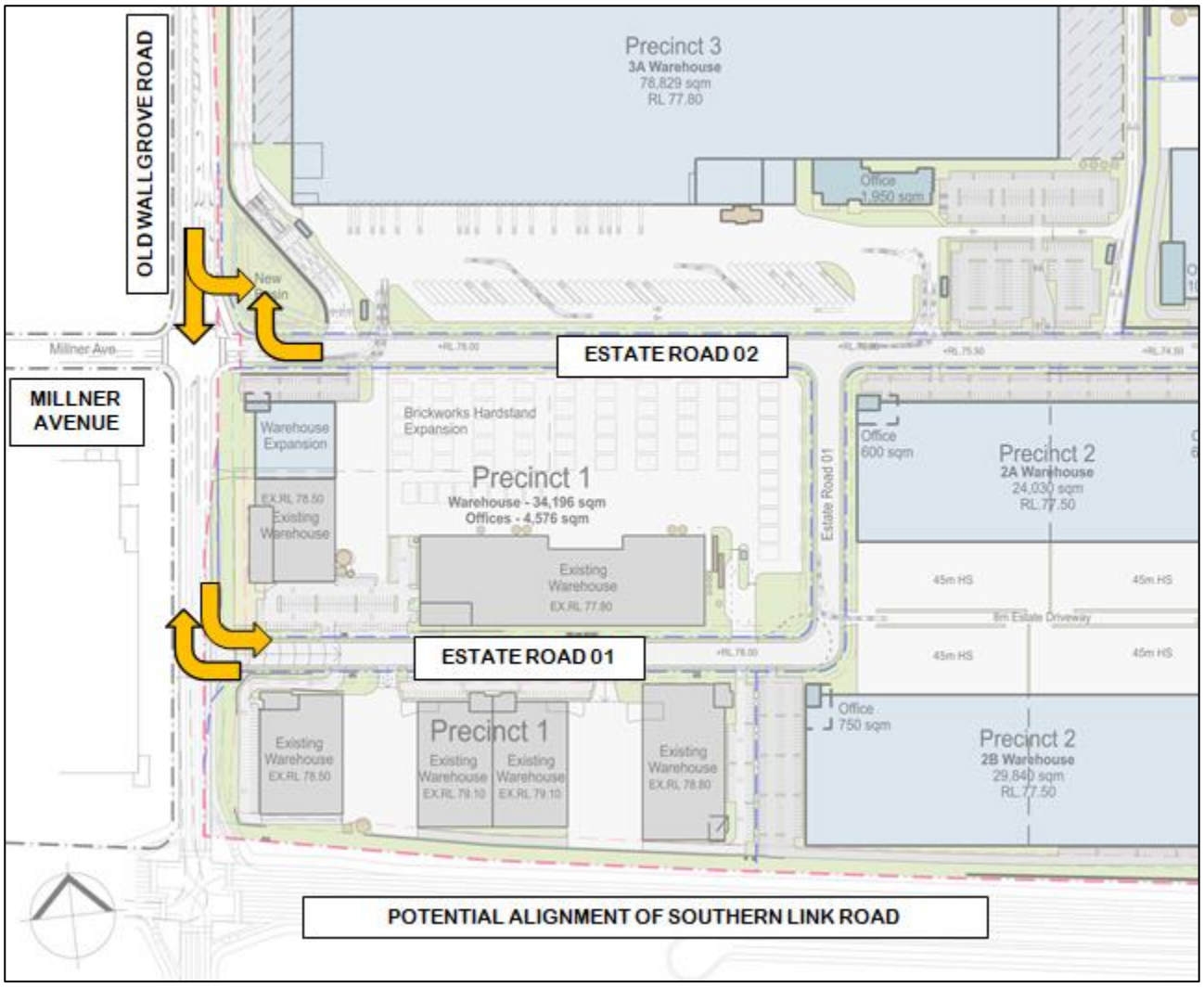


Figure 15: OEE Traffic Movements prior to SLR Construction

7.5.4 Southern Link Road

As the Southern Link Road (SLR) is neither committed nor funded, the influence of this potential link is excluded from this analysis. Future assessment of the SLR and associated impacts upon adjoining intersections will be addressed by TfNSW's SLR team.

7.6 Future Year Models

As mentioned in **Section 7.1**, future year 2026, 2031, and 2036 base volumes and turning movements were extracted from the MRP model for the Old Wallgrove Road / Lenore Drive intersection.

TABLE 17 INTERSECTIONS ASSESSED IN SIDRA

Intersection No	Intersection	Control
1	Old Wallgrove Road / Lenore Drive	Signal
2	Old Wallgrove Road / Millner Avenue[1]	Signal

Note 1: The Estate Road 02 forms the eastern arm of the Old Wallgrove Road / Millner Avenue intersection upon construction of OEE Stage 2

The traffic flow diagrams for the 2026 Base Case, 2026 Project Case (base + development), 2031 Project Case, and 2036 Project Case are shown in **Figure 16** to **Figure 19**. For conservativeness, it is assumed that OEE is fully constructed and operational in 2026. The adjacent developments (OSE, OCE, ESR, Frasers' Nu Pure) are also assumed to be fully constructed and operational by 2026.

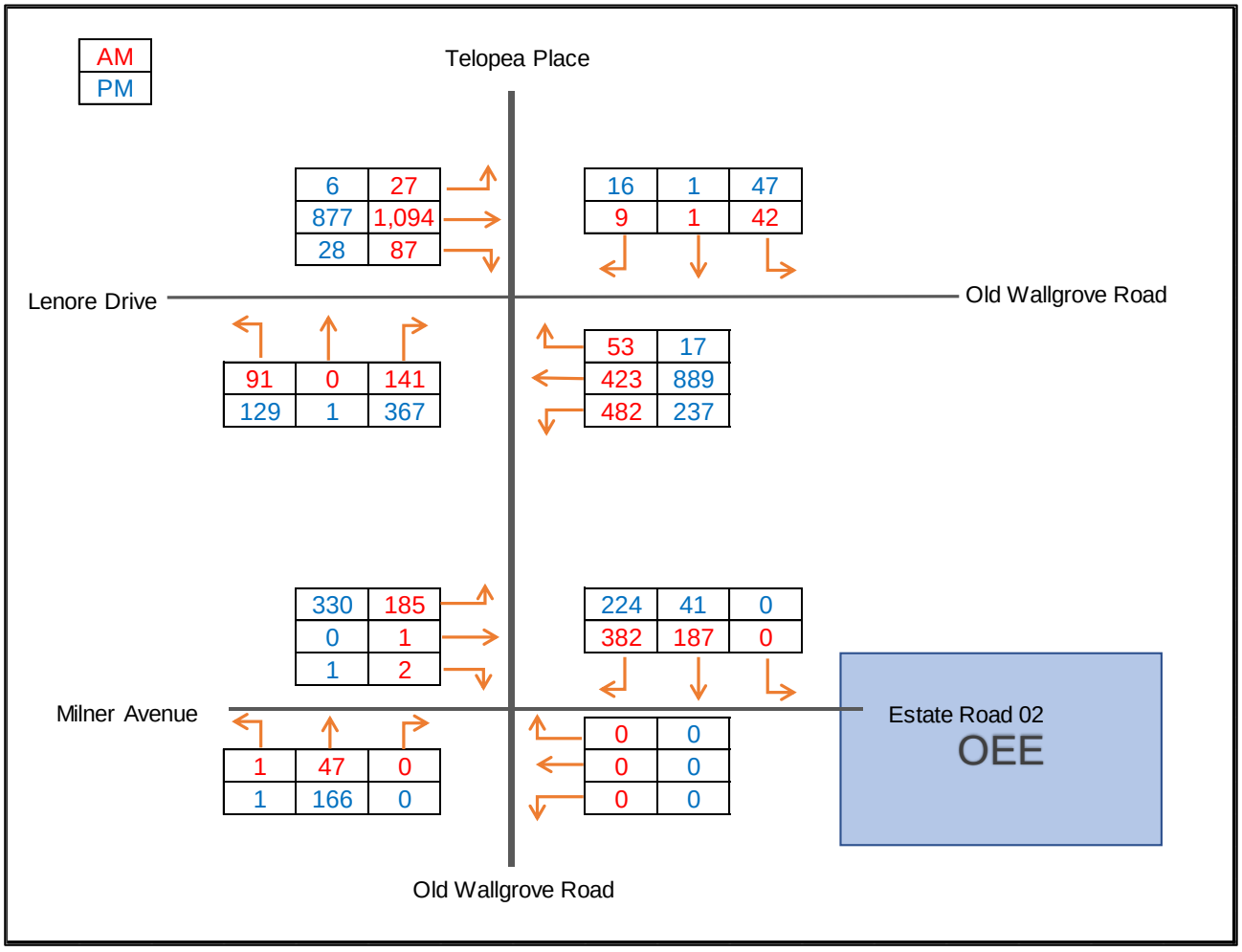


Figure 16: Traffic Demand - 2026 Base Case

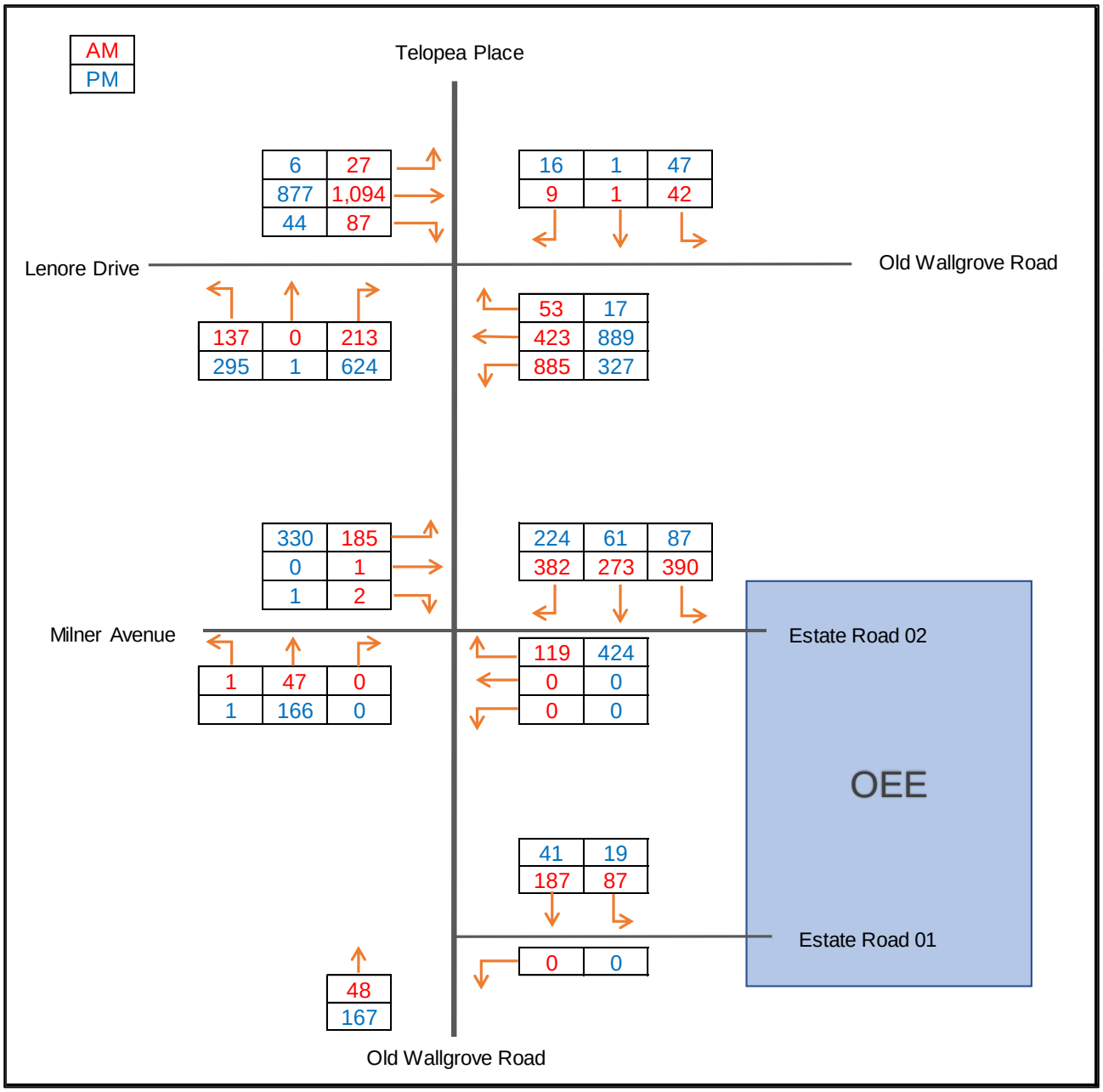


Figure 17: Traffic Demand - 2026 Project Case

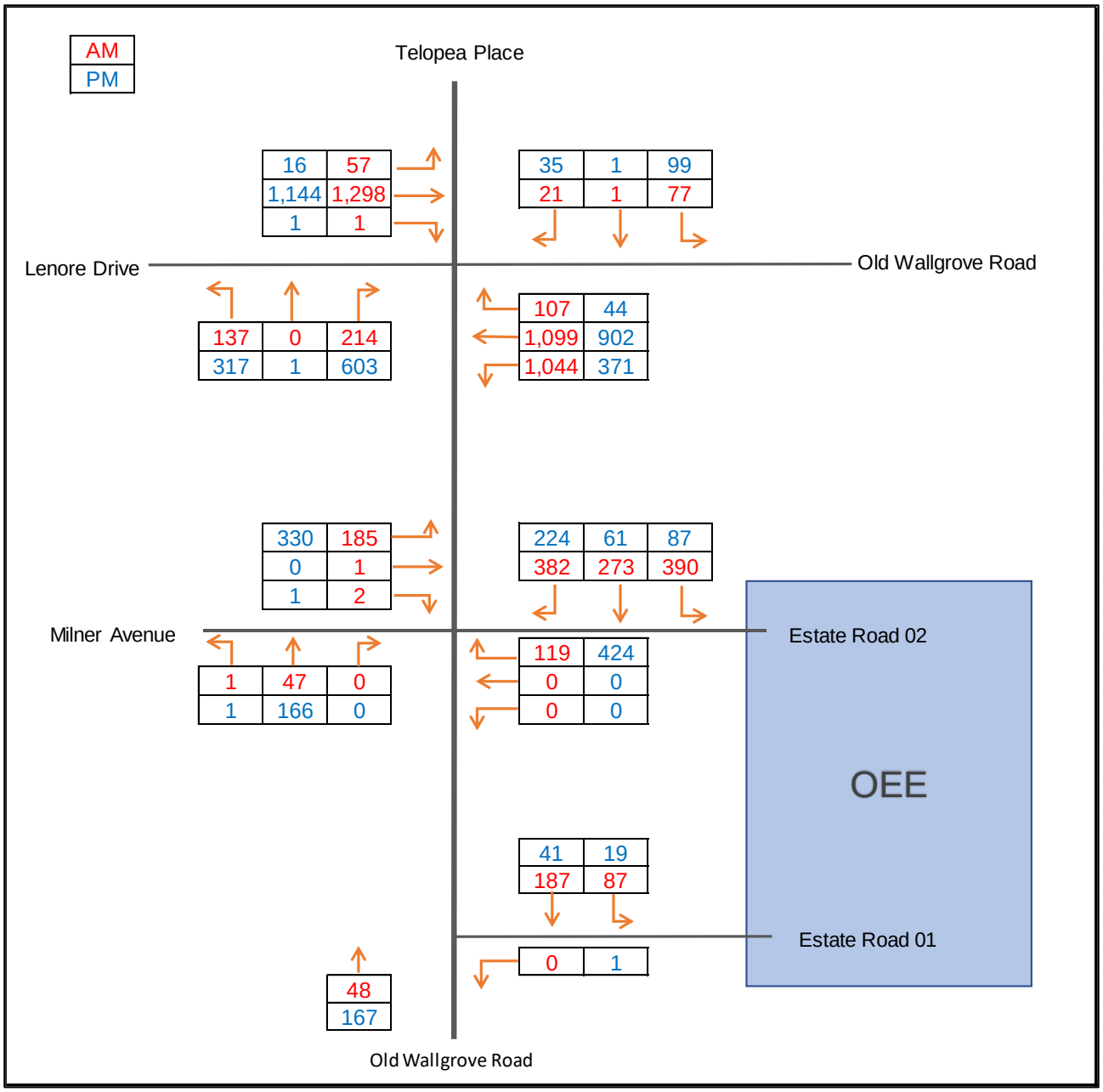


Figure 18: Traffic Demand - 2031 Project Case

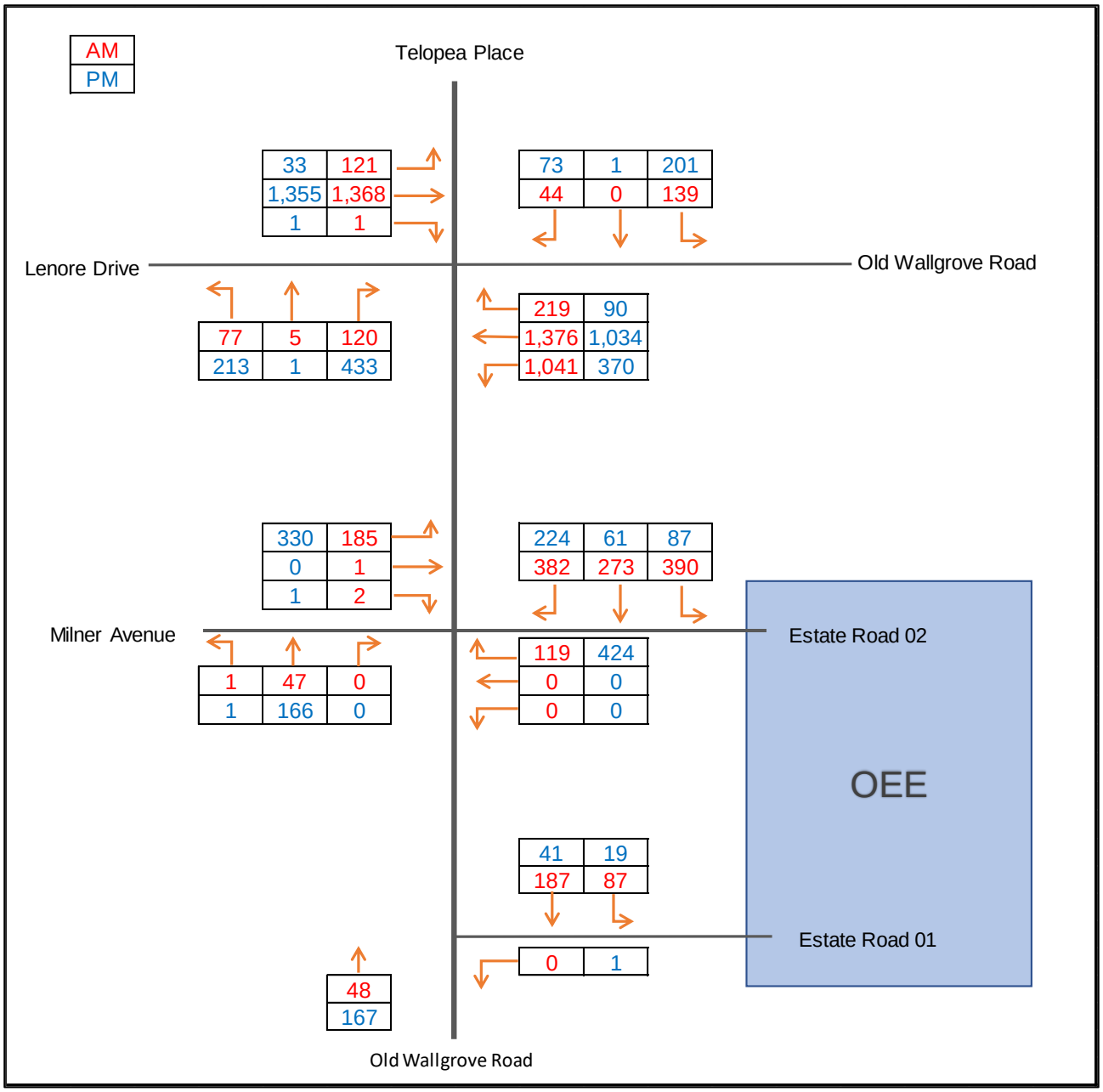


Figure 19: Traffic Demand - 2036 Project Case

The modelling scenarios are summarised in **Table 18**.

TABLE 18 MODELLING SCENARIOS

Scenario No	Scenario Name	Geometry	Traffic Demand		Mitigation
			Background	Development	
1	2021 Existing	Existing	√		
2	2026 Base Case	Existing	√		
3	2026 Project Case	Existing	√	√	
4	2026 Project Case + Mitigation	Per Scenario 3 + mitigation	√	√	√
5	2031 Project Case	Per Scenario 4	√	√	
6	2036 Project Case	Per Scenario 5	√	√	

7.7 Modelling Parameters

7.7.1 SIDRA Input Parameters

Key input parameters for SIDRA Intersection modelling are summarised below:

- Site Level of Service Method was set to 'Delay (RTA NSW)';
- Physical features of the existing intersection geometries were coded with reference to Nearmap aerial imageries;
- Default values of basic saturation flow, peak flow factor, pedestrian walking speed, gap acceptance and environmental factors were unchanged;
- Speed limits were input as per existing posted speed limits at each location; and
- For heavy vehicles, the Passenger Car Unit (or PCU) factor were adopted as 2.0; whereas for light vehicles, the default PCU value (1.0) was unchanged.

7.7.2 Signal Phasing Assumptions

TCS plans were collated for both signalised intersections within the study area. Signal phase times have been set to be 140 second cycle time as requested by TfNSW for future signals. In order to replicate the practical operation of these intersections, a number of assumptions were adopted, such as:

- At the Old Wallgrove Road / Lenore Drive intersection, the left-turn slip lanes are signalised. However, it is noted that the left-turn signals would 'activate' or turn red only when there is a pedestrian demand across the slip lane, which occurs very rarely. At all other times, the left-turn movements on these slip lanes operate as a give-way. To replicate the operation, each of these 1-lane, left-turn slip lanes were coded as priority-controlled with a zebra crossing, instead of signalised.
- The bus lanes on the east and west approaches of Old Wallgrove Road / Lenore Drive intersection were not coded to simplify the signal operation and limit the manual assignment of lane usage. Since the number of buses are negligible (2 per hour in each direction), exclusion of the bus pre-emption is not expected to have a notable impact on the overall intersection performance.
- The Timing Option of 'User-Given Cycle Time' was generally adopted. In some instances, 'User-Given Phase Times' was used due to SIDRA's default allocation of phase times resulting in unbalanced delays between approaches

7.8 Modelling Outcomes

SIDRA modelling results for each scenario are briefly discussed in the following sections. Note that the SIDRA assessment was prepared on an earlier scheme which had higher Precinct GLA than the current scheme (330,898m^2 vs the current 303,330m^2, i.e. some 9% greater), hence the presented modelling has an additional element of conservativeness.

7.8.1 2021 Existing Scenario

The SIDRA results for the existing scenario (2021) is shown in the following table:

TABLE 19 SIDRA RESULTS – 2021 EXISTING

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.37	26	B
			PM	0.58	35	C
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.57	19	B
			PM	0.77	13	A

The analysis demonstrates that the existing two intersections operate satisfactorily in both peak periods with a LoS C or better.

7.8.2 2026 Base Case

The SIDRA results for the 2026 base case scenario are shown in the following table:

TABLE 20 SIDRA RESULTS – 2026 BASE CASE

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.61	22	B
			PM	0.61	30	C
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.45	30	C
			PM	0.46	38	C

The analysis demonstrates that in the future 2026 Base Case scenario, the two intersections continue to operate satisfactorily in both peak periods with a LoS C or better. The Old Wallgrove Road / Millner Avenue intersection has been modelled with the 140 seconds cycle time in this scenario (refer to **Section 7.7.2**) which results in the delay increase and subsequent transition from LoS A to C.

7.8.3 2026 Project Case

The SIDRA results for the 2026 project case scenario are shown in the following table:

TABLE 21 SIDRA RESULTS – 2026 PROJECT CASE

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.73	24	B
			PM	0.79	40	C
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.67	34	C
			PM	0.84	44	D
3	Proposed secondary Estate access	Left-in / Left-out	AM	0.10	7.4	A
			PM	0.06	7.4	A

The results suggest that, with the additional OEE traffic, the signalised intersections continue to operate satisfactorily in the AM peak period. In the PM peak, the Old Wallgrove Road / Millner Avenue intersection worsens to a LoS D. When sensitivity testing these intersections (refer to **Section 0**) with an elevated trip rate of 0.23 / 0.24 trips per 100m^2 in the AM / PM peak hours, it was found that the two signalised intersections exceeded capacity in the PM peak period. To address this, mitigation measures as outlined in the following section were proposed to increase capacity and improve operation of the intersections.

As the priority-controlled intersection at Old Wallgrove Road / Estate Road 01 will be reconfigured to be left-in / left-out only (removal of the right-turn out to Old Wallgrove Road) upon construction of OEE Stage 2, it has also been assessed in this scenario. This intersection operates at a LoS A with minimal delay.

7.8.4 2026 Project Case + Mitigation

The proposed mitigation measures are summarised in **Figure 20** and **Figure 21** and described below.

- Old Wallgrove Road / Lenore Drive
  - Widening of the southern side of the intersection to accommodate a second departure lane, allowing for a continuous flow from the East approach; and
  - Widening and extension of the existing left-turn slip lane from the South approach from the existing 35 metres to 140 metres.
- Old Wallgrove Road / Millner Avenue
  - Widening of the northern side of the intersection to accommodate an additional 100 metres left turn slip lane into Estate Road 02 (eastern arm of intersection); and
  - Extending the kerbside lane of the East approach from 50 metres to 140 metres (i.e. through No Stopping restrictions or similar).

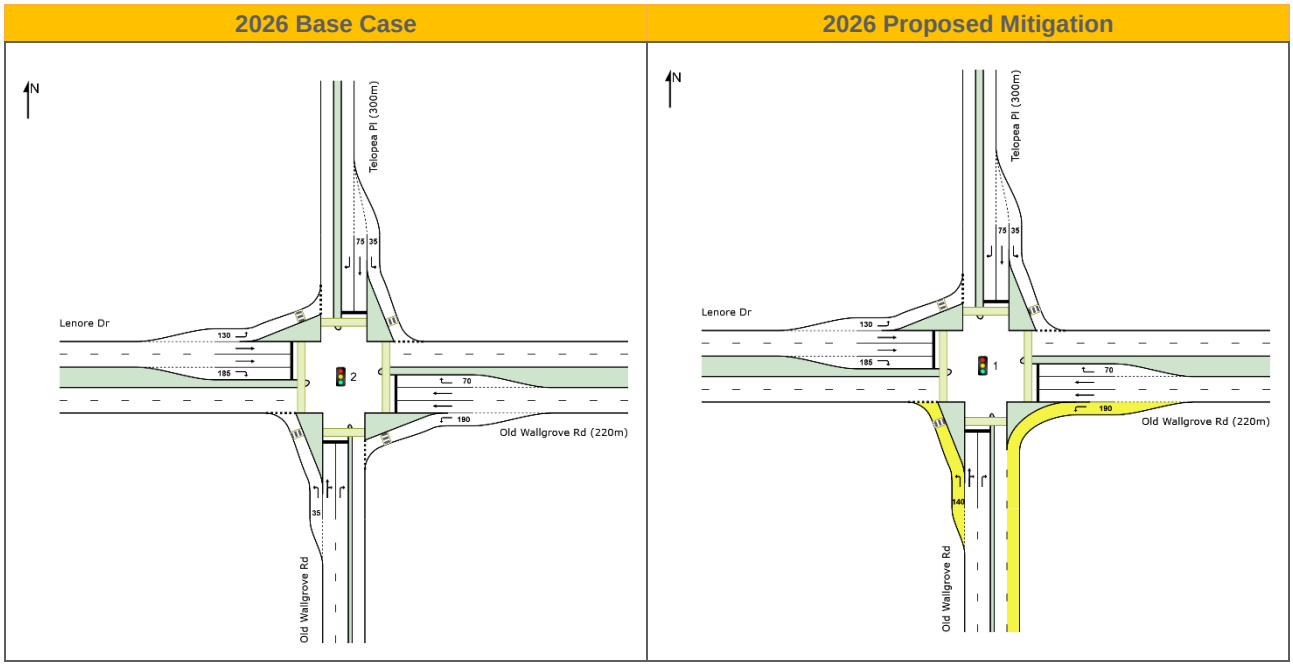


Figure 20: Old Wallgrove Road / Lenore Drive intersection Mitigation

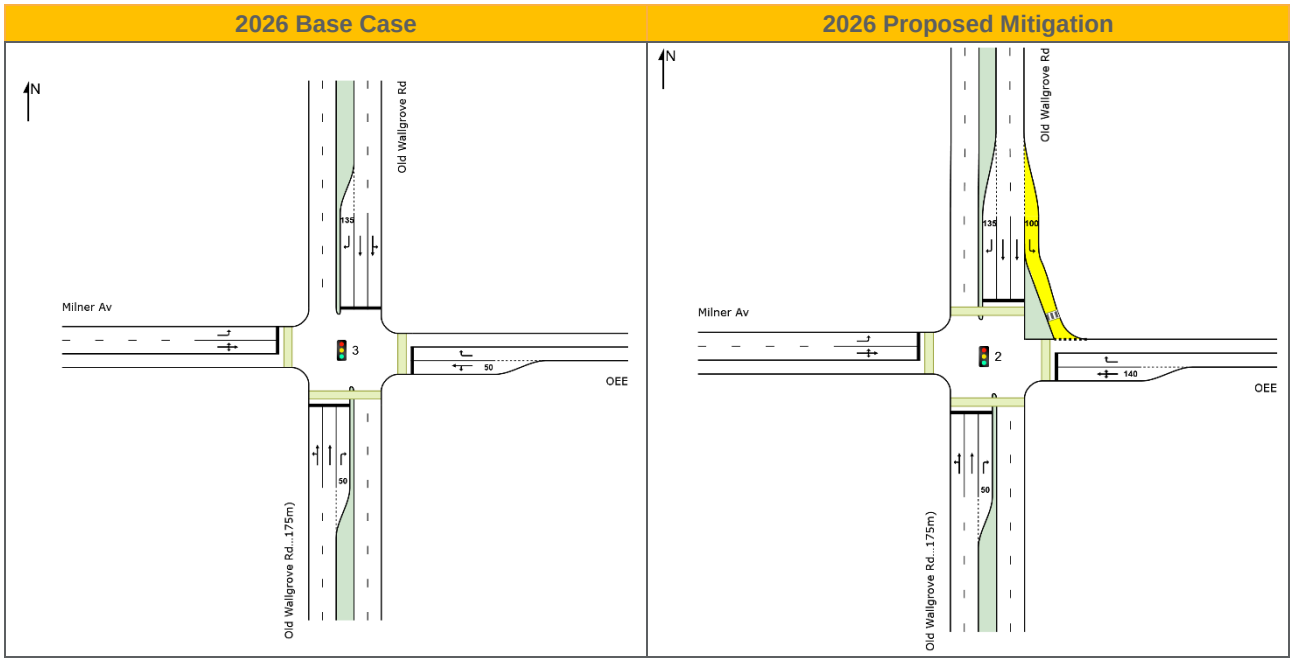


Figure 21: Old Wallgrove Road / Millner Avenue intersection Mitigation

The SIDRA results for the mitigation measures (for the 2026 project case) are shown in the table attached overleaf:

TABLE 22 SIDRA RESULTS – SCENARIO 3 (2026 PROJECT CASE + MITIGATION)

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.65	22	B
			PM	0.75	36	C
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.53	29	C
			PM	0.68	39	C
3	Proposed secondary Estate access	Left-in / Left-out	AM	0.10	7.4	A
			PM	0.06	7.4	A

As seen in **Table 22**, the following mitigation measures improve the operation of both intersections, with the intersections operating at a LoS C or better in both peak periods and individual approaches operating at LoS D or better (refer to **Appendix B** for detailed SIDRA movement summaries).

7.8.5 2031 Project Case

The SIDRA modelling results for the 2031 project case scenario are shown in the following table:

TABLE 23 SIDRA RESULTS – SCENARIO 6 (2036 PROJECT CASE)

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.81	23	B
			PM	0.91	46	D
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.53	29	C
			PM	0.68	39	C
3	Proposed secondary Estate access	Left-in / Left-out	AM	0.10	7.4	A
			PM	0.06	7.4	A

The analysis demonstrates that the mitigation measures proposed for the 2026 Project Case + Mitigation scenario are sufficient in maintaining acceptable operation of the signalised intersections in the 2031 model year. In 2031, both signalised intersections continue to operate with sufficient spare capacity, with a LoS D or better in all approaches.

It is noted that the Old Wallgrove Road / Millner Avenue intersection continues to operate identically to the 2026 Project Case (after mitigation) as we've conservatively assumed full uplift in the adjoining sites and in OEE by 2026. Increases in volumes at the Old Wallgrove Road / Lenore Drive intersection is due to background growth elsewhere.

7.8.6 2036 Project Case

The SIDRA modelling results for the 2036 project case scenario are shown in the following table:

TABLE 24 SIDRA RESULTS – SCENARIO 6 (2036 PROJECT CASE)

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.91	32	C
			PM	0.88	38	C[1]
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.53	29	C
			PM	0.68	39	C
3	Proposed secondary Estate access	Left-in / Left-out	AM	0.10	7.4	A
			PM	0.06	7.4	A

Note that the Old Wallgrove Road / Lenore Drive intersection performs better in the 2036 PM peak compared to 2031 PM peak due to other local and regional upgrades assumed in the Aimsun model which reduce the cumulative background increase (amongst other factors).

The analysis demonstrates that the mitigation measures proposed for the 2026 Project Case + Mitigation scenario are sufficient in maintaining acceptable operation of the signalised intersections in the 2036 model year. In 2036, both signalised intersections continue to operate with sufficient spare capacity, with a LoS D or better in all approaches.

It is noted that the Old Wallgrove Road / Millner Avenue intersection continues to operate identically to the 2026 Project Case (after mitigation) as we've conservatively assumed full uplift in the adjoining sites and in OEE by 2026. Increases in volumes at the Old Wallgrove Road / Lenore Drive intersection is due to background growth elsewhere.

7.8.7 Summary

In summary, the projected traffic associated with this SSD will result in the requirement to increase intersection capacity through widening at the southern approach of the Old Wallgrove Road / Lenore Drive intersection and the northern approach of the Old Wallgrove Road / Millner Avenue intersection. These intersection upgrades will enable the intersections to operate at a LoS D or better in the 2036 model year. The Old Wallgrove Road / Estate Road 01 priority-controlled intersection, after reconfiguration to a left-in / left-out, will continue to operate at a LoS A.

7.9 Sensitivity Analysis

In line with comments received from TfNSW (see **Section 1.3**), further sensitivity testing has been applied to test the impact of adoption of higher trip rates. That is:

- AM Peak: From 0.18 to 0.23 trips per 100m^2 GFA;
- PM Peak: From 0.16 to 0.24 trips per 100m^2 GFA; and
- Daily: Unchanged at 2.43 trips per 100m^2 GFA.

It is our view that the adopted trip rates documented in the previous section (0.18 and 0.16) are appropriate for the development, however, testing for the TfNSW recommended trip rates (0.23 and 0.24) provides a more robust assessment and confidence in the proposed mitigation measures. For the sensitivity analysis, the elevated trip rates are applied to both the OEE development and also adjacent developments which are not yet fully developed (i.e. ESR and Frasers' Nu Pure). Specifically, as it relates to the trip generation for OEE:

TABLE 25 OAKDALE EAST ESTATE TRIP GENERATION BY PRECINCT

Precinct	GLA (m^2)	AM		PM		Daily
		LV	HV	LV	HV	
1	38,772	74	15	77	16	942
2	82,490	158	32	165	33	2,005
3	96,810	185	38	193	39	2,352
4	55,800	107	22	111	23	1,356
5	15,400	29	6	31	6	374
Other	14,058	27	5	28	6	342
Total	303,330	580	118	605	123	7,371

Application of the elevated rates to the 2036 project case SIDRA model results in the following outcomes:

TABLE 26 SIDRA RESULTS – SCENARIO 6A (2036 PROJECT CASE) SENSITIVITY ANALYSIS

Intersection No	Intersection Name	Control	Peak	DoS	Delay (s)	LoS
1	Old Wallgrove Road / Lenore Drive	Signal	AM	0.93	36	C
			PM	0.92	47	D
2	Old Wallgrove Road / Millner Avenue	Signal	AM	0.53	29	C
			PM	0.71	40	C
3	Proposed secondary Estate access	Left-in / Left-out	AM	0.12	7.4	A
			PM	0.09	7.4	A

As demonstrated, with the higher trip rates the intersections continue to operate satisfactorily, with a LoS D or better. Therefore, the proposed mitigation measures are considered appropriate even with the more conservative trip rates of 0.23 and 0.24 trips per 100m^2 GFA in the AM / PM peak and no further mitigation is warranted (refer to **Appendix C** for detailed SIDRA movement summaries).

8 Preliminary Construction Traffic Management Plan

A detailed CTMP will be provided as part of detailed construction planning and in response to a suitable Condition of Consent (CoC). For the purposes of this TA, the following general principles for managing construction traffic have been assumed and provide an understanding of the likely traffic impacts during the construction period.

8.1 Potential Haulage Routes

The primary potential haulage route to and from the Site would be via the M7 Motorway, Wallgrove Road, Mini Link Road, Old Wallgrove Road and Milner Avenue, as shown in the figure below. Obviously, this is subject to further liaison with the proposed contractor and can be finalised later and prior to the CC phase.

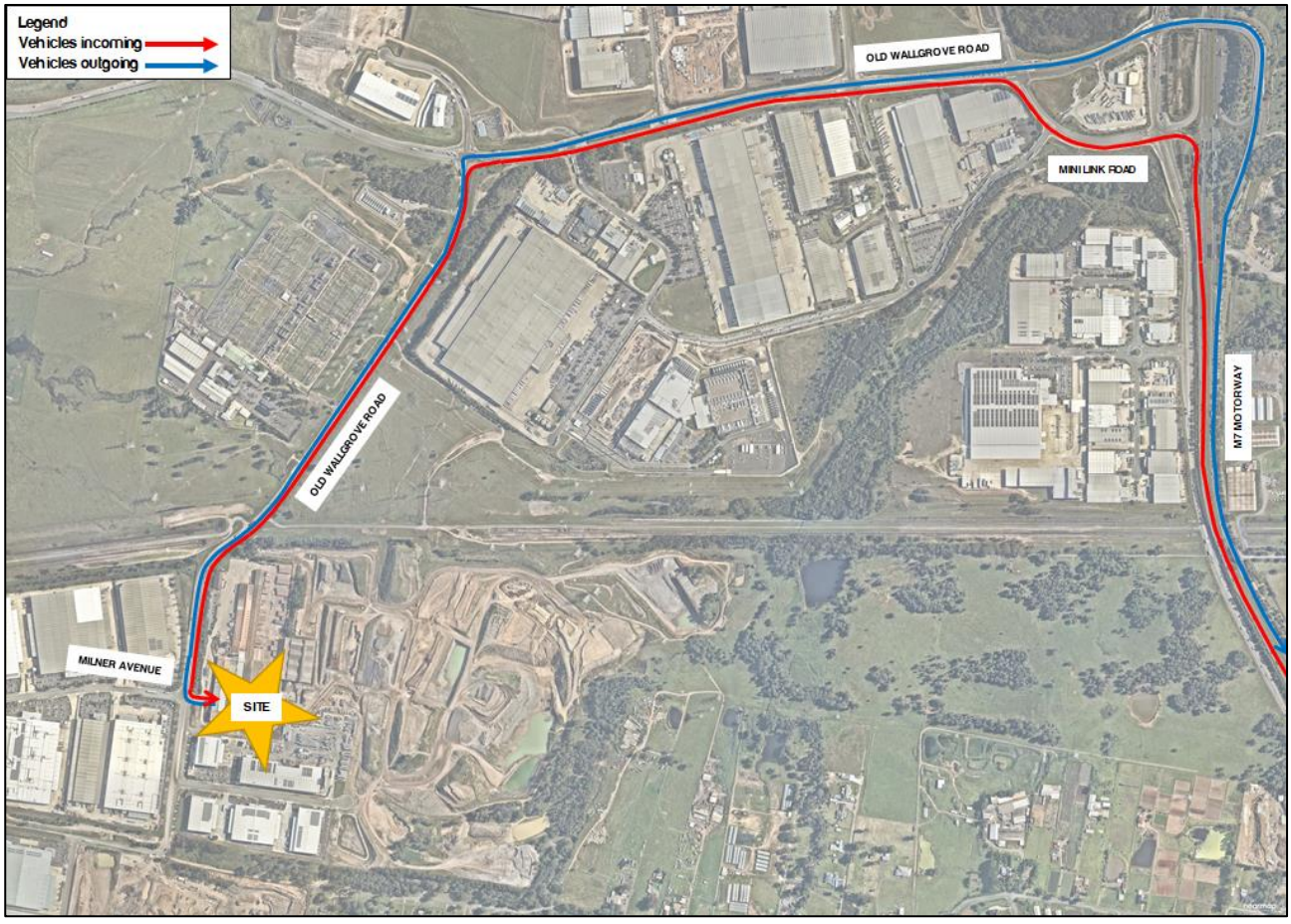


Figure 22: Potential Construction Travel Route to / from the Site

8.2 Proposed Working Hours

The construction work would vary depending on the phase of construction and associated activities and includes both construction and design personnel. The size of the on-site workforce has not been finalised and

as a result, the peak working population on-site at any given time during the construction period may vary. Construction works would be undertaken during standard construction-working hours, which are likely to be as follows. The exact hours will be confirmed in the consent conditions:

- Monday to Friday: 7.00 AM to 6.00 PM
- Saturday: 8.00 AM to 1.00 PM
- Sunday and Public holidays: No planned work.

It may (on occasion) be necessary to undertake night works to minimise disruption to traffic or for oversize deliveries under a special permit.

8.3 Anticipated Construction Program Traffic Generation

Light vehicle traffic generation would be generally associated with contractor movements to and from the Site. Contractors would be comprised of project managers, various trades and general construction personnel. Over the full construction period, the peak workforce represents the worst-case scenario for vehicle movements during the AM or PM road network peak hour. The workforce arrival and departure periods represent the peak construction traffic generation periods.

Light vehicle construction trips are expected to arrive in the morning and depart in the evening and the number of trips would be based on the workforce numbers. Parking for this construction related-vehicles would be provided on-site.

Heavy vehicle traffic would mainly be generated by activities associated with the delivery of construction equipment and delivery of material for construction works.

Notwithstanding, majority of the deliveries are likely to occur outside of the peak road network traffic periods and would have limited (if any) impact onto surrounding road network. Again, it is emphasised that a detailed CTMP will be provided in response to a suitable CoC for the Proposal.

Importantly, it is highly likely that the construction traffic volumes are lower than the operational traffic volumes. Therefore, recognising that the key intersections are anticipated to perform satisfactorily once the Site is completed, it can be assumed that the intersection would satisfactorily accommodate the lower volumes of construction traffic.

8.4 Construction Mitigation Measures

While the traffic impacts of construction of the development are likely to be less than the operational phases, the following measures will be undertaken to minimise the impacts of the construction activities of the development:

- Traffic control would be required to manage and regulate traffic movements into and out of the Site during construction; and
- Disruption to road users would be kept to a minimum by scheduling intensive delivery activities outside of peak network hours.

9 Design Commentary

9.1 Relevant Design Standards

The elements of the proposed Precinct 1 expansion and Precinct 3 demonstrate general compliance for Site access, car parking and loading procedures in line with the following relevant Australian Standards:

- AS/NZS 2890.1:2004 for car parking spaces
- AS2890.2:2018 for commercial vehicle loading areas; and
- AS/NZS2890.6:2009 for accessible spaces.

It is expected that any detailed construction drawings in relation to the car park or Site access would comply with these Standards, and moreover that compliance with the above Standards is anticipated to form a standard CoC to any development approval.

9.2 Design Vehicles

The Precinct 1 expansion hardstand area can accommodate up to 20.0 metre Articulated Vehicles (AVs). Precinct 3 can accommodate up to 30.0 metre Super B-Doubles limited to side load and up to 20.0 metre Articulated Vehicles (AVs) for recessed dock access and rear loading at RSD positions.

Although Precinct 3 can accommodate 30.0m Super B-doubles, it is noted that based on the operational information provided by the immediate tenant for Precinct 3, the largest truck required for operation is a 26.0m B-double. As such, the assessment undertaken for 30.0m Super B-doubles is deemed conservative and has been undertaken to future proof the Site.

9.3 Access Design

The future freight line corridor, labelled as an SP2 Infrastructure zone on the Masterplan, runs through the Estate, passing south of Precinct 5. It is understood that the proposed freight line will be at a higher elevation than the proposed Estate roadway leading to Precinct 5, hence the intersection would be grade separated. This facilitates independent access to / from Precinct 5 without interaction with the future freight line.

For Site levels and similar details, refer to the Civil documentation prepared separately. For outcomes of the consultation, refer to the Planning documentation prepared separately.

9.4 Commercial Hardstand Area

The design review indicates that access and egress to recessed docks and roller shutter doors can generally occur noting that hardstand operational management would effectively facilitate the movements of trucks within the hardstand area.

All commercial vehicles can enter and exit the site in a forward direction. Consideration shall be given to the design commentary and RSD vehicle size limitations included in **Appendix D**.

9.5 Estate Roads

All Estate Roads, intersections and junctions thereof have been designed to accommodate trucks mainly up to 26.0 metre B-doubles (designed by AT&L). The specific travel route to be adopted is shown in the figure below (prior to the SLR connection).

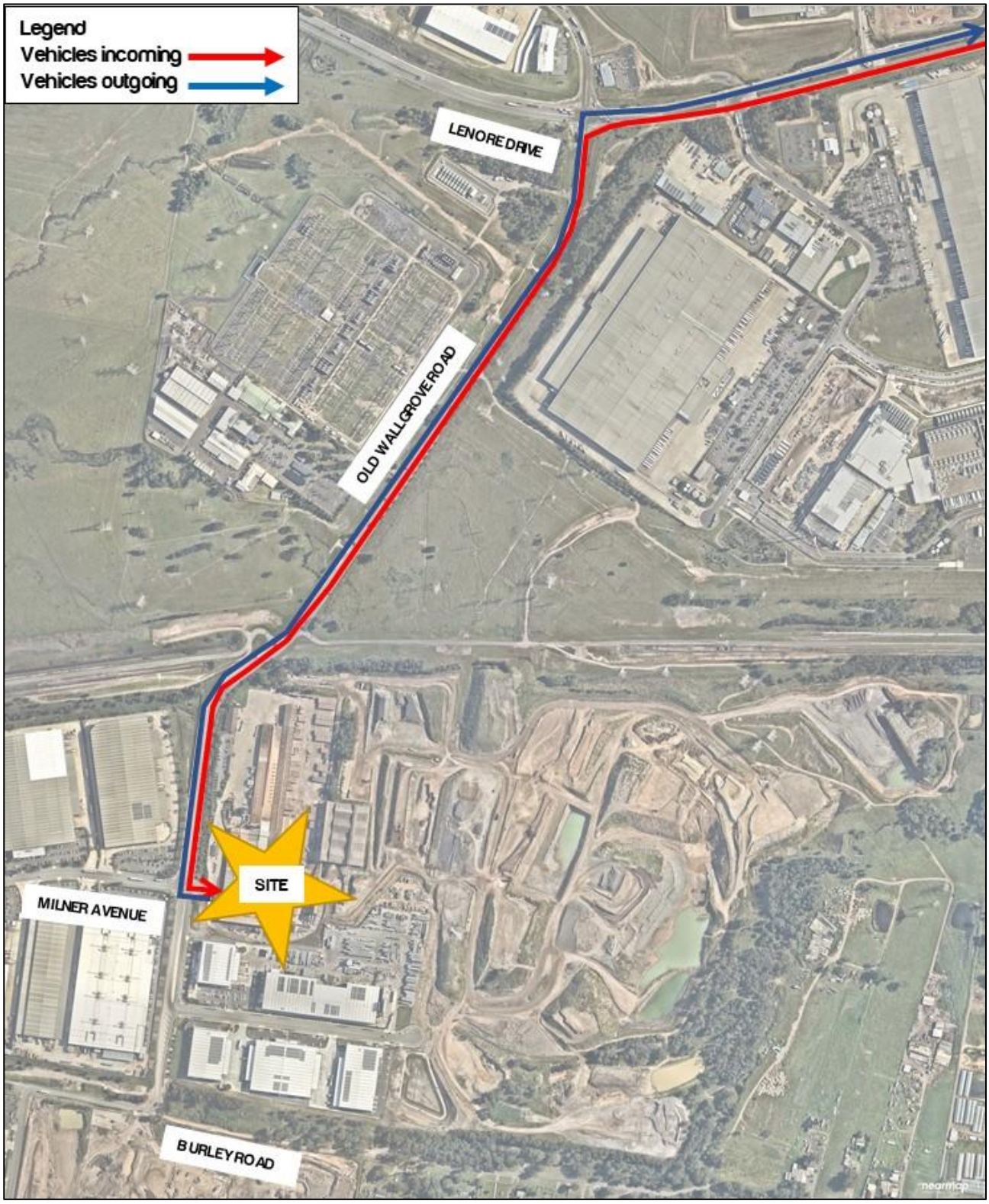


Figure 23: Specific Travel Route to / from the Site – Prior to Potential Future SLR Connection

Ason Group has been advised that “No Parking” and “No Stopping” restrictions would be proposed on all future public roads within the OEE.

9.6 Car Parking Design

Staff and visitor parking – situated in proximity to tenancies – is demonstrated to generally comply with AS2890.1:2004 in line with User Class 2 which is superior to the minimum User Class 1/1A required for staff parking. Accessible spaces generally comply with AS2890.6:2009.

9.7 Fire Service Appliance Circulation

In line with Fire and Rescue NSW (FRNSW) Guidelines, circulation around the Site and through the fire path perimeter has been tested for a 12.5 m HRV, demonstrating sufficient access for ‘General and ‘Specialist’ fire appliances, as demonstrated in **Appendix D**.

9.8 Internal Circulation

The proposed circulation route for the Precinct 1 expansion is shown in the figure below. It is noted that heavy vehicles entering / exiting from the Precinct 1 expansion will do so by utilising the proposed heavy vehicle access driveway.

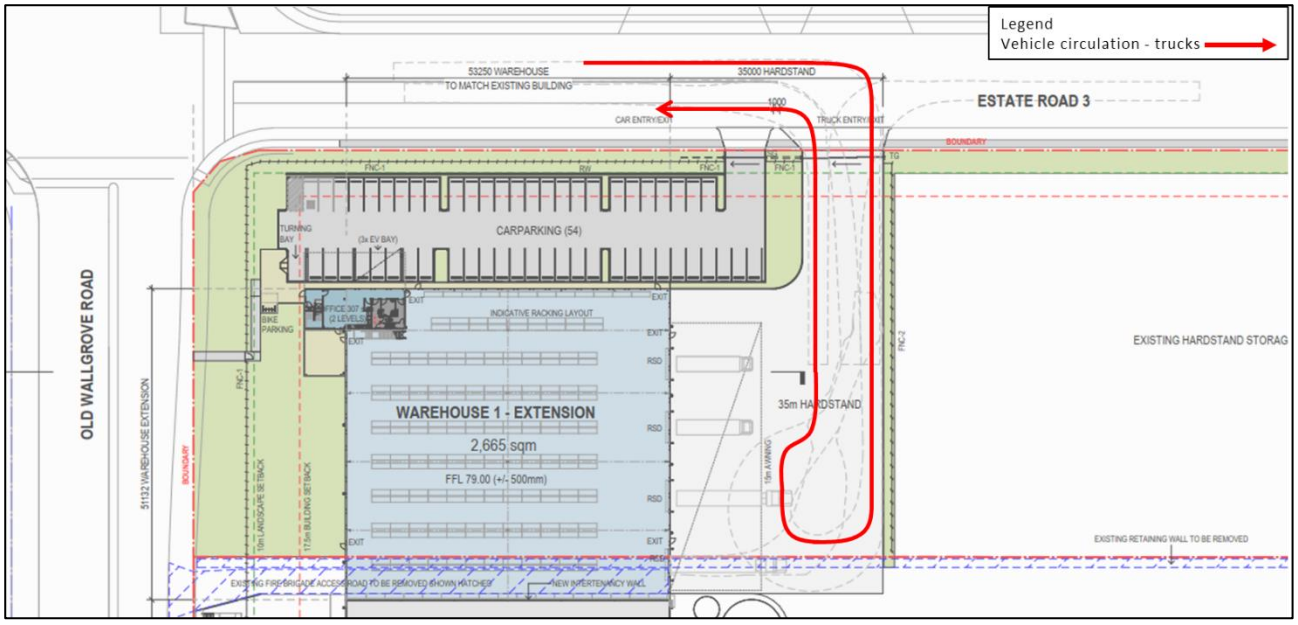


Figure 24: Heavy Vehicle Circulation Route within Precinct 1 – Design for 20m AV

A one-way clockwise circulation route is proposed for all heavy vehicles making inbound deliveries to Precinct 3.

As for heavy vehicles making outbound deliveries, a one-way counterclockwise circulation route is proposed. This is shown in the following figure.

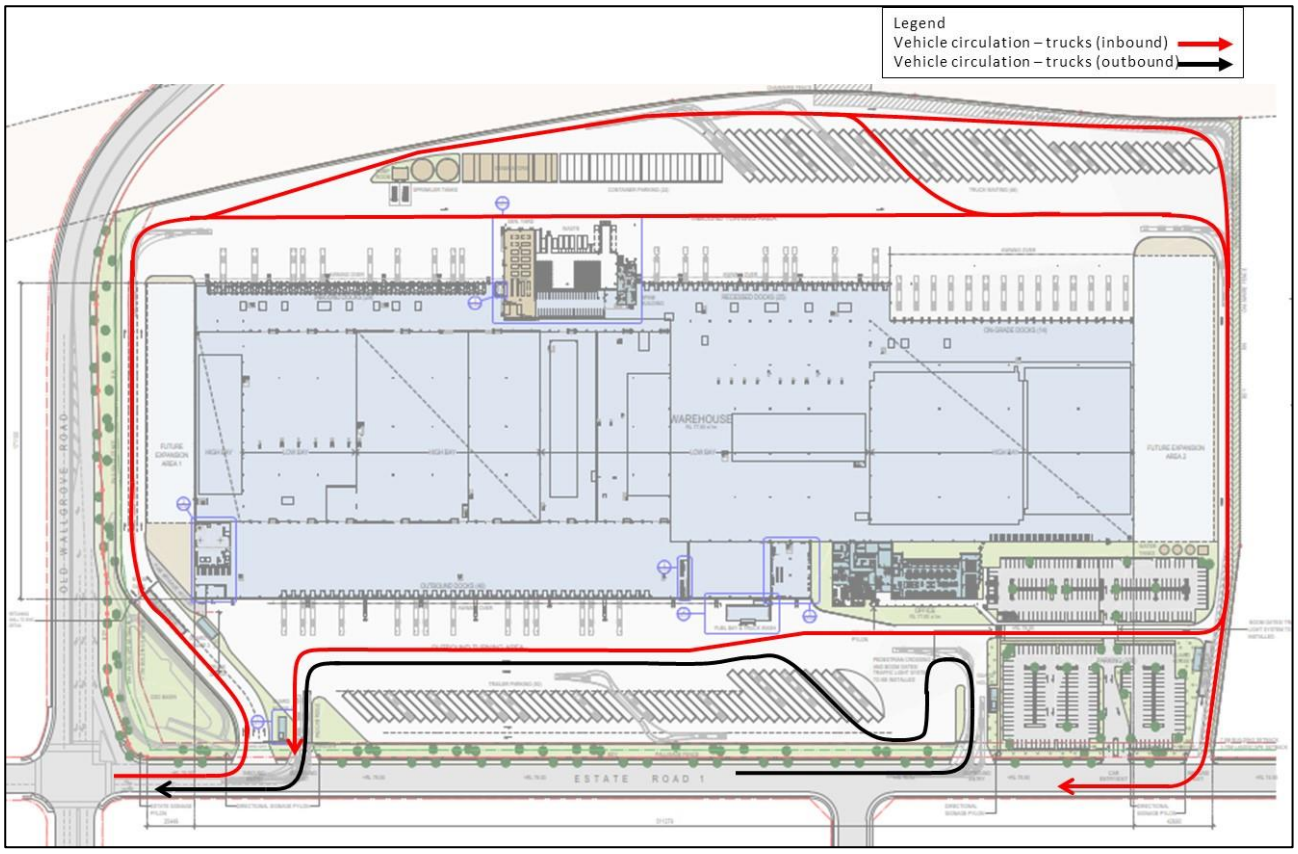


Figure 25: Heavy Vehicle Circulation Route within Precinct 3

10 Summary and Conclusions

Ason Group has been engaged by Goodman Property Services (Aust) Pty Ltd (Goodman) to prepare a TA to assess the traffic and parking implications associated with the development of the Precinct 1 expansion and Precinct 3 within the Oakdale East Estate (OEE).

10.1 Key Findings

The key findings of this TA are:

- Based on survey evidence conducted by Ason Group for vehicle trip generation rates at Oakdale Central Estate (OCE), Oakdale South Estate (OSE) and the First Estate Precinct, the adopted trip generation rates of 0.18 and 0.16 trips per 100m^2 GFA in the AM and PM Peaks is considered to be appropriate.
- The estimated proposed SSD traffic generation having regard for the adopted rates of 0.18 / 0.16 / 2.43 trips per 100m^2 GFA (AM / PM / Daily) is shown in **Table 27**:

TABLE 27 TRAFFIC GENERATION FOR THE ENTIRE OAKDALE EAST ESTATE

Precincts	GLA (m^2)	AM Peak	PM Peak	Daily
1 to 5	303,330	546	485	7,371

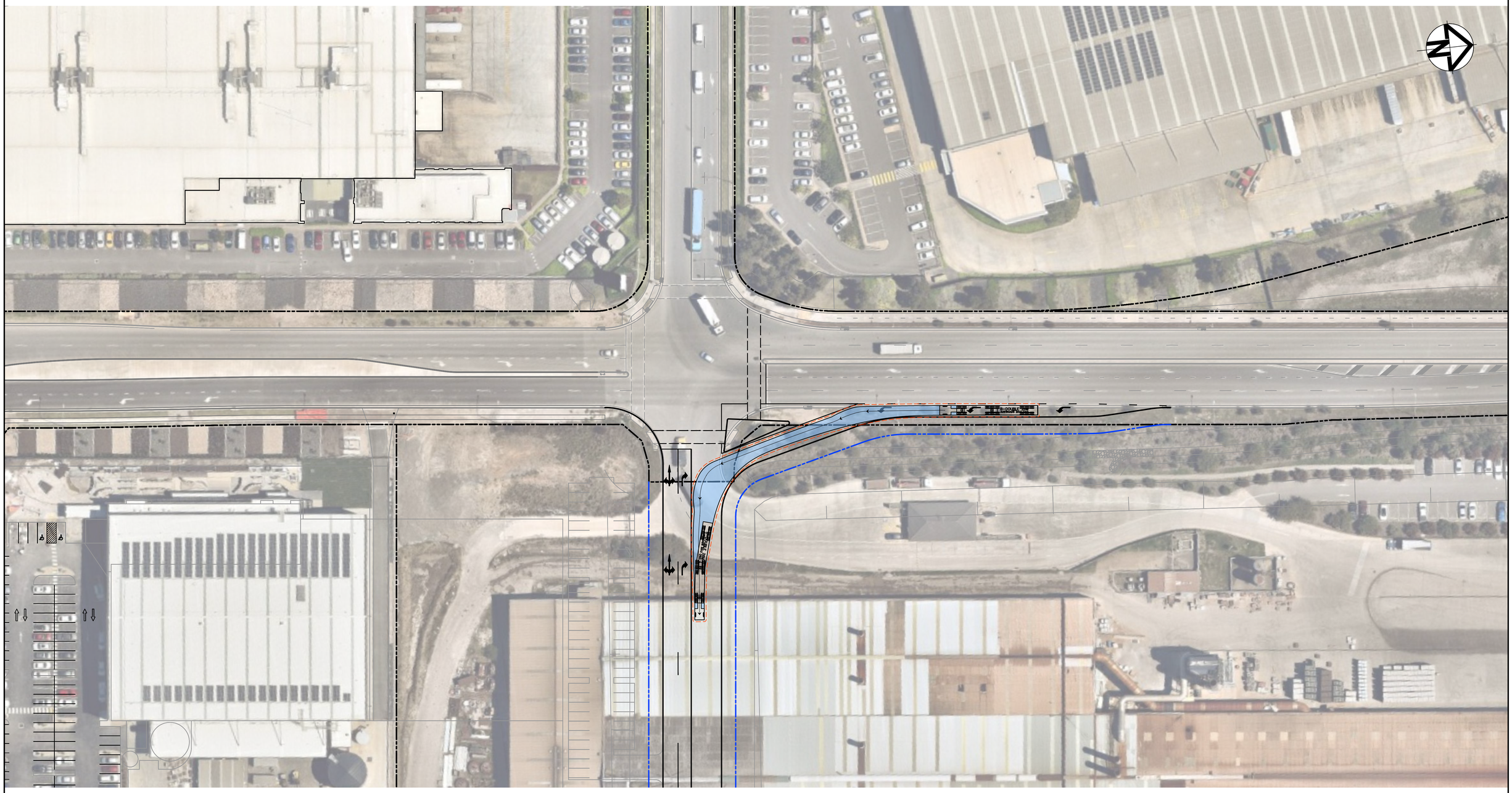
- SIDRA modelling was undertaken for the following scenarios:
  - Existing;
  - 2026 Base Case;
  - 2026 Project Case;
  - 2026 Project Case + Mitigation;
  - 2031 Project Case; and
  - 2036 Project Case.
- Mitigation measures were proposed to ensure that the modelled intersections continued to operate at a satisfactory Level of Service. The mitigation measures at the following intersections is explained below:
  - Old Wallgrove Road / Lenore Drive
    - Widening of the southern side of the intersection to accommodate a second departure lane, allowing for a continuous flow from the East approach; and
    - Widening and extension of the existing left-turn slip lane from the South approach from the existing 35 metres to 140 metres.
  - Old Wallgrove Road / Millner Avenue
    - Widening of the northern side of the intersection to accommodate an additional 100 metres left turn slip lane into Estate Road 02 (eastern arm of intersection); and
    - Extending the kerbside lane of the East approach from 50 metres to 140 metres (i.e. through No Stopping restrictions or similar).
  - In the 2026 model year, the intersections operate at a LoS C or better in both peak periods, post-mitigation.
  - In the 2031 model year, the intersections operate at a LoS D or better in both peak periods, without any further mitigation.
  - In the 2036 model year, the intersections operate at a LoS D or better in both peak periods, without any further mitigation.

- In summary, the projected traffic associated with the OEE can be satisfactorily offset by the proposed mitigation measures.
- Further to this, sensitivity analysis, adopting higher trip rates (recommended by TfNSW) of 0.23 and 0.24 trips per 100m^2 GFA in the AM and PM peaks, finds the proposed mitigation measures are suitable even under the elevated trip rate and no additional mitigation is warranted as a result.
- On-site parking provisions for Precinct 1 under this SSD meets and exceeds the requirements of the OEE DCP 2022. On-site parking provisions for Precincts 3 under this SSD are lower than the requirements of the OEE DCP 2022, however based on the known tenant's operational requirements, the proposed provision of 328 spaces accommodates their expected parking demand.
- Detailed design of each individual building is deferred to their respective DA assessment. However, the Site access, car park and loading areas for all buildings are expected to comply with the following relevant Australian Standards:
  - AS 2890.1:2004 for car parking areas,
  - AS 2890.2:2018 for commercial vehicle loading areas and
  - AS 2890.6:2009 for accessible (disabled) parking.
- It is expected that any detailed construction drawings in relation to the car park or Site access would comply with these Standards. Furthermore, compliance with the above Standards would be expected to form a standard condition of consent to any development approval.

10.2 Conclusions

In summary, the proposed OEE Concept Plan, including the Stage 2 works of the Precinct 1 expansion and Precinct 3 warehouse developments, is deemed supportable on traffic and transport planning grounds and is not expected to result in any adverse impacts on the surrounding road network.

Appendix A. Old Wallgrove Road / Millner Avenue Concept Plan



Issue	Description	Date
P1	ISSUED FOR INFORMATION	21-02-22

Bar Scales

0 10 20 30 40 50m

1 : 500 @ A1 1 : 1000 @ A3

100mm on Original

THIS DRAWING CANNOT BE COPIED OR REPRODUCED IN ANY FORM OR USED FOR ANY OTHER PURPOSE OTHER THAN THAT ORIGINALLY INTENDED WITHOUT THE WRITTEN PERMISSION OF AT&L

Client

Goodman

Scales		Drawn	JB
1 : 500		Designed	JB
Grid	MGA	Checked	AM
Height Datum	AHD	Approved	

Project

OAKDALE EAST
INFRASTRUCTURE MASTERPLAN

Title

FUNCTIONAL LAYOUT
HIGH ENTRY
LEFT TURN

Civil Engineers and Project Managers

at&l

Level 7, 153 Walker Street
North Sydney NSW 2060
ABN 96 130 882 405
Tel: 02 9439 1777
Fax: 02 9923 1055
www.atl.net.au
info@atl.net.au

Status
PRELIMINARY ONLY
NOT TO BE USED FOR CONSTRUCTION

A1

Project No. - Drawing No.
20-798-SK071(B)

Issue
P1

\\ATLSERVER2\Projects\20-798 Oakdale East Rehab\6.0 Drgs\Civil\Sketches\20-798-SK071(B) - MILLNER AVE HIGH ENTRY LEFT TURN.dwg

Appendix B. SIDRA Movement Summaries (0.18/0.16 trip rates)

USER REPORT FOR SITE

All Movement Classes

Project: p1546m05v1_OEE0.18_0.16 **Template: Movement Summary**

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2021 Existing)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	63	27.0	66	27.0	0.062	9.2	LOS A	0.6	4.9	0.18	0.64	0.18	56.6
2	T1	1	27.0	1	27.0	* 0.373	53.7	LOS D	6.3	54.0	0.92	0.79	0.92	30.2
3	R2	196	27.0	206	27.0	0.373	61.4	LOS E	6.3	54.0	0.92	0.79	0.92	26.6
Approach		260	27.0	274	27.0	0.373	48.7	LOS D	6.3	54.0	0.74	0.75	0.74	31.8
East: Old Wallgrove Rd (220m)														
4	L2	415	27.0	437	27.0	0.342	8.9	LOS A	3.8	32.8	0.20	0.66	0.20	51.3
5	T1	349	23.6	367	23.6	0.291	30.4	LOS C	8.4	70.9	0.72	0.61	0.72	41.7
6	R2	21	14.0	22	14.0	* 0.320	82.7	LOS F	1.6	12.4	1.00	0.71	1.00	17.3
Approach		785	25.1	826	25.1	0.342	20.4	LOS B	8.4	70.9	0.45	0.64	0.45	45.0
North: Telopea Pl (300m)														
7	L2	7	14.0	7	14.0	0.011	11.2	LOS A	0.1	0.8	0.27	0.64	0.27	49.3
8	T1	1	14.0	1	14.0	0.014	71.4	LOS F	0.1	0.6	0.97	0.57	0.97	27.3
9	R2	1	14.0	1	14.0	0.015	79.1	LOS F	0.1	0.6	0.97	0.59	0.97	24.0
Approach		9	14.0	9	14.0	0.015	25.4	LOS B	0.1	0.8	0.43	0.63	0.43	38.5
West: Lenore Dr														
10	L2	1	14.0	1	14.0	0.001	7.9	LOS A	0.0	0.0	0.10	0.61	0.10	59.5
11	T1	608	23.3	640	23.3	* 0.368	18.8	LOS B	12.1	101.9	0.60	0.53	0.60	51.0
12	R2	75	27.0	79	27.0	0.284	60.2	LOS E	4.7	40.2	0.90	0.78	0.90	31.5
Approach		684	23.7	720	23.7	0.368	23.3	LOS B	12.1	101.9	0.64	0.56	0.64	46.8
All Vehicles		1738	24.8	1829	24.8	0.373	25.8	LOS B	12.1	101.9	0.57	0.62	0.57	42.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2021 Existing)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	209	27.0	220	27.0	0.253	12.6	LOS A	4.1	35.4	0.35	0.70	0.35	53.8
2	T1	1	27.0	1	27.0	* 0.563	66.7	LOS E	5.9	50.7	1.00	0.79	1.00	26.7
3	R2	164	27.0	173	27.0	0.563	74.3	LOS F	5.9	50.7	1.00	0.79	1.00	23.5
Approach		374	27.0	394	27.0	0.563	39.8	LOS C	5.9	50.7	0.63	0.74	0.63	36.7
East: Old Wallgrove Rd (220m)														
4	L2	70	27.0	74	27.0	0.064	10.2	LOS A	0.9	7.6	0.23	0.65	0.23	50.0
5	T1	727	23.3	765	23.3	* 0.576	33.0	LOS C	19.9	166.9	0.82	0.72	0.82	40.1
6	R2	6	14.0	6	14.0	0.015	48.3	LOS D	0.3	2.5	0.77	0.67	0.77	24.9
Approach		803	23.5	845	23.5	0.576	31.1	LOS C	19.9	166.9	0.77	0.72	0.77	40.7
North: Telopea Pl (300m)														
7	L2	15	14.0	16	14.0	0.017	10.2	LOS A	0.2	1.5	0.23	0.64	0.23	50.6
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	1	14.0	1	14.0	0.015	79.1	LOS F	0.1	0.6	0.97	0.59	0.97	24.0
Approach		17	14.8	18	14.8	0.017	17.9	LOS B	0.2	1.5	0.32	0.63	0.32	43.5
West: Lenore Dr														
10	L2	1	14.0	1	14.0	0.001	7.9	LOS A	0.0	0.0	0.09	0.61	0.09	59.5
11	T1	383	23.5	403	23.5	0.303	28.6	LOS C	9.0	75.9	0.71	0.60	0.71	43.0
12	R2	200	27.0	211	27.0	* 0.569	56.7	LOS E	12.6	108.9	0.92	0.83	0.92	32.4
Approach		584	24.7	615	24.7	0.569	38.2	LOS C	12.6	108.9	0.78	0.68	0.78	37.8
All Vehicles		1778	24.6	1872	24.6	0.576	35.2	LOS C	19.9	166.9	0.74	0.71	0.74	38.7

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2021 Existing)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 60 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Sequence1 - Import - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1
Output Phase Sequence: A, D, E, F, F1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	9	4	9	44.4	* 0.108	15.9	LOS B	0.6	5.3	0.79	0.61	0.79	39.2
2	T1	66	22	69	33.3	* 0.108	15.7	LOS B	0.9	8.3	0.80	0.61	0.80	41.4
3	R2	2	1	2	50.0	0.005	12.7	LOS A	0.0	0.2	0.68	0.59	0.68	28.7
Approach		77	27	81	35.1	0.108	15.6	LOS B	0.9	8.3	0.79	0.61	0.79	40.9
East: OEE														
4	L2	1	0	1	0.0	0.007	21.4	LOS B	0.0	0.3	0.85	0.56	0.85	25.8
5	T1	1	0	1	0.0	0.007	16.8	LOS B	0.0	0.3	0.85	0.56	0.85	35.0
6	R2	8	2	8	25.0	* 0.043	30.4	LOS C	0.2	1.9	0.90	0.66	0.90	31.0
Approach		10	2	11	20.0	0.043	28.2	LOS B	0.2	1.9	0.89	0.64	0.89	31.0
North: Old Wallgrove Rd														
7	L2	12	8	13	66.7	0.082	17.2	LOS B	0.9	8.0	0.56	0.64	0.56	46.9
8	T1	96	26	101	27.1	0.082	12.8	LOS A	1.0	8.3	0.57	0.63	0.57	51.2
9	R2	382	113	402	29.6	* 0.566	20.7	LOS B	8.9	78.2	1.00	0.87	1.00	45.2
Approach		490	147	516	30.0	0.566	19.0	LOS B	8.9	78.2	0.91	0.81	0.91	46.0
West: Milner Av														
10	L2	185	135	195	73.0	0.260	20.1	LOS B	2.2	24.7	0.74	0.73	0.74	35.2
11	T1	1	0	1	0.0	0.260	15.7	LOS B	2.1	23.3	0.75	0.73	0.75	34.4
12	R2	2	1	2	50.0	0.260	20.7	LOS B	2.1	23.3	0.75	0.73	0.75	34.7
Approach		188	136	198	72.3	0.260	20.1	LOS B	2.2	24.7	0.74	0.73	0.74	35.2
All Vehicles		765	312	805	40.8	0.566	19.1	LOS B	8.9	78.2	0.85	0.77	0.85	42.0

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2021 Existing)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 40 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Sequence1 - Import - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1
Output Phase Sequence: A, D, E, F, F1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	4	1	4	25.0	* 0.111	14.4	LOS A	0.8	6.1	0.70	0.56	0.70	43.1
2	T1	122	17	128	13.9	* 0.111	9.2	LOS A	0.9	7.1	0.70	0.55	0.70	57.1
3	R2	1	0	1	0.0	0.001	9.6	LOS A	0.0	0.1	0.56	0.58	0.56	35.9
Approach		127	18	134	14.2	0.111	9.3	LOS A	0.9	7.1	0.70	0.55	0.70	56.4
East: OEE														
4	L2	1	0	1	0.0	0.017	18.4	LOS B	0.0	0.2	0.94	0.58	0.94	27.8
5	T1	1	0	1	0.0	0.017	13.8	LOS A	0.0	0.2	0.94	0.58	0.94	36.7
6	R2	21	12	22	57.1	* 0.769	34.8	LOS C	0.6	6.3	1.00	0.87	1.95	26.1
Approach		23	12	24	52.2	0.769	33.2	LOS C	0.6	6.3	0.99	0.85	1.87	26.4
North: Old Wallgrove Rd														
7	L2	16	14	17	87.5	0.043	12.7	LOS A	0.2	2.5	0.45	0.64	0.45	49.9
8	T1	30	17	32	56.7	0.043	9.8	LOS A	0.3	2.8	0.55	0.61	0.55	54.6
9	R2	224	112	236	50.0	* 0.353	12.7	LOS A	2.5	25.4	0.59	0.74	0.59	50.0
Approach		270	143	284	53.0	0.353	12.4	LOS A	2.5	25.4	0.58	0.72	0.58	50.3
West: Milner Av														
10	L2	330	101	347	30.6	0.316	13.8	LOS A	2.6	22.5	0.71	0.74	0.71	42.8
11	T1	1	0	1	0.0	0.316	9.3	LOS A	2.4	21.0	0.72	0.74	0.72	38.1
12	R2	9	1	9	11.1	0.316	14.0	LOS A	2.4	21.0	0.72	0.74	0.72	38.6
Approach		340	102	358	30.0	0.316	13.8	LOS A	2.6	22.5	0.71	0.74	0.71	42.7
All Vehicles		760	275	800	36.2	0.769	13.1	LOS A	2.6	25.4	0.67	0.71	0.70	46.1

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2026 Base)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	91	27.0	96	27.0	0.096	9.2	LOS A	0.8	7.3	0.19	0.65	0.19	56.6
2	T1	1	27.0	1	27.0	* 0.559	68.7	LOS E	5.1	44.3	1.00	0.78	1.00	26.2
3	R2	141	27.0	148	27.0	0.559	76.3	LOS F	5.1	44.3	1.00	0.78	1.00	23.1
Approach		233	27.0	245	27.0	0.559	50.1	LOS D	5.1	44.3	0.68	0.73	0.68	32.0
East: Old Wallgrove Rd (220m)														
4	L2	482	27.0	507	27.0	0.402	9.2	LOS A	5.2	44.8	0.23	0.67	0.23	51.0
5	T1	423	23.5	445	23.5	0.295	23.5	LOS B	9.1	76.5	0.65	0.55	0.65	46.8
6	R2	53	14.0	56	14.0	* 0.605	81.9	LOS F	4.0	31.4	1.00	0.78	1.07	17.4
Approach		958	24.7	1008	24.7	0.605	19.5	LOS B	9.1	76.5	0.46	0.62	0.46	45.6
North: Telopea Pl (300m)														
7	L2	42	14.0	44	14.0	0.088	15.3	LOS B	1.0	7.9	0.39	0.69	0.39	44.7
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	9	14.0	9	14.0	* 0.137	81.3	LOS F	0.7	5.2	0.99	0.67	0.99	23.6
Approach		52	14.3	55	14.3	0.137	27.8	LOS B	1.0	7.9	0.51	0.68	0.51	36.4
West: Lenore Dr														
10	L2	27	14.0	28	14.0	0.021	8.2	LOS A	0.1	1.1	0.12	0.63	0.12	59.3
11	T1	1094	23.2	1152	23.2	* 0.572	15.4	LOS B	22.1	185.7	0.62	0.56	0.62	54.6
12	R2	87	27.0	92	27.0	0.297	57.8	LOS E	5.3	45.7	0.88	0.78	0.88	32.2
Approach		1208	23.3	1272	23.3	0.572	18.3	LOS B	22.1	185.7	0.63	0.58	0.63	51.2
All Vehicles		2451	24.0	2580	24.0	0.605	22.0	LOS B	22.1	185.7	0.56	0.61	0.56	45.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2026 Base)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	129	27.0	136	27.0	0.187	14.4	LOS A	3.0	25.6	0.39	0.70	0.39	52.4
2	T1	1	27.0	1	27.0	*0.598	48.6	LOS D	10.1	87.3	0.90	0.81	0.90	31.9
3	R2	367	27.0	386	27.0	0.598	57.2	LOS E	13.1	112.9	0.92	0.82	0.92	27.7
Approach		497	27.0	523	27.0	0.598	46.1	LOS D	13.1	112.9	0.78	0.79	0.78	32.8
East: Old Wallgrove Rd (220m)														
4	L2	237	27.0	249	27.0	0.186	8.4	LOS A	1.2	10.5	0.13	0.64	0.13	51.8
5	T1	889	23.2	936	23.2	*0.608	27.2	LOS B	23.2	194.6	0.78	0.69	0.78	43.9
6	R2	17	14.0	18	14.0	0.259	82.3	LOS F	1.3	10.0	1.00	0.70	1.00	17.3
Approach		1143	23.8	1203	23.8	0.608	24.1	LOS B	23.2	194.6	0.64	0.68	0.64	44.6
North: Telopea Pl (300m)														
7	L2	47	14.0	49	14.0	0.099	19.6	LOS B	1.4	11.0	0.48	0.70	0.48	40.7
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	16	14.0	17	14.0	*0.243	82.2	LOS F	1.2	9.4	1.00	0.70	1.00	23.4
Approach		64	14.2	67	14.2	0.243	36.1	LOS C	1.4	11.0	0.62	0.70	0.62	32.4
West: Lenore Dr														
10	L2	6	14.0	6	14.0	0.004	8.0	LOS A	0.0	0.2	0.10	0.62	0.10	59.5
11	T1	877	23.2	923	23.2	0.592	27.0	LOS B	22.3	187.3	0.77	0.69	0.77	44.1
12	R2	28	27.0	29	27.0	*0.478	84.5	LOS F	2.1	18.5	1.00	0.73	1.00	26.0
Approach		911	23.2	959	23.2	0.592	28.7	LOS C	22.3	187.3	0.77	0.69	0.77	42.9
All Vehicles		2615	24.0	2753	24.0	0.608	30.2	LOS C	23.2	194.6	0.72	0.71	0.72	40.7

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2026 Base)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1
Output Phase Sequence: A, D, E, F, F1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.077	51.2	LOS D	1.4	11.8	0.82	0.61	0.82	25.4
2	T1	47	27.0	49	27.0	* 0.077	46.8	LOS D	1.4	11.9	0.83	0.61	0.83	27.7
3	R2	1	27.0	1	27.0	0.002	18.9	LOS B	0.0	0.2	0.63	0.58	0.63	25.1
Approach		49	27.0	52	27.0	0.077	46.3	LOS D	1.4	11.9	0.82	0.61	0.82	27.7
East: OEE														
4	L2	1	27.0	1	27.0	0.008	53.3	LOS D	0.1	1.0	0.83	0.57	0.83	14.4
5	T1	1	27.0	1	27.0	0.008	48.5	LOS D	0.1	1.0	0.83	0.57	0.83	23.3
6	R2	1	27.0	1	27.0	0.004	55.9	LOS D	0.1	0.5	0.85	0.60	0.85	22.7
Approach		3	27.0	3	27.0	0.008	52.6	LOS D	0.1	1.0	0.83	0.58	0.83	20.6
North: Old Wallgrove Rd														
7	L2	1	27.0	1	27.0	* 0.133	28.7	LOS C	3.6	31.3	0.58	0.65	0.58	38.9
8	T1	187	27.0	197	27.0	0.133	24.4	LOS B	3.6	31.4	0.58	0.65	0.58	41.4
9	R2	382	27.0	402	27.0	* 0.450	32.2	LOS C	21.7	186.8	1.00	0.89	1.00	39.6
Approach		570	27.0	600	27.0	0.450	29.7	LOS C	21.7	186.8	0.86	0.81	0.86	40.0
West: Milner Av														
10	L2	185	27.0	195	27.0	0.182	25.2	LOS B	3.2	27.4	0.67	0.73	0.67	38.2
11	T1	1	27.0	1	27.0	* 0.182	27.8	LOS B	3.0	25.9	0.77	0.74	0.77	28.9
12	R2	2	27.0	2	27.0	0.182	32.6	LOS C	3.0	25.9	0.77	0.74	0.77	29.8
Approach		188	27.0	198	27.0	0.182	25.3	LOS B	3.2	27.4	0.68	0.73	0.68	38.1
All Vehicles		810	27.0	853	27.0	0.450	29.8	LOS C	21.7	186.8	0.82	0.78	0.82	38.7

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2026 Base)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.321	59.8	LOS E	5.3	45.5	0.91	0.73	0.91	24.1
2	T1	166	27.0	175	27.0	* 0.321	54.3	LOS D	5.3	45.8	0.91	0.73	0.91	27.9
3	R2	1	27.0	1	27.0	0.002	26.7	LOS B	0.0	0.3	0.55	0.60	0.55	22.2
Approach		168	27.0	177	27.0	0.321	54.2	LOS D	5.3	45.8	0.91	0.73	0.91	27.9
East: OEE														
4	L2	1	27.0	1	27.0	0.004	32.4	LOS C	0.1	0.7	0.63	0.51	0.63	20.1
5	T1	1	27.0	1	27.0	0.004	27.6	LOS B	0.1	0.7	0.63	0.51	0.63	29.9
6	R2	1	27.0	1	27.0	0.002	33.7	LOS C	0.0	0.4	0.64	0.58	0.64	29.4
Approach		3	27.0	3	27.0	0.004	31.2	LOS C	0.1	0.7	0.64	0.53	0.64	27.2
North: Old Wallgrove Rd														
7	L2	1	27.0	1	27.0	0.081	53.4	LOS D	1.2	10.2	0.86	0.69	0.86	27.0
8	T1	41	27.0	43	27.0	0.081	52.3	LOS D	1.3	10.9	0.86	0.69	0.86	28.2
9	R2	224	27.0	236	27.0	* 0.459	33.8	LOS C	10.3	88.8	0.79	0.81	0.79	38.9
Approach		266	27.0	280	27.0	0.459	36.7	LOS C	10.3	88.8	0.81	0.79	0.81	37.3
West: Milner Av														
10	L2	330	27.0	347	27.0	0.437	30.6	LOS C	6.6	56.7	0.87	0.79	0.87	36.1
11	T1	1	27.0	1	27.0	* 0.437	26.0	LOS B	6.1	52.9	0.87	0.79	0.87	29.6
12	R2	1	27.0	1	27.0	0.437	30.8	LOS C	6.1	52.9	0.87	0.79	0.87	30.5
Approach		332	27.0	349	27.0	0.437	30.6	LOS C	6.6	56.7	0.87	0.79	0.87	36.1
All Vehicles		769	27.0	809	27.0	0.459	37.8	LOS C	10.3	88.8	0.85	0.77	0.85	34.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2026 Project)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	137	27.0	144	27.0	0.152	9.2	LOS A	1.3	11.1	0.19	0.65	0.19	56.7
2	T1	1	27.0	1	27.0	*0.650	66.2	LOS E	7.6	65.7	1.00	0.82	1.05	26.8
3	R2	213	27.0	224	27.0	0.650	73.9	LOS F	7.8	67.0	1.00	0.82	1.05	23.6
Approach		351	27.0	369	27.0	0.650	48.6	LOS D	7.8	67.0	0.68	0.75	0.71	32.5
East: Old Wallgrove Rd (220m)														
4	L2	885	27.0	932	27.0	0.730	10.8	LOS A	15.4	132.5	0.41	0.74	0.41	49.6
5	T1	423	23.5	445	23.5	0.250	16.3	LOS B	7.6	63.6	0.54	0.47	0.54	53.6
6	R2	53	14.0	56	14.0	0.346	72.8	LOS F	3.7	28.8	0.97	0.76	0.97	19.0
Approach		1361	25.4	1433	25.4	0.730	14.9	LOS B	15.4	132.5	0.47	0.66	0.47	48.5
North: Telopea Pl (300m)														
7	L2	42	14.0	44	14.0	0.084	18.9	LOS B	1.2	9.6	0.46	0.70	0.46	41.4
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	9	14.0	9	14.0	*0.137	81.3	LOS F	0.7	5.2	0.99	0.67	0.99	23.6
Approach		52	14.3	55	14.3	0.137	30.7	LOS C	1.2	9.6	0.56	0.69	0.56	34.7
West: Lenore Dr														
10	L2	27	14.0	28	14.0	0.020	8.2	LOS A	0.1	1.1	0.12	0.63	0.12	59.3
11	T1	1094	23.2	1152	23.2	*0.645	22.2	LOS B	26.6	222.9	0.74	0.67	0.74	47.9
12	R2	87	27.0	92	27.0	*0.636	76.5	LOS F	6.4	54.8	1.00	0.81	1.05	27.6
Approach		1208	23.3	1272	23.3	0.645	25.8	LOS B	26.6	222.9	0.75	0.68	0.75	44.9
All Vehicles		2972	24.5	3128	24.5	0.730	23.6	LOS B	26.6	222.9	0.61	0.68	0.61	44.0

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2026 Project)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	295	27.0	311	27.0	0.422	18.8	LOS B	9.6	83.1	0.53	0.75	0.53	49.3
2	T1	1	27.0	1	27.0	*0.787	43.5	LOS D	14.2	122.5	0.82	0.85	0.94	33.7
3	R2	624	27.0	657	27.0	0.787	52.3	LOS D	26.1	225.4	0.90	0.88	0.98	29.2
Approach		920	27.0	968	27.0	0.787	41.6	LOS C	26.1	225.4	0.79	0.83	0.84	34.8
East: Old Wallgrove Rd (220m)														
4	L2	327	27.0	344	27.0	0.260	8.6	LOS A	2.3	19.4	0.16	0.64	0.16	51.6
5	T1	889	23.2	936	23.2	*0.790	43.2	LOS D	29.4	247.0	0.95	0.87	0.98	34.7
6	R2	17	14.0	18	14.0	0.259	82.3	LOS F	1.3	10.0	1.00	0.70	1.00	17.3
Approach		1233	24.1	1298	24.1	0.790	34.6	LOS C	29.4	247.0	0.74	0.81	0.76	37.6
North: Telopea Pl (300m)														
7	L2	47	14.0	49	14.0	0.120	33.0	LOS C	2.1	16.1	0.67	0.73	0.67	31.9
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	16	14.0	17	14.0	*0.243	82.2	LOS F	1.2	9.4	1.00	0.70	1.00	23.4
Approach		64	14.2	67	14.2	0.243	45.9	LOS D	2.1	16.1	0.75	0.72	0.75	28.4
West: Lenore Dr														
10	L2	6	14.0	6	14.0	0.004	8.0	LOS A	0.0	0.2	0.10	0.62	0.10	59.5
11	T1	877	23.2	923	23.2	0.770	41.8	LOS C	28.0	234.6	0.94	0.85	0.96	35.4
12	R2	44	27.0	46	27.0	*0.751	88.1	LOS F	3.5	30.2	1.00	0.83	1.28	25.4
Approach		927	23.3	976	23.3	0.770	43.8	LOS D	28.0	234.6	0.94	0.85	0.97	34.6
All Vehicles		3144	24.5	3309	24.5	0.790	39.6	LOS C	29.4	247.0	0.81	0.83	0.84	35.6

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2026 Project)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1
Output Phase Sequence: A, D, E, F, F1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	0	1	27.0	0.105	58.9	LOS E	1.5	12.8	0.88	0.65	0.88	23.6
2	T1	47	13	49	27.0	* 0.105	54.5	LOS D	1.5	12.9	0.89	0.65	0.89	25.5
3	R2	1	0	1	27.0	0.006	31.7	LOS C	0.0	0.3	0.82	0.59	0.82	19.2
Approach		49	13	52	27.0	0.105	54.1	LOS D	1.5	12.9	0.89	0.65	0.89	25.4
East: OEE														
4	L2	1	0	1	27.0	0.005	40.1	LOS C	0.1	0.8	0.71	0.53	0.71	17.5
5	T1	1	0	1	27.0	0.005	35.3	LOS C	0.1	0.8	0.71	0.53	0.71	27.1
6	R2	119	32	125	27.0	0.305	47.0	LOS D	6.7	57.8	0.83	0.77	0.83	25.0
Approach		121	33	127	27.0	0.305	46.8	LOS D	6.7	57.8	0.82	0.77	0.82	25.0
North: Old Wallgrove Rd														
7	L2	390	105	411	27.0	* 0.446	13.8	LOS A	7.4	63.8	0.52	0.76	0.52	48.5
8	T1	273	74	287	27.0	0.446	34.7	LOS C	13.7	118.0	0.77	0.76	0.77	35.3
9	R2	382	113	402	29.6	* 0.670	51.8	LOS D	23.8	209.3	1.00	0.88	1.00	32.7
Approach		1045	292	1100	27.9	0.670	33.1	LOS C	23.8	209.3	0.76	0.81	0.76	36.8
West: Milner Av														
10	L2	185	135	195	73.0	0.256	22.8	LOS B	2.9	33.4	0.73	0.73	0.73	34.3
11	T1	1	0	1	27.0	* 0.256	18.3	LOS B	2.7	30.3	0.74	0.73	0.74	33.1
12	R2	1	0	1	27.0	0.256	23.1	LOS B	2.7	30.3	0.74	0.73	0.74	33.7
Approach		187	136	197	72.5	0.256	22.8	LOS B	2.9	33.4	0.73	0.73	0.73	34.3
All Vehicles		1402	473	1476	33.8	0.670	33.7	LOS C	23.8	209.3	0.77	0.79	0.77	34.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2026 Project)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.321	59.8	LOS E	5.3	45.5	0.91	0.73	0.91	24.1
2	T1	166	27.0	175	27.0	0.321	54.3	LOS D	5.3	45.7	0.91	0.73	0.91	27.9
3	R2	1	27.0	1	27.0	0.002	26.9	LOS B	0.0	0.3	0.62	0.60	0.62	22.1
Approach		168	27.0	177	27.0	0.321	54.2	LOS D	5.3	45.7	0.91	0.73	0.91	27.9
East: OEE														
4	L2	1	27.0	1	27.0	0.004	31.8	LOS C	0.1	0.7	0.62	0.50	0.62	20.4
5	T1	1	27.0	1	27.0	0.004	27.0	LOS B	0.1	0.7	0.62	0.50	0.62	30.2
6	R2	424	27.0	446	27.0	* 0.837	54.9	LOS D	30.4	261.8	0.98	0.93	1.08	23.0
Approach		426	27.0	448	27.0	0.837	54.8	LOS D	30.4	261.8	0.98	0.93	1.08	23.0
North: Old Wallgrove Rd														
7	L2	87	27.0	92	27.0	* 0.204	32.2	LOS C	4.0	34.5	0.73	0.75	0.73	34.7
8	T1	61	27.0	64	27.0	0.204	53.0	LOS D	4.0	34.5	0.87	0.74	0.87	27.9
9	R2	224	50.0	236	50.0	* 0.535	35.5	LOS C	10.8	108.0	0.83	0.82	0.83	38.2
Approach		372	40.8	392	40.8	0.535	37.6	LOS C	10.8	108.0	0.81	0.79	0.81	35.9
West: Milner Av														
10	L2	330	30.6	347	30.6	0.450	31.4	LOS C	6.7	59.4	0.87	0.79	0.87	35.5
11	T1	1	27.0	1	27.0	* 0.450	26.8	LOS B	6.3	55.7	0.88	0.79	0.88	29.3
12	R2	1	27.0	1	27.0	0.450	31.6	LOS C	6.3	55.7	0.88	0.79	0.88	30.2
Approach		332	30.6	349	30.6	0.450	31.4	LOS C	6.7	59.4	0.87	0.79	0.87	35.5
All Vehicles		1298	31.9	1366	31.9	0.837	43.8	LOS D	30.4	261.8	0.89	0.83	0.93	30.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 3 [3. Old Wallgrove Rd x Estate Road AM (Site Folder: 2026 Project)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Road														
2	T1	48	27.0	51	27.0	0.016	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		48	27.0	51	27.0	0.016	0.0	NA	0.0	0.0	0.00	0.00	0.00	80.0
East: Estate Road														
4	L2	1	27.0	1	27.0	0.001	5.0	LOS A	0.0	0.0	0.14	0.48	0.14	47.4
Approach		1	27.0	1	27.0	0.001	5.0	LOS A	0.0	0.0	0.14	0.48	0.14	47.4
North: Old Wallgrove Road														
7	L2	87	27.0	92	27.0	0.096	7.4	LOS A	0.0	0.0	0.00	0.41	0.00	50.9
8	T1	187	27.0	197	27.0	0.096	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	77.2
Approach		274	27.0	288	27.0	0.096	2.4	NA	0.0	0.0	0.00	0.20	0.00	69.6
All Vehicles		323	27.0	340	27.0	0.096	2.0	NA	0.0	0.0	0.00	0.17	0.00	71.0

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 3 [3. Old Wallgrove Rd x Estate Road PM (Site Folder: 2026 Project)]

4. Old Wallgrove Rd x Estate Road AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Road (100m)														
2	T1	168	27.0	177	27.0	0.058	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		168	27.0	177	27.0	0.058	0.0	NA	0.0	0.0	0.00	0.00	0.00	80.0
East: Estate Road														
4	L2	1	27.0	1	27.0	0.001	4.9	LOS A	0.0	0.0	0.06	0.50	0.06	37.9
Approach		1	27.0	1	27.0	0.001	4.9	LOS A	0.0	0.0	0.06	0.50	0.06	37.9
North: Old Wallgrove Road (200m)														
7	L2	19	27.0	20	27.0	0.021	7.4	LOS A	0.0	0.0	0.00	0.41	0.00	51.0
8	T1	41	27.0	43	27.0	0.021	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	74.0
Approach		60	27.0	63	27.0	0.021	2.3	NA	0.0	0.0	0.00	0.20	0.00	63.1
All Vehicles		229	27.0	241	27.0	0.058	0.6	NA	0.0	0.0	0.00	0.06	0.00	74.0

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	137	27.0	144	27.0	0.141	9.4	LOS A	1.4	12.2	0.21	0.65	0.21	56.4
2	T1	1	27.0	1	27.0	*0.609	64.5	LOS E	7.6	65.1	0.99	0.81	1.00	27.2
3	R2	213	27.0	224	27.0	0.609	72.1	LOS F	7.6	65.1	0.99	0.81	1.00	24.1
Approach		351	27.0	369	27.0	0.609	47.6	LOS D	7.6	65.1	0.69	0.75	0.69	32.9
East: Old Wallgrove Rd (220m)														
4	L2	885	27.0	932	27.0	0.647	8.0	LOS A	0.0	0.0	0.00	0.59	0.00	52.9
5	T1	423	23.5	445	23.5	0.313	26.2	LOS B	9.6	80.8	0.68	0.58	0.68	44.8
6	R2	53	14.0	56	14.0	*0.605	81.9	LOS F	4.0	31.4	1.00	0.78	1.07	17.4
Approach		1361	25.4	1433	25.4	0.647	16.6	LOS B	9.6	80.8	0.25	0.59	0.25	47.5
North: Telopea Pl (300m)														
7	L2	42	14.0	44	14.0	0.091	17.6	LOS B	1.2	9.0	0.44	0.70	0.44	42.5
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	9	14.0	9	14.0	*0.137	81.3	LOS F	0.7	5.2	0.99	0.67	0.99	23.6
Approach		52	14.3	55	14.3	0.137	29.7	LOS C	1.2	9.0	0.54	0.69	0.54	35.3
West: Lenore Dr														
10	L2	27	14.0	28	14.0	0.021	8.2	LOS A	0.1	1.1	0.12	0.63	0.12	59.3
11	T1	1094	23.2	1152	23.2	*0.606	18.6	LOS B	24.3	204.2	0.68	0.62	0.68	51.3
12	R2	87	27.0	92	27.0	0.307	58.7	LOS E	5.4	46.2	0.89	0.78	0.89	31.9
Approach		1208	23.3	1272	23.3	0.606	21.3	LOS B	24.3	204.2	0.68	0.63	0.68	48.6
All Vehicles		2972	24.5	3128	24.5	0.647	22.4	LOS B	24.3	204.2	0.48	0.63	0.49	45.0

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	295	27.0	311	27.0	0.394	18.1	LOS B	9.4	81.1	0.52	0.75	0.52	49.8
2	T1	1	27.0	1	27.0	*0.711	45.2	LOS D	19.9	171.2	0.94	0.86	0.94	33.1
3	R2	624	27.0	657	27.0	0.711	52.9	LOS D	19.9	171.2	0.94	0.86	0.94	29.1
Approach		920	27.0	968	27.0	0.711	41.7	LOS C	19.9	171.2	0.81	0.82	0.81	34.8
East: Old Wallgrove Rd (220m)														
4	L2	327	27.0	344	27.0	0.239	8.0	LOS A	0.0	0.0	0.00	0.59	0.00	53.2
5	T1	889	23.2	936	23.2	*0.710	35.6	LOS C	26.6	222.8	0.88	0.79	0.88	38.7
6	R2	17	14.0	18	14.0	0.259	82.3	LOS F	1.3	10.0	1.00	0.70	1.00	17.3
Approach		1233	24.1	1298	24.1	0.710	28.9	LOS C	26.6	222.8	0.65	0.73	0.65	41.2
North: Telopea Pl (300m)														
7	L2	47	14.0	49	14.0	0.114	27.0	LOS B	1.8	14.1	0.59	0.72	0.59	35.3
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	16	14.0	17	14.0	*0.243	82.2	LOS F	1.2	9.4	1.00	0.70	1.00	23.4
Approach		64	14.2	67	14.2	0.243	41.5	LOS C	1.8	14.1	0.70	0.72	0.70	30.1
West: Lenore Dr														
10	L2	6	14.0	6	14.0	0.004	8.0	LOS A	0.0	0.2	0.10	0.62	0.10	59.5
11	T1	877	23.2	923	23.2	0.692	35.4	LOS C	25.6	214.7	0.88	0.78	0.88	38.8
12	R2	44	27.0	46	27.0	*0.751	88.1	LOS F	3.5	30.2	1.00	0.83	1.28	25.4
Approach		927	23.3	976	23.3	0.751	37.7	LOS C	25.6	214.7	0.88	0.78	0.89	37.6
All Vehicles		3144	24.5	3309	24.5	0.751	35.5	LOS C	26.6	222.8	0.77	0.77	0.77	37.7

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Milner Avenue
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.072	49.4	LOS D	1.3	11.6	0.81	0.60	0.81	25.9
2	T1	47	27.0	49	27.0	0.072	45.0	LOS D	1.3	11.6	0.81	0.60	0.81	28.3
3	R2	1	27.0	1	27.0	0.001	15.9	LOS B	0.0	0.2	0.48	0.57	0.48	31.1
Approach		49	27.0	52	27.0	0.072	44.5	LOS D	1.3	11.6	0.81	0.60	0.81	28.3
East: OEE														
4	L2	1	27.0	1	27.0	0.005	44.8	LOS D	0.1	0.9	0.76	0.55	0.76	19.7
5	T1	1	27.0	1	27.0	* 0.005	40.0	LOS C	0.1	0.9	0.76	0.55	0.76	27.5
6	R2	1	27.0	1	27.0	0.003	47.0	LOS D	0.1	0.5	0.77	0.59	0.77	27.0
Approach		3	27.0	3	27.0	0.005	43.9	LOS D	0.1	0.9	0.76	0.56	0.76	25.2
North: Old Wallgrove Rd														
7	L2	1	27.0	1	27.0	0.001	8.0	LOS A	0.0	0.0	0.09	0.61	0.09	56.6
8	T1	187	27.0	197	27.0	* 0.280	51.5	LOS D	5.6	48.0	0.87	0.75	0.87	28.5
9	R2	382	27.0	402	27.0	* 0.518	22.7	LOS B	14.5	124.8	0.64	0.79	0.64	44.1
Approach		570	27.0	600	27.0	0.518	32.2	LOS C	14.5	124.8	0.72	0.78	0.72	38.8
West: Milner Av														
10	L2	185	27.0	195	27.0	0.211	24.4	LOS B	3.1	26.8	0.75	0.72	0.75	38.5
11	T1	1	27.0	1	27.0	* 0.211	23.4	LOS B	2.9	24.6	0.80	0.73	0.80	32.5
12	R2	2	27.0	2	27.0	0.211	28.2	LOS B	2.9	24.6	0.80	0.73	0.80	31.5
Approach		188	27.0	198	27.0	0.211	24.5	LOS B	3.1	26.8	0.75	0.72	0.75	38.4
All Vehicles		810	27.0	853	27.0	0.518	31.2	LOS C	14.5	124.8	0.73	0.75	0.73	38.0

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Milner Avenue
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.222	49.2	LOS D	4.7	40.5	0.82	0.66	0.82	26.9
2	T1	166	27.0	175	27.0	* 0.222	43.7	LOS D	4.7	40.8	0.83	0.66	0.83	31.7
3	R2	1	27.0	1	27.0	0.002	26.8	LOS B	0.0	0.3	0.59	0.60	0.59	26.1
Approach		168	27.0	177	27.0	0.222	43.7	LOS D	4.7	40.8	0.82	0.66	0.82	31.7
East: OEE														
4	L2	1	27.0	1	27.0	0.004	36.5	LOS C	0.1	0.8	0.67	0.52	0.67	22.3
5	T1	1	27.0	1	27.0	0.004	31.7	LOS C	0.1	0.8	0.67	0.52	0.67	30.2
6	R2	1	27.0	1	27.0	0.002	37.8	LOS C	0.0	0.4	0.69	0.58	0.69	29.9
Approach		3	27.0	3	27.0	0.004	35.3	LOS C	0.1	0.8	0.68	0.54	0.68	28.0
North: Old Wallgrove Rd														
7	L2	1	27.0	1	27.0	0.001	8.0	LOS A	0.0	0.0	0.09	0.61	0.09	56.6
8	T1	41	27.0	43	27.0	0.055	45.2	LOS D	1.1	9.5	0.78	0.66	0.78	30.7
9	R2	224	27.0	236	27.0	* 0.487	34.1	LOS C	10.5	90.3	0.79	0.80	0.79	38.8
Approach		266	27.0	280	27.0	0.487	35.7	LOS C	10.5	90.3	0.78	0.78	0.78	37.8
West: Milner Av														
10	L2	330	27.0	347	27.0	0.505	30.8	LOS C	5.8	50.3	0.91	0.80	0.91	36.1
11	T1	1	27.0	1	27.0	* 0.505	26.0	LOS B	5.7	49.5	0.91	0.80	0.91	31.4
12	R2	1	27.0	1	27.0	0.505	30.8	LOS C	5.7	49.5	0.91	0.80	0.91	30.5
Approach		332	27.0	349	27.0	0.505	30.8	LOS C	5.8	50.3	0.91	0.80	0.91	36.0
All Vehicles		769	27.0	809	27.0	0.505	35.3	LOS C	10.5	90.3	0.85	0.76	0.85	35.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2031 Project - Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] veh/h	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	137	37	144	27.0	0.250	17.7	LOS B	3.9	33.8	0.47	0.72	0.47	50.1
2	T1	1	0	1	27.0	*0.747	70.9	LOS F	7.9	68.4	1.00	0.86	1.16	25.7
3	R2	214	58	225	27.0	0.747	78.6	LOS F	8.2	71.0	1.00	0.86	1.16	22.7
Approach		352	95	371	27.0	0.747	54.9	LOS D	8.2	71.0	0.79	0.80	0.89	30.5
East: Old Wallgrove Rd (220m)														
4	L2	1044	282	1099	27.0	0.807	9.2	LOS A	12.2	105.4	0.35	0.70	0.35	50.8
5	T1	1099	255	1157	23.2	0.668	20.2	LOS B	28.3	237.8	0.71	0.65	0.71	49.7
6	R2	107	15	113	14.0	*0.752	79.6	LOS F	8.1	63.3	1.00	0.85	1.16	17.8
Approach		2250	552	2368	24.5	0.807	17.9	LOS B	28.3	237.8	0.56	0.68	0.56	47.2
North: Telopea Pl (300m)														
7	L2	77	11	81	14.0	0.172	25.2	LOS B	2.9	23.1	0.59	0.74	0.59	36.5
8	T1	1	0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	21	3	22	14.0	*0.320	82.7	LOS F	1.6	12.4	1.00	0.71	1.00	23.4
Approach		99	14	104	14.1	0.320	37.9	LOS C	2.9	23.1	0.68	0.73	0.68	31.3
West: Lenore Dr														
10	L2	57	8	60	14.0	0.043	8.7	LOS A	0.5	3.6	0.16	0.64	0.16	58.7
11	T1	1298	301	1366	23.2	*0.743	22.4	LOS B	34.0	285.4	0.79	0.73	0.79	47.7
12	R2	1	0	1	27.0	0.008	70.1	LOS E	0.1	0.6	0.93	0.60	0.93	29.0
Approach		1356	309	1427	22.8	0.743	21.9	LOS B	34.0	285.4	0.76	0.72	0.76	48.1
All Vehicles		4057	969	4271	23.9	0.807	22.9	LOS B	34.0	285.4	0.65	0.71	0.66	44.6

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2031 Project - Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	317	27.0	334	27.0	0.489	20.6	LOS B	11.8	101.4	0.60	0.77	0.60	48.2
2	T1	1	27.0	1	27.0	* 0.900	67.7	LOS E	16.7	143.6	0.87	0.94	1.23	26.4
3	R2	603	27.0	635	27.0	0.900	74.7	LOS F	31.8	273.8	0.95	0.96	1.23	23.4
Approach		921	27.0	969	27.0	0.900	56.1	LOS D	31.8	273.8	0.83	0.89	1.02	29.9
East: Old Wallgrove Rd (220m)														
4	L2	371	27.0	391	27.0	0.287	8.3	LOS A	1.6	13.7	0.12	0.64	0.12	51.8
5	T1	902	23.2	949	23.2	0.734	35.8	LOS C	27.9	233.7	0.89	0.79	0.89	38.4
6	R2	44	14.0	46	14.0	* 0.670	85.6	LOS F	3.4	26.9	1.00	0.79	1.16	16.8
Approach		1317	24.0	1386	24.0	0.734	29.7	LOS C	27.9	233.7	0.68	0.75	0.68	40.1
North: Telopea Pl (300m)														
7	L2	99	14.0	104	14.0	0.282	47.1	LOS D	5.6	43.8	0.83	0.78	0.83	25.9
8	T1	1	27.0	1	27.0	0.010	66.0	LOS E	0.1	0.6	0.95	0.57	0.95	28.7
9	R2	35	14.0	37	14.0	* 0.320	77.1	LOS F	2.5	19.7	0.99	0.74	0.99	24.4
Approach		135	14.1	142	14.1	0.320	55.0	LOS D	5.6	43.8	0.87	0.77	0.87	25.4
West: Lenore Dr														
10	L2	16	14.0	17	14.0	0.012	8.2	LOS A	0.1	0.6	0.12	0.62	0.12	59.3
11	T1	1144	23.2	1204	23.2	* 0.906	56.8	LOS E	45.8	384.6	1.00	1.04	1.17	29.5
12	R2	1	27.0	1	27.0	0.017	79.8	LOS F	0.1	0.6	0.98	0.59	0.98	26.9
Approach		1161	23.1	1222	23.1	0.906	56.1	LOS D	45.8	384.6	0.99	1.03	1.16	29.7
All Vehicles		3534	24.1	3720	24.1	0.906	46.2	LOS D	45.8	384.6	0.83	0.88	0.93	32.7

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2036 Project - Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1
Output Phase Sequence: A, D, E, G, G1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	77	27.0	81	27.0	0.169	23.1	LOS B	2.7	23.0	0.55	0.73	0.55	46.7
2	T1	1	27.0	1	27.0	* 0.387	64.1	LOS E	4.2	36.0	0.97	0.77	0.97	27.3
3	R2	120	27.0	126	27.0	0.387	71.8	LOS F	4.2	36.0	0.97	0.77	0.97	24.1
Approach		198	27.0	208	27.0	0.387	52.8	LOS D	4.2	36.0	0.80	0.75	0.80	31.2
East: Old Wallgrove Rd (220m)														
4	L2	796	27.0	838	27.0	0.582	8.0	LOS A	0.0	0.0	0.00	0.59	0.00	53.0
5	T1	1376	23.1	1448	23.1	0.805	18.8	LOS B	39.6	332.4	0.74	0.69	0.75	51.2
6	R2	219	14.0	231	14.0	* 0.869	80.2	LOS F	17.4	136.3	1.00	0.93	1.26	17.7
Approach		2391	23.6	2517	23.6	0.869	20.8	LOS B	39.6	332.4	0.52	0.68	0.54	45.8
North: Telopea Pl (300m)														
7	L2	77	14.0	81	14.0	0.136	29.4	LOS C	3.1	24.5	0.62	0.73	0.62	33.8
8	T1	1	27.0	1	27.0	0.011	67.4	LOS E	0.1	0.6	0.95	0.57	0.95	28.4
9	R2	21	14.0	22	14.0	* 0.213	77.6	LOS F	1.5	11.8	0.98	0.71	0.98	24.3
Approach		99	14.1	104	14.1	0.213	40.0	LOS C	3.1	24.5	0.70	0.73	0.70	30.4
West: Lenore Dr														
10	L2	121	14.0	127	14.0	0.099	10.4	LOS A	1.7	13.3	0.25	0.66	0.25	56.8
11	T1	1368	23.1	1440	23.1	* 0.913	49.5	LOS D	55.2	463.4	0.97	1.01	1.12	32.2
12	R2	3	27.0	3	27.0	0.051	80.8	LOS F	0.2	1.9	0.98	0.63	0.98	26.7
Approach		1492	22.4	1571	22.4	0.913	46.4	LOS D	55.2	463.4	0.91	0.98	1.05	33.4
All Vehicles		4180	23.1	4400	23.1	0.913	31.9	LOS C	55.2	463.4	0.68	0.79	0.74	39.2

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2036 Project - Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	213	27.0	224	27.0	0.345	20.2	LOS B	7.2	62.1	0.55	0.75	0.55	48.4
2	T1	1	27.0	1	27.0	* 0.792	63.0	LOS E	15.9	137.5	1.00	0.89	1.13	27.6
3	R2	432	27.0	455	27.0	0.792	70.7	LOS F	15.9	137.5	1.00	0.89	1.13	24.4
Approach		646	27.0	680	27.0	0.792	54.0	LOS D	15.9	137.5	0.85	0.85	0.94	30.5
East: Old Wallgrove Rd (220m)														
4	L2	370	27.0	389	27.0	0.271	8.0	LOS A	0.0	0.0	0.00	0.59	0.00	53.2
5	T1	1034	23.2	1088	23.2	0.709	26.9	LOS B	29.8	249.8	0.80	0.72	0.80	44.3
6	R2	90	14.0	95	14.0	* 0.822	85.3	LOS F	7.1	55.5	1.00	0.88	1.30	16.9
Approach		1494	23.6	1573	23.6	0.822	25.7	LOS B	29.8	249.8	0.62	0.70	0.63	43.0
North: Telopea Pl (300m)														
7	L2	99	14.0	104	14.0	0.250	39.7	LOS C	5.1	39.8	0.77	0.77	0.77	28.7
8	T1	1	27.0	1	27.0	0.011	67.4	LOS E	0.1	0.6	0.95	0.57	0.95	28.4
9	R2	35	14.0	37	14.0	* 0.355	78.7	LOS F	2.5	19.9	0.99	0.74	0.99	24.1
Approach		135	14.1	142	14.1	0.355	50.0	LOS D	5.1	39.8	0.83	0.76	0.83	27.0
West: Lenore Dr														
10	L2	33	14.0	35	14.0	0.025	8.5	LOS A	0.2	1.9	0.15	0.63	0.15	58.9
11	T1	1355	23.2	1426	23.2	* 0.884	42.1	LOS C	49.1	412.1	0.96	0.96	1.06	35.3
12	R2	1	27.0	1	27.0	0.010	73.8	LOS F	0.1	0.6	0.95	0.60	0.95	28.2
Approach		1389	23.0	1462	23.0	0.884	41.3	LOS C	49.1	412.1	0.94	0.95	1.03	35.7
All Vehicles		3664	23.6	3857	23.6	0.884	37.5	LOS C	49.1	412.1	0.79	0.82	0.85	36.6

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

SIDRA INTERSECTION 9.0 | Copyright © 2000-2020 Akcelik and Associates Pty Ltd | sidrasolutions.com

Appendix C. SIDRA Movement Summaries (0.23/0.24 trip rates)

USER REPORT FOR SITE

All Movement Classes

Project: p1546m05v1_OEE0.23_0.24 **Template: Movement Summary**

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2026 Base)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	96	27.0	101	27.0	0.100	9.4	LOS A	1.0	8.2	0.20	0.65	0.20	56.5
2	T1	1	27.0	1	27.0	* 0.591	69.2	LOS E	5.5	47.1	1.00	0.79	1.02	26.1
3	R2	149	27.0	157	27.0	0.591	76.8	LOS F	5.5	47.1	1.00	0.79	1.02	23.0
Approach		246	27.0	259	27.0	0.591	50.4	LOS D	5.5	47.1	0.69	0.73	0.70	31.9
East: Old Wallgrove Rd (220m)														
4	L2	526	27.0	554	27.0	0.443	9.4	LOS A	6.4	55.5	0.25	0.68	0.25	50.8
5	T1	423	23.5	445	23.5	0.304	24.8	LOS B	9.4	78.7	0.66	0.57	0.66	45.7
6	R2	53	14.0	56	14.0	* 0.605	81.9	LOS F	4.0	31.4	1.00	0.78	1.07	17.4
Approach		1002	24.8	1055	24.8	0.605	19.8	LOS B	9.4	78.7	0.47	0.64	0.47	45.3
North: Telopea Pl (300m)														
7	L2	42	14.0	44	14.0	0.089	15.3	LOS B	1.0	7.9	0.39	0.69	0.39	44.7
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	9	14.0	9	14.0	* 0.137	81.3	LOS F	0.7	5.2	0.99	0.67	0.99	23.6
Approach		52	14.3	55	14.3	0.137	27.8	LOS B	1.0	7.9	0.51	0.68	0.51	36.4
West: Lenore Dr														
10	L2	27	14.0	28	14.0	0.021	8.2	LOS A	0.1	1.1	0.12	0.63	0.12	59.3
11	T1	1094	23.2	1152	23.2	* 0.572	15.4	LOS B	22.1	185.7	0.62	0.56	0.62	54.6
12	R2	95	27.0	100	27.0	0.304	56.2	LOS D	5.7	49.2	0.87	0.78	0.87	32.6
Approach		1216	23.3	1280	23.3	0.572	18.5	LOS B	22.1	185.7	0.63	0.58	0.63	51.1
All Vehicles		2516	24.1	2648	24.1	0.605	22.3	LOS B	22.1	185.7	0.57	0.62	0.57	45.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2026 Base)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	150	27.0	158	27.0	0.212	15.3	LOS B	3.7	32.1	0.41	0.71	0.41	51.8
2	T1	1	27.0	1	27.0	*0.641	45.6	LOS D	11.2	96.2	0.89	0.81	0.89	32.9
3	R2	428	27.0	451	27.0	0.641	54.7	LOS D	15.5	134.0	0.91	0.83	0.91	28.5
Approach		579	27.0	609	27.0	0.641	44.4	LOS D	15.5	134.0	0.78	0.80	0.78	33.4
East: Old Wallgrove Rd (220m)														
4	L2	256	27.0	269	27.0	0.201	8.5	LOS A	1.5	12.8	0.14	0.64	0.14	51.7
5	T1	889	23.2	936	23.2	*0.645	30.4	LOS C	24.5	205.9	0.82	0.73	0.82	41.7
6	R2	17	14.0	18	14.0	0.259	82.3	LOS F	1.3	10.0	1.00	0.70	1.00	17.3
Approach		1162	23.9	1223	23.9	0.645	26.3	LOS B	24.5	205.9	0.67	0.71	0.67	42.9
North: Telopea Pl (300m)														
7	L2	47	14.0	49	14.0	0.103	22.0	LOS B	1.5	12.1	0.52	0.71	0.52	38.8
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	16	14.0	17	14.0	*0.243	82.2	LOS F	1.2	9.4	1.00	0.70	1.00	23.4
Approach		64	14.2	67	14.2	0.243	37.9	LOS C	1.5	12.1	0.64	0.70	0.64	31.6
West: Lenore Dr														
10	L2	6	14.0	6	14.0	0.004	8.0	LOS A	0.0	0.2	0.10	0.62	0.10	59.5
11	T1	877	23.2	923	23.2	0.628	30.2	LOS C	23.6	198.2	0.81	0.73	0.81	41.8
12	R2	30	27.0	32	27.0	*0.512	84.8	LOS F	2.3	19.9	1.00	0.74	1.03	26.0
Approach		913	23.3	961	23.3	0.628	31.9	LOS C	23.6	198.2	0.82	0.73	0.82	40.8
All Vehicles		2718	24.1	2861	24.1	0.645	32.3	LOS C	24.5	205.9	0.74	0.73	0.74	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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2026 Base)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1
Output Phase Sequence: A, D, E, F, F1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.098	51.5	LOS D	1.7	15.0	0.83	0.63	0.83	25.3
2	T1	60	27.0	63	27.0	* 0.098	47.1	LOS D	1.8	15.2	0.83	0.63	0.83	27.6
3	R2	1	27.0	1	27.0	0.002	18.9	LOS B	0.0	0.2	0.63	0.58	0.63	25.1
Approach		62	27.0	65	27.0	0.098	46.7	LOS D	1.8	15.2	0.83	0.63	0.83	27.6
East: OEE														
4	L2	1	27.0	1	27.0	0.008	53.3	LOS D	0.1	1.0	0.83	0.57	0.83	14.4
5	T1	1	27.0	1	27.0	0.008	48.5	LOS D	0.1	1.0	0.83	0.57	0.83	23.3
6	R2	1	27.0	1	27.0	0.004	55.9	LOS D	0.1	0.5	0.85	0.60	0.85	22.7
Approach		3	27.0	3	27.0	0.008	52.6	LOS D	0.1	1.0	0.83	0.58	0.83	20.6
North: Old Wallgrove Rd														
7	L2	1	27.0	1	27.0	* 0.169	29.2	LOS C	4.7	40.8	0.59	0.66	0.59	38.5
8	T1	239	27.0	252	27.0	0.169	24.9	LOS B	4.8	41.0	0.59	0.66	0.59	41.0
9	R2	382	27.0	402	27.0	* 0.454	32.0	LOS C	21.3	183.4	1.00	0.89	1.00	39.7
Approach		622	27.0	655	27.0	0.454	29.3	LOS C	21.3	183.4	0.84	0.80	0.84	40.1
West: Milner Av														
10	L2	185	27.0	195	27.0	0.182	25.2	LOS B	3.2	27.4	0.67	0.73	0.67	38.2
11	T1	1	27.0	1	27.0	* 0.182	27.8	LOS B	3.0	25.9	0.77	0.74	0.77	28.9
12	R2	2	27.0	2	27.0	0.182	32.6	LOS C	3.0	25.9	0.77	0.74	0.77	29.8
Approach		188	27.0	198	27.0	0.182	25.3	LOS B	3.2	27.4	0.68	0.73	0.68	38.1
All Vehicles		875	27.0	921	27.0	0.454	29.7	LOS C	21.3	183.4	0.81	0.77	0.81	38.6

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2026 Base)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.480	61.7	LOS E	8.2	70.5	0.94	0.77	0.94	23.7
2	T1	249	27.0	262	27.0	* 0.480	56.2	LOS D	8.2	70.9	0.95	0.77	0.95	27.4
3	R2	1	27.0	1	27.0	0.002	27.3	LOS B	0.0	0.3	0.56	0.60	0.56	21.9
Approach		251	27.0	264	27.0	0.480	56.1	LOS D	8.2	70.9	0.94	0.77	0.94	27.3
East: OEE														
4	L2	1	27.0	1	27.0	0.004	32.4	LOS C	0.1	0.7	0.63	0.51	0.63	20.1
5	T1	1	27.0	1	27.0	0.004	27.6	LOS B	0.1	0.7	0.63	0.51	0.63	29.9
6	R2	1	27.0	1	27.0	0.002	33.7	LOS C	0.0	0.4	0.64	0.58	0.64	29.4
Approach		3	27.0	3	27.0	0.004	31.2	LOS C	0.1	0.7	0.64	0.53	0.64	27.2
North: Old Wallgrove Rd														
7	L2	1	27.0	1	27.0	0.121	56.8	LOS E	1.9	16.0	0.87	0.71	0.87	26.0
8	T1	62	27.0	65	27.0	0.121	54.2	LOS D	1.9	16.5	0.87	0.71	0.87	27.6
9	R2	224	50.0	236	50.0	* 0.578	36.1	LOS C	10.8	108.0	0.86	0.82	0.86	37.9
Approach		287	45.0	302	45.0	0.578	40.1	LOS C	10.8	108.0	0.87	0.80	0.87	35.8
West: Milner Av														
10	L2	330	30.6	347	30.6	0.450	31.4	LOS C	6.7	59.4	0.87	0.79	0.87	35.5
11	T1	1	27.0	1	27.0	* 0.450	26.8	LOS B	6.3	55.7	0.88	0.79	0.88	29.3
12	R2	1	27.0	1	27.0	0.450	31.6	LOS C	6.3	55.7	0.88	0.79	0.88	30.2
Approach		332	30.6	349	30.6	0.450	31.4	LOS C	6.7	59.4	0.87	0.79	0.87	35.5
All Vehicles		873	34.3	919	34.3	0.578	41.4	LOS C	10.8	108.0	0.89	0.79	0.89	33.4

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2026 Project)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	155	27.0	163	27.0	0.170	9.2	LOS A	1.5	12.8	0.19	0.65	0.19	56.6
2	T1	1	27.0	1	27.0	*0.649	63.0	LOS E	8.1	69.6	0.99	0.82	1.03	27.6
3	R2	241	27.0	254	27.0	0.649	70.9	LOS F	9.0	77.3	0.99	0.82	1.03	24.3
Approach		397	27.0	418	27.0	0.649	46.8	LOS D	9.0	77.3	0.68	0.76	0.70	33.2
East: Old Wallgrove Rd (220m)														
4	L2	1042	27.0	1097	27.0	0.865	13.3	LOS A	27.8	239.6	0.61	0.83	0.61	47.6
5	T1	423	23.5	445	23.5	0.263	18.6	LOS B	8.1	67.9	0.58	0.49	0.58	51.3
6	R2	53	14.0	56	14.0	0.323	71.5	LOS F	3.6	28.5	0.96	0.76	0.96	19.2
Approach		1518	25.6	1598	25.6	0.865	16.8	LOS B	27.8	239.6	0.61	0.73	0.61	46.8
North: Telopea Pl (300m)														
7	L2	42	14.0	44	14.0	0.084	20.6	LOS B	1.3	10.3	0.49	0.70	0.49	39.9
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	9	14.0	9	14.0	*0.137	81.3	LOS F	0.7	5.2	0.99	0.67	0.99	23.6
Approach		52	14.3	55	14.3	0.137	32.1	LOS C	1.3	10.3	0.59	0.70	0.59	33.9
West: Lenore Dr														
10	L2	27	14.0	28	14.0	0.020	8.2	LOS A	0.1	1.1	0.12	0.63	0.12	59.3
11	T1	1094	23.2	1152	23.2	*0.680	25.2	LOS B	28.4	238.3	0.79	0.72	0.79	45.4
12	R2	95	27.0	100	27.0	*0.649	75.8	LOS F	6.9	59.6	1.00	0.81	1.06	27.8
Approach		1216	23.3	1280	23.3	0.680	28.8	LOS C	28.4	238.3	0.79	0.72	0.79	42.8
All Vehicles		3183	24.7	3351	24.7	0.865	25.4	LOS B	28.4	239.6	0.69	0.73	0.69	42.6

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2026 Project)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	399	27.0	420	27.0	0.535	21.1	LOS B	14.7	126.7	0.60	0.77	0.60	47.9
2	T1	1	27.0	1	27.0	*0.932	70.9	LOS F	21.7	187.4	0.78	0.95	1.19	25.7
3	R2	814	27.0	857	27.0	0.932	75.9	LOS F	46.8	403.0	0.92	0.98	1.24	23.2
Approach		1214	27.0	1278	27.0	0.932	57.9	LOS E	46.8	403.0	0.82	0.91	1.03	29.3
East: Old Wallgrove Rd (220m)														
4	L2	390	27.0	411	27.0	0.312	8.8	LOS A	3.1	27.0	0.18	0.65	0.18	51.4
5	T1	889	23.2	936	23.2	*0.929	72.6	LOS F	38.8	325.9	1.00	1.08	1.28	25.1
6	R2	17	14.0	18	14.0	0.259	82.3	LOS F	1.3	10.0	1.00	0.70	1.00	17.3
Approach		1296	24.2	1364	24.2	0.929	53.5	LOS D	38.8	325.9	0.75	0.95	0.95	29.6
North: Telopea Pl (300m)														
7	L2	47	14.0	49	14.0	0.141	47.5	LOS D	2.6	20.2	0.81	0.74	0.81	25.8
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	16	14.0	17	14.0	*0.243	82.2	LOS F	1.2	9.4	1.00	0.70	1.00	23.4
Approach		64	14.2	67	14.2	0.243	56.6	LOS E	2.6	20.2	0.86	0.73	0.86	25.0
West: Lenore Dr														
10	L2	6	14.0	6	14.0	0.004	8.0	LOS A	0.0	0.2	0.10	0.62	0.10	59.5
11	T1	877	23.2	923	23.2	0.908	66.4	LOS E	36.1	303.1	1.00	1.04	1.23	26.6
12	R2	55	27.0	58	27.0	*0.939	101.7	LOS F	4.8	41.5	1.00	0.95	1.68	23.2
Approach		938	23.4	987	23.4	0.939	68.1	LOS E	36.1	303.1	0.99	1.04	1.25	26.4
All Vehicles		3512	24.8	3697	24.8	0.939	59.0	LOS E	46.8	403.0	0.84	0.95	1.05	28.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2026 Project)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Coordinated Cycle Time = 120 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, F, F1
Output Phase Sequence: A, D, E, F, F1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.199	59.3	LOS E	1.8	14.7	0.95	0.70	0.95	23.5
2	T1	60	21.2	63	21.2	* 0.199	54.9	LOS D	1.8	14.8	0.95	0.70	0.95	25.7
3	R2	1	27.0	1	27.0	0.007	29.5	LOS C	0.0	0.3	0.87	0.59	0.87	20.0
Approach		62	21.3	65	21.3	0.199	54.6	LOS D	1.8	14.8	0.95	0.70	0.95	25.7
East: OEE														
4	L2	1	27.0	1	27.0	0.005	37.4	LOS C	0.1	0.7	0.74	0.54	0.74	18.4
5	T1	1	27.0	1	27.0	0.005	32.6	LOS C	0.1	0.7	0.74	0.54	0.74	28.0
6	R2	152	27.0	160	27.0	0.430	45.3	LOS D	7.9	68.3	0.88	0.79	0.88	25.5
Approach		154	27.0	162	27.0	0.430	45.2	LOS D	7.9	68.3	0.88	0.79	0.88	25.5
North: Old Wallgrove Rd														
7	L2	498	27.0	524	27.0	* 0.562	13.5	LOS A	8.9	76.8	0.58	0.78	0.58	48.7
8	T1	349	27.0	367	27.0	0.562	31.5	LOS C	16.0	138.0	0.81	0.79	0.81	36.9
9	R2	382	29.6	402	29.6	* 0.621	42.3	LOS C	20.0	175.3	1.00	0.88	1.00	35.7
Approach		1229	27.8	1294	27.8	0.621	27.6	LOS B	20.0	175.3	0.78	0.82	0.78	39.5
West: Milner Av														
10	L2	185	73.0	195	73.0	0.222	18.1	LOS B	2.4	27.9	0.66	0.71	0.66	35.9
11	T1	1	27.0	1	27.0	* 0.222	13.5	LOS A	2.2	24.7	0.68	0.71	0.68	35.6
12	R2	1	27.0	1	27.0	0.222	18.3	LOS B	2.2	24.7	0.68	0.71	0.68	36.0
Approach		187	72.5	197	72.5	0.222	18.0	LOS B	2.4	27.9	0.66	0.71	0.66	35.9
All Vehicles		1632	32.6	1718	32.6	0.621	29.2	LOS C	20.0	175.3	0.78	0.80	0.78	36.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2026 Project)]

Old Wallgrove Road x Milner Avenue
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.480	61.7	LOS E	8.2	70.5	0.94	0.77	0.94	23.7
2	T1	249	27.0	262	27.0	* 0.480	56.2	LOS D	8.2	70.9	0.95	0.77	0.95	27.4
3	R2	1	27.0	1	27.0	0.003	34.1	LOS C	0.0	0.4	0.72	0.60	0.72	19.2
Approach		251	27.0	264	27.0	0.480	56.2	LOS D	8.2	70.9	0.94	0.77	0.94	27.3
East: OEE														
4	L2	1	27.0	1	27.0	0.003	25.2	LOS B	0.1	0.6	0.54	0.47	0.54	23.4
5	T1	1	27.0	1	27.0	0.003	20.4	LOS B	0.1	0.6	0.54	0.47	0.54	33.1
6	R2	635	27.0	668	27.0	* 1.035	124.9	LOS F	73.9	637.2	1.00	1.20	1.60	13.2
Approach		637	27.0	671	27.0	1.035	124.6	LOS F	73.9	637.2	1.00	1.20	1.60	13.2
North: Old Wallgrove Rd														
7	L2	130	27.0	137	27.0	0.301	33.2	LOS C	6.3	54.0	0.77	0.77	0.77	34.1
8	T1	91	27.0	96	27.0	0.301	53.9	LOS D	6.3	54.0	0.89	0.76	0.89	27.6
9	R2	224	50.0	236	50.0	* 0.753	48.5	LOS D	13.3	132.9	0.97	0.87	1.04	33.6
Approach		445	38.6	468	38.6	0.753	45.1	LOS D	13.3	132.9	0.89	0.82	0.93	32.5
West: Milner Av														
10	L2	330	30.6	347	30.6	0.610	37.9	LOS C	7.7	68.4	0.96	0.82	0.96	33.4
11	T1	1	27.0	1	27.0	* 0.610	32.8	LOS C	7.5	66.5	0.96	0.81	0.96	27.2
12	R2	1	27.0	1	27.0	0.610	37.6	LOS C	7.5	66.5	0.96	0.81	0.96	28.2
Approach		332	30.6	349	30.6	0.610	37.8	LOS C	7.7	68.4	0.96	0.82	0.96	33.4
All Vehicles		1665	30.8	1753	30.8	1.035	75.7	LOS F	73.9	637.2	0.95	0.96	1.19	22.1

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 3 [3. Old Wallgrove Rd x Estate Road AM (Site Folder: 2026 Project)]

New Site
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Road														
2	T1	61	27.0	64	27.0	0.021	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	80.0
Approach		61	27.0	64	27.0	0.021	0.0	NA	0.0	0.0	0.00	0.00	0.00	80.0
East: Estate Road														
4	L2	1	27.0	1	27.0	0.001	5.1	LOS A	0.0	0.0	0.16	0.48	0.16	47.3
Approach		1	27.0	1	27.0	0.001	5.1	LOS A	0.0	0.0	0.16	0.48	0.16	47.3
North: Old Wallgrove Road														
7	L2	111	27.0	117	27.0	0.123	7.4	LOS A	0.0	0.0	0.00	0.41	0.00	50.9
8	T1	239	27.0	252	27.0	0.123	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	77.2
Approach		350	27.0	368	27.0	0.123	2.4	NA	0.0	0.0	0.00	0.20	0.00	69.5
All Vehicles		412	27.0	434	27.0	0.123	2.0	NA	0.0	0.0	0.00	0.17	0.00	71.0

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 3 [3. Old Wallgrove Rd x Estate Road PM (Site Folder: 2026 Project)]

4. Old Wallgrove Rd x Estate Road AM
Site Category: (None)
Give-Way (Two-Way)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Road (100m)														
2	T1	250	27.0	263	27.0	0.086	0.0	LOS A	0.0	0.0	0.00	0.00	0.00	79.9
Approach		250	27.0	263	27.0	0.086	0.0	NA	0.0	0.0	0.00	0.00	0.00	79.9
East: Estate Road														
4	L2	1	27.0	1	27.0	0.001	4.9	LOS A	0.0	0.0	0.07	0.50	0.07	37.8
Approach		1	27.0	1	27.0	0.001	4.9	LOS A	0.0	0.0	0.07	0.50	0.07	37.8
North: Old Wallgrove Road (200m)														
7	L2	29	27.0	31	27.0	0.032	7.4	LOS A	0.0	0.0	0.00	0.42	0.00	50.9
8	T1	62	27.0	65	27.0	0.032	0.0	LOS A	0.0	0.0	0.00	0.10	0.00	74.0
Approach		91	27.0	96	27.0	0.032	2.4	NA	0.0	0.0	0.00	0.20	0.00	63.0
All Vehicles		342	27.0	360	27.0	0.086	0.6	NA	0.0	0.0	0.00	0.06	0.00	74.0

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.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	155	27.0	163	27.0	0.158	9.6	LOS A	1.7	14.8	0.22	0.66	0.22	56.3
2	T1	1	27.0	1	27.0	*0.619	62.8	LOS E	8.5	73.0	0.99	0.81	1.00	27.7
3	R2	241	27.0	254	27.0	0.619	70.5	LOS E	8.5	73.0	0.99	0.81	1.00	24.4
Approach		397	27.0	418	27.0	0.619	46.7	LOS D	8.5	73.0	0.69	0.75	0.69	33.3
East: Old Wallgrove Rd (220m)														
4	L2	1042	27.0	1097	27.0	0.762	8.1	LOS A	0.0	0.0	0.00	0.58	0.00	52.6
5	T1	423	23.5	445	23.5	0.329	28.3	LOS B	10.0	84.1	0.71	0.61	0.71	43.2
6	R2	53	14.0	56	14.0	*0.605	81.9	LOS F	4.0	31.4	1.00	0.78	1.07	17.4
Approach		1518	25.6	1598	25.6	0.762	16.3	LOS B	10.0	84.1	0.23	0.60	0.23	47.3
North: Telopea Pl (300m)														
7	L2	42	14.0	44	14.0	0.092	18.5	LOS B	1.2	9.4	0.46	0.70	0.46	41.7
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	9	14.0	9	14.0	*0.137	81.3	LOS F	0.7	5.2	0.99	0.67	0.99	23.6
Approach		52	14.3	55	14.3	0.137	30.4	LOS C	1.2	9.4	0.56	0.69	0.56	34.9
West: Lenore Dr														
10	L2	27	14.0	28	14.0	0.021	8.2	LOS A	0.1	1.1	0.12	0.63	0.12	59.3
11	T1	1094	23.2	1152	23.2	*0.621	20.0	LOS B	25.2	211.7	0.70	0.64	0.70	50.0
12	R2	95	27.0	100	27.0	0.324	58.1	LOS E	5.8	50.3	0.89	0.79	0.89	32.1
Approach		1216	23.3	1280	23.3	0.621	22.7	LOS B	25.2	211.7	0.71	0.65	0.71	47.4
All Vehicles		3183	24.7	3351	24.7	0.762	22.8	LOS B	25.2	211.7	0.48	0.64	0.48	44.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G, G2*
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	399	27.0	420	27.0	0.512	20.4	LOS B	14.8	127.9	0.61	0.78	0.61	48.3
2	T1	1	27.0	1	27.0	*0.818	48.5	LOS D	28.4	245.1	0.97	0.91	1.05	31.9
3	R2	814	27.0	857	27.0	0.818	56.2	LOS D	28.4	245.1	0.97	0.91	1.05	28.1
Approach		1214	27.0	1278	27.0	0.818	44.4	LOS D	28.4	245.1	0.85	0.87	0.91	33.8
East: Old Wallgrove Rd (220m)														
4	L2	390	27.0	411	27.0	0.285	8.0	LOS A	0.0	0.0	0.00	0.59	0.00	53.2
5	T1	889	23.2	936	23.2	*0.805	45.3	LOS D	30.2	253.6	0.96	0.89	1.01	33.9
6	R2	17	14.0	18	14.0	0.259	82.3	LOS F	1.3	10.0	1.00	0.70	1.00	17.3
Approach		1296	24.2	1364	24.2	0.805	34.6	LOS C	30.2	253.6	0.67	0.80	0.70	37.7
North: Telopea Pl (300m)														
7	L2	47	14.0	49	14.0	0.128	34.7	LOS C	2.1	16.8	0.69	0.74	0.69	31.0
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	16	14.0	17	14.0	*0.243	82.2	LOS F	1.2	9.4	1.00	0.70	1.00	23.4
Approach		64	14.2	67	14.2	0.243	47.2	LOS D	2.1	16.8	0.77	0.73	0.77	27.9
West: Lenore Dr														
10	L2	6	14.0	6	14.0	0.005	8.0	LOS A	0.0	0.2	0.10	0.62	0.10	59.5
11	T1	877	23.2	923	23.2	0.770	41.8	LOS C	28.0	234.6	0.94	0.85	0.96	35.5
12	R2	55	27.0	58	27.0	*0.805	88.6	LOS F	4.4	38.0	1.00	0.86	1.34	25.3
Approach		938	23.4	987	23.4	0.805	44.3	LOS D	28.0	234.6	0.94	0.85	0.97	34.5
All Vehicles		3512	24.8	3697	24.8	0.818	40.8	LOS C	30.2	253.6	0.81	0.83	0.85	35.2

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - AM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Milner Avenue
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.091	49.7	LOS D	1.7	14.8	0.81	0.62	0.81	25.8
2	T1	60	27.0	63	27.0	0.091	45.3	LOS D	1.7	14.8	0.82	0.62	0.82	28.2
3	R2	1	27.0	1	27.0	0.002	16.8	LOS B	0.0	0.2	0.53	0.57	0.53	30.5
Approach		62	27.0	65	27.0	0.091	44.9	LOS D	1.7	14.8	0.81	0.62	0.81	28.2
East: OEE														
4	L2	1	27.0	1	27.0	0.232	50.0	LOS D	4.4	38.2	0.84	0.75	0.84	17.9
5	T1	1	27.0	1	27.0	* 0.232	45.2	LOS D	4.4	38.2	0.84	0.75	0.84	25.5
6	R2	152	27.0	160	27.0	0.232	50.4	LOS D	4.5	38.4	0.84	0.75	0.84	26.1
Approach		154	27.0	162	27.0	0.232	50.3	LOS D	4.5	38.4	0.84	0.75	0.84	26.1
North: Old Wallgrove Rd														
7	L2	498	27.0	524	27.0	0.389	8.2	LOS A	2.4	20.5	0.14	0.64	0.14	56.3
8	T1	349	27.0	367	27.0	* 0.523	54.8	LOS D	11.1	95.8	0.93	0.80	0.93	27.4
9	R2	382	29.6	402	29.6	* 0.532	23.0	LOS B	14.6	128.2	0.66	0.80	0.66	44.0
Approach		1229	27.8	1294	27.8	0.532	26.0	LOS B	14.6	128.2	0.53	0.74	0.53	41.2
West: Milner Av														
10	L2	185	73.0	195	73.0	0.268	27.8	LOS B	3.0	33.8	0.75	0.75	0.75	32.8
11	T1	1	27.0	1	27.0	* 0.268	24.4	LOS B	2.9	33.3	0.77	0.76	0.77	32.1
12	R2	1	27.0	1	27.0	0.268	29.2	LOS C	2.9	33.3	0.77	0.76	0.77	31.1
Approach		187	72.5	197	72.5	0.268	27.8	LOS B	3.0	33.8	0.75	0.75	0.75	32.8
All Vehicles		1632	32.8	1718	32.8	0.532	29.3	LOS C	14.6	128.2	0.59	0.74	0.59	37.5

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 2 [2. Old Wallgrove Rd x Milner Av - PM (Site Folder: 2026 Project + Miti)]

Old Wallgrove Road x Milner Avenue
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Single Diamond Overlap - Copy - Copy - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd (175m)														
1	L2	1	27.0	1	27.0	0.333	50.7	LOS D	7.3	62.8	0.85	0.70	0.85	26.5
2	T1	249	27.0	262	27.0	* 0.333	45.2	LOS D	7.3	63.1	0.86	0.70	0.86	31.1
3	R2	1	27.0	1	27.0	0.002	27.0	LOS B	0.0	0.3	0.61	0.60	0.61	26.1
Approach		251	27.0	264	27.0	0.333	45.2	LOS D	7.3	63.1	0.85	0.70	0.85	31.1
East: OEE														
4	L2	1	27.0	1	27.0	0.709	48.6	LOS D	20.1	172.8	0.93	0.85	0.93	18.2
5	T1	1	27.0	1	27.0	* 0.709	43.8	LOS D	20.1	172.8	0.93	0.85	0.93	25.9
6	R2	635	27.0	668	27.0	0.709	48.9	LOS D	20.1	173.5	0.93	0.85	0.93	26.5
Approach		637	27.0	671	27.0	0.709	48.9	LOS D	20.1	173.5	0.93	0.85	0.93	26.5
North: Old Wallgrove Rd														
7	L2	130	27.0	137	27.0	0.102	8.1	LOS A	0.4	3.8	0.10	0.63	0.10	56.5
8	T1	91	27.0	96	27.0	0.121	46.1	LOS D	2.5	21.5	0.80	0.70	0.80	30.4
9	R2	224	50.0	236	50.0	* 0.620	36.3	LOS C	11.0	110.1	0.85	0.82	0.85	37.9
Approach		445	38.6	468	38.6	0.620	30.1	LOS C	11.0	110.1	0.62	0.74	0.62	39.5
West: Milner Av														
10	L2	330	30.6	347	30.6	0.519	31.0	LOS C	5.9	51.8	0.91	0.80	0.91	35.6
11	T1	1	27.0	1	27.0	* 0.519	26.2	LOS B	5.8	51.1	0.91	0.80	0.91	31.3
12	R2	1	27.0	1	27.0	0.519	31.0	LOS C	5.8	51.1	0.91	0.80	0.91	30.4
Approach		332	30.6	349	30.6	0.519	31.0	LOS C	5.9	51.8	0.91	0.80	0.91	35.6
All Vehicles		1665	30.8	1753	30.8	0.709	39.7	LOS C	20.1	173.5	0.84	0.79	0.84	32.2

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2031 Project - Existing Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1*, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	155	27.0	163	27.0	0.276	18.4	LOS B	4.7	40.1	0.49	0.73	0.49	49.6
2	T1	1	27.0	1	27.0	*0.777	70.2	LOS E	8.6	73.7	1.00	0.87	1.20	25.9
3	R2	242	27.0	255	27.0	0.777	78.0	LOS F	9.8	84.2	1.00	0.87	1.18	22.8
Approach		398	27.0	419	27.0	0.777	54.8	LOS D	9.8	84.2	0.80	0.82	0.91	30.5
East: Old Wallgrove Rd (220m)														
4	L2	1228	27.0	1293	27.0	0.949	32.2	LOS C	57.1	492.2	0.69	0.89	0.81	35.8
5	T1	1099	23.2	1157	23.2	0.684	21.6	LOS B	29.3	246.0	0.73	0.67	0.73	48.4
6	R2	107	14.0	113	14.0	*0.752	79.6	LOS F	8.1	63.3	1.00	0.85	1.16	17.8
Approach		2434	24.7	2562	24.7	0.949	29.5	LOS C	57.1	492.2	0.73	0.79	0.79	39.1
North: Telopea Pl (300m)														
7	L2	77	14.0	81	14.0	0.176	27.5	LOS B	3.1	24.5	0.62	0.75	0.62	35.0
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	21	14.0	22	14.0	*0.320	82.7	LOS F	1.6	12.4	1.00	0.71	1.00	23.4
Approach		99	14.1	104	14.1	0.320	39.7	LOS C	3.1	24.5	0.70	0.74	0.70	30.5
West: Lenore Dr														
10	L2	57	14.0	60	14.0	0.043	8.7	LOS A	0.5	3.6	0.16	0.64	0.16	58.7
11	T1	1298	23.2	1366	23.2	*0.762	24.0	LOS B	35.3	296.0	0.82	0.75	0.82	46.4
12	R2	1	27.0	1	27.0	0.008	70.1	LOS E	0.1	0.6	0.93	0.60	0.93	29.0
Approach		1356	22.8	1427	22.8	0.762	23.4	LOS B	35.3	296.0	0.79	0.75	0.79	46.8
All Vehicles		4287	24.1	4513	24.1	0.949	30.2	LOS C	57.1	492.2	0.75	0.78	0.80	39.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2031 Project - Existing Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	425	27.0	447	27.0	0.606	23.2	LOS B	17.8	153.6	0.67	0.79	0.67	46.6
2	T1	1	27.0	1	27.0	* 1.039	142.4	LOS F	32.2	278.0	1.00	1.14	1.81	15.7
3	R2	789	27.0	831	27.0	1.039	140.1	LOS F	61.6	530.9	1.00	1.13	1.71	14.7
Approach		1215	27.0	1279	27.0	1.039	99.2	LOS F	61.6	530.9	0.89	1.02	1.34	20.8
East: Old Wallgrove Rd (220m)														
4	L2	444	27.0	467	27.0	0.342	8.3	LOS A	2.0	17.5	0.13	0.64	0.13	51.8
5	T1	902	23.2	949	23.2	0.831	47.9	LOS D	32.5	272.4	0.97	0.92	1.05	32.7
6	R2	44	14.0	46	14.0	* 0.670	85.6	LOS F	3.4	26.9	1.00	0.79	1.16	16.8
Approach		1390	24.1	1463	24.1	0.831	36.5	LOS C	32.5	272.4	0.70	0.83	0.76	36.2
North: Telopea Pl (300m)														
7	L2	99	14.0	104	14.0	0.341	60.0	LOS E	6.3	49.2	0.91	0.76	0.91	22.1
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	35	14.0	37	14.0	* 0.533	84.1	LOS F	2.7	21.0	1.00	0.74	1.03	23.1
Approach		135	14.1	142	14.1	0.533	66.4	LOS E	6.3	49.2	0.93	0.75	0.94	22.5
West: Lenore Dr														
10	L2	16	14.0	17	14.0	0.012	8.2	LOS A	0.1	0.6	0.12	0.62	0.12	59.3
11	T1	1144	23.2	1204	23.2	* 1.028	118.5	LOS F	64.6	542.1	1.00	1.33	1.59	17.3
12	R2	1	27.0	1	27.0	0.017	79.8	LOS F	0.1	0.6	0.98	0.59	0.98	26.9
Approach		1161	23.1	1222	23.1	1.028	117.0	LOS F	64.6	542.1	0.99	1.32	1.57	17.5
All Vehicles		3901	24.4	4106	24.4	1.039	81.0	LOS F	64.6	542.1	0.85	1.03	1.19	23.0

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2031 Project + Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1
Output Phase Sequence: A, D, E, G, G1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	155	27.0	163	27.0	0.290	16.0	LOS B	4.2	36.2	0.45	0.72	0.45	51.3
2	T1	1	27.0	1	27.0	* 0.777	71.5	LOS F	9.2	79.6	1.00	0.87	1.18	25.6
3	R2	242	27.0	255	27.0	0.777	79.2	LOS F	9.2	79.6	1.00	0.87	1.18	22.6
Approach		398	27.0	419	27.0	0.777	54.5	LOS D	9.2	79.6	0.78	0.81	0.90	30.7
East: Old Wallgrove Rd (220m)														
4	L2	1228	27.0	1293	27.0	0.898	8.3	LOS A	0.0	0.0	0.00	0.57	0.00	51.6
5	T1	1099	23.2	1157	23.2	0.616	15.6	LOS B	24.9	209.3	0.62	0.57	0.62	54.5
6	R2	107	14.0	113	14.0	* 0.425	64.9	LOS E	7.0	55.2	0.95	0.79	0.95	20.5
Approach		2434	24.7	2562	24.7	0.898	14.1	LOS A	24.9	209.3	0.32	0.58	0.32	50.4
North: Telopea Pl (300m)														
7	L2	77	14.0	81	14.0	0.149	29.8	LOS C	3.2	25.4	0.63	0.74	0.63	33.6
8	T1	1	27.0	1	27.0	0.011	67.4	LOS E	0.1	0.6	0.95	0.57	0.95	28.4
9	R2	21	14.0	22	14.0	* 0.213	77.6	LOS F	1.5	11.8	0.98	0.71	0.98	24.3
Approach		99	14.1	104	14.1	0.213	40.3	LOS C	3.2	25.4	0.71	0.73	0.71	30.2
West: Lenore Dr														
10	L2	57	14.0	60	14.0	0.043	8.6	LOS A	0.4	3.3	0.16	0.64	0.16	58.8
11	T1	1298	23.2	1366	23.2	* 0.850	35.9	LOS C	43.2	362.8	0.93	0.89	0.98	38.5
12	R2	1	27.0	1	27.0	0.017	79.8	LOS F	0.1	0.6	0.98	0.59	0.98	26.9
Approach		1356	22.8	1427	22.8	0.850	34.8	LOS C	43.2	362.8	0.89	0.88	0.94	39.1
All Vehicles		4287	24.1	4513	24.1	0.898	25.0	LOS B	43.2	362.8	0.56	0.70	0.58	43.0

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2031 Project + Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - Copy (2) (phase reduction applied)
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G2
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	425	27.0	447	27.0	0.580	22.4	LOS B	18.1	155.6	0.69	0.81	0.69	47.1
2	T1	1	27.0	1	27.0	* 0.899	65.9	LOS E	32.4	278.9	1.00	0.97	1.23	26.9
3	R2	789	27.0	831	27.0	0.899	73.5	LOS F	32.4	278.9	1.00	0.97	1.23	23.8
Approach		1215	27.0	1279	27.0	0.899	55.7	LOS D	32.4	278.9	0.89	0.91	1.04	30.1
East: Old Wallgrove Rd (220m)														
4	L2	444	27.0	467	27.0	0.325	8.0	LOS A	0.0	0.0	0.00	0.59	0.00	53.1
5	T1	902	23.2	949	23.2	0.734	35.8	LOS C	27.9	233.7	0.89	0.79	0.89	38.5
6	R2	44	14.0	46	14.0	* 0.670	85.6	LOS F	3.4	26.9	1.00	0.79	1.16	16.8
Approach		1390	24.1	1463	24.1	0.734	28.5	LOS C	27.9	233.7	0.61	0.73	0.61	41.0
North: Telopea Pl (300m)														
7	L2	99	14.0	104	14.0	0.295	48.3	LOS D	5.7	44.6	0.85	0.78	0.85	25.5
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	35	14.0	37	14.0	* 0.533	84.1	LOS F	2.7	21.0	1.00	0.74	1.03	23.1
Approach		135	14.1	142	14.1	0.533	57.7	LOS E	5.7	44.6	0.89	0.77	0.90	24.6
West: Lenore Dr														
10	L2	16	14.0	17	14.0	0.012	8.2	LOS A	0.1	0.6	0.12	0.62	0.12	59.3
11	T1	1144	23.2	1204	23.2	* 0.906	56.8	LOS E	45.8	384.6	1.00	1.04	1.17	29.6
12	R2	1	27.0	1	27.0	0.017	79.8	LOS F	0.1	0.6	0.98	0.59	0.98	26.9
Approach		1161	23.1	1222	23.1	0.906	56.1	LOS D	45.8	384.6	0.99	1.03	1.16	29.8
All Vehicles		3901	24.4	4106	24.4	0.906	46.2	LOS D	45.8	384.6	0.82	0.88	0.92	32.8

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2036 Project - Existing Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1
Output Phase Sequence: A, D, E, G, G1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	88	27.0	93	27.0	0.200	23.6	LOS B	3.2	27.2	0.56	0.74	0.56	46.4
2	T1	1	27.0	1	27.0	* 0.438	64.6	LOS E	4.8	41.1	0.98	0.78	0.98	27.2
3	R2	136	27.0	143	27.0	0.438	72.2	LOS F	4.8	41.1	0.98	0.78	0.98	24.0
Approach		225	27.0	237	27.0	0.438	53.2	LOS D	4.8	41.1	0.81	0.76	0.81	31.0
East: Old Wallgrove Rd (220m)														
4	L2	937	27.0	986	27.0	0.781	9.0	LOS A	10.4	89.8	0.30	0.68	0.30	51.0
5	T1	1376	23.1	1448	23.1	0.805	18.8	LOS B	39.6	332.4	0.74	0.69	0.75	51.1
6	R2	219	14.0	231	14.0	* 0.869	80.2	LOS F	17.4	136.3	1.00	0.93	1.26	17.7
Approach		2532	23.8	2665	23.8	0.869	20.5	LOS B	39.6	332.4	0.60	0.71	0.63	45.5
North: Telopea Pl (300m)														
7	L2	77	14.0	81	14.0	0.138	30.0	LOS C	3.2	25.0	0.63	0.73	0.63	33.5
8	T1	1	27.0	1	27.0	0.011	67.4	LOS E	0.1	0.6	0.95	0.57	0.95	28.4
9	R2	21	14.0	22	14.0	* 0.213	77.6	LOS F	1.5	11.8	0.98	0.71	0.98	24.3
Approach		99	14.1	104	14.1	0.213	40.5	LOS C	3.2	25.0	0.70	0.73	0.70	30.1
West: Lenore Dr														
10	L2	121	14.0	127	14.0	0.100	10.4	LOS A	1.7	13.3	0.25	0.66	0.25	56.8
11	T1	1368	23.1	1440	23.1	* 0.913	49.6	LOS D	55.3	463.5	0.97	1.01	1.12	32.1
12	R2	4	27.0	4	27.0	0.068	81.1	LOS F	0.3	2.5	0.98	0.64	0.98	26.7
Approach		1493	22.4	1572	22.4	0.913	46.5	LOS D	55.3	463.5	0.91	0.98	1.05	33.3
All Vehicles		4349	23.3	4578	23.3	0.913	31.6	LOS C	55.3	463.5	0.72	0.81	0.78	39.1

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2036 Project - Existing Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Existing
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - Copy
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G
Output Phase Sequence: A, D, E, G

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	281	27.0	296	27.0	0.477	23.0	LOS B	11.0	94.4	0.62	0.77	0.62	46.7
2	T1	1	27.0	1	27.0	* 0.999	112.3	LOS F	20.9	179.8	0.92	1.07	1.61	18.9
3	R2	571	27.0	601	27.0	0.999	118.4	LOS F	37.7	324.7	0.97	1.07	1.58	16.9
Approach		853	27.0	898	27.0	0.999	87.0	LOS F	37.7	324.7	0.86	0.97	1.27	22.8
East: Old Wallgrove Rd (220m)														
4	L2	277	27.0	292	27.0	0.213	8.2	LOS A	1.1	9.4	0.11	0.63	0.11	51.9
5	T1	1034	23.2	1088	23.2	0.783	33.3	LOS C	32.8	275.6	0.88	0.80	0.89	39.9
6	R2	90	14.0	95	14.0	* 1.027	134.8	LOS F	9.3	73.2	1.00	1.07	1.89	11.7
Approach		1401	23.3	1475	23.3	1.027	34.9	LOS C	32.8	275.6	0.74	0.79	0.80	37.3
North: Telopea Pl (300m)														
7	L2	99	14.0	104	14.0	0.310	56.1	LOS D	6.1	47.7	0.89	0.76	0.89	23.2
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	35	14.0	37	14.0	* 0.533	84.1	LOS F	2.7	21.0	1.00	0.74	1.03	23.1
Approach		135	14.1	142	14.1	0.533	63.5	LOS E	6.1	47.7	0.92	0.76	0.92	23.2
West: Lenore Dr														
10	L2	33	14.0	35	14.0	0.025	8.5	LOS A	0.2	1.9	0.15	0.63	0.15	58.9
11	T1	1355	23.2	1426	23.2	* 0.980	83.1	LOS F	67.5	566.2	1.00	1.21	1.36	22.8
12	R2	1	27.0	1	27.0	0.013	76.6	LOS F	0.1	0.6	0.96	0.60	0.96	27.6
Approach		1389	23.0	1462	23.0	0.980	81.3	LOS F	67.5	566.2	0.98	1.19	1.33	23.2
All Vehicles		3778	23.7	3977	23.7	1.027	64.7	LOS E	67.5	566.2	0.86	0.98	1.11	26.7

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - AM (Site Folder: 2036 Project - Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Phase Times)

Timings based on settings in the Site Phasing & Timing dialog
Phase Times specified by the user
Phase Sequence: Leading Right Turn - Copy - Import
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G1
Output Phase Sequence: A, D, E, G, G1

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	88	27.0	93	27.0	0.190	22.9	LOS B	3.1	26.4	0.55	0.73	0.55	46.8
2	T1	1	27.0	1	27.0	*0.412	63.3	LOS E	4.7	40.7	0.97	0.78	0.97	27.5
3	R2	136	27.0	143	27.0	0.412	71.0	LOS F	4.7	40.7	0.97	0.78	0.97	24.3
Approach		225	27.0	237	27.0	0.412	52.2	LOS D	4.7	40.7	0.80	0.76	0.80	31.4
East: Old Wallgrove Rd (220m)														
4	L2	937	27.0	986	27.0	0.685	8.1	LOS A	0.0	0.0	0.00	0.58	0.00	52.8
5	T1	1376	23.1	1448	23.1	*0.870	27.5	LOS B	41.0	344.1	0.75	0.75	0.82	43.8
6	R2	219	14.0	231	14.0	0.869	80.2	LOS F	17.4	136.3	1.00	0.93	1.26	17.7
Approach		2532	23.8	2665	23.8	0.870	24.9	LOS B	41.0	344.1	0.49	0.70	0.55	42.5
North: Telopea Pl (300m)														
7	L2	77	14.0	81	14.0	0.137	30.5	LOS C	3.2	25.1	0.63	0.73	0.63	33.2
8	T1	1	27.0	1	27.0	0.011	67.4	LOS E	0.1	0.6	0.95	0.57	0.95	28.4
9	R2	21	14.0	22	14.0	*0.213	77.6	LOS F	1.5	11.8	0.98	0.71	0.98	24.3
Approach		99	14.1	104	14.1	0.213	40.8	LOS C	3.2	25.1	0.71	0.73	0.71	30.0
West: Lenore Dr														
10	L2	121	14.0	127	14.0	0.100	10.4	LOS A	1.7	13.2	0.25	0.66	0.25	56.8
11	T1	1368	23.1	1440	23.1	0.926	54.7	LOS D	57.9	485.6	0.98	1.05	1.17	30.3
12	R2	4	27.0	4	27.0	*0.068	81.1	LOS F	0.3	2.5	0.98	0.64	0.98	26.7
Approach		1493	22.4	1572	22.4	0.926	51.2	LOS D	57.9	485.6	0.92	1.02	1.09	31.6
All Vehicles		4349	23.3	4578	23.3	0.926	35.7	LOS C	57.9	485.6	0.66	0.81	0.76	37.0

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Site: 1 [1. Old Wallgrove Rd x Lenore Dr - PM (Site Folder: 2036 Project - Upgraded Layout)]

Old Wallgrove Road x Lenore Drive
Site Category: Proposed Design 1
Signals - EQUISAT (Fixed-Time/SCATS) Isolated Cycle Time = 140 seconds (Site User-Given Cycle Time)
Variable Sequence Analysis applied. The results are given for the selected output sequence.

Timings based on settings in the Site Phasing & Timing dialog
Phase Times determined by the program
Phase Sequence: Leading Right Turn - Copy (2)
Reference Phase: Phase A
Input Phase Sequence: A, D, E, G, G2*
Output Phase Sequence: A, D, E, G
(* Variable Phase)

Vehicle Movement Performance

Mov ID	Turn	INPUT VOLUMES [Total veh/h	HV] %	DEMAND FLOWS [Total veh/h	HV] %	Deg. Satn v/c	Aver. Delay sec	Level of Service	95% BACK OF QUEUE [Veh. veh	Dist] m	Prop. Que	Effective Stop Rate	Aver. No. Cycles	Aver. Speed km/h
South: Old Wallgrove Rd														
1	L2	281	27.0	296	27.0	0.435	21.9	LOS B	10.6	91.4	0.61	0.77	0.61	47.4
2	T1	1	27.0	1	27.0	* 0.915	77.6	LOS F	24.5	210.9	1.00	0.98	1.33	24.3
3	R2	571	27.0	601	27.0	0.915	85.2	LOS F	24.5	210.9	1.00	0.98	1.33	21.5
Approach		853	27.0	898	27.0	0.915	64.4	LOS E	24.5	210.9	0.87	0.91	1.09	27.6
East: Old Wallgrove Rd (220m)														
4	L2	277	27.0	292	27.0	0.203	8.0	LOS A	0.0	0.0	0.00	0.59	0.00	53.2
5	T1	1034	23.2	1088	23.2	0.739	29.3	LOS C	31.1	260.8	0.84	0.76	0.84	42.5
6	R2	90	14.0	95	14.0	* 0.913	94.4	LOS F	7.6	59.3	1.00	0.96	1.51	15.6
Approach		1401	23.3	1475	23.3	0.913	29.3	LOS C	31.1	260.8	0.68	0.74	0.71	40.9
North: Telopea Pl (300m)														
7	L2	99	14.0	104	14.0	0.276	47.2	LOS D	5.6	44.0	0.83	0.78	0.83	25.9
8	T1	1	27.0	1	27.0	0.016	71.9	LOS F	0.1	0.6	0.97	0.58	0.97	27.2
9	R2	35	14.0	37	14.0	* 0.533	84.1	LOS F	2.7	21.0	1.00	0.74	1.03	23.1
Approach		135	14.1	142	14.1	0.533	57.0	LOS E	5.6	44.0	0.88	0.77	0.89	24.8
West: Lenore Dr														
10	L2	33	14.0	35	14.0	0.025	8.5	LOS A	0.2	1.9	0.15	0.63	0.15	58.9
11	T1	1355	23.2	1426	23.2	* 0.923	54.9	LOS D	55.8	468.0	1.00	1.06	1.18	30.2
12	R2	1	27.0	1	27.0	0.011	75.2	LOS F	0.1	0.6	0.95	0.60	0.95	27.9
Approach		1389	23.0	1462	23.0	0.923	53.8	LOS D	55.8	468.0	0.98	1.05	1.15	30.6
All Vehicles		3778	23.7	3977	23.7	0.923	47.2	LOS D	55.8	468.0	0.84	0.89	0.97	32.4

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.
Intersection and Approach LOS values are based on average delay for all vehicle movements.
Delay Model: SIDRA Standard (Geometric Delay is included).
Queue Model: SIDRA Standard.
Gap-Acceptance Capacity: SIDRA Standard (Akçelik M3D).
HV (%) values are calculated for All Movement Classes of All Heavy Vehicle Model Designation.

* Critical Movement (Signal Timing)

Appendix D. Swept Path Analysis and Design Commentary

NOTE:

1. THE DESIGN OF PRECINCT 3 IS SHOWN BETWEEN AG02 AND AG14. THE DESIGN OF THE PRECINCT 1 EXPANSION IS SHOWN BETWEEN AG15 AND AG22.

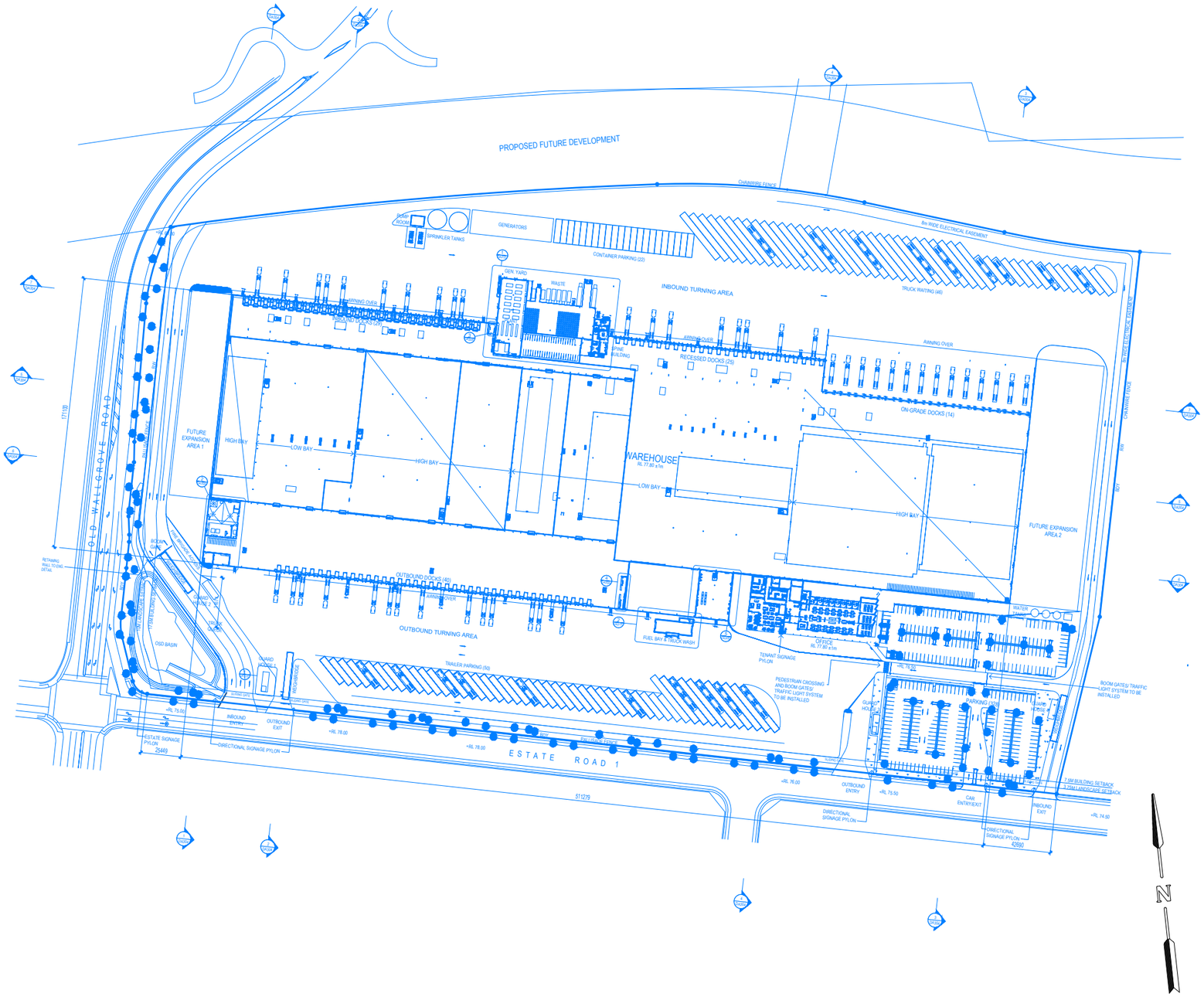
2. THE CURRENT DESIGN OF PRECINCT 3 CAN ACCOMMODATE THE LARGEST EXPECTED VEHICLE, THE 26.0m B-DOUBLE. THE SWEPT PATH ASSESSMENT FOR THIS VEHICLE IS SHOWN FROM AG02 TO AG05.

3. TO FUTURE PROOF THE SITE, VEHICLES UP TO 30.0m SUPER B-DOUBLES CAN ALSO ACCESS PRECINCT 3. THE SWEPT PATH ASSESSMENT FOR 30.0m SUPER B-DOUBLES IS SHOWN FROM AG06 TO AG09.

4. VEHICLES UP TO 20.0m AVs CAN REAR LOAD WITHIN THE PROPOSED RSDs AND RECESSED DOCKS FOR PRECINCT 3. THEY CAN ALSO ACCESS THE TRUCK PARKING, AS REQUIRED. THIS IS SHOWN WITHIN AG10 AND AG11.

5. FIRE TRUCKS WILL BE ABLE TO CIRCULATE THE SITE AND REVERSE INTO THE DEDICATED BOOSTER LOCATIONS FOR PRECINCT 3. IT IS SHOWN WITHIN AG12 AND AG13.

6. THE CLASS OF CAR PARKING SPACES HAS BEEN ASSESSED AND IT IS USER CLASS 2 (GREATER THAN USER CLASS 1/1A AS REQUIRED BY AS2890.1:2004). MINOR AMENDMENTS WILL BE REQUIRED AT THE CAR PARK (OF PRECINCT 3). THIS IS SHOWN WITHIN AG14.



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED: Mario Dizon	PAPER SIZE: A3
APPROVED BY: A. RASOULI	DATE: 23.05.2022
SCALE: 1:3000	NTS

CLIENT: Goodman Property Services (Aust) Pty Ltd

PROJECT: 1546 Oakdale East Estate

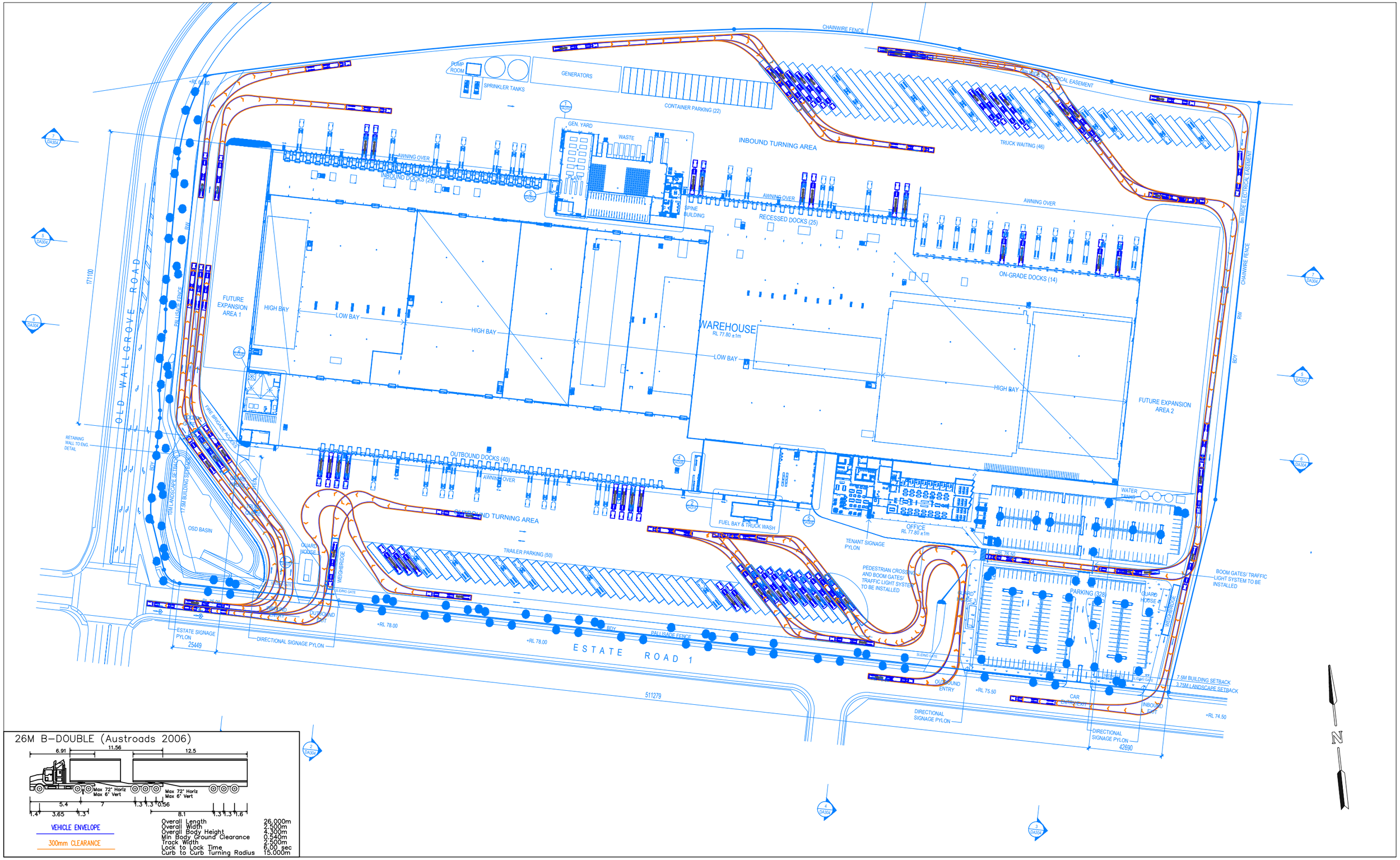
DOCUMENT INFORMATION: DESIGN ASSESSMENT — GENERAL NOTES

FILE NAME	SHEET
AG1546-04-v02.dwg	AG01

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON ASSUMES NO RESPONSIBILITY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA IN WHOLE OR IN PART IF THE PLAN/DATA HAS BEEN ALTERED, OR NOT USED BY THE CLIENT OR TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA.

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON ACCEPTS NO RESPONSIBILITY FOR USE OF THIS PLAN/DATA FOR PURPOSES OTHER THAN THOSE FOR WHICH IT WAS PREPARED BY ASON. ASON ACCEPTS NO RESPONSIBILITY FOR ANY LOSS OR DAMAGE SUFFERED BY ANY PERSON OR ORGANISATION OTHER THAN THE CLIENT IN CONNECTION WITH THE PLAN/DATA, INCLUDING BUT NOT LIMITED TO LOSS OR DAMAGE SUFFERED AS A RESULT OF ANY RELIANCE ON THE PLAN/DATA BY A THIRD PARTY. ASON ACCEPTS NO RESPONSIBILITY FOR ANY LOSS OR DAMAGE SUFFERED BY THE CLIENT OR ANY THIRD PARTY AS A RESULT OF ANY DEFICIENCY IN THE PLAN/DATA ARISING FROM INACCURATE OR INCOMPLETE INFORMATION SUPPLIED BY THE CLIENT OR ANY OTHER PERSON OR ORGANISATION ON BEHALF OF THE CLIENT. THE CLIENT AGREES TO INDEMNIFY ASON AGAINST ANY CLAIM OR PROCEEDING BROUGHT AGAINST ASON BY ANY THIRD PARTY IN RESPECT OF, OR ARISING OUT OF, OR CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH ASON'S TO THE ACCOMPANYING DATA.



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:2000
	NTS

CLIENT
Goodman Property Services (Aust) Pty Ltd

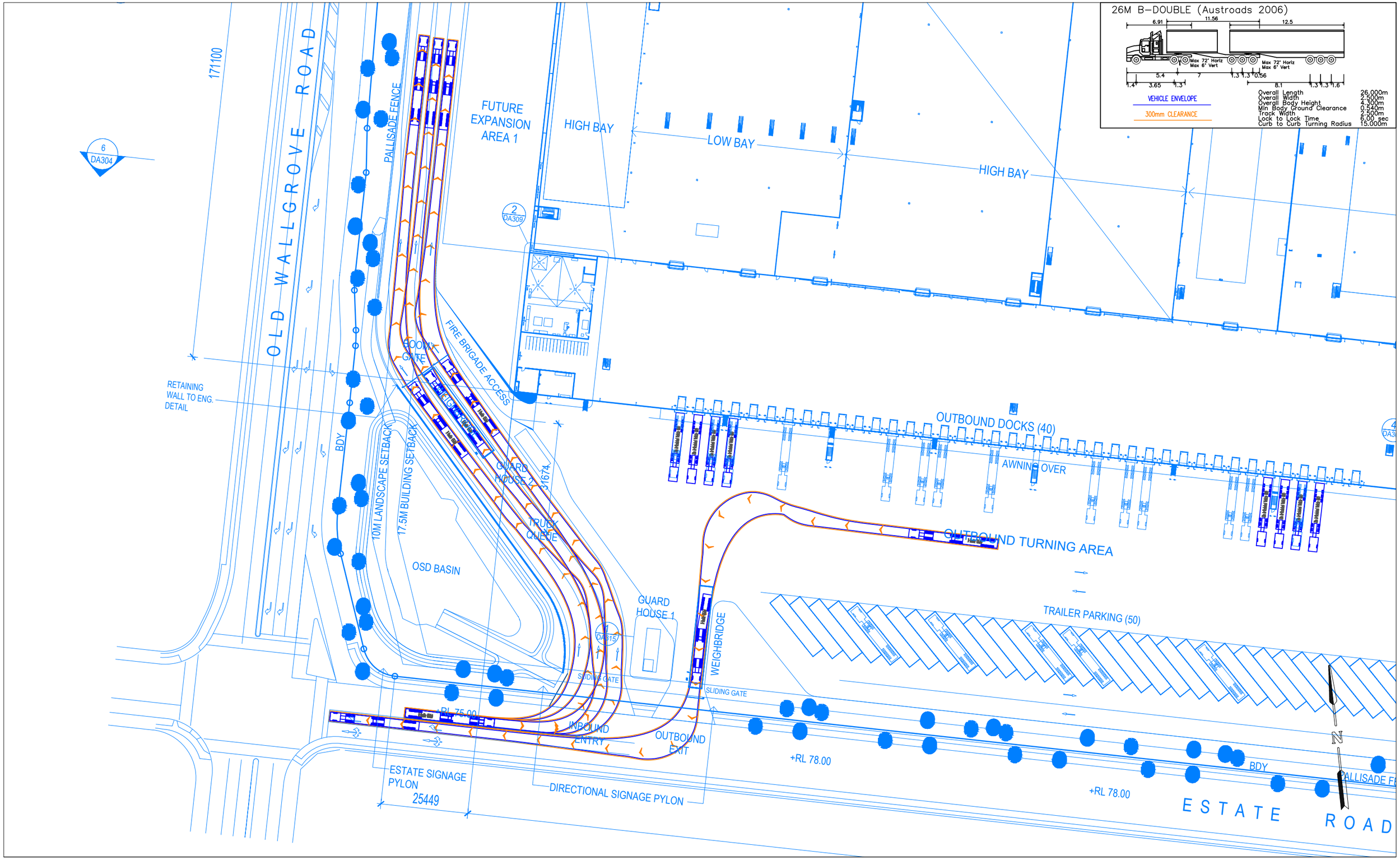
PROJECT
1546
Oakdale East Estate

DOCUMENT INFORMATION
DESIGN ASSESSMENT
SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG02

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON WILL NOT BE HELD LIABLE FOR ANY LOSS OR DAMAGE SUFFERED FROM ANY THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INTENTIONAL OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA.



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:1000
	0 10 20

CLIENT: Goodman Property Services (Aust) Pty Ltd

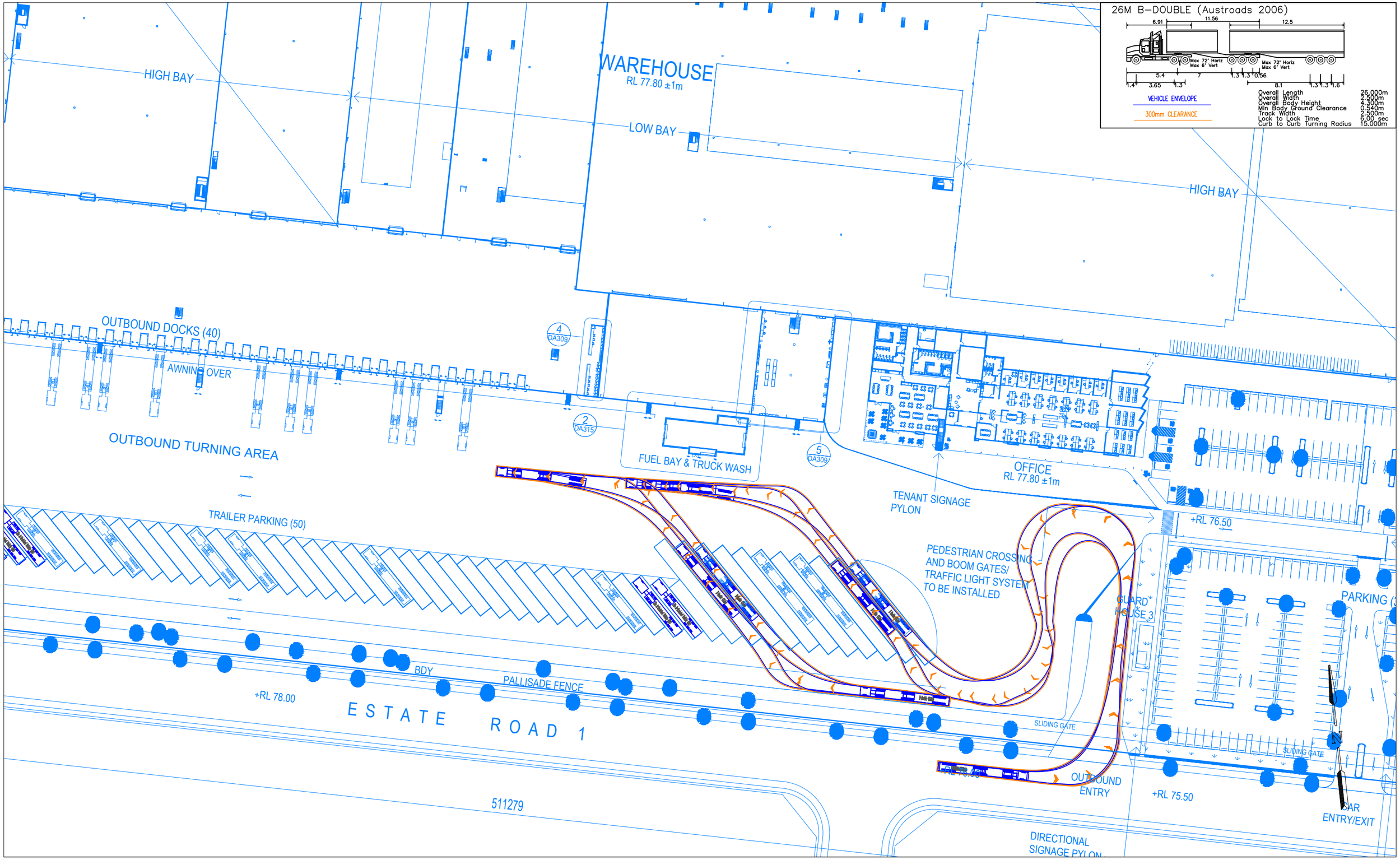
PROJECT: 1546 Oakdale East Estate

DOCUMENT INFORMATION
DESIGN ASSESSMENT
SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG03

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON WILL NOT BE LIABLE TO ANY PERSON OR ENTITY FOR ANY LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN OR ITS INFORMATION OR WITH CLAIMS BY THIRD PARTIES ARISING FROM ANY FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/WITH THE ASSOCIATED DATA.

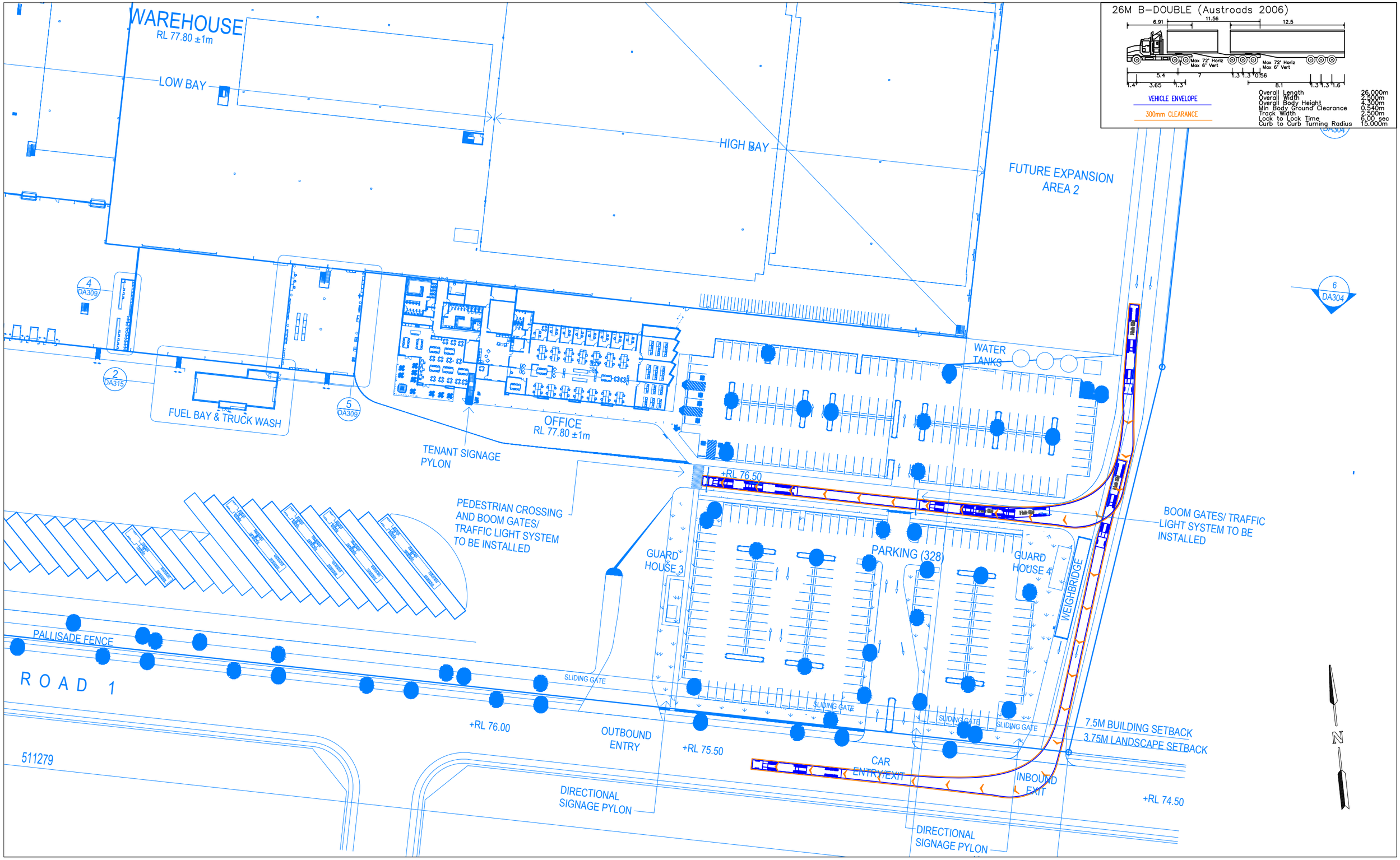


GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED: Mario Dizon	PAPER SIZE: A3	CLIENT: Goodman Property Services (Aust) Pty Ltd	DOCUMENT INFORMATION: DESIGN ASSESSMENT
APPROVED BY: A. RASOULI	DATE: 23.05.2022	PROJECT: 1546	SWEPT PATH ASSESSMENT
SCALE: 1:1000	0 10 20	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg / SHEET: AG04

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au



GENERAL NOTES

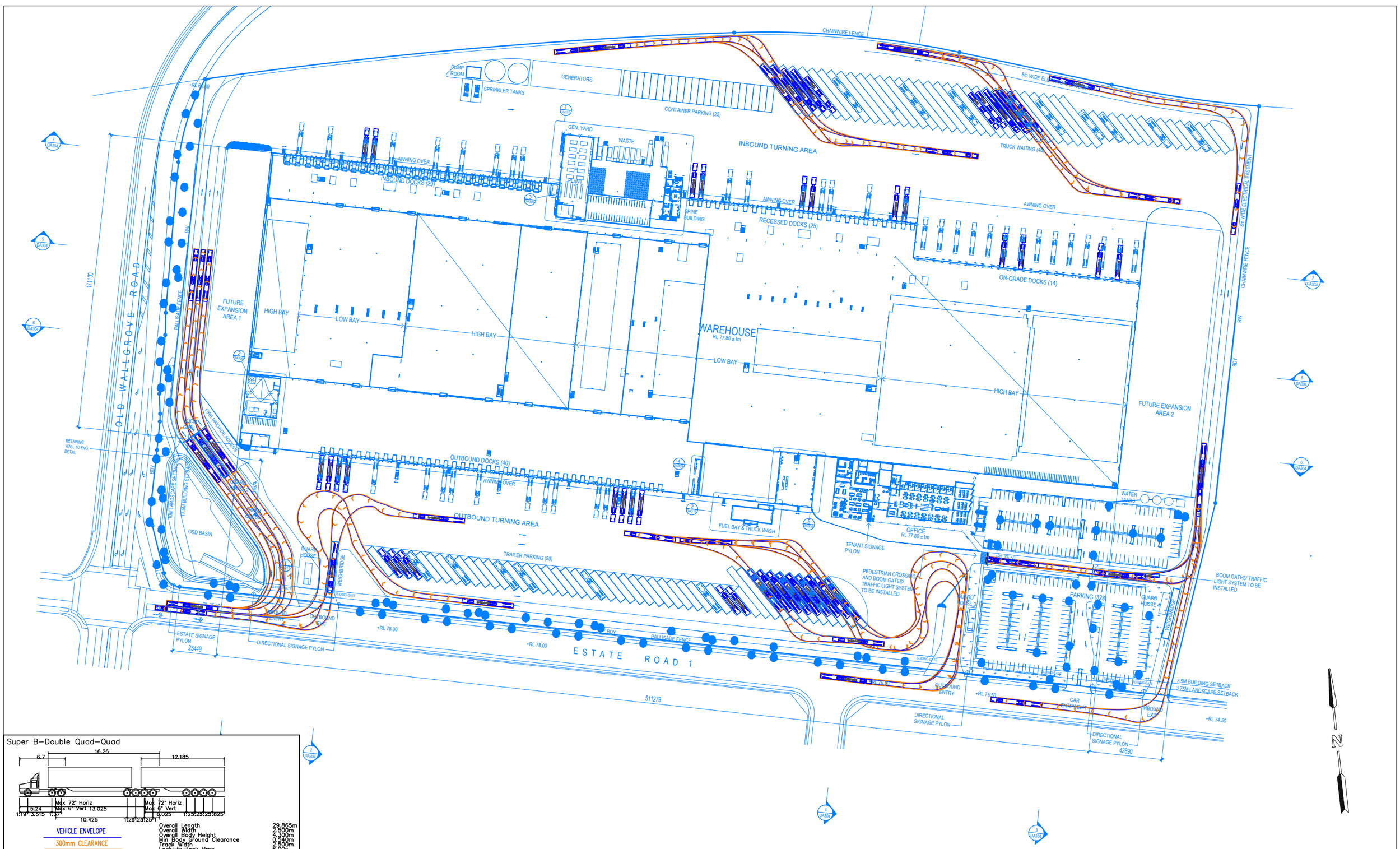
This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE	0 10 20	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg — SHEET: AG05
1:1000			

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.

PLOT DATE: 23/05/2022 11:48:01 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |



GENERAL NOTES

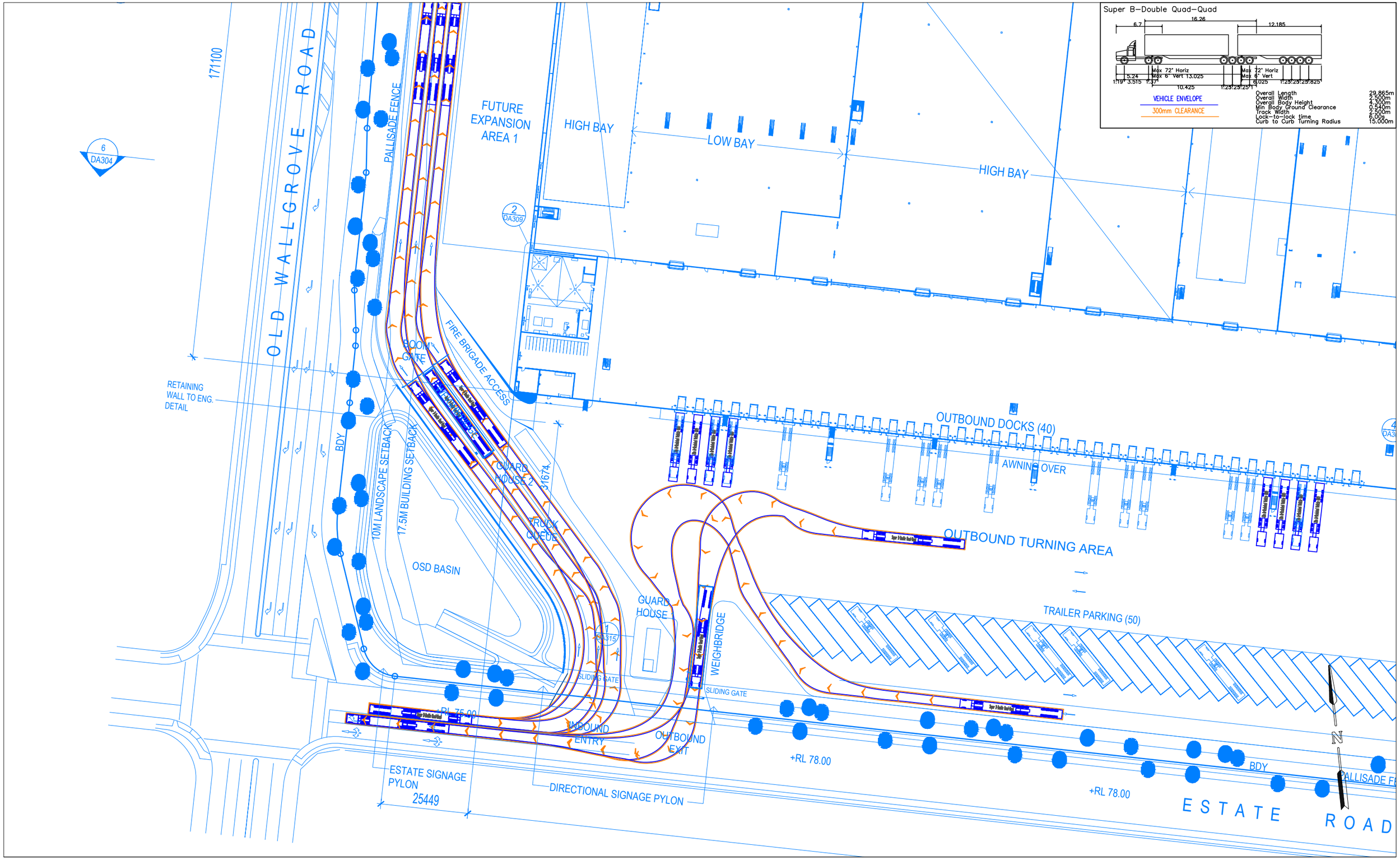
This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE			FILE NAME / SHEET
1:2000	NTS	Oakdale East Estate	AG1546-04-v02.dwg / AG06

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.

PLOT DATE: 23/05/2022 11:48:07 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

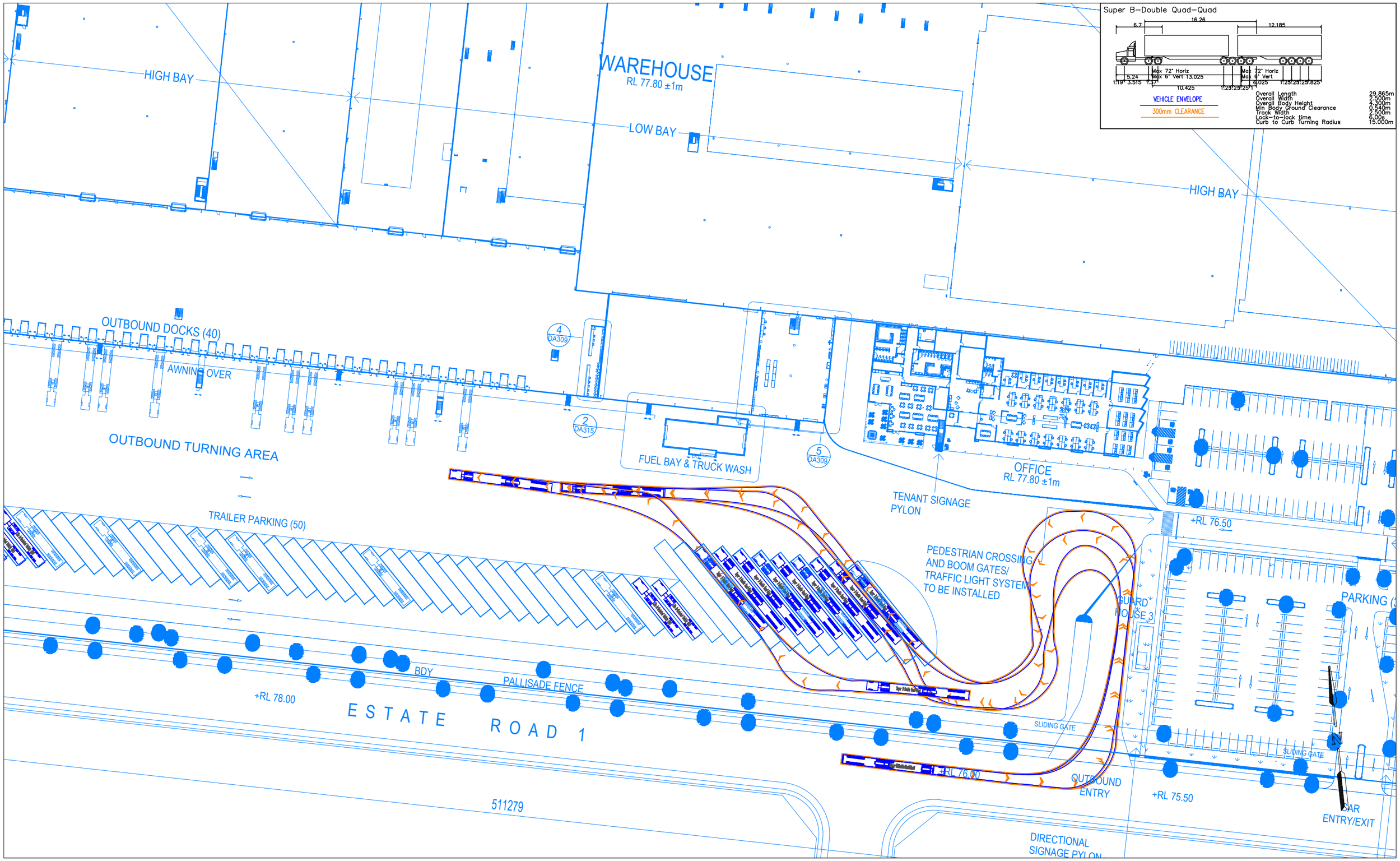
DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE	0 10 20	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg / SHEET: AG07

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.

PLOT DATE: 23/05/2022 11:48:15 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCHMARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON ACCEPTS NO RESPONSIBILITY FOR ANY PERSON USING OR RELYING ON INFORMATION CONTAINED IN THIS PLAN/DATA FOR PURPOSES OTHER THAN THOSE FOR WHICH IT WAS PREPARED BY ASON, OR FOR ANY PURPOSE OTHER THAN THAT AUTHORISED BY ASON IN WRITING. THE ACCURACY OF THE PLAN/DATA IS NOT GUARANTEED, OR WITH CASHFLOW BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA WITHIN THE ACCOMPANYING DATA.



Super B-Double Quad-Quad

VEHICLE ENVELOPE

300mm CLEARANCE

Overall Length	29.865m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	15.000m

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:1000
	0 10 20

CLIENT: Goodman Property Services (Aust) Pty Ltd

PROJECT: 1546 Oakdale East Estate

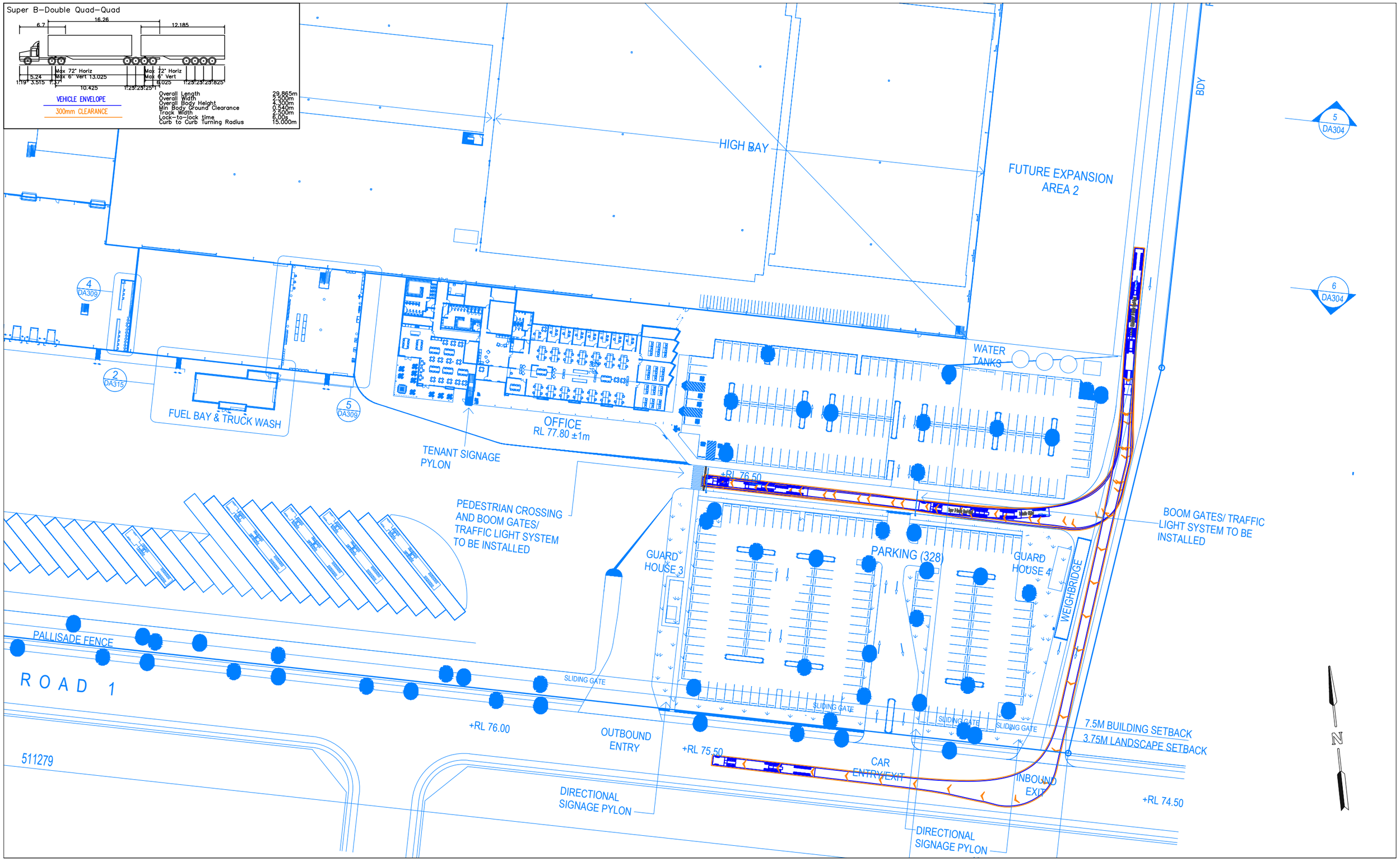
DOCUMENT INFORMATION

DESIGN ASSESSMENT

SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG08

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au



GENERAL NOTES

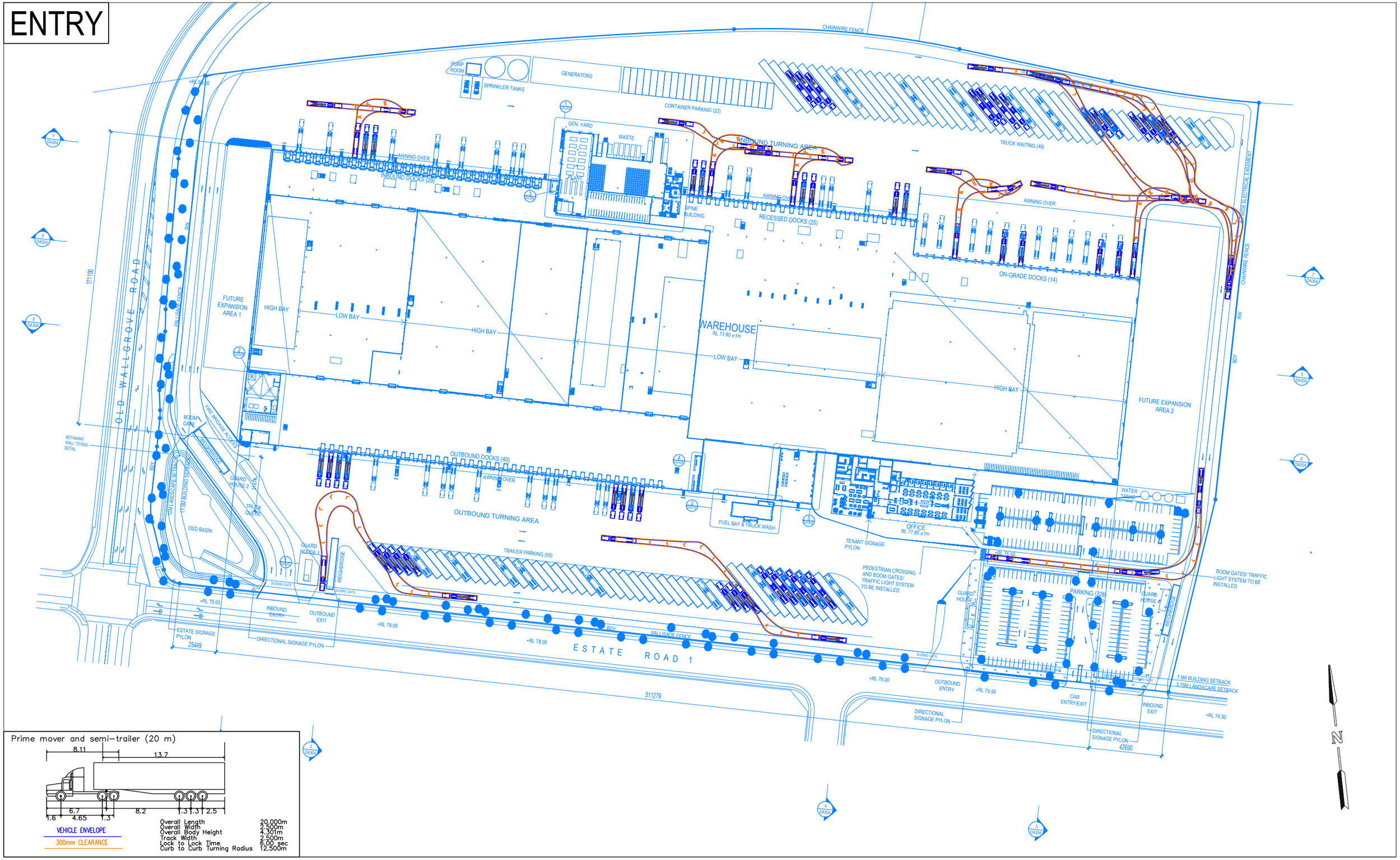
This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE	0 10 20	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg — SHEET: AG09
1:1000			

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.

PLOT DATE: 23/05/2022 11:48:26 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE			FILE NAME / SHEET
1:2000	NTS	Oakdale East Estate	AG1546-04-v02.dwg / AG10

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

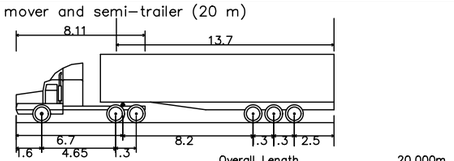
ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.

PLOT DATE: 23/05/2022 11:48:32 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |

EXIT

CHAINWIRE FENCE
8m WIDE ELECTRICAL EASEMENT
PUMP ROOM
SPRINKLER TANKS
GENERATORS
CONTAINER PARKING (22)
TRUCK WAITING (46)
GEN. YARD
WASTE
AWNING OVER
INBOUND DOCKS (29)
INBOUND TURNING AREA
SPINE BUILDING
RECESSED DOCKS (25)
ON-GRADE DOCKS (14)
FUTURE EXPANSION AREA 1
HIGH BAY
LOW BAY
WAREHOUSE
RL 77.80 ±1m
FUTURE EXPANSION AREA 2
OLD WALLGROVE ROAD
171.00
+RL 80.00
PALISADE FENCE
RW
BOOM GATE
FIRE BRIGADE ACCESS
RETAINING WALL TO ENG. DETAIL
OUTBOUND DOCKS (40)
OUTBOUND TURNING AREA
10M LANDSCAPE SETBACK
17.5M BUILDING SETBACK
OSD BASIN
GUARD HOUSE 2
TRUCK QUEUE
GUARD HOUSE 1
WEIGHBRIDGE
SLIDING GATE
FUEL BAY & TRUCK WASH
OFFICE
RL 77.80 ±1m
TENANT SIGNAGE PYLON
WATER TANKS
TRAILER PARKING (50)
PEDESTRIAN CROSSING AND BOOM GATES/ TRAFFIC LIGHT SYSTEM TO BE INSTALLED
+RL 76.50
PARKING (328)
GUARD HOUSE 3
BOOM GATES/ TRAFFIC LIGHT SYSTEM TO BE INSTALLED
+RL 75.00
INBOUND ENTRY
OUTBOUND EXIT
ESTATE SIGNAGE PYLON
25449
DIRECTIONAL SIGNAGE PYLON
+RL 78.00
ESTATE ROAD 1
511279
+RL 76.00
OUTBOUND ENTRY
+RL 75.50
CAR ENTRY/EXIT
INBOUND EXIT
+RL 74.50
DIRECTIONAL SIGNAGE PYLON
42690
7.5M BUILDING SETBACK
3.75M LANDSCAPE SETBACK
N

Prime mover and semi-trailer (20 m)



VEHICLE ENVELOPE
300mm CLEARANCE

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

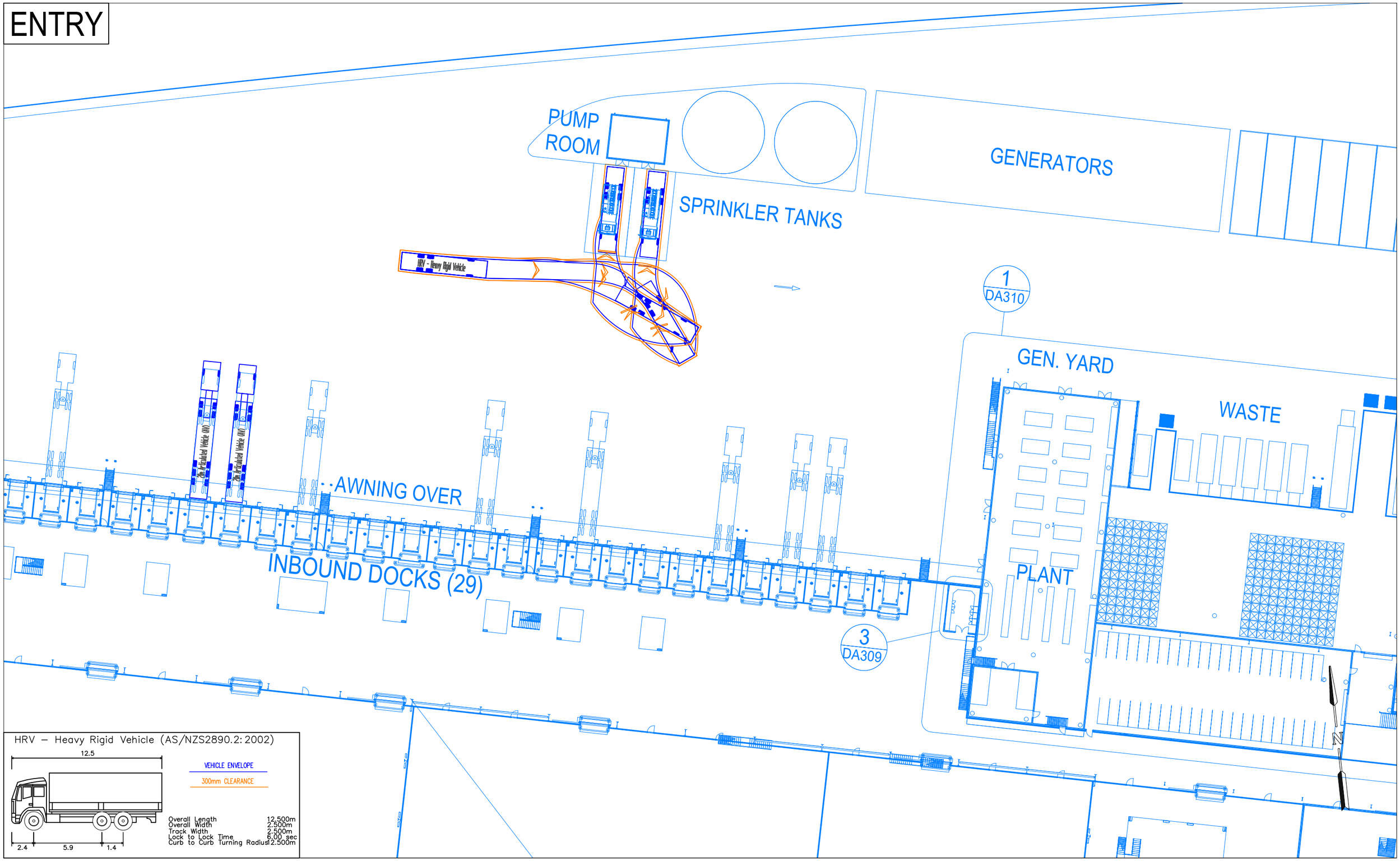
GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED: Mario Dizon	PAPER SIZE: A3	CLIENT: Goodman Property Services (Aust) Pty Ltd	DOCUMENT INFORMATION: DESIGN ASSESSMENT
APPROVED BY: A. RASOULI	DATE: 23.05.2022	PROJECT: 1546	SWEPT PATH ASSESSMENT
SCALE: 1:2000	NTS	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg / SHEET: AG11

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON ACCEPTS NO RESPONSIBILITY FOR ANY LOSS OR DAMAGE RESULTING FROM ALTERATIONS TO THE PLAN/DATA WHETHER INTENTIONAL OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH ADHERE TO THE INFORMATION CONTAINED IN THIS PLAN/DATA.



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE	0 5 10	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg / SHEET: AG12

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT) CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.

PLOT DATE: 23/05/2022 11:48:50 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |

ASONA ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASONA IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASONA WILL NOT BE RESPONSIBLE FOR ANY LOSS OR DAMAGE SUFFERED BY ANY PERSON OR BODY WHO RELIES ON THE INFORMATION CONTAINED IN THIS PLAN/DATA WITHIN THE ASSOCIATED WORK DATA.

EXIT

PUMP ROOM

SPRINKLER TANKS

GENERATORS

1
DA310

GEN. YARD

WASTE

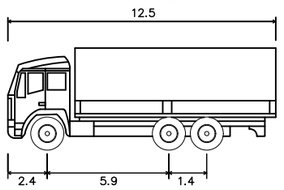
PLANT

AWNING OVER

INBOUND DOCKS (29)

3
DA309

HRV – Heavy Rigid Vehicle (AS/NZS2890.2: 2002)



VEHICLE ENVELOPE

300mm CLEARANCE

Overall Length	12.500m
Overall Width	2.500m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	2.500m

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED: Mario Dizon	PAPER SIZE: A3
APPROVED BY: A. RASOULI	DATE: 23.05.2022
SCALE: 1:500	0 5 10

CLIENT: Goodman Property Services (Aust) Pty Ltd

PROJECT: 1546 Oakdale East Estate

DOCUMENT INFORMATION: DESIGN ASSESSMENT — SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG13

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASONS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.

HIGH BAY

FUTURE EXPANSION AREA 2

4 DA306

2 DA315

FUEL BAY & TRUCK WASH

5 DA306

OFFICE
RL 77.80 ±1m

TENANT SIGNAGE PYLON

WATER TANKS

5 DA304

6 DA304

AS PER AS2890.1:2004, WIDEN AISLE TO 5.8m.

+RL 76.50

PEDESTRIAN CROSSING AND BOOM GATES/ TRAFFIC LIGHT SYSTEM TO BE INSTALLED

BOOM GATES/ TRAFFIC LIGHT SYSTEM TO BE INSTALLED

GUARD HOUSE 3

PARKING (328)

GUARD HOUSE 4

WEIGHBRIDGE

ALLISADE FENCE

O A D 1

79

SLIDING GATE

+RL 76.00

OUTBOUND ENTRY

+RL 75.50

SLIDING GATE

CAR ENTRY/EXIT

SLIDING GATE

SLIDING GATE

INBOUND EXIT

7.5M BUILDING SETBACK

3.75M LANDSCAPE SETBACK

+RL 74.50

DIRECTIONAL SIGNAGE PYLON

DIRECTIONAL SIGNAGE PYLON

42690

N

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 18.05.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:1000
	0 10 20

CLIENT
Goodman Property Services (Aust) Pty Ltd

PROJECT
1546
Oakdale East Estate

DOCUMENT INFORMATION
DESIGN ASSESSMENT
SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG14

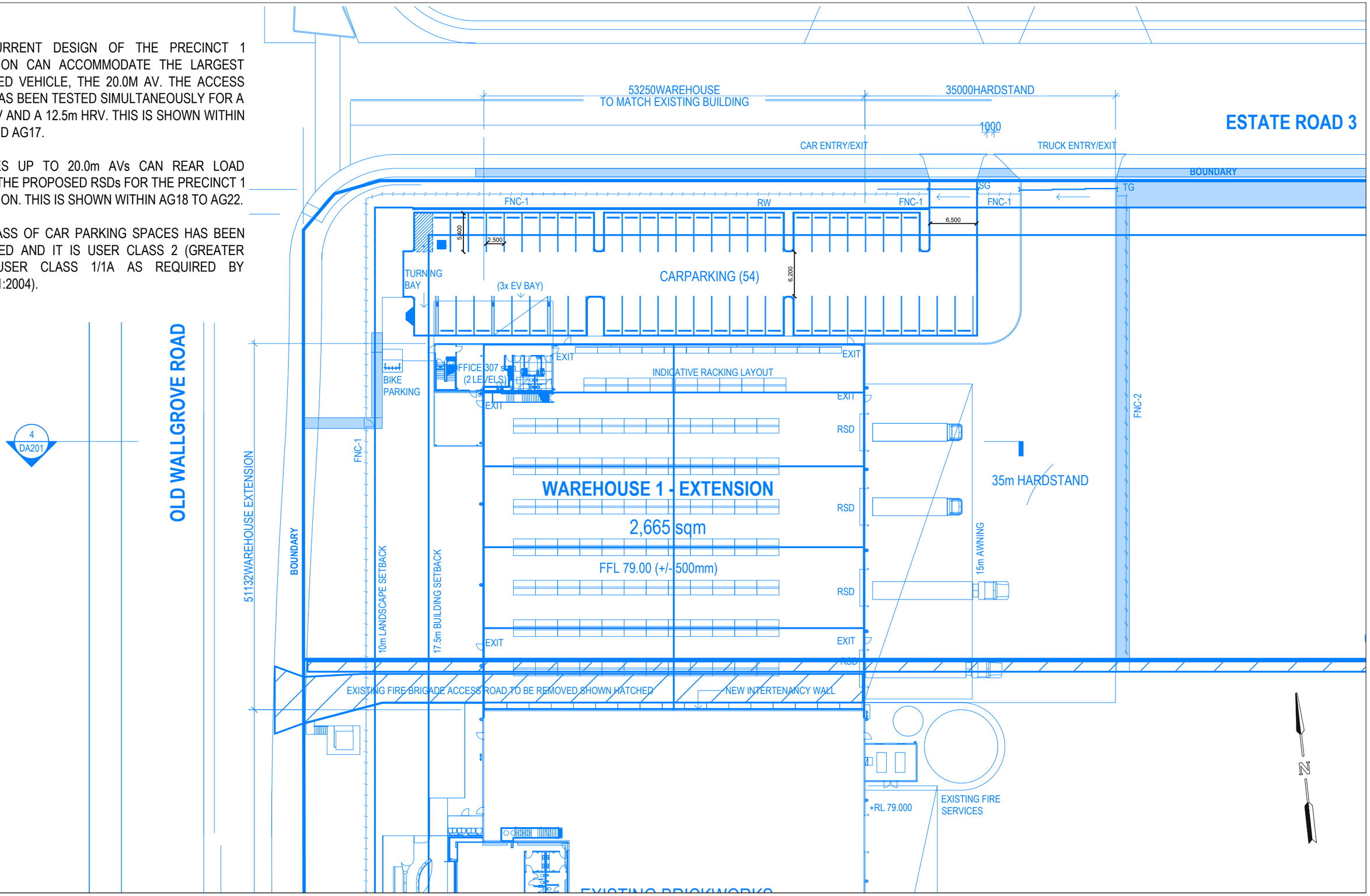
asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

NOTE:

1. THE CURRENT DESIGN OF THE PRECINCT 1 EXPANSION CAN ACCOMMODATE THE LARGEST EXPECTED VEHICLE, THE 20.0M AV. THE ACCESS POINT HAS BEEN TESTED SIMULTANEOUSLY FOR A 20.0m AV AND A 12.5m HRV. THIS IS SHOWN WITHIN AG16 AND AG17.

2. VEHICLES UP TO 20.0m AVs CAN REAR LOAD WITHIN THE PROPOSED RSDs FOR THE PRECINCT 1 EXPANSION. THIS IS SHOWN WITHIN AG18 TO AG22.

3. THE CLASS OF CAR PARKING SPACES HAS BEEN ASSESSED AND IT IS USER CLASS 2 (GREATER THAN USER CLASS 1/1A AS REQUIRED BY AS2890.1:2004).



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED: Mario Dizon	PAPER SIZE: A3
APPROVED BY: A. RASOULI	DATE: 23.05.2022
SCALE: 1:500	0 10 20

CLIENT: Goodman Property Services (Aust) Pty Ltd

PROJECT: 1546 Oakdale East Estate

DOCUMENT INFORMATION: DESIGN ASSESSMENT — GENERAL NOTES

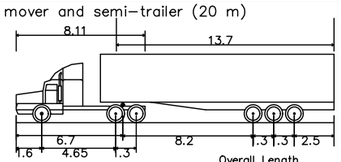
FILE NAME	SHEET
AG1546-04-v02.dwg	AG15

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASONGROUP ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASONG TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASONG ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASONG IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.

RIGHT IN / LEFT OUT

Prime mover and semi-trailer (20 m)

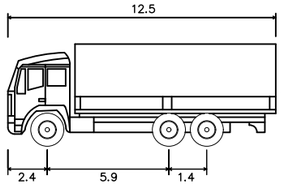


VEHICLE ENVELOPE

300mm CLEARANCE

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

HRV – Heavy Rigid Vehicle (AS/NZS2890.2: 2002)



VEHICLE ENVELOPE

300mm CLEARANCE

Overall Length	12.500m
Overall Width	2.500m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

4
DA201

OLD WALLGROVE ROAD

51132WAREHOUSE EXTENSION

BOUNDARY

10m LANDSCAPE SETBACK

17.5m BUILDING SETBACK

FNC-1

20m Articulated Vehicle (AV)

53250WAREHOUSE
TO MATCH EXISTING BUILDING

35000HARDSTAND

1000

CAR ENTRY/EXIT

TRUCK ENTRY/EXIT

ESTATE ROAD 3

BOUNDARY

SG

TG

FNC-1

RW

FNC-1

FNC-1

FNC-2

TURNING BAY

(3x EV BAY)

CARPARKING (54)

BIKE PARKING

OFFICE 307 sqm
(2 LEVELS)

EXIT

EXIT

EXIT

INDICATIVE RACKING LAYOUT

EXIT

RSD

RSD

RSD

WAREHOUSE 1 - EXTENSION

2,665 sqm

FFL 79.00 (+/-500mm)

EXIT

EXIT

HRV - Heavy Rigid Vehicle

35m HARDSTAND

15m AWNING

EXISTING FIRE BRIGADE ACCESS ROAD TO BE REMOVED SHOWN HATCHED

NEW INTERTENANCY WALL

+RL 79.000

EXISTING FIRE SERVICES

EXISTING BRICKWORKS

N

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:500
	0 10 20

CLIENT: Goodman Property Services (Aust) Pty Ltd

PROJECT: 1546 Oakdale East Estate

DOCUMENT INFORMATION

DESIGN ASSESSMENT

SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG16

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASONGROUP ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASONS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASONGROUP ACCEPTS NO RESPONSIBILITY FOR THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE DOCUMENTATION DATA.

RIGHT IN / LEFT OUT

Prime mover and semi-trailer (20 m)

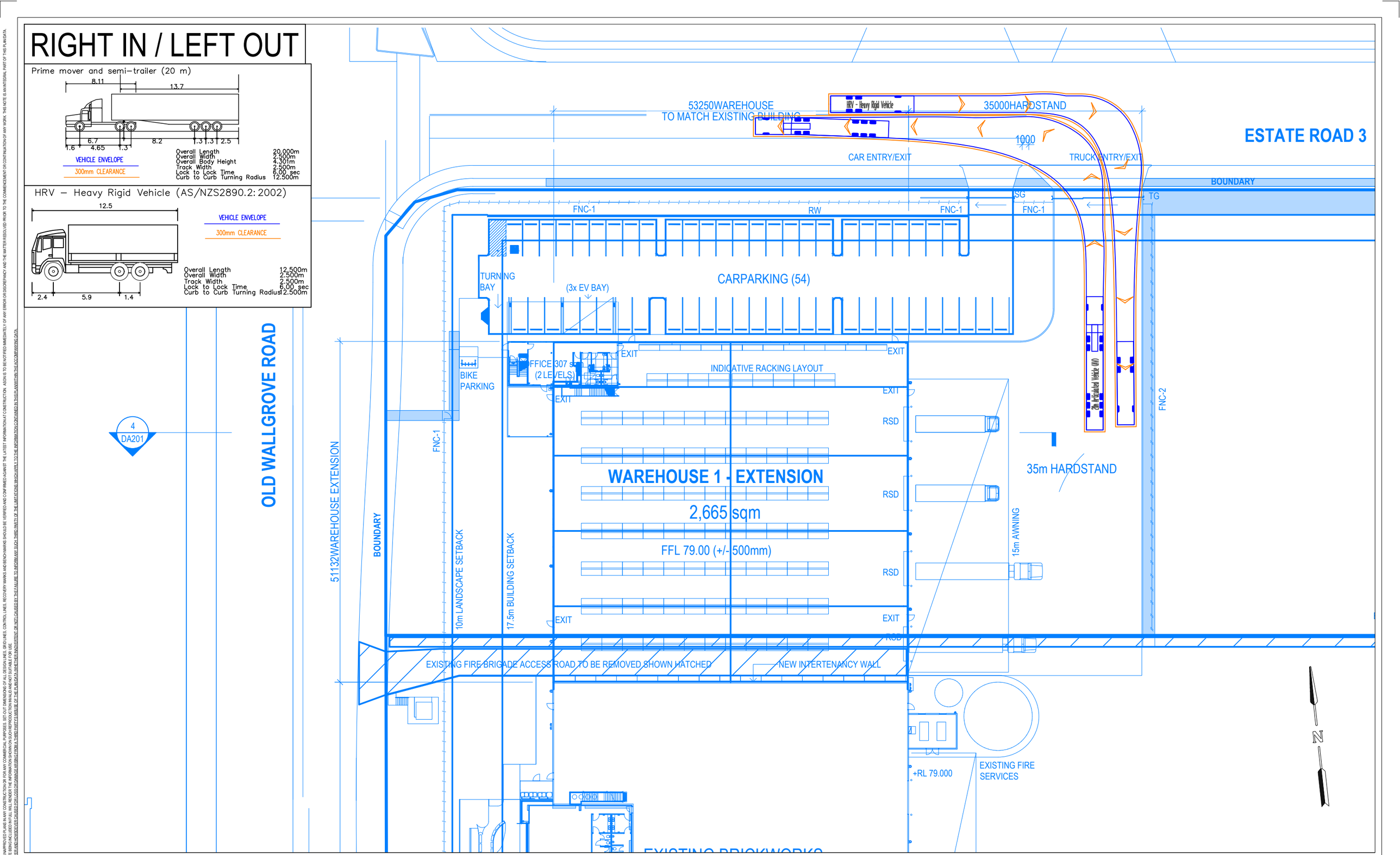
VEHICLE ENVELOPE
300mm CLEARANCE

Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

HRV – Heavy Rigid Vehicle (AS/NZS2890.2: 2002)

VEHICLE ENVELOPE
300mm CLEARANCE

Overall Length	12.500m
Overall Width	2.500m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	2.500m



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:500
	0 10 20

CLIENT: Goodman Property Services (Aust) Pty Ltd

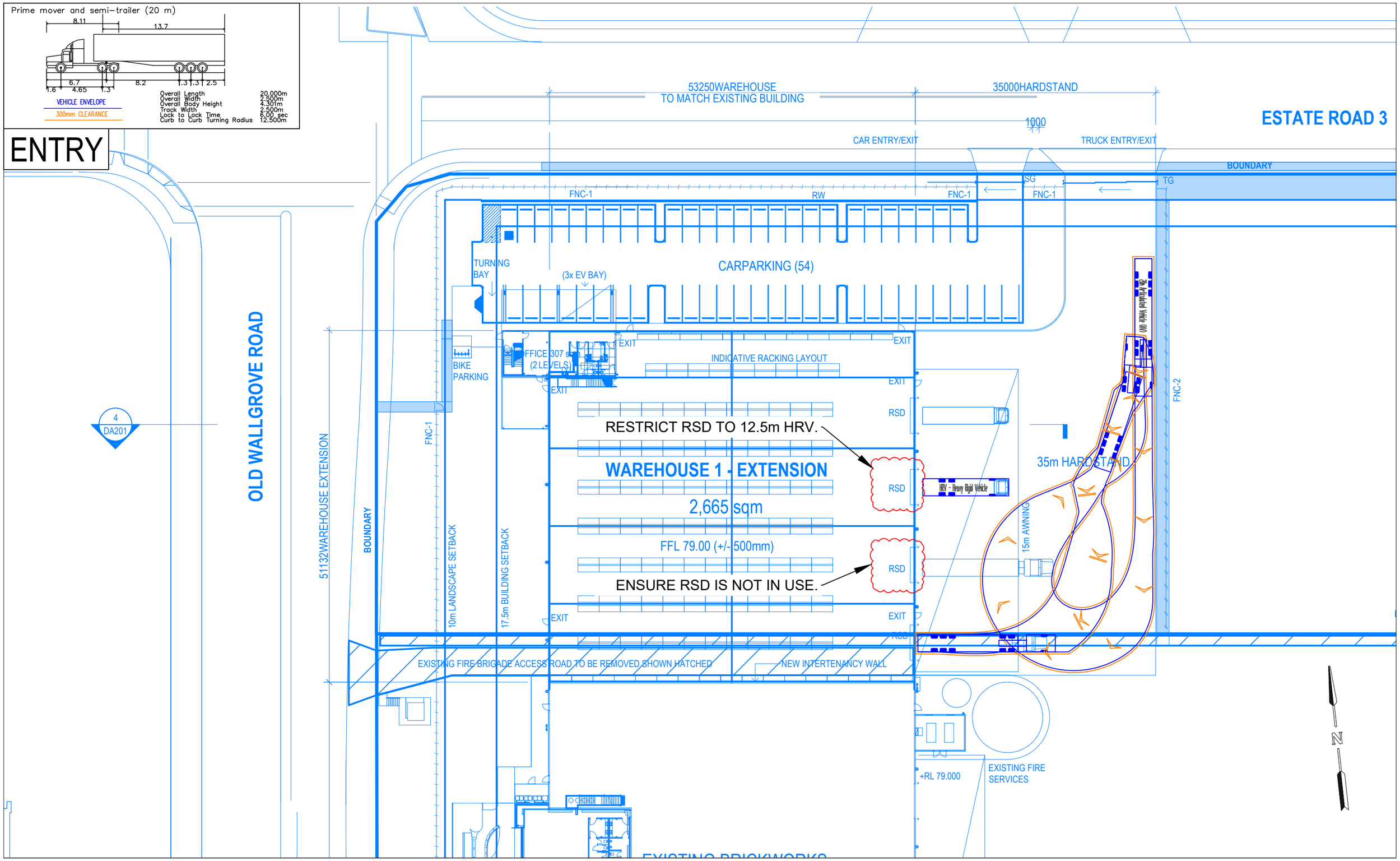
PROJECT: 1546 Oakdale East Estate

DOCUMENT INFORMATION
DESIGN ASSESSMENT
SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG17

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON SHALL NOT BE LIABLE FOR ANY LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER DIRECTLY OR INDIRECTLY CAUSED BY THE FAILURE TO PERFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA.



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd
APPROVED BY	DATE	PROJECT
A. RASOULI	23.05.2022	1546
SCALE	0 10 20	Oakdale East Estate
1:500		

DOCUMENT INFORMATION

DESIGN ASSESSMENT

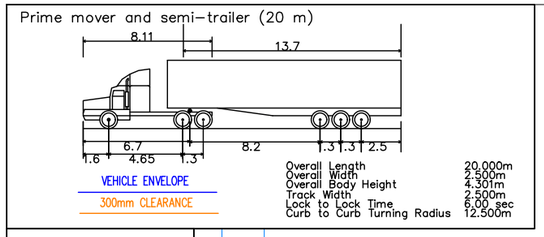
SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG18

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT LIGHTLY CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.

PLOT DATE: 23/05/2022 11:49:19 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |



ENTRY

53250WAREHOUSE
TO MATCH EXISTING BUILDING

35000HARDSTAND

1000

ESTATE ROAD 3

CAR ENTRY/EXIT

TRUCK ENTRY/EXIT

BOUNDARY

SG

TG

FNC-1

RW

FNC-1

FNC-1

20m ASPHALT WIDE (W)

TURNING BAY

(3x EV BAY)

CARPARKING (54)

OLD WALLGROVE ROAD

4
DA201

BIKE PARKING

OFFICE 307 sqm
(2 LEVELS)

EXIT

EXIT

INDICATIVE RACKING LAYOUT

EXIT

EXIT

RSD

FNC-1

RESTRICT RSD TO 12.5m HRV.

WAREHOUSE 1 - EXTENSION

2,665 sqm

FFL 79.00 (+/-500mm)

RSD

HRV - Heavy Rigid Vehicle

35m HARDSTAND

15m AWNING

FNC-2

51132WAREHOUSE EXTENSION

BOUNDARY

10m LANDSCAPE SETBACK

17.5m BUILDING SETBACK

EXIT

EXIT

RSD

EXISTING FIRE BRIGADE ACCESS ROAD TO BE

ENSURE RSD IS NOT IN USE.

TENANCY WALL

RSD

+RL 79.000

EXISTING FIRE SERVICES

N

EXISTING BRICKWORKS

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCHMARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON GROUP PTY LTD. THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN/DATA INCLUDE, BUT ARE NOT LIMITED TO, THE FACT THAT THE PLAN/DATA MAY BE INCOMPLETE, OR MAY CONTAIN ERRORS IF THE FAILURE TO INFORM ANY SUCH THING EXISTS IS BECAUSE OF THE PLAN/DATA HAVING BEEN ALTERED, CORRUPTED, DISCLOSED, LOST OR DESTROYED BY ANY PERSON OTHER THAN ASON GROUP PTY LTD OR ITS AUTHORISED REPRESENTATIVES.

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:500
	0 10 20

CLIENT: Goodman Property Services (Aust) Pty Ltd

PROJECT: 1546 Oakdale East Estate

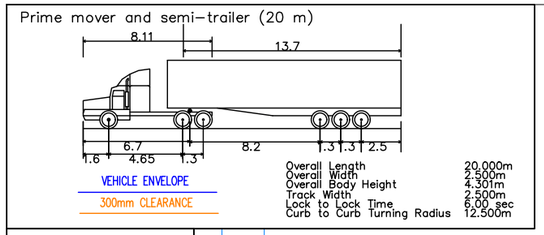
DOCUMENT INFORMATION

DESIGN ASSESSMENT

SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG19

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au



ENTRY

53250WAREHOUSE
TO MATCH EXISTING BUILDING

35000HARDSTAND

1000

ESTATE ROAD 3

CAR ENTRY/EXIT

TRUCK ENTRY/EXIT

BOUNDARY

SG

TG

FNC-1

RW

FNC-1

FNC-1

TURNING BAY

(3x EV BAY)

CARPARKING (54)

OLD WALLGROVE ROAD

4
DA201

BIKE PARKING

OFFICE 307 sqm
(2 LEVELS)

EXIT

EXIT

INDICATIVE RACKING LAYOUT

EXIT

RSD

WAREHOUSE 1 - EXTENSION

2,665 sqm

RSD

FFL 79.00 (+/-500mm)

RSD

ENSURE RSD IS NOT IN USE.

EXIT

EXIT

RSD

FNC-1

FNC-2

35m HARDSTAND

15m AWNING

51132WAREHOUSE EXTENSION

BOUNDARY

10m LANDSCAPE SETBACK

17.5m BUILDING SETBACK

EXISTING FIRE BRIGADE ACCESS ROAD TO BE REMOVED SHOWN HATCHED

NEW INTERTENANCY WALL

+RL 79.000

EXISTING FIRE SERVICES

N

EXISTING BRICKWORKS

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCHMARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
ASON WILL NOT BE RESPONSIBLE FOR ANY LIABILITY THAT FOR ANY REASON ARISES AS A RESULT OF THE PLAN BEING USED BY A THIRD PARTY OR FOR A PURPOSE OTHER THAN THE ONE FOR WHICH IT WAS PREPARED.

GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	Mario Dizon
PAPER SIZE	A3
APPROVED BY	A. RASOULI
DATE	23.05.2022
SCALE	1:500
	0 10 20

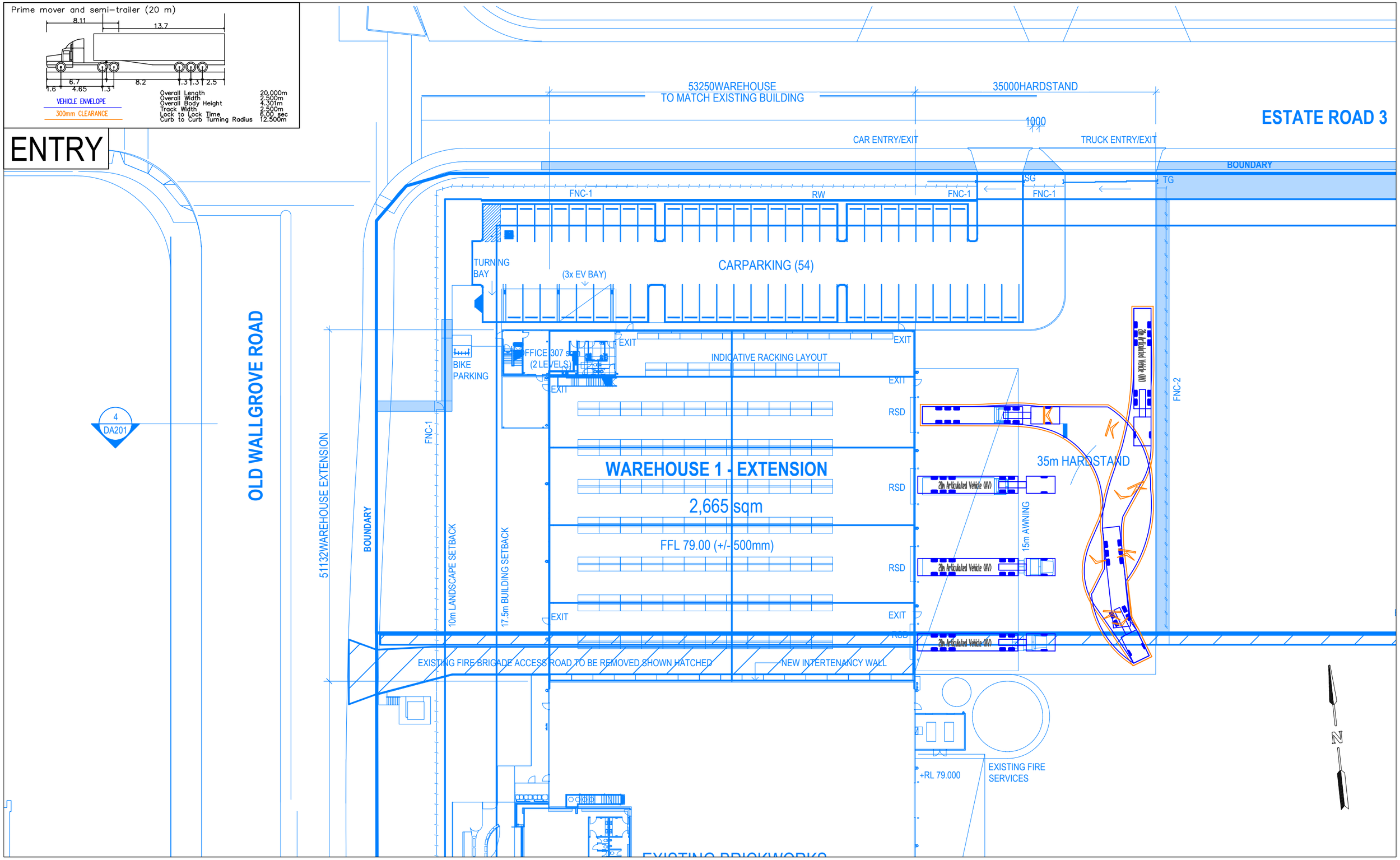
CLIENT: Goodman Property Services (Aust) Pty Ltd

PROJECT: 1546 Oakdale East Estate

DOCUMENT INFORMATION: DESIGN ASSESSMENT — SWEPT PATH ASSESSMENT

FILE NAME	SHEET
AG1546-04-v02.dwg	AG20

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au



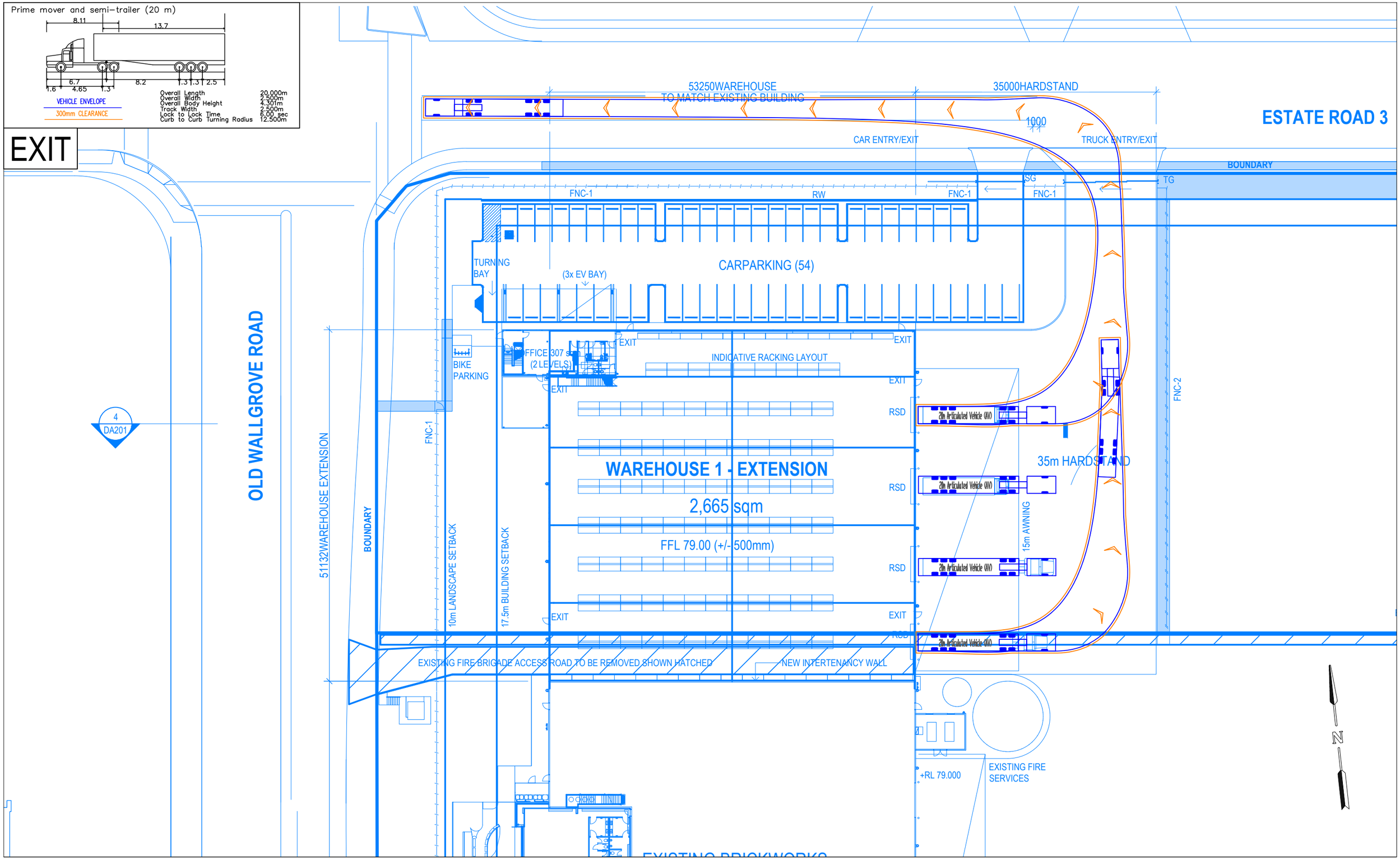
GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE	0 10 20	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg / SHEET: AG21
1:500			

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

ASON ACCEPTS NO RESPONSIBILITY WHATSOEVER FOR THE USE OF UNAPPROVED PLANS IN ANY CONSTRUCTION OR FOR ANY COMMERCIAL PURPOSES. SET-OUT DIMENSIONS OF ALL DESIGN LINES, GRID LINES, CONTROL LINES, RECOVERY MARKS AND BENCH MARKS SHOULD BE VERIFIED AND CONFIRMED AGAINST THE LATEST INFORMATION AT CONSTRUCTION. ASON IS TO BE NOTIFIED IMMEDIATELY OF ANY ERROR OR DISCREPANCY AND THE MATTER RESOLVED PRIOR TO THE COMMENCEMENT OR CONTINUATION OF ANY WORK. THIS NOTE IS AN INTEGRAL PART OF THIS PLAN/DATA.
REPRODUCTION OF THIS PLAN OR ANY PART OF IT WITHOUT THIS NOTE BEING INCLUDED IN FULL WILL RENDER THE INFORMATION SHOWN ON SUCH REPRODUCTION INVALID AND NOT SUITABLE FOR USE.
DISCLAIMER - ASON THEREFORE DISCLAIMS ANY LIABILITY WHATSOEVER AND HOWSOEVER CAUSED FOR LOSS OR DAMAGE ARISING FROM A THIRD PARTY'S MISUSE OF THE PLAN/DATA WHETHER INADVERTENT OR NOT, CAUSED BY THE FAILURE TO INFORM ANY SUCH THIRD PARTY OF THE LIMITATIONS WHICH APPLY TO THE INFORMATION CONTAINED IN THIS PLAN WITHIN THE ACCOMPANYING DATA.



GENERAL NOTES

This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by SBA Architects, received 12.04.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION
Mario Dizon	A3	Goodman Property Services (Aust) Pty Ltd	DESIGN ASSESSMENT
APPROVED BY	DATE	PROJECT	SWEPT PATH ASSESSMENT
A. RASOULI	23.05.2022	1546	
SCALE	0 10 20	Oakdale East Estate	FILE NAME: AG1546-04-v02.dwg — SHEET: AG22
1:500			

asongroup
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000
info@asongroup.com.au

PLOT DATE: 23/05/2022 11:49:39 AM | CAD REFERENCE: C:\Users\Mario Dizon\Desktop\CAD\P1546 - Oakdale East\AG1546-04-v02.dwg | Mario Dizon |