

Transport Assessment

Development Application

Buildings 4A & 4B – Oakdale West Industrial Estate

19/09/2022

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Glossary

Acronym	Description
CC	Construction Certificate
Council	Penrith City Council
DA	Development Application
DCP	Development Control Plan
DoS	Degree of Saturation
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
LoS	Level of Service
MOD	Section 4.55 Modification (also referred as a S4.55)
MRV	Medium Rigid Vehicle (as defined by AS2890.2:2018)
RMS Guide	Transport for NSW (formerly Roads and Traffic Authority), Guide to Traffic Generating Developments, 2002
S4.55	Section 4.55 Modification (also referenced as MOD)
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 Introduction

1.1 Executive Summary

Ason Group has been engaged by Goodman Property Services (Aust) Pty Ltd to provide a Transport Assessment (TA) to support the Development Application for the proposed industrial buildings 4A & 4B at the Oakdale West Industrial Estate (OWE). The proposed buildings (Buildings 4A and 4B) form part of the larger OWE which comprises 154 hectares of land within the Western Sydney Employment Area (WSEA) and is owned by a Joint Venture (JV) between Goodman and Brickworks Limited.

The Development consists of 2 new warehouse buildings each with ancillary office facilities, external hardstand spaces, staff carparking, landscaping and solar panels.

- Building 4A spans 16,785 m² of warehouse space and 650 sqm of office space, creating a total Gross Lettable Area of 17,435 m², and has a proposed ridge height of 13.7m.
- Building 4B spans 14,700 m² of warehouse space and 850 m² of office space, creating a total Gross Lettable Area of 15,550 m², and has a proposed ridge height of 13.7m.

The proposed developments comply with MOD 11 of SSD 7348 Concept Plan that is currently with the Department of Planning & Environment for assessment. The subject sites are benched, serviced and ready for aboveground construction. SSD 7348 approved the infrastructure to these development pads.

Approval is requested for the construction, operation, and use, and fit-out of the buildings. It is noted that 24/7 operations are proposed with a focus on warehouse and industrial use. The applications will be submitted to Penrith City Council (the Council) as a local council development application.

Moreover, the latest approved modification to date is SSD-7348 Modification 10 (MOD 10) which seeks to modify the building layout design of Precincts 3 to 5 and was granted approval by the Department of Planning and Environment (DPE) on 17 August 2022.

Assessments undertaken as part of this TA concludes that the proposal, is consistent with relevant traffic and parking requirements under approved Conditions of Consent (CoC) for OWE, meets relevant Development Control Plans (DCPs) and will not create any adverse impacts on traffic or parking beyond what has been assessed and approved under concept plan approval and subsequent Modifications.

Accordingly, this development application (DA) is supportive on traffic and parking assessment grounds.

1.2 Overview

Ason Group has been engaged by Goodman Property Services (Aust) Pty Ltd to prepare a TA relating to the proposed warehouse development known as Buildings 4A & 4B within Precinct 4. Precinct 4 forms part of the wider OWE.

Located within the Penrith City Council local government area (LGA), the Site is subject to that Council's controls as well as the site-specific controls implemented for the wider Estate as included under the state significant development approval for the Concept Plan accompanying the original application (SSD-7348).

This TA provides an assessment of the relevant traffic, transport, and parking implications of the Proposal.

1.3 Key References

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

- Penrith City Council Development Control Plan (DCP 2014);
- Penrith City Council Local Environmental Plan (LEP 2010); and
- State Significant Development – Oakdale West Estate (SSD 7348).

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); and
- Australian Standard 2890.6:2009 – Parking Facilities – Off Street Parking for People with Disabilities.

In addition to the above references, this TA intends to build upon the wider Oakdale West Industrial Estate, with reference to the previously **APPROVED** Modification 3 traffic report with other similar traffic reports for other MODs and DAs in OWE including:

- Ason Group, Transport Impact Assessment – Oakdale West Industrial Estate – SSD 7348 Modification 3, dated 15 January 2020 (MOD 3 Report);
- Ason Group, Traffic Impact Statement – Oakdale West Industrial Estate – SSD 7348 Modification 5, dated 3 July 2020 (MOD 5 Statement)
- Ason Group, Traffic Impact Statement – Oakdale West Industrial Estate – SSD 7348 Modification 6, dated 9 November 2020 (MOD 6 Statement)
- Ason Group, Traffic Impact Statement – Oakdale West Industrial Estate – SSD 7348 Modification 7, dated 31 May 2021 (MOD 7 Statement)

2 Overview of Proposal

2.1 Summary

A detailed description of the proposal is included in the Statement of Environmental Effects that this assessment accompanies. The proposed development comprises the construction of Buildings 4A & 4B within Precinct 4 of the OWE. The Proposal also includes fit out and use as a warehouse and distribution centre for 2 tenancies. The Proposal includes car parking loading/unloading facilities and truck parking for each tenancy. 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. In summary, the Proposal consists of the following characteristics as shown in **Table 1**.

TABLE 1 PROPOSAL YIELD FOR BUILDINGS 4A & 4B

Component	Building 4A	Building 4B	Total
Warehouse GFA (m ²)	16,785	14,700	31,485
Office GFA (m ²)	650	850	1,500
Total GFA (m ²)	17,435	15,550	32,985
Loading Dock Provision	12 ¹	12 ²	24
Car Parking Provision (Spaces)	73 ³	70 ⁴	143

Note: 1) This provision includes 4 recessed docks and 8 Roller Shutter Doors (RSDs).

2) This provision includes 4 recessed docks and 8 RSDs.

3) This provision includes 2 accessible spaces and 5 Electric Vehicle Charging stations.

4) This provision includes 2 accessible spaces and 5 Electric Vehicle Charging stations.

Detailed architectural plans have been prepared by SBA Architects and accompany the submission. For reference, the proposed Site plan for Buildings 4A & 4B is provided in **Figure 1** at a reduced scale.

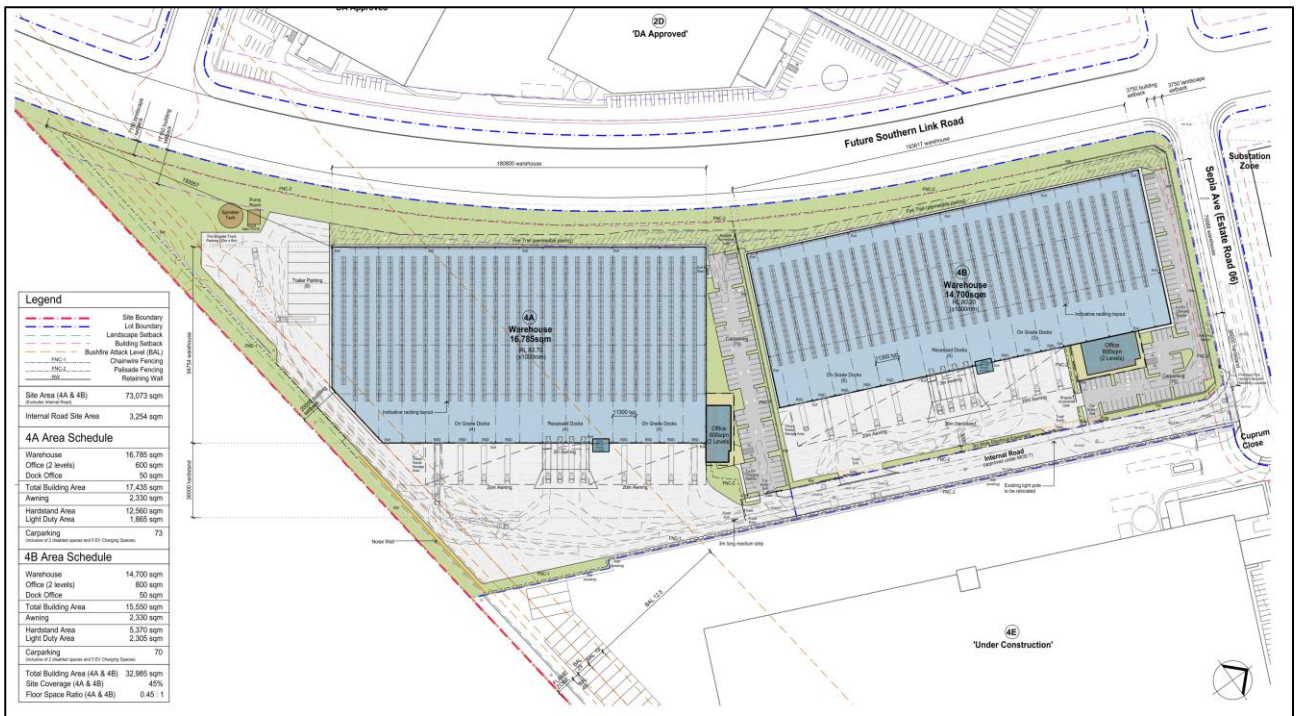


Figure 1: Reduced Buildings 4A & 4B Site Plan

The proposed vehicular access driveway to Buildings 4A and 4B will be shared and is located on Cuprum Close (formerly known as Sepia Avenue). The proposed driveway will provide cars access to the car park and truck access to the hardstand of each building.

Figure 2 demonstrates the proposed vehicular access strategy for the Proposal.

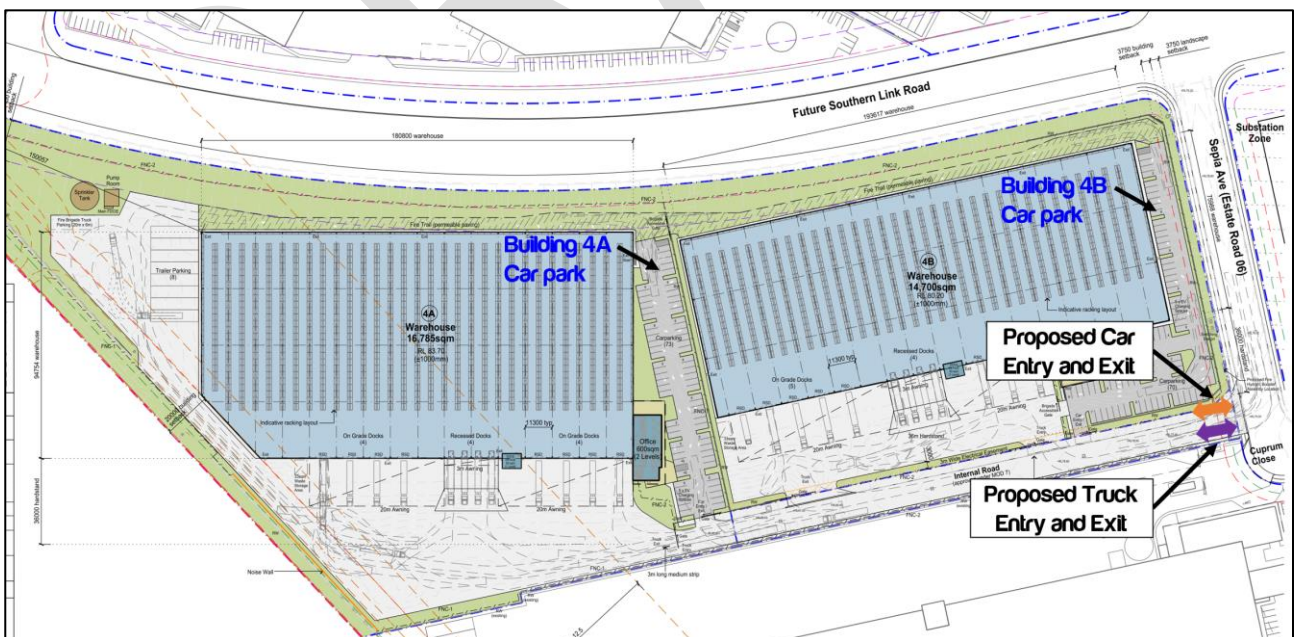


Figure 2: Proposed Vehicular Access Strategy

2.2 Planning Context – Oakdale West Industrial Estate

2.2.1 Concept Plan Approval

The original SSD approval for the Oakdale West Industrial Estate (SSD 7348) was granted on 13 September 2019 and envisaged a total GFA of approximately 475,269m² across the entire Estate spanning 5 precincts. Since that approval, the Estate has gone through several modifications, some of which are discussed further below to provide more context to this TA.

2.2.2 Approved Modification 3

MOD 3 to the SSD 7348 (approved on 3 April 2020) involved major changes to the built form of Precincts numbers 2 to 5 within the approved concept plan at OWE, with some moderate changes to the GFAs of Precinct numbers 4 and 5. Ason Group has previously undertaken detailed traffic assessment and SIDRA modelling for MOD 3. The following tables provides a comparison between the approved GFA from the concept approval to the approved MOD 3. Since MOD 3 included detailed traffic modelling approved by the assessing authorities, this DA refers to that MOD for the traffic assessment purposes.

TABLE 2 APPROVED MOD 3 YIELD

Original Application SSD-7348 Approved GFA	Approved MOD 3 Total GFA
475,269m ²	595,765m ²

2.2.3 Approved Modification 5

MOD 5 for OWE was approved on 5 November 2020 which primarily amended the layout of Precinct 1A. With regard to traffic, MOD 5 did not change the traffic generation of Precinct 1A and remained consistent with the MOD 2 approval. Additionally, MOD 5 did not change the approved parking provisions despite changes to the Precinct 1A car park configuration. **Table 3** shows the approved total OWE GFA for MOD 5 compared to previously approved modifications.

2.2.4 Approved Modification 6

MOD 6 for OWE was approved on 10 March 2021 which included amendments to building layouts of 1B/1C, precinct 3 buildings, and buildings 2A, 2C-2E of precinct 2. It was demonstrated that the amendments only resulted in a minor increase of vehicular traffic generation compared to the approved MOD 3, which included detailed modelling for the surrounding road network. Hence, MOD 6 had no significant departure from the

previously approved MODs 3 and 5. **Table 3** shows the approved total OWE GFA for MOD 6 compared to previously approved modifications.

2.2.5 Approved Modification 7

MOD 7 for OWE was formally lodged in July 2021 and subsequently approved in October 2021. The modification primarily related to changes in the configurations and built form of Precincts 3 and 4. **Table 3** broadly refers the uplift in GFA for MOD 7 against the approved Concept Plan. It is noted that the latest traffic assessment (prepared by Ason Group) was completed for the approved MOD 7.

The table below summarises the total approved GFA for OWE under each traffic related modification. It is evident that the OWE total GFA has remained consistent across MOD 5 to MOD 7.

TABLE 3 APPROVED MODS 3-7 YIELDS

Original Application SSD-7348 Approved GFA (m ²)	Approved MOD 3 Total GFA (m ²)	Approved MOD 5 Total GFA (m ²)	Approved MOD 6 Total GFA (m ²)	Approved MOD 7 Total GFA (m ²)
475,269m ²	595,420	599,455m ²	599,455m ²	599,455m ²

2.2.6 Approved Modification 9

MOD 9 for OWE was formally lodged in November 2021 and subsequently approved in December 2021. MOD 9 is the latest approved modification which primarily related to amendments to the layout of Buildings 2A, 2C and 2D and increased height of Building 2C. **Table 4** outlines the total GFA changes for MOD 9 against the approved Concept Plan.

TABLE 4 APPROVED MOD 9 YIELD

Original Application SSD-7348 Approved GFA	Approved MOD 9 Total GFA
475,269m ²	599,455m ²

Note that the total GFA is identical between MOD 7 and MOD 9. There are, however, differences in the GFA distribution between the two MODs across each Precinct.

2.2.7 Approved Modification 10

MOD 10 is currently under assessment and relates to predominantly signage changes, and GFA changes to Precincts 3, 4 and 5. Further, a revised precinct 5 layout has also been proposed. Nonetheless, the total GFA of the MOD 10 Concept Plan remains the same as MOD 9 as shown in the table below.

TABLE 5 APPROVED MOD 10 YIELD	
Original Application SSD-7348 Approved GFA	Approved MOD 10 Total GFA
475,269m ²	599,455m ²

3 Existing Conditions

3.1 Local Context

OWE is located within the Penrith Council LGA and forms part of broader Oakdale Industrial Estate (the Oakdale Estate), which is approximately 421 hectares of industrial zoned land within the Western Sydney Employment Area (WSEA). The OWE itself provides approximately 154 hectares of industrial zoned land with a developable area of approximately 89 hectares.

The OWE is bordered by the Water NSW Pipeline to the north; Oakdale East Estate (OEE) and Oakdale South Estate (OSE) to the east and south-east respectively; and rural land to the south and west (Kemps Creek), though it is noted that these areas are expected to be rezoned for future industrial use further to the finalisation of a Structure Plan for the Broader Western Sydney Employment Area (BWSEA).

The OWE is shown in its local context in **Figure 3** while the Oakdale Estate is shown in its sub-regional context (within the BWSEA) in **Figure 4**.

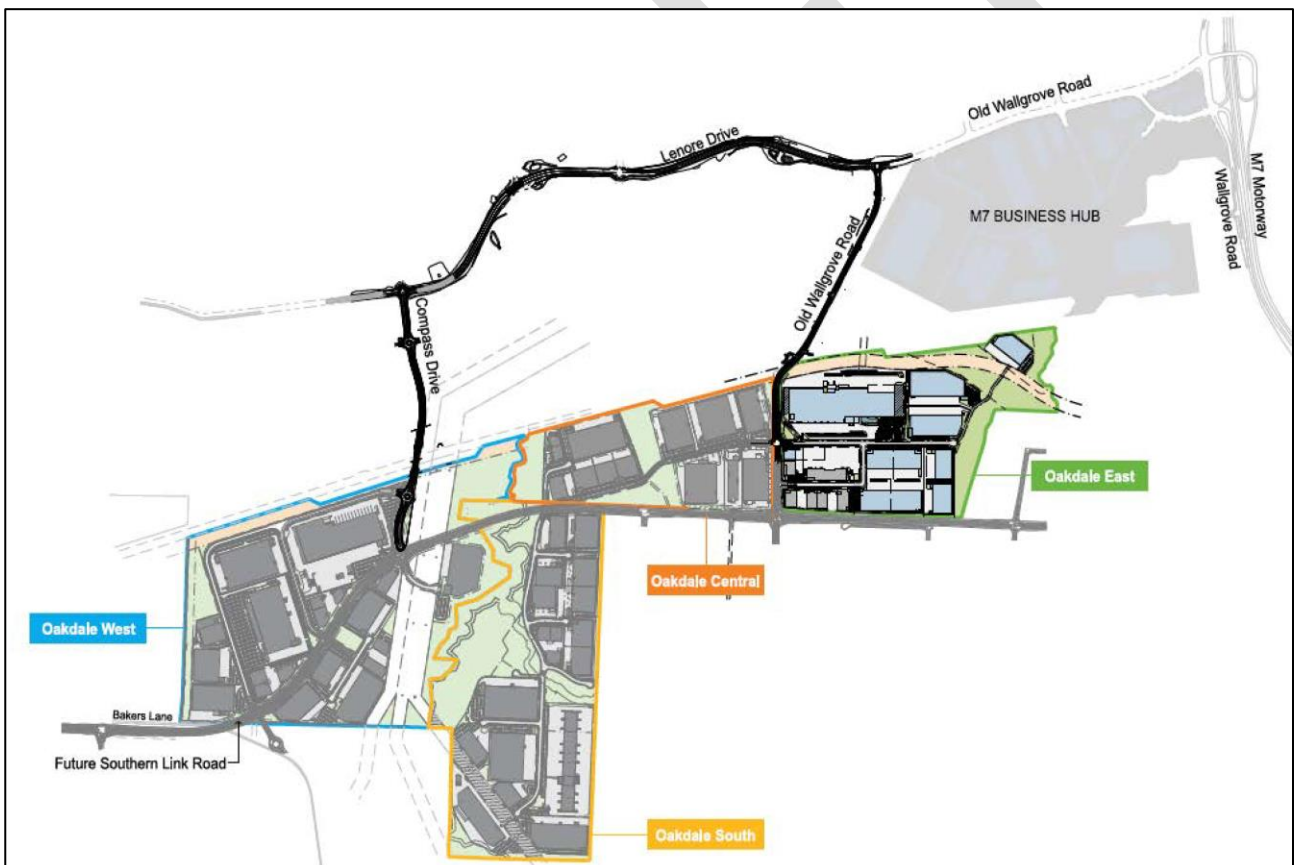


Figure 3: Oakdale West Estate Local Context (Source: SBA Architects)

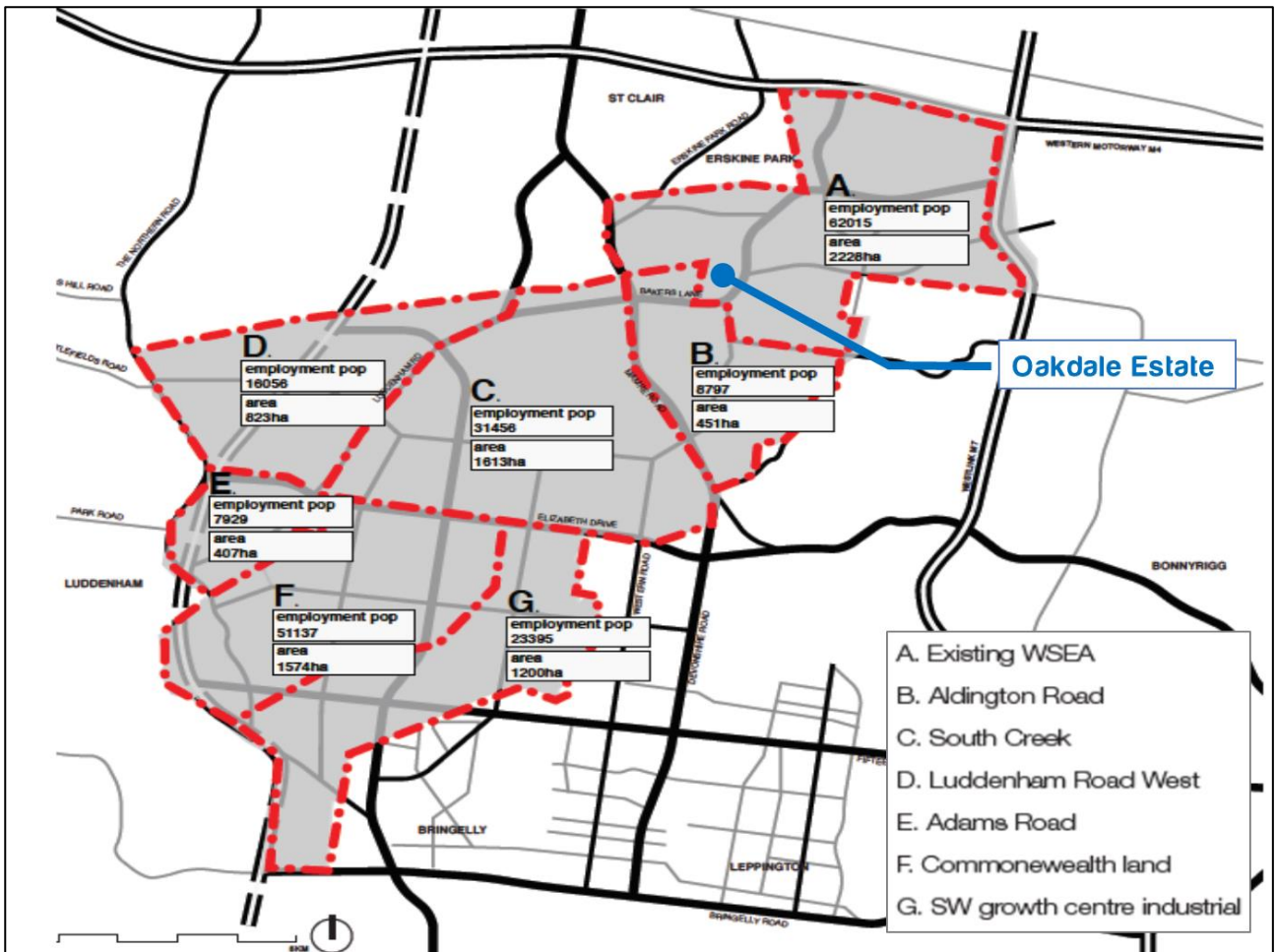


Figure 4: BWSEA Precinct Plan (Source: GHD (June 2013))

3.2 Site Location

The location of the Site and the surrounding road network is shown in **Figure 5**.

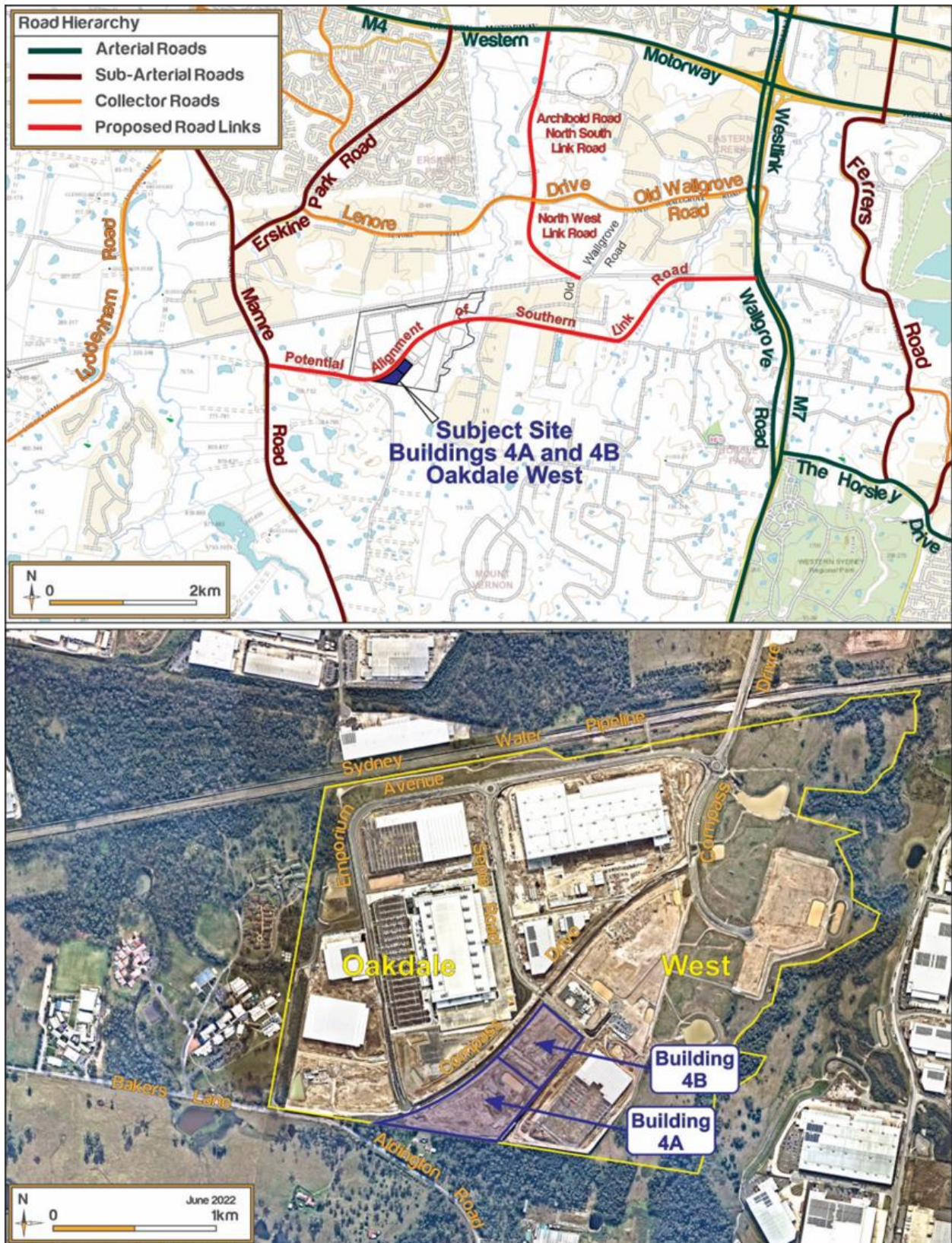


Figure 5: Site Location and Road Hierarchy

3.2.1 Existing Key Roads

The existing key roads providing access for the OWE are summarised in the table below:

TABLE 6 KEY ROAD DESCRIPTIONS

Road Name	Road Classification	Posted Speed Limit (km/h)	On-street Parking Opportunities	Notes
M7 Motorway	Freeway (MR 6004)	100	No on-street parking opportunities on both sides	Provides 2 traffic lanes in each direction separated by a landscaped central median.
Wallgrove Road	State road (MR 515)	80	No on-street parking opportunities on both sides	Provides 2 traffic lanes in each direction. Medians are provided at the respective intersections and from Roussell Road to the Great Western Highway.
Old Wallgrove Road	Local collector road	60	No on-street parking opportunities on both sides	Provides 2 traffic lanes in each direction separated by a landscaped central median.
Lenore Drive	Local collector road	80	No on-street parking opportunities on both sides	Provides 2 traffic lanes in each direction separated by a landscaped central median.
Compass Drive	Local road	60	No on-street parking opportunities on both sides	Provides 2 traffic lanes in each direction separated by a landscaped central median.
Emporium Avenue	Local road	60	On-street parking opportunities on both sides	Provides 1 lane in each direction.
Sepia Road	Local road	60	On-street parking opportunities on both sides	Provides 1 lane in each direction.
Cuprum Close	Local road	50	On-street parking opportunities on both sides	Provides 1 lane in each direction and ends at a cul-de-sac.

3.2.2 Future Key Road

A future key road to be delivered near the vicinity of the Site is the Southern Link Road (SLR). The SLR network will provide the additional road infrastructure to accommodate travel demand generated by employment areas south of the Sydney Water Pipeline (including the OWE and broader Oakdale Estate). The indicative route for the SLR and future connections was initially identified in SEPP (WSEA) 2009 and has since been refined to the current alignment (as shown in **Figure 6**). It is noted that the SLR network planning and development process is ongoing and is therefore potentially subject to change due to further refinement of the route alignment and access arrangements. Importantly, the development of the OWE is not dependent on the SLR itself.



Figure 6: Proposed Southern Link Road Network and Alignment (Source: [TfNSW](#) (2022))

3.2.3 Key Intersections

The key intersections providing access for the OWE include:

- **Lenore Drive & Compass Drive & Grady Crescent:** A signalised intersection with Lenore Drive, providing access to the regional road network and a local connection to an extended Grady Crescent to accommodate future industrial development to the north.
- **Compass Drive & Lockwood Road:** A roundabout intersection providing a local connection between Compass Drive and Templar Road, as well as providing a connection for a local road supporting development to the east, comprising the balance of Fitzpatrick lands.
- **Compass Drive & Emporium Avenue:** A roundabout intersection providing primary access to the OWE prior to the completion of the SLR.
- **Compass Drive & SLR:** A potential future signalised intersection completing the north-south connection between Lenore Drive and SLR. This intersection will also provide access to Precinct 5 of the OWE via Tundra Close (Estate Road 08) to the south of the intersection.

The design of the key intersections listed above have been developed to ensure appropriate intersection operations through a forecast year 2036.

The intersections of Lenore Drive & Compass Drive & Grady Crescent, Compass Drive & Lockwood Road and Compass Drive & Emporium Avenue have been recently constructed in accordance with the approved 2026 interim scenario as part of OWE original concept approval and MOD 3 approval, as indicated from **Figure 7** to **Figure 9**. The approved intersection design of the Compass Drive & SLR intersection is provided in **Figure 10**.

Furthermore, it should be noted that the approved 2036 ultimate scenario includes further upgrades at the intersection of Lenore Drive & Compass Drive & Grady Crescent, as shown in **Figure 11**.

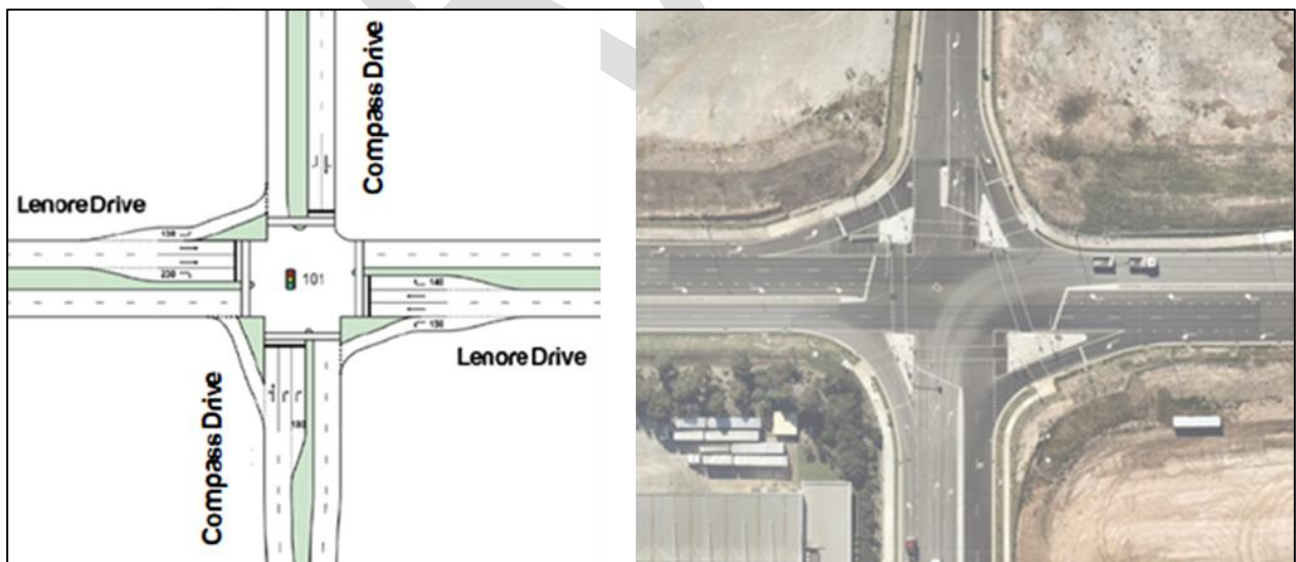


Figure 7: Intersection Layout of Lenore Drive & Compass Drive

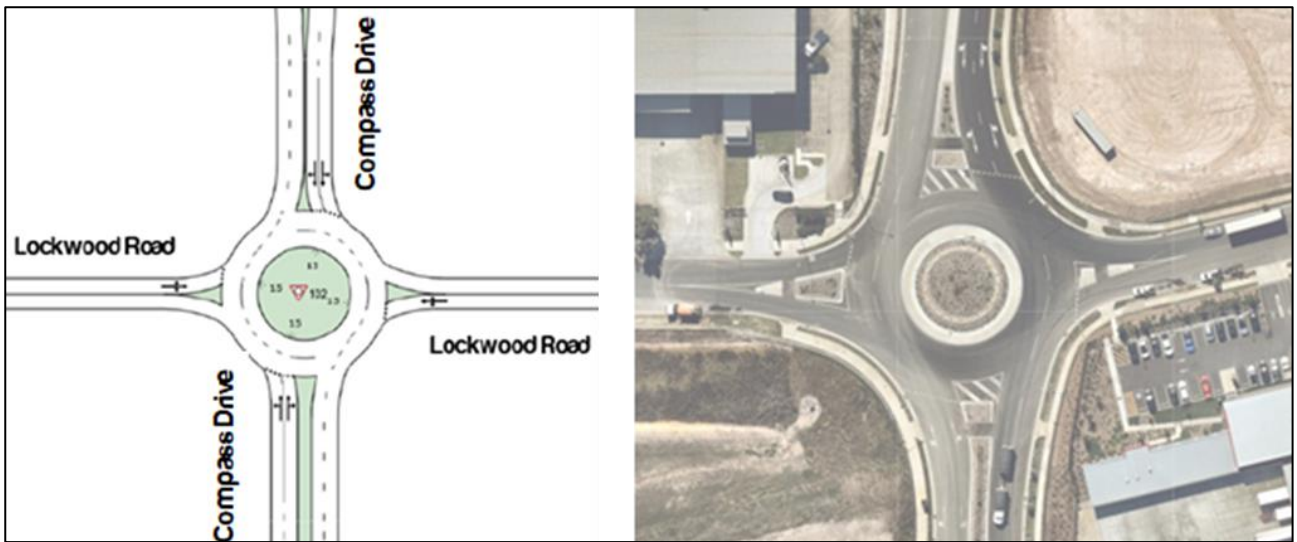


Figure 8: Intersection Layout of Compass Drive & Lockwood Road

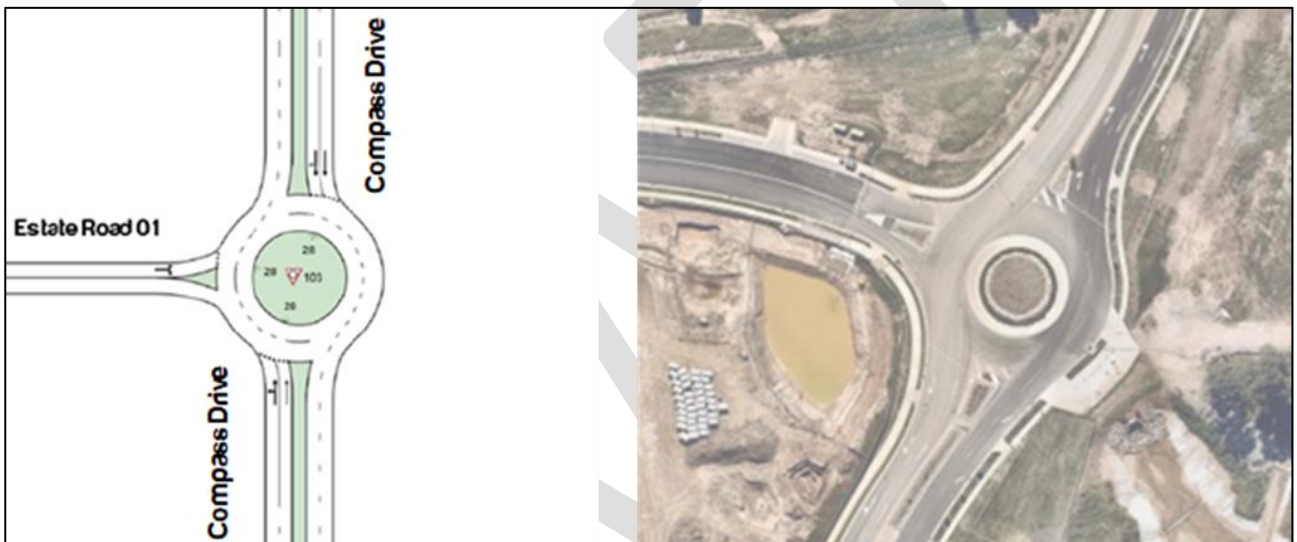


Figure 9: Intersection Layout of Compass Drive & Emporium Avenue

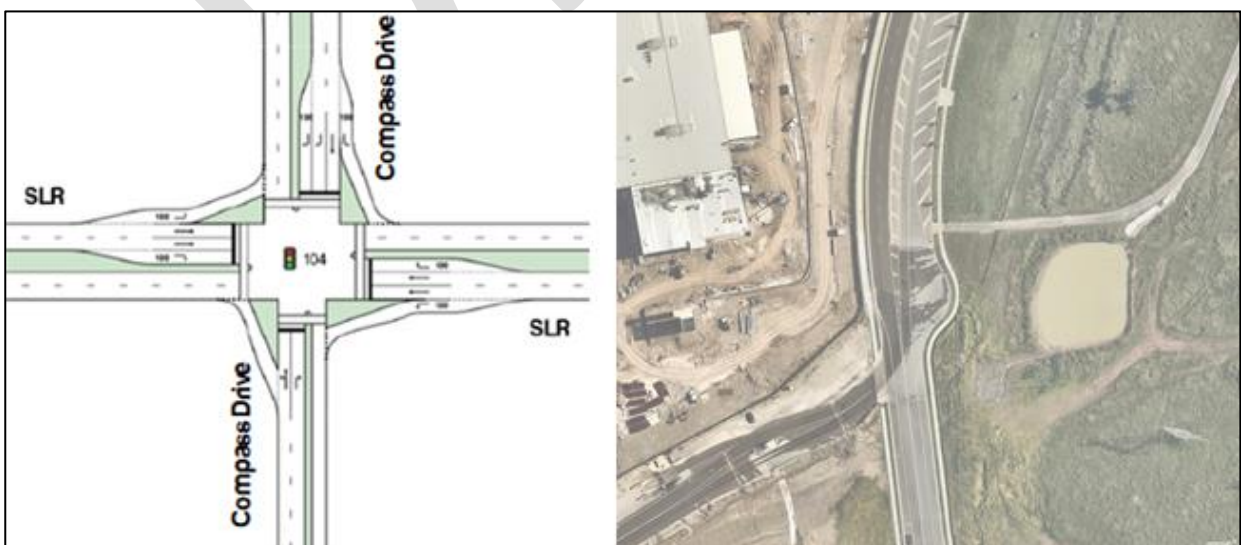


Figure 10: Intersection Layout of Compass Drive & SLR (to be constructed)

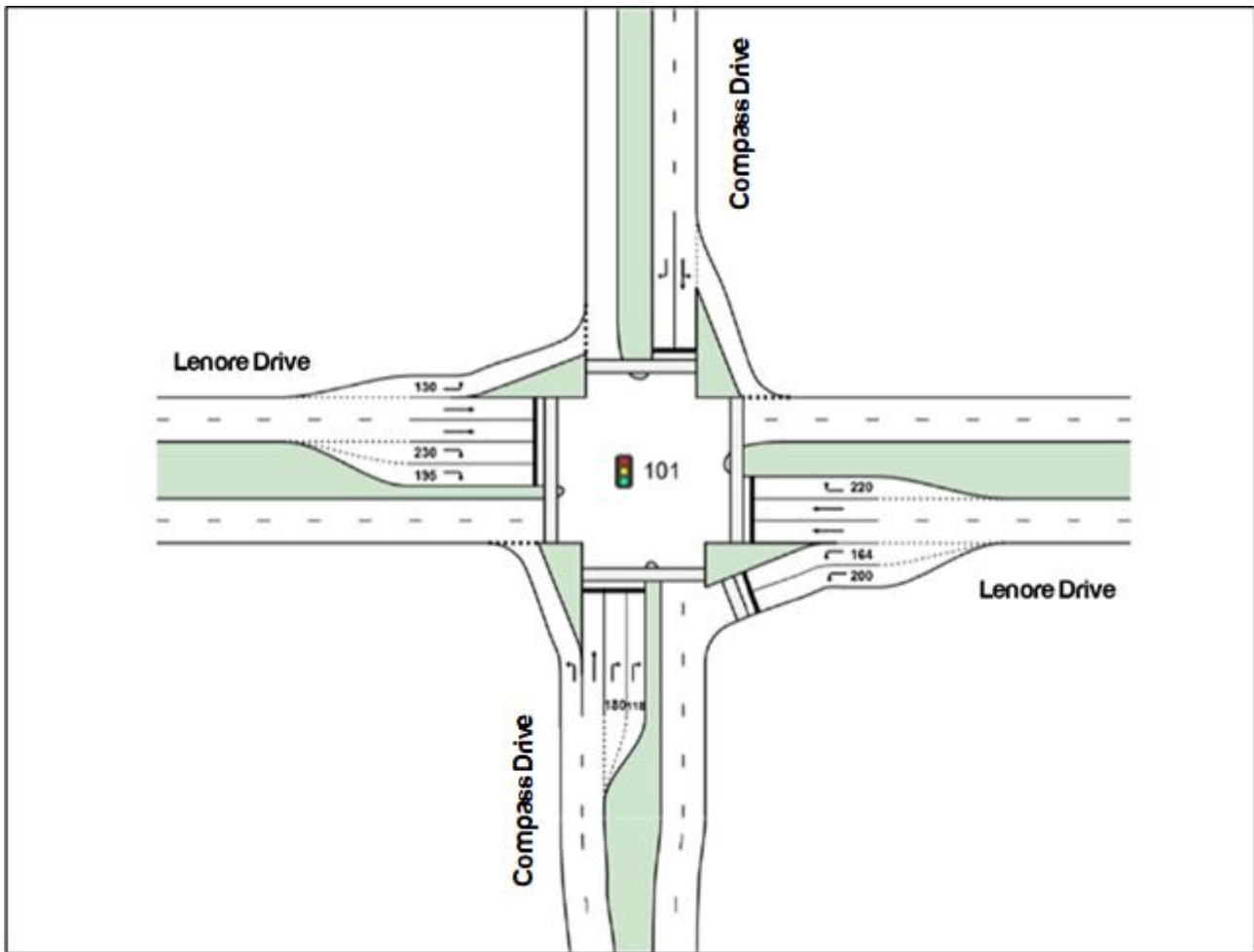


Figure 11: Intersection Layout of Lenore Drive & Compass Drive (2036 Ultimate Scenario)

3.3 Public Transport Services

3.3.1 Existing Bus Services

The introduction of a new bus route has recently been approved to provide additional access for workers / visitors within OWE. This new bus service commenced from 24 October 2021 and will provide direct access to and from the St Marys Train Station. This introduction of a direct connection with the St Marys Train Station increases the accessibility of the Site via public transport services. The existing bus services are shown below in **Figure 12** overleaf.

The timetable of bus route 779 has also been attached within **Appendix A** for reference.

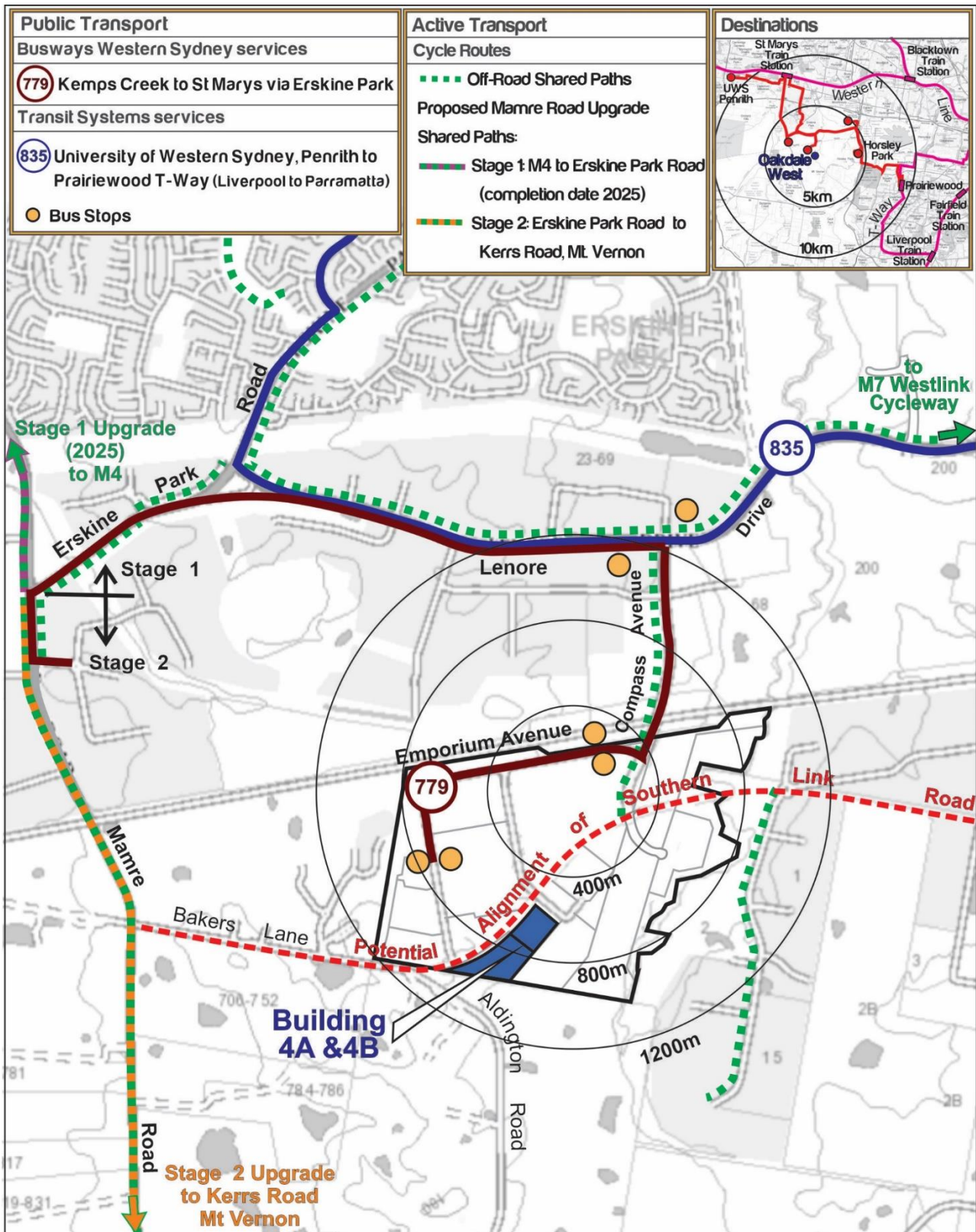


Figure 12: Existing Public Transport and Cycle Links

3.4 Active Transport

Lenore Drive and Compass Drive has been designed to provide appropriate cycle infrastructure, linking to the east (to the M7 cycleway) and the west (from the existing Mamre Road cycle path) with the potential for future augmentation via existing and proposed sub-regional links.

Furthermore, the Compass Drive includes a 2 to 2.5 metre shared footpath (on both sides) providing access to both pedestrians and cyclists. This is an essential link to encourage the uptake of alternative transport modes such as cycling as opposed to the historic dominance of private vehicle travel.

Finally, the provision of appropriate cycle facilities for Buildings 4A & 4B, such as bicycle storage, lockers and shower facilities will further encourage the use of the existing networks, again assisting in the reduction of private vehicle travel when journeying to work.

DRAFT

4 Parking Provisions

4.1 Car Parking

Parking rates for the wider Estate have been provided in accordance with Condition B13 of the 2019 SSD approval. The rates are as shown below in **Table 7**:

TABLE 7 APPROVED CAR PARKING RATES

Source	Land Use	Minimum Car Parking Rate
RMS Guide (OWE Masterplan)	Warehousing / Distribution	1 space per 300 m ² GFA
	Office (Ancillary)	1 space per 40 m ² GFA

Application of above rates to the Proposed Building 4A & 4B results in the following as shown below in **Table 8**:

TABLE 8 PARKING REQUIREMENT & PROVISION FOR BUILDINGS 4A & 4B

Building	GFA (m ²)		Car Parking Required			Car Parking Provided
	Warehouse	Office	Warehouse	Office	Total	
4A	16,785	650	56	17	73	73
4B	14,700	850	49	22	71	71
Total	31,485	1,500	105	39	144	144

Application of the approved rates to the proposed development results in the requirement of 144 spaces. The proposal provides 144 on-site car parking spaces, and thus satisfying requirements.

4.1.1 Accessible Parking

Condition B13(i) of the SSD specifies the following requirements for accessible parking spaces:

- 2 spaces for people with disabilities for every 100 car parking spaces.

This equates to a required provision of 4 spaces for Buildings 4A & 4B which equates to 2 accessible spaces for each car park. In response, 2 accessible spaces will be provided to each car park of Buildings 4A and 4B, satisfying the SSD requirement.

4.2 Bicycle Parking

Council's DCP refers to the Planning Guidelines for Walking and Cycling, which 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 the detailed staff numbers for Buildings 4A & 4B are not available at the time of preparation of this TA. Therefore, for the purpose of this assessment, it has been assumed that the maximum number of staff on Site is equal to the car parking required per building.

Based on the above assumptions, the following bicycle parking requirements are estimated:

TABLE 9 BICYCLE PARKING REQUIREMENTS

Building	Estimated Staff Numbers	Bicycle Parking Requirements (Spaces)
4A	74	Staff: 3-4 Visitors: 4-8
4B	88	Staff: 3-5 Visitors: 5-9

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

TABLE 10 EOT FACILITIES REQUIREMENTS

Staff Numbers	Lockers	Showers	Change Rooms
13 – 49	1 per 3 racks	2 (1 male and 1 female)	2 (1 male and 1 female)
50 – 149	1 per 3 racks	4 (2 male and 2 female)	2 (1 male and 1 female)

The proposal provides a total of 16 bicycle parking (8 for Building 4A and 8 for Building 4B) which meets requirements set out in the Planning Guidelines for Walking and Cycling. Similarly, showers and changerooms have been provided to comply with the minimum requirements.

5 Traffic Assessment

Having regard for the traffic generation rates established and approved in the OWE masterplan, the applicable trip generation rates relevant to the land use are as follows:

- 0.163 peak hour vehicle trips per 100 m² of industrial GFA including ancillary office floor space; and
- 1.892 daily vehicle trips per 100 m² of industrial GFA including ancillary office floor space.

5.1 Traffic Generation

For Buildings 4A & 4B, application of the abovementioned traffic generation rates to the proposed development indicatively results in the following, as shown in **Table 11**:

TABLE 11 BUILDINGS 4A & 4B TRAFFIC GENERATION			
Building	Total GFA (m ²)	Period	Traffic Generation
4A	17,435	AM / PM Hourly Peak	28
		Total Daily (24-Hour)	330
4B	15,550	AM / PM Hourly Peak	25
		Total Daily (24-Hour)	294
Total	32,985	AM / PM Hourly Peak	54
		Total Daily (24-Hour)	624

5.2 Traffic Impact Assessment

As mentioned previously, it is noted that MOD 10 is approved. Further, Buildings 4A and 4B traffic generation has already been reviewed previously as part of MOD 3 and in subsequent modifications which resulted in only minor deviations from the approved MOD 3 traffic generation results. Moreover, the total GFA of OWE has remained unchanged since MOD 5 as shown in the table below. Similarly, GFAs remain relatively consistent at the precinct level.

Hence, noting that the context of Buildings 4A & 4B in MOD 10 is comparable to the context of previous modifications, the traffic generated by Buildings 4A & 4B is expected to have no significant departure from the approved modelling on the broader OWE included in MOD 3.

TABLE 12 MOD 3 AND MOD 10 GFA COMPARISON

Precinct	MOD 3 (m ²)	MOD 5 (m ²)	MOD 6 (m ²)	MOD 7 (m ²)	MOD 10 (m ²)	Difference (MOD 10 – MOD 3)
1	122,082	125,772	125,198	125,198	125,198	3,116
2	266,186	266,186	269,390	269,390	267,860	1,674
3	57,819	57,819	56,759	57,204	53,170	-4,649
4	113,693	113,693	112,123	111,678	120,557	6,864
5	35,640	35,640	35,640	35,640	32,325	-3,315
Amenities Lot		345	345	345	345	0
TOTAL	595,420	599,455	599,455	599,455	599,455	3,690

At the building level, a comparison of the proposed traffic generation and MOD 10 traffic generation for Buildings 4A & 4B which adopts approved traffic generation rates is provided below.

TABLE 13 MOD 10 AND PROPOSED TRAFFIC GENERATION COMPARISON

	Building	GFA (m ²)	Traffic Generation		
			AM (trips per hour)	PM (trips per hour)	Daily (trips per day)
Approved MOD 10	4A	34,758	57	57	658
	4B	12,873	21	21	244
TOTAL		47,631	78	78	902
Proposed Traffic Generation	4A	17,435	28	28	330
	4B	15,550	25	25	294
TOTAL		32,985	54	54	624
Difference (Proposed – MOD 10)		(-)14,646	(-)24	(-)24	(-)278

It is evident that the proposed traffic generation of Buildings 4A & 4B generates less than MOD 10 by the order of 24 less vehicular trips in the AM/PM peak hour and 278 less vehicular trips daily. Hence, the traffic generation of Buildings 4A & 4B aligns with the approved MOD 10 under this assessment.

Hence, Buildings 4A & 4B are supportable is traffic generation grounds.

DRAFT

6 Design Commentary

6.1 Relevant Design Standards

Buildings 4A & 4B 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 plans would comply with these Standards. Furthermore, compliance with the above Standards would be expected to form a standard condition of consent to the development approval.

6.2 Design Vehicles

Buildings 4A & 4B can readily accommodate up to 26.0m B-Doubles side loading. Further, an uncoupling area is provided for Building 4A. Moreover, up to 20.0m Articulated Vehicles for rear loading at recessed docks and RSD positions can be facilitated.

6.3 Commercial Hardstand Area

The design review indicates that access and egress to recessed docks and RSDs 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. In this regard, consideration shall be given to the design commentary and dock limitations included in **Appendix B**.

6.4 Operational Management

To accommodate 26.0m B-Double circulation within Buildings 4A & 4B, 4 RSDs will need to be vacant for each building. Further, 2 RSDs in Building 4B will need to be restricted to 12.5m Heavy Rigid Vehicles (HRVs) to accommodate vehicle swept paths.

Moreover, it is recommended that operational management will include a stop sign at the Building 4B exit and convex mirror placed opposite the northern most dock of Building 4A. This is detailed in the design commentary in **Appendix B**.

6.5 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.

6.6 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 12.5m HRV, demonstrating sufficient access for 'General' and 'Specialist' fire appliances, as demonstrated in **Appendix B**.

DRAFT

7 Preliminary Green Travel Plan

7.1 Purpose

This plan sets out objectives and strategies to assist the Council in achieving their goals to improve sustainability of work trips for the proposal. This preliminary GTP includes a review of the existing transport choices and sets targets so that the effective implementation of the GTP can be assessed. These targets are intended to be realistic but ambitious enough to initiate substantive behavioural change to achieve the desired outcomes, given existing and future multi-modal transport networks.

This preliminary GTP is expected to be coordinated with the Site tenants or their representatives. It shall be reviewed and updated regularly as part of an ongoing review to ensure it remains relevant and reflective of current conditions.

7.2 Travel Mode Share Analysis

It should be noted that the OWE is still in development and as such existing travel patterns cannot be ascertained at this time. Notwithstanding, for the purposes of the GTP, a neighbouring travel zone with existing development, DZN114695449, has been identified and assessed.

Existing travel patterns of employees within the surrounding area have been surveyed in the 2016 Census and presented in the Journey to Work (JTW) dataset provided by TfNSW. The JTW information for the Site and surrounding locality is presented in **Figure 13** shown overleaf.

The area experiences a high proportion of private vehicle trips (inclusive of vehicle driver and vehicle passenger modes) and a low proportion of public and active transport modes. The mode share analysis indicates a high likelihood for staff associated with the development to use private vehicles as the primary mode of transport.

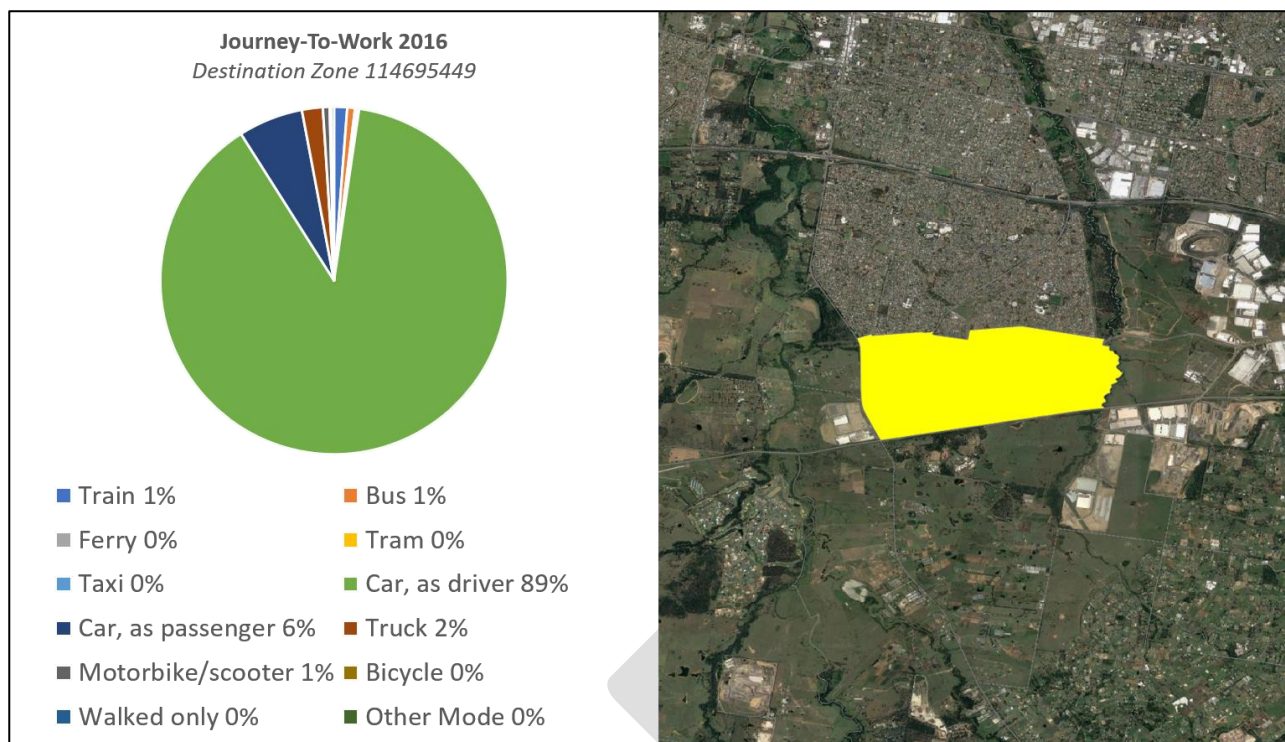


Figure 13: Journey-To-Work 2016 Profile

7.3 Strategic Context

7.3.1 Western Sydney Employment Area

The Oakdale Precinct is located within the WSEA, part of the Western Sydney Priority Growth Area – planning for which is being driven by the DPE. A key outcome of the project involves providing land opportunity for industry and employment, including improvements in connectivity to benefit transport, logistics, warehousing, and office space of the area. The project aims to support the urban growth of the Badgerys Creek Aerotropolis and Western Sydney Airport.

7.3.2 North South Rail Link

The North South Rail Link is a proposed rail access corridor supporting the urban growth and employment through the Western Sydney Priority Growth Area providing a connection between the northern growth centres, through the Badgerys Creek and southwards. The corridor study identifies St Marys Station and Schofields Road as junction points for the corridor, passing through the WSEA site and towards the Western Sydney airport. This rail link will provide additional connectivity to Erskine Park and Orchard Hills from the north and south, widening the potential catchment area of employment and improving workplace accessibility for public transport modes.

7.4 Surrounding Public Transport Services

7.4.1 Railway Services

The *Integrated Public Transport Service Planning Guidelines, Sydney Metropolitan Area* (Transport for NSW, December 2013) states that rail services influence the travel mode choices of areas within 800 metres (approximately 10 minutes' walk) of a railway station. The closest railway station to the Oakdale West Precinct is Mt Druitt Station, is approximately 7 kilometres north of the Site. This would imply that commuting by rail would have minimal influence on workplace travel.

It should be noted that several studies conducted for the Broader Western Sydney Employment Area (BWSEA) reference the potential development of connecting freight or passenger corridor to the Site's west, connecting the T1, T2 and T5 lines to Badgerys Creek Airport.^{1,2}

7.4.2 Bus Services

Having regard to the standard bus travel, the *Integrated Public Transport Service Planning Guidelines* state that bus services influence the travel mode choices of sites within 400 metres (approximately 5 minutes) of a bus stop. As there are limited existing bus services within close proximity of the Site, this implies that bus commuting would have minimal influence on workplace travel.

As outlined in the WSEA, a new regional road network is being developed interlinking the industrial precincts within the region to support the growth and continued development of the area. This presents the potential for an accompanying expansion in the bus service network to connects places of employment within the region.

Notwithstanding, the introduction of a new bus route is confirmed to provide additional access for workers / visitors within OWE. This new bus service commenced from 24 October 2021 and will provide direct access to and from the St Marys Train Station. This introduction of a direct connection with the St Marys Train Station increases the accessibility of the Site via public transport services.

The timetable of bus route 779 has also been attached within **Appendix A** for reference.

¹ Source: Department of Infrastructure, *Regional Development and Cities, Western Sydney Rail Needs Scoping Study* 2018, <https://www.transport.nsw.gov.au/projects/current-projects/western-sydney-rail-needs-scoping-study>

² Source: NSW Planning & Infrastructure, *Broader Western Sydney Employment Area – Draft Structure Plan* 2013, <https://www.planning.nsw.gov.au/-/media/Files/DPE/Reports/broader-western-sydney-employment-area-draft-structure-plan-community-guide-2013-06.pdf>

7.5 Objectives and Targets

7.5.1 Objectives

The primary objectives of this GTP are to:

- Reduce the environmental footprint of the development;
- Promote the use of 'active transport' modes such walking and cycling, particularly for short-medium distance journeys;
- Reduce reliance on the use of private vehicles for all journeys; and
- Encourage a healthier, happier, and more active social culture.

Having regard for the above, this Plan (as shown in **Figure 14**) adopts the following movement hierarchy with priority given to 'active transport' followed by mass public transport and lastly the use of cars and other private vehicles.

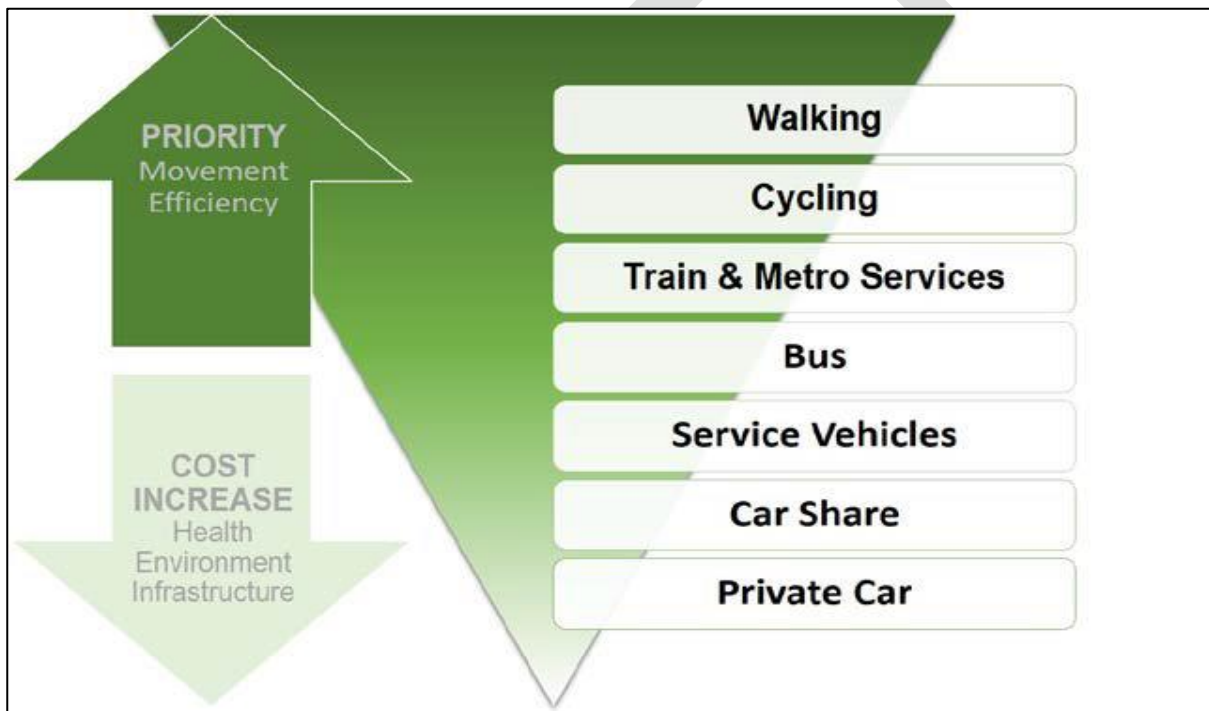


Figure 14: Movement Hierarchy

In a broad sense, this preliminary GTP is intended to encourage the use of active transport thereby reducing the overall distance travelled by private vehicles associated with Buildings 4A & 4B.

It is noted that the above hierarchy applies to staff and visitor (i.e., car) movements. Given the nature of the development for warehouse and industrial purposes, it is acknowledged that there is limited ability to reduce the number of commercial vehicle movements without compromising Site operations.

7.5.2 Mode Share Targets

With the above objectives in mind, the mode share targets outlined in **Table 14** are proposed, based on the JTW Profile for the destination zone.

TABLE 14 MODE SHARE TARGETS (PRIMARY MODE OF TRAVEL)

Travel Mode	Existing – DZN 114695449	Proposed	Relative Change
Walking	0%	0%	0%
Cycling	0%	5%	+ 5%
Train ¹	1%	5% ²	+ 4%
Bus ¹	1%	10%	+ 9%
Vehicle Passenger	6%	10%	+ 4%
Vehicle Driver	90%	68%	- 22%
Other/Mode Not Stated	2%	2%	0%

Note: 1) Key opportunity in future with provision of further regional infrastructure

2) The JTW classifies multi-modal journeys by indicating the 'primary' mode only and is considered in this proposition.

In this context, the mode share targets identified in **Table 14** can be considered with a focus on 20% for public and active transport and 80% on private car usage. This ratio is reflective of travel zones observed to have higher degrees of road network connectivity and limited access to rail facilities. It shall be necessary to adjust these mode share targets as future developments and planned transport infrastructure are realised, allowing for more ambitious targets to be set.

The changes made to cycling, train and bus travel modes are specifically reliant on the improvement of connectivity and additional infrastructure to facilitate them, which is anticipated to occur through several developments and initiatives associated with the broader WSEA.

7.6 Action Plan

7.6.1 Action Plan Measures

The following specific actions have been identified to aid achievement of the targets outlined in **Section 7.5.2**. It is anticipated that relevant actions in **Table 15** should be conveyed to the tenants at the time of tenancy agreement.

Identified strategies include promotion of some event or day-specific activities. In isolation, these may not dramatically alter the day-to-day travel of staff. However, there are benefits of such activities whereby participation can increase awareness of alternative modes of travel that can then form the basis of future travel choices.

TABLE 15 ACTION PLAN MEASURES

Item No.	Action / Description	Responsibility
1. General		
1.1	Establish a centralised Travel Plan Coordinator (TPC) which is to take responsibility for the ongoing review and monitoring of this Plan. This person(s) shall also provide direction to tenants in relation to tenant-specific requirements arising from the GTP.	Landowner / Strata Manager
1.2	Establish and maintain a transport coordinator to engage with the overall transport coordinator above.	Tenant
1.3	Provide 'Travel Welcome Pack' for newly employed staff, highlighting alternate modes of transport other than use of a private vehicle.	TPC / Tenant
1.4	Review of GTP as a regular item on the agenda for the Tenant / Landowner meetings.	TPC
1.5	Encourage flexible work hours, where practicable. Whilst not reducing mode share, this can permit travel outside of peak periods which has other positive benefits.	Tenant
1.6	Preparation of a Transport Access Guide (TAG) – refer to Appendix C .	TPC
2. Walking and Cycling		
2.1	Lobby Council / DPE for improved cycle connections in the broader area.	TPC
2.2	Promote participation in the National Ride2Work Day activity.	Tenant
2.3	Promote participation in Walk to Work Day+ (and other) events.	Tenant
2.4	Provide and maintain clearly signposted bicycle parking within the Site.	Developer / Landowner
2.5	In accordance with the 5% cycling mode share target, sufficient secure parking spaces and 'EoT' facilities shall be provided and maintained. (NOTE: this can be staged to reflect realised demand)	Developer / Landowner
3. Public Transport		
3.1	Advocate for TfNSW to improve public transport services in response to increased development within the surrounding area.	Landowner / TPC
3.2	Update the GTP to reflect changes to any bus routes and service times.	TPC
3.3	Undertake a review to promote initiatives for staff using public transport.	TPC / Tenant
4. Shared Vehicles		

4.1	Review initiatives for staff to promote car-pooling. This may include (but not limited to) the provision of online services or forums to facilitate ease of finding carpooling scheme participants.	TPC / Tenant
4.2	In longer term, engage with Car Share operators to encourage provision of Car Share pods in proximity to the site. This transport option – for miscellaneous travel throughout the day – can then alleviate pressure for staff to drive as part of the primary mode of travel to work.	TPC

Bicycle parking spaces and End of Trip facilities are expected to be provided on-site to support the above Action Plan. Additional bicycle parking spaces may be recommended in the future; however, this would be subject to further review as part of the ongoing GTP maintenance which is discussed further below.

7.7 Communications Strategy

New staff shall be provided with a ‘welcome pack’ as part of the on-site induction process which includes the GTP and other information in relation to sustainable transport choices. This pack shall include a copy of the Travel Access Guide (TAG) as well as general information regarding the health and social benefits of active transport. Advice on where to find further information should also be included such as links to Sydney Cycleways website (<http://www.sydneycycleways.net>).

7.8 Governance and Support

7.8.1 Travel Plan Coordinator

A person(s) shall be nominated as the Travel Plan Coordinator (TPC) and be responsible for:

- Engagement with the future tenants on-site;
- Implementation and promotion of the GTP actions;
- Monitoring the effectiveness of the GTP (refer to monitoring requirements outlined in **Section 7.6**) and ongoing maintenance of the Plan;
- Provide advice in relation to transport-related subjects to staff, tenancy management and visitors, as required; and
- Liaise with external parties (i.e., Council, public transport, and car share operators) in relation to Travel Plan matters.

This role does not necessarily require a full-time position; however, it should be clearly designated among the key responsibilities of the building management group.

This may include financial incentives for staff to use active transport and public transport to travel to work. However, this is not a mandatory requirement and would be subject to the management discretion.

7.8.2 Resourcing

It is not anticipated that the maintenance of this GTP will have significant ongoing cost implications and shall be reviewed on an annual basis by the TPC in order for the best outcome.

7.8.3 Plan Maintenance

This Plan shall be subject to ongoing review and will be updated accordingly. Regular reviews – ideally on annual basis – will be undertaken by the TPC, as required. Key considerations regarding the review of the GTP shall be:

- Updating baseline conditions to reflect any changes to the transport environment in the vicinity of the Site such as changes to bus services, new cycle routes etc. In this regard, review of the GTP may be undertaken on a more frequent basis;
- Tracking progress against proposed travel mode targets;
- To identify any shortfalls and develop an updated action plan to address issues;
- To ensure travel mode targets are updated (if necessary) and to ensure they remain realistic but also ambitious; and
- To revise mode share targets and develop strategies that encourage the use of public and active transport and that discourage single occupant car travel to the site, as future public and active transport improvements around the development Site occur.

7.8.4 Travel Mode Audit Requirements

Travel mode surveys will be undertaken to determine the proportion of persons travelling to/from the site by each transport mode. This will be in the form of annual travel mode questionnaire surveys to be completed by all persons attending the Site, as far as practicable. This survey may be undertaken online or in-person at the discretion of the TPC. A sample of a typical travel mode questionnaire form is included in **Appendix D**.

8 Summary and Conclusions

8.1 Key Findings

The key findings of this TA are:

- The Application relates to the proposed Buildings 4A & 4B warehouse developments, which forms part of the wider Oakdale West Industrial Estate (OWE) precinct. A detailed description of the proposal is included in the Statement of Environmental Effects that this assessment accompanies. In summary, the proposal relates exclusively to the proposed Buildings 4A & 4B and consists of the following characteristics indicated in the table below:

TABLE 16 PROPOSAL YIELD FOR BUILDINGS 4A & 4B

Component	Building 4A	Building 4B	Total
Warehouse GFA (m ²)	16,785	14,700	31,485
Office GFA (m ²)	650	850	1,500
Total GFA (m²)	17,435	15,550	32,985
Loading Dock Provision	12 ¹	12 ²	24
Car Parking Provision (Spaces)	73 ³	71 ⁴	144

Note: 1) This provision includes 4 recessed docks and 8 Roller Shutter Doors (RSDs).

2) This provision includes 4 recessed docks and 8 RSDs.

3) This provision includes 2 accessible spaces and 5 Electric Vehicle Charging stations.

4) This provision includes 2 accessible spaces and 5 Electric Vehicle Charging stations.

- A public transport study of the locale demonstrates that currently, the Site and surrounding area is serviced by an existing bus route, 779, within very close proximity. Notwithstanding, the future context of local and main roads, in consideration of major upgrades, proposes further opportunity for connectivity within the area in both the shorter and longer term.
- An assessment of parking with regards to the SSD approval for the wider masterplan indicates that the proposed provision of 73 spaces for Building 4A and 71 spaces for Lot 4B and meets the relevant requirements.
- Adopting the approved traffic generation rates for the wider masterplan, Building 4A is estimated to result in a total hourly traffic generation of 28 vehicle trips during AM and PM Peak periods (inbound + outbound movements) and a total of 330 vehicle trips throughout the day (inbound + outbound movements).
- Building 4B is estimated to result in a total hourly traffic generation of 25 vehicle trips during the AM and PM peak periods (inbound + outbound movements). The proposal is expected to generate total of 294 vehicle trips throughout the day (inbound + outbound movements) for Building 4B.
- It should be noted that the above estimated peak hour and daily traffic generations for Buildings 4A & 4B aligns with approved MOD 10 traffic generation for the 2 buildings. Further, a review of GFAs of recent approved modifications shows that MOD 10 estate GFA remains unchanged from MOD 9, hence, it is not expected that MOD 10 traffic generation would deviate from the latest approved traffic generation outlined in the MOD 7 TA report for SSD 7348.
- It is also noted that the Precinct 4 traffic including this new DA will not materially change the traffic generation from what has been assessed, modelled, and approved under MOD 3. Hence, no additional traffic modelling is required for this DA.

- In this regard, it should be considered that the peak hourly traffic generation for the Site is consistent with the previous wider Estate assessment and would not have any material traffic impacts to the road network beyond what has already been approved.
- This DA is, therefore, supportable on traffic impact and parking impact grounds.
- Site accesses, car parking and commercial vehicle service areas have generally been designed having regard for the relevant Australian Standards (AS2890 series). It is expected that a detailed review of compliance with the AS2890 series will be undertaken as part of a detailed Construction Certificate documentation.
- A preliminary Green Travel Plan (GTP) has been included in this TA, which sets out objectives and strategies to assist Penrith City Council in achieving their goals to improve sustainability of work trips for the Proposal. This preliminary GTP includes a review of the existing transport choices and sets targets so that the effective implementation of the GTP can be assessed. These targets are intended to be realistic but ambitious enough to initiate substantive behavioural change to achieve the desired outcomes, given existing and future multi-modal transport networks.
- This preliminary GTP is expected to be coordinated with the Site tenants or their representatives. It shall be reviewed and updated regularly as part of an ongoing review to ensure it remains relevant and reflective of current conditions.

8.2 Conclusions

In summary, the proposed Buildings 4A & 4B warehouse developments are deemed supportable on traffic and transport planning grounds and will not result in any adverse impacts on the surrounding road network or the availability of on-street parking.

Appendix A. Timetable of Existing Bus Route 779

How to use this timetable

This timetable provides a snapshot of service information in 24-hour time (e.g. 5am = 05:00, 5pm = 17:00). Information contained in this timetable is subject to change without notice. Please note that timetables do not include minor stops, additional trips for special events, short term changes, holiday timetable changes, real-time information or any disruption alerts.

For the most up-to-date times, use the Trip Planner or Departures at transportnsw.info

Real-time planning


You can plan your trip with real-time information using the Trip Planner or Departures at transportnsw.info or by downloading travel apps on your smartphone or tablet.

The Trip Planner, Departures and travel apps offer various features:

- favourite your regular trips
- see where your service is on the route
- get estimated pick-up and arrival times
- receive service updates
- find nearby stations, stops, wharves and routes
- check accessibility information.

Find the latest apps at transportnsw.info/apps

Accessible services

All new buses are wheelchair-accessible with low-level floors and space for wheelchairs, prams or strollers. Look for the  symbol in this timetable. Some older buses may not have all the features you need. There will be more accessible services as older buses are replaced.

Who is providing my bus services?

The bus services shown in this timetable are run by Busways Western Sydney.

Fares

In Sydney and surrounding regions, fares are based on:

- the distance you travel from tap on to tap off
- the mode of transport you choose
- whether you're eligible for a concession fare or free travel
- any Opal benefits such as discounts and capped fares that apply.

You can use an Opal card or a contactless payment to pay for your travel.

Opal cards

An Opal card is a smartcard you keep and reuse. Add value before you travel, and tap on and tap off to pay your fares throughout Sydney, the Blue Mountains, the Central Coast, the Hunter and the Illawarra.

Which Opal card is right for you?


Adult – Customers 16 years or older who are not entitled to any concessions and normally pay full fare.

Child/Youth – For customers aged 4-15 (inclusive), or customers 16 years or older who hold a NSW/ACT Senior Secondary Student Concession Card.

Gold Senior/Pensioner – For eligible NSW and interstate seniors, pensioners, war widows/ers and asylum seekers.

Concession – For eligible tertiary students, job seekers, apprentices and trainees.

How to get an Opal card

You can get an Adult or Child/Youth Opal card over the counter at Opal retailers that display the Opal sign . To find your nearest retailer visit transportnsw.info/opal.

If you are eligible to travel with concession fares, you can apply for a Gold Senior/Pensioner or Concession Opal card online. Visit transportnsw.info/opal for more information.

Contactless payments

If you have an American Express, Mastercard, Visa card or linked device, you can use it to pay for all public transport on the Opal network. Just make sure to tap on and tap off at Opal readers at the beginning and end of your trip.

Always separate your cards when you tap on and tap off so your preferred card is charged.

You will receive the same travel benefits of an Adult Opal card when you tap on and tap off consistently with the same credit card, debit card or linked device. This includes daily, weekly and weekend travel caps, and a \$2 transfer discount when you change between metro/train, ferry, bus and light rail services within 60 minutes. Adult Opal fare pricing applies.

Find out more at transportnsw.info/contactless

Explanation of definitions and symbols



Wheelchair Accessible

779

St Marys to Kemps Creek via Erskine Park

B

Valid from: 18 July 2022

Creation date: 08 Aug 2022

NOTE: Information is correct on date of download.

Monday to Friday

	04:45	05:15	05:45	06:15	09:15	09:45	10:15	11:15	12:15
Amazon, Emporium Ave, Kemps Creek	04:45	05:15	05:45	06:15	09:15	09:45	10:15	11:15	12:15
Lenore Dr after John Morphett Pl, Erskine Park	04:52	05:22	05:52	06:23	09:23	09:52	10:22	11:22	12:22
James Erskine before Dr Quarry Rd, Erskine Park	04:57	05:27	05:57	06:29	09:29	09:57	10:27	11:27	12:27
Mamre Rd near Banks Dr, St Clair	05:08	05:38	06:08	06:40	09:40	10:08	10:38	11:38	12:38
St Marys RSL Mamre Rd, St Marys	05:12	05:42	06:12	06:45	09:45	10:12	10:42	11:42	12:42
St Marys Station	05:21	05:51	06:21	06:55	09:55	10:21	10:51	11:51	12:51

Monday to Friday

	13:15	14:15	15:45	16:15	16:45	17:15	17:45	18:15	18:45
Amazon, Emporium Ave, Kemps Creek	13:15	14:15	15:45	16:15	16:45	17:15	17:45	18:15	18:45
Lenore Dr after John Morphett Pl, Erskine Park	13:22	14:22	15:53	16:23	16:53	17:23	17:53	18:23	18:53
James Erskine before Dr Quarry Rd, Erskine Park	13:27	14:27	15:59	16:29	16:59	17:29	17:59	18:29	18:59
Mamre Rd near Banks Dr, St Clair	13:38	14:38	16:10	16:40	17:10	17:40	18:10	18:40	19:10
St Marys RSL Mamre Rd, St Marys	13:42	14:42	16:15	16:45	17:15	17:45	18:15	18:45	19:15
St Marys Station	13:51	14:51	16:25	16:55	17:25	17:55	18:25	18:55	19:25

Monday to Friday

	19:15
Amazon, Emporium Ave, Kemps Creek	19:15
Lenore Dr after John Morphett Pl, Erskine Park	19:23
James Erskine before Dr Quarry Rd, Erskine Park	19:29
Mamre Rd near Banks Dr, St Clair	19:40
St Marys RSL Mamre Rd, St Marys	19:45
St Marys Station	19:55

Saturday

	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30	15:30
Amazon, Emporium Ave, Kemps Creek	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30	15:30
Lenore Dr after John Morphett Pl, Erskine Park	07:37	08:37	09:37	10:37	11:37	12:37	13:37	14:37	15:37
James Erskine before Dr Quarry Rd, Erskine Park	07:42	08:42	09:42	10:42	11:42	12:42	13:42	14:42	15:42
Mamre Rd near Banks Dr, St Clair	07:53	08:53	09:53	10:53	11:53	12:53	13:53	14:53	15:53
St Marys RSL Mamre Rd, St Marys	07:57	08:57	09:57	10:57	11:57	12:57	13:57	14:57	15:57
St Marys Station	08:06	09:06	10:06	11:06	12:06	13:06	14:06	15:06	16:06

Saturday

	16:30	17:30	18:30	19:30
Amazon, Emporium Ave, Kemps Creek	16:30	17:30	18:30	19:30
Lenore Dr after John Morphett Pl, Erskine Park	16:37	17:37	18:37	19:37
James Erskine before Dr Quarry Rd, Erskine Park	16:42	17:42	18:42	19:42
Mamre Rd near Banks Dr, St Clair	16:53	17:53	18:53	19:53
St Marys RSL Mamre Rd, St Marys	16:57	17:57	18:57	19:57
St Marys Station	17:06	18:06	19:06	20:06

Sunday & Public Holidays

	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30	15:30
Amazon, Emporium Ave, Kemps Creek	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30	15:30
Lenore Dr after John Morphett Pl, Erskine Park	07:37	08:37	09:37	10:37	11:37	12:37	13:37	14:37	15:37
James Erskine before Dr Quarry Rd, Erskine Park	07:42	08:42	09:42	10:42	11:42	12:42	13:42	14:42	15:42
Mamre Rd near Banks Dr, St Clair	07:53	08:53	09:53	10:53	11:53	12:53	13:53	14:53	15:53
St Marys RSL Mamre Rd, St Marys	07:57	08:57	09:57	10:57	11:57	12:57	13:57	14:57	15:57
St Marys Station	08:06	09:06	10:06	11:06	12:06	13:06	14:06	15:06	16:06

Sunday & Public Holidays

	16:30	17:30	18:30	19:30
Amazon, Emporium Ave, Kemps Creek	16:30	17:30	18:30	19:30
Lenore Dr after John Morphett Pl, Erskine Park	16:37	17:37	18:37	19:37
James Erskine before Dr Quarry Rd, Erskine Park	16:42	17:42	18:42	19:42
Mamre Rd near Banks Dr, St Clair	16:53	17:53	18:53	19:53
St Marys RSL Mamre Rd, St Marys	16:57	17:57	18:57	19:57
St Marys Station	17:06	18:06	19:06	20:06

779

Kemps Creek to St Marys via Erskine Park

B

Monday to Friday

	04:30	05:00	05:30	06:00	06:30	08:30	09:00	09:30	10:30
St Marys Station	04:30	05:00	05:30	06:00	06:30	08:30	09:00	09:30	10:30
St Marys RSL Mamre Rd, St Marys	04:34	05:04	05:34	06:05	06:35	08:35	09:05	09:34	10:34
Mamre Rd near Banks Dr, St Clair	04:37	05:07	05:37	06:08	06:38	08:38	09:08	09:37	10:37
James Erskine before Dr Quarry Rd, Erskine Park	04:46	05:16	05:46	06:17	06:47	08:47	09:17	09:46	10:46
Lenore Dr before John Morphett Pl, Erskine Park	04:54	05:24	05:54	06:26	06:56	08:56	09:26	09:54	10:54
Amazon, Emporium Ave, Kemps Creek	05:06	05:36	06:06	06:40	07:10	09:10	09:40	10:06	11:06

Monday to Friday

	11:30	12:30	13:30	15:00	16:30	17:00	17:30	18:00	18:30
St Marys Station	11:30	12:30	13:30	15:00	16:30	17:00	17:30	18:00	18:30
St Marys RSL Mamre Rd, St Marys	11:34	12:34	13:34	15:05	16:35	17:05	17:35	18:05	18:35
Mamre Rd near Banks Dr, St Clair	11:37	12:37	13:37	15:08	16:38	17:08	17:38	18:08	18:38
James Erskine before Dr Quarry Rd, Erskine Park	11:46	12:46	13:46	15:17	16:47	17:17	17:47	18:17	18:47
Lenore Dr before John Morphett Pl, Erskine Park	11:54	12:54	13:54	15:26	16:56	17:26	17:56	18:26	18:56
Amazon, Emporium Ave, Kemps Creek	12:06	13:06	14:06	15:40	17:10	17:40	18:10	18:40	19:10

Monday to Friday

	19:00
St Marys Station	19:00
St Marys RSL Mamre Rd, St Marys	19:05
Mamre Rd near Banks Dr, St Clair	19:08
James Erskine before Dr Quarry Rd, Erskine Park	19:17
Lenore Dr before John Morphett Pl, Erskine Park	19:26
Amazon, Emporium Ave, Kemps Creek	19:40

Saturday

	06:30	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30
St Marys Station	06:30	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30
St Marys RSL Mamre Rd, St Marys	06:34	07:34	08:34	09:34	10:34	11:34	12:34	13:34	14:34
Mamre Rd near Banks Dr, St Clair	06:37	07:37	08:37	09:37	10:37	11:37	12:37	13:37	14:37
James Erskine before Dr Quarry Rd, Erskine Park	06:46	07:46	08:46	09:46	10:46	11:46	12:46	13:46	14:46
Lenore Dr before John Morphett Pl, Erskine Park	06:54	07:54	08:54	09:54	10:54	11:54	12:54	13:54	14:54
Amazon, Emporium Ave, Kemps Creek	07:06	08:06	09:06	10:06	11:06	12:06	13:06	14:06	15:06

Saturday

	15:30	16:30	17:30	18:30
St Marys Station	15:30	16:30	17:30	18:30
St Marys RSL Mamre Rd, St Marys	15:34	16:34	17:34	18:34
Mamre Rd near Banks Dr, St Clair	15:37	16:37	17:37	18:37
James Erskine before Dr Quarry Rd, Erskine Park	15:46	16:46	17:46	18:46
Lenore Dr before John Morphett Pl, Erskine Park	15:54	16:54	17:54	18:54
Amazon, Emporium Ave, Kemps Creek	16:06	17:06	18:06	19:06

Sunday & Public Holidays

	06:30	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30
St Marys Station	06:30	07:30	08:30	09:30	10:30	11:30	12:30	13:30	14:30
St Marys RSL Mamre Rd, St Marys	06:34	07:34	08:34	09:34	10:34	11:34	12:34	13:34	14:34
Mamre Rd near Banks Dr, St Clair	06:37	07:37	08:37	09:37	10:37	11:37	12:37	13:37	14:37
James Erskine before Dr Quarry Rd, Erskine Park	06:46	07:46	08:46	09:46	10:46	11:46	12:46	13:46	14:46
Lenore Dr before John Morphett Pl, Erskine Park	06:54	07:54	08:54	09:54	10:54	11:54	12:54	13:54	14:54
Amazon, Emporium Ave, Kemps Creek	07:06	08:06	09:06	10:06	11:06	12:06	13:06	14:06	15:06

Sunday & Public Holidays

	15:30	16:30	17:30	18:30
St Marys Station	15:30	16:30	17:30	18:30
St Marys RSL Mamre Rd, St Marys	15:34	16:34	17:34	18:34
Mamre Rd near Banks Dr, St Clair	15:37	16:37	17:37	18:37
James Erskine before Dr Quarry Rd, Erskine Park	15:46	16:46	17:46	18:46
Lenore Dr before John Morphett Pl, Erskine Park	15:54	16:54	17:54	18:54
Amazon, Emporium Ave, Kemps Creek	16:06	17:06	18:06	19:06



- Diagrammatic Map
Not to Scale

Appendix B. Swept Path Analysis and Design Commentary

NOTES:

1. HARDSTANDS AND CAR PARKING AREAS SHOWN ON THIS SITE PLAN HAVE BEEN REVIEWED AND WE NOTE THAT:
- 1.1. HARDSTANDS HAVE BEEN REVIEWED FOR THE LARGEST VEHICLE, 26.0m B-DOUBLE.

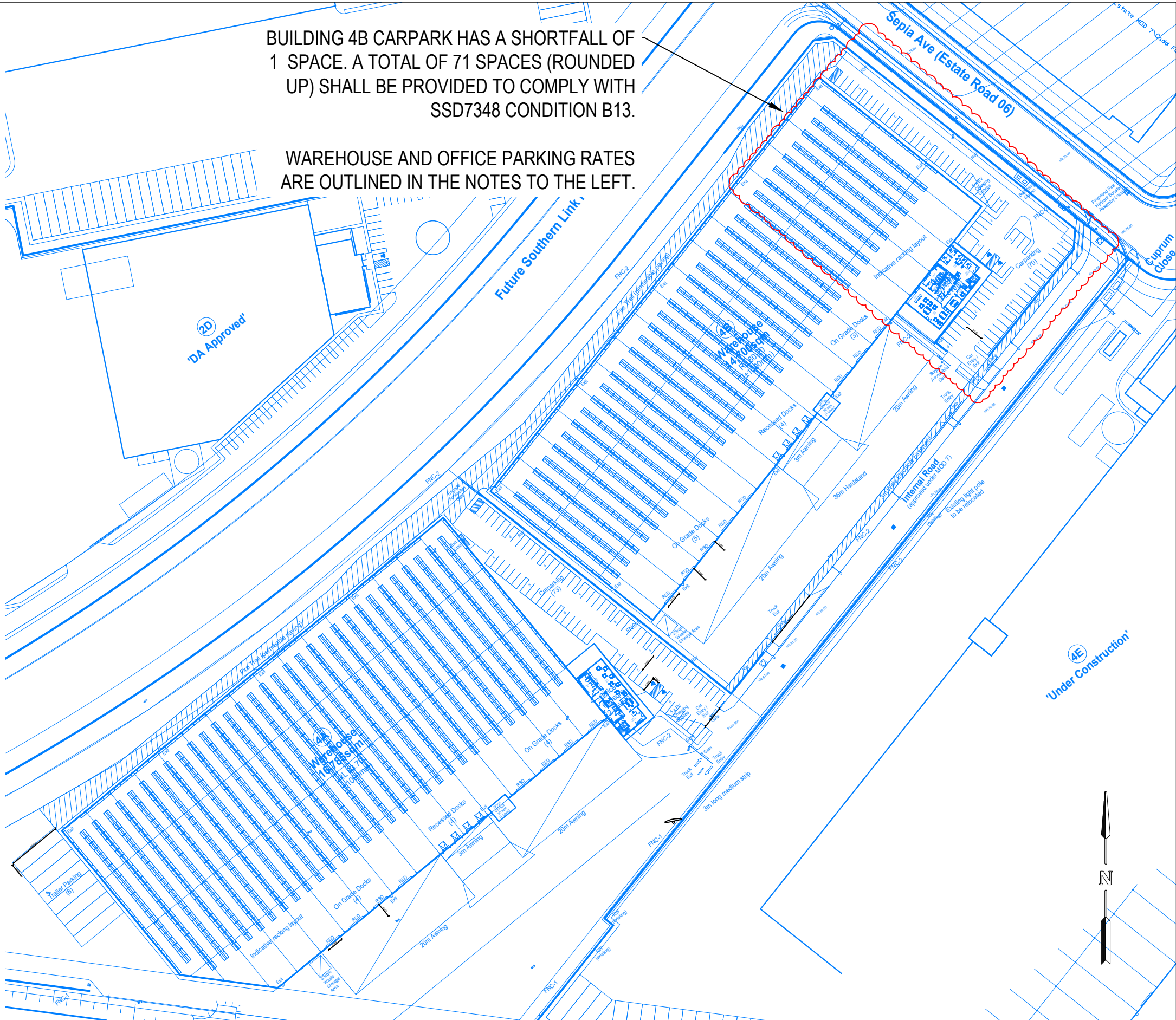
1.2. RECESSED DOCKS AND RSDs HAVE BEEN TESTED FOR REAR LOADING 20.0m AVs.
2. CAR PARKING AREAS HAVE BEEN REVIEWED AGAINST AS2890.1:2004 AND WE NOTE:
- 2.1. CAR PARKING SPACES (2.5m X 5.5m) ARE SUPERIOR TO USER CLASS 2 (2.5m X 5.4m).
3. MINIMUM CAR PARKING REQUIREMENTS SHALL BE IN ACCORDANCE TO SSD 7348 CONDITIONS OF CONSENT AS SHOWN BELOW.
- 3.1. 1 SPACE PER 300m2 OF WAREHOUSE GFA

3.2. 1 SPACE PER 40m2 OF OFFICE GFA

3.3. 2 SPACES FOR DISABILITY PARKING FOR EVERY 100 CAR PARKING SPACES
4. MINIMUM BICYCLE PARKING AND END OF TRIP FACILITIES REQUIREMENTS SHALL BE IN ACCORDANCE TO SSD 7348 CONDITIONS OF CONSENT WHICH SUGGESTS ADOPTING THE "PLANNING GUIDELINES FOR WALKING AND CYCLING 2004"

BUILDING 4B CARPARK HAS A SHORTFALL OF 1 SPACE. A TOTAL OF 71 SPACES (ROUNDED UP) SHALL BE PROVIDED TO COMPLY WITH SSD7348 CONDITION B13.

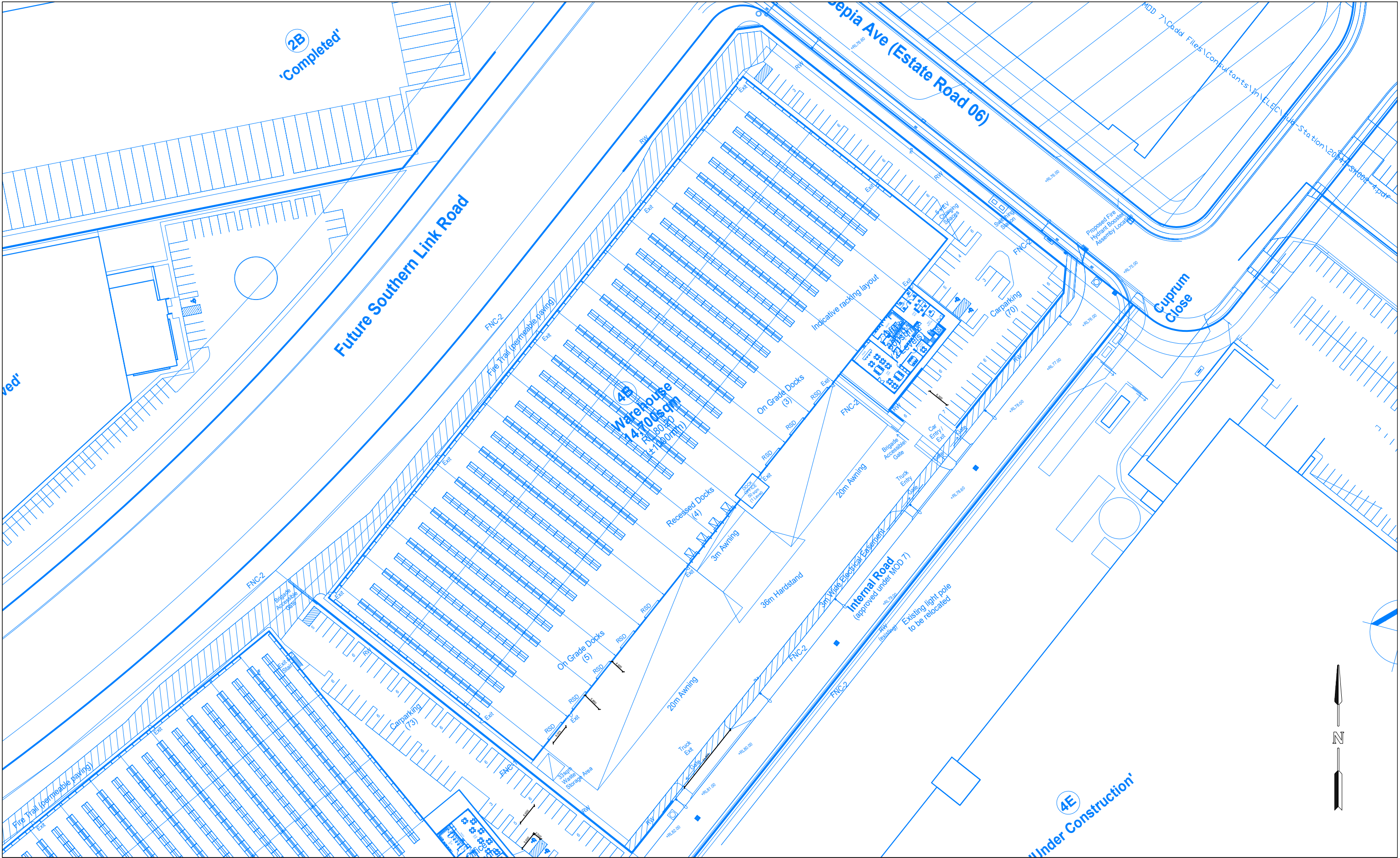
WAREHOUSE AND OFFICE PARKING RATES ARE OUTLINED IN THE NOTES TO THE LEFT.



<div>GENERAL NOTES</div> <div>This drawing is provided for information purposes only and should not be used for construction.</div> <div>Base Plan prepared by SBA Architects, received 13.09.2022.</div> <div>Cuprum Close has a speed limit of 50 km/h.</div> <div>Swept path assessments completed at 10 km/h and 300mm clearance.</div> <div>Design vehicle: 26m B-double Check Vehicle: -</div>	DESIGNED	PAPER SIZE	CLIENT	DOCUMENT INFORMATION	
	Jasmine Wong	A3	Goodman		
	APPROVED BY	DATE	PROJECT	DESIGN REVIEW	SITE OVERVIEW
	A. RASOULI	19.09.2022	2090	FILE NAME	SHEET
SCALE		NTS	Oakdale West Estate, Kemps Creek	AG2090-01-v05.dwg	AG01
1:1500					

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info@asongroup.com.au



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Design vehicle: 26m B-double Check Vehicle: -

DESIGNED Jasmine Wong	PAPER SIZE A3
APPROVED BY A. RASOULI	DATE 19.09.2022
SCALE 1:1000	0 10 20

CLIENT Goodman	PROJECT 2090 Oakdale West Estate, Kemps Creek
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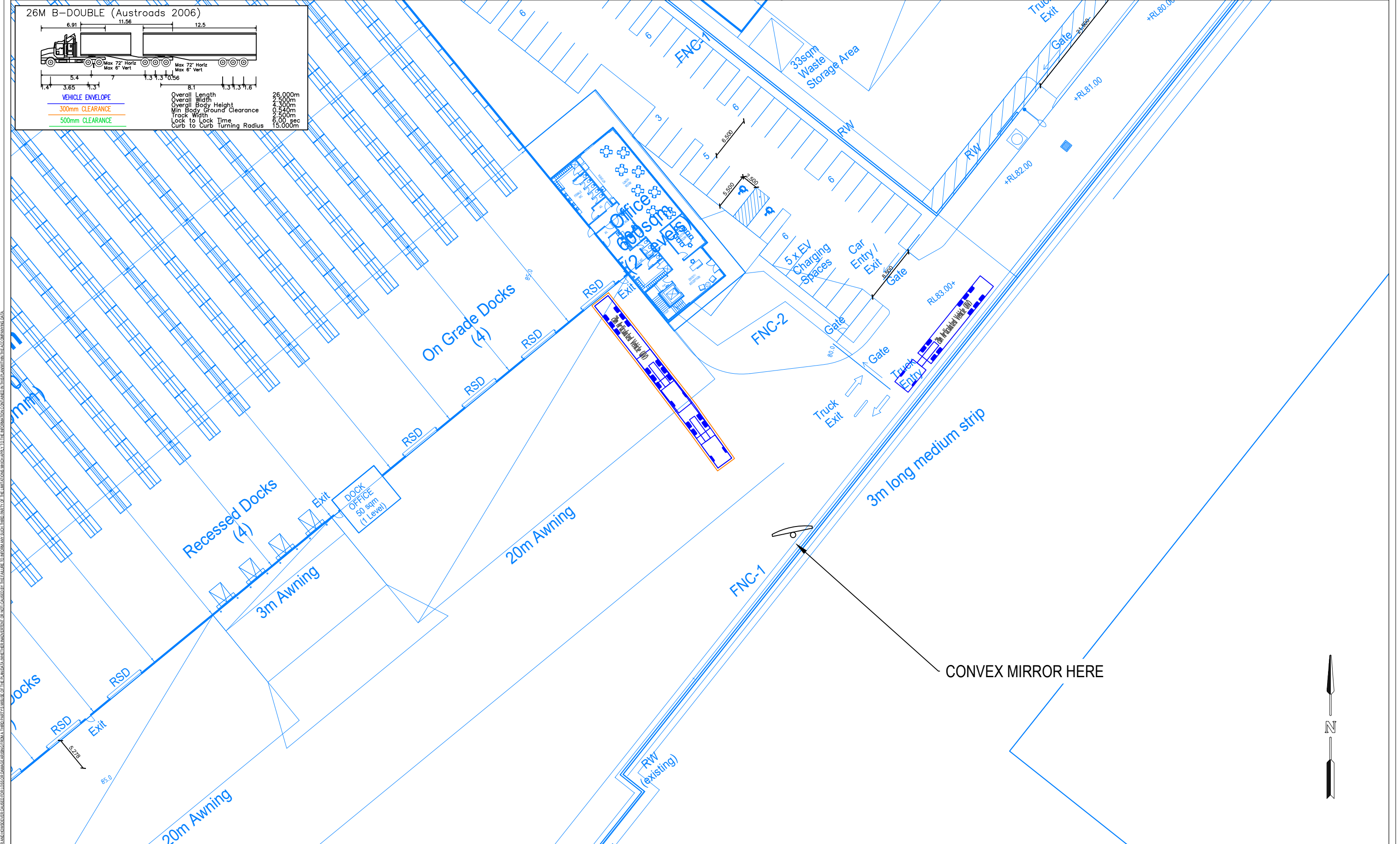
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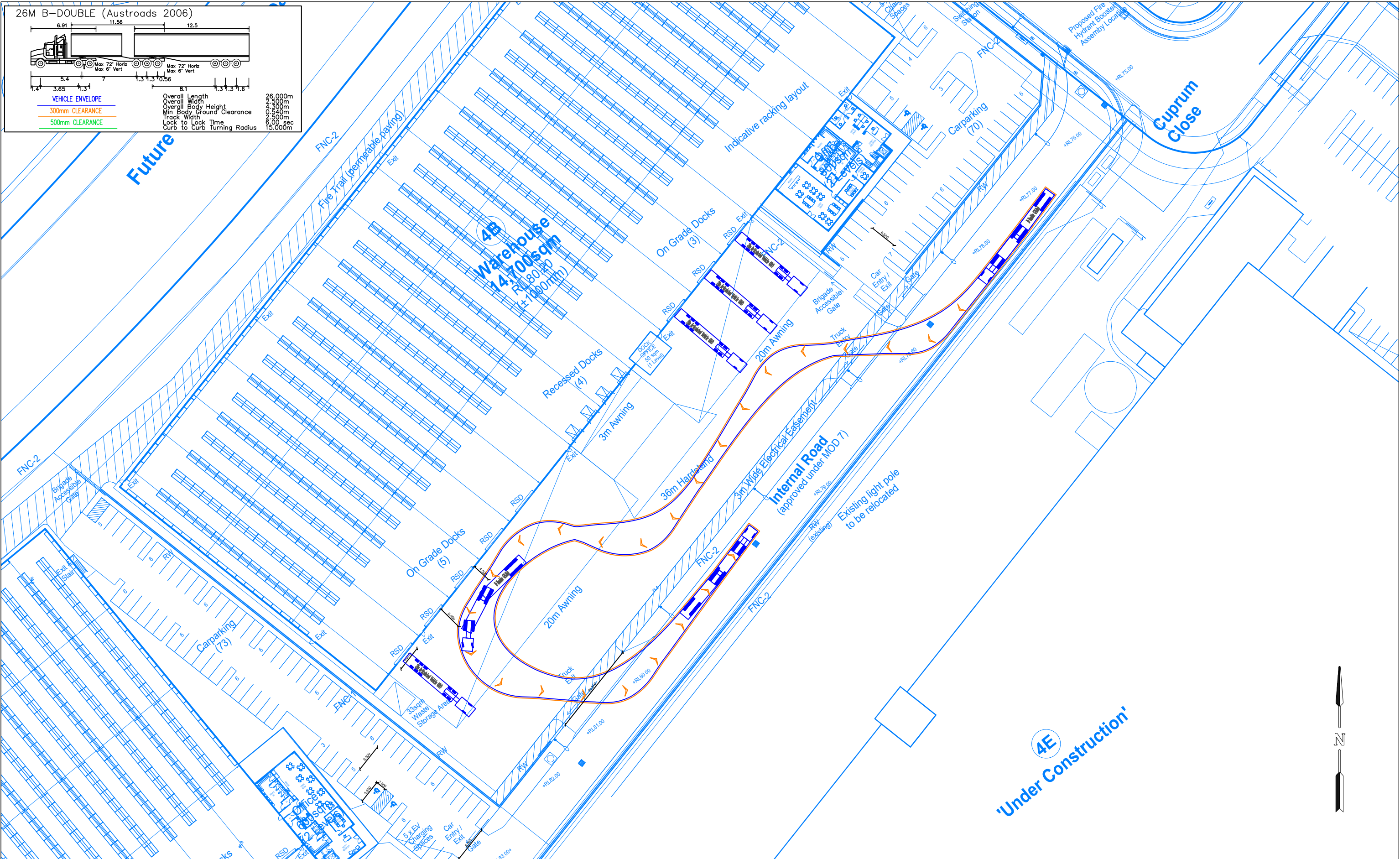
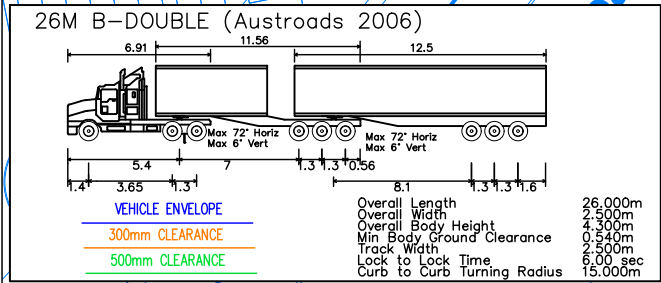
SITE OVERVIEW - LOT 4B

FILE NAME	SHEET
AG2090-01-v05.dwg	AG03

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		APPROVED BY A. RASOULI	DATE 19.09.2022	PROJECT 2090	DESIGN REVIEW	SIGNAGE & LINEMARKING	
		SCALE 1:500	<div>0510</div>	Oakdale West Estate, Kemps Creek	FILE NAME AG2090-01-v05.dwg	SHEET AG07	



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Design vehicle: 26m B-double Check Vehicle: -

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Jasmine Wong	A3	Goodman
APPROVED BY	DATE	PROJECT
A. RASOULI	19.09.2022	2090
SCALE	NTS	Oakdale West Estate, Kemps Creek
1:800		

DOCUMENT INFORMATION	
DESIGN REVIEW	
26m B-DOUBLE SWEEP PATHS - LOT 4B	
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FILE NAME	
AG2090-01-v05.dwg	

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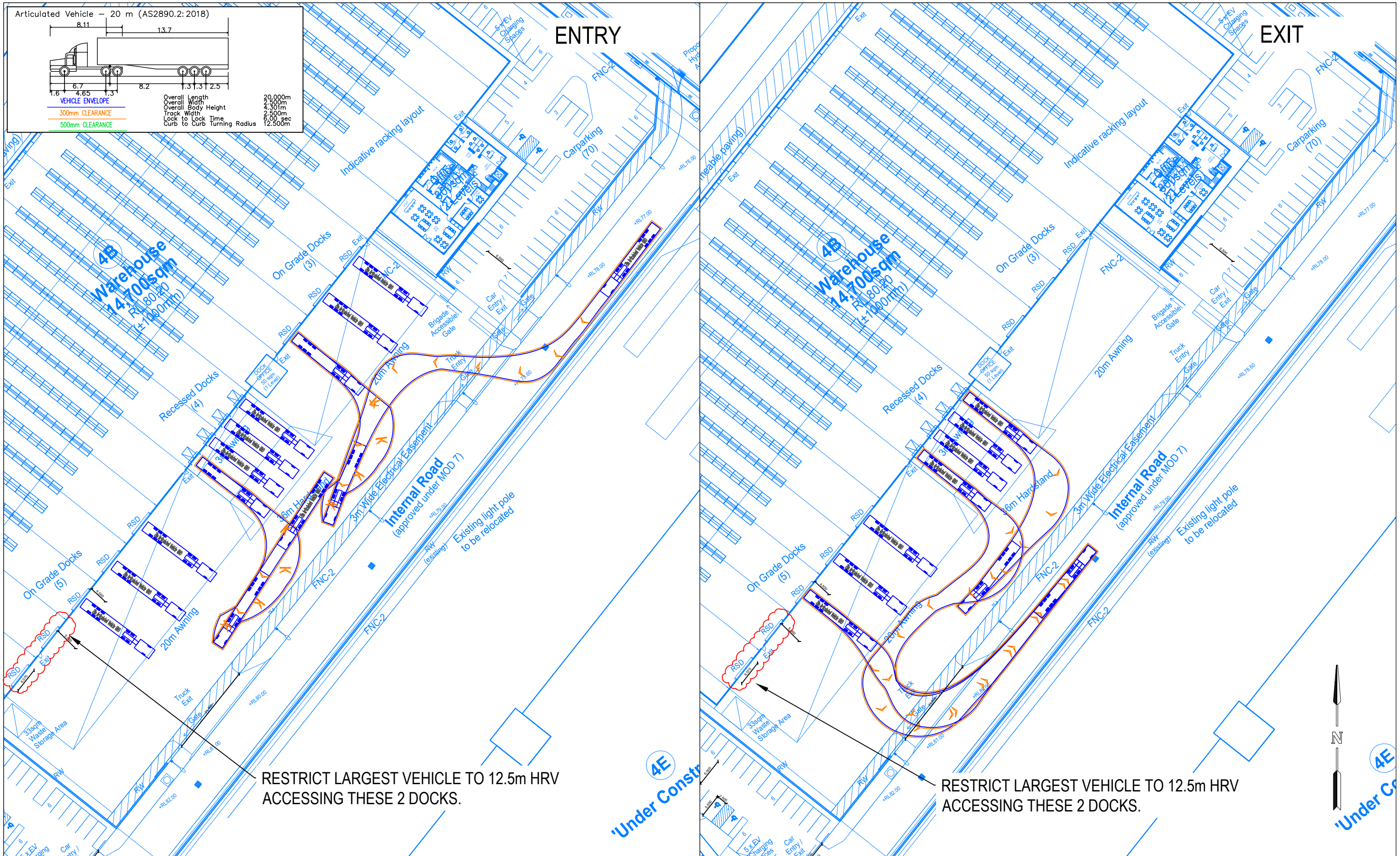
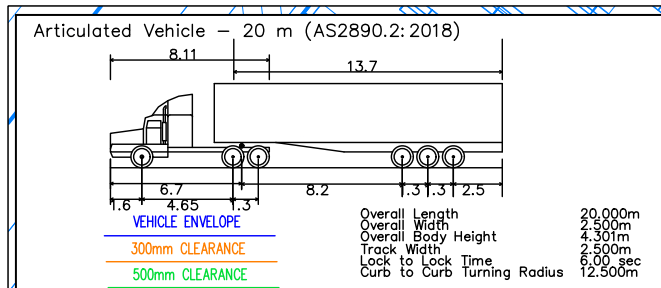
GENERAL NOTES
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Base Plan prepared by SBA Architects, received 13.09.2022.
Cuprum Close has a speed limit of 50 km/h.
Swept path assessments completed at 10 km/h and 300mm clearance.
Design vehicle: 26m B-double Check Vehicle: -


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APPROVED BY A. RASOULI	DATE 19.09.2022
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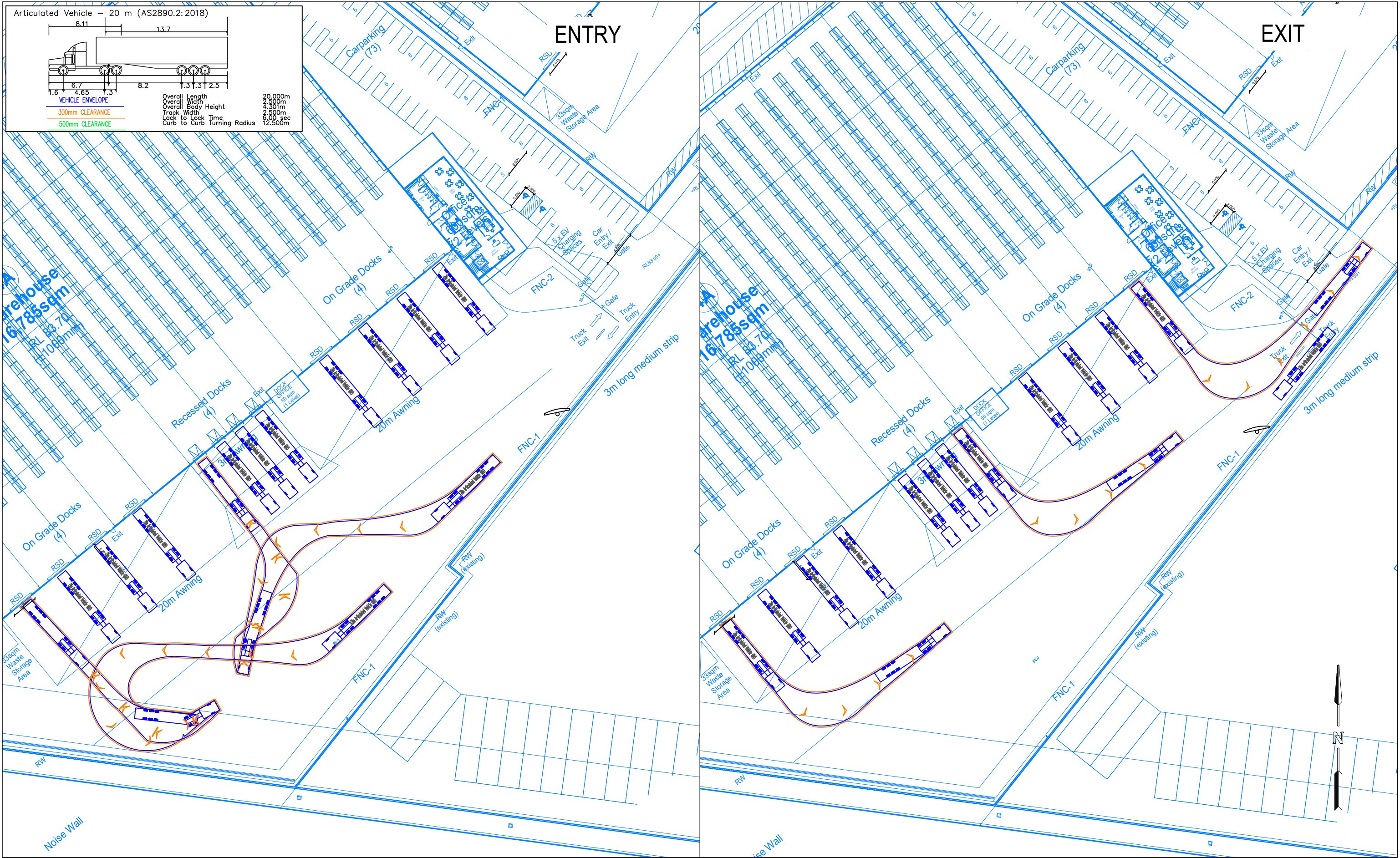
CLIENT Goodman	PROJECT 2090 Oakdale West Estate, Kemps Creek
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DOCUMENT INFORMATION	
DESIGN REVIEW	
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FILE NAME AG2090-01-v05.dwg	SHEET AG10


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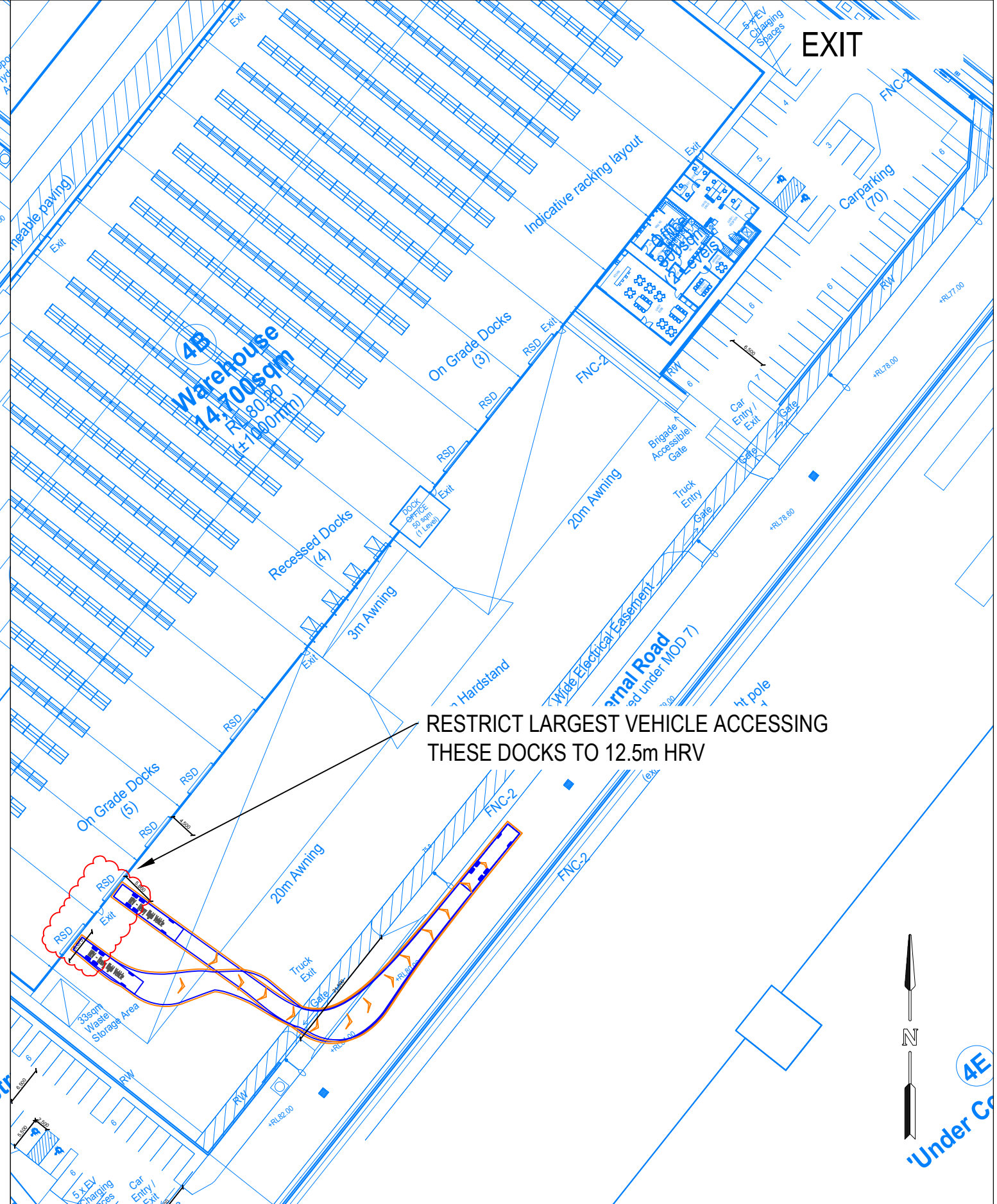
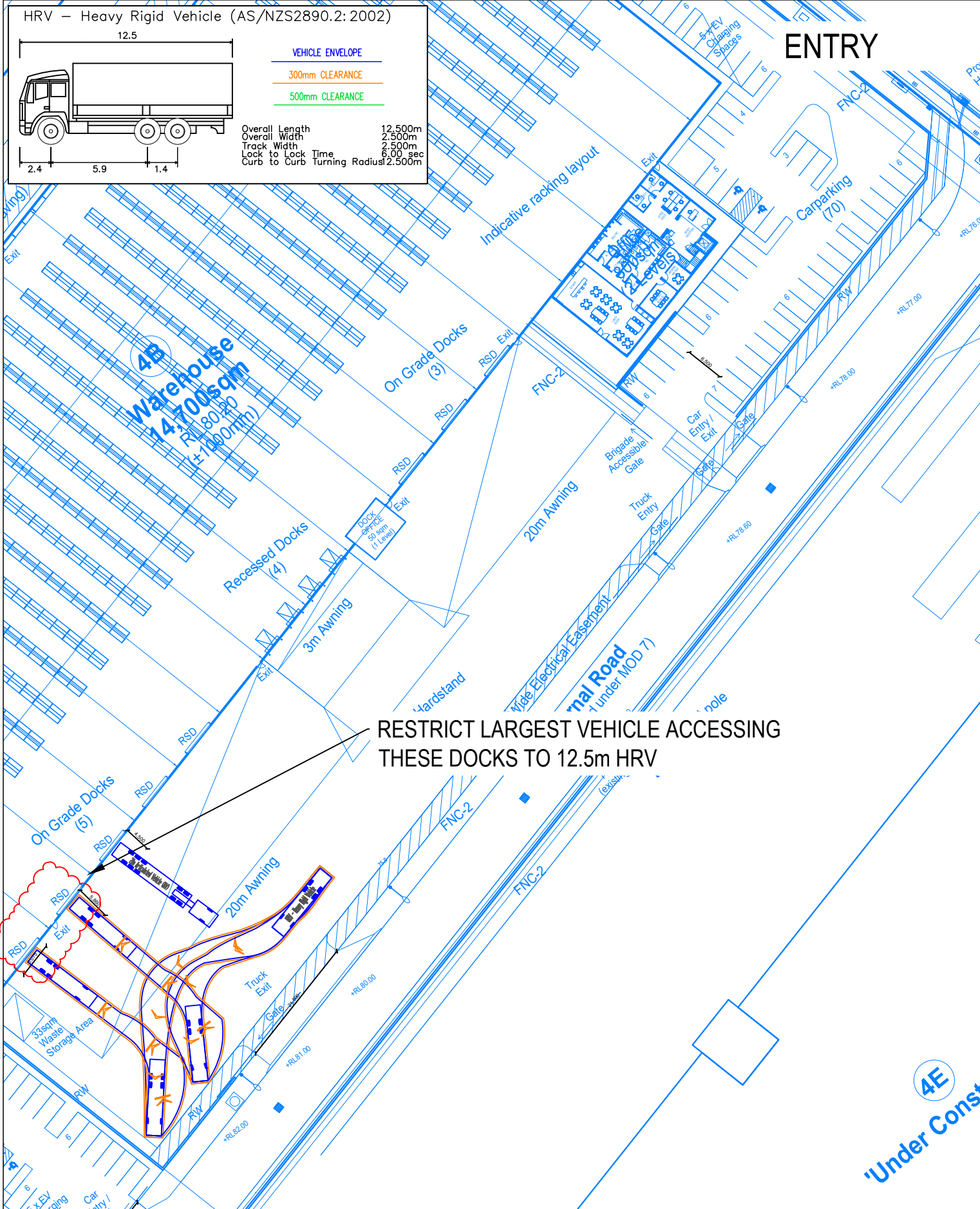
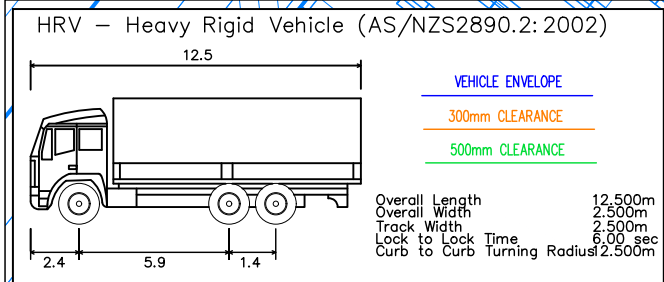


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	APPROVED BY A. RASOULI	DATE 19.09.2022	PROJECT 2090	20m AV - LOT 4B		
	SCALE 1:800	NTS	Oakdale West Estate, Kemps Creek	FILE NAME AG2090-01-v05.dwg	SHEET AG11	



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Swept path assessments completed at 10 km/h and 300mm clearance.
Design vehicle: 26m B-double Check Vehicle: -

DESIGNED Jasmine Wong	PAPER SIZE A3	CLIENT Goodman	DOCUMENT INFORMATION DESIGN REVIEW 20m AV - LOT 4A		 Suite 17.02, Level 17, 1 Castlereagh St Sydney NSW 2000 info@asongroup.com.au
APPROVED BY A. RASOULI	DATE 19.09.2022	PROJECT 2090			
SCALE 1:800	NTS	Oakdale West Estate, Kemps Creek	FILE NAME AG2090-01-v05.dwg	SHEET AG12	



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		APPROVED BY A. RASOULI	DATE 19.09.2022	PROJECT 2090			
		SCALE 1:800	NTS	Oakdale West Estate, Kemps Creek		FILE NAME AG2090-01-v05.dwg	SHEET AG13

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

12.5

VEHICLE ENVELOPE

300mm CLEARANCE

500mm CLEARANCE

Overall Length
Overall Width
Track Width
Lock to Lock Time
Curb to Curb Turning Radius

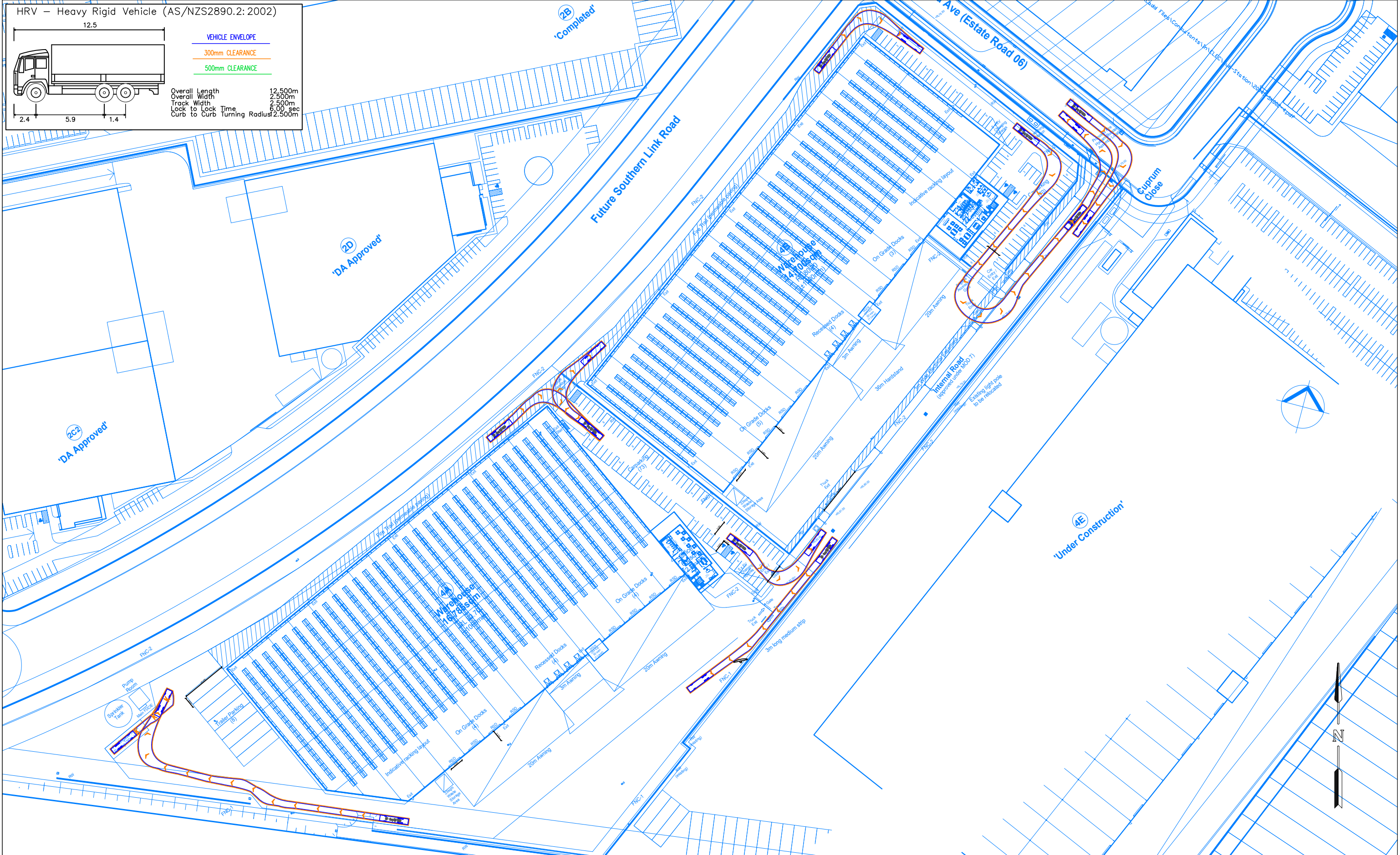
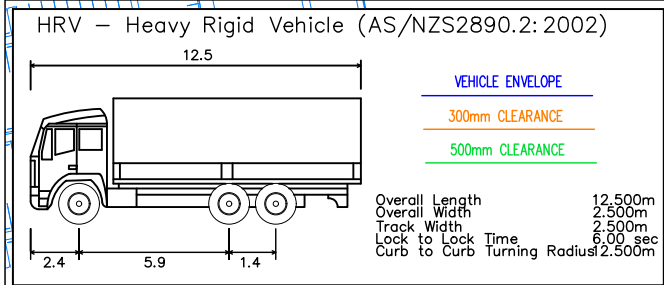
12.500m
2.500m
2.500m
6.00 sec
12.500m

AMEND KERB TO ACCOMMODATE FIRE TRUCK SWEPT PATH

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		APPROVED BY A. RASOULI	DATE 19.09.2022	PROJECT 2090	DESIGN REVIEW	
		SCALE 1:1500	NTS	Oakdale West Estate, Kemps Creek	FIRE TRUCK SWEPT PATHS - ANTI CLOCKWISE	
					FILE NAME AG2090-01-v05.dwg	SHEET AG15

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PLOT DATE: 19/09/2022 5:13:47 PM | CAD REFERENCE: C:\Users\Jasmine Wong\OneDrive - Ason Group\Documents\project\2090 - OWE Lot 4a And 4b\AG2090-01-v05.dwg | Jasmine Wong |



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Swept path assessments completed at 10 km/h and 300mm clearance.
Design vehicle: 26m B-double Check Vehicle: -

DESIGNED

Jasmine Wong

PAPER SIZE

A3

CLIENT

Goodman

DOCUMENT INFORMATION

DESIGN REVIEW

FIRE TRUCK SWEEP PATHS - CLOCKWISE

FILE NAME

AG2090-01-v05.dwg

SHEET

AG16

APPROVED BY

A. RASOULI

DATE

19.09.2022

PROJECT

2090

Oakdale West Estate, Kemps Creek

SCALE

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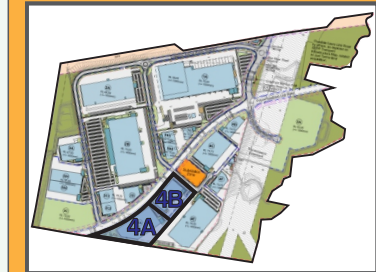
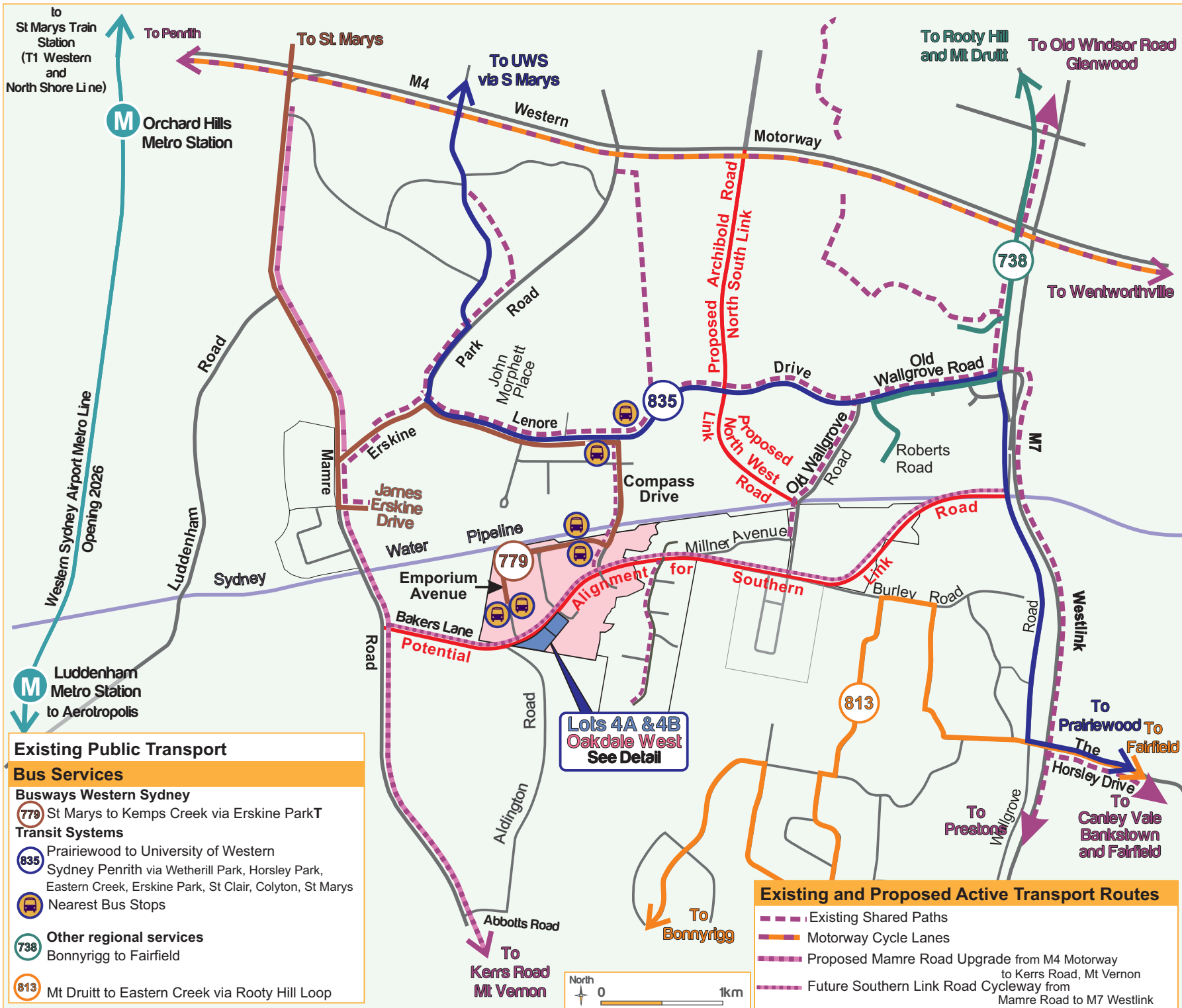
NTS

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Appendix C. Transport Access Guide (TAG)



Buildings 4A and 4B Detail

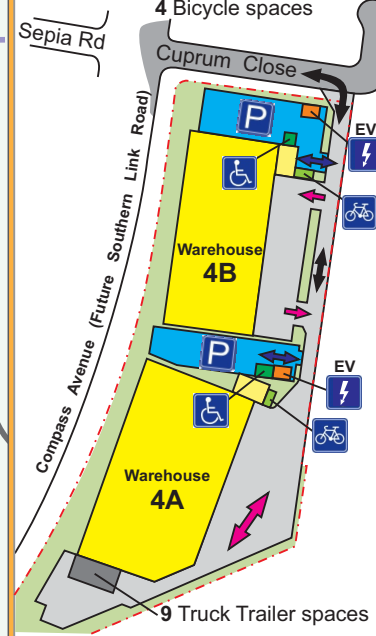
Access

Main Combined Entry

Car Entry

Truck Entry

Warehouse 4B: 74 Car spaces including 2 Accessible spaces and 5 EV Charging spaces, 4 Bicycle spaces



Warehouse 4A: 88 Car spaces including 2 Accessible spaces and 5 EV Charging spaces, 4 Bicycle spaces

Warehouse 4B: 74 Car spaces including 2 Accessible spaces and 5 EV Charging spaces, 4 Bicycle spaces

9 Truck Trailer spaces

August 2022

Appendix D. Sample Travel Mode Questionnaire

Instructions for Surveyor(s)

- The Survey Form (over page) should be completed by EVERY PERSON attending the site on a particular day.
- This survey should be completed SEPARATELY for EACH TRIP undertaken

Travel Mode Questionnaire Survey Form

Date:

Approximate Time:

Q1. Are you one of the following?

- | | |
|--|--|
| <input type="checkbox"/> Office staff | <input type="checkbox"/> Company driver / sub-contractor |
| <input type="checkbox"/> Courier / office delivery | <input type="checkbox"/> Warehouse ground staff |
| <input type="checkbox"/> Casual contractor | <input type="checkbox"/> Other (Please specify). |

Q2. How did you travel to / from the site today?

- | | |
|---------------------------------------|---|
| <input type="checkbox"/> Walked only | <input type="checkbox"/> Car share vehicle |
| <input type="checkbox"/> Bicycle only | <input type="checkbox"/> Motorcycle / scooter |
| <input type="checkbox"/> Train | <input type="checkbox"/> Car (as passenger) |
| <input type="checkbox"/> Bus | <input type="checkbox"/> Car (as driver) |
| <input type="checkbox"/> Taxi | <input type="checkbox"/> Other (Please specify) |

Q3. If you drove to the site, where did you park?

- ☐ Not applicable – did not drive
- ☐ On-site car park
- ☐ On-site within truck hardstand
- ☐ On-street
- ☐ In another nearby off-street car park
- ☐ Other (Please specify)

Q4. What is your Residential Postcode?