



Horsley Drive Business Park, Buildings 2 & 3

State Significant /Development Application (SSD 17161650)

Wetherill Park

4/05/2022

P1738r01



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contents

Glossary

1	Introduction	1
1.1	Overview	1
1.2	Secretary Environmental Assessment Requirements	1
1.3	Key References	2
2	Existing Approvals	4
2.1	Subject site	4
2.2	Existing Site Approval	5
3	Existing Conditions	7
3.1	Road Hierarchy	7
3.2	Heavy Vehicle Access	9
3.3	The Horsley Drive Upgrade	10
3.4	Active and Public Transport	11
3.5	Travel Mode Share	13
3.6	Crash History	14
4	The Proposal	16
4.1	The Proposal	16
5	Parking Requirements	18
5.1	Car Parking	18
5.2	Accessible Parking	18
5.3	Bicycle Parking	19
6	Traffic Impacts	20
6.1	Traffic Generation	20
6.2	Heavy Vehicle Generation	21
7	Preliminary Construction Traffic Management Plan	22
7.1	Introduction	22
7.2	Potential Haulage Routes	22
7.1	Proposed Working Hours	22
7.2	Construction Traffic Generation	23
7.3	Construction Mitigation Measures	23
8	Design Review	24
8.1	Relevant Design Standards	24
8.2	Design Vehicle	24
8.3	Vehicle Access & Internal Circulation	24
9	Summary and Conclusions	26

9.1	Summary	26
9.2	Conclusions	26

contents continued

Figures

Figure 1: Site Location	4
Figure 2: Road Hierarchy	7
Figure 3: TfNSW RAV Approved 25/26 m B-double Vehicle Routes	9
Figure 4: The Horsley Drive Upgrade- Concept Design	10
Figure 5: Existing Public and Active Transport Network	12
Figure 6: Destination Zone	13
Figure 7: Travel Mode Distribution.....	14
Figure 8: Crash Locations	15
Figure 9: Proposed Site Plan	17
Figure 11: Haulage Routes	22

Tables

Table 1: DPE Traffic & Transport SEARs - SSD-1716 1650.....	1
Table 2: Key Road Network	7
Table 3: Bus Services	11
Table 4: Journey to Work	13
Table 5: Crash Typology	15
Table 6: Approved Parking Rates.....	18
Table 7: Accessible Parking Requirement	18
Table 8: Buildings 1 & 2 Traffic Generation	20
Table 9: Warehouse Traffic Generation Comparison	20
Table 10: Intersection Performance	21

APPENDICES

Appendix A.

Glossary

Acronym	Description
AGRD	Austroads Guide to Road Design
AGTM	Austroads Guide to Traffic Management
AVD	Average Vehicle Delay
CC	Construction Certificate
Council	Fairfield City Council
DA	Development Application
DCP	Development Control Plan
DOS	Degree of Saturation
DPE	Department of Planning and Environment
FSR	Floor space ratio
GFA	Gross Floor Area
HRV	Heavy Rigid Vehicle (as defined by AS2890.2:2018)
HDBP	Horsley Drive Business Park
IPT Guidelines	Transport for NSW Integrated Public Transport Service Planning Guidelines
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)
NHVR	National Heavy Vehicle Regulator
OC	Occupation Certificate
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
TIA	Transport Impact Assessment
TIS	Transport Impact Statement
veh/hr	Vehicle movements per hour (1 vehicle in & out = 2 movements)

1 Introduction

1.1 Overview

Ason Group has been engaged by Charter Hall to prepare a Transport Assessment (TA) supporting the State Significant Development Application (SSD-1716 1650). The application relates to development of Warehouse Buildings 2 and 3 (the Proposal) of the Horsley Drive Business Park (HDBP) Stage 2, located at Lots 17 – 22 DP 13961 and Lot 2 DP 1212087.

HDBP Stage 2 is subject to a Concept Plan approval (reference: SSD-7664-Mod-1). Detailed consent was provided for Building 1 on the southern portion of the HDBP, in August 2020 (reference: SSD-10404). This application therefore refers to the detailed design for Buildings 2 and 3 of the approved Concept Plan.

The Site is located within the Fairfield Council (LGA) and is therefore subject to that Council's controls. Under the Fairfield Local Environmental Plan 2013 (LEP), the land is zoned *IN1 – General Industrial*.

1.2 Secretary Environmental Assessment Requirements

Secretary Environmental Assessment Requirements (SEARS) for the SSD-17161650 Proposal was issued by the NSW Department of Planning and Environment (DPE) on 27 April 2021.

In this regard, the SEARs appropriate for Traffic and Transport matters is reproduced in **Table 1**, which also includes reference to the relevant sections of the TA where each requirement is addressed.

TABLE 1: DPE TRAFFIC & TRANSPORT SEARS - SSD-1716 1650

Item No.	Description	Relevant Section of TA
1	Details of all traffic types and volumes likely to be generated during construction and operation, including a description of: - Key access / haul routes - Employee shift change pattern - 24-hour profile of truck generation	Details of the traffic types and vehicular traffic generation of the Proposal projected are outlined in Section 6.1 and 6.2. Construction haul routes are discussed in Section 7.2.
2	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	An assessment of the predicted impacts has been undertaken having regard for the projected traffic volumes to the surrounding road network. Previous studies showed that the adjoining road network would exhibit minimal increases in delay and similar LOS with an equivalent level of traffic added. In this regard, SIDRA intersection modelling is deemed not warranted as the proposal is consistent with the Concept Plan and it is therefore expected the outcomes would be similar. Refer to Section 6 for more detail.
3	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 in the street network	Section 7 provides high level preliminary construction traffic management principles. These will be developed further and to be implemented as part of the future Construction Traffic Management Plan (CTMP). It is anticipated that this would be prepared post-approval in response to a standard Condition of Consent.

4	Details and plans of any proposed internal road network, loading dock servicing and provisions, on-site parking provisions, and sufficient pedestrian and cyclist facilities, in accordance with the relevant Australian Standards and the requirements set out in SSD 7664	Refer to plan set for further detail. A reduced site plan is also provided in Section 4.
5	Identification of any dangerous goods likely to be transported on arterial and local roads to/ from the site and, if necessary, the preparation of an incident management strategy	It is understood that there are minimal dangerous goods transported to / from the Site. Refer to wider Environmental Impact Statement package for more information.
6	Details of the largest vehicle anticipated to access and move within the site, including swept path analysis and swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site	26.0m B-Doubles are expected to be the largest vehicles for the proposed development including the hardstand areas. Swept path analysis of the design vehicles are provided in Appendix B.

1.3 Key References

In preparing this TA, a series of key strategic, design and planning documents have informed the assessment of the traffic and transport related elements of the project. These documents include:

- Fairfield Local Environmental Plan 2013 (LEP)
- Fairfield City Wide Development Control Plan 2013 (DCP)
- State Environmental Planning Policy (Western Sydney Parklands) 2009 (SEPP WSP).
- State Environmental Planning Policy (Western Sydney Employment Area) 2009 (SEPP WSEA).
- Greater Sydney Commission (GSC), Greater Sydney Region Plan, March 2018;
- GSC, Western City District Plan, March 2018;
- TfNSW, Future Transport Strategy 2056, March 2018; and
- TfNSW, Future Transport – Greater Sydney Services and Infrastructure Plan, March 2018;

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

- Roads and Maritime Services, Guide to Traffic Generating Developments (RMS Guide)
- RMS Guide to Traffic Generating Developments: Updated Traffic Surveys (RMS TDT2013/04a).
- 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)
- Austroads, Guidelines for Planning and Assessment of Road Freight Access in Industrial Areas;

A number of other background reports have also been referenced to provide more detailed information in regard to future traffic flows through the local road network providing access to the Site as well as the existing Site approvals. These reports include:

- Ason Group, Horsley Drive Business Park Stage 2, Traffic Impact Assessment Report 0300r01v2 (Ason 2016 Report);

- Ason Group, Horsley Drive Business Park Stage 2 MOD, Transport Assessment Report June 2020 1223r02v4 (Ason 2020 Report);
- TRAFFIX, Horsley Drive Business Park Traffic Impacts Assessment for a Part 4 Concept Plan Application May 2012 (TRAFFIX Report);
- Road Delay Solutions, The Horsley Drive Business Park Revised Structure Plan, Traffic Report December 2014 (Reference: 20140209); and
- Road Delay Solutions Proposed Lot 2, Proposed Warehouse/Industrial Facilities, The Horsley Drive Business Park, Traffic Impact Report, April 2016 (Reference: 20160263).
- SMEC The Horsley Drive Upgrade Traffic Impact Assessment Report June 2017 (SMEC Report).

2 Existing Approvals

2.1 Subject site

HDBP is generally located to the northwest of The Horsley Drive signalised intersection with Cowpasture Road. The subject site forms the northern portion of HDBP Stage 2, as shown by **Figure 1**.

The north and west of the subject site is bound by farmland. The eastern boundary is formed by Trivett Street, with industrial developments beyond that. To the south is the balance of the broader HDBP, with the Building 1 construction site directly to the south.

Vehicle access to subject Site is currently provided via the Building 1 construction site. Once complete, there will be an estate road providing access to the wider road network via a new roundabout intersection with Cowpasture Road and Trivett Street. This is consistent with the layout of the completed HDBP Stage 1 development.



Figure 1: Site Location

2.2 Existing Site Approval

2.2.1 HDBP Stage 2 SSD-7664

Approved Development

The HDBP Stage 2 was previously granted approval on 9 November 2017 (SSD-7664), comprising:

- 87,960 m² total building area, which includes:
 - 85,460 m² of warehouse GFA across 4 separate warehouse buildings;
 - 2,500 m² ancillary office space GFA across 4 separate warehouse lots;
- Hardstand access and manoeuvring areas;
- On-site car parking for 385 cars; and
- A new access road from Cowpasture Road.

Approved Traffic Generation

With reference to the previous approval, and the Ason 2016 Report forecast that the HDBP Stage 2 would, once fully operational, generate:

- 138 vehicle movements per hour (veh/hr) in the AM peak hour
- 139 veh/hr in the PM peak hour
- 1,863 vehicle movements per day.

2.2.2 SSD-7664 MOD-1

Approved Development

Subsequently, an application (SSD 7664 MOD-1) was lodged to modify the Concept Plan and approved in August 2020. The Ason 2020 Report was prepared to support SSD 7664 MOD-1.

In summary, the Concept Plan was modified as follows:

- Changes in site layout to provide for a total of 76,293 m² GFA which consists of 3 industrial warehouse buildings including:
 - For Building 1, a specialist Coles Customer Fulfilment Centre (CFC) with 24 hour/day, seven day/week operation with 44,713 m² of warehouse and office GFA (assessed and approved under SSD 10404). The CFC is currently being constructed and will be operated by Ocado; and
 - For Buildings 2 and 3, a combined total area of 31,580 m² warehouse GFA on the Site's northernmost Lots which consists of:
 - 16,640 m² of Warehouse 1 GFA
 - 14,940 m² of Warehouse 2 GFA
- Provision of an access roundabout into the Site with Cowpasture Road and Trivett Street; as well as an internal estate road for Lot access.

Approved Traffic Generation

With reference to the existing approval, and the Ason 2020 Report forecast that the HDBP Stage 2 would, once fully operational, generate:

- 179 veh/hr in the AM peak hour
- 217 veh/hr in the PM peak hour
- 3,225 vehicle movements per day

More specifically, the Ason 2020 Report forecast that the Warehouses 1 and 2 (which are the subject of this TA), once fully operational, would generate

- 49 veh/hr in the AM peak hour
- 50 veh/hr in the PM peak hour
- 663 vehicle movements per day

This level of peak hour traffic generation was inherently endorsed by TfNSW as part of the SSD-7664-Mod-1 assessment. As such, these trips set the traffic generation threshold for which future development of the site should be assessed against.

3 Existing Conditions

3.1 Road Hierarchy

The road hierarchy in the vicinity of the site is also shown in **Figure 2** below, with a description of key roads in the locality provided in **Table 2** below.

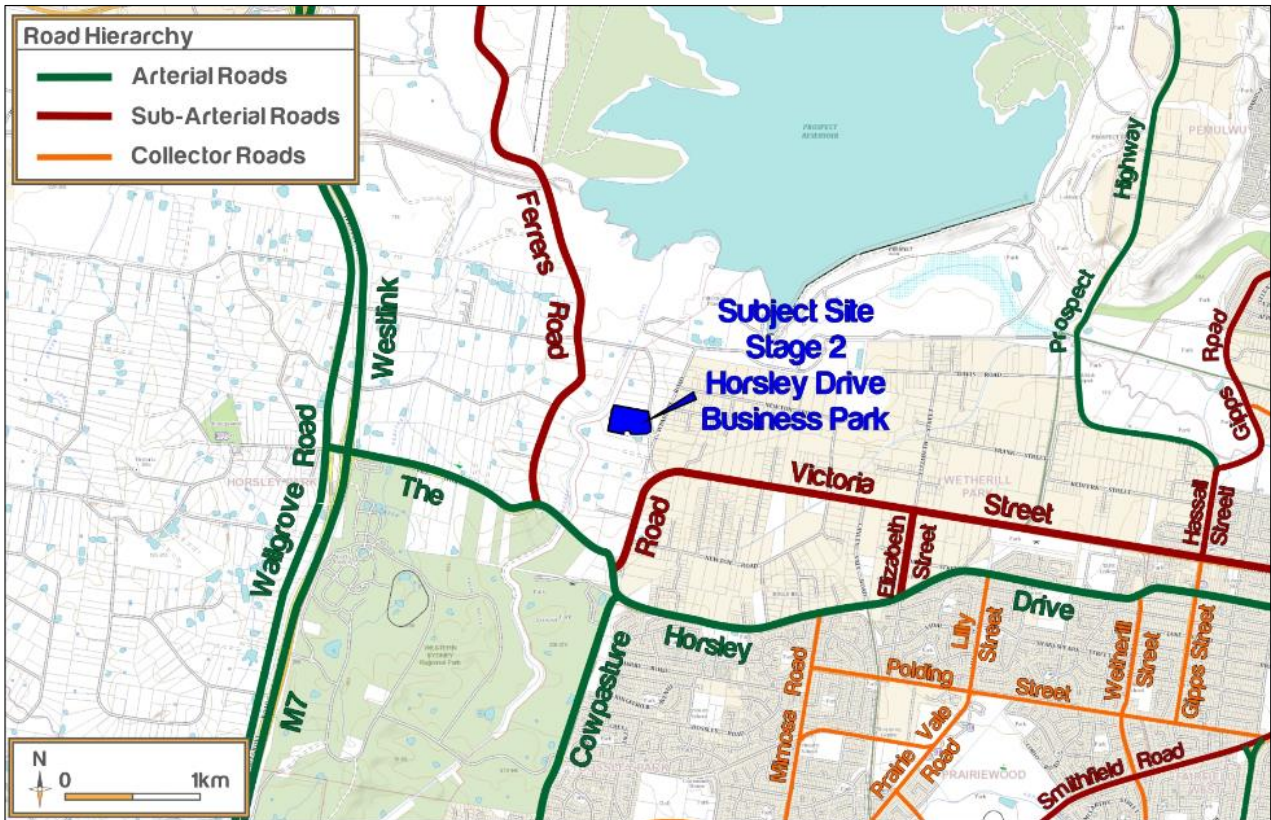
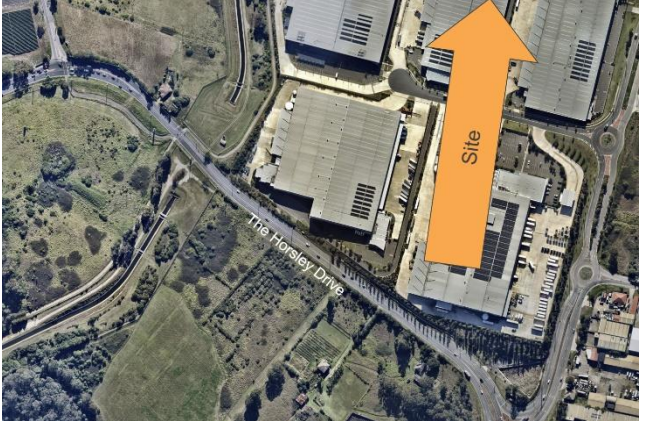


Figure 2: Road Hierarchy

TABLE 2: KEY ROAD NETWORK		
Road	Description	Layout
M7 Motorway	Type: Arterial Road Lanes: Two per direction	

The Horsley Drive	Type: State Road Lanes: Two per direction	
Wallgrove Road	Type: Classified Road Lanes: One-two per direction	
Cowpasture Road	Type: State Road (south of Cowpasture Rd / The Horsley Dr) Collector Road (north of Cowpasture Rd / The Horsley Dr) Lanes: Two per direction	
Newtown Road	Type: Local Road Lanes: One per direction	

Ferrers Road	Type: Regional Road Lanes: One per direction	
Victoria Street	Type: Regional Road Lanes: Two per direction	

3.2 Heavy Vehicle Access

TfNSW Restricted Access Vehicle (RAV) details of approved routes for 25/26m B-doubles can be found in **Figure 3**.

All heavy vehicles would enter and exit the Site via the approved TfNSW routes. These routes generally include links along Cowpasture Road and The Horsley Drive which provide links to the broader network such as the Western Motorway M7 – to the west of the Site.

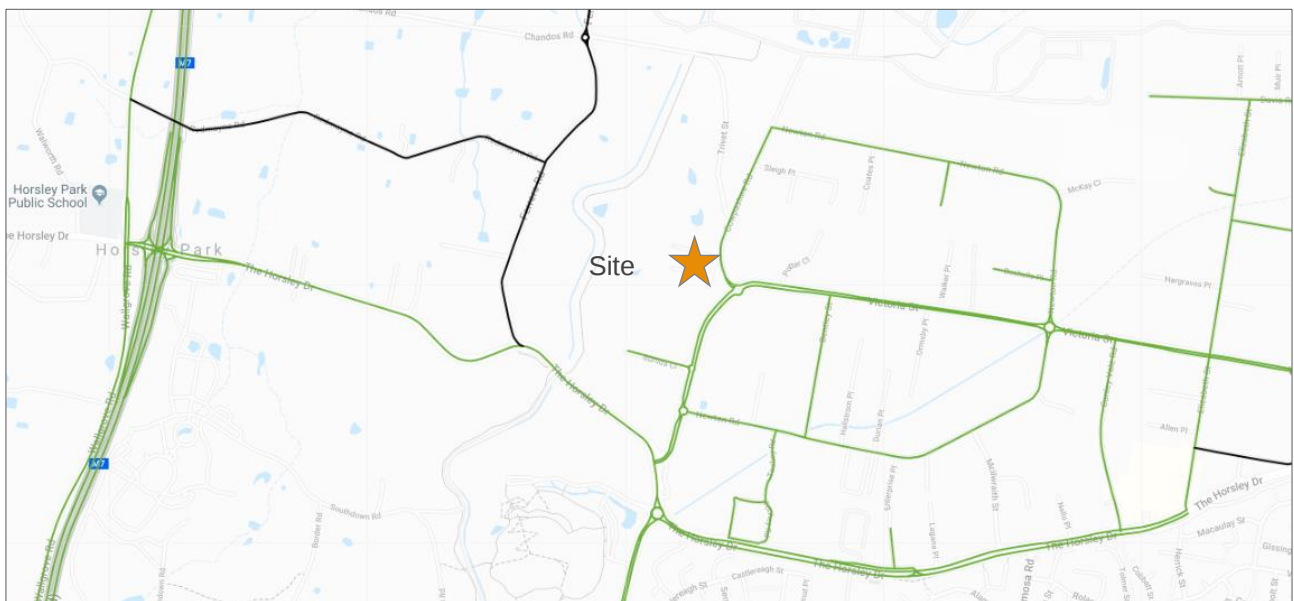


Figure 3: TfNSW RAV Approved 25/26 m B-double Vehicle Routes

3.3 The Horsley Drive Upgrade

The NSW Government is well advanced in the planning stages for an upgrade of The Horsley Drive between Cowpasture Road and the M7 Motorway (the HD Upgrade¹).

The proposed upgrades provide for an improved east-west connection from the Western Sydney Employment Area (WSEA) and the M7 Motorway to the Smithfield Wetherill Park Industrial Area, within which lies the Site and the HDBP.

In summary, the proposed upgrade includes:

- Widening The Horsley Drive to 4 lanes (2 lanes per direction) with a central median capable of accommodated 2 additional lanes (1 additional lane per direction, to a total of 3 per direction) in the future;
- An extra eastbound lane from west of Ferrers Road to Cowpasture Road;
- A pedestrian and cyclist shared path along The Horsley Drive, connecting to the Western Sydney Parklands cycleway;
- Upgrade of the Ferrers Road intersection and Cowpasture Road north intersection;
- Upgrade of the roundabout at The Horsley Drive and Cowpasture Road (southern section) to a signalised intersection to improve traffic flow;

Figure 4 showcases the proposed alignment and upgrades of The Horsley Drive.

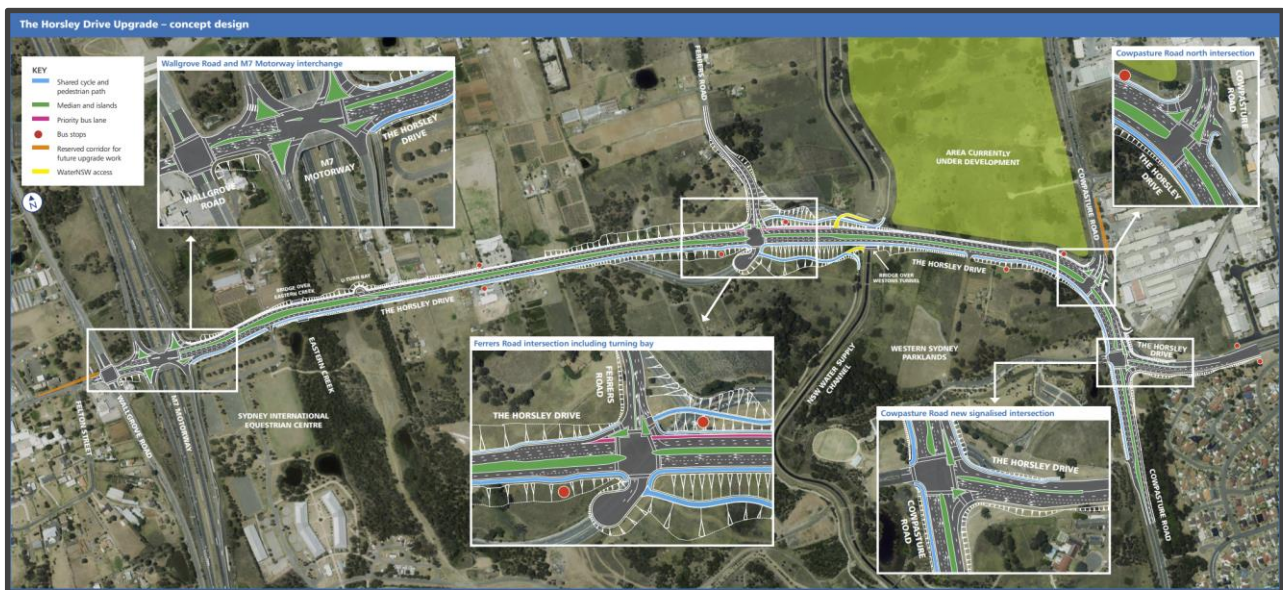


Figure 4: The Horsley Drive Upgrade- Concept Design

Source: TfNSW

Notwithstanding the above, it is noted that land acquisition within the Western Sydney Parklands is currently required to proceed with the detailed design and construction.

¹ <https://roads-waterways.transport.nsw.gov.au/projects/the-horsley-drive-upgrade/index.html>

It is Ason Group's current understanding the initial phases of the upgrade will be complete by 2026.

3.4 Active and Public Transport

3.4.1 Bus Services

Existing key Public Transport services within accessibility of the Site are shown in **Figure 5**.

Having regard to the standard bus travel, the IPT Guidelines state that bus services influence the travel mode choices of sites within 400 metres (approximately 5 minutes' walk) of a bus stop.

The closest bus stop is located to the east of the Site as shown in **Figure 5**. Existing bus services and frequencies are summarised in **Table 3**.

TABLE 3: BUS SERVICES			
Service No.	Route	AM Peak	PM Peak
813	Bonnyrigg to Fairfield	1	2
835	UWS to Prairiewood	5	4

3.4.2 Active Transport Network

An off-road shared cycle path is provided to the west of the Site and provides links to Homebush Bay, the M7 Cycleway, Abbotsbury and Fairfield.

Pedestrian footpaths are provided along sections of Cowpasture Road, Victoria Street and The Horsley Drive.

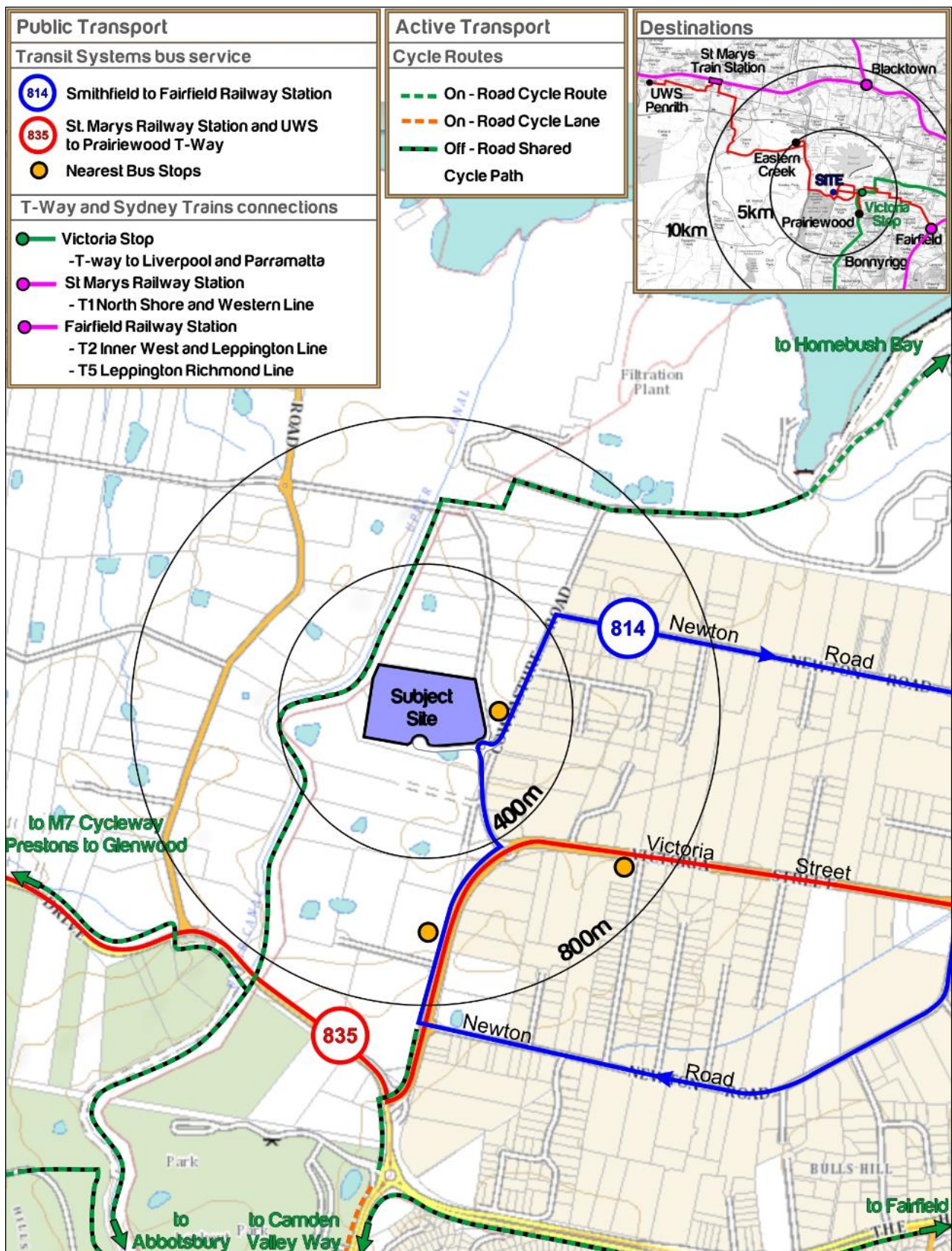


Figure 5: Existing Public and Active Transport Network

3.5 Travel Mode Share

Journey-to-Work (JTW) 2016 data from the Australian Bureau of Statistics (ABS) of people travelling to work in Horsley Park Destination Zone (DZN: 115184209) has been analysed to ascertain the plausible travel origins of workers to the Proposal.

The location of the zone relative to the surrounding context is presented in **Figure 6**.

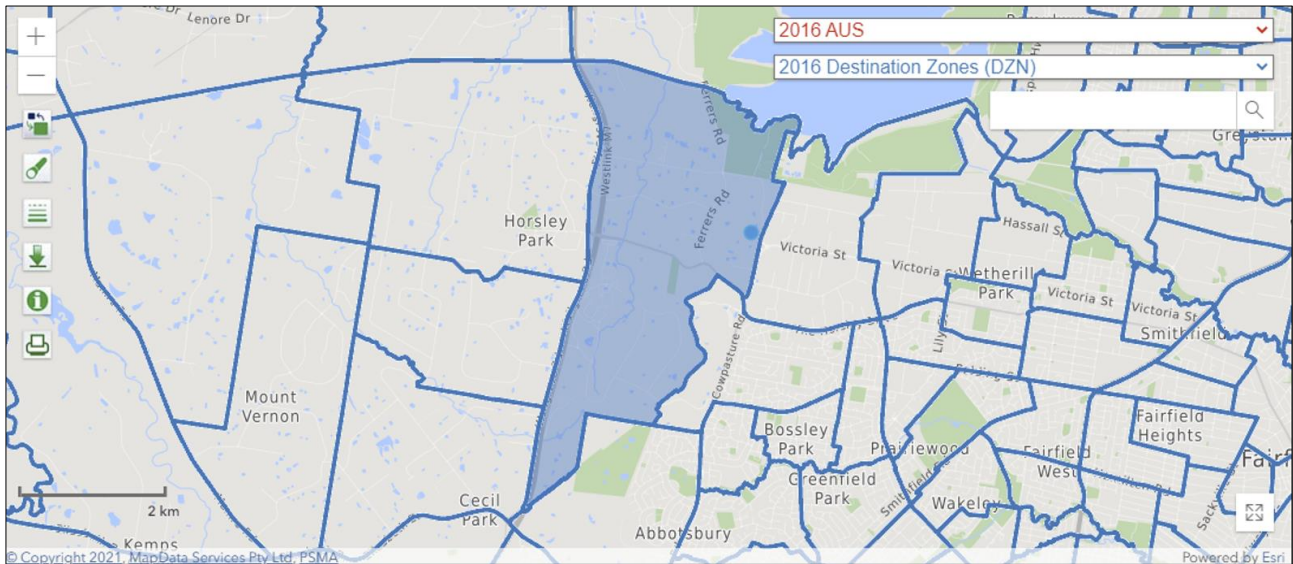


Figure 6: Destination Zone

The results of the travel mode summary are presented in **Table 4**.

TABLE 4: JOURNEY TO WORK			
From	To	No. of Trips	%
Central Coast	Horsley Park	4	4
Illawarra		5	6
Sydney – Baulkham Hills and Hawkesbury		29	32
Sydney – Blacktown		37	41
Sydney – City and Inner South		5	6
Sydney – Inner South West		10	3

As demonstrated, for workers travelling to the area:

- A significant proportion travel from the Sydney – Blacktown statistical area represents 41%;
- The second most popular area is the Sydney – Baulkham Hills and Hawkesbury statistical area at 32%;
- A minor proportion of workers travel from the Sydney – Inner South West and Central Coast statistical area at 3% and 4%.

Furthermore, the travel modes of the workers travelling to Horsley Park is shown in **Figure 7**.

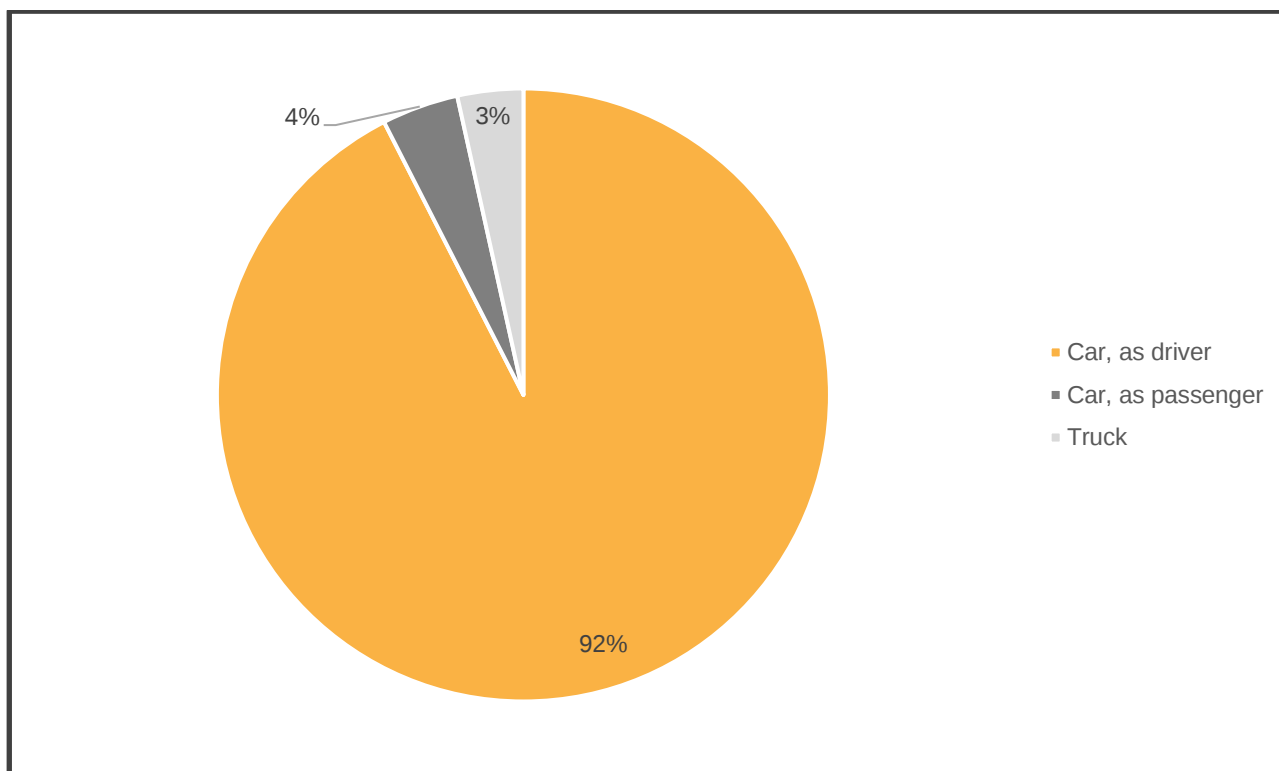


Figure 7: Travel Mode Distribution

Having regard for the above, the data indicates that approximately 97% of employees travel to work via private vehicle (driver or passenger) and 3% travelling to work via heavy vehicles, with minimal usage of public transport or non-vehicle alternatives.

3.6 Crash History

A review of *TfNSW Centre for Road Safety Database* has been undertaken for the most recent five-year period between 2015 – 2021 of the key roads within immediate proximity to the Site.

Locations of the crashes are illustrated in **Figure 8** and the details are summarised in **Table 5**.

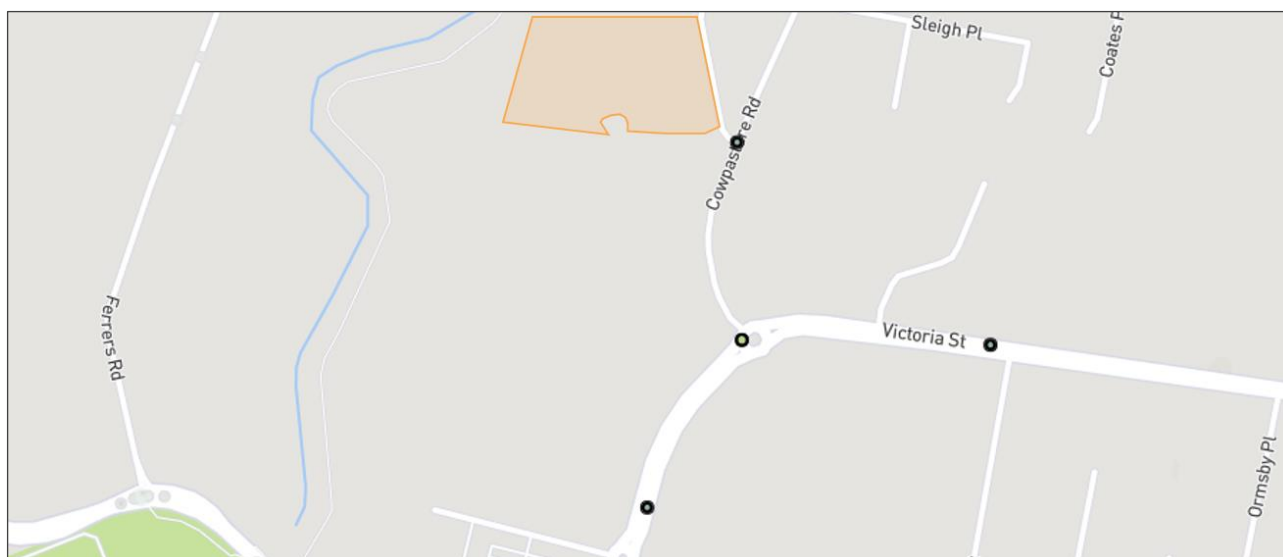


Figure 8: Crash Locations

TABLE 5: CRASH TYPOLOGY				
Reporting Year	Location	RUM Description	Lighting	Injury
2015	Cowpasture Road / Trivet Street	13 – Right near	Darkness	2
	Cowpasture Road / Victoria Street	88 – Out of control on bend	Daylight	-
2016	Victoria Street	30 – Rear end	Daylight	2
2017	Cowpasture Road	71 – Off road left into object	Darkness	1
2019	Cowpasture Road / Victoria Street	88 – Out of control on bend	Dusk	-

From this review of the crash history, 2 crashes were recorded at the Cowpasture Road / Victoria Street roundabout – the highest over the five years.

Notwithstanding, there does not appear to be any consistent themes or indication of any underlying adverse safety issues on the surrounding road network.

Furthermore, it is noted that the Cowpasture Road / Trivett Street intersection is to be upgraded to a roundabout in the future, improving network capacity and reducing delays which will have safety benefits for the local road network.

4 The Proposal

4.1 The Proposal

This application generally seeks approval for a proposed warehouse facility comprising of Warehouse 2 & 3 (Buildings 2 & 3). In summary, the Proposal provides for the following:

- A total building area of 30,270 m² with a total GFA of 25,572 m² including:
 - Warehouse 2 (Building 2) comprising:
 - 14,803 m² of Warehouse GFA
 - 2,177 m² staging area
 - 373 m² of Office GFA
 - 43 m² of Dock Office GFA
 - 49 m² amenity area
 - 72 car parking spaces
- Warehouse 3 (Building 3) comprising:
 - 9,804 m² of Warehouse GFA
 - 2,460 m² staging area
 - 506 m² of Office GFA
 - 43 m² of Dock Office GFA
 - 96 m² amenity area
- 48 car parking spaces.

A reduced copy of the proposed site plan prepared by Watch This Space Design is provided in **Figure 9**.

5 Parking Requirements

5.1 Car Parking

Reference is made to the parking rates adopted within the approved Concept Plan for the HDBP Stage 2 – refer Condition B1 of the SSD 7664 consent. In this regard, the approved parking rates are outlined as follows:

- 1 space for every 300 m² of warehouse GFA
- 1 space for every 40 m² for ancillary office GFA

Accordingly, the required parking based on the above rates are summarised in **Table 6**. As is shown, the development is required to provide 109 spaces; with the Proposal exceeding requirements with 120 spaces provided.

TABLE 6: APPROVED PARKING RATES

Building	Land Use	Yield (m ²)	Parking Requirement	Provision
Warehouse 2	Warehouse	14,803	50	72
	Office	416	11	
Warehouse 3	Warehouse	9,804	33	48
	Office	549	14	
Total			108	120

5.2 Accessible Parking

The Concept Plan approval refers to the *Disability (Access to Premises – Buildings) Standards 2010*, *Building Code of Australia* to assess the requirement for accessible parking spaces. In this regard, the accessible parking rate is as follows:

- 1 space for every 100 car parking spaces or part thereof

Accordingly, the required parking based on the above rates are summarised in **Table 7**.

TABLE 7: ACCESSIBLE PARKING REQUIREMENT

Building	Parking Provision	Accessible Parking Requirement	Accessible Parking Provision
Warehouse 2	72	1	1
Warehouse 3	48	1	1
Total		2	2

With regard to the above table, the accessible parking requirement is a total 1 space. In response, Warehouses 1 & 2 provide a total of 4 accessible parking spaces at 2 for each warehouse and hence meeting the requirement.

5.3 Bicycle Parking

It is acknowledged that the Fairfield DCP does not provide a specific rate for bicycle parking requirement. However it does mention the following:

“To encourage the use of bicycles, new developments should incorporate appropriate bicycle parking/storage facilities.”

Therefore, the current Proposal provides for 12 cycle spaces outside the office for Warehouse 2 and 11 spaces outside the office of Warehouse 3.

6 Traffic Impacts

6.1 Traffic Generation

6.1.1 Buildings 2 & 3

To determine the traffic generation potential of the proposed Warehouse Buildings 2 & 3, reference is made to the traffic generation rates adopted under the approved HDBP Stages 1 & 2 (SSD 7564 and SSD 7664) and subsequent approved MOD (SSD-7664 MOD-1). In this regard, the relevant rates are as follows:

- AM Peak hour: 0.156 veh/hr per 100 m² GFA
- PM Peak hour: 0.157 veh/hr per 100 m² GFA
- Daily: 2.100 vehicle movements per 100 m² GFA

Application of the above traffic generation rates to the specifications of the Proposal results in the traffic generation during each of the critical times outlined in **Table 8**. The forecast breakdown of light and commercial vehicle movements is shown in **Appendix A**; it is noted that there are minor discrepancies between the peak hour volumes reported in Table 8 and those reported in Appendix A further to minor rounding changes.

TABLE 8: BUILDINGS 1 & 2 TRAFFIC GENERATION				
Site	Yield (m ²)	AM Peak	PM Peak	Daily
Warehouse 2	15,219	24	24	320
Warehouse 3	10,269	16	16	216
Total	25,523	40	40	536

The above traffic generation potential of Buildings 2 & 3 are summarised against the approved traffic generation of the Warehouses under the SSD-7664-MOD-1 in **Table 9**.

TABLE 9: WAREHOUSE TRAFFIC GENERATION COMPARISON			
Application	AM Peak	PM Peak	Daily
Approved SSD-7664 MOD-1	49	50	663
Proposal	40	40	536
<i>Difference</i>	-9	-10	-127

As is evident from the above, the traffic generation of the Proposal is less than the permissible threshold set by the Ason 2020 Report, which supported the approved Concept Plan. It should be recognised that the purpose of this SSD is to identify the detailed design of the warehouses, with the traffic impacts assessed as part of the approved Concept Plan. As such, it is concluded that the Proposal is consistent with the approved Concept Plan, and is acceptable.

Nevertheless, the operation of the key intersections in the vicinity of the Site, as reported by the approved Ason 2020 Report, is shown in **Table 10**.

TABLE 10: INTERSECRION PERFORMANCE

Application	Control	Scenario	Period	DOS	AVD	LOS
The Horsley Dr x Cowpasture Rd (South)	Roundabout	Existing	AM	1.006	59.6	E
			PM	1.278	373.9	F
		With Dev*	AM	1.018	66.3	E
			PM	1.385	456.7	F
Cowpasture Rd x The Horsley Dr (North)	Signals	Existing	AM	1.030	43.9	D
			PM	0.969	51.7	D
		With Dev*	AM	1.057	48.3	D
			PM	0.988	56.5	D
The Horsley Dr x Ferrers Road	Signals	Existing	AM	1.235	62.3	E
			PM	1.432	48.3	D
		With Dev*	AM	1.270	67.7	E
			PM	1.433	49.1	D

*approved development

As is shown, the addition of traffic associated with the approved development is not anticipated to have a material impact on the operation of the intersections across the network, with minimal increase in delay and LOS staying consistent.

It is therefore concluded that the development is acceptable on traffic planning grounds as it represents a slight decrease over the level of development already assessed (and approved) for the purposes of the approved Concept Plan.

6.2 Heavy Vehicle Generation

Ason Group have undertaken numerous surveys of warehouse sites within Western Sydney industrial precincts. These surveys enable for a depiction of a typical traffic generation profile of Warehouse developments over a 24-hour period.

Reference to this database has been undertaken to determine the traffic generation profile which includes a heavy vehicle split. On this basis, the forecast breakdown of light and commercial vehicle traffic generation is shown in **Appendix A**.

7 Preliminary Construction Traffic Management Plan

7.1 Introduction

A detailed Construction Traffic Management Plan (CTMP) will be provided as part of detailed construction planning. For the purposes of this TA report, the following general principles for managing construction traffic have been assumed and provide an understanding of the likely traffic impacts during the construction period.

7.2 Potential Haulage Routes

The primary potential haulage routes to and from the Site would be via The Horsley Drive, Cowpasture Road and Victoria Street as shown in **Figure 10**.



Figure 10: Haulage Routes

7.1 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, and as per the Conditions of Consent associated with the Concept Plan approval, which are as follows:

- 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. This is contemplated under Condition B23 of the Concept Plan approval.

7.2 Construction 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. At this stage, it is anticipated that around 40 workers would be on-site at any one time.

The workforce arrival and departure periods (6.30-7.00AM and 6.00-6.30PM) represent the peak construction traffic generation periods which are typically off-peak hours.

Heavy vehicle traffic would mainly be generated by activities associated with the delivery of construction equipment and delivery of material for construction works. As the construction programme has yet to be finalised, a worst-case scenario for heavy vehicle movements per day required for the delivery of construction materials to the Site cannot be accurately determined.

However, at this stage, it is estimated that there would be a peak of 170 truck movements a day which are associated with the excavation phase of construction. These excavation truck movements occur all day between 7:00am to 6:00pm. A maximum peak of 17 truck movements per hour is expected (9 in movements and 8 out movements). This is a maximum that would only occur for the short duration of time when importing of fill is required.

This is of such low traffic volumes (about 1 heavy vehicle per 3.5 minutes) that it would have a negligible impact on the surrounding road network. Importantly, the construction traffic volumes are expected to be lower than the volumes anticipated for the SSD once it becomes operational (being 40 vehicle movements per hour).

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

7.3 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.
- A monitoring and communications strategy would be developed to monitor the effectiveness of the construction management; and to ensure that adequate information is within the community and assist the project team to deliver the traffic changes with minimal disruption to the road network.

8 Design Review

8.1 Relevant Design Standards

The Site's access, car park and service areas should be designed to comply with the following relevant Australian Standards:

- AS2890.1:2004 for Car parking areas;
- AS2890.2:2018 for Commercial vehicle loading areas;
- AS2890.3:2015 for Parking facilities Bicycle parking
- AS2890.6:2015 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, ensured via a suitable Condition of Consent.

8.2 Design Vehicle

Site access points and internal hardstand areas have been designed to cater for trucks up to 20m Articulated Vehicles given that this will be the most frequent vehicle to utilise the hardstand; with a check vehicle of a 26.0 metre B-Double adopted (noting that a low volumes of B-doubles are anticipated to service the Site).

8.3 Vehicle Access & Internal Circulation

All access driveways are generally designed and located in accordance with AS 2890.1:2004 and AS 2890.2:2018. Access to the light vehicle parking area is via minimum 6m wide driveways.

Of note, the proposed truck exit driveway for Warehouse 3 is provided in a location that is compliant with the controls of AS2890.2:2018 and Council's DCP; with the design of the Proposal providing for clear sightlines from the driveway to the roundabout intersection of the Access road with Cowpasture Road / Trivett Street. Further, it is noted that the modelling assessment detailed in Ason 2020 Report found that there would be no vehicles queuing at the intersection and, as such, vehicles entering the roundabout would not block the exit driveway.

Finally, as an exit only, the driveway would not impact vehicles entering the Access Road from the roundabout, and the operation of the roundabout will remain as previously assessed by the Ason 2020 Report.

Loading activities will be subject to the future tenant requirements, and it is anticipated that a Loading Dock Management Plan would be implemented via a suitable Condition of Consent prior to Occupation.

However, it is noted that a B-double uncoupling areas are to be provided, as required by AS 2890.2:2018, for vehicles to be manoeuvred as semi-trailers as required. Alternatively, B-doubles which will not be uncoupled, are expected to be side-loaded. As shown by **Appendix B**, side loading would require 3 docks per warehouse. This would require management of the docks accordingly.

As discussed in Section 6, Warehouse 2 is expected to generate 24 vehicle movements in the AM and PM hours. Heavy vehicles are expected to represent a maximum of 30% of this total (7 movements two-way, i.e. 3-4 trucks). These heavy vehicles will include rigid, semi-trailer and B-double vehicles. Therefore, it is

anticipated that the use of 3 docks for side loading of would not impact on the Site's ability to accommodate vehicles internally, noting that there are 9 other docks that could be utilised during this period.

The proposed heavy vehicle crossovers have been checked with swept paths of 26m B-double vehicles. All relevant internal circulation roads have been checked with a 26m B-Double vehicle. Details provided as part of Design Review attached in Appendix B.

9 Summary and Conclusions

9.1 Summary

Ason Group has been engaged by Charter Hall to prepare a Transport Assessment (TA) supporting the State Significant Development Application (SSD-1716 1650) for detailed design of Stage 2 (Buildings 2 & 3) of the Horsley Drive Business Park, Wetherill Park (the Site).

In summary, the key findings of the SSDA TA are as follows:

- The Proposal generally seeks development detailed approval for spec warehouse developments of Buildings 2 & 3 of the HDBP Stage 2. The Proposal will provide for a total of 25,572 m² of warehouse and office GFA.
- The Site is currently subject to an approved Concept Plan (SSD-7664 MOD-1), with the Proposal generally consistent with this Concept Plan approval. The Concept Plan assumed a total GFA 31,580 m² for Buildings 2 & 3.
- Based the approved Concept Plan parking rates, the development is required to provide 108 car parking spaces.
The Proposal provides for 120 parking spaces and therefore exceeds these requirements.
- Application of the approved traffic generation rates to the Proposal results in a traffic generation potential of 40 veh/hr and 40 veh/hr in the AM and PM Peak hours respectively. This traffic generation is traffic generation is less than the permissible threshold set by the Ason 2020 Report, which supported the approved Concept Plan under SSD-7664-MOD-1.
- It is therefore concluded that the development is acceptable on traffic planning grounds as it represents a slight decrease over the level of development assessed for the purposes of the approved Concept Plan.
- A high level preliminary construction traffic management plan has been provided which outlines the key principles associated with the construction traffic management process including haulage routes and the minimisation of the disruption and impacts to the road network. Further detail can be provided at the appropriate time once a contractor has been engaged.
- In relation to the internal configuration of the Site which includes light, heavy and emergency vehicular access, car parking and servicing areas will be designed in accordance with the relevant Australian Standards series.
- It is expected that any detailed construction drawings in relation to any modified areas of the car park or site access would comply with the relevant standards.
- Furthermore, compliance with the above standards would be expected to form a standard condition of consent to any development approval.

9.2 Conclusions

With regard for the above key findings from the transport assessment, the proposed Warehouses 2 & 3 (Buildings 2 & 3) at Horsley Drive Business Park, Wetherill Park is supportable on traffic and transport planning grounds with no adverse impacts to the external road network.

Appendix A. Operational Traffic Flows

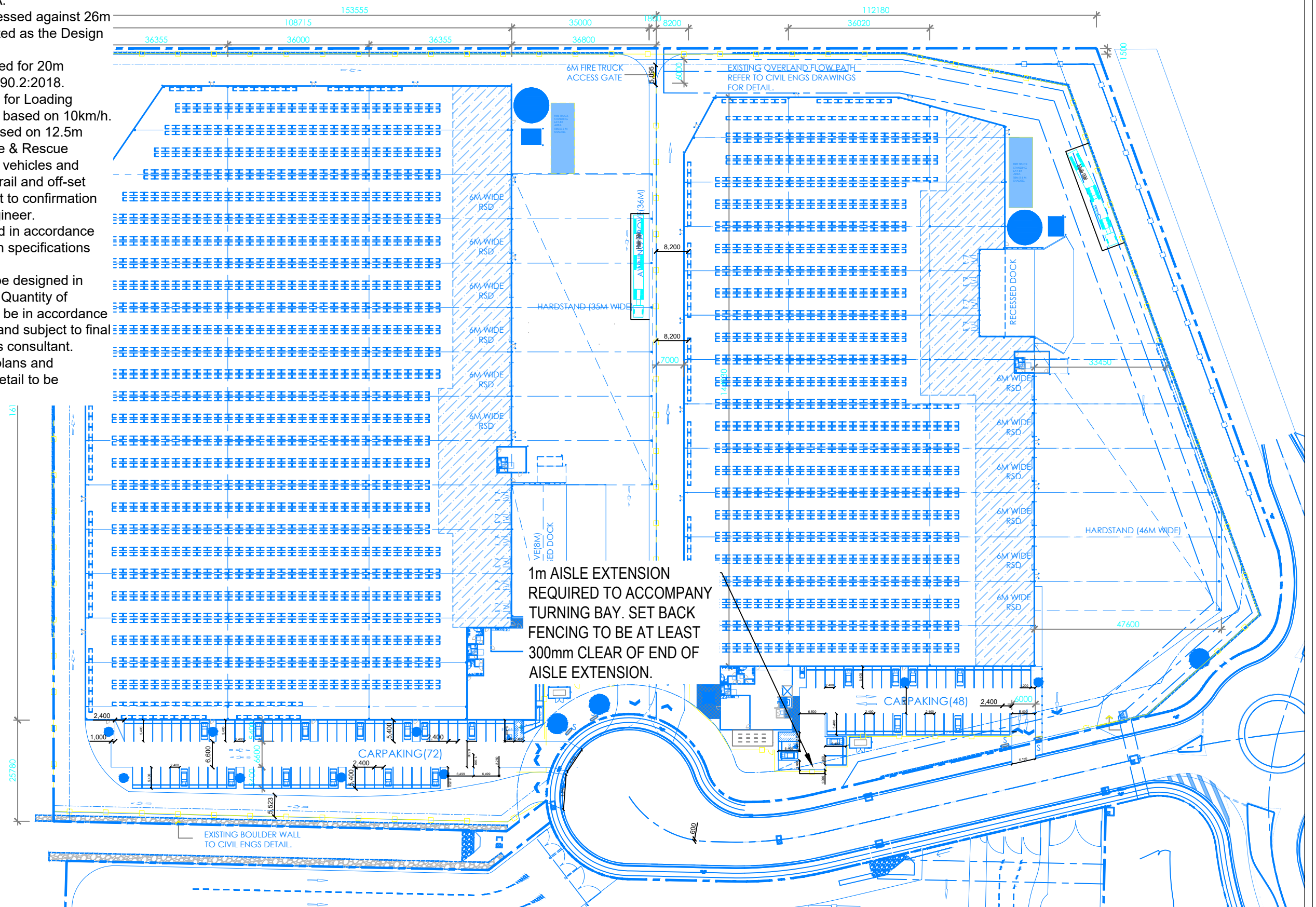
Time Period	Site				Warehouse 2				Warehouse 3			
	Vehicle Movements			Hourly Total	Vehicle Movements			Hourly Total	Vehicle Movements			Hourly Total
	Starting	LV	CV		LV	CV	Total		LV	CV	Total	
0:00		1	0	1	1	0	1	1	0	0	0	0
0:15		0	0	0	0	0	0	0	0	0	0	0
0:30		0	0	0	0	0	0	0	0	0	0	0
0:45		0	0	0	0	0	0	0	0	0	0	0
1:00		0	0	0	0	0	0	0	0	0	0	0
1:15		0	0	0	0	0	0	0	0	0	0	0
1:30		0	0	0	0	0	0	0	0	0	0	0
1:45		0	0	0	0	0	0	0	0	0	0	0
2:00		0	0	0	0	0	0	0	0	0	0	0
2:15		0	0	0	0	0	0	0	0	0	0	0
2:30		0	0	0	0	0	0	1	0	0	0	0
2:45		0	0	0	0	0	0	3	0	0	0	0
3:00		0	0	0	0	0	0	5	0	0	0	1
3:15		1	0	1	1	0	1	6	0	0	0	1
3:30		1	1	2	1	1	2	7	0	0	0	1
3:45		2	1	3	1	1	2	7	1	0	1	2
4:00		1	0	1	1	0	1	7	0	0	0	2
4:15		1	1	2	1	1	2	9	0	0	0	3
4:30		2	1	3	1	1	2	9	1	0	1	4
4:45		2	1	3	1	1	2	11	1	0	1	5
5:00		3	1	4	2	1	3	13	1	0	1	6
5:15		3	0	3	2	0	2	14	1	0	1	7
5:30		5	1	6	3	1	4	17	2	0	2	8
5:45		5	1	6	3	1	4	17	2	0	2	8
6:00		5	1	6	3	1	4	19	2	0	2	9
6:15		6	1	7	4	1	5	21	2	0	2	10
6:30		5	1	6	3	1	4	23	2	0	2	12
6:45		8	1	9	5	1	6	24	3	0	3	14
7:00		8	1	9	5	1	6	25	3	0	3	15
7:15		10	1	11	6	1	7	25	4	0	4	15
7:30		7	2	9	4	1	5	24	3	1	4	15
7:45		8	3	11	5	2	7	23	3	1	4	15
8:00		6	3	9	4	2	6	20	2	1	3	15
8:15		5	5	10	3	3	6	20	2	2	4	15
8:30		4	4	8	2	2	4	20	2	2	4	16
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12:15	6	1	7	0	4	1	5	20	2	0	2	10
12:30	7	1	8	29	4	1	5	20	3	0	3	11
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15:45	4	2	6	26	2	1	3	17	2	1	3	13
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17:45	7	1	8	38	4	1	5	24	3	0	3	17
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18:15	9	2	11	41	5	1	6	19	4	1	5	13
18:30	7	2	9	39	4	1	5	16	3	1	4	10
18:45	5	1	6	32	3	1	4	14	2	0	2	8
19:00	5	1	6	26	3	1	4	13	2	0	2	7
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22:45	2	1	3	10	1	1	2	6	1	0	1	3
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23:15	1	0	1		1	0	1		0	0	0	
23:30	2	0	2		1	0	1		1	0	1	
23:45	1	0	1		1	0	1		0	0	0	
Total	390	145	535		238	98	336		152	47	199	

*CV = commercial vehicle (truck movements)

Appendix B. Design Review

1. Car parking spaces have been assessed against AS2890.1:2004 for User Class 1A.
2. General circulation has been assessed against 26m B-Doubles, which has been adopted as the Design Vehicle as per AS2890.2:2018.
3. Loading docks have been assessed for 20m Articulated Vehicles, as per AS2890.2:2018.
4. Swept path assessment prepared for Loading Docks and general circulation are based on 10km/h.
5. Fire trail assessment prepared based on 12.5m HRV in accordance with NSW Fire & Rescue Guideline "Access for fire brigade vehicles and firefighters" V05. Location of fire trail and off-set distance from warehouses subject to confirmation by the Project's Fire Services Engineer.
6. Vehicle crossovers to be designed in accordance with Fairfield City Council's design specifications and / or AS2890.2:2018.
7. Accessible parking spaces shall be designed in accordance with AS2890.6:2009. Quantity of accessible parking provision shall be in accordance with Fairfield City Council's DCP and subject to final confirmation by the project access consultant.
8. Gradient details not provided on plans and therefore not assessed. Further detail to be provided, prior to CC.



This drawing is provided for information purposes only and should not be used for construction.
Base Plan prepared by Watch This Space Design, received 16.03.2022.
Swept path assessments completed at 10 km/h and 300mm clearance.

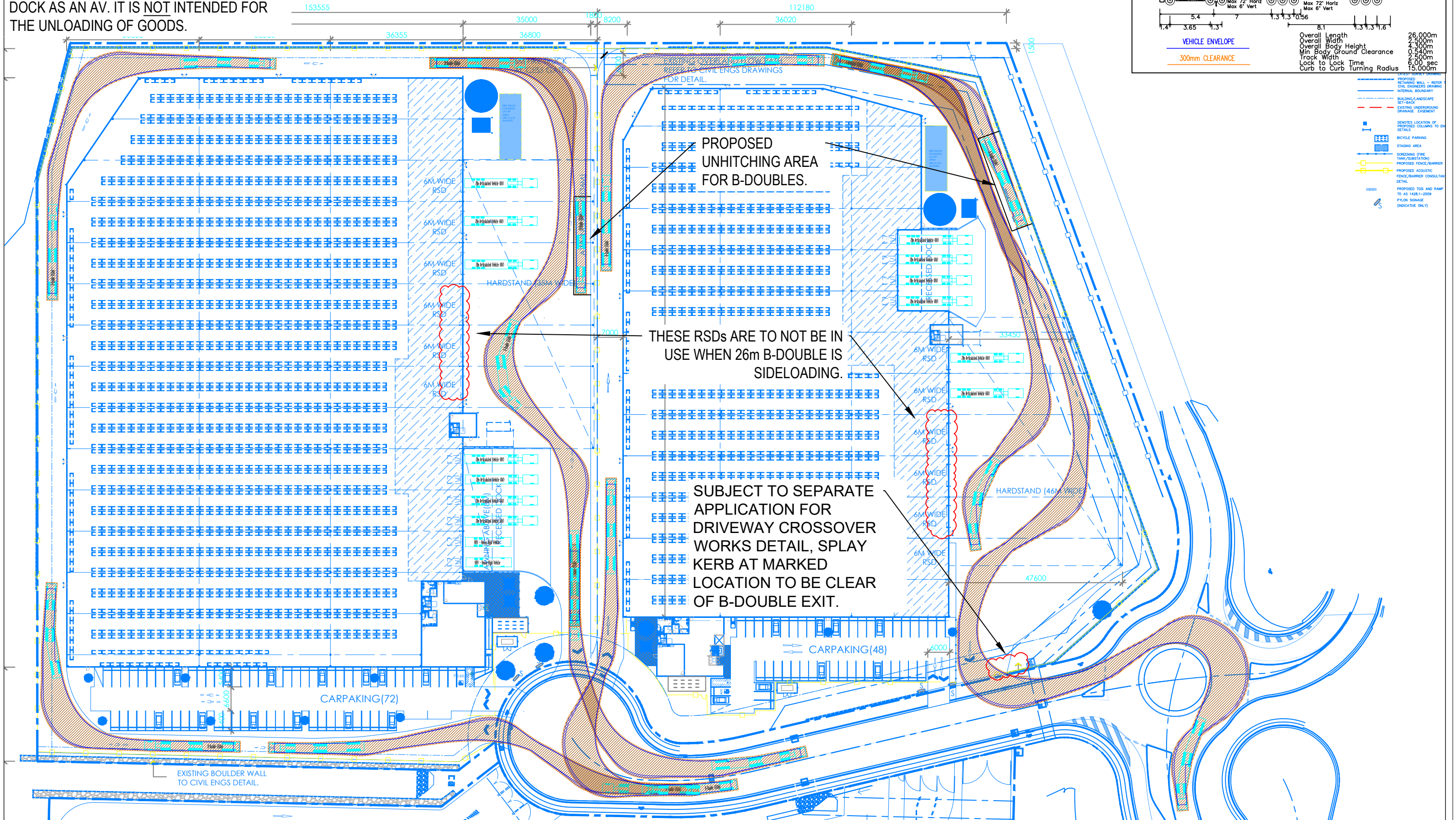
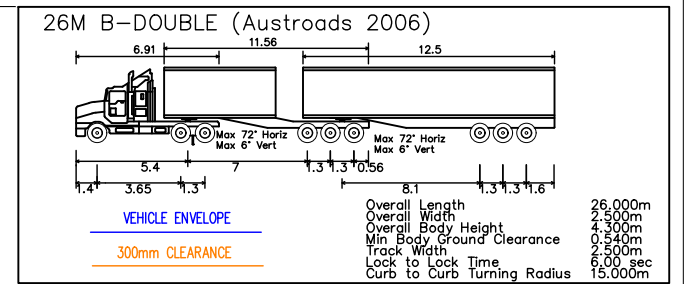
Client:
Charter Hall

Drawing Title:	General Comments
----------------	------------------

Drawing Number:
AG01

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

NOTE:
TRUCKS ARE TO UNHITCH REAR TRAILER AT
UNHITCHING AREA BEFORE ACCESSING
DOCK AS AN AV. IT IS NOT INTENDED FOR
THE UNLOADING OF GOODS.



Notes:

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Swept path assessments completed at 10 km/h and 300mm clearance.

Drawn By:
J.WU

Client:
Charter Hall

Project:
1738
Horsley Drive Business Park

Drawing Title:
Swept Path Analysis
26m B-Double

Date:
30.03.2022

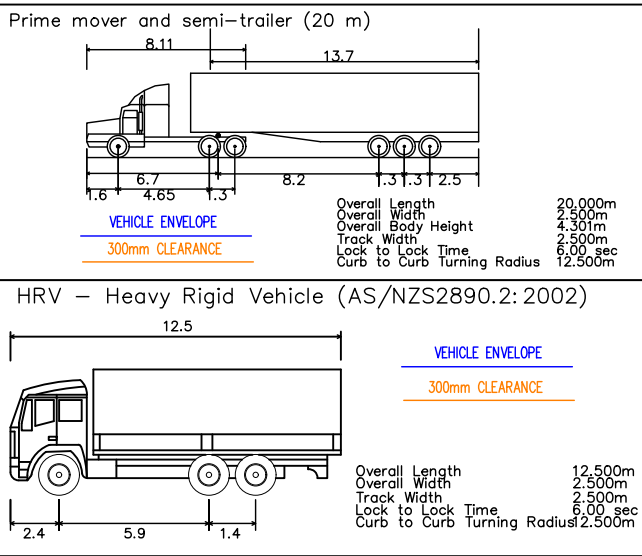
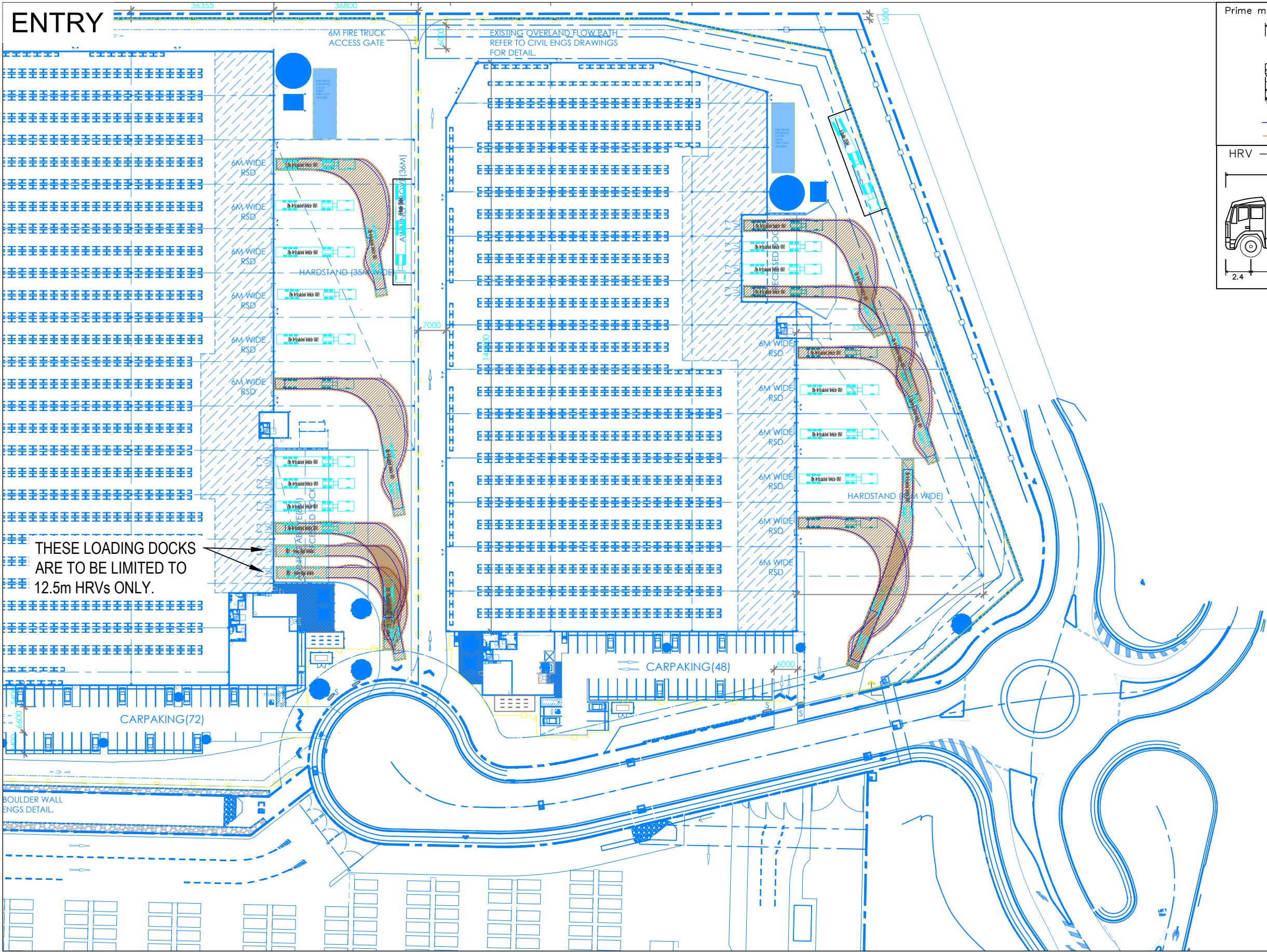
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Drawing Number:
AG02

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Suite 17.02, Level 17, 1 Castlereagh Street
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ENTRY



Notes:

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Swept path assessments completed at 10 km/h and 300mm clearance.

Drawn By:

J.WU

Project:

1738
Horsley Drive Business Park

Date:

30.03.2022

Scale @ A3:

1:1000

Drawing Number:

AG03

Client:

Charter Hall

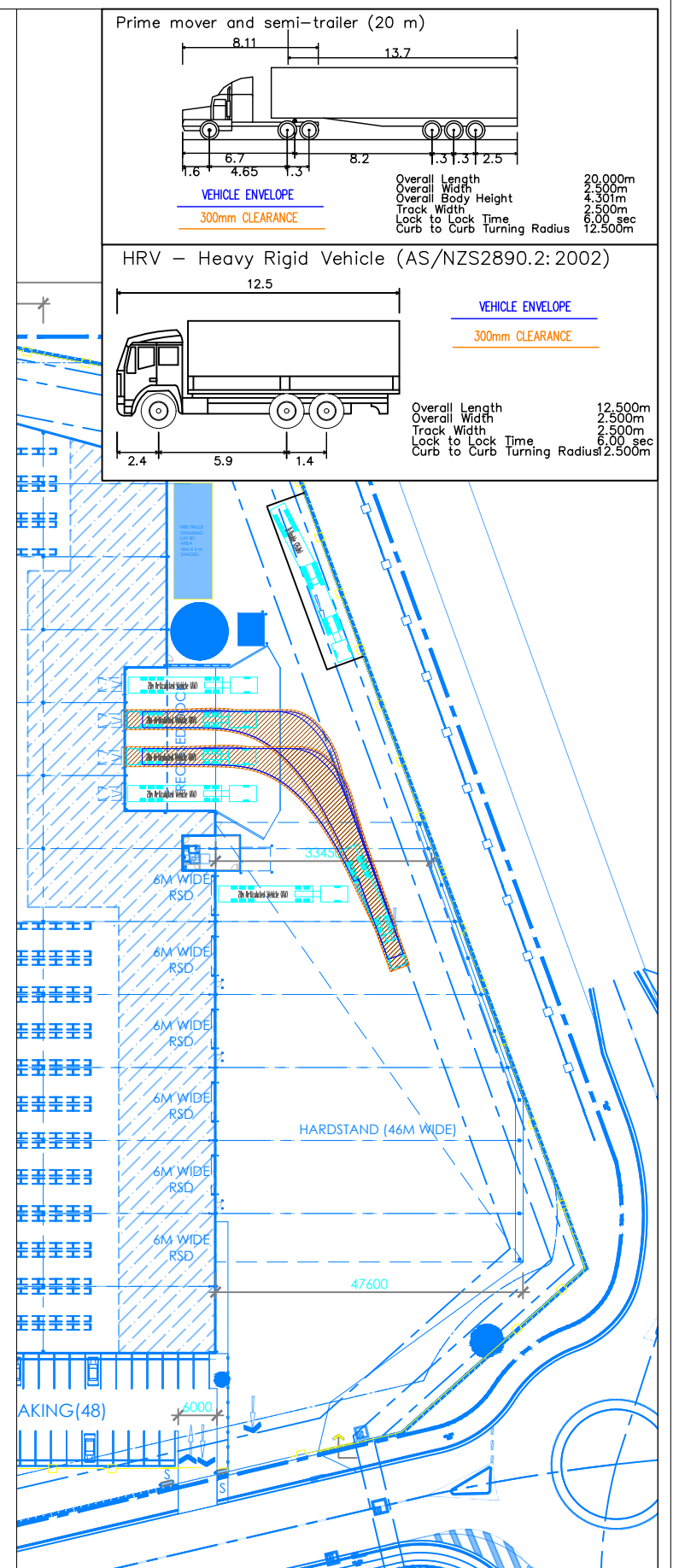
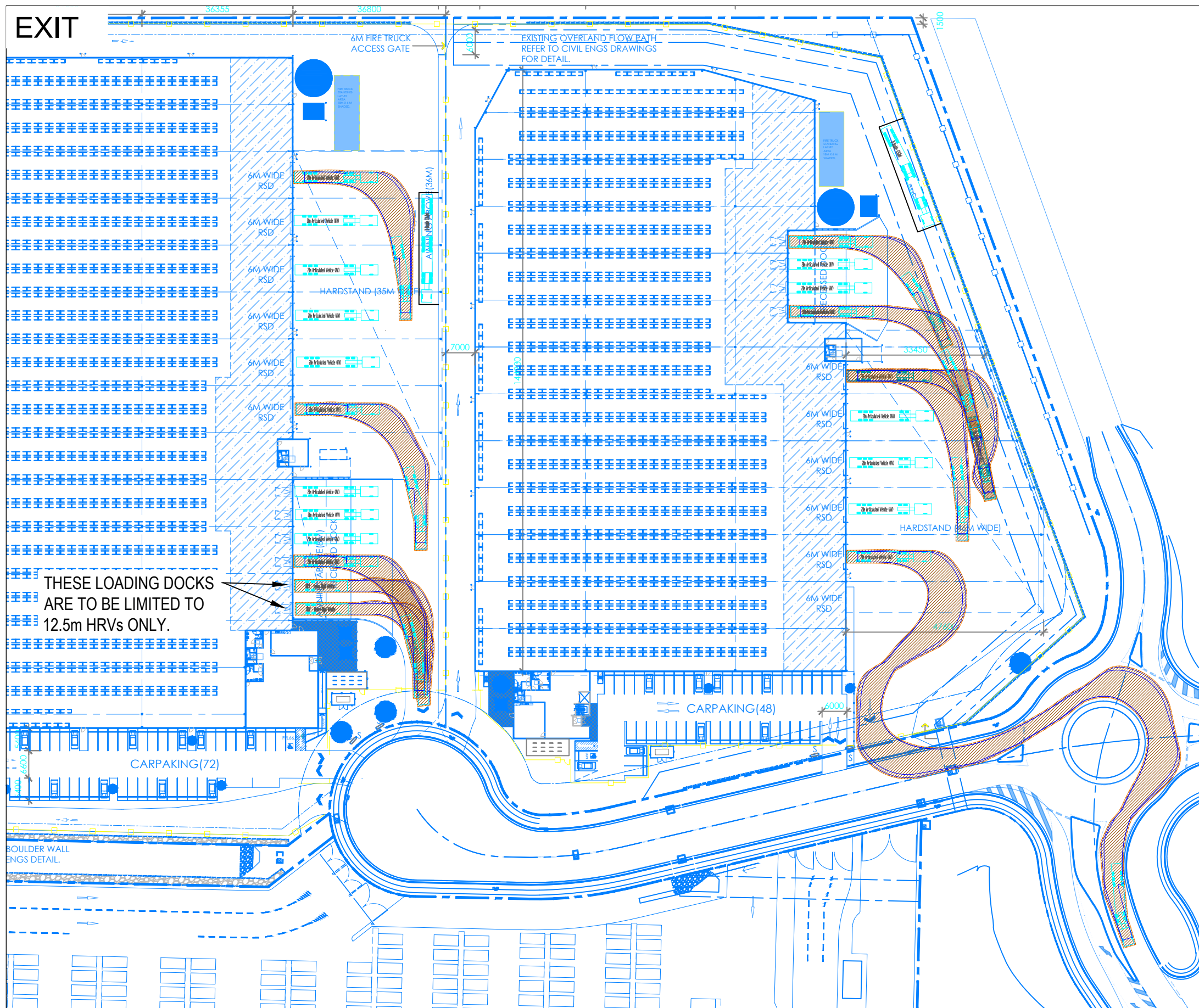
Drawing Title:

Swept Path Analysis
20m Articulated Vehicle & 12.5m Heavy Rigid Vehicle

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Suite 17.02, Level 17, 1 Castlereagh Street
Sydney NSW 2000
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EXIT



Notes:

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Swept path assessments completed at 10 km/h and 300mm clearance.

Drawn By
J.WU

Client:
Charter Hall

Project:
1738
Horsley Drive Business Park

Drawing Title:

Swept Path Analysis

20m Articulated Vehicle & 12.5m Heavy Rigid Vehicle

Date: 30.03.2022

Scale @ A3:
1:1000

Drawing Number:
AG04

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