

Operational Traffic Management Plan

Horsley Drive Business Park Stage 2
May 2022

DRAFT



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1. Introduction

The Department of Planning, Infrastructure & Environment have requested an Operational Traffic Management Plan be implemented as part of the ongoing use of Building 2 and Building 3.

Within the SSD assessment, the following matters were raised for consideration under the Test of Adequacy review:

- Management or mitigation of vehicle flow conflicts via management or re-design;
- Loading dock management (parking & unloading).

The Transport & Traffic Impact Assessment prepared by Ason Group is included in Annexure A.

This Operational Traffic Management Plan will be included as part of the all Leases to ensure future Lessees obligations clearly communicated and able to be referenced.

2. Traffic Assessment

2.1. Transport Assessment (SSD-17161650)

Section 8.3 of the Transport & Traffic Impact Assessment outlines the following:

All access driveways are generally designed 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.

To manage opposing movements around the north western corner of Warehouse 3, it is proposed to implement measures such as give-way signage, mirrors and flashing warning signals. This is considered an acceptable solution given the low magnitude of truck movements expected to be manoeuvring around the site in any given hour. As discussed in Section 6, Warehouse 3 is expected to generate 24 vehicle movements in the AM and PM hours. Heavy vehicles are expected to represent 30% of this total (7 movements two-way, i.e. 3-4 trucks). Therefore, there would be a maximum of 2 trucks passing each other in any 1 hour.

While it is recognised that the site peak may result in a great volume of truck movements, it is still anticipated that the volumes would be of a low order that the above would be sufficient and to ensure no impact of internal queues extending to the external road network.

The proposed heavy 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 A.

The management procedures outlined in this Operational Traffic Management Plan are a base guide for the ongoing management of vehicles accessing and utilising the site for the approved use. Any operations outside of this plan may require further consideration via the appropriate approval pathways.

2.2. Matters raised within the SSD Assessment

The following matters relevant to onsite traffic management were raised as part of the Test of Adequacy review of the SSD:

Item No.	Description	Relevant Section of TA
39	Movement conflicts identified for Warehouse 3 (B-double turn path) and potentially Warehouse 2. Design needs to be amended or justified (including loading dock management plan) if design not revised to eliminate movement conflicts.	As discussed in Section 8.3, the generation of trucks anticipated to be generated by Warehouse 3 is minimal, with 7 two-way movements anticipated during the peak hour (i.e. 3-4 trucks). Therefore, the instances of large vehicles passing each in this location

		would be rare. As such, implementing management measures is deemed entirely appropriate. The management measures implemented will be developed during the detailed design stage and implemented prior to occupation and will include items such as signage, convex mirrors and detector activated flashing amber lights. It is anticipated that this could be ensured via a suitable Condition of Consent. Warehouse 2 is proposed with one-way circulation and as such no such conflicts exist.
40	All loading docks and any parking / unloading areas not within the loading dock area for both Warehouses should be shown as occupied in all turning path overlays.	Refer to Appendix A for updated swept path analysis. It is worthy of note here that in practice, it is rare that all docks occupied at the same time, which allows for the easy management of docks.
41	Reversing movements shown only for 19m semi-trailer – not 26m B-Double, which has not been explained or justified in TIA. Reversing and pull away movements should be provided for the northern and two southern loading bays for Warehouse 2, the recessed dock for Warehouse 3 and northern 6m wide RSD for Warehouse 3 whilst noting requirement above to show loading docks / parking areas as occupied.	The development has not been designed to accommodate reversing b-double movements. B-double vehicles have been adopted as a check vehicle only, with the design vehicle being a 20m AV, as per Section 8.2. The volume of b-doubles accessing the Site is anticipated to be very low frequency and hence it has been has adopted as the check vehicle for design purposes. Unless specifically required, it is standard practice to design spec warehouse developments to either allow for unhitching of b-doubles and then manoeuvring into the required dock, OR b-doubles are to be side loaded. This will ultimately depend on the requirements of the end user (which is not know at this stage), who will be subject to a Loading Dock Management Plan. It is anticipated that side loading would be the preferred arrangement by almost all of the future tenants as it presents a more efficient option. Nevertheless, in the instance of a b-double uncoupling, the rear trailer would be unhitched and left within the unhitching area. The prime mover would then manoeuvre the first trailer as required. The prime mover would then manoeuvre the rear trailer to the relevant areas to be loaded / unloaded as required.

		It is understood that a draft version of the LDMP will be developed prior to construction. However, it is noted that the final LDMP will need to be implemented prior to occupation. For the purposes of the SSDA assessment, it has been demonstrated that a b-double can access the Site and turn around appropriately. The particular arrangements within the Site will ultimately be subject to the future occupiers needs. However, it is noted that all occupiers of the Site will be required to operate as the per NSW's Safe Work requirements. The critical manoeuvres have been shown in Appendix A.
42	Warehouse 2 indicated two loading docks limited to HRVs only but shows 19m semi-trailer.	The HRV swept path analysis for the southernmost dock referenced is shown on AG04 in Appendix A. the swept of the semi-trailer was shown only to demonstrate the movement and why it requires restriction. For clarity, Appendix A has been updated to demonstrate the HRV movement only.

2.3. Matters raised post-exhibition

The following matters relevant to onsite traffic management were raised post exhibition by the Department of Planning:

Item No.	Description	Relevant Section of TA
16.	Loading Dock Management Plan (LDMP) states that B-Doubles will be side loaded. The swept path analysis provided in the TA do not appear to provide adequate space within the designated 'unhitching area' (which is also understood to be the designated loading / unloading area without unhitching occurring) to permit a forklift to operate on the eastern side of the trailers for both Building 2 and 3. The Department understands that curtain side trailers are generally required to be loaded / unloaded from both sides.	Please see section 3.2 and 4.2 which have been amended to address this. It is not intended for the B-doubles to be side unloaded within the unhitching areas. Instead they can be side unloaded by parking parallel to 3 on-grade docks. This allows for unloading from both sides (if required) without impacting on internal traffic flow.
17.	Section 2.2 – states that unhitching of B-Doubles may occur to allow trailers to be manoeuvred into the loading docks. A detailed explanation / process of how this happens and how long it takes is to be provided. For example, is the whole B-Double reversed into the loading docks and the rear trailer disconnected with the front	Detailed unhitching procedures will be developed by specific tenants and operators. Generally the procedure would be that a B-double would park in the designated unhitching area and unhitch their rear trailer before docking as per a standard semi-trailer configuration. Once the first trailer is unloaded

	trailer reversed into a separate dock? If the whole B-Double is reversed, then appropriate swept paths will need to be provided for both buildings.	the B-double is to return to the hitching area and unhitch the prime mover and hitch it onto the rear trailer before proceeding to a dock face for unloading/loading. The dock traffic controller, within the dock office is to co-ordinate these movements with the other trucks. Section 3.2 and 4.2 have been updated with this information.
18	Section 4.2 – dot point 4 states that ‘trucks entering the site must give way to trucks exiting’. It is not acceptable to have heavy vehicles queuing on the estate road and the design of Building 3 is to be amended to not create a traffic conflict zone at the site entrance as is currently the case. The Department notes that Condition B2(c) of SSD-7664 states ‘vehicles must not queue on the public road network’.	Warehouse 3 site layout has been amended to allow for separate truck entry and exit with one way flow around the site. This change removes the give way requirement.
19.	The LDMP provides little detail on how heavy vehicles will be managed within the site to avoid conflicts or how the traffic management system will be equipped and function or what it includes. Deferral to a later stage prior to occupation is not considered an acceptable outcome given the issues noted above.	Warehouse 3 site layout has been amended to allow for separate truck entry and exit with one way flow around the site. This change removes the need for traffic management systems within the site.

3. Warehouse 2 (Western Warehouse)

3.1. Site Layout – Warehouse 2

The trailing figure details the subject warehouse. The heavy vehicle access is designed around achieving a single directional flow around the warehouse entering from the bottom of the court bowl and exiting via the operational hardstand in a south bound direction.

The facility is equipped with:

- 6 on-grade loading docks
- 6 recessed loading docks
- Designated area for B-double unhitching

With the location of these docks shown on Figure 1 - Warehouse 2 Site Layout.

The warehouse operation is expected to be 24 hours a day, 7 days a week however these may vary in accordance with the requirements of a future operator.

3.2. Dock Access

All docks are generally accessible by semi-trailers up to 19.0m in length with the ability to reverse-in and exit forward-out. For B-double access the following options for loading/unloading may be exercised by the dock traffic controller:

- Park in the designated unhitching area and unhitch their rear trailer before docking as per a standard semi-trailer configuration. Once the first trailer is unloaded the B-double is to return to the hitching area and unhitch the prime mover and hitch it onto the rear trailer before proceeding to a dock face for unloading/loading.
- Park in the designated unhitching area until 3 southern on-grade docks are available and then proceed to park parallel to the dock face and side unload the B-double. Exit the site in a forward direction

3.3. Loading/Unloading Procedures

The below procedure is proposed for operational traffic management of the site:

- A schedule must be kept of inbound and outbound truck movements, to allow for efficient utilisation of docks and avoid any bottlenecks.
- Trucks must not queue on the Estate Road while waiting to be unloaded/loaded. Trucks can instead queue within the site leading up to the docks
- Before entering the loading area, all drivers must communicate with the dock traffic controller and be designated a loading dock
- The two southern-most recess docks should be limited to Heavy Rigid Vehicles (HRV) only as detailed in Annexure A
- The Fire Truck Standing lay-by area, line marked adjacent to the fire sprinkler tank and pump room is to be kept clear of standing vehicles and stored material at all times;
- The Fire Truck access gate between the Buildings 2 hardstand and Building 3 driveway is to be kept clear at all time to permit emergency vehicle access between the sites;
- All traffic signage, visual aids and operational line marking is to be maintained at all times
- **Night unloading and loading operations are only to be undertaken from the docks as marked in Figure 1**

4. Warehouse 3 (Eastern Warehouse)

4.1. Site Layout – Warehouse 3

The trailing figure details the subject warehouse. The heavy vehicle access is designed around dual directional flow around the warehouse entering and exiting from the court bowl at the south-west corner of the site, accessing the hardstand around the back of the building via a perimeter driveway.

The facility is equipped with:

- 6 on-grade loading docks
- 4 recessed loading docks
- Designated area for B-double unhitching

With the location of these docks shown on Figure 2 - Site Layout Warehouse 3.

The warehouse operation is expected to be 24 hours a day, 7 days a week however these may vary in accordance with the requirements of a future operator.

4.2. Dock Access

All docks are generally accessible by semi-trailers up to 19.0m in length with the ability to reverse-in and exit forward-out. For B-double access the following options for loading/unloading may be exercised by the dock traffic controller:

- Park in the designated unhitching area and unhitch their rear trailer before docking as per a standard semi-trailer configuration. Once the first trailer is unloaded the B-double is to return to the hitching area and unhitch the prime mover and hitch it onto the rear trailer before proceeding to a dock face for unloading/loading.
- Park in the designated unhitching area until 3 southern on-grade docks are available and then proceed to park parallel to the dock face and side unload the B-double. Exit the site in a forward direction.

4.3. Loading/Unloading Procedures

The following operational management controls are to be followed at all times:

- A schedule must be kept of inbound and outbound truck movements, to allow for efficient utilisation of docks and avoid any bottlenecks.
- Trucks must not queue on the Estate Road while waiting to be unloaded/loaded. Trucks can instead queue within the site leading up to the docks
- Before entering the loading area, all drivers must communicate with the dock traffic controller and be designated a loading dock
- The two southern-most recess docks should be limited to Heavy Rigid Vehicles (HRV) only as detailed in Annexure A
- The Fire Truck Standing lay-by area, line marked adjacent to the fire sprinkler tank and pump room is to be kept clear of standing vehicles and stored material at all times;
- The Fire Truck access gate between the Buildings 2 hardstand and Building 3 driveway is to be kept clear at all time to permit emergency vehicle access between the sites;
- All traffic signage, visual aids and operational line marking is to be maintained at all times. should it be required.
- **Night unloading and loading operations are only to be undertaken from the docks as marked in Figure 2**

Annexure A – Transport & Traffic Impact Assessment



Horsley Drive Business Park, Buildings 2 & 3

State Significant /Development Application (SSD 17161650)

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4/05/2022
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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.

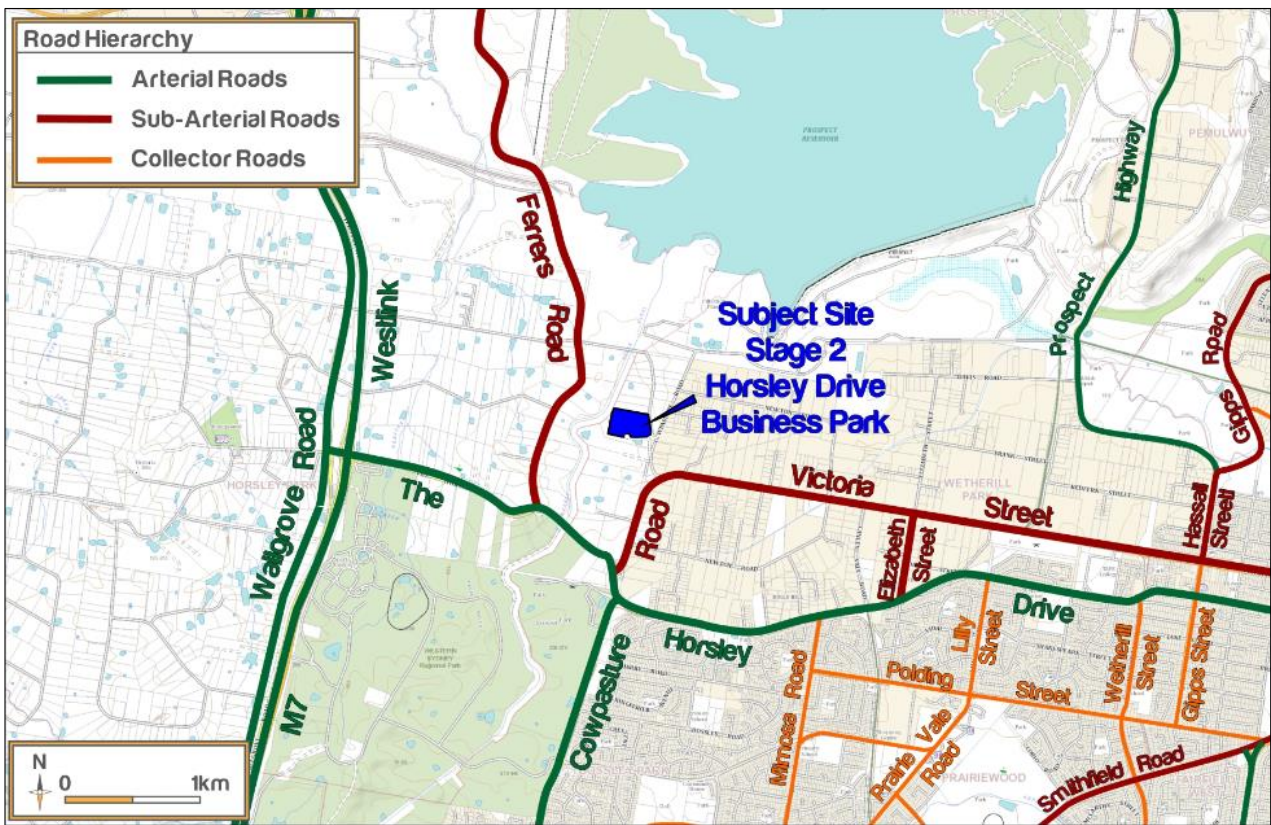
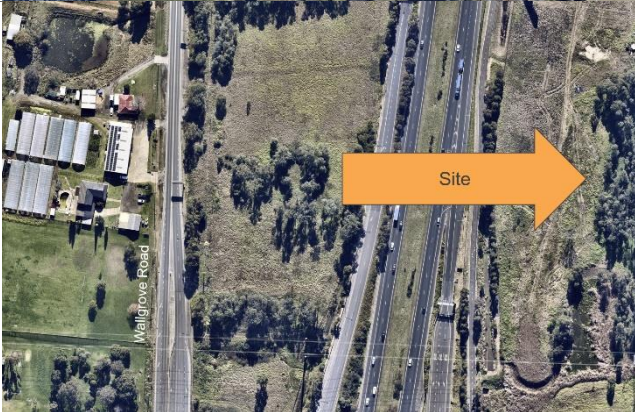


Figure 2: Road Hierarchy

TABLE 2: KEY ROAD NETWORK		
Road	Description	Layout
M7 Motorway	Type: Arterial Road Lanes: Two per direction	An aerial photograph showing the M7 Motorway interchange. An orange arrow points from the text 'Site' to a specific location on the right side of the interchange, indicating the project site's proximity to the motorway.

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.

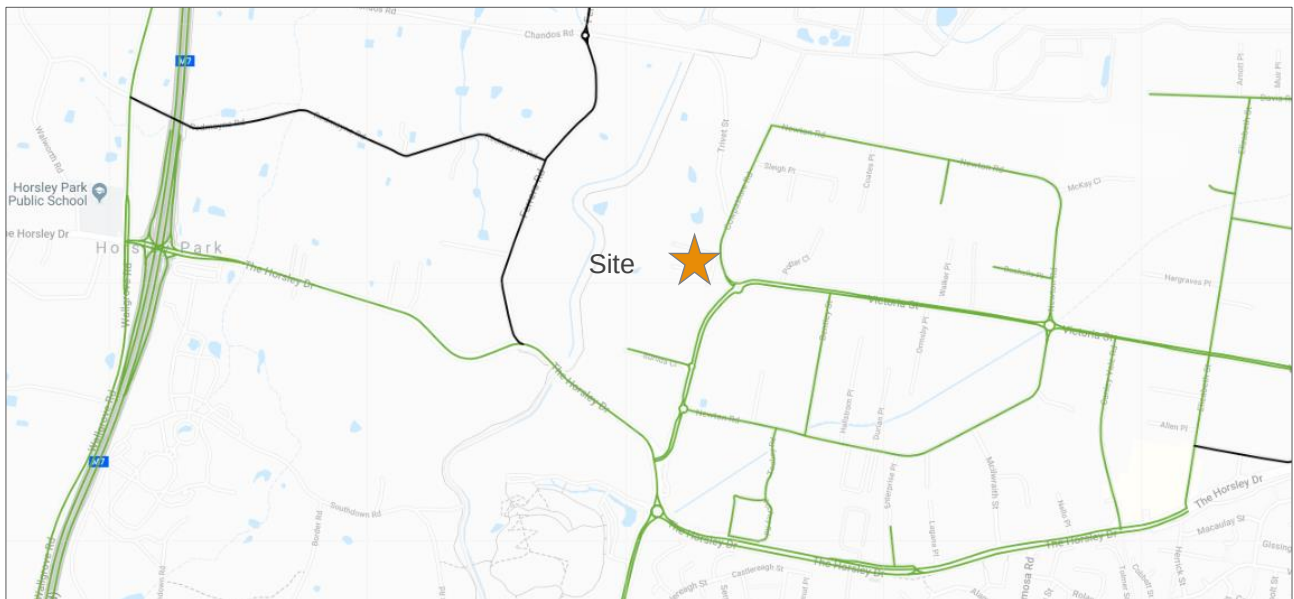


Figure 3: TfNSW RAV Approved 25/26 m B-double Vehicle Routes

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.

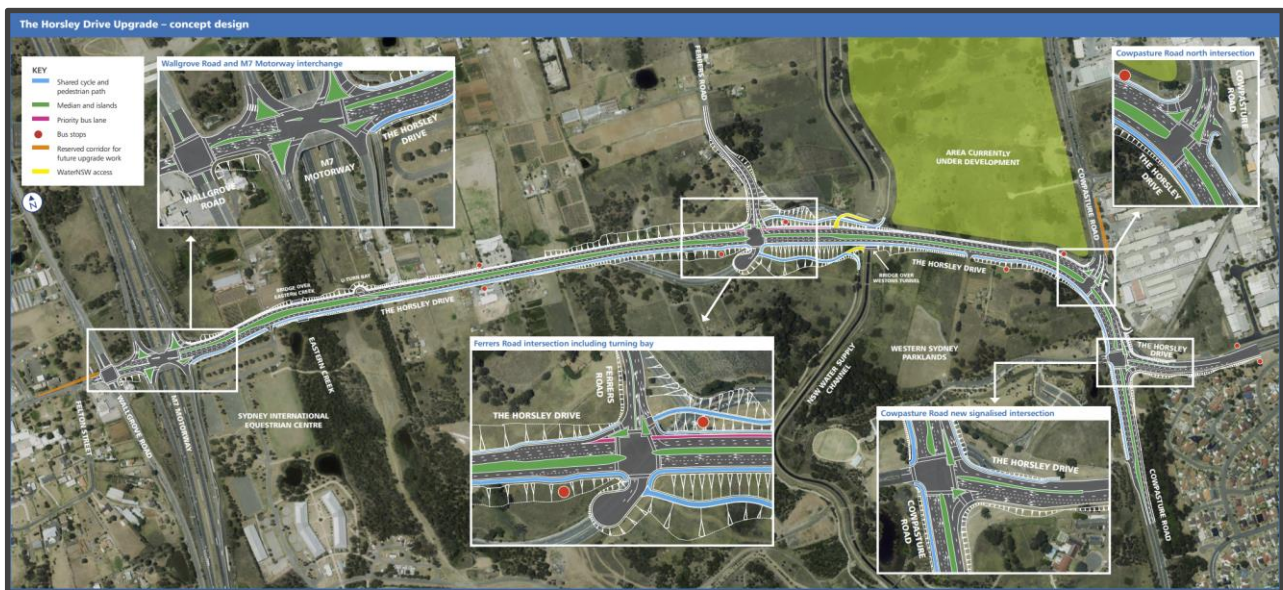


Figure 4: The Horsley Drive Upgrade- Concept Design

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.

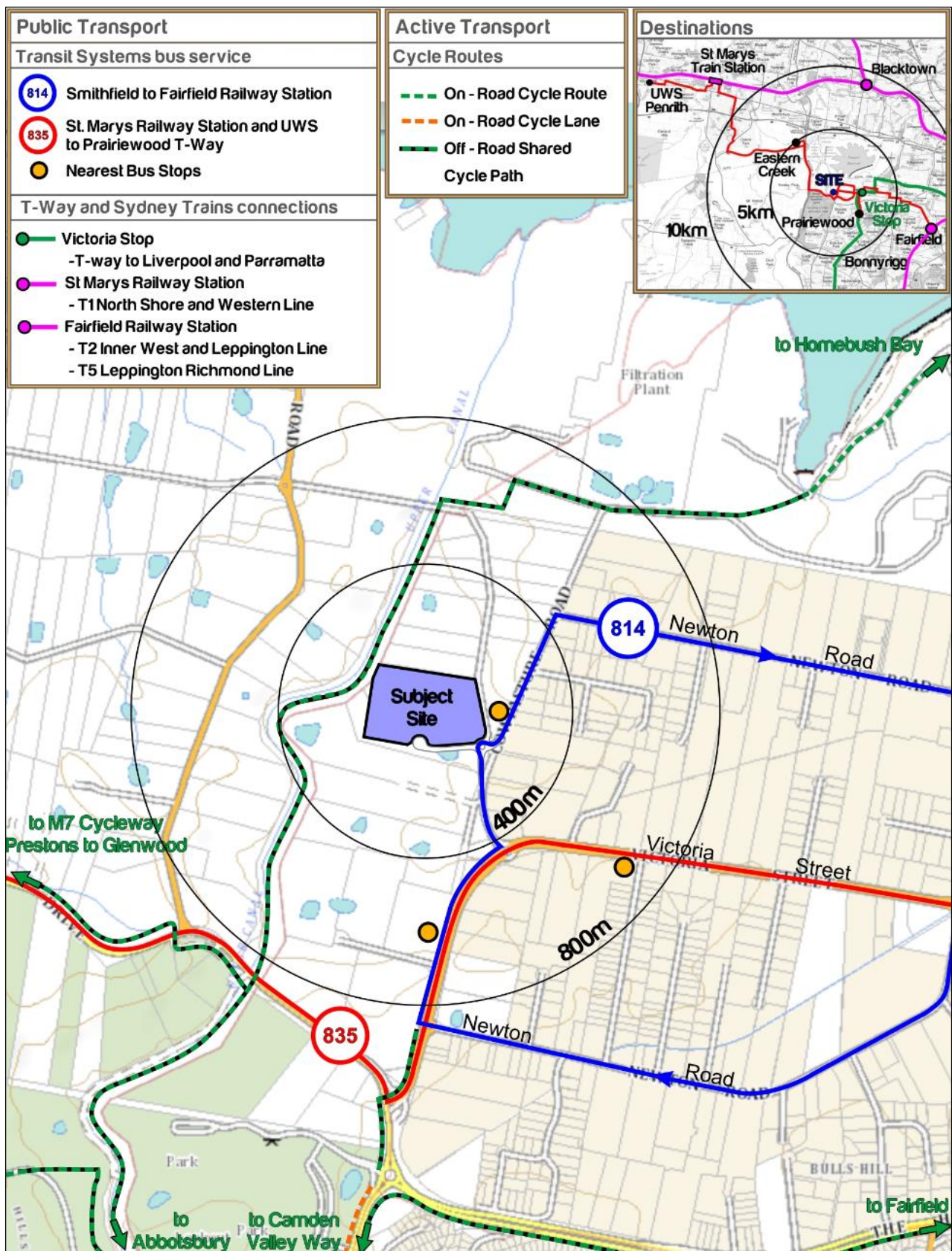


Figure 5: Existing Public and Active Transport Network

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**.

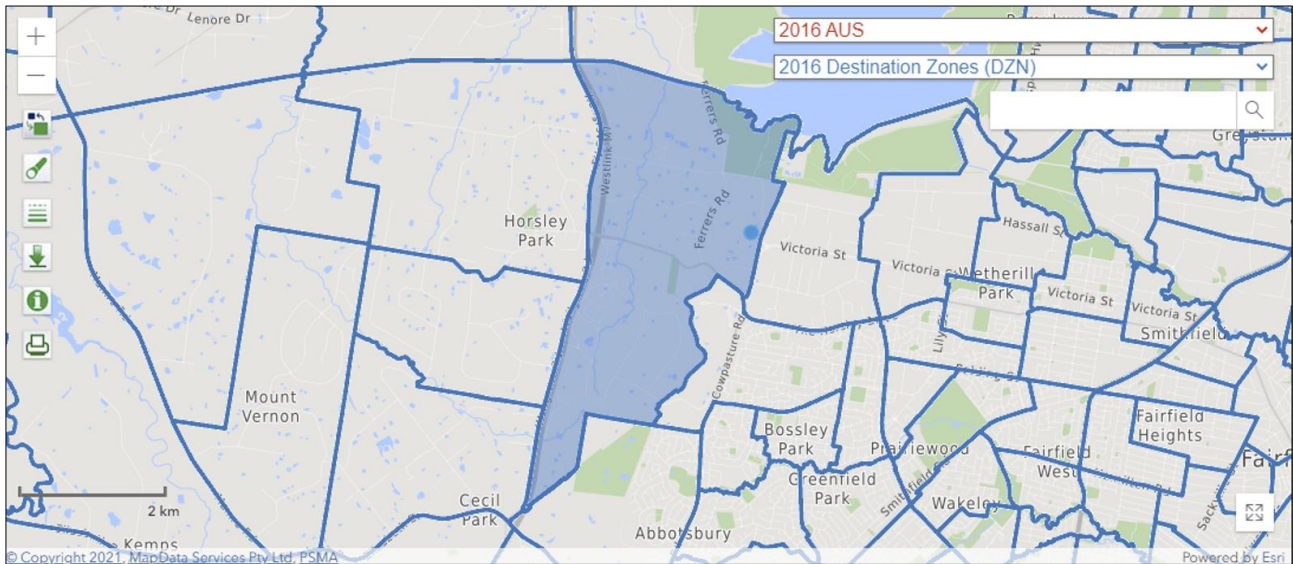


Figure 6: Destination Zone

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**.

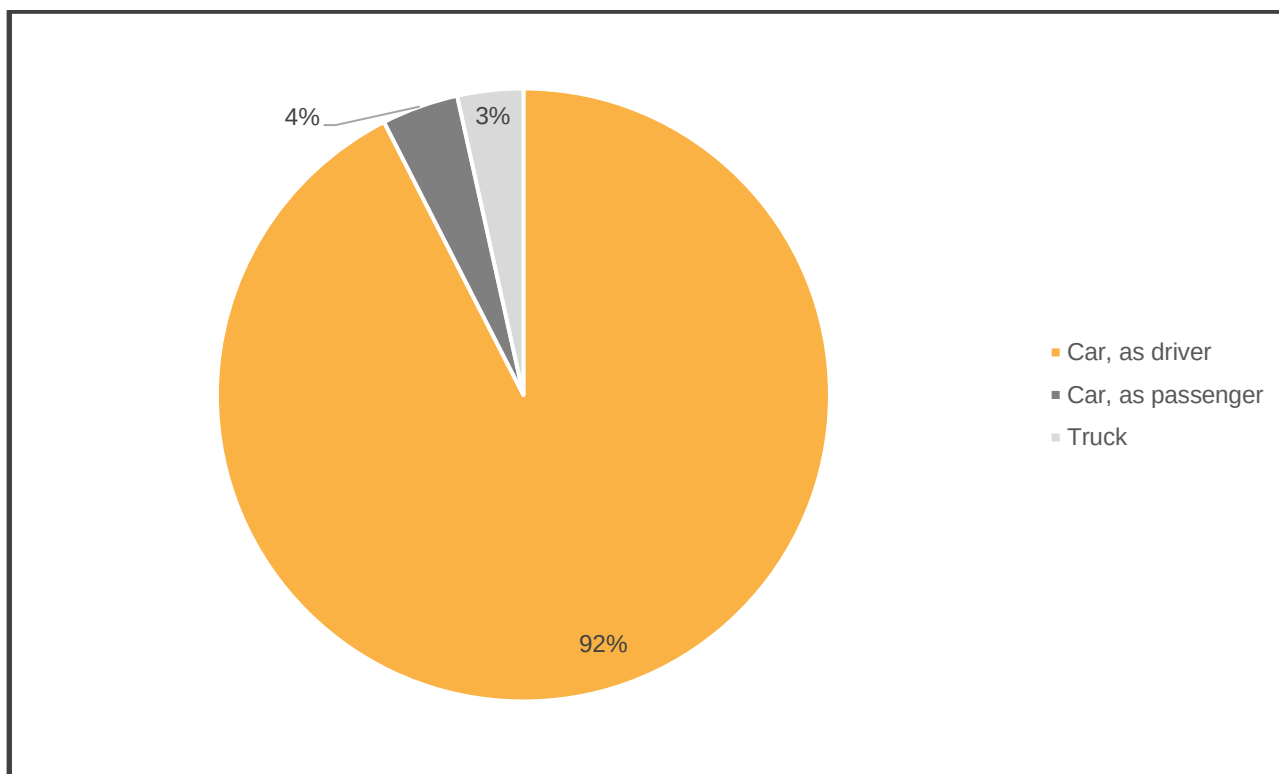


Figure 7: Travel Mode Distribution

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**.

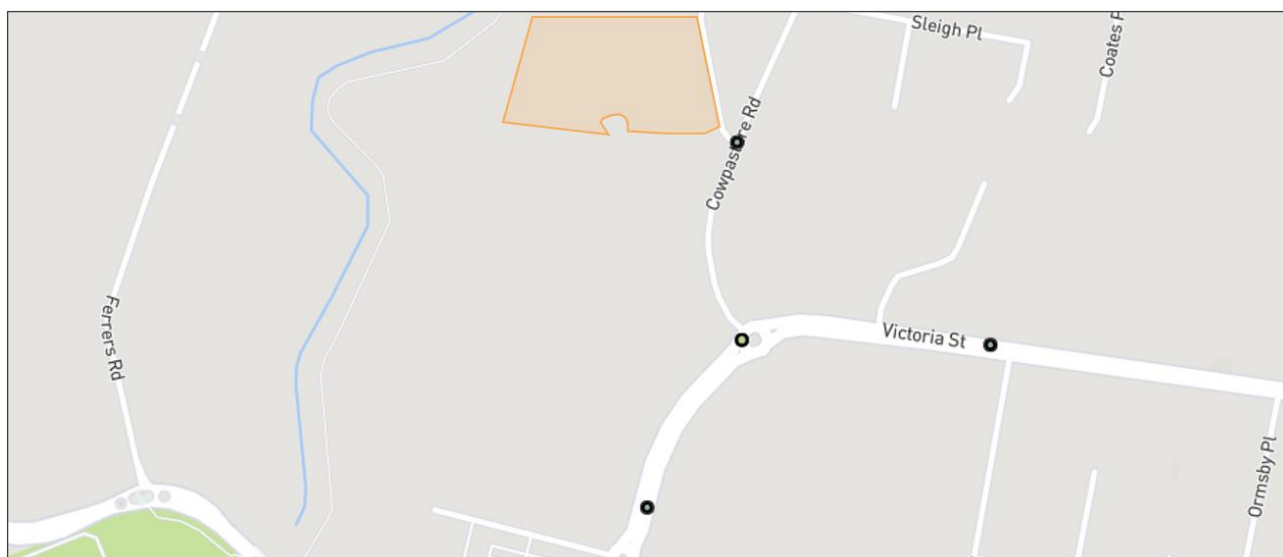


Figure 8: Crash Locations

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 25,523 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:
 - 9,720 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	9,720	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 25,488 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

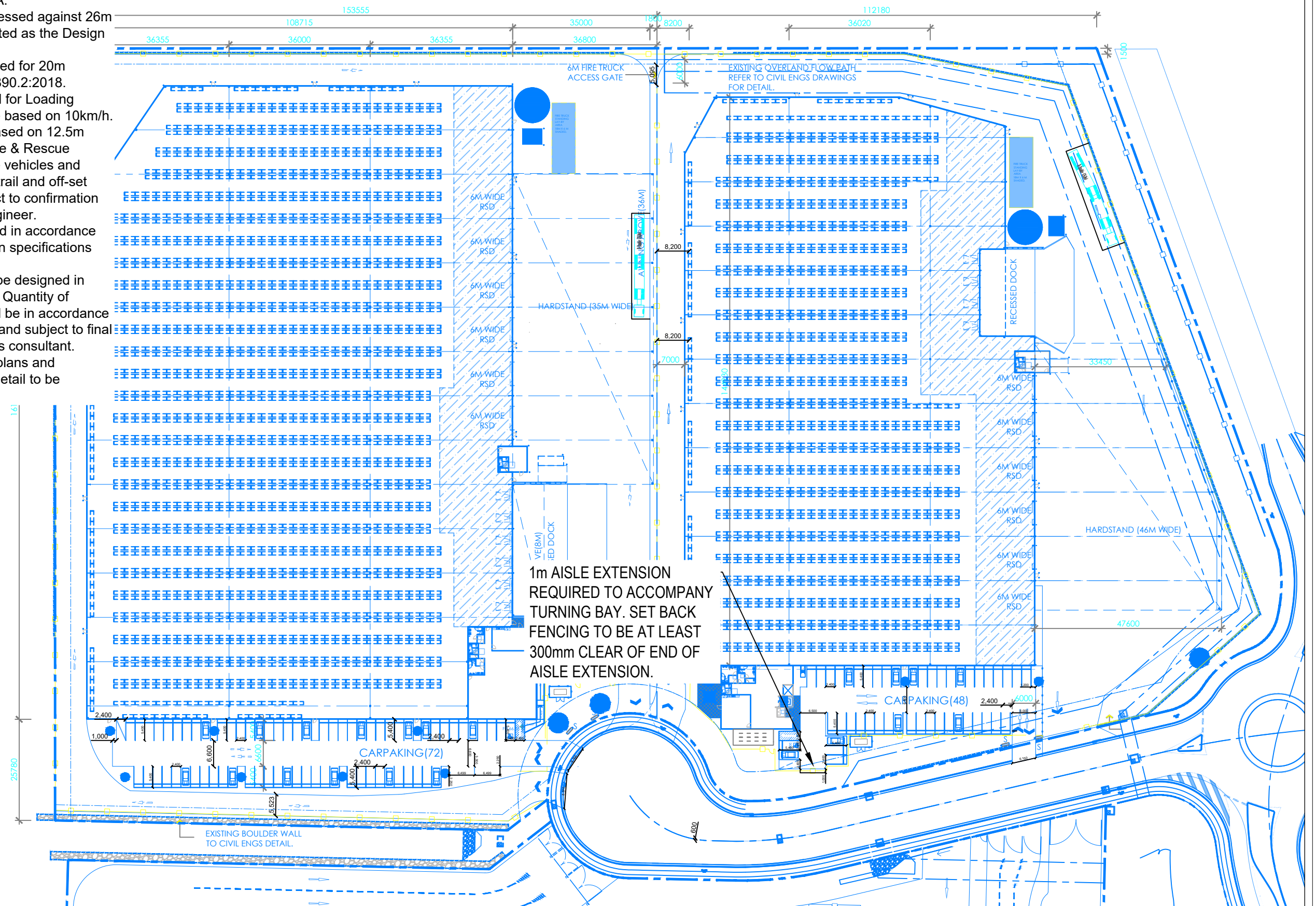
Time Period	Site				Warehouse 2				Warehouse 3			
	Vehicle Movements			Hourly Total	Vehicle Movements			Hourly Total	Vehicle Movements			Hourly Total
	Starting	LV	CV		LV	CV	Total		LV	CV	Total	
0:00		1	0	1	1	0	1	1	0	0	0	0
0:15		0	0	0	0	0	0	0	0	0	0	0
0:30		0	0	0	0	0	0	0	0	0	0	0
0:45		0	0	0	0	0	0	0	0	0	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
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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
8:45		4	4	8	2	2	4	22	2	2	4	15
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9:30		6	3	9	4	2	6	24	2	1	3	16
9:45		9	4	13	5	2	7	22	4	2	6	16
10:00		7	3	10	4	2	6	19	3	1	4	13
10:15		5	3	8	3	2	5	17	2	1	3	12
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11:00		5	2	7	3	1	4	17	2	1	3	9
11:15		6	1	7	4	1	5	18	2	0	2	8
11:30		5	1	6	3	1	4	18	2	0	2	8
11:45		6.0	0	6	4	0	4	19	2	0	2	9
12:00		6	1	7	4	1	5	20	2	0	2	9

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
12:45	6	1	7	30	4	1	5	20	2	0	2	11
13:00	6	2	8	31	4	1	5	19	2	1	3	12
13:15	7	1	8	31	4	1	5	20	3	0	3	13
13:30	6	2	8	31	4	1	5	21	2	1	3	14
13:45	5	2	7	33	3	1	4	22	2	1	3	15
14:00	7	3	10	35	4	2	6	24	3	1	4	17
14:15	6	4	10	37	4	2	6	23	2	2	4	16
14:30	6	4	10	41	4	2	6	20	2	2	4	15
14:45	7	4	11	39	4	2	6	18	3	2	5	14
15:00	5	3	8	35	3	2	5	15	2	1	3	12
15:15	4	2	6	32	2	1	3	14	2	1	3	12
15:30	5	2	7	27	3	1	4	15	2	1	3	12
15:45	4	2	6	26	2	1	3	17	2	1	3	13
16:00	5	2	7	27	3	1	4	20	2	1	3	13
16:15	4	3	7	30	2	2	4	22	2	1	3	14
16:30	7	3	10	33	4	2	6	23	3	1	4	14
16:45	6	3	9	36	4	2	6	22	2	1	3	14
17:00	7	3	10	37	4	2	6	21	3	1	4	14
17:15	7	1	8	36	4	1	5	23	3	0	3	15
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17:45	7	1	8	38	4	1	5	24	3	0	3	17
18:00	10	3	13	41	6	2	8	23	4	1	5	16
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
19:15	4	1	5	22	2	1	3	11	2	0	2	6
19:30	3	2	5	20	2	1	3	10	1	1	2	4
19:45	3	1	4	17	2	1	3	9	1	0	1	2
20:00	2	1	3	14	1	1	2	8	1	0	1	2
20:15	1	1	2	11	1	1	2	8	0	0	0	3
20:30	1	1	2	10	1	1	2	8	0	0	0	4
20:45	1	2	3	11	1	1	2	8	0	1	1	6
21:00	2	2	4	12	1	1	2	8	1	1	2	6
21:15	2	1	3	14	1	1	2	9	1	0	1	5
21:30	2	2	4	14	1	1	2	9	1	1	2	4
21:45	2	1	3	14	1	1	2	9	1	0	1	2
22:00	3	1	4	13	2	1	3	9	1	0	1	2
22:15	1	1	2	11	1	1	2	8	0	0	0	2
22:30	1	1	2	11	1	1	2	7	0	0	0	2
22:45	2	1	3	10	1	1	2	6	1	0	1	3
23:00	2	1	3	9	1	1	2	5	1	0	1	2
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.

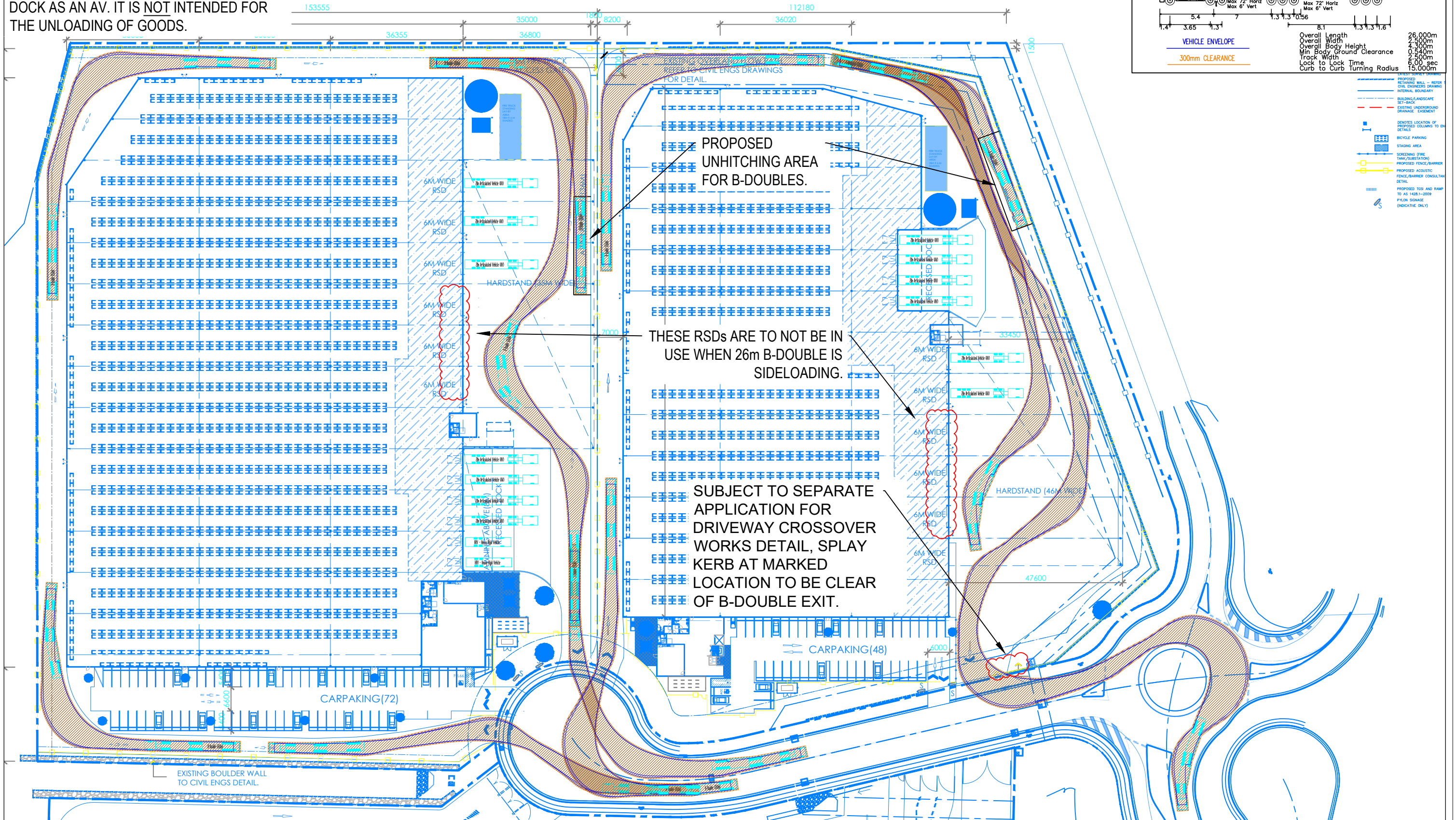
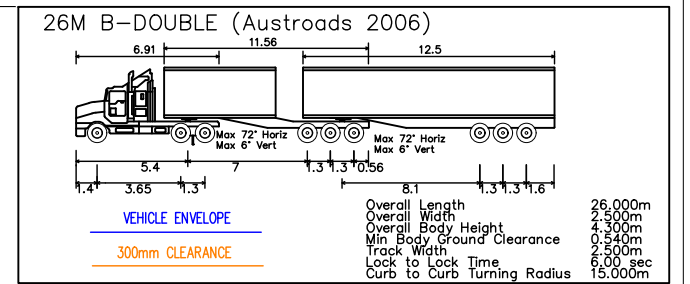
Client:
Charter Hall

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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Base Plan prepared by Watch This Space Design, received 16.03.2022.
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

Scale @ A3:
1:1000

Drawing Number:
AG02

asongroup

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

ENTRY

6M FIRE TRUCK ACCESS GATE

EXISTING OVERLAND FLOW PATH REFER TO CIVIL ENGS DRAWINGS FOR DETAIL.

HARDSTAND (35M WIDE)

THESE LOADING DOCKS ARE TO BE LIMITED TO 12.5m HRVs ONLY.

CARPAKING(72)

CARPAKING(48)

BOULDER WALL ENDS DETAIL.

VEHICLE DIMENSIONS:

Prime mover and semi-trailer (20 m)

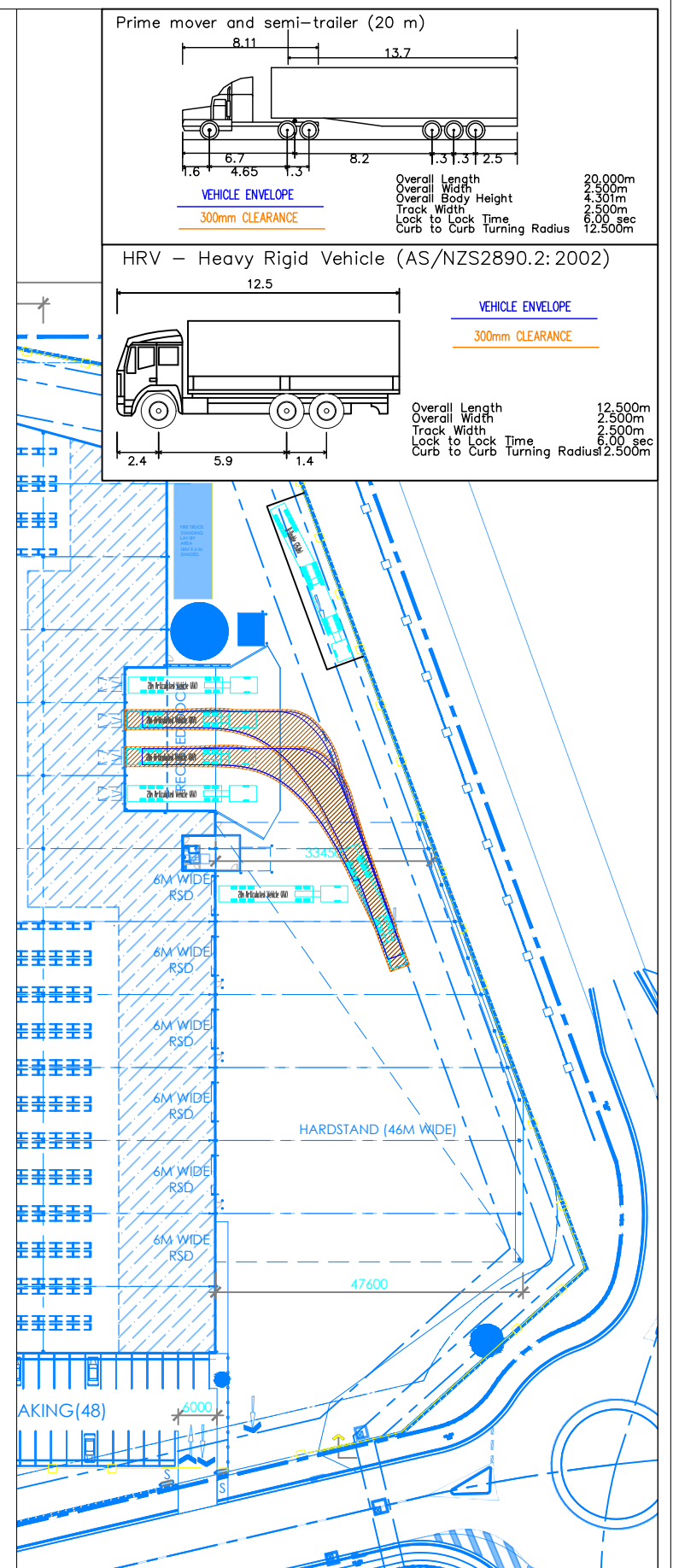
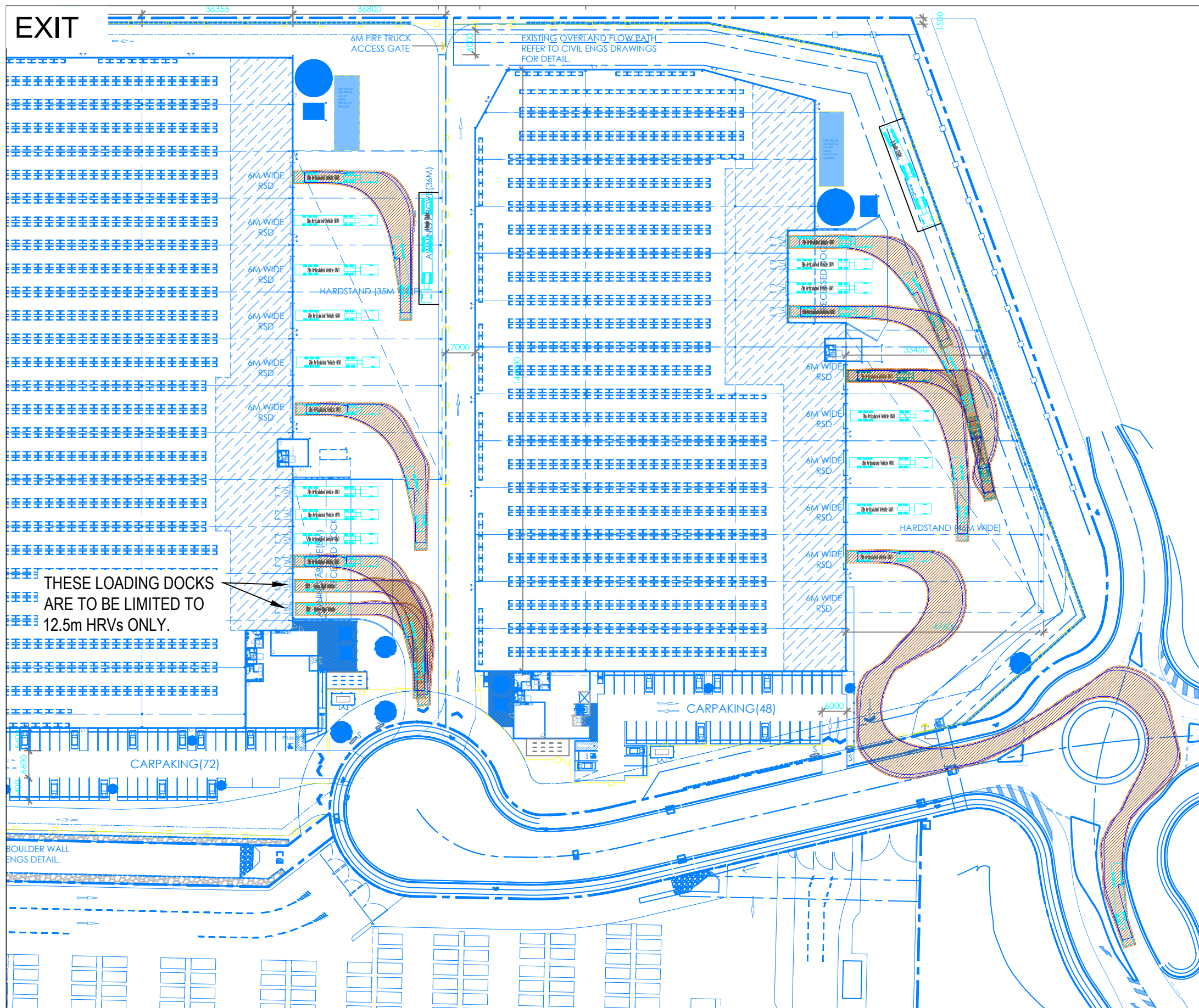
Metric	Value
Overall Length	20.000m
Overall Width	2.500m
Overall Body Height	4.301m
Track Width	2.500m
Lock to Lock Time	6.00 sec
Curb to Curb Turning Radius	12.500m

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

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

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info@asongroup.com.au

EXIT



Notes:

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.

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

asongroup

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