

Transport Assessment

Proposed Food Manufacturing Facility (Snack Brands)
14 Distribution Drive, Orchard Hills

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1 Introduction

1.1 Overview

Ason Group has been commissioned by TM Insight on behalf of Snack Brands Australia (Snackbrands), to prepare a State Significant Development (SSD-18204994) Transport Assessment (TA) in relation to a proposed Food Manufacturing Facility (the Proposal) within the First Estate Precinct (SSD-7173) located at 585-649 Mamre Road, Orchard Hills (The Site). The Site itself is located at 14 and 2 Distribution Drive, Orchard Hills and is legally known as Lot 10 and Lot 11 DP 271141 within Penrith Local Government Area (LGA).

It is noteworthy that this SSD-18204994 generally refers to amendments to the existing development at Lot 11 (previously referred as Lot 7 within First Estate Precinct) and construction of a new industrial building at Lot 10 (previously referred as Lot 9 within First Estate Precinct). It is emphasised that ultimately, these two Lots will operate in conjunction, and they will be tenanted to Snackbrands as a whole. Accordingly, for assessment conservativeness, this TA refers to the traffic and parking assessment of these Lots together - Lot 10 & 11 and herein referred to as the Site.

1.2 Site Location

The precinct which Lots 10 & 11 falls within, is the First Estate Precinct, which comprises the southern portion of a larger precinct referred to as the Mamre West Land Investigation Area (or the Mamre West Precinct) and located in Precinct 11 of the Western Sydney Employment Area (WSEA) – strategically identified employment land under *State Environmental Planning Policy (Western Sydney Employment Area) 2009* (WSEA SEPP).

WSEA can be described as designated land, ultimately providing businesses in the immediate vicinity and wider region with land uses concerning industry and employment, encompassing areas for transport, logistics and office space. A Site Context Plan is presented in **Figure 1**, which provides an appreciation of the wider Mamre West Precinct, and its location within the new Western Sydney Priority Growth Area.

In terms of Lot 11 and by way of background, it is an existing Warehouse and Distribution Facility tenanted to Snackbrands within the First Estate Precinct. Lot 11 has been determined as approved in April 2019 (SSD-9429, also referred as Snackbrands Stage 1 in this TA) and is currently operational. This site location of Lot 11 is shown in **Figure 2** along with Lot 10 relative to the surrounding built-up area.

1.3 Land Zoning

The Site is on land zoned *IN1 - General Industrial* under the provisions of the WSEA SEPP 2009.

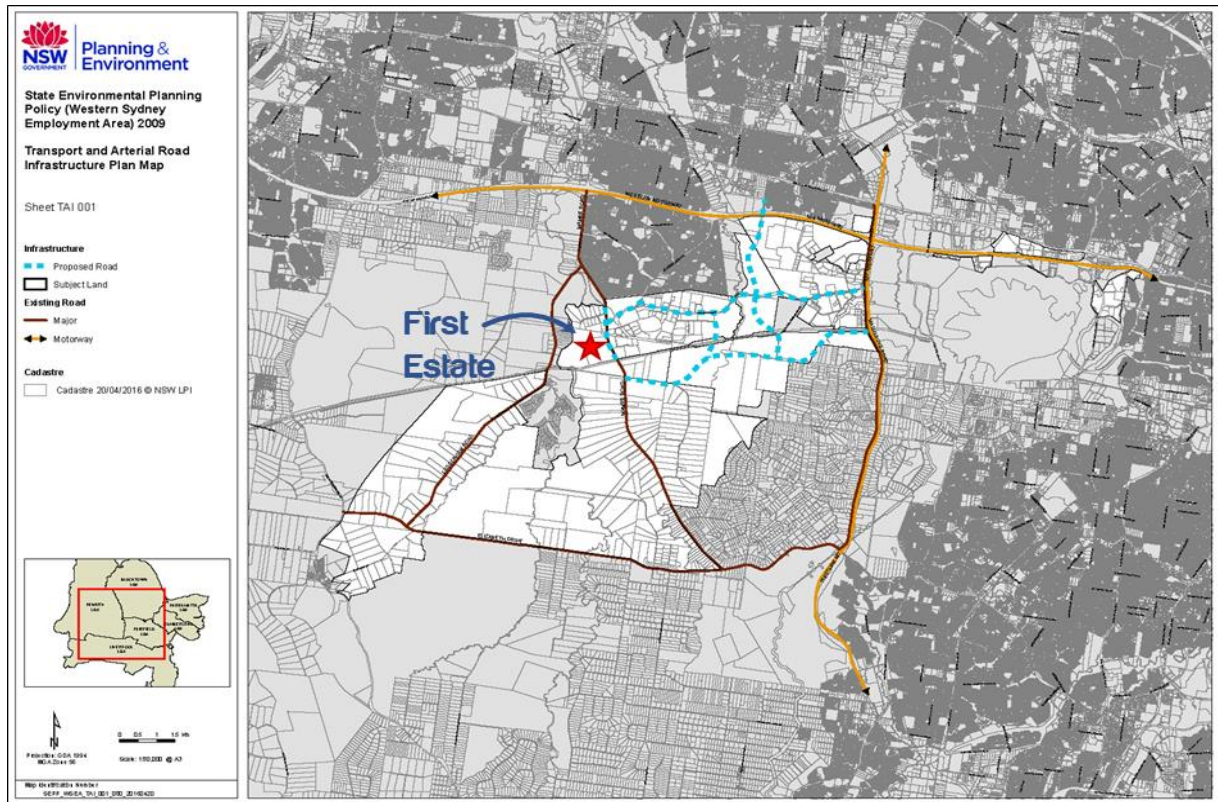


Figure 1: Site Context Plan



Figure 2: Site Location (indicative)

1.4 Summary of Proposed Development

1.4.1 Snackbrands Stage 1 Approval (SSD-9429)

Ason Group has previously completed a Traffic Impact Assessment (ref: 0707r01) to support the Snackbrands Stage 1 (Lot 11) Warehouse / distribution centre State Significant Development (SSD-9429¹) which is located to the south of the Lot 10 site at 2 Distribution Drive, Orchard Hills.

SSD-9429 was determined as approved by the NSW Independent Planning Commission in April 2019, which allows for the Warehouse / Distribution centre with a total GFA of 30,291 m² as per the stamped plans comprising of:

- Warehouse: 29,655 m² GFA
- Office: 636 m² GFA

Snackbrands Stage 1 currently provides 114 on-site car parking spaces.

1.4.2 Proposed Built Form

This application generally seeks approval for a new purpose-built industrial food manufacturing facility for Snackbrands at Lot 10 of the First Estate (Snackbrands Stage 2). Effectively, the proposed development will be an extension and expansion of the existing operational Warehouse and Distribution facility at Lot 11.

Additionally, minor adjustments are also proposed to the operations within the existing Warehouse and Distribution facility at Lot 11 to include industrial food manufacturing operations. A reduced copy of the Site Plan which illustrates the proposed extension (Lot 10) to the existing building (Lot 11) is presented in **Figure 3**. A summary of the proposed building floor areas modifications, extension and parking provision addition is listed as follows:

Lot 11

- Conversion of 5,217 m² Gross Floor Area (GFA) of the existing warehouse to manufacturing use.

Lot 10

- A total GFA of 27,385 m² for manufacturing use, including:
 - Stage 1 - Warehouse 2A:

¹ <https://www.planningportal.nsw.gov.au/major-projects/project/11586>

- Warehouse (including mezzanines): 21,737 m²
- Office: 2,485 m²
- Amenities: 350 m²
- Stage 2 – future Warehouse 2B Extension: 2,813 m²
- Parking provision: 160 car parking spaces, including 2 accessible parking spaces

A summary of changes to the areas and parking spaces for Lot 10 and Lot 11 is outlined in **Table 1**.

Table 1: Lot 10 & Lot 11 Built Form Summary

Lot	Status	Parking (spaces)	Warehouse (m ²)	Manufacturing (m ²)	Office (m ²)	Amenities (m ²)	Total (m ²)
Lot 11	Existing	114	29,655	-	636	-	30,291
	Proposed	114	24,438	5,217	636	-	30,291
Lot 10	Proposed ¹	160	0	24,550	2,485	350	27,385
Proposed Lot 10 & 11 - Total		274	24,438	29,767	3,121	350	57,676

Note: 1) The stage 2 – future warehouse 2B extension has been taken into consideration as a worst-case assessment.

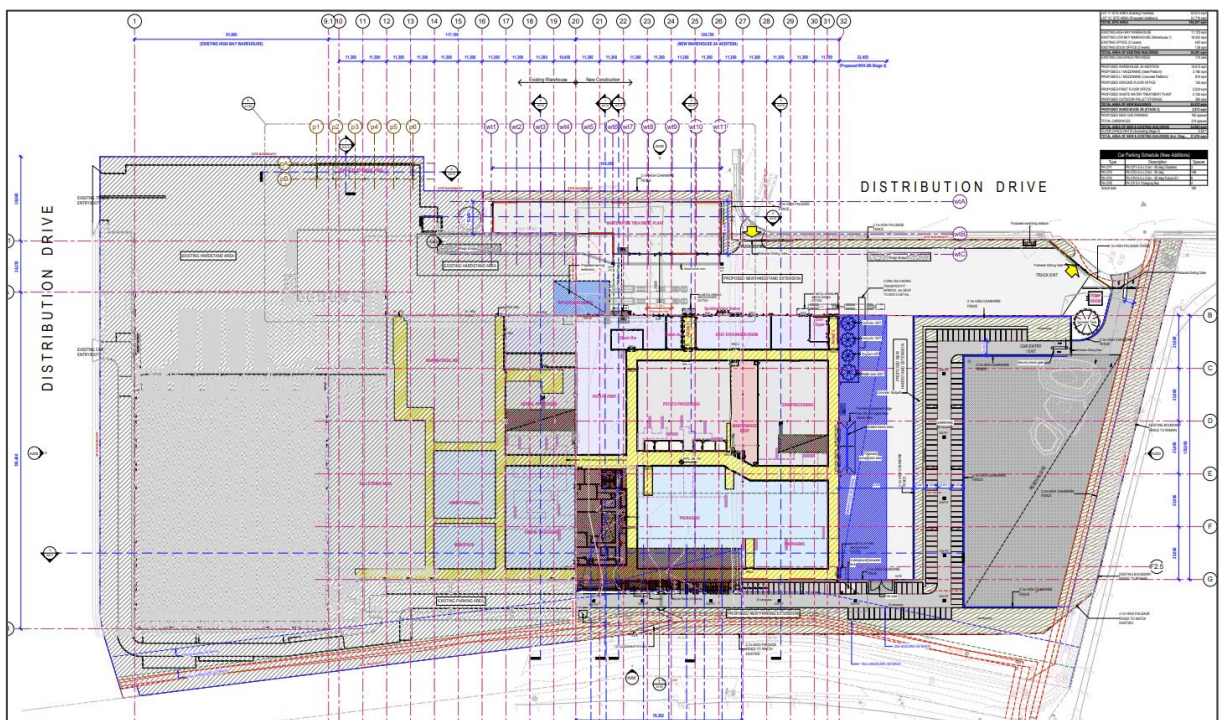


Figure 3: Site Plan

Source: HL Architects

1.4.3 Site Access Arrangements

The Site is proposed to be accessed to / from Distribution Drive via five separate crossovers. The two existing access points to Lot 11 (to the south of the Site) will be maintained with an additional three crossovers to the Lot 10 proposed (to the north-west of the Site). These access points are shown in **Figure 4** and described as follows:

Existing

- Southern 1: A full movement crossover for trucks and other heavy vehicles; and
- Southern 2: A full movement crossover for cars and other light vehicles as well as fire trucks

Proposed

- North-western 1: An entry only crossover for trucks up to 12.5m Heavy Rigid Vehicles (HRV);
- North-western 2: An exit only crossover for trucks up to 26m B-Doubles; and
- North-western 3 : A full movement crossover for light vehicles and trucks up to 26m B-Doubles.

Heavy Vehicles Access Strategy

Operationally, it is anticipated that:

- Trucks accessing the existing Lot 11 would still enter/exit via the existing Southern 1 access.
- The majority of trucks (up to 26m B-doubles) accessing the proposed Lot 10 will enter via the existing Southern 1 access driveway, and then exit via North-western 2 access.

Notably, the North-western 1 access driveway is proposed as a secondary access for waste truck (12.5m HRV) use only. Snackbrands has advised that the use of this access would be infrequent and appropriate on-site traffic management plan would be in place to prevent any potential queuing onto Distribution Drive.

Additionally, North-western 3 access has been designed to accommodate heavy vehicle access for trucks up to 26m B-Doubles, which provides potential access to the residual land to the north of the Site.

Light Vehicles Access Strategy

A separate entry/exit access crossover has been proposed at the existing cul-de-sac of Distribution Drive as North-western 3 access to provide full movement accesses to/from the new Lot 10 car park.

However, noting that the new car park of Lot 10 is proposed as an extension of the existing car park of Lot 11, it is expected that all light vehicles will enter via the existing Southern 2 access and exit via the

North-western 3 access prior to the future extension of Distribution Drive and its connection to the existing signalised T-intersection of Mamre Road with James Erskine Drive (further discussed in Section 2.3.1). An indicative heavy vehicle movement strategy plan is shown in **Figure 5**.

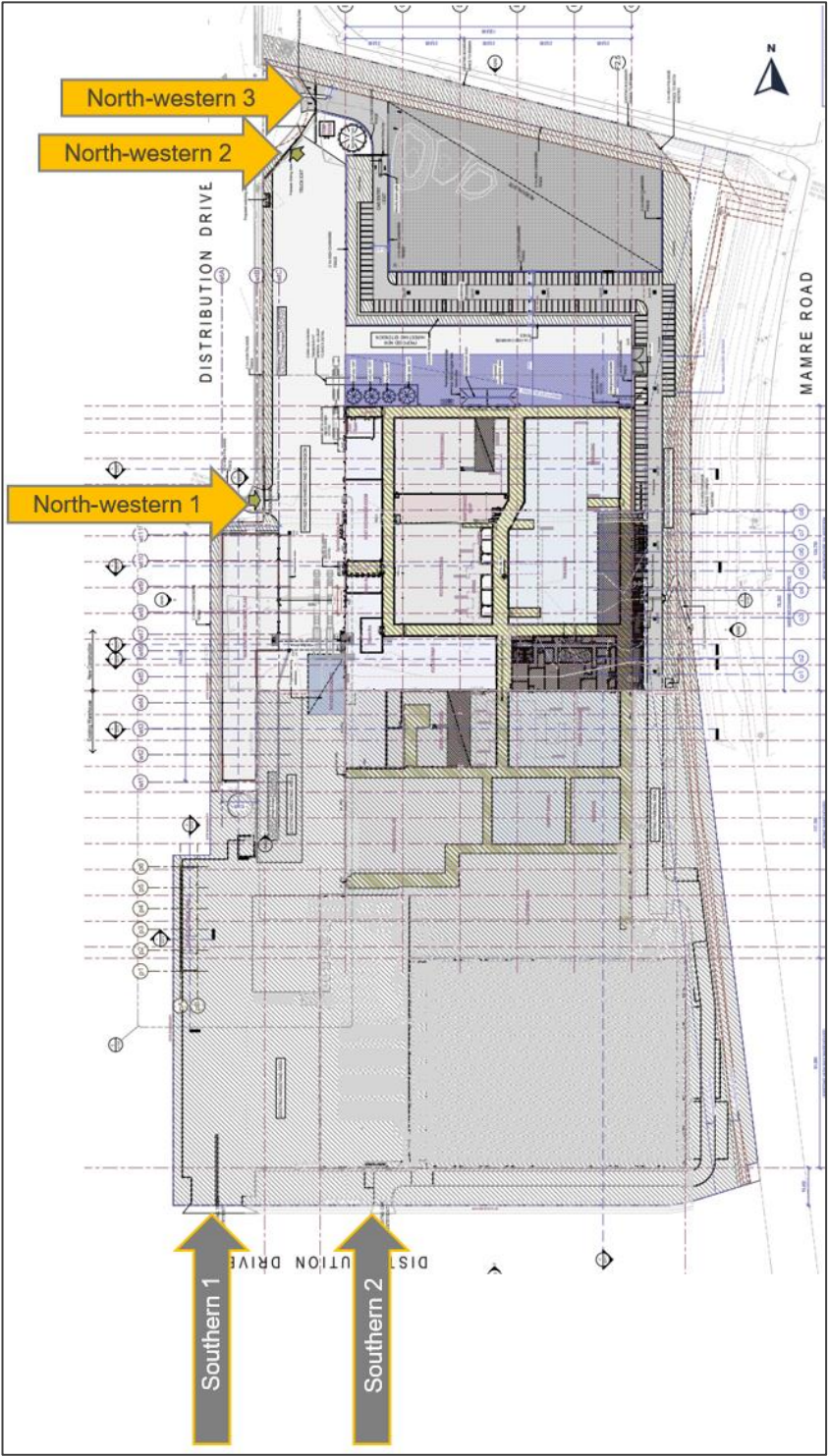


Figure 4: Access Strategy

Source: HL Architects

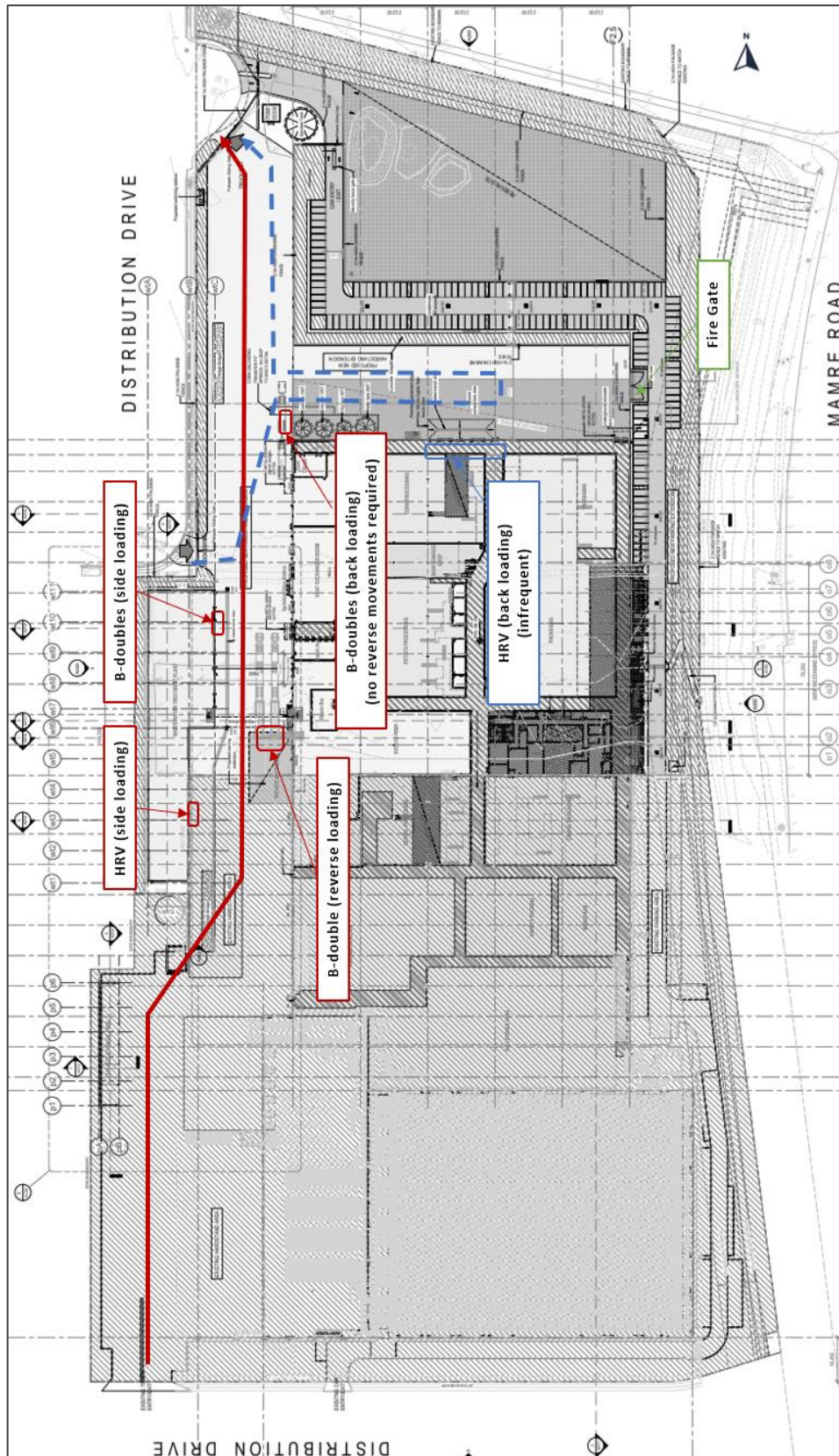


Figure 5: Heavy Vehicle Movement Strategy Plan

Source: HL Architects

1.4.4 Tenant-specific Operational Details

It is understood that the proposed facility is to be operated by Snackbrands which will include the operations of the Lot 10 and Lot 11 developments. Some changes to the current operations are expected, with the following future operational details relevant to traffic considerations:

- 24/7 operational hours
- Up to 380 employees (415 during seasonal peak periods) over 24 hours which are broken up over the day, afternoon, night and office shifts as outlined in **Table 2**.

Table 2: Staff Shift Numbers (Lot 10 & Lot 11)¹

Type	Day (5:00 – 15:00)	Afternoon (13:00 – 23:00)	Night (21:00 – 7:00)	Office (8:00 – 16:00)	Total
Warehouse Office	2	0	0	7	9
Warehouse Team	10	10	10	0	30
Corporate	0	0	0	32 (29)	32 (29)
Other	89 (105)	99 (105)	91 (101)	30 (36)	309 (347)
Total	101 (117)	109 (115)	101 (111)	69 (72)	380 (415)

Note: 1) Operational details during seasonal peak periods are provided in brackets.

The anticipated operational vehicular movements are outlined in **Table 3**, with details provided in **Appendix A**.

Table 3: Operational Vehicle Movements (Lot 10 & Lot 11)¹

Time	Time Period	Light Vehicles	Heavy Vehicles	All Vehicles
AM Peak	8:00 - 9:00	69 (72)	15	84 (87)
PM Peak	15:00 - 16:00	83 (81)	15	98 (96)
Daily		760 (830)	360	1,120 (1,190)

- Note: 1) Operational details during seasonal peak periods are provided in brackets.
2) Road network peak hour along Mamre Road near the First Estate Precinct.

1.5 Response to SEARs

The Secretary Environmental Assessment Requirements (SEARS) for the was issued by NSW Department of Planning, Industry and Environment (DPIE) on 27 May 2021.

The SEARs appropriate for Traffic and Transport matters is reproduced in **Table 4**, which also includes reference to the relevant sections of the TA where each requirement is addressed.

Table 4: Response to SEARS

Item	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	<p>Description of the proposed access points are detailed in Section 1.4.3.</p> <p>The expected vehicular traffic generation of the proposed development is detailed in Section 5.1.2.</p> <p>The traffic generation based on a first-principles assessment from the future tenant (Snackbrands) supplied information during the AM peak hour is 84 veh/hr, PM peak hour is 98 veh/hr and Daily is 1,120 veh/day during normal operational period. Further details can be found in Section 1.4.4, Section 5.1.2, and Appendix A.</p>
2	Details on the relationship of traffic generation between the adjoining SSD-9429 and the development including pre and post-development traffic volumes	<p>The details of the relationship of traffic generation between the adjoining approved SSD-9429 and the development is provided in Section 2.3.2 and Section 5.</p> <p>This includes the traffic generation threshold of the approved Master Plan SSD-7173 and the operational tenant traffic generation details.</p>
3	An assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model	<p>Intersection performance of the key intersection of Mamre Road / Distribution Drive (signalised in the interim scenario) is detailed discussed in Section 5.2.</p>
4	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	<p>Refer to the design review section and Appendix B for Swept Path Analysis furthermore, it is also noted that a Construction Management Plan will be provided in response to Condition of Consent and in response to a conditional of consent as part of the Construction Certificate (CC) phase of this SSD.</p>
5	Details and plans of any proposed the 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	<p>Site plan prepared by HL Architects is extracted and presented in the report for context.</p> <p>The plans detail the proposed the internal road network, loading dock servicing and provisions, on-site parking provisions, and pedestrian and cyclist facilities, which are generally proposed in accordance with the relevant Australian Standards.</p>

Item	Description	Relevant Section of TA
6	Details of the largest vehicle anticipated to access and move within the site, including swept path analysis	Design review assessment of the largest vehicle anticipated which as 26m B-Double to access the hardstand in accordance with AS 2890.2:2018 including swept paths are completed and provided in Appendix B .
7	Swept path diagrams depicting vehicles entering, exiting and manoeuvring throughout the site	Swept path assessment has been undertaken as part of the design review in accordance with AS 2890.2:2018 and are provided in Appendix B
8	Details of road upgrades, infrastructure works or new roads or access points required for the development if necessary.	Reference should be made to Section 5.2 which demonstrates that the surrounding road network will have spare capacity and operate with good performance in accordance with TfNSW Intersection performance criteria. As such, no road upgrades or infrastructure works to the surrounding road network are proposed.

1.6 Conditions of Consent

The Conditions of Consent forming part of the Notice of Determination for the First Estate Master Plan approval (SSD-7173) and relating to the Proposal are as follows:

- Prepare and implement a Construction Traffic Management Plan (CTMP)
- Prepare and implement an Operational Traffic Management Plan (OTMP)
- Workplace Travel Plan (WTP)

It is expected that these plans will be prepared as part of the subsequent Development Application (DA) stage and do not form a requirement as part of this SSDA TA.

1.7 Response to TfNSW's Advice

In response to Request for SEARs, TfNSW has also provided additional advice on 19 May 2021. Responses to the relevant advices are provided in the following table.

Table 5: Response to TfNSW's Advice

Item	TfNSW Advice	Ason Group Response
1	Details of all traffic types and volumes likely to be generated by the proposed development during construction and operation, including a description of haul route origins and destinations, including:	
a.	Daily inbound and outbound vehicle traffic profile by time of day and day of week (if travel patterns differ across the week);	Estimated daily inbound and outbound vehicle traffic profile have been provided in Appendix A for both normal operational period and seasonal peak period.

Item	TfNSW Advice	Ason Group Response
b.	Site and traffic management plan on how to manage number of 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 surrounding road network;	Detailed site access arrangements and an indicative Heavy Vehicle Movement Strategy Plan is provided in Section 1.4.3, which demonstrates that operational truck movements can be sufficiently accommodated on-site with the proposed site plans. Additionally, a detailed CTMP can be prepared in response to a suitable condition of consent for this SSD which can readily be completed as part of the CC stage.
c.	Detailed plan of proposed layout of internal road network to demonstrate that the site will be able to accommodate the most productive vehicle types and parking on site in accordance with the relevant Australian Standard and Council's Development Control Plan;	Details regarding the on-site design of the subject site is provide in Section 6 with Swept path analysis included in Appendix B .
d.	Details and plans of any proposed the 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	Reference should be made to the Architectural Plans prepared by HLA Architects. A reduced copy of the proposed site plan is included in Section 1.4.2.
e.	Swept path diagrams to demonstrate vehicles entering, exiting and manoeuvring throughout the site;	Swept path analysis demonstrating vehicles entering, exiting and manoeuvring throughout the site are provided in Appendix B .
f.	An assessment of the forecast impacts on traffic volume generated on road safety and capacity of road network including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model as prescribed by TfNSW (former Roads and Maritime). The traffic modelling should consider the scenarios of year 2026, 2031, 2036. These should include, but not be limited to: <ul style="list-style-type: none"> i. Mamre Road at Bakers Lane; ii. Mamre Road at Distribution Drive; iii. Mamre Road at James Erskin Drive; and iv. Mamre Road at Erskine Park Road. 	As discussed in Section 5, the estimated operational traffic generation of the Site (Lot 10 and Lot 11) are generally consistent with the approved traffic generation thresholds for Lot 10 and Lot 11 under the approved First Estate Master Plan and Stage 1 Snackbrands TIA and are expected to have immaterial impacts to the surrounding road network and therefore does not warrant further SIDRA modelling assessments. Furthermore, it is noted that the future format of these intersections has been discussed as part of the approved Kemps Creek SSD (SSD-9522) which covers for the approved developments and background traffic growth at these intersections. Ultimately, it is suggested that the broader Mamre Road Precinct study now being completed would deal with the performance of some of these intersections. It is noted that Ason Group has discussed this methodology with DPIE and they have subsequently approved this methodology that SIDRA modelling is not required as part of this SSD approval.
g.	To ensure that the above requirements are fully addressed, an assessment of the predicted impacts of this traffic on road safety and the capacity of the road network, including consideration of cumulative traffic impacts at key intersections using SIDRA or similar traffic model. This is to include the identification and consideration of approved and proposed developments/planning proposals/road upgrades in the vicinity. The assessment needs to consider the impact on Mamre Road for the duration of the works because traffic growth in this area is expected to increase more quickly than standard growth rates;	Previous SIDRA modelling as part of the planning for the overall First Estate Precinct concluded that the interim access arrangements to Mamre Road (prior to the upgrade of Mamre Road and James Erskine Drive to four legs) will operate with a Level of Service B during both peak periods – considered good operation in accordance with TfNSW approved intersection performance criteria. Therefore, it is expected that there is sufficient spare capacity within the existing and planned intersection designs to accommodate the traffic volumes generated by the proposal without causing any adverse impacts to the road network operations.

Item	TfNSW Advice	Ason Group Response
h.	details of road upgrades, infrastructure works, or new roads or access points required for the development;	On the basis of the above, it is anticipated that the road network would be more than adequate to cater for the traffic generated by the Proposal. Accordingly, it is considered that no further road upgrades are required to support the proposed development.
i.	details of travel demand management measures to minimise the impact on general traffic and bus operations, including details of a location-specific sustainable travel plan (Green Travel Plan and specific Workplace Travel Plan) and the provision of facilities to increase the non-car mode share for travel to and from the site;	A detailed Workplace Travel Plan (WTP) can be prepared in response to a suitable condition of consent for this SSD.
j.	details of the adequacy of existing public transport or any future public transport infrastructure within the vicinity of the site, pedestrian and bicycle networks and associated infrastructure to meet the likely future demand for the proposed development; and	The subject site's accessibility to existing public / active transport network and future bus service opportunities has been discussed in Section 3.2.
k.	measures to integrate the development with the existing/future public transport network.	The subject site's accessibility to existing public / active transport network and future bus service opportunities has been discussed in Section 3.2. Furthermore, it is understood that a Workplace Travel Plan (WTP) can be prepared in response to a suitable condition of consent for this SSD.
l.	<p>The preparation of a preliminary Construction Pedestrian and Traffic Management Plan (CPTMP) to demonstrate the proposed management of the impact in relation to construction traffic addressing the following:</p> <ul style="list-style-type: none"> i. assessment of cumulative impacts associated with other construction activities (if any); ii. an assessment of road safety at key intersection and locations subject to heavy vehicle construction traffic movements and high pedestrian activity; iii. details of construction program detailing the anticipated construction duration and highlighting significant and milestone stages and events during the construction process; iv. details of anticipated peak hour and daily construction vehicle movements to and from the site; v. details of on-site car parking and access arrangements of construction vehicles, construction workers to and from the site, emergency vehicles and service vehicle; vi. details of temporary cycling and pedestrian access during construction. 	<p>It should be noted that the construction programme for the development has not yet been finalised.</p> <p>Notwithstanding, a preliminary Construction Traffic Management Plan (CTMP) has been provided as part of the First Estate Masterplan (SSD-7173) TIA, which outlines general principles for managing construction traffic and provides an understanding of the likely traffic impacts during the construction period entire estate.</p> <p>Furthermore, a detailed CTMP can be prepared in response to a suitable condition of consent for this SSD which can readily be completed as part of the CC stage.</p>

Item	TfNSW Advice	Ason Group Response
2	<p>Traffic Counts:</p> <p>TfNSW requests that any counts undertaken are not within close proximity to the school holidays/long weekend.</p> <p>Counts undertaken within close proximity to these events may not indicate normal traffic conditions. Ideally vehicle counts should be undertaken during a typical day, to include Thursday (or Wednesday) and Friday for the study (not near school/public holidays). This will provide the departments with an accurate understanding of the existing traffic conditions and the actual impact of this development application to the surrounding network.</p>	<p>Noted. No traffic count surveys were undertaken as part of this assessment.</p>

1.8 Objectives

Generally, this TA report addresses the relevant Traffic, Transport and Parking implications of the development, including compliance with relevant State and Local Government controls and Australian Standards specifications.

The history of the site, including the access and future intersection operation is discussed in further detail in the following sections to provide context to this application.

1.9 Report Structure

With regard to the above, and with consideration to the TfNSW *Guide to Transport Impact Assessments* 2018 (TIA Guide) framework the remainder of this report is structured as follows:

- **Section 2** provides the summary of the planning context associated with the First Estate Precinct and the associated access arrangements.
- **Section 3** describes the site, existing road network and accessibility to alternative transport modes
- **Section 4** outlines the relevant parking requirements.
- **Section 5** describes the traffic impacts of the proposed development including projected trip generation.
- **Section 6** describes the access, internal configuration of the proposed car parking and loading aspects of the development.
- **Section 7** provides a summary of the key traffic and parking assessment findings.

1.10 References

This report also builds on the following Traffic Impact and Transport Assessments undertaken by Ason Group relating to the Precinct:

- *Mamre West Land Investigation Area, Planning Proposal Mamre Road, Western Sydney Priority Growth Area*, prepared by Ason Group (ref: 0124r03v3) and dated 23 February 2016 (the Planning Proposal TIA).
- *Stage 1 SSDA, Proposed Warehouse and Logistics Hub; 585-649 Mamre Road, Orchard Hills, Western Sydney Priority Growth Area* (the SSD TIA), prepared by Ason Group (ref: 0124r04v2) and dated 5 April 2016. This report was submitted as a State Significant Development (SSD) application for Stage 1 (Lots 7, 8 and internal roads) of the First Estate Precinct,

- *Proposed Training Academy and Emergency Services Facility – FRNSW; Lot 2, 585-649 Mamre Road, Orchard Hills* (the Lot 2 TIA), prepared by Ason Group (ref: 0287r01v2) and dated 22 September 2016. This report was submitted under Part 5 of the Environmental Planning and Assessment Act 1979;
- *Approved Warehouse Development, Section 4.55 Mod Transport Assessment, 13 Distribution Drive, Orchard Hills (First Estate)*, prepared by Ason Group (ref: 1478r01) and dated August 2020.
- *Traffic Impact Assessment for Lot 7 SSD-9429*, prepared by Ason Group (ref: 0707r01) and dated August 2018. This report was submitted as an SSD application for previous Lot 7 of the First Estate Precinct.

This TA has also been informed by the following planning documentation including Standards, Controls and Guidelines:

- NSW DPIE, *Mamre West Land Investigation Area Development Control Plan* 2016 (Mamre West DCP)
- NSW DPIE, *Mamre Road Precinct Draft Development Control Plan* 2020 (Mamre Road Draft DCP)
- State Environmental Planning Policy (Western Sydney Employment Area) 2009
- Roads and Maritime Services, *Guide to Traffic Generating Developments* 2002 (RMS Guide)
- Roads and Maritime Services, *Guide to Traffic Generating Developments Updated Traffic Surveys* (RMS TDT 2013/04a)
- 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)
- Australian Standard 2890.3:2015 Parking Facilities – Bicycle Parking (AS 2890.3:2015)
- Australian Standard 2890.6:2009 Parking Facilities – Off Street Parking for People with Disabilities (AS 2890.6:2009)
- Transport for NSW, *Integrated Public Transport Service Planning Guidelines* 2013 (IPT Planning Guidelines)
- Transport for NSW, *Guide to Transport Impact Assessments* 2018 (TIA Guide)

2 Planning Context

The application has been lodged having regard to the approved Mamre West Altis Warehouse and Distribution Hub development also known as the First Estate Precinct (SSDA-7173) and the subsequent MOD Applications considered by the DPIE.

These previous Concept Plan and subsequent Modification (MOD) Application approvals set out the development principles including estate infrastructure, overall warehouse / industrial floor space, car parking provision rates and provisional requirements for future access to the regional road network.

2.1 Mamre Road Precinct Draft Development Control Plan

The Mamre Road Precinct Draft Development Control Plan 2020 (Mamre Road Draft DCP) has been prepared by NSW DPIE and made available for public exhibition from November 2020 to December 2020.

The Mamre Road Draft DCP provides planning controls for future development in the Mamre Road Precinct including building design controls and a connected and integrated road network. As illustrated in **Figure 6**, the First Estate is located just outside and to the immediate north of the Mamre Road Precinct boundary however, it has been provided for context purposes.

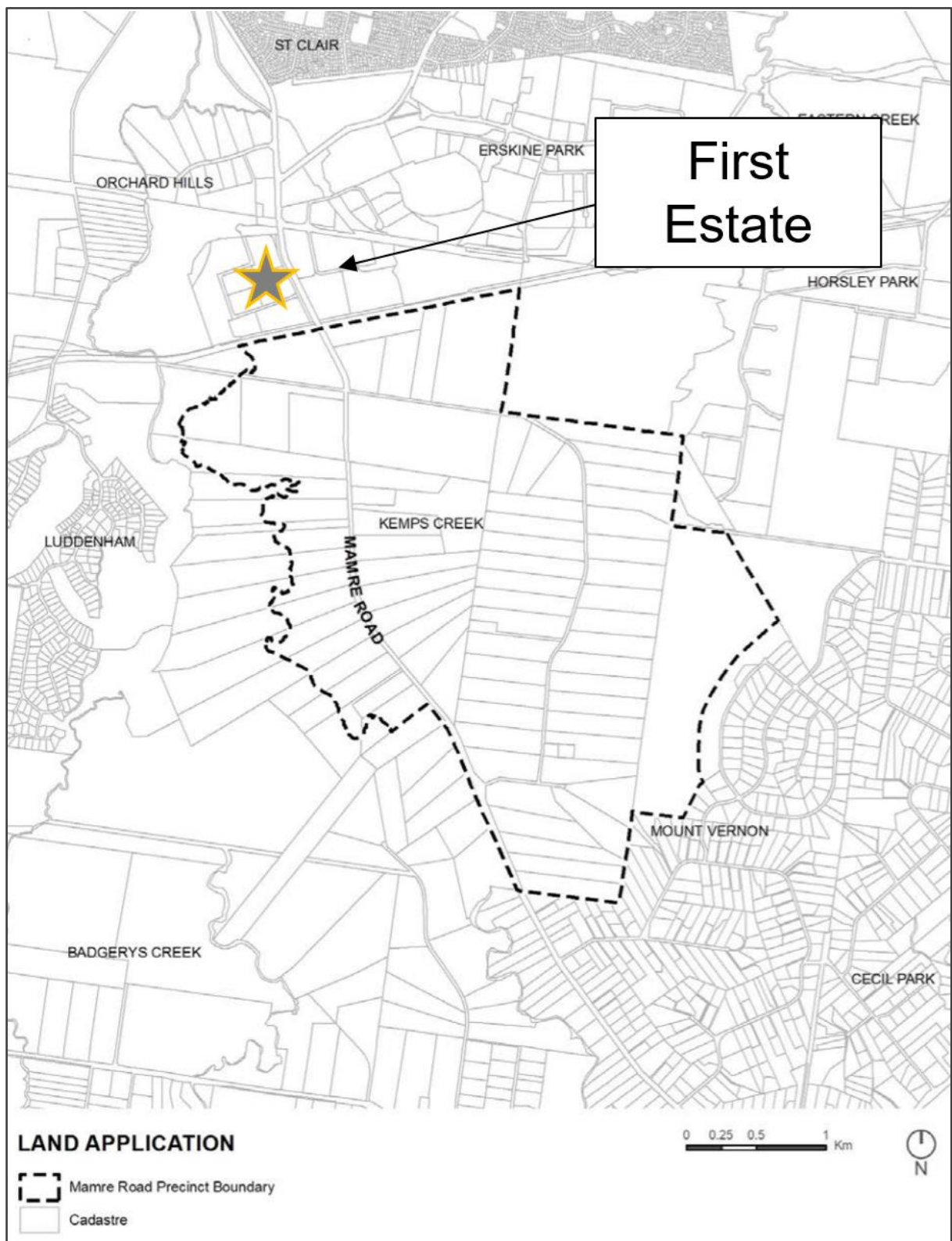


Figure 6: Mamre Road Precinct

Source: Mamre Road Draft DCP 2020

2.2 Mamre West Land Investigation Area

2.2.1 Mamre West Precinct Development Control Plan

The Mamre West Land Investigation Area Draft Development Control Plan 2016 (Mamre West DCP) has been prepared by Urbis on behalf of NSW DPIE. The Mamre West DCP aims to facilitate the redevelopment of the land zoned IN1 General Industrial under the provisions of WSEA SEPP for the Mamre West Precinct as shown in **Figure 7**.



Figure 7: Mamre West Land Investigations Area

2.2.2 Mamre West Land Planning Proposals

The Mamre West Land Investigation Area has been the subject of investigations for rezoning. As shown in **Figure 8**, area consists largely of 3 components described as follows:

- Stage 1 flood-free area to the south (referred to as Mamre West STG1 and consists primarily of the First Estate).
- Stage 2 flood-free area to the north (referred to as Mamre West STG2 and it is the *Potential Stage 2 Area*).
- The remaining area of the Precinct that is flood prone.

Mamre West STG1 and STG2 are 47.8 hectares and 39.6 hectares in site area respectively and represent the 87.4 hectares of developable (flood-free) area within the investigation area.

Based primarily on feedback from residents living within the Mamre West STG2 area, DPIE reduced the Planning Proposal to the Mamre West STG1 study area, with Mamre West STG2 to be potentially the subject of a future Planning Proposal. Subsequently, the Planning Proposal was approved and the Mamre West STG1 area has been rezoned for IN1 use.

Planning for Mamre West STG2 is currently ongoing and, at this time, is awaiting formal approval from DPIE.

2.3 First Estate Precinct

2.3.1 First Estate Access Strategy

In accordance with the Planning Agreement for the Planning Proposal, the following summarises the key components of the agreed Access Strategy for the Mamre West STG1 area (First Estate); it should be noted that the Access Strategy was developed having consideration for the upgrading of Mamre Road² by Transport for NSW (TfNSW) (Formerly Roads & Maritime Services (RMS)) to a Principal Arterial Road:

- Primary Access to be provided via the existing signalised T-intersection of Mamre Road with James Erskine Drive (the Primary Access intersection).
- Secondary Access to the Precinct to be provided via a left-in / left-out priority-controlled intersection with Mamre Road located approximately 500 metres south of the existing intersection with James Erskine Drive (the Secondary Access intersection).

² <https://www.rms.nsw.gov.au/projects/mamre-road-upgrade/index.html>

- Internal industrial collector link roads (i.e. the existing Distribution Drive) connecting the First Estate Precinct to northern Mamre West STG1 areas and onwards to the Primary Access intersection.

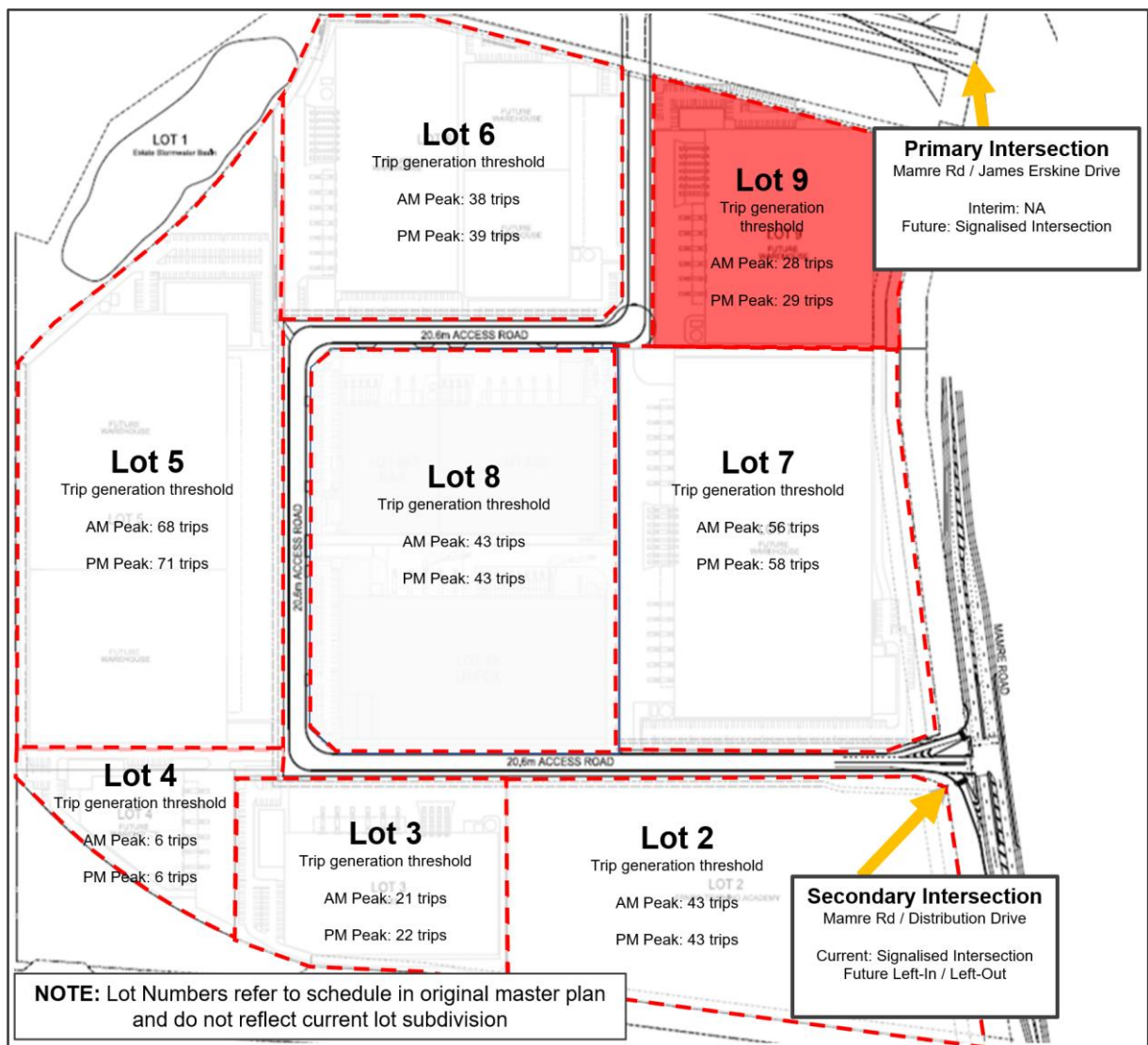
The outcome of the most recent discussions is the construction of a (now operational) temporary (interim) signalised intersection in the location of the future Secondary Access intersection.

This Planning Agreement includes clauses that will ensure that the interim signalised intersection is removed (and reconfigured to left-in / left-out priority-controlled intersection) once TfNSW upgrades Mamre Road to a principal arterial and the Mamre West STG1 area is connected to the Primary Access intersection.

2.3.2 First Estate Master Plan Approval (SSD-7173)

The First Estate Masterplan including the approved trip generation thresholds (SSD-7173) is shown in **Figure 8** with the corresponding land use assumptions provided in **Table 6**.

These yields have been adopted for all previous traffic assessments including the original First Estate Master Plan Approval (*AG ref: 0124r04v2*) and form the basis of the interim and future site access and network operation assessment in the vicinity.



Note: Labelled Lot 9 (now Lot 10) and Lot 7 (now Lot 11)

Figure 8: First Estate Original Master Plan (SSD 7173)

Reference is made to the RMS *Technical Direction 2013/04a – Guide to Traffic Generating Developments; Updated Traffic Surveys* (RMS Guide TDT 2013/04a) to determine the appropriate trip rates for the Precinct.

The RMS Guide TDT 2013/04a provides surveys of industrial precincts across Sydney, including specific data for development within the Erskine Park Industrial Area and therefore provides the most appropriate rates for assessment.

In this regard, the following trip rates – as adopted and approved for the First Estate Master Plan (SSD 7173) traffic generation assessment - in relation to the Erskine Park Industrial Area (total building including both warehouse and office components) are:

- 0.134 trips per 100m² GFA during the morning (AM) peak hour
- 0.139 trips per 100m² GFA during the evening (PM) peak hour
- 1.892 trips per 100m² GFA per day

This TA report adopts the approved trip rate assumptions from the RMS Guide TDT 2013/04a as stipulated above, with application of these rates to the adopted First Estate Master Plan Precinct development yields summarised in **Table 6**.

Table 6: Master Plan approved Traffic Generation

Lot	Warehouse Ref:	Total Built Area (m ²)	AM Trips	PM Trips	Daily
Lot 1	Bio retention basis	n/a	-	-	-
Lot 2	FRNSW	-	91	91	-
Lot 3	Warehouse3	16,000	21	22	303
Lot 4	Warehouse 4	4,250	6	6	80
Lot 5	Warehouse 5a	22,200	30	31	420
	Warehouse 5b	28,600	38	40	541
	Warehouse 6A	6,900	9	10	131
Lot 6	Warehouse 6B	8,200	11	11	155
	Warehouse 6C	20,200	27	28	382
Lot 7 (Current Lot 11)	Warehouse 7	41,500	56	58	785
	Warehouse 8A	11,400	15	16	216
Lot 8	Warehouse 8B	9,400	13	13	178
	Warehouse 8C	22,160	30	31	419
Lot 9 (Current Lot 10)	Warehouse 9	21,200	28	29	401
Total			375	386	4,011

With reference to Table 6, it is noted that, under this First Estate Precinct wide assessment, Lot 10 (formerly Lot 9) was assumed to have a potential developable floor area of some 21,200 m² GFA. Accordingly, the approved Precinct-wide modelling adopts a traffic generation of 28 and 29 vehicles per hour during AM and PM Peaks respectively for Lot 10.

Notwithstanding, noting that the proposed Snackbrands Stage 2 (Lot 10) is expected to operate together with the existing Snackbrands Stage 1 (Lot 11), consideration should be given to the overall traffic generation forecast of Lot 10 and Lot 11 as part of the First Estate Master Plan Approval (SSD-7173).

This traffic generation threshold is outlined in the Ason Group report (*AG ref 0124r04v2*) (See Section 4.3) supporting the original First Estate Master Plan Approval as well as the Ason Group report (*AG ref 0707r01*) (See Section 2.4) supporting the approved Lot 7 (currently Lot 11).

Lot 11 (formerly Lot 7) adopts a traffic generation of 56 and 58 vehicles per hour during AM and PM Peaks respectively.

Having regard for the above, collectively, the overall traffic generation forecast of Lot 10 and Lot 11 allows for the following overall approved traffic generation:

- AM Peak: 84 vehicular trips per hour,
- PM Peak: 87 vehicular trips per hour, and
- Daily: 1,186 vehicular trips per day

These peak hour traffic generation values were endorsed as part of the SSD-7173 First Estate Master Plan approval and therefore set the traffic generation threshold for this assessment.

2.3.3 Stage 1 Snackbrands Approval SSD-9429

Ason Group completed the Traffic Impact Assessment (*AG ref: 0707r01*) supporting the Stage 1 Snackbrands 9 Snack Brands Warehouse and Distribution Facility (SSD-9429). The assessment considers that together, Lots 10 & 11 (formerly Lot 7 & 9) would carry the same traffic generation potential as outlined in the aforementioned section.

SSD-9429 was approved by the NSW DPIE on 5 April 2019 and thereby confirms the traffic generation threshold of Lots 10 & 11 outlined as part of SSD-7173.

3 Existing Conditions

3.1 Key Roads

With reference to **Figure 9**, the key local roads influenced by the application include:

- **Mamre Road** – an arterial road servicing traffic between the Great Western Highway and M4 to the north and Elizabeth Drive to the south. In the vicinity of the Precinct, Mamre Road generally provides 2 lanes for two-way traffic, with additional through movement and turning infrastructure at key intersections, specifically at Erskine Park Road and James Erskine Drive. Mamre Road has a posted speed limit of 80km/hr.
- **Erskine Park Road** – a sub-arterial road servicing traffic between the Great Western Highway and M4 to the north, and Mamre Road to the south-west, as well as linking Lenore Drive (Erskine Park Link Road) to the M7 to the east. Erskine Park Road provides 2 lanes in each direction for two-way traffic north-east from the intersection of Mamre Road. Erskine Park Road has a posted speed limit of 80km/hr.
- **James Erskine Drive** – a local industrial access road, providing access for the Erskine Park Industrial Precinct, which lies to the east of Mamre Road adjacent to the Precinct. James Erskine Drive provides 4 lanes for two-way traffic and provides additional auxiliary turning infrastructure on the approach to Mamre Road. James Erskine Drive has a sign-posted speed limit of 50 km/h.
- **Lenore Drive** – a sub-arterial road intersecting Erskine Park Road in the west and links to the M7 to the east. Lenore Drive provides 2 lanes in each direction east-west for two-way traffic along its length with auxiliary turning infrastructure at signalised intersections. Lenore Drive has a posted speed limit of 80km/hr.
- **Distribution Drive** – A local industrial access road, providing property access to individual premises within The First Estate. It intersects the western side of Mamre Road where it forms the interim signalised intersection including an auxiliary left turn slip lane. Distribution Drive provides one-lane in each direction where on-street parking is permitted in a dedicated shoulder.

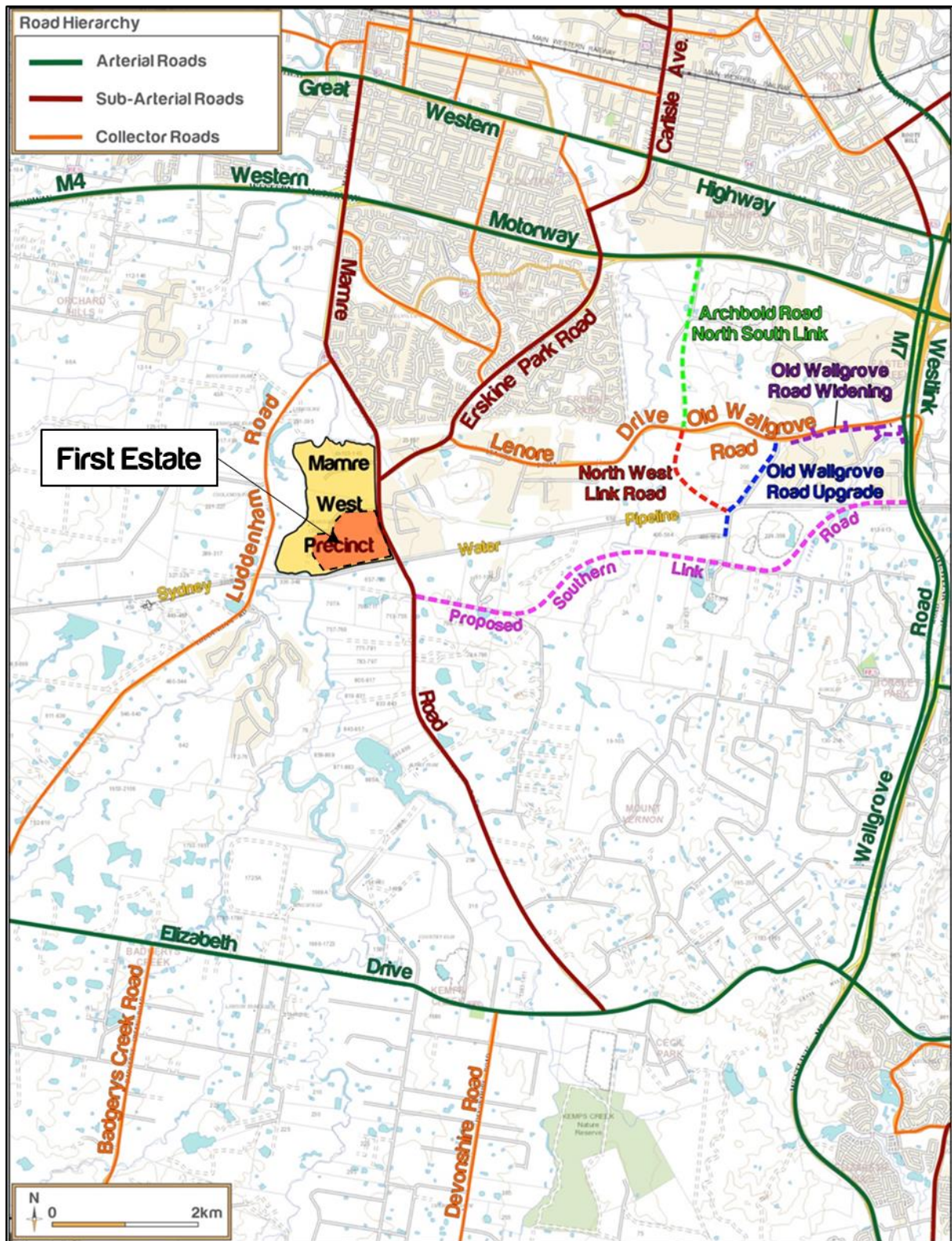


Figure 9: Location Plan & Road Hierarchy

3.2 Public Transport

3.2.1 Bus Services

The existing bus services within the vicinity of the Site are shown in **Figure 10** and frequencies detailed in **Table 7**. It is evident that the Site is not directly serviced by frequent public transport operations at this time. Notwithstanding, the opportunities for future connections have been identified and discussed further below.

Table 7: Existing Bus Services and Frequencies

Route No.	Route	Route Description	Service Frequency
776	Mount Druitt to Penrith via St Clair	Mount Druitt, Minchinbury, Colyton, St Clair, St Marys, Claremont Meadows, Kingswood, Penrith,	Weekday: Every 20-30 minutes peak, every 30 minutes off-peak Weekend: Every 60 minutes throughout the day
779	Erskine Park to St Marys	Erskine Park, St Clair, St Marys	Weekday: Every 30 minutes peak, no services off-peak Weekend: No services
813	Bonnyrigg to Fairfield	Wetherill Park, Bonnyrigg, Cecil Hills, Mount Vernon, Horsley Park, Wetherill Park, Bossley Park, Smithfield, Fairfield	Weekday: Every 30 minutes peak throughout the day Weekend: Every 30 minutes during peak, every 60 during off-peak
835	University of Western Sydney (UWS) to Prairewood	Kingswood, At Marys, Oxley Park, Colyton, St Clair, Erskine Park, Eastern Creek, Horsley Park, Wetherill Park, Bossley Park	Weekday: Every 15 minutes morning peak, every 30 minutes outside peak Weekend: No services

3.2.2 Future Bus Service Opportunities

While the Site will be well served by a future road network, it is nonetheless important that people have the opportunity to use public transport, which requires significant improved connectivity to the broader area in the first instance.

This could be possible through an extension of the 779 bus route to include stops within the future internal road network of the Site. The mentioned route provides a key connection to the St Mary's railway station and to the broader transport network.

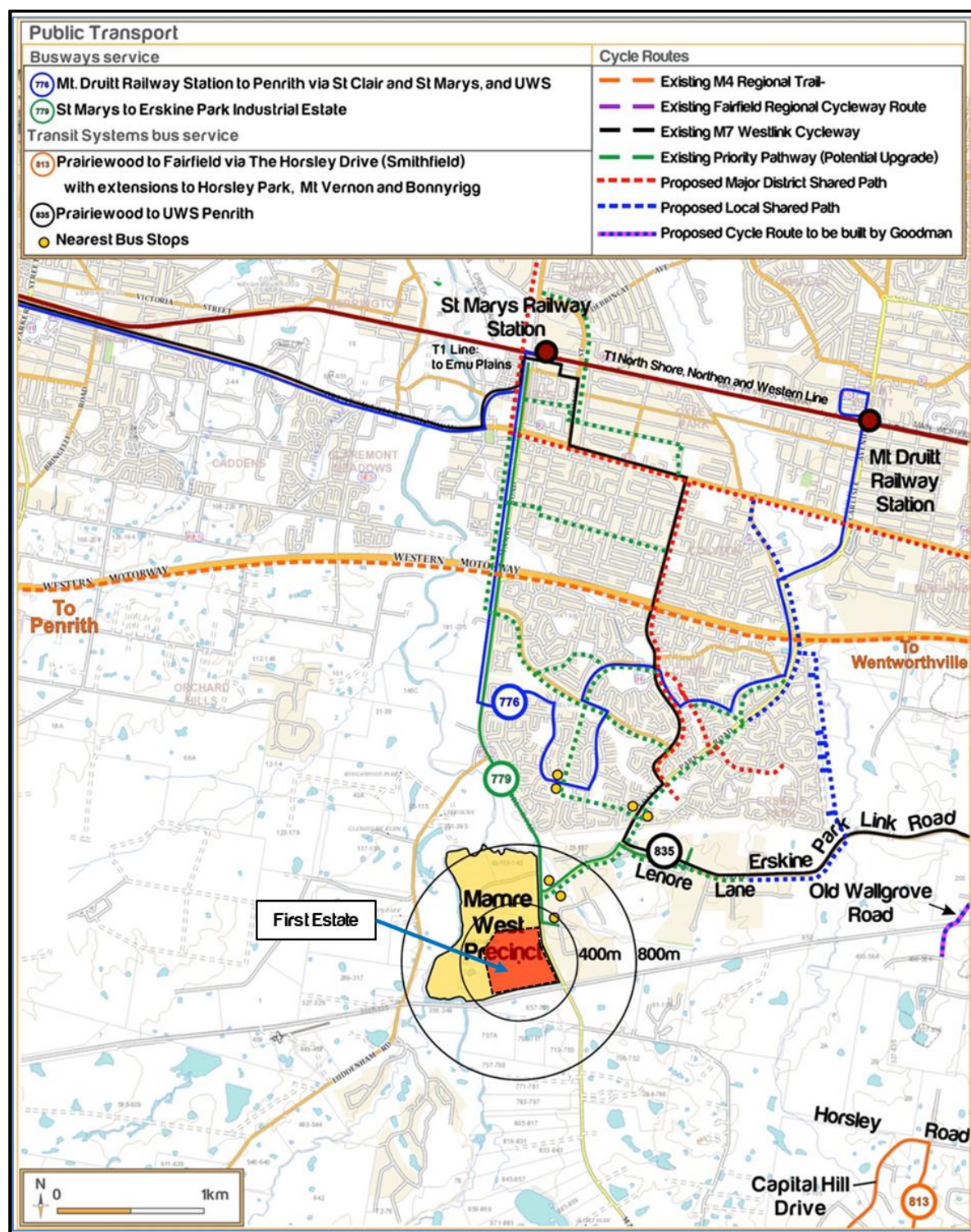


Figure 10: Public Transport Services & Cycling Routes

The planning of bus services in Sydney is governed by the *NSW Integrated Public Transport Service Planning Guidelines 2013* (IPT Guidelines)¹, which aim to establish Strategic Transport Corridors and a hierarchy of bus route types that:

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

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

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

3.3 Cycling

There are existing opportunities and infrastructure for cyclists to access the Site via Mamre Road. Bicycle lanes are provided along Erskine Park Road and sections of Mamre Road, in addition to carriageway shoulders that could also be utilised by cyclists.

Notwithstanding, there are opportunities to improve cycling infrastructure through the provision of shared paths along Mamre Road fronting the Site that could be connected to paths along Erskine Park Road. These shared paths are proposed as part of the Mamre Road Upgrade planning.

3.4 Journey to Work Travel Mode Share Review

A review of the Australian Bureau of Statistics (ABS) 2016 Census Data has been undertaken to establish the existing travel mode behaviour and patterns of workers to the First Estate area. Reference to the ABS Maps indicates that the Site is located within Destination Zone (DZN) 114630002 (as shown in **Figure 11**). The Journey to Work (JTW) travel mode data is presented in **Figure 12**.

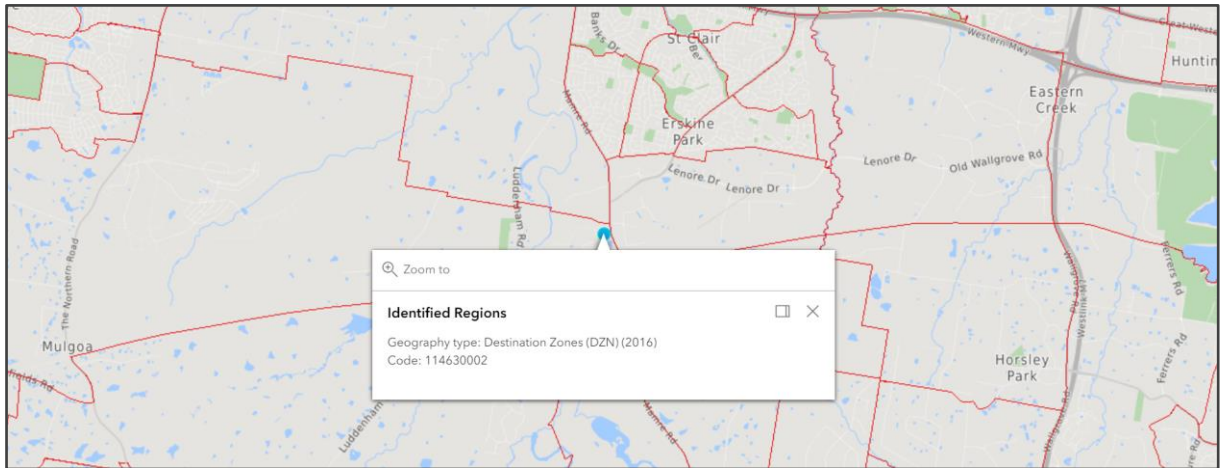


Figure 11: Destination Zone

Source: ABS Maps

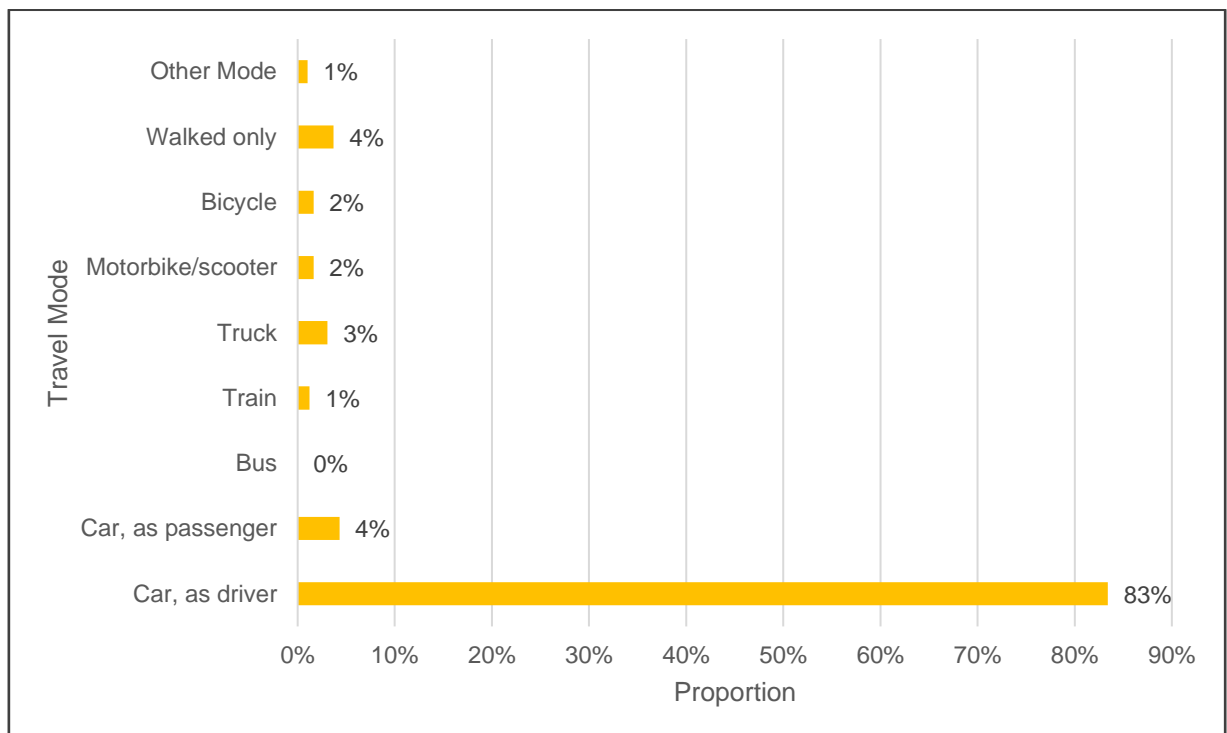


Figure 12: JTW Travel Modes

With reference to the figure above, it is evident that the predominate mode of travel to the area is by private vehicle (as driver) making up 83%. Travelling to work by car as a passenger and by walking is the next popular mode of travel at 4% each respectively which is significantly lowered in comparison.

People who travelled by truck comprised of 3% and motorbike/scooter and bicycle modes were 2%. Public transport usage was the lowest mode of travel showing 1% and 0% for train and bus respectively.

Noting the high preference for private vehicle usage over the other modes, it is considered that there is latitude to encourage a move to other travel modes in the longer term which would reduce the pressure on the road network system.

One such tool to assist in this shift away from private vehicle usage is the implementation of strategies forming part of a Workplace Travel Plan (WTP). This, however, does not form part of the scope for the purposes of this SSDA application but forms part of Conditions of Consent under the First Estate SSD-7173.

4 Parking Requirements

4.1 Car Parking

4.1.1 Car Parking Requirement

Reference is made to the *Mamre West Lands Investigations Area Development Control Plan* (Mamre West DCP) and the *Mamre Road Precinct Draft Development Control Plan* (Mamre Road Draft DCP), and the Master Plans Conditions of Consent which all require car parking for warehouse developments to be provided at the following rates:

- 1 space per 300 m² for warehouse and distribution GFA
- 1 space per 40 m² of ancillary office GFA

Mamre West DCP also specifies the following car parking rates for industrial / manufacturing land use.

- 1 space per 100 m² of industrial / manufacturing GFA

Application of these rates to the floor areas proposed is summarised in **Table 8**.

Table 8: Car Parking Provision and Requirements Lots 10 & 11

Site	Floor Area (m ² GFA)	DCP Parking Rate	Parking Required ¹	Parking Provided
Warehouse	24,438	1 space / 300 m ² GFA	81	274
Manufacturing	29,767	1 space / 100 m ² GFA	298	
Office	3,121	1 space / 40 m ² GFA	78	
Amenities	350	-	-	
Lot 10 & 11 - Total	57,676		457	274

Notes: 1) No. of spaces rounded to nearest whole number.

The development includes provision of a total of 274 car spaces, which is deemed to be theoretically 183 car parking spaces below the requirements.

4.1.2 On-site Parking Survey at Snackbrands Stage 1 (Lot 11)

With consideration to the Proposal having a shared parking arrangement with the development of Lot 11, it is essential to establish the existing parking demand. In this respect, Ason Group undertook a

Site visit of the Snackbrands Lot 11 Stage 1 site on Monday 15 March 2021 between the morning and evening peak hours.

Results indicated a total of 40 car parking spaces were occupied out of a total capacity of 114 spaces. This represents a maximum parking demand of approximately 35% and suggests the car park is currently underutilised with ample spare capacity available - representing 65%.

It is worth noting also that the approved Lot 11 (SSD-9429) also required 114 spaces under the Mamre West DCP and was met with the provision of 114. Given the actual demand was 40 car parking spaces occupied at the time of survey, this suggests that the theoretical parking requirements as per the Precinct DCP is surplus to the actual parking demand as observed on site.

Photographs of the northern and southern car parks are provided in **Figure 13** and **Figure 14** respectively.



Figure 13: Snackbrands Lot 11 Existing Car Parking – Northern Car Park



Figure 14: Snackbrands Lot 11 Existing Car Parking – Southern Car Park

4.1.3 First Principal Car Parking Demand Assessment

As discussed in Section 1.4.4, it is expected that there will be up to 380 employees (415 during seasonal peak periods) over 24 hours which are broken up over the day, afternoon, night and office shifts. Based on the estimated staff shift arrangements, forecast car parking demand of the Site (Lot 10 and Lot 11) is presented below.

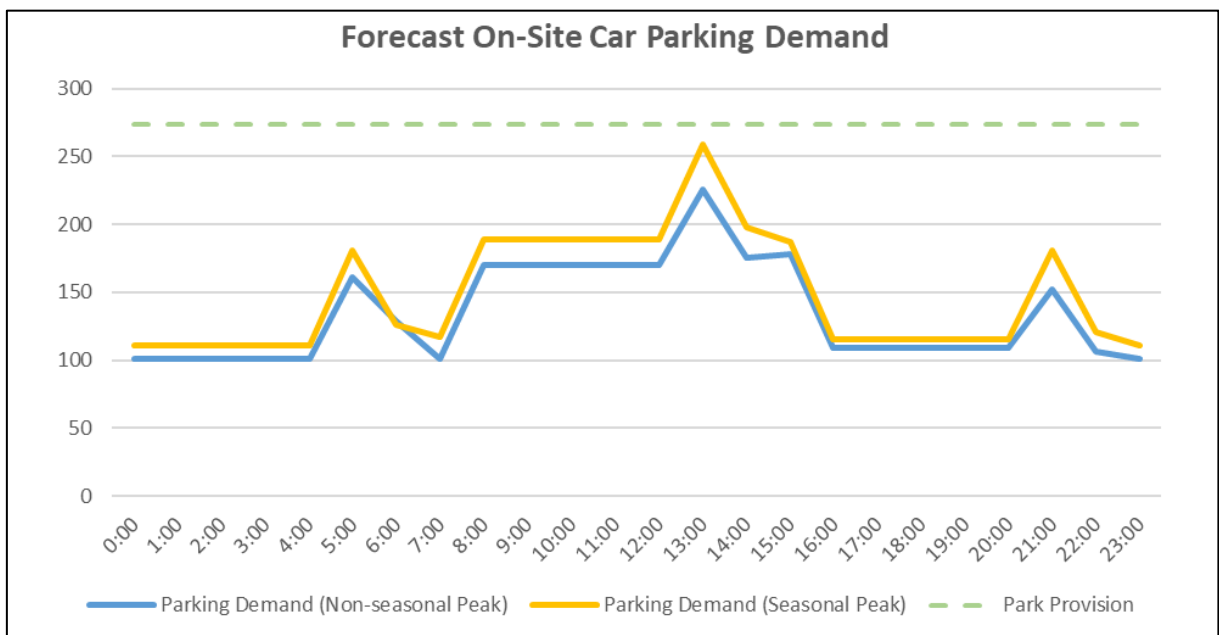


Figure 15: Forecast Car Parking Demand

It is indicated that the maximum on-site parking demand for the overall Snackbrands development (Lot 10 and Lot 11) at any one time is expected to be approximately 226 spaces during non-seasonal peak periods and approximately 259 spaces during seasonal peak periods. Therefore, the proposed 274 spaces are considered sufficient to accommodate the actual on-site parking demand.

4.1.4 Car Parking Provision

In summary, the Proposal includes a total provision of 274 car spaces, which results a theoretically shortage of 183 car parking spaces comparing to the Mamre West DCP requirements. However, consideration should also be given to the following:

- Based on the on-site Parking Survey at Snackbrands Stage 1 (Lot 11), it is evident that the theoretical parking requirements as per the Precinct DCP is surplus to the actual demand as observed on site.
- With reference to Section 4.1.3, that the maximum on-site parking demand for the overall Snackbrands development (Lot 10 and Lot 11) at any one time is expected to be approximately 226 spaces during non-seasonal peak periods and approximately 259 spaces during seasonal peak periods, a requirement of 477 parking spaces is considered surplus to the actual parking demand on-site.
- As mentioned in section 1.6, a Workplace Travel Plan (WTP) is required as one of the Conditions of Consent for the First Estate Master Plan approval (SSD-7173), which would encourage a move from private vehicle usage to other travel modes and therefore further reduce the on-site parking demand.

Having regard to the above, the proposed 274 car parking spaces are deemed acceptable.

4.1.5 Accessible Parking

The Mamre West DCP does not provide guidance in relation to Accessible Parking. As such, reference is made to the Mamre Road Draft DCP, Table 12 which requires Accessible Parking to be provided in accordance with the *Disability (Access to Premises – Buildings) Standards 2010* from the Building Code of Australia (Access Standards).

In this regard, the Access Standards requires accessible parking for office (Class 5) and warehouse (Class 7) developments to be provided at a rate of:

- 1 space for every 100 car parking spaces or part thereof (rounded up).

Application of this control to the proposed overall parking provision of 274 spaces results in a minimum of 3 accessible parking space being required. In response, the Proposal includes a provision of 4 accessible parking spaces made up of the existing 2 spaces at Lot 11 and an additional 2 for Lot 10.

4.2 Bicycle Parking

The Mamre West DCP does not provide parking rates Bicycle Parking provision. As such, reference is made to the Mamre Road Draft DCP, Table 12 which requires that developments provide Bicycle Parking in accordance with *Planning Guidelines for Walking and Cycling* 2004 prepared by DPIE (Walking and Cycling Guidelines). In this regard, the Walking and Cycling Guidelines stipulates the following bicycle provision rates:

- 3% - 5% of staff (for staff).
- 5% - 10% of staff (for visitors).

Based on the information provided by Snackbrands, the expected maximum staff number on-site for the overall Snackbrands development (Lot 10 and Lot 11) at any one time is 185 people (day and office shifts).

Application of these rates will result in a nominal requirement for between 15-28 bicycle spaces.

It is noted that 10 class 3 bicycle racks are provided at the existing Lot 11 site. Additional 18 bicycle racks at Lot 10 is shown on the current plans bringing the total to 28 bicycle racks and satisfies the requirement.

5 Traffic Assessment

5.1 Traffic Generation

5.1.1 Standard Assessment – RMS Guide Rates

As discussed in Section 2.3.2, the RMS Technical Direction TDT 2013/04a – as adopted by the TIA (AG ref: 0124r04v2) supporting the approved First Estate Master Plan (SSD-7173) and indeed the TIA (AG ref: 0707r01) supporting Stage 1 Snackbrands Snack Brands Warehouse and Distribution Facility (SSD-9429) - identifies the following traffic generation for the Erskine Park Industrial Area (developments typically include elements of industrial, manufacture, research, warehousing, office etc.), which are considered representative of the proposed development:

- AM Peak: 0.134 trips per 100m² GFA per hour
- PM Peak: 0.139 trips per 100m² GFA per hour
- Daily: 1.892 trips per 100m² GFA per day

Application of the above rates to the proposed development yield of Lot 10 and Lot 11 (59,705m² GFA) results in:

- AM peak hour: 80 veh/hr
- PM peak hour: 83 veh/hr
- Daily: 1,130 veh/day

These figures include both staff vehicles (light vehicles) and commercial vehicles (heavy vehicles) as part of a two-way movement comprising of both inbound and outbound trips.

5.1.2 Tenant-specific Operational Assessment

For a First-Principles assessment, reference is made to the indicative operational information supplied by Snackbrands (refer Section 1.4.4). Based on the information provided, Snackbrands as a tenant (which includes operation of bot Lot 10 and Lot 11) is expected to generate the following vehicular trips:

- AM peak hour: 84 veh/hr (87 veh/hr during seasonal peak periods)
- PM peak hour: 98 veh/hr (96 veh/hr during seasonal peak periods)
- Daily: 1,120 veh/day (1,190 veh/day during seasonal peak periods)

The nature of residual land near the northern boundary of the Site is still unknown at the time of preparing this TA report; however, based on the information provided, it is understood that this residual land could potentially be used for truck parking (maximum 30 truck parking spaces), which may result in approximately 60 additional daily vehicular trips.

Notwithstanding, it should be noted that the use of this residual land is not included as part of this SSD and the potential use for truck parking is not expected to result in any additional vehicular trips during AM and PM peak hours.

5.1.3 Traffic Generation Comparison

With consideration to the above, the traffic generation from the various appropriate sources is presented in **Table 9** for the purposes of comparison against the approved First Estate Master Plan (SSD-7173) and approved Stage 1 Snackbrands (SSD-9429) by taking account the **combined** traffic generation potential of Lot 10 & Lot 11.

Table 9: Lot 10 & Lot 11 Trip Generation Comparison (vehicular trips)

Site	AM Peak Hour	PM Peak Hour	Daily
Standard RMS Rate	80	83	1,130
Approved Threshold (SSD-7173 & SSD-9429)	84	87	1,186
Forecast Operation Generation ¹	84 (87)	98 (96)	1,120 (1,190)

Note: 1) Operational details during seasonal peak periods are provided in brackets.

With reference to the above table, it is evident that the traffic generation forecasted by application of the RMS Rates is **less** than that of the approved First Estate Master Plan (SSD-7173) and Snackbrands Stage 1 (SSD-9429) thresholds for Lot 10 & Lot 11 by 4 trips/hr in the AM Peak and PM Peak respectively. This difference is a result of the reduced area of Lot 10 and Lot 11 relative to the approved potential developable floor area.

Notwithstanding, based on the indicative operational information supplied by Snackbrands, the proposed development (inclusive of the existing Lot 11 development), during normal operational period, is expected to generate in the order of 84 veh/hr and 96 veh/hr during the morning and evening peak hour periods, and 1,120 trips per day, which is consistent with the approved SSD-7173 threshold during the AM Peak and marginally higher by 11 trips/hr during the PM Peak.

In referring to the assessment by First-Principles, the increases of this magnitude are considered minimal in the overall scheme and expected to have negligible impacts to the surrounding road network.

5.2 Traffic Impact

The development traffic is above the approved thresholds by minor amounts such that it would be equivalent to increases of approximately 1 vehicle every 6 minutes during PM peak hours.

Previous modelling as part of the planning for the overall First Estate Precinct concluded that the interim access arrangements to Mamre Road (prior to the upgrade of Mamre Road and James Erskine Drive to four legs) will operate with a Level of Service B during both peak periods – considered good operation in accordance with TfNSW approved intersection performance criteria.

On the basis of the above, it is anticipated that the road network would be more than adequate to cater for the traffic generated by the Proposal. Accordingly, it is considered that no further road upgrades are required to support the proposed development.

Accordingly, it is expected that there is sufficient spare capacity within the existing and planned intersection designs to accommodate the traffic volumes generated by the proposal without causing any adverse impacts to the road network operations.

In summary, Ason Group is of the opinion that the Proposal is supportable on traffic and transport impact grounds without any material impacts to the road network expected.

6 Design Commentary

6.1 Relevant Design Standards

The site access, car park and loading areas (and access thereto) demonstrate general compliance for the following relevant Australian Standards:

- AS2890.1:2004 for car parking areas;
- AS2890.2:2018 for commercial vehicle loading areas;
- AS2890.3:2015 for bicycle parking; and
- AS2890.6:2009 for accessible (disabled) parking.

It is expected that any detailed construction drawings in relation to the car park or site access would comply with these Standards.

6.2 Design Vehicle

Site accesses and internal hardstand areas have been designed to cater for trucks of up to 26.0 metres B-doubles. Car parking areas have been designed to cater for B99 cars and fire trucks as necessary.

6.3 Fire Service Appliance Circulation

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

6.4 Internal Circulation

Access strategies for both light and heavy vehicles have been provided in Section 1.4.3.

For heavy vehicle internal circulation, it is expected and noted that:

- Trucks accessing the existing Lot 11 would still enter/exit via the existing Southern 1 access.
- The majority of trucks (up to 26m B-doubles) accessing the proposed Lot 10 will enter via the existing Southern 1 access driveway, and then exit via North-western 2 access. '
- B-Doubles are expected for side-loading at majority of the RSDs, however, Snackbrands has advised that they require B-Double reverse movements for the 2 RSDs shown in **Figure 16**. These movements come under a pre-scheduled program and will be managed by on-site staff.

- The scope of AS890.2:2018 do not include reverse movements for B-double, however, the hardstand area fronting these RSDs is greater than 100m which allows for B-doubles to fully straighten up prior to reverse manoeuvre which makes such movements practical.
- The North-western 1 access driveway is proposed as a secondary access for waste truck (12.5m HRV) to assess the proposed hardstand area. However, Ason Group has been advised that the use of this access would be infrequent and appropriate on-site traffic management plan would be in place to prevent any potential queuing onto Distribution Drive.

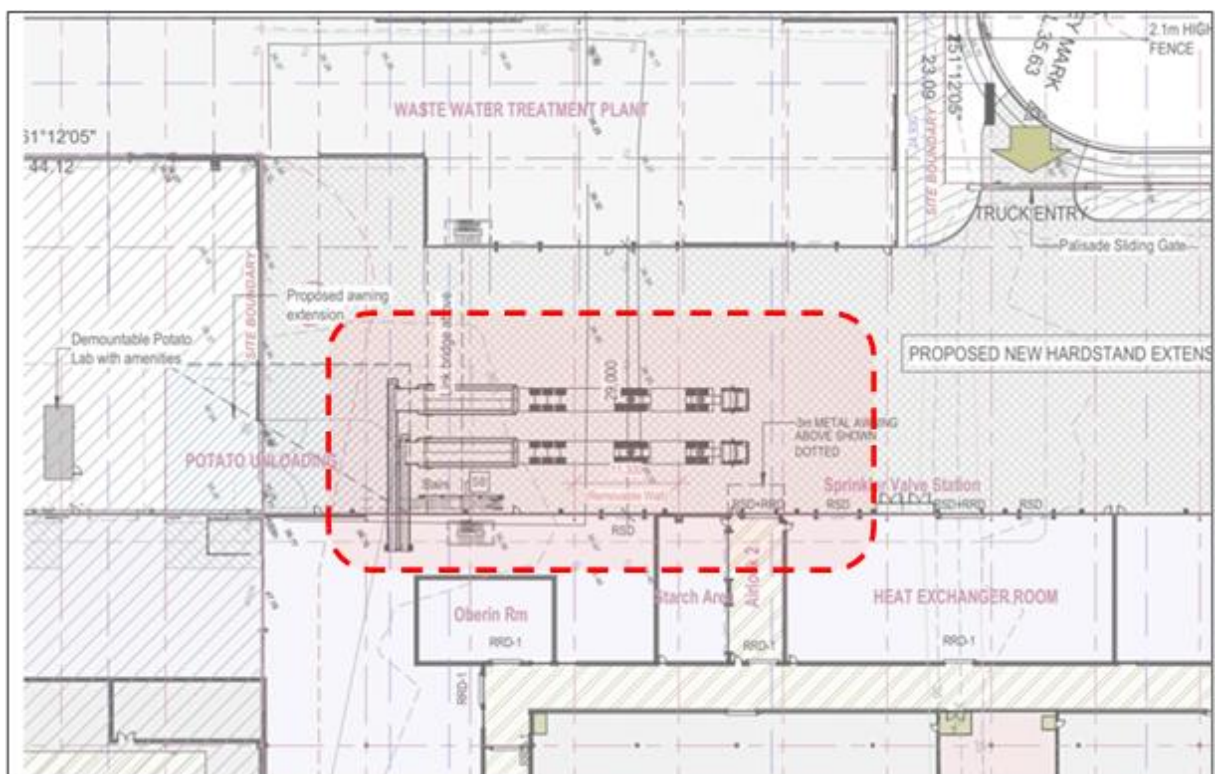


Figure 16: B-Double reverse movements for the 2 RSDs

7 Conclusions

Ason Group has been commissioned by TM Insight on behalf of Snack Brands Australia (Snackbrands), to prepare a State Significant Development (SSD-18204994) Transport Assessment (TA) in relation to a proposed Food Manufacturing Facility (the Proposal) within the First Estate Precinct (SSD-7173) located at 585-649 Mamre Road, Orchard Hills (The Site).

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

- The Proposal generally refers to amendments to the existing development at Lot 11 (previously referred as Lot 7 within First Estate Precinct) and construction of a new industrial building at Lot 10 (previously referred as Lot 9 within First Estate Precinct). It is emphasised that ultimately, these two Lots will operate in conjunction, and they will be tenanted to Snackbrands as a whole. Accordingly, for assessment conservativeness, the assessment has been undertaken based on the operation of Lot 10 & 11 as an overall development.
- The Site is proposed to be accessed to / from Distribution Drive via the intersection of Mamre Road and Distribution Drive. In the future, Primary Access to the First Estate Precinct of which Lot 10 and Lot 11 forms a part of, is to be provided via the existing signalised T-intersection of Mamre Road with James Erskine Drive and Secondary Access is to be provided via a left-in / left-out priority controlled intersection with Mamre Road located approximately 500 metres south of the James Erskine Drive intersection.
- Based on operational information provided by the future tenant – Snackbrands – the anticipated operational vehicular movements are outlined in table below:

Time	Time Period	Light Vehicles	Heavy Vehicles	All Vehicles
AM Peak	8:00 - 9:00 ²	69 (79)	15	84 (87)
PM Peak	15:00 - 16:00 ²	83 (81)	15	98 (96)
	Daily	760 (830)	360	1,120 (1,190)

Note: 1) Operational details during seasonal peak periods are provided in brackets.
2) Road network peak hour along Mamre Road near the First Estate Precinct.

- Noting the approved traffic generation thresholds for Lot 10 and Lot 11 under the approved First Estate Master Plan is 84 trips/hr and 87 trips/hr during AM and PM peak hours separately and 1,186 trips per day, the forecast traffic generation would represent an increase over threshold by

11 veh/hr during evening peak hour, which is considered a minor departure from the original approval.

- On this basis, it is expected that there is sufficient spare capacity within the existing and planned intersection designs to accommodate the traffic volumes generated by the proposal without causing any adverse impacts to the road network operations.
- A total of 274 car parking spaces are proposed for the overall Lot 10 & 11 site, including an additional 160 spaces (as part of the extension) to the existing 114 spaces.
- This indicates a deficit of 183 spaces in accordance with the Mamre West DCP and suggested that additional parking is provided to satisfy the requirement. However, the proposed 274 car parking spaces are considered acceptable, noting:
 - Based on the on-site Parking Survey at Snackbrands Stage 1 (Lot 11), it is evident that the theoretical parking requirements as per the Precinct DCP is surplus to the actual demand as observed on site.
 - With reference to Section 4.1.3, that the maximum on-site parking demand for the overall Snackbrands development (Lot 10 and Lot 11) at any one time is expected to be approximately 226 spaces during non-seasonal peak periods and approximately 259 spaces during seasonal peak periods, a requirement of 477 parking spaces is considered surplus to the actual parking demand on-site.
 - As mentioned in section 1.6, a Workplace Travel Plan (WTP) is required as one of the Conditions of Consent for the First Estate Master Plan approval (SSD-7173), which would encourage a move from private vehicle usage to other travel modes and therefore further reduce the on-site parking demand.

In summary, the Proposal is supportable on traffic and transport planning grounds and is not expect to result in any adverse impacts on the surrounding road network or the availability of on-street parking environment.

Appendix A:

Anticipated Operational Vehicular Movements

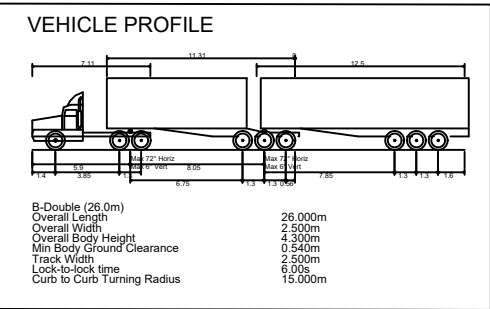
Normal Demand																										
		1:00																								
	D/S In	D/S In	N/S Out	D/S In	N/S Out	Office In					A/S In	A/S In	D/S Out	A/S In	D/S Out	Office Out					N/S In	N/S In	A/S Out	N/S In	A/S Out	
Times	5:00	6:00		7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00		15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00		23:00				
Warehouse Team (current)		10			10						10			10						10						
Warehouse Office (current)		1		1		7						1		7						10						
Corporate/Maint/Prod Salary						32								32												
Indirect	25		18		13	30				23		25	15	30					18		23	13	15			
Direct	35		25	29	35					33		35	28	29					25		33	35	28			
Shift Total	60	11	43	30	58	69	0	0	0	56	10	61	43	40	69	0	0	0	43	10	56	48	53	0	0	0
Transition Time	60	54		88	69	0	0	0	0	56	71		83	69	0	0	0	0	43	66		101		0	0	0
Normal Truck movements	10	10		10	10	10	10	10	10	10	10		10	10	10	10	10	10	10	10		10		10	10	10
Factory trucks	5	5		5	5	5	5	5	5	5	5		5	5	5	5	5	5	5	5		5		5	5	5
Expected Vehicle movements	75	69		103	84	15	15	15	15	71	86		98	84	15	15	15	15	58	81		116		15	15	15

Peak Demand	1:00																											
	D/S In	D/S In	N/S Out	D/S In	N/S Out	Office In						A/S In	A/S In	D/S Out	A/S In	D/S Out	Office Out						N/S In	N/S In	A/S Out	N/S In	A/S Out	
Times	5:00	6:00		7:00	8:00	9:00	10:00	11:00	12:00	13:00	14:00		15:00	16:00	17:00	18:00	19:00	20:00	21:00	22:00		23:00						
Warehouse Team (current)		10			10						10			10						10								
Warehouse Office (current)		1		1		7						1		7						10		10						
Corporate/Maint/Prod Salary						29								29														
Indirect	30		26			36				30		30		36					26		30							
Direct	40		40	35	35					40		40	35	35	0				40		40	35	35					
Shift Total	70	11	66	36	45	72	0	0	0	70	10	71	35	46	72	0	0	0	66	10	70	35	45	0	0	0	0	
Transition Time	70	77		81	72	0	0	0	0	70	81		81	72	0	0	0	0	66	80		80		0	0	0	0	
Normal Truck movements	10	10		10	10	10	10	10	10	10	10		10	10	10	10	10	10	10	10		10		10	10	10	10	
Factory trucks	5	5		5	5	5	5	5	5	5	5		5	5	5	5	5	5	5	5		5		5	5	5	5	
Expected Vehicle movements	85	92		96	87	15	15	15	15	85	96		96	87	15	15	15	15	81	95		95		15	15	15	15	

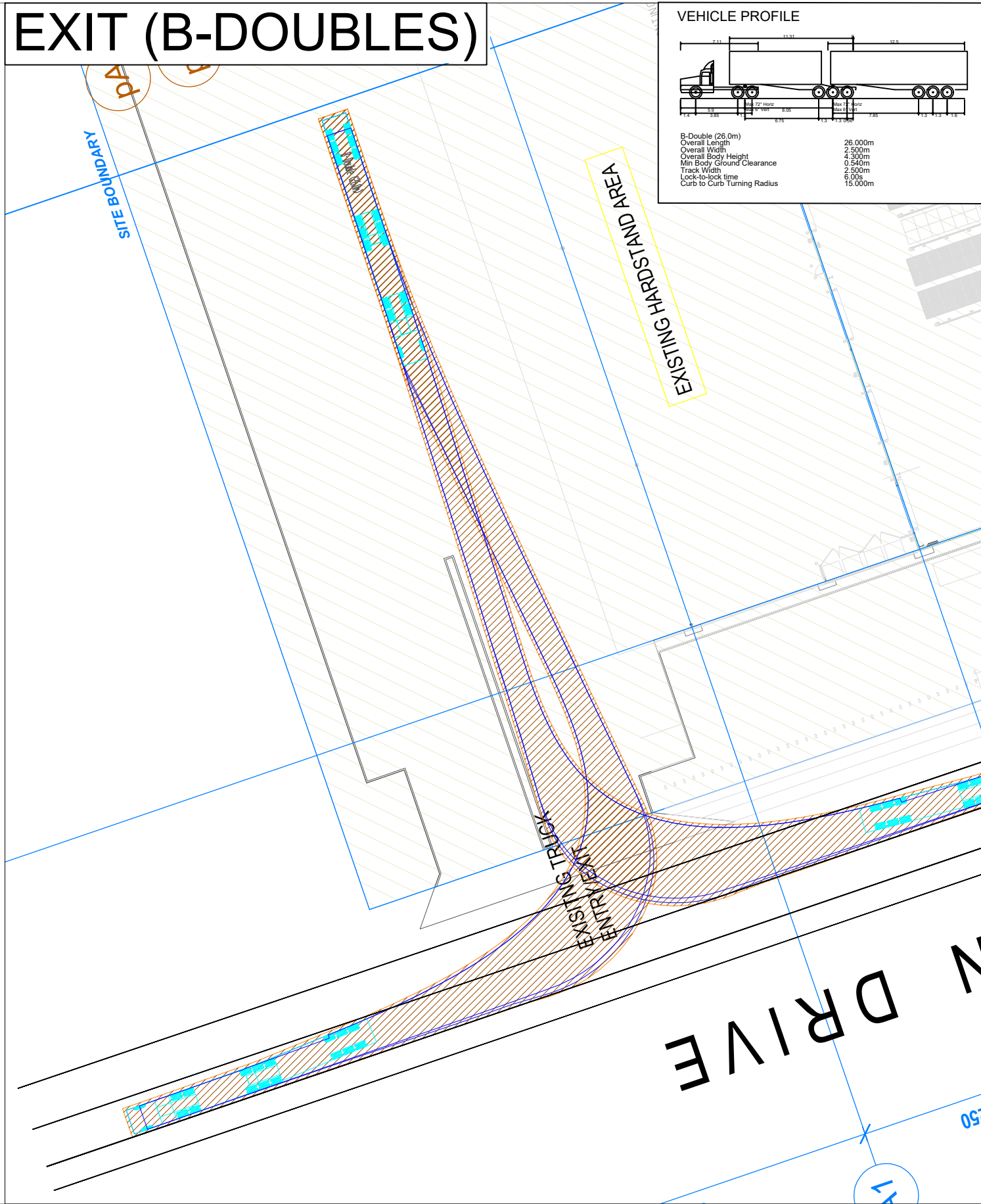
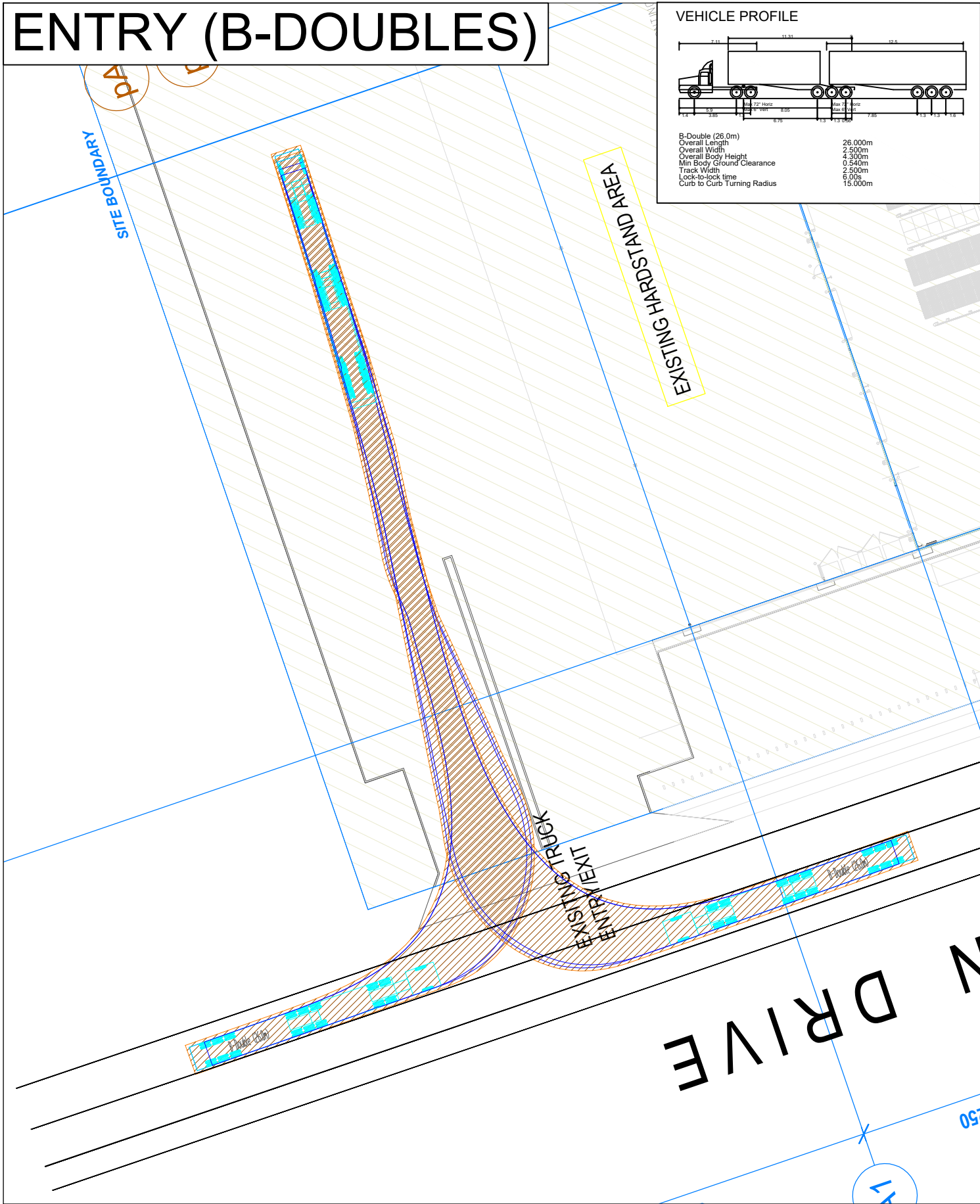
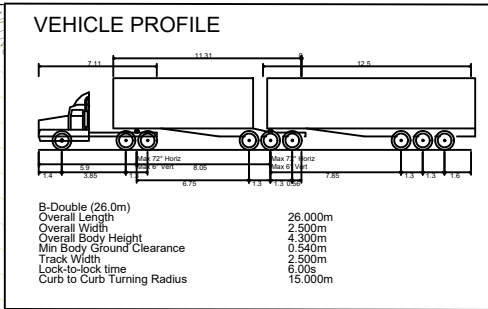
Appendix B:

Swept Paths Analysis

ENTRY (B-DOUBLES)



EXIT (B-DOUBLES)



Notes:

All swept paths are completed at 10 km/hr with 300 mm clearances
Note plans assessed were provided by HL Architects on 29.06.2021

This drawing is provided for information purposes only and should not be used for construction.

Document Info:

Drawn by: O HASHMI
File name: AG1654-07-v01.dwg

Client:

SNACK BRANDS

Project:

AG1654
14 DISTRIBUTION DRIVE, ORCHARD HILLS

Drawing Title:

SWEPT PATH ASSESSMENT
ENTRY AND EXIT

Date:

01/07/2021

Scale @ A3:

1:500

Drawing Number:

AG 01

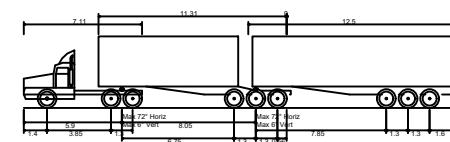
asongroup

Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000

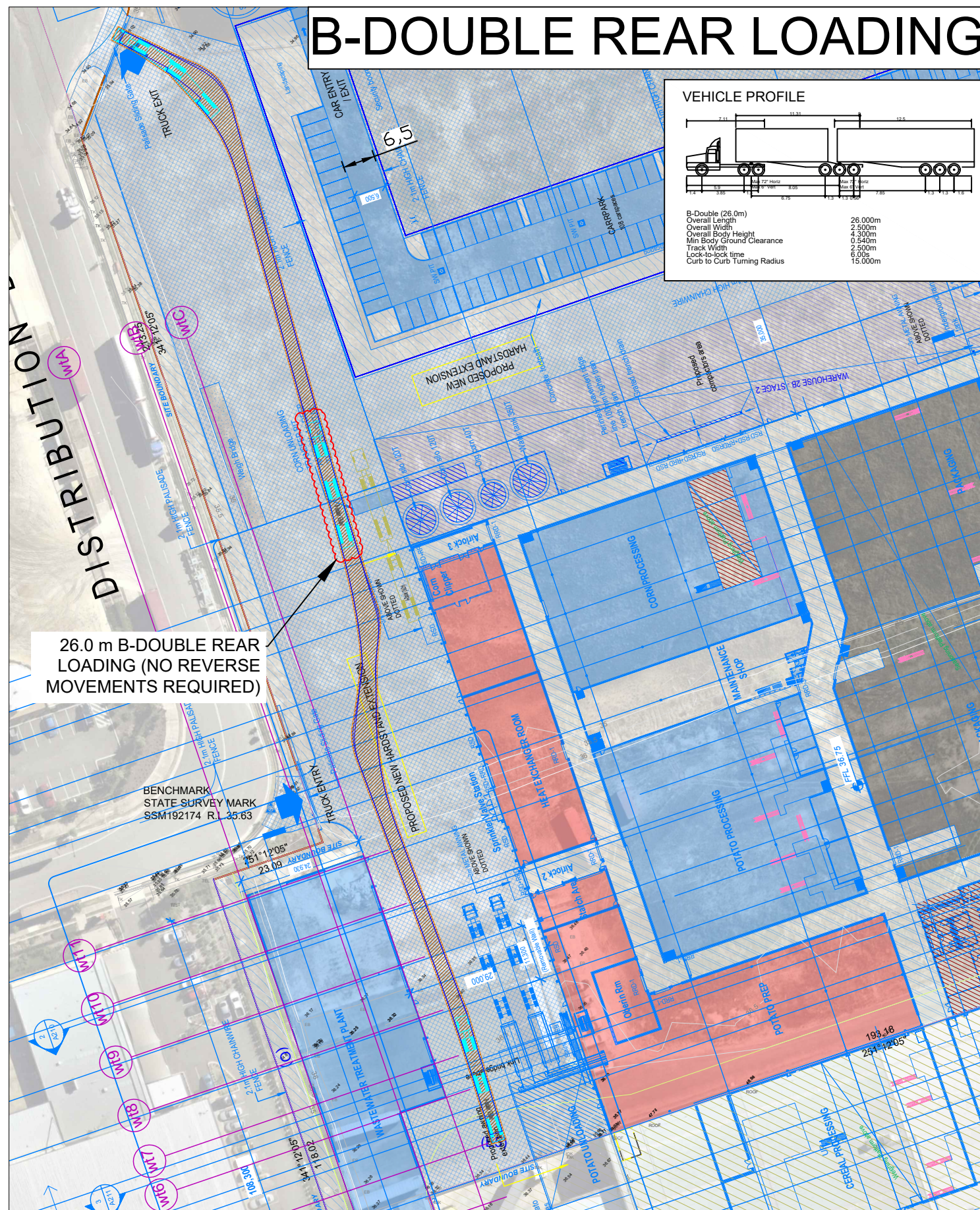
info@asongroup.com.au

B-DOUBLE REAR LOADING

VEHICLE PROFILE

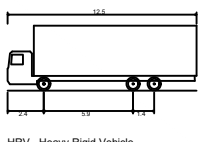


B-Double (26.0m)
Overall Length 26.00m
Overall Width 2.50m
Overall Body Height 4.30m
Min Body Ground Clearance 0.540m
Track Width 2.50m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 15.00m

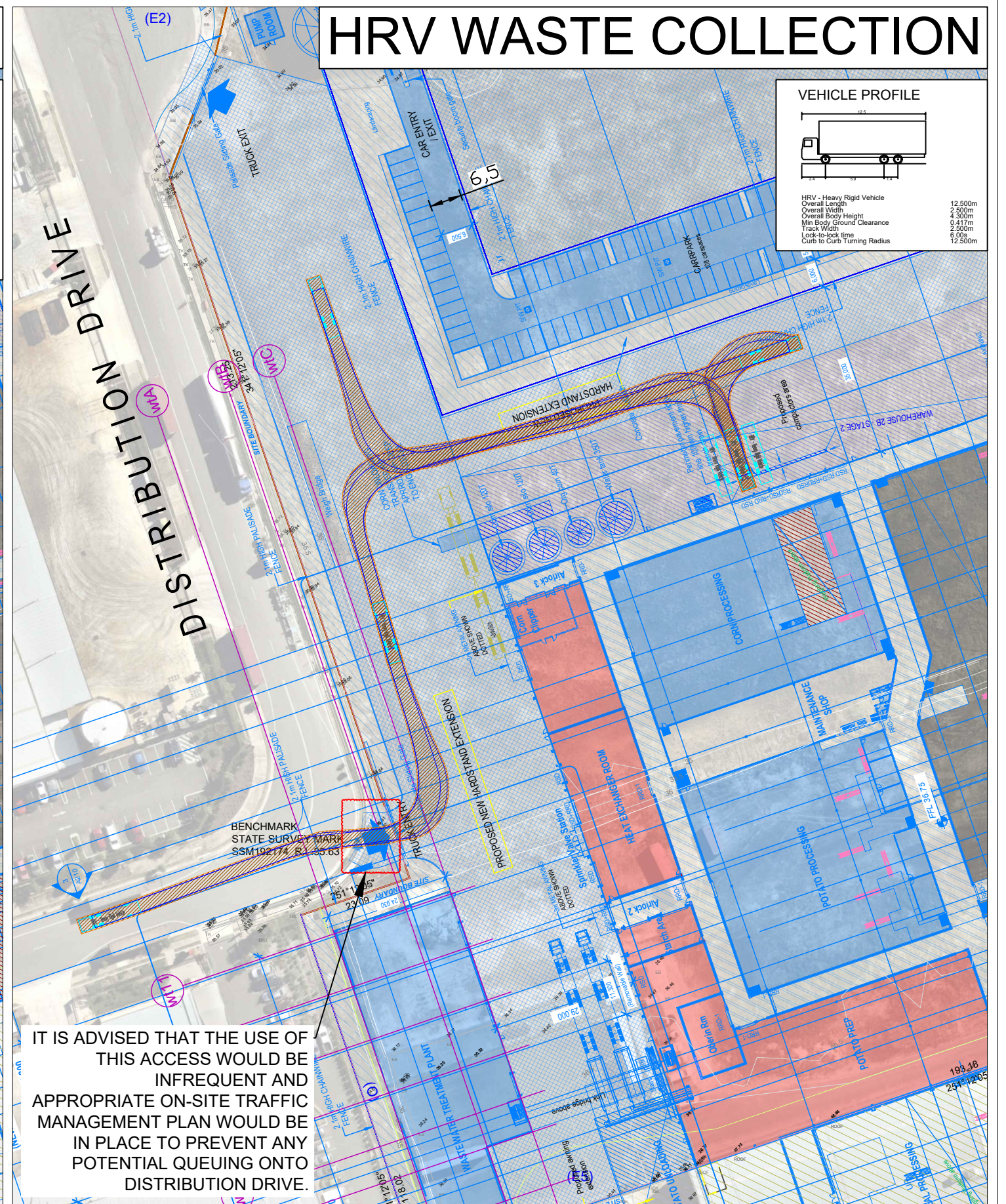


HRV WASTE COLLECTION

VEHICLE PROFILE



HRV - Heavy Rigid Vehicle
Overall Length 12.50m
Overall Width 2.50m
Overall Body Height 4.30m
Min Body Ground Clearance 0.417m
Track Width 2.50m
Lock-to-lock time 6.00s
Curb to Curb Turning Radius 12.50m



Notes:

All swept paths are completed at 10 km/hr with 300 mm clearances
Note plans assessed were provided by HL Architects on 29.06.2021

This drawing is provided for information purposes only and should not be used for construction.

Document Info:

Drawn by: O HASHMI
File name: AG1654-07-v01.dwg

Client:

SNACK BRANDS

Project:

AG1654
14 DISTRIBUTION DRIVE, ORCHARD HILLS

Drawing Title:

SWEPT PATH ASSESSMENT
CORN SIDE LOADING AND WASTE COLLECTION

Date:

01/07/2021

Scale @ A3:

1:1000

Drawing Number:

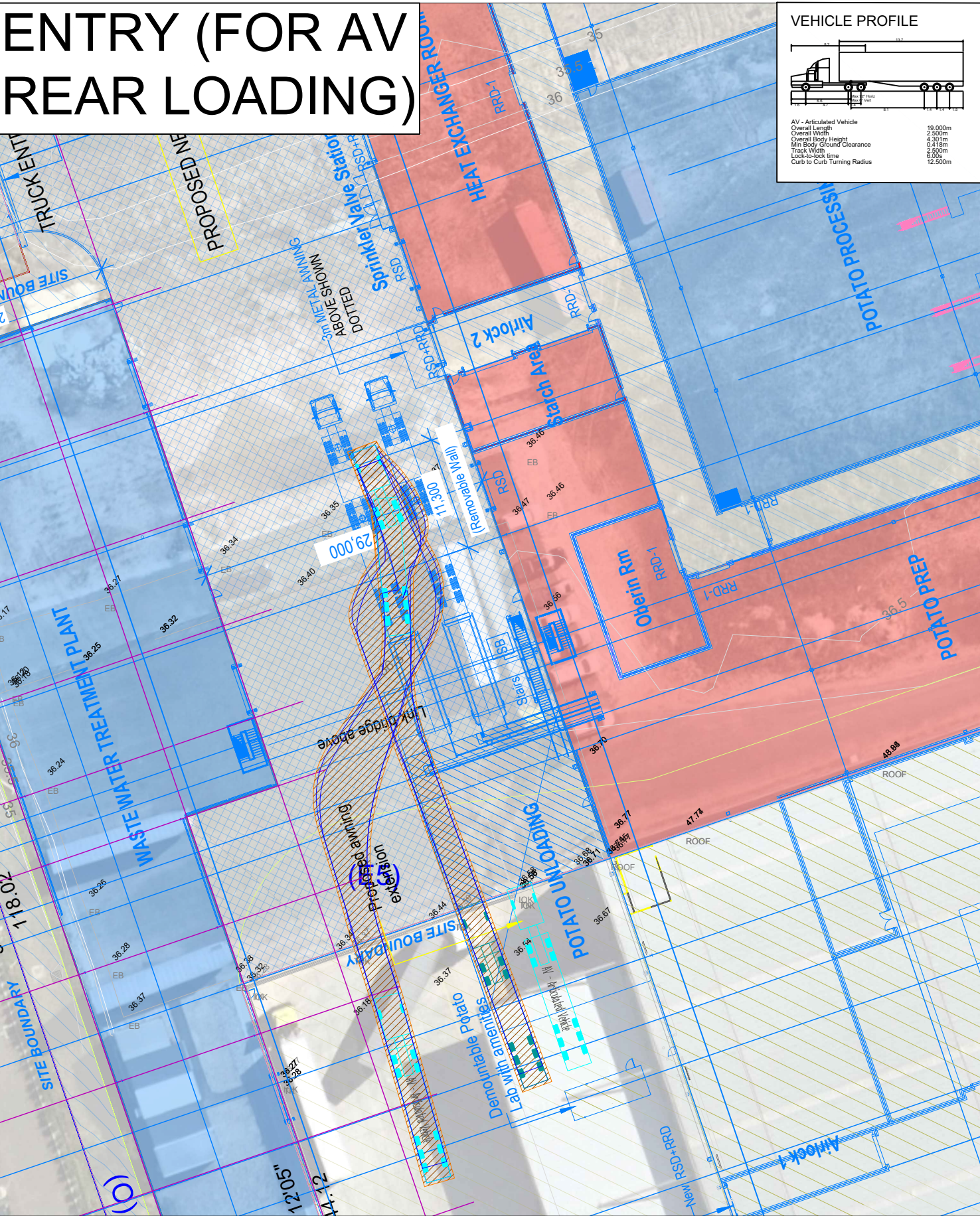
AG 03

asongroup

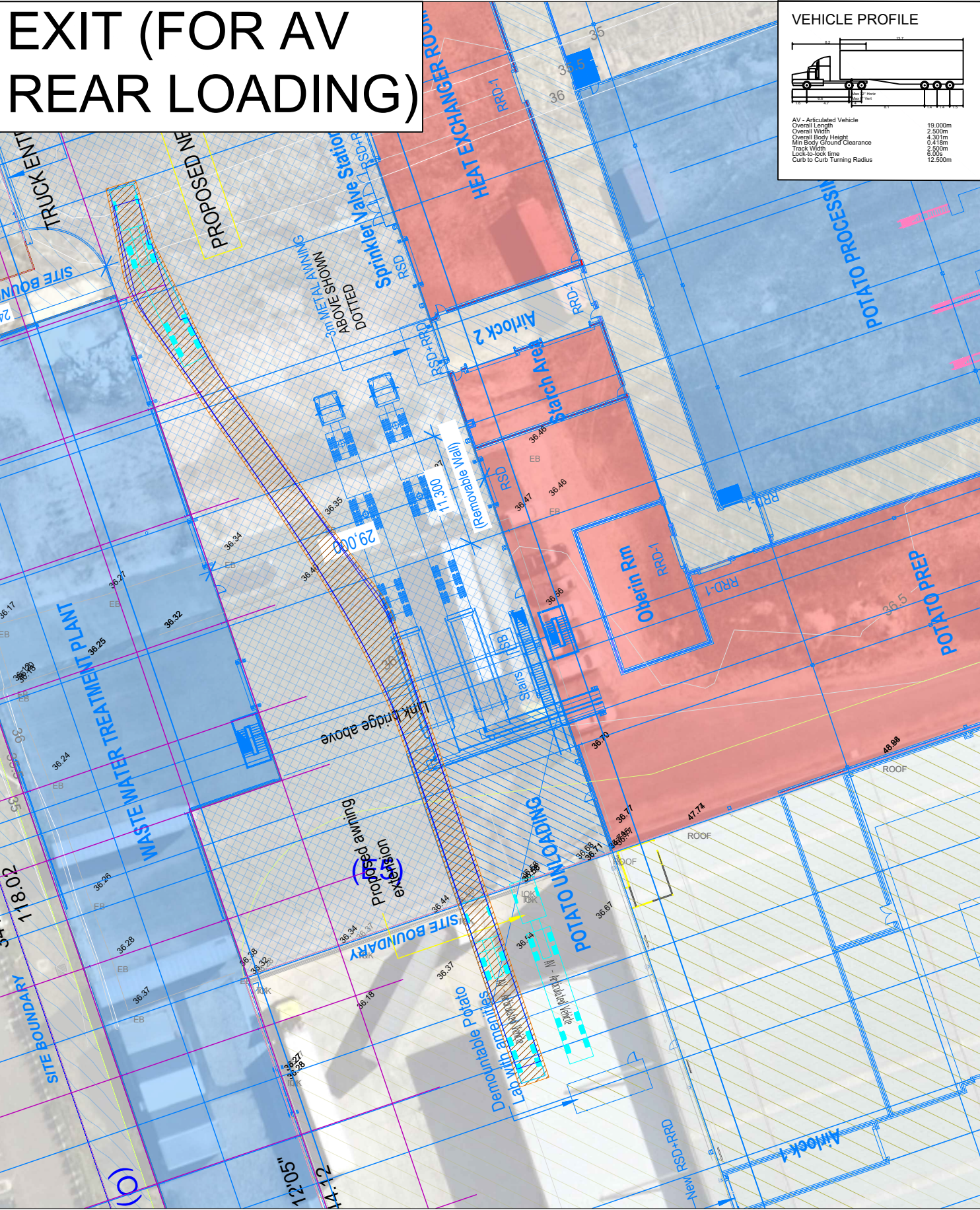
Suite 17.02, Level 17, 1 Castlereagh St
Sydney NSW 2000

info@asongroup.com.au

ENTRY (FOR AV REAR LOADING)



EXIT (FOR AV REAR LOADING)



Notes:

All swept paths are completed at 10 km/hr with 300 mm clearances
Note plans assessed were provided by HL Architects on 29.06.2021

This drawing is provided for information purposes only and should not be used for construction.

Document Info:

Drawn by: O HASHMI
File name: AG1654-07-v01.dwg

Client:

SNACK BRANDS

Project:

AG1654
14 DISTRIBUTION DRIVE, ORCHARD HILLS

Drawing Title:

SWEPT PATH ASSESSMENT
19.0 m AVs REAR LOADING

Date:

01/07/2021

Scale @ A3:

1:500

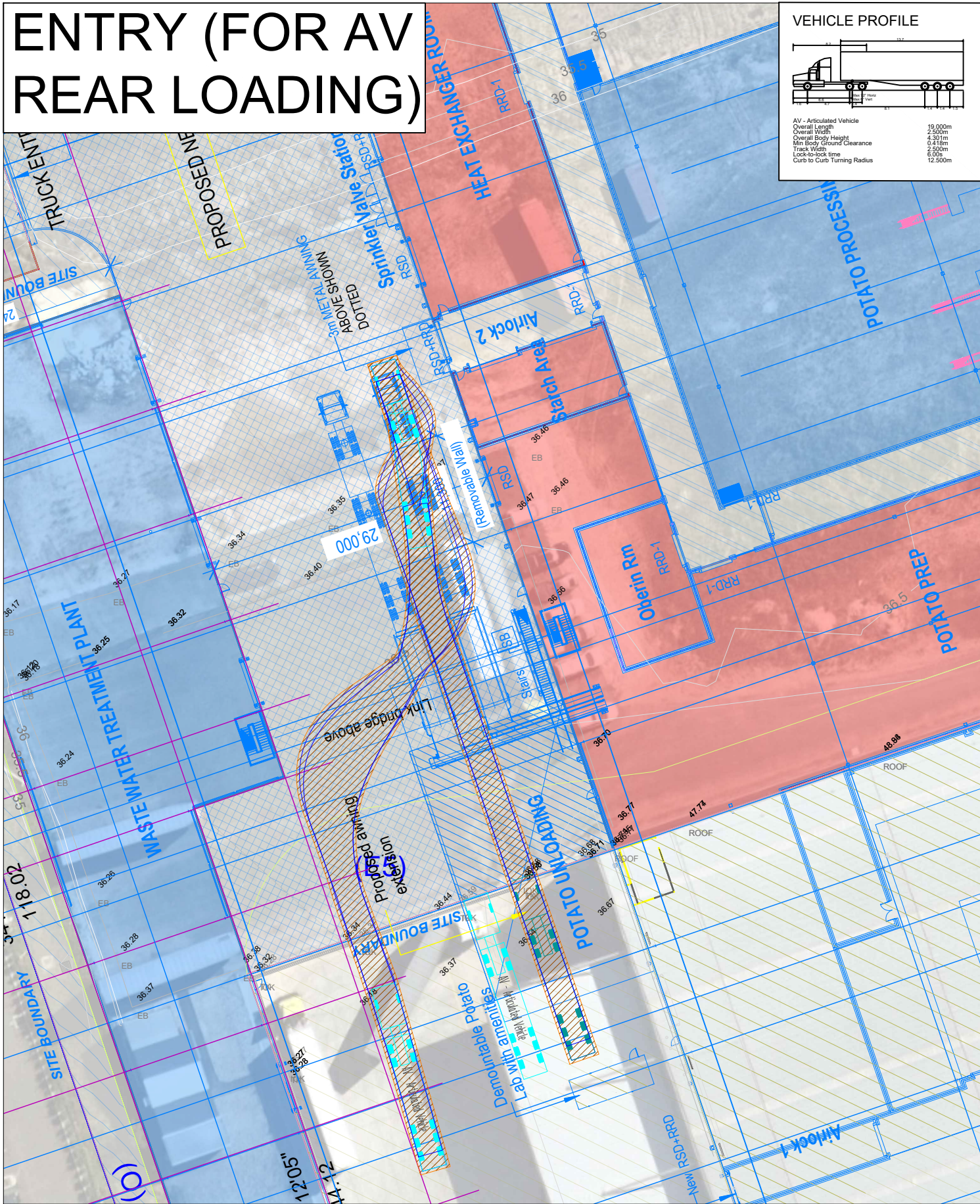
Drawing Number:

AG 04

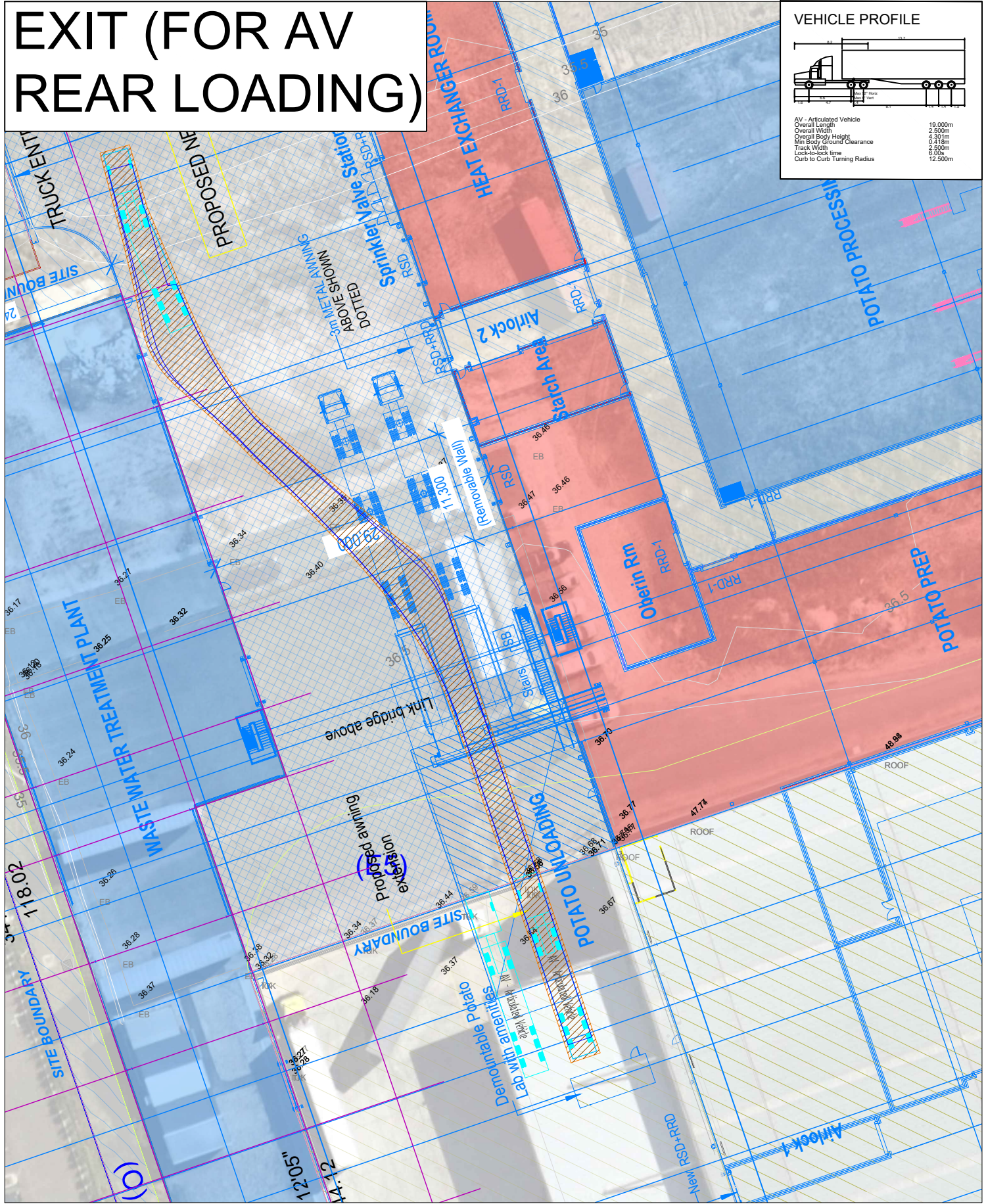
asongroup

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Sydney NSW 2000
info@asongroup.com.au

ENTRY (FOR AV REAR LOADING)



EXIT (FOR AV REAR LOADING)



Notes:

All swept paths are completed at 10 km/hr with 300 mm clearances
Note plans assessed were provided by HL Architects on 29.06.2021

This drawing is provided for information purposes only and should not be used for construction.

Document Info:

Drawn by: O HASHMI
File name: AG1654-07-v01.dwg

Client:

SNACK BRANDS

Project:

AG1654
14 DISTRIBUTION DRIVE, ORCHARD HILLS

Drawing Title:

SWEPT PATH ASSESSMENT
19.0 m AVs REAR LOADING

Date:

01/07/2021

Scale @ A3:

1:500

Drawing Number:

AG 05

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Sydney NSW 2000

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ENTRY AND EXIT (B-DOUBLES)

VEHICLE PROFILE

B-Double (26.0m)

Overall Length

Overall Width

Overall Body Height

Min Body Ground Clearance

Track Width

Lock-to-lock time

Curb to Curb Turning Radius

26.000m

2.500m

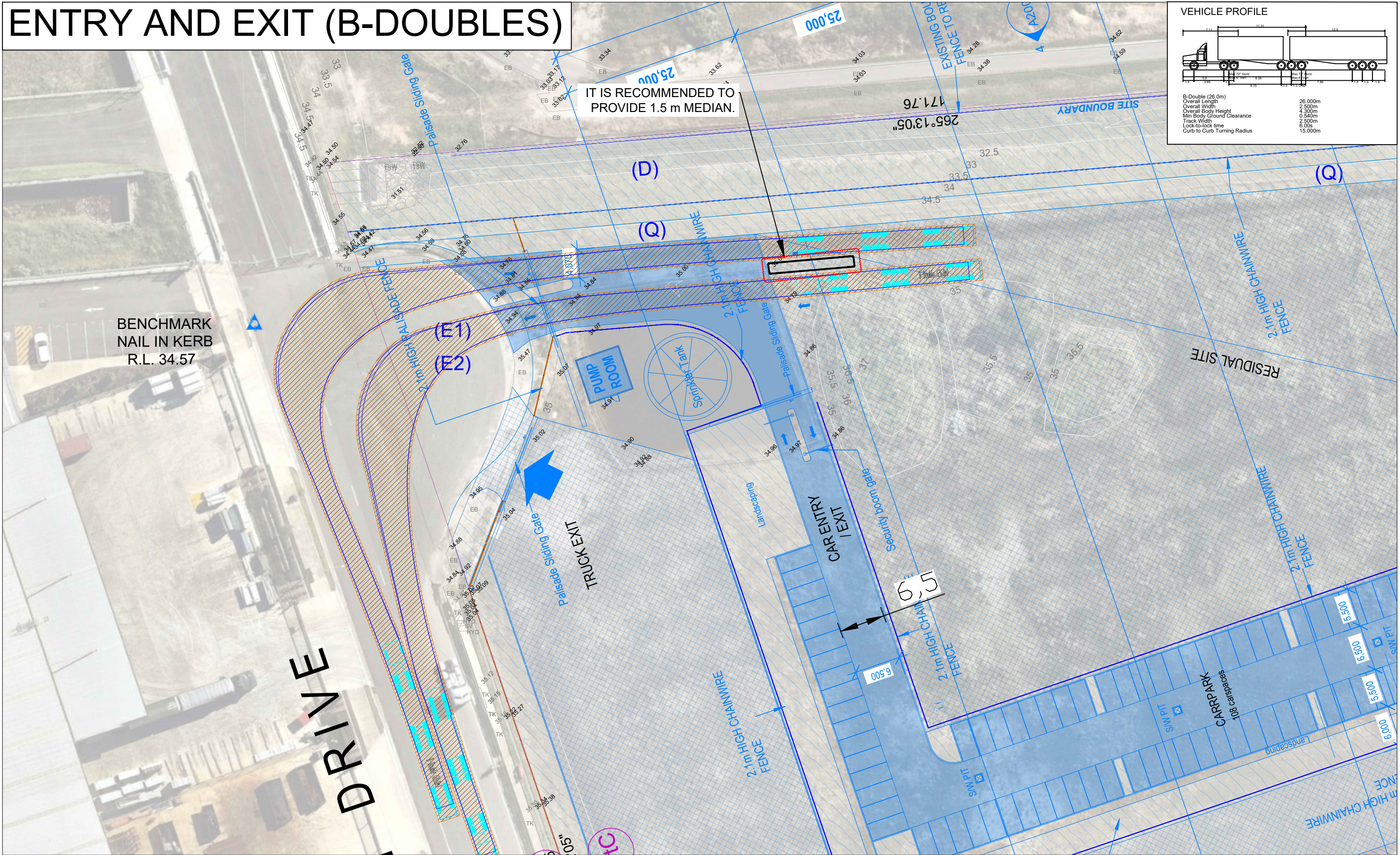
4.300m

0.540m

2.500m

6.00s

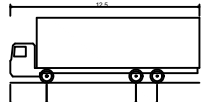
15.000m



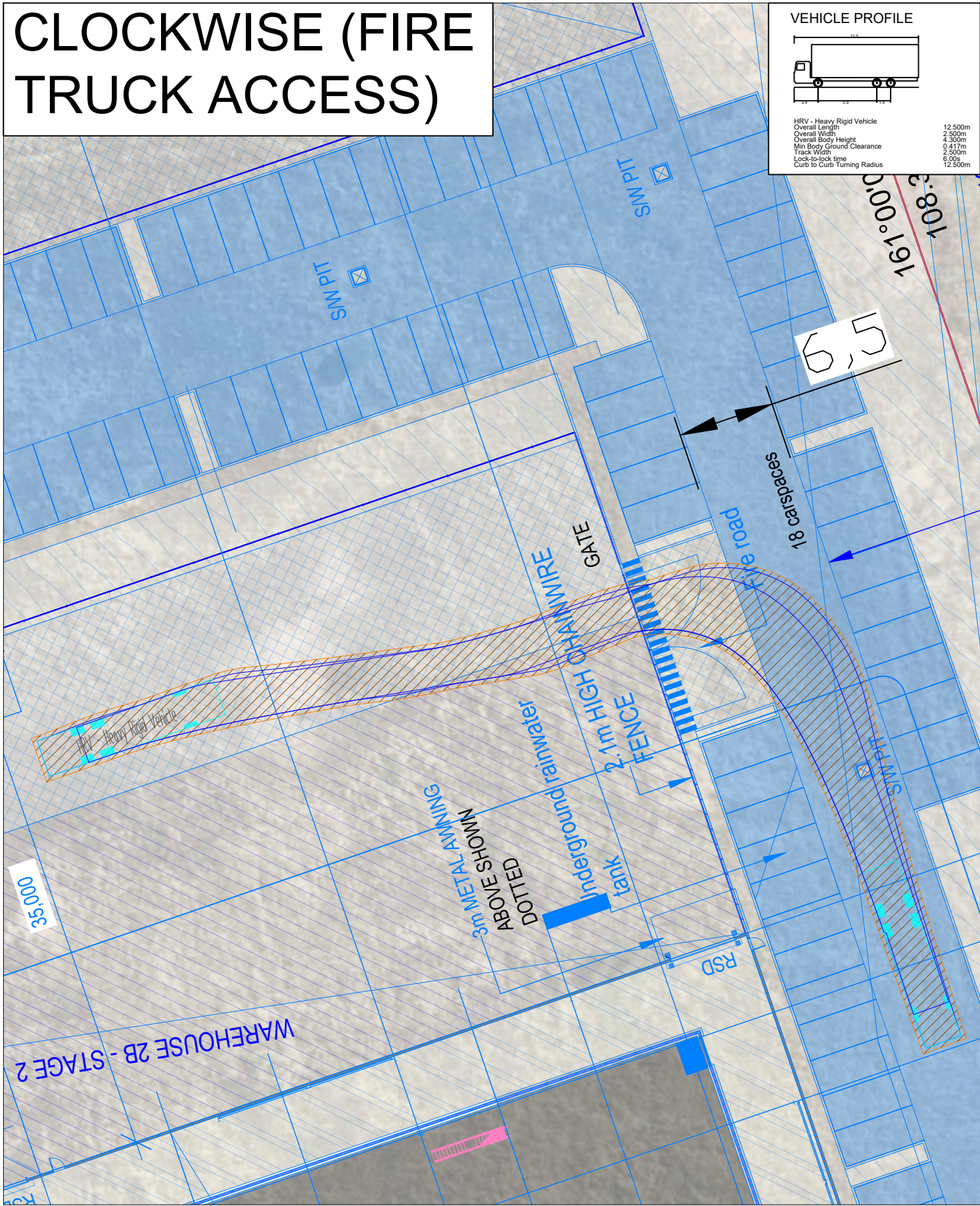
<div>Notes:</div> <div>All swept paths are completed at 10 km/hr with 300 mm clearances</div> <div>Note plans assessed were provided by HL Architects on 29.06.2021</div> <div>This drawing is provided for information purposes only and should not be used for construction.</div>	<div>Document Info:</div> <div>Drawn by: O HASHMI</div> <div>File name: AG1654-07-v01.dwg</div>	<div>Project:</div> <div>AG1654</div> <div>14 DISTRIBUTION DRIVE, ORCHARD HILLS</div>	<div>Date:</div> <div>01/07/2021</div>	<div></div> <div>Suite 17.02, Level 17, 1 Castlereagh St</div> <div>Sydney NSW 2000</div> <div>info@asongroup.com.au</div>
	<div>Client:</div> <div>SNACK BRANDS</div>	<div>Drawing Title:</div> <div>SWEPT PATH ASSESSMENT</div> <div>TRUCK LOADING AREA</div>	<div>Scale @ A3:</div> <div>1:500</div>	
			<div>Drawing Number:</div> <div>AG 06</div>	

CLOCKWISE (FIRE TRUCK ACCESS)

VEHICLE PROFILE

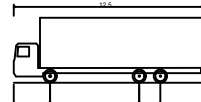


HRV - Heavy Rigid Vehicle
Overall Length 12.500m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.417m
Track Width 2.500m
Lock-to-ack time 6.00s
Curb to Curb Turning Radius 12.500m

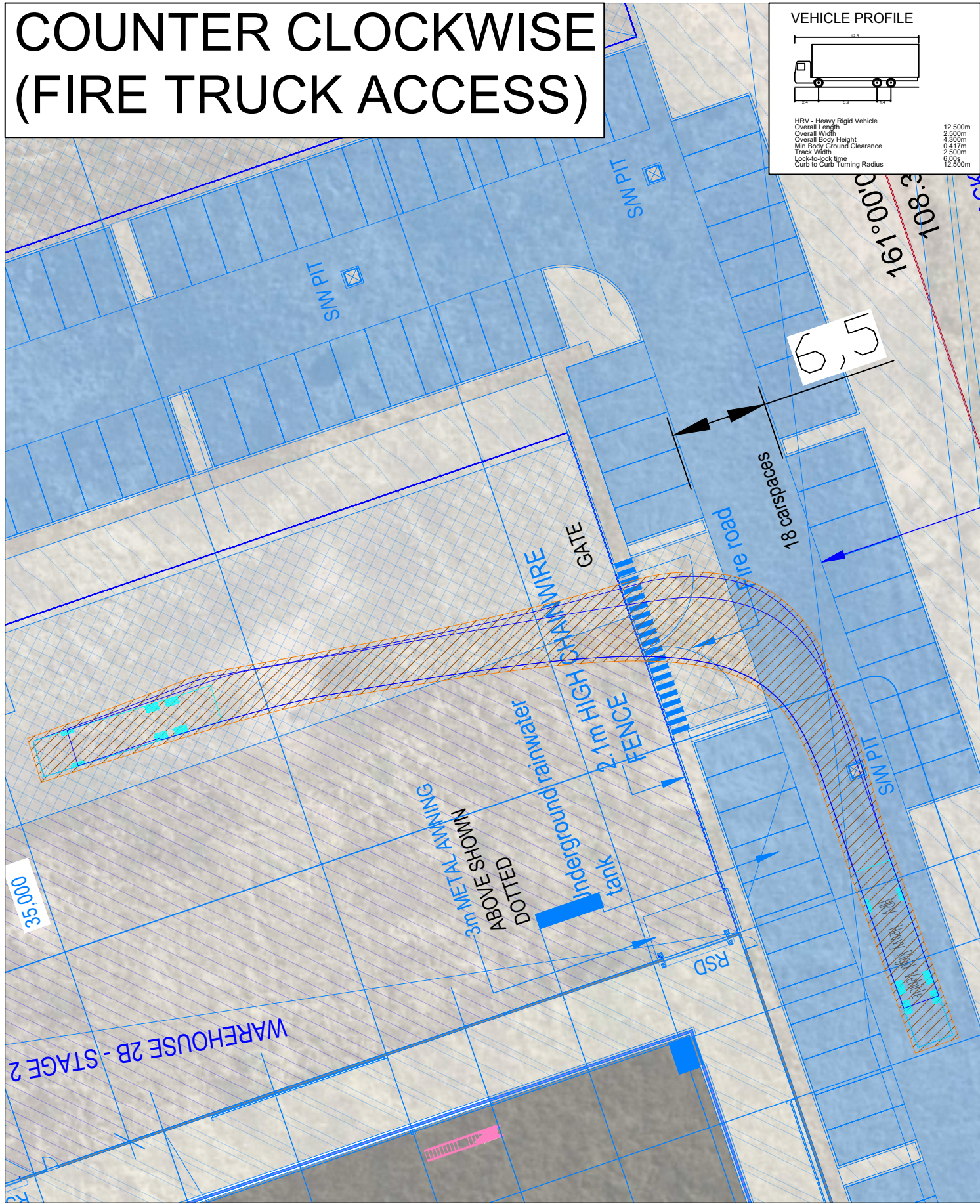


COUNTER CLOCKWISE (FIRE TRUCK ACCESS)

VEHICLE PROFILE



HRV - Heavy Rigid Vehicle
Overall Length 12.500m
Overall Width 2.500m
Overall Body Height 4.300m
Min Body Ground Clearance 0.417m
Track Width 2.500m
Lock-to-ack time 6.00s
Curb to Curb Turning Radius 12.500m



Notes:

All swept paths are completed at 10 km/hr with 300 mm clearances
Note plans assessed were provided by HL Architects on 29.06.2021

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Document Info:

Drawn by: O HASHMI
File name: AG1654-07-v01.dwg

Client:

SNACK BRANDS

Project:

AG1654
14 DISTRIBUTION DRIVE, ORCHARD HILLS

Drawing Title:

SWEPT PATH ASSESSMENT
FIRE TRUCK (12.5 m HRV)

Date:

01/07/2021

Scale @ A3:

1:750

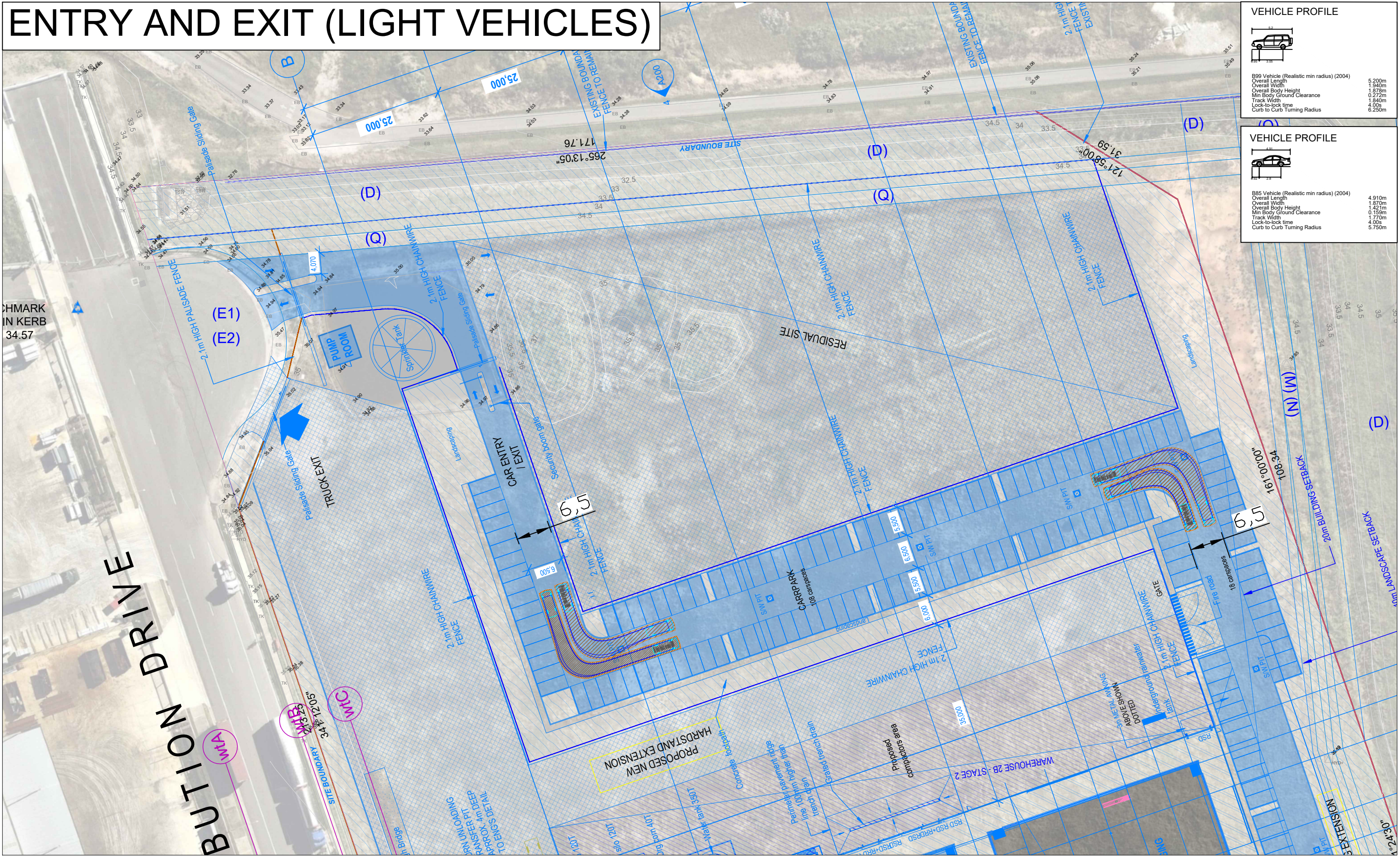
Drawing Number:

AG 07

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ENTRY AND EXIT (LIGHT VEHICLES)



VEHICLE PROFILE	
B99 Vehicle (Realistic min radius) (2004)	
Overall Length	5.200m
Overall Width	1.940m
Overall Body Height	1.878m
Min Body Ground Clearance	0.272m
Track Width	1.840m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6.250m

VEHICLE PROFILE	
B85 Vehicle (Realistic min radius) (2004)	
Overall Length	4.910m
Overall Width	1.870m
Overall Body Height	1.421m
Min Body Ground Clearance	0.158m
Track Width	1.770m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	5.750m

Notes:

All swept paths are completed at 10 km/hr with 300 mm clearances
Note plans assessed were provided by HL Architects on 29.06.2021

This drawing is provided for information purposes only and should not be used for construction.

Document Info:
Drawn by: O HASHMI
File name: AG1654-07-v01.dwg
Client:
SNACK BRANDS

Project:
AG1654
14 DISTRIBUTION DRIVE, ORCHARD HILLS
Drawing Title:
SWEPT PATH ASSESSMENT
B85 AND B99 VEHICLES AT THE BEND

Date:
01/07/2021
Scale @ A3:
1:750
Drawing Number:
AG 08