Reference: 0714l02

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Willowtree Planning
Suite 4, Level 7, 100 Walker Street
North Sydney, NSW 2060

Attention: Travis Lythall

Re: Proposed Modification to a State Significant Development – Transport Statement

Dear Travis,

Ason Group has been commissioned by Willowtree Planning to prepare a Transport Statement (TS) in support of a Modification Application (the Proposal) to a State Significant Development (SSD). The SSD (reference number SSD 9601) pertains to an industrial development at 780 Wallgrove Road, Horsley Park (the Austral Site).

This TS provides an assessment of the access, traffic and parking implications of the Proposal.

Background

The Site lies within the City of Fairfield Council (Council) Local Government Area (LGA), and as such key reference documents for the assessment include:

- Fairfield City Wide Development Control Plan 2013 (DCP 2013); and
- Fairfield Local Environmental Plan 2012 (LEP 2013).

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

- Australian Standard 2890.1:2004 Parking Facilities – Off-Street Car Parking (AS2890.1:2004);
- Australian Standard 2890.2:2018 Parking Facilities – Off-Street Commercial Vehicle Facilities (AS2890.2:2018);
- Australian Standard 2890.6:2009 Parking Facilities – Off-Street Parking for People with Disabilities (AS2890.6:2009);
- RMS Guide to Traffic Generating Development; October 2002 (RMS Guide); and
- RMS Technical Direction, Guide to Traffic Generating Developments – Updated Traffic Surveys; August 2013 (RMS Guide Update).

This TS also references existing traffic reports and studies, including:

- Ason Group Transport Assessment, Proposed Plant 2 Refurbishment 780 Wallgrove Road, Horsley Park, Issue III (Ason Group reference: 0714r01v3) (Ason 2019 TA)
- Ason Group RFI letter, Proposed Plant 2 Refurbishment 780 Wallgrove Road, Horsley Park, Issue I (Ason Group reference: 0714l01v1)

Location

The Austral Site has a street address of 780 Wallgrove Road, Horsley Park, and is legally known as Lot 7 of DP 1059698. The Austral Site is located approximately 30 km west of the Sydney CBD and 13 km southwest of the Parramatta CBD and is used for the manufacturing of bricks.

The Plant 2 Site occupies a parcel of land in the eastern section of the Austral Site and is located to the immediate south of the Sydney Water Supply Pipeline with Ferrers Road running along the eastern boundary. Within the broader locale, surrounding developments comprise predominantly industrial facilities providing warehousing, distribution and various extractive industries.

The Plant 2 Site (and broader Austral Site), as well as the key local roads providing access for the sites, are shown in their local context in **Figure 1**.

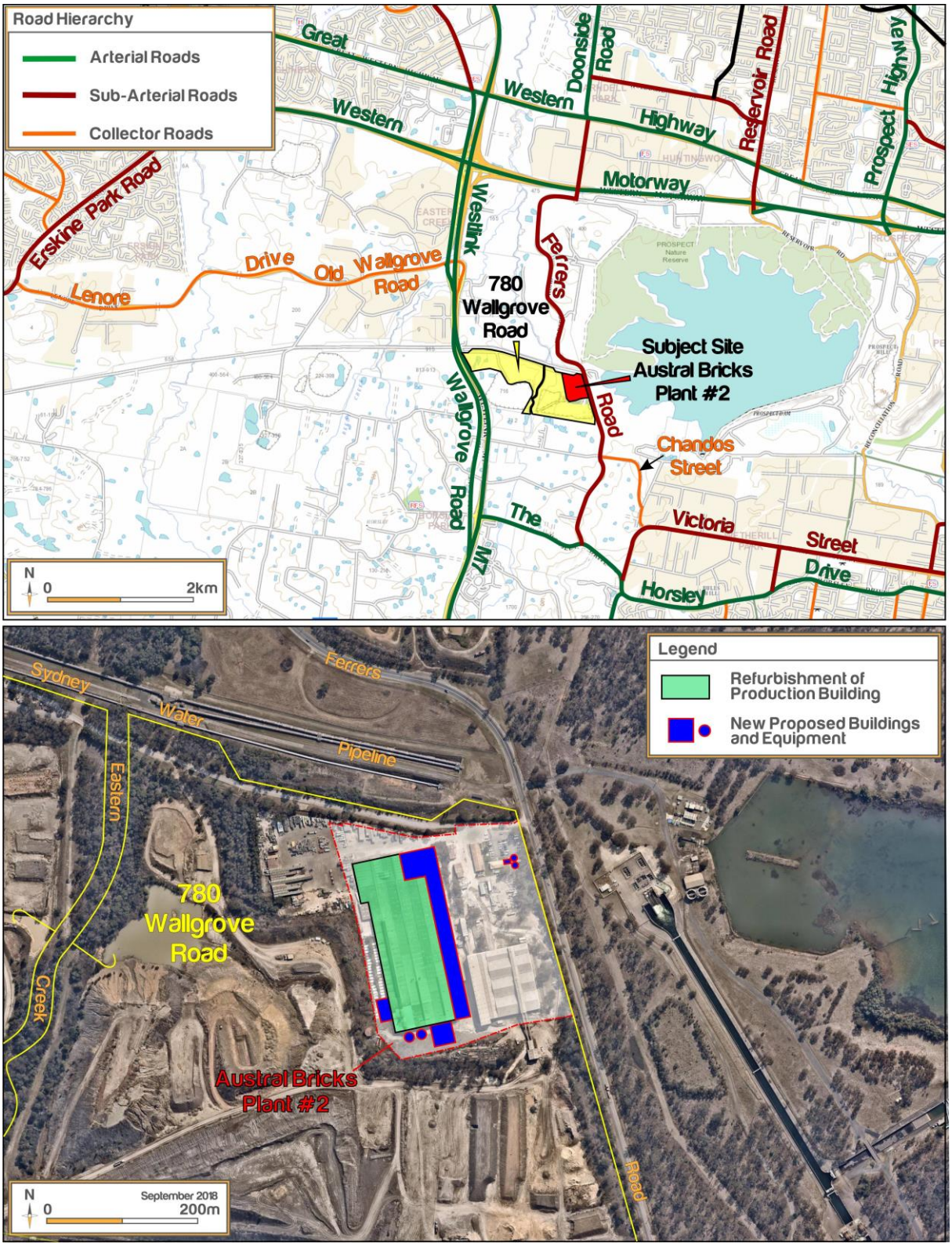


Figure 1: Site Context and Road Hierarchy

The Existing Approval

The existing SSD 9601 currently grants approval for the following:

- An extension of the existing building (Plant 2) to provide an additional GFA of approximately 13,350m^2 which would in turn provide for the replacement of 2 existing kilns with 1 new upgraded kiln.
- The construction of a new sealed fire road to allow emergency vehicles (including fire trucks) to service the Plant 2 Site.
- The retention of the existing on-site car park and provision of 18 formalised visitor parking spaces.
- Maximum of 35 staff on site at any given time.

Figure 2 presents a copy of the approved SSD stamped plans at a reduced scale showing the general layout of the buildings and the associated traffic circulation, loading and car parking areas.

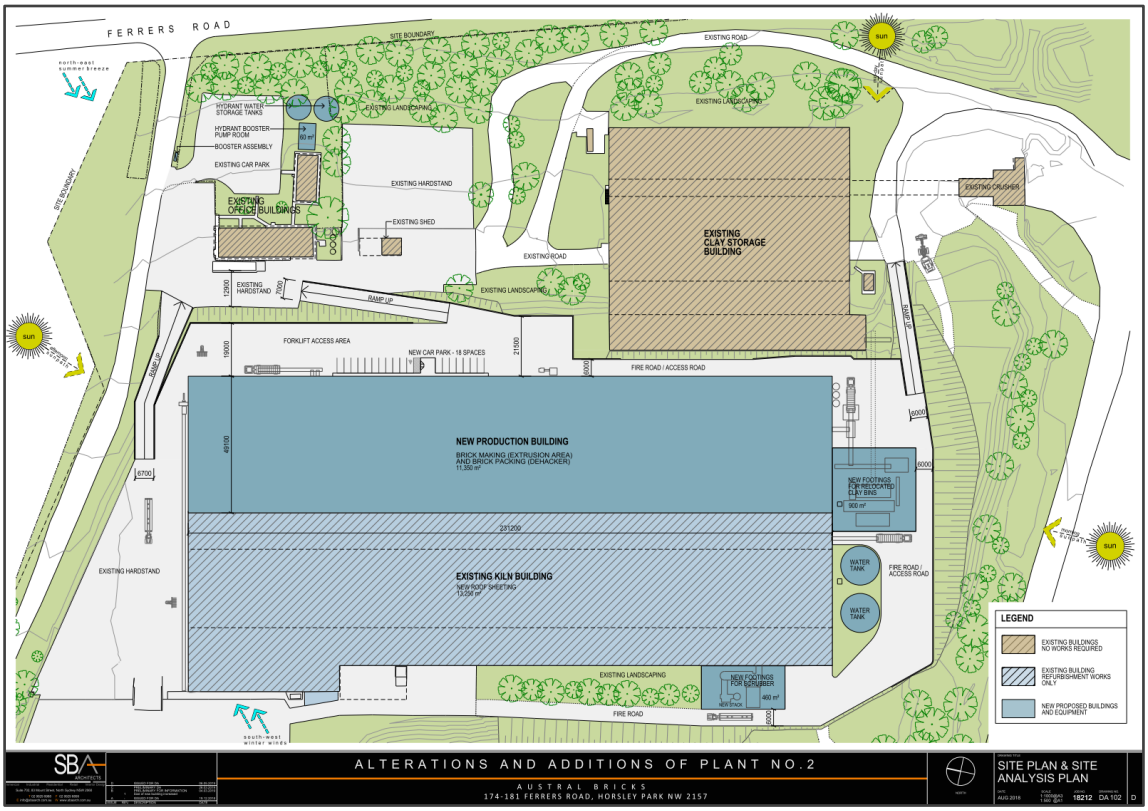


Figure 2: Approved SSD Stamped Plan

The Proposal

The Proposal seeks approval for a modification to SSD 9601 which comprises the following key works:

- Provision of 33 car spaces at the car park outside the office of the new production building.
- Construction of a new hardstand area for loading/unloading and storage.
- Removal of an existing internal ramp at the northern end of the Site.
- Construction of a new driveway for heavy vehicles to/from the Internal Access Road including the gate and weighbridges within the Site.
- Demolition of office buildings at the north-eastern section of the Site and convert into a yard for storage and overflow parking.
- Additional 10-12 staff working the night shift.
- Retained maximum of 35 staff on site at any given time.

Figure 3 presents a copy of the Site plan further to the modifications of the Proposal.

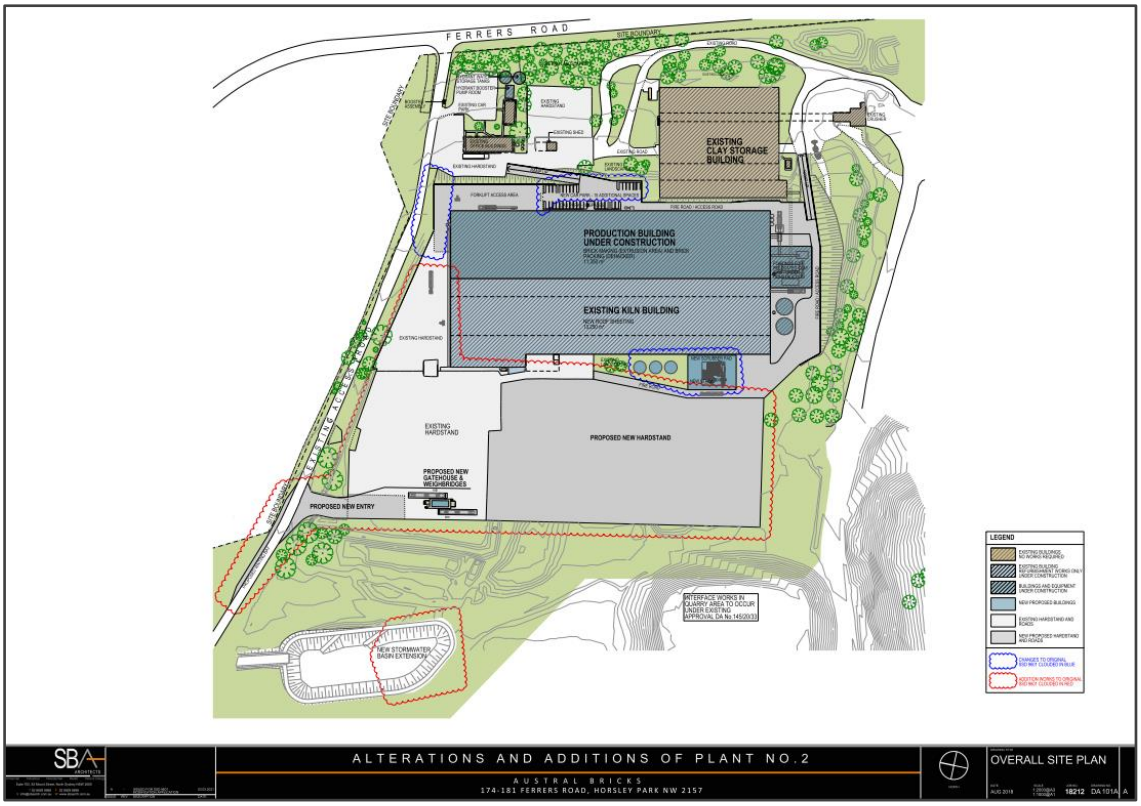


Figure 3: Proposed Site Plan

Car Parking Assessment

The Proposal provides for amendments to design but does not provide for any increase to GFA.

As such, it is expected that the car parking demands of the Proposal will be consistent with the car parking conclusions of the Ason 2019 TA, which was ultimately accepted as part of the approved SSD. The car parking analysis of both reports utilised a first-principles approach and concluded that the provision of 18 formal car spaces and the existing unmarked car park (which could provide for up to 63 car spaces based on the minimum requirements of AS28890.1:2004) would accommodate the car parking demand of the development.

The Proposal provides for 33 formal car spaces at a centralised location outside the factory for staff and visitors. This will facilitate the retention of the unmarked car park for the purpose of overflow parking for the wider Austral Site.

It is noted that the Proposal would see a total increase of 10 staff for the night shift. Notwithstanding, the maximum number of staff on site at any given time will remain as 35 staff. This indicates a car parking demand of 35 spaces, which is consistent with the previous assessment.

As such, the additional parking to be provided following the Modification results in a net increase of 15 formal car spaces within the Plant 2 Site. it is noted that the unmarked car park will generally be unused unless required for overflow parking (such as for visitors when all staff are on-site) and will support the wider Austral Site.

The Proposal is therefore supportable on car parking grounds.

Traffic Generation

Existing Approval

The existing approval (SSD 9601) comprised the refurbishment and extension of existing on-site infrastructure but did not increase staff numbers, production or general vehicle movements.

Furthermore, as part of the SSD, traffic volume surveys were undertaken at the intersection of Access Road / Wallgrove Road and Access Road / Ferrers Road. The results of the survey informed the SIDRA intersection modelling.

Noting that Plant 2 was operational during the time of traffic surveys, it can be deduced that the existing generation of Plant 2 have been captured in the traffic surveys and SIDRA intersection modelling.

Proposal

The Proposal will result in an additional 10-12 staff working the night shift and an increase in production which would result in the following additional traffic generation:

- 10-12 light vehicles relating to staff working the night shift (between 10pm and 6am)
- 10 additional heavy vehicles travelling to / from the Site across the course of the day (20 vehicle movements)

The additional staff trips would be outside of the key road network peak hours, which was determined to be from 8:30am to 9:30am and 1:00pm to 2:00pm on Wallgrove Road, as per traffic surveys undertaken in 2018 to inform the Ason 2019 TA.

With regard to the additional truck movements, an additional 20 truck movements throughout the day would result in approximately 2-3 trucks per hour.

As such, the Proposal would result in an increase of 2-3 vehicle trips in the peak hours.

Traffic Impacts

As mentioned, SIDRA intersection modelling was undertaken at the intersection of Ferrers Road / Access Road under existing conditions (based on traffic surveys data). The results of the SIDRA analysis are presented in **Table 1**.

Table 1: Existing intersection performance

Intersection	Period	Degree of Saturation (DoS)	Average Vehicle Delay (AVD)	Level of Service (LoS)
Ferrers Road / Access Road	AM	0.409	70.1 sec	E
	PM	0.079	108.1 sec	F

With reference to Table 1, the SIDRA results indicate relatively poor operations at the intersection of Access Road & Ferrers Road.

The delay at this intersection is to the right turn movement, from Access Road to Ferrers Road (southbound). However, the delay relates to only a small number of vehicle trips (4 trips and 2 trips in the AM and PM peak hours respectively) and as such has no bearing on general intersection operations.

Importantly, any additional traffic allocated to the movement would result in significant increases to delay within the SIDRA model as the right turn from Access Road is already operating at capacity. This is a known limitation with SIDRA intersection modelling and is unlikely to occur in practice.

Nonetheless, the Existing + Proposal operation has been assessed for a worst-case scenario (Scenario 1) where all additional vehicles (3 trucks total) turn right. The results of the analysis are shown in **Table 2**.

Table 2: Existing + Proposal intersection performance – Scenario 1

Intersection	Period	Degree of Saturation (DoS)	Average Vehicle Delay (AVD)	Level of Service (LoS)
Ferrers Road / Access Road	AM	0.548	96.4 sec	F
	PM	0.872	868.5 sec	F

The results of the Scenario 1 modelling indicate significant increases to average delay, being 26.3 sec and 760.4 sec in the AM and PM peak hours, respectively. This is consistent with our commentary above, being that the intersection is already operating at capacity and that any traffic, however minor, allocated to the intersection would result in substantial (though unrealistic) increases to delay.

As such, Ason Group have undertaken modelling with consideration to 'dynamic redistribution' of traffic; that is, it would be apparent to those who are familiar with the area (or have been informed) that using the intersection of Ferrers Road / Access Road for right turn movements should be avoided.

It is therefore reasonable to conclude that these drivers would seek an alternative route, either by turning left at Ferrers Road (Scenario 2) or by avoiding the intersection entirely and use the Wallgrove Road / Access Road intersection to the east of the Site (Scenario 3).

Scenario 2 has been assessed and the results are summarised in Table 3.

Table 3: Existing + Proposal Intersection Performance – Scenario 2

Intersection	Period	Degree of Saturation (DoS)	Average Vehicle Delay (AVD)	Level of Service (LoS)
Ferrers Road / Access Road	AM	0.428	70.7 sec	F
	PM	0.095	109.5 sec	F

The results of the Scenario 2 modelling indicate very minor increases to average delay, being 0.6 sec and 1.4 sec in the AM and PM peak hours, respectively. Therefore, Scenario 2 would not materially impact the operation of the Ferrers Road / Access Road intersection.

Scenario 3 will not affect the Ferrers Road / Access Road intersection is it would be bypassed completely.

With consideration to the above, it is Ason Group's opinion that the impact of the cumulative traffic generation of the existing SSD 9601 and the Proposal is acceptable for the following reasons:

- The existing Ferrers Road / Access Road intersection has been tested with SIDRA and the results indicate that the right turn from Access Road to Ferrers Road is operating poorly. As such, any increase in traffic to this movement would result in significant (though unrealistic) increases to the average delay; this is a known limitation of SIDRA intersection modelling.
- The results for all vehicles turning right from Access Road to Ferrers Road (Scenario 1) indicate unrealistic increases to average delay (26.3 sec in the AM peak hour and 760.4 sec in the PM peak hour). This is consistent with the SIDRA limitations, as discussed in the point above.
- Notwithstanding, an increase of up to 3 trucks in the peak is minor and it would be expected that it this increase would not significantly impact the operation of any intersection.

- With consideration to dynamic redistribution, it would be apparent that those familiar with the area (or have been warned / instructed) would either turn left from Access Road onto Ferrers Road (Scenario 2) OR avoid the Ferrers Road / Access Road intersection entirely (Scenario 3).
- SIDRA modelling demonstrates that Scenario 2 would result in minor increases to delay (0.6 sec in the AM peak hour and 1.4 sec in the PM peak hour) whilst Scenario 3 would not impact the intersection at all.
- As such, the cumulative traffic impacts of the existing SSD 9601 and the Proposal is minor and would not materially impact the existing intersection operation.
- It is also noted that as part of the Gazcorp Industrial Estate SSD (application no.: SSD 5248), upgrades to the Access Road / Wallgrove Road intersection have been stipulated in the Development Consent. The upgrades are yet to be constructed, and would further improve the operation of the intersection when completed.

The Proposal is therefore supportable on traffic generation grounds.

Design Commentary

A comprehensive technical assessment of the revised Site plans indicates that the Proposal is designed in accordance with the following relevant Australian Standards:

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

Based on the technical analysis, the following features of the Proposal are considered noteworthy:

- All staff and employee parking are to be provided in accordance with AS2890.1 for a Class 1A user, which requires a minimum space length of 5.4m, a minimum width of 2.4m and a minimum aisle width of 5.8m.
- All disabled and adaptable parking spaces are to be provided in accordance with AS2890.6, which requires a space with a clear width of 2.4m and located adjacent to a minimum shared area of 2.4m.
- All spaces located adjacent to obstructions greater than 150mm in height are to be provided with an additional width of 300mm. This includes any landscaping that exceeds 150mm.
- All carparking areas have been separated away from heavy vehicle access.
- The proposed heavy vehicle driveway, weighbridges and loading/unloading arrangement at the hardstand area can accommodate a 26m B-Double.

The results of this analysis, which are presented on plans attached as **Attachment 1**, indicates that all necessary vehicular manoeuvres can be accommodated under the Proposal.

It is expected that any detailed construction drawings in relation to any modified areas of the car park or Site access would comply with these Standards. Furthermore, compliance with the above Standards would be expected to form a standard Condition of Consent to any development approval.

Conclusions

Further to a detailed assessment of the Proposal, Ason Group has concluded that:

- The car parking provision of the Proposal is consistent with the approved car parking provision.
- The Proposal would generate a sufficiently low order of trips in the peak hour (up to 3 vehicles) and is not expected to materially impact the surrounding road network.
- The proposed modifications to the internal Site design will provide compliance with all relevant Australian Standards.

As such, Ason Group has determined that the Proposal is supportable on access, traffic and parking grounds.

We trust the above is of assistance. If you have any questions or should you wish to discuss further, please feel free to contact the undersigned.

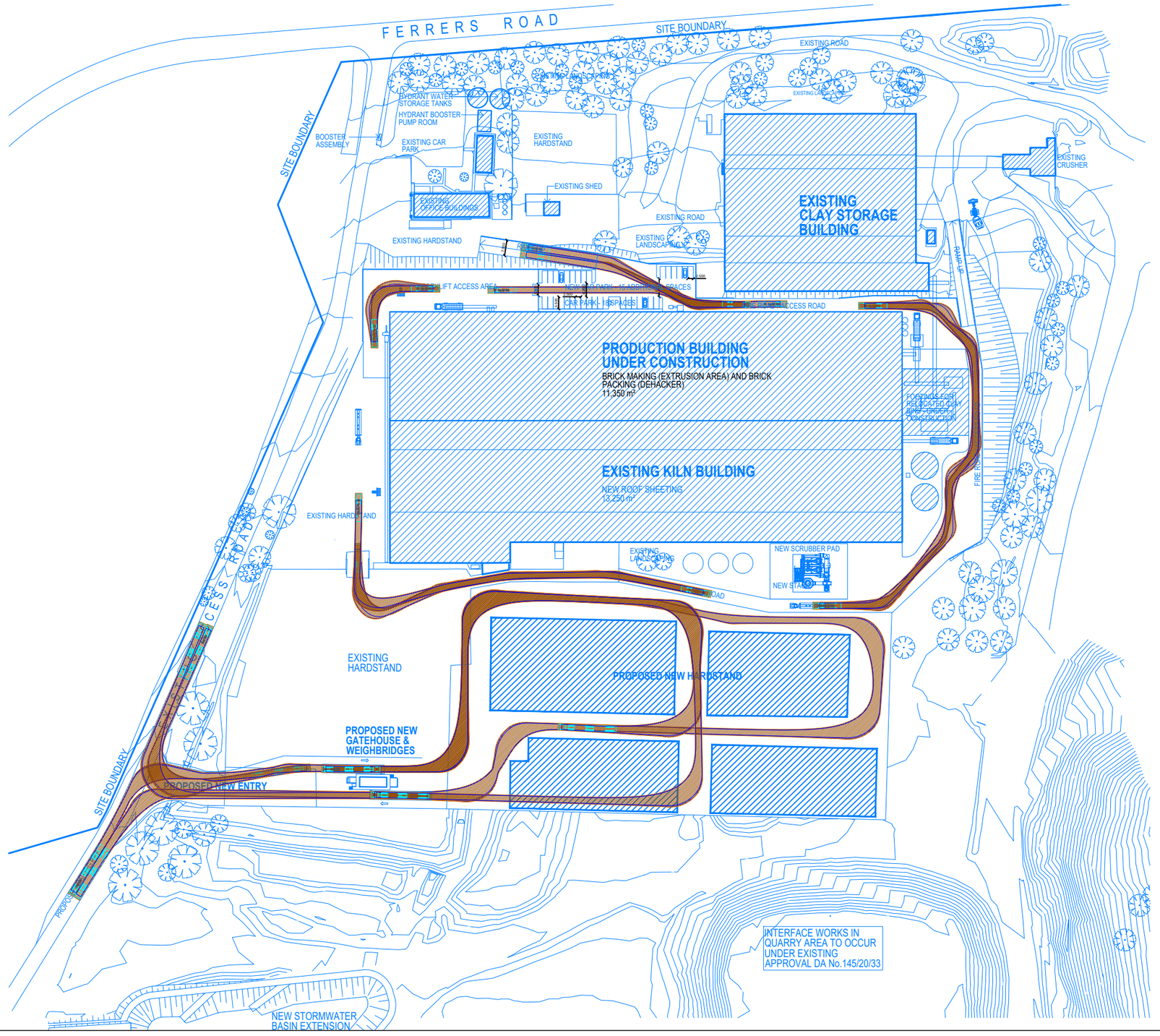
Yours sincerely,

Alan Tan
Traffic Engineer – Ason Group

Email: alan.tan@asongroup.com.au

Attachment: 1) Swept Path Analysis

Attachment 1



Notes:

Plan reference: 18212_DA_105_P2_Overall Floor Plan issued on 04 Mar 2021 by Willowtree Planning

For information purposes only - not for construction

Drawn By: AT

Client: Austral Bricks

Project: 0714 780 Old Wallgrove Road

Drawing Title: Overall Site Plan

Date: 23-Mar-21

Scale @ A3: 1:2000

Drawing Number: AG01

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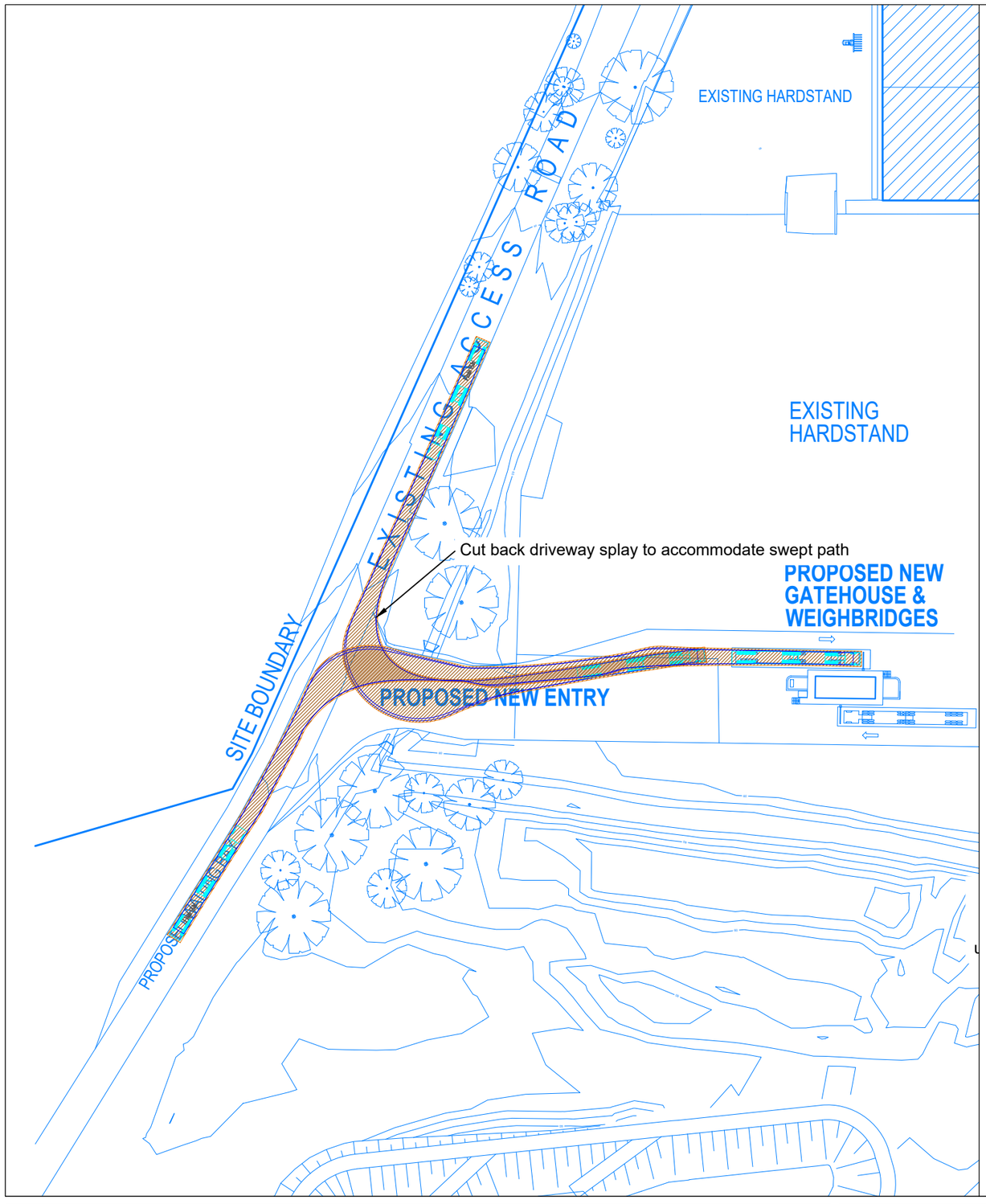

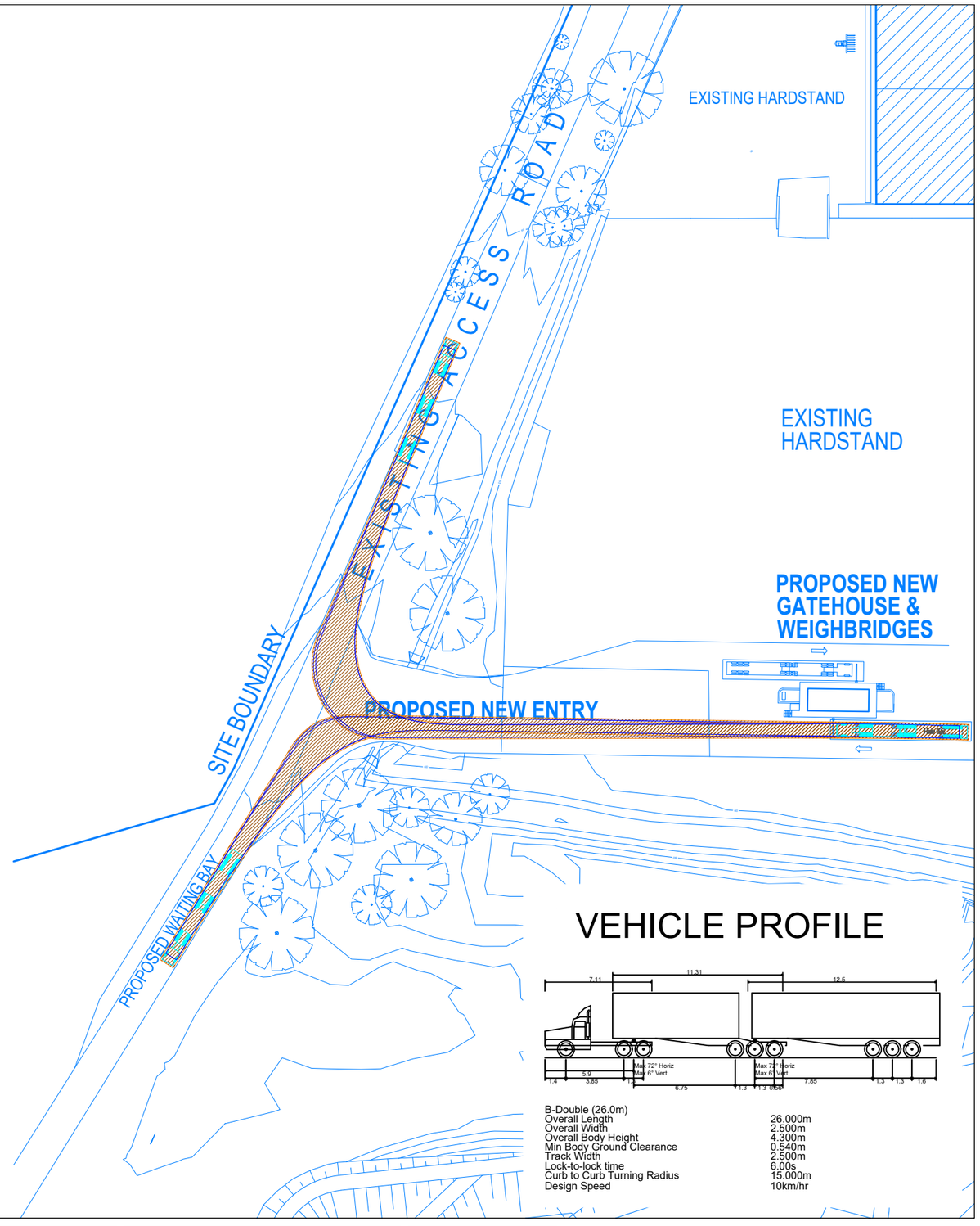

VEHICLE PROFILE

B-Double (26.0m)	
Overall Length	26.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	15.000m
Design Speed	10km/hr

Notes:

Plan reference: 18212_DA_105_P2_Overall Floor Plan issued on 04 Mar 2021 by Willowtree Planning

For information purposes only - not for construction

Drawn By: AT

Client: Austral Bricks

Project: 0714 780 Old Wallgrove Road

Drawing Title: Swept Path Analysis - Proposed Driveway 26m B-Double

Date: 23-Mar-21

Scale @ A3: 1:1000

Drawing Number: AG02

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EXISTING KILN BUILDING

NEW ROOF SHEETING
13,250 m²

EXISTING HARDSTAND

EXISTING LANDSCAPING

NEW SCRUBBER PAD

NEW STACK

FIRE ROAD

FIRE RO

EXISTING HARDSTAND

PROPOSED NEW HARDSTAND

way splay to accommodate swept path

PROPOSED NEW GATEHOUSE & WEIGHBRIDGES

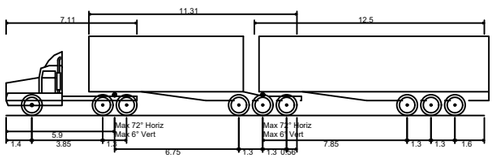
ITRY

Indicative stopckpile locations

Recommend keeping area clear to allow of a truck route. This would allow 26m B-Doubles to straighten up on approach to the weighbridge.

INTERFACE WORKS IN QUARRY AREA TO OCCUR UNDER EXISTING APPROVAL DA No.145/20/33

VEHICLE PROFILE



B-Double (26.0m)	
Overall Length	26.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	15.000m
Design Speed	10km/hr

Notes:

Plan reference: 18212_DA_105_P2_Overall Floor Plan issued on 04 Mar 2021 by Willowtree Planning

For information purposes only - not for construction

Drawn By: AT

Client: Austral Bricks

Project: 0714 780 Old Wallgrove Road

Drawing Title: Swept Path Analysis - Internal 26m B-Double

Date: 23-Mar-21

Scale @ A3: 1:1000

Drawing Number: AG03

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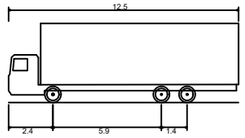
VEHICLE PROFILE



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-lock time	6.00s
Curb to Curb Turning Radius	12.500m
Maximum Design Speed	10km/h

ASSEMBLY

EXISTING CAR PARK

HARDSTAND

EXISTING SHED

EXISTING OFFICE BUILDINGS

EXISTING ROAD

EXISTING HARDSTAND

EXISTING LANDSCAPING

EXISTING CLAY STORAGE BUILDING

RAMP UP

7,000

2,500

FORKLIFT ACCESS AREA

NEW CAR PARK - 15 ADDITIONAL SPACES

4,000

2,500

5,500

CAR PARK - 18 SPACES

FIRE ROAD / ACCESS ROAD

PRODUCTION BUILDING UNDER CONSTRUCTION

BRICK MAKING (EXTRUSION AREA) AND BRICK PACKING (DEHACKER)
11,350 m²

FOOTINGS FOR RELOCATED CLAY BINS - UNDER CONSTRUCTION

FIRE ROAD / ACCESS ROAD

EXISTING KILN BUILDING

NEW ROOF SHEETING
13,250 m²

EXISTING HARDSTAND

EXISTING LANDSCAPING

NEW SCRUBBER PAD

NEW STACK

FIRE ROAD

EXISTING HARDSTAND

PROPOSED NEW HARDSTAND

Notes:

Plan reference: 18212_DA_105_P2_Overall Floor Plan issued on 04 Mar 2021 by Willowtree Planning

For information purposes only - not for construction

Drawn By: AT	Project: 0714 780 Old Wallgrove Road	Date: 23-Mar-21	asongroup
Client: Austral Bricks	Drawing Title: Swept Path Analysis - Fire Truck 12.5m Heavy Rigid Vehicle (HRV)	Scale @ A3: 1:1000	Suite 5.02, Level 5, 1 Castlereagh Street Sydney NSW 2000
		Drawing Number: AG04	info@asongroup.com.au