APPENDIX 10

TRAFFIC IMPACT ASSESSMENT

Traffic Impact Assessment

Proposed Extension of Mainfreight Facility
30-50 Yarrawa Street, Prestons

Reference: 12.424r01v3 TRAFFIX Yarrawa St DA Report, Issue III

traffix
traffic & transport planners

po box 1061
potts point nsw 1335
t: +61 2 8324 8700
f: +61 2 9380 4481
w: www.traffix.com.au
abn: 66065132961

Document Verification

Job Number:	12.424
Project:	30-50 Yarrawa Street, Prestons
Client:	Goodman Property Services Pty Ltd

Revision		Initials	Date	Signature
12.424r01v1 TRAFFIX Yarrawa St, DA Report, Draft	Prepared by:	AR	20/02/2013	
	Checked by:	PT	20/02/2013	
	Approved by:	GP	21/02/2013	
12.424r01v2 TRAFFIX Yarrawa St DA Report, Issue II	Prepared by:	AR	22/02/2013	
	Checked by:	PT	22/02/2013	
	Approved by:	GP	22/02/2013	
12.424r01v3 TRAFFIX Yarrawa St DA Report, Issue III	Prepared by:	AR	09/04/2013	
	Checked by:	PT	09/04/2013	
	Approved by:	GP	09/04/2013	

traffix
traffic & transport planners

po box 1061
potts point nsw 1335
t: +61 2 8324 8700
f: +61 2 9380 4481
w: www.traffix.com.au
abn: 66065132961

Contents

1. Introduction

1.1 Background

TRAFFIX has been commissioned by Goodman Property Services (Aust.) Pty Ltd to undertake a Traffic Impact Assessment (TIA) in support of a proposed expansion of an existing warehouse and distribution facility located at 30-50 Yarrawa Street, Prestons in the local government area of the City of Liverpool. This TIA supports a State Significant Development Application under the Part 4 of the *Environmental Planning and Assessment Act 1979*.

The existing development is a third party logistics facility that operates as a warehouse and distribution centre. Goodman (on behalf of operators Mainfreight) now seeks to expand the existing distribution operations and consolidate part of the existing Mainfreight facility in Moorebank to within the existing facility at Prestons.

This report documents the findings of our investigations and should be read in the context of the Environmental Impact Assessment (EIA) prepared separately. Specifically, this report addresses the Key Issues for Transport and Access, as detailed in the Director General's Requirements (DGRs) issued by the NSW Department of Planning & Infrastructure (DPI) on 1st February 2013.

1.2 Director General's Requirements

The following table presents each of the traffic and access related DGRs, along with the report section within which the relevant response to each DGR is provided.

Table 1: Director General's Requirements

Director General's Requirement	Section
Accurate predictions of the traffic generated by the development	4, 6
A detailed assessment of the potential impacts of the development on the capacity, efficiency and safety of the road network including the cumulative traffic generated by all existing and the proposed development	6
Details of any upgrades to road infrastructure that would be required due to the development	6
Site accesses, internal roads and vehicular parking required as a result of the development	4, 5, 7

1.3 NSW Roads & Maritime Requirements

In addition to the DGRs, this report responds to the specific requirements of the NSW Roads and Maritime Services (RMS) as presented in the RMS letter of 30th January 2013, which informed the DGRs. The following table presents each of the traffic and access related DGRs, along with the report section within which the relevant response to each DGR is provided.

Table 2: NSW Roads & Maritime Services Requirements

RMS Requirements	Section
1. Daily and peak traffic movements likely to be generated by the proposed development including the impact on nearby intersections and the need / associated funding for upgrading or road improvement works (if required).	4, 6
2. Details of the proposed accesses and the parking provisions associated with the proposed development including compliance with the requirements of the relevant Australian Standards (ie: turn paths, sight distance requirements, aisle widths, etc).	4, 5, 7
3. Proposed number of car parking spaces and compliance with the appropriate parking codes.	5
4. Details of service vehicle movements (including vehicle type and likely arrival and departure times).	5, 7
5. The hazardous materials shall be transported using the designated dangerous goods routes. In this regard, a travel plan or map should be provided to DP&I which illustrates the routes for transportation of the dangerous goods to the subject site.	6

Consultation with RMS has also been undertaken and includes the following:

- A telephone conversation and subsequent email of 8th February 2013 regarding designated dangerous goods routes; and
- A follow-up telephone conversation of 19th February 2013 advising that at present, there are no designated dangerous goods routes and that the suitability of a route is determined on a case by case basis. It was however advised by RMS that vehicles carrying dangerous goods are prohibited from using tunnel sections on Sydney motorways.

1.4 Report Structure

The remainder of this report is structured as follows:

- Section 2: Describes the site and its location
- Section 3: Documents existing traffic conditions
- Section 4: Describes the proposed development
- Section 5: Assesses the parking requirements
- Section 6: Assesses traffic impacts
- Section 7: Discusses access and internal design aspects
- Section 8: Presents the overall study conclusions.

2. Location and Site

The premises known as 30-50 Yarrawa Street are located on the southern side of Yarrawa Street, approximately 400 metres west of the Bernera Road Interchange of the Westlink M7 motorway. It is also approximately 7 kilometres west of Liverpool Town Centre, 38 kilometres west of Port Botany and 45 kilometres southwest of Sydney CBD.

The entire site has a rectangular configuration with a site area of approximately 85,100m^2 and consists of three Lots, one Lot of 48,750m^2 in area accommodating the existing Mainfreight facility and two currently vacant Lots to the east, with a combined area of 36,350m^2, which will support the expansion development. The site has a northern frontage of approximately 425 metres to Yarrawa Street, eastern and western frontages of approximately 200 metres each to vacant neighbouring Lots; and a southern frontage of 425 metres to an adjacent industrial property.

The site and the surrounding areas form a developing Industrial Estate. Access Roads are provided off Bernera Road, which provides convenient access to the Westlink M7 Motorway and on to the M5 Motorway.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**. Reference should also be made to the Photographic Record presented at **Appendix A**, which provides an appreciation of the general character of roads and other key attributes in proximity of the site.

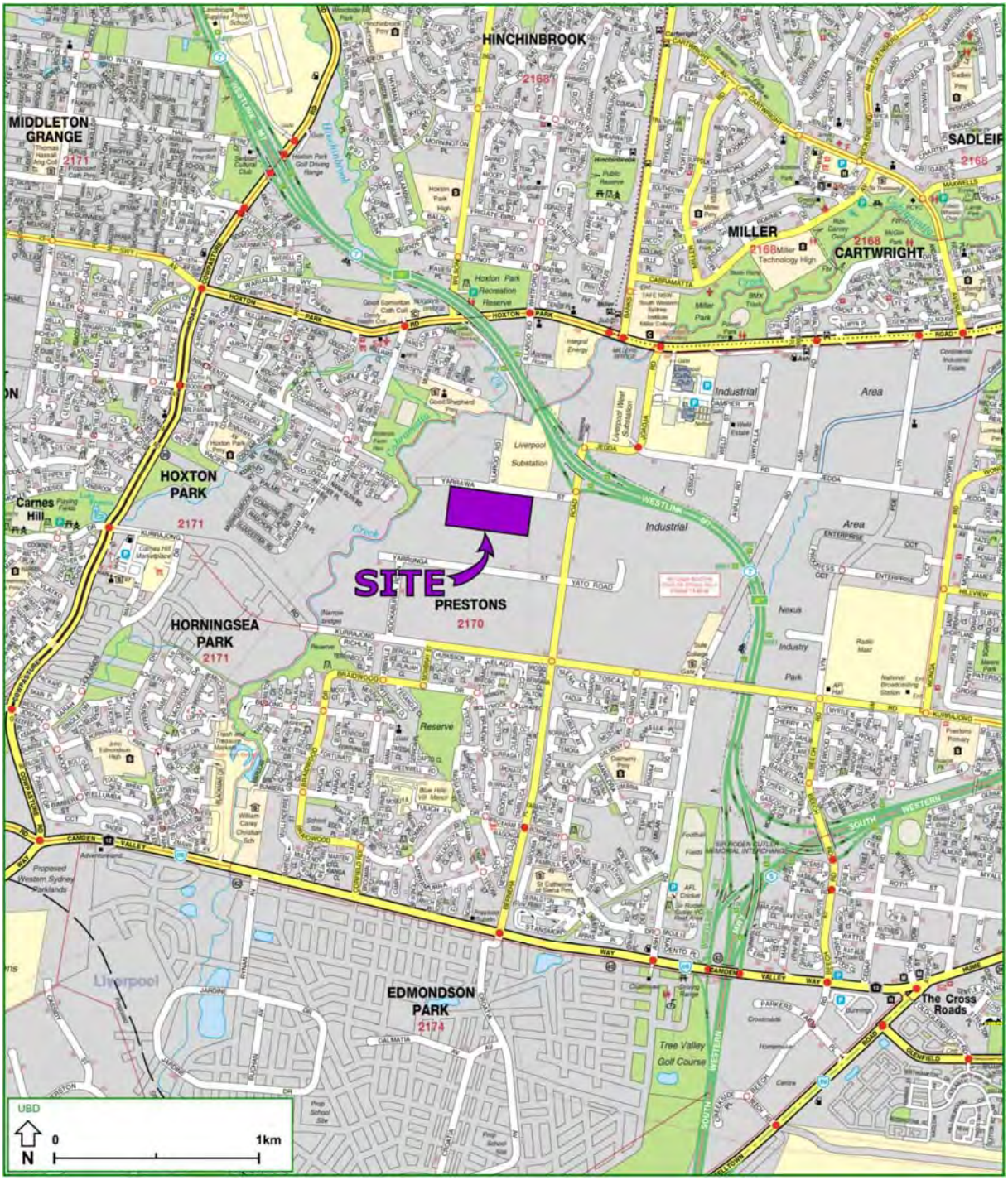


Figure 1: Location Plan

Figure 2: Site Plan

3. Existing Traffic Conditions

3.1 Road Network

The road hierarchy in the vicinity of the site is shown in **Figure 3** with the following roads of particular interest:

- Westlink M7 Motorway: an RMS State Road, the Westlink M7 Motorway is a 40 kilometre long-four lane motorway serving Sydney's west. It links with the M2 at Baulkham Hills, the M4 at Eastern Creek and the M5/Hume Highway at Prestons. The M7-M5 corridor provides a direct route of about 35 kilometres from the site to Port Botany in the east.

- Bernera Road: an RMS classified Regional Road (RR7262) that runs in a north-south direction in the vicinity of the subject site, connecting to the Westlink M7 Motorway to the north. 2005 Annual Average Daily Traffic statistics from RMS indicates that it carries about 10,300 vehicles per day. The Road consists generally of a single traffic lane in each direction and has a sign-posted speed limit of 60 km/h.

- Yarrawa Street: a local industrial access road that runs in an east-west direction to the north of the site and consists of a single lane of traffic in each direction. The current road width is approximately 12 metres in width with on-street parking provided on both sides. At its eastern end, Yarrawa Street joins with Bernera Road at the northbound Westlink M7 interchange roundabout. It is noteworthy that as part of the construction of the existing facility (under DA 1093/2007) Goodman also undertook a full upgrade of Yarrawa Street, from its western boundary to the interchange roundabout in the east, including an upgrade at the roundabout itself.

It can be seen from Figure 3 that the site is conveniently located with respect to the arterial and local road systems serving the region. It is therefore able to effectively distribute traffic onto the wider road network, minimising traffic impacts.

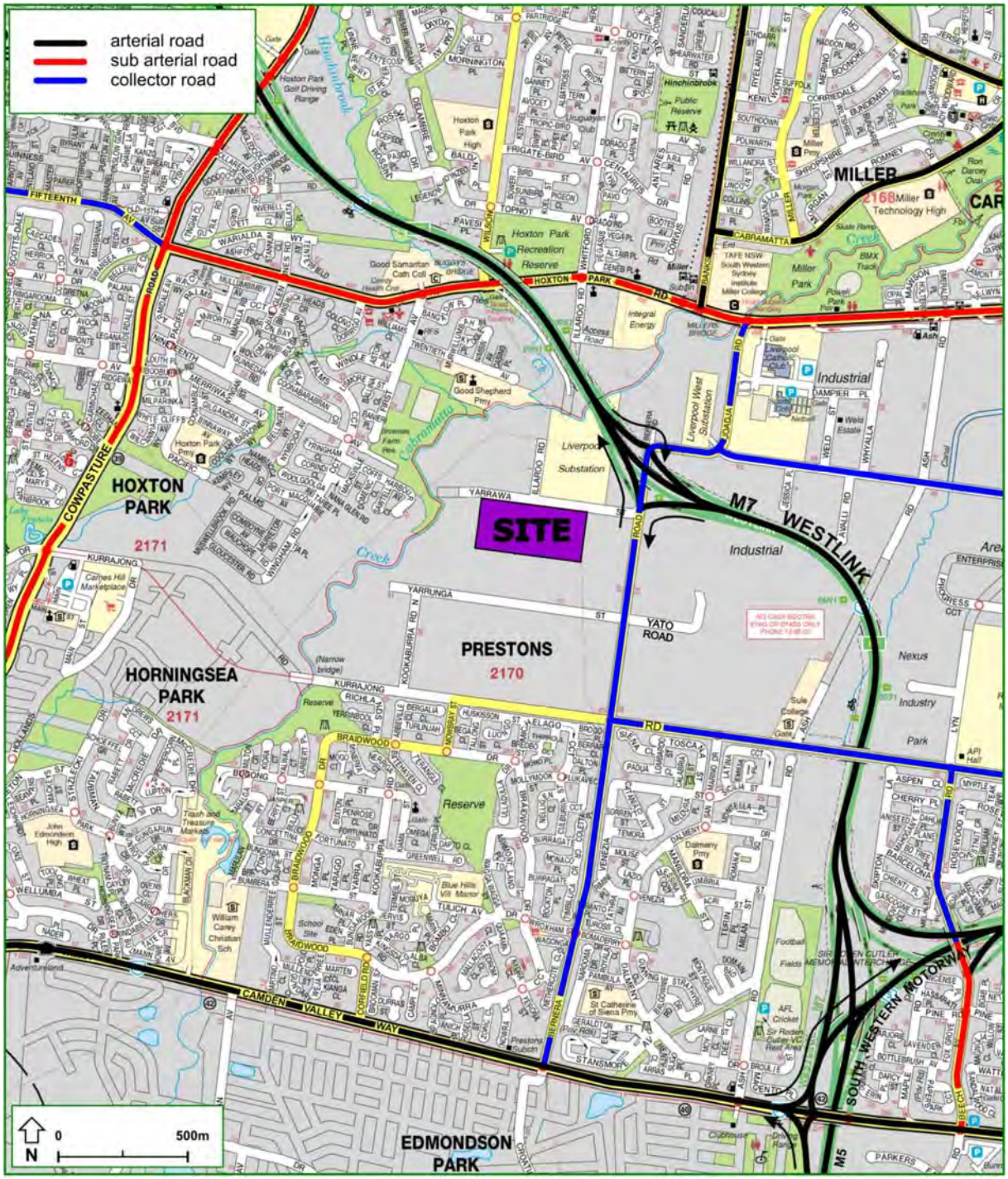


Figure 3: Road Hierarchy

3.2 Public Transport

The existing bus services that operate in the locality are shown in **Figure 4**. The site is approximately 6 kilometres to the west of Liverpool Railway Station, which provides services along the Cumberland, South, Inner West and Bankstown Lines. It can be seen that the site is currently poorly served by public transport. However, it is likely that once the surrounding industrial estate is fully developed, the opportunity to improve bus accessibility would be investigated.

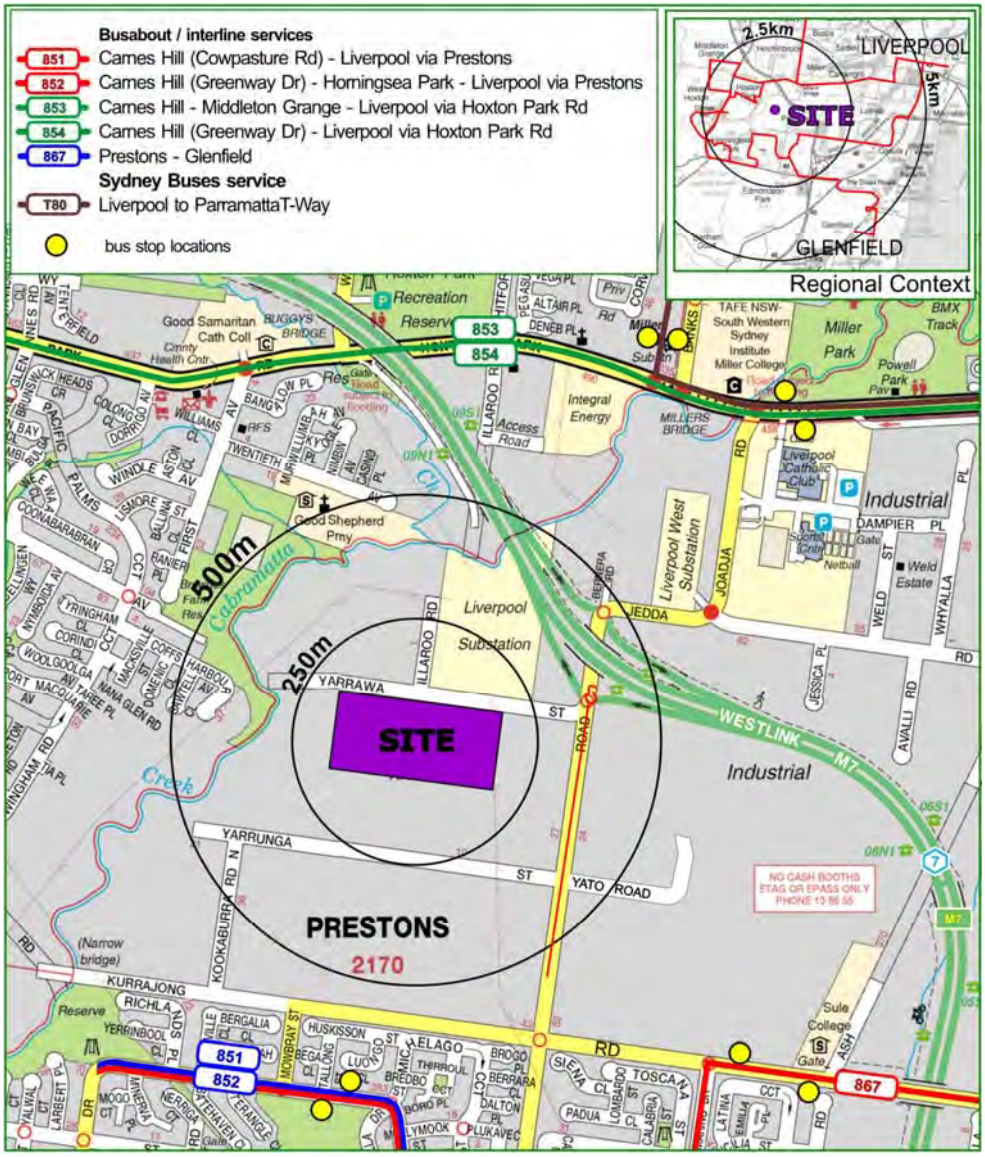


Figure 4: Public Transport Services

3.3 Existing Site Characteristics

3.3.1 Existing Mainfreight Facility

As previously mentioned, the subject site (as a whole) comprises three Lots, with the western Lot accommodating the existing Mainfreight facility, consisting of a warehouse and distribution centre with ancillary office. With regard to operational buildings (excluding the ancillary office), the main components of the existing facility consist of the following three built areas:

- Warehouse Building 1 (to the north) with a floor area of 13,510m^2;
- Warehouse Building 2 (to the south) with a floor area of 14,600m^2; and
- Breezeway of 3,326m^2.

The site also provides loading and parking areas with two driveway accesses on Yarrawa Street. The existing car park provides 107 off-street parking spaces.

3.3.2 Existing Site Traffic and Parking Surveys

Surveys of the site were undertaken on 28th November 2012 to determine the existing traffic generation and parking demand of the site. Traffic counts of vehicles arriving and departing the site were taken over a 14-hour period from 6:00am to 8:00pm. In addition, the vehicles counts were classified by light vehicles and heavy (or delivery) vehicles.

During the same period, a car parking survey was undertaken that recorded the number of cars that parked on the entire site (existing paved car park and neighbouring unpaved extension site) as well as the on-street parking.

The results of the surveys are presented below.

3.3.3 Existing Parking Demand

The surveys indicated that the parking demand peaked at 122 cars, from 10:00am to 10:45am. During this period the majority of cars were parked within the formal 107 space car park, with the balance parked within the vacant Lot and with some vehicles parked on-street.

The parking profile for the 14-hour survey period is shown graphically in **Figure 5**.

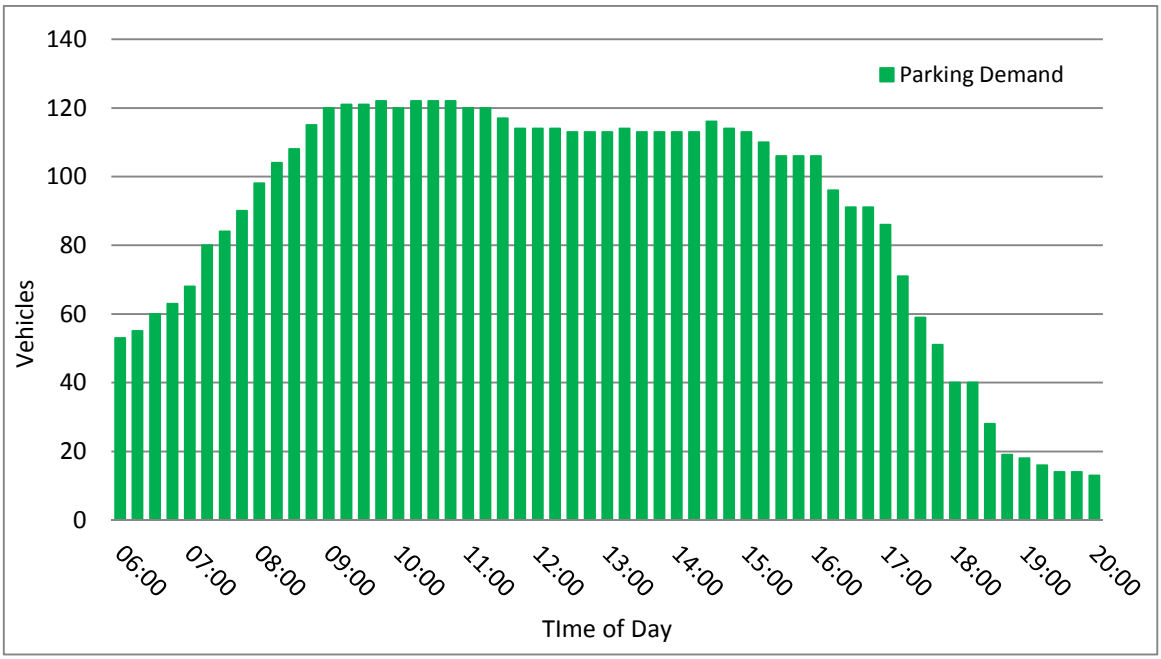


Figure 5: Existing On-Site Parking Profile for all locations

3.3.4 Existing Traffic Generation

The traffic count surveys provided the following information. For the purpose of this study, the site traffic has been divided in to two categories: staff-related traffic (generally light vehicles) and operational traffic (generally heavy vehicles).

The traffic surveys indicated the following with regard to staff-related (light vehicle) traffic:

- The morning peak hour occurred from 7:45am to 8:45pm;
- Morning peak hour volumes were observed to be 59 vehicles per hour (42 IN / 17 OUT);
- The evening peak hour occurred from 5:00pm to 6:00pm; and
- Evening peak hour volumes were observed to be 54 vehicles per hour (4 IN / 50 OUT).

With regard to Operational (heavy vehicle) traffic, the surveys indicated the following:

- The morning peak hour also occurred from 7:45am to 8:45pm;
- Morning peak hour volumes were observed to be 42 trucks per hour (25 IN / 17 OUT);
- The afternoon peak hour occurred also from 5:00pm to 6:00pm; and
- Afternoon peak hour volumes were observed to be 95 trucks per hour (45 IN / 50 OUT).

3.3.5 Existing Road Access

The site is accessed via Yarrawa Street which forms the western approach to the roundabout at Bernera Road. This roundabout is constructed with a large diameter central island and with generally two circulating traffic lanes. It includes on and off ramps to the M7 Motorway.

4. Description of Proposed Development

4.1 Development Details

A detailed description of the proposed development is provided in the EIS prepared separately. The significant components of the development can be summarised as follows:

- An expansion of 1,710m^2 to Warehouse Building 1 increasing its floor area from 13,510m^2 to 15,220m^2 with 7 recessed loading bays;
- An expansion of 13,250m^2 to Warehouse Building 2 increasing its floor area from 14,600m^2 to 27,850m^2 with 5 recessed loading bays;
- An expansion of 2,350m^2 to the existing Breezeway increasing its floor area from 3,326m^2 to 5,676m^2;
- 200m^2 of additional ancillary office increasing to office space from 1,272m^2 to 1,472m^2;
- 14,830m^2 of additional hardstand area of;
- A total parking provision of 217 spaces consisting of:
    - 107 existing spaces;
    - 70 proposed spaces;
    - 40 provisional spaces to be formed if require;
- A total 3 access driveways as follows:
    - an existing driveway at the western end of the site;
    - a new midblock driveway located about 10 metres to the west of the existing eastern driveway (to be closed); and
    - a new driveway at the eastern end of the site.

The parking and traffic impacts arising from the development are discussed in Sections 5 and 6, respectively. Reference should be made to the plan submitted separately to Council which is presented at reduced scale at **Appendix B**.

Mainfreight are experienced operators in the freight and logistics industry. In addition as previously mentioned, the proposal involves relocating some of its exiting Moorebank operations to the Prestons site. Accordingly, Mainfreight has provided detailed information about the anticipated operation of the expanded facility at Prestons.

4.2 Staffing Levels

As part of the partial consolidation of the Moorebank facility into the Prestons facility, Mainfreight has indicated that they propose transferring 37 of their Moorebank staff members to the Prestons facility. Mainfreight staff can be broadly divided in to two categories, namely office staff and warehouse staff.

The following table presents the existing and future staffing levels of the site as well as identifying the forecasted percentage increases in staffing levels:

Table 3: Number of Staff on Site

Staff	Office	General	TOTAL
Existing	46	114	160
Proposed	56	141	197
% Increase	**22%**	**24%**	**23%**

4.3 Site Operation and Forecasted Vehicle Movements

4.3.1 Future Operation (Heavy Vehicle) Traffic Flows

Mainfreight has also provided details of the operational (heavy vehicle) traffic anticipated for the entire expanded facility.

Firstly, Mainfreight has advised that the facility would run two 'operations' on site; which are referred to as follows:

- The Transport Shed Operation (TSO) – primarily facilitated from the expanded Warehouse Building 1; and
- The Logistics Shed Operation (LSO) – primarily facilitated from expanded Warehouse Building 2.

The data provided by Mainfreight for each of these operations is directly related to the traffic generating potential of the development. Therefore, in the interests of clarity, anticipated operational traffic movements have been included within this section.

4.3.2 Forecasted Transport Shed Operation Traffic

The total number of TSO heavy vehicles expected per day are as follows:

- 30 B-Double articulated trucks;
- 20 Semi-trailer articulated trucks; and
- 200 Pickup and Delivery (PUD) vehicles (4, 6, 8 and 12 tonnes).

The 50 TSO articulated trucks (long haul) are expected to arrive at the site during the 3-hour morning period from 6.00am to 9.00am, unload and park within the hardstand area. During the 3-hour afternoon/evening period from 3.00pm to 6.00pm, these 50 long haul vehicles would load and depart the site.

The 200 PUD vehicles identified above would operate throughout the day; however, the majority of the PUD trips would also occur during the 3-hour morning and afternoon periods identified above.

Table 4 provides a summary of the anticipated TSO heavy vehicle movements over these 3 hour periods (that is, they are not hourly volumes).

Table 4: Predicted TSO Peak Period Traffic

Type of Vehicle	AM Peak Period (6am-9am)			PM Peak Period (3pm-6pm)		
	IN	OUT	TOTAL	IN	OUT	TOTAL
PUD	100	100	200	100	100	200
B-Doubles	30	-	30	-	30	30
Semi-Trailers	20	-	20	-	20	20
TOTAL	**150**	**100**	**250**	**100**	**150**	**250**

4.3.3 Forecasted Logistics Shed Operation Traffic

The LSO heavy vehicle traffic generation is expected to be:

- 20 rigid trucks carrying containers per day;
- 10 Semi-trailer articulated trucks per day; and
- 2 rigid trucks and 1 semi-trailer during the peak hours, equivalent to 6 trips (3 IN / 3 OUT).

The combination of the TSO and LSO heavy vehicle movements are referred to as the forecast Operational Traffic for development. The trip generation analysis due to these traffic flows is discussed further in Section 6 of this report.

4.3.4 Forecasted Daily Operational Traffic

On the basis of the information above provided by Mainfreight, it can be determined that that future daily trip generation of operational traffic (trucks) to/from the site, would be 560 trips consisting of:

- 500 truck trips associated with the TSO; and
- 60 truck trips associated with the LSO.

5. Parking Requirements

5.1 Car Parking – Council Controls

The Liverpool Development Control Plan (DCP) 2008 – Part 1.2 nominally requires car parking for warehouses to be provided at the rates shown in **Table 5**.

Table 5: Council Parking Rates and Provision

Type	Area (m^2)	Council Parking Rates	Spaces Required	Spaces Provided
Warehouse	43,070	1 / 75m^2	575	
Office	1,472	1 / 35m^2	42	
TOTAL			**617**	**217**

As can be seen, the scheme proposes significantly less parking than is recommended under strict application of the DCP guidance. In order to assess the adequacy of the proposed parking provision, the following site specific parking demand calculations have been undertaken.

Firstly, it is noted as identified earlier in Section 4.2, Mainfreight has provided information indicating that staffing levels at the Prestons site will increase by 23%. Recognising that the majority of on-site parking demand is generated by staff, it can therefore be assumed that parking demand would also increase by 23%. By applying this to the peak surveyed demand of 122 parking spaces, it can be determined that the future development could generate a peak demand for 150 parking spaces.

Secondly, the percentage increase in building area can also be used as a factor for determining future parking demand. In this regard it is noted that the total building area is proposed to increase by 55% from 29,382m^2 to 45,577m^2. By applying this to the peak surveyed demand of 122 parking spaces, it can be determined that the future development would generate a peak demand for 189 parking spaces.

Therefore, it can be expected that the completed development could generate a peak parking demand of 150 – 189 parking spaces. In response, the development proposes 177 formed parking spaces with an area provisionally identified for a further 40 parking spaces that would take the total on-site parking provision up to 217 parking spaces. Having consideration for the potential variation in future parking demand, the approach of providing 177 spaces with an option to increase the provision to up to 217 spaces should this become necessary, is considered acceptable and avoids the potential for providing an over-supply of parking, which would be a waste of resources.

5.2 Truck Parking – Transport Shed Operation

As identified in Section 4.3.2, up to 50 articulated trucks, consisting on 30 B-Double trucks and 20 semi-trailer trucks, would be parked within the site between 9.00am to 3.00pm. The Truck Parking Management Plan (TPMP) attached at **Appendix C**, shows the locations where the these vehicles would be parked, with the majority located centrally within the new hardstand area and additional parking provided along the south side of the existing warehouse building.

With regard to the semi-trailer trucks, the TPMP identifies an area (spaces A1 – A20, each of which is 19 metres long and 3.5 metres wide) where 20 semi-trailer trucks can be accommodated on the hardstand area. Each of these spaces can be accessed independently via reverse in, reverse out manoeuvres.

In order to accommodate the 30 B-Double trucks on-site, the rear trailer of each vehicle would be uncoupled so that it can be parked separately using a small towing vehicle. The TPMP identifies an area (spaces T1 – T30, each of which is 12.5 metres long and 3.5 metres wide) where 30 rear trailer units can be accommodated on the hardstand area. In addition, the TPMP identifies an area (spaces B1 – B20, each of which is 15.6 metres long and 3.5 metres wide) where 20 of the B-Double front truck-and-trailer units can be accommodated on the hardstand area. The TPMP also identifies an area along the south side of the existing warehouse building where the remaining 10 B-Double front units can be parked.

As indicated on the TPMP, a number of the B-Double front unit spaces and rear trailer spaces are provided in a stacked formation. Accordingly, these spaces will need to be occupied and vacated in an ordered manner. It is anticipated that at a later stage, a detailed Operation Management Plan

would be prepared by Mainfreight to ensure that access to and from these stacked spaces is managed appropriately.

Finally, it is noteworthy that the truck swept paths on the TPMP indicate that vehicles parked within the identified parking areas on the hardstand do not obstruct trucks from entering and exiting the two adjacent loading docks and the breezeway.

5.3 Disabled Parking

The DCP requires accessible car parking spaces be provided at a rate of 1 space per 100 car parking spaces or part thereof for industrial developments with parking above 20 spaces. Accordingly, the development provides two accessible parking spaces with one space each at the western and eastern car parks.

5.4 Servicing

In accordance with Council's DCP, adequate facilities for servicing the Mainfreight site would be provided on-site to ensure loading/unloading activities do not occur on street and compromise the safety, amenity and capacity of the public road system.

Service vehicles would enter and exit the site in a forward direction and loading facilities would be provided for the development in accordance with AS2890.2 – 2002.

A designated service area would be provided in a location that is convenient to the service entrance. Furthermore, this area would be located such that heavy vehicles manoeuvring in to and out of the service area would be separated from areas of car parking or pedestrian movement.

6. Traffic Impacts

6.1 Traffic Generation

6.1.1 Staff-Related Trips

As previously stated, the traffic surveys indicated that the staff-related (light vehicle) peak hour traffic generation of the site was:

- Morning peak hour - 59 trips (42 IN / 17 OUT)
- Evening peak hour - 54 trips (4 IN / 50 OUT)

Mainfreight has provided information that indicates that staffing levels will increase by 23%. Using this factor, it can be determined that the future peak hour traffic flows would be:

- Morning peak hour - 73 trips (52 IN / 21OUT)
- Evening peak hour - 67 trips (5 IN / 62 OUT)

With regard to daily trips, the survey data recorded a total of 384 arrival and departure trips. Therefore, application of the 23% factor indicates that daily staff-related trips would be about 472 light vehicles per day.

6.1.2 Operational Trips

As previously stated, the traffic surveys indicated that the operational (heavy vehicle) peak hour traffic generation of the site was:

- Morning peak hour - 42 trips (25 IN / 17 OUT)
- Evening peak hour - 95 trips (45 IN / 50 OUT)

With regard to the TSO (Transport Shed Operation) traffic, Table 4 from Section 4.3.2 presented the anticipated truck movements for the 3-hour morning and evening periods. Mainfreight anticipates that these trips would be evenly distributed throughout these 3-hour periods. On this basis, **Table 6** presents the peak 1-hour traffic generation forecasts for the TSO traffic.

Table 6: Predicted TSO Peak Hour Traffic

Type of Vehicle	AM Peak Hour			PM Peak Hour		
	IN	OUT	TOTAL	IN	OUT	TOTAL
PUD	33	33	67	33	33	67
B-Doubles	10	-	10	-	10	10
Semi-Trailers	7	-	7	-	7	7
TSO Traffic	**50**	**33**	**83**	**33**	**50**	**83**
LSO Traffic	**3**	**3**	**6**	**3**	**3**	**6**
Total Operational Traffic	**53**	**36**	**89**	**36**	**53**	**89**

Table 6 also presents the LSO (Logistic Shed Operation) peak hour traffic as stated in Section 4.3.3 and the combined (Total) Operational Traffic (heavy vehicle) anticipated during the morning and evening peak hours.

6.2 Net Traffic Increase

Table 7 presents a comparison of the existing peak hour traffic generation (based on the survey data) with the forecasted peak hour traffic generation based on the analysis above.

Table 7: Net Hourly Traffic Volume Increase

Scenario	Traffic Type	Staff-related	Operational	Total
Morning Peak Hour	Existing	59	42	101
	Future	73	89	162
	Net Increase	**14**	**47**	**61**
Evening Peak Hour	Existing	54	95	149
	Future	67	90	157
	Total	**13**	**(-5)**	**8**

Table 7 shows that based on the information provided by Mainfreight, the development would generate generally similar levels of peak hour traffic during the evening peak hour as that presently generated by the existing use. During the morning peak hour, trips are forecasted to increase by 61 trips. This equates to just one additional trip every minute. It is considered that an increase in traffic volumes of this order would have a negligible impact on the surrounding road network, with these trips being split between entries and exits.

6.3 Network Performance

All trips would occur via the Westlink M7 interchange roundabout at the intersection of Yarrawa Street with Bernera Road, as occurs with the existing site operations. Observations of the interchange roundabouts indicate that they currently operate well with minimal delays and queues. In this regard it is noted that the Westlink M7 motorway is Sydney's most recently constructed motorway (opening in December 2005) and the Bernera Road interchange has been constructed in anticipation of the development of the industrial estate surrounding (and including) the subject site.

Figure 6 shows a plan of the Westlink M7 / Bernera Road interchange roundabouts. The southern roundabout, which provides direct access to Yarrawa Street, has a diameter of about 55 metres and provides two circulation lanes. It has been designed to accommodate the volume of traffic that would be expected once the surrounding industrial estate is fully developed. The 55 metre diameter also accommodates the large B-Double trucks that will service the area and currently service the existing Mainfreight facility.

Figure 6: Westlink M7 / Bernera Road Interchange

As identified above, the site is forecast to generate 61 trips (split between entries and exits) during the morning peak hour and just 8 trips during the evening peak hour. All of these additional trips would oarrive/depart via the Westlink M7 interchange roundabout and based on observations of the interchange, it is anticipated that these trips would be satisfactorily accommodated by the roundabout. Accordingly, detailed intersection performance modelling of the roundabout is not warranted.

As mentioned earlier, Goodman has already completed significant improvements to Yarrawa Street and the interchange roundabout as part of the construction of the existing facility. Therefore, in light of the negligible traffic generation anticipated for the expansion, no further upgrades to the surrounding road infrastructure are required.

6.4 Dangerous Goods Routes

As previously mentioned, it has been determined that there are no designated dangerous goods routes, only sections of roads/motorways that vehicles carrying dangerous goods are prohibited from using, such as the M5 motorway tunnels located between the site and Port of Botany.

Prior to the transportation of any dangerous goods, it is understood that Mainfreight would prepare a risk assessment of the proposed route in accordance NSW DPI's *Hazardous Industry Planning Advisory Paper No 11 – Route Selection*.

7. Access & Internal Design Aspects

7.1 Access

Vehicular access to the site consists of three (separate access driveways), as shown on the plan attached at Appendix B:

- An existing entry and exit driveway at the western side of the property serving the western car park and as the exit route for the PUDs;
- Two new entry and exit driveways for trucks at the western and eastern sides of the hardstand area, also providing access to the provisional car parking spaces; and
- A new entry and exit driveway to the east of the site for access to the new staff car park.

The proposed driveways would be designed and constructed in accordance with AS 2890.1-2004 and AS 2890.2-2002, with the operational driveways designed to accommodate 26 metre B-Double articulated trucks.

Access and egress swept-path movements for a B-Double truck are presented on the plan attached at **Appendix D**.

7.2 Internal Design

The internal design would comply with the requirements of AS 2890.1-2004 and AS 2890.2-2002, with the following characteristics considered noteworthy:

- The separate entry and exit driveways allow trucks to enter, circulate through the site, unload and exit in a forward direction, as shown on the swept-path plan attached at Appendix D;
- Parking spaces would generally be 2.5 metres in width and 5.5 metres in length and satisfy the requirements of AS 2890.1 for Class 2 parking;

- Sufficient end of aisle space would be provided at the end of both car parks to allow vehicles to exit parking area in a forward direction;

- Both disabled parking spaces would be provided with easy access to the pedestrian walkways. These spaces would be designed in accordance with the requirements AS 2890.6-2009, *Off-street parking for people with disabilities*.

In summary, the internal road design is acceptable and would provide a satisfactory standard of safety and efficiency. It is however envisaged that a standard condition of consent would be imposed requiring compliance with relevant Australian standards. As such, minor amendments considered necessary (if any) can be dealt with prior to the release of a Construction Certificate.

8. Conclusions

In summary:

- The subject development proposes to expand an existing Mainfreight facility by expanding the warehouse use by about 16,000m^2 and the associated office use by 200m^2. The facility would be extended on to the adjacent Lots, currently vacant.
- Mainfreight will be consolidating part of its Moorebank facility to the Prestons location, transferring 37 staff members to the subject site.
- The subject site will provide an additional 110 parking spaces on site, resulting in a total of 217 parking spaces. This will satisfy the estimated parking demand for 150 spaces for staff and visitor use.
- The traffic generation due to the expansion will add 61 trips in the morning peak hour and 8 trips in the evening peak hour period, resulting in only minimal impact to the existing road network. This derives from a detailed understanding of the site operations, both currently and as proposed.
- The proposed access, internal design principles, car parking and servicing have all been designed in accordance with Australian Standards and are considered acceptable and will operate safely and efficiently.

It is therefore concluded that the proposed development is supportable on traffic planning grounds and will operate satisfactorily. Furthermore, this report satisfactorily responds to each of the Director General's Requirements and the requirements of Roads and Maritime Services.

Appendix A

Photographic Record

View looking south at the Gate 1 and the paddock driveway of the Mainfreight facility at 26 Yarrawa Street, Prestons

View looking east along Yarrawa Street from the Gate 1 access of the subject site

View looking west along Yarrawa Street from the Gate 1 access of the subject site

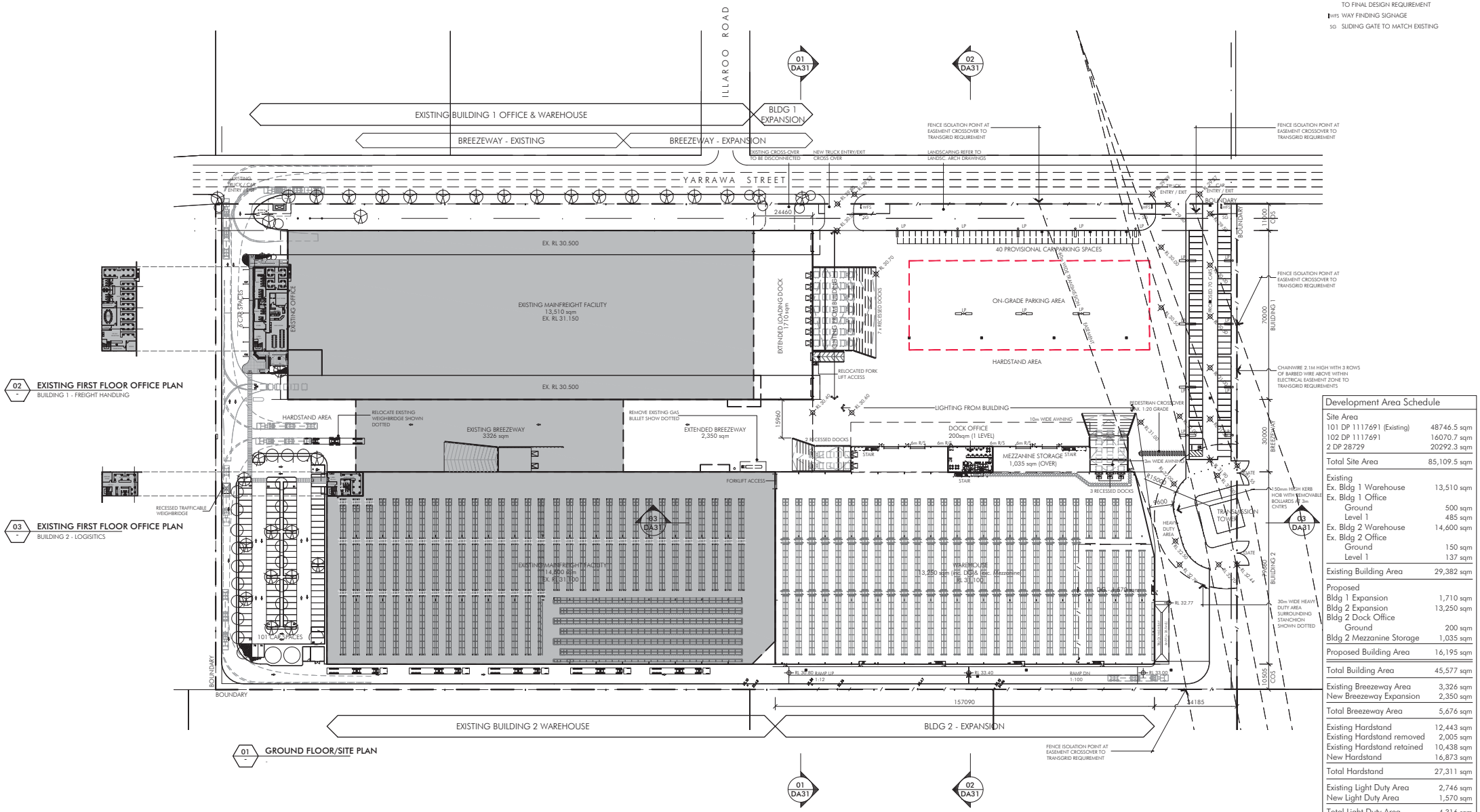
View looking south at the Gate 2 of the Mainfreight facility at 26 Yarrawa Street, Prestons

View looking west along Yarrawa Street from the Gate 2 access of the subject site

View looking west along Yarrawa Street from the Gate 2 access of the subject site

Appendix B

Reduced Plans



02 EXISTING FIRST FLOOR OFFICE PLAN
BUILDING 1 - FREIGHT HANDLING

03 EXISTING FIRST FLOOR OFFICE PLAN
BUILDING 2 - LOGISITICS

01 GROUND FLOOR/SITE PLAN

LEGEND

- LP LIGHT POST - MAX. 4m ABOVE FRL WITHIN TRANSGRID ELECTRICAL EASEMENT ZONE. SCHEMATIC LIGHTING ONLY AND SUBJECT TO FINAL DESIGN REQUIREMENT
- WFS WAY FINDING SIGNAGE
- SG SLIDING GATE TO MATCH EXISTING

Development Area Schedule

Site Area	
101 DP 1117691 (Existing)	48746.5 sqm
102 DP 1117691	16070.7 sqm
2 DP 28729	20292.3 sqm
Total Site Area	85,109.5 sqm
Existing	
Ex. Bldg 1 Warehouse	13,510 sqm
Ex. Bldg 1 Office	
Ground	500 sqm
Level 1	485 sqm
Ex. Bldg 2 Warehouse	14,600 sqm
Ex. Bldg 2 Office	
Ground	150 sqm
Level 1	137 sqm
Existing Building Area	29,382 sqm
Proposed	
Bldg 1 Expansion	1,710 sqm
Bldg 2 Expansion	13,250 sqm
Bldg 2 Dock Office	
Ground	200 sqm
Bldg 2 Mezzanine Storage	1,035 sqm
Proposed Building Area	16,195 sqm
Total Building Area	45,577 sqm
Existing Breezeway Area	3,326 sqm
New Breezeway Expansion	2,350 sqm
Total Breezeway Area	5,676 sqm
Existing Hardstand	12,443 sqm
Existing Hardstand removed	2,005 sqm
Existing Hardstand retained	10,438 sqm
New Hardstand	16,873 sqm
Total Hardstand	27,311 sqm
Existing Light Duty Area	2,746 sqm
New Light Duty Area	1,570 sqm
Total Light Duty Area	4,316 sqm
Proposed Heavy Duty Area	1,315 sqm
Car parking	
Existing Car Parking	107 cars
Proposed Car Parking	70 cars
Provisional Car Spaces	40 cars
Total Car Spaces provided	217 cars

Client
GOODMAN

L17, 60 Castlereagh Street, Sydney NSW 2000
t 02 9230 7400 f

Project
MAINFREIGHT FACILITY - PROPOSED EXPANSION
PRESTONS DISTRIBUTION CENTRE
26 YARRAWA STREET, PRESTONS

A	ISSUE FOR DEVELOPMENT APPLICATION	20.02.13
B	OFFICE AND RACKING LAYOUTS ADDED	04.04.13
C	EASTERN TRUCK ENTRY/EXIT WIDENED	09.04.13

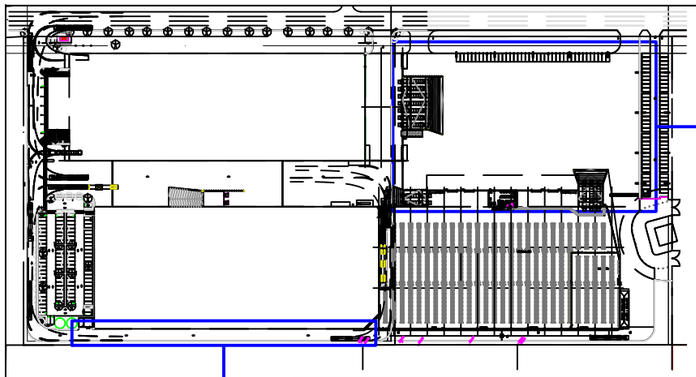
Title: ground floor / site plan
Scale: 1:750 (A1) / 1:1500 (A3)
Date: Apr 2013
Number: 4167_DA01

0 7.5 15 32.5 75m

nettleton

Appendix C

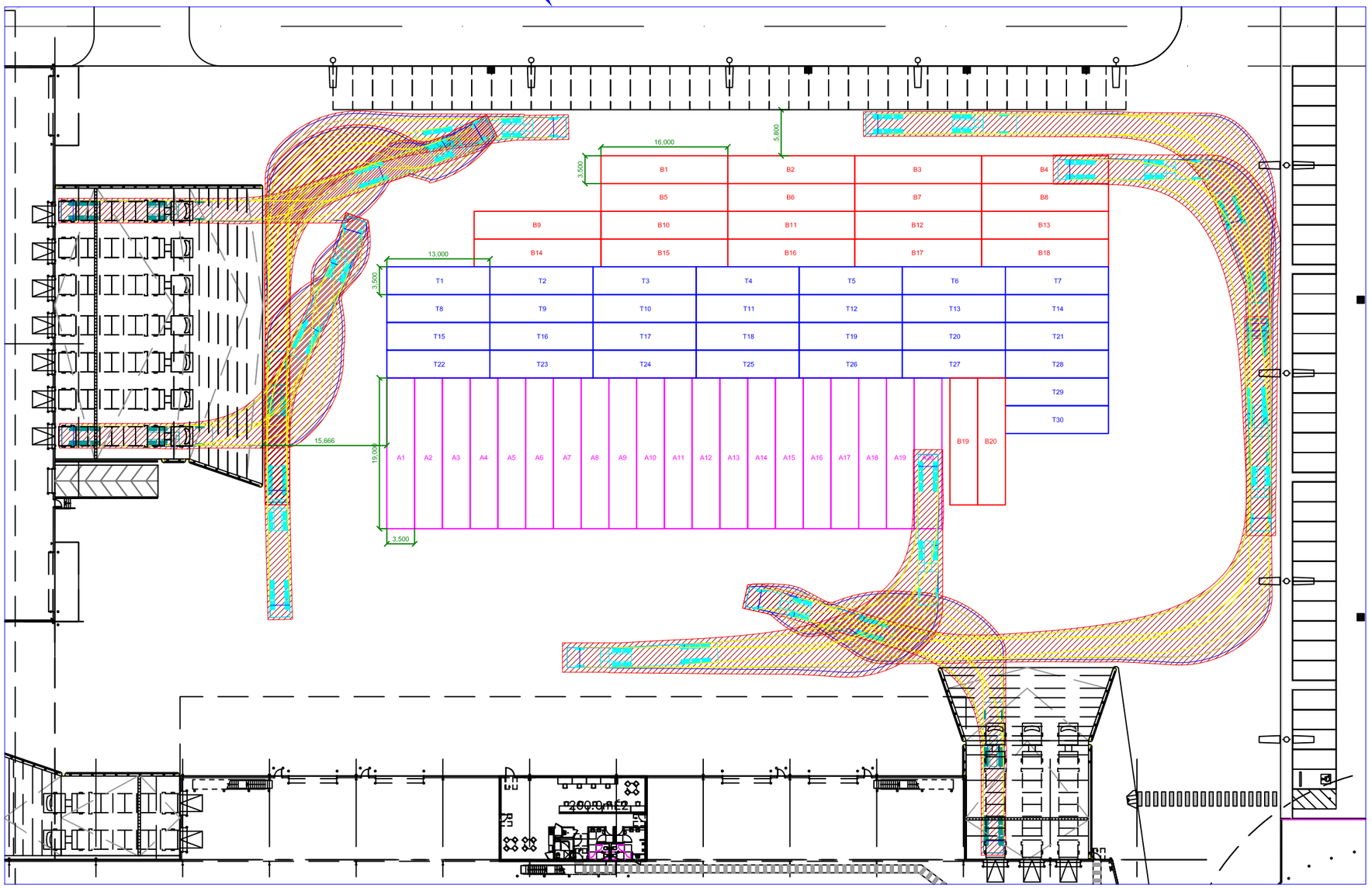
Truck Parking Management Plan

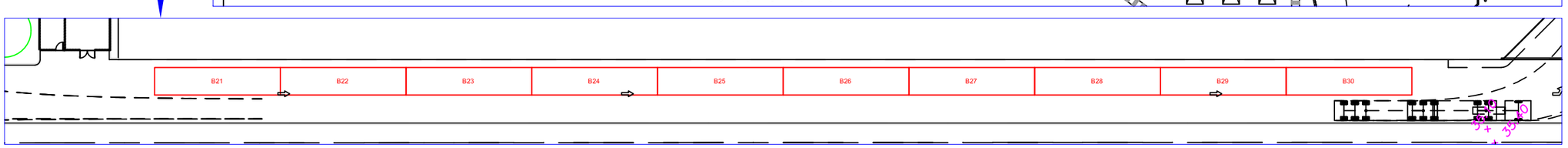


19m AV Parking Spaces

15.6m B-Double Truck Parking Spaces

12.5m B-Double Trailer Parking Spaces





notes

This drawing is prepared for information purposes only. It is not to be used for construction.

no.	revision note	by.	date

architect

Nettleton Tribe
117 Willoughby Road
Crows Nest NSW 2065

client

Goodman Limited

scale

1:600 @ A3

project

MAINFREIGHT FACILITY
26 YARRAWA STREET, PRESTONS

drawing prepared by

TRAFFIX
traffic and transport planners
suite 3.08 46a macleay street
potts point NSW 2011
PO Box 1061 potts point nsw 1035
t: +61 2 8324 8700
f: +61 2 9380 4481
e: info@traffix.com.au

traffix
traffic & transport planners

drawing title

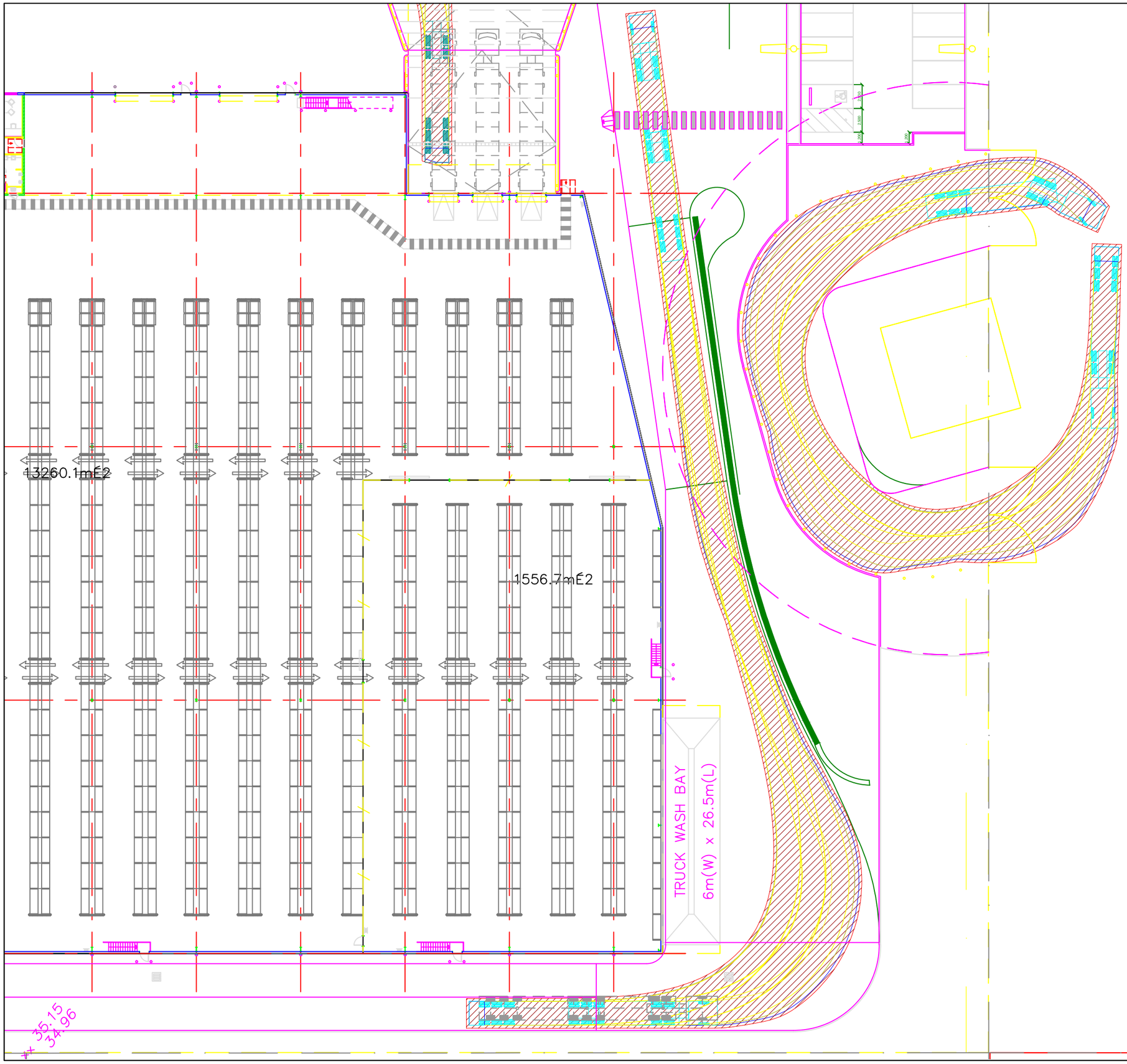
Truck Parking Management Plan (TPMP)

drawn:	checked:	date:
AR	AJ	08-04-13

12.424	-	TX.07	-
project no.	drawing phase.	drawing no.	rev

Appendix D

Swept Path Analysis



notes

This drawing is prepared for information purposes only. It is not to be used for construction.

no.	revision note	by.	date

architect

Nettleton Tribe
117 Willoughby Road
Crows Nest NSW 2065

client

Goodman Limited

scale

1:400 @ A3

0m 4 8 12 16

project

MAINFREIGHT FACILITY
26 YARRAWA STREET, PRESTONS

drawing prepared by

TRAFFIX
traffic and transport planners

suite 3.08 46a macleay street
potts point NSW 2011

PO Box 1061 potts point nsw 1035

t: +61 2 8324 8700
f: +61 2 9380 4481
e: info@traffix.com.au

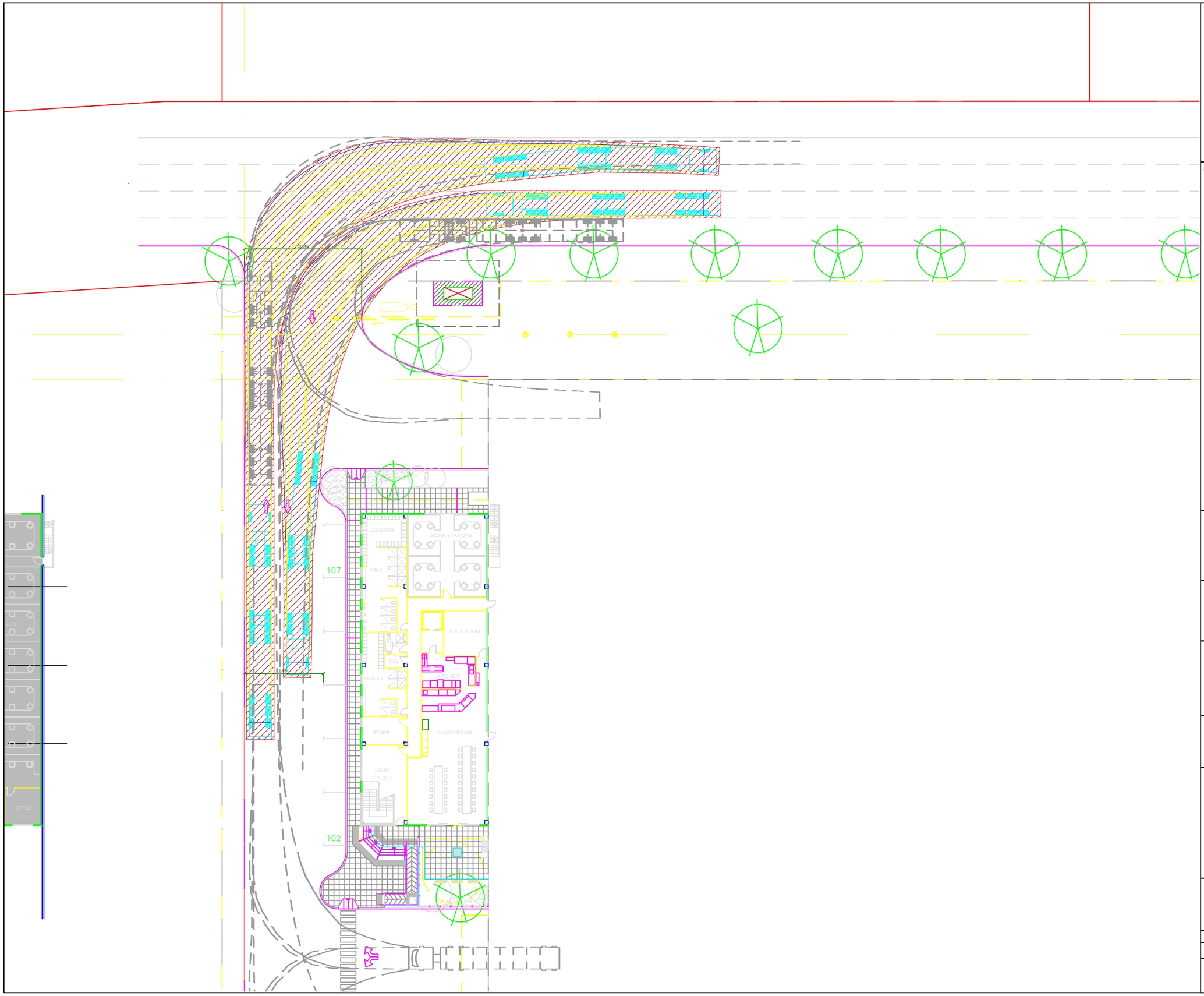
traffix
traffic & transport planners

drawing title

Swept Paths Analysis - 26m B-Double Entering the Site and 19m AV Entering and Exiting the Site

drawn:	checked:	date:
AR	PT	25-02-13

project no.	drawing phase.	drawing no.	rev
12.424	-	TX.01	-



notes
This drawing is prepared for information purposes only. It is not to be used for construction.

no.	revision note	by.	date

architect
Nettleton Tribe
117 Willoughby Road
Crows Nest NSW 2065

client
Goodman Limited

scale
1:400 @ A3
0m 4 8 12 16

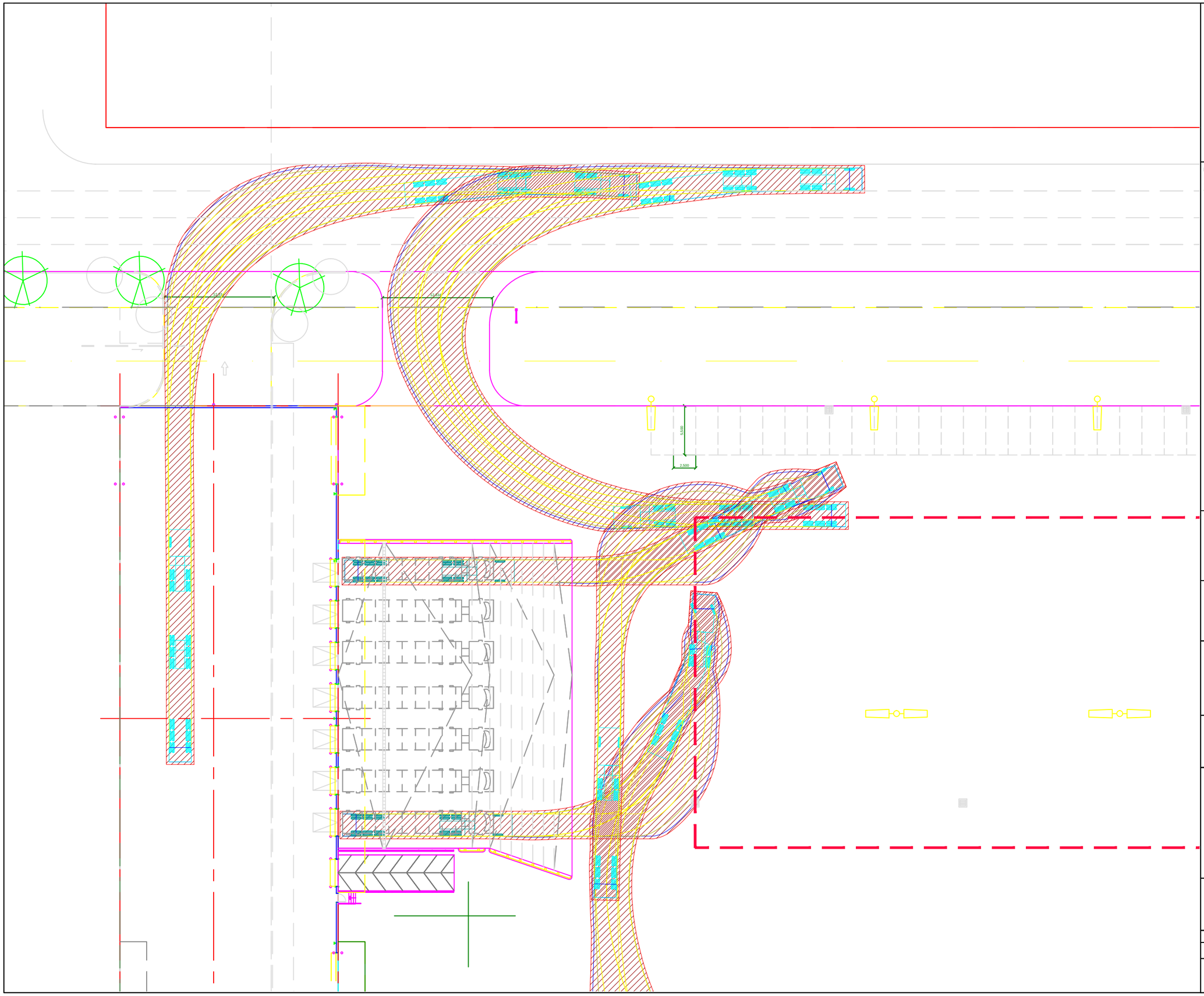
project
MAINFREIGHT FACILITY
26 YARRAWA STREET, PRESTONS

drawing prepared by
TRAFFIX
traffic and transport planners
suite 3.08 46a macleay street
potts point NSW 2011
PO Box 1061 potts point nsw 1035
t: +61 2 8324 8700
f: +61 2 9380 4481
e: info@traffix.com.au
traffix
traffic & transport planners

drawing title
Swept Paths Analysis - 26m B-Double Entering and Exiting the Site

drawn:	checked:	date:
AR	PT	25-02-13

12.424	-	TX.02	-
project no.	drawing phase.	drawing no.	rev



notes

This drawing is prepared for information purposes only. It is not to be used for construction.

no.	revision note	by.	date
1.	Loading dock swept paths		04-04-13

architect

Nettleton Tribe
117 Willoughby Road
Crows Nest NSW 2065

client

Goodman Limited

scale

1:400 @ A3

0m 4 8 12 16

project

MAINFREIGHT FACILITY
26 YARRAWA STREET, PRESTONS

drawing prepared by

TRAFFIX
traffic and transport planners

suite 3.08 46a macleay street
potts point NSW 2011

PO Box 1061 potts point nsw 1035

t: +61 2 8324 8700
f: +61 2 9380 4481
e: info@traffix.com.au

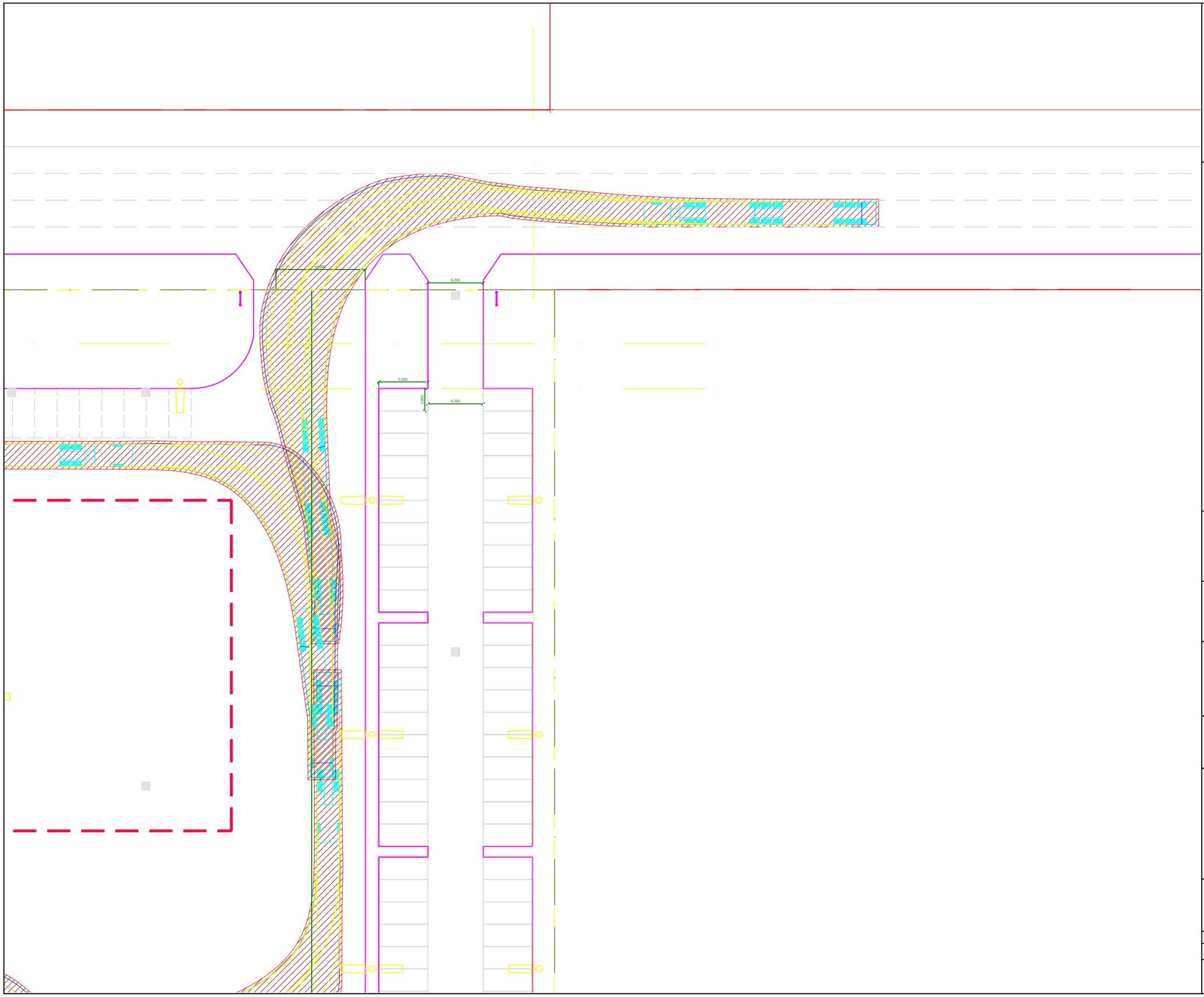
traffix
traffic & transport planners

drawing title

Swept Paths Analysis - 26m B-Double Exiting the Site and 19m AV entering the loading docks

drawn:	checked:	date:
AR	PT	25-02-13

project no.	drawing phase.	drawing no.	rev
12.424	-	TX.03	1



notes

This drawing is prepared for information purposes only. It is not to be used for construction.

no.	revision note	by.	date

architect

Nettleton Tribe
117 Willoughby Road
Crows Nest NSW 2065

client

Goodman Limited

scale

1:400 @ A3

0m 4 8 12 16

project

MAINFREIGHT FACILITY
26 YARRAWA STREET, PRESTONS

drawing prepared by

TRAFFIX
traffic and transport planners

suite 3.08 46a macleay street
potts point NSW 2011

PO Box 1061 potts point nsw 1035

t: +61 2 8324 8700
f: +61 2 9380 4481
e: info@traffix.com.au

traffix
traffic & transport planners

drawing title

Swept Paths Analysis - 26m B-Double Entering the Site

drawn:	checked:	date:
AR	PT	25-02-13

project no.	drawing phase.	drawing no.	rev
12.424	-	TX.04	-