Traffic Impact Assessment

Proposed Mixed-Used Development
24-26 Railway Parade, Westmead

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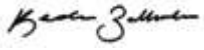
v12	31/10/2018	Kedar Ballurkar	Kedar Ballurkar	

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1. Introduction

TRAFFIX has been commissioned by Drill Pty Ltd to undertake a Traffic Impact Assessment in support of a Development Application relating to a proposed mixed-use development, located at 24-26 Railway Parade, Westmead.

The development is situated in the Parramatta Council Local Government Area and has been assessed under that Council's controls.

This report documents the findings of our investigations and should be read in the context of the Statement of Environmental Effects (SEE) prepared separately.

The 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 site is located at 24-26 Railway Parade, Westmead and is bound by Ashley Lane to the east, Railway Parade to the south and mixed used developments to the west and the north. The site is located approximately 60 metres north of Westmead Railway Station and 21 kilometres north-west of the Sydney CBD.

The site is rectangular in configuration having a total site area of approximately 2,514m^2. It currently accommodates the Westmead Shopping Village (1,380 m^2 of retail) and the Westmead Tavern (520 m^2).

The site has a southern frontage to Railway Parade and a northern property boundary to a mixed-used development of approximately 46 metres. The eastern boundary frontage is to Ashley Lane with the western boundary to a mixed-used development and are both approximately 50 metres in length. Access to the site is currently provided via a vehicular crossing on Ashley Lane which serves 22 on-site car parking space and three (3) loading spaces.

A Location Plan is presented in **Figure 1**, with a Site Plan presented in **Figure 2**.

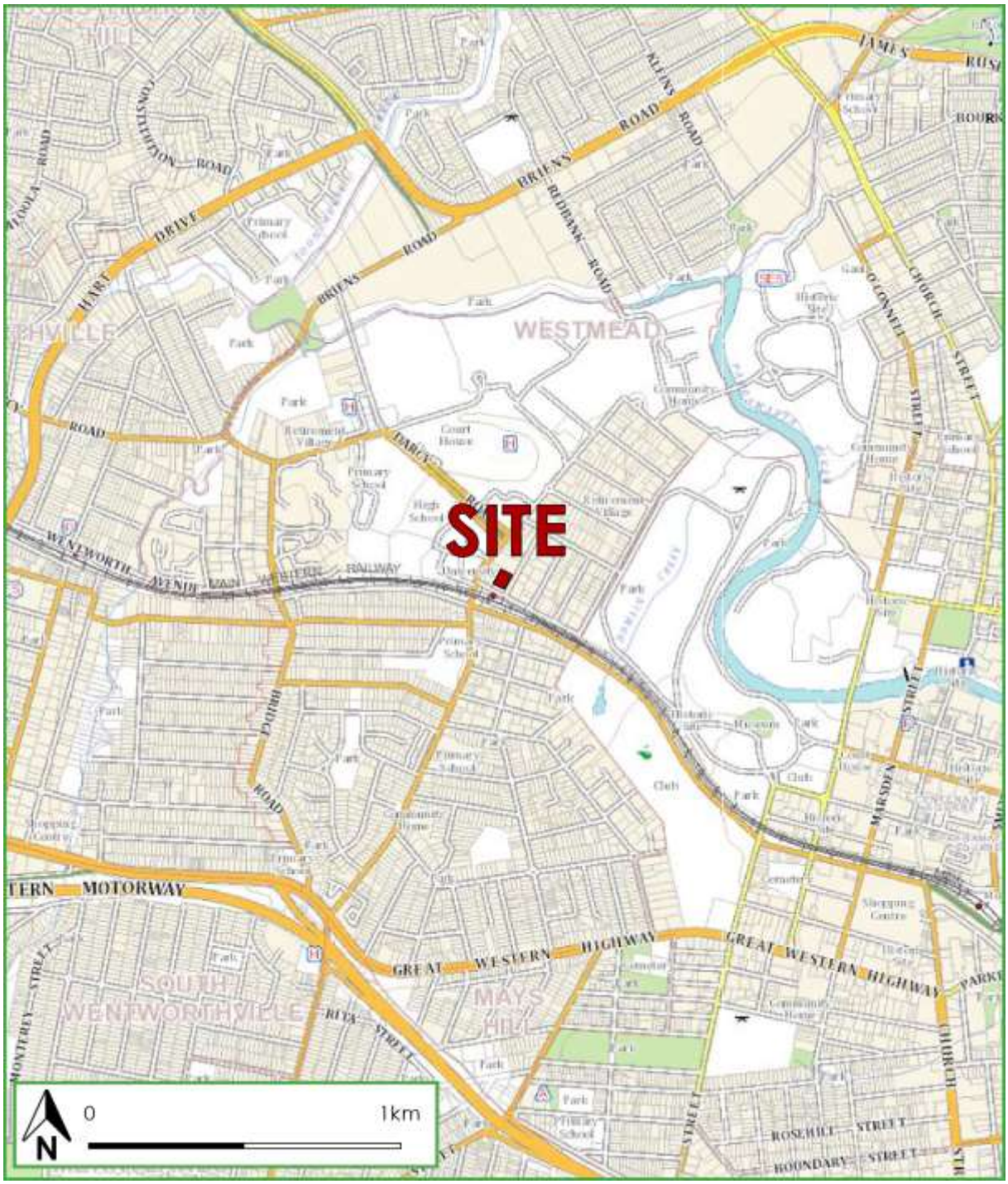


Figure 1: Location Plan

Figure 2: Site Plan

3. Existing Traffic Conditions

3.1 Road Hierarchy

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

- Hawkesbury Road: an RMS Main Road (MR 7481) that traverses in a north- south direction between Hainsworth Street in the north and The Great Western Highway in the south. Hawkesbury Road carries five traffic lanes in close proximity to the site. Two northbound lanes are dedicated for vehicles and one is dedicated to buses. The road also provides two southbound traffic lanes.
- Railway Parade: a local road that traverses in an east-west direction between Hawkesbury Road in the west and Park Avenue in the east. Railway Parade is subject to a 50km/h speed zoning and carries two traffic lanes, one in each direction. Parallel parking is permissible on the northern side of the parade and 90 degree angled parking is available on the southern side of Parade.
- Queens Road: a local road that traverses in an east-west direction between Hawkesbury Road in the west and Park Avenue in the east. Queens Road is subject to a 50km/h speed zoning and carries two traffic lanes, one in each direction. Parallel parking is permissible on both sides of the Road, however, is subject to a "2P 8:30am- 6:00pm Mon-Fri and 8:00am-12:00pm Saturday" restriction.
- Ashley Lane: a local lane that traverses in a north-south direction between Railway Parade in the south and Queens Road in the north. Ashley Lane carries one traffic lane which is restricted to one way traffic flow, northbound and provides parallel parking on the western side subject to a "1P 8:00am-6:00pm, Mon-Fri, 8:30am-12:00pm, Saturday".

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

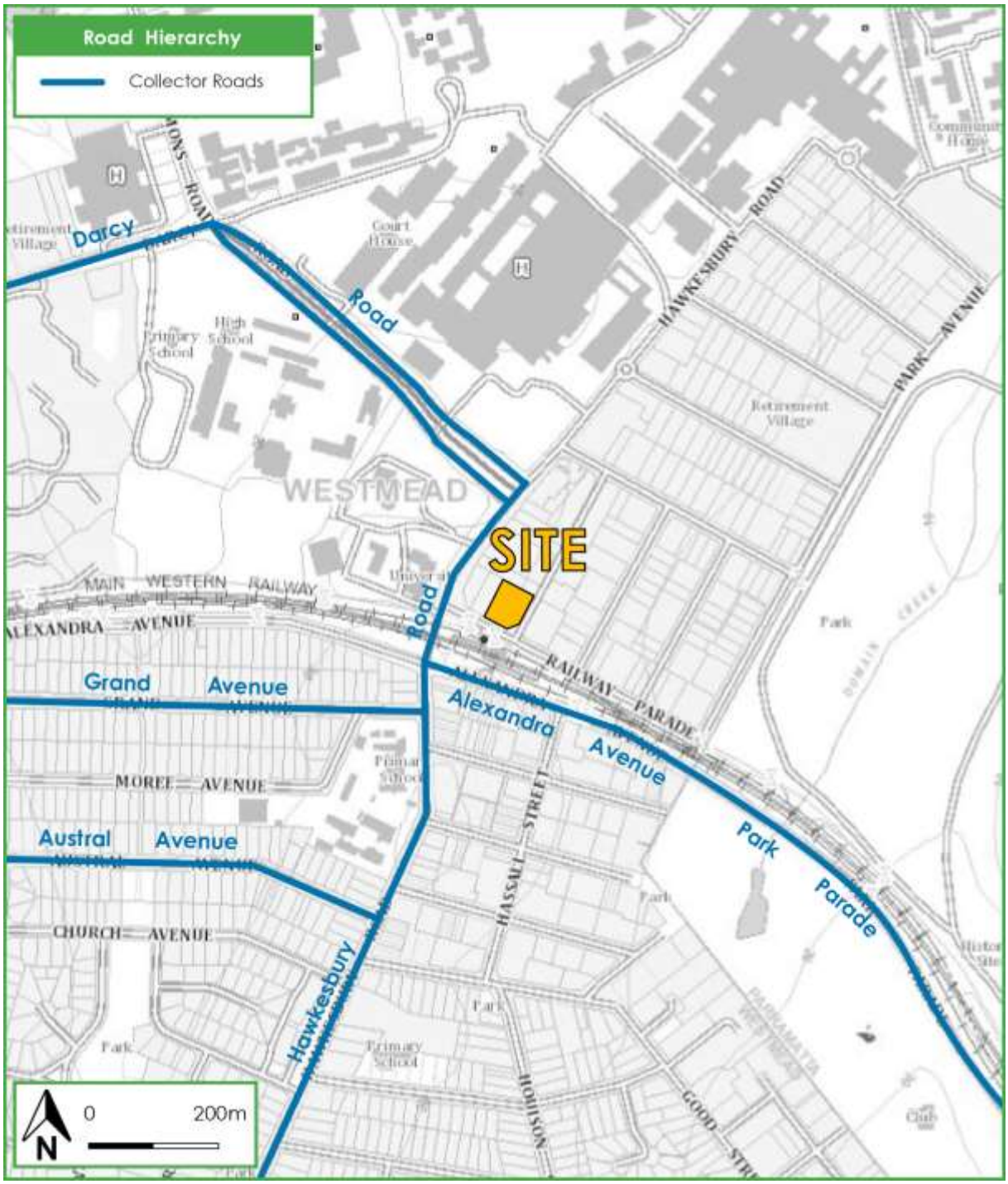


Figure 3: Road Hierarchy

3.2 Public Transport and Active Travel

The existing bus services that operate in the locality are shown in **Figure 4**. It is evident that the development benefits from good bus services with six bus stops being situated within 400 metres of the site. Details of the bus services are shown in **Table 2** below:

Table 2: Bus Services- Accessibility to Other Urban Centres and Service Attributes

Bus Route	Starting Destination	Accessible Urban Centres	Service Attributes
T60	Castle Hill to Parramatta	North West T-way, Winston Hills & Crestwood	Service operates from 6am – 7pm weekdays
T61	Blacktown to Parramatta	Westmead, North-West T-way and Kings Langley	Service operates Monday to Friday between 5:15am – 11:41pm. Saturday between 6:33am and 11:35pm Sunday and public Holidays between 7:32am and 9:34pm
T62	Castle Hill to Parramatta	North-west T-way, Bella Vista, Tuckwell Road.	Service operates Monday to Friday between 4:55am – 8:20pm. Saturday between 7:43am and 6:44pm Sunday and public Holidays between 8:46am and 6:47pm
T63	Rouse Hill to Parramatta	Westmead, North-West T-way, Glenwood, Stanhope Gardens & Kellyville Ridge	Service operates Monday to Friday between 5:28am – 9:34pm.
T64	Rouse Hill to Parramatta	Westmead, North-West T-way. Norwest Business Park, Kellyville, Beaumoont Hills	Service operates Monday to Friday between 4:35am – 10:35pm. Saturday between 7:49am and 9:53pm Sunday and public Holidays between 7:48am and 7:52pm
T65	Rouse Hill to Parramatta	Westmead, North-West T-Way (stops at all T-Way stations between Parramatta and Rouse Hill)	Service operates Monday to Friday between 5:20am – 11:12pm. Saturday between 6:03am and 11:12pm Sunday and public Holidays between 6:16am and 10:20pm
T66	Adelphi Street Rouse Hill to Parramatta		Service operates Monday to Friday between 5:46am – 6:50pm. Saturday between 6:48am and 6:34pm Sunday and public Holidays between 7:33am and 6:34pm
708	Constitution Hill to Parramatta	Centenary Village, Mayflower Village, Melrose Village, Edith Walker Village, Pendle Hill, Wentworthville, Westmead Hospital.	Service operates Monday to Friday between 9:00am – 9:50am and 2:10pm and 2:57pm
711	Blacktown to Parramatta	Lalor Park, Seven Hills, Toongabbie, Wentworthville, Westmead Hospital and Westmead	Service operates Monday to Friday between 5:00am – 11:00pm. Saturday between 6:13am and 10:13pm Sunday and public Holidays between 7:13am and 8:13pm
818	Westmead to Merrylands	Hilltop, South Wentworthville and Wentworthville	Service operates Monday to Friday between 7:26am – 4:52pm.

Westmead Railway Station is located adjacent from the subject site. The Railway Station lies on the T1 Western Line and the T5 Cumberland Line providing connections to Campbelltown, Blacktown, Emu Plains, Richmond and Chatswood.

Additionally, the subject site is located in close proximity to the Westmead and Parramatta Bicycle Routes. Pedestrian facilities are also located around the site with pedestrian paths located on both sides of Hawkesbury Road and Railway Parade and on the western side of Ashley Lane. Pedestrian crossing facilities are also provided on Railway Parade providing access to the Westmead Railway Station and on all legs of the Hawkesbury Road and Railway Parade intersection. The bicycle route map has been included in **Appendix A**, for reference.

3.3 Parramatta Light Rail

The Parramatta Light Rail is a future project announced by the NSW Government. This will consist of two stages, which centres on the Parramatta City Centre:

- Stage 1: 16 stops between Carlingford in the north and Westmead to the west.
- Stage 2: 10-12 stops between Sydney Olympic Park in the east and joining to the Stage 1 Line between Rydalmere and Camellia.

A Stage 1 Map has been included in **Appendix B** where it is evident that stops will be constructed on Hawkesbury Road to the west of the site.

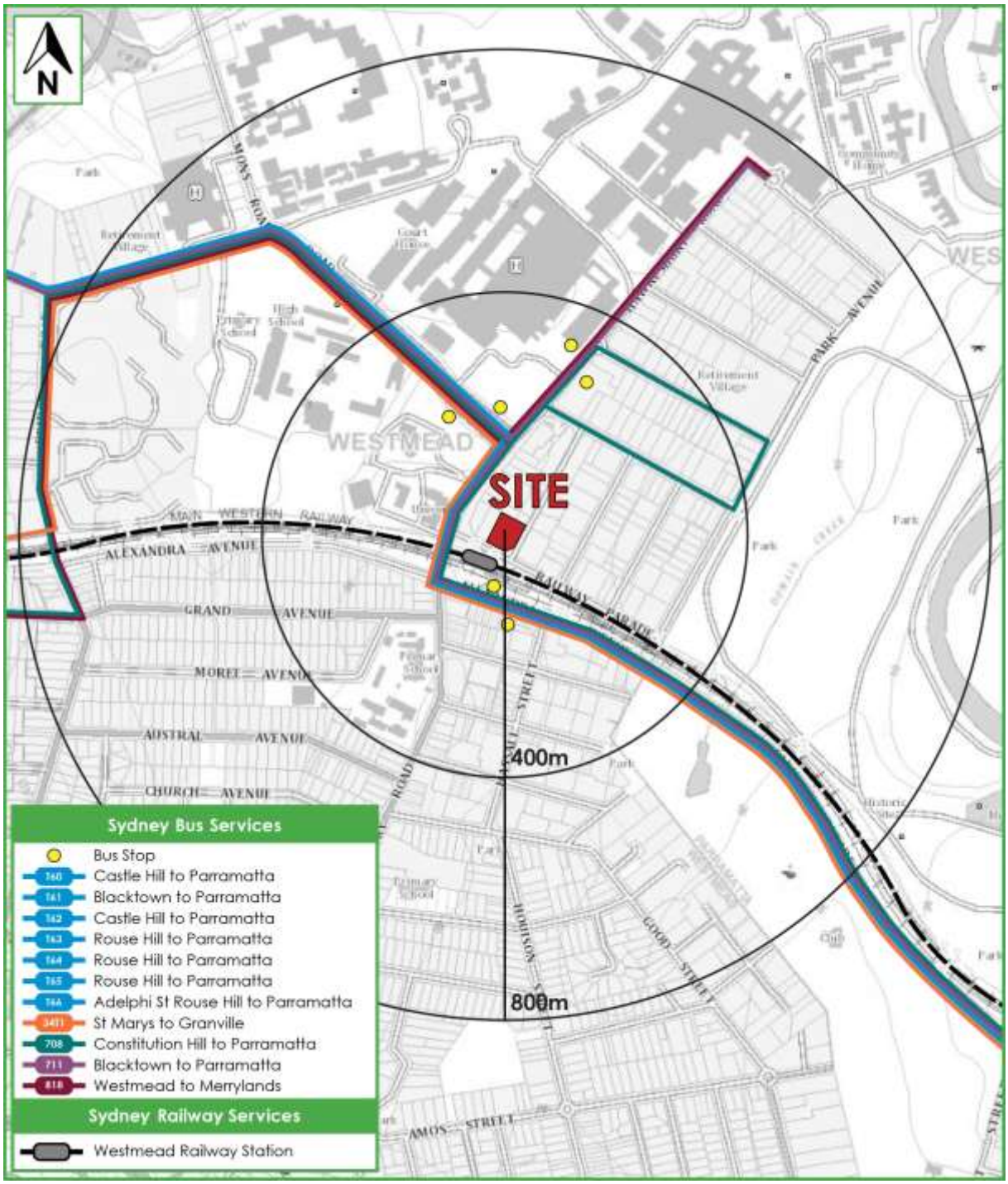


Figure 4: Public Transport

3.4 Existing Site Generation

The site currently accommodates 1,380 m^2 of retail and the Westmead Tavern which has a Gross floor area of 520m^2. The *Guide to Traffic Generating Developments (Roads and Maritime Services 2010)* provides trip rates for retail and tavern developments as follows:

- Retail rate: 4.6 vehicle trips / 100 m^2 of GFA for specialty retail
- Tavern: 1.3 vehicle trips / 100m^2 GFA (GTA Consultants 2012).

As such the existing traffic generation from the subject site is estimated to be:

- 71 vehicle trips per hour during the PM peak period (36 in, 35 out)

3.5 Existing Intersection Performance

The performance of the existing road network has been previously assessed for a Planning Proposal lodged for the site in 2012. The accompanying Traffic Impact Assessment report outlined the results of software modelling undertaken for relevant intersections including at Hawkesbury Road / Alexandra Avenue and Hawkesbury Road / Railway Parade. The summary Level of Service parameters show that all intersections were operating within capacity.

TRAFFIX has subsequently undertaken a survey on Thursday 27 September 2018 to account for current external conditions. Noting that the proposed development will have more pronounced impacts during evening periods (having customer generating uses), the two intersections have been remodelled for the PM peak period using SIDRA Intersection 8.0 software. It is noteworthy that this software has since improved in capability to provide network coordination for phasing and a cycle time of 120 seconds has been adopted.

The SIDRA model produces a range of outputs, the most useful of which are the Degree of Saturation (DOS) and Average Vehicle Delay per vehicle (AVD). The AVD is in turn related to a level of service (LOS) criteria. These performance measures can be interpreted using the following explanations:

DOS - the DOS is a measure of the operational performance of individual intersections. As both queue length and delay increase rapidly as DOS approaches 1, it is usual to attempt to keep DOS to less than 0.9. When DOS exceeds 0.9 residual queues can be anticipated, as occurs at many major intersections throughout the metropolitan area during peak periods. For intersections controlled by roundabout or give way/stop control, satisfactory intersection operation is generally indicated by a DOS of 0.8 or less.

AVD - the AVD for individual intersections provides a measure of the operational performance of an intersection. In general, levels of acceptability of AVD for individual intersections depend on the time of day (motorists generally accept higher delays during peak commuter periods) and the road system being modelled (motorists are more likely to accept longer delays on side streets than on the main road system).

LOS - this is a comparative measure which provides an indication of the operating performance of an intersection as shown below:

Level of Service	Average Delay per Vehicle (secs/veh)	Traffic Signals, Roundabout	Give Way and Stop Signs
A	less than 14	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory but accident study required
D	43 to 56	Operating near capacity	Near capacity and accident study required
E	57 to 70	At capacity; at signals incidents will cause excessive delays. Roundabouts require other control mode	At capacity and requires other control mode
F	More than 70	Unsatisfactory and requires additional capacity.	Unsatisfactory and requires other control mode or major treatment.

A summary of the modelled results for existing conditions are provided in **Table 3** below. Reference should also be made to the SIDRA outputs included in **Appendix C** which provides detailed results for individual lanes and approaches.

Table 3: PM Peak Period Intersection Performances

Intersection Description	Control Type	Model	Period	Degree of Saturation	Intersection Delay (sec)	Level of Service
Hawkesbury Road / Alexandra Avenue	Signals	Existing	PM	0.760	35.4	C
Hawkesbury Road / Railway Parade	Signals	Existing	PM	0.753	18.0	B
Hawkesbury Road / Queens Road	Priority*	Existing	PM	0.597	10.7	B

*SIDRA results reported for priority controlled intersections relate to the movement with the highest delay, in accordance with the RMS Guide to Traffic Generating Developments.

It can be seen from **Table 3** that the intersections of Hawkesbury Road / Alexandra Avenue and Hawkesbury Road / Railway Parade operate at a Level of Service of C or better during the PM peak period. A further priority controlled intersection upstream at Hawkesbury Road / Queens Road has also been modelled which operates with a Level of Service of B.

4. Description of Proposed Development

A detailed description of the proposed development is provided in the Statement of Environmental Effects prepared separately. In summary, approval is sought for the demolition of all existing structures and for the construction of a 16 storey mixed-use development comprising of:

- 33 residential apartments, consisting of:
  - 9 x one bedroom apartments;
  - 21 x two bedroom apartments;
  - 3 x three bedroom apartments;
- A hotel containing 97 rooms for accommodation;
- A medical centre containing 1,319m^2 gross floor area;
- A tavern containing 676m^2 gross floor area;
- A supermarket containing 1,100m^2 gross floor area;
- 634m^2 gross floor area of food and beverage space;
- 631m^2 gross floor area of retail space;

The proposed development will accommodate the following on-site parking facilities:

- 130 car parking spaces within a three level basement car park, accessed from Ashley Lane;
- The following service vehicle parking on a single level basement loading dock, accessed from Ashley Lane:
  - 1 x bay suitable for a 10.24m waste collection vehicle;
  - 2 x bays suitable for an 8.8m Medium Rigid Vehicle; and
  - 1 x bay suitable for potential ambulance use.

The Development Application will also propose changes to the public domain including a relocated pedestrian crossing on Railway Parade and a future bus parking restriction to serve the hotel.

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

5. Parking Requirements

5.1 Council Controls

Under Part 4.3.4.2 of the *Parramatta Development Control Plan (DCP) 2011*, the site has been identified as belonging to a strategic precinct for 24-26 Railway Parade, Westmead. The applicable parking rates for this precinct are shown listed in **Table 4**.

Table 4: DCP Parking Rates and Provision

Type	Number / Area	Maximum Parking Rate[1]	Maximum Spaces Permissible[2]	Spaces
Residential				
Residents	33 dwellings	1 space per dwelling plus 1 space for every 5 dwellings for visitors	33	33
Visitors			6	5
		Sub-Total	39	38
Hotel				
Hotel	97 rooms *5 employees*[3]	1 per 5 rooms *1 per 3 employees*	21	19
Commercial & Retail				
Supermarket	1,100 m^2	1 space per 30m^2	36	73
Medical Centre	1,319 m^2	1 space per 300m^2	4	
Retail	631 m^2	1 space per 30m^2	21	
Tavern	676 m^2	1 space per 100m^2	6	
Food & Beverage	634m^2	1 space per 30m^2	21	
		Sub-total	88	73
		Total:	**148**	**130**

[1] Site specific rates adopted for 24-26 Railway Parade, Westmead in accordance with Part 4.3.4.2 of DCP.

[2] Parking spaces rounded down to the nearest whole number.

[3] Estimate

It can be seen that the proposed development is nominally permitted to provide a maximum of 148 car parking spaces. In response, provision for 130 parking spaces has been made, thereby complying with the DCP. In particular, provision for 73 parking spaces has been made for retail and commercial uses, which is expected to compensate for any lost parking spaces on Railway Parade associated with the proposed Bus Zone and public domain works.

5.2 Adaptable and Disabled Parking

5.2.1 Residential Parking

It is understood that the residential component for the proposed development will contain three (3) adaptable dwellings and thus three (3) accessible parking spaces have been provided for resident use and designed in accordance with AS2890.6 (2009). An additional visitor space has also been designed as an accessible space which is supported.

5.2.2 Other Uses

For other uses, Part 3 of the DCP requires the number of accessible car parking spaces to be provided as prescribed in Table D3.5 of the Building Code of Australia. As the development has a mixture of uses the accessible parking requirements have been summarised in **Table 5** below.

Table 5: BCA Accessible Parking Rates and Provision

Type	Building Class	Accessible Parking Rate	Parking Provision	Accessible Spaces Required	Accessible Spaces Provided
Hotel	3	Percentage of adaptable rooms to overall rooms multiplied by number of spaces	19 (four adaptable rooms)	1	2
Supermarket	6	1 space for every 50 car parking spaces or part thereof	73	2	2
Retail					
Tavern					
Food & Beverage					
Medical Centre	9a				
			Total:	**3**	**4**

It can be seen that that non-residential uses of the proposed development will generate a requirement for three (3) accessible parking spaces. In response, four (4) accessible parking spaces are provided for these uses, including two (2) for the hotel, thereby complying with the DCP.

5.3 Bicycle Parking

Part 3.6.2 of the DCP requires bicycle parking to be provided for only certain uses, with applicable rates summarised in **Table 6**.

Table 6: DCP Bicycle Parking Rates and Provision

Type	No / Area	Parking Rate	Parking Requirement
Supermarket	1,100m^2	1 space / 200 m^2	12
Retail	631m^2		
Food & Beverage	634m^2		
Residential	33 dwellings	1 space / 2 dwellings	17
		Total:	**29**

As can be seen that the proposed development has a requirement to provide 29 bicycle parking spaces. In response, provision for 30 spaces has been made within the basement, thereby complying with the DCP.

5.4 Motorcycle Parking

A requirement for motorcycle parking was not found in the DCP (aside from boarding houses or developments within the Parramatta City Centre or Epping Town Centre). Nevertheless, provision for eight (8) motorcycle parking spaces has been made within the basement car park.

5.5 Servicing

Service vehicle requirements for different development types have been assessed in **Table 7** below. Where rates for specific land uses are not listed in the DCP, rates from the RMS *Guide to Traffic Generating Developments* have been adopted.

Table 7: DCP/RMS Loading Rates and Provision

Type	Size	DCP Loading Requirement	RMS Loading Requirements	Loading Requirement	Loading Provision
Residential	33 dwellings	-	1 loading bay / 50 dwellings	0.7	3
Hotel	97 rooms	-	1 loading bay / 50 rooms; 1 space / 1,000sqm Public Space	1.9	
Supermarket	1,100m^2	1 loading bay / 400m^2	-	4.3	
Retail	631m^2		-		
Tavern	676m^2	-	1 loading bay / 400m^2	1.7	
Medical Centre (Retail)	1,319m^2	1 loading bay / 400m^2	-	3.3	
Food & Beverage	634m^2	1 loading bay / 400m^2	-	1.6	
			Total:	**14**	**3**

It can be seen that the proposed development would nominally require 14 service bays. Notwithstanding, this provision is considered onerous as the rates assume each land use is a standalone development. In response, provision for three (3) service bays have been provided on a separate basement level to the car park. These loading docks can accommodate at any time up to two (2) 8.8m Medium Rigid Vehicles as well as a 10.24m waste collection vehicle.

It is envisaged that based on the large bay sizes that a provision of three (3) loading bays will be sufficient to service the proposed development. This would be achievable as many land uses such as supermarkets, hotels and food & beverage shops have fixed servicing requirements that could be scheduled to occur at complimentary times. Furthermore, waste could be consolidated for users to limit the number of collections occurring per week.

Accordingly, a Loading Dock Management Plan could be drafted prior to occupation of the proposed development and would address matters such as:

- Delivery requirements and service schedules;
- Operational aspects on how to use facilities; and
- Management duties and responsibilities.

Finally it is understood that the existing development on-site contains a comparable amount of retail space (supermarket), however with less provision for service vehicles. The proposal is therefore expected to result in an improvement over existing conditions.

6. Traffic Impacts

6.1 Trip Generation

Given the high proportion of retail uses, the proposed development is expected to generate peak traffic activity during weekday evening periods, with mornings only expected to comprise mostly of journey to work trips. As such, trip rates have been adopted for the PM peak period below, which have either been adopted from the RMS Guide to Traffic Generating Developments or are consistent with the Traffic Impact Assessment report accompanying the Planning Proposal for the site.

6.1.1. Residential

The RMS Technical Direction *TDT 2013/04a Guide to Traffic Generating Developments* recommends a trip generation rate of 0.15 vehicle trips per dwelling during the PM peak hour for high density residential developments. Application of this rate to the 33 residential apartments results in the following traffic generation:

- 5 vehicle trips per hour during the PM peak period (4 in and 1 out)

6.1.2 Hotel

The trip generation rate for the proposed hotel has been adopted from the Traffic Impact Assessment accompanying the Planning Proposal for the site, which was for 0.2 vehicle trips per room. The proposed 97 room hotel is thus expected to generate the following traffic:

- 20 vehicle trips per hour during the PM peak period (10 in and 10 out)

6.1.3 Retail (Supermarket, Retail and Food & Beverage Tenancies)

The RMS Guide to Traffic Generating Developments recommends a trip generation rate of 4.6 vehicle trips per 100m^2 gross leasable floor area (assumed equivalent to gross floor area) during the late night Thursday PM peak period for secondary retail stores, inclusive of take-away shops. It is considered that this rate is also appropriate for the supermarket given the restricted parking supply (and recent trends for extended trading hours across all days of the week). Accordingly, the proposed supermarket, retail and food & beverage tenancies (2,365m^2 gross floor area) are expected to generate the following traffic:

- 109 vehicle trips per hour during the PM peak period (54 in and 55 out)

6.1.4 Medical Centre

The RMS Guide to Traffic Generating Developments recommends a trip generation rate of 2.2 vehicle trips per 100m^2 gross leasable floor area (assumed equivalent to gross floor area) for medical centres within shopping centres during PM peak periods. Application of this rate to the proposed 1,319m^2 gross floor area of medical centre space results in the following traffic generation:

- 29 vehicle trips per hour during the PM peak period (14 in and 15 out)

6.1.6 Tavern

The trip generation rate for the proposed tavern has been adopted from the Traffic Impact Assessment accompanying the Planning Proposal for the site, which was for 1.3 vehicle trips per 100m^2 gross floor area. The proposed 676m^2 gross floor area tavern is thus expected to generate the following traffic:

- 9 vehicle trips per hour during the PM peak period (4 in and 5 out)

6.1.8 Combined

The proposed development is expected to generate the following traffic:

- 172 vehicle trips per hour during the PM peak period (88 in, 84 out)

6.1.8 Combined

The above traffic generation does not take into consideration the volumes presently generated by the site. Accordingly, when accounting for the assessment of the existing development (Section 3.4), the proposal is expected to result in the following net increase in traffic:

- 101 vehicle trips per hour during the PM peak period (50 in, 51 out)

6.2 Traffic Distribution

6.2.1 Parramatta Light Rail

Transport for NSW has issued comments in July 2018 with reference to the Parramatta Light Rail project. A copy of this letter is included in **Appendix B** and identifies associated changes to the road network, the following which is of relevance to the site:

- Light Rail on Hawkesbury Road.
- Queens Road becoming one-way westbound between Hawkesbury Road and Ashley Lane.
- Removal of right-turn vehicle access from Hawkesbury Road, northbound into Queens Road.
- Existing pedestrian crossing on Railway Parade proposed to be relocated west to align with a new mid-block pedestrian link.

When assessing the Environmental Impact Statement (EIS) for the project, it is evident that the line will terminate north of Railway Parade as illustrated in **Figure 5**. This is consistent with the SIDRA modelling undertaken for the EIS which did not include the intersection of Hawkesbury Road / Railway Parade or Hawkesbury Road / Alexandra Road. It is therefore presumed that these intersections will continue to operate with the same configuration of lanes as existing conditions, whilst the intersection of Hawkesbury Road and Queens Road will be restricted to a left-out intersection only.

Figure 5: Parramatta Light Rail Route (EIS)

6.2.1 Traffic Splits

Noting that the access for the proposed development will be from Ashley Lane (one-way eastbound), the following split of development traffic has been assumed for the purposes of assessing intersection performance:

- 100% of traffic to enter Railway Parade from Hawkesbury Road, with
  - 30% approaching from the north and west (including from Darcy Road),
  - 30% approaching from the south on Hawkesbury Road,
  - 30% approaching from the east on Park Parade, and
  - 10% approaching from the west on Alexandra Avenue.
- 100% of traffic to exit Queens Parade left onto Hawkesbury Road, with:
  - 30% to head west by turning right onto Darcy Road,
  - 30% to head south on Hawkesbury Road,
  - 20% to head east by turning left onto Park Parade,
  - 10% to recirculate the local road network by turning left onto Railway Parade, and
  - 10% to head west by turning right onto Alexandra Avenue.

6.3 Intersection Performance

A summary of the intersection performance for the distributed development volumes is provided in **Table 8**.

Table 8: PM Peak Period Intersection Performances

Intersection Description	Control Type	Model	Period	Degree of Saturation	Intersection Delay (sec)	Level of Service
Hawkesbury Road / Alexandra Avenue	Signals	Existing	PM	0.760	35.4	C
		Future		0.791	36.1	C
Hawkesbury Road / Railway Parade	Signals	Existing	PM	0.753	18.0	B
		Future		0.773	18.6	B
Hawkesbury Road / Queens Road	Priority*	Existing	PM	0.597	6.8	A
		Future**		0.184	5.5	A

* SIDRA results reported for priority controlled intersections relate to the movement with the highest delay, in accordance with the RMS Guide to Traffic Generating Developments.

** Model includes modified layout in response to changes to accommodate the Parramatta Light Rail project.

It can be seen that the addition of development traffic will result in a negligible increase in average delay of less than one second, whilst the Level of Service parameters will continue to be at C or better, indicating that the road network will have spare capacity.

It is therefore assumed that the traffic impacts arising from the proposed development will be minor, to which it is expected that the impacts during the AM peak period would also be minimal, given that the above assessment accounts for customer generated traffic during a late night trading period (Thursday).

7. Access & Internal Design Aspects

7.1 Access

Car Park Access

Nominal driveway widths for car parks are stipulated in Table 3.2 of the off-street car parking standard AS2890.1 (2004). Notwithstanding, Section 3.2 permits driveway widths to be determined by accepted design procedures should traffic data be more accurately known.

The proposed access location is on Ashley Lane, which is noted to restrict traffic to one-way flow in a northbound direction. As such, the proposed access will in-turn be restricted to a simplified left-in and left-out arrangement.

Accordingly, a swept path analysis has been undertaken of the proposed car park access, which has a minimum width of 5.5m. The results of the analysis are presented in **Appendix E** and demonstrate that simultaneous flow can occur between entering and exiting vehicles.

The proposed car park access is therefore expected to operate satisfactorily in accordance with the provisions in the standard.

Loading Dock Access

A separate access for the loading dock has been proposed on Ashley Lane, with a minimum width of 4.6m. Under the off-street commercial vehicle parking standard AS2890.2 (2002), the loading arrangements for the proposed development are considered to be consistent with 'regular service' on a 'minor road'. These conditions bear the following requirements:

- *"Manoeuvring on-street, if permitted by the relevant authority, shall be strictly limited to one reverse movement either onto or off the street, and furthermore, shall be subject to consideration of both safety and obstruction to other on-street traffic."*
- *"The swept path of the maximum size design vehicle using the facility may be allowed to occupy the entire width (less specified clearances) of a two-way access driveway when the vehicle is entering or leaving the minor road."*

In response the proposed access has been designed to accommodate forward entry and exit movements as evidenced by the swept path analysis in **Appendix E** for the largest vehicle to enter the loading dock, being a 10.24m waste collection vehicle. This arrangement will therefore result in a safer outcome than a reverse entry movement whilst minimising obstruction.

Prior to a Construction Certificate, further details will be provided regarding a traffic signal system that will be implemented to facilitate flow between the access and loading dock on Level LB1.

7.2 Internal Design

The design of the proposed development generally complies with AS2890.1 (2004), AS2890.2 (2002) and AS2890.6 (2009), with the following considered noteworthy:

Parking Modules

- All residential car parking spaces have been designed to User Class 1A dimensions with parking bays being a minimum 2.4 metres in width, 5.4 metres in length and provided a minimum of 5.8 metres aisle width, thereby satisfying the requirements of AS2890.1 (2004).
- All retail car parking spaces have been designed to User Class 3 dimensions with parking bays being a minimum 2.6 metres in width, 5.4 metres in length and provided a minimum 6.2 metre aisle.
- All accessible car parking spaces have been designed in accordance with AS 2890.6 (2009), having a minimum space length of 5.4 metres, a minimum width of 2.4 metres with and are situated immediately adjacent to a 2.4 metre wide shared area.
- Four (4) parking spaces have been designed in accordance with Small Car dimensions under AS2890.1 (2004), which achieve a minimum space width of 2.4m and space length of 5.0m.
- All spaces located adjacent to obstructions of greater than 150mm in height are provided with an additional width of 300mm.
- Dead-end aisles are provided with the required 1.0m aisle extension in accordance with Figure 2.3 of AS 2890.1 (2004).

Ramps and Clear Head Heights

- The main vehicular access ramp to the site is provided with a maximum grade of 1:20 (5%) for the first 6 metres within the property boundary, satisfying Clause 3.3(b) of AS 2890.1 (2004).

- Ramps associated with the basement car park have a maximum gradient of 20% (1 in 5) for a length not exceeding 20 metres.
- A minimum clear head height of 2.2m is to be provided for all other areas within the basement car park as required by AS 2890.1 (2004).
- A clear head height of 2.5m is to be provided above all accessible parking spaces and shared areas, as required by AS 2890.6 (2009).
- A minimum clear head height of 4.5 metres is to be provided within the loading area as required under AS2890.2 (2002). A vertical clearance test has been undertaken with the results in **Appendix F** demonstrating that this height is achieved for a template 12.5m Heavy Rigid Vehicle.

Other Considerations

- The 2.0m by 2.5m sight distance triangles illustrated in Figure 3.3 of AS2890.1 (2004) are strictly achieved for the proposed Ashley Lane accesses. Notwithstanding, it is acknowledged that pedestrians may walk inside the actual property due to a 3 metre building setback.

  Accordingly, the walls within the building have been splayed to ensure the sight distance triangles are clear of obstructions to visibility at the car park access. This is also strictly achieved for one side of the loading dock access, whilst the other side has been splayed by 1.4m by 7.4m (to facilitate entry movements). It is anticipated that these provisions will allow exiting drivers to stop for pedestrians, achieving the intent of the standard.

Service Area Design

- The internal design of the service area has been undertaken in accordance with the requirements of AS28090.2 (2002) for the maximum length vehicle permissible on-site being a 10.24 metre waste collection vehicle.
- A minimum bay width of 3.5m is provided for all service bays.
- A turntable has been provided to ensure forward exit movements for bays located at each end. The turntable has been designed for vehicles up to the size of an 8.8m MRV and a swept path analysis has been undertaken for critical reverse movements in **Appendix E**.

7.3 External Design Aspects

The Development Application will also propose changes to the public domain including:

- A relocated pedestrian crossing further west on Railway Parade to align with a pedestrian site link. This is consistent with the proposed measures outlined in the Transport for NSW letter in relation to the Parramatta Light Rail project.
- An on-street bus parking restriction on Railway Parade to replace an existing 11m "1/4 P 8:00am – 6:00pm, Mon-Fri" restriction. The bus parking restriction will serve demands for the proposed hotel.

A plan of the existing signage on Railway Parade is included in **Appendix G** for reference and the proposed changes to the public domain are illustrated in a plan in **Appendix H**. The proposal is considered supportable noting that the availability of parking available for town centre use will effectively increase with the provision of on-site basement parking.

8. Conclusions

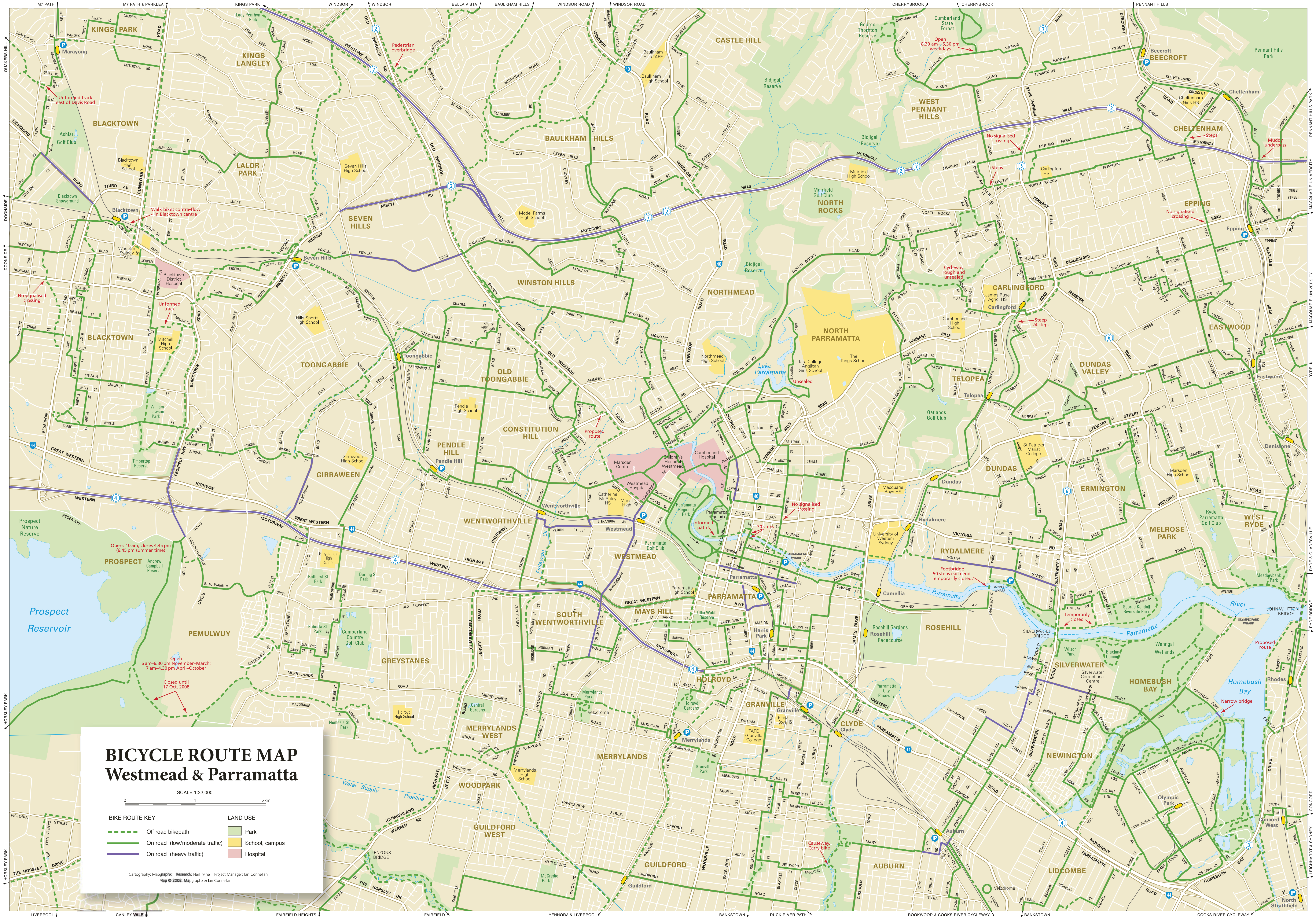
In summary:

- A Development Application seeks approval to construct a 16 storey mixed-use development at 24-26 Railway Parade in Westmead. It is to comprise of 33 residential apartments, a 97 room hotel, a supermarket, a medical centre, a tavern, retail tenancies and food and beverage tenancies.
- Under the *Parramatta Development Control Plan 2011*, the proposed development is permitted to provide a maximum of 148 parking spaces based on the site specific controls applicable for 24-26 Railway Parade. In response, provision for 130 spaces has been made, thereby complying with Council's planning controls.
- The proposed development has been assessed to generate a net increase of 101 vehicle trips per hour during the critical PM peak period which would comprise of customer trips. Additional software modelling has supplemented the analysis supporting the Planning Proposal, to which the increases in delays at intersections on Hawkesbury Road will be negligible.
- The design of the proposed development generally complies with AS2890.1 (2004) and AS2890.2 (2002), with a swept path analysis demonstrating satisfactory operation of accesses and critical internal movements.

In light of the above, the Development Application is supported on transport planning grounds.

Appendix A

Westmead & Parramatta Bicycle Routes



BICYCLE ROUTE MAP
Westmead & Parramatta
SCALE 1:32,000
0
1
2km
BIKE ROUTE KEY
Off road bikepath
On road (low/moderate traffic)
On road (heavy traffic)
LAND USE
Park
School, campus
Hospital
Cartography: Mapgraphx Research: Neil Irvine Project Manager: Ian Connellan
Map © 2008: Mapgraphx & Ian Connellan
KINGS PARK
KINGS LANGLEY
CASTLE HILL
BLACKTOWN
BAULKHAM HILLS
WEST PENNANT HILLS
BEECROFT
CHELTENHAM
LALOR PARK
SEVEN HILLS
NORTH ROCKS
EPPING
WINSTON HILLS
NORTHMEAD
CARLINGFORD
NORTH PARRAMATTA
EASTWOOD
TOONGABBIE
OLD TOONGABBIE
DUNDAS VALLEY
TELOPEA
CONSTITUTION HILL
PENDLE HILL
GIRRAWEEN
DUNDAS
ERMINGTON
WENTWORTHVILLE
MELROSE PARK
WEST RYDE
WESTMEAD
RYDALMERE
PROSPECT
PARRAMATTA
SOUTH WENTWORTHVILLE
MAYS HILL
ROSEHILL
PEMULWUY
GREYSTANES
HOLROYD
SILVERWATER
HOMEBUSH BAY
GRANVILLE
CLYDE
MERRYLANDS WEST
MERRYLANDS
NEWINGTON
WOODPARK
GUILDFORD WEST
GUILDFORD
AUBURN
LIDCOMBE
Prospect Reservoir
Parramatta River
Homebush Bay
Lake Parramatta
Water Supply Pipeline
Unformed track east of Davis Road
Walk bikes contra-flow in Blacktown centre
No signalised crossing
Unformed track
Pedestrian overbridge
Open 8.30 am—5.30 pm weekdays
No signalised crossing
Steps
Muddy underpass
Cycleway rough and unsealed
Steep 24 steps
Unsealed
Proposed route
Opens 10 am, closes 4.45 pm (6.45 pm summer time)
Unformed path
30 steps
Footbridge 50 steps each end. Temporarily closed.
Temporarily closed
Proposed route
Narrow bridge
Open 6 am–6.30 pm November–March; 7 am–4.30 pm April–October
Closed until 17 Oct, 2008
Causeway. Carry bike

Appendix B

Parramatta Light Rail Project – Map and Traffic Changes Letter

Parramatta Light Rail

Preferred alignment – Stage 1

- Stage 1 preferred alignment
- Light rail stops
- Line to depot only
- Train station
- Bus interchange
- Ferry terminus

Carlingford
Telopea
Dundas
Rydalmere
Camellia
Tramway Avenue
Harris Street
Parramatta Square
Eat Street
Prince Alfred Square
Fennell Street
Factory Street
Cumberland Hospital
Children's Hospital at Westmead
Westmead Hospital
Westmead Station
PENNANT HILLS ROAD
WINDSOR ROAD
KISSING POINT ROAD
JAMES RUSE DRIVE
VICTORIA ROAD
HAWKESBURY RD
FACTORY ST
O'CONNELL STREET
CHURCH STREET
SMITH ST
MACARTHUR STREET
MACQUARIE ST
GEORGE ST
GRAND AVENUE
PARRAMATTA PARK
WESTERN SYDNEY STADIUM
STABLING AND MAINTENANCE FACILITY
ROSEHILL RACECOURSE
GREAT WESTERN HWY
Parramatta North
Westmead
Parramatta
Rosehill

NSW GOVERNMENT | Transport for NSW

18 July 2018

Anthony Blood
Development Assessment Officer
City of Parramatta
PO Box 32
Parramatta NSW 2124

Dear Anthony,

RE: DA/381/2018 24-26 Railway Parade, Westmead. NSW 2145

Thank you for referring the above proposal to TfNSW (Parramatta Light Rail) for review and comment.

The EIS for the Parramatta Light Rail (Stage 1) was on exhibition during October 2017 and shows that the light rail route will connect Parramatta's CBD with the Westmead Health precinct, Parramatta North Urban Transformation Program, the new Western Sydney Stadium, three Western Sydney University campuses, the relocated Powerhouse Museum, Rosehill Racecourse, the Camellia Precinct and redevelopment at Telopea.

TfNSW plans to commence construction of the Parramatta Light Rail (PLR) by 2019 and for it to be operational in 2023.

During the construction and operation phases of the Parramatta Light Rail Project there will be intermittent, short and long term road closures, as well as material changes to road network operations. These changes may impact pedestrian, cyclist and vehicular access routes to the proposed development.

The traffic changes implemented by PLR in the precinct include:

- Signalisation of Caroline Street and Hawkesbury Road intersection
- Park Avenue converted to one-way southbound only between Hainsworth and Jessie Street
- Jessie Street one way westbound between Hawkesbury Road and Park Avenue (left out only at Hawkesbury Road)
- Queens Road one-way westbound between Hawkesbury Road and Ashley Lane
- Removal of right-turn vehicle access from Hawkesbury Road, northbound into Queens Road and Jessie Street.
- Light rail on Hawkesbury Road
- Heavy vehicle access for Parramatta Park via Park Parade will be restricted to:
    - Access into the park via Railway Parade, Park Parade and right turn into the park at the Queens Road gatehouse.
    - Access out of the park via the Queens Road gatehouse into Queens Road and left turn only onto Hawkesbury Road.
- Changes to parking availability on Railway Parade

<u>Recommendations</u>

- Existing pedestrian crossing on Railway Parade proposed to be relocated west to align with new Mid-block pedestrian link.

Transport for NSW
Level 10, 130 George Street, Parramatta NSW 2150
T 1800 227 774 | **W** transport.nsw.gov.au | ABN 18 804 239 602

- Mid-block link provides good opportunity for alternative pedestrian movement between Railway Parade and Hawkesbury Road. This will reduce dependence on constrained footpath next to Light Rail Terminus.
- Public Domain upgrade to Railway Parade including new trees. This work needs to be coordinated with station TAP upgrade and PLR public domain works.
- DA proposed 100+ basement car spaces accessed via Ashley Lane. Increased vehicle movements will not assist in creating a more walkable pedestrian-friendly Precinct. PLR recommends the number of basement car spaces are significantly reduced.
- Potential construction staging conflicts between development and Light Rail main infrastructure works. Works need to be coordinated with PLR.
- High density mixed use development, including four storey podiums, is arguably not inconsistent with State Government planning principles around railway stations.
- Parramatta Light Rail advises that an analysis should be undertaken by the proponent to demonstrate vehicle movements can work within the context of road changes in the surrounding area. All construction activities including traffic management must be coordinated with Parramatta Light Rail.
- Suggest proponent to provide civil works plan showing road, driveway and kerb adjustments proposed as well as site plan showing the location of proposed external utility connections to allow TfNSW to provide comments on these interfaces.

Parramatta Light Rail advises that an analysis should be undertaken by the proponent to demonstrate vehicle movements can work within the context of road changes in the surrounding area. All construction activities including traffic management must be coordinated with Parramatta Light Rail.

Thank you for the opportunity to provide comment on this planning proposal. Please contact Gideon Chapman Gideon.Chapman@transport.nsw.gov.au if you would like to discuss the comments raised.

Yours sincerely

Tim Poole

pp ~~**Andrew Quarmby**~~ TIM POOLE.
~~Acting~~ Program Director

cc: Grant Knoetz, TfNSW

Appendix C

Traffic Surveys

Date: 5 October 2018
Ref: 18120

Kedar Ballurkar
TRAFFIX

By email: Kedar.Ballurkar@traffix.com.au

Dear Kedar,

Re: Intersection Movement Survey
WESTMEAD

As instructed by your offices we have now completed the required surveys according to our agreed scope of works at the following location(s):

- WESTMEAD
  1. Signalized Cross Intersection of Hawkesbury Road and Alexandra Avenue
  2. Signalized T-intersection of Hawkesbury Road and Railway Parade
  3. T-intersection of Queens Road and Hawkesbury Road

I attach herewith our surveys output (both in PDF and XLS formats) for your perusal. I trust that this submission is suitable to your requirements and look forward to the opportunity of assisting you in your future projects. Should you require further clarification of the results please do not hesitate to contact myself at 0430 160 889.

Thank you.

Yours sincerely,

Nicholas Lo

Nicholas Lo

Location	Hawkesbury Road	**Duration**	0700 - 0900
	Alexandra Avenue		1600 - 1800
	Hawkesbury Road		-
	Alexandra Avenue	**Day/Date**	Thursday, September 27, 2018
Suburb	WESTMEAD	**Weather**	-

All Vehicles Time Per 15 Mins	NORTH *Hawkesbury Road*										EAST *Alexandra Avenue*										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
6:00 - 6:15	23	8	**31**	49	1	**50**	12	0	**12**	**93**	4	0	**4**	20	0	**20**	29	5	**34**	**58**	323	18	**341**
6:15 - 6:30	34	11	**45**	78	0	**78**	9	0	**9**	**132**	9	0	**9**	21	1	**22**	29	9	**38**	**69**	455	25	**480**
6:30 - 6:45	43	10	**53**	83	2	**85**	7	0	**7**	**145**	8	0	**8**	19	0	**19**	43	5	**48**	**75**	498	20	**518**
6:45 - 7:00	37	11	**48**	79	7	**86**	21	0	**21**	**155**	15	0	**15**	27	0	**27**	72	7	**79**	**121**	538	29	**567**
7:00 - 7:15	62	8	**70**	107	4	**111**	9	0	**9**	**190**	12	0	**12**	18	1	**19**	48	6	**54**	**85**	561	23	**584**
7:15 - 7:30	62	9	**71**	90	1	**91**	11	0	**11**	**173**	4	0	**4**	30	0	**30**	62	11	**73**	**107**	549	27	**576**
7:30 - 7:45	46	8	**54**	100	4	**104**	28	0	**28**	**186**	8	0	**8**	40	0	**40**	35	7	**42**	**90**	496	26	**522**
7:45 - 8:00	49	5	**54**	98	6	**104**	20	1	**21**	**179**	1	0	**1**	23	0	**23**	50	7	**57**	**81**	512	25	**537**
Period End	**356**	**70**	**426**	**684**	**25**	**709**	**117**	**1**	**118**	**1253**	**61**	**0**	**61**	**198**	**2**	**200**	**368**	**57**	**425**	**686**	**3932**	**193**	**4125**
15:00 - 15:15	39	8	**47**	170	3	**173**	12	0	**12**	**232**	9	0	**9**	63	1	**64**	46	6	**52**	**125**	462	19	**481**
15:15 - 15:30	56	6	**62**	167	1	**168**	13	0	**13**	**243**	10	0	**10**	65	0	**65**	46	7	**53**	**128**	490	15	**505**
15:30 - 15:45	58	8	**66**	177	0	**177**	26	0	**26**	**269**	8	0	**8**	47	0	**47**	42	7	**49**	**104**	510	15	**525**
15:45 - 16:00	47	7	**54**	177	0	**177**	18	0	**18**	**249**	5	1	**6**	74	0	**74**	52	9	**61**	**141**	523	19	**542**
16:00 - 16:15	48	7	**55**	170	1	**171**	23	0	**23**	**249**	8	1	**9**	66	0	**66**	49	9	**58**	**133**	510	18	**528**
16:15 - 16:30	68	9	**77**	145	0	**145**	17	0	**17**	**239**	12	0	**12**	65	0	**65**	57	11	**68**	**145**	534	20	**554**
16:30 - 16:45	58	9	**67**	164	0	**164**	20	0	**20**	**251**	12	1	**13**	64	0	**64**	49	11	**60**	**137**	543	22	**565**
16:45 - 17:00	53	6	**59**	161	2	**163**	17	1	**18**	**240**	7	0	**7**	67	1	**68**	46	8	**54**	**129**	520	18	**538**
Period End	**427**	**60**	**487**	**1331**	**7**	**1338**	**146**	**1**	**147**	**1972**	**71**	**3**	**74**	**511**	**2**	**513**	**387**	**68**	**455**	**1042**	**2630**	**97**	**4238**

All Vehicles Time Per 15 Mins	SOUTH *Hawkesbury Road*										WEST *Alexandra Avenue*										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
6:00 - 6:15	4	0	**4**	110	3	**113**	1	0	**1**	**118**	9	1	**10**	62	0	**62**				**72**	323	18	**341**
6:15 - 6:30	3	0	**3**	174	2	**176**	0	0	**0**	**179**	27	0	**27**	71	2	**73**				**100**	455	25	**480**
6:30 - 6:45	6	0	**6**	192	3	**195**	0	0	**0**	**201**	27	0	**27**	70	0	**70**				**97**	498	20	**518**
6:45 - 7:00	4	0	**4**	183	4	**187**	0	0	**0**	**191**	28	0	**28**	72	0	**72**				**100**	538	29	**567**
7:00 - 7:15	5	0	**5**	213	3	**216**	0	0	**0**	**221**	16	0	**16**	71	1	**72**				**88**	561	23	**584**
7:15 - 7:30	5	0	**5**	197	6	**203**	1	0	**1**	**209**	18	0	**18**	69	0	**69**				**87**	549	27	**576**
7:30 - 7:45	4	0	**4**	144	7	**151**	0	0	**0**	**155**	9	0	**9**	82	0	**82**				**91**	496	26	**522**
7:45 - 8:00	6	0	**6**	176	5	**181**	0	0	**0**	**187**	20	0	**20**	69	1	**70**				**90**	512	25	**537**
Period End	**37**	**0**	**37**	**1389**	**33**	**1422**	**2**	**0**	**2**	**1461**	**154**	**1**	**155**	**566**	**4**	**570**				**725**	**3932**	**193**	**4125**
15:00 - 15:15	7	0	**7**	74	1	**75**	0	0	**0**	**82**	7	0	**7**	35	0	**35**				**42**	462	19	**481**
15:15 - 15:30	8	0	**8**	82	0	**82**	0	0	**0**	**90**	11	0	**11**	32	1	**33**				**44**	490	15	**505**
15:30 - 15:45	13	0	**13**	76	0	**76**	0	0	**0**	**89**	16	0	**16**	47	0	**47**				**63**	510	15	**525**
15:45 - 16:00	14	0	**14**	78	1	**79**	0	0	**0**	**93**	9	0	**9**	49	1	**50**				**59**	523	19	**542**
16:00 - 16:15	5	0	**5**	70	0	**70**	0	0	**0**	**75**	23	0	**23**	48	0	**48**				**71**	510	18	**528**
16:15 - 16:30	9	0	**9**	98	0	**98**	0	0	**0**	**107**	12	0	**12**	51	0	**51**				**63**	534	20	**554**
16:30 - 16:45	8	0	**8**	101	1	**102**	0	0	**0**	**110**	18	0	**18**	49	0	**49**				**67**	543	22	**565**
16:45 - 17:00	10	0	**10**	86	0	**86**	0	0	**0**	**96**	19	0	**19**	54	0	**54**				**73**	520	18	**538**
Period End	**74**	**0**	**74**	**665**	**3**	**668**	**0**	**0**	**0**	**742**	**115**	**0**	**115**	**365**	**2**	**367**				**482**	**2630**	**97**	**4238**

Traffic Information Specialists

ABN: 42 613 389 923

Email info@trafficinfospecialist.com.au

Location	Hawkesbury Road	**Duration**	0700 - 0900
	Alexandra Avenue		1600 - 1800
	Hawkesbury Road		-
	Alexandra Avenue	**Day/Date**	Thursday, September 27, 2018
Suburb	WESTMEAD	**Weather**	-

All Vehicles Time Per Hour	NORTH Hawkesbury Road										EAST Alexandra Avenue										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
6:00 - 7:00	137	40	**177**	289	10	**299**	49	0	**49**	**525**	36	0	**36**	87	1	**88**	173	26	**199**	**323**	1814	92	**1906**
6:15 - 7:15	176	40	**216**	347	13	**360**	46	0	**46**	**622**	44	0	**44**	85	2	**87**	192	27	**219**	**350**	2052	97	**2149**
6:30 - 7:30	204	38	**242**	359	14	**373**	48	0	**48**	**663**	39	0	**39**	94	1	**95**	225	29	**254**	**388**	2146	99	**2245**
6:45 - 7:45	207	36	**243**	376	16	**392**	69	0	**69**	**704**	39	0	**39**	115	1	**116**	217	31	**248**	**403**	2144	105	**2249**
7:00 - 8:00	219	30	**249**	395	15	**410**	68	1	**69**	**728**	25	0	**25**	111	1	**112**	195	31	**226**	**363**	2118	101	**2219**
Period End	**943**	**184**	**1127**	**1766**	**68**	**1834**	**280**	**1**	**281**	**3242**	**183**	**0**	**183**	**492**	**6**	**498**	**1002**	**144**	**1146**	**1827**	**10274**	**494**	**10768**
15:00 - 16:00	200	29	**229**	691	4	**695**	69	0	**69**	**993**	32	1	**33**	249	1	**250**	186	29	**215**	**498**	1985	68	**2053**
15:15 - 16:15	209	28	**237**	691	2	**693**	80	0	**80**	**1010**	31	2	**33**	252	0	**252**	189	32	**221**	**506**	2033	67	**2100**
15:30 - 16:30	221	31	**252**	669	1	**670**	84	0	**84**	**1006**	33	2	**35**	252	0	**252**	200	36	**236**	**523**	2077	72	**2149**
15:45 - 16:45	221	32	**253**	656	1	**657**	78	0	**78**	**988**	37	3	**40**	269	0	**269**	207	40	**247**	**556**	2110	79	**2189**
16:00 - 17:00	227	31	**258**	640	3	**643**	77	1	**78**	**979**	39	2	**41**	262	1	**263**	201	39	**240**	**544**	2107	78	**2185**
Period End	**1078**	**151**	**1229**	**3347**	**11**	**3358**	**388**	**1**	**389**	**4976**	**172**	**10**	**182**	**1284**	**2**	**1286**	**983**	**176**	**1159**	**2627**	**10312**	**364**	**10676**

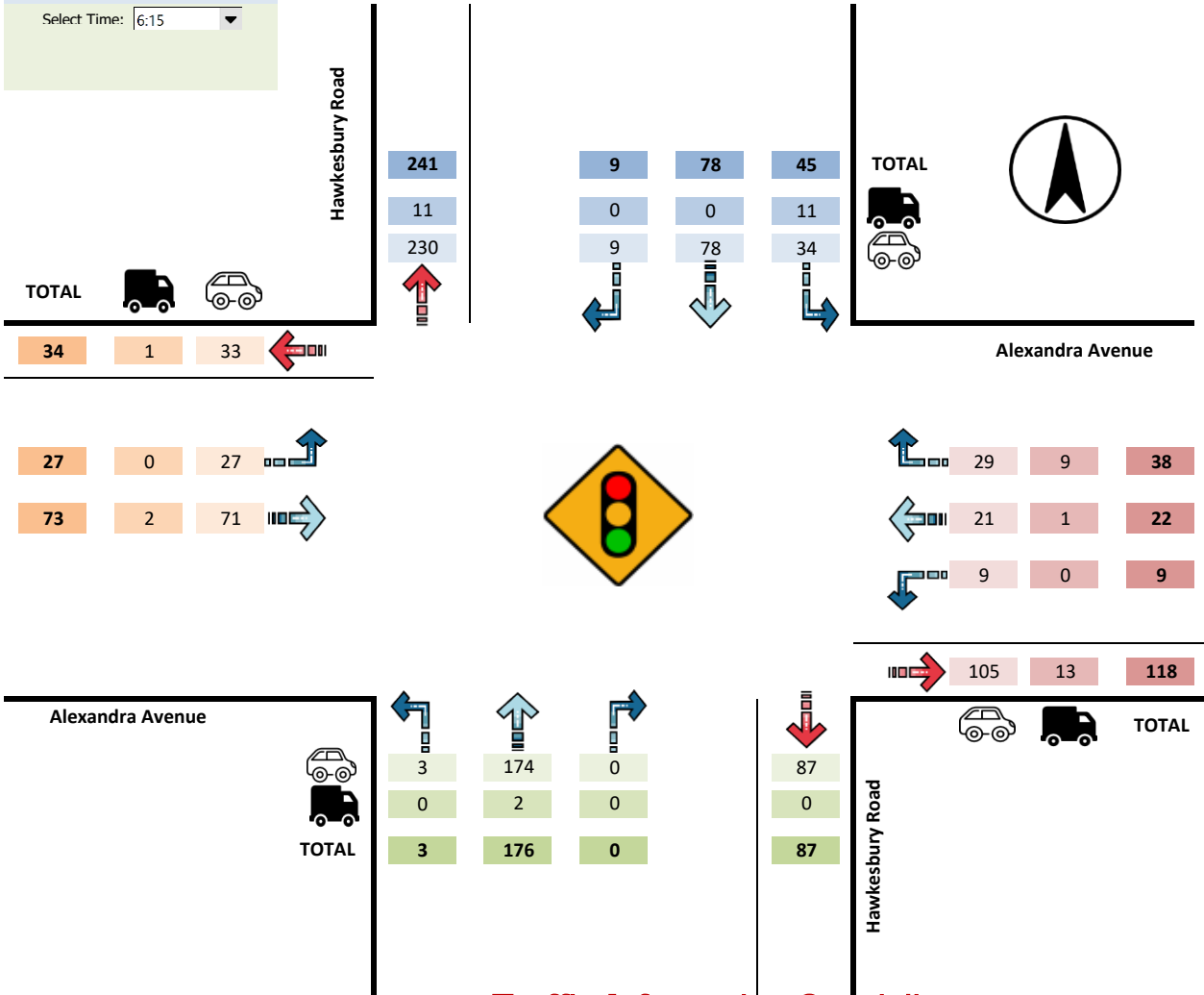
All Vehicles Time Per Hour	SOUTH Hawkesbury Road										WEST Alexandra Avenue										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
6:00 - 7:00	17	0	**17**	659	12	**671**	1	0	**1**	**689**	91	1	**92**	275	2	**277**				**369**	1814	92	**1906**
6:15 - 7:15	18	0	**18**	762	12	**774**	0	0	**0**	**792**	98	0	**98**	284	3	**287**				**385**	2052	97	**2149**
6:30 - 7:30	20	0	**20**	785	16	**801**	1	0	**1**	**822**	89	0	**89**	282	1	**283**				**372**	2146	99	**2245**
6:45 - 7:45	18	0	**18**	737	20	**757**	1	0	**1**	**776**	71	0	**71**	294	1	**295**				**366**	2144	105	**2249**
7:00 - 8:00	20	0	**20**	730	21	**751**	1	0	**1**	**772**	63	0	**63**	291	2	**293**				**356**	2118	101	**2219**
Period End	**93**	**0**	**93**	**3673**	**81**	**3754**	**4**	**0**	**4**	**3851**	**412**	**1**	**413**	**1426**	**9**	**1435**				**1848**	**10274**	**494**	**10768**
15:00 - 16:00	42	0	**42**	310	2	**312**	0	0	**0**	**354**	43	0	**43**	163	2	**165**				**208**	1985	68	**2053**
15:15 - 16:15	40	0	**40**	306	1	**307**	0	0	**0**	**347**	59	0	**59**	176	2	**178**				**237**	2033	67	**2100**
15:30 - 16:30	41	0	**41**	322	1	**323**	0	0	**0**	**364**	60	0	**60**	195	1	**196**				**256**	2077	72	**2149**
15:45 - 16:45	36	0	**36**	347	2	**349**	0	0	**0**	**385**	62	0	**62**	197	1	**198**				**260**	2110	79	**2189**
16:00 - 17:00	32	0	**32**	355	1	**356**	0	0	**0**	**388**	72	0	**72**	202	0	**202**				**274**	2107	78	**2185**
Period End	**191**	**0**	**191**	**1640**	**7**	**1647**	**0**	**0**	**0**	**1838**	**296**	**0**	**296**	**933**	**6**	**939**				**1235**	**10312**	**364**	**10676**

Location	Hawkesbury Road	Duration	0700 - 0900
	Alexandra Avenue		1600 - 1800
	Hawkesbury Road		-
	Alexandra Avenue	Day/Date	Thursday, September 27, 2018
Suburb	WESTMEAD	Weather	-

DATA SELECTION

Select Time: 6:15

TIME RANGE		
6:15	-	6:30
PEAK		
6:45	-	7:45



Traffic Information Specialists

ABN: 42 613 389 923

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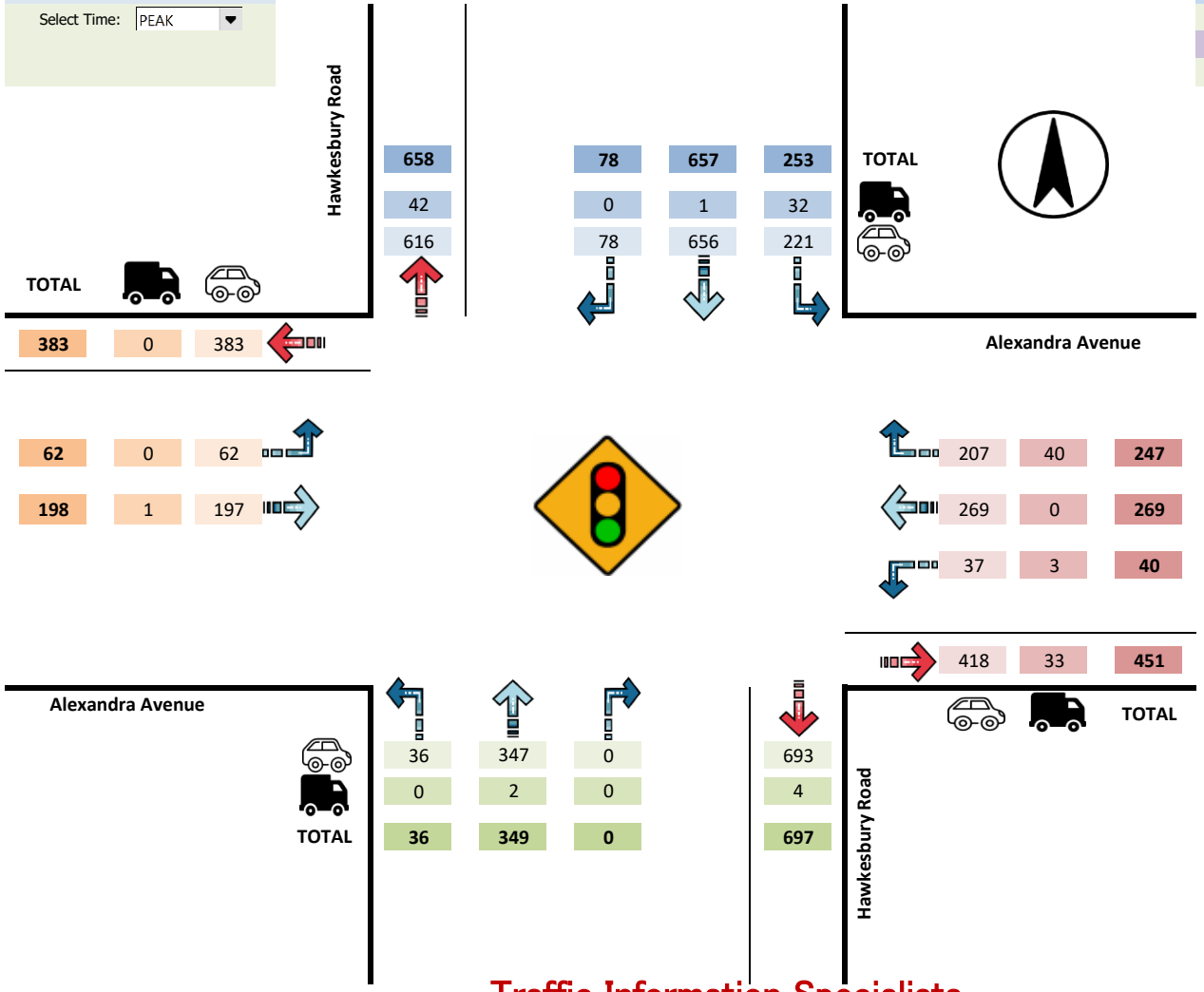
Location	Hawkesbury Road	Duration	0700 - 0900
	Alexandra Avenue		1600 - 1800
	Hawkesbury Road		-
	Alexandra Avenue	Day/Date	Thursday, September 27, 2018
Suburb	WESTMEAD	Weather	-

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	PM
PEAK		
15:45	-	16:45



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Location	Hawkesbury Road		**Duration**	0700 - 0900	
	Railway Parade			1600 - 1800	
	Hawkesbury Road			-	
	-		**Day/Date**	Thursday, September 27, 2018	
Suburb	WESTMEAD		**Weather**	-	

All Vehicles Time Per 15 Mins	NORTH *Hawkesbury Road*										EAST *Railway Parade*										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 7:15	11	0	**11**	63	9	**72**				**83**	21	0	**21**				4	0	**4**	**25**	247	18	**265**
7:15 - 7:30	16	0	**16**	91	11	**102**				**118**	30	0	**30**				6	0	**6**	**36**	373	22	**395**
7:30 - 7:45	19	0	**19**	98	12	**110**				**129**	35	0	**35**				11	0	**11**	**46**	425	20	**445**
7:45 - 8:00	16	0	**16**	89	18	**107**				**123**	48	0	**48**				7	0	**7**	**55**	443	29	**472**
8:00 - 8:15	16	0	**16**	142	12	**154**				**170**	36	0	**36**				6	0	**6**	**42**	477	21	**498**
8:15 - 8:30	23	0	**23**	113	10	**123**				**146**	50	0	**50**				6	0	**6**	**56**	469	27	**496**
8:30 - 8:45	15	2	**17**	120	12	**132**				**149**	54	0	**54**				7	0	**7**	**61**	384	28	**412**
8:45 - 9:00	10	0	**10**	113	11	**124**				**134**	54	1	**55**				2	0	**2**	**57**	425	24	**449**
Period End	**126**	**2**	**128**	**829**	**95**	**924**				**1052**	**328**	**1**	**329**				**49**	**0**	**49**	**378**	**3243**	**189**	**3432**
16:00 - 16:15	12	0	**12**	165	11	**176**				**188**	56	0	**56**				7	0	**7**	**63**	367	18	**385**
16:15 - 16:30	26	0	**26**	186	7	**193**				**219**	50	0	**50**				8	0	**8**	**58**	409	14	**423**
16:30 - 16:45	15	0	**15**	189	8	**197**				**212**	72	0	**72**				4	0	**4**	**76**	414	15	**429**
16:45 - 17:00	8	0	**8**	184	7	**191**				**199**	58	0	**58**				6	0	**6**	**64**	395	17	**412**
17:00 - 17:15	5	0	**5**	165	8	**173**				**178**	76	0	**76**				10	0	**10**	**86**	398	17	**415**
17:15 - 17:30	20	0	**20**	182	9	**191**				**211**	48	0	**48**				8	0	**8**	**56**	425	20	**445**
17:30 - 17:45	14	0	**14**	184	9	**193**				**207**	58	0	**58**				6	0	**6**	**64**	430	21	**451**
17:45 - 18:00	15	0	**15**	180	9	**189**				**204**	51	0	**51**				10	0	**10**	**61**	407	17	**424**
Period End	**115**	**0**	**115**	**1435**	**68**	**1503**				**1618**	**469**	**0**	**469**				**59**	**0**	**59**	**528**	**2055**	**92**	**3384**

All Vehicles Time Per 15 Mins	SOUTH *Hawkesbury Road*										WEST -										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 7:15				93	8	**101**	55	1	**56**	**157**											247	18	**265**
7:15 - 7:30				166	11	**177**	64	0	**64**	**241**											373	22	**395**
7:30 - 7:45				208	7	**215**	54	1	**55**	**270**											425	20	**445**
7:45 - 8:00				200	11	**211**	83	0	**83**	**294**											443	29	**472**
8:00 - 8:15				220	8	**228**	57	1	**58**	**286**											477	21	**498**
8:15 - 8:30				213	17	**230**	64	0	**64**	**294**											469	27	**496**
8:30 - 8:45				133	14	**147**	55	0	**55**	**202**											384	28	**412**
8:45 - 9:00				150	12	**162**	96	0	**96**	**258**											425	24	**449**
Period End				**1383**	**88**	**1471**	**528**	**3**	**531**	**2002**											**3243**	**189**	**3432**
16:00 - 16:15				91	7	**98**	36	0	**36**	**134**											367	18	**385**
16:15 - 16:30				106	7	**113**	33	0	**33**	**146**											409	14	**423**
16:30 - 16:45				98	7	**105**	36	0	**36**	**141**											414	15	**429**
16:45 - 17:00				98	10	**108**	41	0	**41**	**149**											395	17	**412**
17:00 - 17:15				87	9	**96**	55	0	**55**	**151**											398	17	**415**
17:15 - 17:30				120	11	**131**	47	0	**47**	**178**											425	20	**445**
17:30 - 17:45				110	10	**120**	58	2	**60**	**180**											430	21	**451**
17:45 - 18:00				107	8	**115**	44	0	**44**	**159**											407	17	**424**
Period End				**817**	**69**	**886**	**350**	**2**	**352**	**1238**											**2055**	**92**	**3384**

Traffic Information Specialists

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Location	Hawkesbury Road	**Duration**	0700 - 0900
	Railway Parade		1600 - 1800
	Hawkesbury Road		-
	-	**Day/Date**	Thursday, September 27, 2018
Suburb	WESTMEAD	**Weather**	-

All Vehicles Time Per Hour	NORTH Hawkesbury Road										EAST Railway Parade										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00	62	0	**62**	341	50	**391**				**453**	134	0	**134**				28	0	**28**	**162**	1488	89	**1577**
7:15 - 8:15	67	0	**67**	420	53	**473**				**540**	149	0	**149**				30	0	**30**	**179**	1718	92	**1810**
7:30 - 8:30	74	0	**74**	442	52	**494**				**568**	169	0	**169**				30	0	**30**	**199**	1814	97	**1911**
7:45 - 8:45	70	2	**72**	464	52	**516**				**588**	188	0	**188**				26	0	**26**	**214**	1773	105	**1878**
8:00 - 9:00	64	2	**66**	488	45	**533**				**599**	194	1	**195**				21	0	**21**	**216**	1755	100	**1855**
Period End	**337**	**4**	**341**	**2155**	**252**	**2407**				**2748**	**834**	**1**	**835**				**135**	**0**	**135**	**970**	**8548**	**483**	**9031**
16:00 - 17:00	61	0	**61**	724	33	**757**				**818**	236	0	**236**				25	0	**25**	**261**	1585	64	**1649**
16:15 - 17:15	54	0	**54**	724	30	**754**				**808**	256	0	**256**				28	0	**28**	**284**	1616	63	**1679**
16:30 - 17:30	48	0	**48**	720	32	**752**				**800**	254	0	**254**				28	0	**28**	**282**	1632	69	**1701**
16:45 - 17:45	47	0	**47**	715	33	**748**				**795**	240	0	**240**				30	0	**30**	**270**	1648	75	**1723**
17:00 - 18:00	54	0	**54**	711	35	**746**				**800**	233	0	**233**				34	0	**34**	**267**	1660	75	**1735**
Period End	**264**	**0**	**264**	**3594**	**163**	**3757**				**4021**	**1219**	**0**	**1219**				**145**	**0**	**145**	**1364**	**8141**	**346**	**8487**

All Vehicles Time Per Hour	SOUTH Hawkesbury Road										WEST -										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00				667	37	**704**	256	2	**258**	**962**											1488	89	**1577**
7:15 - 8:15				794	37	**831**	258	2	**260**	**1091**											1718	92	**1810**
7:30 - 8:30				841	43	**884**	258	2	**260**	**1144**											1814	97	**1911**
7:45 - 8:45				766	50	**816**	259	1	**260**	**1076**											1773	105	**1878**
8:00 - 9:00				716	51	**767**	272	1	**273**	**1040**											1755	100	**1855**
Period End				**3784**	**218**	**4002**	**1303**	**8**	**1311**	**5313**											**8548**	**483**	**9031**
16:00 - 17:00				393	31	**424**	146	0	**146**	**570**											1585	64	**1649**
16:15 - 17:15				389	33	**422**	165	0	**165**	**587**											1616	63	**1679**
16:30 - 17:30				403	37	**440**	179	0	**179**	**619**											1632	69	**1701**
16:45 - 17:45				415	40	**455**	201	2	**203**	**658**											1648	75	**1723**
17:00 - 18:00				424	38	**462**	204	2	**206**	**668**											1660	75	**1735**
Period End				**2024**	**179**	**2203**	**895**	**4**	**899**	**3102**											**8141**	**346**	**8487**

Traffic Information Specialists
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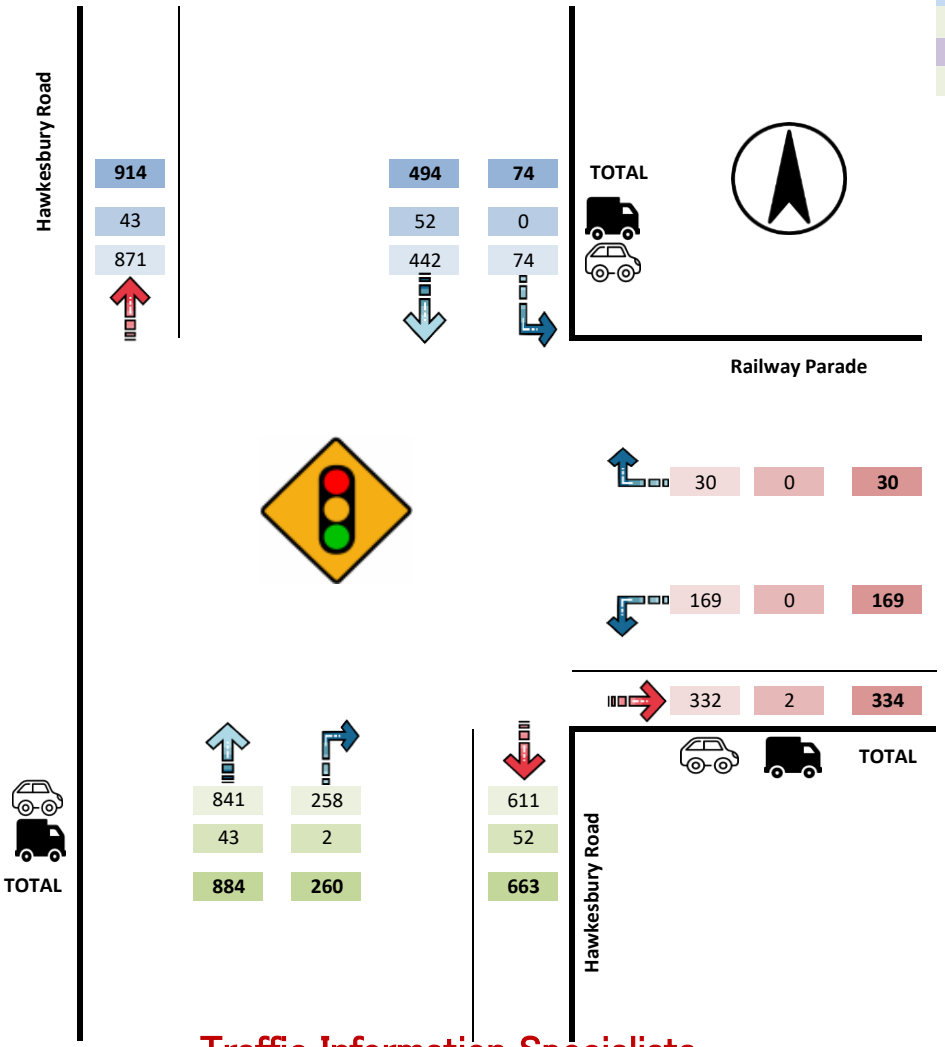
Location	Hawkesbury Road	Duration	0700 - 0900
	Railway Parade		1600 - 1800
	Hawkesbury Road		-
	-	Day/Date	Thursday, September 27, 2018
Suburb	WESTMEAD	Weather	-

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	AM
PEAK		
7:30	-	8:30



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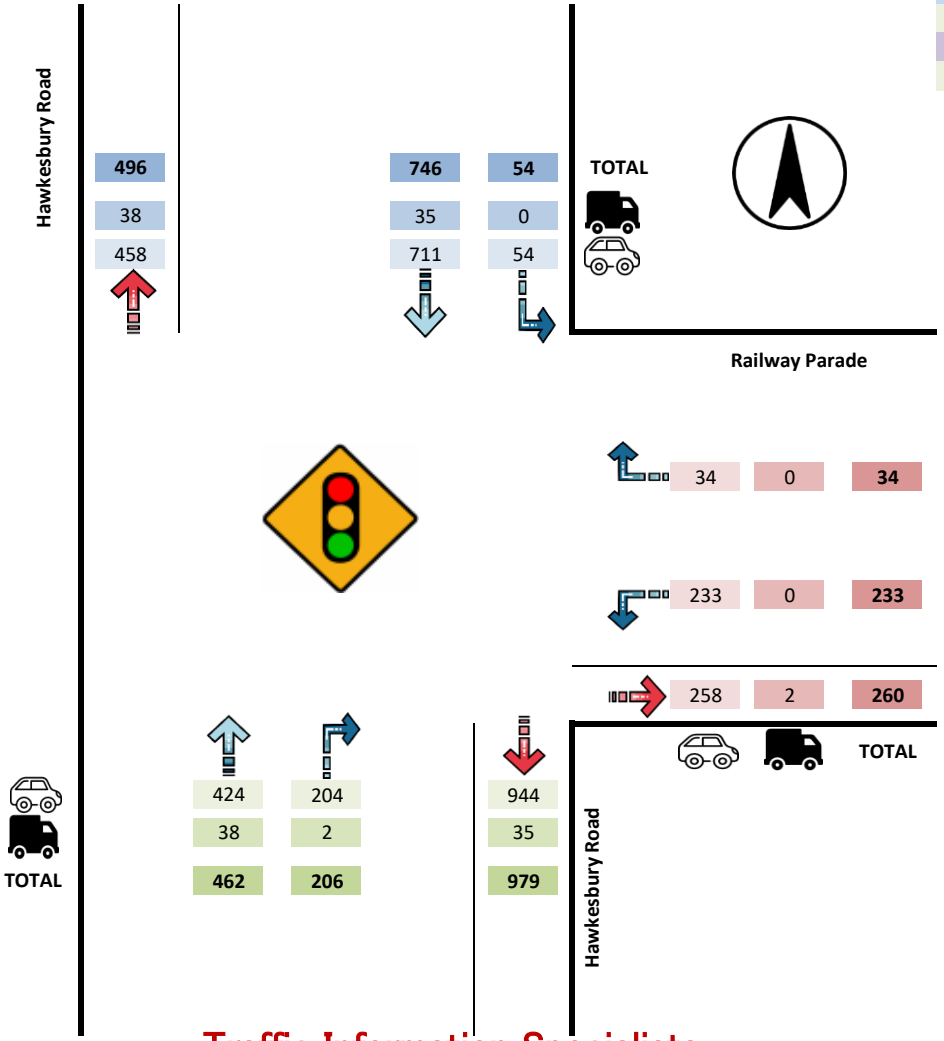
Location	**Hawkesbury Road**	**Duration**	**0700 - 0900**
	Railway Parade		**1600 - 1800**
	Hawkesbury Road		**-**
	-	**Day/Date**	**Thursday, September 27, 2018**
Suburb	**WESTMEAD**	**Weather**	**-**

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	PM
PEAK		
17:00	-	18:00



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Location	Hawkesbury Road		**Duration**	0700 - 0900	
	Queens Road			1600 - 1800	
	Hawkesbury Road			-	
	-		**Day/Date**	Thursday, September 27, 2018	
Suburb	WESTMEAD		**Weather**	-	

All Vehicles Time Per 15 Mins	NORTH *Hawkesbury Road*										EAST *Queens Road*										TOTAL		
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	TOTAL
7:00 - 7:15	2	0	**2**	37	3	**40**				**42**	20	0	**20**							**20**	140	7	**147**
7:15 - 7:30	1	0	**1**	53	2	**55**				**56**	25	0	**25**							**25**	176	6	**182**
7:30 - 7:45	3	0	**3**	55	5	**60**				**63**	33	0	**33**							**33**	209	8	**217**
7:45 - 8:00	2	0	**2**	70	2	**72**				**74**	38	2	**40**							**40**	230	6	**236**
8:00 - 8:15	2	0	**2**	54	3	**57**				**59**	35	0	**35**							**35**	202	5	**207**
8:15 - 8:30	2	0	**2**	58	2	**60**				**62**	31	1	**32**							**32**	217	5	**222**
8:30 - 8:45	7	0	**7**	59	5	**64**				**71**	33	1	**34**							**34**	212	10	**222**
8:45 - 9:00	5	1	**6**	35	1	**36**				**42**	37	0	**37**							**37**	199	4	**203**
Period End	**24**	**1**	**25**	**421**	**23**	**444**				**469**	**252**	**4**	**256**							**256**	**1585**	**51**	**1636**
16:00 - 16:15	4	0	**4**	109	4	**113**				**117**	42	0	**42**							**42**	234	6	**240**
16:15 - 16:30	4	0	**4**	119	2	**121**				**125**	44	1	**45**							**45**	256	5	**261**
16:30 - 16:45	2	0	**2**	101	2	**103**				**105**	54	0	**54**							**54**	231	6	**237**
16:45 - 17:00	3	0	**3**	112	3	**115**				**118**	37	0	**37**							**37**	205	6	**211**
17:00 - 17:15	2	0	**2**	108	1	**109**				**111**	39	0	**39**							**39**	222	2	**224**
17:15 - 17:30	2	0	**2**	101	2	**103**				**105**	41	0	**41**							**41**	239	4	**243**
17:30 - 17:45	2	0	**2**	91	2	**93**				**95**	37	0	**37**							**37**	212	4	**216**
17:45 - 18:00	3	0	**3**	87	3	**90**				**93**	31	2	**33**							**33**	208	6	**214**
Period End	**22**	**0**	**22**	**828**	**19**	**847**				**869**	**325**	**3**	**328**							**328**	**1086**	**22**	**1846**

All Vehicles Time Per 15 Mins	SOUTH *Hawkesbury Road*										WEST -										TOTAL		
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	TOTAL
7:00 - 7:15				71	3	**74**	10	1	**11**	**85**											140	7	**147**
7:15 - 7:30				84	4	**88**	13	0	**13**	**101**											176	6	**182**
7:30 - 7:45				102	3	**105**	16	0	**16**	**121**											209	8	**217**
7:45 - 8:00				108	1	**109**	12	1	**13**	**122**											230	6	**236**
8:00 - 8:15				101	2	**103**	10	0	**10**	**113**											202	5	**207**
8:15 - 8:30				113	2	**115**	13	0	**13**	**128**											217	5	**222**
8:30 - 8:45				99	3	**102**	14	1	**15**	**117**											212	10	**222**
8:45 - 9:00				96	1	**97**	26	1	**27**	**124**											199	4	**203**
Period End				**774**	**19**	**793**	**114**	**4**	**118**	**911**											**1585**	**51**	**1636**
16:00 - 16:15				64	2	**66**	15	0	**15**	**81**											234	6	**240**
16:15 - 16:30				77	2	**79**	12	0	**12**	**91**											256	5	**261**
16:30 - 16:45				56	2	**58**	18	2	**20**	**78**											231	6	**237**
16:45 - 17:00				48	2	**50**	5	1	**6**	**56**											205	6	**211**
17:00 - 17:15				59	1	**60**	14	0	**14**	**74**											222	2	**224**
17:15 - 17:30				78	2	**80**	17	0	**17**	**97**											239	4	**243**
17:30 - 17:45				66	2	**68**	16	0	**16**	**84**											212	4	**216**
17:45 - 18:00				69	1	**70**	18	0	**18**	**88**											208	6	**214**
Period End				**517**	**14**	**531**	**115**	**3**	**118**	**649**											**1086**	**22**	**1846**

Traffic Information Specialists

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Location	Hawkesbury Road		**Duration**	0700 - 0900	
	Queens Road			1600 - 1800	
	Hawkesbury Road			-	
	-		**Day/Date**	Thursday, September 27, 2018	
Suburb	WESTMEAD		**Weather**	-	

All Vehicles Time Per Hour	NORTH *Hawkesbury Road*										EAST *Queens Road*										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00	8	0	**8**	215	12	**227**				**235**	116	2	**118**							**118**	755	27	**782**
7:15 - 8:15	8	0	**8**	232	12	**244**				**252**	131	2	**133**							**133**	817	25	**842**
7:30 - 8:30	9	0	**9**	237	12	**249**				**258**	137	3	**140**							**140**	858	24	**882**
7:45 - 8:45	13	0	**13**	241	12	**253**				**266**	137	4	**141**							**141**	861	26	**887**
8:00 - 9:00	16	1	**17**	206	11	**217**				**234**	136	2	**138**							**138**	830	24	**854**
Period End	**54**	**1**	**55**	**1131**	**59**	**1190**				**1245**	**657**	**13**	**670**							**670**	**4121**	**126**	**4247**
16:00 - 17:00	13	0	**13**	441	11	**452**				**465**	177	1	**178**							**178**	926	23	**949**
16:15 - 17:15	11	0	**11**	440	8	**448**				**459**	174	1	**175**							**175**	914	19	**933**
16:30 - 17:30	9	0	**9**	422	8	**430**				**439**	171	0	**171**							**171**	897	18	**915**
16:45 - 17:45	9	0	**9**	412	8	**420**				**429**	154	0	**154**							**154**	878	16	**894**
17:00 - 18:00	9	0	**9**	387	8	**395**				**404**	148	2	**150**							**150**	881	16	**897**
Period End	**51**	**0**	**51**	**2102**	**43**	**2145**				**2196**	**824**	**4**	**828**							**828**	**4496**	**92**	**4588**

All Vehicles Time Per Hour	SOUTH *Hawkesbury Road*										WEST -										TOTAL		TOTAL
	L			T			R				L			T			R						
	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	LIGHT	HEAVY	Σ	TOTAL	LIGHT	HEAVY	
7:00 - 8:00				365	11	**376**	51	2	**53**	**429**											755	27	**782**
7:15 - 8:15				395	10	**405**	51	1	**52**	**457**											817	25	**842**
7:30 - 8:30				424	8	**432**	51	1	**52**	**484**											858	24	**882**
7:45 - 8:45				421	8	**429**	49	2	**51**	**480**											861	26	**887**
8:00 - 9:00				409	8	**417**	63	2	**65**	**482**											830	24	**854**
Period End				**2014**	**45**	**2059**	**265**	**8**	**273**	**2332**											**4121**	**126**	**4247**
16:00 - 17:00				245	8	**253**	50	3	**53**	**306**											926	23	**949**
16:15 - 17:15				240	7	**247**	49	3	**52**	**299**											914	19	**933**
16:30 - 17:30				241	7	**248**	54	3	**57**	**305**											897	18	**915**
16:45 - 17:45				251	7	**258**	52	1	**53**	**311**											878	16	**894**
17:00 - 18:00				272	6	**278**	65	0	**65**	**343**											881	16	**897**
Period End				**1249**	**35**	**1284**	**270**	**10**	**280**	**1564**											**4496**	**92**	**4588**

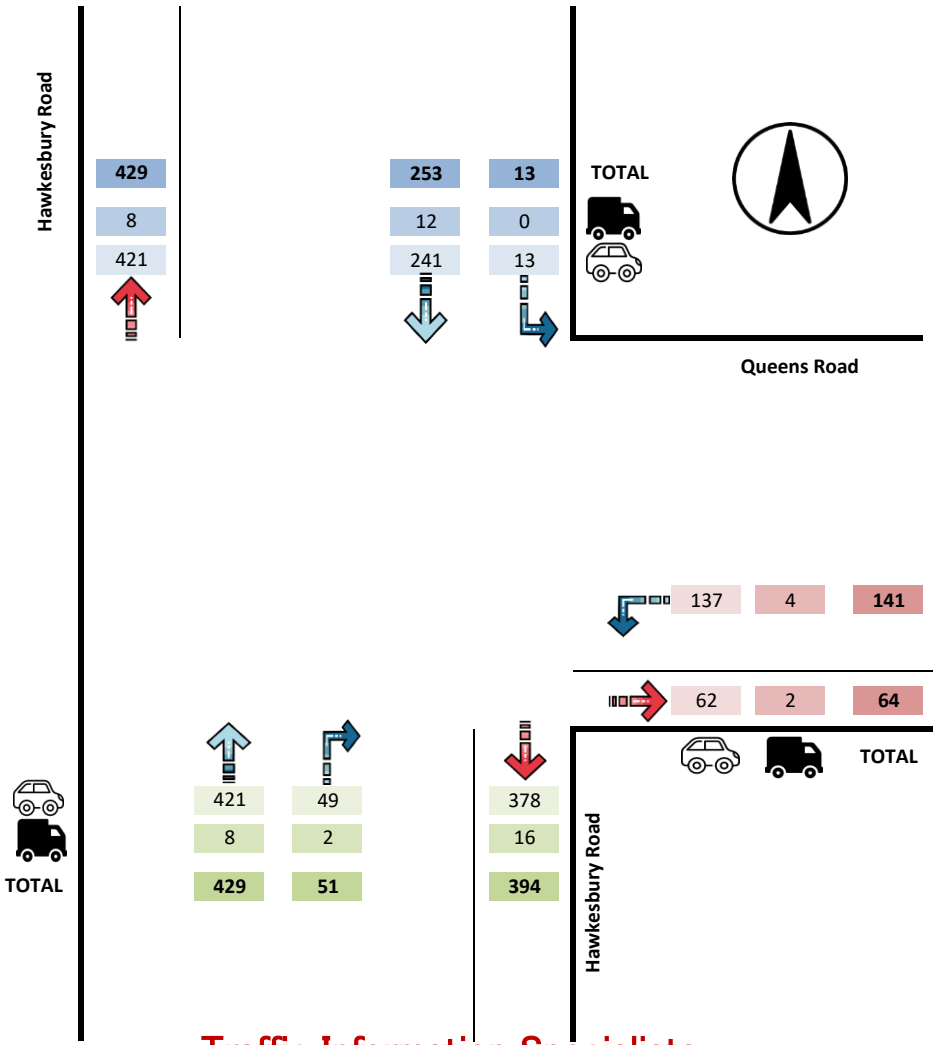
Traffic Information Specialists
ABN: 42 613 389 923
Email info@trafficinfospecialist.com.au

Location	Hawkesbury Road	Duration	0700 - 0900
	Queens Road		1600 - 1800
	Hawkesbury Road		-
	-	Day/Date	Thursday, September 27, 2018
Suburb	WESTMEAD	Weather	-

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	AM
PEAK		
7:45	-	8:45



-

Traffic Information Specialists

ABN: 42 613 389 923

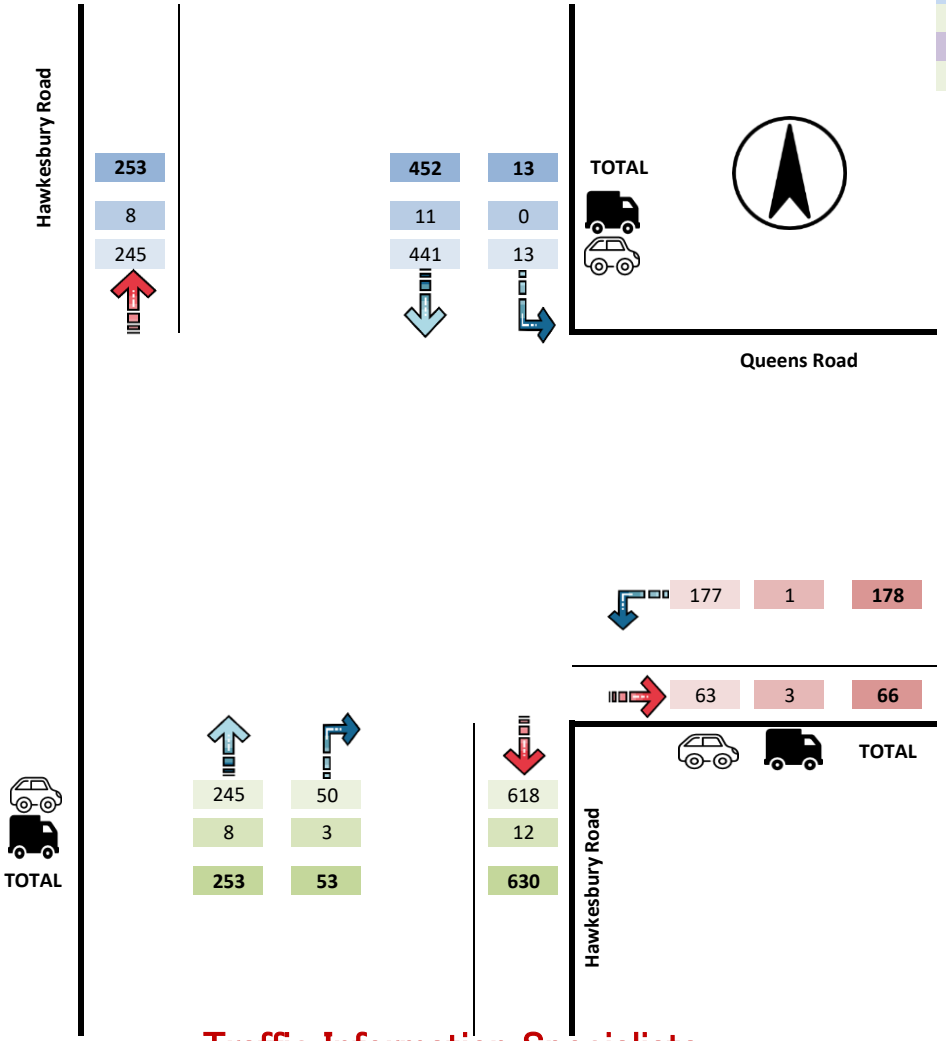
Email info@trafficinfospecialist.com.au

Location	**Hawkesbury Road**	**Duration**	**0700 - 0900**
	Queens Road		**1600 - 1800**
	Hawkesbury Road		**-**
	-	**Day/Date**	**Thursday, September 27, 2018**
Suburb	**WESTMEAD**	**Weather**	**-**

DATA SELECTION

Select Time: PEAK

TIME RANGE		
PEAK	-	PM
PEAK		
16:00	-	17:00



-

Traffic Information Specialists

ABN: 42 613 389 923

Email info@trafficinfospecialist.com.au

Appendix D

Reduced Architectural Plans

LEGEND AMENDED

PARKING BREAKDOWN BY LEVEL

LEVEL	PARKING	ACCESSIBLE	BICYCLE	MOTORCYCLE
B2	43	1	10	2
B3	43	1	10	4
B4	44	6	10	2
TOTAL	**130**	**8**	**30**	**8**

PARKING BREAKDOWN BY USE

COMMERCIAL & RETAIL B2, B3	73	(2 ACCESSIBLE) (2 SMALL CAR SPACE)
HOTEL B3, B4	19	(2 ACCESSIBLE)
RESIDENT B4	33	(3 ACCESSIBLE) (2 SMALL CAR SPACE)
VISITORS B4	5	(1 ACCESSIBLE)

CAR PARK DIMENSIONS (M)

TYPICAL PARKING BAY	2.6 X 5.5
TYPICAL AISLE WIDTH	6.6
SMALL CAR PARK BAY	2.3 X 5.0
SMALL CAR AISLE WIDTH	5.8
BICYCLE PARKING BAY	0.5 X 2.0
MOTORCYCLE PARKING BAY	1.2 X 2.5

PARKING LAYOUT AMENDED

LEGEND AMENDED

CORE AND BIKE PARKING AMENDED

CORE AND LEVEL AMENDED

PARKING LEGEND

- COMMERCIAL / RETAIL
- HOTEL
- RESIDENTIAL
- VISITOR
- BICYCLE
- MOTORCYCLE

RAMP AND PARKING LAYOUT AMENDED

B4 CAR PARK

NOTE:
PARKING LAYOUT SUBJECT TO FURTHER COORDINATION

FIRE STAIR 02
LIFT SHAFT
SUPERMARKET LIFT SHAFT
CAR PARK SUPPLY AIR RISER
CAR PARK SUPPLY AIR FAN ROOM
RESIDENT STORES
ABOVE GROUND SEWER PUMPWELL
CONVEX MIRROR
RL 19100
RAMP FROM B3
RAMP ABOVE
TANK CHAMBER (DIESEL STORAGE)
UP
MT
COMMS
HOTEL LIFT
APARTMENT LIFT
ELEC
GAS
LIFT LOBBY
RESIDENT STORES
INGROUND SEWER PIT
IN-GROUND STORM WATER PIT
FIRE STAIR 01
CAR PARK EXHAUST RISER
CAR PARK EXHAUST FAN ROOM
PLENUM

General Notes

1. Do not scale drawings. Dimensions govern.
2. All dimensions are in millimetres unless noted otherwise.
3. All dimensions shall be verified on site before proceeding with the work
4. All omissions or discrepancies shall be notified to the architect
5. Mechanical and Electrical plant and services shown are indicative only. Refer to Service Engineers drawings.
6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION
B	26.10.2018	REVISED DA

NOTE

PLANS ARE PRELIMINARY ONLY BASED ON DA SET. SUBJECT TO STRUCTURAL AND SERVICES COORDINATION, GENERAL DESIGN DEVELOPMENT AND CONSTRUCTION TOLERANCES.

RL 31.000 SURVEY LEVEL

North

Project
24-26 Railway Parade Westmead 2145 NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 501, Level 5
53 Berry St, North Sydney, NSW 2060
Tel. 02 8904 1853
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LB4 CAR PARK PLAN

DEVELOPMENT APPLICATION

Project No. 16-021 Drawing No. DA111 Rev. B

LEGEND AMENDED

PARKING BREAKDOWN BY LEVEL

LEVEL	PARKING	ACCESSIBLE	BICYCLE	MOTORCYCLE
B2	43	1	10	2
B3	43	1	10	4
B4	44	6	10	2
TOTAL	**130**	**8**	**30**	**8**

PARKING BREAKDOWN BY USE

COMMERCIAL & RETAIL B2, B3	73	(2 ACCESSIBLE) (2 SMALL CAR SPACE)
HOTEL B3, B4	19	(2 ACCESSIBLE)
RESIDENT B4	33	(3 ACCESSIBLE) (2 SMALL CAR SPACE)
VISITORS B4	5	(1 ACCESSIBLE)

CAR PARK DIMENSIONS (M)

TYPICAL PARKING BAY	2.6 X 5.5
TYPICAL AISLE WIDTH	6.6
SMALL CAR PARK BAY	2.3 X 5.0
SMALL CAR AISLE WIDTH	5.8
BICYCLE PARKING BAY	0.5 X 2.0
MOTORCYCLE PARKING BAY	1.2 X 2.5

PARKING LEGEND

- COMMERCIAL / RETAIL
- HOTEL
- RESIDENTIAL
- VISITOR
- BICYCLE
- MOTORCYCLE

CORE AND BIKE PARKING LAYOUT AMENDED

LEGEND AMENDED

PARKING LAYOUT AMENDED

SECURE ACCESS TO HOTEL AND RESIDENT PARKING ADDED

INTERCOM FOR USE BY HOTEL (1ST STAGE) OR RESIDENT VISITORS (1ST STAGE PLUS 2ND STAGE)

1ST STAGE BOOMGATE FOR HOTEL AND RESIDENTS

BOOMGATE ACTIVATED BY DETECTOR LOOP

CORE AND PLANT ROOM AMENDED

RAMP AND PARKING LAYOUT AMENDED

SECURE ACCESS TO HOTEL STAFF AND RESIDENT / VISITOR PARKING ADDED

2ND STAGE SHUTTER DOOR FOR RESIDENT, VISITORS AND HOTEL STAFF

B3 CAR PARK

NOTE:
PARKING LAYOUT SUBJECT TO FURTHER COORDINATION

TRADE WASTE TANKS GREASE INTERCEPTORS
FIRE STAIR 02
GREASE ARRESTOR ROOM
MEDICAL CENTRE, TAVERN, F&B LIFT
MEDICAL CENTRE, TAVERN, F&B LIFT
LIFT LOBBY
SUPERMARKET PASSENGER LIFT
SUPERMARKET PASSENGER LIFT
CAR PARK SUPPLY AIR RISER
CAR PARK SUPPLY AIR FAN ROOM
GREASE TRAP
CONVEX MIRROR
CONVEX MIRROR
CONVEX MIRROR
RAMP FROM B2
RL 22100
MT
COMMS
HOTEL LIFT
HOTEL LIFT
ELEC
BM
APARTMENT LIFT
APARTMENT LIFT
GAS
HYD
LIFT LOBBY
UP
RAMP TO B4
PLANT ROOM
SUPERMARKET GREASE TRAP ROOM
RL 22100
FIRE STAIR 01
CAR PARK EXHAUST RISER
CAR PARK EXHAUST FAN ROOM
PLENUM

48540
8400 8400 8400 8400 6880 8060
10850 9100 10200 9100 3330
5500 2600 6500 5500 6400 6600 5500 TYP. 2600 TYP. 900 2600 2600 180 6560 300

Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION
B	26.10.2018	REVISED DA

NOTE

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RL 31.000 SURVEY LEVEL

North

Project
24-26 Railway Parade Westmead 2145 NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 501, Level 5
53 Berry St, North Sydney, NSW 2060
Tel. 02 8904 1853
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LB3 CAR PARK PLAN

DEVELOPMENT APPLICATION

Project No. 16-021 Drawing No. DA112 Rev. B

LEGEND AMENDED

PARKING BREAKDOWN BY LEVEL

LEVEL	PARKING	ACCESSIBLE	BICYCLE	MOTORCYCLE
B2	43	1	10	2
B3	43	1	10	4
B4	44	6	10	2
TOTAL	**130**	**8**	**30**	**8**

PARKING BREAKDOWN BY USE

COMMERCIAL & RETAIL B2, B3	73	(2 ACCESSIBLE) (2 SMALL CAR SPACE)
HOTEL B3, B4	19	(2 ACCESSIBLE)
RESIDENT B4	33	(3 ACCESSIBLE) (2 SMALL CAR SPACE)
VISITORS B4	5	(1 ACCESSIBLE)

CAR PARK DIMENSIONS (M)

TYPICAL PARKING BAY	2.6 X 5.5
TYPICAL AISLE WIDTH	6.6
SMALL CAR PARK BAY	2.3 X 5.0
SMALL CAR AISLE WIDTH	5.8
BICYCLE PARKING BAY	0.5 X 2.0
MOTORCYCLE PARKING BAY	1.2 X 2.5

PARKING LAYOUT AMENDED

PARKING LEGEND

LEGEND AMENDED

- COMMERCIAL / RETAIL
- HOTEL
- RESIDENTIAL
- VISITOR
- BICYCLE
- MOTORCYCLE

CORE AND BIKE PARKING LAYOUT AMENDED

CORE AND LEVEL AMENDED

RAMP AND PARKING LAYOUT AMENDED

General Notes

1. Do not scale drawings. Dimensions govern.
2. All dimensions are in millimetres unless noted otherwise.
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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION
B	26.10.2018	REVISED DA

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RL 31.000 SURVEY LEVEL

North

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24-26 Railway Parade Westmead 2145
NSW

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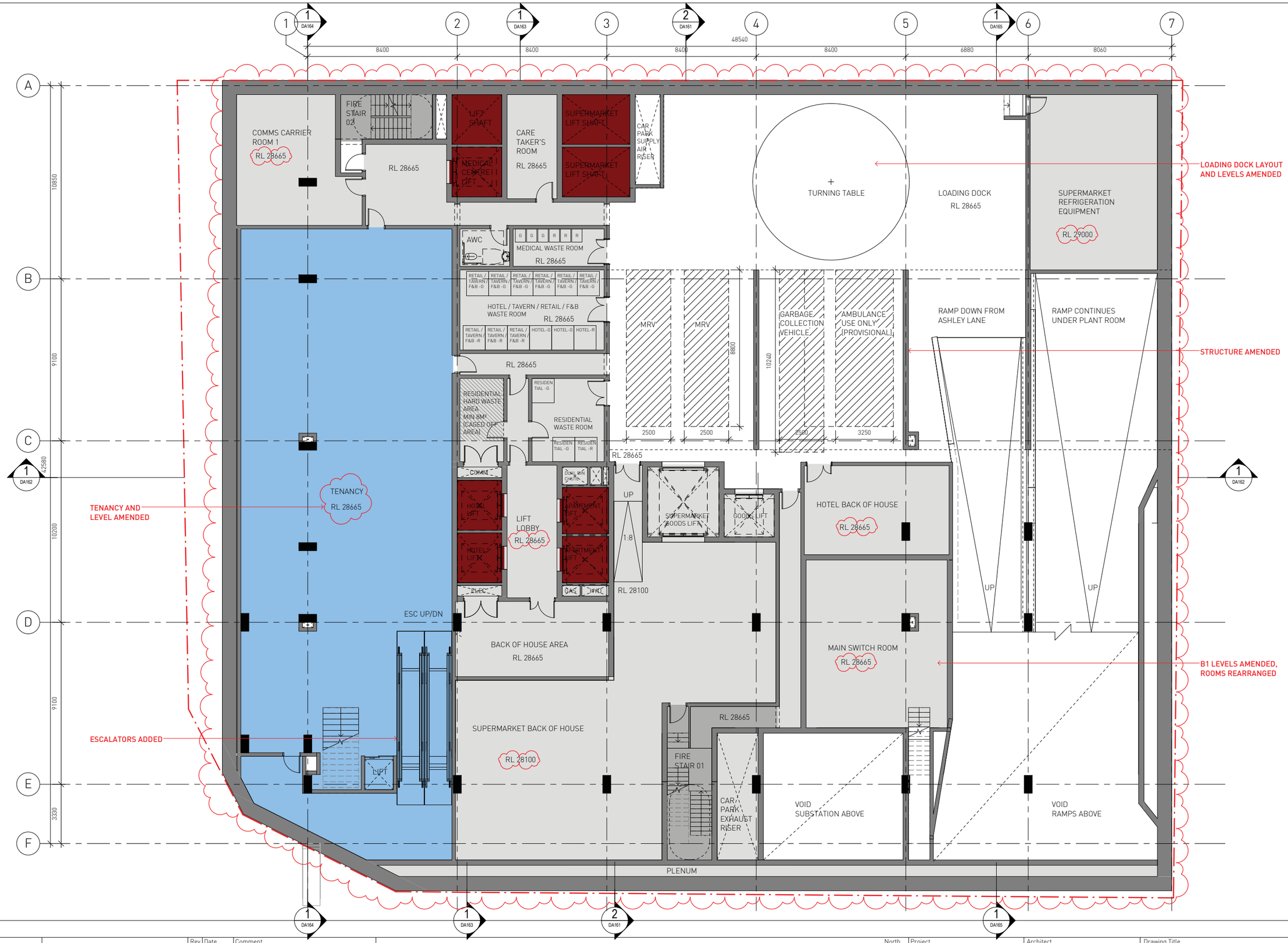
53 Berry St, North Sydney, NSW 2060
Tel. 02 8904 1853
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LB2 CAR PARK PLAN

DEVELOPMENT APPLICATION

16-021 DA113 B
Project No. Drawing No. Rev.



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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION
B	26.10.2018	REVISED DA

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RL 31.000 SURVEY LEVEL

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
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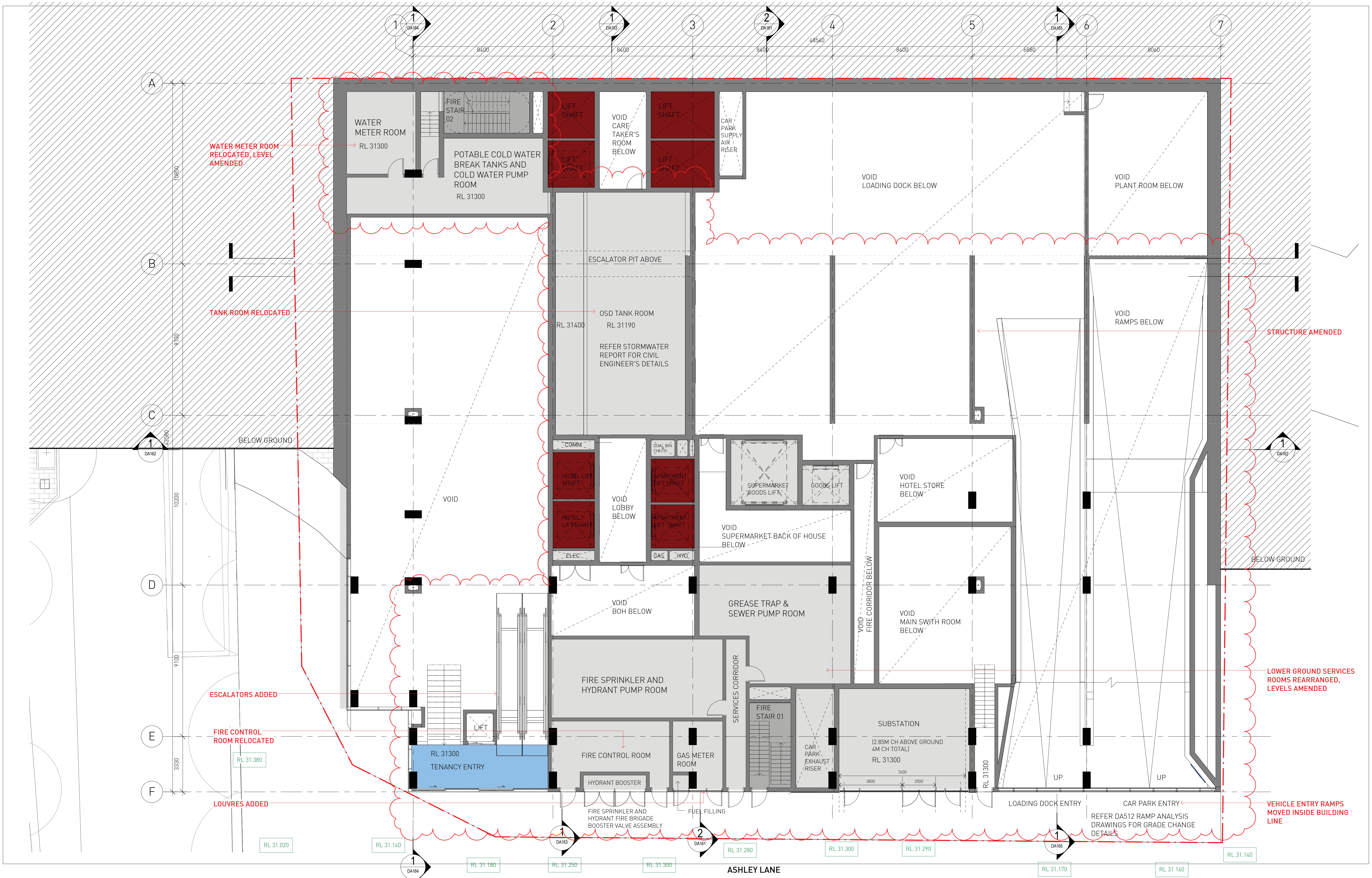
Tel. 02 8904 1853
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LB1 TENANCY_STORE_LOADING DOCK PLAN

DEVELOPMENT APPLICATION

16-021 DA114 B
Project No. Drawing No. Rev.



WATER METER ROOM RELOCATED, LEVEL AMENDED
TANK ROOM RELOCATED
ESCALATORS ADDED
FIRE CONTROL ROOM RELOCATED
LOUVRES ADDED
STRUCTURE AMENDED
LOWER GROUND SERVICES ROOMS REARRANGED, LEVELS AMENDED
VEHICLE ENTRY RAMPS MOVED INSIDE BUILDING LINE
WATER METER ROOM
RL 31300
FIRE STAIR 02
POTABLE COLD WATER BREAK TANKS AND COLD WATER PUMP ROOM
RL 31300
LIFT SHAFT
VOID CARE TAKER'S ROOM BELOW
CAR PARK SUPPLY AIR RISER
VOID LOADING DOCK BELOW
VOID PLANT ROOM BELOW
ESCALATOR PIT ABOVE
OSD TANK ROOM
RL 31400
RL 31190
REFER STORMWATER REPORT FOR CIVIL ENGINEER'S DETAILS
VOID RAMPS BELOW
VOID
BELOW GROUND
COMM
HOTEL LIFT SHAFT
VOID LOBBY BELOW
APARTMENT LIFT SHAFT
DUAL BIN CHUTE
ELEC
GAS
HYD
SUPERMARKET GOODS LIFT
GOODS LIFT
VOID HOTEL STORE BELOW
VOID SUPERMARKET BACK OF HOUSE BELOW
VOID BOH BELOW
GREASE TRAP & SEWER PUMP ROOM
VOID FIRE CORRIDOR BELOW
VOID MAIN SWITH ROOM BELOW
FIRE SPRINKLER AND HYDRANT PUMP ROOM
SERVICES CORRIDOR
FIRE STAIR 01
CAR PARK EXHAUST RISER
SUBSTATION
[2.85M CH ABOVE GROUND 4M CH TOTAL]
RL 31300
LIFT
RL 31300
TENANCY ENTRY
FIRE CONTROL ROOM
GAS METER ROOM
HYDRANT BOOSTER
FIRE SPRINKLER AND HYDRANT FIRE BRIGADE BOOSTER VALVE ASSEMBLY
FUEL FILLING
LOADING DOCK ENTRY
CAR PARK ENTRY
REFER DA512 RAMP ANALYSIS DRAWINGS FOR GRADE CHANGE DETAILS
UP
RL 31300
ASHLEY LANE
RL 31.380
RL 31.020
RL 31.140
RL 31.180
RL 31.250
RL 31.300
RL 31.280
RL 31.300
RL 31.290
RL 31.170
RL 31.160
RL 31.140
48540
8400
8400
8400
8400
6860
8060
10850
9100
10200
9100
3330
2380
7600
3800
2000

General Notes

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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

Rev.	Date	Comment
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B	26.10.2018	REVISED DA

NOTE

PLANS ARE PRELIMINARY ONLY BASED ON DA SET. SUBJECT TO STRUCTURAL AND SERVICES COORDINATION, GENERAL DESIGN DEVELOPMENT AND CONSTRUCTION TOLERANCES.

RL 31.000 SURVEY LEVEL

North

Project
24-26 Railway Parade Westmead 2145 NSW

Client
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Tel. 02 8904 1853
www.sissonsarchitects.com

Scale
1 : 100 @A1 HALF SCALE @ A3

Drawing Title
LOWER GROUND - ASHLEY LANE

DEVELOPMENT APPLICATION

16-021 DA115 B
Project No. Drawing No. Rev.

PEDESTRIAN CROSSING WIDENED TO ORIGINAL VPA WIDTH

BUILDING ENTRY AND TENANCY UPDATED

FIRE CONTROL ROOM RELOCATED TO LOWER GROUND

ESCALATOR ADDED

HOTEL / APARTMENT LOBBIES MERGED

LEVELS AMENDED

LANDING LEVEL AMENDED

LANDSCAPING AND RAMP AMENDED

CANOPY ABOVE EXTENDED

LINE OF SECURITY ADDED FOR PUBLIC STAIRS

LEVELS AMENDED

TAVERN ENTRY
TENANCY 001 RL 34500
FIRE STAIR 03
FIRE STAIR 02
MEDICAL CENTRE, TAVERN, F&B LIFT
LIFT LOBBY RL 34500
SUPERMARKET PASSENGER LIFT
CAR PARK SUPPLY AIR RISER
TENANCY 002 RL 34500
TENANCY 003
1:14
UP
SEATING AREA
RL34500
ESCALATORS UP
ARCADE
PUBLIC OPEN SPACE REFER LANDSCAPE DRAWINGS FOR DETAILS
PUBLIC STAIRS
TENANCY 004
SUPERMARKET ENTRY
HOTEL & APARTMENT LOBBY
MAIL BOXES
SUPERMARKET LIQUOR STORE
SUPERMARKET EXIT
FIRE STAIR 05
FIRE STAIR 04
COMMS
DUAL RISER CHUTE
HOTEL LIFT
APARTMENT LIFT
SUPERMARKET GOODS LIFT
GOODS LIFT SHAFT
ELEC
DE
GAS
HYD
SUPERMARKET TRADING FLOOR RL 34500
CAR PARK EXHAUST RISER
EXHAUST FAN ROOM (SUBSTATION BELOW)
LOADING DOCK RAMP BELOW
CAR PARK RAMP BELOW
RAILWAY PARADE
BUS STOPPING ZONE
ASHLEY LANE
RL 34.150
RL 34.400
RL 33.660
RL 33.010
RL 32.660
RL 32.190
RL 31.380
RL 31.020
RL 31.140
RL 31.180
RL 31.250
RL 31.300
RL 31.280
RL 31.300
RL 31.290
RL 31.170
RL 31.160
RL 31.140
RL 35.010
RL34250
RL34110
RL34040
RL33560
RL35010
8400
8400
8400
48540
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8060
10850
9100
10200
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3330
42580
A
B
C
D
E
F
1 DA164
1 DA163
2 DA161
1 DA165
1 DA162
1 DA162

General Notes	Copyright	Rev	Date	Comment
1. Do not scale drawings. Dimensions govern. 2. All dimensions are in millimetres unless noted otherwise. 3. All dimensions shall be verified on site before proceeding with the work 4. All omissions or discrepancies shall be notified to the architect 5. Mechanical and Electrical plant and services shown are indicative only. Refer to Service Engineers drawings. 6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.		A B	28.05.2018 26.10.2018	DA SUBMISSION REVISED DA

NOTE

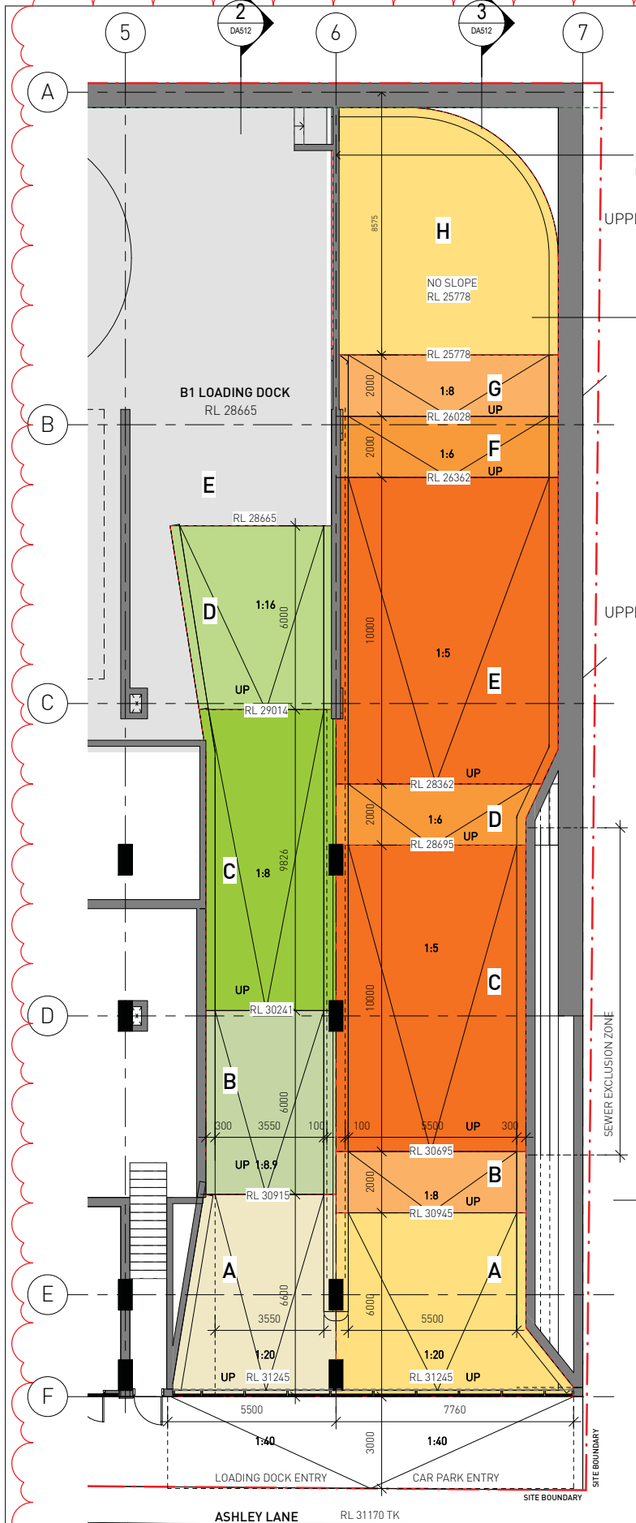
PLANS ARE PRELIMINARY ONLY BASED ON DA SET. SUBJECT TO STRUCTURAL AND SERVICES COORDINATION, GENERAL DESIGN DEVELOPMENT AND CONSTRUCTION TOLERANCES.

RL 31.000 SURVEY LEVEL

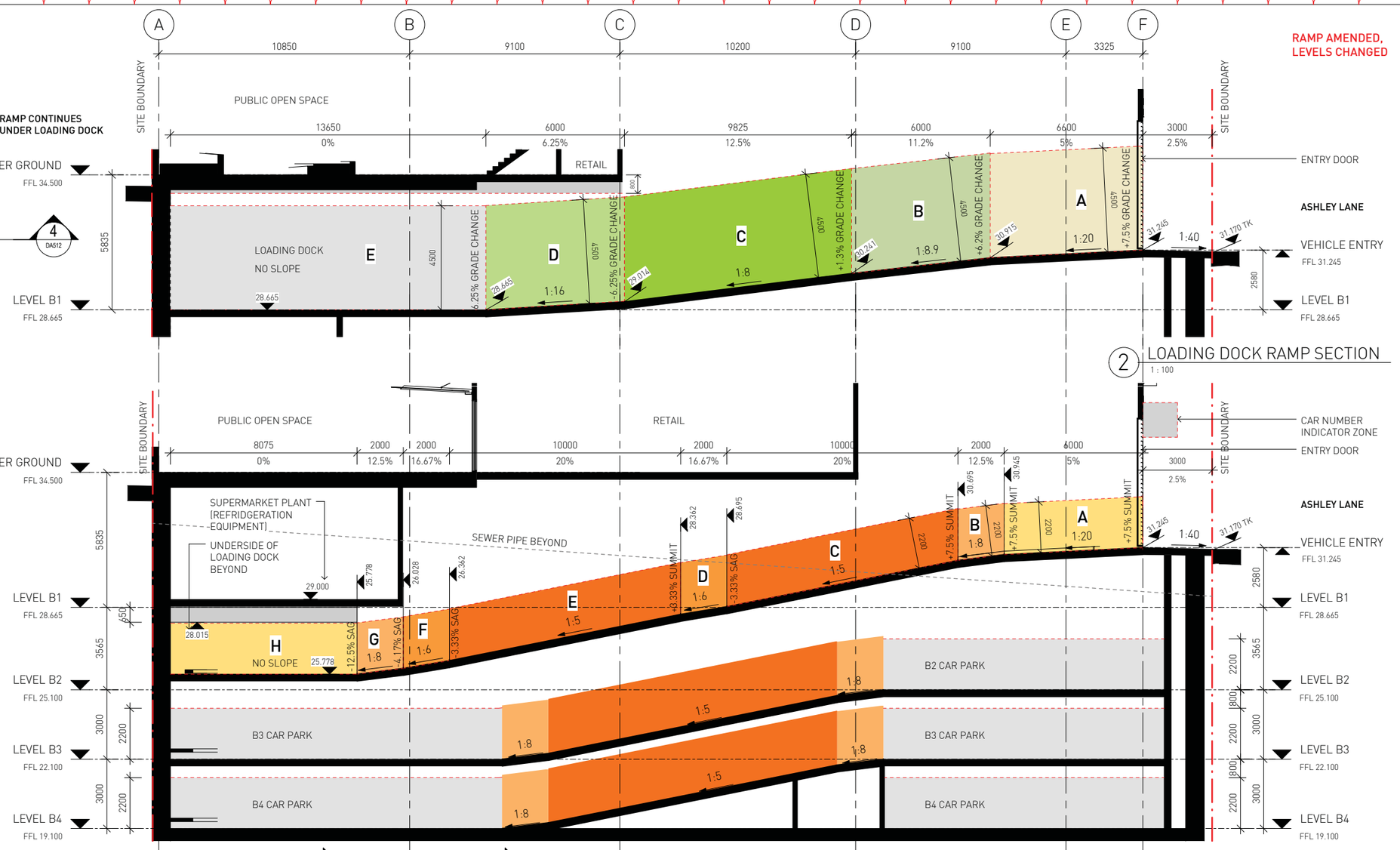
North

Project	Architect	Drawing Title
24-26 Railway Parade Westmead 2145 NSW	SISSONS ARCHITECTS Studio 501, Level 5 53 Berry St, North Sydney, NSW 2060 Tel. 02 8904 1853 www.sissonsarchitects.com	UPPER GROUND - RAILWAY PARADE DEVELOPMENT APPLICATION
Client: Drill Pty Ltd	Scale: 1 : 100 @A1 HALF SCALE @ A3	16-021 DA116 (Project No. / Drawing No.) B (Rev.)

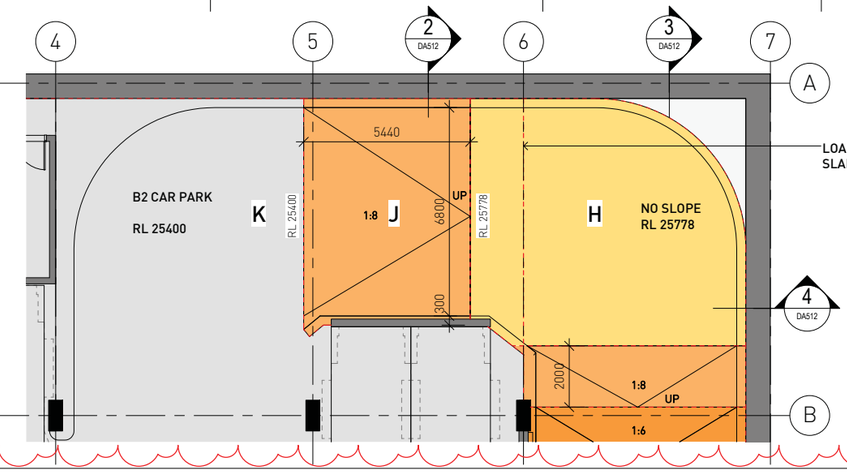
RAMP AMENDED, LEVELS CHANGED



1 VEHICLE RAMPS PLAN
1 : 100

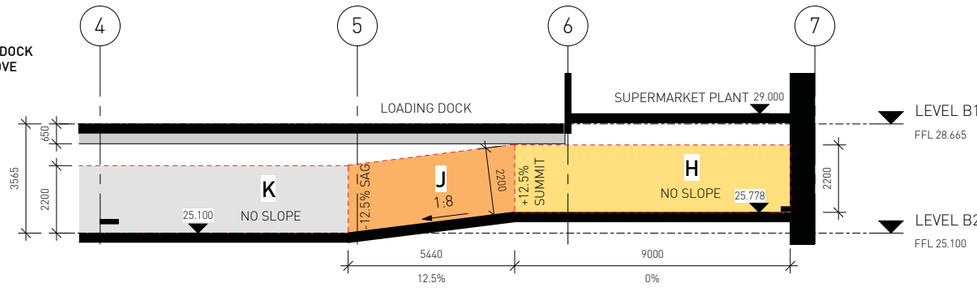


2 LOADING DOCK RAMP SECTION
1 : 100



5 B2 CAR PARK RAMP PLAN
1 : 100

3 CAR PARK RAMP SECTION 1
1 : 100



4 CAR PARK RAMP SECTION 2
1 : 100

General Notes

1. Do not scale drawings. Dimensions govern.
2. All dimensions are in millimetres unless noted otherwise.
3. All dimensions shall be verified on site before proceeding with the work
4. All omissions or discrepancies shall be notified to the architect
5. Mechanical and Electrical plant and services shown are indicative only. Refer to Service Engineers drawings.
6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION
B	26.10.2018	REVISED DA

NOTE:
REFER TRAFFIC REPORT FOR SWEPT PATHS AND OTHER DETAILS.

LOADING DOCK RAMP TO COMPLY WITH **AS 2890.2:2002**
TABLE 3.2
MAXIMUM ROADWAY AND RAMP GRADES,
AND RATES OF CHANGE OF GRADE
DESIGN VEHICLE: MRV, HRV
ROADWAY / RAMP GRADE (MAX): 1:6.5 (15.4%)
RATE OF CHANGE OF GRADE (MAX) : 1:16 (6.25%) IN 7.0M OF TRAVEL

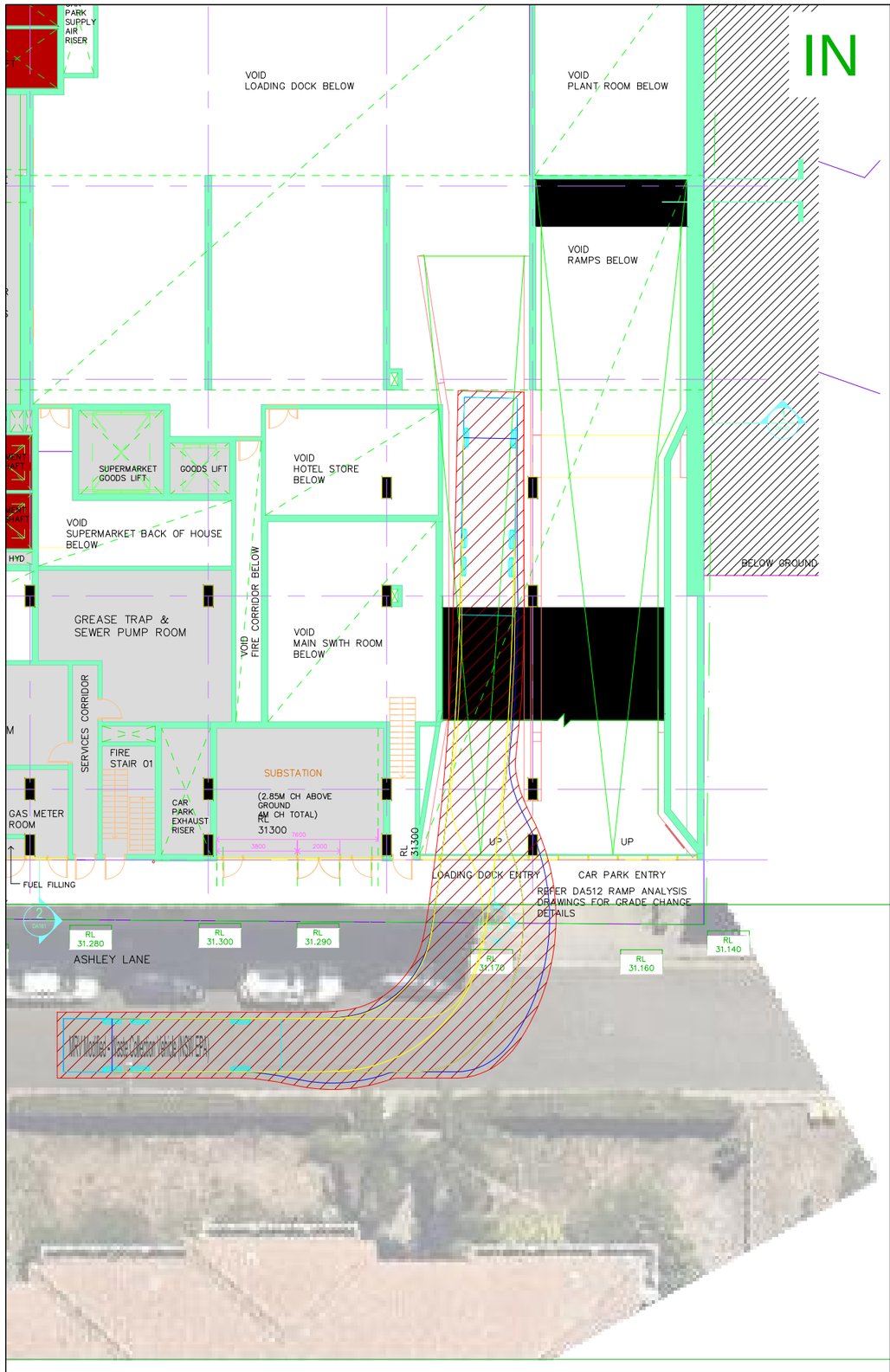
CAR PARK RAMS TO COMPLY WITH **AS 2890.1:2004**
2.5.3 CIRCULATION ROADWAY AND RAMP GRADES
a) STRAIGHT RAMPS: PUBLIC CAR PARKS:
i) LONGER THAN 20M - 1 IN 6 (16.7%) MAXIMUM
ii) UP TO 20M LONG - 1 IN 5 (20%) MAXIMUM
d) CHANGES OF GRADE
i) 12.5 % (1 IN 8) FOR SUMMIT GRADE CHANGES
ii) 15 % (1 IN 6.7) FOR SAG GRADE CHANGES
e) GRADE TRANSITIONS
TRANSITIONS OF 2M IN LENGTH WILL USUALLY BE SUFFICIENT TO CORRECT BOTTOMING OR SCRAPING AT GRADE CHANGES UP TO 18%

North

Project	24-26 Railway Parade Westmead 2145 NSW
Client	Drill Pty Ltd
Architect	SISSONS ARCHITECTS Studio 501, Level 5 53 Berry St, North Sydney, NSW 2060 Tel. 02 8904 1853 www.sissonsarchitects.com
Scale	1 : 100 @A1 HALF SCALE @ A3
Drawing Title	VEHICLE ENTRY AND RAMP ANALYSIS DEVELOPMENT APPLICATION
Project No.	16-021 DA512
Drawing No.	
Rev.	B

Appendix E

Swept Path Analysis



Notes

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

TRAFFIX is responsible for vehicle swept path diagrams and/or drawing mark-ups only. Base drawing prepared by others.

Vehicle swept path diagrams prepared using computer generated turning path software and associated CAD drawing platforms. Vehicle data based upon relevant Australian Standards (*AS/NZS 2890.1-2004 Parking facilities - Off-street car parking*, and/or *AS 2890.2-2002 Parking facilities - Off-street commercial vehicle facilities*). These standards embody a degree of tolerance, however the vehicle characteristics in these standards represent a suitable design vehicle and do not account for all variations in vehicle dimensions / specifications and/or driver ability or behaviour.

no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Sissons Architects

client

Drill Pty Ltd

scale

1:250 @ A3

0m 2 4 6 8

project

24-26 Railway Parade, Westmead

drawing prepared by

TRAFFIX
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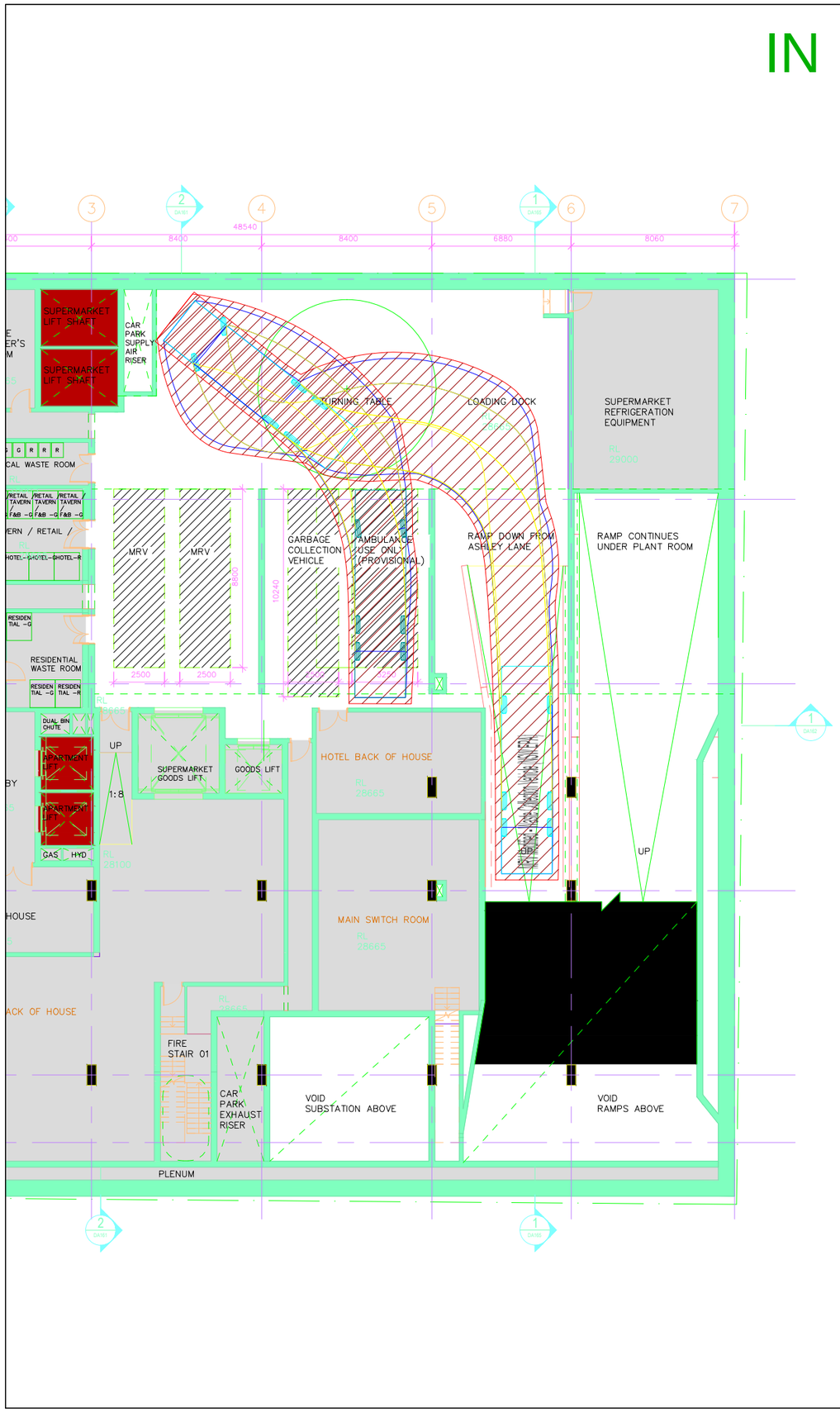
traffix
traffic & transport planners

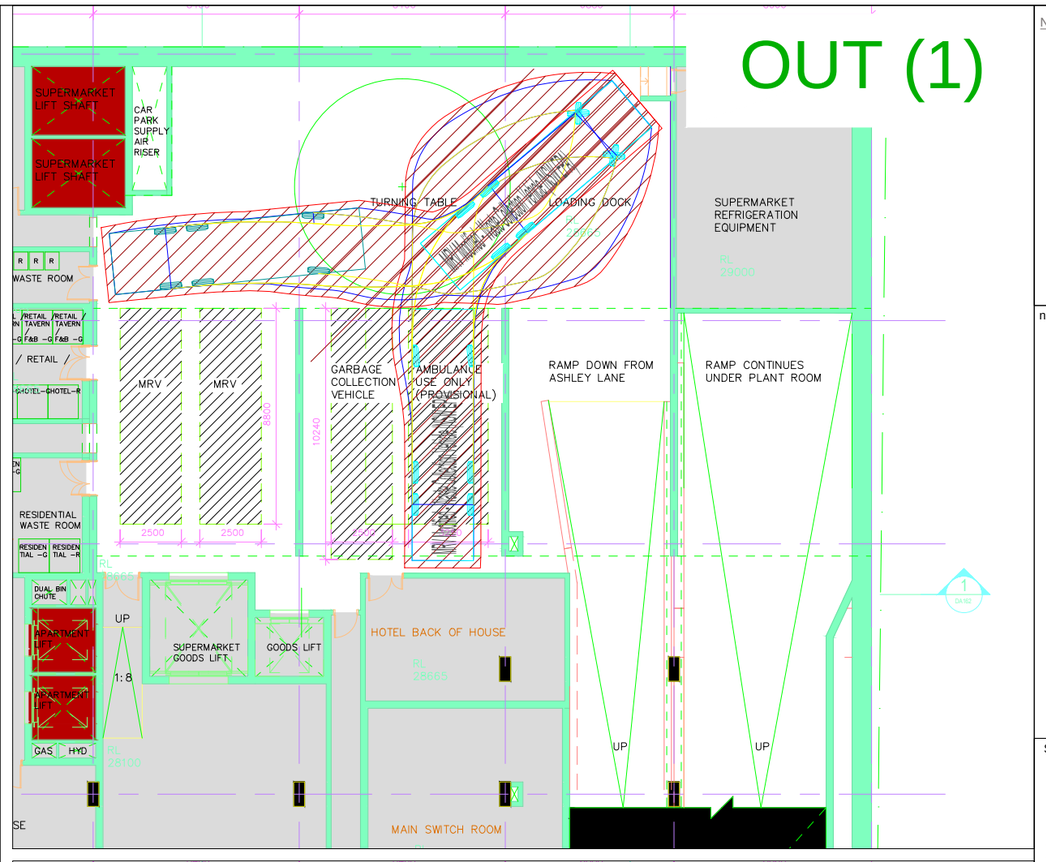
drawing title

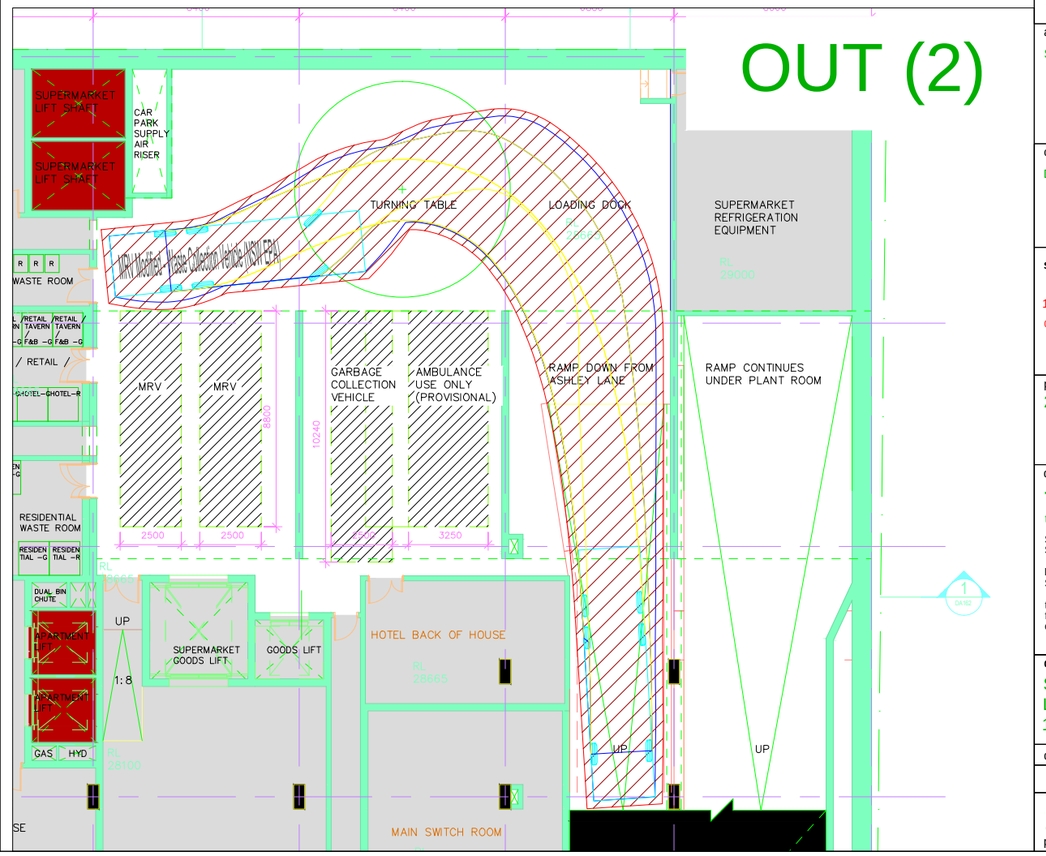
Swept Path Analysis
Ashley Lane - Loading Dock Access
10.24m Waste Collection Vehicle

drawn:	checked:	date:
KB	KB	30 Oct 18

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







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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect
Sissons Architects

client
Drill Pty Ltd

scale
1:250 @ A3
0m 2 4 6 8

project
24-26 Railway Parade, Westmead

drawing prepared by
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traffic and transport planners
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Strawberry Hills NSW 2012
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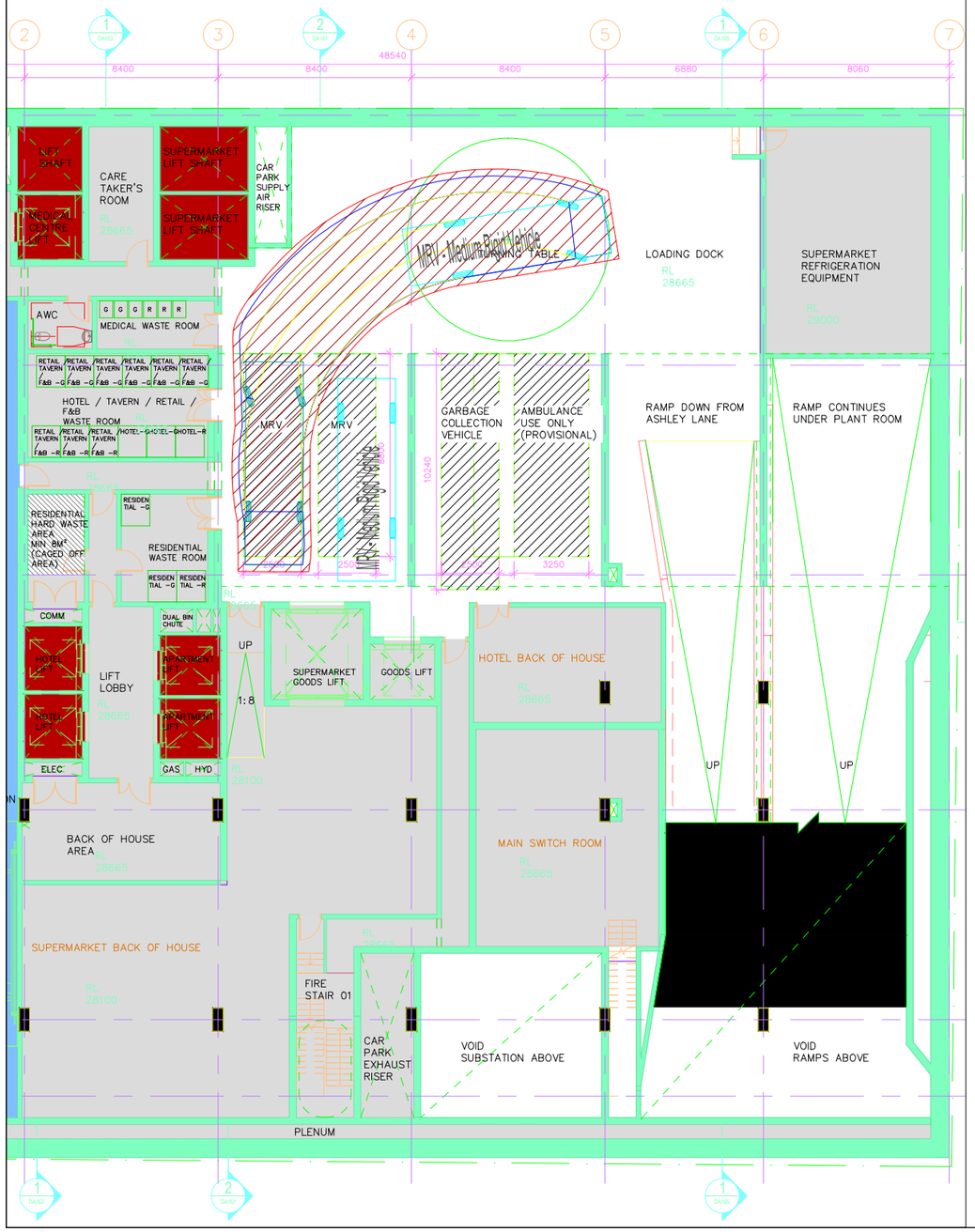
f: +61 2 9380 4481
e: info@traffix.com.au
traffix
traffic & transport planners

drawing title
Swept Path Analysis
Loading Dock
10.24m Waste Collection Vehicle

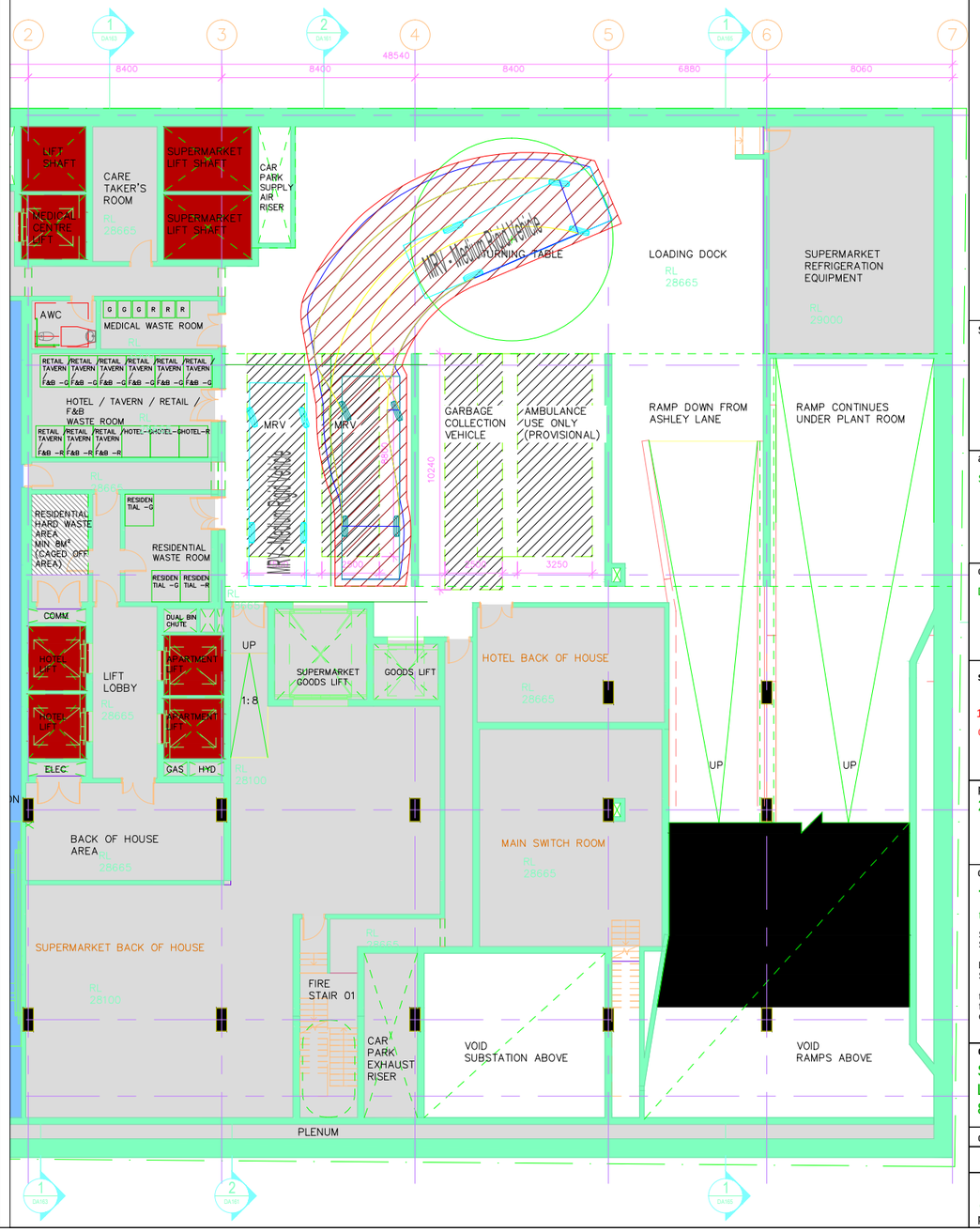
drawn:	KB	checked:	KB	date:	30 Oct 18

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

IN (1)



IN (2)



Notes

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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect
Sissons Architects

client
Drill Pty Ltd

scale
1:250 @ A3
0m 2 4 6 8

project
24-26 Railway Parade, Westmead

drawing prepared by

TRAFFIX
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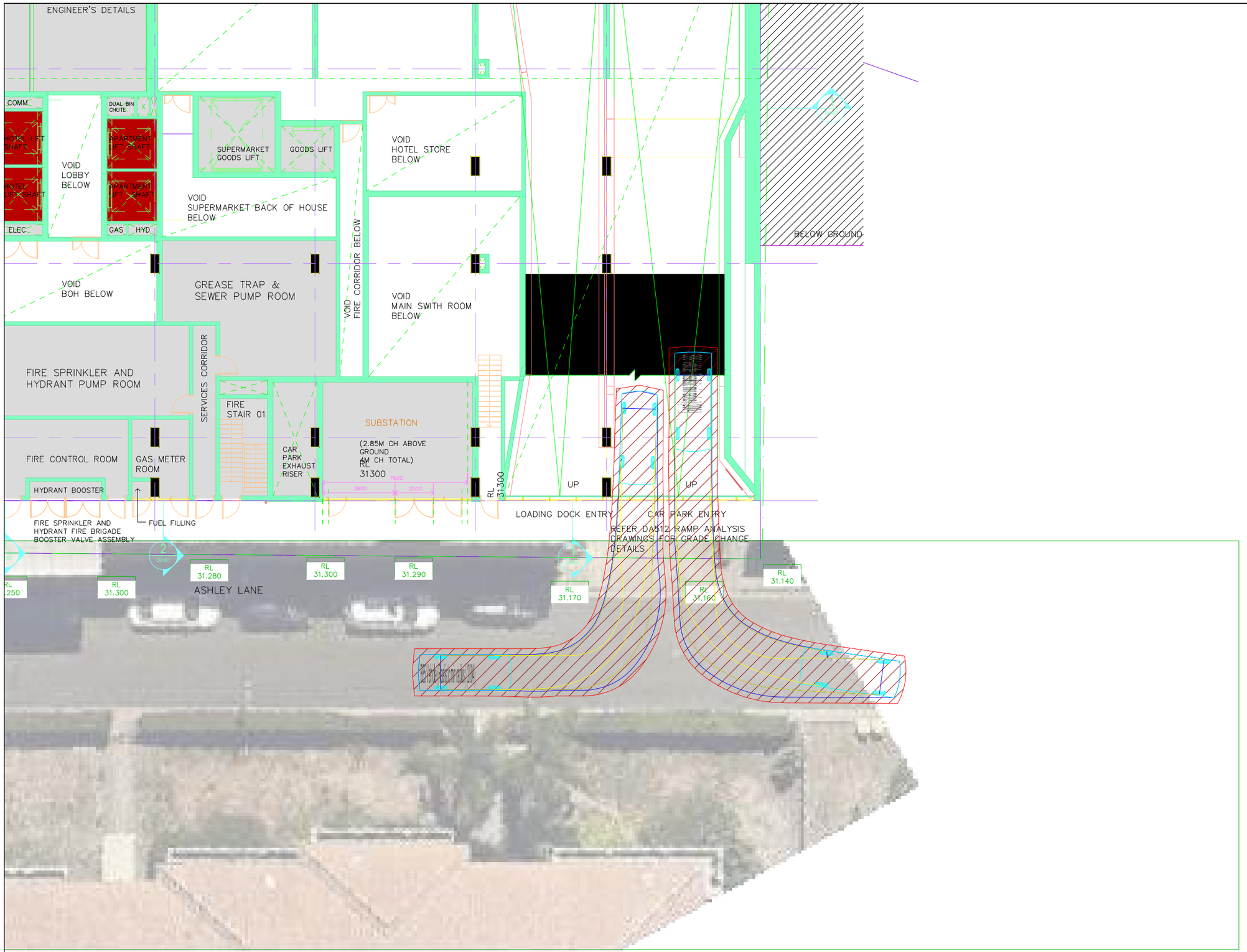
traffix
traffic & transport planners

drawing title
Swept Path Analysis
Loading Dock
8.8m Medium Rigid Vehicle

drawn:	KB	checked:	KB	date:	30 Oct 18

16.443	-	TX.03	-
project no.	drawing phase.	drawing no.	rev



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Sissons Architects

client

Drill Pty Ltd

scale

1:200 @ A3

0m 2 4 6 8

project

24-26 Railway Parade, Westmead

drawing prepared by

TRAFFIX
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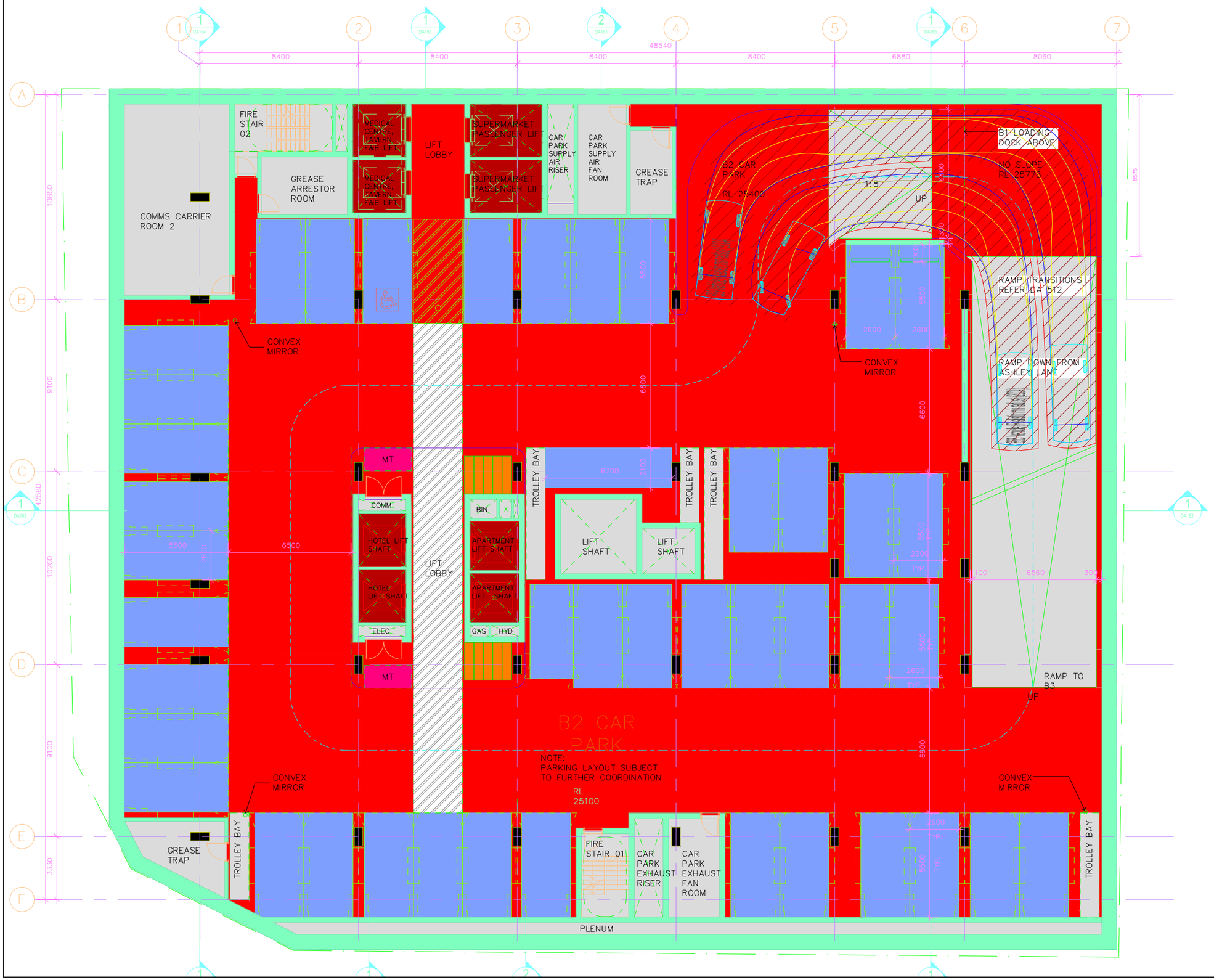
traffix
traffic & transport planners

drawing title

Swept Path Analysis
Ashley Lane - Car Park Access
B85 & B99 Vehicle

drawn:	checked:	date:
KB	KB	30 Oct 18

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



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect
Sissons Architects

client
Drill Pty Ltd

scale
1:200 @ A3
0m 2 4 6 8

project
24-26 Railway Parade, Westmead

drawing prepared by
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Strawberry Hills NSW 2012
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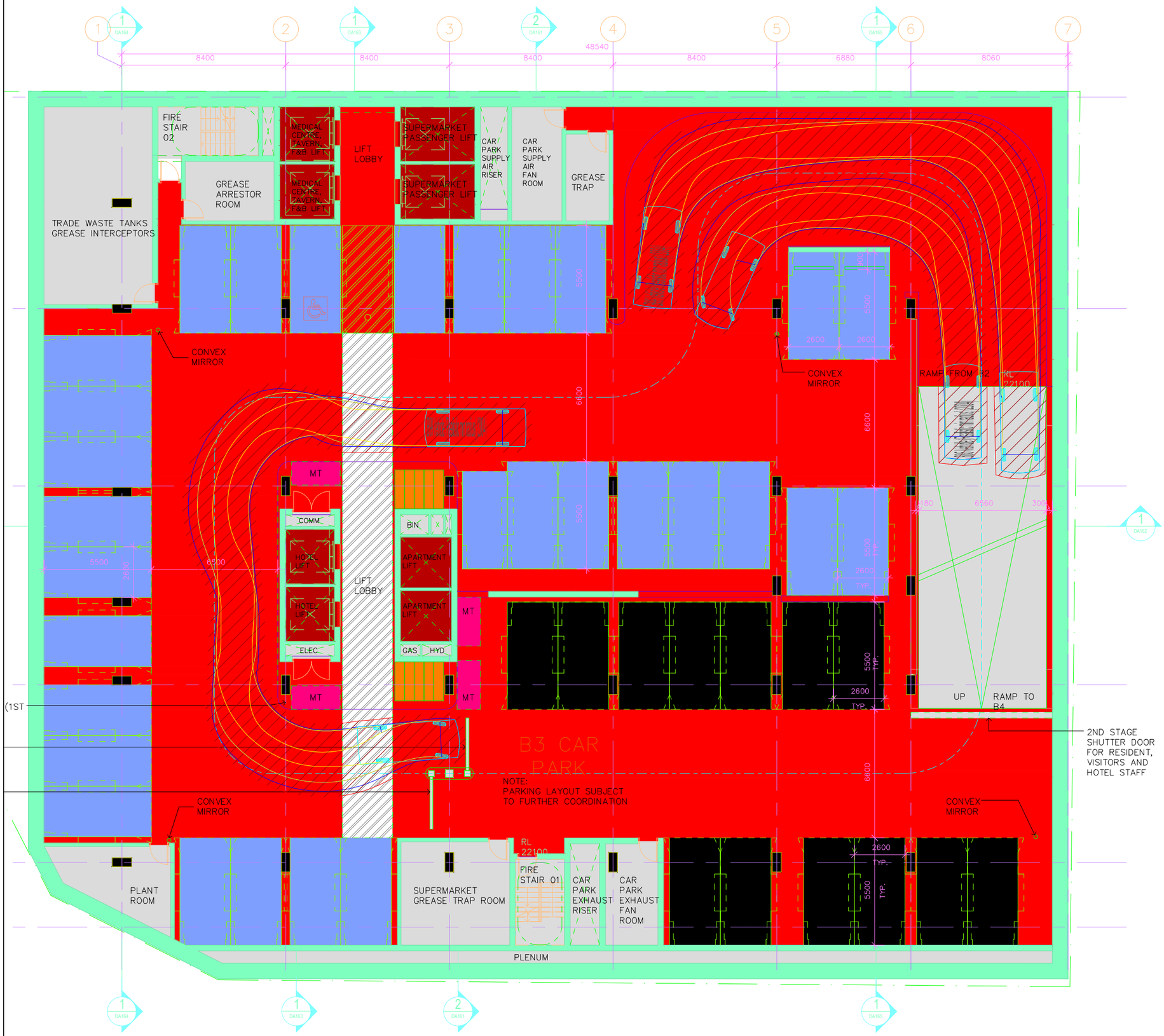
f: +61 2 9380 4481
e: info@traffix.com.au
traffix
traffic & transport planners

drawing title
Swept Path Analysis
B2 Level
B85 & B99 Vehicle

drawn:	checked:	date:
KB	KB	30 Oct 18

project no.	drawing phase.	drawing no.	rev
16.443	-	TX.05	-



LEVEL PA
B2 43
B3 43
B4 44
TOTAL 13

PARKING BRE

COMMERCIAL
B2,
B3
HOTEL
B3,
B4
RESIDENT
B4

VISITORS
B4

CAR PARK DI

TYPICAL PARK
TYPICAL AISLE

SMALL CAR P
SMALL CAR A

BICYCLE PARK
MOTORCYCLE

PARKING LEGE

COM RET

HOT

RES

VISI

BIC

MOT

Notes

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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect
Sissons Architects

client
Drill Pty Ltd

scale
1:200 @ A3
0m 2 4 6 8

project
24-26 Railway Parade, Westmead

drawing prepared by

TRAFFIX
traffic and transport planners
Suite 2.08, 50 Holt Street
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Strawberry Hills NSW 2012
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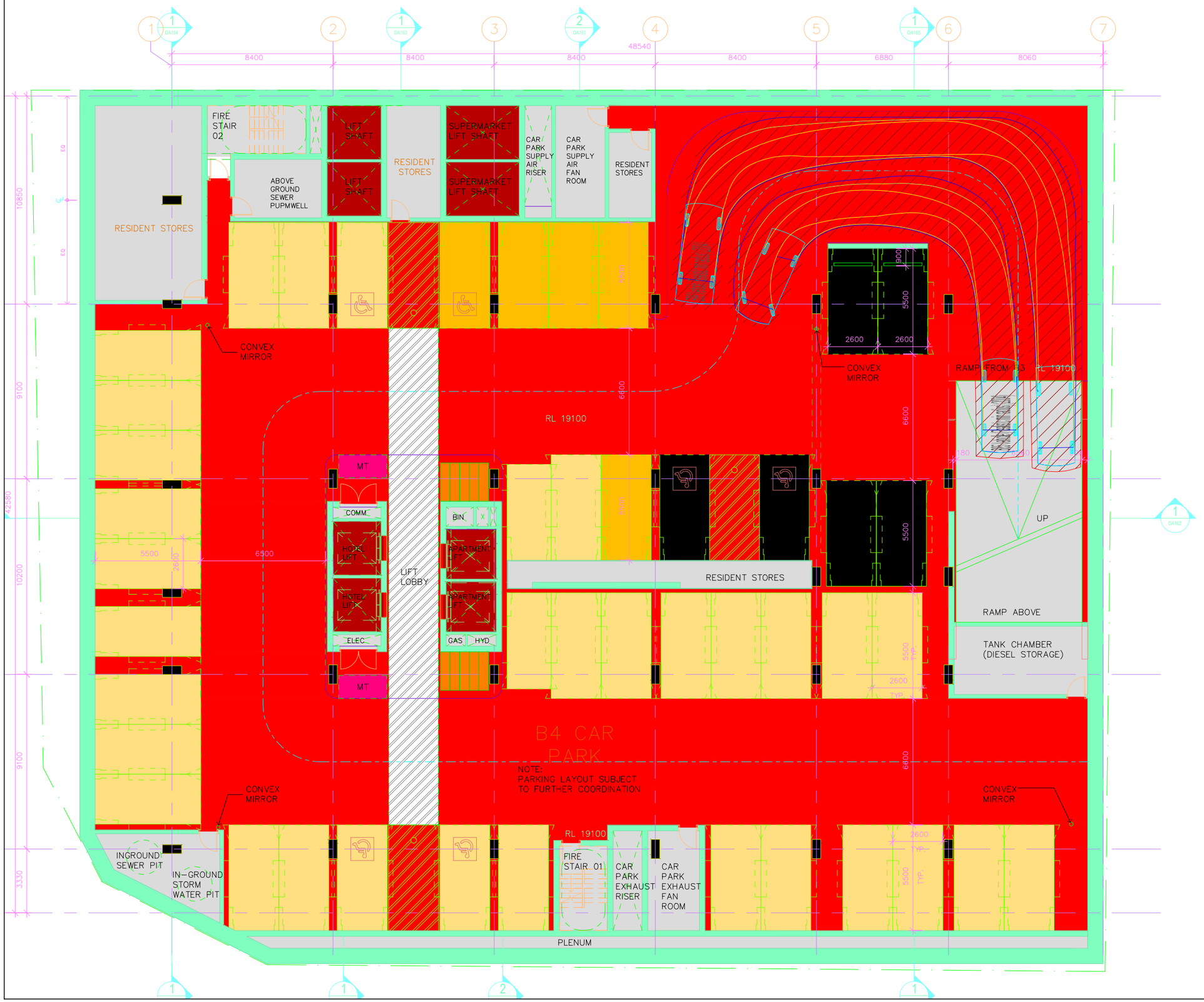
e: info@traffix.com.au
traffix
traffic & transport planners

drawing title
Swept Path Analysis
B3 Level
B85 & B99 Vehicle

drawn:	checked:	date:
KB	KB	30 Oct 18

project no.	drawing phase.	drawing no.	rev
16.443	-	TX.06	-



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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect
Sissons Architects

client
Drill Pty Ltd

scale
1:200 @ A3
0m 2 4 6 8

project
24-26 Railway Parade, Westmead

drawing prepared by
TRAFFIX
traffic and transport planners
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PO Box 1124
Strawberry Hills NSW 2012
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traffix
traffic & transport planners

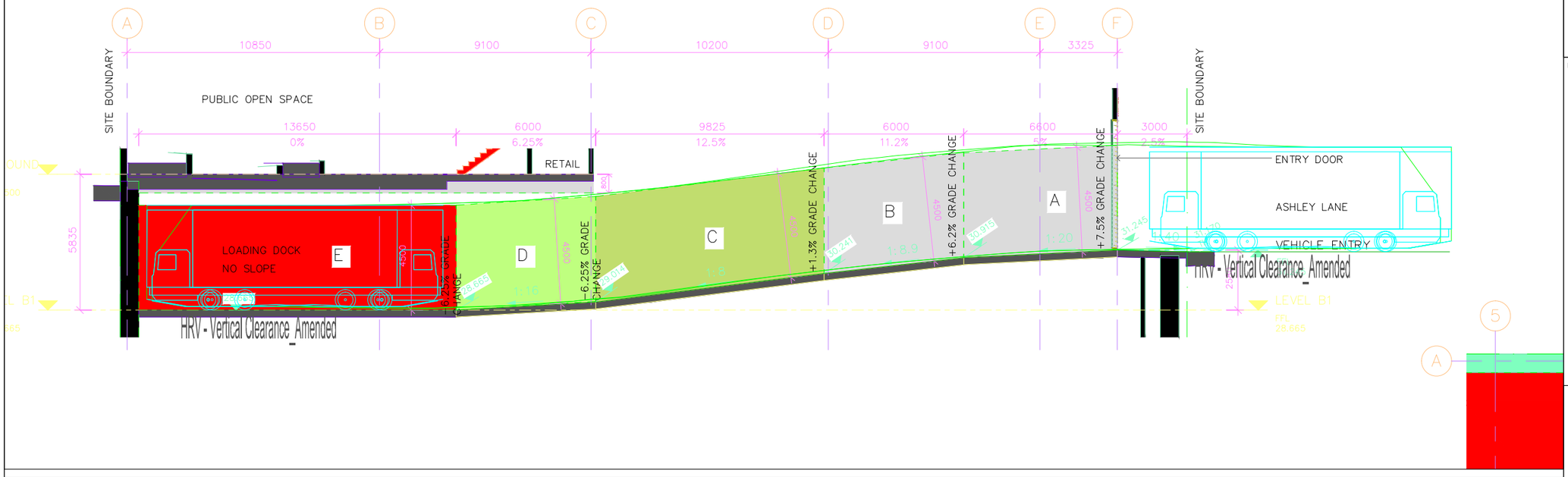
drawing title
Swept Path Analysis
B4 Level
B85 & B99 Vehicle

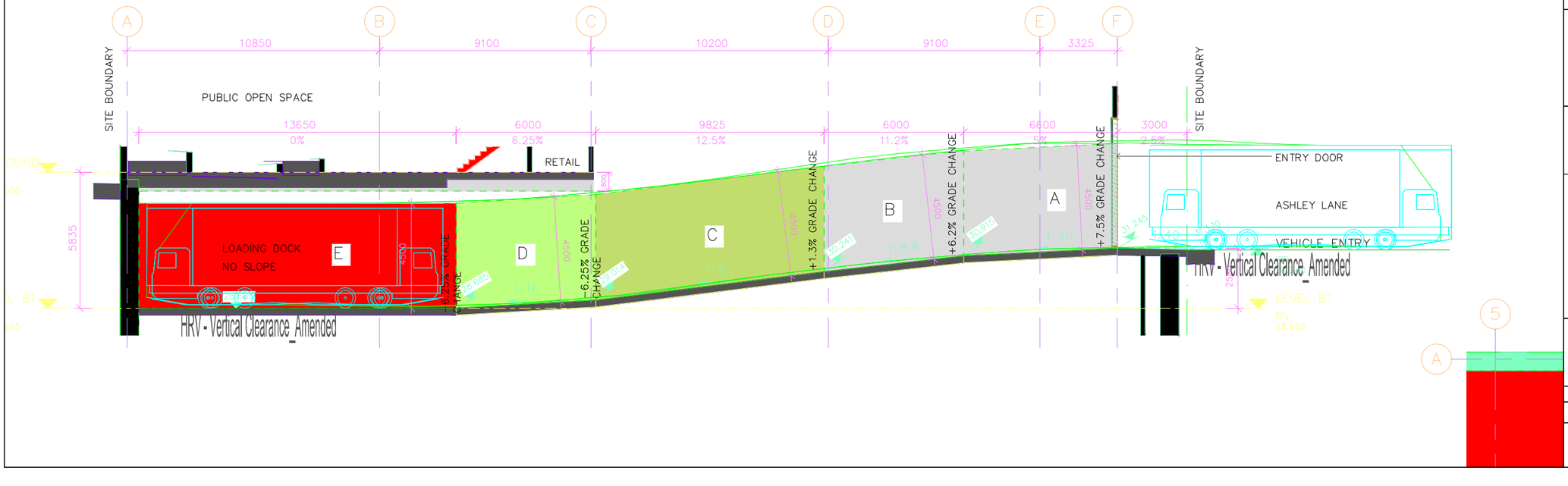
drawn:	checked:	date:
KB	KB	30 Oct 18

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

Appendix F

Vertical Clearance Test





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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Sissons Architects

client

Drill Pty Ltd

scale

1:200 @ A3

0m 2 4 6 8

project

24-26 Railway Parade, Westmead

drawing prepared by

TRAFFIX
traffic and transport planners

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Surry Hills NSW 2010

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Strawberry Hills NSW 2012

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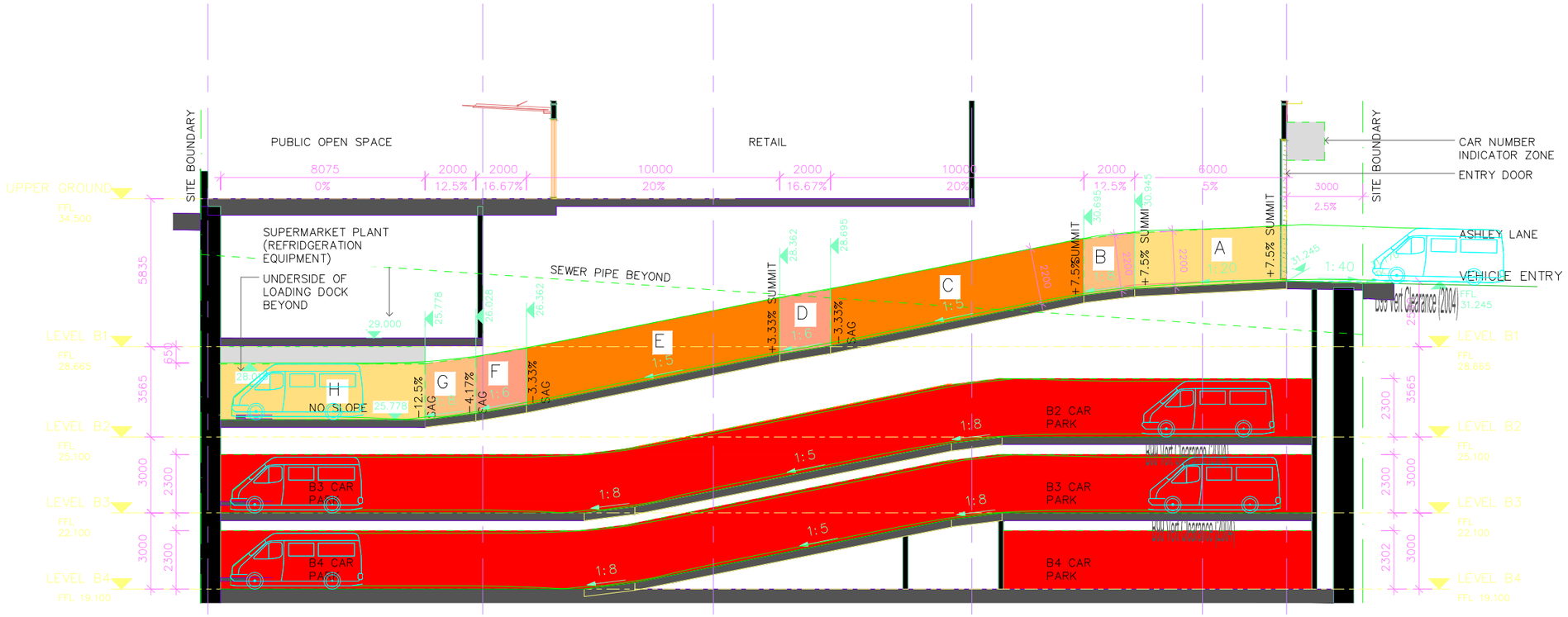
traffix
traffic & transport planners

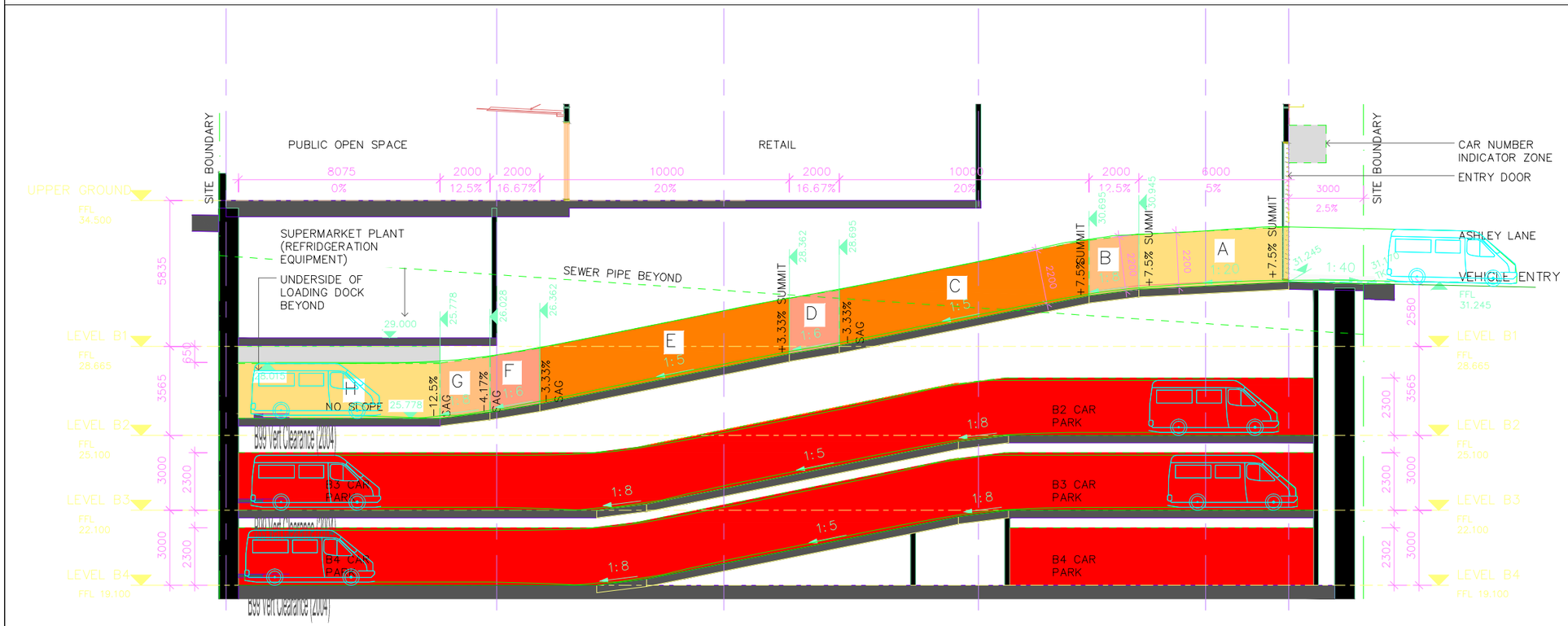
drawing title

Vertical Clearance Test
Loading Dock
12.5m Heavy Rigid Vehicle (4.5m Height)

drawn:	checked:	date:
KB	KB	31 Oct 18

project no.	drawing phase.	drawing no.	rev
16.443	-	TX.08	-





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no.	revision note	by.	date

Swept Path Legend:

- Wheel Path
- Vehicle Body Envelope
- Clearance Envelope (300mm)

architect

Sissons Architects

client

Drill Pty Ltd

scale

1:100 @ A3

0m 1 2 3 4

project

24-26 Railway Parade, Westmead

drawing prepared by

TRAFFIX
traffic and transport planners

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Surry Hills NSW 2010

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Strawberry Hills NSW 2012

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traffix
traffic & transport planners

drawing title

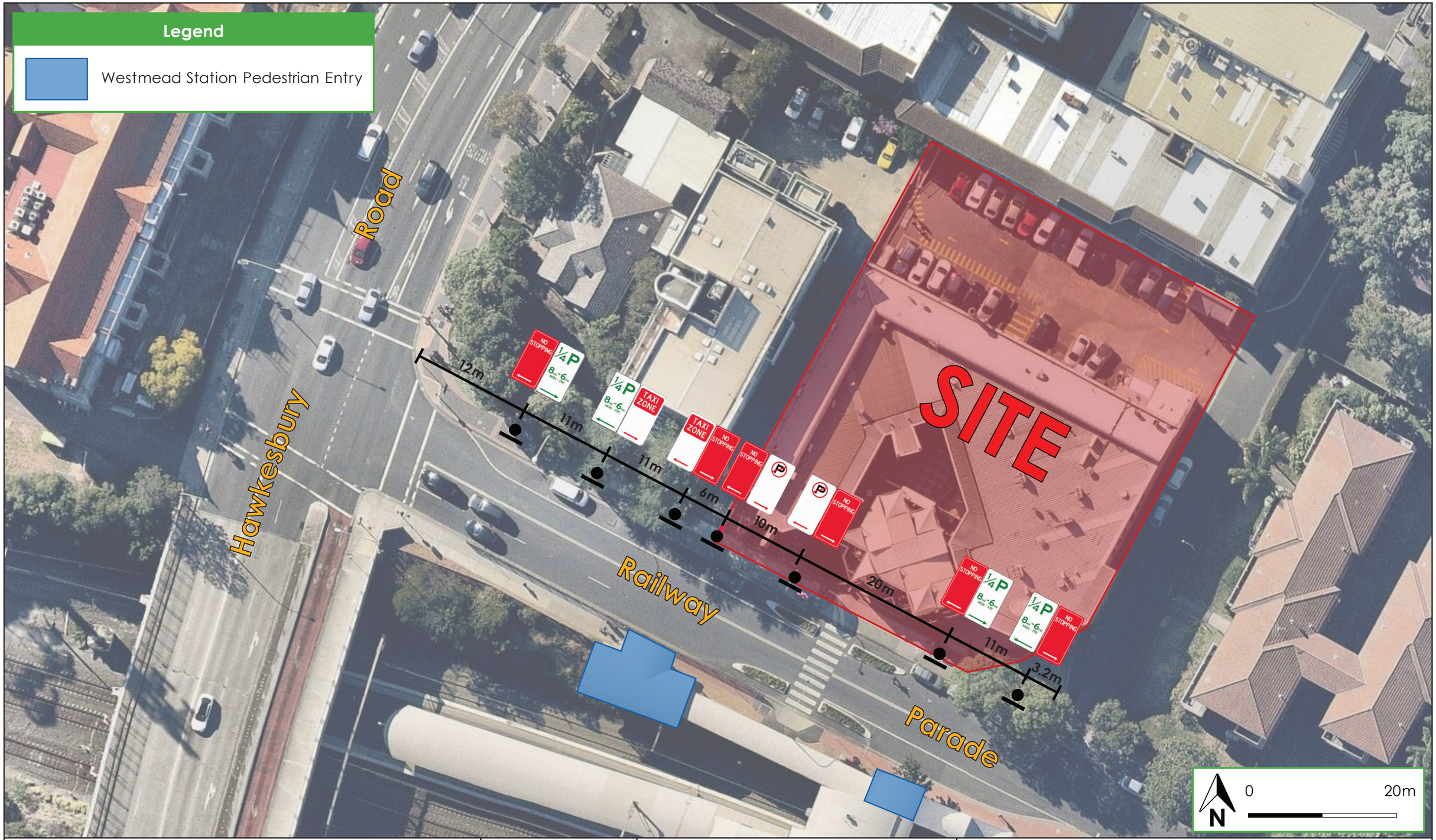
Vertical Clearance Test
Basement Car Park
B99 Vehicle

drawn:	checked:	date:
KB	KB	31 Oct 18

project no.	drawing phase.	drawing no.	rev
16.443	-	TX.09	-

Appendix G

Existing On-Street Signage Plan



Existing Signage Plan		**Date:**	04.09.2017
Project:	24-26 Railway Parade, Westmead	**Prepared By:**	Eamon McBride
Project Number:	16.443	**Approved By:**	Alexandra Kavanagh
Client:	First Point Property	**Signature:**	

TRAFFIC & TRANSPORT PLANNERS

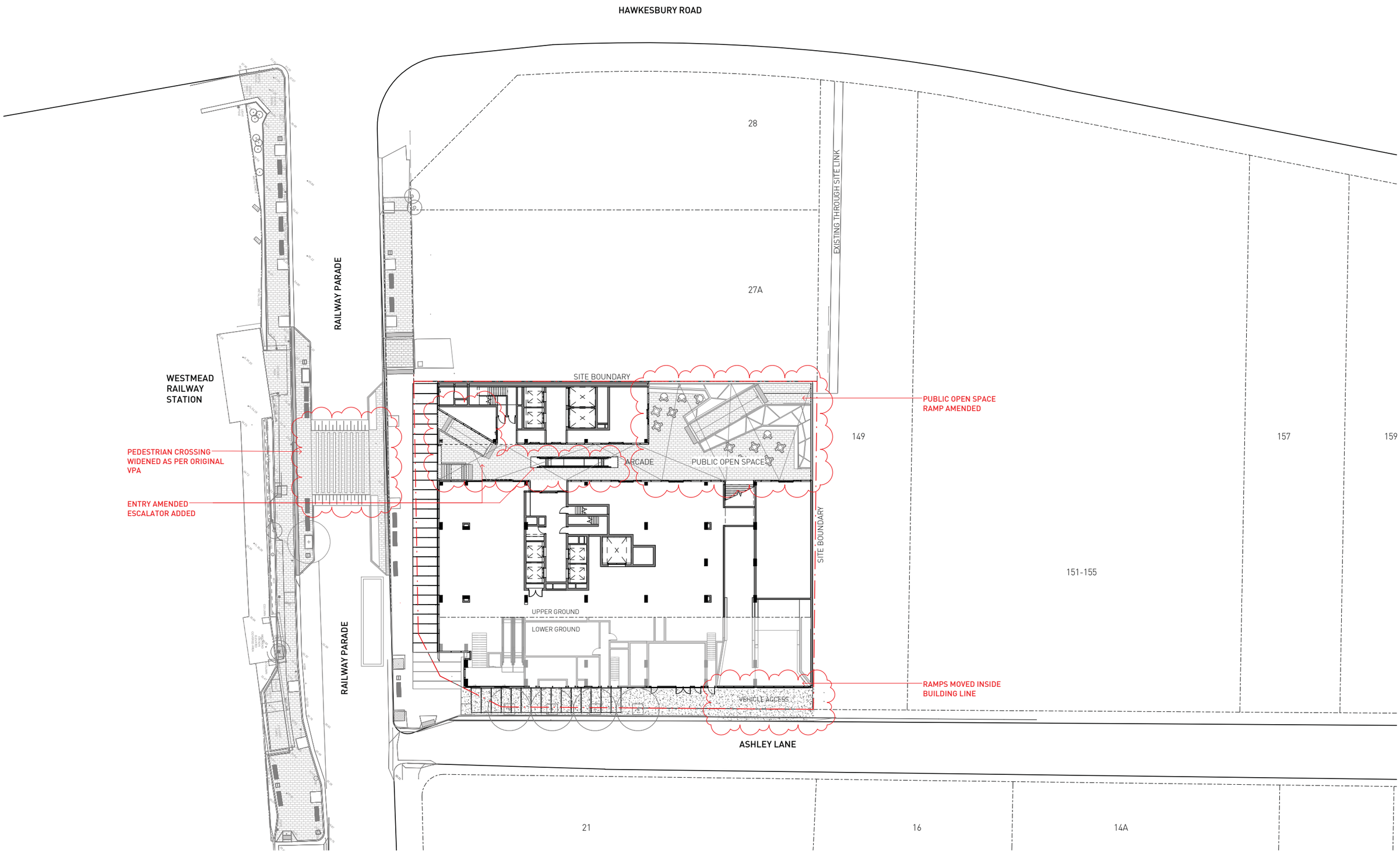
Suite 2.08
50 Holt Street
Surry Hills NSW 2010

(02) 8324 8700
info@traffix.com.au

TRAFFIX

Appendix H

Proposed Public Domain Plan



General Notes

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4. All omissions or discrepancies shall be notified to the architect
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6. All steelwork section sizes are indicative only. Refer to Structural Engineers drawings for serial sizes.

Rev.	Date	Comment
A	28.05.2018	DA SUBMISSION
B	26.10.2018	REVISED DA

North

Project
24-26 Railway Parade Westmead 2145
NSW

Client
Drill Pty Ltd

Architect
SISSONS ARCHITECTS
Studio 501, Level 5
53 Berry St, North Sydney, NSW 2060
Tel. 02 8904 1853
www.sissonsarchitects.com

Scale
1 : 250 @A1 HALF SCALE @ A3

Drawing Title
OVERALL GROUND FLOOR PLAN - PROPOSED

DEVELOPMENT APPLICATION

16-021 DA009 B
Project No. Drawing No. Rev.

traffix
traffic & transport planners

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Strawberry Hills NSW 2012
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w: www.traffix.com.au
director Graham Pindar
acn: 065132961
abn: 66065132961

Reference: 16.443r02v02

21 December 2018

Drill Pty Ltd
C/- First Point
PO Box 131
DOUBLE BAY NSW 1360

Attention: Mr Mark Hovey, Managing Director

Re: 24-26 Railway Parade, Westmead - DA/381/2018
Response to Council

Dear Mark,

We refer to the subject Development Application and comments forwarded by Council's Senior Development Assessment Officer in their email dated 29 November 2018. With reference to the basement car park, the following concern was raised:

> *"The amended plans show that two boom gates and one roller shutter door will be installed to manage residential, visitor and hotel car parking spaces. However, concerns are still remained in relation to how the parking spaces allocated to medical centre, tavern and retail areas will be managed to prevent the use of the parking spaces by users other than the customers and clients of the commercial and retail areas (i.e. there is a risk that the parking spaces be used by medical centre, tavern and retail staff or anybody else from outside as all-day parking spots which will result in that no parking will be available for using by the customers and clients of the commercial and retail areas). The applicant is to be required to provide clarification in this regard. Any suggested security measures are to be shown on the floor plans."*

We note that the DCP states *'the location of the site supports the greater intensity of uses to optimise the available transport services in order to minimise the dependence on private vehicles'*. Indeed, the site is specifically subjected to maximum parking rates for all land uses, where the provision of 73 commercial & retail spaces is closer to the upper limit of 88 parking spaces that are permissible.

It is thus anticipated that the basement parking supply will be sufficient for both customer and staff demands, having regard for accessibility to public transport and the location of the site within a town centre (thus benefiting from many residents living within a walkable catchment). Furthermore, parking rates have historically been devised to account for peak scenarios such as Thursday late night trading periods. There has since been an overall trend in recent years for supermarkets and restaurants to have extended trading periods across all days of the week. This would result in more consistent but tempered parking demands, whereby customers can make more frequent walk-in trips rather than car based journeys to load a higher volume of goods.

It is however acknowledged that there is a need to discourage commuter parking within the basement given the very close proximity of the site to Westmead Station and the future Parramatta Light Rail terminal on Hawkesbury Road. A paid parking arrangement (after a free period) is therefore considered warranted, which is a more sustainable outcome as opposed to Council Rangers inspecting the basement as part of any perpetual Memorandum of Understanding agreement.

It is anticipated that a 'ticketless' system could be implemented, involving the use of number plate scanners and boom gates. The indicative location for all elements of the system is illustrated in **Figure 1**, situated on Level B2, at the base of the ramp. The system would allow for entering vehicles to automatically pass, whilst exiting vehicles will be able to reach a payment terminal or intercom when exiting. The system will allow for flexibility in terms of allowing medium term users (such as visitors to the medical centre) or approved staff members to park for longer durations (without payment) by registering their number plate.

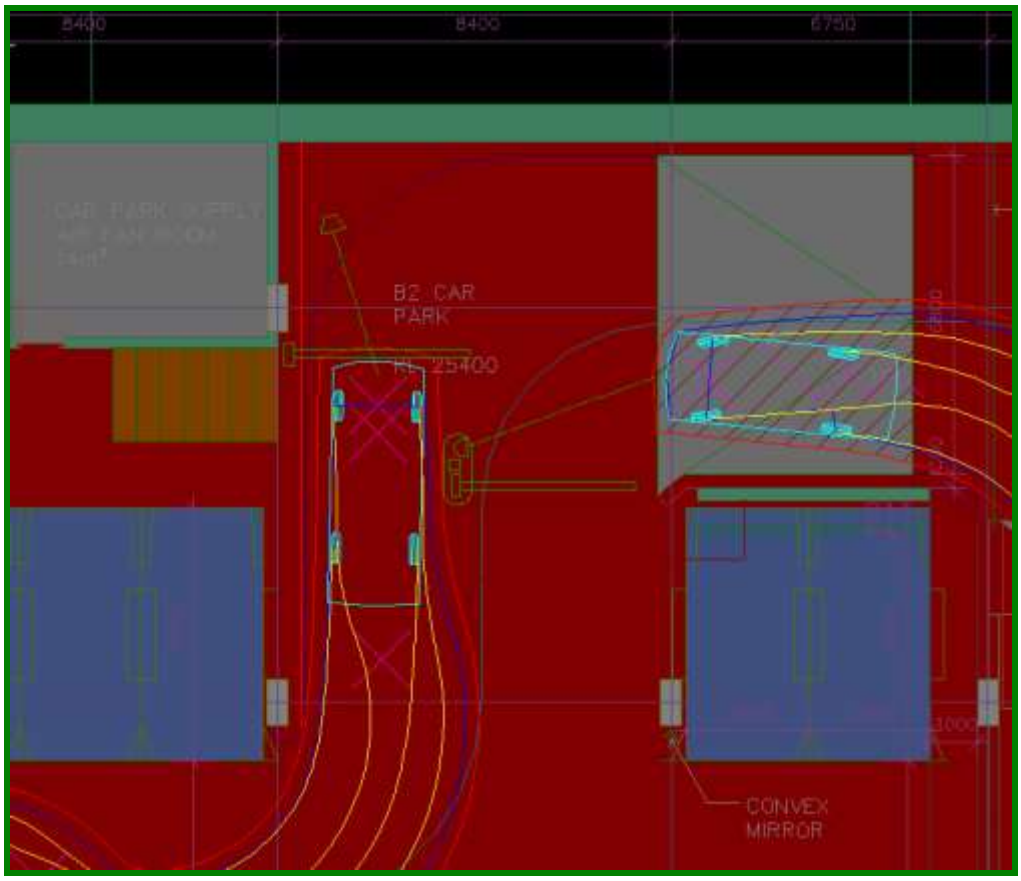


Figure 1: 'Ticketless' Parking System

With respect to the design of the 'ticketless' parking system, the proposed arrangement complies with the following aspects of the off-street car parking standard AS2890.1 (2004):

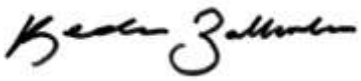
- A minimum width of 3.0m kerb-to-kerb is provided for entry and exit lanes.
- The intercom has been positioned on a flat grade, which is less than the maximum permissible grade of 1:20 (5%).
- Based on the estimated traffic generation, the flow on the entry lane (88 vehicles per hour) and exit lane (84 vehicles per hour) will be well below the threshold of 300 vehicles per hour per lane, where a boomgate facilitates access.
- Approximately 40 metres of queuing capacity is provided on approach to the boomgate, which is expected to account for the 98th percentile queue, as required to be accommodated on-site.

We thus anticipate that the 'ticketless' parking system will enable all customer and staff parking demands to be securely accommodated on-site, whereby it is anticipated that full details regarding the system can be provided prior to issue of a Construction Certificate.

We trust that this advice is of assistance and please don't hesitate to contact the undersigned should you have any queries.

Yours faithfully,

traffix



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