117 Pringle Avenue, Belrose
Traffic Impact Assessment

Prepared for:

Speedway Petroleum

1 August 2025

The Transport Planning Partnership

117 Pringle Avenue, Belrose
Traffic Impact Assessment

Client: Speedway Petroleum

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Version	Date	Prepared by	Reviewed by	Approved by	Signature
V01	23/05/2025	Sokan Chhoun	Ken Hollyoak	Ken Hollyoak	Ken Hollyoak
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1 Introduction

1.1 Overview

The Transport Planning Partnership (TTPP) has prepared this Traffic Impact Assessment (TIA) report to accompany a Development Application (DA) to be lodged with Northern Beaches Council (Council) for the proposed additions and alterations to the existing service centre at 117 Pringle Avenue, Belrose.

The DA seeks approval to reintroduce fuel sales (four fuel dispensers) and new underground fuel storage tanks by removing the existing car wash facilities. The existing workshop facilities are proposed to be retained as per existing conditions.

This TIA report has been prepared to assess the traffic and parking implications of the proposed development on the surrounding locality, with associated management measures proposed to mitigate the impacts of the proposed development.

It is noted that a Section 4.55 Modification Application (S4.55 MOD) was lodged with Council for the development but has been subsequently withdrawn, with this current DA to be lodged instead to seek approval for the proposed development. During the approval process for the S4.55 MOD, the MOD was referred to the Northern Beaches Local Planning Panel (NBLPP).

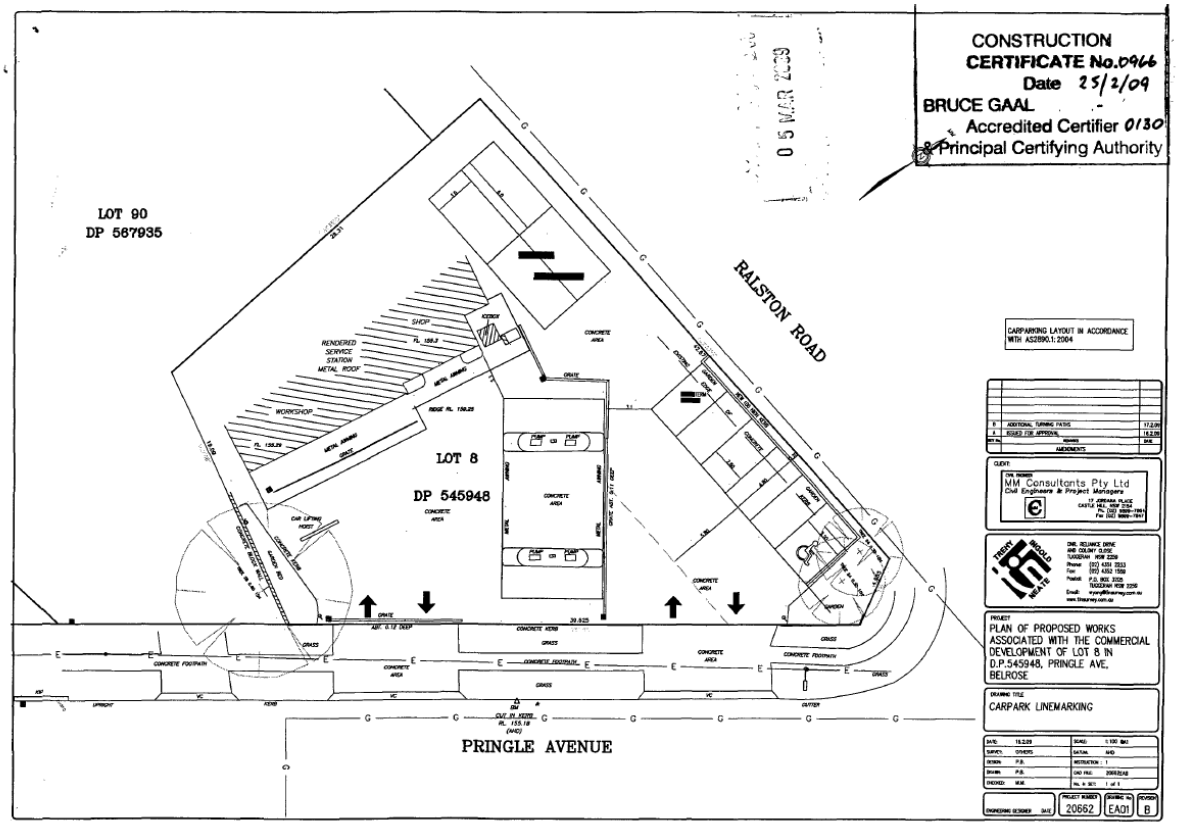
Several traffic and parking concerns were raised by the NBLPP amongst other concerns. These include the number of on-site parking spaces, anticipated parking implications associated with the proposal, on-site traffic circulation, truck access and measures to manage the future operation of the proposed service station. This TIA report has been prepared, taking into consideration the traffic and parking concerns raised by NBLPP.

1.2 Historical Site Context

It is noted that prior to 2009, the site was originally occupied by a service station that comprised four refuelling dispensers, a shop and service centre workshop (Land Use Consent 72/112).

A stamped Construction Certificate plan dated 25th February 2009 shows the approved arrangement with 4 fuel pumps with 8 fuel dispensers, the workshop and 10 parking spaces (including 2 tandem spaces).

Figure 1.1: 2009 Construction Certificate Plan



In 2009, a development consent was granted for DA2009/1842 for the proposed alterations to the existing site to provide a car wash facility, with three of the refuelling dispensers to be replaced with car wash bays. One fuel dispenser remained on-site until 2013.

In 2013, the remaining fuel dispenser was also decommissioned, resulting in the site being used for service centre and car wash facilities, with no more fuel sales happening on-site.

The current proposal seeks to redevelop the subject site back to how it operated prior to 2009, with the main components being the reintroduction of fuel pumps and shop, and retention of the service centre workshop.

1.3 Report Structure

The remaining structure of the report is set out as follows:

- Chapter 2 discusses the existing conditions including a description of the site.
- Chapter 3 provides a brief description of the proposed development.
- Chapter 4 assesses the parking implications and requirements.
- Chapter 5 assesses the traffic generation and its implications.
- Chapter 6 presents the conclusion of the assessment.

2 Existing Conditions

2.1 Site Context

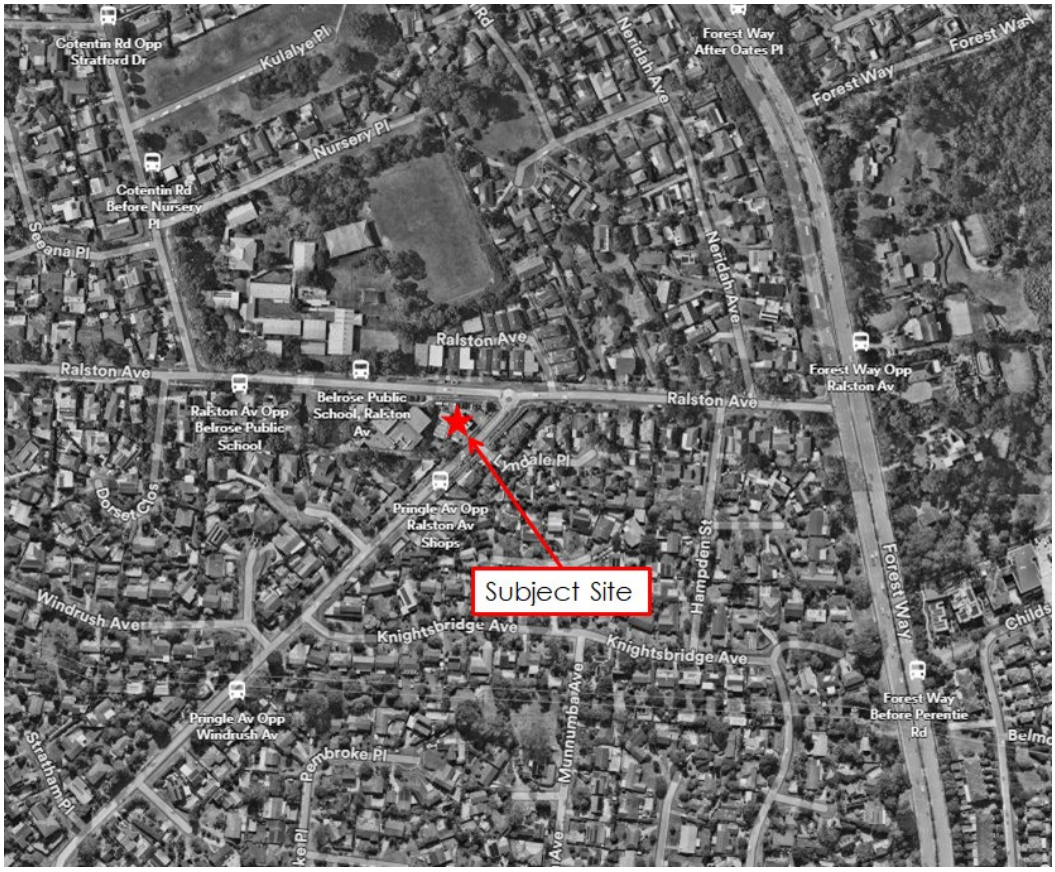
The subject site is located at 117 Pringle Avenue, Belrose, which falls within the Northern Beaches Council (Council). It is currently zoned E1 – Local Centre, according to Warringah Local Environment Plan (WLEP) 2011, which service station development is a permissible land use.

The subject site is a corner lot, generally bound by Pringle Avenue along the eastern boundary and Ralston Avenue along the northern boundary. Belrose Village shopping centre is located immediately north and south of the subject site.

The existing subject site is occupied by car wash facilities and a workshop facility. Of note, the site was formerly occupied by a service station until fuel sales were replaced with a car wash facility. Vehicle access to the site is currently provided off Pringle Avenue with separate entry and exit driveways.

Figure 2.1 shows the subject site location and its surrounds.

Figure 2.1: Site Context



Basemap Source: Nearmap Aerial Imagery, imagery dated 03/04/2025

Surrounding land uses comprise predominantly low-density residential dwellings, with commercial and business premises throughout the surrounding environ. Belrose Public School is also located on Ralston Avenue, to the north-west of the subject site.

2.2 Surrounding Road Network

The subject site is generally surrounded by a network of local roads, including Pringle Avenue and Ralston Avenue. These roads provide connectivity to the wider arterial road network on Forest Way. A description of these surrounding roads is provided herein.

Pringle Avenue is a two-lane, two-way local road, generally aligned in a north-south direction. It connects with Sorlie Road to the south via a priority-controlled intersection and Ralston Avenue to the north via a roundabout. Unrestricted parking is provided on either side of the road in the immediate vicinity of the subject site. Along the site frontage, the posted speed limit is 50km/h, with 40km/h school zone restrictions that apply during school hours.

Ralston Avenue is a two-lane, two-way local road, generally aligned in an east-west direction. It connects with Forest Way to the east via a priority-controlled and is a cul-de-sac to the west at Ralston Lookout. In the vicinity of the subject site, the posted speed limit is 50km/h. There is unrestricted parking provided on either side of the road.

Forest Way is a classified State road, providing connectivity to the wider arterial road network via Warringah Road to the south and Mona Vale Road to the north. To the south of Ralston Avenue, Forest Way has three traffic lanes in either travel direction. To the north of Ralston Avenue, it has two lanes in either travel direction. Forest Way has 80km/h posted speed limit.

2.3 Public Transport Infrastructure

The subject site is serviced by a number of bus routes, along Pringle Avenue, Ralston Avenue and Forest Way. The closest bus stop is located immediately south of the subject site on Pringle Avenue.

No train or metro services are currently provided within the immediate vicinity of the site.

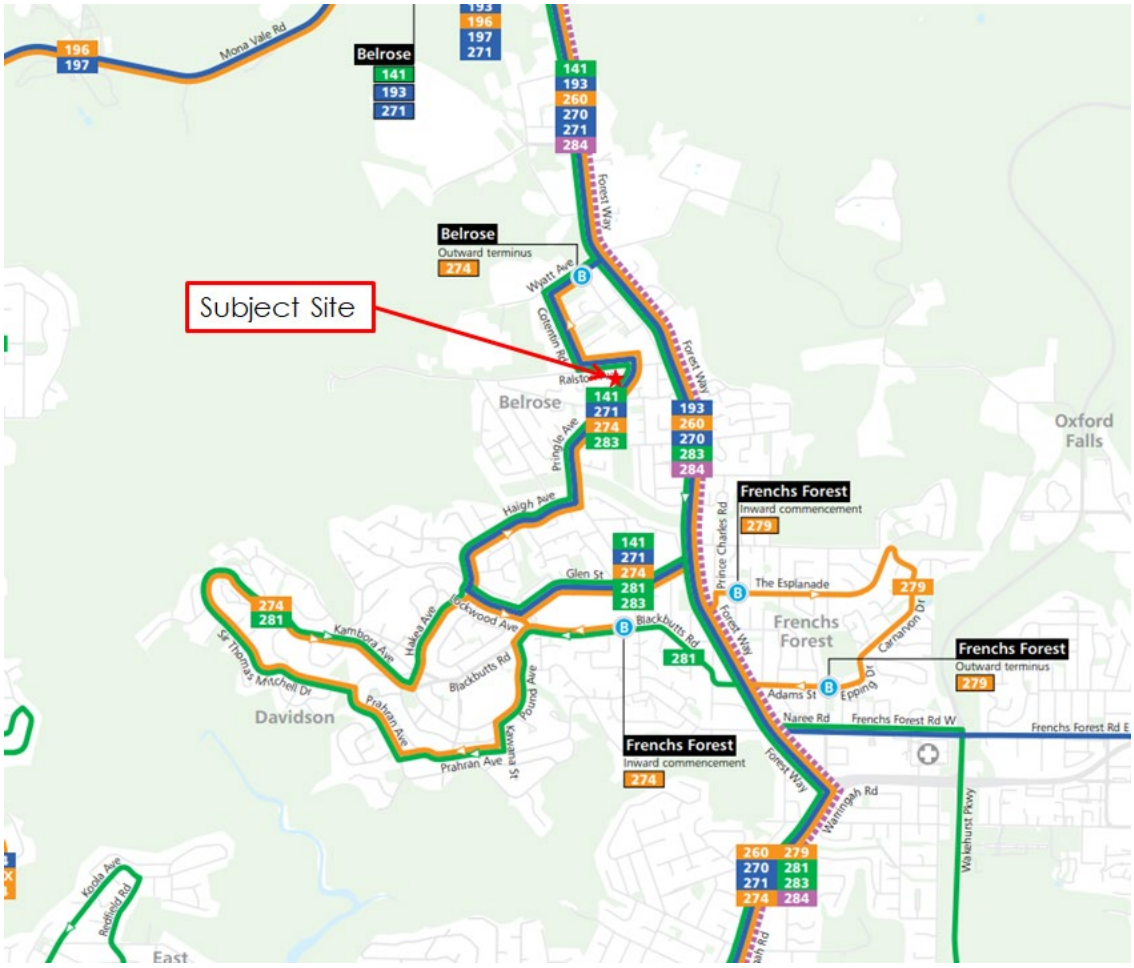
Table 2.1 shows the existing bus services available within 400m walking distance of the subject site, with the surrounding public transport map illustrated in

Table 2.1: Bus Services within 400m of the Subject Site

Bus Route	Route Description	Service Frequency	Walking Distance from the Site
141	Austlink to Manly via Frenchs Forest	30 – 60 minutes	40m
193	Warringah Mall to Austlink via Frenchs Forest	30 – 60 minutes	350m
260	Terrey Hills to North Sydney	20 – 30 minutes (only runs in the AM peak and PM peak)	350m
270	Terrey Hills to City QVB	15 – 30 minutes	350m
271	Belrose to City QVB	15 – 30 minutes	40m
274	Davidson to City QVB via Frenchs Forest	15 – 30 minutes (only runs in the AM peak and PM peak)	40m
283	Chatswood to Belrose (Loop Service)	20 – 60 minutes	40m
284	Duffys Forest to Terrey Hills & Chatswood	10 – 60 minutes (limited services per day)	350m

Source: TfNSW, last accessed on 22/05/2025

Figure 2.2: Surrounding Public Transport Service



Source: TfNSW – North Shore and Upper North Shore Bus Network Map, last accessed on 22/05/2025

2.4 Pedestrian and Cyclist Infrastructure

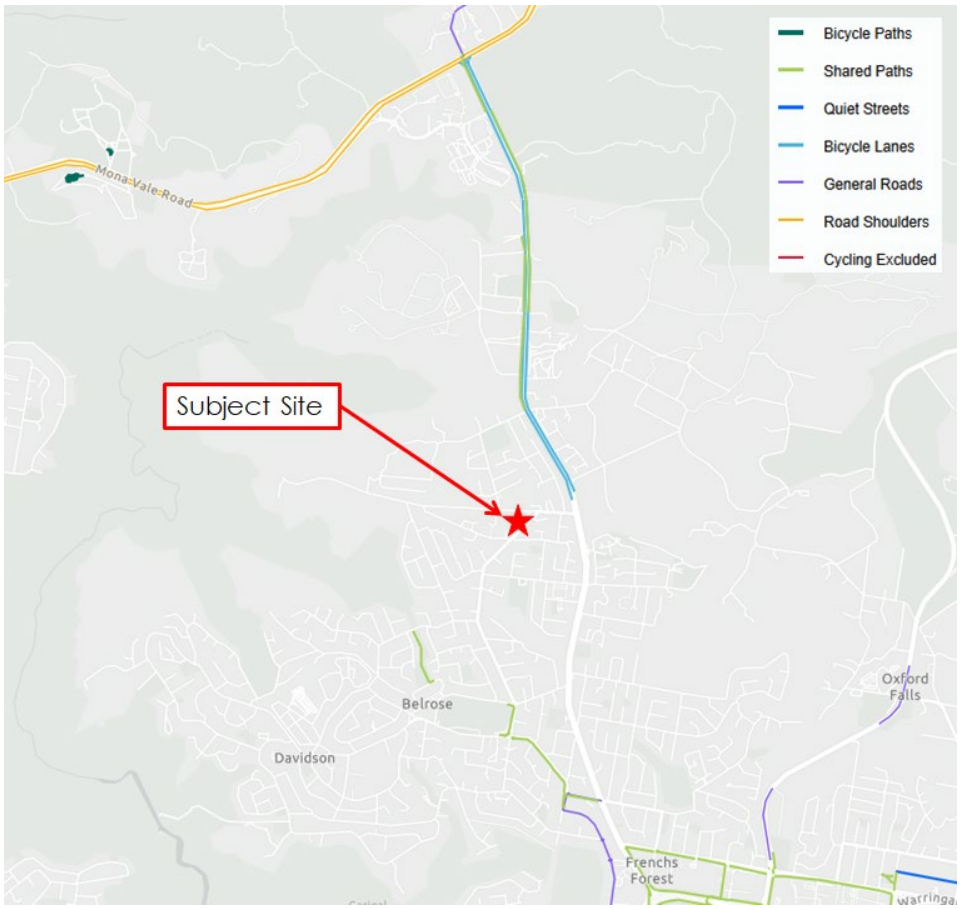
In the immediate vicinity of the site, pedestrian footpaths are provided on both sides of Ralston Avenue and Pringle Avenue. The eastern footpath on Pringle Avenue, however, discontinues just north of Coachline Place.

A formal pedestrian 'zebra' crossing is provided on Ralston Avenue, immediately west of the Belrose Village shopping centre. This provides good pedestrian crossing opportunities across Ralston Avenue between Belrose Public School, Belrose Village shopping centre and neighbouring sites.

According to TfNSW Cycleway Finder, the nearest cycleway is provided along Forest Way, starting north of Ralston Avenue. This cycleway provides connectivity to the wider cycle network via Mona Vale Road to the north. Figure 2.3 shows the existing cycling infrastructure around the subject site.

Review of the aerial imagery also shows line marked on-road cycling routes on Ralston Avenue (between Forest Way and Hampden Street), Hampden Street, Knightsbridge Avenue and Hews Parade, which are located to the east and south of the site.

Figure 2.3: Surrounding Cycling Infrastructure

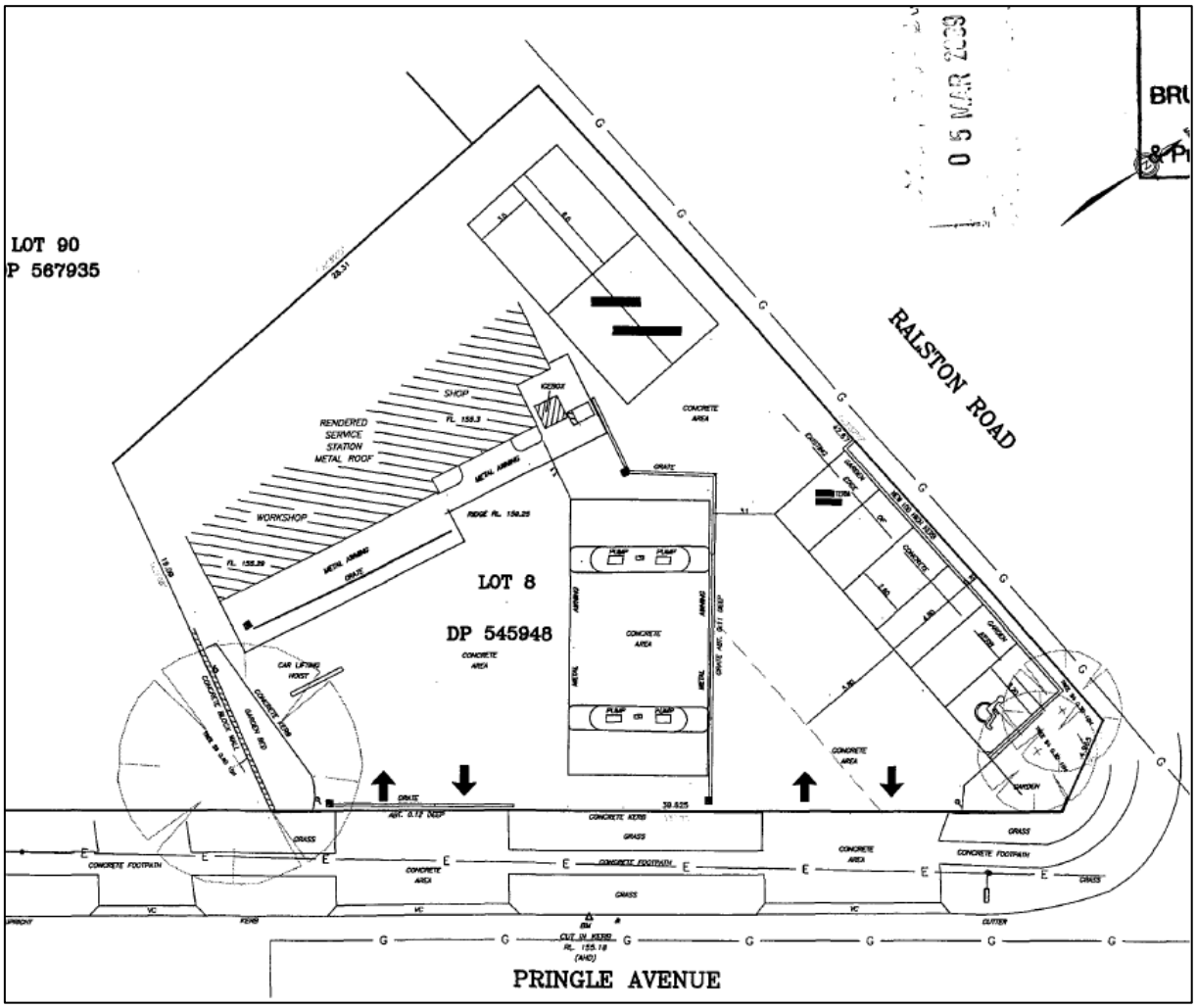


Source: TfNSW Cycleway Finder, last accessed 22/05/2025

2.5 Existing On-Site Parking Demand

It is noted that the subject site prior to 2009, when it was operating as a service station (four refuelling dispensers), was approved for 10 parking spaces (including 2 tandem spaces) as shown in the Construction Certificate (CC) plans dated 25 February 2009. The indicative site layout of the previous service station is shown in Figure 2.4.

Figure 2.4: Approved Service Station Site Layout



The proposed introduction of car wash facility in 2009 in place of the refuelling dispensers provided informal parking for vehicles on-site.

Notwithstanding this, the proposed removal of the car wash facility would eliminate the parking demand associated with the car wash component. However, the parking demand associated with the service bay workshops would remain.

3 Proposed Development

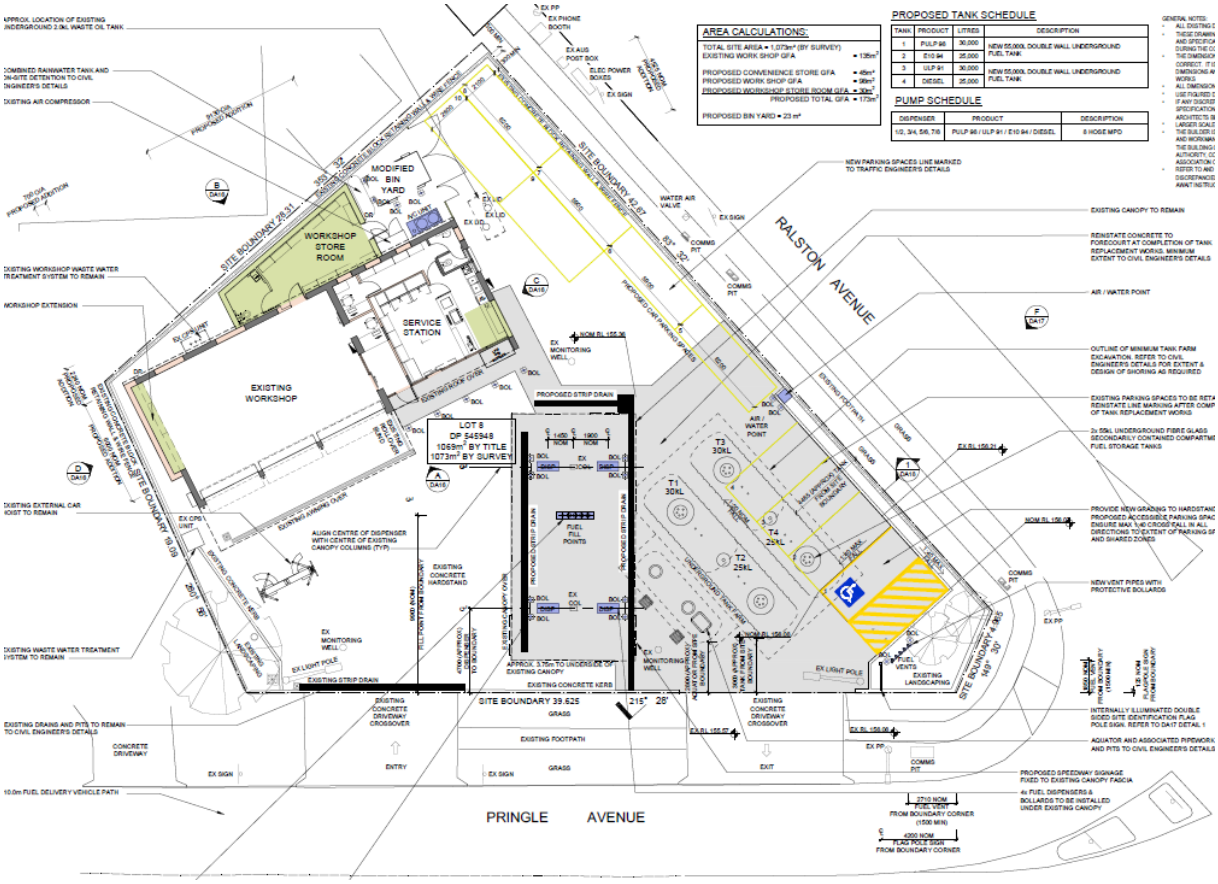
3.1 Overview of the Proposal

The proposed development seeks to make additions and alterations to the site at 117 Pringle Avenue, Belrose, to reinstate the fuel sales as opposed to the car wash facility. The fuel sales area is to contain four refuelling dispensers and associated fuel sales / pay-point building, similar to the operation of the site prior to 2009 and as shown at **Figure 2.4.**

The existing workshop facilities are to be retained on the site, with some internal modifications to separate the administration /reception and pay-point areas of the operations.

The proposed site layout is shown in Figure 3.1, with the full architectural plans provided in **Appendix A**. Storage is moved from a temporary container to the rear of the building with a new bin storage yard added.

Figure 3.1: Proposed Site Layout



3.2 Proposed Vehicle Access Arrangement

Vehicle access to the site will be provided off Pringle Avenue via separate entry and exit driveways, as per existing conditions as shown in Figure 3.2. Vehicles will be permitted to turn left or right into and out of the site, as per existing conditions.

Figure 3.2: Proposed Site Access Arrangements

Basemap Source: Nearmap Aerial Imagery, imagery dated 07/12/2023

The existing canopy with a height of 3.75m will be retained as part of the proposal. Therefore, all service vehicles including waste collection vehicles and fuel tanker shall be restricted to a maximum height of 3.5m.

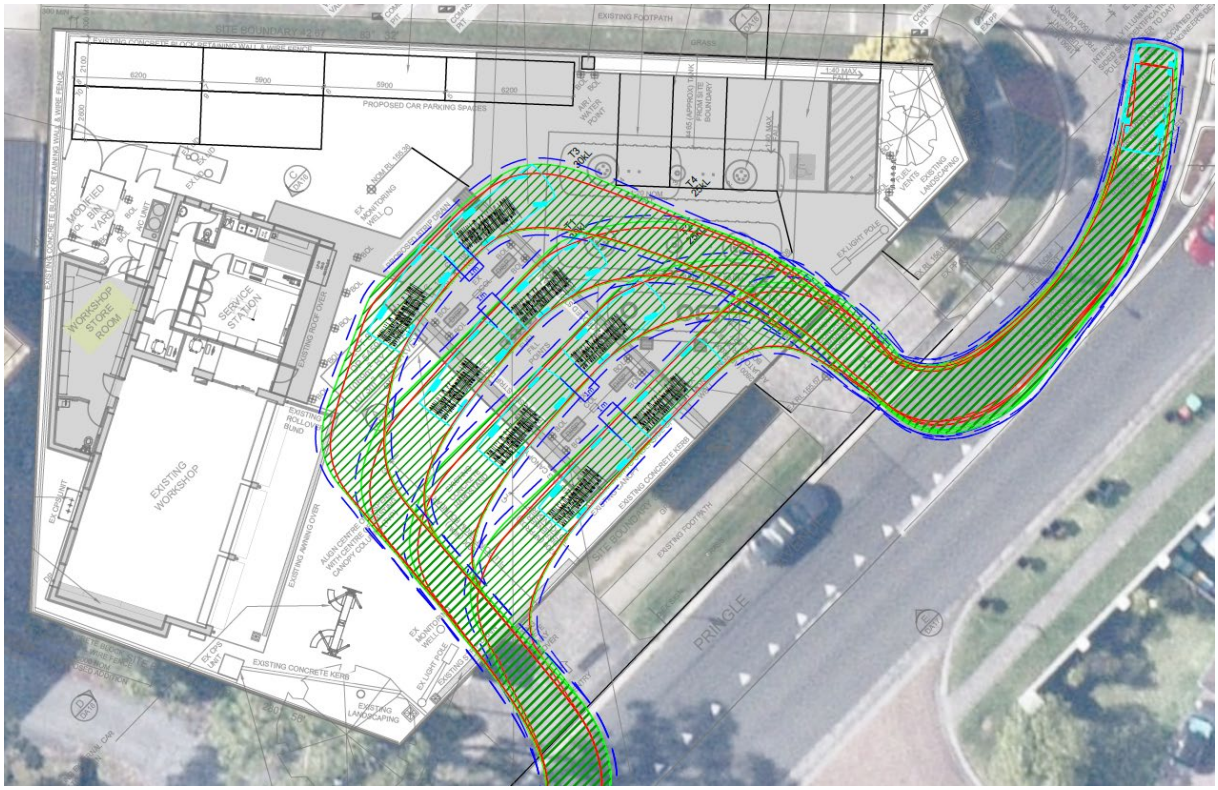
The proposed fuel tanker and private waste collection vehicle will comply with these height restrictions. Appropriate signage to indicate the maximum height clearance under the canopy shall be provided to manage this.

TTPP has undertaken swept path analysis which demonstrates appropriate access arrangements to/from the site is achieved. These swept paths are provided in **Appendix B**.

Swept path analysis also has been undertaken to demonstrate that refuelling vehicles travelling through the site would not be impeded by the on-site parking spaces that could have adverse impacts on the on-site traffic circulation.

The swept path also indicates that when there are two vehicles refuelling simultaneously within the same service channel with a gap of 1m in between, vehicular access for the adjacent service channels will not be impeded. This is illustrated in Figure 3.3.

Figure 3.3: Refuelling Dispenser Access and Circulation Swept Path



Due to the site constraints, vehicles parked at the parallel parking spaces along the northern boundary would need to give-way to refuelling vehicles when exiting the site. These spaces would be used and managed by the workshop and not by customers. Therefore, this arrangement is acceptable.

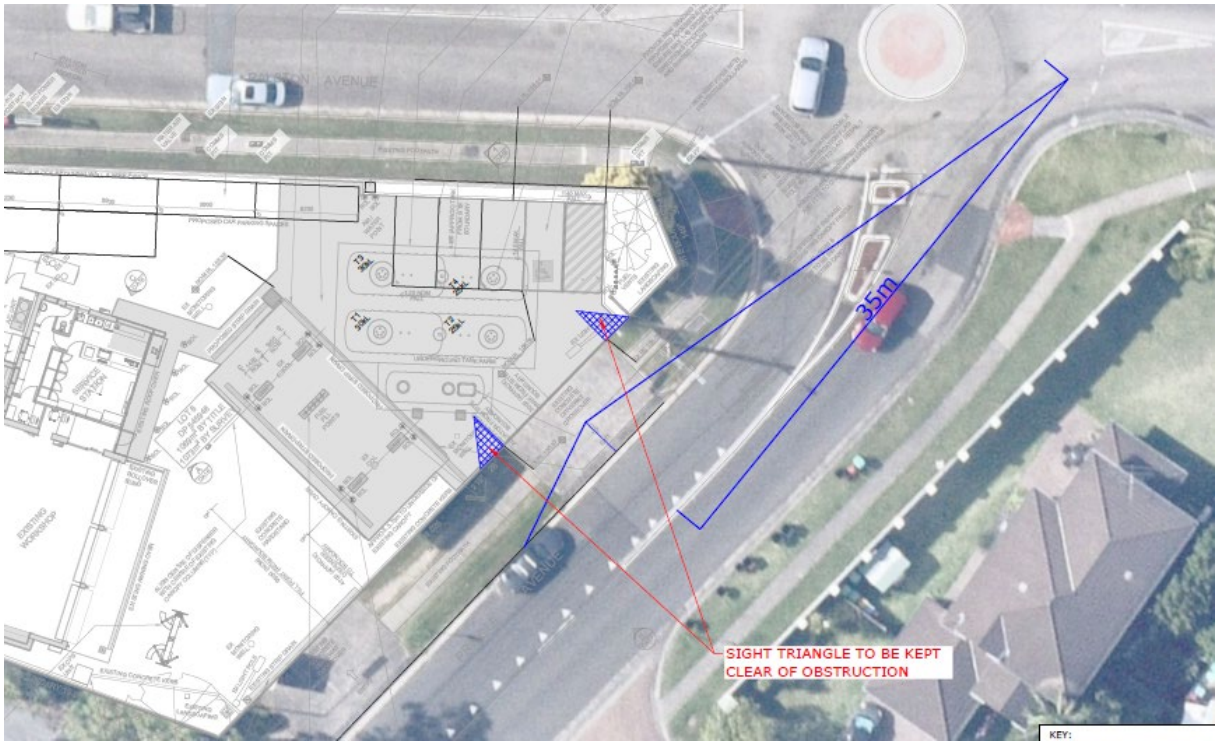
3.3 Sight Distance Assessment

The subject site is located within close proximity of the Ralston Avenue / Pringle Avenue roundabout, particularly the proposed northern egress driveway. The egress driveway is located at some 35m south of the roundabout. No obstructions are present in the direct line of sight between the driveway and the roundabout.

According to AS2890.1:2004, a minimum stopping sight distance of 45m is required to traffic on the frontage road, based on the frontage road speed limit of 50km/h (Pringle Avenue). However, it is noted that given the nature of roundabouts, which vehicles tend to travel at a lower speed when turning at the roundabout, it is expected that turning vehicles would be travelling around this section of road at about 30 to 40km/h.

Therefore, based on a travel speed of 40km/h, a minimum 35m stopping sight distance would be required. There is approximately 35m stopping sight distance to the roundabout as shown in Figure 3.4, which is considered satisfactory. This sight distance assessment map is also contained in **Appendix C**.

Figure 3.4: Sight Distance at Egress Driveway



4 Parking Assessment

4.1 Car Parking Requirements

Parking requirements for the proposed development have been assessed against Warringah's Development Control Plan (WDCP) 2011.

The car parking requirements for service stations, as stipulated in WDCP, are based on the number of service bays, convenience store GFA, and restaurant GFA, which are as follows:

- 6 car spaces per service bay, plus
- 5 spaces per 100m^2 GFA of convenience store, plus
- The greater of 15 spaces per 100m^2 GFA, or 1 space per 3 seats.

It is worthy to note that this proposed development seeks to modify the use of the site to what it was operating as prior to 2009; that is a service station comprising three service bays, four refuelling dispensers and associated convenience store. On this basis, a comparison of the approved parking rates for the previous service station and the proposed service station has been undertaken and summarised in Table 4.1.

Table 4.1: Comparison of Car Parking Rates and Provision

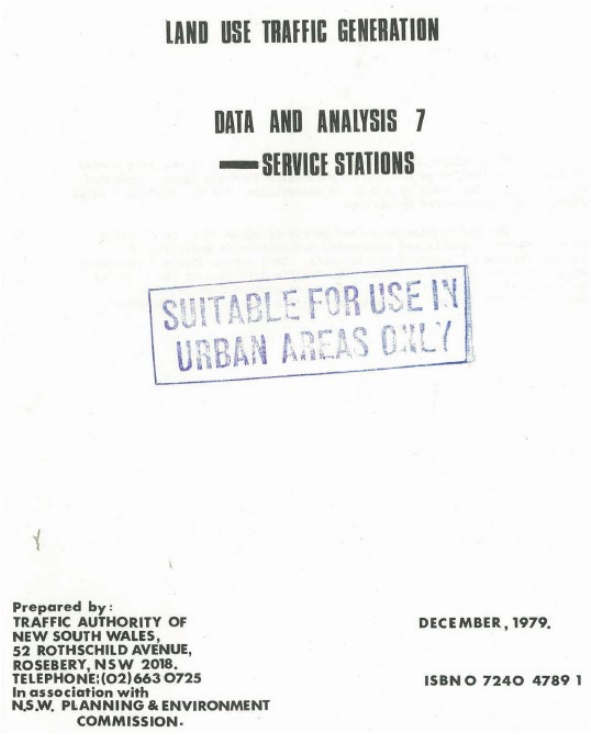
Land Use	Car Parking Rate	Yield		Required Car Spaces	
		Previous Service Station	Proposed Service Station	Previous Service Station	Proposed Service Station
Service Bay	6 car spaces per service bay	3 service bays	3 service bays	18	18
Convenience Store	5 car spaces per 100m^2 GFA	Unknown (Assume 45m^2)	45m^2	2	2
Restaurant	The greater of 15 spaces per 100m^2 GFA OR 1 space per 3 seats	N/A	N/A	-	-
Total				**20**	**20**

Table 4.1 shows that when adopting the current WDCP parking rate, the previous service station would need to have provided 20 car spaces. This assumes a 45m^2 GFA for the previous convenience store in the absence of this information and based on the similar size of the convenience store as shown in the site plans in Figure 2.4 and Figure 3.1. However, the previous service station only provided 10 car spaces, which is a shortfall of 10 car spaces.

The proposed development is also required to provide 20 car spaces according to the WDCP requirement given the same proposed service bay and convenience store yield as the previous service station. It is proposed to provide ten car spaces, which is a shortfall of 10 car spaces when compared to the WDCP requirement.

It is of note that the WDCP requirement of 6 spaces per service bay is the same as that contained within the RTA (now TfNSW) 2002 Guide to Traffic Generating Developments. It is presumed therefore that rather than undertake their own analysis of the car parking characteristics of workshops, Council has relied on the 2002 RTA Guide.

The 2002 Guide was in fact based upon studies undertaken by RTA TfNSW in the late 1970's.



LAND USE TRAFFIC GENERATION

DATA AND ANALYSIS 7

—SERVICE STATIONS

SUITABLE FOR USE IN URBAN AREAS ONLY

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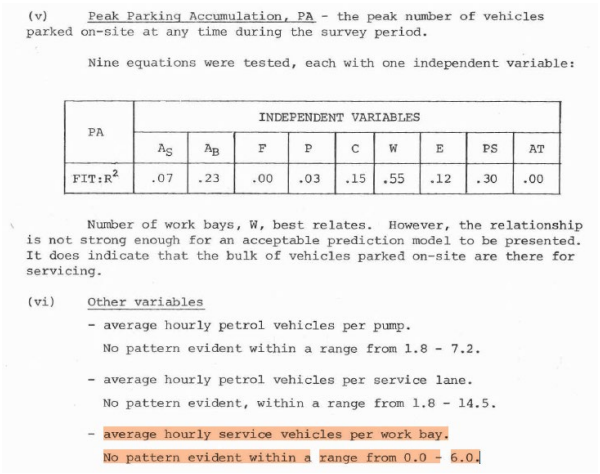


(v) Peak Parking Accumulation, PA - the peak number of vehicles parked on-site at any time during the survey period.

Nine equations were tested, each with one independent variable:

PA	INDEPENDENT VARIABLES								
	A_S	A_B	F	P	C	W	E	PS	AT
FIT:R^2	.07	.23	.00	.03	.15	.55	.12	.30	.00

Number of work bays, W, best relates. However, the relationship is not strong enough for an acceptable prediction model to be presented. It does indicate that the bulk of vehicles parked on-site are there for servicing.

(vi) Other variables

- average hourly petrol vehicles per pump.
  No pattern evident within a range from 1.8 - 7.2.
- average hourly petrol vehicles per service lane.
  No pattern evident, within a range from 1.8 - 14.5.
- average hourly service vehicles per work bay.
  No pattern evident within a range from 0.0 - 6.0.

Clealry this data is now over 45 years old and is now out of date. Indeed, TfNSW updated their Traffic Generation gudiance for service stations based upon a study undertaken by TEF consultants on behalf of TfNSW in 2013. In its introduction, the 2013 study noted that:-

The (current 2002 RTA) Guide contains trip generation and parking demand information derived from a 1979 survey of ten Service Stations across greater Sydney. Half of the sites were self-service, and half offered the then traditional driveway service. Since that survey was undertaken:

- ***self-service has displaced driveway service***
- ***service stations are now much larger***
- ***it is now rare for a service station to also contain a vehicle service workshop or bay***
- ***service stations now also offer convenience items and groceries***
- ***service stations are often attached to fast food outlets***
- ***much petrol retailing is now allied to large supermarket chains and loyalty schemes***
- ***petrol pricing is highly variable day-to-day, with consequent wide variations in customer patronage.***

Given these changes, there is now a need to validate (or otherwise) the 1979 trip generation and parking demand data for Service Stations, to assist with traffic impact assessment and planning.

Of the 10 sites surveyed in 2013, only one had car service facilities and that site had only 4 parking spaces.

It is of note that during a recent development application relating to Heartland Motors in Castle Hill, the operator of the site challenged the 6 parking spaces per service bay required by the 2002 RTA guide. They said :-

> Records provided by Heartland Motors found that the site services an average of 33 vehicles per day with the 18 hoists on-site over a three-month period between December 2021 to February 2022.
>
> Further records provided by Heartland Motors for the period between January 2018 to December 2019 (refer to Appendix A for details) found:
>
> - In the 2018 calendar year, an average of 37.5 vehicles per day were serviced;
> - In the 2019 calendar year, an average of 29.9 vehicles per day were serviced.
>
> I note Council have referred to 1 hoist for 6 parking spaces. This is severely outdated and incorrect. These days, cars service intervals are bigger than ever as are the warranty periods hence cars are coming back less and less to dealerships.
>
> Attached is some actual data of our Castle Hill workshop which shows 58 days of service history, totalling 1,916 jobs which equates to 33 jobs per day. Considering we have 18 hoists in the workshop plus 7 additional parking spaces in there we clearly need only 8 outside additional parking spaces to cover this considering 18 hoists + 7 indoor spaces + 8 outdoor spaces equals 33 jobs per day.

At that site, 18 hoists and 7 indoor spaces were used for servicing and the average number of vehicles serviced per day was between 29.9 and 37.5.

Therefore each hoist/servicing space was used by 1.5 vehicles per day. It is clear that the 6 parking spaces per hoist is not representative of existing operations and is extremely excessive. However, in stating this, we do note that an additional allowance should be made for staff at the servicing depot and we are instructed that the workshop currently employs 4 people.

An examination of the Journey to Work statistics shows that in the Belrose Zone, of those people who travel to work, 80% drive and would require a parking space. Consequently 3 spaces would be adequate.

Table 4.2: Travel Mode to Work in Belrose

Mode	Mode Share (%)	Mode Share, excluding did not go to work (%)	Mode Share of Those who did not work from home (%)
Train	3	4	6
Bus	2	3	5
Ferry	0	0	0
Tram/Light rail	0	0	0
Taxi/ride-share	0	0	0
Car, as driver	43	51	80
Car, as passenger	3	3	5
Truck	1	1	2
Motorbike	0	0	0
Bicycle	0	0	0
Walked only	1	2	3
Other Mode	0	0	0
Worked at Home	30	0	0
Did not go to work	16	0	0

On this basis, the required car parking would be as follows:-

Table 4.3: Updated Car Parking Provision Calculation

Land Use	Car Parking Rate	Proposed Service Station	
		Yield	Required Car Spaces
Service Bay	1.5 car spaces per service bay	3 service bays	4.5
	Additional Staff Spaces	4 staff	3
Convenience Store	5 car spaces per 100m^2 GFA	45m^2	2.25
Total			**9.75**

It is of course noted that cars are able to park at the bowsers for the purposes of buying fuel and purchasing from the convenience shop. Having studied BP stations over the years, a survey of a BP service Station at 2 Princes Hwy, St Peters NSW 2044 was undertaken to study the purpose of all vehicles parking on the site, the St Peters site has 6 pumps and a convenience store of around 155m^2. The survey recorded the purpose of all vehicles entering the site in the AM and PM peak periods and found that:

- 14% of the cars visiting the site simply drove through without stopping
- 50% of vehicles stopped and filled at the fuel pump and paid inside the shop
- 9% of vehicles stopped and filled at the fuel pump but paid at the pump
- 16% of vehicles entered the site, parked at the pump, did not purchase fuel but just visited the shop
- 3% of vehicles parked in the designated parking spaces and visited the shop
- 2% of vehicles parked in the parking spaces for some time (i.e. staff parking)
- 5% of vehicles parked in the parking spaces for the purposes of using the air pump
- The dwell time from entering the site to leaving the bowser for vehicles (but not including staff, fuel unloading and deliveries) was 3 minutes and 40 seconds.

Consequently, the parking spaces provided for the service station element are primarily used by staff or people using the air pump.

It is noted that there are eight additional parking spaces available at the refuelling dispensers which are used for the service station operation. Generally, service station customers undertake linked trips; that is refuelling vehicles and visiting the associated convenience store for goods purchase. Vehicles which are stationary at the refuelling bays would remain there while customers pay for fuel and goods. Therefore, given the dual use of service station, each refuelling bay acts as a short duration parking bay.

On the above basis, it is expected that the car parking demand associated with the proposed development can be sufficiently accommodated within the site and is not expected to adversely impact the surrounding on-street parking.

4.2 Accessible Parking Requirements

WDCP does not stipulate specific accessible parking requirements for service stations or convenience stores or workshop facilities.

Reference is made to the National Construction Code (NCC) 2022, which recommends accessible parking spaces to be provided at a rate of 1 space for every 50 car parking spaces or part thereof for a service station. It is proposed to comply with this requirement and provide one accessible parking space, as per the existing site.

However, the proposed accessible parking space will be designed in accordance with AS2890.6:2022, with a width of 2.4m and a length of 5.4m, with an adjacent shared zone of the same size. This is considered an improvement from the existing accessible space with no adjacent shared zone provided, which is not compliant with the latest AS2890.6:2022.

4.3 Bicycle Parking Requirements

WDCP does not stipulate specific bicycle parking requirements for service stations. Due to limited cycling infrastructure around the vicinity of the subject site and the nature of service station operation, it is expected that cyclist activities will be minimal. Therefore, it is not proposed to provide any bicycle parking at the service station.

4.4 Motorcycle Parking Requirements

WDCP does not stipulate specific motorcycle parking requirements for service stations. It is not proposed to provide any motorcycle parking at the service station, noting that motorcycle parking can be accommodated within the proposed car parking spaces and at the refuelling bays.

4.5 Loading Bay Requirements

WDCP stipulates that specific loading and unloading activities associated with service and delivery should be appropriate to the size and nature of the development. In addition, in accordance with the TfNSW's Guide to Transport Impact Assessment (the Guide) 2024, "*adequate off-street loading facilities are provided to meet the demands of the development and not rely on the local road network and kerb space*".

Deliveries for the fuel sales, convenience store, and workshop facilities are proposed to be undertaken by small van/utility type vehicles, equivalent to a B99 vehicle. These small deliveries can be accommodated at the proposed car parking spaces, or at the bin yard to the rear of the site.

Waste collection would be undertaken in the bin yard outside of peak periods. A private waste contractor will be used, with a maximum height clearance of 3.5m due to restricted height clearance requirements under the existing canopy. The bespoke waste truck would be no larger than an 8.8m Medium Rigid Vehicle (MRV). Swept path analysis showing an MRV accessing and exiting the bin collection areas are shown in Appendix B.

Fuel deliveries shall be undertaken by a bespoke 10m long fuel truck, no higher than 3.5m in terms of vertical clearance. These vehicles would park adjacent to the fuel tank located between the refuelling dispensers to unload the fuel. Swept path analysis showing the manoeuvre of the fuel truck within the proposed service station is contained in Appendix B.

Notwithstanding this, all servicing and deliveries shall be scheduled to be undertaken outside of the road network and school peak hours, to minimise impacts on the surrounding roads, as well as service station operations. The Site Manager would be responsibility to manage all servicing/delivery requirements accordingly.

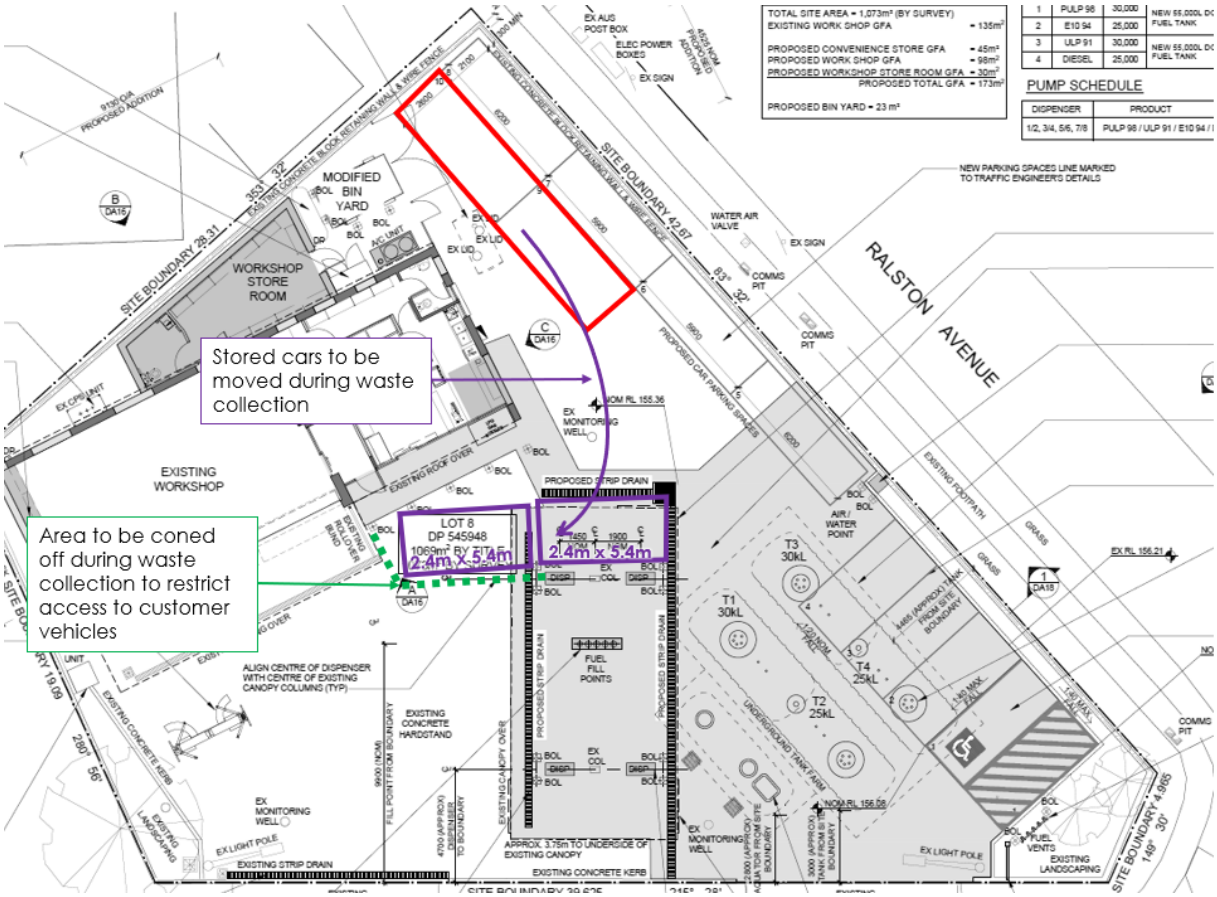
Therefore, the proposed loading arrangements are considered satisfactory.

4.6 Waste Management Procedure

Of the proposed 10 car spaces, four spaces are provided as tandem/ stacked parking spaces and two as parallel spaces. These six spaces would be used by workshop for the storage of vehicles and for staff parking and these spaces would be managed by the workshop.

Waste collection is to occur within the two car spaces marked in Figure 4.1. The two cars stored within these spaces are to be relocated to the first fuel bowser prior to waste vehicle arrival, to enable the use of the displaced area for loading.

Figure 4.1: Waste Collection Procedure



5 Traffic Assessment

The TfNSW's Guide to Transport Impact Assessment (the Guide) 2024 stipulates the following trip generation rate for service stations during the AM and PM peak hours:

- AM peak hour vehicle trip rate = $0.2815*N^2 + 14.047*N + 16.715$
- PM peak hour vehicle trip rate = $0.0205*S + 88.52$

Where *N = number of service channels at the service station*

S = total site area is square metre

The proposed service station development has a total site area of some 1,073 m^2 and comprises four service channels. Based on this, the proposed development is anticipated to generate some 77 vehicle trips during the AM peak hour and 111 vehicle trips during the PM peak hour.

It is also noted that service stations generally provide for vehicles already travelling on the roads rather that specific trips to the service station. Therefore, the majority of the trips are expected to be passing trade. According to the Institute of Transportation Engineers (ITE), around 56 per cent of service station trips are passing trade whereas much higher rates of 70% and 80% passing trade have been mooted in the Land & Environment Court.

Based on this, the proposed development is only expected to generate some additional 34 vehicle trips (17 vehicles) during the AM peak hour and 49 vehicle trips (25 vehicles) during the PM peak hour on the road network.

The proposed removal of the car wash facility will eliminate the traffic generation associated with this use. The Development Consent for the DA2008/1482 indicates that the existing site was approved for a single car wash bay. However, the Guide does not stipulate traffic generation rates for car wash facilities.

Reference is made to the TfNSW's Trip Generation Survey Data Report for Car Wash & Cafes, which surveyed traffic generation of 15 car wash and café sites. According to the survey data, the average trip generation rate across all sites is some 5 vehicle trips per car wash bay during the peak hours. However, it should be noted that the site with only one car wash bay is likely to generate higher traffic generation given the potential higher turnover.

Notwithstanding this, it is expected the net additional traffic generation of the proposed development will be at least 5 vehicle trips lower than the 34 vehicle trips and 49 vehicle trips (i.e., 29 vehicle trips and 44 vehicle trips) during the AM and PM peak hours, respectively.

It is worthy to note that the trip generation rates stipulated in the Guide are not dependent on the service bay workshop component. Notwithstanding this, the service bay components will be retained as per the existing operation. Therefore, it is not expected to generate any additional vehicle trips on the surrounding road network.

Based on the above, the net additional traffic generation of the proposed development is not expected to have any adverse impacts on the surrounding road network.

Furthermore, it is worthy to note that the proposed development is seeking to modify the site into the service station similar to the previous service station that was operating prior to 2009, comprising four refuelling dispensers, a small convenience store, and three service bays. Therefore, this level of traffic would have already been generated from the previous use of the site. Therefore, it is expected that the existing roads are suitable to accommodate traffic generated by the proposed service station given it was formally occupied by the same use on the site.

6 Summary and Conclusion

This Traffic Impact Assessment relates to the proposed redevelopment of the existing Belrose Service Centre, located at 117 Pringle Avenue, Belrose. The key findings of the report are presented below:

- The proposal seeks approval to reinstate fuel sales by providing 4 refuelling dispensers by removing the current car wash facilities.
- Prior to 2009, the site was originally occupied by a service station (comprising four refuelling dispensers) and service bay workshops, until the refuelling component was replaced with a car wash. The proposal comprises the same number of fuel dispensers (4), the same number of service bays as existing, minor alterations to the existing building and same access arrangements as per the former service station.
- Vehicle access to/from the subject site will be maintained as per existing driveways off Pringle Avenue. These driveways are suitable to accommodate the largest vehicle, which is a 10m long fuel truck.
- The existing canopy has a height of 3.75m and all servicing/delivery vehicles including waste vehicles shall be restricted to a maximum height of 3.5m.
- Waste collection shall be undertaken by a private waste contractor using a site-specific waste vehicle with a maximum vertical clearance of 3.5m, which would be no larger than an 8.8m MRV. Other deliveries shall be via small vans / small rigid vehicles.
- The proposed changes to the car parking layout and associated elements are proposed to be designed in accordance with AS2890.1:2004 requirements.
- Appropriate sight distance have also been provided at the existing driveways off Pringle Avenue.
- The parking provision which is the same as that provided for the previous service station, is sufficient to accommodate the anticipated parking demand. This also notes that additional 8 parking spaces are available at the refuelling dispensers for short-term parking, which are generally used by service station customers.
- The proposed development is expected to generate an additional 29 vehicle trips and 44 vehicle trips during the AM and PM peak hours. This level of traffic is expected to be sufficiently accommodated on the surrounding road network without adverse impacts. It is worth noting that the site was previously used for fuel sales with the same number of fuel dispensers (i.e. four) and workshop facilities and therefore, this level of traffic would have already been generated from the original use of the site.
- Given the site has continued to be used as a service station with car related uses, as per the previous service station, the existing roads are considered suitable to accommodate the anticipated traffic generation associated by the reinstatement of fuel related sales.

Overall, the traffic and parking aspects of the proposed development are considered to be satisfactory.

Appendix A

Proposed Site Layout

AREA CALCULATIONS:

TOTAL SITE AREA = 1,073m² (BY SURVEY)
EXISTING WORK SHOP GFA = 135m²

PROPOSED CONVENIENCE STORE GFA = 45m²
PROPOSED WORK SHOP GFA = 98m²
PROPOSED WORKSHOP STORE ROOM GFA = 30m²
PROPOSED TOTAL GFA = 173m²

PROPOSED BIN YARD = 23 m²

PROPOSED TANK SCHEDULE

TANK	PRODUCT	LITRES	DESCRIPTION
1	PULP 98	30,000	NEW 55,000L DOUBLE WALL UNDERGROUND FUEL TANK
2	E10 94	25,000	
3	ULP 91	30,000	NEW 55,000L DOUBLE WALL UNDERGROUND FUEL TANK
4	DIESEL	25,000	

PUMP SCHEDULE

DISPENSER	PRODUCT	DESCRIPTION
1/2, 3/4, 5/6, 7/8	PULP 98 / ULP 91 / E10 94 / DIESEL	8 HOSE MPD

GENERAL NOTES:
- ALL EXISTING DETAILS TO BE CONFIRMED BY SURVEYOR
- THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH OTHER CONSULTANTS DRAWINGS AND SPECIFICATIONS AND SUCH OTHER WRITTEN INSTRUCTIONS AS MAY BE ISSUED DURING THE COURSE OF THE CONTRACT AND THE CONSTRUCTION OF THE WORKS
- THE DIMENSIONS AND PROFILES SHOWN ON THE DRAWINGS ARE BELIEVED TO BE CORRECT. IT IS THE RESPONSIBILITY OF THOSE WORKING ON SITE TO VERIFY THE DIMENSIONS AND PROFILES AND LOCATE ALL SERVICES ON SITE PRIOR TO COMMENCING WORKS
- ALL DIMENSIONS ARE IN MILLIMETRES UNLESS NOTED OTHERWISE
- USE FIGURED DIMENSIONS ONLY. DO NOT SCALE.
- IF ANY DISCREPANCIES EXIST IN DIMENSIONING, COORDINATION BETWEEN SCHEDULES, SPECIFICATIONS AND / OR DRAWINGS, OR ANY OTHER DISCREPANCY, NOTIFY MCHP ARCHITECTS BEFORE PROCEEDING WITH WORKS
- LARGER SCALE DRAWINGS TAKE PRECEDENCE OVER SMALLER SCALE DRAWINGS
- THE BUILDER IS TO ENSURE THAT ALL BUILDING WORKS, ASSOCIATED WORKS, MATERIALS AND WORKMANSHIP IN THIS PROJECT ARE TO BE CONSTRUCTED IN ACCORDANCE WITH THE BUILDING CODE OF AUSTRALIA, THE RULES AND REQUIREMENTS OF THE LOCAL WATER AUTHORITY, COUNCIL, ALL OTHER RELEVANT AUTHORITIES AND THE RELEVANT STANDARDS ASSOCIATION OF AUSTRALIA CODES AND SPECIFICATIONS
- REFER TO AND COORDINATE WITH ALL CONSULTANT DOCUMENTATION IF ANY DISCREPANCIES OR CLASHES ARE DISCOVERED DURING WORKS. NOTIFY ARCHITECT AND AWAIT INSTRUCTIONS

NOTE:
BUILDING INTERNAL LAYOUT INDICATIVE ONLY.

LEGEND
- PROPOSED ADDITION TO EXISTING WORKSHOP
- PROPOSED ALTERATION TO EXISTING WORKSHOP
- EXISTING BUILDING WALLS TO REMAIN
- PROPOSED SITE ADDITIONS

APPROX. LOCATION OF EXISTING UNDERGROUND 2.0kL WASTE OIL TANK
COMBINED RAINWATER TANK AND ON-SITE DETENTION TO CIVIL ENGINEER'S DETAILS
EXISTING AIR COMPRESSOR
9130 O/A PROPOSED ADDITION
700 O/A PROPOSED ADDITION
B DA16
353° 32'
SITE BOUNDARY 28.31
EXISTING CONCRETE BLOCK RETAINING WALL & WIRE FENCE
MODIFIED BIN YARD
WORKSHOP STORE ROOM
A/C UNIT
EX LID
EXISTING WORKSHOP WASTE WATER TREATMENT SYSTEM TO REMAIN
WORKSHOP EXTENSION
EX CPS UNIT
SERVICE STATION
EXISTING ROOF OVER
C DA16
D DA16
2240 NOM PROPOSED ADDITION
EXISTING CONCRETE BLOCK RETAINING WALL & WIRE FENCE
6000 NOM PROPOSED ADDITION
SITE BOUNDARY 19.09
EXISTING AWNING OVER
EXISTING ROLLOVER BUND
LOT 8
DP 545948
1069m² BY TITLE
1073m² BY SURVEY
A DA16
EXISTING EXTERNAL CAR HOIST TO REMAIN
ALIGN CENTRE OF DISPENSER WITH CENTRE OF EXISTING CANOPY COLUMNS (TYP)
EXISTING CONCRETE HARDSTAND
EX CPS UNIT
EXISTING CONCRETE KERB
EXISTING LANDSCAPING
EX MONITORING WELL
EX LIGHT POLE
EXISTING STRIP DRAIN
EXISTING WASTE WATER TREATMENT SYSTEM TO REMAIN
9900 (NOM) FILL POINT FROM BOUNDARY
EXISTING CANOPY OVER
4700 (APPROX) DISPENSER TO BOUNDARY
PROPOSED STRIP DRAIN
1450 NOM
1900 NOM
DISP
EX COL
FUEL FILL POINTS
APPROX. 3.75m TO UNDERSIDE OF EXISTING CANOPY
EX MONITORING WELL
UNDERGROUND TANK FARM
2800 (APPROX) AQUATOR FROM SITE BOUNDARY
3000 (APPROX) TANK FROM SITE BOUNDARY
NOM RL 156.08
EX RL 155.57
EXISTING CONCRETE DRIVEWAY CROSSOVER
SITE BOUNDARY 39.625
215° 28'
GRASS
EXISTING FOOTPATH
ENTRY
EXIT
EX SIGN
CONCRETE DRIVEWAY
EXISTING DRAINS AND PITS TO REMAIN TO CIVIL ENGINEER'S DETAILS
10.0m FUEL DELIVERY VEHICLE PATH
NEW SPILL SAFE FILL BOX
PROPOSED UNDER CANOPY DRAINAGE TO CONNECT TO EXISTING TRADE WASTE PIT TO CIVIL ENGINEER'S DETAILS
PRINGLE AVENUE
280° 56'
EX PP
EX PHONE BOOTH
EX AUS POST BOX
ELEC POWER BOXES
EX SIGN
4525 NOM PROPOSED ADDITION
300 MIN
800 MIN
2100
2600
6200
5900
SITE BOUNDARY 42.67
93° 32'
NEW PARKING SPACES LINE MARKED TO TRAFFIC ENGINEER'S DETAILS
WATER AIR VALVE
COMMS PIT
RALSTON AVENUE
PROPOSED CAR PARKING SPACES
EX MONITORING WELL
NOM RL 155.36
PROPOSED STRIP DRAIN
AIR / WATER POINT
EXISTING FOOTPATH
GRASS
EX RL 156.21
T1 30kL
T2 25kL
T3 30kL
T4 25kL
4465 (APPROX) TANK FROM SITE BOUNDARY
1:20 NOM FALL
1:40 MAX FALL
EX RL 156.08
EX PP
COMMS PIT
FUEL VENTS
EXISTING LANDSCAPING
EX LIGHT POLE
SITE BOUNDARY 4.965
149° 30'
EXISTING CANOPY TO REMAIN
REINSTATE CONCRETE TO FORECOURT AT COMPLETION OF TANK REPLACEMENT WORKS. MINIMUM EXTENT TO CIVIL ENGINEER'S DETAILS
F DA17
OUTLINE OF MINIMUM TANK FARM EXCAVATION. REFER TO CIVIL ENGINEER'S DETAILS FOR EXTENT & DESIGN OF SHORING AS REQUIRED
EXISTING PARKING SPACES TO BE RETAINED. REINSTATE LINE MARKING AFTER COMPLETION OF TANK REPLACEMENT WORKS
2x 55kL UNDERGROUND FIBRE GLASS SECONDARILY CONTAINED COMPARTMENTED FUEL STORAGE TANKS
1 DA18
NOM RL 156.08
PROVIDE NEW GRADING TO HARDSTAND FOR PROPOSED ACCESSIBLE PARKING SPACE. ENSURE MAX 1:40 CROSS FALL IN ALL DIRECTIONS TO EXTENT OF PARKING SPACE AND SHARED ZONES
NEW VENT PIPES WITH PROTECTIVE BOLLARDS
1850 NOM FUEL VENT FROM BOUNDARY (1500 MIN)
125 NOM FLAGPOLE SIGN FROM BOUNDARY
INTERNALLY ILLUMINATED DOUBLE SIDED SITE IDENTIFICATION FLAG POLE SIGN. REFER TO DA17 DETAIL 1
AQUATOR AND ASSOCIATED PIPEWORK AND PITS TO CIVIL ENGINEER'S DETAILS
PROPOSED SPEEDWAY SIGNAGE FIXED TO EXISTING CANOPY FASCIA
4x FUEL DISPENSERS & BOLLARDS TO BE INSTALLED UNDER EXISTING CANOPY
2710 NOM FUEL VENT FROM BOUNDARY CORNER (1500 MIN)
4200 NOM FLAG POLE SIGN FROM BOUNDARY CORNER
E DA17

1 PROPOSED SITE PLAN
A1 SCALE: 1:100
0 1 2 5 10 metres

PRELIMINARY
NOT FOR CONSTRUCTION

No	Date	Description	By
J	29.07.2025	MINOR WORKSHOP EXTENSION, CARPARKING MODIFIED	HS
I	18.05.2025	RWT AND AQUATOR ADDED TO SUIT STORMWATER REQUIREMENTS	HS
H	28.03.2025	FUEL FILL POINT RELOCATED, TRUCK PATH REMOVED	MF1
G	18.03.2025	ACCESSIBLE PARKING AND FUEL DELIVERY VEHICLE PATH SHOWN	MF1
F	20.03.2024	DEVELOPMENT APPLICATION ISSUE	MF1
E	21.02.2024	UPDATED TO SUIT CIVIL ENGINEER'S DETAILS	MF1
D	07.12.2023	SIGNAGE ADDED TO CANOPY, PARKING LINE MARKING UPDATED	MF1
C	24.11.2023	UNDERGROUND FUEL TANKS REVISED	MF1
B	17.10.2023	ADDITIONAL INFORMATION FOR COORDINATION	MF1
A	10.10.2023	ORIGINAL ISSUE	MF1

Client
SPEEDWAY PETROLEUM

Project
ALTERATIONS & ADDITIONS TO EXISTING WORKSHOP FOR NEW SERVICE STATION TENANCY
LOT 8 DP 545948
117 PRINGLE AVENUE BELROSE NSW 2085

Drawing Title
PROPOSED SITE PLAN

A1 Scale	A3 Scale	Date	Drawn
1:100	HALF A1 SCALE	04.10.2023	MF1

Drawing No: **21-069 DA13**
Revision: **J**

MCHP ARCHITECTS
ABN 21 096 632 450
SUITE 5, 38-46 ALBANY STREET
ST LEONARDS NSW 2065
02 9436 2222 mchp.com.au
NOMINATED ARCHITECTS:
Craig Ridgewell: 9109 NSW | 3871 SA | 800779 Vic | 2871 ACT
David Cahill: 7135 NSW | 3870 SA | 16212 Vic | 2806 ACT | 5724 Qld
MCHP Architects Company Registration: 600137 Vic | 3879 SA

Appendix B

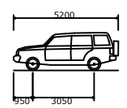
Swept Path Analysis

RALSTON AVENUE

PRINGLE AVENUE

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



B99 Vehicle (Realistic min radius) (2004)

Overall Length	5200mm
Overall Width	1940mm
Overall Body Height	1878mm
Min Body Ground Clearance	272mm
Track Width	1840mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	6250mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KR	KH	KH	01/08/25

ttpp transport planning

PROJECT

BELROSE SERVICE CENTRE

TITLE

SWEPT PATH ANALYSIS
AS2890.1 5.2m B99 VEHICLE

DWG No. 23192CAD006
FIGURE 1

DATE STAMP 1 August 2025

PROJECT No.	SCALE	REV.
23192	1:250 @A3	A

Date: 1 August 2025

Filename: 23192CAD006-250801-Swept Path

VEHICLE ENTERING

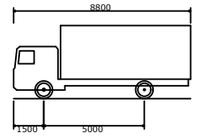
VEHICLE EXITING

RALSTON AVENUE

PRINGLE

KEY:

	Forward	Reverse
Wheel path		
Body envelope		
300mm clearance		



MRV - Medium Rigid Vehicle

Overall Length	8800mm
Overall Width	2500mm
Overall Body Height	3633mm
Min Body Ground Clearance	428mm
Track Width	2500mm
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	10000mm

REV.	DESCRIPTION	DRAWN	CHECK	APP'D	DATE
A	ISSUE FOR DISCUSSION	KR	KH	KH	01/08/25

ttpp transport planning

PROJECT

BELROSE SERVICE CENTRE

TITLE

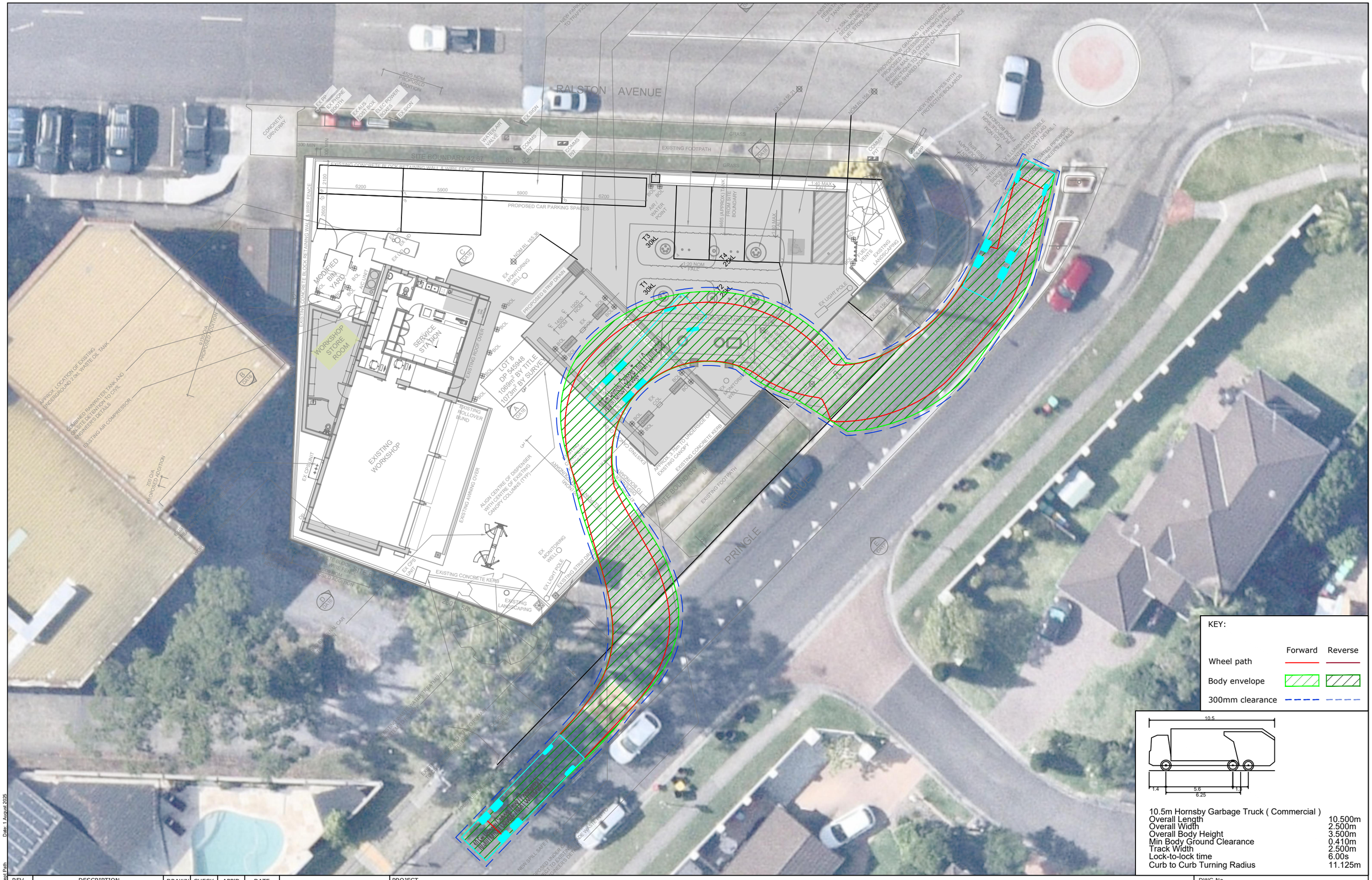
SWEPT PATH ANALYSIS
AS2890.2 8.8m MEDIUM RIGID VEHICLE

DWG No. 23192CAD006 FIGURE 2

DATE STAMP 1 August 2025

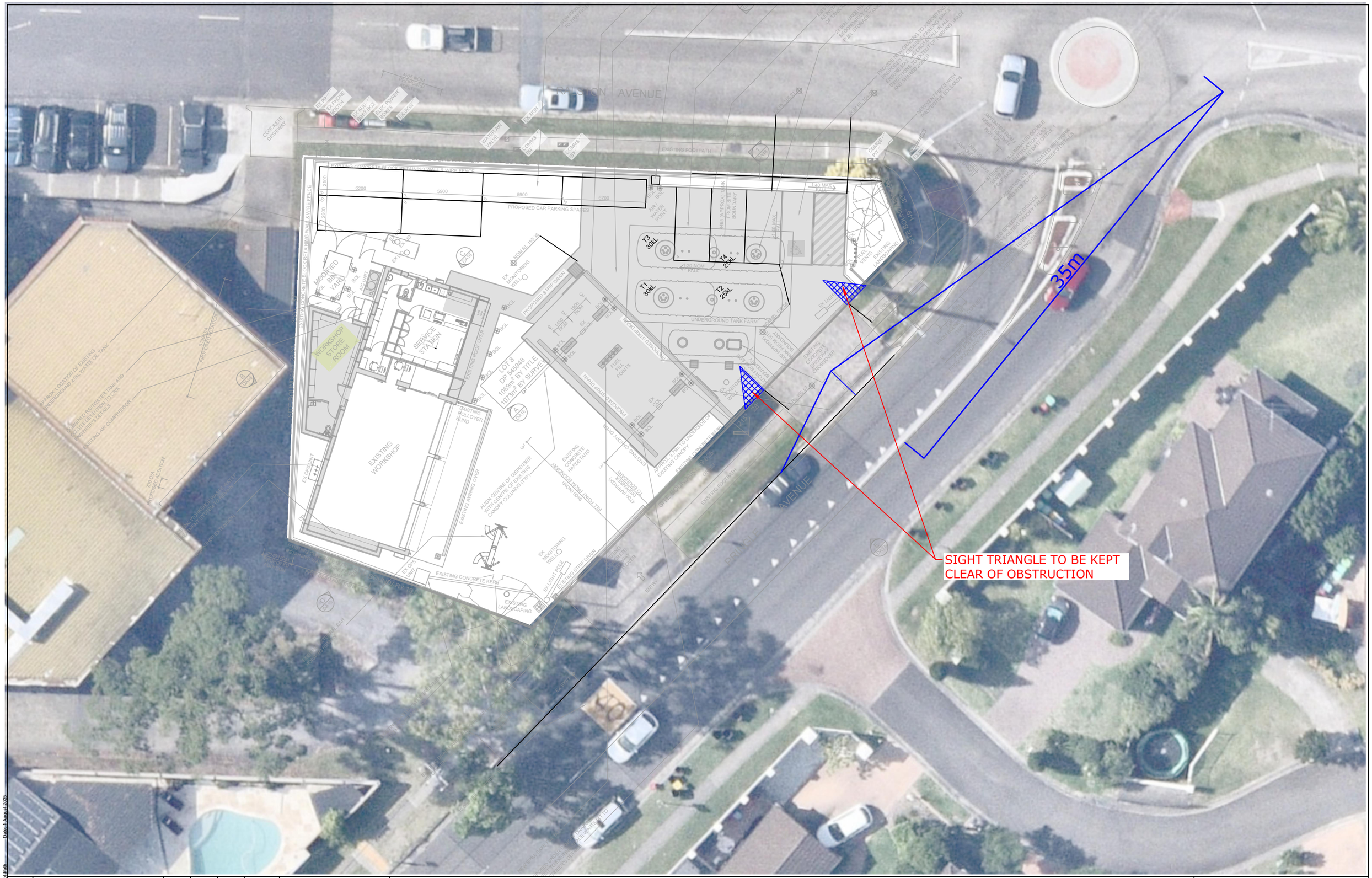
PROJECT No.	SCALE	REV.
23192	1:350 @A3	A

Filename: 23192CAD006-250801-Swept Path
Date: 1 August 2025


RALSTON AVENUE
PRINGLE AVENUE
SITE BOUNDARY 42.67
83° 32'
EXISTING FOOTPATH
GRASS
CONCRETE DRIVEWAY
EX. PPT
EX. PHONE BOOTH
EX. AUS POST BOX
ELEC. POWER BOXES
EX. SIGN
WATER AIR VALVE
COMMS PIT
4525 NOM. PROPOSED ADDITION
300 MIN
600 MIN
EXISTING CONCRETE BLOCK RETAINING WALL & WIRE FENCE
6200
5900
5900
6200
2200
2600
PROPOSED CAR PARKING SPACES
1:40 MAX FALL
AIR WATER POINT
EX. LIGHT POLE
EX. FUEL VENTS
EXISTING LANDSCAPING
T1 30KL
T2 25KL
T3 30KL
T4 20KL
H65 (APPROX) TANK FROM SITE BOUNDARY
EX. NOM RL55.68
EX. MONITORING WELL
MODIFIED BIN YARD
WORKSHOP STORE ROOM
SERVICE STATION
EXISTING WORKSHOP
EXISTING ROOF OVER
PROPOSED STRIP DRAIN
EXISTING HOLLOWER BUND
LOT 8 DP 845948 1069m² BY TITLE 1070m² BY SURVEY
EX. GPO PIT
EX. CP
EX. GAS VALVE
EX. GAS METER
EX. LIGHT POLE
EXISTING CONCRETE KERB
EXISTING LANDSCAPING
EXISTING CONCRETE KERB
EXISTING FOOTPATH
EXISTING CANOPY
APPROX. 4.75m TO UNDERSIDE OF EXISTING CANOPY
ALIGN CENTRE OF DISPENSER WITH CENTRE OF EXISTING CANOPY COLUMNS (TYP)
EXISTING AWNING OVER
EXISTING CONCRETE KERB
EXISTING STRIP DRAIN
EXISTING CONCRETE KERB
EXISTING CANOPY
APPROX. 4.75m TO UNDERSIDE OF EXISTING CANOPY
EXISTING CONCRETE KERB
EXISTING FOOTPATH
EXISTING GRASS
EXISTING GRASS
EXISTING GRASS

Appendix C

Sight Distance Assessment


35m
SIGHT TRIANGLE TO BE KEPT CLEAR OF OBSTRUCTION
EXISTING WORKSHOP
WORKSHOP STORE ROOM
SERVICE STATION
MODIFIED BIN YARD
PROPOSED CAR PARKING SPACES
UNDERGROUND TANK FARM
T1 30KL
T2 25KL
T3 30KL
T4 20KL
LOT 8 DP 845948 1069m² BY TITLE 1079m² BY SURVEY
EXISTING CONCRETE KERB
EXISTING FOOTPATH
EXISTING CONCRETE DRIVEWAY
PRINCE AVENUE
EXISTING CONCRETE DRIVEWAY CROSSOVER
EXISTING LANDSCAPING
EXISTING CONCRETE BLOCK RETAINING WALL & WIRE FENCE
PROPOSED STRIP DRAIN
EXISTING ROOF OVER
EXISTING AWNING OVER
EXISTING CANOPY
EXISTING CONCRETE HARDSTAND
ALIGN CENTRE OF DISPENSER WITH CENTRE OF EXISTING CANOPY COLUMNS (TYP)
EXISTING STEP DRAIN
EX MONITORING WELL
EX LIGHT POLE
EX GPO
EX SIGN
EX PHONE BOOTH
EX AUS POST BOX
ELEC POWER BOXES
WATER AIR VALVE
COMMS PIT
EX CROSSING
EXISTING TREE
EXISTING SHRUBS
EXISTING TREES
EXISTING TREE TO BE REMOVED
EXISTING TREE TO BE TRIMMED
EXISTING TREE TO BE PROTECTED

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