

Two Wells Ambulance Station

Traffic Impact Assessment

Grieve Gillett Architects

23 July 2025

Ref: 241697R005D



Building exceptional
outcomes together



Document History and Status

Rev	Description	Author	Reviewed	Approved	Date
A	Draft TIA	KN	TCP	TCP	31/01/2025
B	Final TIA	KN	JA	TCP	31/03/2025
C	Final TIA	KN	JA	TCP	26/04/2025
D	Final TIA	KN	JA	TCP	28/07/2025

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Client: Grieve Gillett Architects
Ref: 241697R005D

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1 Background Information

1.1 Introduction

Tonkin has been engaged by Grieve Gillett Architects to undertake a Traffic Impact Assessment (TIA) for the proposed new Ambulance Station on Old Port Wakefield Road in Two Wells, South Australia. This TIA is to accompany the planning permit application.

This report documents how the proposed Ambulance Station will impact the existing traffic network in the surrounding area.

1.2 Scope of Works and Methodology

This TIA has been developed in line with the scope of works and methodology in our proposal (reference 241697P001A) which has included the following:

- Established a baseline of available traffic data provided by the client or through publicly available source on relevant road network.
- Obtained relevant crash data for the relevant roads around the subject site.
- Undertake a desktop site review to document existing road network issues and potential constraints.
- Estimated the anticipated traffic generation of the site, based on industry standards as well as information provided by the client.
- Assigned the estimated traffic distribution onto the external road network as a percentage distribution in different directions and onto the existing road network.
- Considered the implications of the additional traffic volumes onto the road network in the proximity of the site.
- Identification of any road/intersection upgrades or changes that might be needed to support the development and additional traffic growth.
- Preparation of TIA that is in a format appropriate for DIT referral.



2 Background Information

This section of the report details the existing traffic and road conditions based on desktop investigations and data obtained from around the site and the surrounding road network.

2.1 Site Description

The subject site is located at the southern corner of the intersection of Old Port Wakefield Road and Wells Road in Two Wells, as shown in Figure 2.1. The surrounding area is mixed use, with shops, community services, and parks. There is an existing building used by Two Wells 1st Scout Group at the southwest end of the site, and the rest is used as an unofficial parking area.

There are two Adelaide Plains Council buildings adjacent to the subject site: Adelaide Plains Council Two Wells Office and Two Wells Council Chambers. Two Wells Country Fire Service (CFS) is located to the southwest of the subject site.



Figure 2.1 Site Location

It is understood that the around 8 hectares of land west to the subject site will be developed into commercial, retail, and community facilities, as illustrated in Figure 2.2.



Figure 2.2 Council Land Acquisition for Commercial, Retail, and Community Facilities



2.2 Planning Zone

The proposed development is located within Adelaide Plains Council, under Township Main Street (TMS) Zone. The land zoning map is displayed in Figure 2.3.

The following overlaps are applicable for the subject site:

- Hazards (Bushfire – Urban Interface) Overlay
- Hazards (Flooding – General) Overlay
- Native Vegetation Overlay
- Prescribed Wells Area Overlay
- Traffic Generating Development Overlay

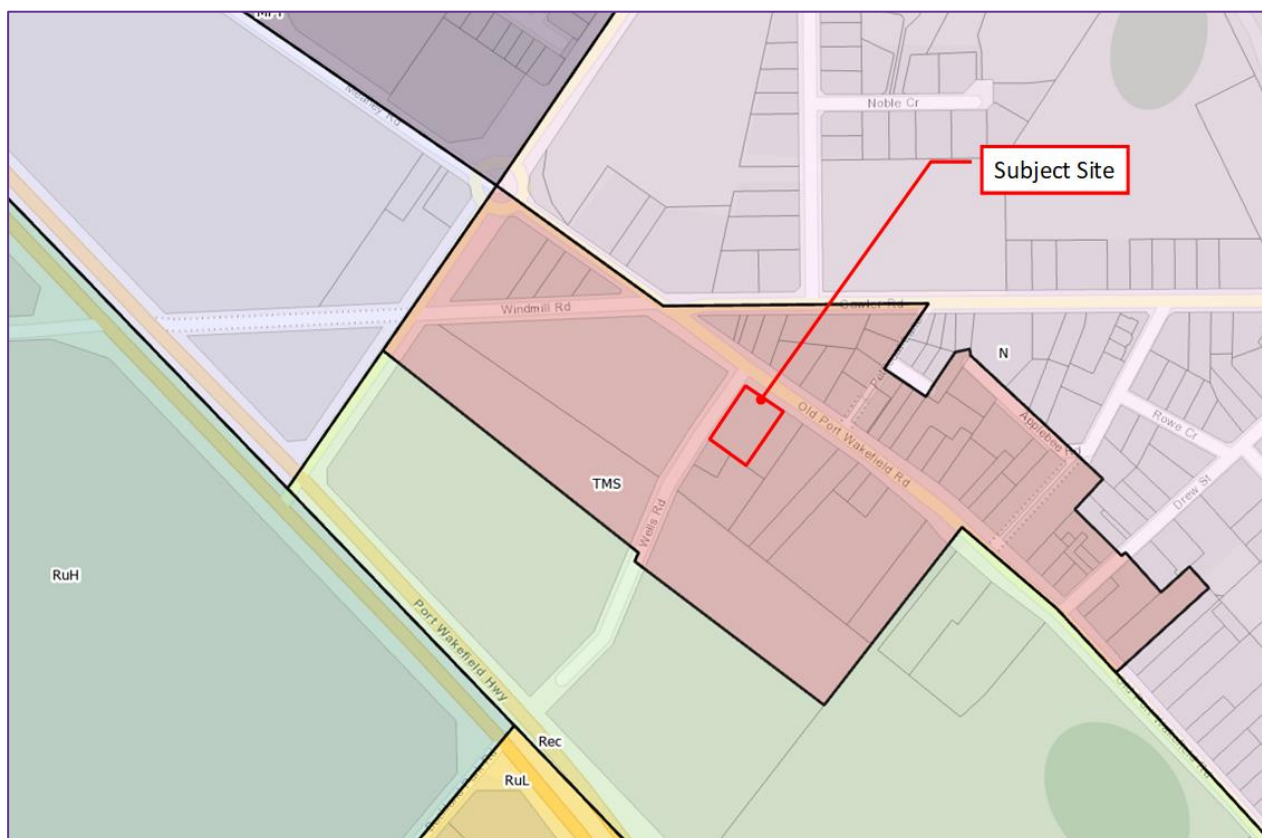


Figure 2.3 Planning Zone of the Development Site

2.3 Road Network

2.3.1 Old Port Wakefield Road

Old Port Wakefield Road is classified as a subarterial road, under the jurisdiction of Adelaide Plains Council. It is a two-way, two-lane road, with the width of each lane to be around 5m to 6m. On the frontage of the subject site, there are 45-degree angle parking spaces provided along the westbound lane, and parallel parking spaces along the eastbound lane.

As Old Port Wakefield Road is connected with Mallala Road and Gawler Road, and indirectly with Princes Highway / Port Wakefield Highway / A1, it provides access to the wider network for the proposed ambulance station.

The posted speed limit is 50km/h. Figure 2.4 shows the configuration of Old Port Wakefield Road in the vicinity of the subject site.



Figure 2.4 Old Port Wakefield Road looking Northwest, adjacent to the Subject Site



2.3.2 Wells Road

Wells Road is a dual-lane single carriageway with maintenance authority also belonging to Adelaide Plains Council. It is classified as a Local Road.

One end of Wells Road is a cul-de-sac, with the other end connected with Old Port Wakefield Road. The length of the road is around 350m.

The posted speed limit is by default to be 50km/h for local residential roads. Figure 2.5 shows the configuration of Wells Road in the vicinity of the subject site.



Figure 2.5 Wells Road Looking North, adjacent to the Subject Site



2.4 Crash History

Within the vicinity of the subject site, crash data for the period of 2019-2023 inclusive from Data SA was reviewed on LocationSA, as shown in Figure 2.6. There were few collisions recorded on Old Port Wakefield Road, with none having occurred in the proximity to the site. The closest recorded crash is approximately 150m east of the site and is noted as being a collision with a parked vehicle causing property damage.

There are no crashes recorded near the site along Wells Road.



Figure 2.6 Old Port Wakefield Road Looking Southeast, adjacent to the Subject Site



3 Proposed Development

3.1 Proposed Layout

The proposed development includes the removal of the existing scout group building, and the implementation an ambulance station with an off-street carpark with 15 spaces.

The proposed design will result in some loss of spaces within the angle parking bay on Old Port Wakefield Road.

Figure 3.1 shows the proposed design layout. The full design set can be found in Appendix A.

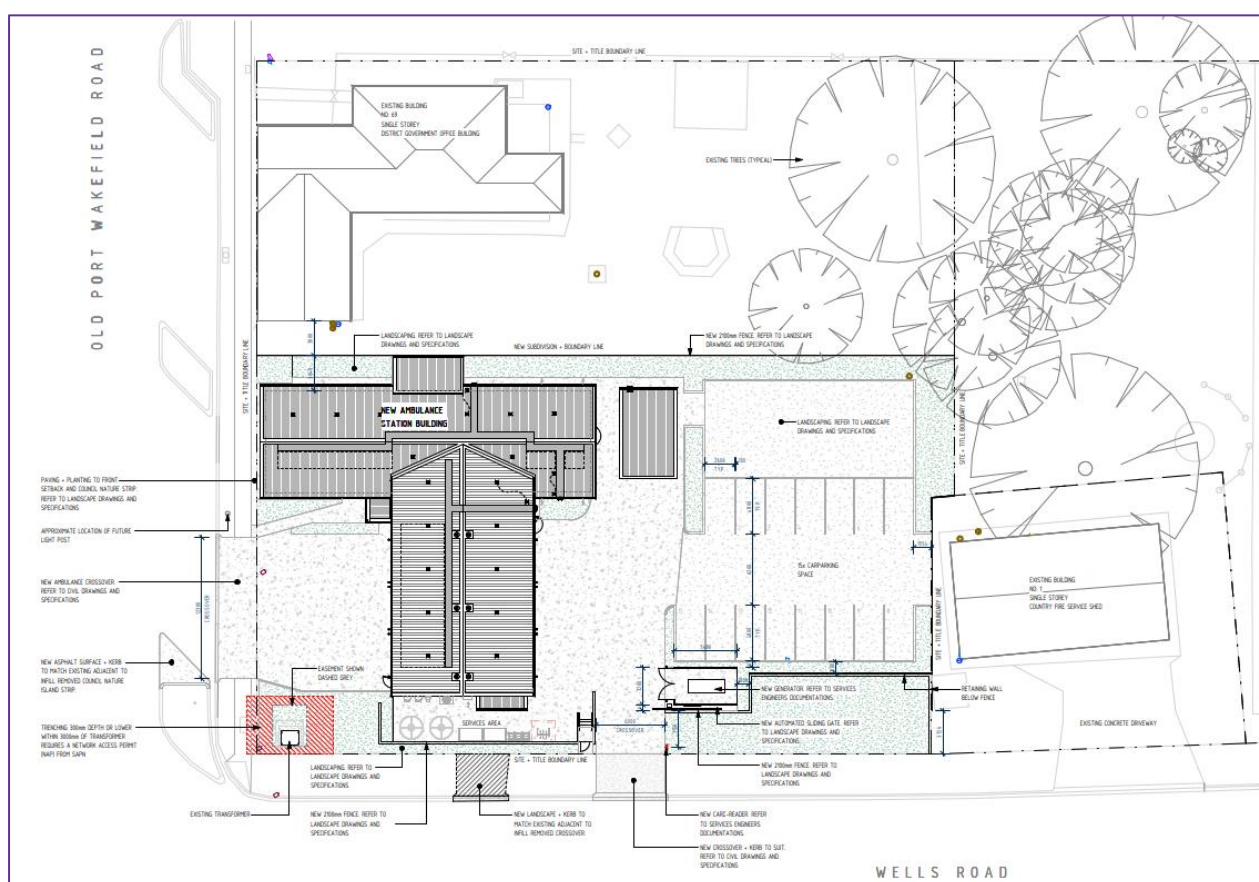


Figure 3.1 Proposed Layout

Within the station following rooms are proposed:

- Ambulance Garage for 3 ambulances
- Ambulance undercover park x 1
- Training room
- Office
- CTL
- Kitchen
- Crew Room
- Communication Room
- Cleaners Closet
- AMB Water Closet
- Change Room
- Linen
- Dirty Utility Room
- AMB Store
- Drug Store
- Sleep Rooms x 4

3.2 Site Access Arrangements

The proposed site access arrangement is indicatively shown in Figure 3.4. There are two accesses for the ambulance station, Old Port Wakefield Road Access and Wells Road Access.

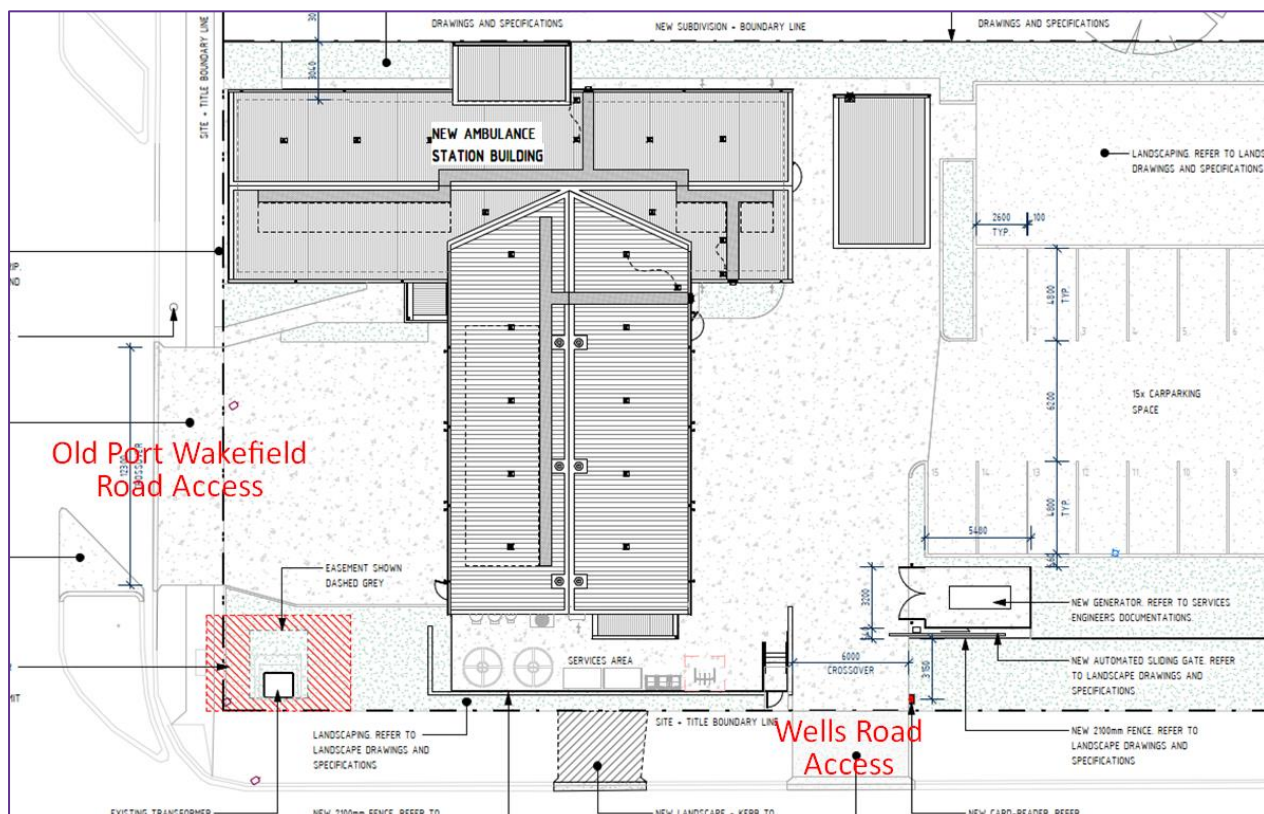


Figure 3.3 Access Arrangement

For the ambulance station, all ingress vehicles are to enter the site via the access on Wells Road. This access is controlled by an automated sliding gate with a card reader, which allows to restrict access to authorised vehicles only. Therefore all vehicles will need to pull up the driveway on the side of the card reader.

For the egress movements, ambulances are to exit the site through the exit only access on Old Port Wakefield Road. All other vehicles are to use the access on Wells Road. These movements are illustrated in Figure 3.4.

Concerns might be raised regarding the conflict of the ingress and egress vehicles at the access on Wells Road. However, as this is a restricted access site where all staff are informed and well aware of the operation, and also that all vehicles will be stopped at the sliding gate before entering, the risk of collisions with vehicles from the opposing direction at the driveway is low and does not pose a safety concern. We also note that this access arrangement is an operational requirement of SA Ambulance Service (SAAS).

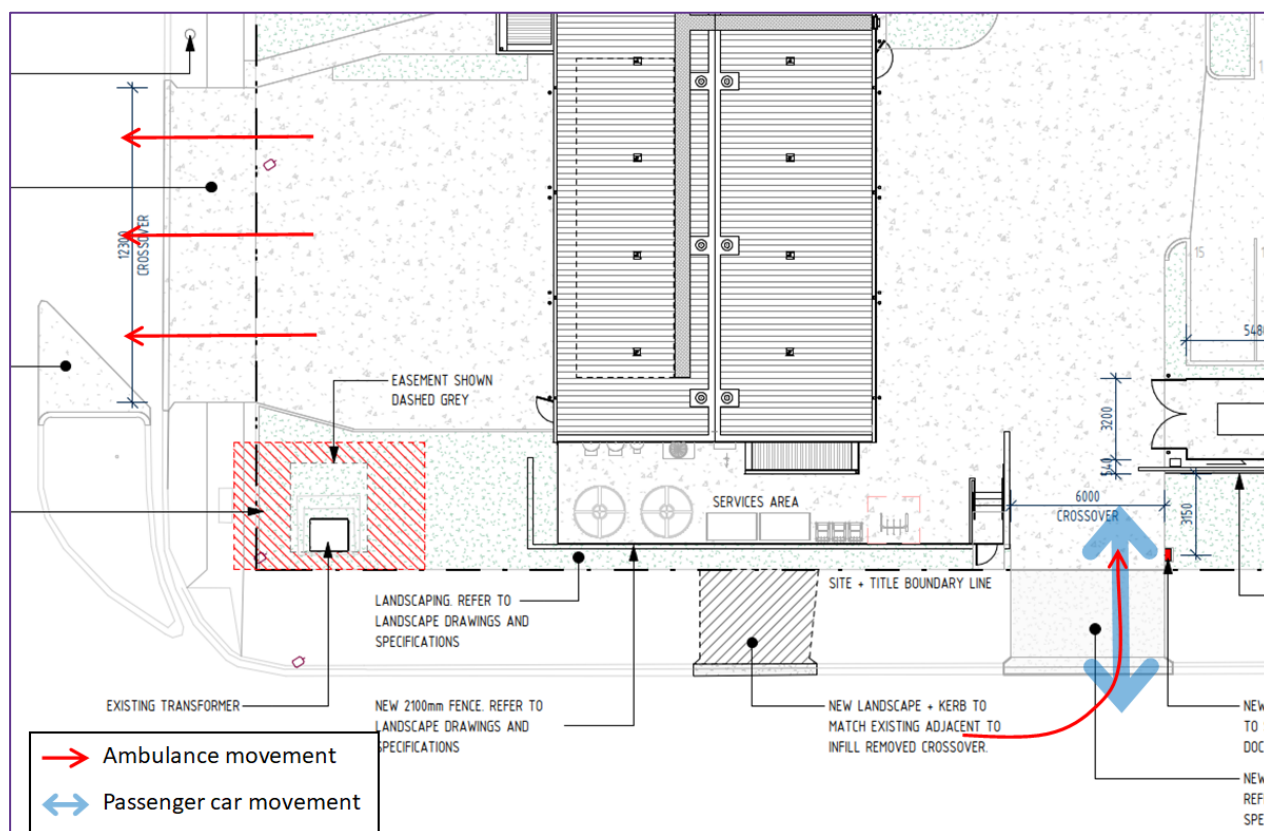


Figure 3.4 Site Access Arrangements



4 Impact Assessment

4.1 Traffic Impact

Based on the information provided, it is understood that SAAS has required 12 paramedics to be staffed on site at all times.

The existing AADT on Old Port Wakefield Road between Mallala Road and Gawler Road is estimated to be around 5,100 vehicles per day. There is no traffic data available for Wells Road. However the traffic volume on Wells Road is not expected to be high as it is a cul-de-sac, providing access mainly to a recycle centre, a historic site, and an open field.

To conduct a conservative analysis, it is assumed there are 12 vehicles entering and 12 vehicles exiting during the peak hour. As the proposed ambulance station has capacity for 4 ambulances, if all ambulances are entering and leaving the site during the peak hour, the total number of generated trips is 32 trips. This equates to around 1 additional vehicle every 2 minutes. This is considered to be an insignificant increase the network can adequately absorb.

As it is unlikely that all 12 paramedics and 4 ambulances would be accessing or exiting the site at the same time, it is reasonable to believe that the estimated trip generation at the site would be much less significant than estimated, and is expected to be well within the operating capacity of the surrounding road network.

Occasionally more people might be coming to the station for training or meeting purposes and use the training room, where it has a capacity of 20 people. But the generated trips are still well within the network capacity.

4.2 Sight Distance Assessment

Sight distance at the proposed driveway crossovers has been assessed in accordance with the requirements of Figure 3.2 found in AS2890.1. For a default speed limit of 50km/hr, the desirable sight distance is 69m. This is shown in Figure 4.1.

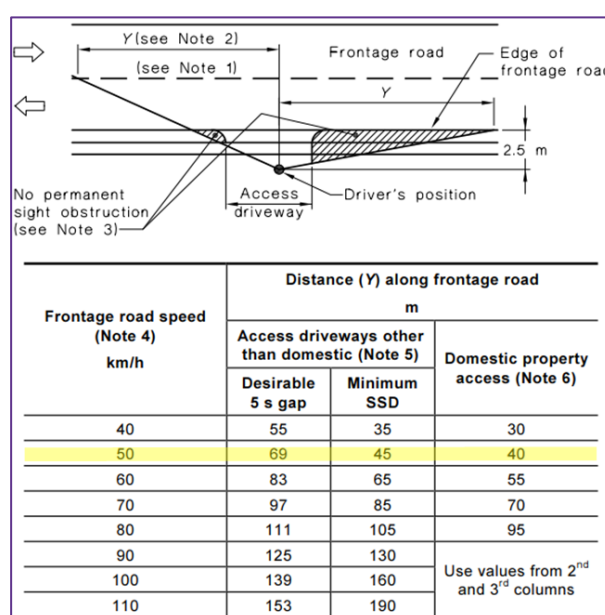


Figure 4.1 AS 2890.1 Figure 3.2

The following sections are to discuss the sight distance requirements at each access.

4.2.1 Old Port Wakefield Road

Figure 4.2 shows that in order to achieve sufficient sight distance for ambulances exiting on to Old Port Wakefield Road, some on-street parking space removals would be required. It is highly recommended that a desirable of 69m of sight distance or longer is provided considering that this vehicle crossing is used when ambulances are being dispatched, often in emergency situation where time is highly sensitive, therefore effort should be made to maximise driver's visibility to the road.

Some of the angle parking spaces on Old Port Wakefield Road can potentially be replaced with parallel parking spaces if they do not interfere with the sight line, as indicated in Figure 4.2. This could lessen the impact of parking loss on the community.

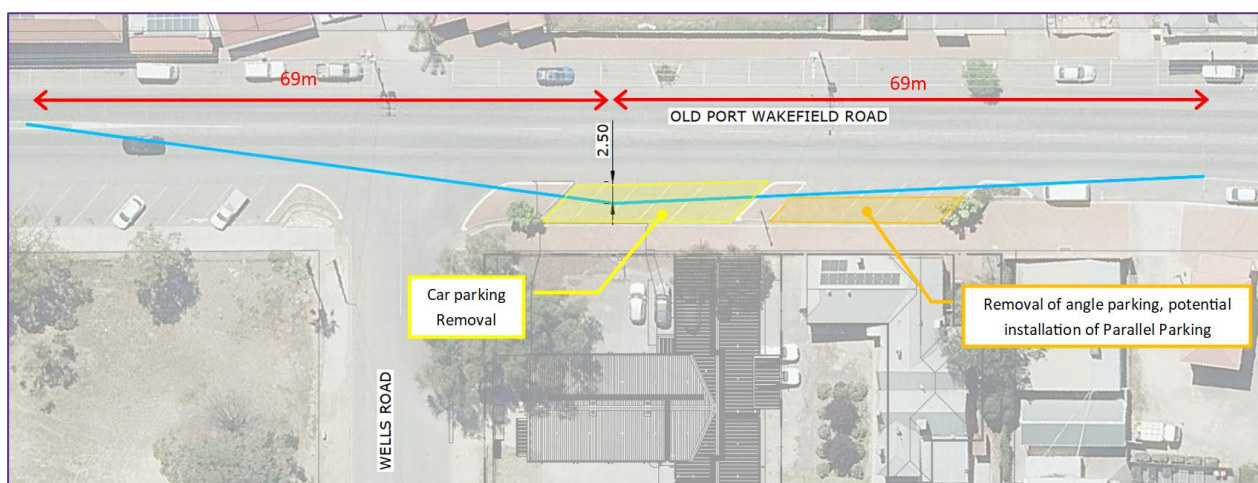


Figure 4.2 Sight Distance Check – Old Port Wakefield Road

Accordingly these angle parking spaces along Old Port Wakefield Road have been proposed to be removed or replaced as shown in Figure 4.3.

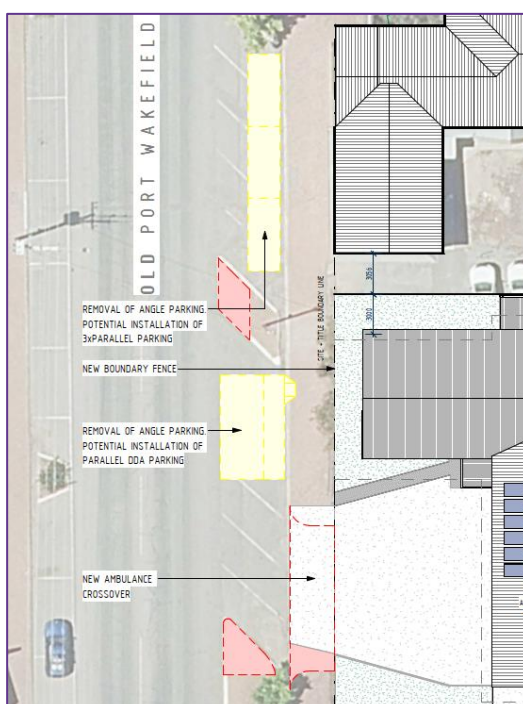


Figure 4.3 Proposed On-Street Carparking Arrangement

An alternative access arrangement has been suggested to avoid the removal of street parking along Old Port Wakefield Road, as illustrated in Figure 4.4. This option stems from the high demand for parking serving nearby businesses and the planned developments in the area, as discussed in Section 2.1. Under this arrangement, all vehicles, including ambulances, will use Wells Road for both inbound and outbound trips.

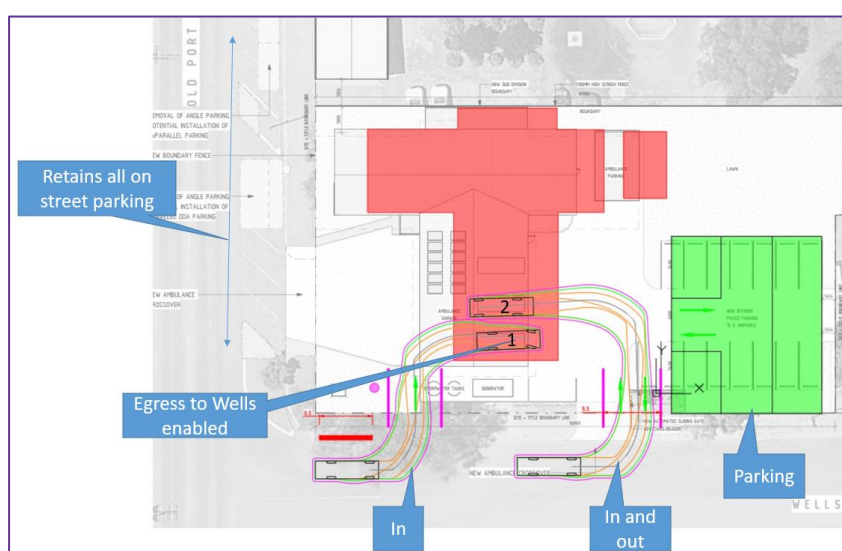


Figure 4.4 Alternative Access Arrangements

While this arrangement may mitigate the impact on on-street parking, it would require ambulances to exit Wells Road before re-entering the main network connected to Old Port Wakefield Road. This would ultimately increase response times, potentially causing unnecessary delays for emergency responders when attending to urgent calls. Considering that there are plans to develop the adjacent land for commercial and retail use, as discussed previously, the traffic flow on Wells Road is expected to increase. This could potentially result in a need for the intersection of Old Port Wakefield Road and Wells Road to be upgraded in order to meet the growing demand. Combining with an increased traffic volume and an intersection that is more complicated to negotiate, the response time can be lengthened significantly.

Given the above considerations, it is not recommended to adopt this arrangement.

4.2.2 Wells Road Access

On Wells Road, no-parking yellow lines needs to be installed on both sides of the proposed driveway, as shown in Figure 4.5, in order to provide sufficient sight distance.

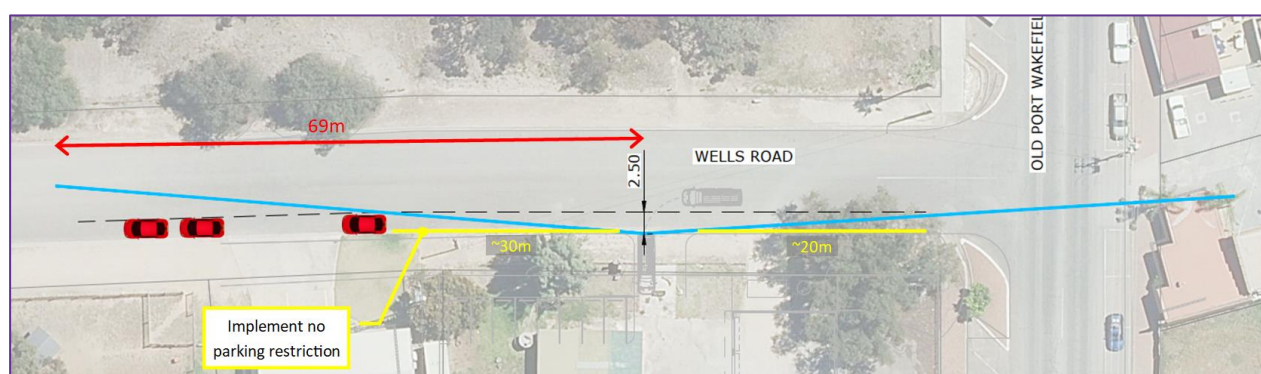


Figure 4.5 Sight Distance Check – Wells Road

4.3 Driveway Width Assessment

The width of the proposed ambulance driveway on Old Port Wakefield Road is governed by the operational requirement set out by Department for Health and Wellbeing (DHW), that all ambulances are able to exit simultaneously, to accommodate for ambulance drivers who are often under stress and pressure when the ambulances are being dispatched.

However, according to AS 2890.1 Section 3.2.3, a minimum of 6m clearance is required from the tangent point of the intersection to the edge of accessway at an intersection, as shown in Figure 4.6.

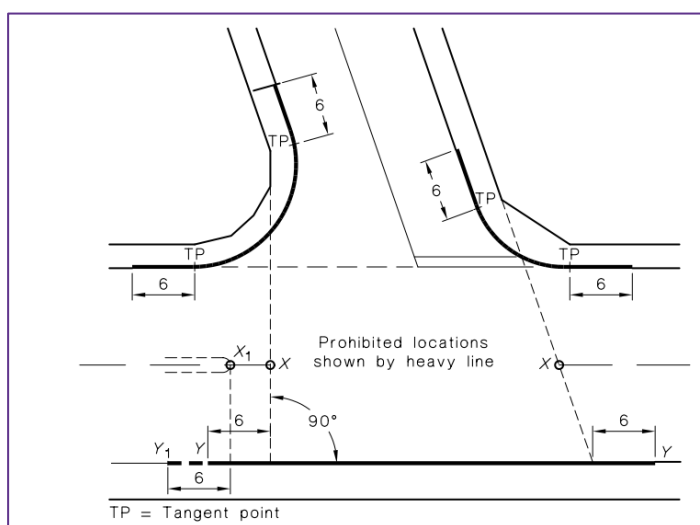


Figure 4.6 AS 2890.1 Prohibited Accessway Locations

To achieve the 6m requirement, it is recommended that the existing kerb build-out be reshaped. Figure 4.7 illustrates the proposed kerb configuration, which is designed to maintain access for a 19m semi-trailer—the largest vehicle permitted on Wells Road—at the intersection of Old Port Wakefield Road and Wells Road, while meeting the 6-metre requirement.

This arrangement will also allow ambulances to exit westbound more smoothly from the garage opening on the far western side.

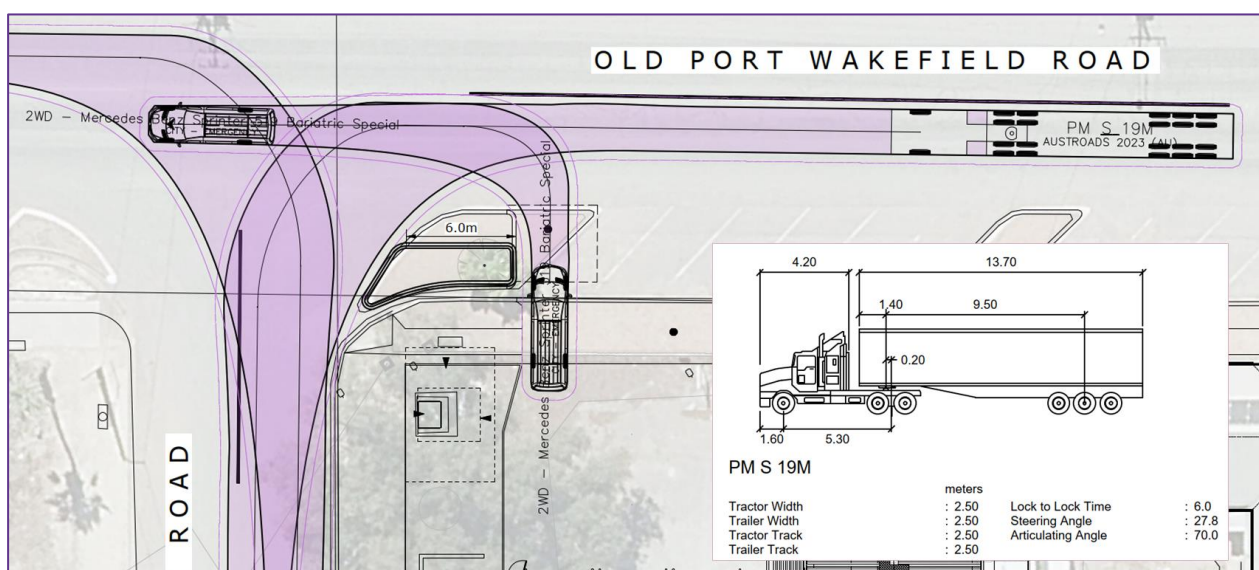


Figure 4.7 Recommended Kerb Built-Out Reshaping



5 Car Parking Assessment

5.1 Parking Requirements

The SA Planning and Design Code does not specify any car parking provision requirement for ambulance stations. However, SA Ambulance Service has required that at least 15 off-street parking spaces are to be provided. With the proposed on-site car park with 15 spaces, this has been satisfied.

5.2 Parking Design Review

The car park on site has been designed based on the standards set out in AS 2890.1: 2004. According to AS 2890.1 Table 1.1, this site is most appropriately classified as User Class 1. This requires each of the 90-degree parking bays to be 2.4m by 5.4m, and an aisle width of 5.8m. The proposed 2.6m by 5.4m and 6m of aisle width has met and exceeded the standards.

The aisle has also been extended by more than 1m as this is a blind aisle, as defined in AS 2890.1 Clause 2.4.2 (c).

Figure 5.1 shows the dimensions of the carpark.

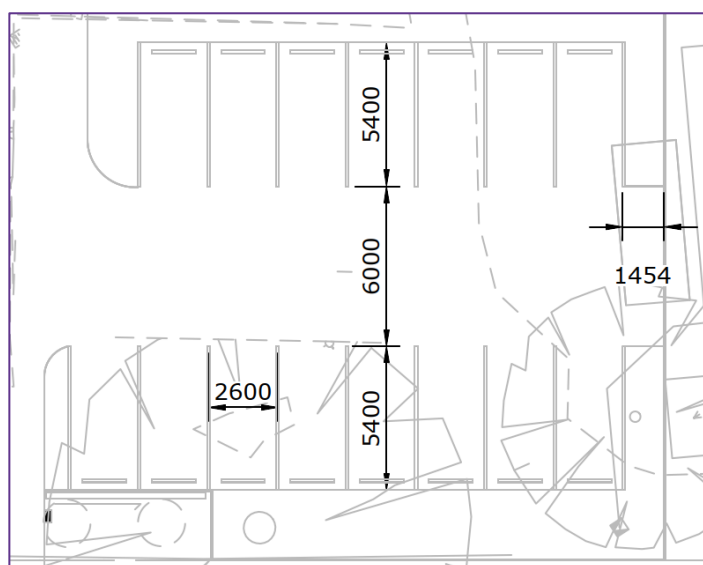


Figure 5.1 Dimensions of On-Site Car Park

5.3 Ambulance Access

A swept path analysis has been conducted to demonstrate that ambulances can access the parking area and the garage without any issues.

The full swept path analysis can be found in Appendix B.



6 Summary and Conclusions

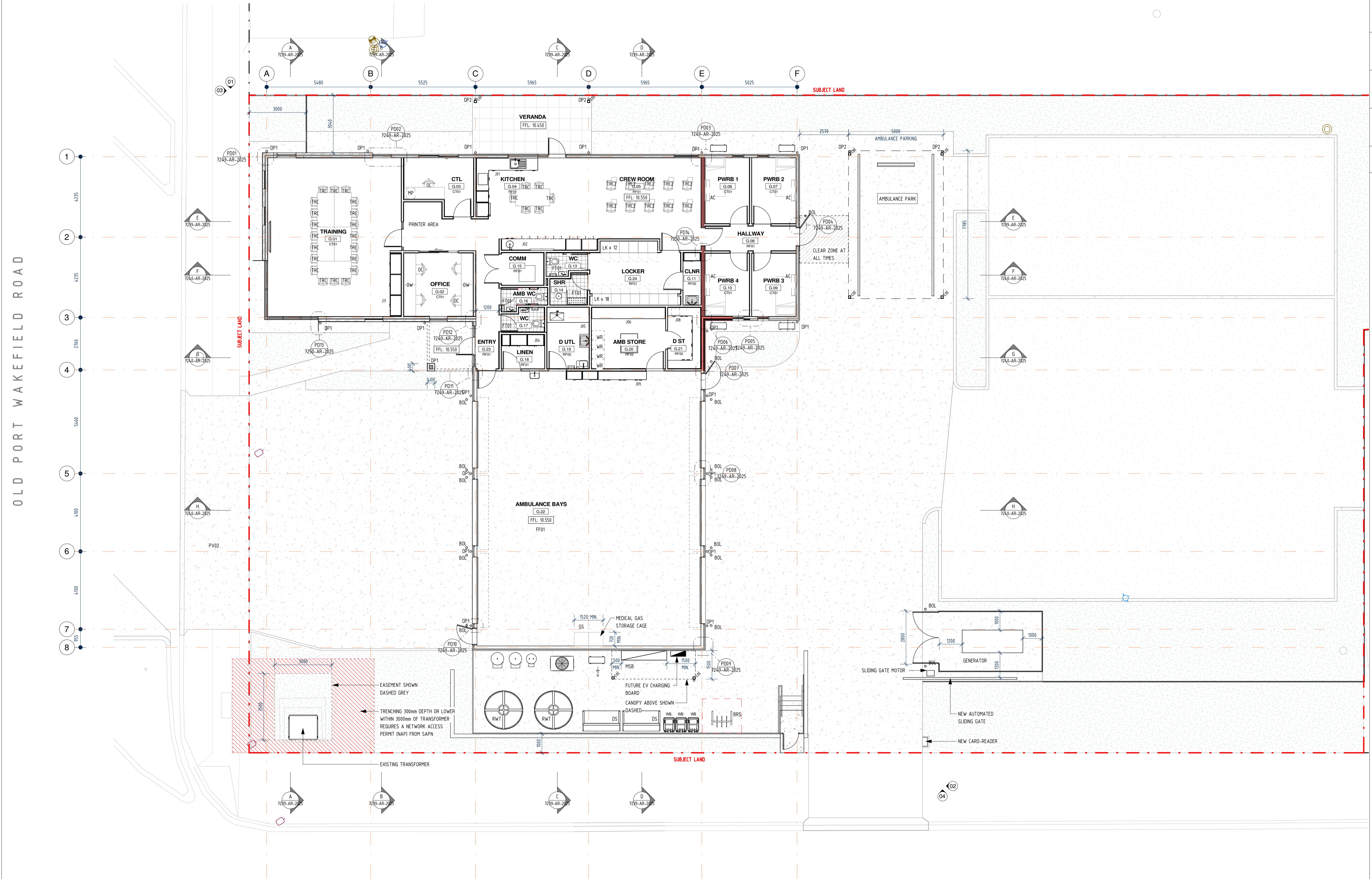
A traffic impact assessment has been undertaken to assess the impact of the proposed ambulance station in Two Wells. The findings are as follow:

- A new ambulance station is proposed on Old Port Wakefield Road in Two Wells, South Australia.
- An 8-hectare land west to the subject site has been acquired by Council for commercial, retail, and community facility development.
- The existing site is currently being used as an unofficial parking area.
- Both Old Port Wakefield Road and Wells Road are under the jurisdiction of Adelaide Plains Council, and there are no crashes on these roads relating to the site from 2019 to 2023.
- The on-site car park is proposed to accommodate 15 spaces.
- Vehicles granted access to the ambulance station are proposed to exit and enter along the same side at the vehicle crossing on Wells Road to use the card reader. The risk of collision with the opposing traffic is considered to be low as only staff is allowed to access the site, and that the sliding gate requires all vehicles to stop and process before entering.
- Considering the proposed land use and surrounding area, it is expected that the generated traffic would be well within the operating capacity of the external road network.
- Sight distance analysis indicates that the removal of existing on-street parking is necessary to meet the required standards. The proposed design has been adjusted accordingly to address this need.
- An alternative access arrangement has been suggested for ambulances to access via Wells Street for both inbound and outbound trips. This could result in longer response time for emergency services and have a negative impact on public health and confidence.
- 15 off-street car parking spaces are proposed on site, which meets the requirement set by SA Ambulance Service. The dimensions of the car park are designed according to AS 2890.1.
- Swept path analysis confirms that ambulances can safely access and manoeuvre around the site.



Appendix A – Proposed Design Set

OLD PORT WAKEFIELD ROAD

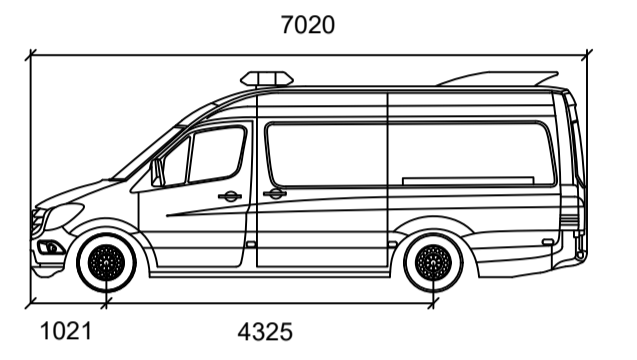
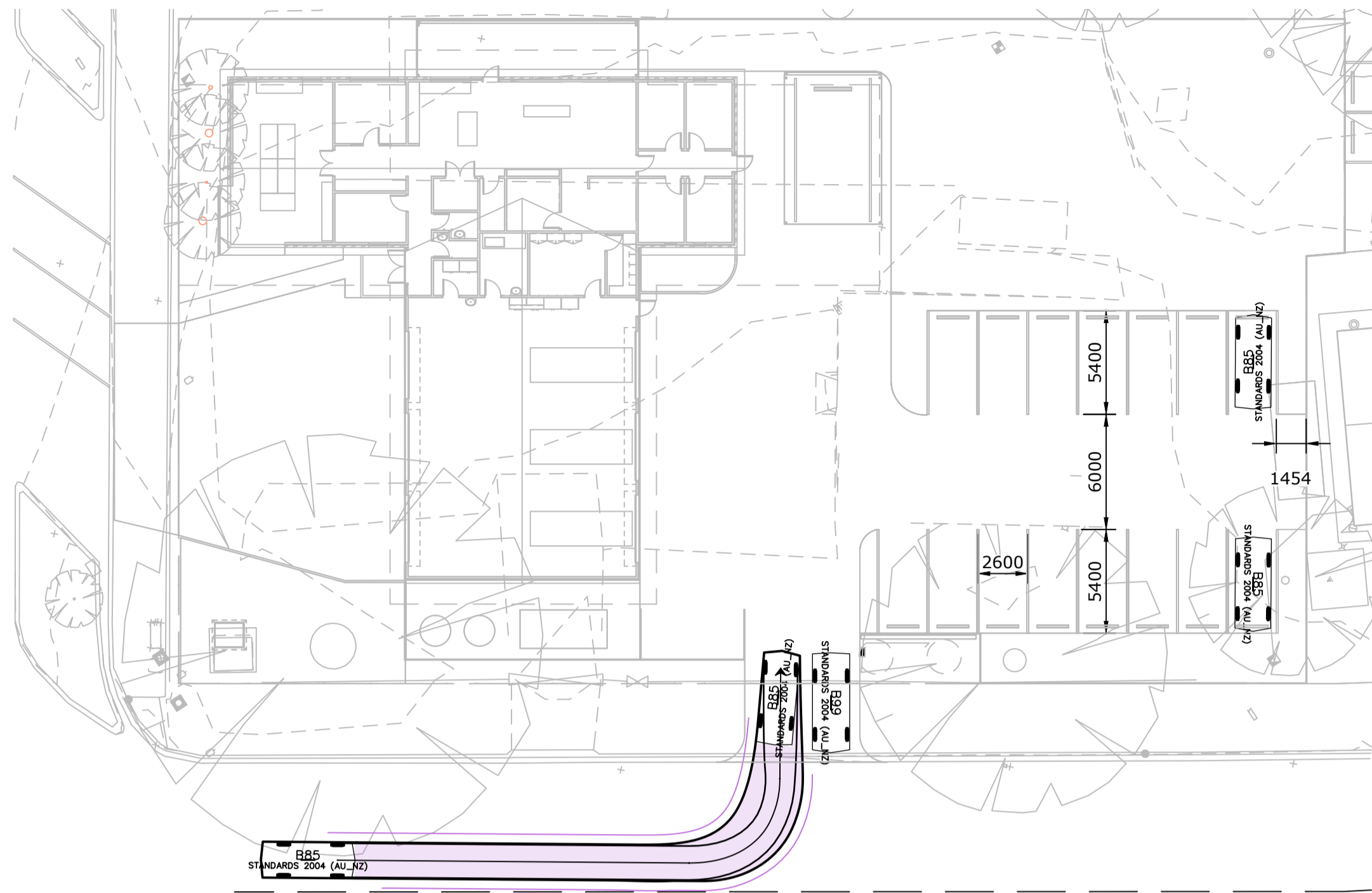
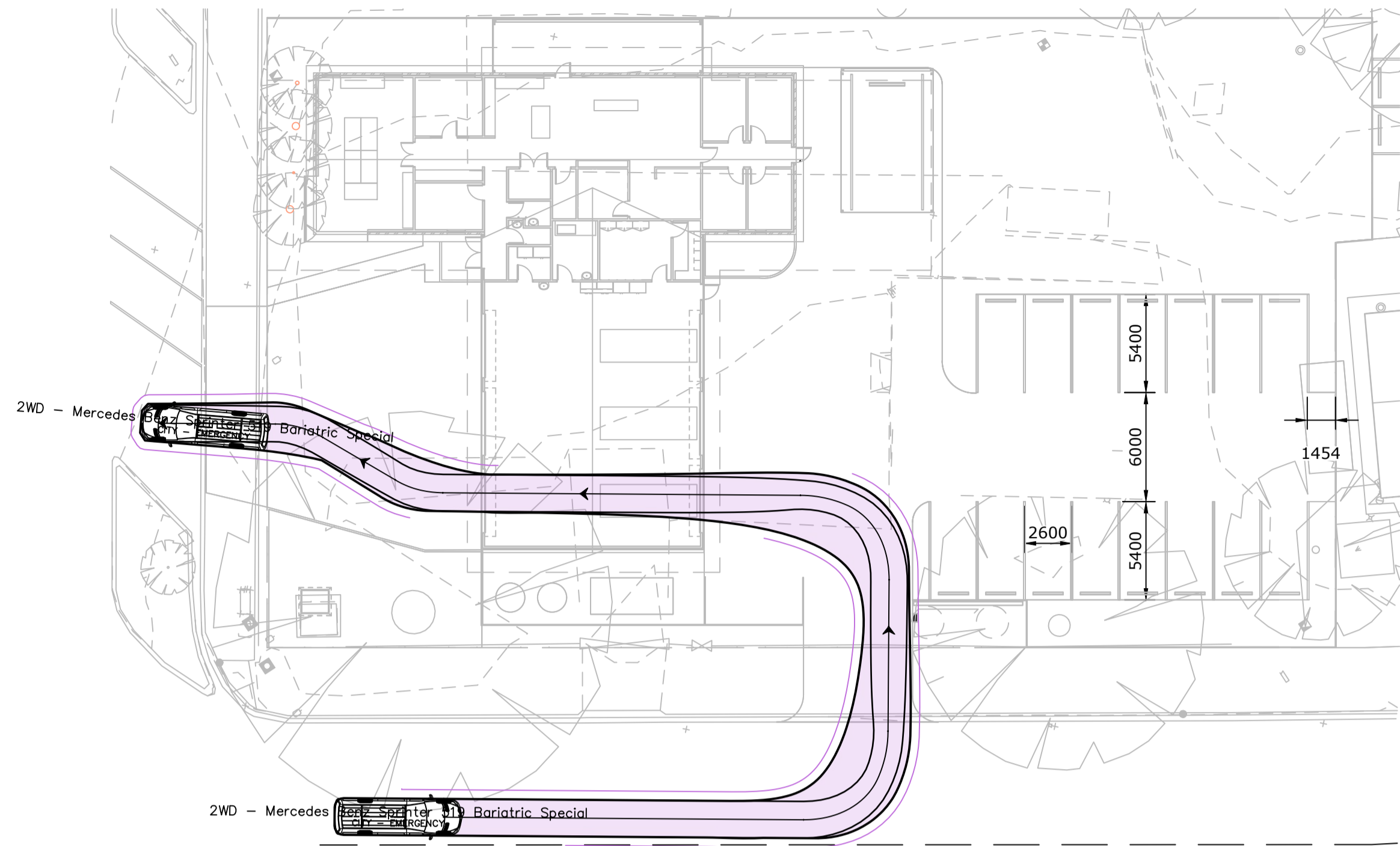


WELLS ROAD

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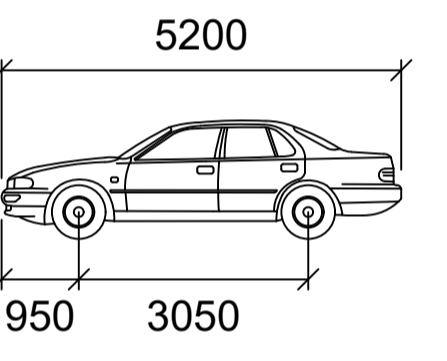


Appendix B – Swept Path Analysis



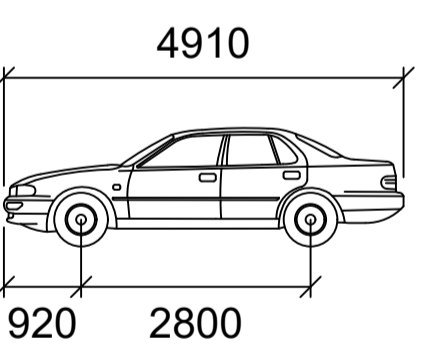
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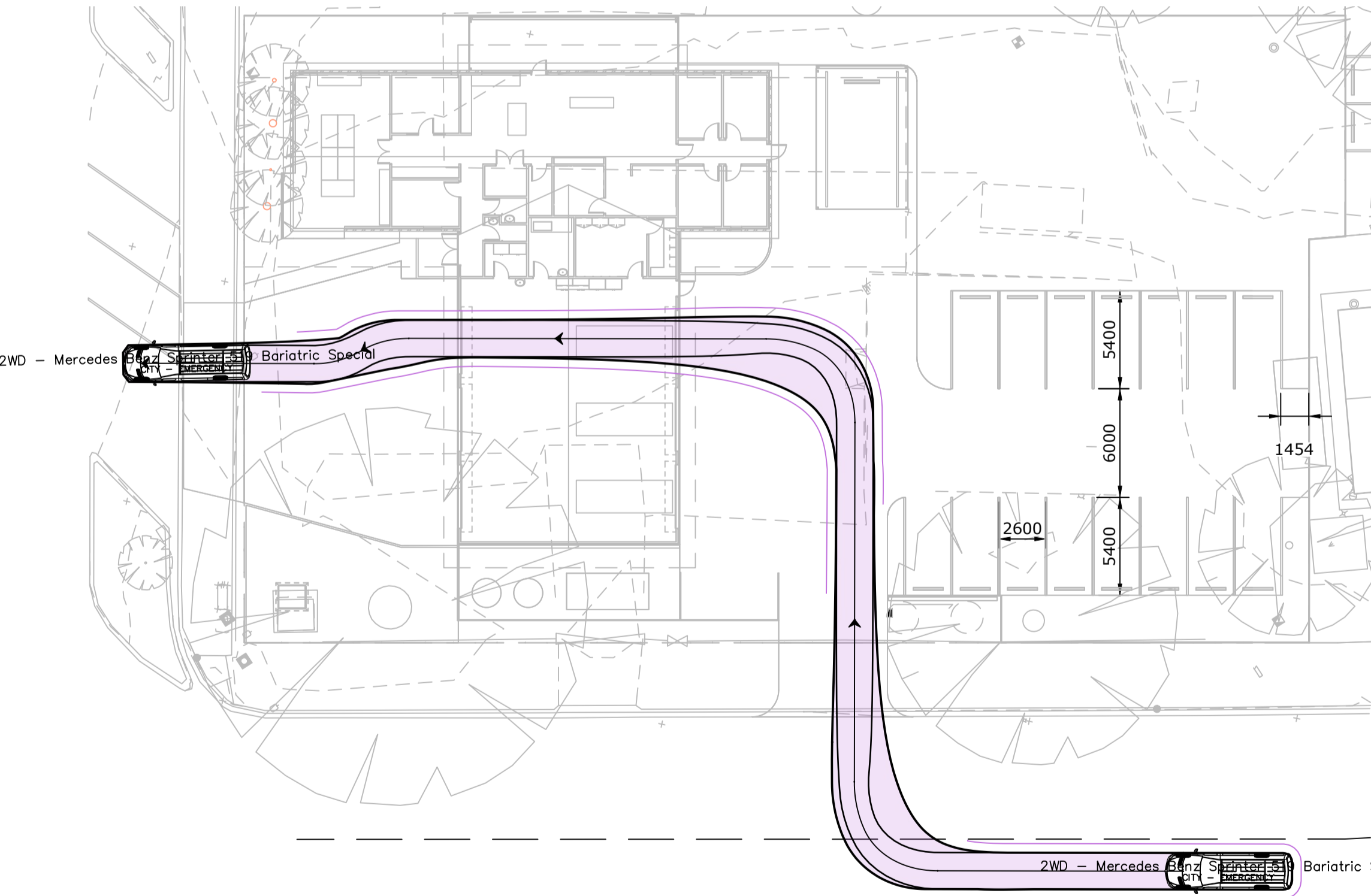
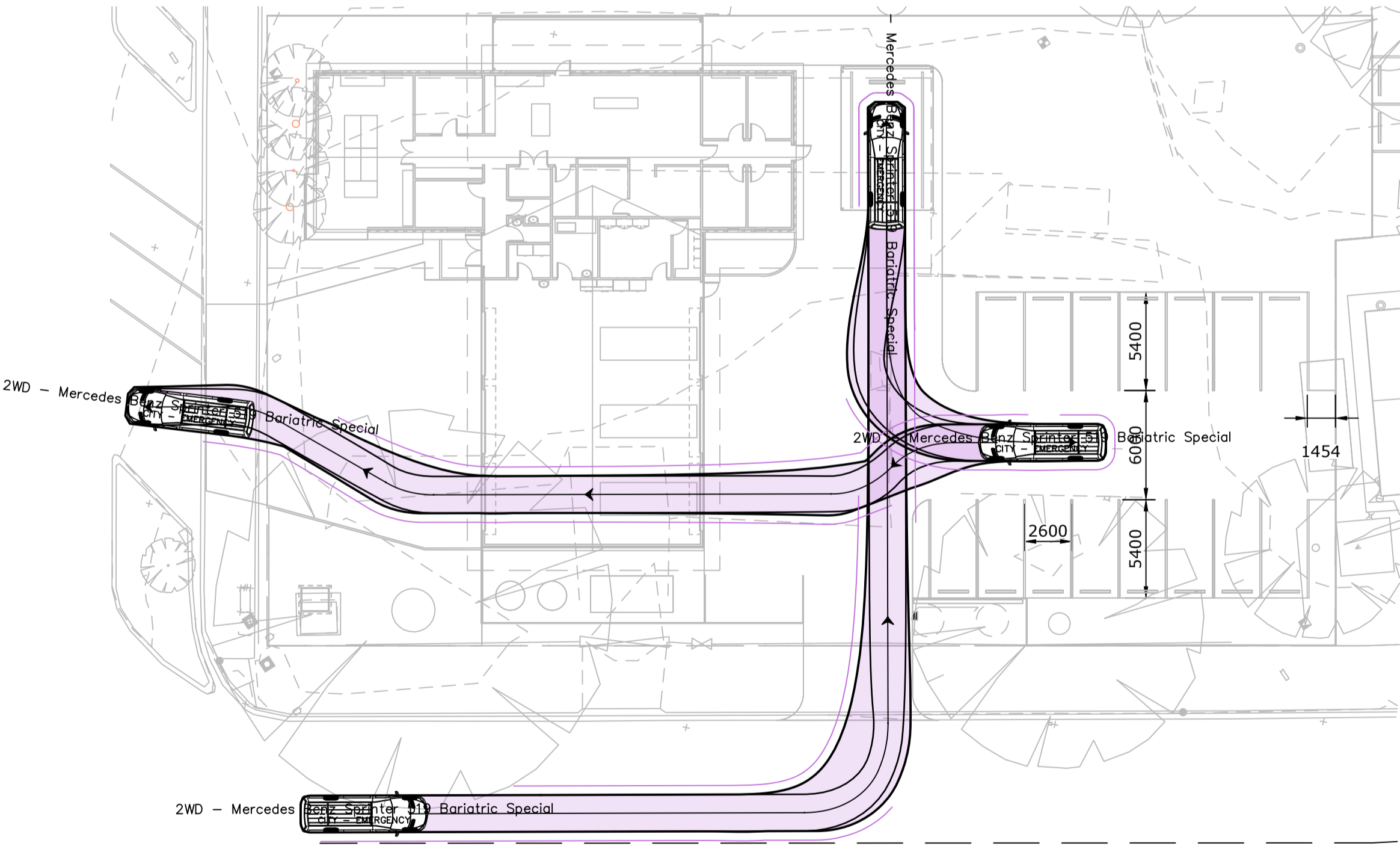
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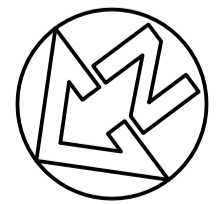


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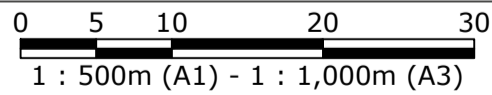
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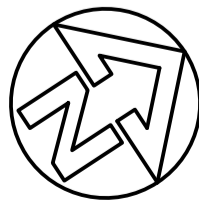
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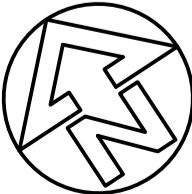
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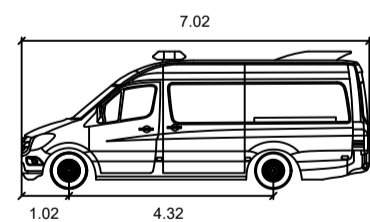
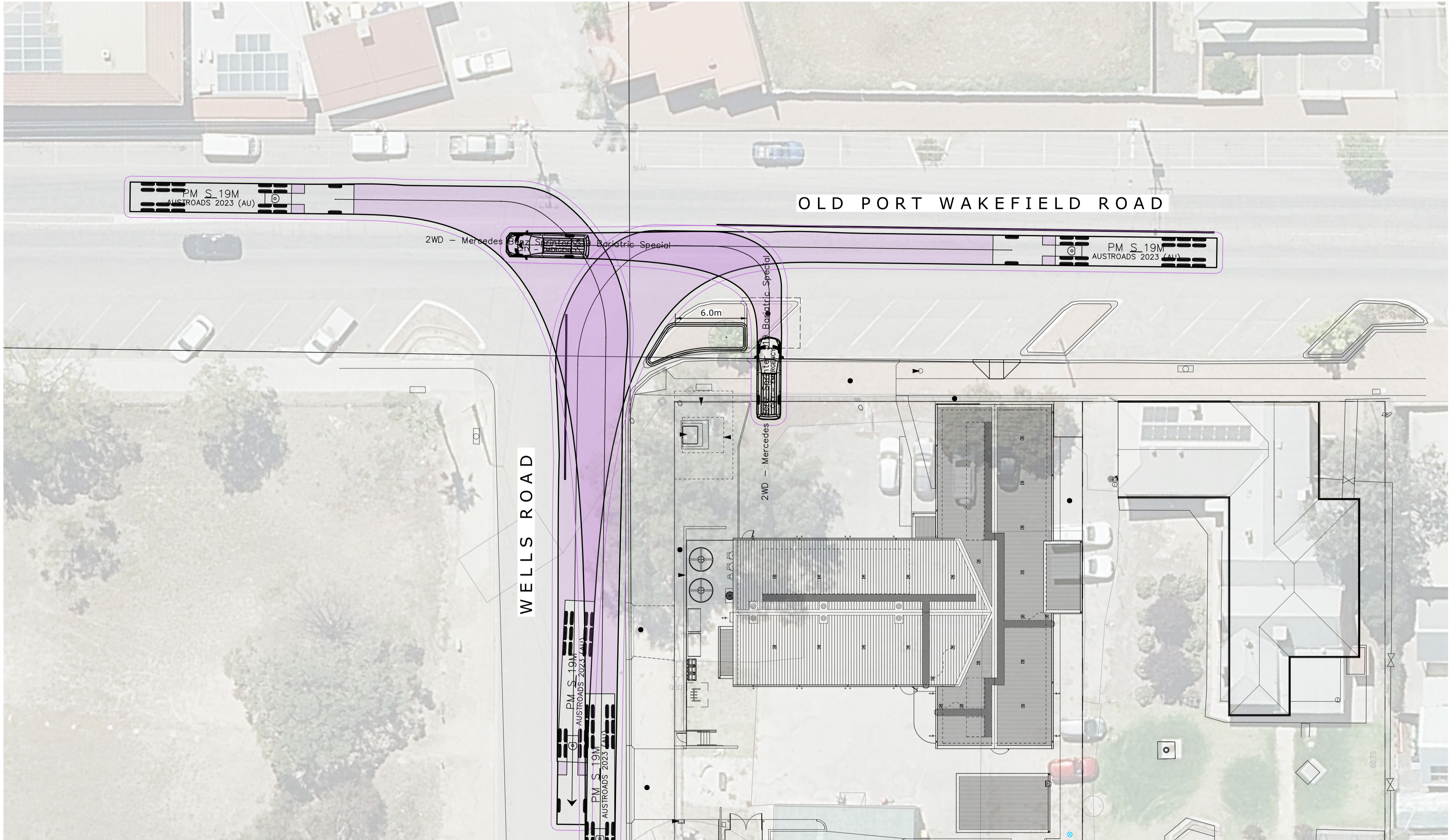
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TWO WELLS SAAS AMBULANCE STATION

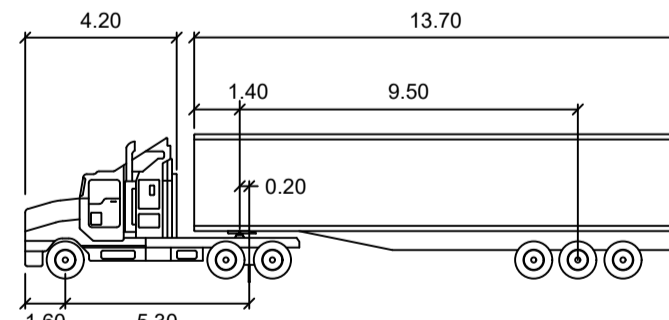
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241697_SIGHT DIST CHECKS.DWG	241697	SK011	



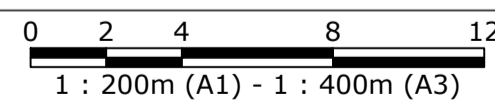
2WD - Mercedes Benz Sprinter 519 Bariatric Special

Width	: 2.02
Track	: 2.02
Lock to Lock Time	: 6.0
Steering Angle	: 42.7



PM S 19M

Tractor Width	: 2.50	Lock to Lock Time	: 6.0
Tractor Track	: 2.50	Steering Angle	: 27.8
Trailer Width	: 2.50	Articulating Angle	: 70.0
Trailer Track	: 2.50		



100mm ON ORIGINAL DRAWING - DO NOT SCALE DRAWING

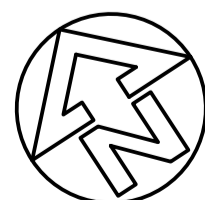
SHEET SIZE
A1

COORDS: GDA 2020 MGA ZONE 54
DATUM: ALL LEVELS TO A.H.D.

SCALE:

SURVEYED:
SURVEY DATE:

APPROVED / PROJECT LEADER



REV	ISSUED FOR INFORMATION	AMENDMENT / REASON FOR ISSUE	DATE	DES.	DWN.

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THIS DRAWING IS TO BE VIEWED IN COLOUR AS SOME FEATURES / SYMBOLS ARE DIFFERENTIATED BY COLOUR. DRAWING NOT TO BE RELIED ON IF PRINTED IN GREYSCALE.

NOT FOR CONSTRUCTION

GRIEVE GILLET ARCHITECTS

TWO WELLS SAAS AMBULANCE STATION



tonkin.com.au

FILENAME:
241697_ATURN 23.07.25.DWG

PROJECT NUMBER	DRAWING NUMBER	REVISION
241697	SK010	

T:\2024\241697 TWO WELLS AMBULANCE STATION - GRIEVE GILLET ARCHITECTS\4_WORKING\1 CAD\CIVIL\241697_ATURN 23.07.25.DWG -GA- (23-07-25 3:13:58PM)