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# PROVISION OF CONSULTING ENGINEERING SERVICES

19, 21, 23 SYDNEY RD, MUDGEE

TRAFFIC ASSESSMENT

1 MARCH 2022

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## 1 INTRODUCTION

Triaxial have been engaged by P & D Eldred Holdings to prepare a traffic assessment report for the proposed redevelopment of the premises located at 19, 21 and 23 Sydney Road, Mudgee.

The purpose of this report is to assess the traffic implications of the development proposal. This report is to be included in the application lodged with Mid Western Regional Council.



Figure 1: Existing Site

## 2 PROPOSAL

### 2.1 DEVELOPMENT SITE

The site located at 19, 21 and 23 Sydney Road, Mudgee is currently utilised as follows:

- Number 19: Existing auto electrical business at the Sydney Road frontage, with another automotive repair business operating at the rear. Separate Sydney Road access.
- Number 21: Previous Peter's Refrigeration business (commercial equipment storage and sales). Separate existing Sydney Road access point.
- Number 23: Six separate single storey residential units with a separate Sydney Road access point.

The three adjacent parcels of land will be developed into a single multi-unit industrial estate. No consolidation of boundaries is proposed; however a small boundary adjustment may be necessary to ensure the three parcels can still operate independently.

This traffic summary will provide information on the expected increase in traffic due to the development and the measures to be undertaken to manage this increase.

### 3 EXISTING TRAFFIC CONDITIONS

#### 3.1 ROAD HIERARCHY – SURROUNDING ROAD NETWORK

The site is surrounded by the following roads:

- **Castlereagh Highway** is a Transport for NSW Highway, with state road classification B55.

The site is located 690m to the South of the existing railway crossing of Sydney Road / Gwebegar railway corridor and the Castlereagh Highway. The site is located approximately 250m from the intersection of Castlereagh Highway and Industrial Avenue.

#### 3.2 EXISTING TRAFFIC VOLUMES

Existing traffic volumes along Lions Drive were obtained from the Mudgee Traffic Study. The traffic study included observed daily traffic figures from 2014 along with an estimation of future daily traffic predicted for 2032. In the absence of available traffic count data, the predicted 2032 traffic figures have been adopted for this report.

Traffic figures from the study from the two closest locations have been shown in the table below:

	Daily Pm Peak Hour 2014	L.O.S - 2014	Daily PM Peak Hour 2032	L.O.S - 2032
Sydney Rd (Railway crossing)	572 – N/E 517 – S/W	A	776 – N/E 589 – S/W	B
Sydney Rd (Industrial Rd)	329 – N/E 402 – S/W	A	438 – N/E 489 – S/W	A

**Table 1:** Peak hour vehicle trips observed for Sydney Road at closest available location from Mudgee Township Traffic Management Study 2014 (Gennaoui Consulting).

It is important to note that even with the increase in traffic predicted to 2032, no upgrades were recommended in the 2014 traffic study for Sydney Road either at the railway crossing or Industrial Road.

#### 3.3 EXISTING CRASH DATA

A review of the available crash data from the 5-year period 2016 – 2021 shows that there were a total of three crashes recorded between 2016 – 2020. Two of the crashes were of the non-casualty minor towaway variety and one crash recorded moderate injuries. Other crashes nearby included a moderate injury recorded on the Southern side of the Burrundulla Road intersection, as shown in the image below:

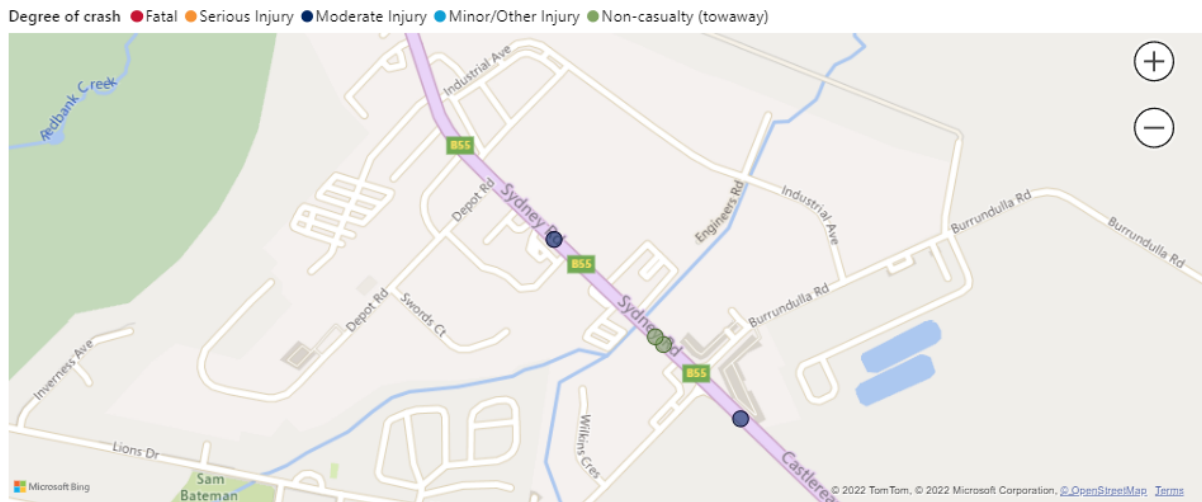


Figure 2: Crash data near the site showing 4 crashes from 2016-2021.

#### 4 EXPECTED TRAFFIC GENERATION

The expected traffic increase generated by the development is shown in the table below. The traffic generation rates have been calculated using Austroads Guide to Traffic Management Part 12 – Traffic Impacts of Development.

The development is classified as a retail development similar to a “motor showroom” or a “car type retail” – the higher generation rate from these two classifications was used.

Development Type	Gross Floor Area (total) m <sup>2</sup>	Daily Vehicle Trips	Peak Hour Vehicle Trips
Auto Repair	740	74	8
Retail / Bulky Goods	555	56	14
Residential	6 dwellings	54	6
<b>TOTAL</b>		<b>184</b>	<b>28</b>

Table 2: Existing traffic generation rates (from Guide to Traffic Generating Developments)

	Gross Floor Area (total) m <sup>2</sup>	Daily Vehicle Trips	Peak Hour Vehicle Trips
Warehouse	2115	85	11
Retail / Bulky Goods	1498	150	37.45
Office	1121	113	22.4
Auto Repair	740	74	8
<b>TOTAL</b>	<b>5120</b>	<b>386</b>	<b>79</b>

Table 3: Expected future traffic generation rates

Peak vehicle trips were also assessed based on the site being a business park (Section 3.10.4 Guide to Traffic Generating Developments). Traffic figures based on this approach are shown below:

- Peak hour vehicle trips =  $1.2v/hr/100m^2$  gross floor area = 66 vehicle trips per hour as a fully functioning site with a combination of office, warehouse, and retail/bulky goods.
- Peak service vehicle trips =  $0.5v/hr/100m^2$  gross floor area = 28 service vehicles per hour.

For the purposes of this report a conservative total of 79 vehicle trips per hour was adopted as the peak hour vehicle trips generated by the development. This represents an increase of 51 vehicle trips per hour and 202 vehicle trips per day over the existing premises at 19, 21, and 23 Sydney Road.

### **Expected Impact**

Road carriageway level of service is not expected to be impacted, as the traffic generation figures calculated for this development are well within the carriageway level of service triggers as defined in the Austroads Guide to Traffic Management Part 3, which gives a mid-block capacity of a typical urban road as 900 vehicles per hour.

At the expected 2032 traffic figures for Sydney Road of 776 vehicles at the railway crossing on Sydney Road, the additional 51 vehicles per hour above this figure will not trigger any change in the carriageway level of service.

The proposed impact on the existing road network is proposed to be minimal, with 51 total vehicle trips during peak hour added to the existing peak hour volumes.

As the development sits mid-block with no immediate intersections nearby and good site distance in either direction from the proposed property entrances, there is not expected to be a discernible impact on nearby intersections, especially as the path of travel from the site is likely to be a combination of trips in the N/E and S/W directions.

It is important to note that table 4.8 of the Mudgee Traffic Study identifies the intersection of Sydney Road with Industrial Avenue as operating at a level of service A, the highest available, even with all future traffic generated by developments up to the year 2032 taken into account.

## **5 PARKING**

As documented on the architectural plans, Mid Western Regional Council DCP states that for Bulky Goods Retailing, rural supplies, hardware and building supplies stores, a parking rate of 1 space per  $50m^2$  of gross floor area should be applied. For the manufacturing area of the site a parking rate of 1 space per  $75m^2$  should be applied.

A summary of the floor area and required number of parking spaces for each is shown below, taken from Architectural plans 591ELD-01 Revision B:

	Size (m <sup>2</sup> )	Parking ratio (per 100m <sup>2</sup> )	Spaces required
Bulky goods	1498	2	29.96
Warehouse	2115	1	21.15
Office	1121	3.3	37.36
Auto Repair	3 bays	5/bay	15
TOTAL			<b><u>104</u></b>

Table 4: Parking spaces required for each proposed use

The total number of parking spaces required for the development is 104. There are **104** spaces proposed to be constructed as documented on the architectural layout, which is in accordance with the minimum required.

We note that there is an allowances for accessible parking space adjacent to the entry location of Units 1, 21, 9 18.

No on-street parking has been included in the total number of parking spaces proposed in the development.

**6 SITE ACCESS**

In order to determine the suitability of the site layout, turning paths were run using Autodesk vehicle tracking software.

Results of the vehicle tracking are shown on Triaxial Consulting plans TX15963.00-C10.0 and C10.1 for a semi-trailer, which has been adopted as the largest design vehicle. During typical operation of the business park, it is more likely that deliveries and service vehicle trips would be conducted by a medium rigid truck, however a semi-trailer was adopted to ensure the site could be serviced with the proposed layout.

**Refer Appendix A - Triaxial Consulting plans TX15963.00-C10.0 & C10.1**



## **7 PEDESTRIAN ACCESS**

Pedestrian access to the development will be via the existing road verge along Sydney Road. There is no existing footpath on the verge along the Sydney Road frontage due to the extremely low volume of pedestrian traffic.

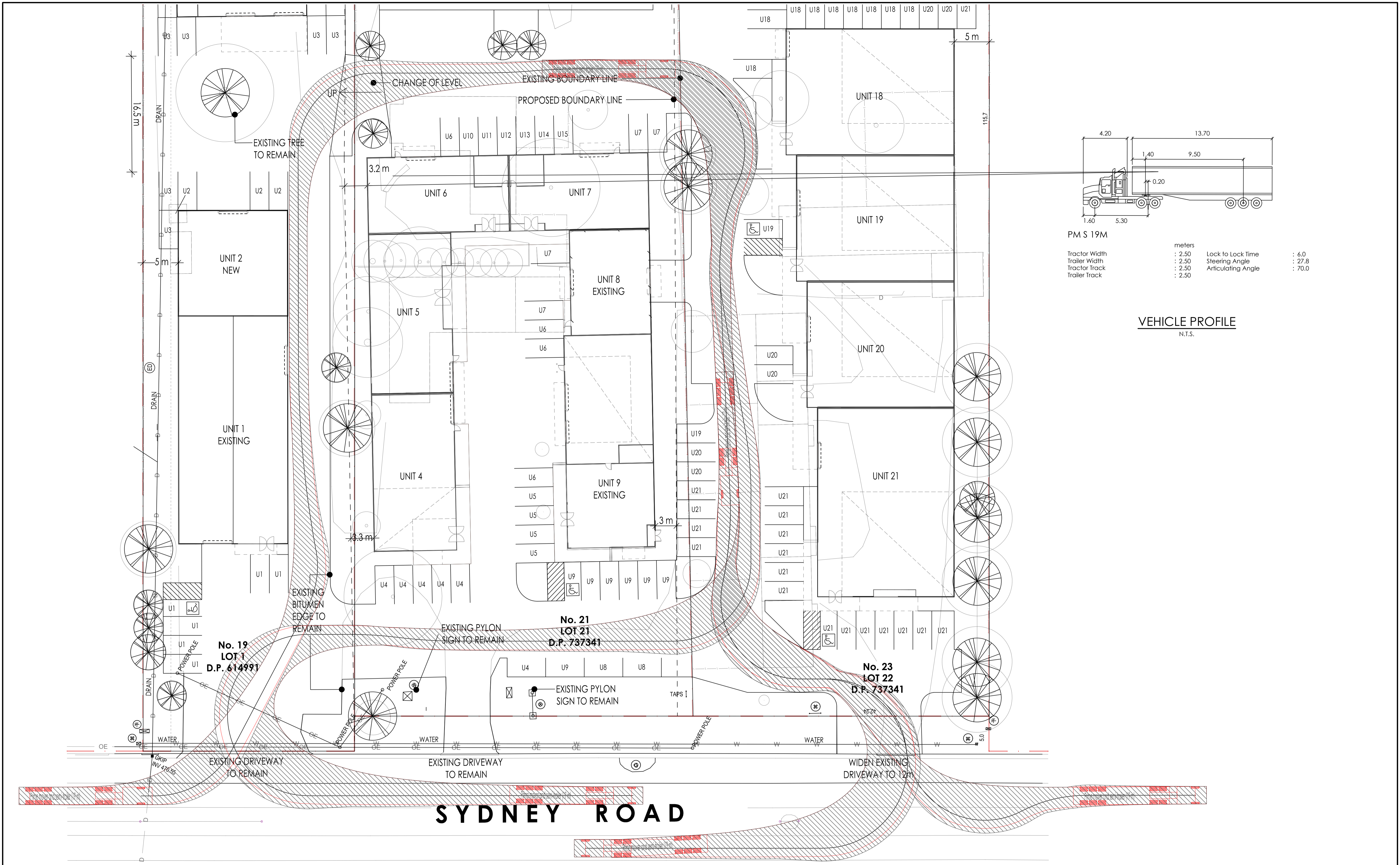
As the development sits within other industrial and commercial premises, and the nature of the business park will not be a driver for increased pedestrian access, it is unlikely that there will be any increase to pedestrian traffic as a result of the development.

The removal of the existing 6 residential units will actually lead to an overall reduction in the amount of pedestrian movements along the Sydney Road frontage.

## **8 SUMMARY**

In summary, the proposed development of 19, 21 and 23 Sydney Road to increase the size of the showroom will generate a potential increase of 51 vehicles during peak hour along Sydney Road. This increase is not expected to alter the level of service of Sydney Road or the adjacent intersections nearby.

## APPENDIX A – VEHICLE SIMULATION PLANS

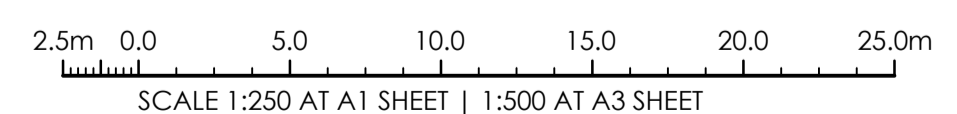


**PMS 19M**

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

**VEHICLE PROFILE**  
N.T.S.

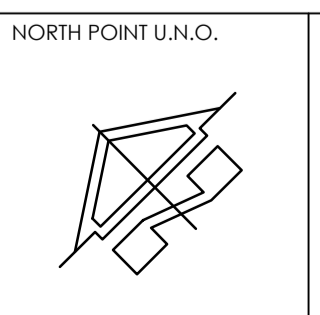
**VEHICLE SIMULATION PLAN**  
SCALE 1:250 AT A1



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AMENDMENTS

22.01.18	A	J.D
DATE	ISSUE	BY

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ARCHITECT  
**SUNRAI DESIGNS**

CLIENT  
**P&D ELDRED HOLDINGS**

PROJECT  
**PROPOSED INDUSTRIAL DEV'T  
19, 21 & 23 SYDNEY ROAD  
MUDGEE NSW 2850**

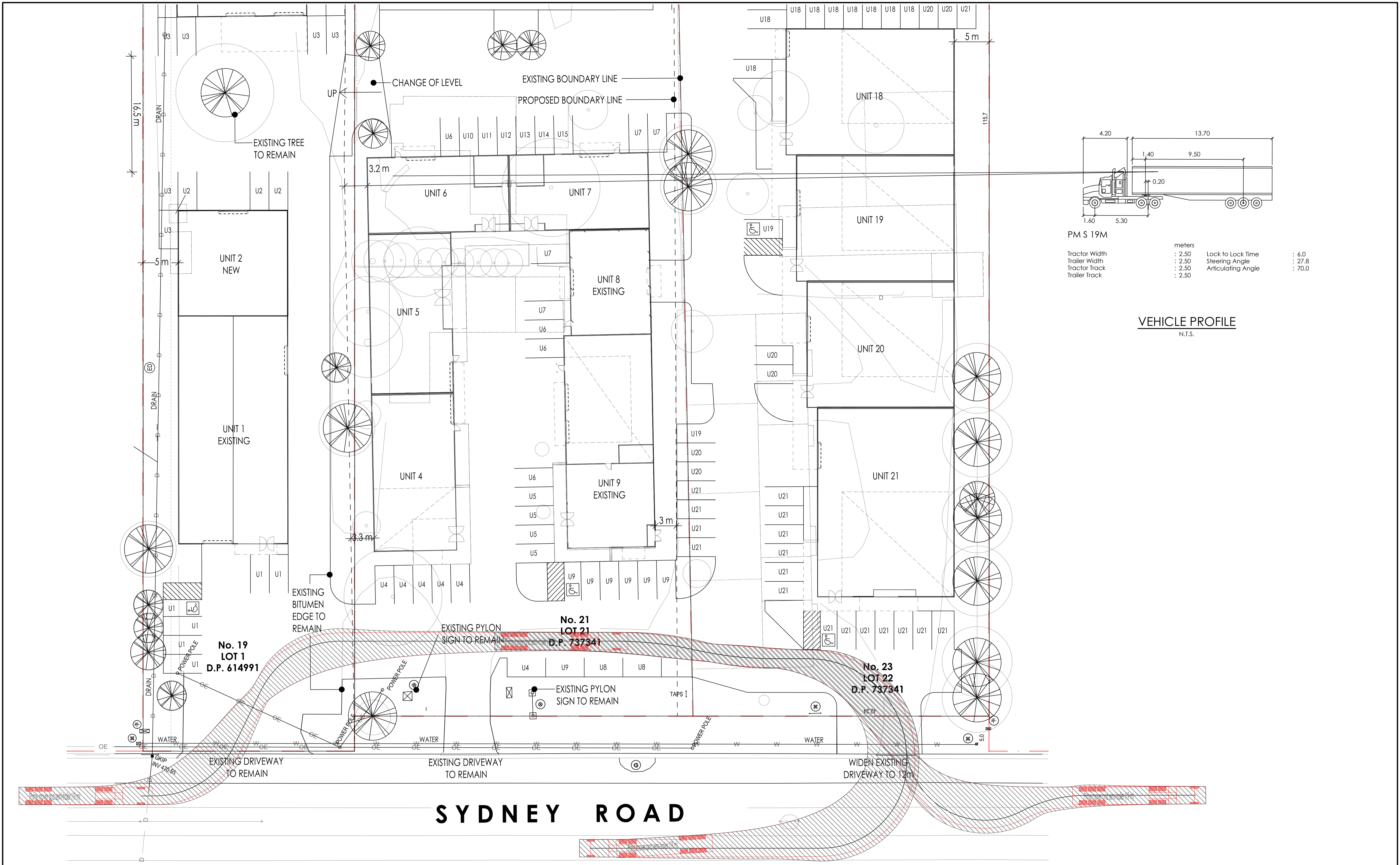
DESIGNED J.D	DRAWN C.R	DATE FEB 22	SIZE A1	CAD REF TX15963.00 - C01
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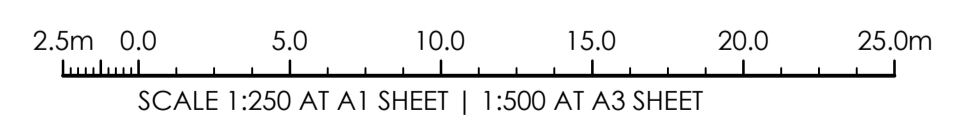
DRAWING TITLE  
**VEHICLE SIMULATION PLAN  
SHEET 1**

PROJECT No. **TX15963.00 - C10.0** DRAWING No. **A** ISSUE



**VEHICLE SIMULATION PLAN**

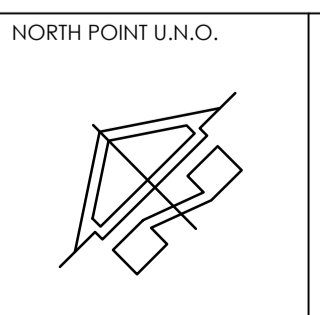
SCALE 1:250 AT A1



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NORTH POINT U.N.O.

ARCHITECT  
**SUNRAI DESIGNS**

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**P&D ELDRED HOLDINGS**

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**PROPOSED INDUSTRIAL DEV'T  
19, 21 & 23 SYDNEY ROAD  
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DRAWING TITLE  
**VEHICLE SIMULATION PLAN  
SHEET 2**

PROJECT No.  
**TX15963.00 - C10.1**

DRAWING No. ISSUE  
**A**