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PROVISION OF CONSULTING ENGINEERING SERVICES

**WYALONG 1C SOLAR FARM
WARGIN ROAD
WYALONG NSW 2671**

TRAFFIC ASSESSMENT REPORT

05 AUGUST 2021

REFERENCE: TX15839.00-01.RPT.JD-REV0

SYDNEY | ADELAIDE | BAROSSA | DARWIN | MUDGEE

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1 of 13

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1 INTRODUCTION

Triaxial have been engaged by ITP Development to prepare a traffic assessment report. The purpose of this report is to assess the traffic implications of the development proposal. This report is to be included in the development application lodged with Bland Shire Council.

The site is currently utilised for grazing and is shown in the photo below:

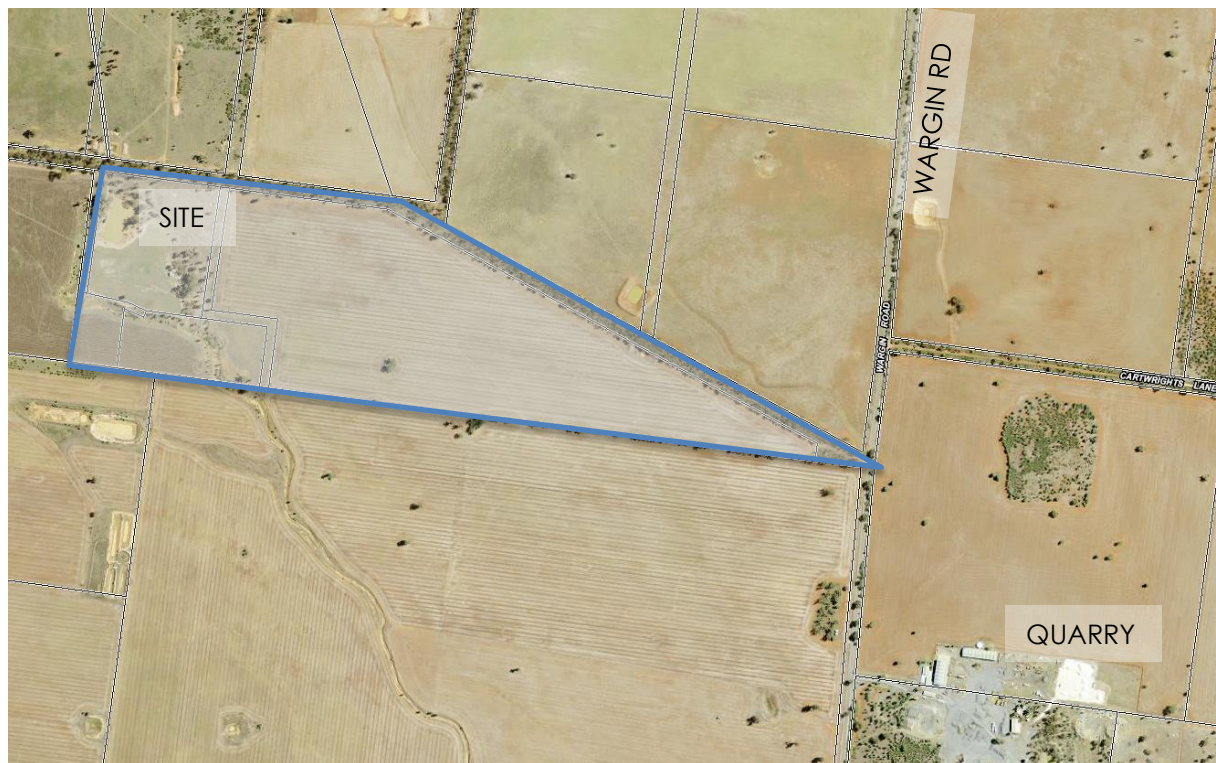


Figure 1: Existing Site

2 PROPOSAL

2.1 DEVELOPMENT SITE

The site is proposed to be utilised by ITP Development for the construction of a 5MW solar farm on an area of approximately 16Ha size located at Wargin Road, Wyalong.

The proposed development site is located near Wyalong, approximately 2.0km from the Southern edge of the township, taken as the Fred Calms Rd / Cootamundra – Lake Cargelligo Railway Corridor intersection. The site is currently zoned as RU1 rural. The proposed site has not been identified as a possible future residential release area.

The proposed access road to the site intersects with Wargin Road. There is an existing quarry with an entrance located approximately 450m to the South of the proposed solar farm site entry.

3 DESIGN SERVICE VEHICLES

3.1 CONSTRUCTION PHASE 0-3 MONTHS

It is proposed that the following vehicles will access the site during the following stages of the

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project:

Vehicles accessing the site during construction will consist of:

- B-Double trucks (total minimum number of B-Doubles required over the construction phase).
- Construction / Earthworks vehicles for the construction of a new access road.
- Light vehicles suitable for transporting up to 50 workers.
- Bus service for workers if required.

3.2 TYPICAL USE DURING OPERATIONAL PHASE

The following list depicts the weekly schedule of vehicles required for the facility to operate.

- Maintenance access vehicles (1 light vehicle) access to the site in 3 monthly intervals.

4 EXISTING TRAFFIC CONDITIONS

4.1 ROAD HIERARCHY – SURROUNDING ROAD NETWORK

The NSW administrative road hierarchy comprises the following road classifications, which align with generic road hierarchy as follows:

- **Wargin Road** is a local road, managed by Bland Shire Council, with primary function of providing vehicular access between West Wyalong and agricultural land located to the South of the town.

Wargin Road is listed as an approved B-Double Route by RMS as shown in Figure 2.

- **Newell Highway (A39)**

The Newell Highway will serve as the main access road during the construction of the solar farm. Deliveries to site will access Wargin Road via the Newell Highway and the approved B-Double route.



Figure 2: Existing travel conditions. Source: RMS website: <http://www.rms.nsw.gov.au/business-industry/heavy-vehicles/maps/restricted-access-vehicles-map/map/>

4.2 EXISTING TRAFFIC DATA

At the time of this report the most recent traffic data available from Bland Shire Council was not available for Wargin Road.

Online traffic data was available from RMS for the location of Newell Highway at West Wyalong, which is just East of the intersection with Goldfields Way.

With reference to Figure 4, the maximum number of vehicles per hour, during the Weekday AM peak hour in any direction is 298 in the PM peak.

With reference to Table 4.5 of RTA Guide to Traffic Generating Developments 2002 – see Table 2, the allowable peak flow for Level of Service (LoS) A is 530, which exceeds 298 vehicle movements. Based on the figures obtained for the Newell Highway (6142) counting station we have assumed that the percentage of heavy vehicles will be in the >15% category.

It is noted LoS A is the highest possible level of service for two lane rural roads, and a minimum LoS C is desirable for major roads.

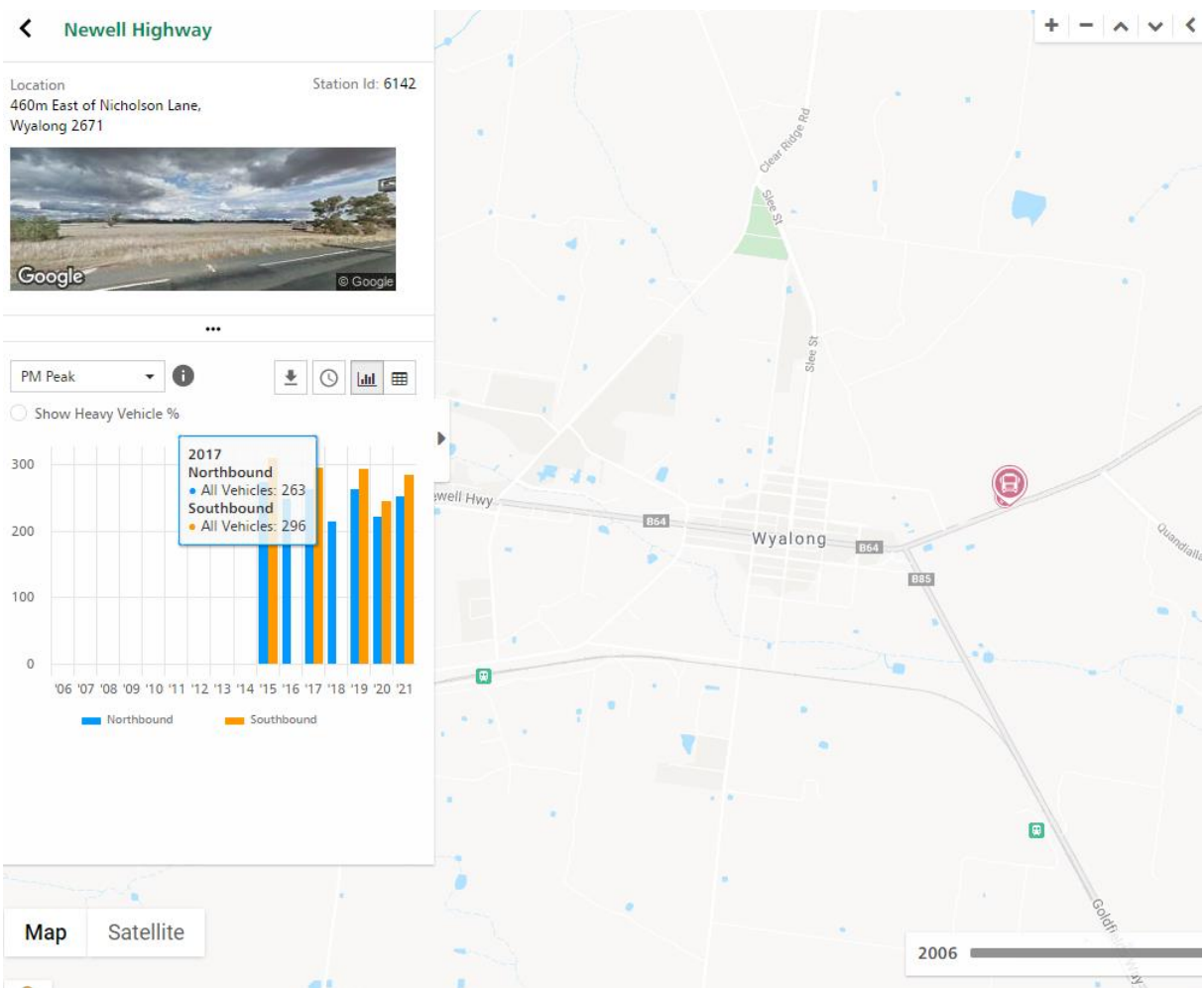


Figure 3: Existing traffic count at Wyalong on the Newell Highway

Newell Highway (6142) Data

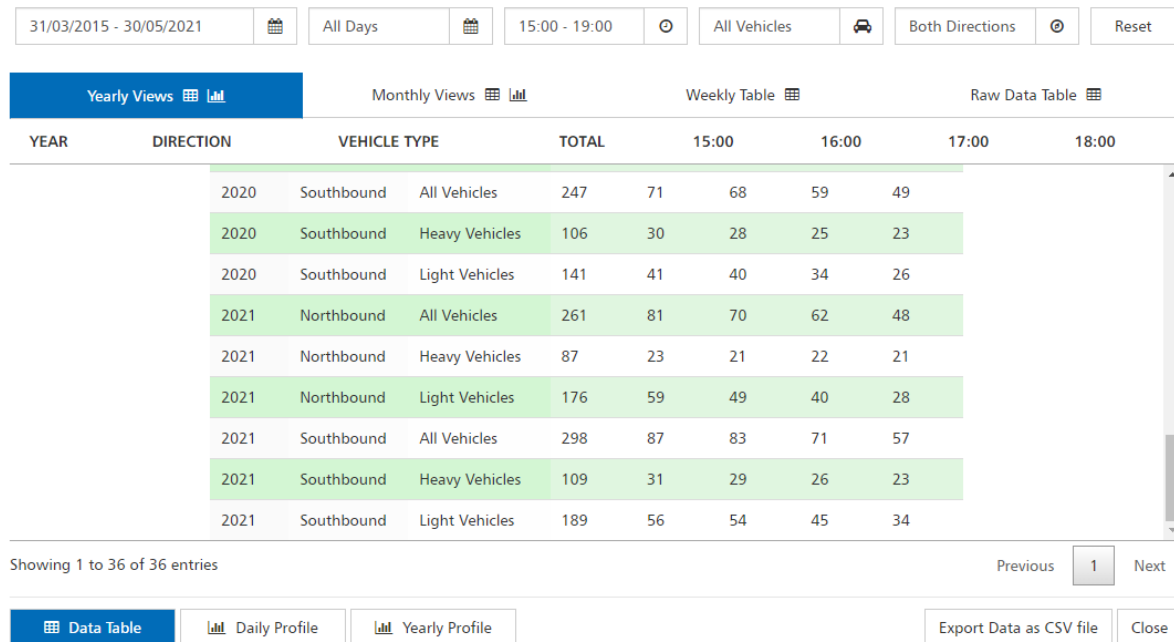


Figure 4: Existing traffic count Weekdays PM

Whilst the traffic figures listed in Figure 4 above do not represent the traffic along Wargin Road, they do present the opportunity to gauge the percentage of heavy vehicles typical to the area.

5 PROPOSED TRAFFIC MANAGEMENT PLAN

5.1 PROJECTED TRAFFIC GENERATION POTENTIAL – TOTAL DEVELOPMENT

Based on advice from the client and a review of previous Solar Farm installations the proposed traffic generation for the development is separated into the construction and operational phases of the project as shown below. It is proposed to have 50 workers accessing the site during the construction phase, with work carried out between 7am – 4pm Monday to Friday. All construction workers are proposed to travel to site in light vehicles.

Construction equipment is to be delivered to site via heavy vehicles between 10am – 2pm daily, hence not contributing to the AM or PM peak times.

Information obtained from ITP Solar confirms that there will be approximately 12000 solar modules to be constructed on the development site. It is proposed to deliver these modules to site using a B-Double truck. The B-Double trucks will have capacity for 32 pallets each containing 31 modules, giving a capacity delivery of 992 solar modules. As a conservative estimate for the purposes of this report, we have indicated a maximum of 1 B-Double vehicle per day that will access site out of peak hour times for delivery of materials.

Construction of the access road and associated civil works to the site will require equipment and material transport to the site from West Wyalong. The anticipated traffic movements for each phase of the project are detailed in the table below.

Phase	Vehicle Description	Expected Vehicle Movements
Establishment	10-15 trucks and trailers to deliver gravel/road base with 4-5 workers (2 people per vehicle)	5 vehicle trips per day for 2-3 days
	Light vehicles	6 to 8 vehicle trips per day
Construction	45 total articulated trucks (max 26m length) to deliver equipment	4 vehicle trips per day non-peak period
	40 light vehicle one-way trips for 50 construction workers (worst case no shuttle assumed with one person per vehicle)	40 vehicle trips per day
	Potential shuttle bus service to and from site	2 vehicle trips per day

Commissioning	Light vehicles and 12 metre heavy rigid vehicles for 10 workers with 2 workers per vehicle	5 vehicle trips per day
Operational	1 light vehicle for maintenance work	1 vehicle trip every 3 months

Table 1: Expected traffic generation in each phase of the project

No reduction in these rates has been allowed for with pedestrian and cycle access to the facility. It is assumed that if all workers are accessing the site using light vehicles with at least 2 workers per vehicle. Extra daily trips have been allowed for to access West Wyalong during the day if required. No weekend trips are expected.

As previously mentioned, the site will be unmanned during the operational phase and is expected to generate only up to two light vehicle trips in every 3-month period.

It is important to note that the greatest interaction with traffic external to the site will be during the peak PM period, estimated to be between 4pm – 5pm. The AM peak period with traffic heading to the site will not generate as many interactions due to the expected peak arrival time of 6am – 7am by the workers.

5.2 PROPOSED SITE ENTRY

The proposed site entry location located along Wargin Road has in excess of 300m of sight distance in either direction in accordance with the requirements of Austroads Guide to Road Design.

Refer Appendix A – Photos 1 and 2

The proposed access to the solar plant will be via a newly constructed access road within the existing road reserve.

We recommend that the site entry to the solar farm from the existing access road be constructed with a sealed access point. Triaxial plan TX15839.00-C10.0 shows the turning path of a B-Double truck, the largest design vehicle to be accessing the site. The sealed entrance should extend a minimum of 26 metres into the site to minimise disruption to the private access road and ensure that a B-Double is able to queue off the road if required to when accessing the site.

Refer Appendix B – Triaxial Plan TX15839.00-C10.0

5.3 IMPACT ON SURROUNDING ROAD NETWORK

During a site visit by Triaxial Consulting staff on 3rd August 2021 a traffic count of 3 total vehicles were recorded along private access road for a 30-minute period between 2pm – 2:30pm. All

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of the vehicles observed were heavy vehicles that were accessing the Quarry site further to the South.

With the limited traffic movements during the construction period added to the predicted peak hour figures, it is not expected that the additional peak hour vehicles will affect the existing level of service along Wargin Road.

**PEAK HOUR FLOW ON TWO-LANE RURAL ROADS
(VEHICLES PER HOUR)
(DESIGN SPEED OF 100KM/HR)**

Terrain	Level of Service	Proportion of Heavy Vehicles			
		0%	5%	10%	15%
Level	A	<630	<590	<560	<530
	B	630	590	560	530
	C	1030	970	920	870
	D	1630	1550	1480	1410
	E	2630	2500	2390	2290

Source Table 4.5 RTA Guide to Traffic Generating Developments October 2002

Table 2: Carriageway Level of Service limits

The peak vehicle trips as listed in this report will have only a very minor impact on the surrounding road network, and only for a very limited construction phase. It is not envisaged that the development will cause a decrease in the level of service to either the road carriageway along Wargin Road.

5.4 CONSTRUCTION WORKER SITE ACCESS

As the site is located along the new access road, construction worker access to the site via light vehicles should be done so with appropriate safe construction site management principles.

Depending on the accommodation arrangements made by the successful building contractor in the construction phase of the project, care should be taken to avoid any impacts on the West Wyalong town centre. Possible impacts may be mitigated by sourcing accommodation away from the town centre, or the provision of a bus service to convey workers to site.

6 SUMMARY

In summary, the proposed construction of the solar farm will cause no long-term effect to the surrounding road network due to the unmanned operation of the site requiring only minimal regular maintenance by a small number of staff.

Construction traffic appropriately managed with out of peak hour deliveries and construction of the new access road to the site from an existing approved B-Double route will ensure traffic impacts are minimised during the short construction phase of the project.

APPENDIX A - SITE PHOTOS



Photo 1
Proposed site entry
location looking North
along Wargin Road



Photo 2
Proposed site entry
location looking South
along Wargin Road



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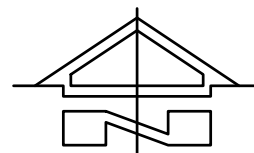
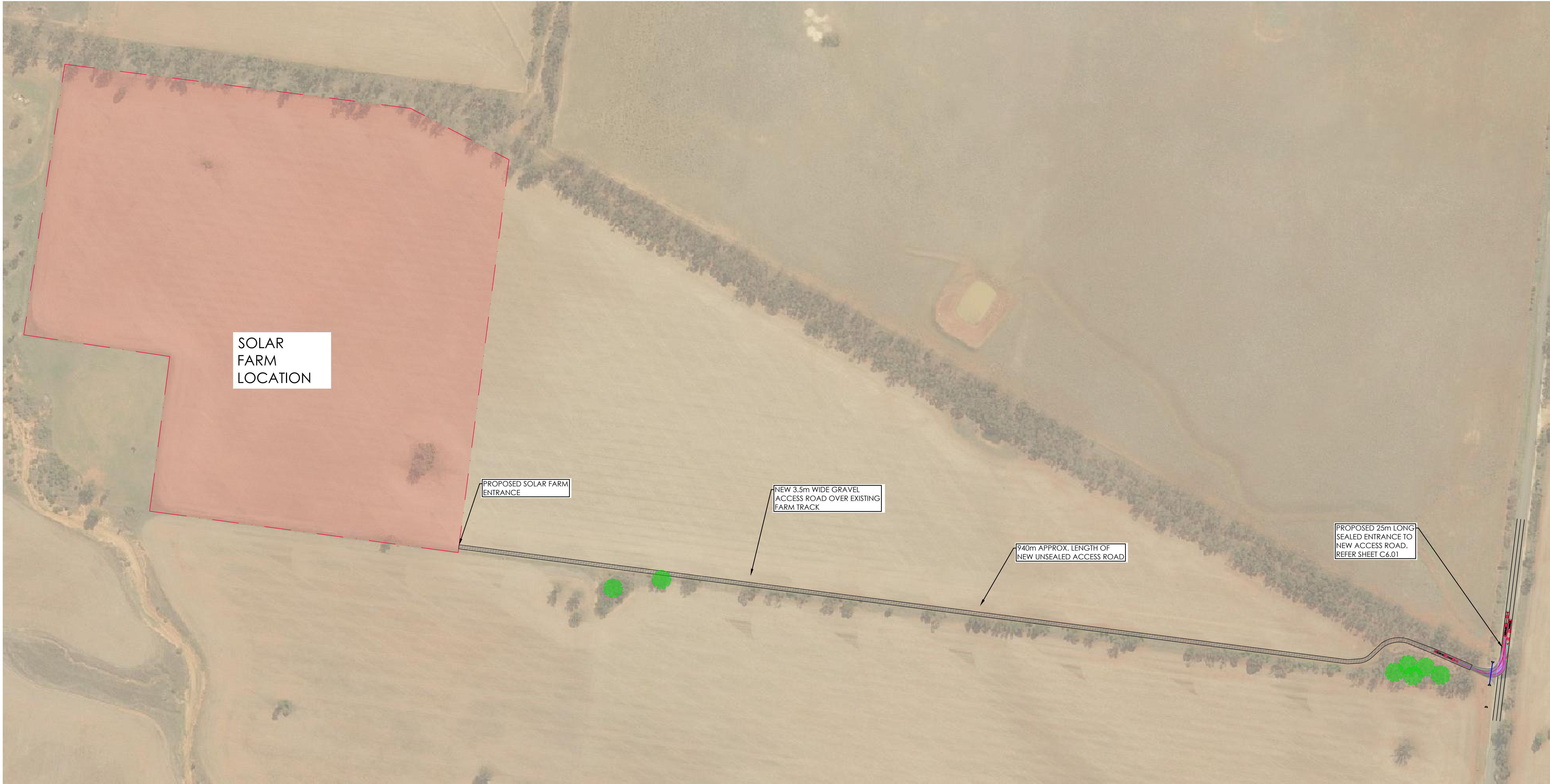
APPENDIX B – TRIAXIAL PLANS TX15839.00-C10.0

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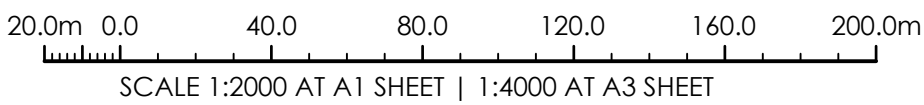
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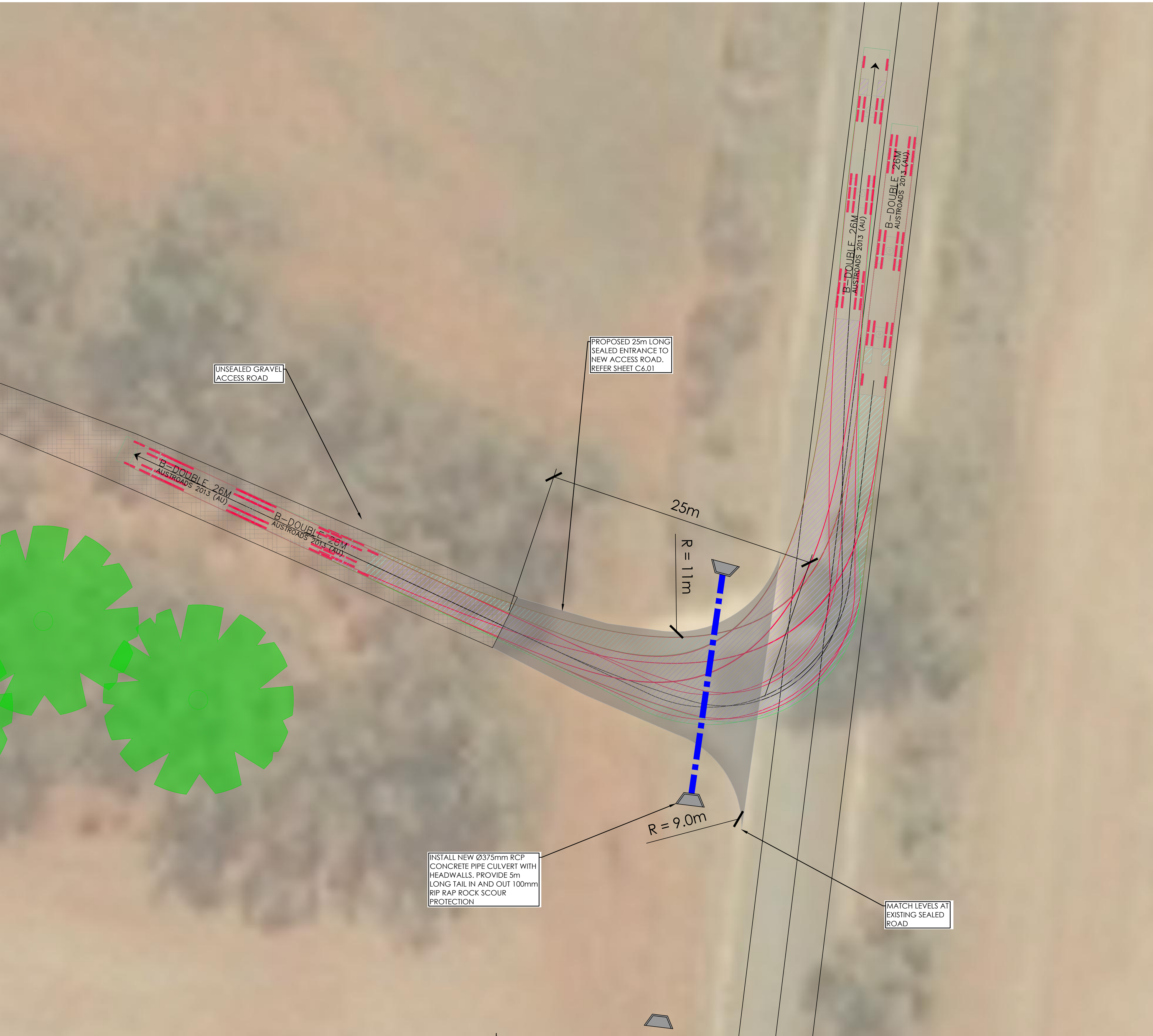
LEGEND

SYMBOL	DESCRIPTION
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	UNSEALED PAVEMENT



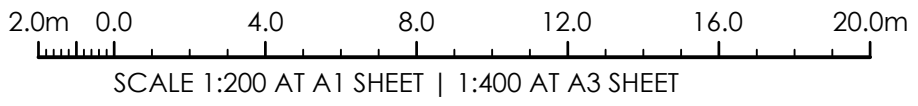
ACCESS PLAN
SCALE 1:2000 AT A1





LEGEND	
SYMBOL	DESCRIPTION
	SEALED PAVEMENT
	UNSEALED PAVEMENT

PAVEMENT PLAN
SCALE 1:200 AT A1



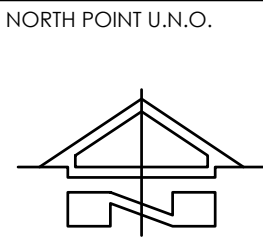
ISSUED FOR APPROVAL
AMENDMENTS

30.08.21
DATE

A
ISSUE

J.D.
BY

NOT FOR CONSTRUCTION



ARCHITECT

CLIENT
ITP DEVELOPMENT

PROJECT
WEST WYALONG 5MW SOLAR FARM
WARGIN ROAD, WEST WYALONG
NSW 2671

DESIGNED --
DRAWN --
DATE SEP 21
SIZE A1
CAD REF TX15839.00 - C01



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DRAWING TITLE
ENTRANCE PLAN

PROJECT No. TX15839.00 - C6.01
DRAWING No. A
ISSUE