
Robertstown East Solar Project

Transport Impact Assessment

Prepared for: EPS Energy

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Revision

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Acknowledgment of Country

In the spirit of reconciliation, Stantec acknowledges the Traditional Custodians of country throughout Australia and their connections to land, sea and community. We pay our respect to their Elders past and present, and extend that respect to all Aboriginal and Torres Strait Islander peoples.

Limitations

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TRANSPORT IMPACT ASSESSMENT

Robertstown East Solar Project

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Appendix A. Development Plans

1. Introduction

1.1 Background

In November 2018 Stantec (then GTA Consultants) prepared a Transport Impact Assessment (TIA) in support of a Development Application for a proposed solar project on land located approximately 5km northeast of Robertstown, SA. The development has since been approved under Development Approval 422/V005/18 V1 and is proposed to be an integrated but separately operated grid connected Photovoltaic Energy Generation System (PVS) of approximately 500MW (AC) generation capacity and a 500MW capacity Battery Energy Storage System (BESS) with 1,000MWh of storage that will feed into the National Electricity Market via ElectraNet's Robertstown Substation.

Due to site constraints identified from pre-construction investigation works, post development approval, approximately 200MW+ of PVS solar generation was considered unviable for construction on the Robertstown Solar project land. The site constraints include but are not limited to geotechnical, hydrological and fauna constraints. To address the loss of generation potential, an additional area of approximately 630ha of suitable unconstrained land, referred to as the Robertstown East solar project land, adjacent to Robertstown Solar project land has been secured.

Therefore, EPS Energy engaged Stantec to prepare an updated TIA to the previous prepared in 2018 which assesses the impact of the proposed change in subject site from a transport perspective. Given the change in subject site does not increase the level of solar energy generation already approved under Development Approval 422/V005/18 V1, construction volumes will remain the same and the impact will be limited to vehicle routing and turning warrant assessments.

1.2 Purpose of this Report

This report sets out an assessment of the anticipated transport implications of the proposed development, including consideration of the following:

1. existing traffic conditions surrounding the site
2. traffic generation characteristics of the proposed development
3. heavy vehicle route to the proposed development
4. proposed access arrangements and sight distance for the site
5. transport impact of the development proposal on the surrounding road network

1.3 References

In preparing this report, reference has been made to the following:

- GTA Consultants (now Stantec) 2018 TIA
- Robertstown Solar Variation (Approved 2022 vs Revised 2024 Layout) & Robertstown East Solar
- Goyder Council Development Plan (consolidated – 24 November 2016)
- AustRoads Guide to Road Design – Part 4A – Signalised & Unsignalised Intersections (2017)
- Locality plan and project boundary for the proposed development as provided by EPS Energy
- various technical data as referenced in this report

2. Existing Conditions

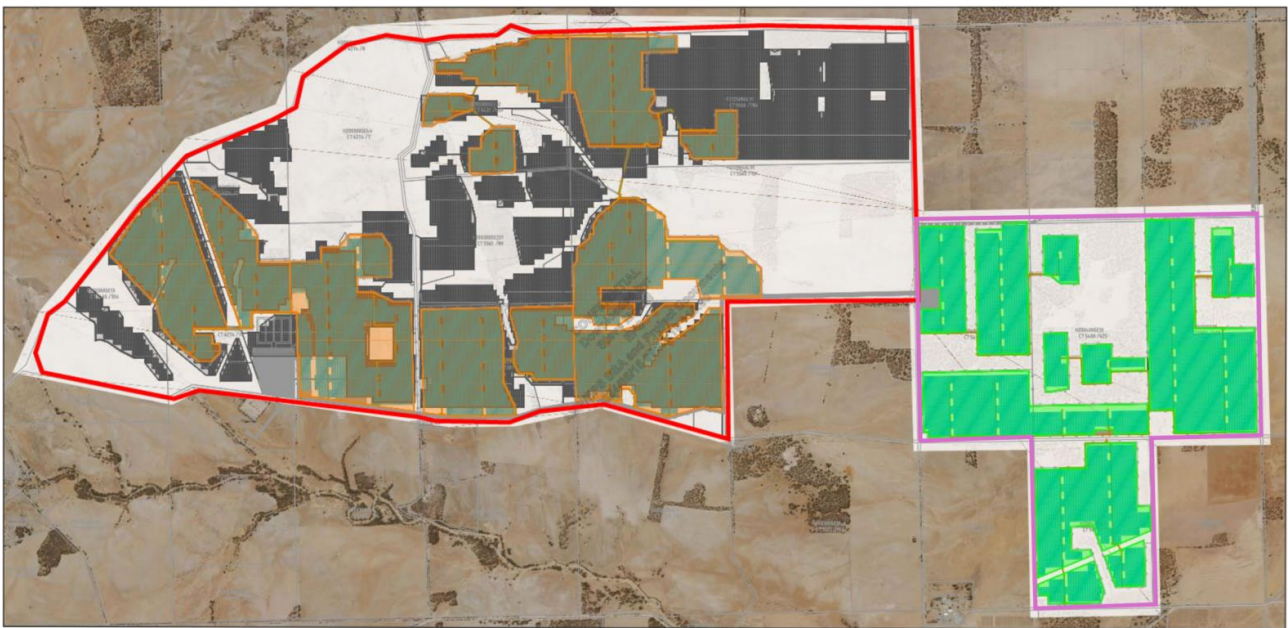
2.1 Project Area

The project area is located approximately 5km northeast of Robertstown, SA. The project area is comprised of the existing Robertstown Solar project land, equating to an area of approximately 1,800 hectares (ha), and the proposed Robertstown East solar project land consisting of approximately 630 hectares (ha) in area, located to the east of Worlds End Highway.

The existing Robertstown Solar Project land is bounded by Lower Bright Road, Powerline Road and Junction Road. Eagle Hawke Gate Road bisects the site in a north/south direction. The proposed Robertstown East Solar Project land is bound by Sutherlands Road to the east, Pipeline Road to the south and Junction Road to the west, with Lower Bright Road bisecting the site in an east/west direction.

The location of the subject site, that includes the existing and proposed project areas is shown in Figure 2.1 below, and further detailed in Appendix A.

Figure 2.1 – Subject Site



Source: Robertstown Solar Variation (Approved 2022 vs Revised 2024 Layout) & Robertstown East Solar

2.2 Road Network

2.2.1 Adjoining Roads

Worlds End Highway

Worlds End Highway is under the care and control of the Department of Planning Transport and Infrastructure (DPTI) and is a two-way, two lane road, configured with one lane in each direction. The carriageway is approximately 8 metres wide and set within a road corridor approximately 60 metres wide. Data obtained from DPTI shows that within the vicinity of the project area, the annual average daily traffic volume (AADT) is approximately 170 vehicles per day 1. The highway is subject to the rural default speed limit of 100km/h.

Local Roads

Powerline Road and Lower Bright Road are unsealed two-way local roads under the care of the Regional Council of Goyder. They are configured with an approximately 7m carriageway set within a 20m road reserve (approx.). As both roads are unsealed, they are subject to the rural default speed limit of 100 km/h. Stantec was unable to source traffic volume data for Powerline Road and Lower Bright Road however traffic volumes would be expected to be less than 170 vehicles per day.

The immediate Powerline Road approach to Worlds End Highway appears to be sealed. Junction Road and Sutherlands Road both run along the eastern boundary of the project area and are unsealed roads approximately 8.7 metres and 7



metres wide respectively, each set within a road corridor approximately 18 metres wide. Being unsealed, both roads are subject to the default rural limit of 100km/h.

Eagle Hawke Gate Road bisects the project area and is an unsealed road approximately 9 metres wide at its southern end towards Lower Bright Road however reduces to a track approximately 180 metres north of Lower Bright Road. The road is set within a corridor approximately 18 metres wide. Being unsealed, the road is subject to the default rural limit of 100km/h.

2.2.2 Surrounding Intersections

The following intersections currently exist in the vicinity of the project area:

- Powerline Road / Fettke Road / Worlds End Highway (unsignalised)
- Lower Bright Road / Powerline Road (unsignalised)
- Lower Bright Road / Eagle Hawke Gate Road (unsignalised)
- Lower Bright Road / Junction Road (unsignalised)
- Lower Bright Road / Sutherlands Road (unsignalised)
- Powerline Road / Sutherlands Road (unsignalised)
- Powerline Road / Junctions Road (unsignalised)
- Powerline Road / Eagle Hawke Gate Road (unsignalised)

2.2.3 Sight Distance

A desktop assessment of sight distance at the intersection of Worlds End Highway and Powerline Road has been undertaken in accordance with the requirements of the Austroads Guide to Road Design – Part 4A: Unsignalised and Signalised Intersections (Austroads, 2017). The assessment considers the Safe Intersection Sight Distance (SISD) and Minimum Gap Sight Distance (MGSD).

- Safe Intersection Sight Distance (SISD) – the sight distance for a vehicle travelling on a major road and approaching an intersection to observe a vehicle on the minor road approach moving into a collision situation and to decelerate to a stop before reaching the collision point; and
- Minimum Gap Sight Distance (MGSD) – sight distance for vehicles exiting the project area to observe approaching vehicles on the major road and decide whether there is a sufficient gap to turn from the minor road.

Given the rural location of the project area, at a design speed of 110km/h and a reaction time of 2.5 seconds, an SISD of 300 metres is required.

MGSD is based on the critical gap acceptance time that drivers are prepared to accept when undertaking a crossing or turning manoeuvre at intersections. Depending on the types of turning movements, critical gap acceptance time has the following values:

- Right turn from major road – across one lane: 4 secs
- Right turn from minor road – two lane/two way: 5 secs
- Crossing – two lane/two way: 5 secs
- Left turn: 5 secs

A design speed of 110 km/h and critical gap acceptance time of 5 secs requires a MGSD of 153m.

The SISD and MGSD at the intersection of Powerline Road and Worlds End Highway are considered satisfactory to the north of the intersection however sight distance to the south is limited and is discussed further in Section 4 – Traffic Impact Assessment.

A high-level aerial sight distance assessment has been undertaken at the intersection of Powerline Road and Lower Bright Road. The assessment indicates that there's likely to be at least 300 metres of horizontal sight distance in to the north and 170 metres horizontal sight distance to the south of the intersection.



3. Development Proposal

3.1 Proposed Development

The development proposal includes the construction of a Photovoltaic Energy Generation System (PVS) of approximately 500 MW (AC) generation capacity and Battery Energy Storage System (BESS).

Construction of the development is proposed in stages.

A construction scenario of 28 months is adopted for the assessment. During construction a campsite may be established within the project area for construction workers.

3.2 Vehicle Access

Access to the two areas of land within the subject site are to be taken separately.

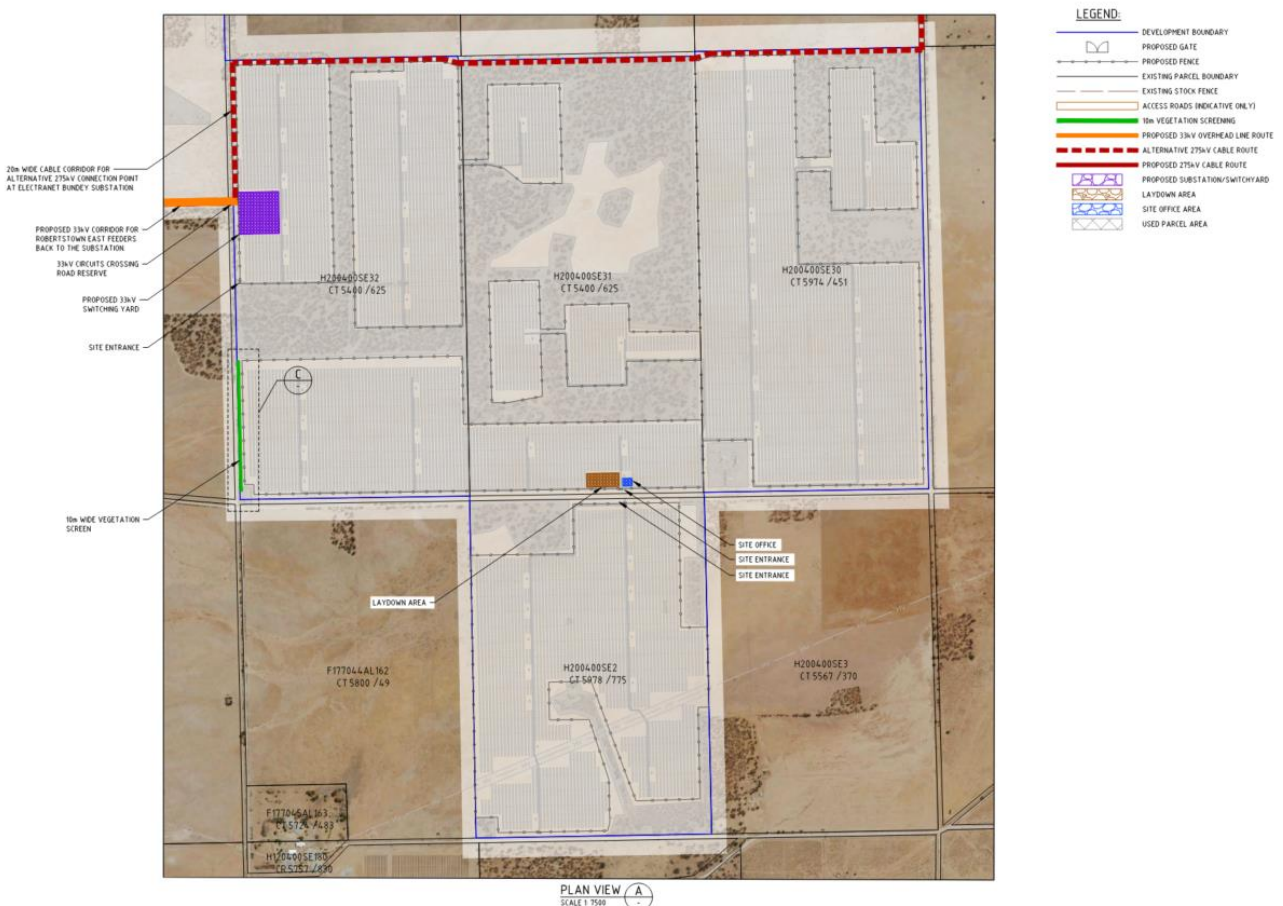
3.2.1 Robertstown Solar Project Land

The access locations to the approved Robertstown Solar Project land remains the same, being primarily located on Lower Bright Road. Options for access from Eagle Hawke Gate Road are being considered. Where possible, options to utilise existing crossovers will be adopted. Some access locations may be temporary to facilitate construction and may be closed once the solar facility is in operation.

3.2.2 Robertstown East Solar Project Land

Access to the newly acquired Robertstown East Solar Project land is to be taken from two locations as detailed in Figure 3.1 below, the proposed Switching Yard (purple) off of Junction Road and the proposed Laydown Area (brown) off of Lower Bright Road.

Figure 3.1 – Access Locations - Robertstown East Solar Project Land



Source: ROB.AMP.GN.DRG.A.0202

Access to the Switching Yard is to be taken from Junction Road and access to the Laydown Area will be taken directly from Lower Bright Road.

4. Traffic Impact Assessment

4.1 Proposed Heavy Vehicle Route to Project Area

Heavy vehicles will be required to access the project area and surrounding areas during the construction phase for solar PV module deliveries, BESS infrastructure deliveries, road upgrades associated with project area access, internal access tracks, sub-station, office and maintenance facility construction. During the operational phase, it is envisaged there will be very few heavy vehicle movements.

The indicative heavy vehicle route for the project area at Robertstown is as follows:

- From Port Adelaide via National Highway A9 (Port River Expressway, Salisbury Highway) and National Highway A1, National Highway M20, Thiele Highway (B81), Worlds End Highway, Powerline Road and Lower Bright Road.

The existing DPTI approved restricted access vehicle routes are detailed on the DPTI RAVnet website and are reproduced in Figure 4.1 and Figure 4.2 below, with the proposed route highlighted. Figure 4.3 shows the existing 26m B-Double (PBS Level 2) network in the locality of the project area. Worlds End Highway is gazetted for 26m B-Double vehicles, however Powerline Road, Lower Bright Road, Eagle Hawke Gate Road, Sutherlands Road and Junction Road are not currently gazetted for 26m B-Double (PBS Level 2) access. Where approval to operate B-doubles is sought, an application to the National Heavy Vehicle Regulator (NHVR) will be required.

Figure 4.1 – Existing 26m B-Double Approved Routes – Port Adelaide to Gawler



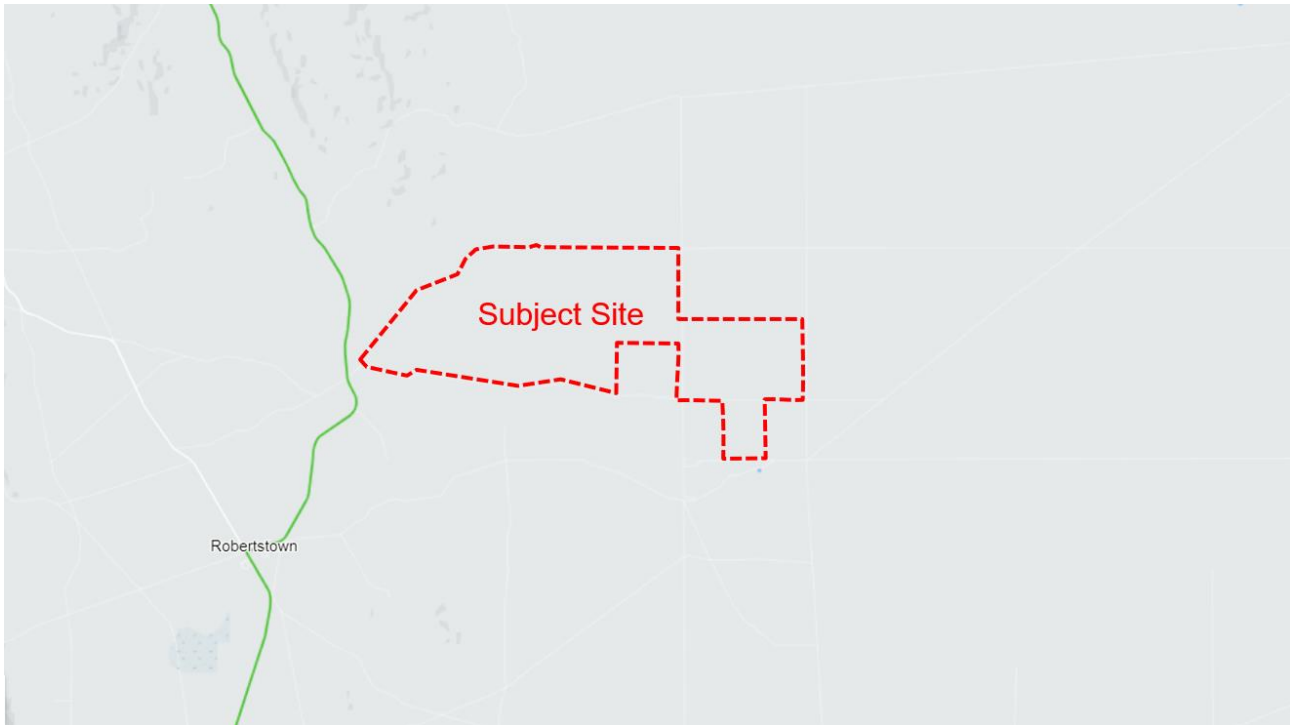
Source: National Network Map – NHVR Portal

Figure 4.2 – Existing 26m B-Double Approved Routes – Gawler to the proposed project area



Source: National Network Map – NHVR Portal

Figure 4.3 – Existing 26m B-Double Approved Routes in Vicinity of the Subject Site



Source: National Network Map – NHVR Portal

Except for a small number of oversized vehicles which are required for delivery of transformers and a substation, the maximum design vehicle for the proposed project area access is a 26 metre B-Double which is currently approved for travel along most of the proposed route. There is one notable turning restriction (No. 24842) at Kapunda which only permits left turn movements by B-doubles from Perry Road into Adelaide Road, and right turn movements only from Adelaide Road onto Perry Road.

The above restriction corresponds with the approved B-double route and appears to have been implemented to prevent B-double movements through the town centre. Although the town centre is classed as a general access route and therefore accessible by 19 metre semi-trailers, it is recommended that semi-trailers adopt the approved B-double route for improved travel time and to preserve amenity within the town centre.

Over dimensional vehicles will require an application to be lodged with DPTI and require either private or police escort depending on the limits of the over dimensional load.

Turnpaths have been completed for a 26 metre B-double (PBS Level 2) combination turning between the Worlds End Highway and Powerline Road and are shown in Figure 4.4 and Figure 4.5 over. The turnpaths show that a B-double will be able to undertake the turning manoeuvres within the existing footprint of the intersection and that upgrades to the intersection are not required to accommodate the turnpath. It is noted that when a B-double turns left from Powerline Road, simultaneous vehicle movements are not possible since the whole width of Powerline Road is required for the vehicle to complete the turn and avoid crossing the centreline on Worlds End Highway. The turnpath demonstrates however that a vehicle waiting to turn into Powerline Road can safely store on the highway while the B-double turns out. This arrangement is considered acceptable since the volume of traffic on Worlds End Highway is very low.

Figure 4.4 – 26 Metre B-Double Turn Path - Right Turn into Powerline Road



Figure 4.5 – 26 Metre B-Double Turn Path - Left Turn from Powerline Road



Turnpaths for a 26 metre B-double have also been completed for the intersection of Powerline and Lower Bright Road and are shown in Figure 4.6 and Figure 4.7 over. The turn paths show that B-doubles will be able to turn within the existing footprint of the intersection and therefore modifications to the intersection are not required. While the turnpaths

require the B-double to cross the centreline of the road, the manoeuvre is not considered high risk since there appears adequate sight distance at the intersection and traffic volumes along Powerline Road and Bright Road are very low.

Figure 4.6 – 26 Metre B-Double Turnpath – Right Turn from Powerline Road to Lower Bright Road

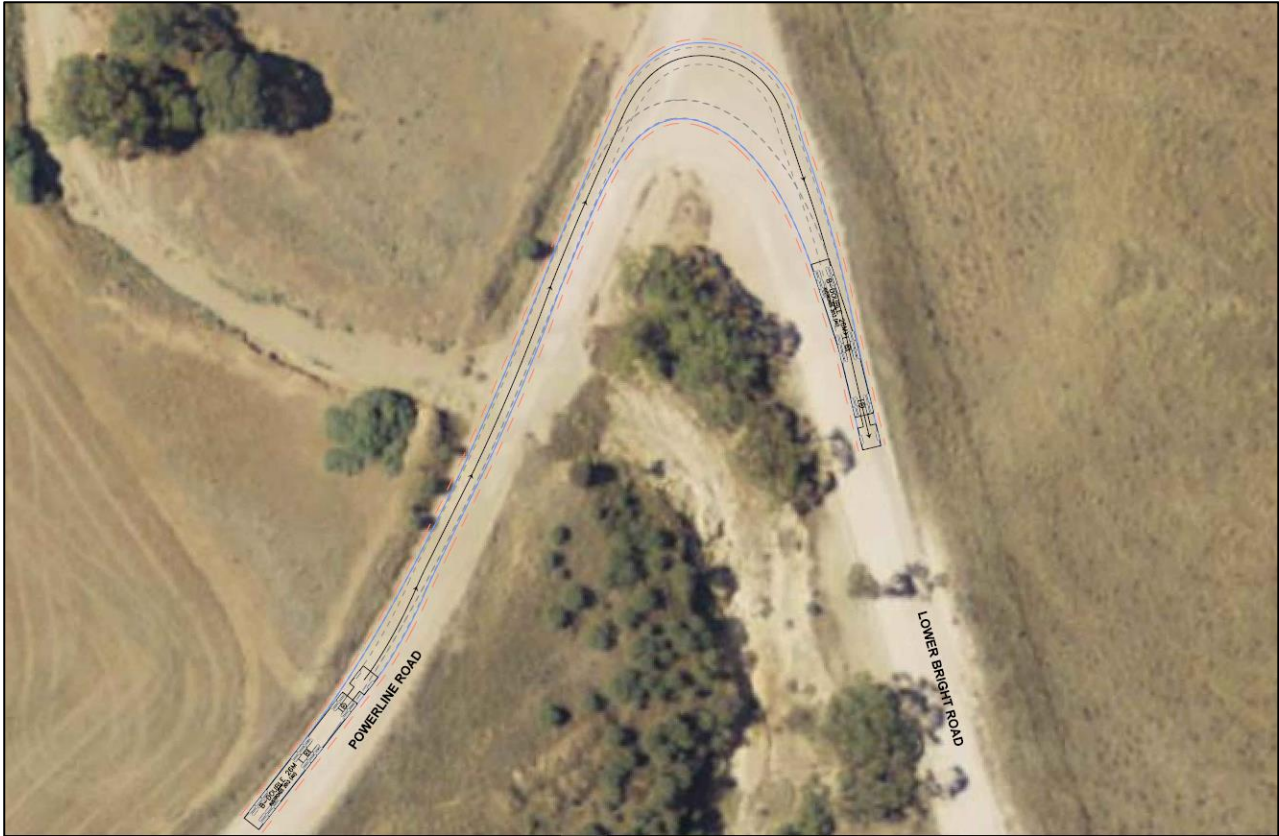
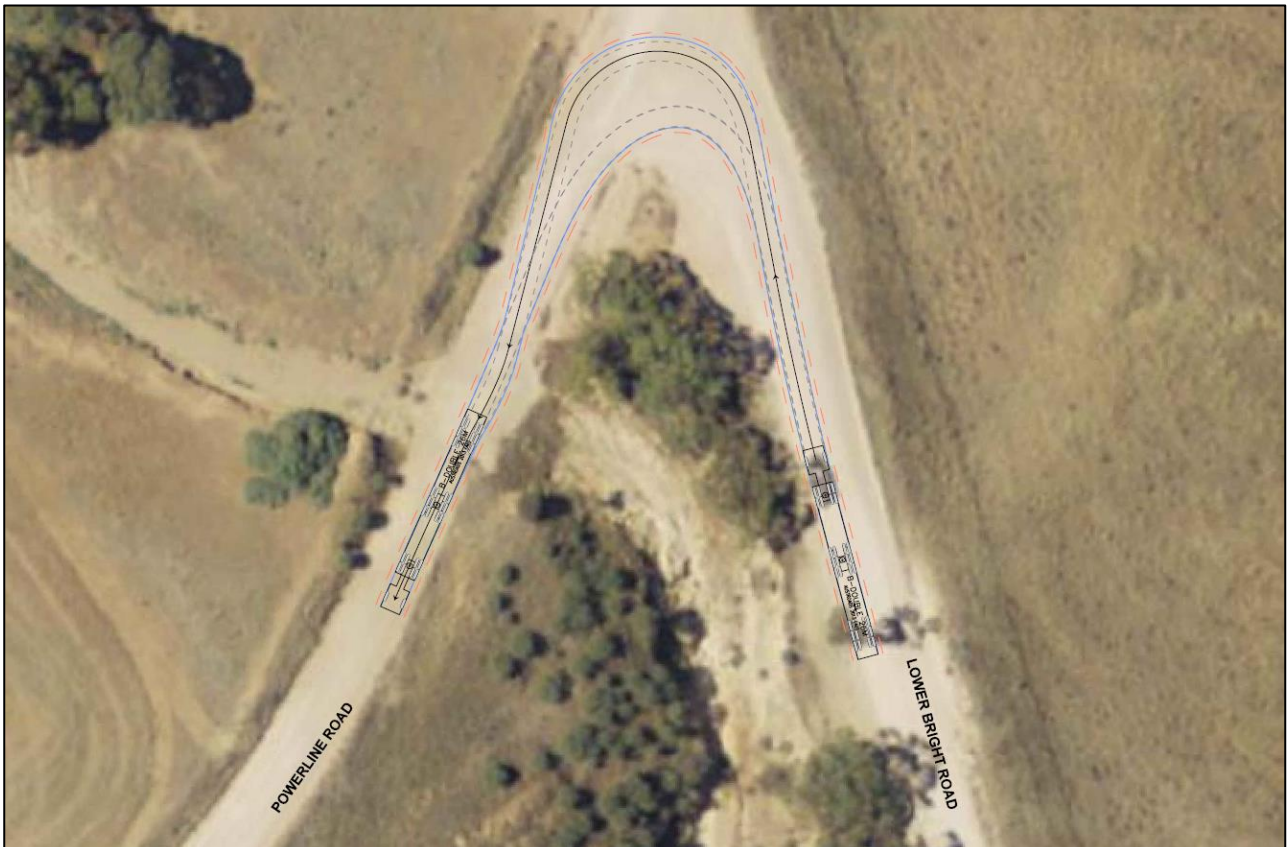


Figure 4.7 – 26 Metre B-Double Turnpath – Left Turn from Lower Bright Road to Powerline Road



4.2 Traffic Generation & Distribution

4.2.1 Traffic Generation

Traffic impacts of the proposed solar project on the surrounding road network during the construction phase have been assessed based on the following two scenarios:

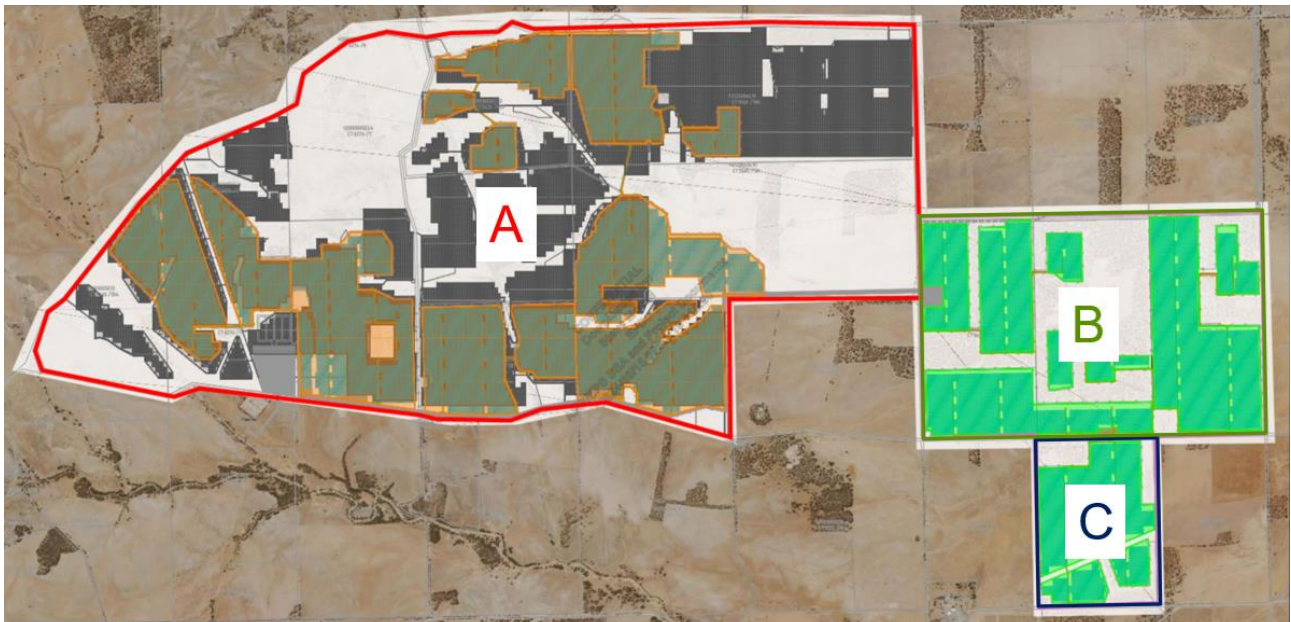
- Scenario 1 – all light and heavy vehicle movements will arrive from the south during the construction phase
- Scenario 2 – a construction camp may be set up within the project area, which will reduce the volume of light vehicles traveling to and from the site on a daily basis

Traffic in the operational phase will most likely comprise of light vehicles as staff monitor operations and maintain the facility. It is envisaged there will be very few heavy vehicle movements, and these would likely occur on an ad hoc basis for equipment replacement.

4.2.2 Traffic Distribution

With the acquisition of the Robertstown East Solar Project land, the distribution of development generated traffic throughout the subject site has changed. Whilst all generated traffic is expected to access the subject site via the Powerline Road / Fettke Road / Worlds End Highway intersection, beyond this point the direction of travel is subject to where within the subject site the trip is destined for. Figure 4.8 below, splits the subject site into three destination areas for development traffic.

Figure 4.8 – Subject Site Trip Destination Areas



The percentage split of development traffic destined for each location identified above is as follows:

- A (red): 60%
- B (green): 30%
- C (blue): 10%

As detailed in Section 3.2 of this report, access to the Robertstown Solar Project land (Area A) is to be taken from Lower Bright Road, potentially at the existing intersections with Eagle Hawke Gate Road. Access to Area B is to be taken from Junction Road. Access to the southern section of Robertstown East Solar Project land (Area C) is to be taken from Lower Bright Road.

Therefore, it is expected that all development generated traffic would leave the arterial road network at the Powerline Road / Fettke Road / Worlds End Highway intersection by turning onto Powerline Road. Vehicles would then turn onto Lower Bright Road and travel eastwards before traffic destined for Area A (60%) would turn left into Area A at Eagle Hawke Gate Road. The remaining 40% of traffic would then continue on Lower Bright Road before reaching the intersection with Junction Road, where the 30% of vehicles destined for Area B would turn left, drive northwards on Junction Road and turn right into the Switching Yard. The 10% of traffic destined for Area C would continue past the Junction Road intersection before turning right into the Laydown Area.

4.3 Construction Phase Traffic Generation – Scenario 1

4.3.1 Design Rates

Traffic generation estimates for the project area were sourced from EPS Energy. Based on a 28-month construction period, the proposed project is anticipated to generate a total of 11,342 heavy vehicle movements during the construction period of 28 months. A summary of the anticipated heavy vehicle types and movements during the construction period is provided in Table 4.1.

Table 4.1 – Anticipated Heavy Vehicle Type and Movement Details [1]

Table Column Heading		Delivery Vehicle	Movements
Major Equipment Delivery	Post Pounding Units and Piles.	Semi-Trailer	1,532
	Tracking System, Framework	Semi-Trailer	3,238
	PV Modules	B-Double Semi	3,090
	PCS, Inverters	L - Low Loader	206
	Combiner Boxes	Semi-Trailer	62
	Other including cabling	Semi-Trailer	1,122
Site Mobilisation / Set-up	Misc. Establishment Deliveries	L - Low Loader	12
	Earthmoving Equipment Deliveries	H - Low Loader	12
	Imported Materials for Office / Laydown	Truck and Dog	280
	Imported Materials for Roads	Truck and Dog	900
HV Trenching	Excavator Delivery	H - Low Loader	4
	Cable Laying Equipment	L - Low Loader	4
	Cable Bedding Sand	Truck and Dog	200
Substation Works	Misc. Building Materials etc	Semi-Trailer	10
	Primary Transformer	O/D H-Low Loader	2
	Modular Substation	O/D L-Low Loader	2
	Switchboard	L - Low Loader	4
	Cabling	L - Low Loader	4
	Switchgear Components	Semi-Trailer	10
General Construction	Waste Collection	Waste Truck	160
	Dust suppression	Water Trucks	488
		TOTAL	11,342

Source: Estimated traffic movement data by EPS Energy, dated [22 August 2018].

The average heavy vehicle and light vehicle movements per day during construction are shown in Table 4.2 below.

Table 4.2 – Traffic Generation Estimates

Construction Phase	Light Vehicles per day	Heavy Vehicles per day	OD Heavy Vehicles	Total movements per day
Months 1-2	10	9		19
Months 3-4	15	11		26
Months 5-6	23	17		40
Months 7-8	34	26		60
Months 9-10	32	20		52
Months 11-12	27	21	2	50
Months 13-14	30	21		51
Months 15-16	32	19		51
Months 17-18	26	20		46



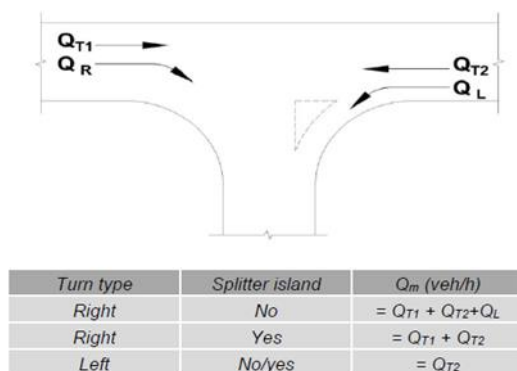
Construction Phase	Light Vehicles per day	Heavy Vehicles per day	OD Heavy Vehicles	Total movements per day
Months 19-20	27	21		48
Months 21-22	30	19		49
Months 23-24	29	18		47
Months 25-26	22	11		33
Months 27-28	17	1		18

The estimated average vehicle movements per day across the construction scenario varies across different phases, with a consistent level of daily movements averaging approximately 50 movements per day (20 light vehicles and 30 heavy vehicles) during construction months 7 to 24.

4.3.2 Intersection Treatment Warrant Assessments

Based on the above traffic generation and distribution estimates, an assessment in accordance to the Guide to Road Design Part 4: Intersections and Crossings - General (Austroads, 2017) has considered the warrants for turning treatments at the intersection of Worlds End Highway and Powerline Road, the site access to Robertstown Solar Project land (Area A) from Lower Bright Road, the Lower Bright Road / Junction Road intersection, the site access to the Switching Yard at Area B and the site access to the Laydown Area at Area C. Figure 4.8 shows the various traffic volume parameters calculated by the warrant.

Figure 4.9 – Calculation of the Major Road Traffic Volume Parameter Qm



For a right turn movement, the major road traffic volume parameter (Q M) consists of the traffic held up behind the right turning vehicles on the major road (Q_{T1}), and traffic impacting the right turn movement in the opposite direction of travel (Q_{T2} and Q_L). For a left turn movement, the major road traffic volume parameter (Q M) considers only the traffic held up by the turning vehicle in the same lane (Q_{T2}).

Worlds End Highway / Powerline Road

Worlds End Highway has an Average Annual Daily Traffic (AADT) of 170 in vicinity of the project area. For this assessment a peak hour volume of 10% of the daily traffic was assumed. As such, the peak hour traffic volume is approximately 17 vehicles, comprising 9 northbound movements and 8 southbound movements based on a 50:50 directional split being assumed.

It is assumed that 30% of the light vehicles will likely arrive at the project area within a given peak hour correlating with shift work. Therefore, it is anticipated that the volume of light vehicles arriving at the project area in a peak hour will be approximately 6 vehicles. Given the location of the project area to major towns in the vicinity, it is assumed that most of the traffic will arrive and depart Powerline Road to the south. Since most of the traffic is expected from the south, potential limitations of the sight distance from Powerline Road to the south will have little impact or risk to development traffic since right turn movements from Powerline Road are not expected to be frequent.

Heavy vehicles will be travelling via the proposed route via Worlds End Highway from the west of the project area. It is assumed that the arrival distribution of heavy vehicles is even over hours of construction. As such a peak hour heavy vehicle volume equal to 10% of the daily heavy vehicle volume has been adopted, which equates to approximately 3 vehicles in the peak hour.

The turning movements of vehicles at the intersection of Worlds End Highway and Powerline Road is shown in Figure 4.10 over.

Figure 4.10 – Turning movements in a peak hour



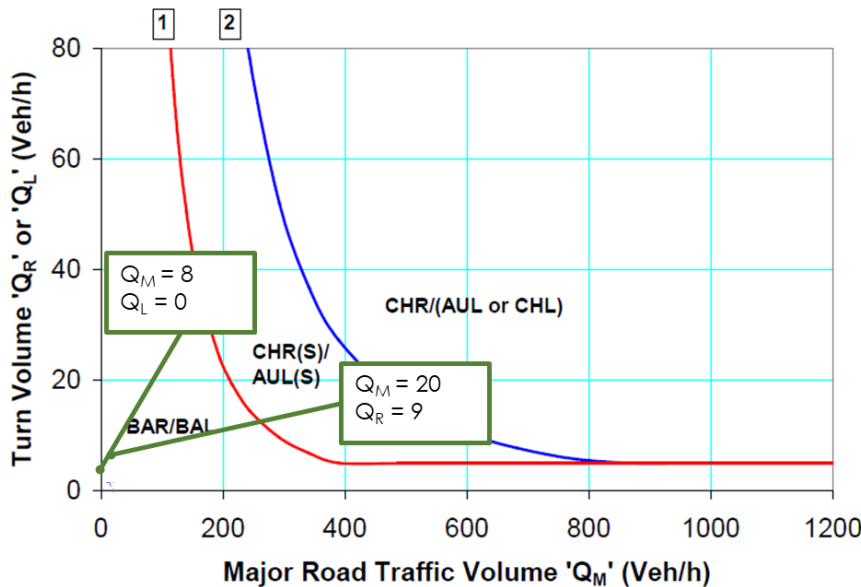
Based on the traffic volume and distribution assumptions, Table 4.3 below presents the left and right turn volume calculations with respect to the major road traffic volumes.

Table 4.3 – Traffic Volume Parameters

Turn Type	Peak Hour Movements	Major Traffic Volume (QM)
Right (QR)	QR = 9	QM = QT1 + QT2 + QL = 20
Left (QL)	QL = 0	QM = QT2 = 8

Figure 4.11 outlines the warrant for turn treatments on the major road at unsignalised intersections for a design speed equal to or greater than 100km/h. The Peak Hour Movements (QR/QL) and corresponding Major Traffic Volumes (QM) are plotted on the graph to determine the type of turn treatment required.

Figure 4.11 – Warrant for intersection treatment



(a) Design speed ≥ 100 km/h

Source: (Reproduced based on Figure A 10b, Austroads, Guide to Road Design Part 4)

From the above assessment, it can be concluded that during the peak hour, the marginal increase in turning movements at the intersection associated with the development traffic would not significantly impact on the current warrant requirements. Therefore, formal turn treatments at the intersection are not considered to be warranted.

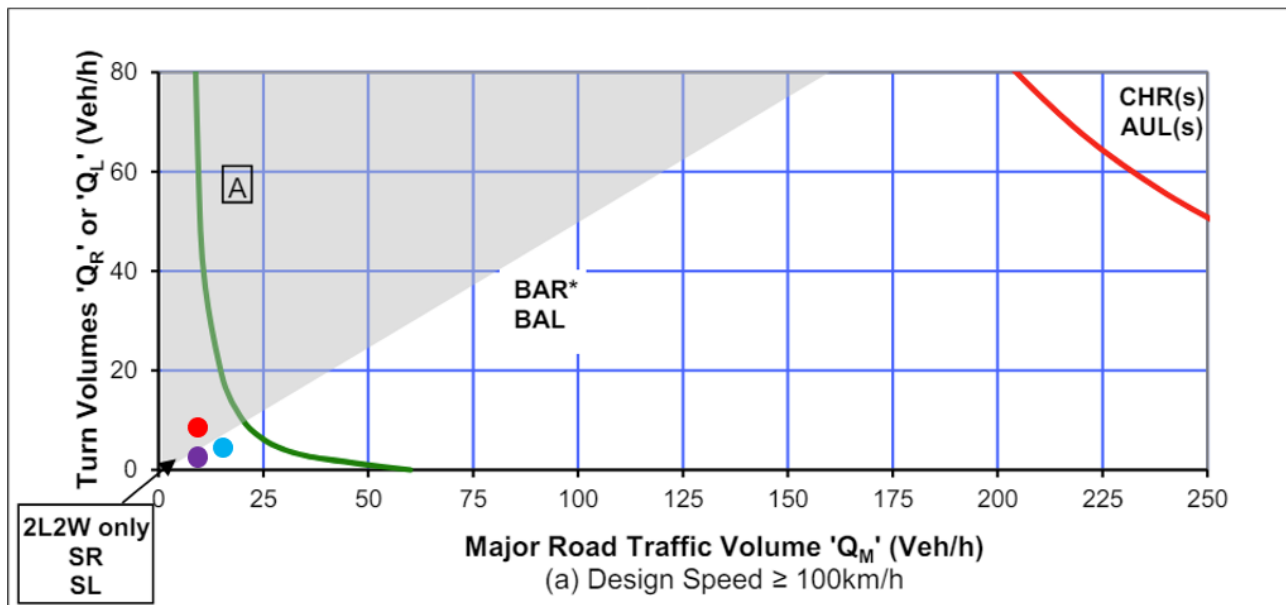
Site Accesses

Reliable traffic volume data is not publicly available for Lower Bright Road or Junction Road however, given that the AADT at an arterial road like the Worlds End Highway is 170 within close proximity of the subject site, it is safe to assume that the AADT on Lower Bright Road and Junction Road is well below 170 vehicles per day. Despite this, without reliable data to reference and to ensure a comprehensive assessment is undertaken, an AADT of 170 has been adopted at Lower Bright Road and Junction Road. Resulting in a peak hour traffic volume of 17 vehicles, comprising of 9 westbound / southbound and 8 eastbound / northbound movements.

As identified in Section 4.2.2 of this report, 60% of the 6 light and 3 heavy vehicles expected to enter the project area at the Worlds End Highway / Powerline Road intersection will enter the Robertstown Solar Project land (Area A) from Lower Bright Road. 30% will enter the Switching Yard at Area B from Junction Road and the remaining 10% will enter the Laydown Area at Area C from Lower Bright Road. The resulting peak hour turning movements at each site access are detailed in Figure 4.12. The traffic volumes above were applied to the warrant for turn treatments on the major road at unsignalised intersections for a design speed equal to or greater than 100km/h and the output is detailed in Figure 4.12 below.

Figure 4.12 – Warrant for intersection treatment – Site Accesses

Area C – Site Access			Area B – Site Access			Area C – Site Access		
TWA			TWA			TWA		
	LEFT	RIGHT		LEFT	RIGHT		LEFT	RIGHT
Q l/r	5	N/A	Q l/r	N/A	3	Q l/r	1	N/A
Qm	9	N/A	Qm	N/A	17	Qm	9	N/A
TREATMENT		● BAR	TREATMENT		● BAR	TREATMENT	● BAR	●



Source: (Reproduced based on Figure A 10b, Austroads, Guide to Road Design Part 4)

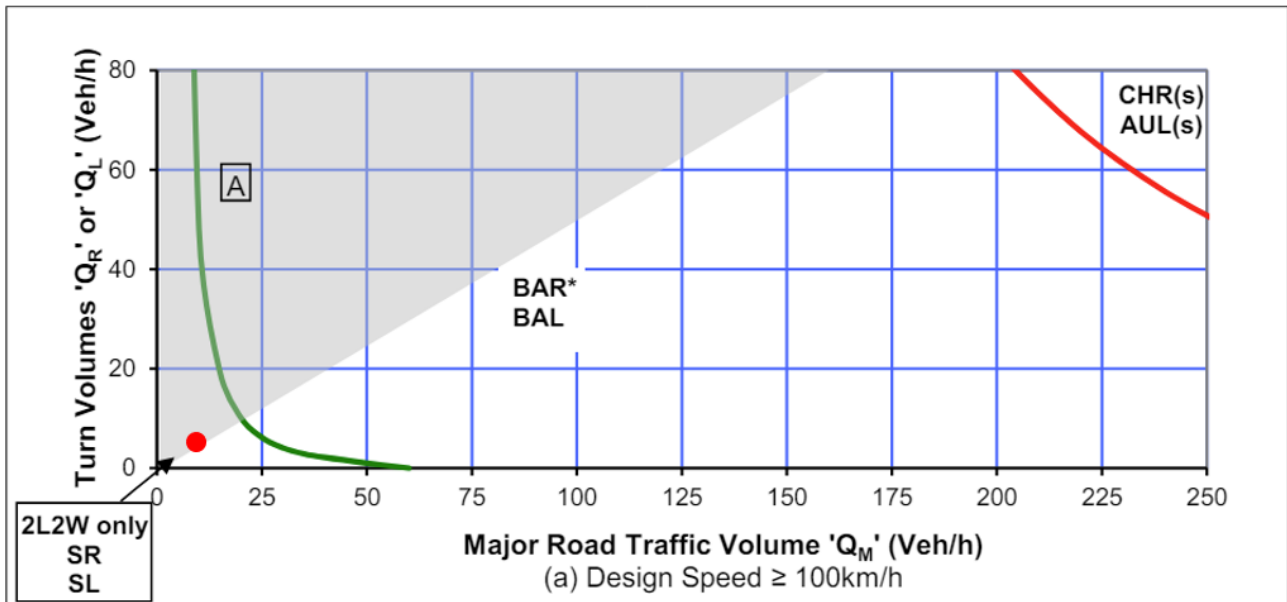
From the above assessment, it can be concluded that during the peak hour, the impact of the development generated traffic entering the site at the access on Junction Road and either access on Lower Bright Road are minimal, and formal turn treatments are not required.

Lower Bright Road / Junction Road

The 30% of vehicles directed towards the Switching Yard at Area B will take a left turn at the Lower Bright Road / Junction Road intersection therefore, a warrant for turn treatments assessment is required at this intersection. The resulting assessment is detailed in Figure 4.13 below.

Figure 4.13 – Warrant for intersection treatment – Lower Bright Road / Junction Road

Lower Bright Road / Junction Road		
	TWA	
	LEFT	RIGHT
Q l/r	3	N/A
Qm	9	N/A
TREATMENT	●	●



From the above assessment, it can be concluded that during the peak hour, the impact of the development generated traffic on the Lower Bright Road / Junction Road intersection is minimal, and no formal turn treatment is required.

4.4 Construction Phase Traffic Generation – Scenario 2

In this scenario, a construction camp is proposed within the project area so that light vehicle traffic generated during the construction phase will be reduced. The construction camp is anticipated to reduce light vehicle movements during the peak period by up to 90% compared to Scenario 1, hence reducing the project-generated light vehicles from 20 vehicles per day to 2 vehicles per day.

The peak hour light vehicle traffic is therefore anticipated to be less than 1 vehicle per hour (assuming 30% of daily vehicle movements are in the peak hour).

The anticipated heavy vehicle volume will be consistent with that of Scenario 1, which is 3 heavy vehicles in the peak hour.

The increase in traffic volumes in the construction phase is marginal and will not generate any additional intersection treatment requirement. The risk associated with the additional turning manoeuvres in this scenario is negligible given the traffic volumes considered.

4.5 Operational Phase Traffic Generation

Given the low trip rate generated by the operational staff, the development will not compromise the safety or function of the surrounding road network during the operational phase. No turning treatments at the intersection of Worlds End Highway and Powerline Road would therefore be warranted.

4.6 Summary

In summary, the project is not anticipated to generate high volumes of traffic during either the construction or operational phases. The intersection of Worlds End Highway and Powerline Road will not require any additional intersection treatment beyond the current layout.

5. Conclusion

Stantec has undertaken a transport feasibility assessment for the proposed Robertstown Solar development including both the Robertstown Solar Project land and the Robertstown East Solar Project land and the following conclusions are made:

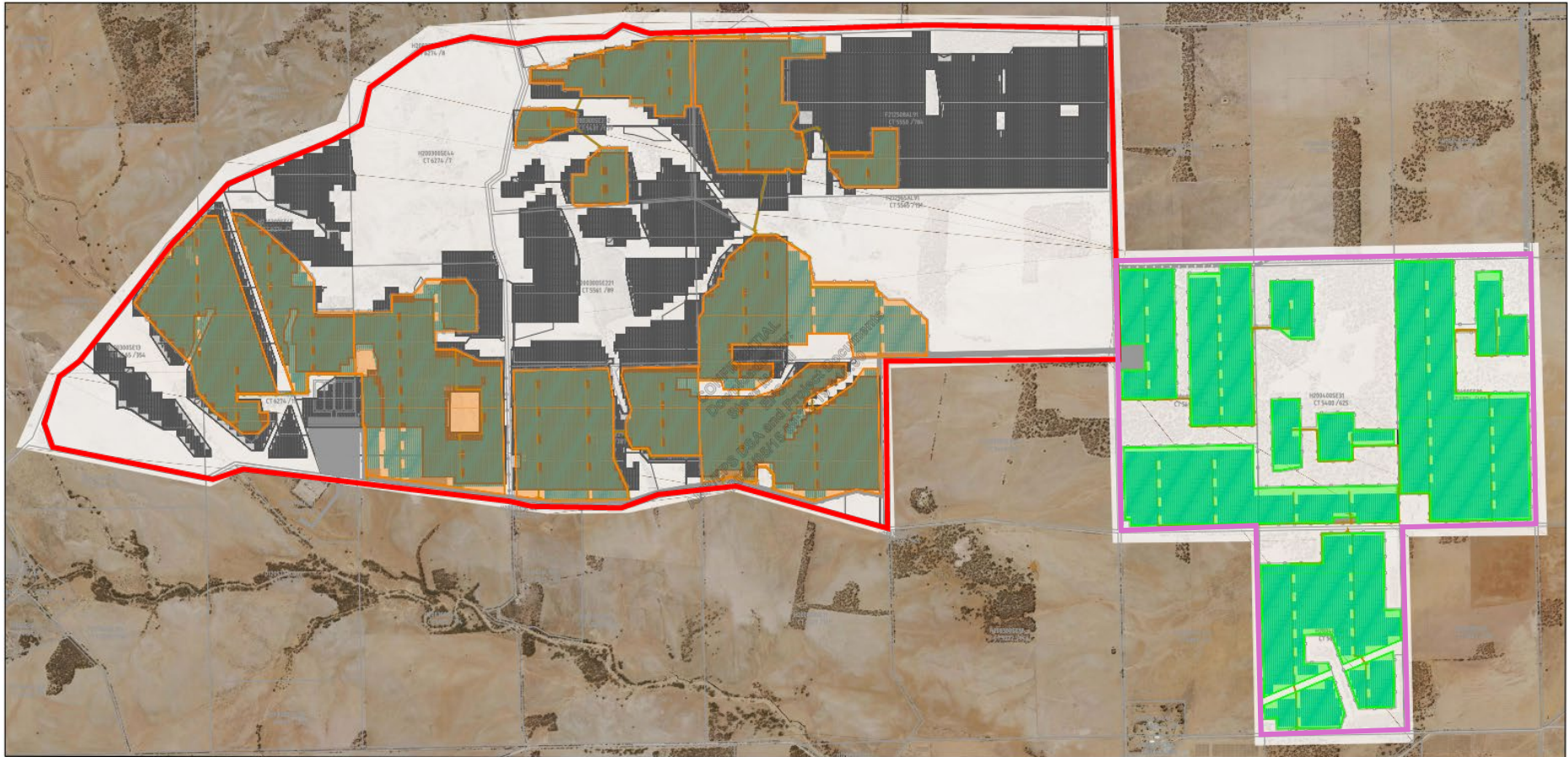
1. A Photovoltaic Energy Generation System (PVS) of approximately 500 MW (AC) generation capacity and Battery Energy Storage System (BESS) is proposed on the project area located 5km northeast of Robertstown SA.
2. A new parcel of suitable land (630ha) to the east has been acquired to support the solar generation deemed unviable at the existing site due to unforeseen constraints.
3. Access to the project area will be provided primarily along Lower Bright Road with potential access also considered from Eagle Hawke Gate Road.
4. Traffic volumes on the surrounding road network are considered to be very low with approximately 170 vehicles per day on Worlds End Highway and less than 170 vehicles per day along Lower Bright Road.
5. The proposed heavy vehicle route to the Project Area will be from Port Adelaide via National Highway A9, National Highway A1, National Highway M20, Thiele Highway B81, Worlds End Highway, and Lower Bright Road
6. The proposed heavy vehicle route is currently gazetted for 26m B-Double (PBS Level 2) combinations up to Worlds End Highway. Powerline and Lower Bright Roads are not currently gazetted for 26m B-Double combinations and will require applications to be lodged with for the National Heavy Vehicle Regulator (NHVR) for approval. This may require a formal Restricted Access Vehicle Route assessment to be completed for the subject sections of road.
7. Where over dimensional loads are proposed, an application to DPTI will be required and over dimensional loads will likely require a vehicle escort.
8. The traffic generated by the proposed project area during the construction and operational phases is very low in comparison to existing traffic volumes and therefore is not expected to compromise the safety or function of the surrounding road network.
9. Construction traffic will be split between three identified areas within the subject site, resulting in 90% of traffic entering the existing Robertstown Solar Project land from Lower Bright Road and the remaining 10% entering the newly acquired Robertstown East Solar Project land also from Lower Bright Road.
10. Review of the warrants for various intersection treatments indicates that additional traffic generated by the development will not impact on the warrant for formal turn treatments from Worlds End Highway to Powerline Road over existing traffic volumes.
11. A desk top sight distance assessment at the intersection of Powerline Road and Worlds End Highway suggests that the SISD and MGSD meets the requirements of the AustRoads Guide to Road Design Part 4a in the northbound direction. Sight distance in the southbound direction appears to have some limitations but is not expected to be required for anything more than an occasional site vehicle.
12. A desktop aerial sight distance assessment at the intersection of Lower Bright Road and Powerline Road suggests that there is at least 300 metres of available horizontal sight distance in either direction which is considered acceptable. Vertical sight distance requires on-site confirmation.



Appendix A. Development Plans

Robertstown Solar Variation (Approved 2022 vs Revised 2024 Layout) & Robertstown East Solar – New Development Application

15 May 2024



Legend



2024 Robertstown Solar revised layout (proposed Variation to 422/V005/18 V1)



2024 Robertstown East Solar layout (new Crown Sponsorship & Development Application)



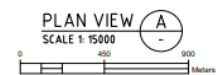
2022 Robertstown Solar & BESS approved layout (Development Approval 422/V005/18 V1)






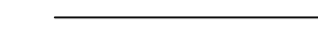










Robertstown Solar area pursuant to a proposed Variation of 422/V005/18 V1



Robertstown East Solar area proposed under a new Crown Sponsorship & Development Application



LEGEND:

-  DEVELOPMENT BOUNDARY
-  PROPOSED GATE
-  PROPOSED FENCE
-  EXISTING PARCEL BOUNDARY
-  EXISTING STOCK FENCE
-  ACCESS ROADS (INDICATIVE ONLY)
-  10m VEGETATION SCREENING
-  PROPOSED 33kV OVERHEAD LINE ROUTE
-  ALTERNATIVE 275kV CABLE ROUTE
-  PROPOSED 275kV CABLE ROUTE
-  PROPOSED SUBSTATION/SWITCHYARD
-  LAYDOWN AREA
-  SITE OFFICE AREA
-  USED PARCEL AREA

20m WIDE CABLE CORRIDOR FOR ALTERNATIVE 275kV CONNECTION POINT AT ELECTRANET BUNDEY SUBSTATION.

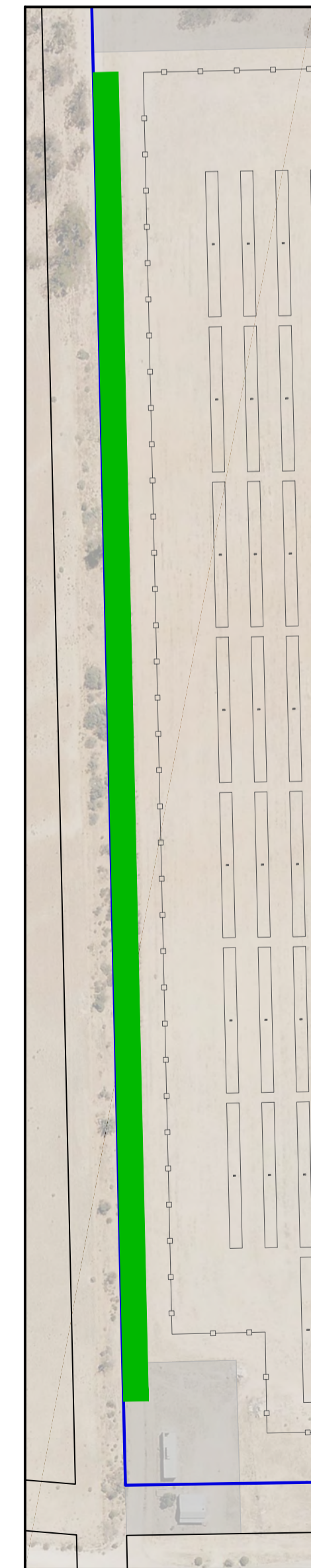
PROPOSED 33kV CORRIDOR FOR ROBERTSTOWN EAST FEEDERS BACK TO THE SUBSTATION.

33kV CIRCUITS CROSSING ROAD RESERVE

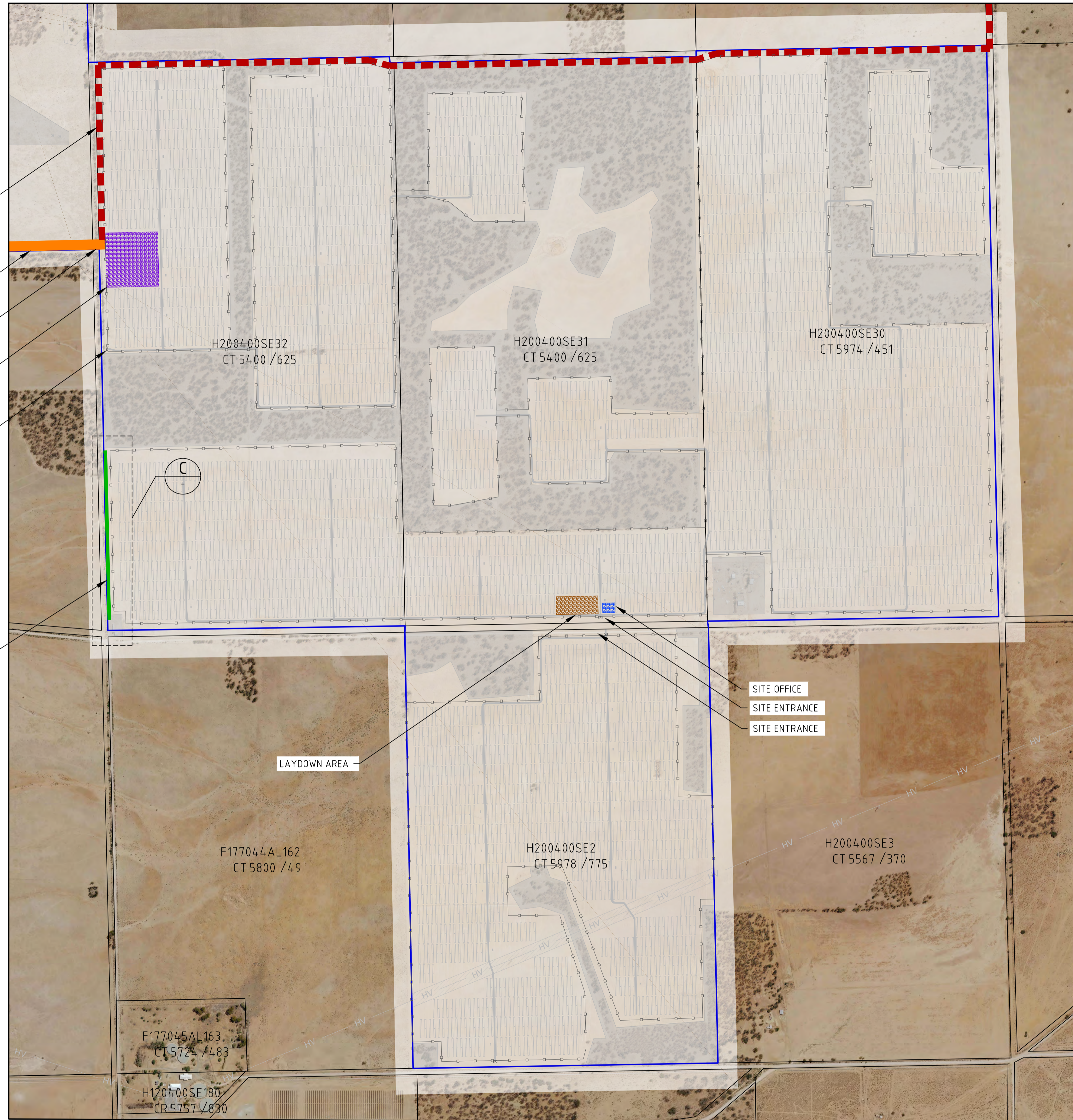
PROPOSED 33kV SWITCHING YARD

SITE ENTRANCE

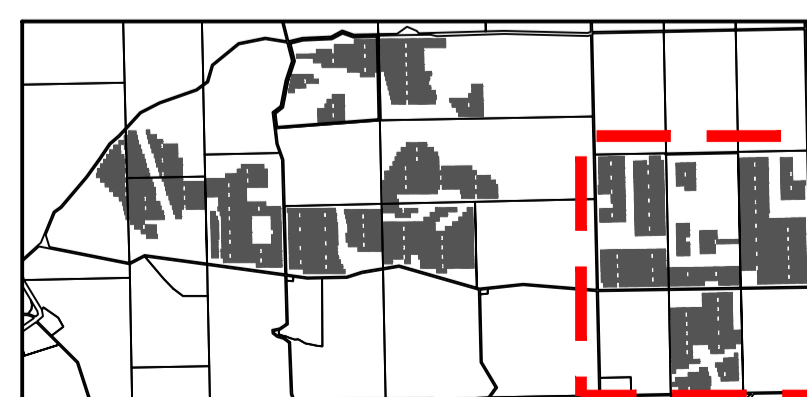
10m WIDE VEGETATION SCREEN



VEGETATION SCREEN C
SCALE 1: 2000




PLAN VIEW A
SCALE 1: 7500



KEY PLAN B
SCALE 1: 100000

REV	DATE	REVISION DESCRIPTION	DESIGNED	REVIEWED	APPROVED
B	17.05.2024	CONCEPT ISSUE	NUEBERGANG	B.JAYATILAKA	B.JAYATILAKA
A	07.05.2024	CONCEPT ISSUE	NUEBERGANG	B.JAYATILAKA	B.JAYATILAKA

AMP PROJECT No: ROBERTSTOWN



PROPRIETARY AND CONFIDENTIAL TO AMP ENERGY. ALL RIGHTS RESERVED.

NOT FOR CONSTRUCTION

**ROBERTSTOWN SOLAR: CONCEPT A
AREA 2 - ROBERTSTOWN EAST (RTE)
GENERAL LAYOUT**

DRAWING NUMBER: **ROB.AMP.GN.DRG.A.0202**

REVISION: **B**

Friday, 17 May 2024, 10:13:45 AM

SIZE A1 SHEET (100mm ON ORIGINAL)
0 | 10 | 20 | 30 | 40 | 50 | 60 | 70 | 80 | 90 | 100



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