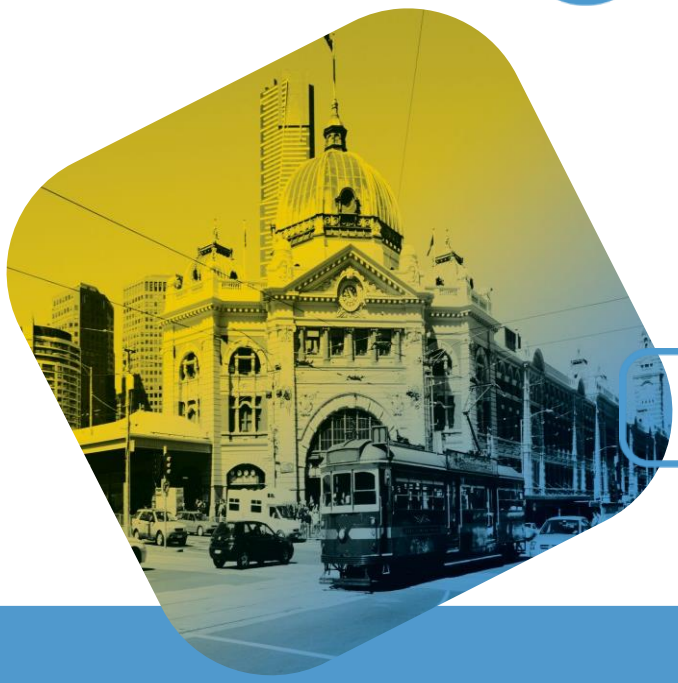
36°38'21.0"S
144°46'55.5"E

Cooba Solar Project, Colbinabbin



Traffic and Transport Assessment

19 December 2024
Prepared for Venn Energy P/L

IMP2109029REP01F04

Impact

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Contents

Figures

Appendices

1 IMPACT® Snap Shot

Development Proposition		
Location	36°38'21.0"S 144°46'55.5"E	Cornella Church Road, Colbinabbin VIC 3559
Use	500 MW Solar Facility with 300 MW BESS	
Access	Site Access are proposed along Cornella-Church Road, Myola Road, Plain Road and Davey Road.	

Traffic Considerations	
Traffic Generation	
Construction Traffic	A total of up to 200 (two-way) additional daily vehicle movements are expected during peak construction activities (100 heavy vehicles & 100 light vehicles). Further to this, if a 25-seater bus were utilised to transport staff to and from the site, we would expect up to 104 additional daily movements.
OSOM Deliveries	It is to be noted that this current assessment takes into consideration vehicle sizes of up to 20m (semi-trailers) and does not cater for the assessment of OSOM vehicle deliveries. Ultimately, this assessment will need to be undertaken as part of the NHVR application process.
Operation & Maintenance	Up to five (5) daily vehicle movements are expected with routine maintenance during operations. There will also be, on occasion some additional movements associated with more thorough maintenance (to be taking place on a 2 and 3 yearly basis, i.e. transformer testing).
Design Considerations	
Access Route	Site Access locations have been proposed along Cornella-Church Road, Myola Road, Plain Road and Davey Road with access to these locations afforded from Heathcote-Rochester Road.
Turn Treatments	It is noted that access via Heathcote-Rochester Road and Cornella Church Road intersection (although triggers a requirement for a BAL/BAR treatment), may require some form of road widening to accommodate turning lanes as a result of the limited sightlines and the high-speed environment. The intersection of Heathcote-Rochester Road with Myola Road and Davey Road will carry considerably less construction traffic as oppose to Cornella Church Road. Notwithstanding, these intersections by default will trigger a BAL/BAR treatment however, given the relatively low construction volumes, short-term nature of the project, adequate sightlines and sufficient width at the intersection (as demonstrated by the swept path analysis), it is recommended to utilise the full width for access if required in place of a more formal BAL/BAR upgrade.

	Further, it is considered appropriate that temporary advanced warning signs be implemented along the site access and neighbouring intersections to mitigate risks and assist with safe accessibility during the construction period.
Sight Distances	The intersections of Heathcote-Rochester Road with Cornella Church Road, Myola Road and Davey Road which provide direct access to construction vehicles were assessed for sight distances in accordance with Austroads Guide to Road Design Part 4A. The assessment indicated that Heathcote-Rochester Road and Cornella Church Road did not satisfy the minimum sight distance requirements whilst the intersection of Heathcote-Rochester Road with Myola Road and Davey Road satisfied the minimum requirements. Notwithstanding, prior to construction, we recommend that an on-site assessment be undertaken to confirm that there is no vegetation impeding on the integrity of the available SISD's (minor trimming could be undertaken if required). Further, it is recommended that during construction, traffic management devices such as 'trucks crossing' be utilised and in the event that site distances are less than the required, temporary speed reduction signages can be used to supplement the lack of sight lines.
Recommendations	
Maintenance Plan	It is recommended that the applicant liaise with Council to form an agreement on the construction standard required to implement a gravel 'all weather' road, in addition to determining an appropriate maintenance agreement during the construction period.
Traffic Management Plan	It is recommended that a detail Traffic Management Plan (TMP) be prepared once the project design is complete and prior to commencement of the project construction, to confirm requirements for mitigation and management works.

Conclusion

— There are no traffic and transport grounds that should prohibit the issue of a permit.

2 Introduction

2.1 Engagement

IMPACT® have been engaged by NGH Consulting on behalf of Venn Energy P/L to undertake a Traffic and Transport Impact Assessment for the proposed Solar Energy Facility and Battery Energy Storage System (BESS) facility.

2.2 Scope of Engagement

This Traffic and Transport Impact Assessment has been prepared to accompany a town planning submission for the proposed Solar Energy Facility and BESS facility located in Colbinabbin.

3 Cooba Solar Project

3.1 Location

The subject site is comprised of 24 parcels under 1 property totalling approximately 1,147 ha in area, with 665 ha to be used for the project layout. Figure 1 depicts the proposed site footprint.

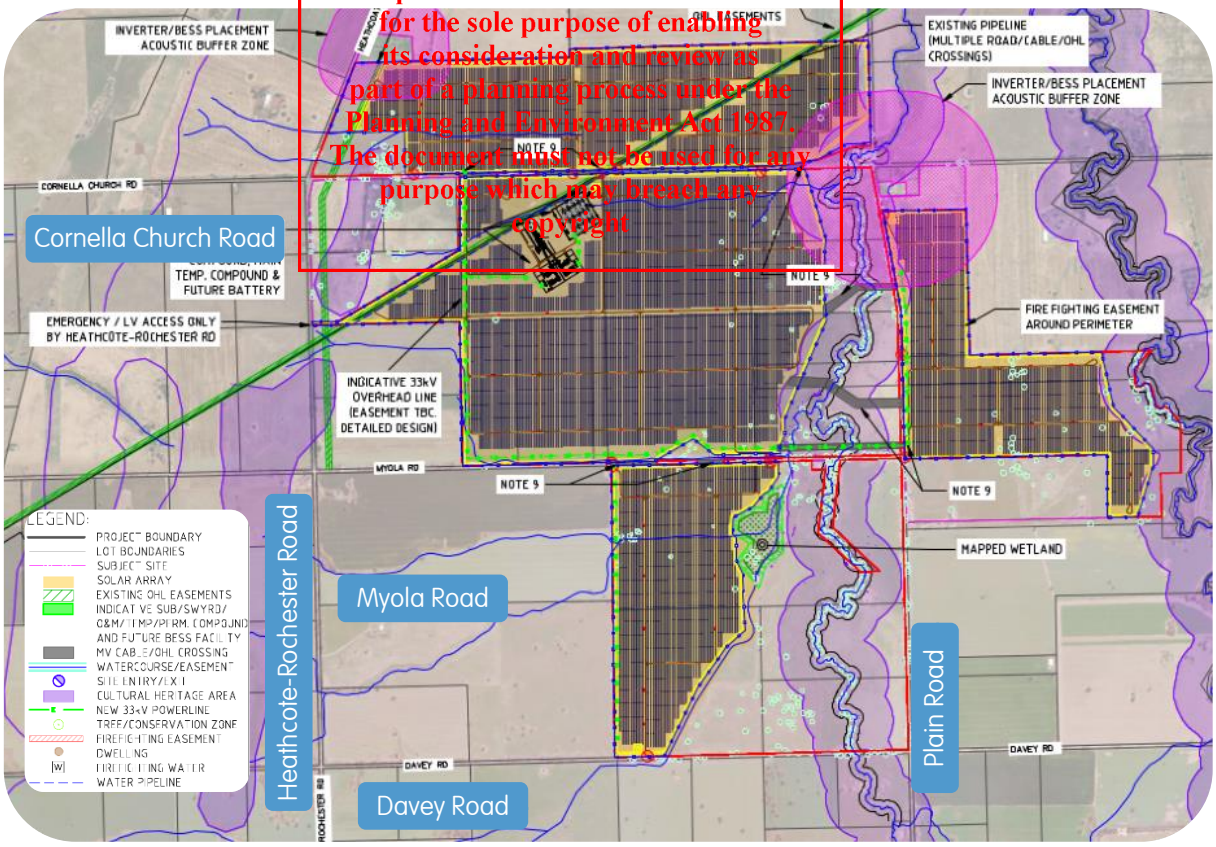


Figure 1 Location of Subject Site

The subject site is surrounded predominately by farmland. Most notably, the Yallagalorrah Creek runs directly through the site.

3.2 Site Context

The site is located approximately 8km south of the Colbinabbin township and is currently used for farming / grazing purposes. Further, the surrounding land in the area is also typically farmland.

Currently, there is an existing transmission line that runs directly through the subject site.

3.3 Planning Zone

The subject site is located within the Farming Zone (as outlined in the Campaspe Planning Scheme) and is illustrated in Figure 2.

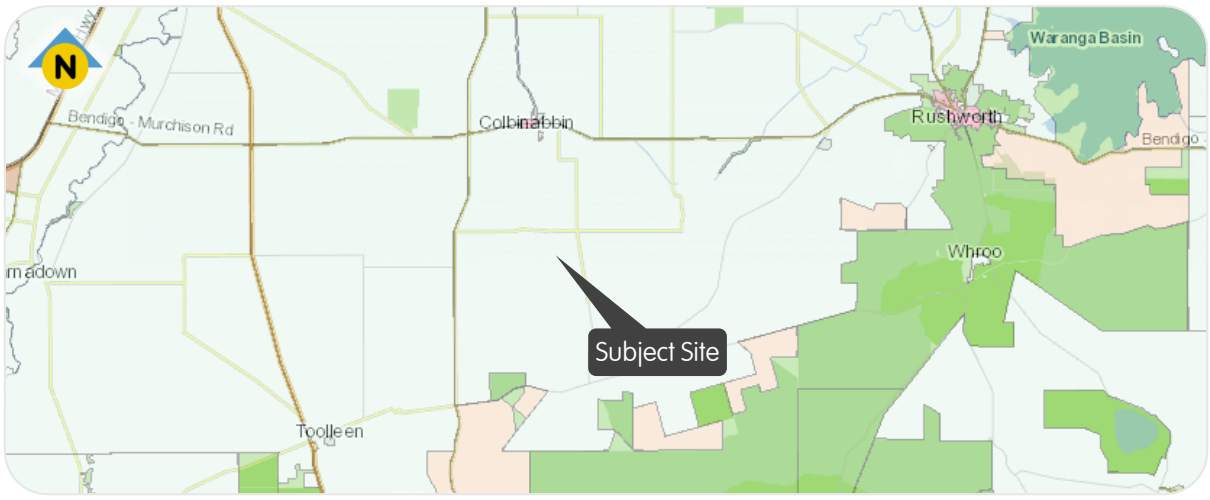


Figure 2 Land Use Planning Zone - 124 Cornella Church Road, Colbinabbin

3.3.1 Planning Framework

3.3.1.1 Clause 53.13 - Renewable Energy Facility

Clause 53.13 of the Victorian Planning Provisions outlines the relevant application requirements associated with the development of renewable energy facilities such as the proposed. Relevant to traffic and access matters, considerations under Clause 53.13 include:

- A design response, including a written report and assessment which addresses:
  - The effect of traffic to be generated on roads.
- The responsible authority must also consider, as appropriate:
  - Whether the proposal will require traffic management measures.

3.4 Road Network

3.4.1 Heathcote-Rochester Road

Classified as a Transport Zone 2 (TRZ2) as part of the Principal Road Network, Heathcote-Rochester Road extends in a general north-south direction between Midland Highway to the north and Northern Highway to the south.

A review of the aerial imagery shows that in proximity to the subject site, Heathcote-Rochester Road has been constructed with a sealed pavement with approximately 6.0 metres in width. With no posted speed limit, the default rural limit of 100 km/hr applies to this road.

Traffic volume data extracted from the Department of Transport's (DoT) database shows that Heathcote-Rochester Road currently carries up to 1,700 vehicles per day (two-way volumes).

A view of Heathcote-Rochester Road is shown in Figure 3.

Figure 3 Views of Heathcote-Rochester Road

3.4.2 Cornella Church Road

Classified a local road, Cornella Church Road generally extends in an east-west direction and is bounded by Heathcote-Rochester Road to the west and Orchard Road to the east.

A review of the aerial imagery shows that in proximity to the subject site, Cornella Church Road has been constructed as a sealed road with approximately 4.0 metres wide. With no posted speed limit, the default rural limit of 100 km/hr applies to this road.

Historic traffic data provided by Council along Cornella Church Road suggest that up to 32 daily vehicles are expected of which up to 10% of the daily traffic or three (3) vehicles per hour is expected during the peak period of operation.

A view of Cornella Church Road is shown in Figure 4.

Figure 4 Views of Cornella Church Road Facing East

3.4.3 Plain Road

Classified as a local road, Plain Road extends in a general north-south direction between the Colbinabbin Township to the north and Tait Hamilton Road to the south.

A review of the aerial imagery shows that in proximity to the subject site, Plain Road has been constructed as an unsealed gravel road with approximately 6.0 metres (allowing two-way movement) plus shoulders measuring approximately 0.5-1 metre of each side of the carriageway.

With no posted speed limit, the default rural limit of 100 km/hr applies to this road.

Currently no traffic data is available for Plain Road.

For the purposes of a conservative assessment, 20 vehicles per a day or two (2) vehicles during the peak hour is assumed along this section of road as these roads are often utilised by land-owners whereby there would be limited through traffic occurring.

A view of Plain Road is shown in Figure 5.

Figure 5 **Views of Plain Road Facing South**

3.4.4 Myola Road

Classified as a local road, Myola Road extends in a general east-west direction between Myola East Road to the west and Plain Road to the east.

A review of the aerial imagery shows that in proximity to the subject site, Myola Road has been constructed as an unsealed gravel road with approximately 7.0 metres allowing for two-way movement.

Currently no traffic data is available for Myola Road.

For the purposes of a conservative assessment, 20 vehicles per a day or two (2) vehicles during the peak hour is assumed along this section of road as these roads are often utilised by land-owners whereby there would be limited through traffic occurring.

An aerial view of Myola Road is shown in Figure 6.

Figure 6 **Views of Myola Road and Heathcote-Rochester Road**

3.4.5 Davey Road

Classified as a local road, Davey Road extends in a general east-west direction between Heathcote-Rochester Road to the west and Heathcote-Moora Road to the east.

A review of the aerial imagery shows that in proximity to the subject site, Davey Road has been constructed with an unsealed gravel road with approximately 6.0 metres allowing for two-way movement.

With no posted speed limit, the default rural limit of 100 km/hr applies to this road.

Currently no traffic data is available for Davey Road.

For the purposes of a conservative assessment, 20 vehicles per a day or two (2) vehicles during the peak hour is assumed along this section of road as these roads are often utilised by land-owners whereby there would be limited through traffic occurring.

An aerial review of Davey Road is shown in Figure 7.

Figure 7 Views of Davey Road Facing East

3.5 VicRoads Road Network Limits

The VicRoads pre-approved B-Double and High Performance Freight Vehicle (HPFV) network in the locality of the development are reproduced in Figure 8.

These network diagrams are typically read as follows:

- Green Roads - pre-approved for haulage and typically a permit is not required
- Orange Roads - conditionally approved, haulage along these roads are subject to conditions
- Red Roads - restrict access, an assessment and permit is required for haulage along these sections
- Unhighlighted Roads - require an assessment and approval from the responsible authority.

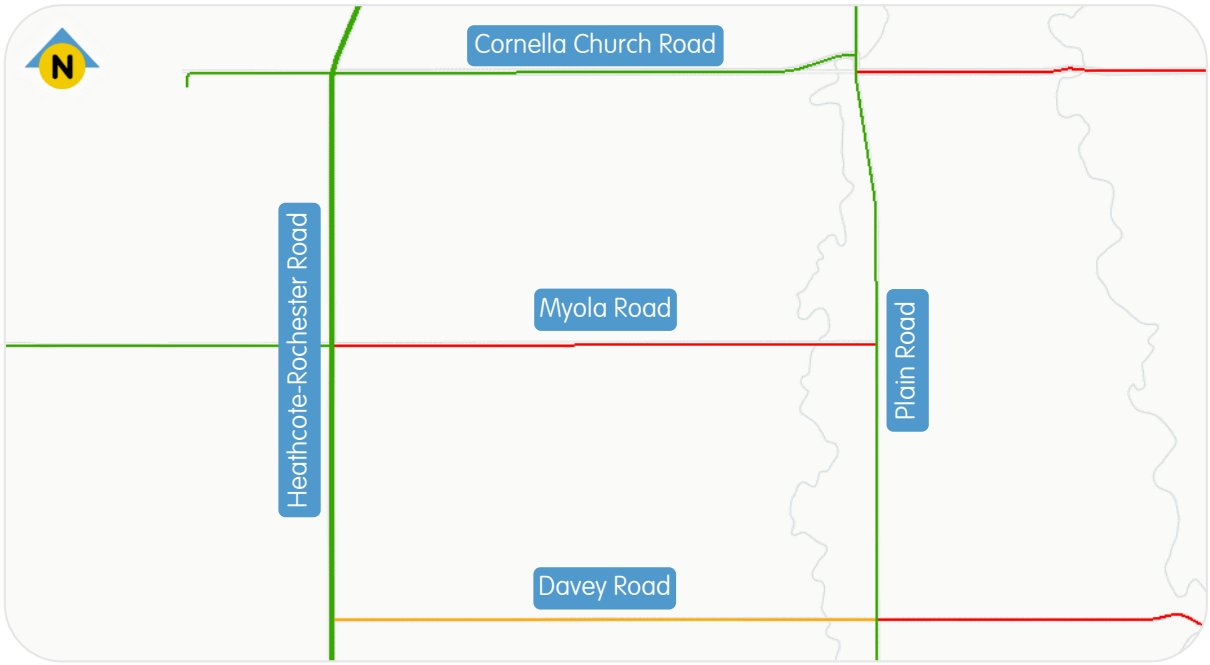


Figure 8 VicRoads Pre-Approved B-Double & High Mass Limits (HML) Haulage Network Maps

As per above, the green lines represent roads which are pre-approved for haulage and typically a permit is not required for haulage on these roads, e.g. Cornella Church Road, Plain Road and Heathcote-Rochester Road.

Conversely, Myola Road is restricted for access and the haulage of B-double/HML vehicles and will require an application to be put forward to the satisfaction of Council / NHVR.

Davey Road is conditionally approved for haulage access however is subject to conditions.

3.6 Cooba Solar Project

IMPACT® have been advised that the project will consist of a solar energy facility comprising approximately of 700,000 solar panels (modules) and a capacity to generate up to 350 MWAC/500 MWDC.

It is expected that the site will connect directly into the existing power line located along the northern boundary of the subject land.

A detailed car park / access design has not yet been determined, however **IMPACT**® are advised that:

- The site access point will be built to accommodate construction vehicle traffic, including vehicles of up to 20m in length (semi-trailers);
- Site access locations are proposed along Cornella-Church Road, Myola Road, Plain Road and Davey Road;
- During construction, vehicles will be stored on-site either within the designated laydown / storage locations, or where construction activities are occurring; and
- During operations, operational, and maintenance staff vehicles will be accommodated on-site within a vehicle parking area located adjacent to the site office.

The current indicative site layout is shown in Figure 9 in addition to the copy of this plan attached in Appendix A.

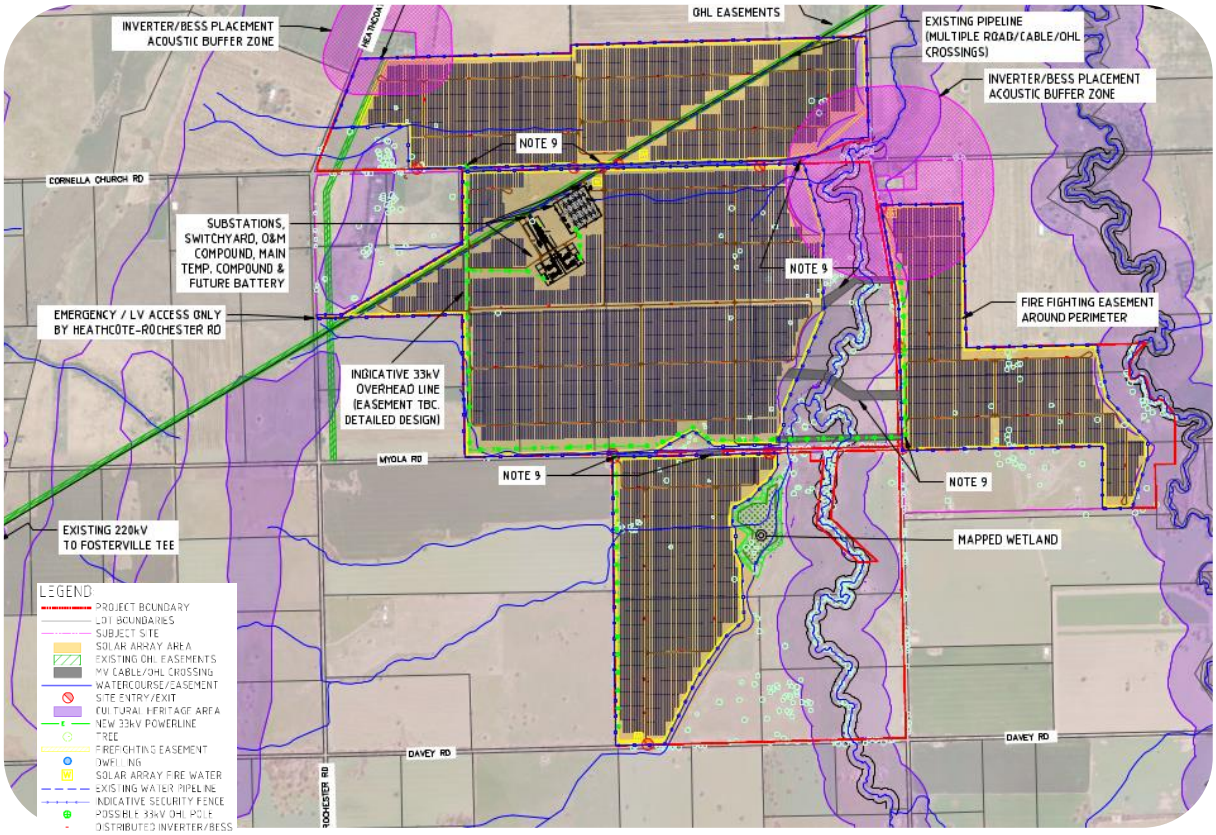


Figure 9 Indicative Site Layout

4 Traffic Considerations

4.1 General

The Solar Energy Facility access road network will typically limit internal construction traffic to internal access roads, with only deliveries and staff movements to and from the site required to travel across the external road network.

External traffic generated by the subject site will generally be split into two (2) broad categories:

- General traffic generated by staff & couriers travelling to/from the subject site; and
- Other heavy vehicle movements (HV) which are used for the delivery of solar panel components and construction materials such as aggregate and water.

4.2 Traffic Generation

4.2.1 Construction Traffic Volumes

Construction is expected to take approximately 12 to 18 months to complete.

IMPACT® have been advised by the applicant based on history and experience in constructing Solar Energy Facilities of similar size/capacity that the following peak movements are likely to occur:

- Light Vehicle Movements:
  - Daily peak of up to 100 two-way vehicle movements
- Heavy Vehicle Movements:
  - Daily peak of up to 100 two-way vehicle movements during construction; upgrading or decommissioning

Accordingly, a total of up to 200 daily vehicle movements are expected during peak operation periods.

Conservatively, it is expected that a maximum of 100 workers will be on-site during all stages of construction activity and will travel to site via individual vehicles. We note however that buses can be utilised to transport staff to and from the site and thus reduce the amount of light vehicle movements.

If a 25-seater bus was to be utilised, this would generate up to four (4) vehicle movements per day as opposed to 100 vehicle movements.

In addition, it is noted that vehicles larger than a single trailer vehicle (e.g., 26m B-doubles) will not be required during the construction phase and thus all activity will be managed to avoid using these vehicles.

4.2.2 Operation and Maintenance Traffic Volumes

For majority of the time, Solar Energy Facility's operate with limited staff and generate minimal traffic movements.

Accordingly, apart from the initial construction phase, the proposal is anticipated to have a negligible impact upon traffic on the load road network. It is understood that operation and maintenance vehicles will likely occur on a quarterly basis with advanced maintenance operations to be undertaken on a 2 and 3 year basis (i.e. transformer testing). The quarterly site attendance will involve a single commercial vehicle equivalent to a UTE.

To provide a basis for traffic volume estimations, the following traffic generation numbers have been provided by the applicant based on past experiences with Solar Energy Facility's of similar capacity:

- Light Vehicle Movements:
  - Daily peak of up to 10 two-way vehicle movements
- Heavy Vehicle Movements:
  - Daily peak of up to 0 vehicle movements

It is expected that a total of five (5) workers will be on site at any given time.

No heavy vehicles are expected over the duration of this phase.

It is anticipated that five (5) parking spaces will be provided (within the designated hardstand zone within the construction area).

In the context of construction traffic and also the existing traffic along Heathcote-Rochester Road, operating traffic will be minimal.

4.3 Vehicle Access Routes

Vehicle deliveries will be split between various categories. The following sections outlines the anticipated vehicle routes for various types of delivery / construction vehicles.

4.3.1 Construction Material Delivery

We understand that both coarse and fine gravel and water deliveries for the construction of hardstand areas and access tracks will be sourced locally.

It is expected that aggregates will be sourced from the Colbinabbin Township area and will leverage the following locations:

Haulage Delivery Route
Coarse Aggregate and Fine Crushed Gravel Deliveries & Water Deliveries
Bendigo-Murchison Road - Heathcote-Rochester Road - Cornella Church Road/Myola Road/Davey Road/Plain Road - Subject Site to access the site.

4.3.2 Solar Modules / Thermal Energy Components

IMPACT® are advised that due to the specialised nature of these components, these materials will be sourced from Port Melbourne.

It is advised that materials will be transported to the site by road. The anticipated route from is as follows and is depicted in Figure 10 overleaf.

Port Melbourne - Webb Dock Drive - CityLink (M2) - Tullamarine Freeway (M2) - Western Ring Road (M80) - Hume Freeway (M31) - Northern Freeway (B75) - Heathcote-Rochester Road (C347) - Cornella Church Road/Myola Road/Plain Road/Davey Road - Subject Site.

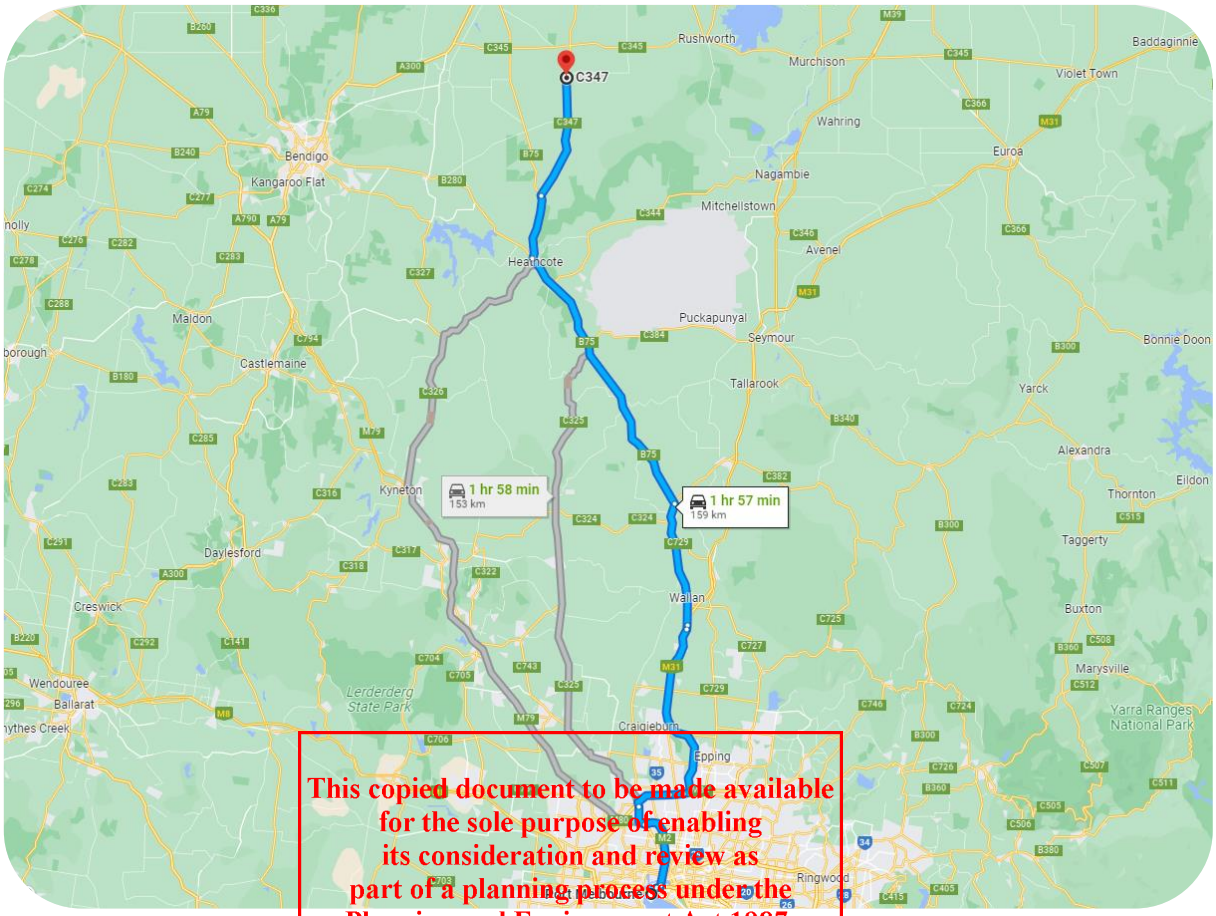


Figure 10 Haulage Route from Port Melbourne

Further to this, a small percentage of large loads/transportable buildings, power transformer components are expected to be delivered from the manufacturing facility locally. This route is as follows:

Bendigo-Murchison Road - Heathcote-Rochester Road - Cornella Church Road - Subject Site

4.3.3 Construction Staff

During the delivery of the project, it is expected that staff will typically reside in Colbinabbin Township. Accordingly, the majority of staff vehicle movements (light vehicles) will arrive at the site via:

Bendigo-Murchison Road - Heathcote-Rochester Road - Cornella Church Road - Subject Site

4.3.4 Oversized Overmass (OSOM) Vehicle Deliveries

IMPACT® are advised that the site will require the delivery of several over-sized, over-mass components, such as substations and the AustNet switchroom. It is expected that a 12-axle platform trailer (120T capacity) will be used to facilitate the delivery of these components.

It is noted that this current assessment takes into consideration vehicle sizes of up to 20m in length (semi-trailers) and does not cater for the assessment of OSOM deliveries.

Ultimately, this assessment will need to be undertaken as part of the NHVR application process to confirm if any temporary traffic management measures will be required.

4.4 Traffic Impact

4.4.1 Vehicle Access Corridor

4.4.1.1 Access Route

IMPACT® are advised that the site access points for construction vehicles will be along Cornella Church Road, Plain Road, Myola Road and Davey Road.

As highlighted in Section 3.5, a permit is not required for haulage on Cornella Church Road, Plain Road and Heathcote-Rochester Road, however is required for access via Myola Road and Davey Road subject to conditions.

4.4.1.2 Pavement Conditions

As mentioned previously, Heathcote-Rochester Road and Cornella Church Road are all sealed roads, whilst Myola Road and Plain Road are unsealed Roads.

Davey Road is currently constructed as a 'dry weather only' gravel road and as a result, we would expect the road pavement to comfortably cater for the proposed construction traffic in dry weather only.

Figure 11 illustrates the existing pavement conditions surrounding the subject site.

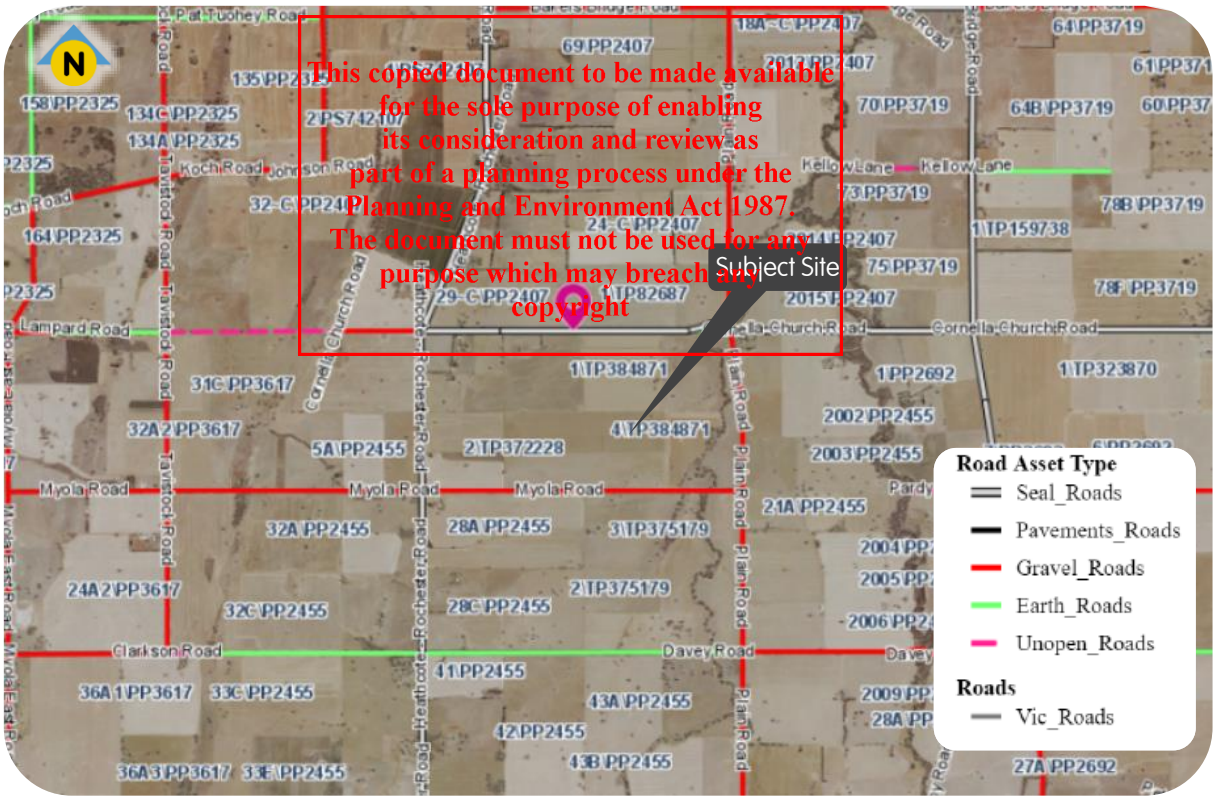


Figure 11 Existing Pavement Conditions (Source: Campaspe Shire Council)

It is suggested that the applicant liaise with Council and agree on the construction standard required for a gravel all weather road, in addition to determining an appropriate maintenance agreement during the construction period for all existing pavements impacted by the construction traffic.

4.4.2 Road Capacity

The proposed development is projected to generate up to 200 additional (two-way movements) per day during peak construction activities if staff were to travel to and from the site via individual vehicles.

If buses were utilised to transport staff to the site, then the site would expect to generate up to 104 daily vehicle movements.

Heathcote-Rochester Road

Heathcote-Rochester Road is classified as an arterial road. These roads are typically expected to carry more than 7,000 vehicles each day.

As discussed in Section 3.4.1, Heathcote-Rochester Road would likely carry in the order of 1,700 daily vehicle movements under the existing conditions.

Accordingly, during the peak construction stages of the project, this road can be expected to carry up to 2,000 daily vehicle movements at its maximum or up to 1,908 daily vehicles (if buses were utilised to transport staff to/from site). This level of traffic sits comfortably within the acceptable range for this classification of road.

Accordingly, during the construction stages of the project, the relevant section of Heathcote-Rochester Road can be expected to carry up to 200 additional daily vehicles and 20 peak period movements (assuming 50% of movements occur during a 'peak' period).

This level of traffic, particularly during the peak period, e.g. 20 peak hour movements (1 vehicle movement every 3 minutes) can be comfortably accommodated by Heathcote-Rochester Road without any material impact on the operational or safety of this road.

Cornella Church Road

Cornella Church Road is classified as a rural/living access road. These roads are typically expected to carry over 150 vehicles per day. As discussed in Section 3.4.2, Cornella Church Road has historically carried up to 32 vehicles per day (or 3 vehicles during the peak hour).

During the peak construction stages of the project, this road can be expected to carry up to 232 vehicle movements assuming that all staff drive to and from the site or up to 136 vehicle movements per day assuming that staff will be bused to and from the site.

We anticipate that the additional movements generated by the development can be comfortably accommodated by the existing road network. Note, we do not that the additional movements may have an ongoing impact on the road pavement and recommend that a maintenance agreement be made with Council.

Plain Road

Plain Road is classified as a rural access road. These roads are typically expected to carry up to 150 vehicles per day. As discussed in Section 3.4.3 Plain Road has historically carried up to 20 vehicles per day (or 2 vehicles during the peak hour).

During the peak construction stages of the project, this road can be expected to carry up to 220 vehicle movements assuming that all staff drive to and from the site or up to 124 vehicle movements per day assuming that staff will be bused to and from the site.

We anticipate that the additional movements generated by the development can be comfortably accommodated by the existing road network. Note, we do not that the additional movements may have an ongoing impact on the road pavement and recommend that a maintenance agreement be made with Council.

Myola Road & Davey Road

Myola Road & Davey Road are classified as a rural access road. These roads are typically expected to carry up to 150 vehicles per day. As discussed in Section 3.4.4 and 3.4.5, Myola Road & Davey Road is assumed

(noting that traffic data was not available at time of writing this report) to carry up to 20 vehicles per day (or 2 vehicles during the peak hour).

During the peak construction stages of the project, this road can be expected to carry up to 220 vehicle movements assuming that all staff drive to and from the site or up to 124 vehicle movements per day assuming that staff will be bused to and from the site.

We anticipate that the additional movements generated by the development can be comfortably accommodated by the existing road network. Note, we do not that the additional movements may have an ongoing impact on the road pavement and recommend that a maintenance agreement be made with Council.

5 Design Considerations

5.1 Site Access Considerations

We are advised that vehicles accessing the site will be limited to single trailer truck vehicles (no B-doubles).

Based on the plans provided, we understand that access to the site will be afforded via Cornella Church Road, Plain Road, Myola Road and Davey Road.

It is noted that given the land is currently unconstructed, in addition to the number of access points, typical swept paths have been undertaken to demonstrate the suitability of the current routes and the extent of widening works needed.

Further details of the swept path assessment are shown in Appendix A.

5.2 Sight Distance Considerations

Access to the site will be afforded generally via Heathcote-Rochester Road via Cornella Church Road, Myola Road and Davey Road.

A desktop assessment of the available sight distances from the site access points has been undertaken using aerial imagery and images provided by the applicant. We note that an on-site assessment should be undertaken to validate the following sight distance review prior to construction.

AustRoads Guide to Road Design - Part 4A: Unsignalised intersections sets out the sight distance requirements for unsignalised intersections. For a speed limit of 100km/hr (design speed of 110km/hr) which applies to Waterfall Way and a reaction time of 2.5 seconds, Austroads stipulates a SISD of at least 300m.

It is anticipated that Cornella Church Road will cater for the majority of construction traffic, whilst Myola Road and Davey Road will carry moderately less construction traffic.

The site distance for the above-mentioned intersections is shown in Figure 12.

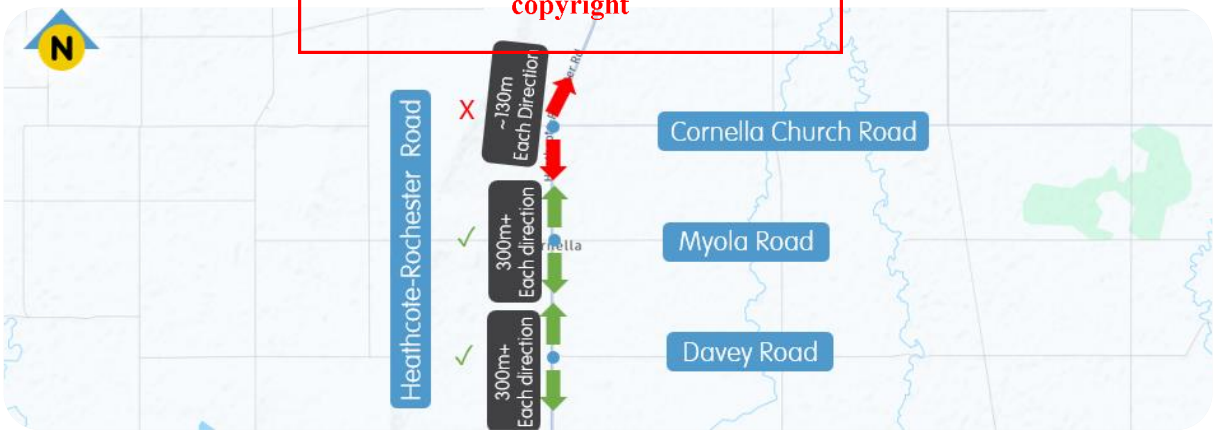


Figure 12 Sight Distance Assessment

The assessment indicates that the intersection of Heathcote-Rochester Road and Cornella Church Road does not meet the minimum sight distance requirements outlined in the guidelines. The review identified that sightlines were restricted as a result of the curvature of the road when facing northbound and southbound at Cornella Church Road.

In contrast, the intersections at Heathcote-Rochester Road / Myola Road and Davey Road comfortably meet the minimum sight distance requirements as Heathcote-Rochester Road was generally flat and clear of vegetation.

Notwithstanding, prior to construction, we recommend that an on-site assessment be undertaken to confirm that there is no vegetation impeding on the integrity of the available SISD's (minor trimming could be undertaken if required).

In addition, it is recommended that during construction, traffic management devices such as 'trucks crossing' be utilised. In the event that sight distances are less than the required (in accordance with Austroads's sight distance requirements) temporary speed reduction signages can be used to supplement the lack of sight lines.

5.3 Turning Lane Considerations

Reference has been made to Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings[1] (AGTM Part 6). This document provides guidance on the warrants for various turn treatments at unsignalised intersections.

These warrants provide guidance on where a full-length deceleration lane must be used and where a shorter lane, designated Auxiliary Left Turn Lane (AUL) and Channelised Right Turn (CHR), may be acceptable based on traffic volumes.

5.3.1 Heathcote-Rochester Road & Cornella Church Road

We understand that there will likely be multiple site-access locations for vehicles travelling to and from Heathcote-Rochester Road. However, for a conservative assessment, we've assumed that all vehicles will travel to and from Cornella Church Road to the Site Access.

As discussed previously, Heathcote-Rochester Roads is expected to carry up to 1,700 vehicles per day or in this case 170 vehicles during the peak period (generally accepted that 10% of daily traffic occurs during the peak hour) whilst Cornella Church Road has historically carried up to 32 daily vehicles.

This proposal is projected to generate in the order of:

- 200 two-way daily vehicle movements during the peak construction period (assuming all staff drive to site via individual vehicles) or;
- 104 two-way daily movements (assuming all staff are bused to and from site).

Conservatively, it is assumed that all inbound movements will occur along Heathcote-Rochester Road and will be distributed along the proposed site access routes (e.g. Davey Road, Myola Road and Cornella Church Road during the external road peak period.

However, noting that details of the construction schedule has yet to be developed/finalised at this stage, it is conservatively assumed, for the purposes of this analysis that all vehicles will be travelling to/from Cornella Church Road. Notwithstanding, the following Options have been assessed:

- Option 1: 100 inbound movements (assuming all staff drive to site);
  - 50 (50%) of movements occurring during the peak period
- Option 2: 54 inbound movements (assuming staff are bused to and from the site).
  - 27 (50%) of movements occurring during the peak period.

Figure 13 illustrates turning lane treatments for Heathcote-Rochester Road and Cornella Church Road and Figure 14 illustrates the turning lane treatments Cornella Church Road and the Site Access.

[1] Austroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings, Austroads 2017 Edition)

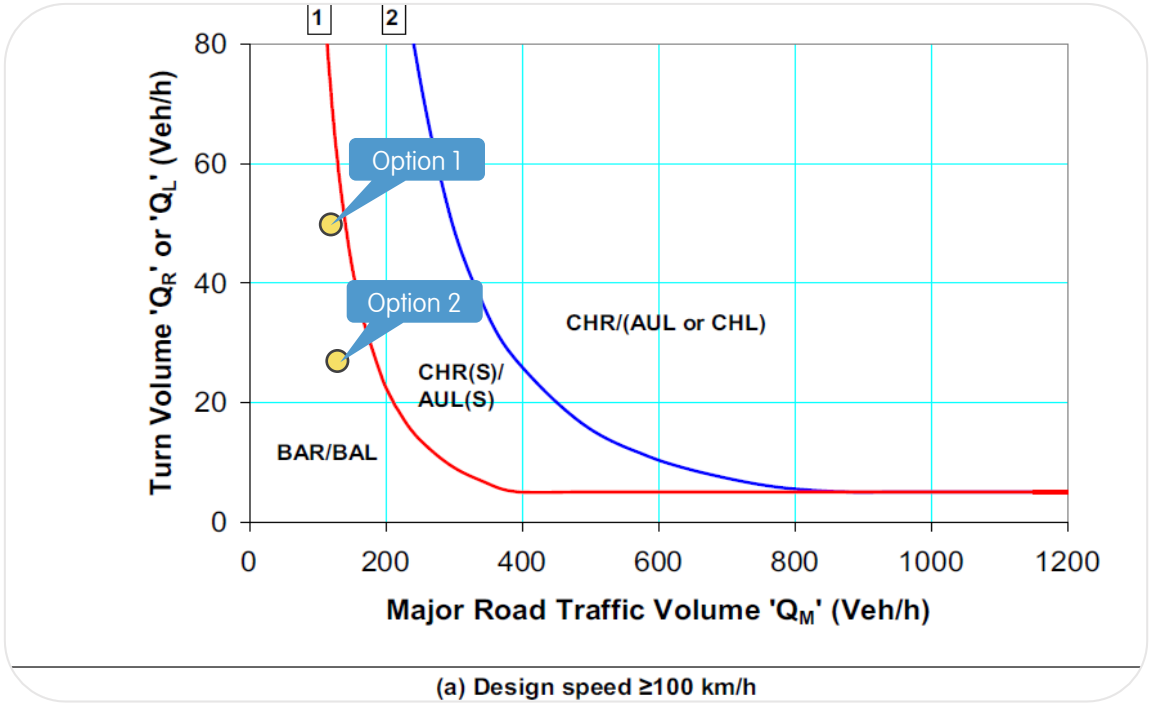


Figure 13 Turn Treatment Warrants at Heathcote-Rochester Road & Cornella Church Road

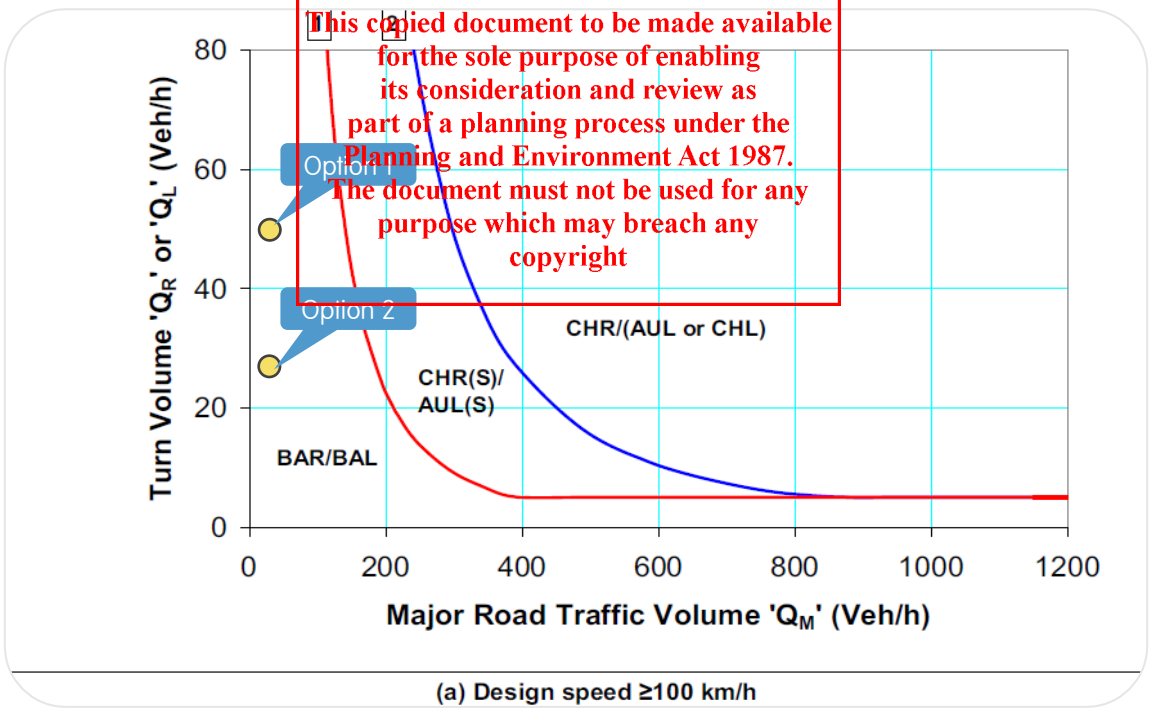


Figure 14 Turn Treatment Warrants at Cornella Church Road & Site Access

Based on the foregoing, this intersection triggers a warrant for a basic left-turn treatment (BAL) and right turn (BAR) treatment for access along Heathcote-Rochester Road / Cornella Church Road and the Site Access location.

Due to the short-term nature of the construction period (12 to 18 month construction period) and the low construction volumes, it is recommended to utilise the full width for passing if required in place of a more formal BAL and BAR treatment for access along Cornella Church Road and the Site Access.

Option 1 (which considers that all staff drive to and from the site) nearly triggers the need to provide a channelised right-turn and auxiliary left-turn slip lane along Heathcote-Rochester Road and thus is recommended to reduce the number of light-vehicle movements where possible.

Further to this, it is noted that access via Heathcote-Rochester Road and Cornella Church Road intersection (although triggers a requirement for a BAL/BAR treatment), may require some form of road widening to accommodate turning lanes as a result of the limited sightlines and the high-speed environment.

5.3.2 Heathcote-Rochester Road & Myola Road / Davey Road Intersections

It is anticipated that during construction, the majority of traffic will travel to/from Cornella Church Road with a small percentage of traffic travelling to/from Myola Road and Davey Road.

Section 5.3.1 considers as part of Option 1 that all staff will drive to/from the site and is conservatively estimated to generate a further 100 inbound movements or a total of 50 inbound movements during the peak period for construction vehicles.

For the following assessment, the following splits are considered for construction vehicles:

- Cornella Church Road: 70% (35 inbound movements)
- Myola Road: 20% (10 inbound movements)
- Davey Road: 10% (5 inbound movements)

As presented above, Cornella Church Road will trigger a BAL/BAR treatment (assuming that all traffic travels to/from this intersection). Similarly, the intersections of Myola Road and Davey Road with Heathcote-Rochester Road have been assessed against the turn lane warrants and is shown in Figure 15.

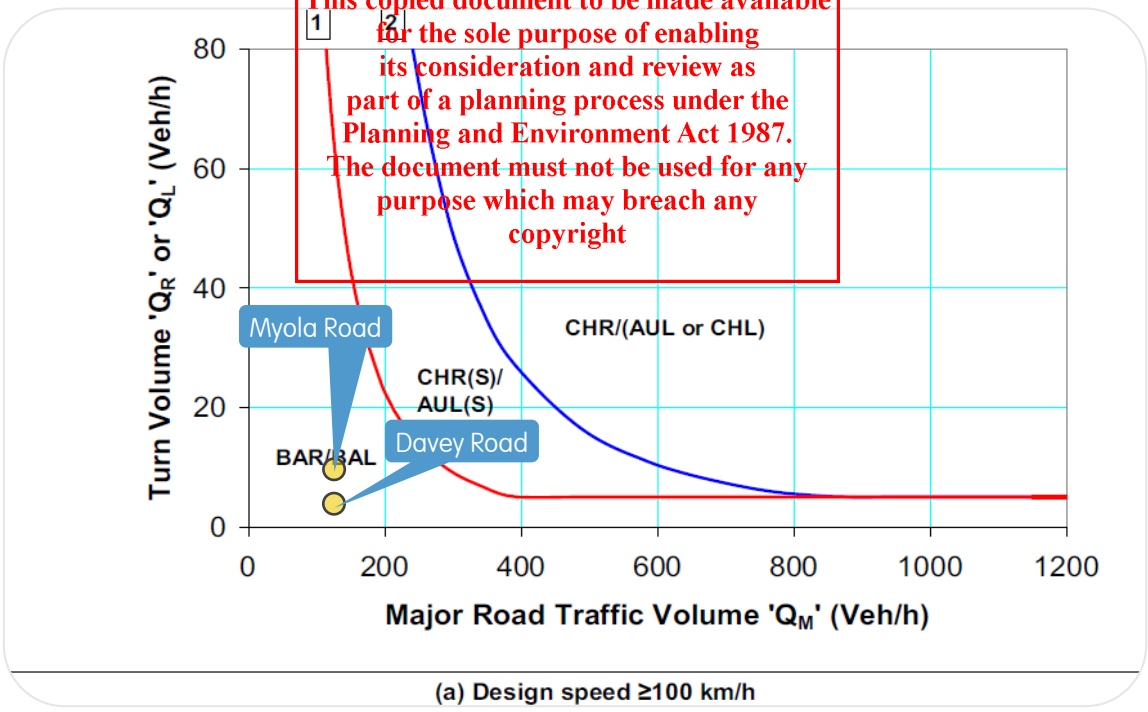


Figure 15 Turn Treatment Warrants at Heathcote-Rochester Road with Myola Road & Davey Road

This assessment indicates that each of these intersections between Heathcote-Rochester Road and Myola Road / Davey Road will trigger a BAL/BAR treatment.

The above notwithstanding, we suggest that the existing geometry is retained, and short-term traffic management principles / advanced warning signs are leveraged at these two intersections to facilitate vehicle movement during the construction period, noting that:

- Increased widening at each of these locations would have a significant impact on native vegetation around each of these intersections;
- Swept path analysis (shown in Appendix B) demonstrate that construction vehicles can enter and exit the intersection of Myola Road and Davey Road from Heathcote-Rochester Road without the need for additional widening;
- Each of these intersections carry fewer additional construction related traffic movements (as compared to Heathcote-Rochester Road / Cornella Church Road);
- The increase in construction traffic is temporary and once in operation, very few site related vehicles will utilise either of these intersections (with the main access compound accessed from Cornella-Church Road); and
- Sufficient sightlines are available from each of these intersections.

6 Traffic Management Plan

Subject to the appointment of a supplier / construction contractor and other considerations, aspects of the Cooba Solar Project may be subject to review.

In addition, construction / work programs for the project will not be fully resolved until closer to the project commencement. As such, subject to commencement timeframes, there is potential for changes to the existing road conditions and Solar Energy Facility haulage assumptions as considered within this report.

Based on the foregoing, and our experience with similar projects, we expect that a detailed Traffic Management Plan (TMP) will need to be prepared prior to the commencement of the construction of the project to confirm any mitigation measures and management works required at that time.

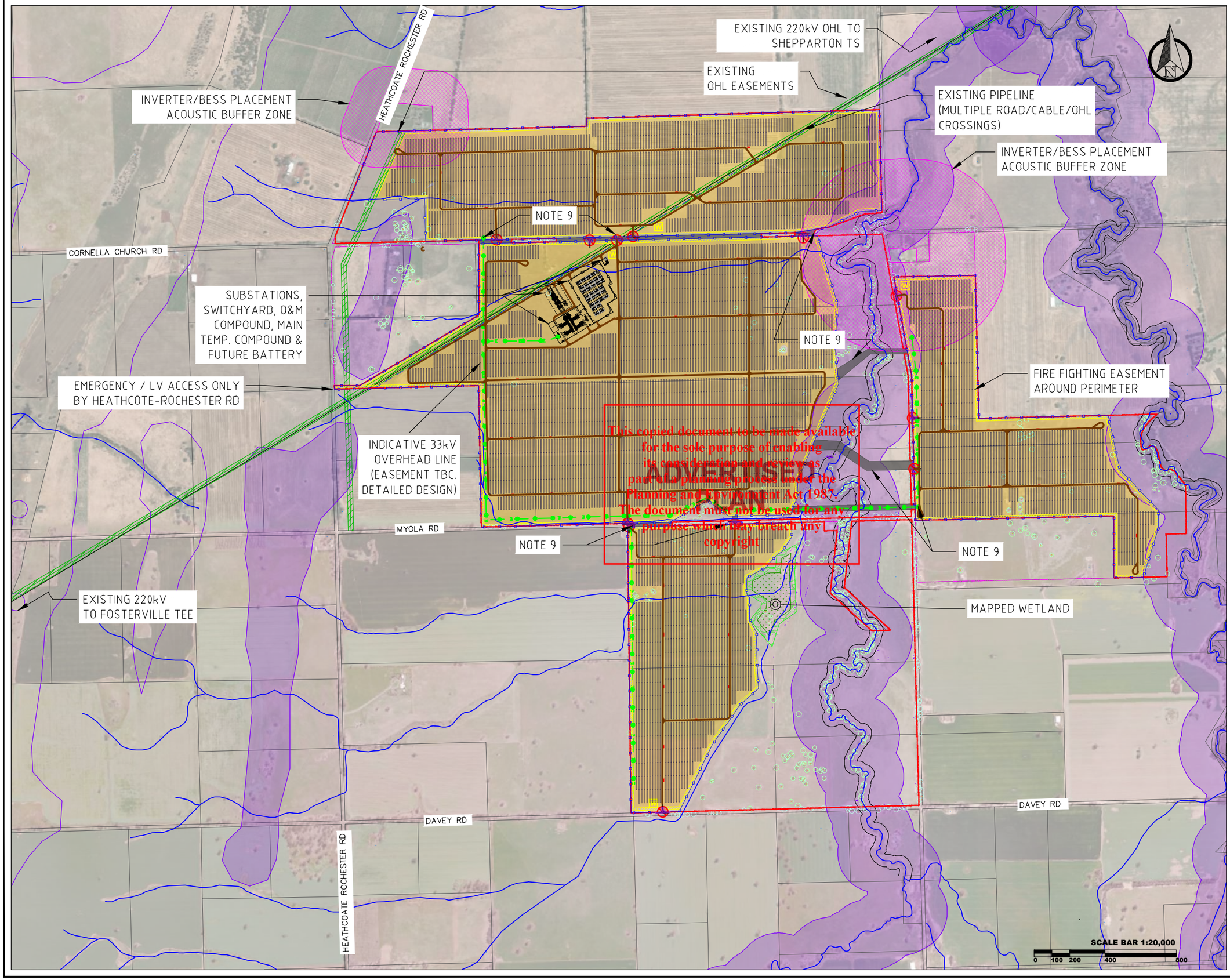
The TMP would be implemented as a condition of any Development Consent issued for the Solar Energy Facility and would be developed in consultation with Council, VicRoads, and any other relevant stakeholders to provide a more accurate indication of traffic impacts and generally identify responsibilities for road maintenance and upgrades throughout the construction period.

In general, the TMP should include:

- Confirmation of the Solar Energy Facility construction timeframe and work stages.
- Confirmation of expected traffic volumes generated by the Solar Energy Facility for all work stages.
- Identification of all HV and OD vehicle haulage routes for all work stages.
- A mechanism to review identified haulage route road conditions prior to the commencement of works.
- Mechanisms/agreements (if deemed necessary) to maintain haulage route roads and road infrastructure, including local public roads used by site traffic, during construction works and to reinstate roads to at least pre-construction conditions.
- Qualify any requirement for specific work stage construction traffic management plans.
- Qualify and identify any relevant mechanisms for OD vehicle permits and traffic management requirements.
- Confirm on-site the adequacy of available sight distances along the site access.

Note that this is not an exhaustive list, and that the final TMP requirements will be as per those outlined in the Development Consent.

APPENDIX A
Site Layout Plan



NOTES:

1. NOT FOR CONSTRUCTION. PRELIMINARY DRAWING FOR DEVELOPMENT SIZING PURPOSES ONLY.
2. LAYOUT SUBJECT TO CHANGE AFTER PV MODULE SELECTION.
3. REFER CULTURAL HERITAGE AREA STUDIES FOR SITE SPECIFIC FINDS.
4. REFER LANDSCAPING DESIGN FOR NEW VEGETATION SCREENING.
5. FINAL ACCESS TRACK LOCATION SUBJECT TO DETAILED DESIGN AFTER EQUIPMENT SELECTION.
6. ALL BURIED SERVICES TO BE LOCATED PRIOR TO COMMENCEMENT OF DETAILED DESIGN.
7. POWERLINE EASEMENTS AND COMPOUND LOCATIONS INDICATIVE ONLY. SUBSTATION, SWITCHYARD AND BATTERY COMPOUND LOCATION TO BE FINALISED DURING DETAILED DESIGN. BESS FACILITY, BESS SUBSTATION AND SOLAR SUBSTATION MAY BE CO-LOCATED OR SEPARATE.
8. SOLAR ARRAY INFRASTRUCTURE AREA INCLUDES SEVERAL TEMPORARY COMPOUNDS AND CONSTRUCTION FACILITIES.
9. OHL AND BURIED CROSSING LOCATIONS BETWEEN LAND PARCELS.

LEGEND:

- PROJECT BOUNDARY
- LOT BOUNDARIES
- SUBJECT SITE
- SOLAR ARRAY AREA
- EXISTING OHL EASEMENTS
- MV CABLE/OHL CROSSING
- WATERCOURSE/EASEMENT
- SITE ENTRY/EXIT
- CULTURAL HERITAGE AREA
- E — NEW 33kV POWERLINE
- TREE
- FIREFIGHTING EASEMENT
- DWELLING
- W — SOLAR ARRAY FIRE WATER
- EXISTING WATER PIPELINE
- INDICATIVE SECURITY FENCE
- POSSIBLE 33kV OHL POLE
- DISTRIBUTED INVERTER/BESS (INDICATIVE)

REV:	DESCRIPTION:	BY:	DATE:
W	ADDITIONAL VEG. AVODANCE	TCMM	18.07.2024
V	ADDED INV/BESS TO LEGEND	ABC	14.03.2024
U	DETAIL CHANGES	TCMM	13.03.2024

STATUS: NOT FOR CONSTRUCTION

VENN ENERGY
Level 22, 120 Spencer St
Melbourne, VIC, AUS

BRIGHTY ENERGY

PROJECT: COOBA SOLAR FARM

TITLE: PROJECT LAYOUT (PLANNING) PRELIMINARY

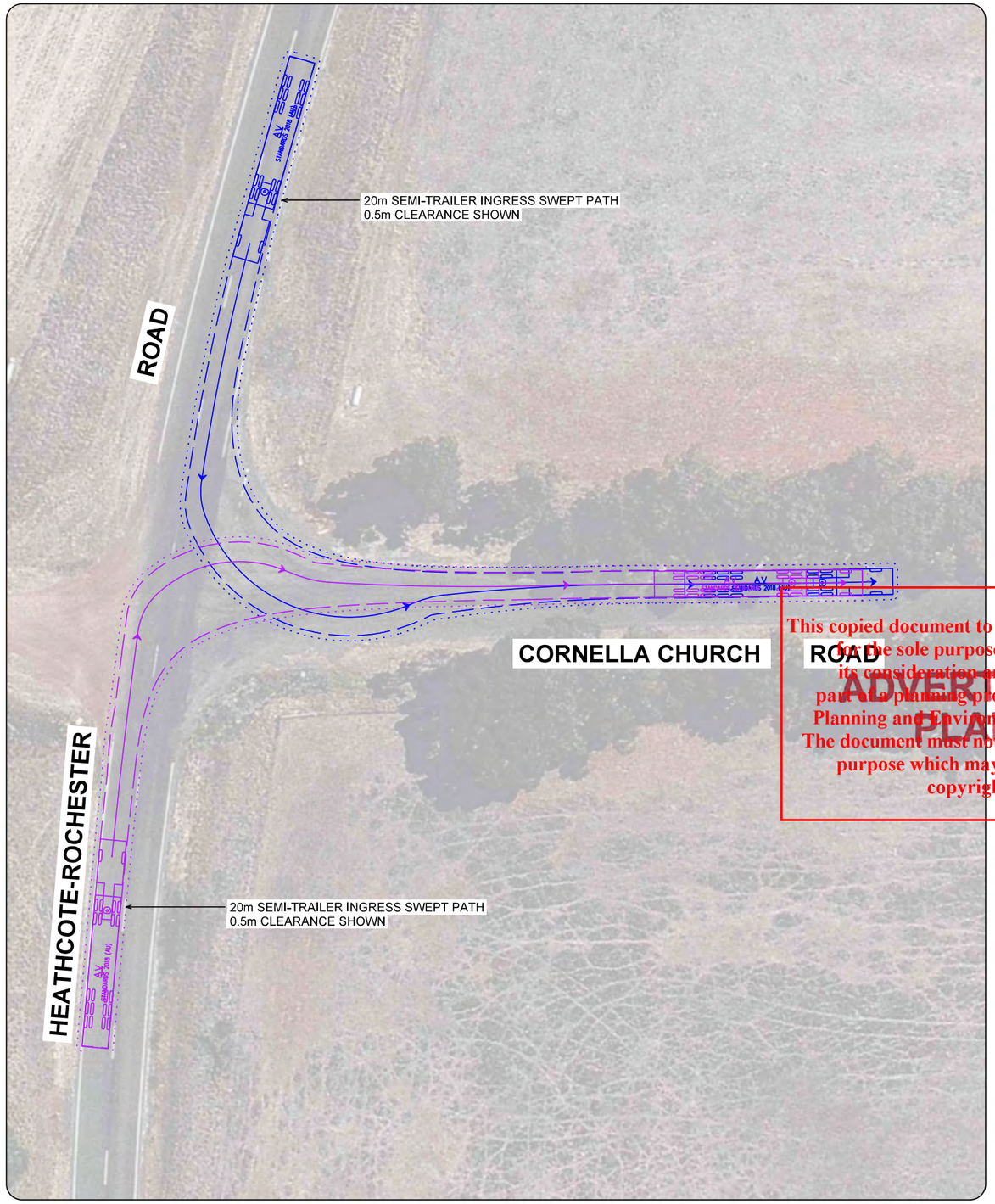
SCALE AT A3:	DATE:	DRAWN:	CHECKED:
1:20,000	1.07.2024	TCMM	ABC

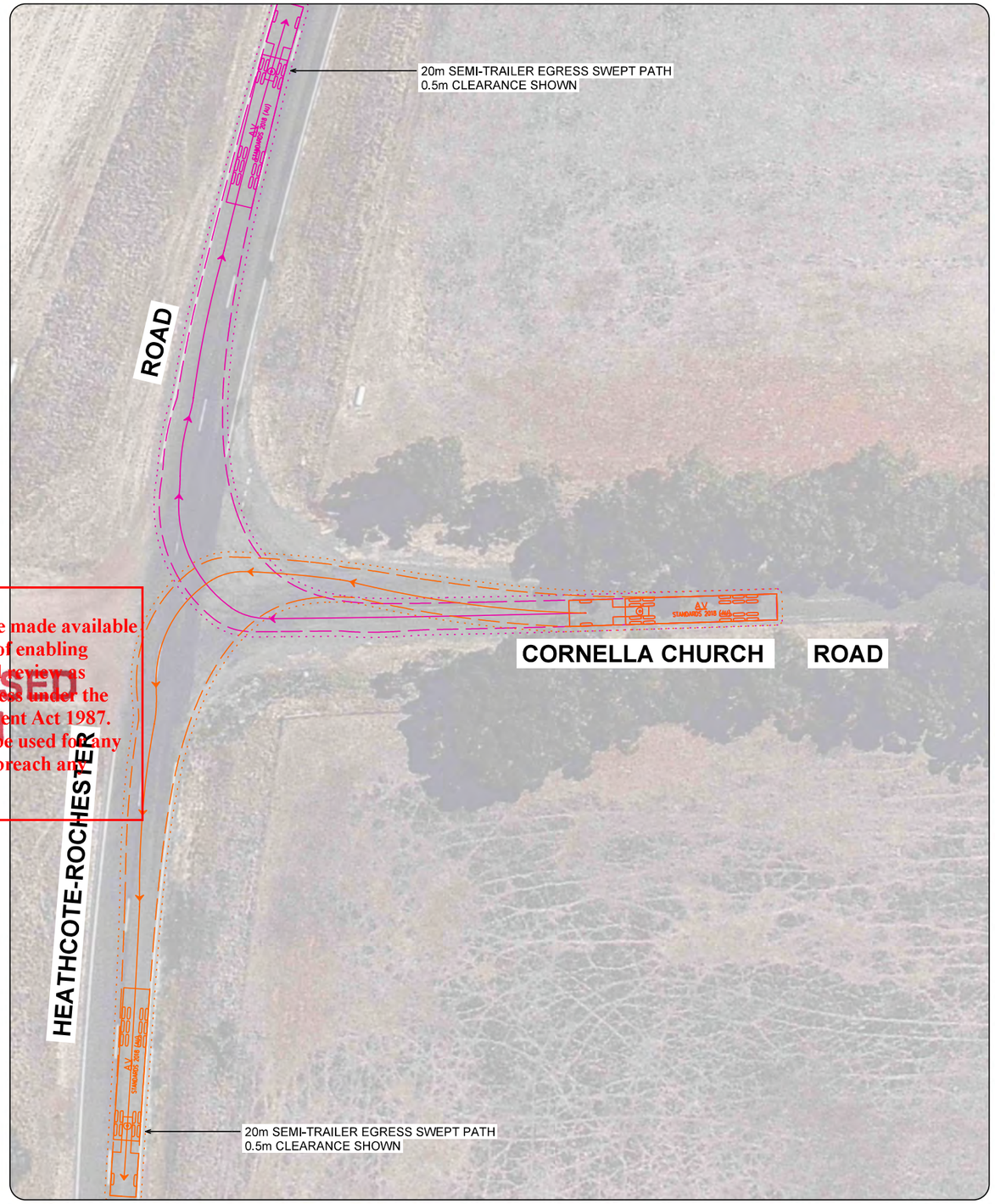
PROJECT NO:	DRAWING NO:	REVISION:
VEN02	CLB-GA-01-DA-01	W

APPENDIX B
Swept Path Analysis

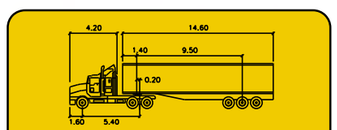
Design Vehicle

— 20m Semi-Trailers





GENERAL NOTES:
1. ALL DIMENSIONS ARE TO FACE OF KERB AND CHANNEL UNLESS NOTED OTHERWISE.
2. LOCAL ROAD:
   - CORNELLA CHURCH ROAD (SPEED ZONE 100KM/H).
   DECLARED ROAD:
   - HEATHCOTE ROAD (SPEED ZONE 100KM/H).
3. BASE INFORMATION FROM NEARMAP AERIAL PHOTOGRAPHY DATED 30.01.2010.



20m SEMI-TRAILER

METERS

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TRAILER WIDTH	: 2.50	STEERING ANGLE	: 28.3
TRACTOR TRACK	: 2.50	ARTICULATING ANGLE	: 72.0
TRAILER TRACK	: 2.50		

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MELWAY ONLINE REF:MAP X921 F8

SCALE
1:500 @ A3

Client
VENN ARTIBIR GROUP

Date **2023-07-26**
Drawn / Approved **WH / HM**

Project
COOBA SOLAR FARM & BATTERY ENERGY STORAGE
124 CORNELLA CHURCH ROAD, COLBINABBIN
SHIRE OF CAMPASPE

Title
TRAFFIC AND TRANSPORT ASSESSMENT
SWEPT PATH ANALYSIS
20m SEMI-TRAILER

Status
PRELIMINARY

Drawing Number
IMP2109029 - DRG-01-01

Revision
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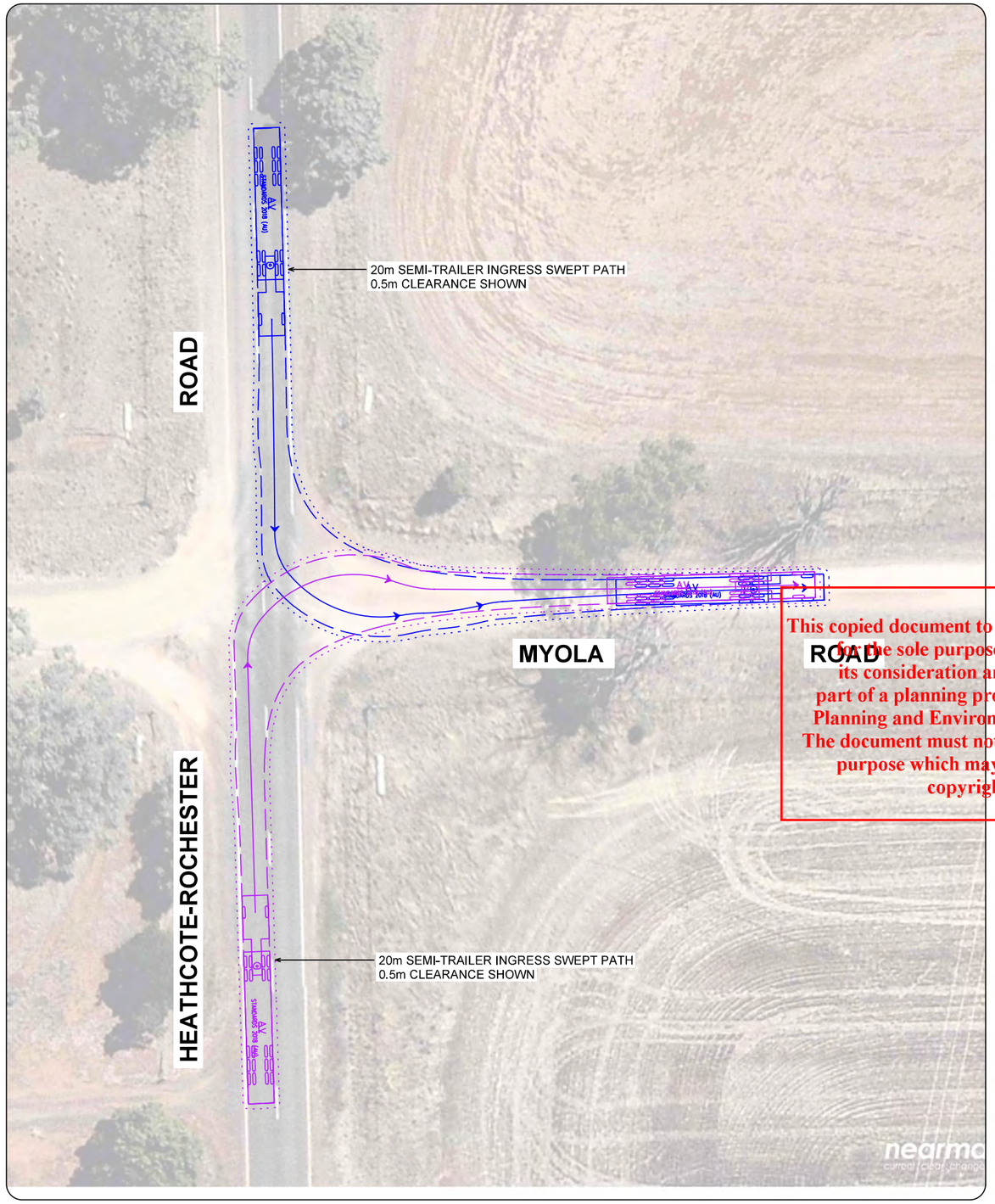

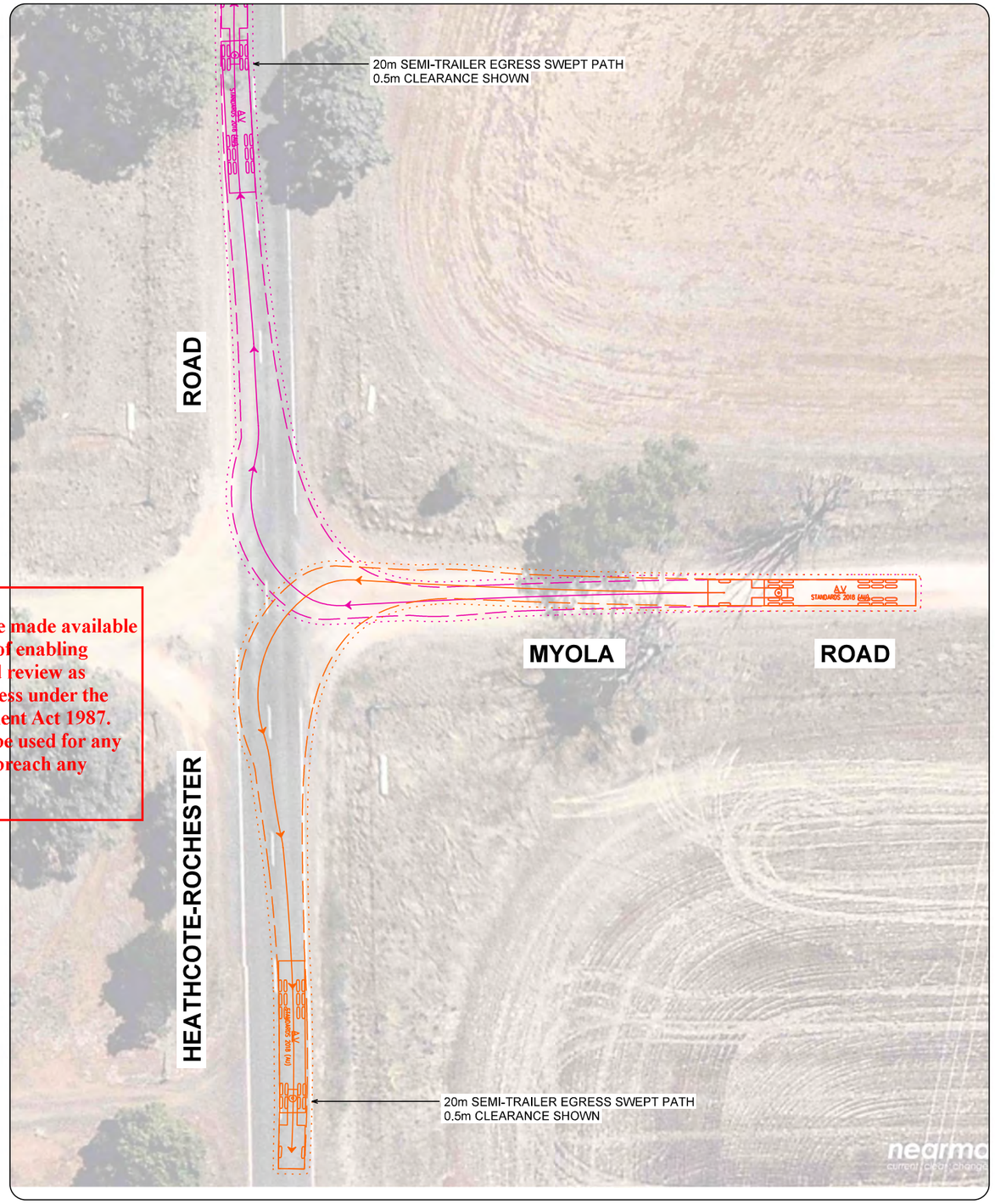

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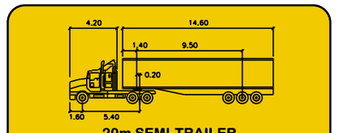

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TRACTOR TRACK	: 2.50	ARTICULATING ANGLE	: 72.0
TRAILER TRACK	: 2.50		

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SCALE
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Client
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Date **2023-07-26**
Drawn / Approved **WH / HM**

Project
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124 CORNELLA CHURCH ROAD, COLBINABBIN
SHIRE OF CAMPASPE

Title
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SWEPT PATH ANALYSIS
20m SEMI-TRAILER

Status
PRELIMINARY

Drawing Number
IMP2109029 - DRG-01-02

Revision
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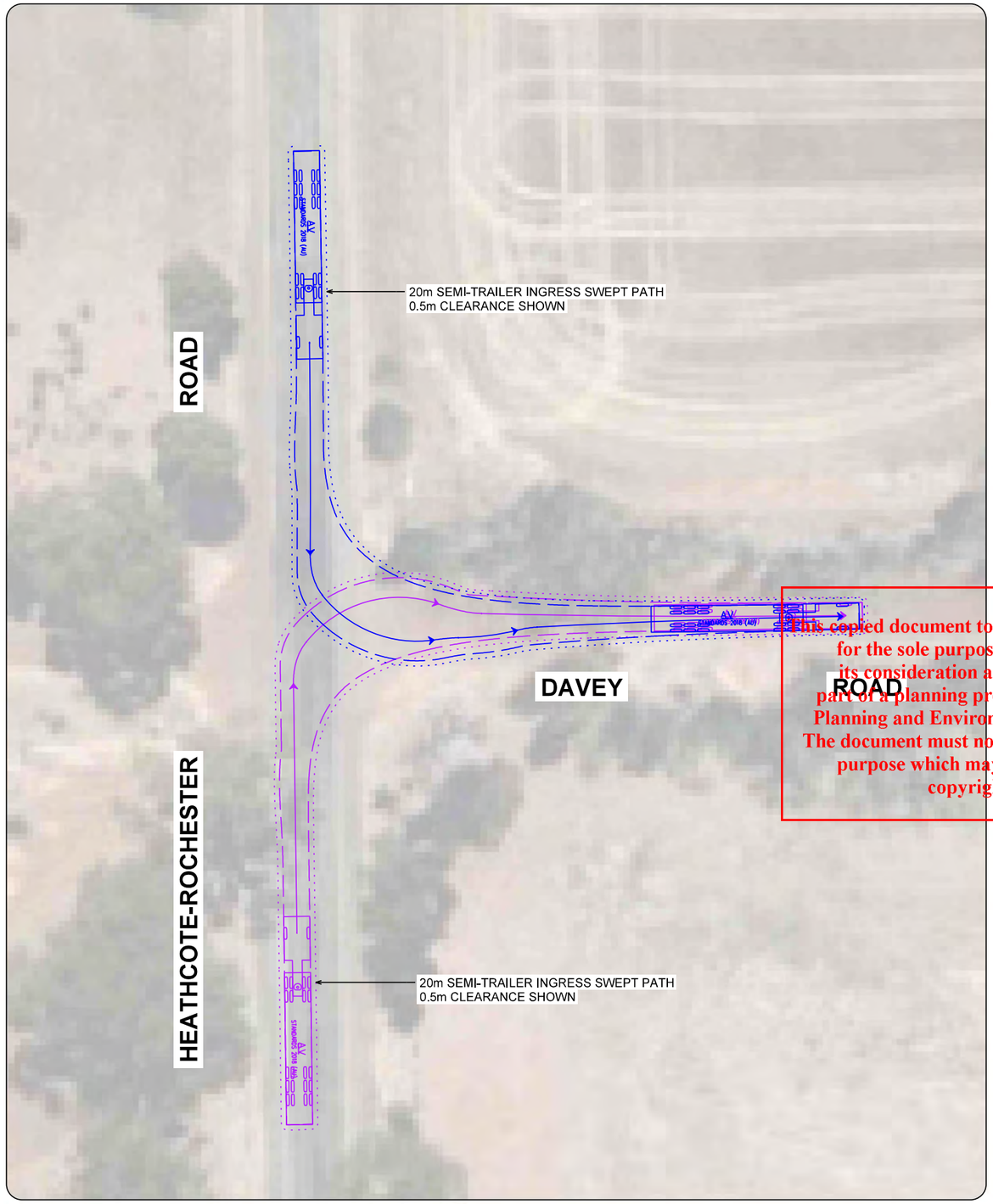

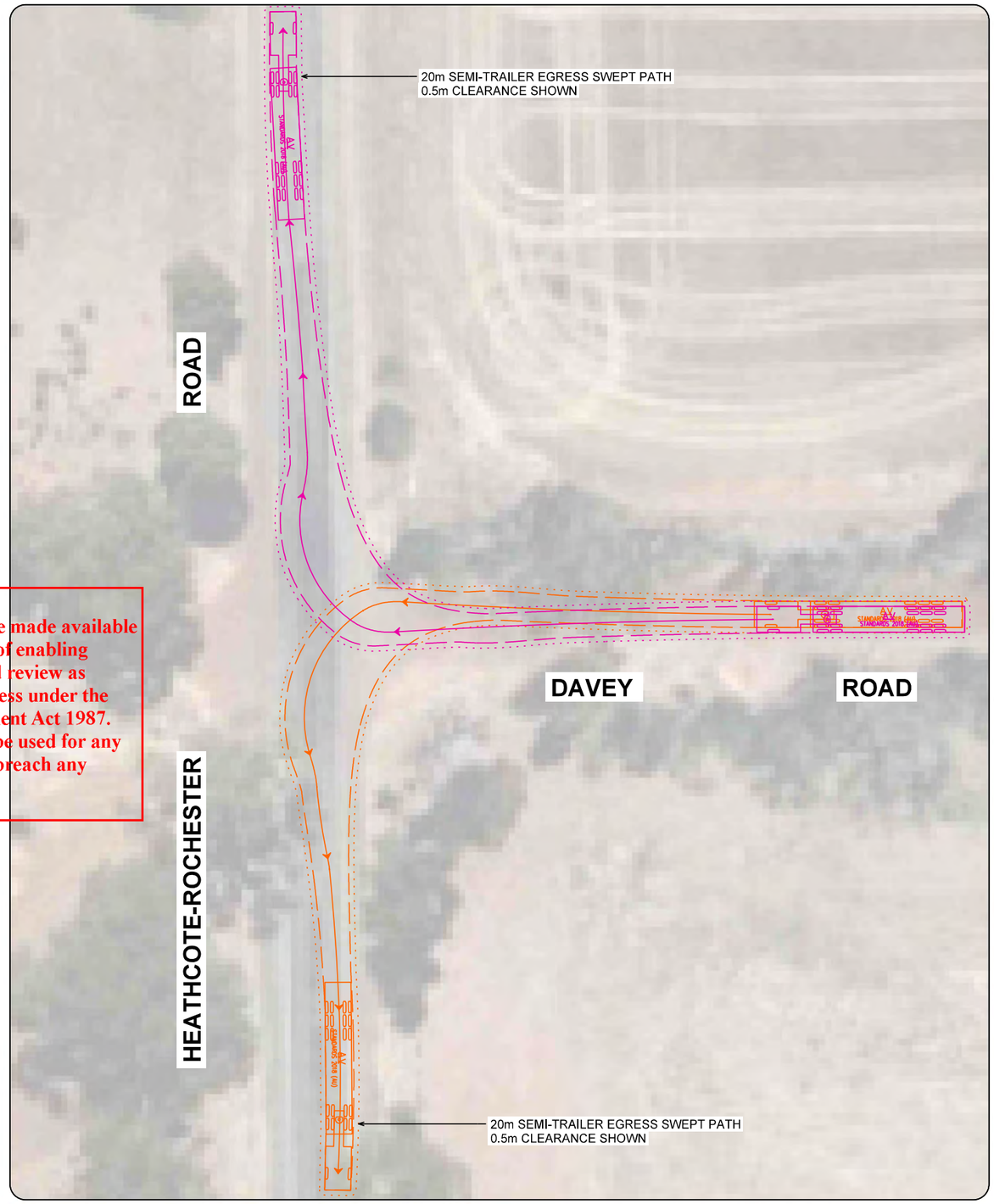

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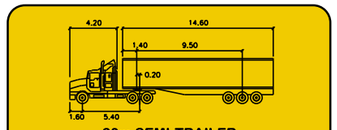

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TRAILER TRACK	: 2.50		

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Project
COOBA SOLAR FARM & BATTERY ENERGY STORAGE
124 CORNELLA CHURCH ROAD, COLBINABBIN
SHIRE OF CAMPASPE

Title
TRAFFIC AND TRANSPORT ASSESSMENT
SWEPT PATH ANALYSIS
20m SEMI-TRAILER

Status
PRELIMINARY

Drawing Number
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Revision
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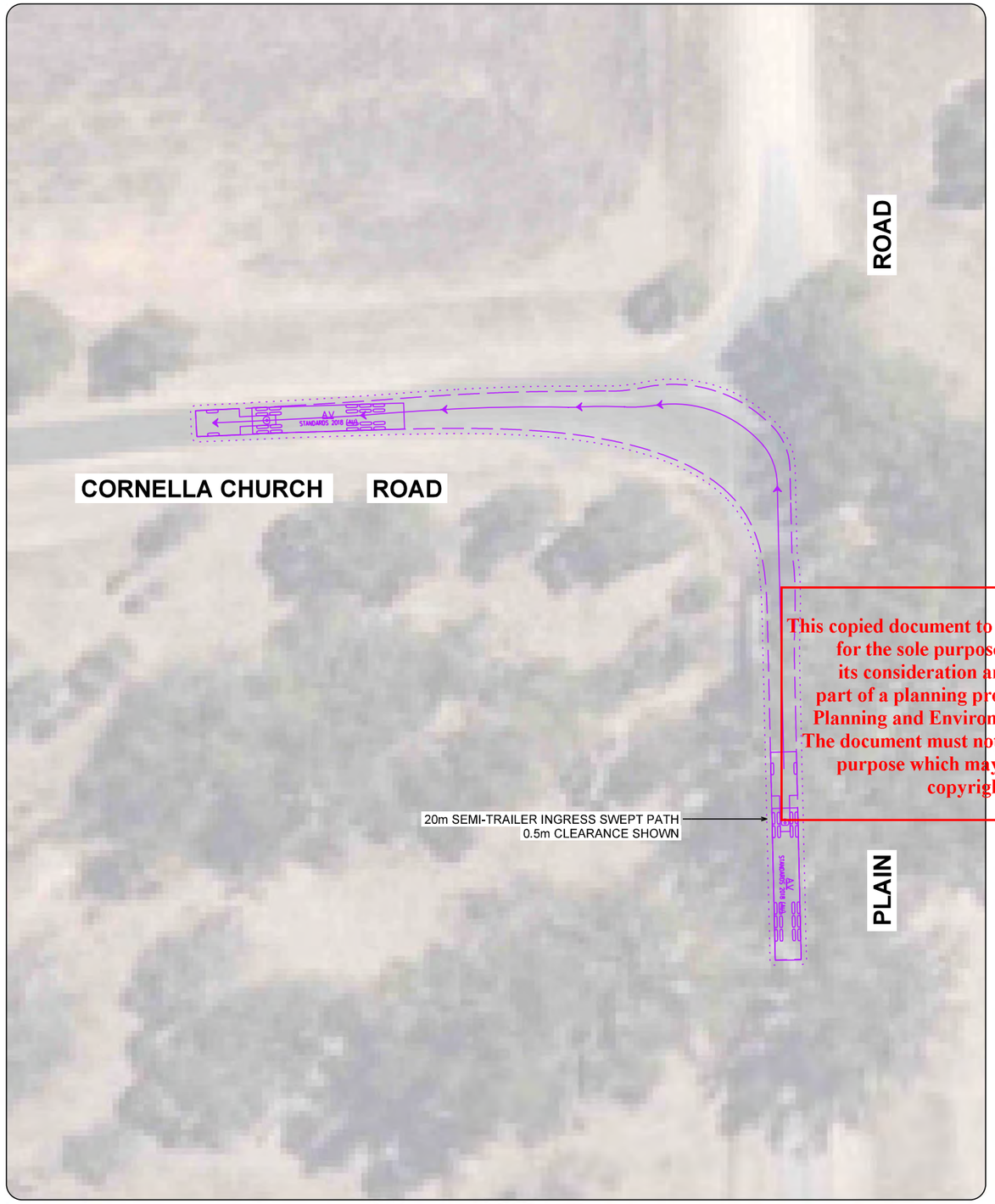

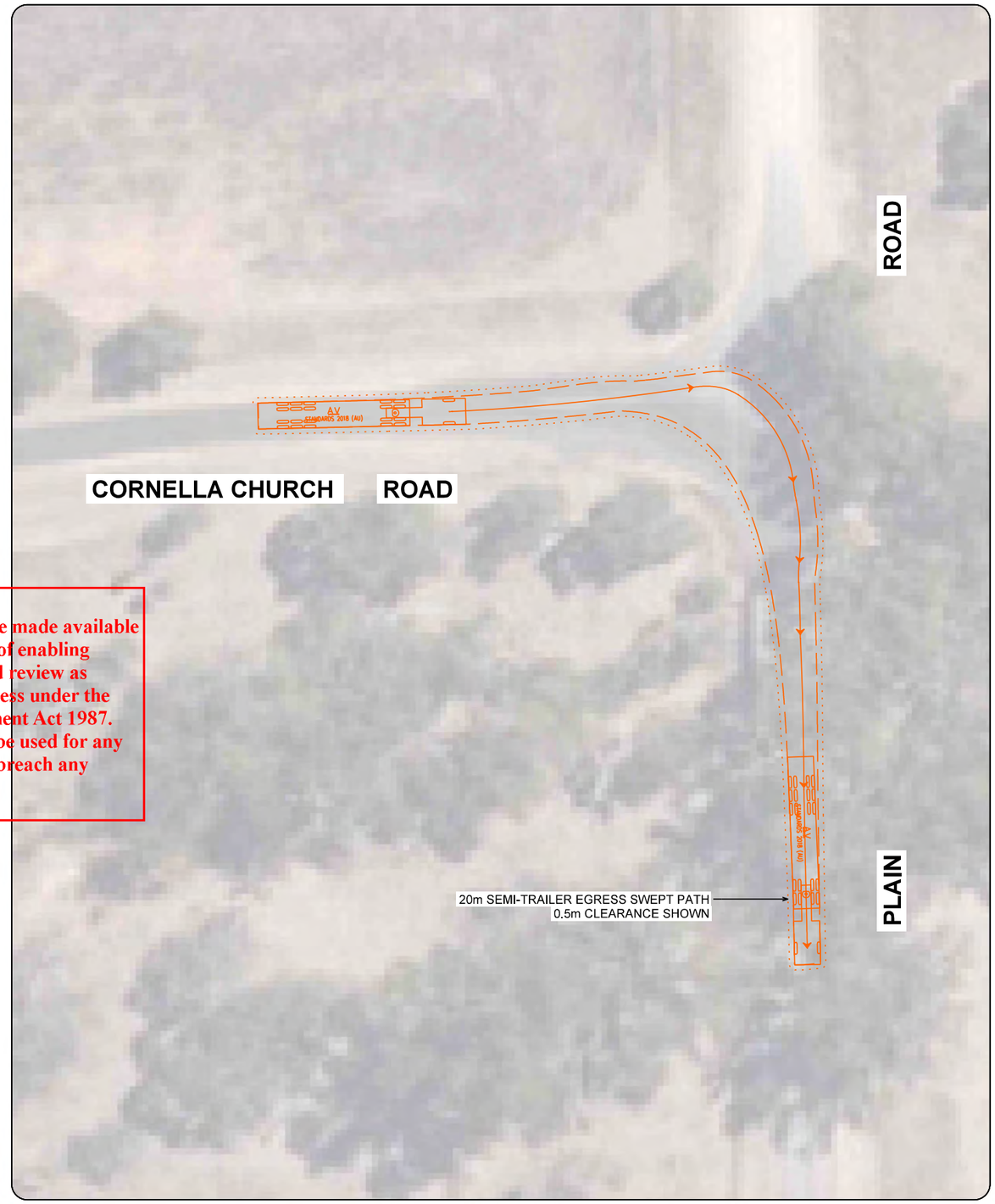

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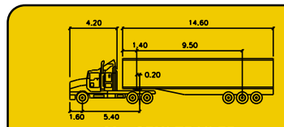

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Date **2023-07-26**
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Project
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124 CORNELLA CHURCH ROAD, COLBINABBIN
SHIRE OF CAMPASPE

Title
TRAFFIC AND TRANSPORT ASSESSMENT
SWEPT PATH ANALYSIS
20m SEMI-TRAILER

Status
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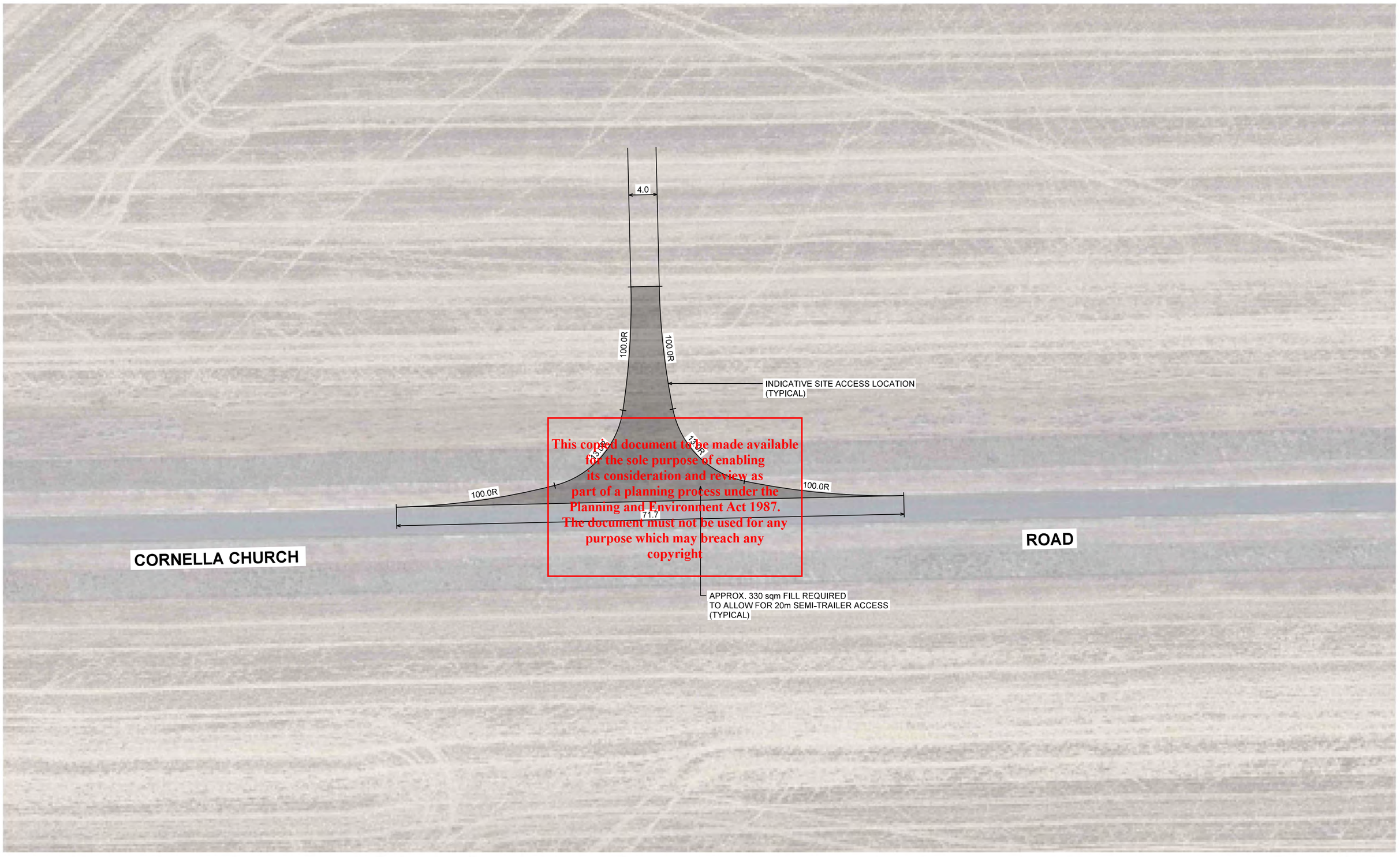

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Date 2023-07-26
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Project
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124 CORNELLA CHURCH ROAD, COLBINABBIN
SHIRE OF CAMPASPE

Title
TRAFFIC AND TRANSPORT ASSESSMENT
SITE ACCESS LOCATION

Status
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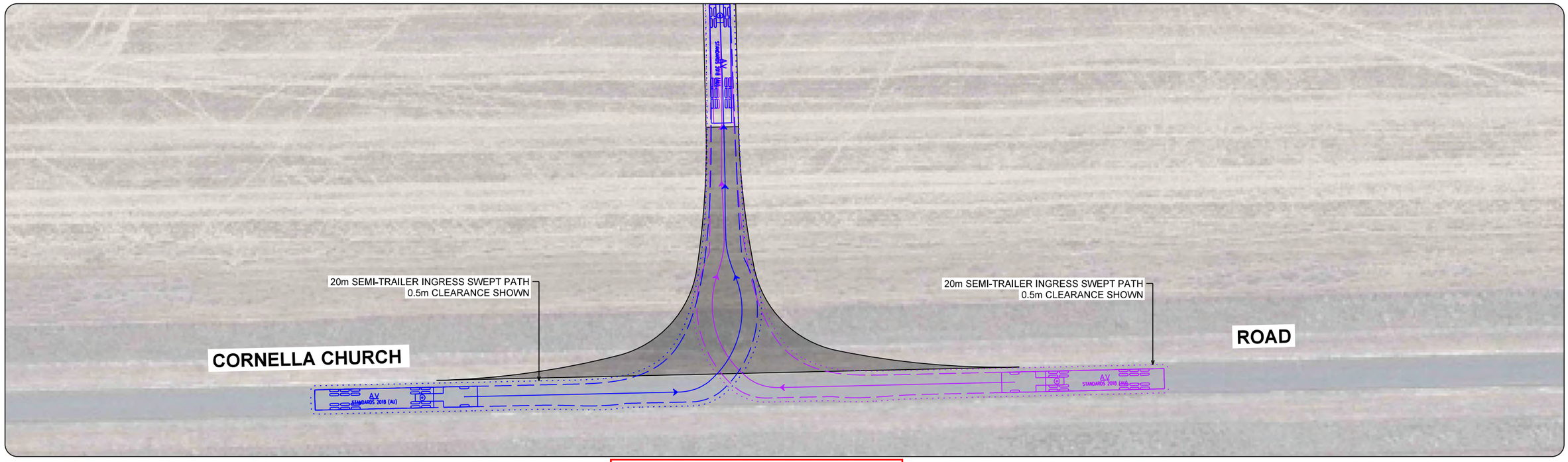

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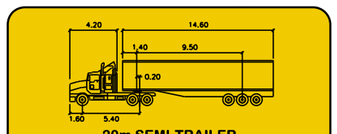

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TRAILER TRACK	: 2.50		

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1:500 @ A3

Client
VENN ARTIBIR GROUP

Date **2023-07-26**
Drawn / Approved **WH / HM**

Project
COOBA SOLAR FARM & BATTERY ENERGY STORAGE
124 CORNELLA CHURCH ROAD, COLBINABBIN
SHIRE OF CAMPASPE

Title
TRAFFIC AND TRANSPORT ASSESSMENT
SWEPT PATH ANALYSIS
20m SEMI-TRAILER

Status
PRELIMINARY

Drawing Number
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Revision
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Simplexity