

Traffic Impact Assessment Report

409 Gwydir Highway, Glen Innes, NSW

Project Number 230730

Final3 Report 10/02/2026

Client Green Gold Energy Pty Ltd

Document control record

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Executive summary

Green Gold Energy Pty Ltd engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed solar energy facility development at **409 Gwydir Highway, Glen Innes, NSW**.

This report has been updated to include:

- revised access location to the highway
- respond to the letter from Transport for NSW (TfNSW) dated 30 May 2025

The table below summarises the subject site, the proposed development, and our conclusions and recommendations.

Address	409 Gwydir Highway, Glen Innes, NSW
Zoning	RU1: Primary Production
Proposed development	Solar Energy Facility
Road network	Gwydir Highway (B76)
Traffic generation	Daily and peak hour traffic volumes of: — 50 vehicles per day (vpd) — 21 vehicles per hour (vph)
Car parking	20 light vehicle parking spaces
Conclusion	We conclude that subject to the implementation of our recommendations, there are no traffic engineering reasons that would prevent the development from proceeding: — the pre-construction phase is expected to take 3-4 weeks — the construction phase is expected to take 9 months — the peak hour traffic generation is likely to occur during the construction phase of the development, where the peak hour volumes are expected to be: — 20 light vehicles — 1 heavy vehicle. — during the development's operation phase, the daily movements are expected to be up to 2 light vehicles (4 trips)

-
- the car parking demand during the development's construction phase will likely be 20 spaces
 - the setback of the security fencing for the subject site will provide the minimum 20 m required to allow storage of a 19 m semi-trailer clear of the traffic lane on Gwydir Highway
 - the intersection of Gwydir Highway and the proposed subject site access meets the warrant for a type BAL turn lane
-

Recommendations

It is recommended that:

Recommendation 1: the proposed development plan should be updated to indicate a formal on-site car parking provision for 20 vehicles.

Recommendation 2: detailed design of the site access should ensure SISD of 285 m for cars and 303 m for trucks is achieved.

Recommendation 3: ensure a 6 m wide all-weather access track is provided to the subject site.

Recommendation 4: ensure the outside radius of the track at the turnaround area within the site compound is at least 15 m.

Recommendation 5: Gwydir Highway should be upgraded to provide BAR and BAL treatments at the proposed sight access as per the strategic concept design plans in Appendix 2.

Recommendation 6: truck warning signs should be displayed near the subject site access on the highway approaches during the construction phase when heavy vehicles are making deliveries to the subject site.

Referenced documents

References used in the preparation of this report include the following:

- Austroads Guide to Road Design
 - Part 4A – Unsignalised and Signalised Intersections, for sight distance criteria and provision for turning vehicles at intersections (AGRD4)
- Austroads Guide to Traffic Management
 - Part 6 – Intersections, Interchanges and Crossings Management, for sight distance criteria and provision for turning vehicles at intersections (AGTM6)
 - Part 12 – Traffic Impacts of Developments
- Australian Standards:
 - AS 2890.1-2004 Parking facilities - Off-street car parking
 - AS 2890.2-2018 Parking facilities - Off-street commercial vehicle facilities
- RTA Guide to Traffic Generating Developments, Version 2.2, October 2002

- Glen Innes Severn Shire Council
 - Development Control Plan (DCP) 2014
 - Local Environmental Plan (LEP) 2012

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Appendix 3 – Acronyms and terms

1 Introduction

Green Gold Energy Pty Ltd engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed solar energy facility development at **409 Gwydir Highway, Glen Innes, NSW**.

This report has been updated to include

- revised access location to the highway
- respond to the letter from Transport for NSW (TfNSW) dated 30 May 2025.

For the details about:

- existing site conditions – see section 3
- description of the proposed development – see section 4
- traffic impact of the proposed development – see section 4
- car parking assessment of the proposed development – see section 5
- assessment of the access to the proposed development – see section 6
- our conclusions and recommendations – see section 7.

2 Respond to authorities

2.1 TfNSW further information required letter

TfNSW provided an updated response, and most of the original items were closed, except for the following ones.

Further information required	Trafficworks response
1) The largest design vehicles appear to be Semi-Trailers and B-Double heavy vehicles. TfNSW recommend further information be provided to confirm all components of the proposed development can be transported to site on the nominated design vehicles, including: a) Dimension and mass details of all components or loads requiring transportation, b) Maximum load dimensions and weight limits for each of the design vehicles. c) Details of any specialist vehicles in any future swept path analysis	— The largest vehicle will be a 19.0 m semi-trailer. — There will be no Higher Mass Limit (HML) or Oversized-Overmass (OSOM) loads used for transport to the subject site. — Most equipment deliveries will be within standard shipping containers. — Refer to Section 4.2.2 for more information
2) The TIA recommends a Basic Left (BAL) turn treatment, however; a lower order Rural Property Access (RPA) is proposed, supported only by 'truck warning signs'. The warrants assessment excludes westbound (Inverell) movements, which may trigger the requirement for a Basic Right (BAR) turn treatment, if included	— The subject site development access has been updated to incorporate the turn lanes from the warrant assessment, a 2d Strategic Design has been prepared. — Refer to Appendix 2 – Strategic Concept Design Plans

Further information required	Trafficworks response
3) The location of the proposed site access is unclear in the submitted information. Council should be satisfied the DA is supported by updated plans and details to accurately reflect the existing road conditions, including; nearby hazards, road geometry, vegetation, utilities, drainage and other property accesses etc. Further, it is unclear how any site access or road upgrades will impact the classified road within the limits of the existing road geometry, noting the limited road frontage that appears to be available	— The report has been updated to clearly reference the subject site access, and a 2d Strategic Design has been prepared. — Refer to Section 4.1 and Appendix 2 – Strategic Concept Design Plans
4) Sight distances have been assessed using Australian Standard (AS/NZS 2890.1), however; this should be updated using Austroads Guidelines, to clarify any potential impact of safety barriers, proposed fencing and landscaping on sight lines	— The report has been updated to include assessment against Austroads SISD (refer to Appendix 2 – Strategic Concept Design Plans).
5) No swept path analysis has been undertaken for the largest design vehicles, entering and exiting the proposed site access	— Swept paths are included in the 2d Strategic Design that has been prepared. — Refer to Appendix 2 – Strategic Concept Design Plans
6) TfNSW ‘Strategic Design for DA’s factsheet’ may assist in identifying the level of detail required in the design drawings for any proposed road works on a classified road.	— Noted

3 Existing conditions

3.1 Subject site

The subject site is:

- located across multiple parcels of land known as Lots 59, 60, 61 and 62 of DP1834), approximately 3 km west of Glen Innes, NSW
- currently used for farming and agricultural activities
- surrounded by land currently used for farming and agricultural activities, including some residential rural properties.

There is currently no vehicular access to the subject site.

Figure 1 shows the subject site's location, surrounded predominantly by farmland.

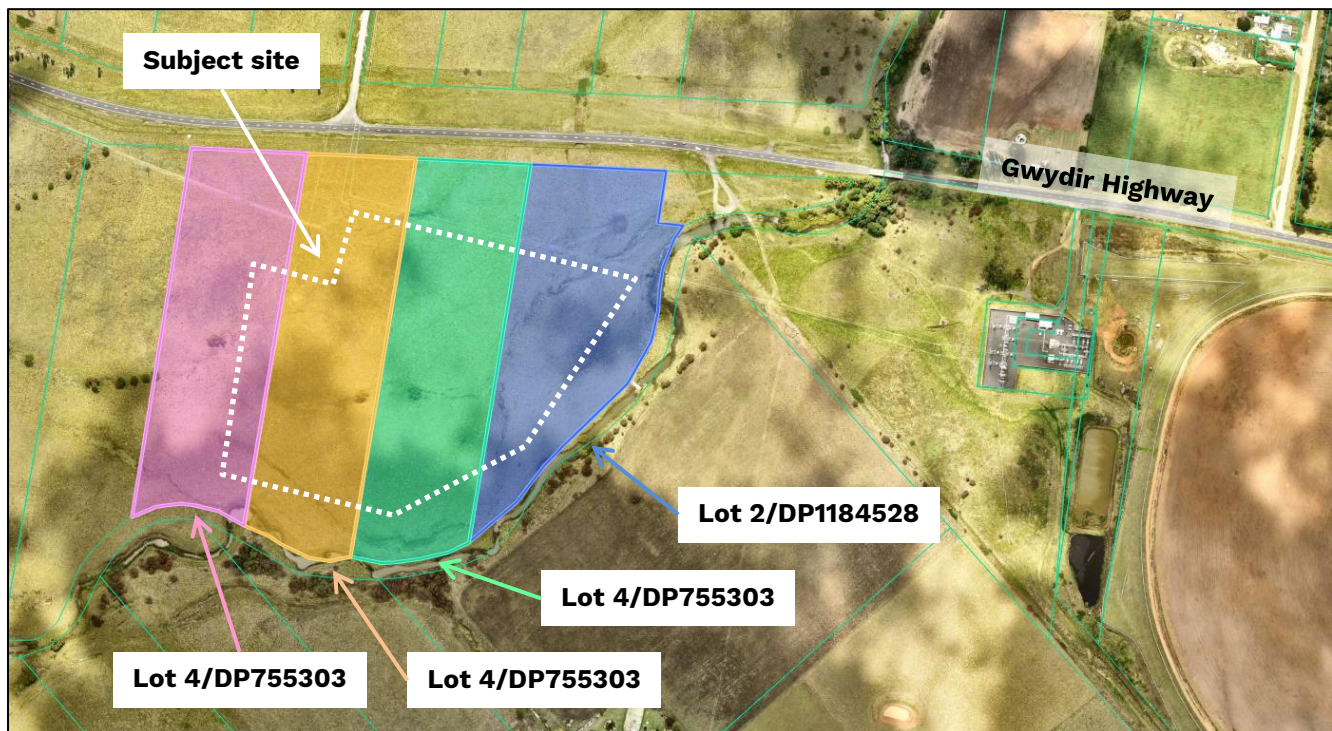


Figure 1: Location plan (reproduced with permission from Nearmap)

The subject site and most of the surrounding land is located within a Primary Production Zone (RU1), as per the Glen Innes Severn Shire Council (Council) Local Environmental Plan 2012 (LEP).

Figure 2 shows the zoning for the subject site and the surrounding area.

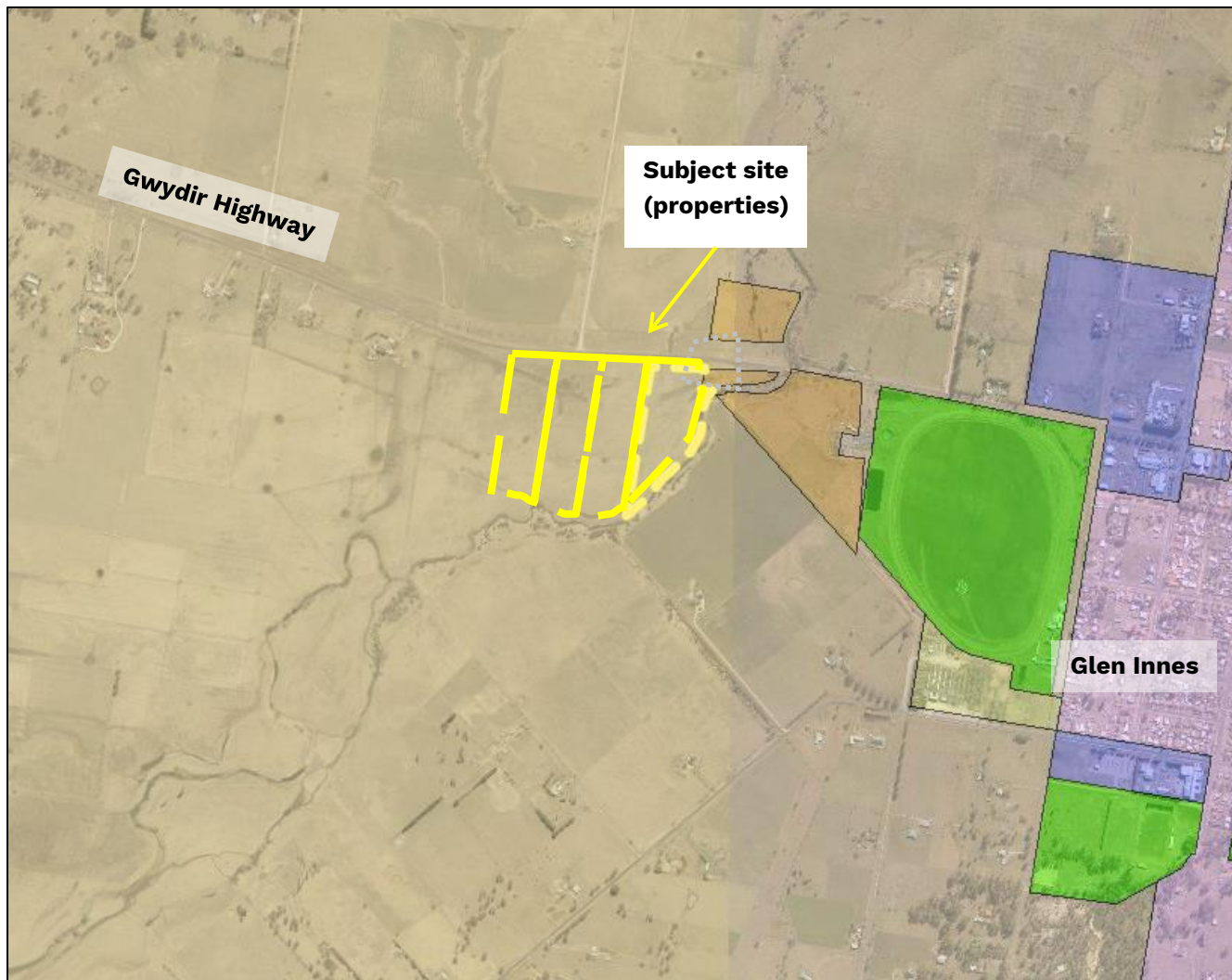


Figure 2: Zoning plan (reproduced from NSW ePlanning Spatial Viewer)

3.2 Road network

3.2.1 Gwydir Highway (B76)

Table 1 describes the features of this road.

Table 1: Gwydir Highway features

Feature	Description
Road type	Classified state arterial road (B76) managed by Transport for New South Wales (TfNSW)
Access	Provides access between Grafton, to the east, and the Castlereagh Highway, near Walgett, to the west
Carriageway	- Two-way, two-lane road with 3.5 m traffic lanes and 1.0 m sealed shoulders on each side - Road safety barrier (115 m length) on both sides of the road approx. 80 m west of the existing driveway adjacent to the site - Road safety barrier (100 m length) on both sides of the road approx. 145 m east of the existing driveway adjacent to the site
Road reservation	80 m wide
Speed limit	A posted speed limit of 100 km/h

Figure 3 and Figure 4 provides further information about the road.



Figure 3: Gwydir Highway westbound, adjacent to the subject site (to the left)



Figure 4: Gwydir Highway eastbound, adjacent to the subject site (to the right)

3.3 Traffic volumes

TfNSW Traffic Volume Viewer details traffic volumes for many of the arterial roads in New South Wales. Scrutiny of the records indicates that in 2024, 1,471 vehicles per day (vpd) travelled along the section of Gwydir Highway located less than 1 km west of the subject site (Station Id: 6134).

The 2-way traffic volumes recorded by the station indicate the following:

- a daily traffic volume of 743 vpd eastbound and 728 vpd westbound
- AM commuter peak (8:00 am to 9:00 am) of 65 vehicles per hour (vph) eastbound and 50 vph westbound
- PM commuter peak (3:00 pm to 4:00 pm) of 59 vehicles per hour (vph) eastbound and 62 vph westbound.

Figure 5 shows the daily traffic volume profile at station 6134.

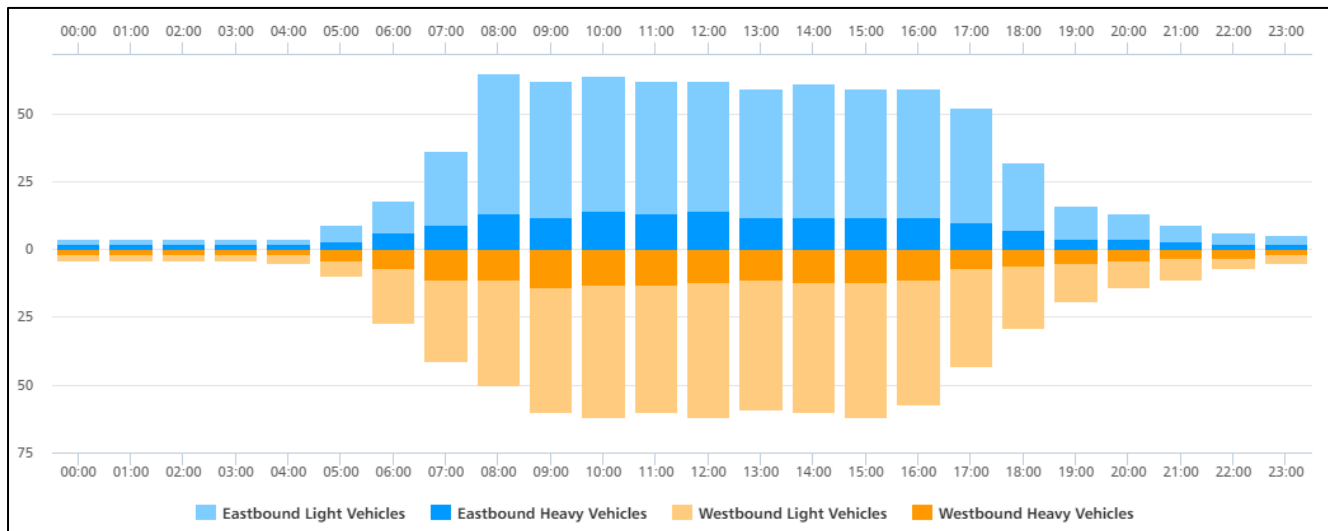


Figure 5: Midweek traffic volumes, daily profiles (Source: TfNSW Traffic Volume Viewer - Site 6134)

Analysis of the historical traffic data determined the recent annual growth rate to be 2%. Using this information, the expected two-way traffic volumes for 2025 were calculated, as follows:

- a daily traffic volume of 758 vpd eastbound and 743 vpd westbound
- AM commuter peak (8:00 am to 9:00 am) of 66 vehicles per hour (vph) eastbound and 51 vph westbound
- PM commuter peak (3:00 pm to 4:00 pm) of 60 vehicles per hour (vph) eastbound and 63 vph westbound.

3.4 Crash history

TfNSW Centre for Road Safety website details all injury crashes on roads throughout New South Wales and reports that no casualty crashes have occurred on the roads in the vicinity of the subject site in the most recent 5 years of published data (2019 – 2024).

Based on this, we conclude that no crash trend requires immediate investigation.

4 Traffic assessment of the proposed development

4.1 Development summary

The proposed development in Glen Innes involves constructing a solar energy facility to generate power that will be connected to the local electricity grid. The facility will provide a reliable power source to the local community. The proposed development plan is provided in Appendix 1.

The proposed facility will be un-staffed, and the period that will generate the most traffic will be the construction phase. Any access to the subject site once in operation will be for security or maintenance purposes.

The development will have direct access to Gwydir Highway via a new proposed access as shown in the Figure 6.

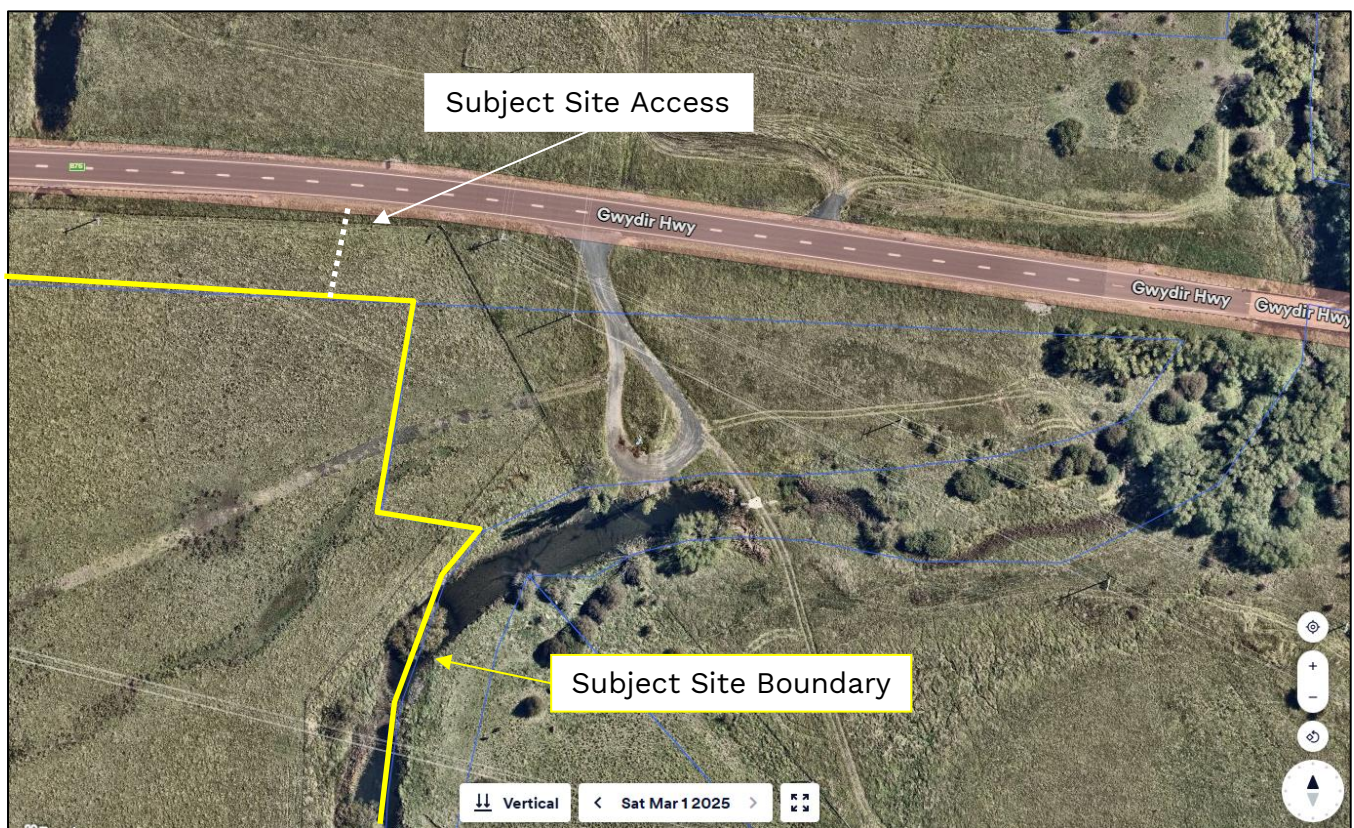


Figure 6: Location of the proposed site access (Source: Nearmap under licence)

4.1.1 Pre-construction

The pre-construction phase of the development may include road upgrades or maintenance works to the public road network, building/road dilapidation surveys, installation of fencing, artefact survey and/or salvage, overhead line safety marking and geotechnical drilling and/or surveying.

The pre-construction activities have been divided into 2 stages:

- site access construction (as per attached Appendix 2 – Strategic Concept Design Plans)
- other activities (including the installation of fencing, overhead line safety marking and geotechnical drilling).

Table 2: Pre-construction schedule

Stage	Site Works	Construction Period (weeks)
A	Site access construction	3-4 weeks
B	Other activities (fencing, line marking and geotech drilling)	3-4 weeks

Note: the subject site works (Stages A and B) may overlap.

4.1.2 Construction

On-site construction for the proposed solar energy facility is mainly limited to the assembly and connection of components, with the typical solar panels readily transportable via 12.5 m rigid trucks.

Access to the subject site by a larger vehicle will only be required to deliver the inverter / transformer / power station (in a 40 ft container). This will need access to the subject site by a 19 m semi-trailer.

The typical construction delivery schedule for this type of solar energy facility is shown in Table 3.

Table 3: Construction delivery schedule

Time period	Site Works
Month 1	Civil earthworks, fencing and landscaping
Months 2 to 5	Delivery of long lead materials
	PV panel and LV cable installation
Months 5 to 8	HV station installation, testing and commissioning
Month 9	Site clean-up and demobilisation

There is a 9-month construction phase before the full operation of the facility.

4.1.3 Heavy vehicle access to the subject site

The proposed heavy vehicle route from Sydney to the subject site during construction is via New England Highway, turning left to Gwydir Highway in Glen Innes.

Figure 7 indicates the recommended route for all heavy vehicles to the subject site.

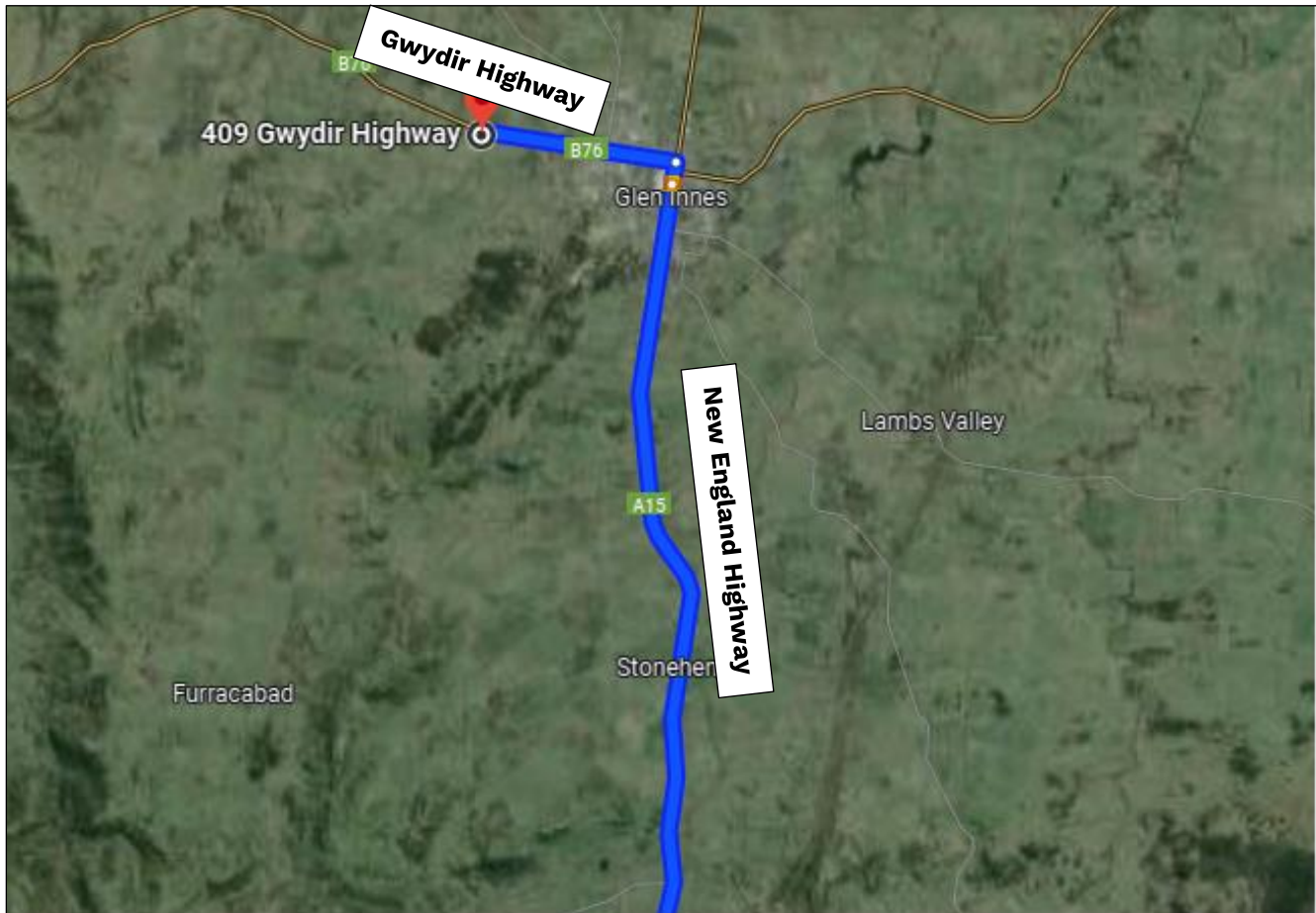


Figure 7: Recommended route to/from the subject site

4.1.4 Operation / decommissioning

Upon completion of the leasing period, if the lease is not renewed, it will be incumbent on the facility's operator to decommission the facility, remove all installations and restore the subject site to its pre-existing state.

Upon approval of this application, the responsible authority may require a decommissioning and rehabilitation plan to be submitted for endorsement.

4.2 Traffic generation

Traffic generation for new developments is typically estimated using the traffic generation rates provided in the Transport for NSW Transport Guide to Transport Impact Assessments (2024). However, the Guide does not include traffic generation rates for solar energy facilities.

Therefore, an empirical assessment was undertaken to estimate the traffic generation to/from the proposed development. Traffic generation analysis was undertaken for the pre-construction, construction and operational phases of the development to establish peak traffic generation.

4.2.1 Pre-construction phase traffic volumes

The pre-construction activities have been divided into 2 stages:

- site access construction (as per attached Appendix 2 – Strategic Concept Design Plans)
- other activities (including the installation of fencing, overhead line safety marking and geotechnical drilling)

The construction of the intersection is likely to take 3-4 weeks, with the remaining activities likely to occur over a 3-4 week period. It should be noted that the 2 stages may overlap.

The peak hour vehicle volumes associated with the above tasks are shown below in Table 4.

Table 4: Pre-construction activities peak hour traffic volumes

Pre-construction phase	Heavy vehicles	Light vehicles	Total vehicles
Access construction	2 vph	3 vph	5 vph
Other activities	1 vph	6 vph	7 vph

4.2.2 Construction phase traffic volumes

Based on the information provided, the peak light vehicle traffic generation will likely occur during the second month of the construction phase.

It is expected that 20 construction staff vehicles will access the subject site per day, resulting in a total daily traffic generation of 40 vpd, including:

- 20 vpd arriving at the start of the shift at approximately 7:00 am
- 20 vpd departing at the end of the shift at approximately 5:00 pm.

Assessment of the heavy vehicles accessing the subject site during the construction phase revealed that the peak traffic generation is likely to occur from the start of the second month to the end of the fifth month. During this period, 5 heavy vehicles per day will access the subject site, resulting in 10 vpd (5 vpd arriving and 5 vpd departing).

Assuming the construction work will be undertaken during normal working hours, the 5 vehicles will be expected to access the subject site outside commuter peak hours. The impact of heavy vehicles on the morning and afternoon commuter peaks is considered negligible. However, conservatively, for this assessment, it has been assumed that a single heavy vehicle will arrive / depart the subject site during the AM and PM peak hours.

The heavy vehicles accessing the subject site will be mainly 12.5 m rigid trucks, with occasional 19 m semi-trailers (i.e. no B-doubles, higher mass limit (HML) or Oversized-Overmass (OSOM) transport vehicles will require access). The trucks will access the subject site via a left turn from Gwydir Highway.

4.2.3 Operational phase traffic volumes

The proposed solar energy facility will feature remote monitoring in real-time, enabling constant surveillance and monitoring without the need for on-site staffing.

The compound will contain key infrastructure that requires a high degree of security. Upon identifying potential issues, action can be taken either indirectly from the control centre or directly by using chosen contractors to travel to the subject site. Up to 2 light vehicles will attend the subject site every 6 months during the operational phase for general maintenance.

4.2.4 Peak traffic generation

Assessment of the traffic generation volumes during the pre-construction, construction and operational phases of the development revealed that the peak traffic generation for the subject site would occur during the construction phase refer to Table 5.

Table 5: Traffic comparison

Phase	Heavy vehicles	Light vehicles	Total vehicles
Pre-construction	3 vph	9 vph	12 vph
Construction	1 vph	20 vph	21 vph
Operational	Nil	2 vph	2 vph

Based on the above, the assessment was undertaken to determine the traffic implications during the construction phase.

The initial activity on site during pre-construction activities will be constructing the new access to Gwydir Highway. This will be carried out under traffic management, which will include detailed construction methodology. It will not involve an assessment of vehicles using the access intersection itself, as the construction will occur at the intersection rather than requiring vehicles to use it.

4.3 Traffic distribution assumptions

Our traffic distribution assumptions are the following:

- 100% of light vehicles will arrive to/from the east (Glen Innes)
- all heavy vehicles will arrive to/from the south (Port of Sydney).

4.4 Anticipated traffic volumes

From the information provided in Section 4.2.2, the AM and PM development peaks will occur when staff arrive / depart the subject site, as they generate the most traffic.

As a result, the development peaks are expected to occur between:

- 6:00 am – 8:00 am
- 4:00 pm – 6:00 pm

Based on the time periods listed, the development peak will occur outside the commuter peaks of Gwydir Highway (8 – 9 am and 3 – 4 pm).

Table 6 shows the anticipated peak hour traffic volumes at the proposed access to the development.

Table 6: Anticipated peak hour traffic volumes at the proposed access to the development

Period	Type	Left In	Right In	Left Out	Right Out	Total
AM Peak	Light	20	0	0	0	20
	Heavy	1	0	0	0	1
	TOTAL	21	0	0	0	21
PM Peak	Light	0	0	0	20	20
	Heavy	0	0	0	1	1
	TOTAL	0	0	0	21	21

5 Car parking assessment of the proposed development

5.1 Planning scheme car parking assessment

Transport for NSW Transport Guide to Transport Impact Assessments (2024) includes parking demand rates for new developments. However, the parking requirement for solar energy storage facilities is currently unavailable. Therefore, an empirical assessment was undertaken to estimate the demand for car parking of the proposed development.

Section 4.2.2 outlined that up to 20 light vehicles will access the subject site during the development's construction phase, generating a demand for 20-space car parking.

The proposed site plan does not indicate a provision for 20 formal on-site car parking spaces. However, there is sufficient space to provide this within the subject site.

Recommendation 1: the proposed development plan should be updated to indicate a formal on-site car parking provision for 20 vehicles.

6 Access to the subject site

6.1 Site access – intersection SISD requirement

The RFI letter from TfNSW requested that the sightlines be assessed against Austroads requirements.

The visibility criterion normally applied to intersections is Safe Intersection Sight Distance (SISD) Figure 8 shows the SISD, which:

- is nominated in the Austroads Guide to Road Design, Part 4A (AGRD4) as the minimum distance that should be provided on a major road at any intersection (refer to Section 3.2.2 in AGRD4A)
- provides sufficient distance for the driver of a vehicle on the major road:
 - to observe a vehicle from the minor access approach moving into a collision situation, e.g., in the worst case, stalling across the traffic lanes
 - to decelerate to a stop before reaching the collision point.

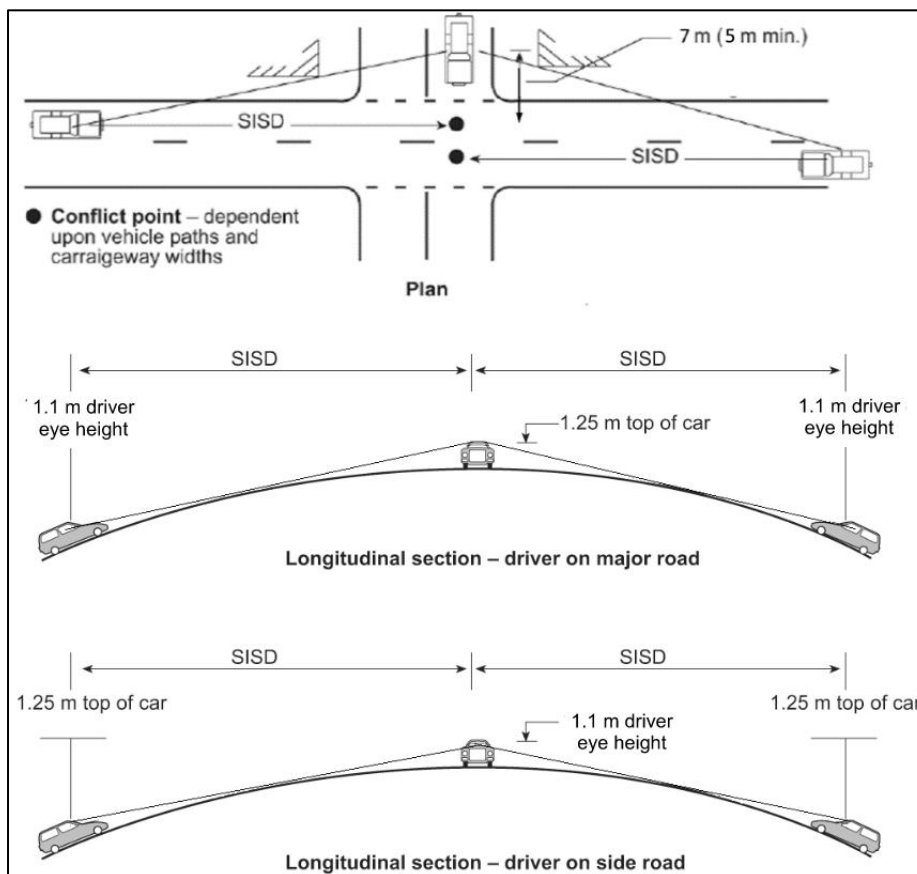


Figure 8: Safe Intersection Sight Distance (SISD) (Source: Figure 3.2 from AGRD4)

The minimum SISD criterion, specified in Table 3.2 of AGRD4A, requires clear visibility for a desirable minimum distance of 285 m, relating to the general reaction time RT of 2 seconds and a design speed of 110 km/h (Design speed = 85th percentile speed or posted speed + 10 km/h). This applies to the proposed development access with Gwydir Highway.

SISD for trucks should also be considered. Design speed for trucks is typically the posted speed limit. Using the SISD criterion specified in section 3.2.2 of the AGRD4A with a 3 second observation time, the SISD for trucks is 303 m for 100 km/h.

There is a bridge with approach safety barriers over the Furracabad Creek, approximately 210 m east of the subject site access. The safety barrier does not obscure approaching vehicles. The SISD criterion for light and heavy vehicles is satisfied with clear sight lines available to the east from the subject site access.

There is a culvert with approach safety barriers over a watercourse, located approx. 30 m west of the proposed site access. The site access will need to be built up so that SISD is met.

Recommendation 2: detailed design of the site access should ensure SISD of 285 m for cars and 303 m for trucks is achieved.

6.2 Access location and operation

The proposed access to the subject site should be constructed generally in accordance with Figure 7.4 in Austroads Guide to Road Design Part 4: Intersections and Crossings requirements (refer to Figure 9).

A Strategic Concept Design has been prepared for the development access connecting to Gwydir Highway. A copy of the concept design is provided in Appendix 2 – Strategic Concept Design Plans.

Figure 7.4: Example of a rural property access specifically designed for articulated vehicles

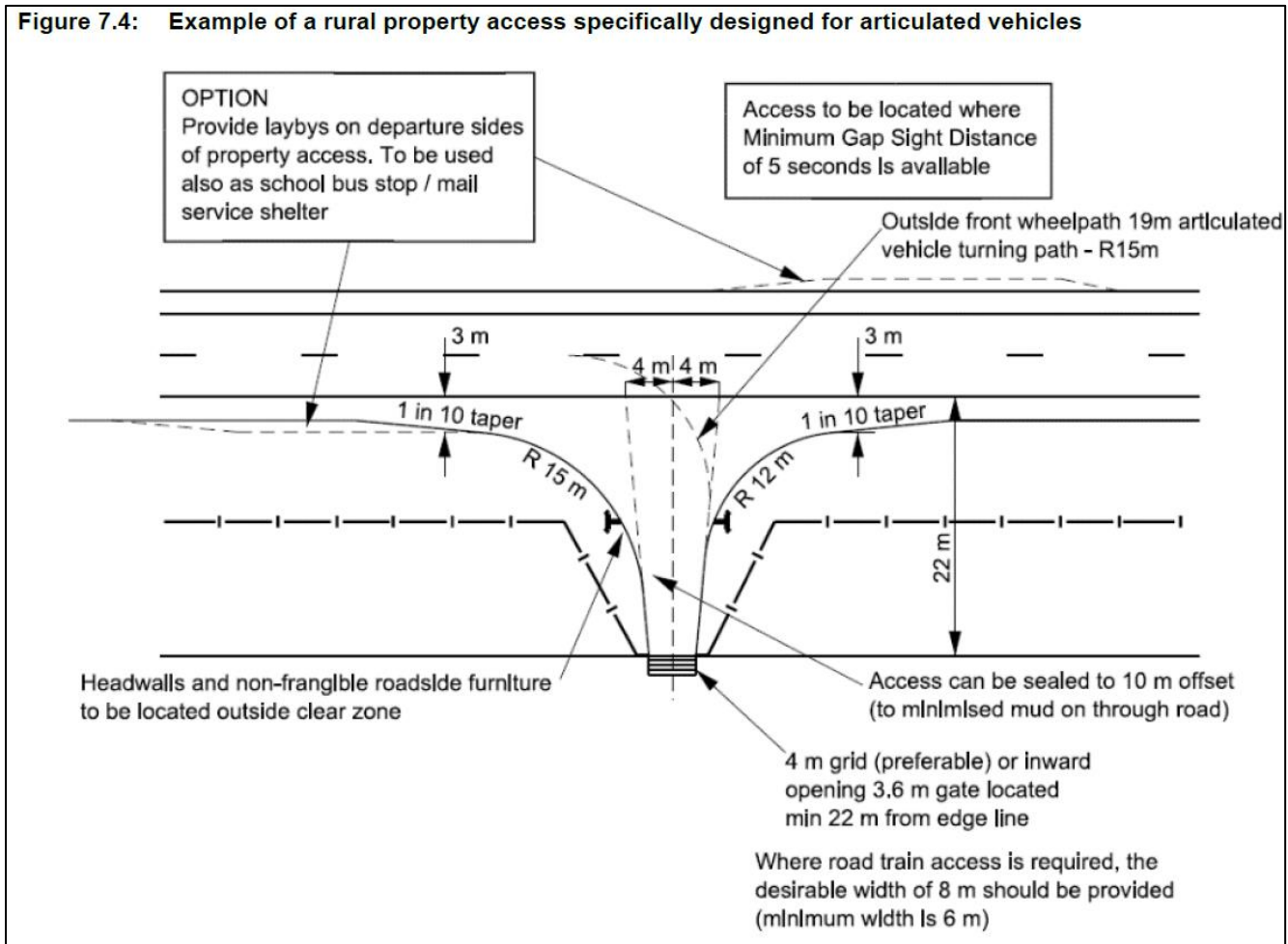


Figure 9: rural property access designed for an articulated vehicle

6.3 Internal access road

The subject site plans indicate the internal road is a 4 m wide access track. To ensure safe two-way traffic, the internal access road from Gwydir Highway to the site should be upgraded to a 6 m wide all-weather track.

Recommendation 3: ensure a 6 m wide all-weather access track is provided to the subject site.

The subject site plans show a turnaround area with a 12.5 m radius. To enable 19 m semi-trailers to perform a safe U-turn, the outside radius of the track must be at least 15 m.

Recommendation 4: ensure the outside radius of the track at the turnaround area within the site compound is at least 15 m.

6.4 Site security

The proposed development will likely include installing site security to restrict access to authorised vehicles only. This will involve the provision of security gates installed at the access to the development.

Should the development include security gates, they should be installed to cater for all queuing vehicles. It is indicated that only one truck is expected to arrive and queue at any time. If the gate for the subject site access were set back 20 m from Gwydir Highway, this would allow for a 19 m semi-trailer waiting for clearance to enter the subject site.

The subject site's fencing is more than 20 m from the edge of the traffic lane on Gwydir Highway. Therefore, the setback will provide the minimum required to store one heavy vehicle clear of the traffic lane.

6.5 Turn provisions impact

The traffic turning from major roads into minor roads should not delay through traffic.

Generally, turn treatments from major roads into minor roads at sign-controlled intersections are provided for safe and efficient intersection operation.

Figure 10 shows the formulas determining the major road volume (Q_M).

The results were then applied to Figure 3.25, Austroads Guide to Traffic Management Part 6 (AGTM6), to determine the intersections' turning treatments.

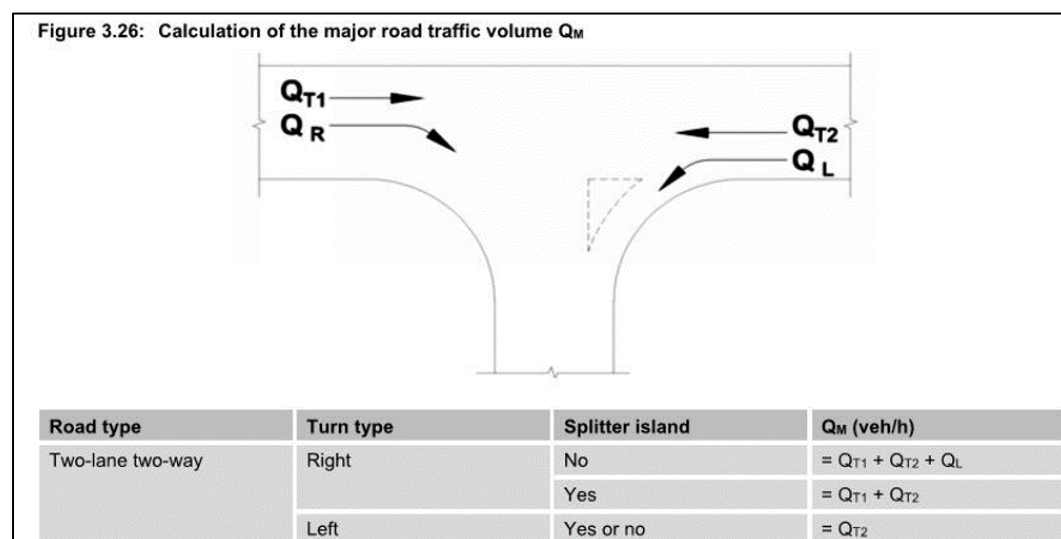


Figure 10: Formulas used to determine major road traffic (Source: Figure 3.26 from AGTM6)

6.5.1 Turn lane treatments

Traffic volumes help determine appropriate turn lane treatments at access intersections to development sites.

To determine anticipated conditions at the intersection, traffic volumes Table 6 were used to determine the warrants shown in Table 7 and were applied in Figure 11.

Table 7: Right turn lane treatments on Gwydir Highway at the subject site intersection – anticipated conditions

Road	Peak Period	Left Turn Q_L (vph)	Right Turn Q_R (vph)	Through Q_T (vph)	Q_M	Q_M
					Left Turn	Right Turn
Gwydir Highway	AM	21	0	Q_{T1} 74	56	0
				Q_{T2} 56		
	PM	0	0	Q_{T1} 64	0	0
				Q_{T2} 64		

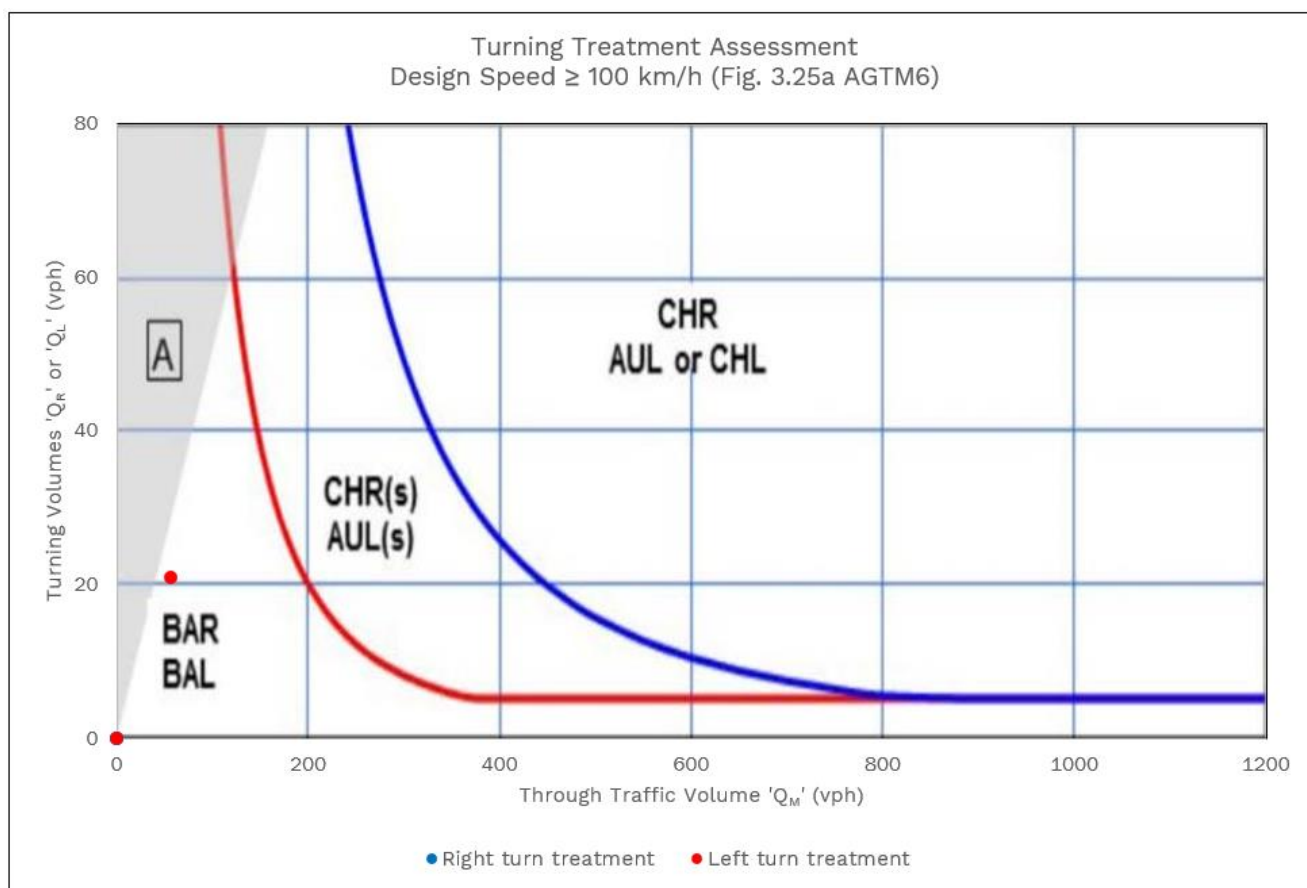


Figure 11: Graph used to determine the turn treatments Gwydir Highway at proposed site access intersection – anticipated conditions

Based on the data gathered and reported in this section, our key observations are:

- left turn from Gwydir Highway into the proposed site access meets the warrants for a BAL treatment in the morning peak period
- access treatment is not required for the right turn from Gwydir Highway into the subject site.

Although traffic is not expected to arrive at the subject site from the west, to ensure any infrequent movements are catered for, a basic right (type BAR) turn treatment should be included.

Strategic concept design plans were prepared for the intersection of the proposed development access and Gwydir Highway, showing BAR and BAL treatments that can accommodate heavy vehicles accessing the subject site. Refer to Appendix 2 – Strategic Concept Design Plans for more details.

Recommendation 5: Gwydir Highway should be upgraded to provide BAR and BAL treatments at the proposed sight access as per the strategic concept design plans in Appendix 2.

Truck warning signs should be displayed near the subject site access on the highway approaches during the construction phase when heavy vehicles are making deliveries to the subject site.

Recommendation 6: truck warning signs should be displayed near the subject site access on the highway approaches during the construction phase when heavy vehicles are making deliveries to the subject site.

7 Conclusions and recommendations

We conclude there are no traffic engineering reasons that would prevent the development from proceeding, as outlined below:

- the pre-construction phase is expected to take 3-4 weeks
- the construction phase is expected to take 9 months
- the peak hour traffic generation is likely to occur during the construction phase of the development, where the peak hour volumes are expected to be:
 - 20 light vehicles
 - 1 heavy vehicle.
- during the development's operation phase, the peak hour volumes are expected to be up to 2 light vehicles
- the car parking demand during the development's construction phase will likely be 20 spaces
- the setback of the security fencing for the subject site will provide the minimum 20 m required to allow storage of a 19 m semi-trailer clear of the traffic lane on Gwydir Highway
- the intersection of Gwydir Highway and the proposed subject site access meets the warrant for a type BAL turn lane.

However, this TIA has identified a number of recommendations that need to be addressed:

Recommendation 1: the proposed development plan should be updated to indicate a formal on-site car parking provision for 20 vehicles.

Recommendation 2: detailed design of the site access should ensure SISD of 285 m for cars and 303 m for trucks is achieved.

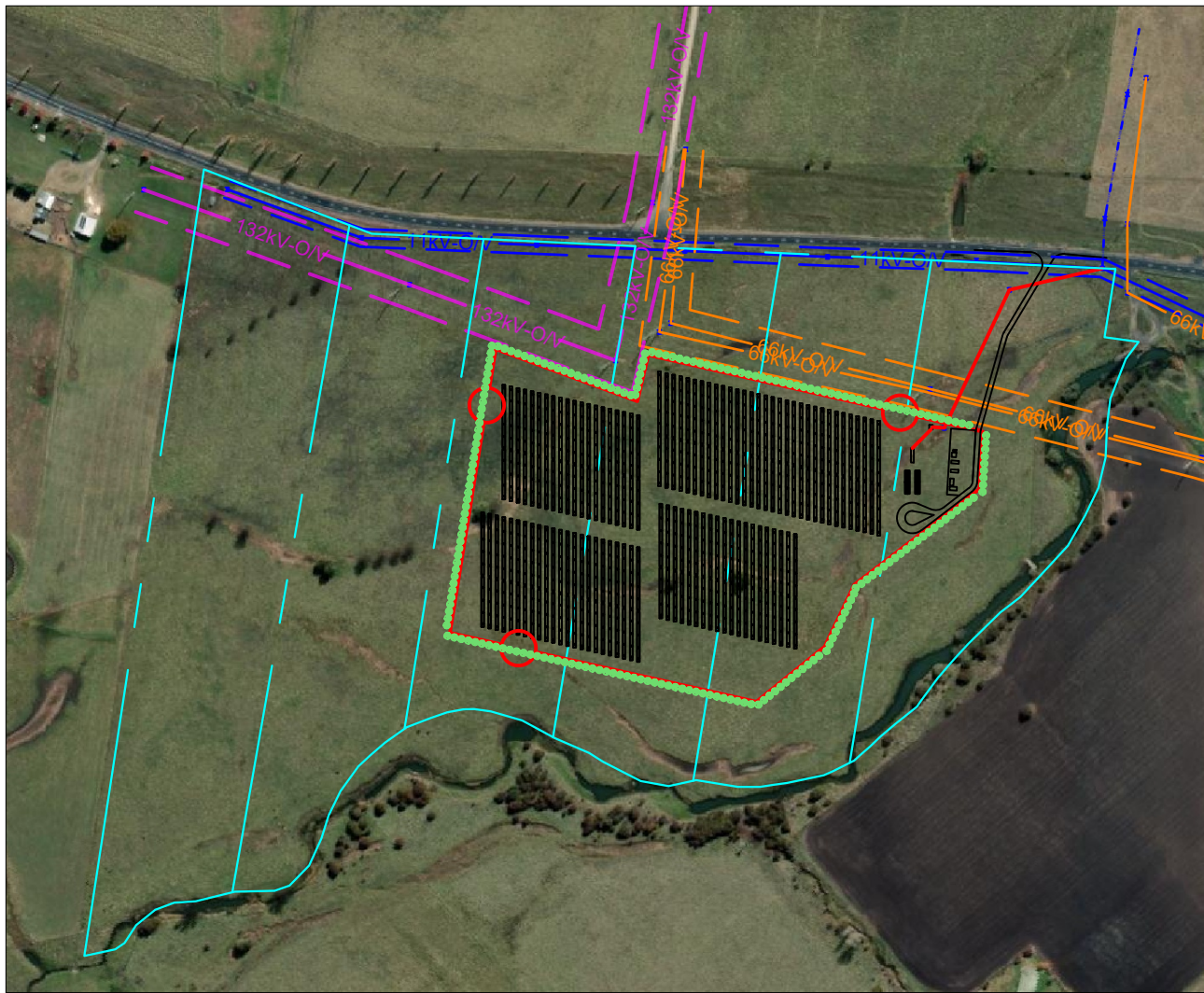
Recommendation 3: ensure a 6 m wide all-weather access track is provided to the subject site.

Recommendation 4: ensure the outside radius of the track at the turnaround area within the site compound is at least 15 m.

Recommendation 5: Gwydir Highway should be upgraded to provide BAR and BAL treatments at the proposed sight access as per the strategic concept design plans in Appendix 2.

Recommendation 6: truck warning signs should be displayed near the subject site access on the highway approaches during the construction phase when heavy vehicles are making deliveries to the subject site.

Appendix 1 – Development Plans



LOCALITY PLAN

NOTES

- 1. ACTUAL DIMENSIONS AND CLEARANCES MAY VARY SUBJECT TO SITE CONDITIONS.
- 2. DIMENSIONS OF ELECTRICAL EQUIPMENT ARE INDICATIVE ONLY. ACTUAL DIMENSIONS TO BE CONFIRMED.
- 3. EXISTING ESSENTIAL ENERGY 11kV POLES ARE ILLUSTRATIVE ONLY. ACTUAL POSITION IS SUBJECT TO THE ACTUAL MEASUREMENT ON SITE.
- 4. TWO NEW POLES WILL BE INSTALLED TO CARRY OVERHEAD POWER LINES AND CONNECT TO ESSENTIAL ENERGY NETWORK.
- 5. SITE STORAGE AND AMENITY FACILITIES TO BE ON SITE ONLY DURING CONSTRUCTION PHASE. NO PERMANENT BUILDINGS TO BE KEPT ON SITE AFTER CONSTRUCTION COMPLETED.
- 6. THE NUMBER OF BATTERY CONTAINERS IS FOR INDICATION ONLY AND VARIES FROM 2 TO 8.

LEGEND

- PROPOSED PV ARRAY
- SECURITY FENCE
- PROPERTY BOUNDARY

SYSTEM SPECIFICATIONS				
DC	5.54	MW	TOTAL MODULES	7695
MODULE CAPACITY	720	W	MODULES PER STRING	27
NUMBER OF INVERTERS	1	-	NUMBER OF STRINGS	285
INVERTER MODEL	SG4950HV-MV	-	MODULE MODEL	CHSM66N(DG)/F-BH-720
NUMBER OF BATTERIES	TBD	-	BATTERY MODEL	ST-2752UX

FOR INFORMATION

SITE SPECIFICATIONS		
FENCE PERIMETER	1284	m
AREA WITHIN FENCE	9.1	Ha
PV AREA		Ha
PAVED AREA	-	m ²

REVISION									
F	03/12/24	D.S.	ACE	D.S.	ACE	NSW-158	UPDATE DC CAPACITY		
E	30/08/24	D.S.	ACE	D.S.	ACE	NSW-158	UPDATE SETBACK AREA		
D	19/06/24	D.S.	ACE	D.S.	ACE	NSW-158	UPDATE SITE BOUNDARY		
J	02/12/25	D.S.	ACE	D.S.	ACE	NSW-158	UPDATE SITE ACCESS		
H	08/09/25	D.S.	ACE	D.S.	ACE	NSW-158	UPDATE DC CAPACITY		
G	30/07/25	D.S.	ACE	D.S.	ACE	NSW-158	UPDATE DC CAPACITY		
No	DATE	DRN	CHK	ENG	Q.A.	PROJECT	DESCRIPTION	NUMBER	TITLE
REFERENCE DRAWINGS									

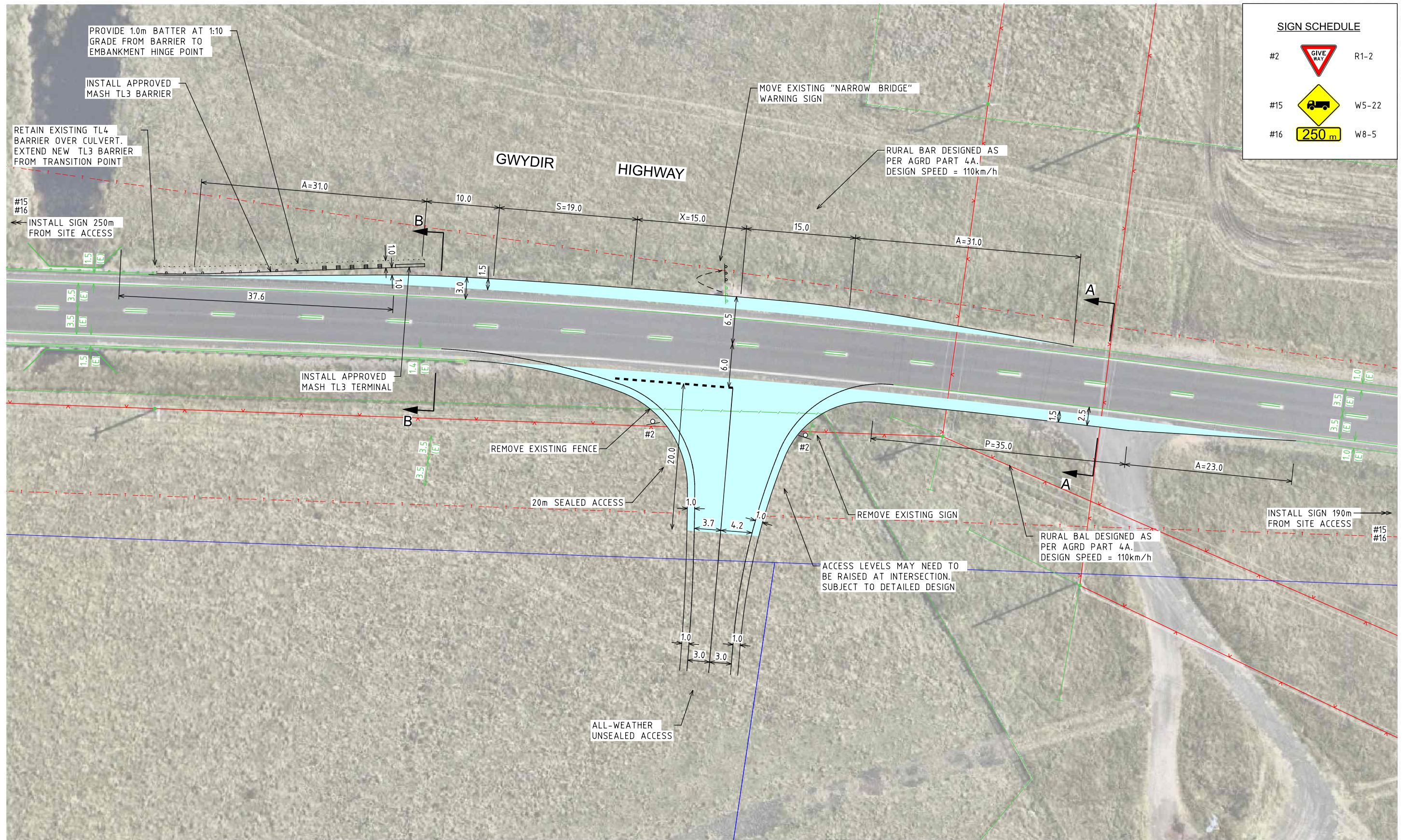


409 GWYDIR HWY, GLENN INNES, NSW, 2370
4.95MVA PV & BESS EXPORT SYSTEM
SITE PLAN

DATE: 02/12/25	DRN: D.S.	CHK: ACE	ENG: D.S.	Q.A: ACE	SCALE: 1:1000
PROJ No: NSW-158	DRG No:				REV J

Appendix 2 – Strategic Concept Design Plans

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Drawing Record

ISSUE	DRAWN	APP'D	DATE	AMENDMENT
P2	IN	KK	10.02.25	PRELIMINARY ISSUE FOR COMMENT

WARNING
BEWARE OF UNDERGROUND SERVICES
THE LOCATIONS OF UNDERGROUND SERVICES ARE APPROXIMATE ONLY AND THEIR EXACT POSITION SHOULD BE PROVEN ON SITE. NO GUARANTEE IS GIVEN THAT ALL EXISTING SERVICES ARE SHOWN.

PRELIMINARY PLAN
FOR DISCUSSION PURPOSES ONLY
SUBJECT TO CHANGE WITHOUT NOTIFICATION
DATE OF ISSUE: 10/02/25

Notes & Legend

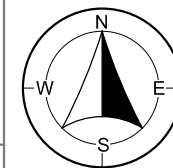
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Design by Trafficworks	New Pavement
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Existing	

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GREEN GOLD ENERGY



SCALE OF METRES
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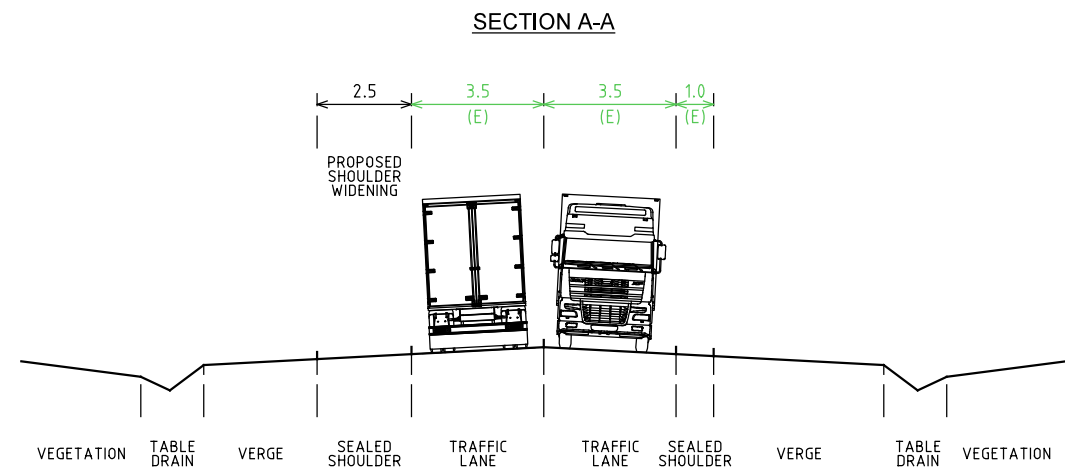
409 Gwydir Highway, Glen Innes

Glen Innes Severn Council

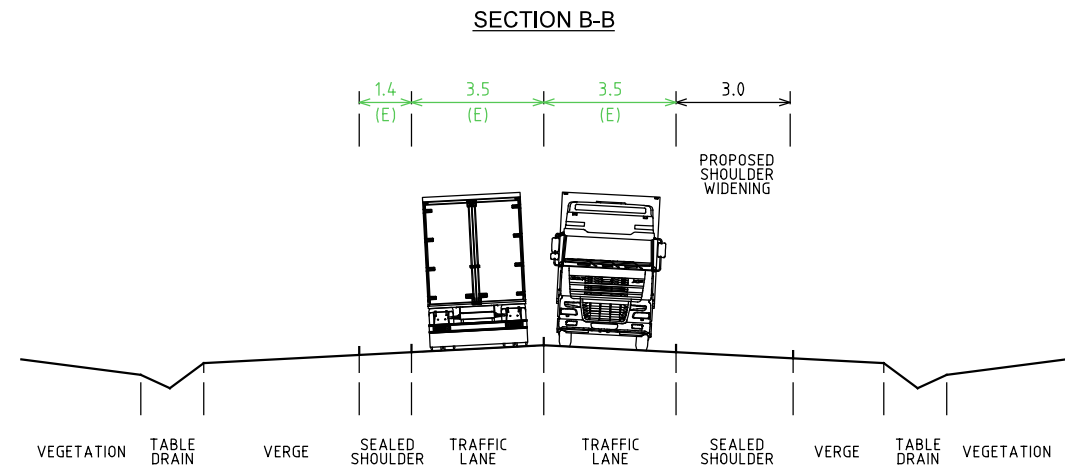
Two-Dimensional Strategic Design

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CROSS SECTIONS ARE INDICATIVE ONLY.
DETAILED DESIGN REQUIRED.



CROSS SECTIONS ARE INDICATIVE ONLY.
DETAILED DESIGN REQUIRED.

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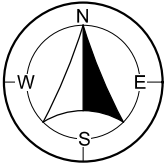
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409 Gwydir Highway, Glen Innes

Glen Innes Severn Council

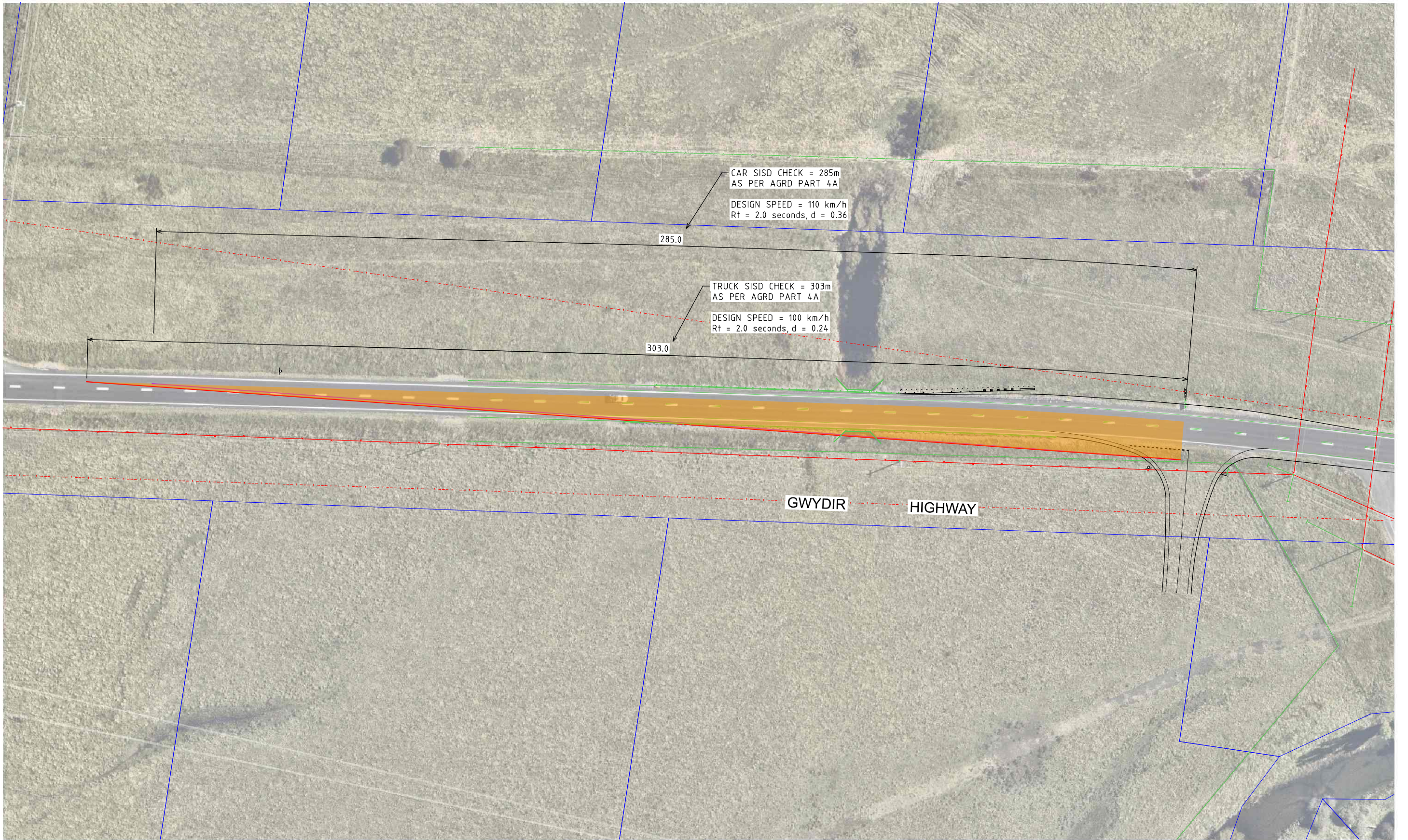
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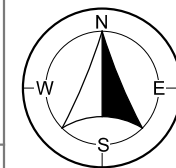
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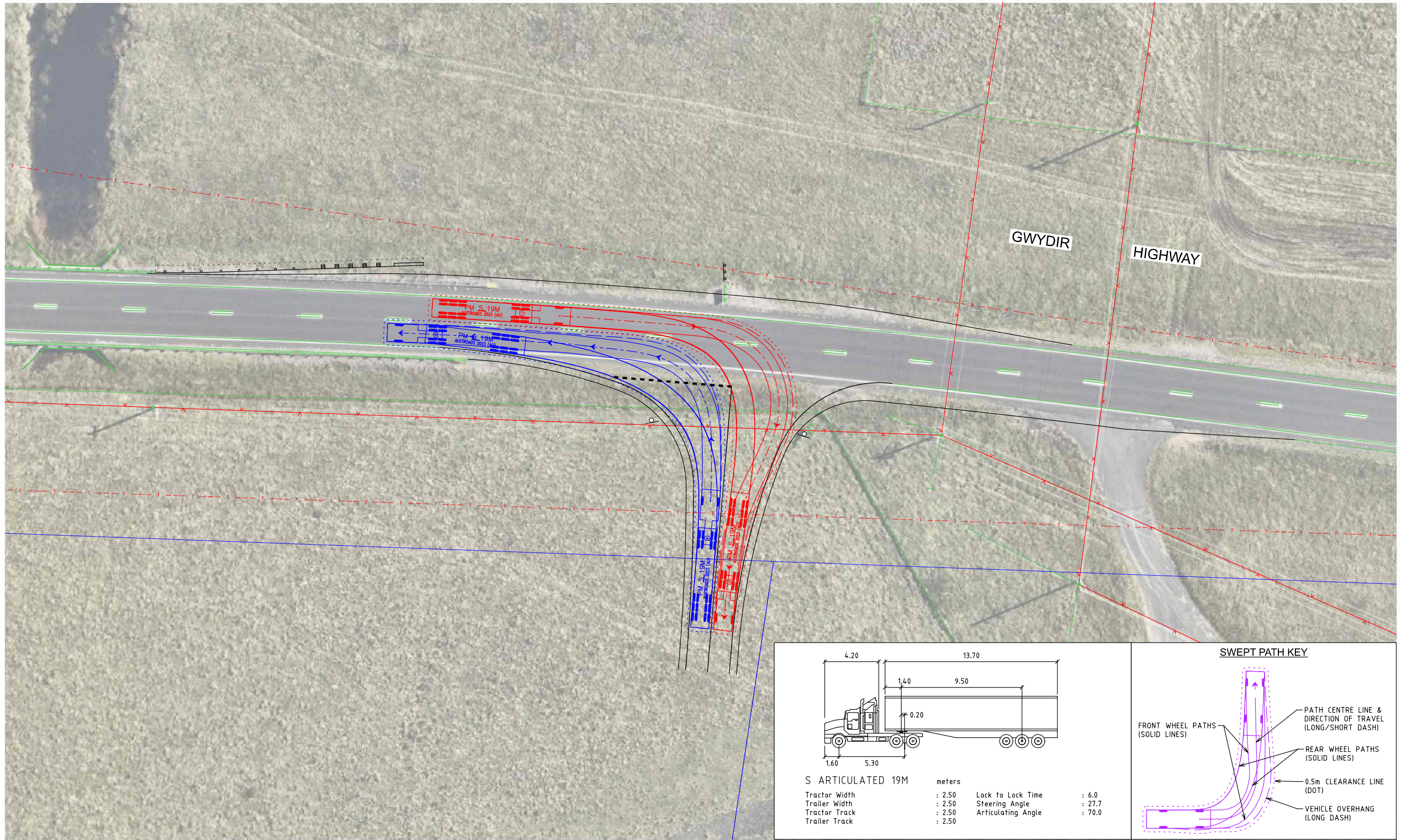
409 Gwydir Highway, Glen Innes

Glen Innes Severn Council

SISD Check

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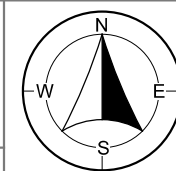
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SCALE OF METRES
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409 Gwydir Highway, Glen Innes

Glen Innes Severn Council

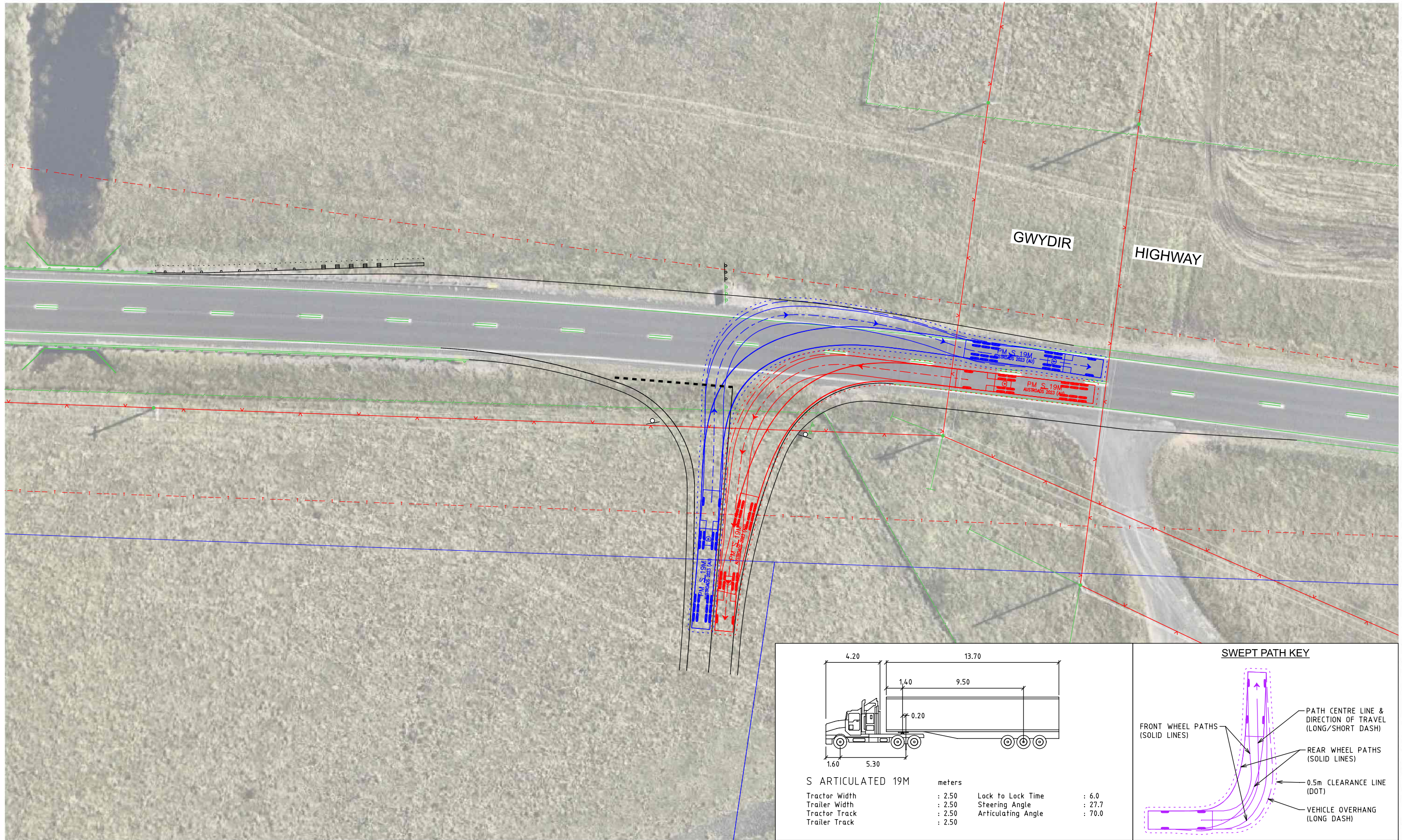
Swept Path Assessment

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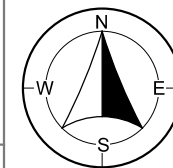
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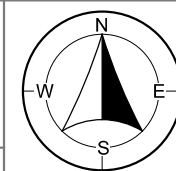
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Appendix 3 – Acronyms and terms

Acronyms / terms	Definition
AGRD4	Austroads Guide to Road Design Part 4 – Intersections and crossings
AGRD4A	Austroads Guide to Road Design Part 4A – Unsignalised and signalised intersections
AGTM6	Austroads Guide to Traffic Management Part 6 – Intersections, interchanges and crossings management
AGTM8	Austroads Guide to Traffic Management Part 8 – Local street management
AS/NZS2890.1	Australian Standard / New Zealand Standard 2890.1 Parking facilities Part 1: Off-street car parking
DPE	Department of Planning and Environment
ESD	Entering site distance
PSP	Precinct structure plan
SIDRA	SIDRA intersection – micro analytical traffic engineering software to model the performance of intersections
SISD	safe intersection sight distance
TIA	traffic impact assessment
TfNSW	Transport for New South Wales (NSW)
vpd	vehicles per day
vph	vehicles per hour