

Traffic Impact Assessment Report

Hume Highway, Holbrook, NSW

Project Number 230506

Final Report 12/03/2024

Client ACEnergy Pty Ltd

Document control record

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Executive summary

ACEnergy Pty Ltd engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed development of a Battery Energy Storage System (BESS) at **Hume Highway, Holbrook, NSW**.

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

Address	Hume Highway, Holbrook, NSW
Zoning	RU1: Primary Production
Proposed development	Battery Energy Storage System (BESS)
Road network	<ul style="list-style-type: none"> — Hume Highway (State Road) — Bendemeer Lane (Local Road)
Traffic generation	<p>Construction phase (per day):</p> <ul style="list-style-type: none"> — 3 light vehicles — 2 heavy vehicles <p>Operation phase (per month):</p> <ul style="list-style-type: none"> — 2 light vehicles
Car parking	<p>Construction phase: 3 spaces</p> <p>Operation phase: 2 spaces</p>
Conclusion	<p>We conclude that, subject to the implementation of our recommendations, no traffic engineering reasons would prevent the development from proceeding.</p> <ul style="list-style-type: none"> — 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: <ul style="list-style-type: none"> — 3 light vehicles — 1 heavy vehicle — the construction phase is expected to take 4 weeks — the subject site will generate a peak car parking demand of 3 spaces during the construction period and 2 spaces post-opening — the development plan includes a designated parking area that will satisfy the parking demand

-
- adequate sight distance can be achieved at the intersection of Bendemeer Lane and the Hume Highway; no further treatment is required
 - the proposed site access driveway along Bendemeer Lane satisfies the minimum entering sight distance of 160 m, as specified in AS/NZS 2890.1
 - the setback of the proposed security gate is about 25 m from the edge of Bendemeer Lane and will accommodate the storage of a 19 m semi-trailer clear of the traffic lane
 - no turn lane treatments are required at the Bendemeer Lane/site access intersection during the development's construction phase.
-

Recommendations

It is recommended that:

- **Recommendation 1:** the subject site access driveway should be constructed per Figure 7.4 in Austroads Guide to Road Design Part 4 requirements and to the council's satisfaction.
-

Referenced documents

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

- Austroads Guide to Road Design
 - Part 4: Intersections and Crossings, for details of the access driveway
 - 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)
- Australian Standards:
 - AS 2890.1-2004 Parking facilities - Off-street car parking
- RTA Guide to Traffic Generating Developments, Version 2.2, October 2002.
- Federation Council
 - Greater Hume Local Environmental Plan (LEP) 2012
 - Greater Hume Development Control Plan (DCP) 2013

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1 Introduction

ACEnergy Pty Ltd engaged Trafficworks to undertake a traffic impact assessment (TIA) for the proposed development of a Battery Energy Storage System (BESS) at **Hume Highway, Holbrook, NSW**.

For the detail about:

- existing site conditions – see section 2
- description of the proposed development – see section 3.1
- traffic impact of the proposed development – see section 3
- car parking assessment of the proposed development – see section 4
- assessment of the access to the proposed development – see section 5
- our conclusions and recommendations – see section 5.3.

2 Existing conditions

2.1 Subject site

The subject site is:

- located adjacent to the Hume Highway and Bendemeer Lane, south of Holbrook and comprises a small area contained within Lot 22 of DP809338, approximately 4.5 km south of Holbrook
- currently occupied by farmland with a residential dwelling and outbuildings.

Vehicular access to the subject site is available from the Hume Highway via Bendemeer Lane (i.e. no direct access to the Highway).

Figure 1 shows the subject site's location, surrounded by farmland and rural properties.



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

The subject site is located within a wider area of the RU1: Primary Production zone on the west side of the state highway (located within SP2: Classified Road zone), as per the Greater Hume Council's (council) Local Environmental Plan (LEP).

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

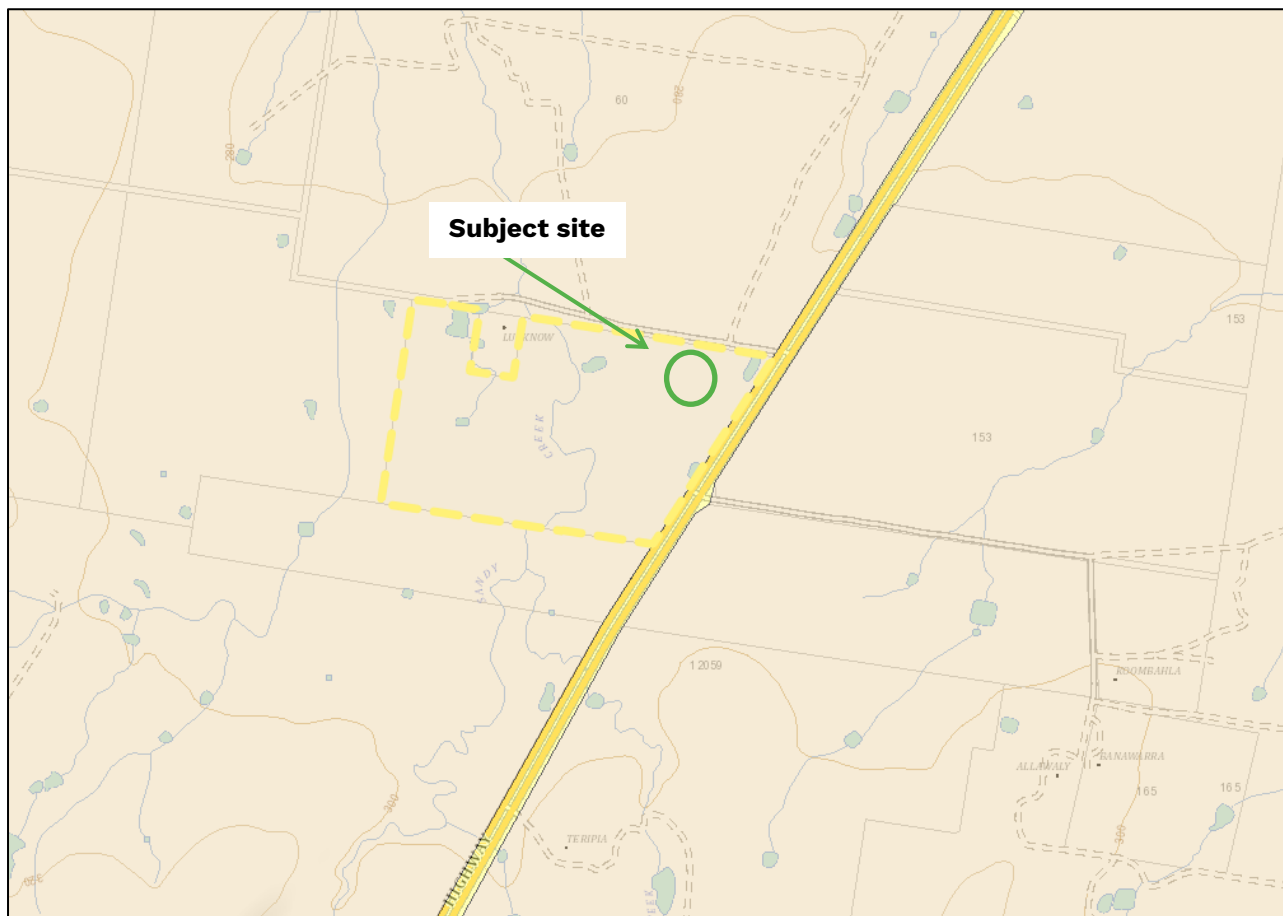


Figure 2: Zoning plan (reproduced from NSW ePlanning Spatial Viewer)

2.2 Road network

The road network includes:

- Hume Highway (M31)
- Bendemeer Lane

2.2.1 Hume Highway (M31)

Table 1 describes the features of this road.

Table 1: Hume Highway features

Feature	Description
Road type	Classified state arterial road managed by Transport for New South Wales (TfNSW). Part of the national Auslink network.
Access	Provides access between the NSW/Victorian border and Sydney to the northeast (continues southwest to Melbourne as Hume Freeway)
Carriageway	Four-lane, two-way dual carriageway sealed road consisting of: <ul style="list-style-type: none"> — 4.0 m northbound and southbound traffic lanes (2 lanes in each direction) — sealed shoulders ranging from 1.0 m to 1.5 m in width
Road reservation	60 m wide
Speed limit	110 km/h

Figure 3 provides further information about the road.



Figure 3: Hume Highway, northbound carriageway, looking south at the intersection with Bendemeer Lane

2.2.2 Bendemeer Lane

Table 2 describes the features of this road.

Table 2: Bendemeer Lane features

Feature	Description
Road type	Local road managed by council
Access	Provides access to a few residential properties and farmland to the Hume Highway. The road is a no-through road
Carriageway	Two-way unsealed road with a 4.0m wide formation
Road reservation	20 m wide
Speed limit	Default rural 100 km/h

Figure 4 and Figure 5 provide further information about the road.



Figure 4: Bendemeer Lane, looking east towards the Hume Highway, near the proposed subject site driveway



Figure 5: Bendemeer Lane, looking west at the subject site driveway

2.3 Traffic volumes

TfNSW Traffic Volume Viewer details traffic volumes for many of the arterial roads in New South Wales. A review of the records indicates that in 2010, 4,026 vehicles per day (vpd) travelled along the section of the Hume Highway located approximately 24 km northeast of Holbrook (Station Id: 95033).

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

- daily traffic volume of 4,026 vpd
- AM commuter peaks (9:00 am to 10:00 am) of 170 vehicles per hour (vph)
- PM commuter peak (3:00 pm – 4:00 pm) of 156 vph
- even directional split

Projecting the traffic volumes to 2024 by adopting a compound growth rate of 1%¹ per annum, Bendemeer Lane is currently estimated to carry:

- a daily traffic volume of 4,628 vpd
- AM peak of 195 vph
- PM peak of 179 vph.

2.4 Crash history

The TfNSW Centre for Road Safety website details all injury crashes throughout New South Wales and reports that a single casualty crash occurred on the roads near the subject site in the last 5 years (2018 – 2022).

- Serious injury off road to left into object (RUM code 71) crash occurred in daylight conditions in 2022 on the Hume Highway northbound carriageway at the intersection with Bendemeer Lane.

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

¹ Investigation of traffic volumes within the region indicates a less than 1 % growth rate within the last 5-10 years. Therefore, the assumption of applying a 1 % growth rate is conservative for projecting the traffic volumes to 2024.

3 Traffic assessment of the proposed development

3.1 The proposal

The proposed development south of Holbrook involves constructing a BESS with batteries and a medium voltage power station (MVPS) housed in 40ft containers. The proposed facility will be unstaffed, and the period that will generate the most traffic will be the construction phase.

Vehicular access to the site is proposed directly from Bendemeer Lane via a new access driveway approximately 200 m west of the Hume Highway (Figure 6). An extract of the proposed development plan is shown in Figure 7, and the full plan is provided in Appendix 1.



Figure 6: The location of the proposed driveway access to the subject site to / from Bendemeer Lane

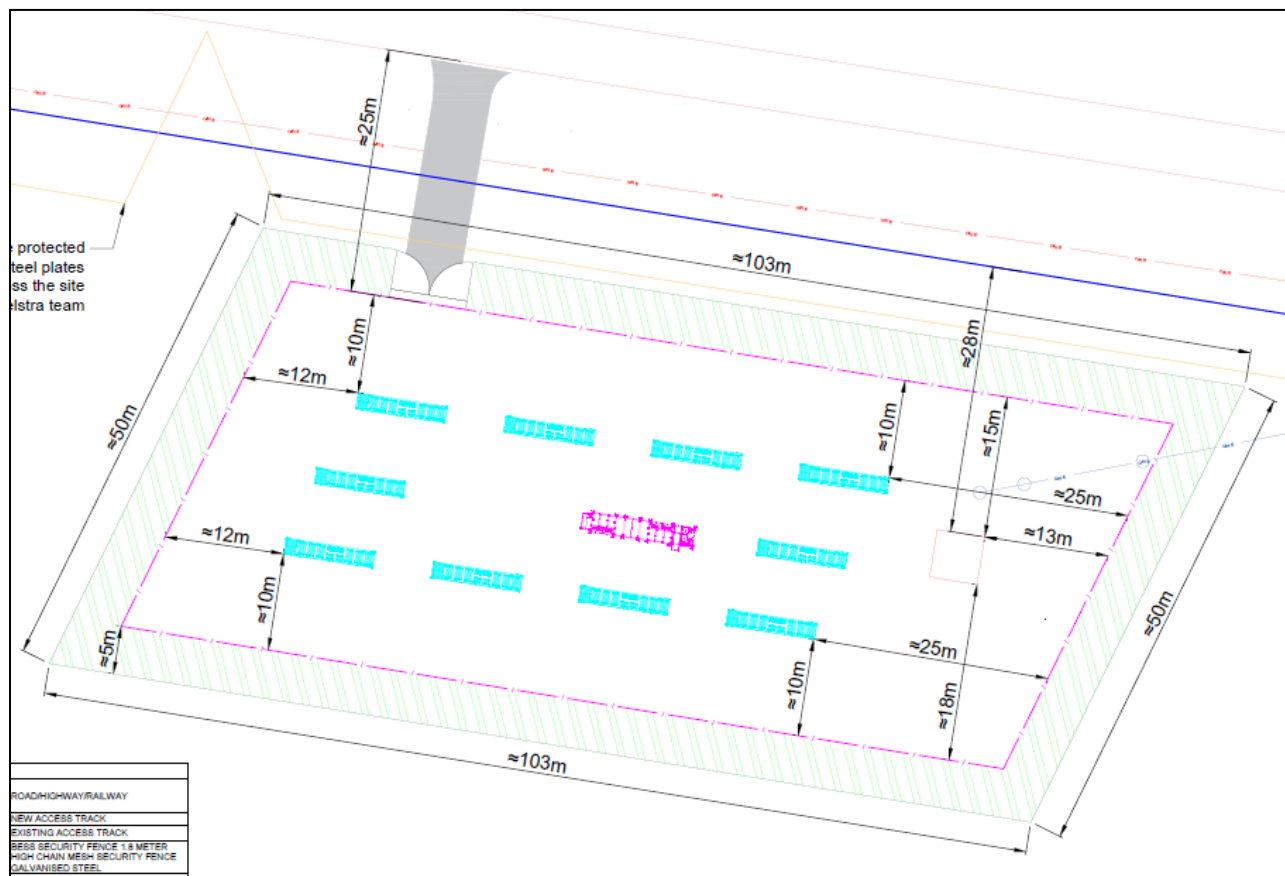


Figure 7: Extract of the development plan

3.1.1 Construction

On-site construction for the proposed BESS is limited mainly to assembly and connecting components with the typical battery energy storage system shipping containers. For the most part, all equipment will be transported to the subject site via rigid trucks, with only the batteries and MVPS required to be delivered by a 19 m semi-trailer (B-doubles will not be used for transportation).

The typical construction delivery schedule for this BESS is shown in Table 3.

Table 3: Construction delivery schedule

Time period	Site Works
Week 1	drainage, road and fencing works installation of concrete footings
Week 2	cable installation delivery of battery shipping containers and MVPS installation of battery shipping containers and inverter station

Time period	Site Works
Week 3	electrical installation and cable termination electrical testing
Week 4	commissioning / demobilisation

There is a 4-week construction phase before the full operation of the BESS.

3.1.2 Heavy vehicle access to the subject site

All heavy vehicle traffic will arrive / depart the subject site via Bendemeer Lane and the Hume Highway. Heavy vehicles will enter the subject site with a left turn from the Hume Highway onto Bendemeer Lane and then turn left into the subject site, about 200 m along Bendemeer Lane.

Heavy vehicles will exit the subject site with a right turn onto Bendemeer Lane and then a left turn onto the Hume Highway to head north towards Holbrook. At the Holbrook interchange (Albury Street), the heavy vehicles would leave the highway via the off-ramp, use the interchange to perform a U-turn and enter the southbound carriageway to Melbourne via the on-ramp.

The route for departing heavy vehicles to use the interchange at Holbrook to the north is preferred to heavy vehicles making a right turn using the at-grade centre median crossing of the Bendemeer Lane / Hume Highway intersection.

Figure 8 and Figure 9 indicate the routes for all heavy vehicles arriving and departing the subject site.

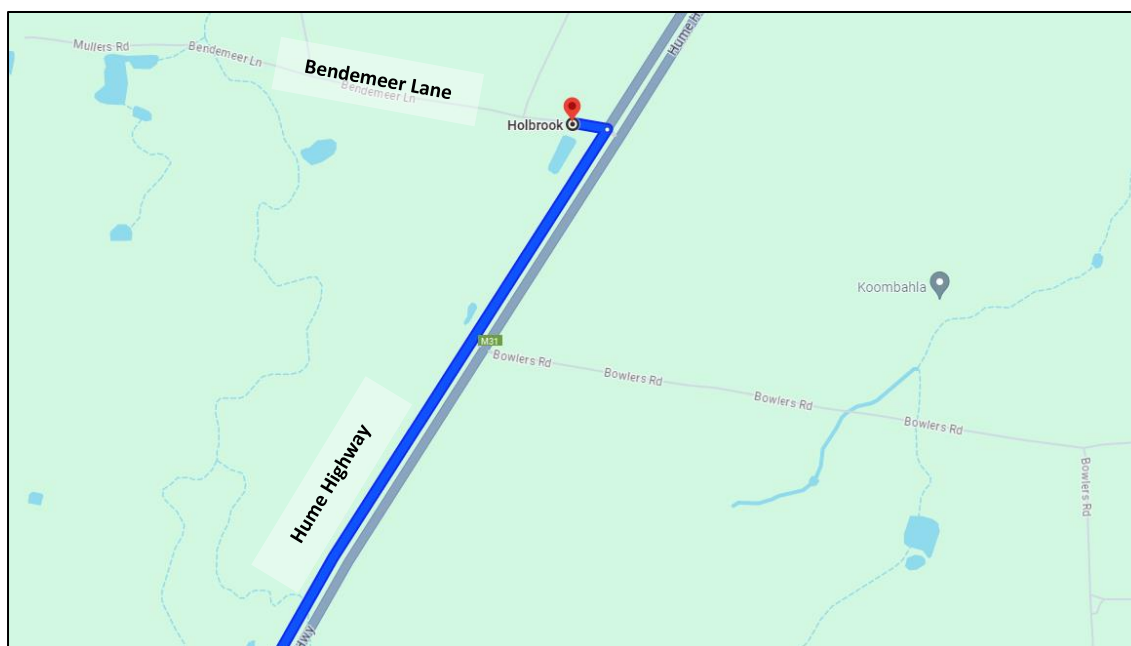


Figure 8: Indicative route for heavy vehicle arrivals (source: Google Maps)

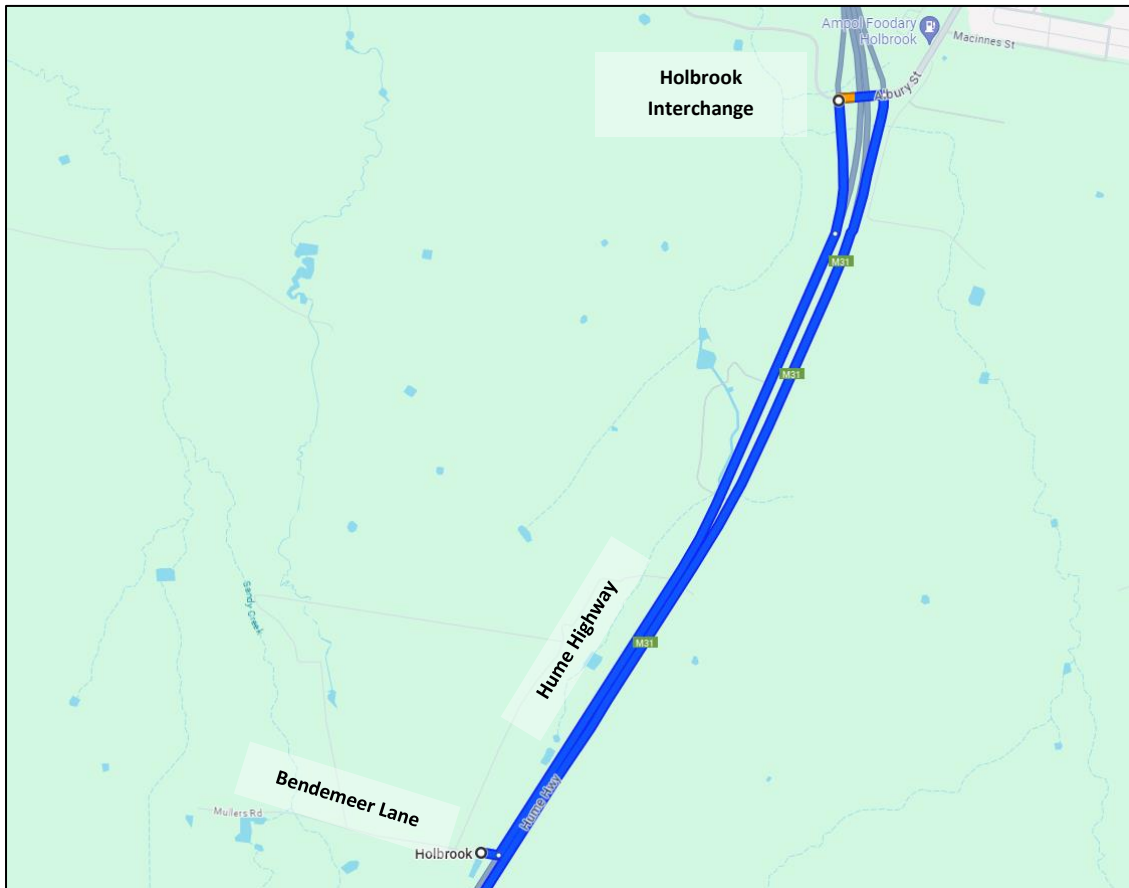


Figure 9: Indicative route for heavy vehicle departures (source: Google Maps)

The light vehicles are expected to arrive from Holbrook (from the north) or the more significant population centre of Albury/Wodonga to the south (about one hour's travel each way).

3.1.3 Operation / decommissioning

The proposed use is based on a forty-year lease. Upon completion of this leasing period, if the lease is not renewed, it will be incumbent upon the facility's operator to decommission the facility, remove all installations, and remediate the subject site back to its pre-existing state.

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

3.2 Traffic generation

Typically, the traffic generation for new developments is estimated using the traffic generation rates provided in the RTA Guide to Traffic Generating Developments – Version 2.2A 2002 (the RTA Guide). However, the RTA Guide does not include traffic generation rates for BESS facilities.

Therefore, the traffic generation to/from the proposed development was estimated empirically. Traffic generation analysis was undertaken for the development's construction and operational phases to establish the likely peak traffic generation.

3.2.1 Construction phase traffic volumes

Based on the information provided, the peak light vehicle traffic generation is likely to occur from the start of the construction phase to the completion of this phase, with a maximum traffic generation likely to occur during weeks 1 to 3. This is when 3 construction staff vehicles per day (vpd) will access the subject site, resulting in a total daily traffic generation of 6 vpd (3 vpd arriving at the start of the shift and 3 vpd departing at the end of the shift).

Assuming the construction work will be undertaken during regular working hours, it is anticipated that 3 vehicles will access the subject site during a given peak hour (at the start of the morning shift).

Assessment of the heavy vehicles accessing the subject site during the construction phase revealed that peak traffic generation is likely to occur from the start, with a maximum number of heavy vehicles accessing the subject site during week two. This period includes delivery of battery shipping containers when up to 12 heavy vehicles will access the subject site weekly and up to 2 vpd. Therefore, this would result in a total daily traffic generation of 4 vpd (2 vpd arriving and 2 vpd departing). It is unlikely that heavy vehicles will arrive within the same hour as deliveries will be managed by the project team (i.e. delivery schedule).

The vehicles are anticipated to be accessing the subject site outside of the commuter peak hours for the surrounding road network.

The impact of heavy vehicles is considered negligible; however, conservatively, for this assessment, it has been assumed that a single heavy vehicle will access the subject site during the AM (arriving) and PM (departing) peak hours.

3.2.2 Operational phase traffic volumes

The proposed BESS will have remote monitoring in real-time, allowing for constant surveillance and monitoring of the facility without the requirement for staffing on-site.

The compound contains critical infrastructure that requires a high degree of security. Upon identification of potential issues, action can be taken indirectly from the control centre or directly using chosen contractors who would travel to the subject site if required. During the operational phase, 2 light vehicles will attend the subject site fortnightly for general maintenance.

3.2.3 Peak traffic generation

Assessment of the likely traffic generation volumes during the construction and operational phases of the development revealed that the peak traffic generation for the subject site

would occur during the construction phase of the development. Therefore, the assessment was undertaken to determine the traffic implications during the construction phase of the development.

Conclusion 1: 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:

- 3 light vehicles
- 1 heavy vehicle

Conclusion 2: the construction phase is expected to take 4 weeks.

3.3 Traffic distribution assumptions

Based on the surrounding road network, it has been assumed that light vehicle traffic will access the site as follows:

- 60% to/from the south (Albury/Wodonga), entering via a left turn from the highway
- 40% to/from the north (Holbrook), entering via a right turn from the highway
- 100% of the light vehicles will turn left from Bendemeer Lane to the subject site.

It has been assumed that 100% of the heavy vehicle traffic will access the subject site to/from the south, entering the subject site via a left turn in (i.e. from Melbourne) along the designated route (refer to Figure 8 and Figure 9). It should be noted that 100% of the heavy vehicles will turn left in/left out to/from the Highway (to/from Bendemeer Lane).

It has been assumed that all vehicles will enter the site in the AM peak and depart during the PM peak.

3.4 Anticipated traffic volumes

Given that the proposed BESS will have peak traffic generation during the construction phase, the anticipated development traffic volumes for 2023 (when the facility is under construction) are summarised in Table 4. It is noted that this table reflects the turning movements at the Hume Highway / Bendemeer Lane intersection.

Table 4 Directional split of peak traffic flow at the intersection of the Hume Highway and Bendemeer Lane

Period	Type	Left In	Right In	Left Out	Right Out	Total
AM Peak	Light	2	1	0	0	3
	Heavy	1	0	0	0	1
	TOTAL	3	1	0	0	4

Period	Type	Left In	Right In	Left Out	Right Out	Total
PM Peak	Light	0	0	1	2	3
	Heavy	0	0	1	0	1
	TOTAL	0	0	2	2	4

4 Car parking assessment of the proposed development

4.1 Planning scheme car parking assessment

The RTA Guide provides car parking rates for new developments. However, the parking requirement for BESS facilities is currently unavailable. Therefore, an empirical assessment was undertaken to estimate the car parking demand for the proposed development.

Section 3.2.1 outlined that:

- up to 3 light vehicles are anticipated to access the subject site per day during the construction phase of the development

Section 3.2.2 outlined that:

- up to 2 light vehicles are anticipated to access the subject site every fortnight post-opening the facility for periodic maintenance.

The proposed site plan indicates a formal on-site car parking area, providing sufficient space to accommodate the required on-site parking.

Conclusion 3: the subject site will generate a peak car parking demand of 3 spaces during construction and 2 spaces post-opening.

Conclusion 4: the development plan includes a designated parking area to satisfy the parking demand.

5 Access to the subject site

5.1 Site access – intersection SISD requirement

The visibility criterion typically applied to intersections is Safe Intersection Sight Distance (SISD). Figure 10 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.

The minimum SISD criterion, specified in Table 3.2 of AGRD4A, requires clear visibility for a desirable minimum distance of 324 m, relating to the general reaction time RT of 2 seconds and a design speed of 120 km/h (posted speed + 10 km/h).

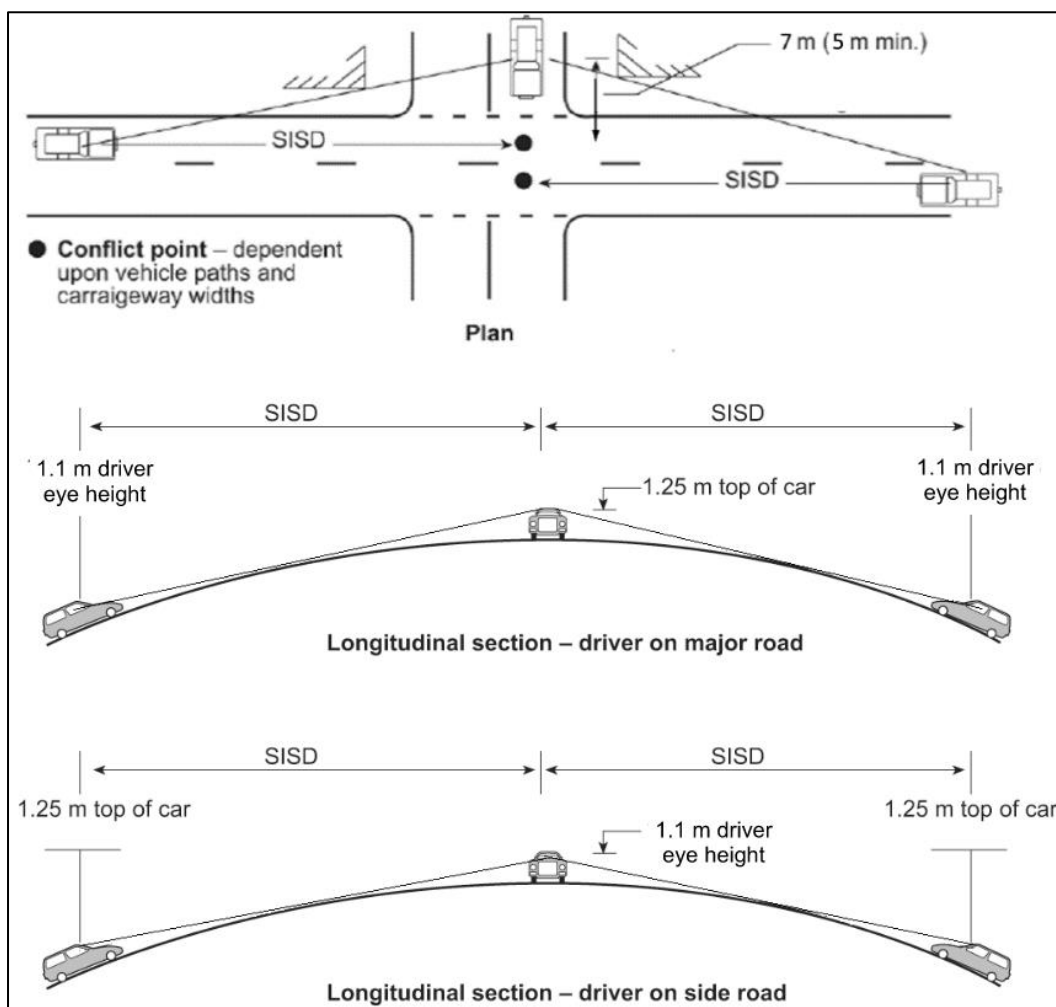


Figure 10: Safe Intersection Sight Distance (SISD) (Source: Figure 3.2 from AGRD4)

SISD for heavy vehicles is calculated with reduced deceleration coefficients and increased observation heights to incorporate the different vehicle characteristics. With a 110 km/h design speed, the SISD for a heavy vehicle at this location is 351 m.

The available sight distance at the intersection of Bendemeer Lane and the Hume Highway is demonstrated in Figure 11.



Figure 11: Bendemeer Lane and the Hume Highway intersection – view southwest

Due to the traffic conditions on the day of the site inspection, photos from the centre median looking northeast were not possible. However, site observations were made while turning from the median to travel southbound on the Hume Highway (and subsequent desktop checks using current aerial photography).

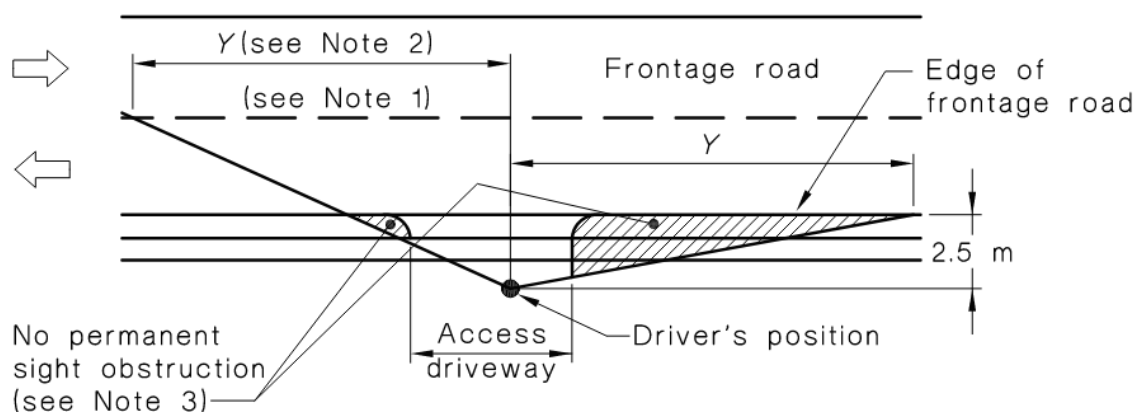
The site assessment concluded that the visibility requirements are satisfied at the intersection of Bendemeer Lane and the Hume Highway; no further treatment is required.

Conclusion 5: Adequate sight distance can be achieved at the intersection of Bendemeer Lane and the Hume Highway; no further treatment is required.

5.2 Site access – Access driveway ESD requirement

Section 3.2.4 in AS/NZS 2980.1 Parking Facilities – Part 1: Off-street car parking sets out the entering sight distance (ESD) criteria for a driver exiting an access driveway to traffic on the frontage road.

Un-signalised access driveways shall be located so the intersection sight distance available to drivers leaving the driveway along the frontage road is at least that shown in Figure 3.2 of AS/NZS 2890.1 (reproduced in Figure 12).



Frontage road speed (Note 4) km/h	Distance (Y) along frontage road m		
	Access driveways other than domestic (Note 5)		Domestic property access (Note 6)
	Desirable 5 s gap	Minimum SSD	
40	55	35	30
50	69	45	40
60	83	65	55
70	97	85	70
80	111	105	95
90	125	130	Use values from 2 nd and 3 rd columns
100	139	160	
110	153	190	

Figure 12: Sight distance requirements at driveways (Source: Figure 3.2 from AS/NZS 2890.1)

The proposed site access to the development along Bendemeer Lane is subject to a 100 km/h speed limit. As a result, the corresponding minimum Stopping Sight Distance (SSD) is 160 m. This can be achieved east and west of the proposed site access driveway. Figure 13 and Figure 14 show there is no vegetation restricting site distance to the east and west of the site access.



Figure 13: At the intersection of the site access driveway and Bendemeer Lane facing east



Figure 14: At the intersection of the site access driveway and Bendemeer Lane facing west

Conclusion 6 The proposed site access driveway along Bendemeer Lane satisfies the minimum entering sight distance of 160 m, as specified in AS/NZS 2890.1.

5.3 Access location and operation

The subject site access driveway is recommended to be constructed per Figure 7.4 in Austroads Guide to Road Design Part 4: Intersections and Crossings requirements and to the council's satisfaction (refer to Figure 15). It should provide sufficient width to facilitate the movements of a 19 m semi-trailer accessing the subject site.

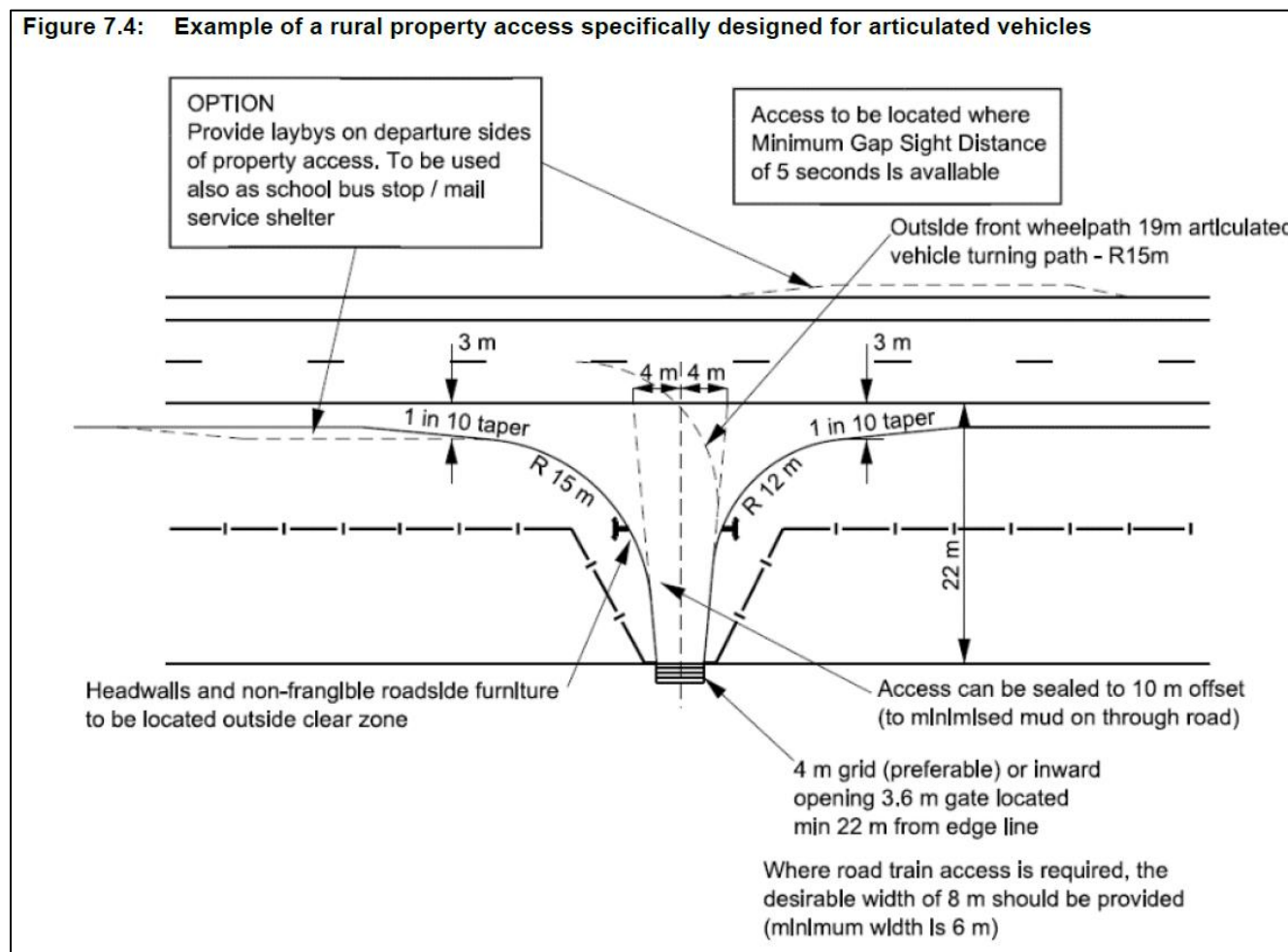


Figure 15: rural property access designed for an articulated vehicle

Recommendation 1: The subject site access driveway should be constructed per Figure 7.4 in Austroads Guide to Road Design Part 4 requirements and to the council's satisfaction.

5.4 Site security

The proposed development will include installing site security and restricting access to authorised vehicles only. This will involve the provision of security fencing and gates at the development's entrance. The proposed security gate is about 25 m from the edge of the formation on Bendemeer Lane.

It is indicated that only 1 truck is expected to arrive and queue at any time, with the largest vehicle accessing the subject site a 19 m semi-trailer. Hence, the access gate is setback a

sufficient distance from the edge of Bendemeer Lane to allow a 19 m semi-trailer to wait clear of the carriageway.

Conclusion 7: the setback of the proposed security gate is about 25 m from the edge of Bendemeer Lane and will accommodate the storage of a 19 m semi-trailer clear of the traffic lane.

5.5 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 16 shows the formulas required to determine the major road volume (Q_M), reproduced from Figure 3.26 of Austroads Guide to Traffic Management Part 6 (AGTM6). The results were then applied to Figure 3.25 of AGTM6 to determine the turning treatment warrants for the intersections.

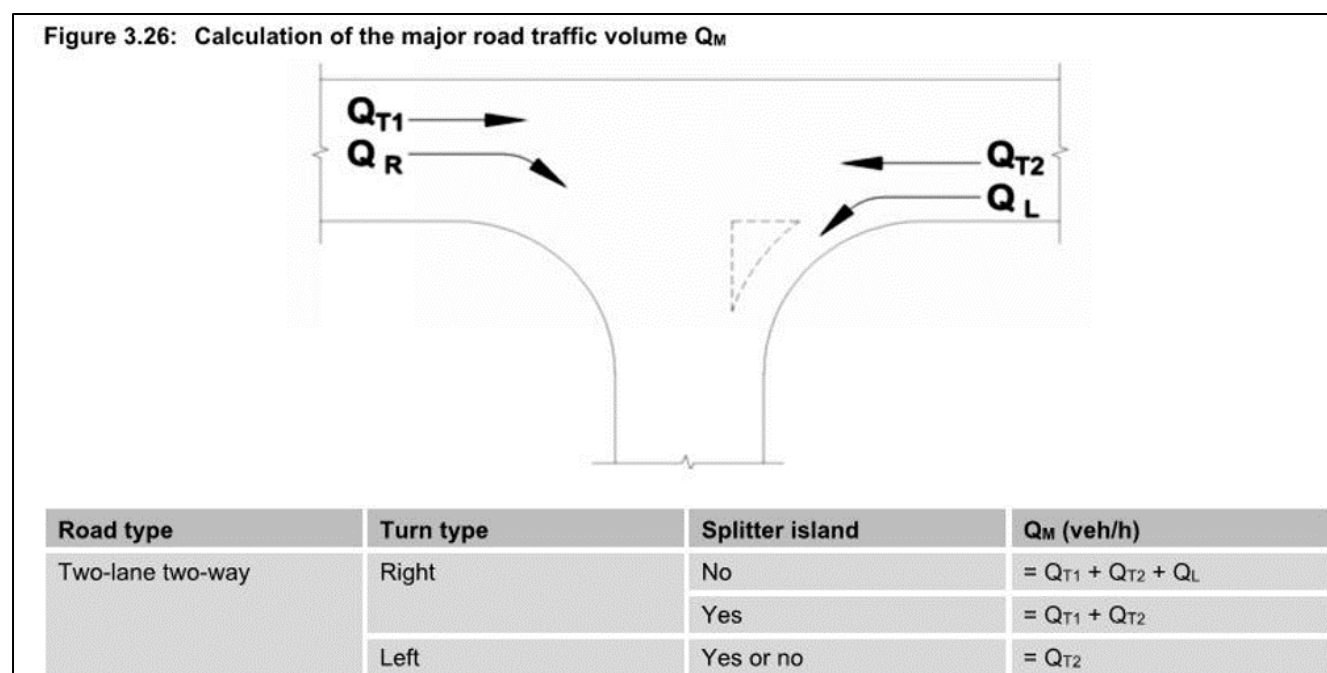


Figure 16: Formulas used to determine major road traffic (Source: Figure 3.26 from AGTM6)

5.5.1 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 from Section 2.3 were used to determine the warrants shown in Table 5 and were applied in Figure 17.

Table 5: Turn lane treatments on the Hume Highway at the Bendemeer Lane intersection – anticipated conditions

Road	Peak Period	Left Turn Q_L (vph)	Right Turn Q_R (vph)	Through Q_T (vph)	Q_M Left Turn	Q_M Right Turn
Hume Highway	AM	3	1	Q_{T1} 98	98	199
				Q_{T2} 98		
	PM	0	0	Q_{T1} 90	0	0
				Q_{T2} 90		

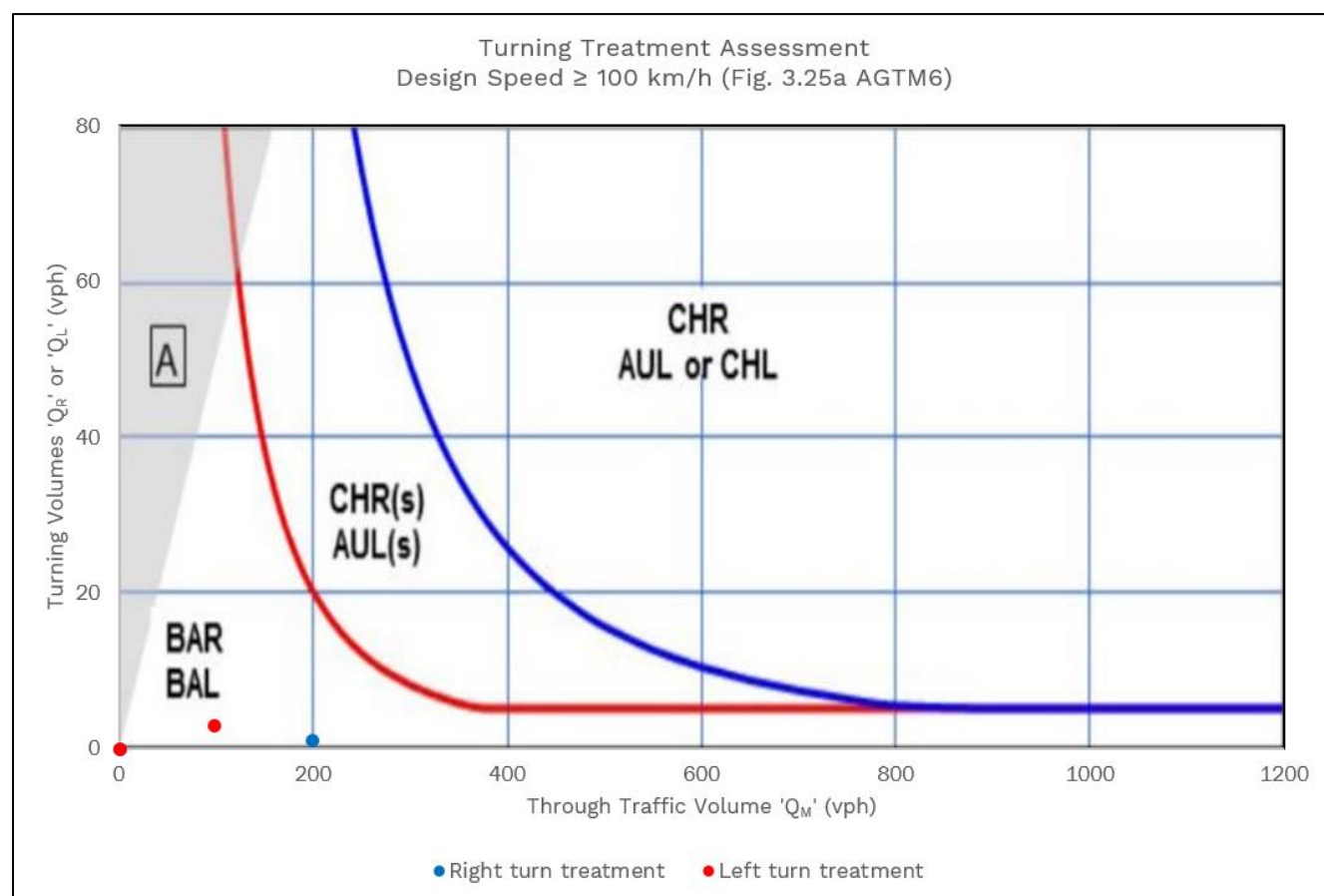


Figure 17: Graph used to determine the turn treatments on the Hume Highway at the Bendemeer Lane intersection – anticipated conditions

The assessment revealed that the Bendemeer Lane/site access intersection warrants a Basic Left (type BAL) and a Basic Right (type BAR) turn treatment.

Due to the low turning volumes during construction and operation, and the short term duration of construction, the safety and operation of the Hume Highway at the Bendemeer intersection can be maintained with no additional turn lane treatments.

Conclusion 8: No turn lane treatments are required at the Hume Highway / Bendemeer Lane intersection for the construction phase of the development.

6 Conclusions and recommendations

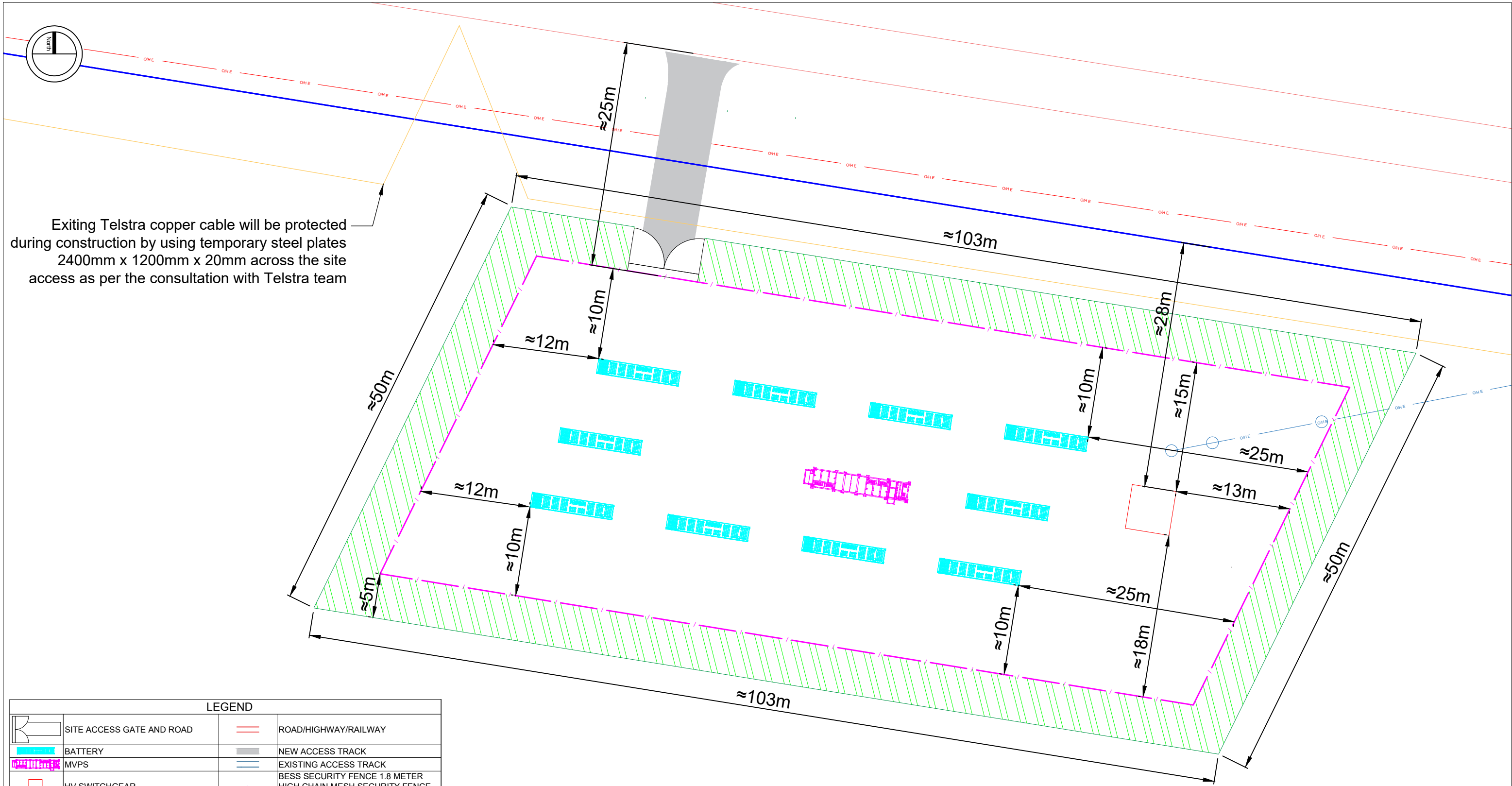
We conclude there are no traffic engineering reasons that would prevent the development from proceeding, as outlined below:

- the peak hour traffic generation is likely to occur during the construction phase of the development, where the peak hour traffic volumes are expected to be:
 - 3 light vehicles
 - 1 heavy vehicle.
- the construction phase is expected to take 4 weeks
- the subject site will generate a peak car parking demand of 3 spaces during the construction period and 2 spaces post-opening.
- the development plan includes a designated parking area that will satisfy the parking demand
- adequate sight distance can be achieved at the intersection of Bendemeer Lane and the Hume Highway; no further treatment is required
- the proposed site access driveway along Bendemeer Lane satisfies the minimum entering sight distance of 160 m, as specified in AS/NZS 2890.1
- the setback of the proposed security gate is about 25 m from the edge of Bendemeer Lane and will accommodate the storage of a 19 m semi-trailer clear of the traffic lane
- no turn lane treatments are required at the Bendemeer Lane/site access intersection for the construction phase of the development.

However, this TIA has identified a recommendation that needs to be addressed:

- **Recommendation 1:** the subject site access driveway should be constructed per Figure 7.4 in Austroads Guide to Road Design Part 4 requirements and to the council's satisfaction.

Appendix 1 – Development Plans



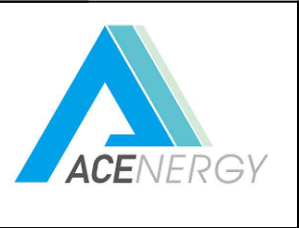
LEGEND					
	SITE ACCESS GATE AND ROAD		ROAD/HIGHWAY/RAILWAY		
	BATTERY		NEW ACCESS TRACK		
	MVPS		EXISTING ACCESS TRACK		
	HV SWITCHGEAR		BESS SECURITY FENCE 1.8 METER HIGH CHAIN MESH SECURITY FENCE GALVANISED STEEL		
	EXISTING O/H LINE		TITLE BOUNDARY		
	EXISTING LINE EASEMENT		NEIGHBORING BOUNDARIES		
	EXISTING HV POLE/TOWER		ONE ROW LANDSCAPE		
	NEW O/H LINE		TWO ROWS LANDSCAPE		
	NEW LINE EASEMENT		RESIDENTIAL PROPERTY		
	NEW HV POLE/TOWER		CAR PARK AREA		
	EXISTING ACCESS ROUTE TO BE UPGRADED (TBC)		TREES TO BE REMOVED (ALL TREES IN THE MARKED AREA)		
	EXISTING TREES		EXISTING DAM		
	TREE TO BE REMOVED (MARKED)		EXISTING TELSTRA COPPER CABLE		
	FARM FENCE		72,000 LITERS WATER TANK		

REVISIONS					
REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	CONCEPT SITE PLAN	13/12/23	XZ	AJ

PROJECT DETAILS:	HOLBROOK DISTRIBUTION BESS HUME HIGHWAY, HOLBROOK NSW 2644 -35.75903, 147.28859
CLIENT DETAILS:	ACENERGY PTY LTD
DRAWING TITLE:	SITE PLAN 2 OF 2

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SHEET SIZE: A3	PROJECT NO: 23132	REV. NO: A





R03

MULLERS RD

R02

R01

EXISTING TREES LOCATED ON THE
OPPOSITE ROAD WAY TO PROJECT SITE

PROPOSED PoCC LOCATION
POLE NUMBER 303031

BENDEMEER LN

HUME HWY

HUME HWY

LEGEND

	SITE ACCESS GATE AND ROAD		ROAD/HIGHWAY/RAILWAY
	BATTERY		NEW ACCESS TRACK
	MVPS		EXISTING ACCESS TRACK
	HV SWITCHGEAR		BESS SECURITY FENCE 1.8 METER HIGH CHAIN MESH SECURITY FENCE GALVANISED STEEL
	EXISTING O/H LINE		TITLE BOUNDARY
	EXISTING LINE EASEMENT		NEIGHBORING BOUNDARIES
	EXISTING HV POLE/TOWER		ONE ROW LANDSCAPE
	NEW O/H LINE		TWO ROWS LANDSCAPE
	NEW LINE EASEMENT		RESIDENTIAL PROPERTY
	NEW HV POLE/TOWER		CAR PARK AREA
	EXISTING ACCESS ROUTE TO BE UPGRADED (TBC)		TREES TO BE REMOVED (ALL TREES IN THE MARKED AREA)
	EXISTING TREES		EXISTING DAM
	TREE TO BE REMOVED (MARKED)		EXISTING TELSTRA COPPER CABLE
	FARM FENCE		72,000 LITERS WATER TANK

REVISIONS

REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	CONCEPT SITE PLAN	13/12/23	XZ	AJ

PROJECT DETAILS: **HOLBROOK DISTRIBUTION BESS**
HUME HIGHWAY, HOLBROOK NSW 2644
+35.75903, 147.28859

CLIENT DETAILS: **ACENERGY PTY LTD**

DRAWING TITLE: **LOCALITY DIAGRAM 1 OF 2**

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R03

MULLERS RD

R02

R01

PROPOSED PoCC LOCATION
POLE NUMBER 303031

≈583m

≈568m

BENDEMEER LN

≈8m

≈8m

≈104m

≈40m

≈98m

≈639m

HUME HWY

HUME HWY

DISTANCE FROM RESIDENTIAL AREA
TO BESS AREA

R01 (NEAREST DWELLING)	APPROX. 297m
R02	APPROX. 599m
R03	APPROX. 956m

LEGEND

	SITE ACCESS GATE AND ROAD		ROAD/HIGHWAY/RAILWAY
	BATTERY		NEW ACCESS TRACK
	MVPS		EXISTING ACCESS TRACK
	HV SWITCHGEAR		BESS SECURITY FENCE 1.8 METER HIGH CHAIN MESH SECURITY FENCE GALVANISED STEEL
	EXISTING O/H LINE		TITLE BOUNDARY
	EXISTING LINE EASEMENT		NEIGHBORING BOUNDARIES
	EXISTING HV POLE/TOWER		ONE ROW LANDSCAPE
	NEW O/H LINE		TWO ROWS LANDSCAPE
	NEW LINE EASEMENT		RESIDENTIAL PROPERTY
	NEW HV POLE/TOWER		CAR PARK AREA
	EXISTING ACCESS ROUTE TO BE UPGRADED (TBC)		TREES TO BE REMOVED (ALL TREES IN THE MARKED AREA)
	EXISTING TREES		EXISTING DAM
	TREE TO BE REMOVED (MARKED)		EXISTING TELSTRA COPPER CABLE
	FARM FENCE		72,000 LITERS WATER TANK

REVISIONS

REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	CONCEPT SITE PLAN	13/12/23	XZ	AJ

PROJECT DETAILS: HOLBROOK DISTRIBUTION BESS
HUME HIGHWAY, HOLBROOK NSW 2644
-35.75903, 147.28859

CLIENT DETAILS: ACENERGY PTY LTD

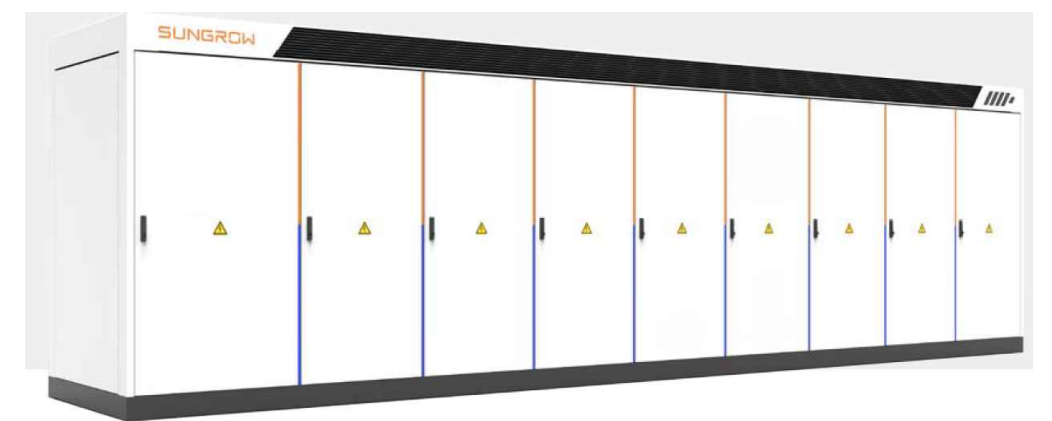
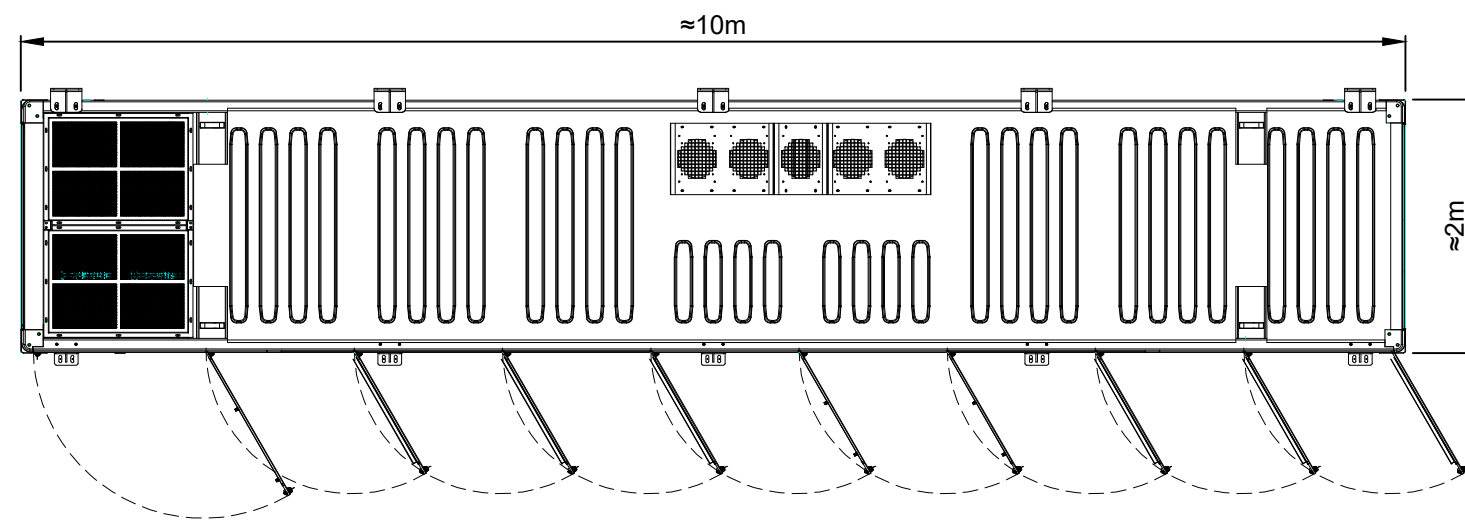
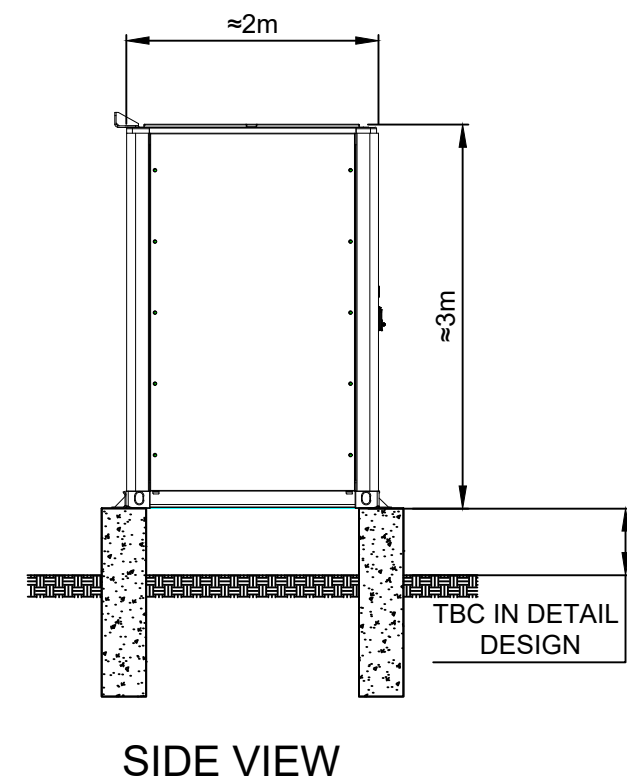
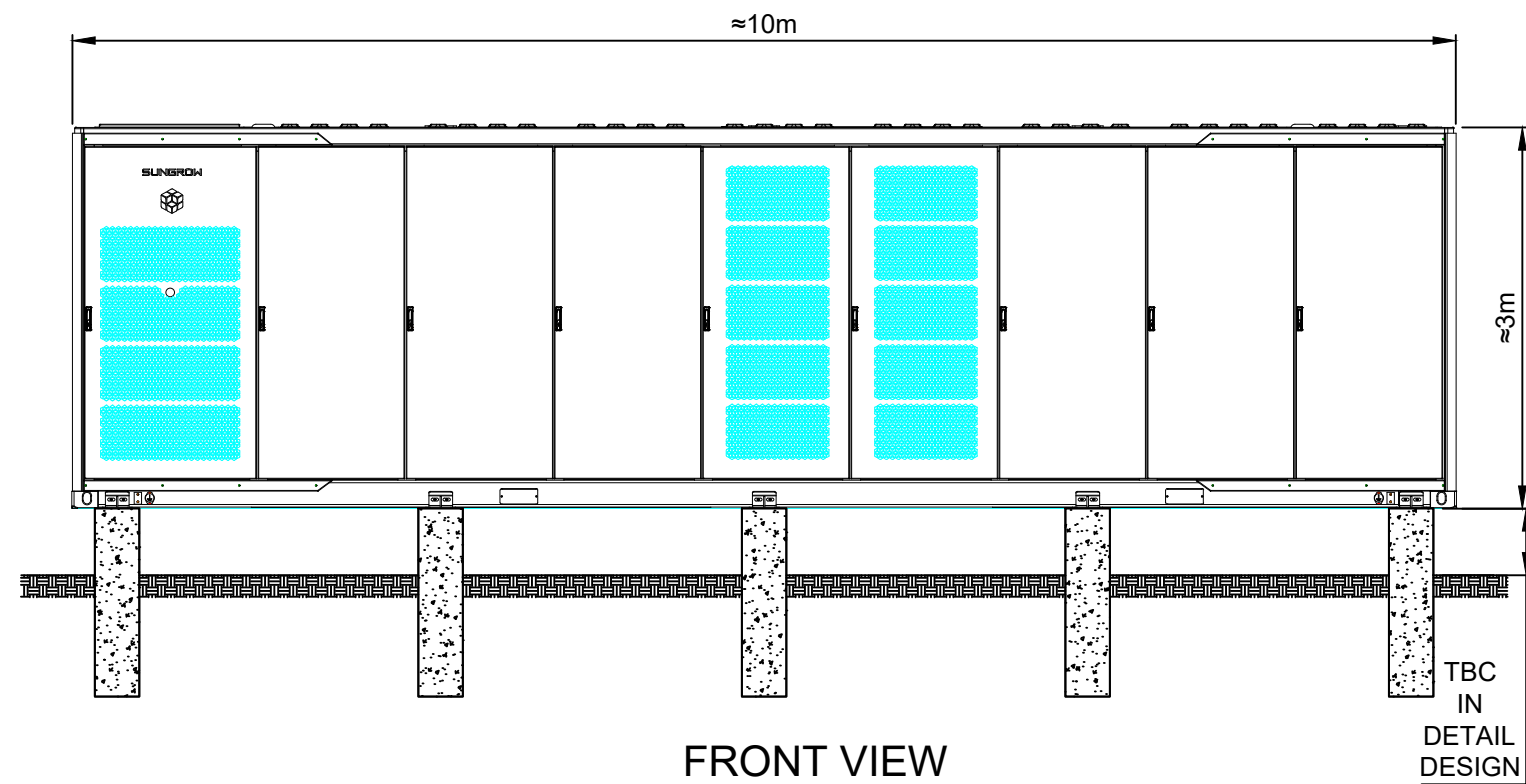
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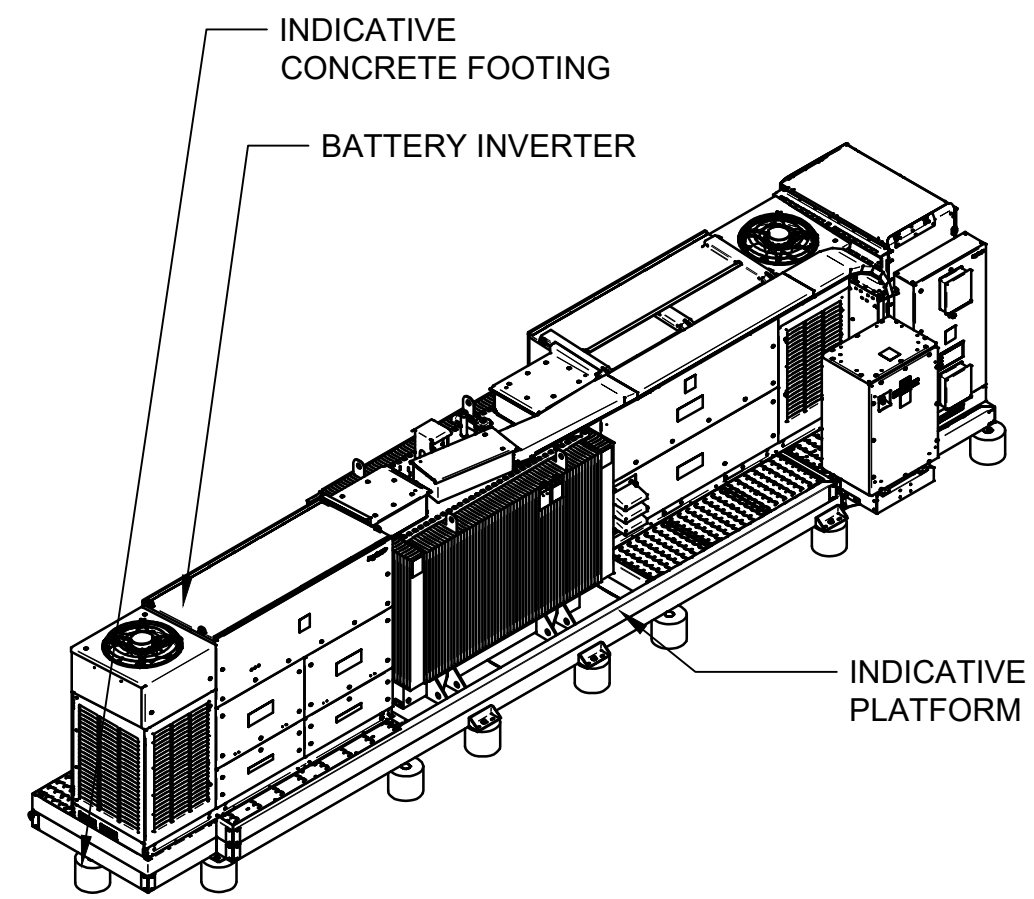
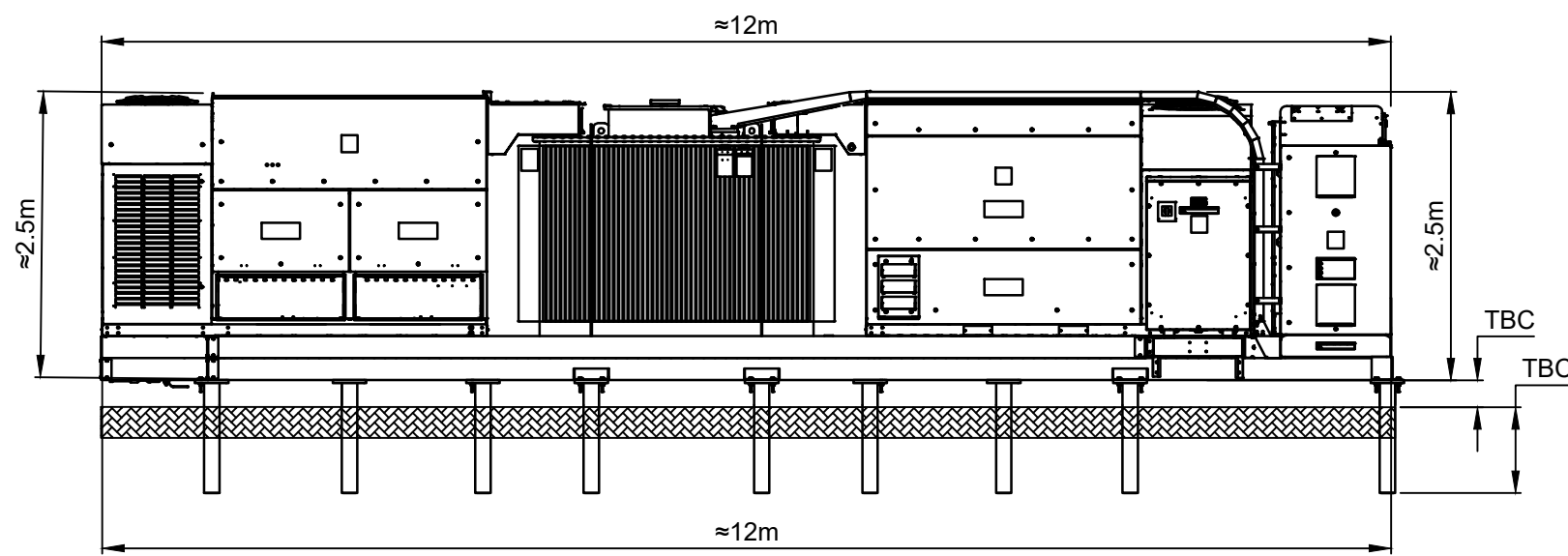
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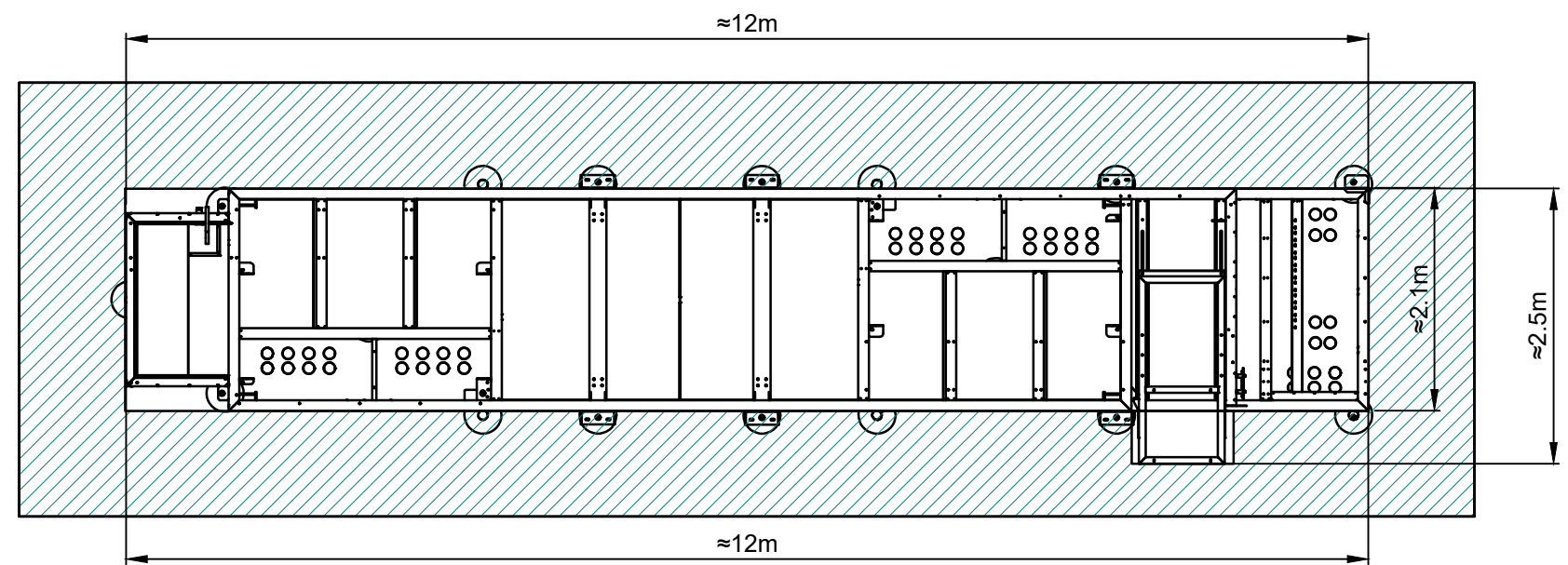


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						DRAWING TITLE: ENERGY STORAGE CONTAINER ELEVATIONS							
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									A3	23132	A		

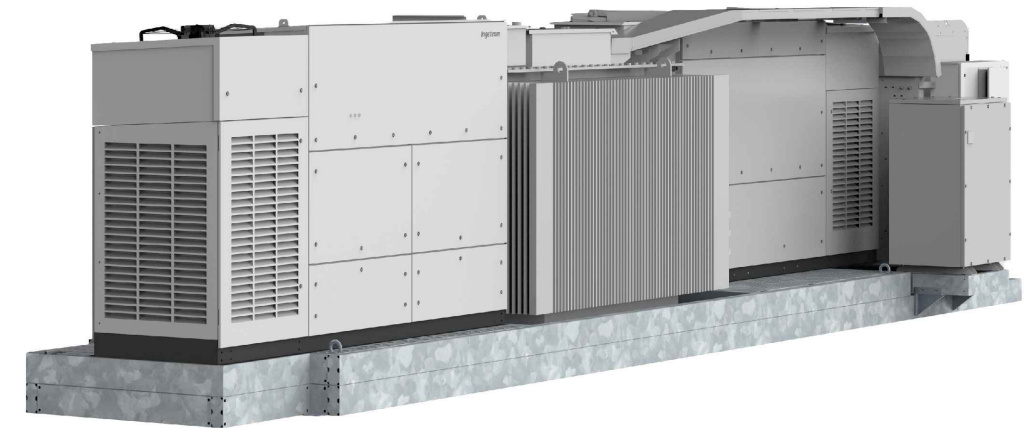
MVPS FRONT VIEW




MVPS TOP VIEW

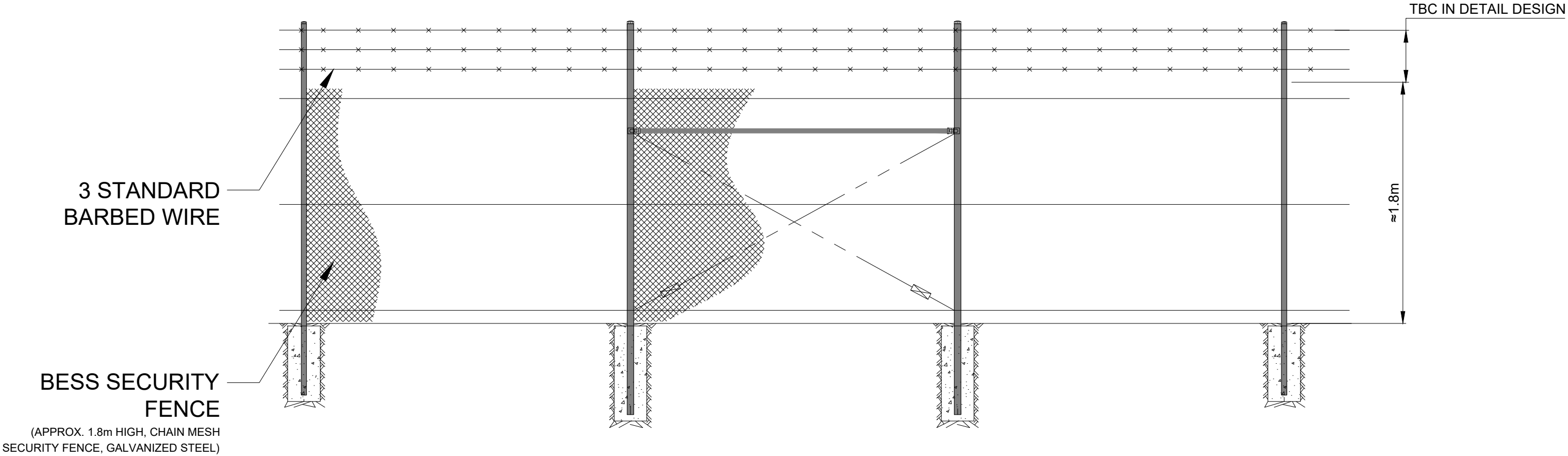


TYPICAL MVPS

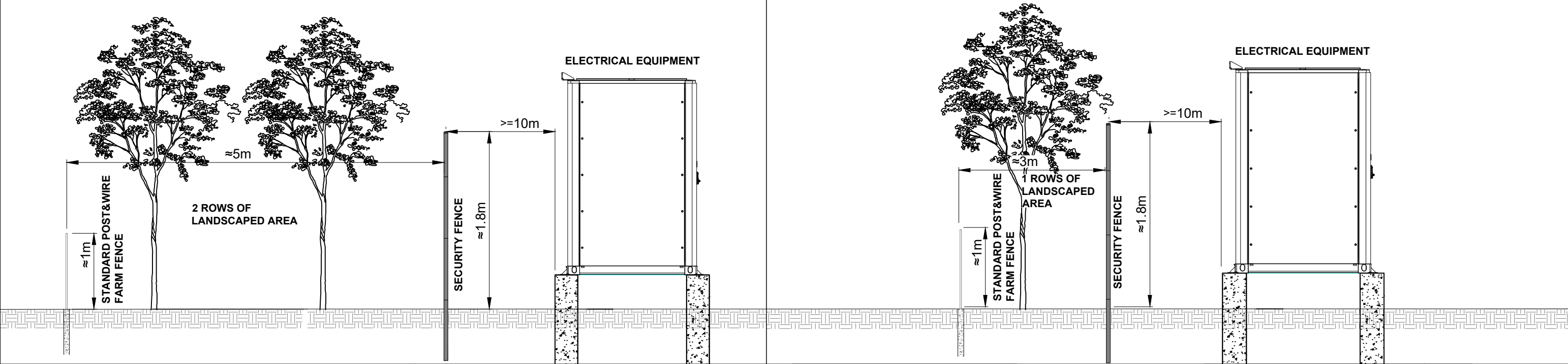


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A	FA	INITIAL ISSUE	13/12/23	XZ	AJ	CLIENT DETAILS:				
						ACENERGY PTY LTD				
						DRAWING TITLE:				
						MVPS ELEVATIONS				

SECURITY FENCE FRONT VIEW

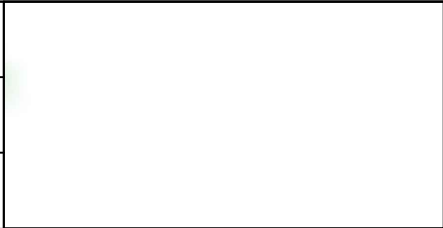


SECURITY FENCE AND LANDSCAPE SIDE VIEW



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CLIENT DETAILS:	ACENERGY PTY LTD
DRAWING TITLE:	SECURITY FENCE & LANDSCAPE ELEVATIONS



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Appendix 2 – 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