



Traffic & Transportation Direction



Gugaa BESS

Preliminary Traffic Assessment

November 2025

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Preliminary Traffic Assessment

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1. Introduction

Amber Organisation Pty Ltd has been engaged by FP Solutions to conduct a review of the traffic matters associated with the Gugaa Battery Energy Storage System (BESS) located at 477 Gregadoo East Road in Gregadoo.

The Project proposes to construct a 1GW BESS and would be accessed via Livingstone Gully Road. The delivery port for the transformer and other large battery components is yet to be determined but is anticipated to be either Port of Botany or Port of Melbourne.

The following provides a review of the traffic engineering matters relevant to the Project. The assessment includes a review of the potential access routes for construction traffic and oversize/overmass vehicles, as well as a review of the access arrangements for the Project to determine any potential road upgrades required as a result of the increase in traffic generated by construction personnel and heavy vehicles accessing the Project Area.

The assessment has used available aerial and road network imagery and has been undertaken with consideration of the approved Restricted Access Vehicle network maps provided by the National Heavy Vehicle Regulator and Transport for New South Wales (TfNSW).

2. Existing Conditions

2.1 Project Location

The Project is located at 477 Gregadoo East Road in Gregadoo, approximately 17km southeast of Wagga Wagga, NSW. It has an area of approximately 40.3 hectares and is located within the Wagga Wagga City Council local government area. Figure 1 shows the location of the Project in relation to the surrounding transport network.

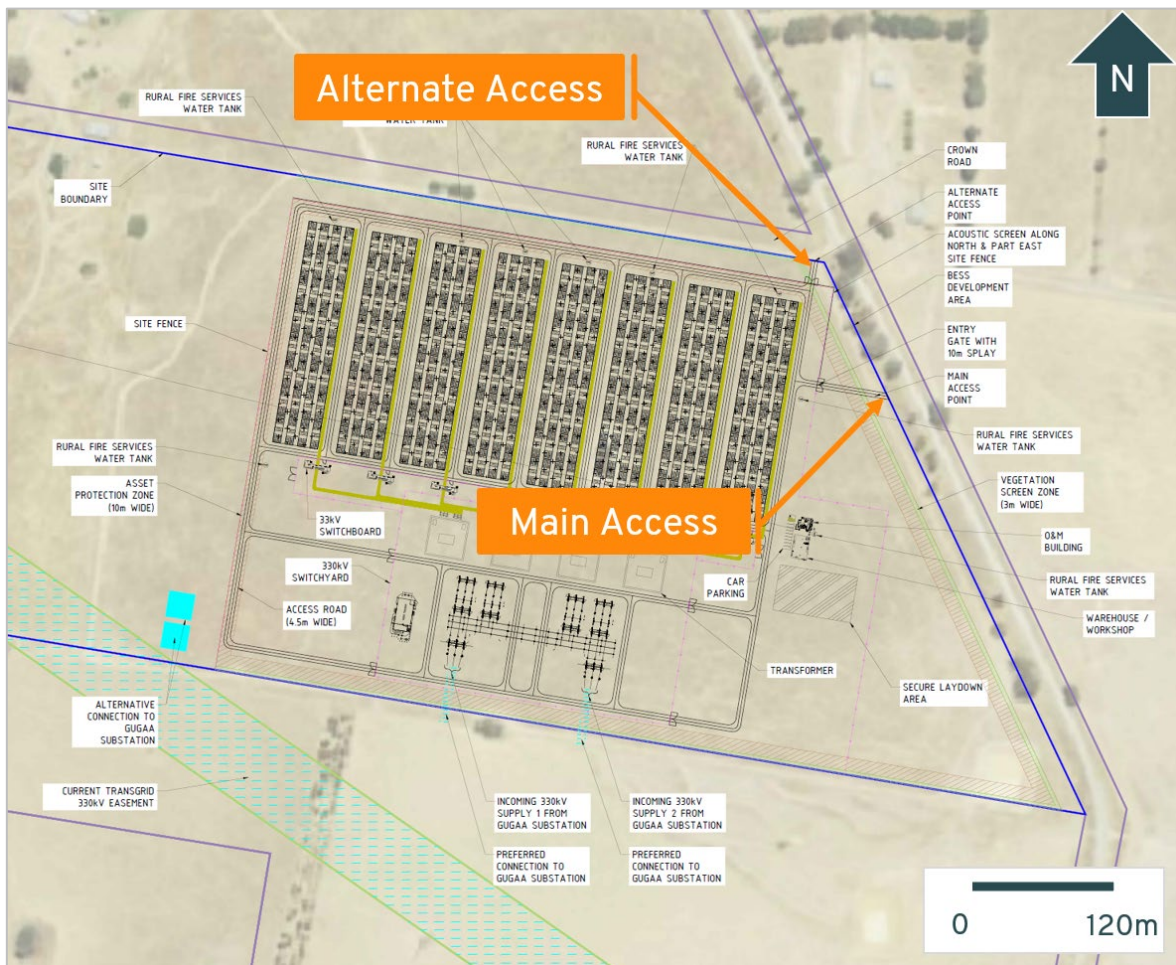
Figure 1: Project Location



Source: OpenStreetMap

Access to the site will be via Livingstone Gully Road at either the main access point or the potential alternate access point, which will be confirmed during the EIS process. The site plan showing the two access points is provided in Figure 2.

Figure 2: Site Layout



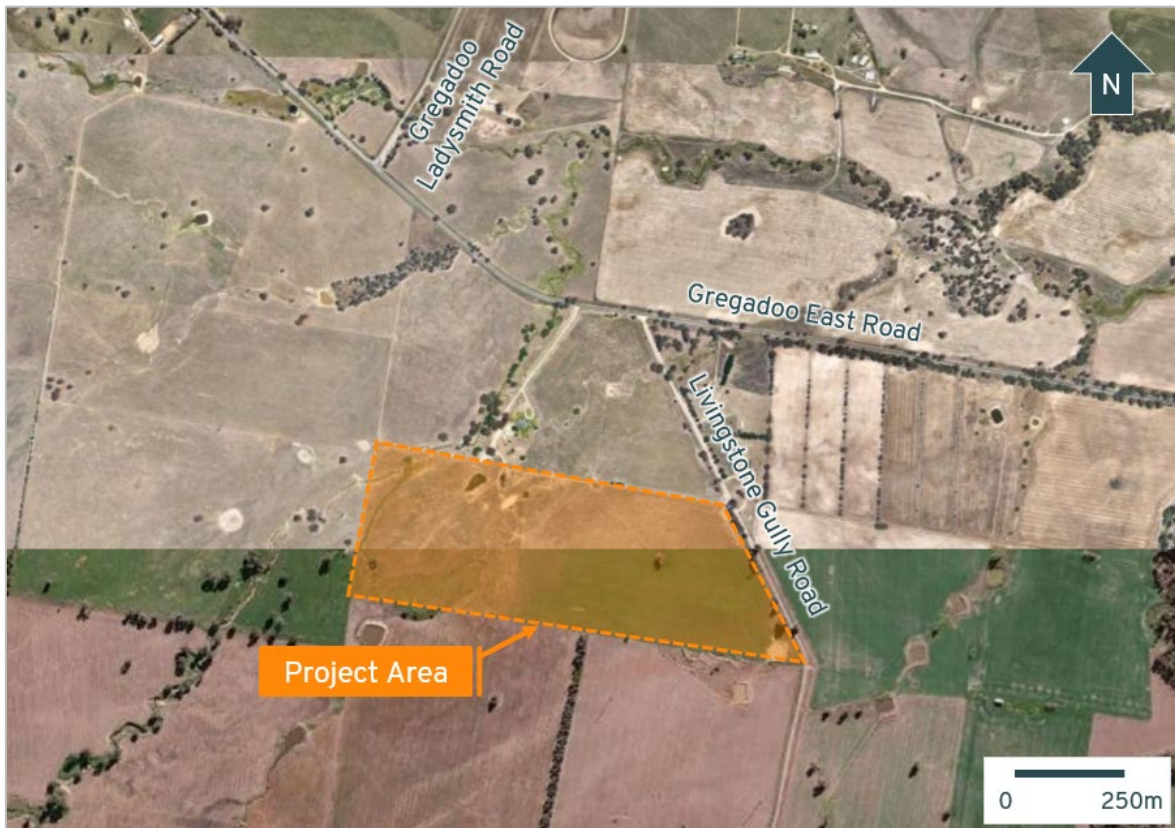
Source: QGE

The figure shows the Project is connected with the surrounding Regional Road network via Tumbarumba Road which connects into the State Road network via Sturt Highway to the north or Hume Highway to the south. These roads provide access to a number of nearby towns including Wagga Wagga to the northwest and Albury to the southwest.

The Project Area and surrounding land are largely zoned as Primary Production (RU1), with an area of Rural Landscape (RU2) to the west.

Figure 3 provides an aerial photograph of the Project Area and the surrounding area, noting that most land is being utilised for agricultural purposes.

Figure 3: Aerial Photograph of Project and Surrounding Area



Source: NearMap

2.2 Road Network

Tumbarumba Road is Regional Road that runs in a general north-southeast alignment for approximately 47 km between the Sturt Highway and its continuation as Masons Hill Road in Tumbarumba. It also intersects with the Hume Highway midway along its length. Within the vicinity of the site, Tumbarumba Road has a sealed carriageway width of approximately 7.0 metres, with one lane of traffic in each direction. Tumbarumba Road has a posted speed limit of 100 km/hr.

Gregadoo East Road is a Council road that runs in a general northwest-southeast alignment for approximately 15 km between its continuation as Mitchell Road near Wagga Wagga to Tumbarumba Road in Tumbarumba. Within the vicinity of the site, Gregadoo East Road has a sealed carriageway width of approximately 6.0 - 7.0 metres, allowing for simultaneous two-way traffic. Gregadoo East Road has a posted speed limit of 100 km/hr. There are two creek crossings between Tumbarumba Road and Livingstone Gully Road with associated bridges to allow suitable vehicles access.

Livingstone Gully Road is a Council road that runs in a general north-south alignment for approximately 13 km between Gregadoo East Road and Pulletop Road. Within the vicinity of the site, Livingstone Gully Road is unsealed with an approximate width of 6.0 – 8.0 metres, allowing for simultaneous two-way traffic. Livingstone Gully Road has a default speed limit of 100 km/hr.

All intersections within the surrounding area are priority controlled and typically form T-intersections. Vehicles exiting the local road network at Gregadoo East Road and turning onto Tumbarumba Road are required to give way and no turn treatments are currently provided.

2.3 Traffic Volumes

A review of available traffic volume data has been undertaken using the TfNSW Traffic Volume Viewer, however there was no publicly available data provided for the surrounding road network.

Traffic information available from other renewable projects in the area indicates that Gregadoo East Road currently accommodates in the order of 50-100 vehicles in the peak hour. Assuming the peak hour represents 10% of the daily traffic volume, Gregadoo East Road is expected to currently accommodate 500-1,000 vehicles per day.

As part of the future Traffic Impact Assessment, it is recommended that survey data be collected to advise the assessment including:

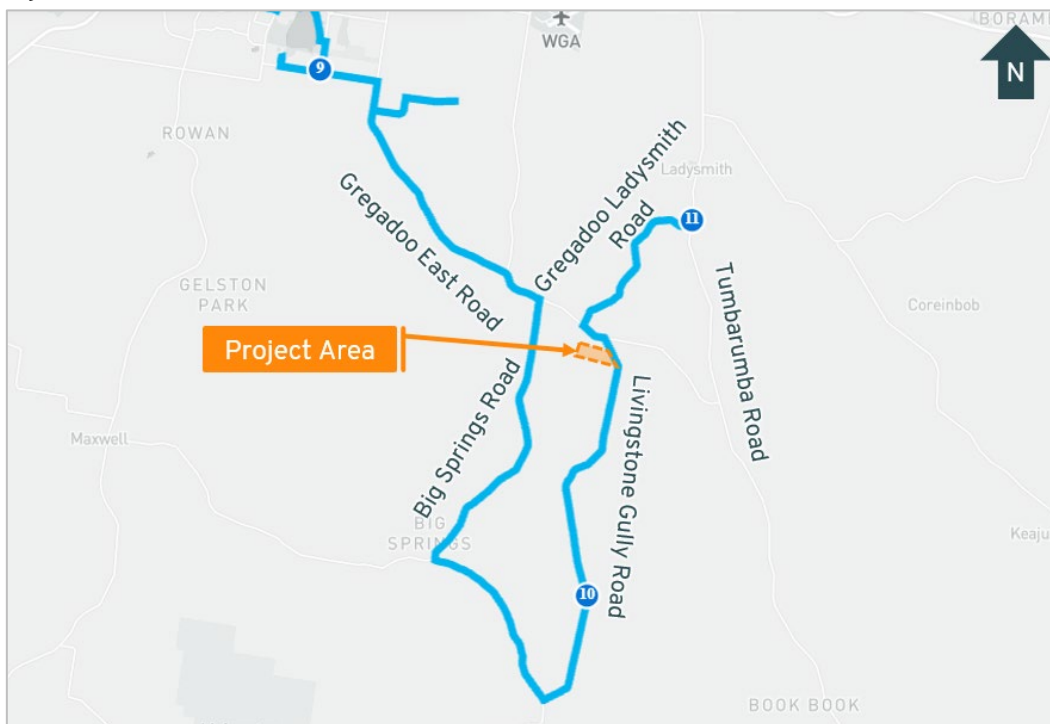
- Turning Movement Count survey at the intersection of Tumbarumba Road and Gregadoo East Road; and
- Tube counts on Tumbarumba Road, Gregadoo East Road and Livingstone Gully Road.

The above surveys would allow a suitable assessment of the future traffic impacts of the project by establishing the existing level of traffic on the surrounding road network. The final location of the traffic surveys would be determined as part of the Environmental Impact Statement (EIS) and preferred access routes.

2.4 Public Transport

No public transport services are provided within the vicinity of the Project. However, Busabout Wagga operate a school bus service that travels along Gregadoo East Road and Livingstone Gully Road. This service operates in the afternoon periods, running between 3:30pm – 5:00pm. A map of the route is provided in Figure 4.

Figure 4: School Bus Routes



Source: Busable

The interaction and any potential conflict between heavy vehicles and school buses will be assessed as part of the EIS.

2.5 Restricted Vehicle Access

2.5.1 B-Doubles

The National Heavy Vehicle Regulator (NHVR) Restricted Access Vehicle Map for the surrounding area is provided within Figure 5. The green lines indicate approved B-Double routes and subsequently the figure shows that the route from Tumbarumba Road to Gregadoo East Road to Livingstone Gully Road to the site is rated to accommodate B-Double vehicles.

Figure 5: NHVR 25/26m B-Double Network Approved Roads



Source: NHVR Restricted Access Vehicle Map

2.5.2 Class 1 OSOM

The NHVR Oversize Overmass (OSOM) Load Carrying Vehicles Network map for the surrounding area is provided within Figure 6. The map shows approved routes for eligible vehicles operating under the Multi-State Class 1 Load Carrying Vehicles Mass and Mass Exemption Notices. The green lines indicate approved Class 1 OSOM Vehicle routes and show the Project has access to the network via Sturt Highway and Hume Highway.

The unrated sections of the access route should be reviewed as part of the EIS.

Figure 6: NHVR Class 1 Oversize Overmass Load Carrying Vehicles Network Approved Roads



Source: NHVR Oversize Overmass Load Carrying Vehicles Network Map

2.6 Crash History

A review has been completed of the TfNSW Road Safety database for all crashes along Tumbarumba Road, Gregadoo East Road and Livingstone Gully Road, including the intersections of Tumbarumba Road with the Sturt Highway and the Hume Highway.

The database provides crash data up to December 2023 and the review has been undertaken for all crashes within the five years prior. The search area and location of any crashes recorded are shown within Figure 7. The crash search revealed six crashes within the search area which are summarised in Table 1.

Figure 7: TfNSW Crash Statistics Map

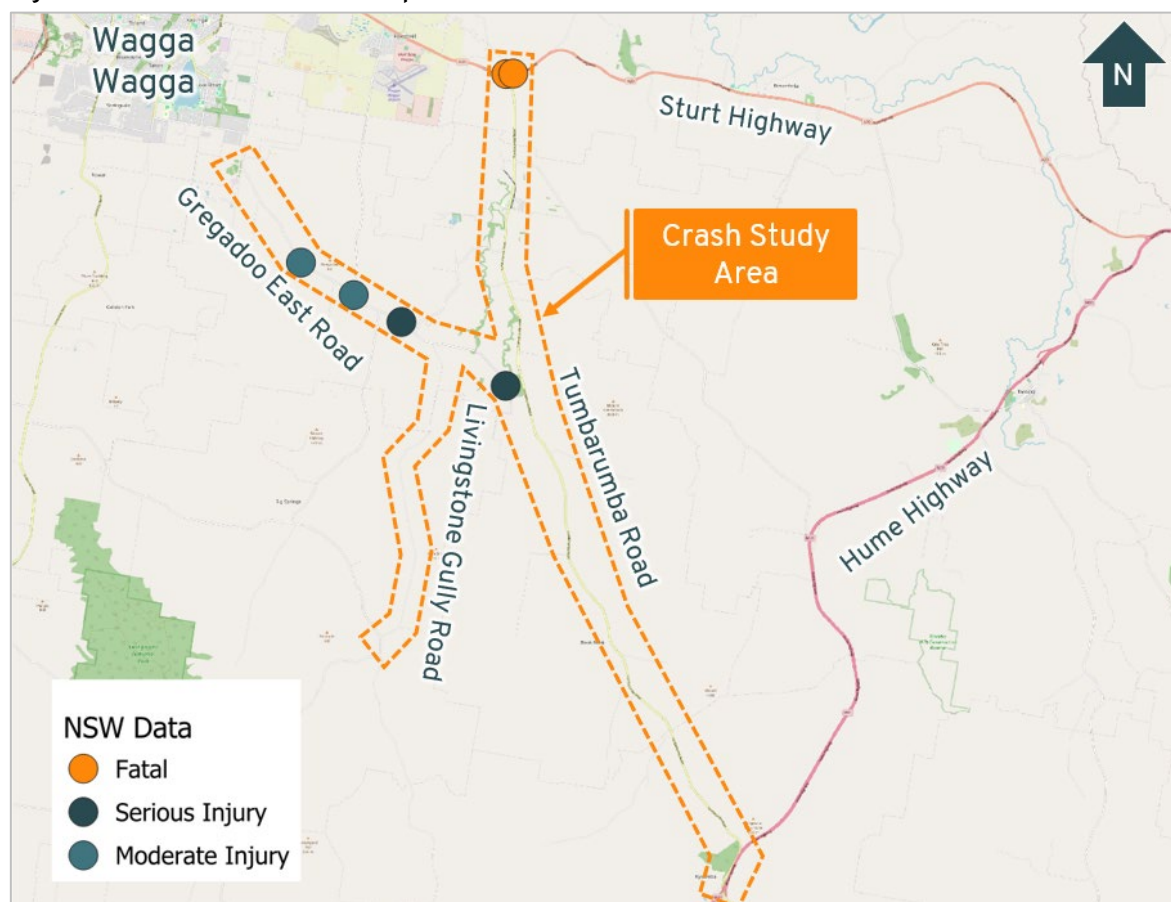


Table 1: Crash Statistics

Road	Location	Severity	Crash Type	Date and Time	Light and Weather Conditions
Gregadoo East Road	1000m West of Tumbarumba Rd	Serious Injury	Off road to the right, hitting object	June 2020 (12:00 - 13:59)	Daylight (Fine)
	1500m West of Angels Lane	Moderate Injury	Off road to the right, hitting object	December 2021 (16:00 - 17:59)	Daylight (Overcast)
	200m South of Elizabeth Ave	Moderate Injury	Off road to the left on right bend, hitting object	December 2023 (22:00 - Midnight)	Darkness (Fine)
	1000m East of Big Springs Rd	Serious Injury	Out of control on road	October 2023 (10:00 - 11:59)	Daylight (Fine)
Sturt Hwy	70m West of River Rd	Fatal	Vehicle hit while emerging from driveway	August 2020 (16:00 - 17:59)	Daylight (Fine)
	150m East of Tumbarumba Rd	Fatal	Off road to the left, hitting object	April 2023 (18:00 - 19:59)	Darkness (Fine)

Two fatal crashes were recorded during the five-year search period, both occurring along the Sturt Highway in proximity to the Tumbarumba Road intersection. It is noted that neither of the crashes were as a result of turning movements at the intersection. One crash occurred when a vehicle was

emerging from a driveway and the other crash occurred when a vehicle came off the road and hit an object.

Four crashes were recorded on Gregadoo East Road, including three to the west of Livingstone Gully Road and one to the east. It is noted that all of these crashes involved single vehicles and most of them came off the road and hit an object.

Given the associated traffic volumes on the roads and the road classifications, there does not appear to be a pattern of crashes that would indicate a significant road safety risk on the potential routes to the site.

3. Preliminary Traffic Assessment

Traffic generated by the Project can be separated into three distinct stages: construction, operation and decommissioning. The peak traffic generating potential is during construction which generates vehicles associated with workers accessing the Project Area and the delivery of raw materials and plant. During operation the Project is expected to generate a lower amount of traffic associated with maintenance workers accessing the Project each day. Decommissioning is anticipated to generate a similar level of traffic to the construction stage.

The following provides a preliminary assessment of the potential traffic impacts of the Project on the road network function for each of the three stages.

3.1 Construction Traffic

3.1.1 Vehicle Types

Construction traffic generated by the Project on a day-to-day basis can be broadly separated into the following categories as outlined in Table 2.

Table 2: Standard Construction Traffic

Terminology		Definition
Light Vehicles		The use of light vehicles will be associated with transporting the workforce to/from the Project. The number of light vehicle movements would be able to be reduced by encouraging carpooling and the use of shuttle buses.
Shuttle Buses		Shuttle buses may be used to transport the workforce from key accommodation locations within nearby towns. These vehicles may be classified as light vehicles or heavy vehicles depending on their size. The use of shuttle buses can have a significant impact on the overall number of light vehicles generated by the Project.
Heavy Vehicles	Rigid Trucks	Rigid Trucks will be used to deliver raw materials and smaller plant and have a typical length between 8 and 13 metres.
	Truck and Dog	Truck and Dog vehicles consist of a rigid truck towing a trailer and are not more than 19 metres in length. These vehicles will be utilised to transport the majority of earthwork material to/from the Project.
	Semitrailers	Semitrailers will be used to transport larger equipment and materials. These vehicles consist of a truck and a single trailer with a total length of 19 metres.
	B-Doubles	B-Doubles will be used to transport larger plant. B-Doubles consist of a truck with two trailers and have a maximum length of 26 metres.

Restricted Access Vehicles / OSOM vehicles will also be required for the delivery of large plant and equipment. These vehicles do not make up the typical traffic generated by the Project and operate under special permits and traffic management measures. The following provides an assessment of the typical Project traffic outlined above with an assessment of OSOM vehicles provided within Section 5.

3.1.2 Traffic Generation

Traffic generated by the Project would typically consist of the following:

- Light vehicles which would primarily occur during the morning peak hour when the workforce arrives on-site and during the evening peak hour when the workforce departs the site.
- Heavy vehicles which would be distributed throughout the day and would be evenly split between arriving and departing movements.

3.1.3 Traffic Distribution

Regular light and heavy vehicle movements are expected to access the Project Area via either Sturt Highway or Hume Highway to Tumbarumba Road. They would then utilise the local road network of Gregadoo East Road and Livingstone Gully Road to reach the site access. Some of the workforce is expected to originate from Wagga Wagga and may travel southeast along Gregadoo East Road to access the project.

The peak hour for construction traffic will occur at the start and end of the day when workers are transported to/from the Project Area. Most workers will typically arrive on-site between 6:00am and 7:00am and depart between 5:00pm and 7:00pm. Workers generally have staggered finish times which results in the evening peak hour being less pronounced.

3.1.4 Traffic Assessment

Traffic impacts would be assessed as part of the future Traffic Impact Assessment. The assessment would include a detailed breakdown of the vehicle types and volumes generated by the Project and would include traffic survey data to understand the existing traffic volumes on the road network. It is recommended that the assessment be undertaken in accordance with the *Austrroads Guide to Traffic Management* and include the following in order to be able to accurately determine the traffic impacts of the Project:

- A traffic modelling analysis at the intersection of Tumbarumba Road and Gregadoo East Road, Tumbarumba Road and Sturt Highway and/or Hume Highway and Tumbarumba Road; and
- A mid-block analysis on Tumbarumba Road, Gregadoo East Road and Livingstone Gully Road.

The assessment should also include a review and allowance for any cumulative impacts associated with other nearby projects, including:

- The approved HumeLink transmission line project located to the immediate south of the project, with access to/from Livingstone Gully Road. It is expected that HumeLink will be completed before the Project commences and therefore only consideration of the operational traffic will likely be required.
- Livingstone Solar Farm located south and east of the site which is expected to gain access from Livingstone Gully Road and is at the 'Prepare EIS' stage. Consideration of traffic associated with the Livingstone Solar Farm will only be made if it is approved prior to the submission of the EIS for the Project.

In the event the future traffic analysis indicates that there are road network capacity issues there would be opportunity to provide road upgrades or traffic management measures to mitigate traffic impacts which could be detailed in a future Traffic Management Plan.

3.2 Operation Traffic

During operation the Project is expected to generate a lower level of traffic associated with maintenance and operation services. Following any road upgrades required to accommodate the construction traffic, it is anticipated that the road network would be able to accommodate the operational traffic with a negligible change to the road environment.

3.3 Decommissioning Traffic

At the end of the operational life of the Project it is anticipated that all above ground infrastructure will be dismantled and removed from the Project Area. Internal roads, if not required for ongoing farming purposes or fire access, would be removed and reinstated as close as possible to its original state.

Traffic generation during decommissioning would be similar to traffic generation during the construction period. A comprehensive Traffic Management Plan would be prepared prior to the decommissioning phase in conjunction with the relevant road authorities. This would aim to ensure adequate road safety and road network operations are maintained.

4. Heavy Vehicle Route Assessment

4.1 Access Route

A review has been undertaken in order to confirm a suitable access route is available for standard heavy vehicles. The assessment provides a review of the surrounding road network utilising the NHVR B-Double Network map to determine whether the largest standard heavy vehicle is able to access the Project. The review indicates that the surrounding State Road network is rated to accommodate B-Double vehicles and provides a link to other key towns including Wagga Wagga and Albury, as well as potential delivery ports such as Port Botany or Port of Melbourne.

The local road network between Tumbarumba Road and the site is also rated to accommodate B-Double vehicles. It is understood that HumeLink (located adjacent to the Project) has recently been approved with heavy vehicle use of Gregadoo East Road and Livingstone Gully Road in their current form. As such, it is considered that these roads remain suitable for the use of Project traffic. Further consultation will be undertaken with Wagga Wagga City Council in relation to the local road network at the EIS stage.

4.2 Unsealed Road Network

The *Australian Road Research Board Best Practice Guide for Unsealed Roads 2* (ARRB Guide), dated October 2020, provides a breakdown of the unsealed road classifications based on a functional classification system which is reflective of the approach taken within the Austroads Guidelines. It is noted that the traffic volumes refer to Average Daily Traffic (two-way). A summary of the classifications outlined within Table 3.9 of the ARRB Guide is provided below in Table 3.

Table 3: Unsealed Roads Classification System (ARRB Guide)

Road Class	Class Type	Service Function Description	Road Type Description
4A	Main Road > 150 vpd	This type of road is used for major movements between population centres and connection to adjacent areas. High traffic volumes occur, and the road can carry large vehicles.	• All weather road, predominantly two-lane and unsealed. Can be sealed if economically justified. • Operating speed standard of 50–80 km/h according to terrain. • Minimum carriageway width is 7m.
4B	Minor Road 50-150 vpd	This type of road is used for connection between local centres of population and links to the primary network.	• All-weather two-lane road formed and gravelled or single-lane sealed road with gravel shoulders. • Operating speed standard of 30–70 km/h according to terrain. • Minimum carriageway width is 5.5m.
4C	Access Road 10-50 vpd	Provides access to low use areas or individual rural property sites and forest areas. Caters for low travel speed and a range of vehicles and may be seasonally closed.	• Substantially a single lane two-way, generally dry weather, formed road. • Operating speeds standard of < 20–40 km/h according to terrain. • Minimum carriageway width is 4m.

Road Class	Class Type	Service Function Description	Road Type Description
4D	Tracks < 10 vpd	Mainly used for fire protection purposes, management access and limited recreational activities.	- Predominantly a single-lane two-way earth track (unformed) at or near the natural surface level. - Predominantly not conforming to any geometric design standards. - Minimum cleared width is 3m.

Unsealed roads would typically be considered for sealing when they accommodate between 200 and 500 vpd. It is not anticipated that the Project would result in the unsealed local road network exceeding 500 vpd, however this will be confirmed when existing traffic movement counts are undertaken. Subsequently, Livingstone Gully Road is expected to be able to remain unsealed. This is consistent with the arrangements for the HumeLink project.

4.3 Local Road Assets

A number of waterways run through the surrounding area and there are several bridges provided to allow suitable vehicle access over these features. The Project is expected to generate a number of vehicle movements during construction that would have a weight above what would typically be adopted in the design of local road bridges. As such, it is recommended that local road structures utilised by the Project be assessed to ensure they are able to accommodate the loads generated during construction.

4.4 Mitigation Measures

A Traffic Management Plan is to be developed prior to construction which is recommended to include the following measures to minimise the impact of construction traffic:

- Prior to construction, a pre-condition survey of the relevant sections of the existing road network should be undertaken in consultation with each relevant Council. During construction the sections of the road network utilised by the proposal are to be monitored and maintained to ensure continued safe use by all road users, and any faults attributed to construction of the Project would be rectified. At the end of construction, a post-condition survey would be undertaken to ensure the road network is left in a condition equivalent to that at the start of construction.
- Neighbours of the Project are to be consulted and notified regarding the timing of major deliveries which may require additional traffic control and disrupt access.

Therefore, it is concluded that the road network is suitable to accommodate the future light and heavy vehicle traffic volumes generated by the Project subject to the adoption of relevant road widening and structural assessments which would be determined as part of the future Traffic Impact Assessment.

5. Preliminary OSOM Route Assessment

5.1 Load Details

The Project is expected to generate a number of OSOM vehicle movements which can be categorised as follows:

- OSOM vehicles which exceed the Class 1 mass and/or dimension requirements and are subject to separate permit applications and regulations. This includes vehicles associated with the delivery of the transformer;
- Class 1 OSOM vehicles which can operate on the approved network subject to travel conditions and may include the battery components depending on the design adopted by the Project; and
- Vehicles built for a purpose other than carrying goods such as a mobile crane, a concrete pump or drill rig are defined as Special Purpose Vehicles (SPVs) and may also be classified as OSOM vehicles.

The following provides a review of the largest components to be transported to the Project Area, which is the transformer.

5.2 Transport Vehicles

The transformer would likely be transported on a beam set combination trailer. Based on our experience, we understand at least two pilot vehicles will accompany each OSOM vehicle to guide the vehicle and manage traffic under the direction of police. Police vehicles will provide traffic management at pinch points as identified within the detail Route Assessment (discussed further in Section 5.4). The OSOM vehicles will leave at specific intervals and regroup at specific pinch points, rest areas, or pullover bays to allow police to implement the required traffic management, such as road closures. This will be detailed in a Traffic Management Plan to be prepared prior to the commencement of construction in consultation with TfNSW and relevant Councils.

5.3 Port of Entry

The delivery port for the transformer and other large battery components is yet to be determined but is anticipated to be either Port Botany or Port of Melbourne. The port would be confirmed based on the capacity of the ports to accommodate the components and deliveries, as well as the suitability of the access route between the port and the Project.

5.4 Preliminary Route Assessment

A high-level assessment of the potential transport routes from the Port Botany and the Port of Melbourne to the project has been completed. The route assessment has focussed on the transformer transport vehicle which typically represents the worst-case scenario due to the length of the vehicle and the associated load. The chosen routes aim to reduce the number of turn manoeuvres at intersections as these may require road upgrades to accommodate the vehicle. It also aims to avoid built-up areas to limit conflicts between the OSOM vehicles and vulnerable road users.

5.4.1 Port of Botany

Based on our experience on other projects, the route is expected to be as follows:

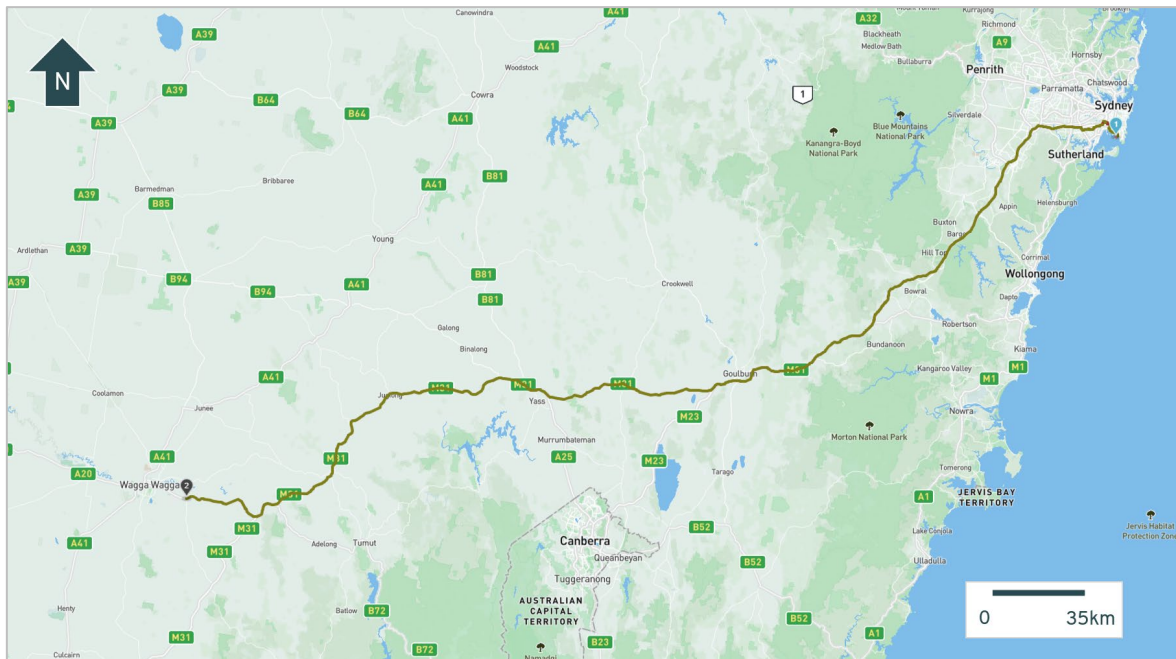
- Vehicles would depart Sydney utilising Bumborah Parade, Botany Road, Bunnerong Road, Gardeners Road and the M8 tunnel to South Western Motorway which becomes the Hume Motorway.
- Once on the Hume Motorway, there are multiple route options to access the site, which will be explored in further detail during the EIS process. These are expected to include:
 - a) Hume Highway to Sturt Highway to Tumbarumba Road to Gregadoo East Road to Livingstone Gully Road to the Project site.
 - b) Hume Highway to Sturt Highway to Elizabeth Avenue to Gregadoo East Road to Livingstone Gully Road to the Project site.
 - c) Hume Highway to Sturt Highway to Bakers Lane to Inglewood Road to Mitchell Road to Gregadoo East Road to Livingstone Gully Road to the Project site.

The local road network including Gregadoo East Road and Livingstone Gully Road are rated for B-Double vehicles, further assessment will be required to ensure they are suitable for OSOM vehicles. It has been advised that there may be some bridges along these roads with weight restrictions that may limit OSOM vehicles use.

Other local roads which are not rated including Elizabeth Avenue, Bakers Lane, Inglewood Road and Mitchell Road will also need to be assessed for OSOM vehicle use. It is understood that some of these roads have been used by OSOM vehicles for nearby projects.

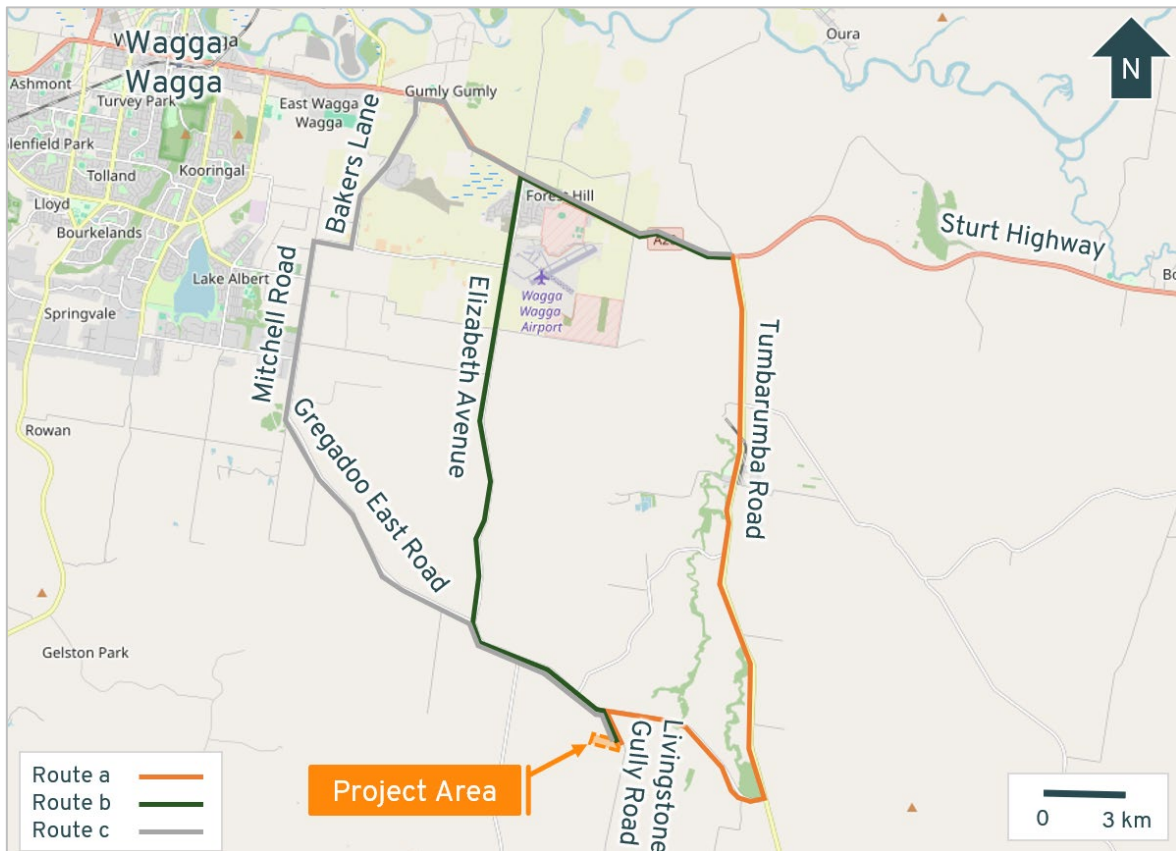
The indicative access route for the transformer transport vehicle from Port of Botany to the project is shown within Figure 8 and Figure 9.

Figure 8: OSOM Vehicles – Indicative Access Route from Port of Botany to Sturt Highway



Source: NHVR Route Planner – Route ID: 20QUA-3 v1

Figure 9: OSOM Vehicles – Indicative Access Routes from Sturt Highway to Project Area



Source: OpenStreetMap

The following travel conditions apply to this route:

- Hume Highway
 - Travel is not permitted after 4.00pm on Sundays or state-wide public holidays between the M5/M7 interchange at Prestons and Picton Road at Wilton.
 - Vehicles or combinations exceeding 3.5 metres wide or 25.0 metres long are not permitted to travel between 8:30am and sunset on weekends or a state-wide public holiday between the M5/M7 interchange at Prestons and the Illawarra Highway at Suttons Forest.
- M5 Motorway
 - An operator of a vehicle or combination equal to or exceeding 4.3 metres wide must contact the motorway operator at least 5 days before travel. Motorway operator contact details available at: www.nhvr.gov.au/access-contacts.
- M8 Motorway Tunnel (restricted)
 - Dimension Limits: Width: 2.5m, Height: 4.3m, Length: 19m
 - If your vehicle exceeds the above dimensions you must apply for a Class 1 permit before you commence your journey.
- Bunnerong Road
 - The driver of a defined heavy vehicle (in excess of 12.5m in length) is permitted to travel from Port Botany to a destination on Beauchamp Road, Matraville despite "No

Trucks" restrictions on Bunnerong Road at Matraville (Road Rule 104) and to make a left turn from Wentworth Avenue into Denison Road at Eastgardens, despite a no left turn sign (Road Rule 91).

5.4.2 Port of Melbourne

Based on our experience on other projects, the route is expected to be as follows:

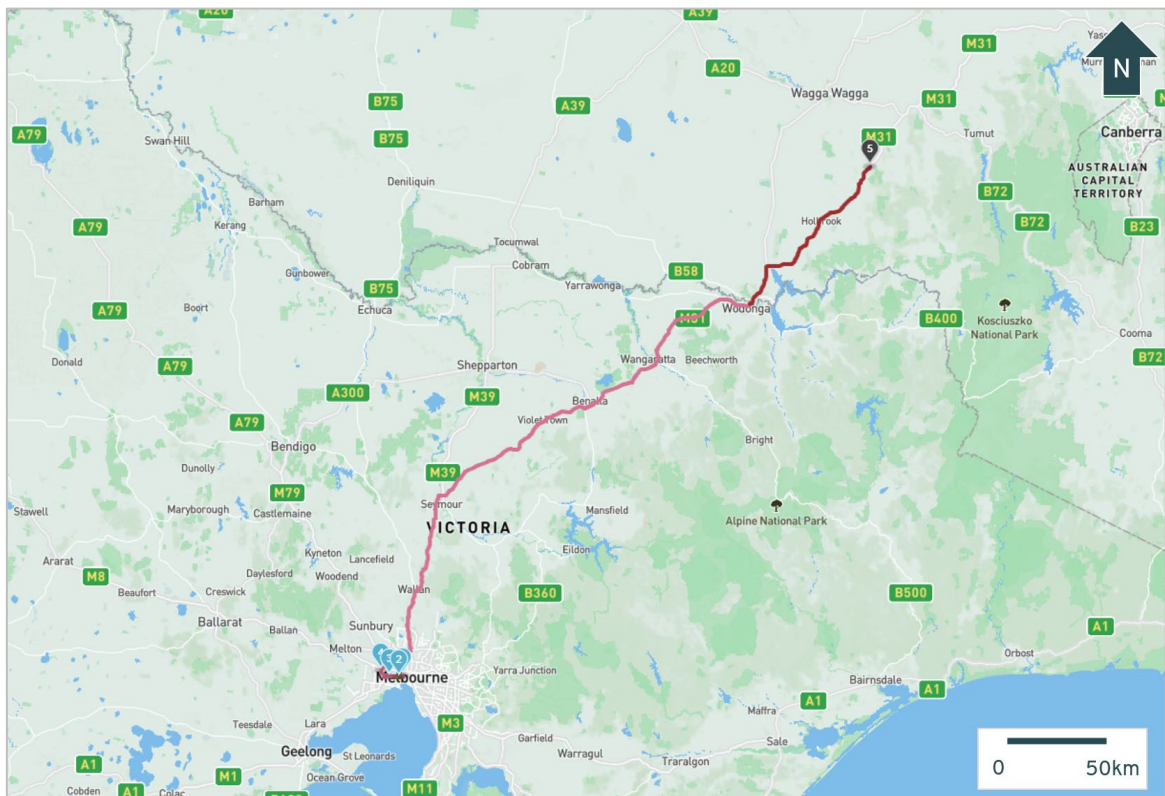
- Vehicles would depart Melbourne utilising Dock Link Road, Footscray Road (Docklands Highway), Moreland Street (Docklands Highway), Whitehall Street (Docklands Highway), Somerville Road, Fairbairn Road, Boundary Road and the Western Ring Road onto the Hume Motorway.
- Once on the Hume Motorway, there are multiple route options to access the site, which will be explored in further details during the EIS process. These are expected to include:
 - a) Hume Highway to Tumbarumba Road to Gregadoo East Road to Livingstone Gully Road to the Project site.
 - b) Hume Highway to Sturt Highway to Elizabeth Avenue to Gregadoo East Road to Livingstone Gully Road to the Project site.
 - c) Hume Highway to Sturt Highway to Bakers Lane to Inglewood Road to Mitchell Road to Gregadoo East Road to Livingstone Gully Road to the Project site.

The local road network including Gregadoo East Road and Livingstone Gully Road are rated for B-Double vehicles, further assessment will be required to ensure they are suitable for OSOM vehicles. It has been advised that there may be some bridges along these roads with weight restrictions that may limit OSOM vehicles use.

Other local roads which are not rated including Elizabeth Avenue, Bakers Lane, Inglewood Road and Mitchell Road will also need to be assessed for OSOM vehicle use. It is understood that some of these roads have been used by OSOM vehicles for nearby projects.

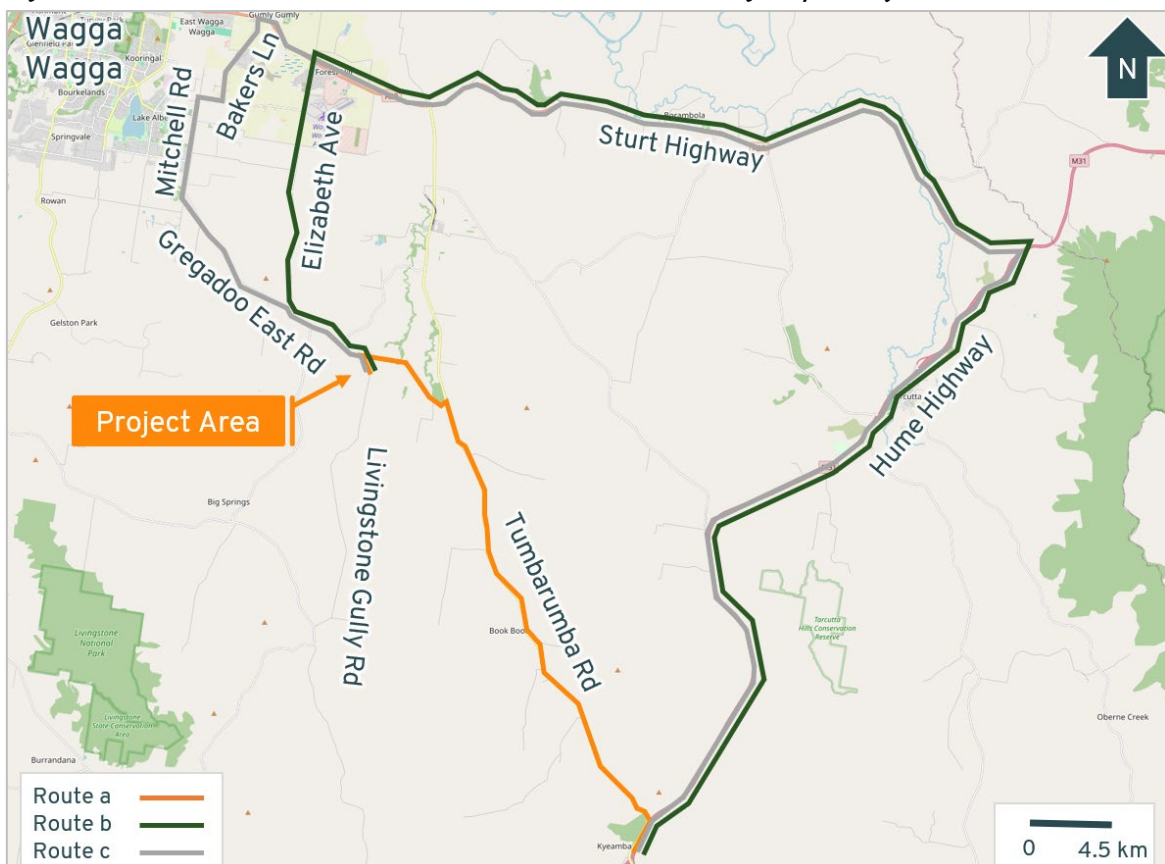
The indicative access route for the transformer transport vehicle from Port of Melbourne to the project is shown within Figure 8.

Figure 10: OSOM Vehicles – Indicative Access Route from Port of Melbourne to Hume Highway



Source: NHVR Route Planner – Route ID: 209EG-3 v1

Figure 11: OSOM Vehicles – Indicative Access Routes from Hume Highway to Project Area



Source: OpenStreetMap

The following travel conditions apply to this route:

- Footscray Road
 - Ongoing adhoc West Gate Tunnel Project roadworks incl. nightly lane closures may impact vehicles in excess of 3.5m wide. For closure advice contact WGTP at cpbjh@wgtp.com.au (preferred) or 1800 105 105 48hrs prior to travel.
- Moreland Street
 - Northbound access restricted to 4.2m wide vehicles from 17 Jan 2022 until further notice. For travel Advice contact WGTP at cpbjh@wgtp.com.au or 1800 105 105.
- Whitehall Street
 - Combinations required to follow the Heavy Vehicle National Law Multi-State Class 1 Load Carrying Vehicle Dimension Exemption Notice• 2022 (No.1) Table 3 time of day travel restrictions when operating within Melbourne & Geelong Urban Area.
- Bridge (Somerville Road)
 - Combinations exceeding 49.5 tonnes need to seek permission from Metro Trains Melbourne on the following contact details: infra.thirdpartyaccess@metrotrains.com.au or 1800 800 007
- Somerville Road
 - Curfews apply for this vehicle between 8pm & 6am weeknights, 1pm Saturday to 6am Monday & school days between 8-9:30am & 2:30-4pm Somerville Road
- Railway Level Crossings
 - For combinations in excess of 26m long or 4.9m high, permission is required to traverse all rail crossings. Apply to ODL Permits at DoT Heavy Vehicle Consent- Structural Engineering by calling 0417 054 626 or emailing odlpermit@roads.vic.gov.au

5.4.3 Overall

It is noted that the routes have been chosen based on previous assessments of height or geometric restriction limits on other routes. A detailed Route Assessment will be prepared in the following stage and would be included as part of the EIS. The Route Assessment would provide an assessment and commentary on the following matters:

- Confirm the dimensions and loading of the OSOM vehicles;
- Contact TfNSW, relevant Council(s), and rail authorities to undertake an assessment of any bridge structures based on the loading of the vehicle;
- Determine any road upgrade works expected along the route that may impact the OSOM vehicles;
- Provide a review of the height clearances along the access route and confirm the vehicles are able to suitably access the Project;
- Provide a horizontal alignment review utilising swept paths to confirm if any road upgrades are required at key pinch points and provide concept designs for any road improvements; and
- Identify suitable pullover bay and rest stop locations.

It is recommended that any required road upgrades are coordinated with other renewable projects that are expected to utilise the same travel routes for construction traffic

6. Intersection Assessment

6.1 Turn Treatments

The primary traffic impact during construction is generated by the workforce accessing the Project in the morning peak hour and exiting the Project in the evening peak hour, and by heavy vehicles accessing the Project during the day. The workforce is expected to be primarily located within the nearby township of Wagga Wagga.

Austrroads Guide to Traffic Management Part 6: Intersections, Interchanges, and Crossings specifies the turning treatments required at intersections. An assessment of the required turn treatments would be undertaken for the intersection of Gregadoo East Road and Tumburumba Road as part of the future Traffic Impact Assessment. An assessment may also be required at the intersection of Tumburumba Road and Sturt Highway and/or Tumburumba Road and Hume Highway. The intersection may need to be upgraded to comply with the *Austrroads Guide* to subsequently allow vehicles to safely exit the Regional Road network noting that there is no 'do nothing' option within the turn treatment assessment and the intersection is not currently provided with turn facilities.

The HumeLink project would also utilise the intersection of Gregadoo East Road and Tumburumba Road. Any road upgrades as part of the project are not publicly available but it is understood that the intersection and associated turn treatments are to be discussed with Council and TfNSW prior to construction of the project with any the road upgrades expected to be completed prior to the start of the Gugaa BESS construction.

The use of shuttle buses to transport the workforce to and from nearby towns is recommended to minimise the number of turning movements during morning and evening peak periods. This would minimise the required level of turn treatment and associated impacts on the road network.

6.2 Local Roads / Project Accesses

A turn treatment assessment would not typically be undertaken for local road intersections or Project accesses that connect to the local road network due to the lower traffic volumes and vehicle speeds. Instead, it is recommended that the local road intersections utilised by the Project and the accesses be designed to accommodate the expected construction vehicles.

The intersections/accesses would be designed to allow two heavy vehicles to pass simultaneously which would typically be based on a B-Double design vehicle. They would also be designed to allow for the largest OSOM vehicle to travel through the intersection/access.

6.3 Sight Distance

Austrroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections specifies the Safe Intersection Sight Distance (SISD) as the minimum sight distance which should be provided along the major road at any intersection. Table 3.1 of the guide specifies the SISD required for various design speeds.

Any intersection between the State/Regional Road network (Tumburumba Road) and the Project access, and the accesses themselves, would be checked against the *Austrroads* requirements as part of the future Traffic Impact Assessment. Any location that does not comply with the sight

distance requirement would require suitable mitigation measures in order to allow vehicles to safely travel through the intersection.

A desktop review of the intersections indicates that the sight distance is compliant. It is also considered that there would be a suitable location available for a site access that complies with the Austroads requirement.

7. Conclusion

Amber has conducted a review of the traffic matters associated with the Gugaa BESS project. The Project proposes to provide a 1GW BESS and would be accessed via Livingstone Gully Road at either the main access or the alternate access. The delivery port for the transformer and other large battery components is yet to be determined but is anticipated to be either Port of Botany or Port of Melbourne.

Based on the assessment, it has been determined that:

- The Project has good access to the Regional and State Road network via Tumbarumba Road which connects onto Sturt Highway in the north and Hume Highway in the south.
- The local road network including Gregadoo East Road and Livingstone Gully Road are on the approved B-Double network. The adjacent HumeLink transmission line project has recently been approved to utilise these roads in their current form for heavy vehicles movements. As such, it is considered that these roads are appropriate to cater for the expected traffic demand associated with the Project. Further consultation will be required with Council to confirm these arrangements.
- The intersections of the local road (Gregadoo East Road) with the Regional Road network (Tumbarumba Road) currently does not provide turn treatments. It is recommended that turn treatments be assessed and provided as needed at the intersection as part of the future Traffic Impact Assessment noting that the intersection may be upgraded as part of the HumeLink project.
- A turn treatment assessment would not typically be undertaken for local road intersections or Project accesses that connect to the local road network due to the lower traffic volumes and vehicle speeds. Instead, it is recommended that the local road intersections utilised by the Project and the accesses be designed to accommodate the expected construction vehicles.
- It is recommended that a tube count be undertaken along Tumbarumba Road, Gregadoo East Road and Livingstone Gully Road, as well as a turning movement count of the Tumbarumba Road and Gregadoo East Road intersection as part of the future Traffic Impact Assessment. The traffic surveys will establish the existing traffic environment.
- The intersections between Tumbarumba Road, Gregadoo East Road, Livingstone Gully Road and the site access would be checked against the Austroads sight distance requirements as part of the future Traffic Impact Assessment. Any location that does not comply with the sight distance requirement would require suitable mitigation measures in order to allow vehicles to safely travel through the intersection.
- Port Botany or Port Melbourne are likely to be the delivery port for the BESS plant. The assessment identifies travel routes for the transformer transport vehicle (OSOM) and general construction traffic (B-Doubles). The routes along the State Road network are expected to be able to accommodate these vehicles with no major road upgrades required. Upgrades may be required for some intersections along the route, including the local road network, to facilitate the movement of the OSOM vehicle to/from the Project Area.
- School bus services operate along Livingstone Gully Road and Gregadoo East Road. The interaction and any potential conflict between heavy vehicles and school buses will be assessed as part of the EIS.
- It is recommended that structures utilised by the Project on Gregadoo East Road be assessed to ensure they are able to accommodate the loads generated during construction.

Overall, the assessment indicates that the Project has good access to the Regional and State Road network and the road network is expected to be able to accommodate the traffic generated by the Project. By providing suitable road carriageway widths, turn treatments, and sight distances, vehicles are expected to be able to safely traverse the local road network.

A Route Assessment would be undertaken for all OSOM vehicles as part of the EIS which would detail the required road upgrades and traffic management measures to ensure OSOM vehicles are able to suitably access the site.

In summary, the Project is not expected to result in significant impacts to the surrounding traffic environment subject to the relevant road upgrades that would be determined through the preparation of a Traffic Impact Assessment and Route Assessment.



Traffic & Transportation Direction

Gugaa BESS

OSOM Route Assessment

November 2025

Reference: 1337 ra 251119 final

Gugaa BESS

OSOM Route Assessment

Prepared for: FP Solutions

Status: Final report

Date: 19 November 2025

Reference: 1337 RA 251119 final

Revision	Date	Description	Author	Reviewed	Approved
A	19/09/25	Draft 01	E. Young	M. Willson	M. Willson
B	08/10/25	Draft 02 – Alternate Route	E. Young	T. Dwyer	T. Dwyer
C	23/10/25	Final 01	E. Young	M. Willson	M. Willson
D	19/11/25	Final 02	E. Young	M. Willson	M. Willson

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Appendix A

Swept Path Assessment – Port of Botany

Appendix B

Swept Path Assessment – Port of Melbourne

1. Introduction

1.1 Background

Amber Organisation has been engaged by FP Solutions to prepare a Route Assessment for the largest high risk oversize overmass (OSOM) vehicle to access the Gugaa Battery Energy Storage System (BESS) during construction.

High risk OSOM vehicles would be required to deliver larger plant to site such as the transformer and earthmoving equipment. These vehicles are expected to exceed the Class 1 mass and/or dimension requirements and would be classified as high risk OSOM vehicles. These vehicles are subject to Transport Management Plans which provide a comprehensive planning and execution focus to ensure that vehicle movements are carried out in a safe and responsible manner with reduced impact on other road users and road infrastructure. High risk OSOM vehicles also typically require pilot vehicle escort.

This assessment considers the route options available for the transport of the transformer, which is expected to be the largest and heaviest component delivered to the site, and is expected to originate from Port Botany (Option 1) or the Port of Melbourne (Option 2). Various constraints along the route have been identified and assessed to determine the likely extent of road upgrades and traffic management measures which would be required to accommodate the OSOM vehicle combination on the road network.

1.2 Document Limitations

This assessment is based on a desktop review of aerial and street-level imagery, publicly available datasets and our experience with similar projects. The findings, conclusions, and recommendations contained herein are based on professional knowledge, experience, and interpretation of available information at the time of assessment. The scope of this assessment is limited to a desktop review and the findings should be confirmed through on-site inspections and measurements prior to transportation.

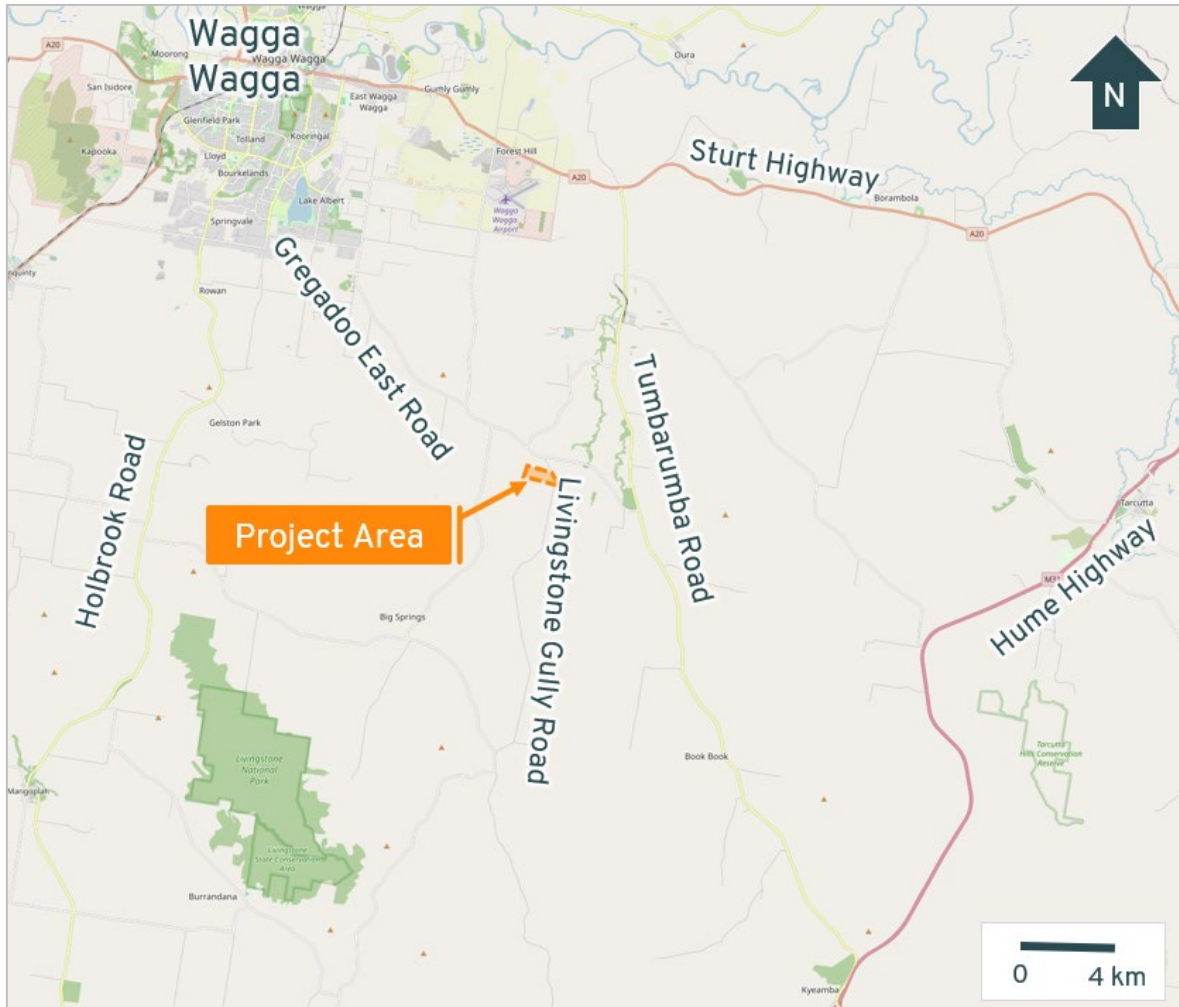
This report relies on data and information provided by third parties and publicly available resources. While every effort has been made to ensure accuracy, completeness, and reliability, Amber Organisation makes no warranties, expressed or implied, regarding the accuracy or completeness of the information contained in this assessment. Conditions may change over time, and future alterations to infrastructure, road networks, or environmental factors may affect the applicability of this assessment. Ongoing due diligence is recommended, including consultation with relevant authorities and further detailed engineering analysis where required.

2. Project Background

The Gugaa BESS is located at 477 Gregadoo East Road in Gregadoo, approximately 17km southeast of Wagga Wagga, NSW. The total generating capacity of the BESS is 1GW.

Figure 1 shows the location of the Project Area in relation to the surrounding transport network, with access to the site via Livingstone Gully Road.

Figure 1: Site Location



Source: OpenStreetMap

3. OSOM Vehicle

The largest component to be delivered to the site is expected to be the transformer. The Applicant has provided information regarding the potential specifications of the transformer which is outlined in Table 1.

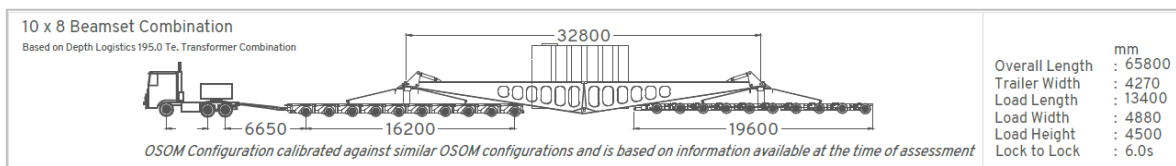
Table 1: Estimated Transformer Specifications

Length (mm)	Width (mm)	Height (mm)	Mass (t)	Trailer Specs
9500	4000	4500	180	10x8 + 10x8 Platform Trailer Beam Set

Based on our experience with transporting transformers of this weight and given the height restrictive bridges located along the route, it is assumed that the transformer will be transported using a beam set combination vehicle. This enables the weight of the transformer to be distributed between two trailers while also allowing it to sit lower to the ground. This reduces the overall height of the transformer as it passes beneath overhead obstructions including bridges and gantries.

The vehicle used for the assessment is shown within Figure 2 and is based on feedback from a transport company which confirmed that the vehicle specification would be suitable for the weight and size of the transformer.

Figure 2: OSOM Vehicle



4. Route Overview

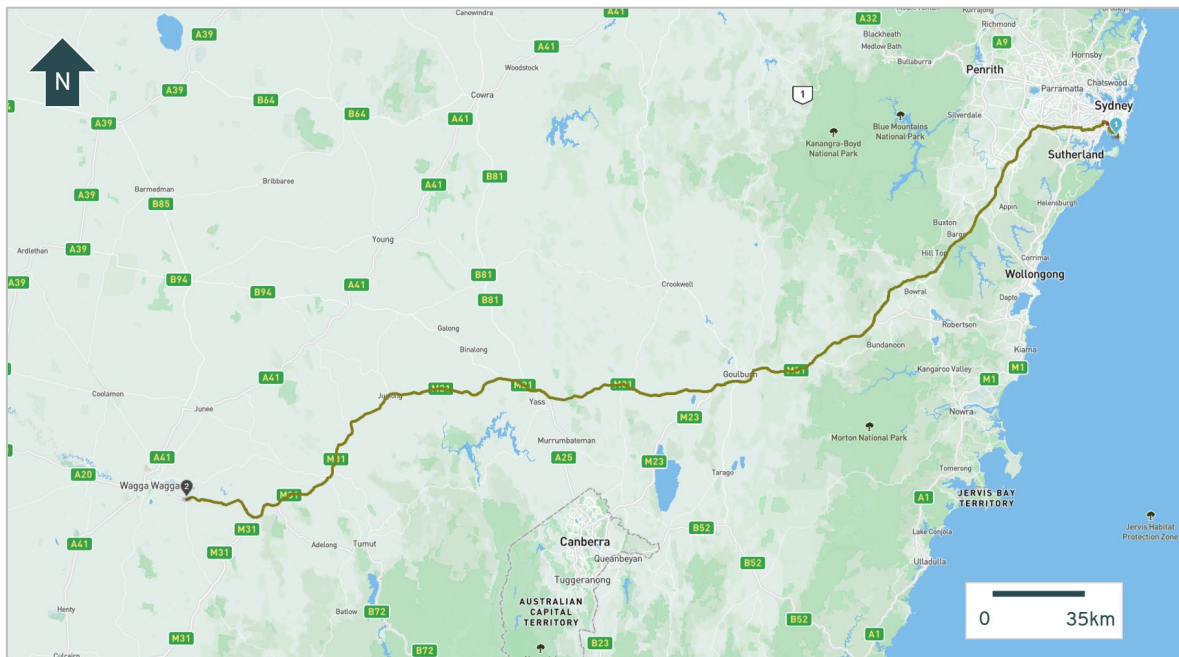
Given the dimensions of the transformer transport combination, the most feasible transport route maximises use of the National Land Transport Network (Road) between the port and the site. These types of roads consist of major highways and freeways which are generally constructed to a high standard to accommodate freight movements and provide uninterrupted routes which minimise turning manoeuvres and travel through built-up areas.

Two route options have been considered, utilising either Port of Botany or Port of Melbourne. A review of each of these are provided in the following sections, based on a review of the National Land Transport Network (Road) including consideration of height clearances, road widths and intersections along the route.

4.1 Option 1 – Port of Botany

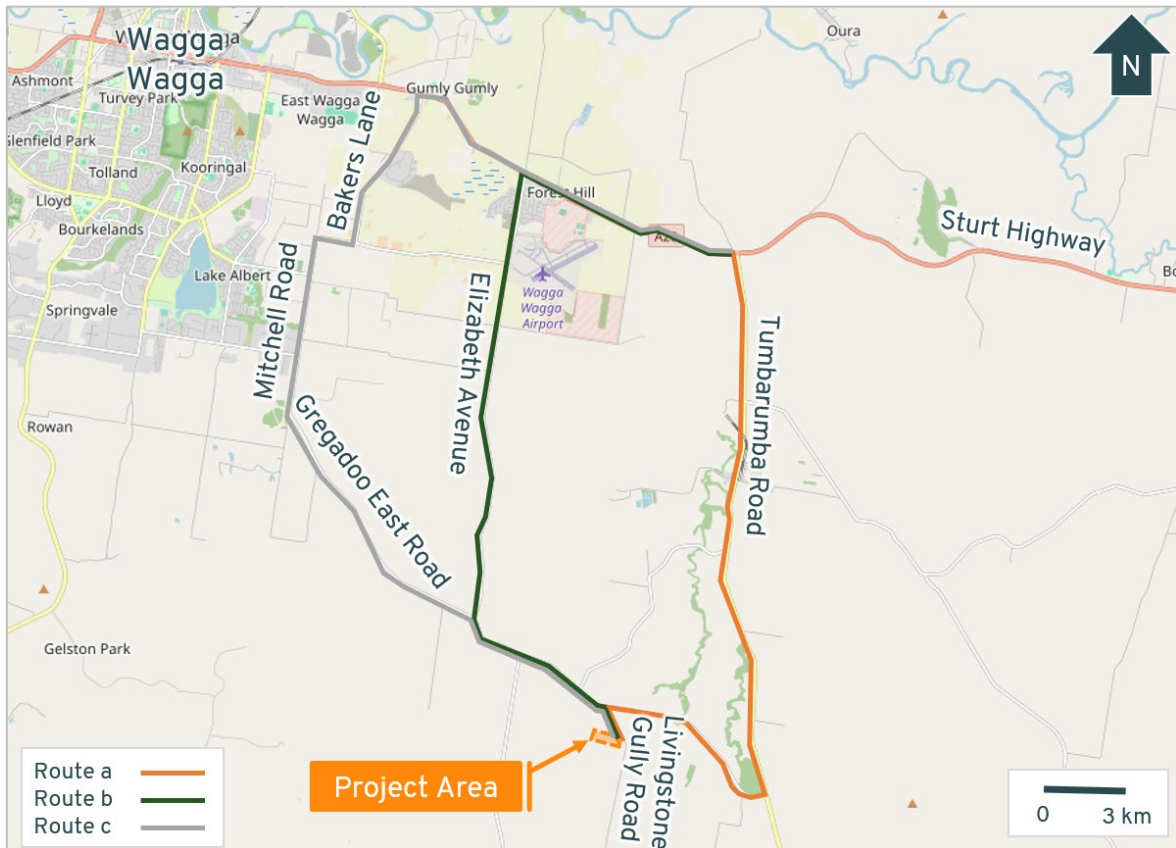
The proposed route options from Port Botany are outlined in Figure 3, Figure 4 and Table 2. It is noted that confirmation of the proposed route will be undertaken during the EIS stage.

Figure 3: Proposed Transformer Route – Port of Botany to Sturt Highway



Source: NHVR Route Planner – Route ID: 20QUA-3 v1

Figure 4: Proposed Transformer Route Options – Sturt Highway to Project Area



Source: OpenStreetMap

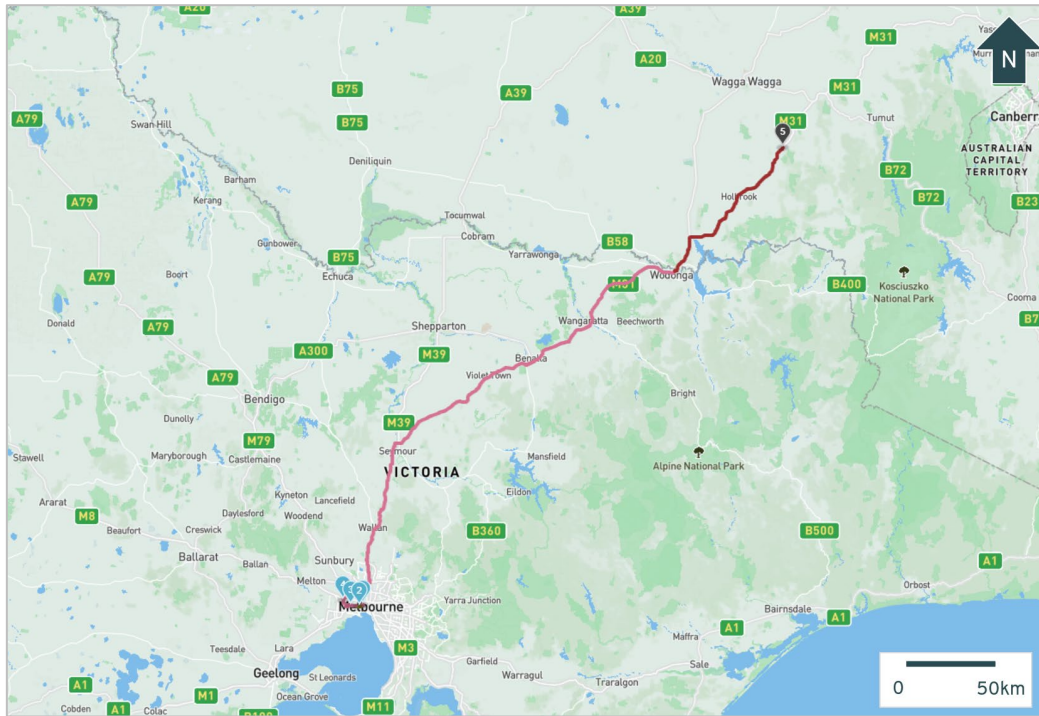
Table 2: Proposed Transformer Route – Port of Botany

Description	Distance (km)	Route Overview		Map Link
		Roads	Authority	
Port of Botany to Gugaa BESS	445	1. Friendship Road	NSW Ports	Link to Route
		2. Bumborah Point Road	TfNSW	
		3. Botany Road		
		4. Bunnerong Road		
		5. Gardeners Road		
		6. Westconnex M8 Tunnel		
		7. Southwestern Motorway		
		8. Hume Motorway		
		9. Sturt Highway		
		10. Tumbarumba Road (Route a)		
		11. Elizabeth Avenue (Route b)	Wagga Wagga City Council	
		12. Bakers Lane (Route c)		
		13. Inglewood Road (Route c)		
		14. Mitchell Road (Route c)		
		15. Gregadoo East Road		
		16. Livingstone Gully Road		

4.2 Option 2 – Port of Melbourne

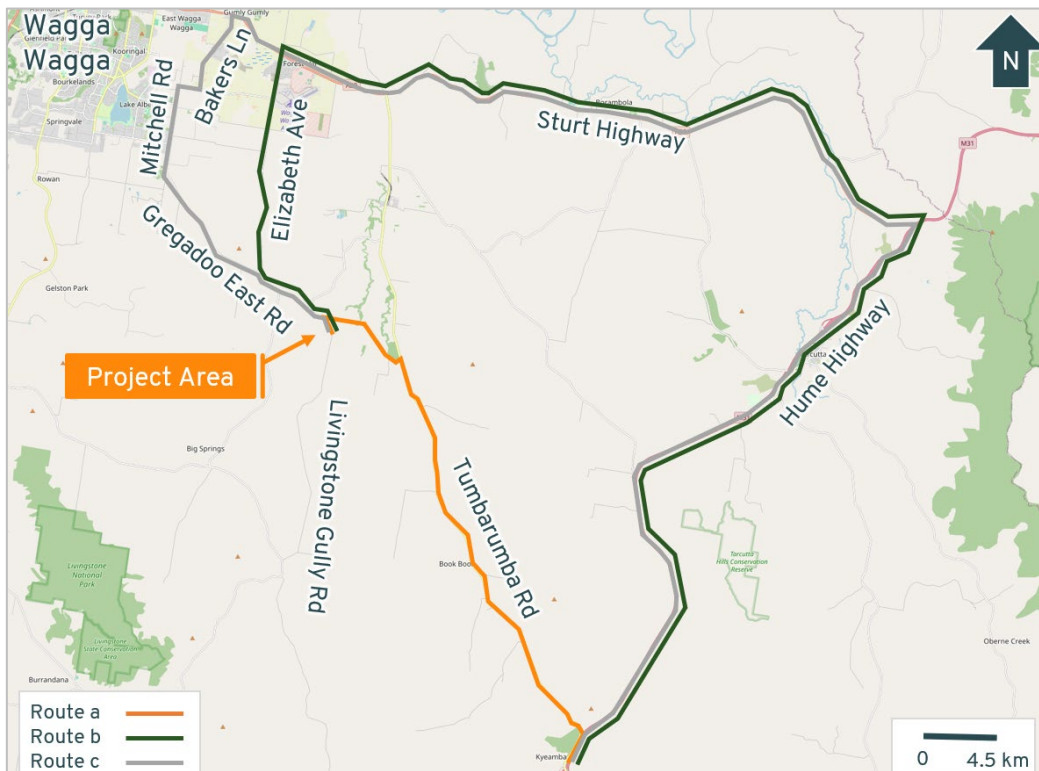
The proposed route option from Port of Melbourne is outlined in Figure 5, Figure 6 and Table 3. It is noted that confirmation of the proposed route will be undertaken during the EIS stage.

Figure 5: Proposed Transformer Route – Port of Melbourne to Hume Highway



Source: NHVR Route Planner – Route ID: 209EG-3 v1

Figure 6: Proposed Transformer Route Options – Hume Highway to Project Area



Source: OpenStreetMap

Table 3: Proposed Transformer Route – Port of Melbourne

Description	Distance (km)	Route Overview		Map Link
		Roads	Authority	
Port of Melbourne to Gugaa BESS	470	1. Dock Link Road 2. Footscray Road (Docklands Highway) 3. Moreland Street (Docklands Highway) 4. Whitehall Street (Docklands Highway)	DTP	Link to Route
		5. Somerville Road	Council (east of Princes Highway) DTP (west of Princes Highway)	
		6. Fairbairn Road 7. Boundary Road 8. Western Ring Road 9. Hume Freeway	DTP	
		10. Hume Highway 11. Sturt Highway (Routes b and c) 12. Tumbarumba Road (Route a)	TfNSW	
		13. Elizabeth Avenue (Route b) 14. Bakers Lane (Route c) 15. Inglewood Road (Route c) 16. Mitchell Road (Route c) 17. Gregadoo East Road 18. Livingstone Gully Road	Wagga Wagga City Council	

5. Route Assessment

The following provides a desktop review of the proposed access route from Port of Botany and Port of Melbourne to the site access. The assessment includes a review of the following:

- Height clearances;
- Railway level crossings;
- Potential rest areas and pullover bays; and
- Swept paths at key pinch points to identify any required road upgrades.

5.1 Option 1 – Port of Botany

5.1.1 Height Clearances

A review of the overhead obstructions along the proposed route was undertaken based on available data from the National Heavy Vehicle Regulator (NHVR) National Network Map. A total of 64 overhead obstructions, predominantly bridge overpasses, were identified along the proposed transport route. The location and specified height clearance of each structure is included within the online map referenced in Table 2. These should be confirmed prior to OSOM travel.

The critical height clearances along the route were identified at several locations as outlined below:

- St Peters Interchange Overpass – 5.1m
- Westconnex M8 Tunnel - 5.1m
- King Georges Road Overpass – 5.02m
- Belmore Road Overpass – 5.09m
- Horsley Road Overpass – 5.03m
- Heathcote Road Overpass – 4.93m
- Kurrajong Road Overpass – 5.03m

It is understood that the documented height clearances along this route have been based on LiDAR surveys and represent the absolute minimum clearance at any point beneath the relevant structures.

The maximum loaded height of the transformer to safely pass beneath the overhead structures is 4.9m. Based on the transformer being able to be lowered to a height of approximately 200mm above the ground surface when travelling beneath obstructions, the maximum transport height of the transformer is restricted to approximately 4.7m. Accordingly, the height clearances along this route would be considered suitable for the transport of the specified transformer and OSOM vehicle combination for this project.

It is noted that a powerline survey would also be required to confirm any overhead powerlines along the route which may need to be lifted, and on-site assessment of any overhanging vegetation (e.g. tree branches) may also be required.

5.1.2 Railway Level Crossings

No rail crossings have been identified along the proposed transport route.

5.1.3 Bridges and Culverts

Structural assessment of bridges and culverts is outside the current scope of this assessment and may need to be undertaken separately to confirm the load bearing capacity of assets along the proposed transport route.

5.1.4 Rest Areas

A rest area has been identified along the OSOM transport route which may be utilised for fatigue management:

- Goulburn Bypass Rest Area (Southbound) ([Map Link](#))

A swept path assessment of the proposed rest area is included within the route assessment (Appendix A) and indicates that the vehicle can suitably access the rest area while maintaining access for general traffic. It is noted that additional rest areas may also be available along the route which could be adopted if required due to unforeseen circumstances. Operating protocol in relation to the use of any rest areas would be outlined as part of the Transport Management Plan to be prepared prior to construction in order to ensure appropriate access is maintained for general traffic.

5.1.5 Pull Over Bays

The proposed transport route through to the Sturt Highway generally provides a minimum sealed carriageway width of approximately 8.0m which is suitable to allow oncoming or following vehicles to safely pass the transport vehicle, noting some vehicles may be required to temporarily slow down and utilise the road shoulders for passing manoeuvres.

From Sturt Highway to the site, road widths are approximately 6.0–8.0m and passing opportunities may be limited in some locations. Given the low traffic volumes expected on these roads, traffic management is proposed to be put in place to hold traffic on intersecting roads while the OSOM vehicle travels through.

Accordingly, it is considered that additional pull over bays are unlikely to be required however, can be provided to allow for additional convenient passing opportunities for following vehicles and/or emergency stopping locations, subject to consultation with the road authorities.

5.1.6 Pinch Points

Up to 15 pinch points have been identified along the route options to the site access point where the transport vehicles would need to undertake turning manoeuvres which may require specific road upgrades and/or traffic management measures.

A swept path assessment has been undertaken at each pinch point using the Autodesk Vehicle Tracking software. A custom vehicle model has been created in the software to closely replicate the relevant vehicle specifications and performance characteristics shown within Figure 2.

The swept path assessment is provided in Appendix A with a summary of the findings outlined within Section 5.1.7 below.

5.1.7 Route Summary

This assessment has identified a number of road upgrades required in order to allow the transformer transport vehicle to successfully access the site from Port Botany, with a summary provided in Table 4 for each of the route options. Areas where road upgrades are required have been highlighted in the table.

Table 4: Schedule of Road Upgrades – Transformer from Port of Botany

Pinch Point	Location	Required Road Upgrades
01	Friendship Road onto Bumborah Point Road (Port Botany)	OSOM vehicle is required to mount the kerb of two traffic islands.
02	Bumborah Point Road onto Botany Road (Port Botany)	OSOM vehicle is required to mount the kerb of two traffic islands.
03	Botany Road onto Bunnerong Road (Matraville)	- OSOM vehicle is required to mount the kerb of two traffic islands. - Construct a hardstand with an area of approximately 82 sqm. - Temporarily remove three affected assets (surveillance cameras, solar panels, pedestrian push button pole)
04	Bunnerong Road onto Gardeners Road (Daceyville)	No road upgrades required.
05	Hume Highway onto Sturt Highway (Tarcutta)	No road upgrades required.
06 (Route A)	Sturt Highway onto Tumbarumba Road (Alfredtown)	- OSOM vehicle is required to mount the kerb of one traffic island. - Temporarily remove one sign.
07 (Route A)	Tumbarumba Road onto Gregadoo East Road (Book Book)	Construct a hardstand with an area of approximately 171 sqm.
08 (Route A)	Gregadoo East Road onto Livingstone Gully Road (Gregadoo)	- Construct a hardstand with an area of approximately 251 sqm. - Confirm shoulder is trafficable prior to OSOM travel.
09 (Route B)	Sturt Highway onto Elizabeth Avenue (Forest Hill)	Temporarily remove two signs.
10 (Route B)	Elizabeth Avenue onto Gregadoo East Road (Gregadoo)	Construct a hardstand with an area of approximately 93 sqm.
11 (Routes B&C)	Gregadoo East Road onto Livingstone Gully Road (Gregadoo)	No road upgrades required.
12 (Route C)	Sturt Highway onto Bakers Lane (Gumly Gumly)	No road upgrades required.
13 (Route C)	Bakers Lane onto Inglewood Road (Lake Albert)	Construct a hardstand with an area of approximately 166 sqm.
14 (Route C)	Inglewood Road onto Mitchell Road (Lake Albert)	Temporarily remove one sign.

Pinch Point	Location	Required Road Upgrades
15	Livingstone Gully Road to Gugaa BESS Site	Construct a hardstand with an area of approximately 133 sqm.

The total road upgrades required along the route are summarised in Table 5 for each route option.

Table 5: Summary of Road Upgrades – Port of Botany

Road Upgrade	Route		
	A	B	C
Assets to be relocated (surveillance cameras, solar panels, pedestrian push button pole)	3	3	3
Islands required to be mounted	7	6	6
Hardstand to be constructed	~637 sqm	~308 sqm	~381 sqm
Signage to be relocated / temporarily removed. these can typically be mounted into sleeves and temporarily removed and reinstated as required during transport.	1	2	1

The majority of the identified road upgrades are limited to the construction of trafficable area and temporary road asset relocation/removal which are considered to be relatively minor.

It is noted that traffic management measures including the use of escort vehicles and spotters will also be required along the route to control traffic and ensure the vehicle and load are clear of infrastructure.

Accordingly, it is concluded that the proposed route is feasible for use by the transformer transport vehicle with a maximum loaded height of 4.9m, subject to the identified road upgrades and traffic management measures.

5.2 Option 2 – Port of Melbourne

5.2.1 Height Clearances

A review of the overhead obstructions along the proposed route was undertaken based on available data from the National Heavy Vehicle Regulator (NHVR) National Network Map. A total of 75 overhead obstructions, predominantly bridge overpasses, were identified along the proposed transport route. The location and specified height clearance of each structure is included within the online map referenced in Table 2. These should be confirmed prior to OSOM travel.

The critical height clearances along the route were identified at several locations as outlined below:

- Arkells Lane Overpass – 5.2m
- Mia Mia Road Overpass - 5.2m
- Kilmore-Broadfield Road Overpass– 5.1m

The maximum loaded height of the transformer to safely pass beneath the overhead structures is 5.0m. Based on the transformer being able to be lowered to a height of approximately 200mm above the ground surface when travelling beneath obstructions, the maximum transport height of the transformer is restricted to approximately 4.8m. Accordingly, the height clearances along this route would be considered suitable for the transport of the specified transformer and OSOM vehicle combination for this project.

It is noted that a powerline survey would also be required to confirm any overhead powerlines along the route which may need to be lifted, and on-site assessment of any overhanging vegetation (e.g. tree branches) may also be required.

5.2.2 Railway Level Crossings

Two railway level crossings have been identified along the proposed transport route, both located on Somerville Road in Brooklyn, Victoria.

The transformer transport vehicle is expected to be able to cross the rail tracks at Somerville Road with no upgrade works required.

Consultation with the rail authority is recommended to confirm any specific conditions or traffic management measures to be adopted during railway crossing manoeuvres. Typically, a Rail Protection Officer would be required to supervise each crossing given the length of the OSOM vehicle combination.

5.2.3 Bridges and Culverts

Structural assessment of bridges and culverts is outside the current scope of this assessment and may need to be undertaken separately to confirm the load bearing capacity of assets along the proposed transport route.

5.2.4 Rest Areas

A rest area has been identified along the OSOM transport route which may be utilised for fatigue management:

- Reef Hills Northbound Rest Area ([Map Link](#))

A swept path assessment of the proposed rest area is included within the route assessment (Appendix B) and indicates that the vehicle can suitably access the rest area while maintaining access for general traffic. It is noted that additional rest areas may also be available along the route which could be adopted if required due to unforeseen circumstances. Operating protocol in relation to the use of any rest areas would be outlined as part of the Transport Management Plan to be prepared prior to construction in order to ensure appropriate access is maintained for general traffic.

5.2.5 Pull Over Bays

The proposed transport route through to the Sturt Highway generally provides a minimum sealed carriageway width of approximately 8.0m which is suitable to allow oncoming or following vehicles to safely pass the transport vehicle, noting some vehicles may be required to temporarily slow down and utilise the road shoulders for passing manoeuvres.

From Sturt Highway to the site, road widths are approximately 6.0–8.0m and passing opportunities may be limited in some locations. Given the low traffic volumes expected on these roads, traffic management is proposed to be put in place to hold traffic on intersecting roads while the OSOM vehicle travels through.

Accordingly, it is considered that additional pull over bays are unlikely to be required however, can be provided to allow for additional convenient passing opportunities for following vehicles and/or emergency stopping locations, subject to consultation with the road authorities.

5.2.6 Pinch Points

Up to 18 pinch points have been identified along the route options to the site access point where the transport vehicles would need to undertake turning manoeuvres which may require specific road upgrades and/or traffic management measures.

A swept path assessment has been undertaken at each pinch point using the Autodesk Vehicle Tracking software. A custom vehicle model has been created in the software to closely replicate the relevant vehicle specifications and performance characteristics shown within Figure 2.

The swept path assessment is provided in Appendix B with a summary of the findings outlined within Section 5.1.7 below.

5.2.7 Route Summary

This assessment has identified a number of road upgrades required in order to allow the transformer transport vehicle to successfully access the site from Port of Melbourne, with a summary provided in Table 4 for each of the route options. Areas where road upgrades are required have been highlighted in the table.

Table 6: Schedule of Road Upgrades – Transformer from Port of Melbourne

Pinch Point	Location	Required Road Upgrades
01	Dock Link Road onto Footscray Road (Docklands Highway) (West Melbourne, VIC)	No road upgrades required.
02	Footscray Road (Docklands Highway) onto Moreland Street (Footscray, VIC)	No road upgrades required.
03	Whitehall Street (Docklands Highway) onto Somerville Road (Footscray, VIC)	Flexible traffic separators and sockets to be temporarily removed or relocated.
04	Somerville Road onto Somerville Road (Kingsville, VIC)	No road upgrades required.
05	Somerville Road onto Fairbairn Road (Sunshine West, VIC)	OSOM vehicle is required to mount the kerb of one traffic island.
06	Fairbairn Road onto Boundary Road (Laverton North, VIC)	- OSOM vehicle is required to mount the kerb of two traffic island. - Temporarily remove four signs.

Pinch Point	Location	Required Road Upgrades
07	Boundary Road onto Western Ring Road (Derrimut, VIC)	No road upgrades required.
08 (Route A)	Hume Highway onto Tumbarumba Road	No road upgrades required.
09 (Route A)	Tumbarumba Road onto Gregadoo East Road (Book Book)	Construct a hardstand with an area of approximately 118 sqm.
10 (Route A)	Gregadoo East Road onto Livingstone Gully Road (Gregadoo)	- Construct a hardstand with an area of approximately 251 sqm. - Confirm shoulder is trafficable prior to OSOM travel.
11 (Routes B&C)	Hume Highway onto Sturt Highway (Tarcutta)	No road upgrades required.
12 (Route B)	Sturt Highway onto Elizabeth Avenue (Forest Hill)	Temporarily remove two signs.
13 (Route B)	Elizabeth Avenue onto Gregadoo East Road (Gregadoo)	Construct a hardstand with an area of approximately 93 sqm.
14 (Routes B&C)	Gregadoo East Road onto Livingstone Gully Road (Gregadoo)	No road upgrades required.
15 (Route C)	Sturt Highway onto Bakers Lane (Gumly Gumly)	No road upgrades required.
16 (Route C)	Bakers Lane onto Inglewood Road (Lake Albert)	Construct a hardstand with an area of approximately 166 sqm.
17 (Route C)	Inglewood Road onto Mitchell Road (Lake Albert)	Temporarily remove one sign.
18	Livingstone Gully Road to Gugaa BESS Site	Construct a hardstand with an area of approximately 133 sqm.

The total road upgrades required along the route are summarised in Table 7 for each route option.

Table 7: Summary of Road Upgrades – Port of Melbourne

Road Upgrade	Route		
	A	B	C
Flexible traffic separators to be temporarily removed/relocated	1	1	1
Islands required to be mounted	3	3	3
Hardstand to be constructed	~502 sqm	~226 sqm	~299 sqm
Signage to be relocated / temporarily removed. these can typically be mounted into sleeves and temporarily removed and reinstated as required during transport.	4	6	5

The majority of the identified road upgrades are limited to the construction of trafficable area and temporary road asset relocation/removal which are considered to be relatively minor.

It is noted that traffic management measures including the use of escort vehicles and spotters will also be required along the route to control traffic and ensure the vehicle and load are clear of infrastructure.

Accordingly, it is concluded that the proposed route is feasible for use by the transformer transport vehicle with a maximum loaded height of 5.0m, subject to the identified road upgrades and traffic management measures.

6. Conclusion

This assessment provides a desktop review of the access route for the transformer delivery vehicle from the Port Botany and Port of Melbourne to the site associated with the Gugaa BESS.

A swept path assessment at critical pinch points is provided within Appendix A and Appendix B and a summary of the route assessment is provided in Table 8.

Table 8: Route Assessment

	Port of Botany	Port of Melbourne
Minor Impacts/Upgrades		
Construction of trafficable areas	Up to 637 sqm	Up to 502 sqm
Traffic sign relocation/removal	Up to two signs	Up to six signs
Vegetation trimming	-	-
Asset relocation/removal	Three assets including surveillance cameras, solar panels and a pedestrian push button pole	-
Moderate Impacts/Upgrades		
Tree removal	-	-
Light or power pole relocation/removal	-	-
Major Impacts/Upgrades		
Encroachment into private property	-	-
Construction of new road sections	-	-
Impacts to railway level crossings	-	Two railway crossings to be traversed
Critical Risks / Other Measures		
Vertical clearance assessment	4.9m maximum height of vehicle and load	5.0m maximum height of vehicle and load
Pull over bays	-	-
Port congestion	High risk	High risk

Overall, the route assessment indicates that either route options is able to accommodate the delivery vehicle subject to minor works and additional hardstand.

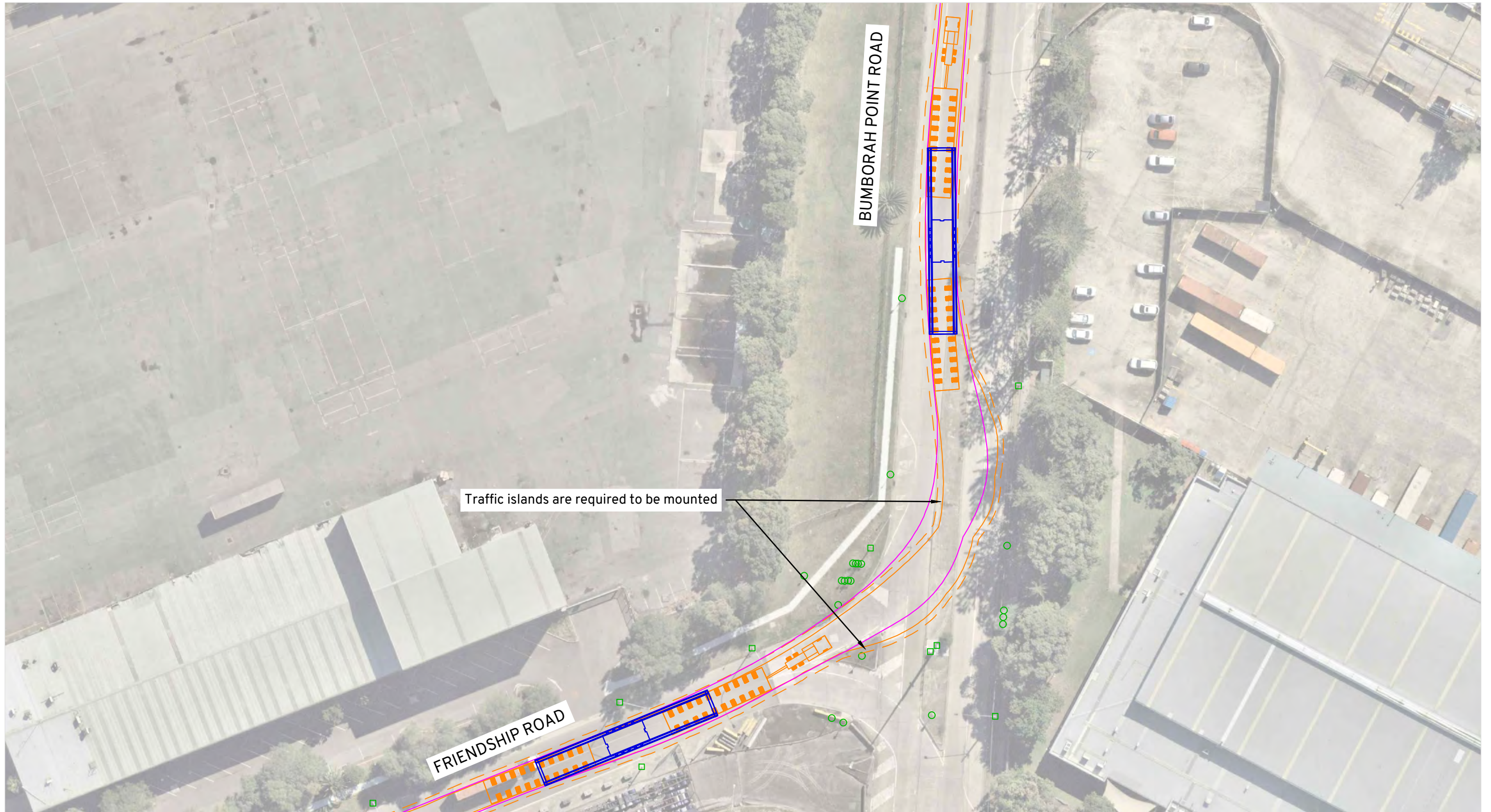
Prior to delivery of the transformer permits would be required to be applied for as part of the finalisation of the Transport Management Plan. It is recommended that any project OSOM movements are timed so they do not coincide with other OSOM vehicles within the surrounding area to limit the impact to the road network, which can be undertaken as part of the permit application process.

Accordingly, it is concluded that the proposed routes are suitable to accommodate the largest high risk OSOM vehicle to access the site.

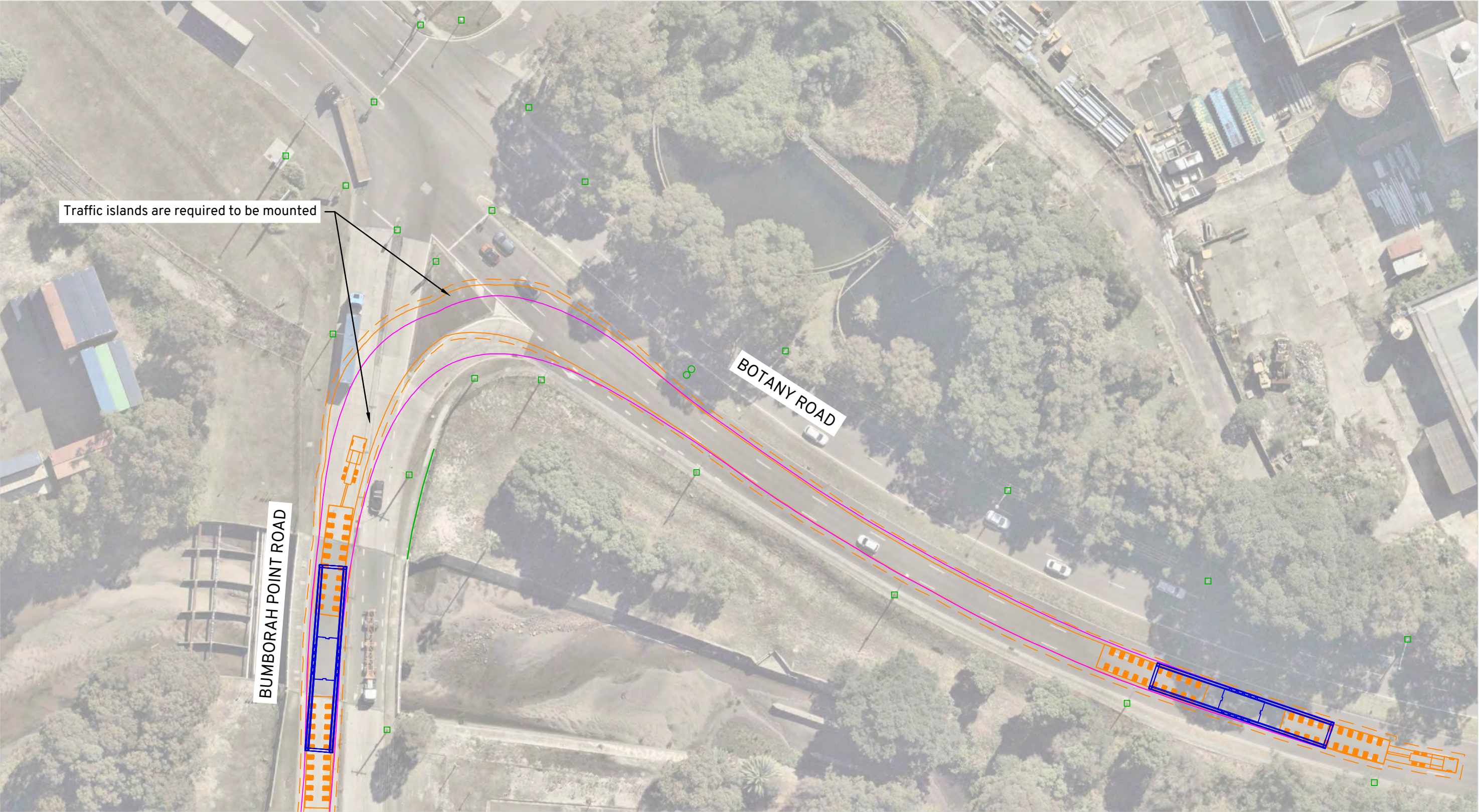
Appendix A

Swept Path Assessment – Port of Botany

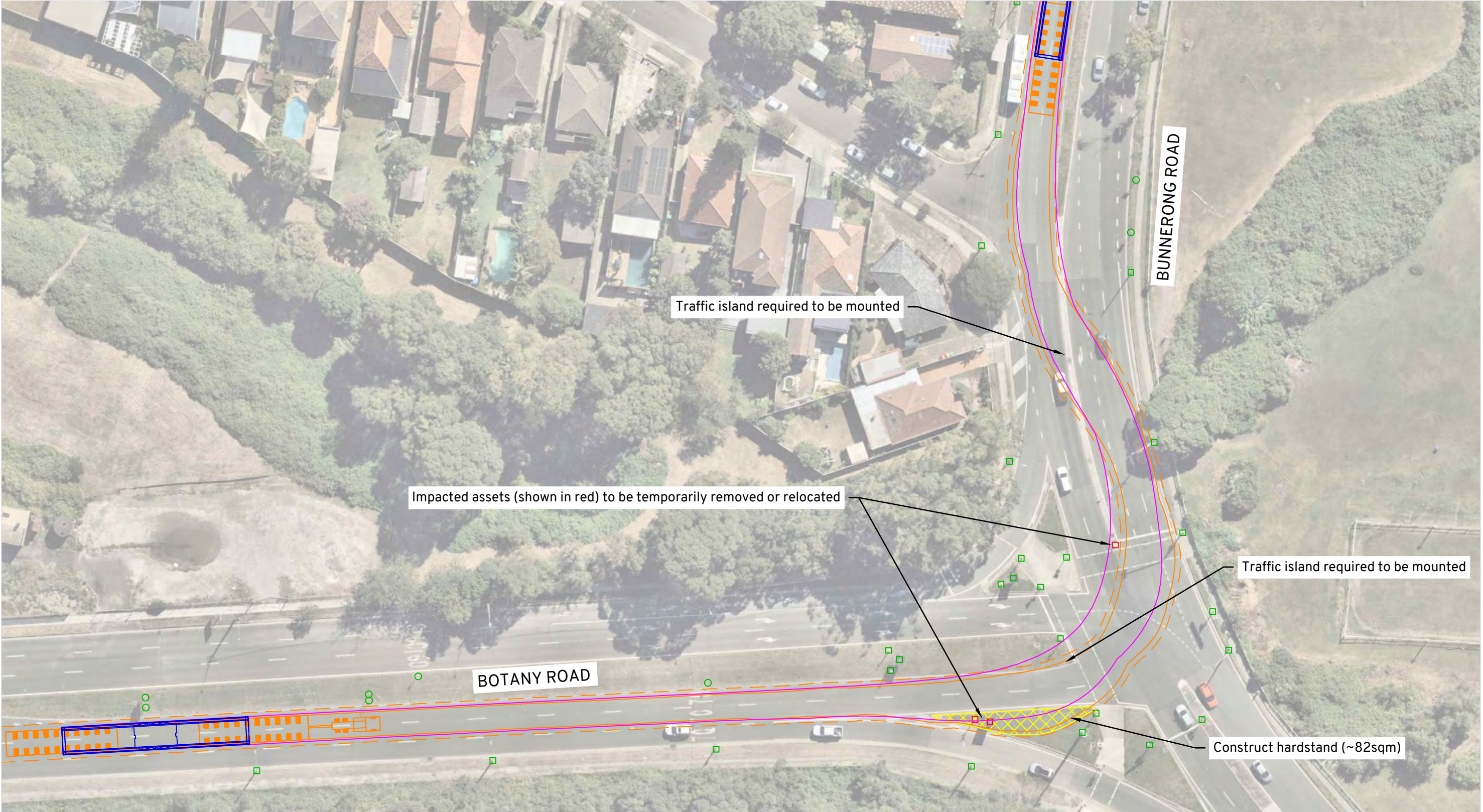




Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - OSOM vehicle is required to mount the kerb of two islands.	 Location: Port Botany, NSW Online Map Link	Friendship Road onto Bumborah Point Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/09/2025 DWG NO: 1337 RA01A - MGA56 SCALE at A3: 1:750 01
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - OSOM vehicle is required to mount the kerb of two islands.	 Location: Port Botany, NSW Online Map Link	Bumborah Point Road onto Botany Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/09/2025 DWG NO: 1337 RA01A - MGA56 SCALE at A3: 1:750 02
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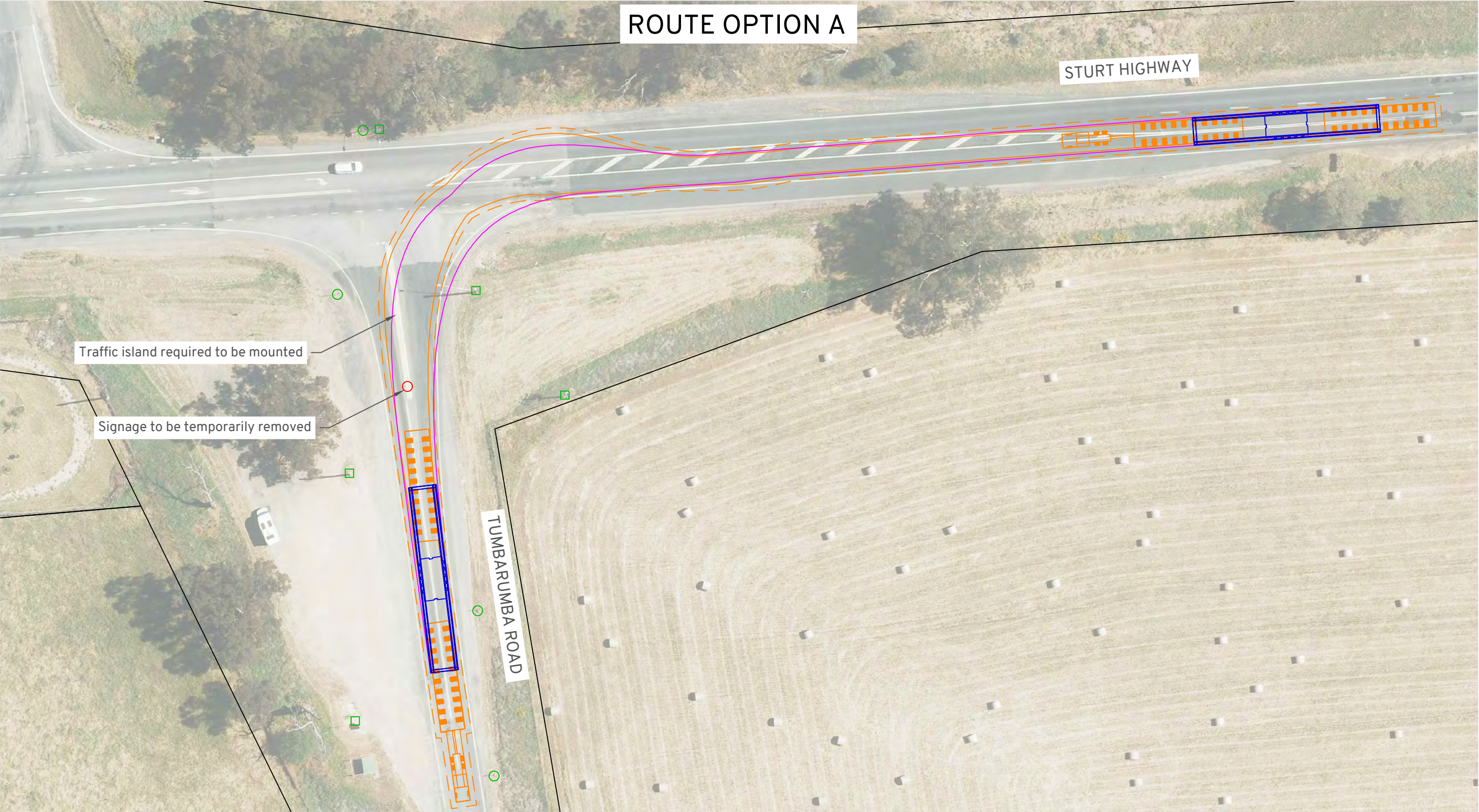
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - OSOM vehicle is required to mount the kerb of two islands. - Construct appropriate hardstand in indicated areas (~82sqm). - Three impacted assets (red) are to be removed/relocated including surveillance cameras, solar panels and a pedestrian push button pole.	 Location: Matraville, NSW Online Map Link	Botany Road onto Bunnerong Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/09/2025 DWG NO: 1337 RA01A - MGA56 SCALE at A3: 1:750 03
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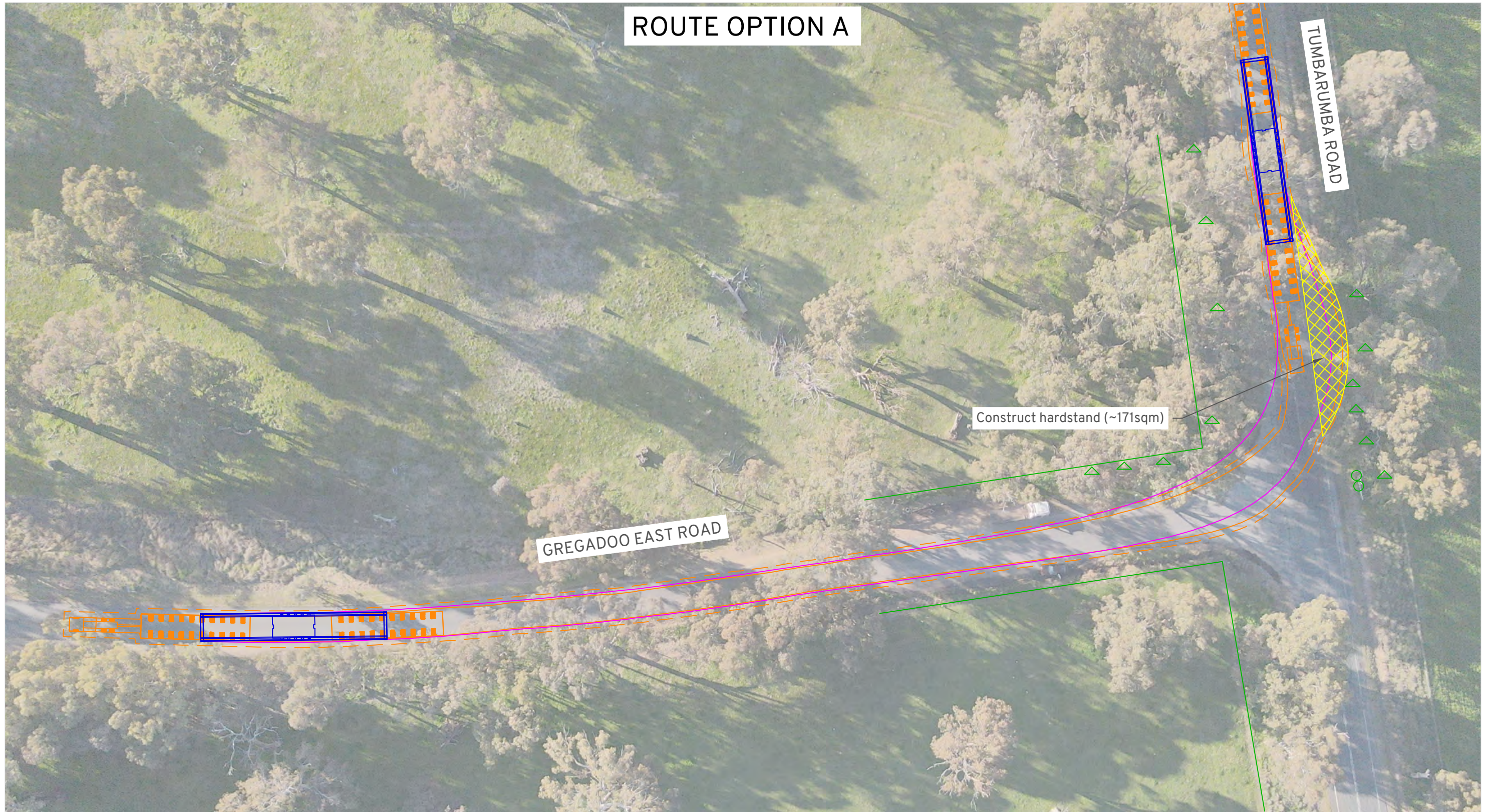
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure.	 Location: Daceyville, NSW Online Map Link	Bunnerong Road onto Gardeners Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/09/2025 DWG NO: 1337 RA01A - MGA56 SCALE at A3: 1:750 04
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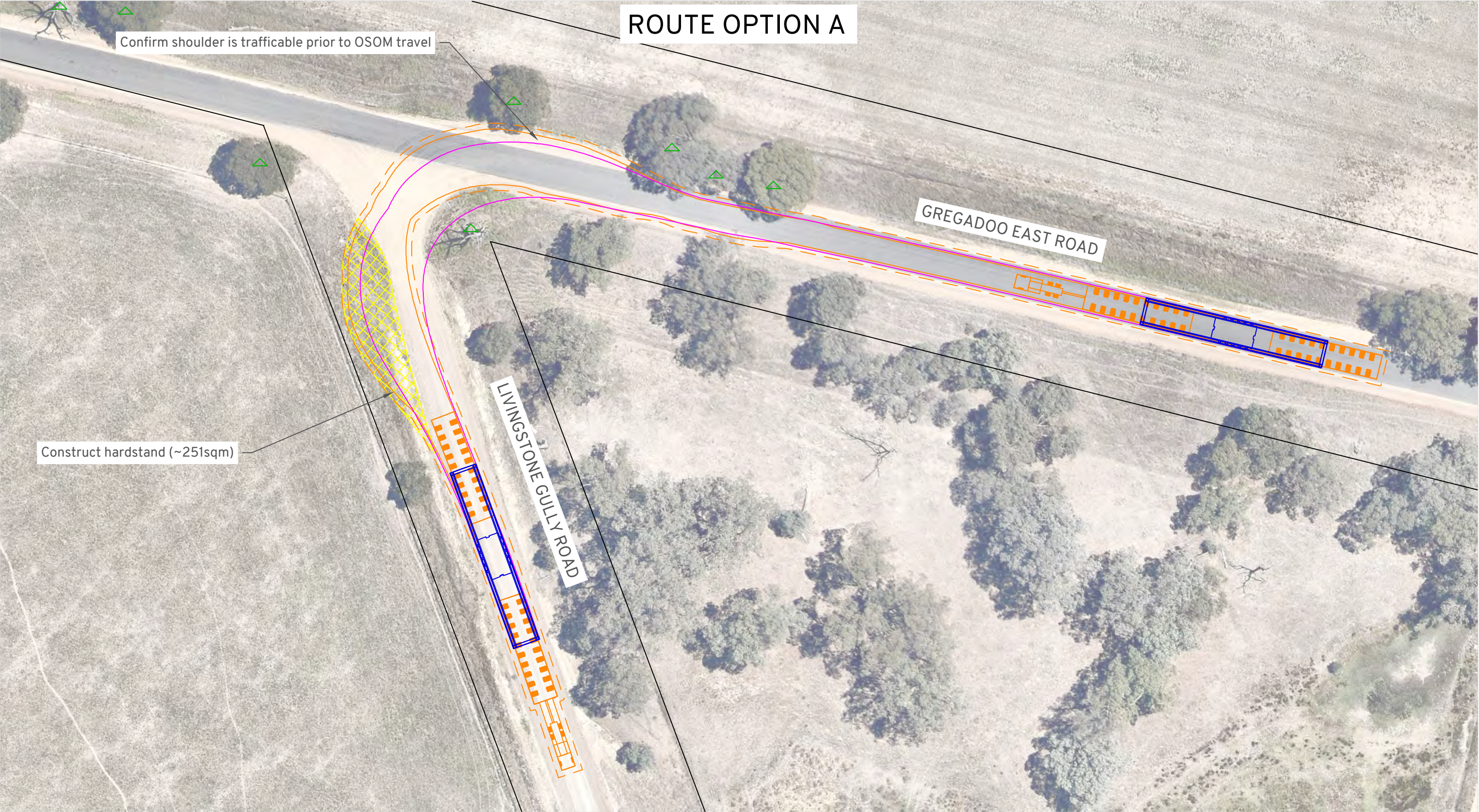
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure.	 Location: Tarcutta, NSW Online Map Link	Hume Highway onto Sturt Highway Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:2000  05
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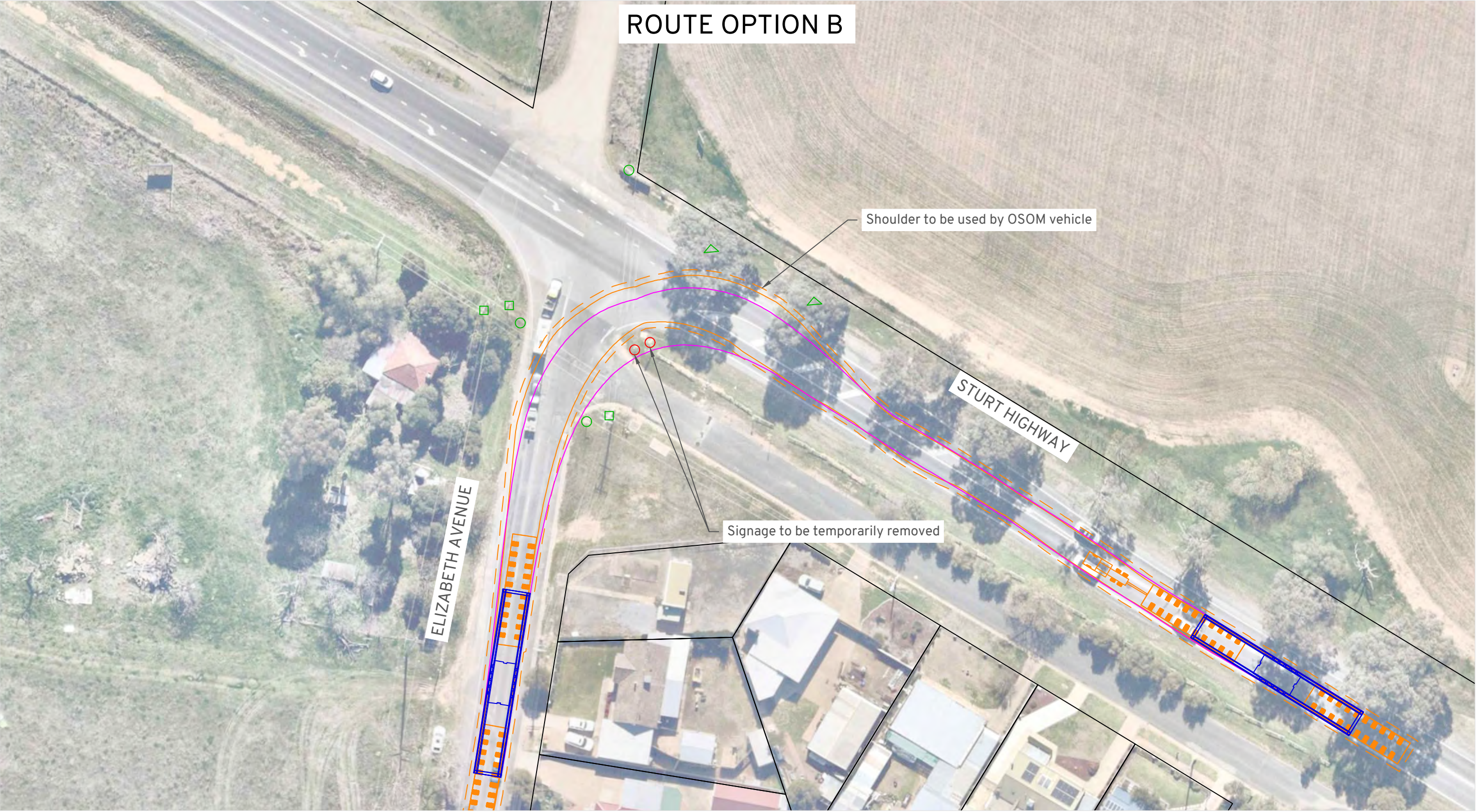
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - OSOM vehicle is required to mount the kerb of one island. - One sign to be temporarily removed.	 Location: Alfredtown, NSW Online Map Link	Sturt Highway onto Tumbarumba Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750  06
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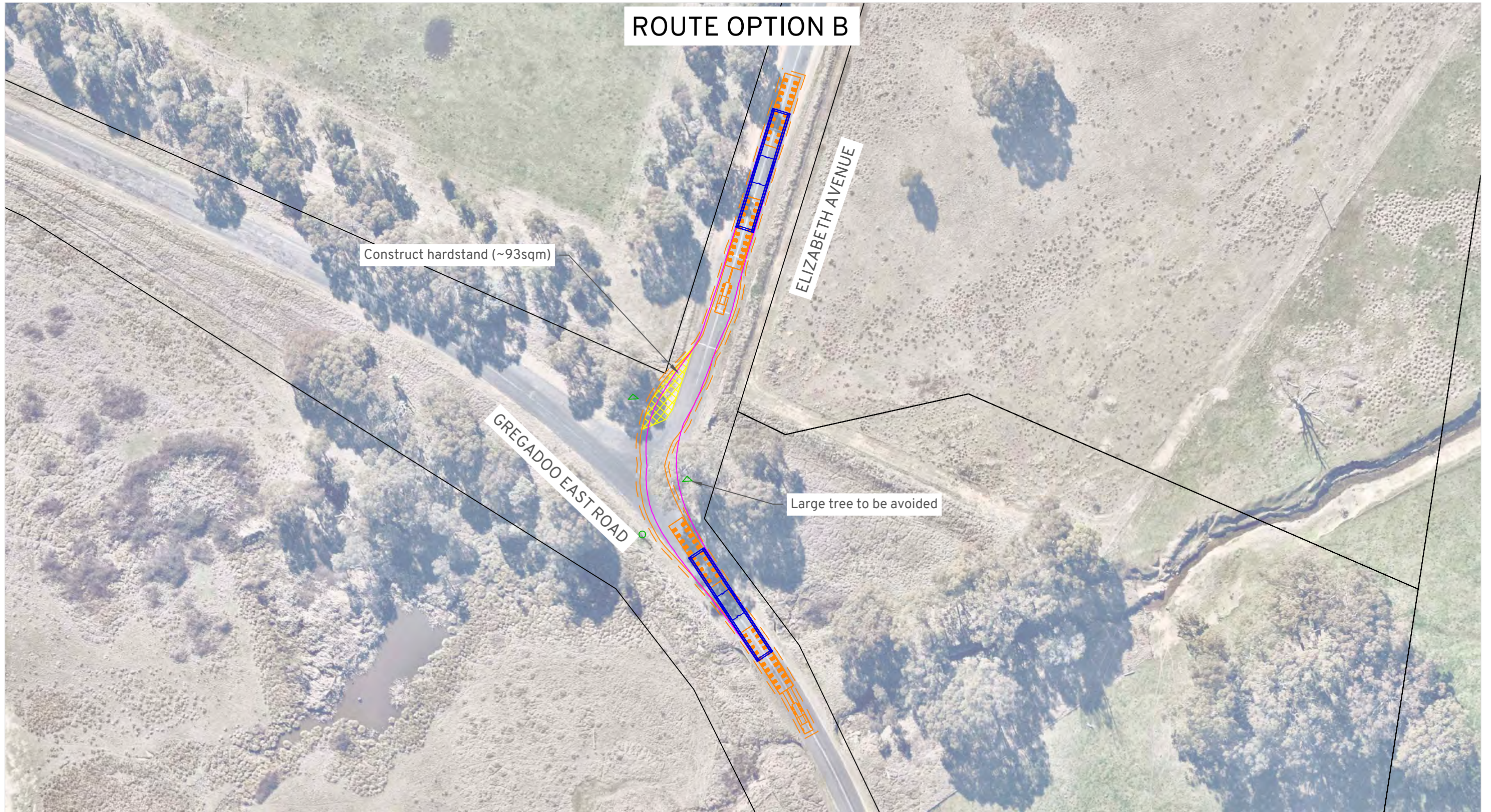
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Construct appropriate hardstand in indicated areas (~171sqm). - Trees/vegetation marked indicatively.	 Location: Book Book, NSW Online Map Link	Tumbarumba Road onto Gregadoo East Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750 
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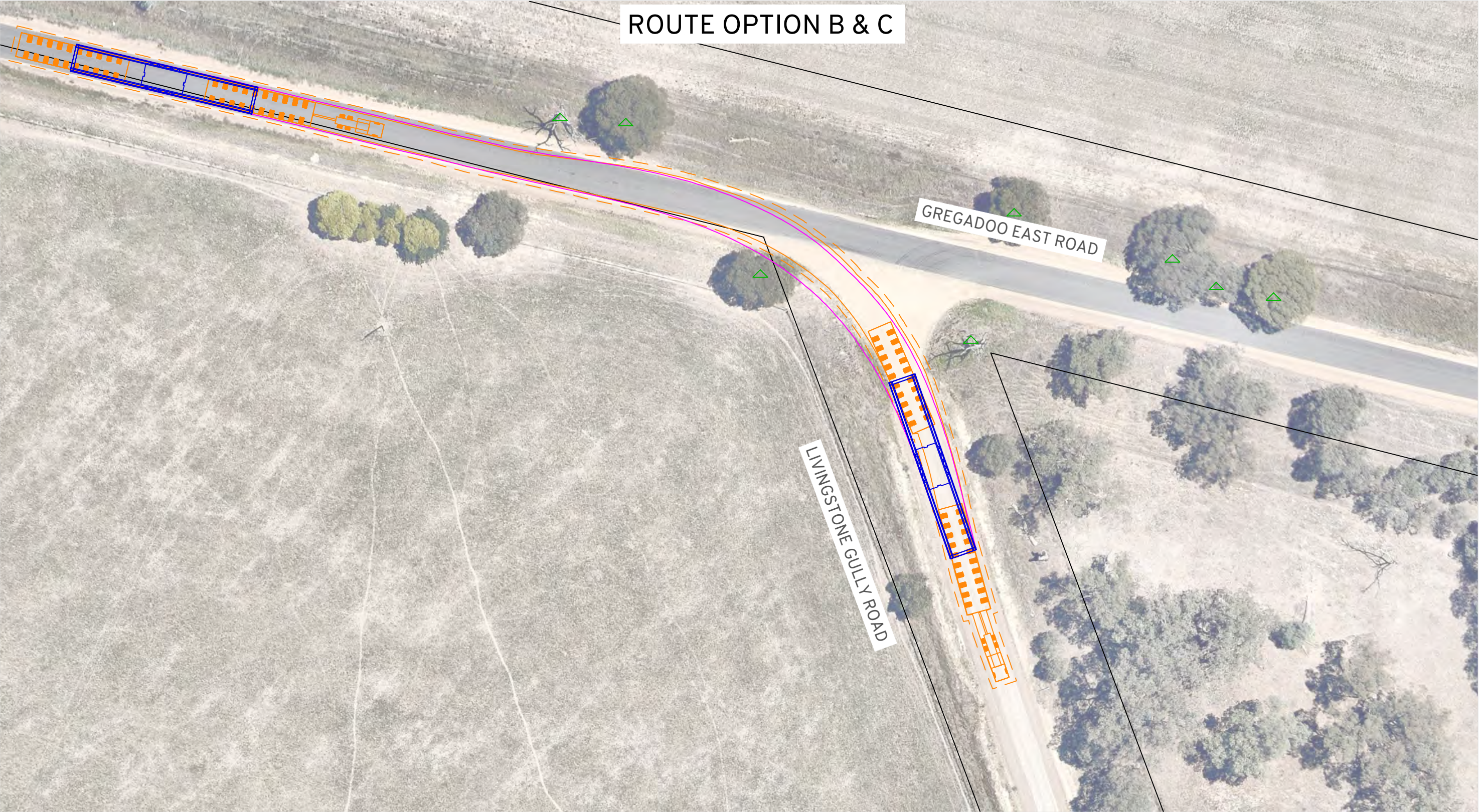
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Trees/vegetation marked indicatively. - Construct appropriate hardstand in indicated areas (~251sqm). - Confirm shoulder is trafficable prior to OSOM travel	 Location: Gregadoo, NSW Online Map Link	Gregadoo East Road onto Livingstone Gully Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750  08
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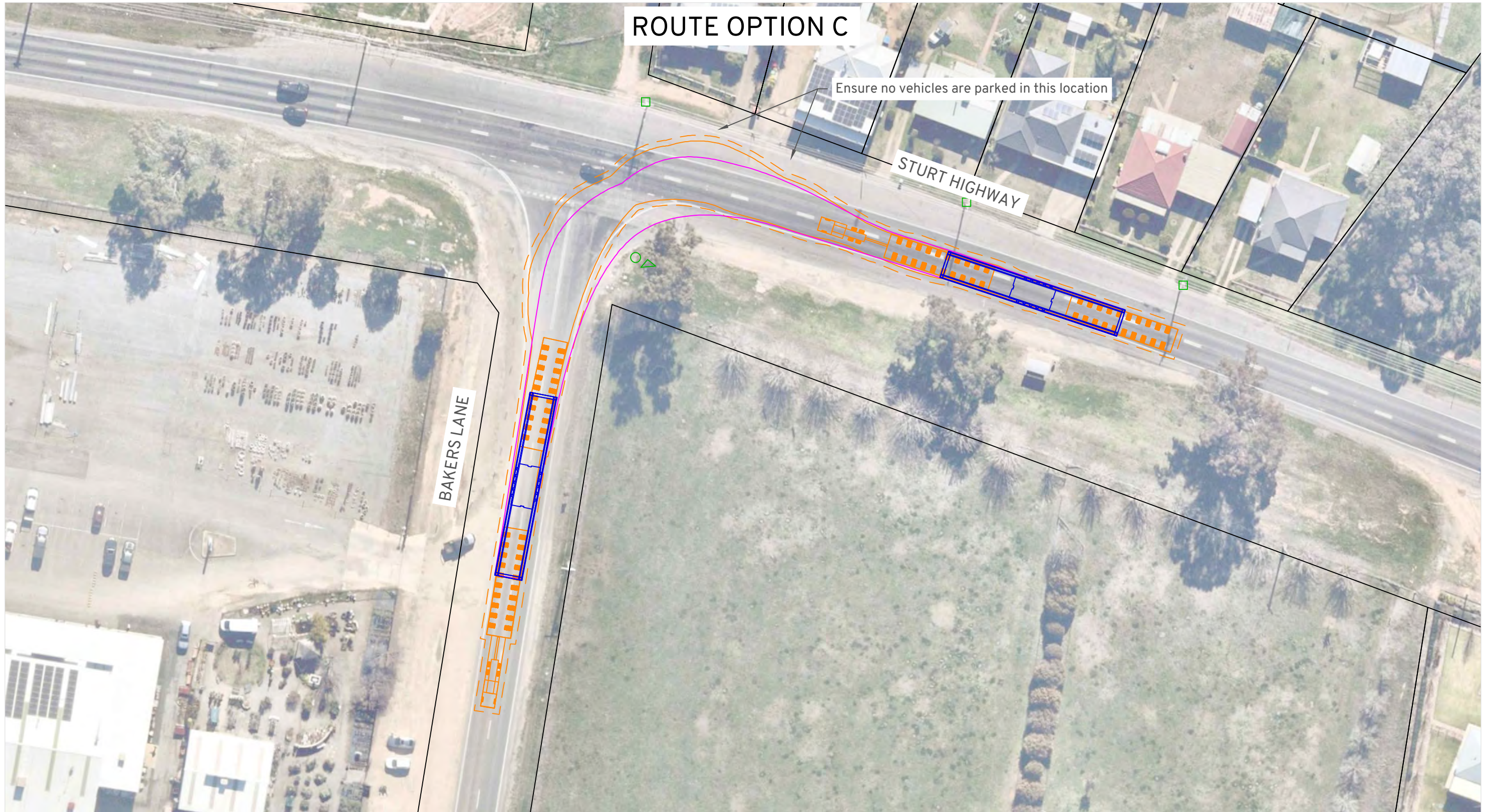


Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Two signs to be temporarily removed.	 Location: Forest Hill, NSW Online Map Link	Sturt Highway onto Elizabeth Avenue Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750  09
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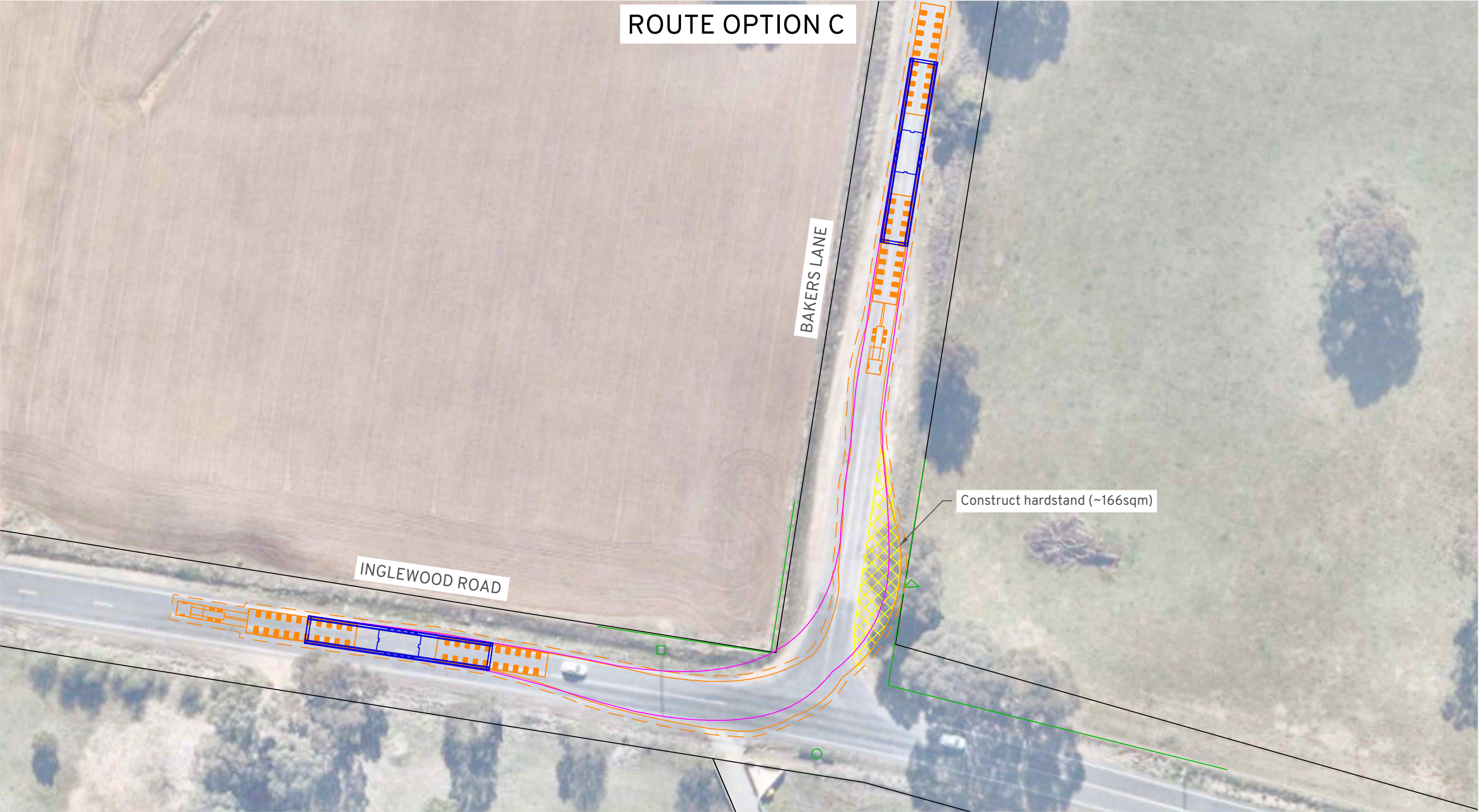


Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail Impacted Assets Marked Red	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Trees/vegetation marked indicatively. - Construct appropriate hardstand in indicated areas (~93sqm).	 Location: Gregadoo, NSW Online Map Link	Elizabeth Avenue onto Gregadoo East Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:1000  10
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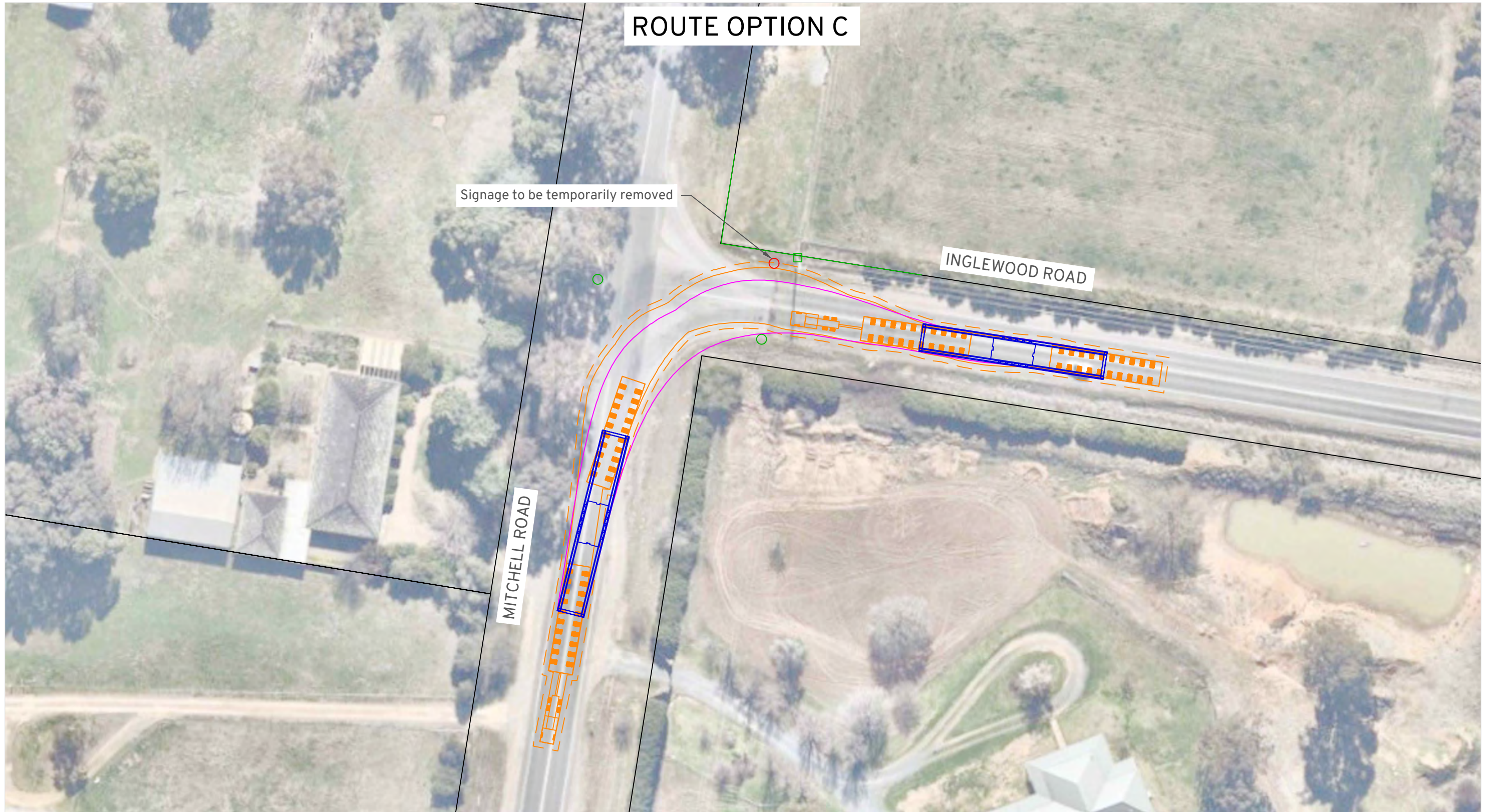




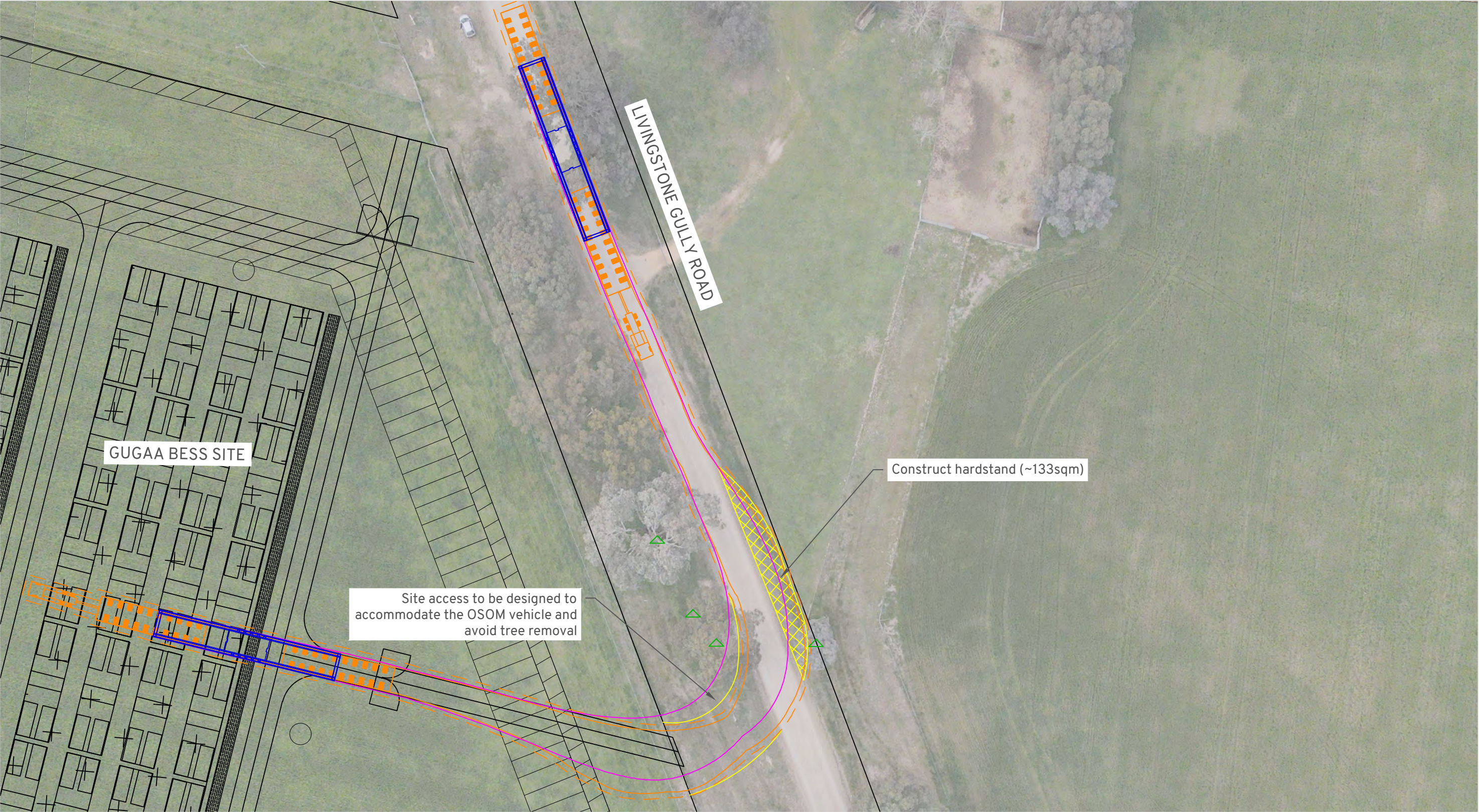
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Ensure no vehicles are parked along the side of the road prior to travel.	 Location: Gumly Gumly, NSW Online Map Link	Sturt Highway onto Bakers Lane Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750 
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Construct appropriate hardstand in indicated areas (~166sqm).	 Location: Lake Albert, NSW Online Map Link	Bakers Lane onto Inglewood Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750  13
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - One sign to be temporarily removed.	 Location: Lake Albert, NSW Online Map Link	Inglewood Road onto Mitchell Road Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750	 14
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail Impacted Assets Marked Red	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Trees/vegetation marked indicatively. - Construct appropriate hardstand in indicated areas (~133sqm). - Site access to be designed to accommodate the OSOM vehicle movement and avoid tree removal.	 Location: Gregadoo, NSW Online Map Link	Livingstone Gully Road onto Gugaa BESS Site Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:750	 15
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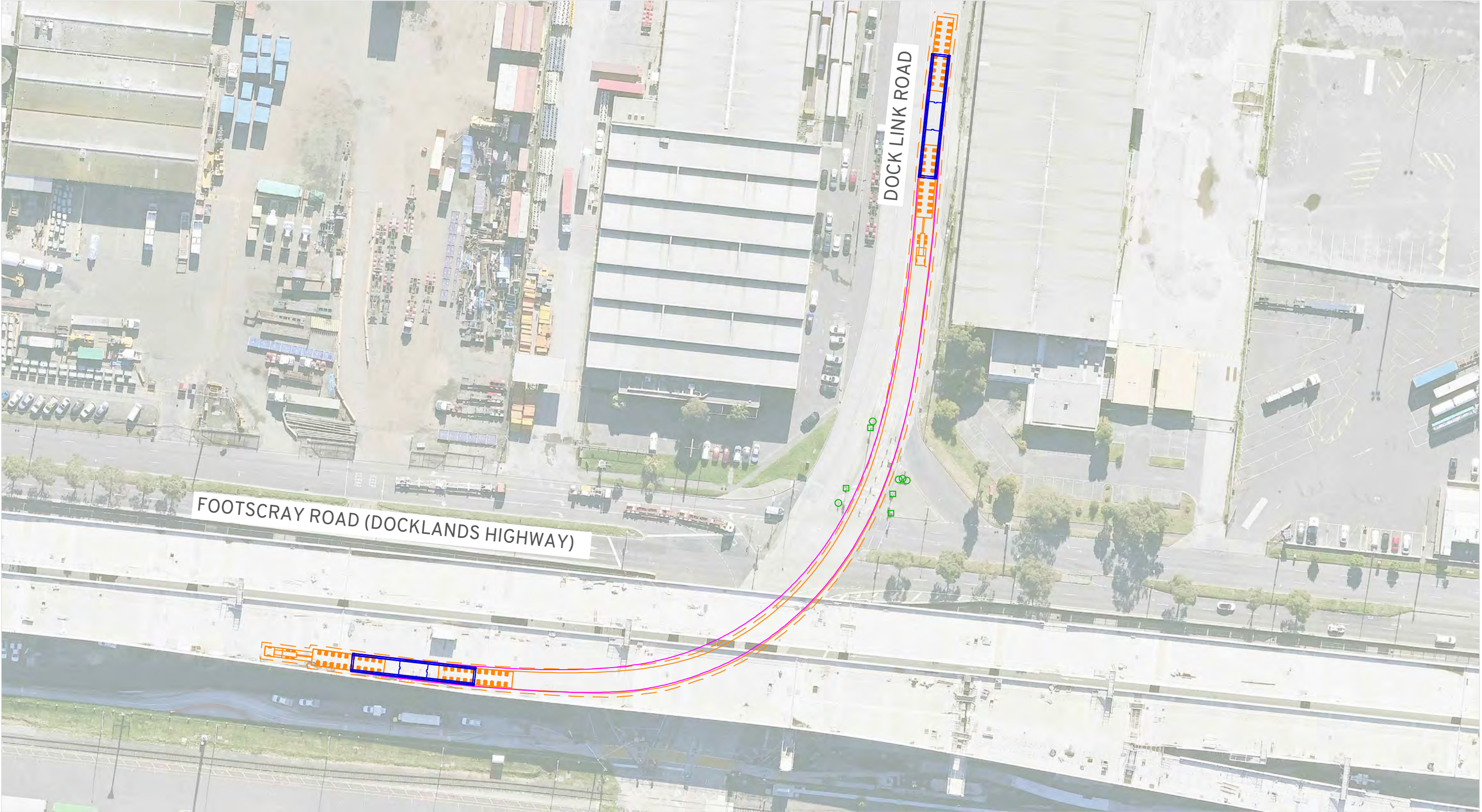


Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure.	 Location: Boxers Creek, NSW Online Map Link	Goulburn Bypass Rest Area Port of Botany to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA01B - MGA55 SCALE at A3: 1:1000  16
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Appendix B

Swept Path Assessment – Port of Melbourne

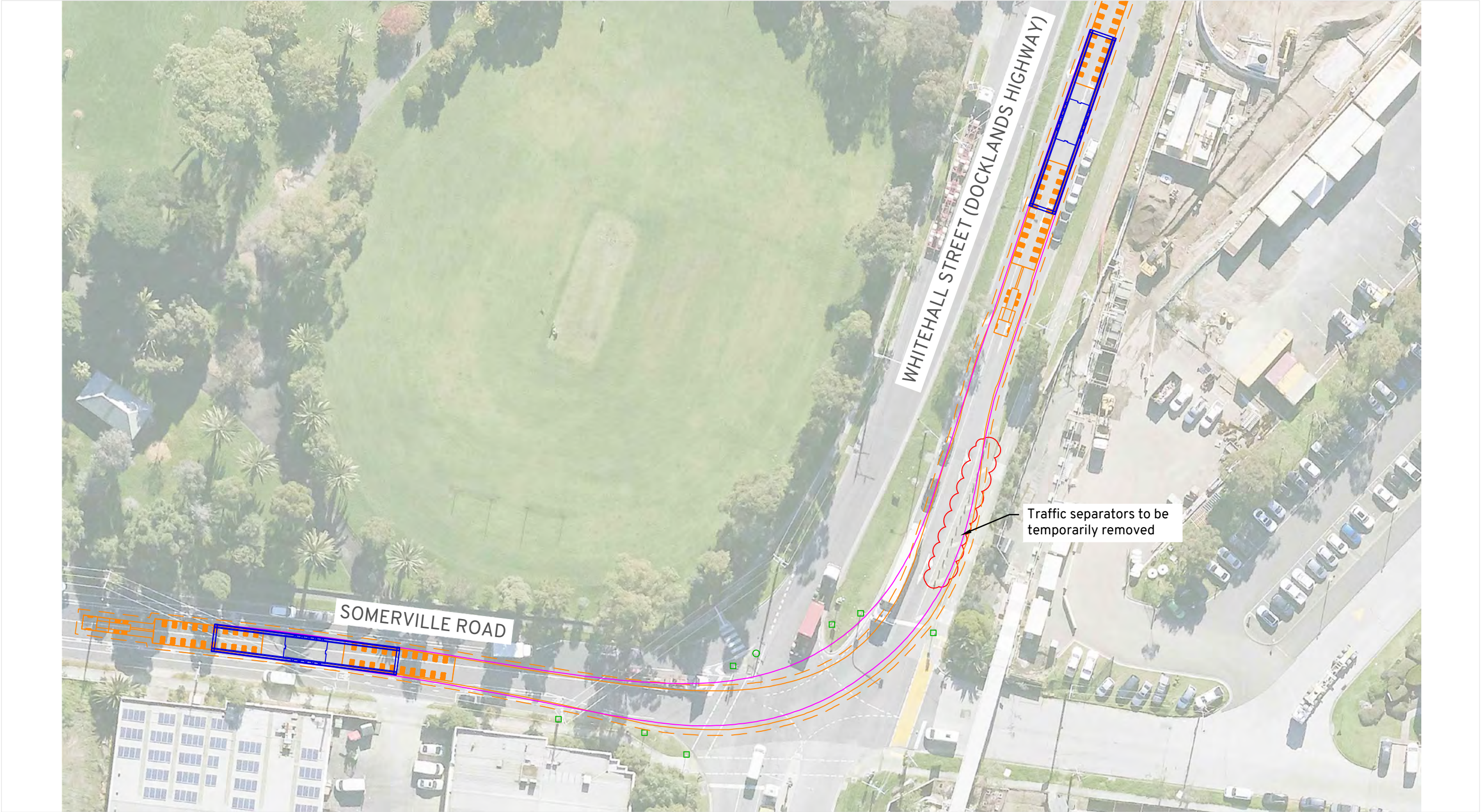




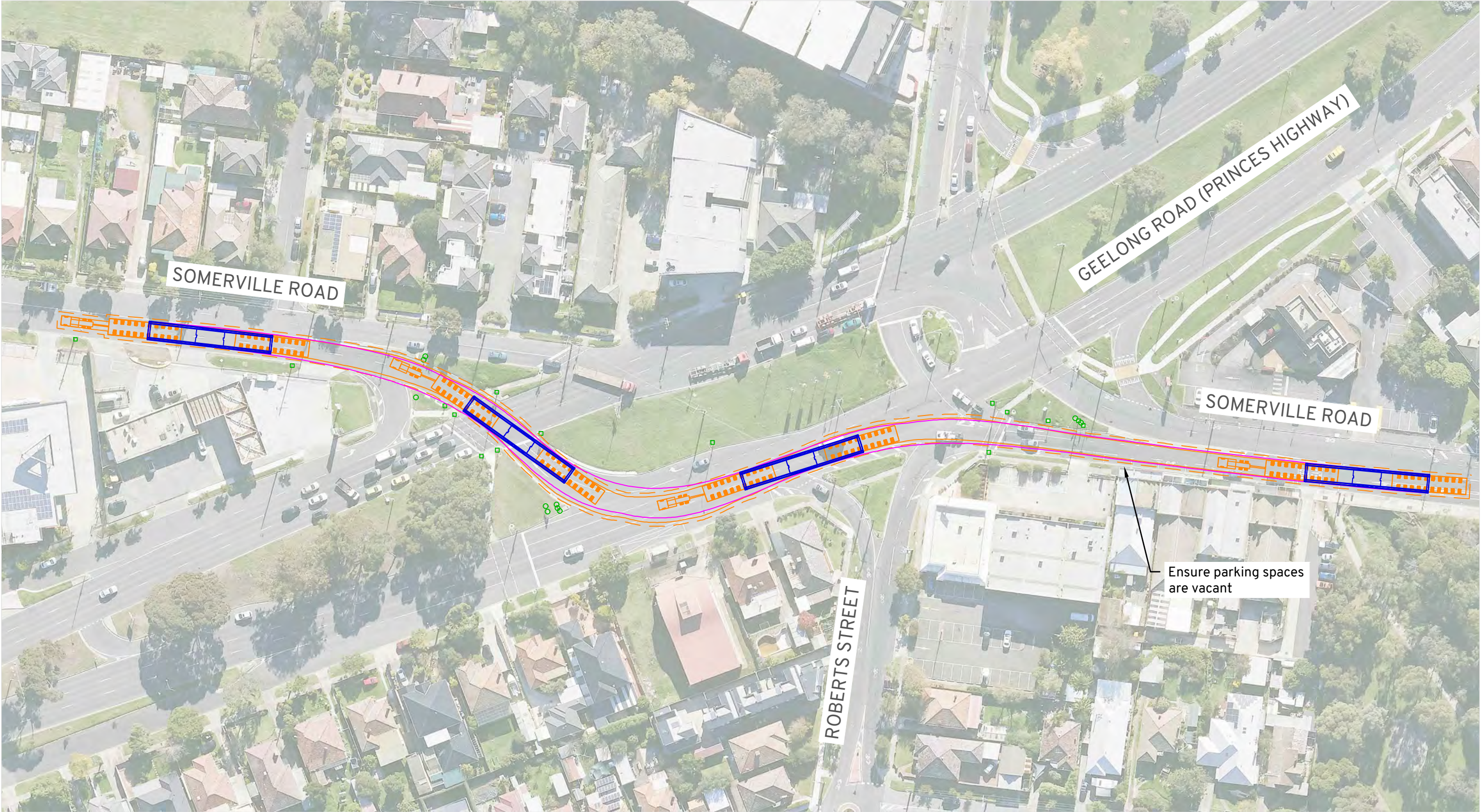
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail Impacted Assets Marked Red	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure.	↑ Location: West Melbourne, VIC Online Map Link Dock Link Road onto Footscray Road (Docklands Highway) Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02A - VIC SCALE at A3: 1:1000 Amber 01
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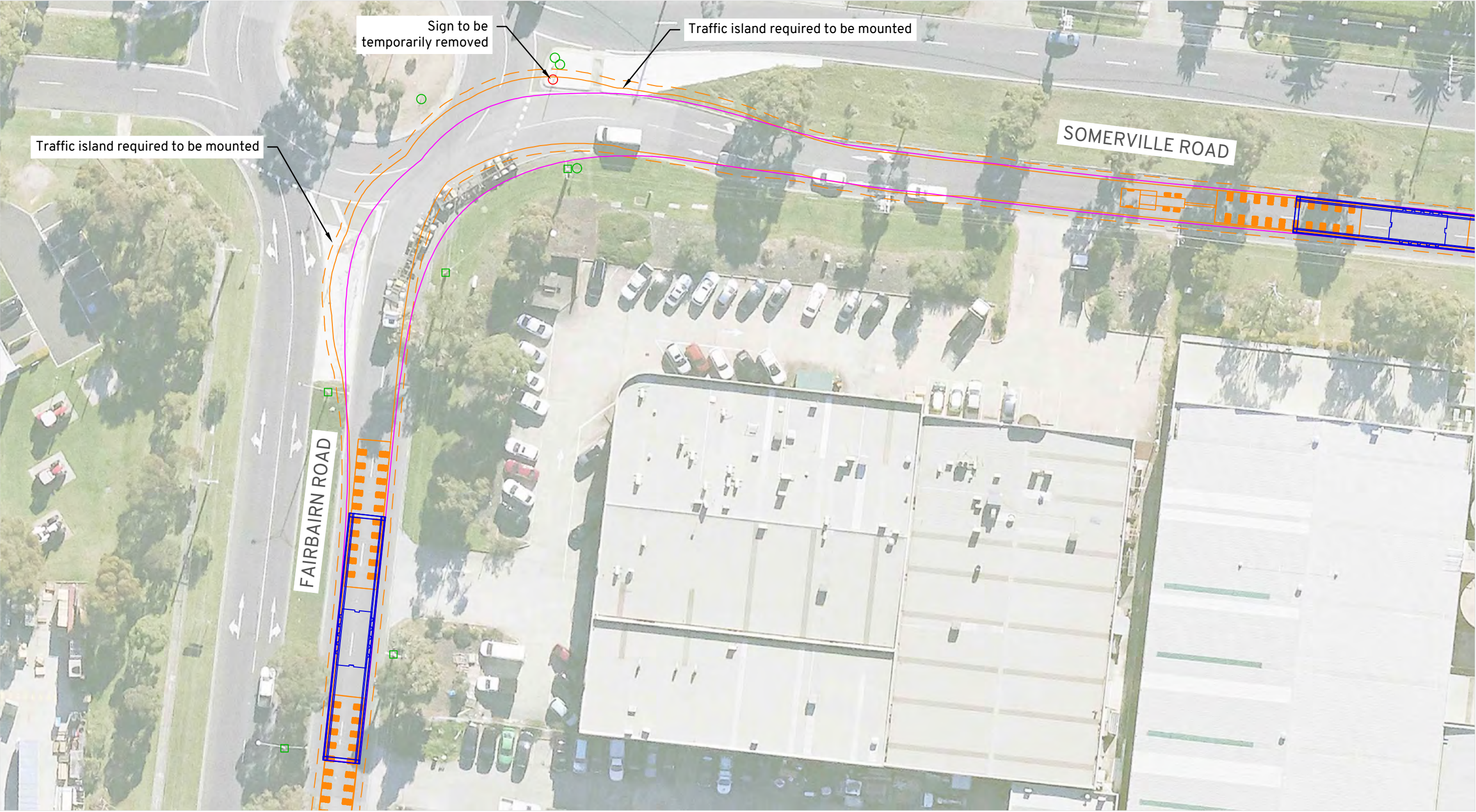
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes.	 Location: Footscray, VIC Online Map Link	Footscray Road (Docklands Highway) onto Moreland Street Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02A - VIC SCALE at A3: 1:500  02
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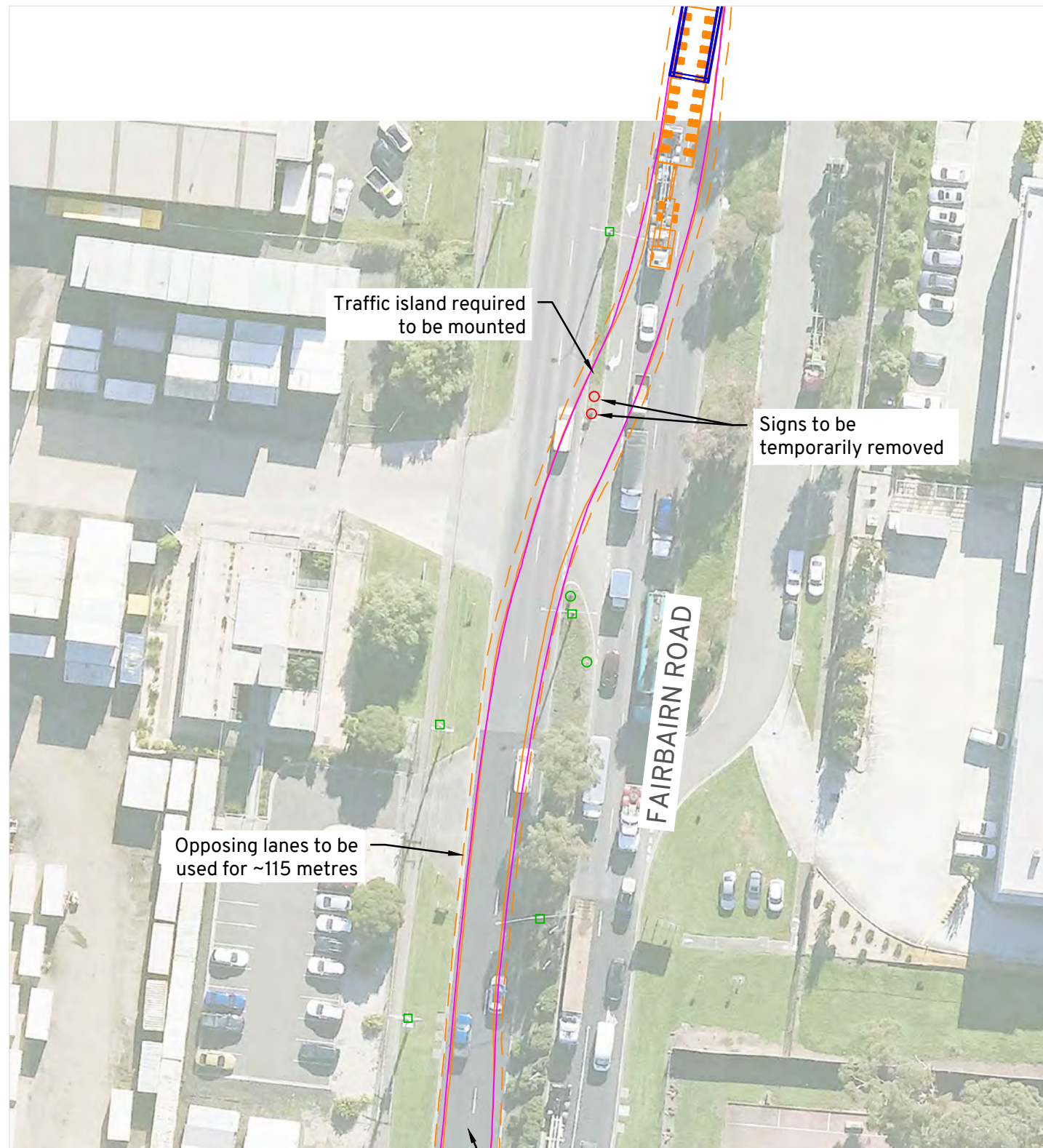
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Flexible traffic separators and sockets to be temporarily removed or relocated.	 Location: Footscray, VIC Online Map Link	Whitehall Street (Docklands Highway) onto Somerville Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02A - VIC SCALE at A3: 1:750  03
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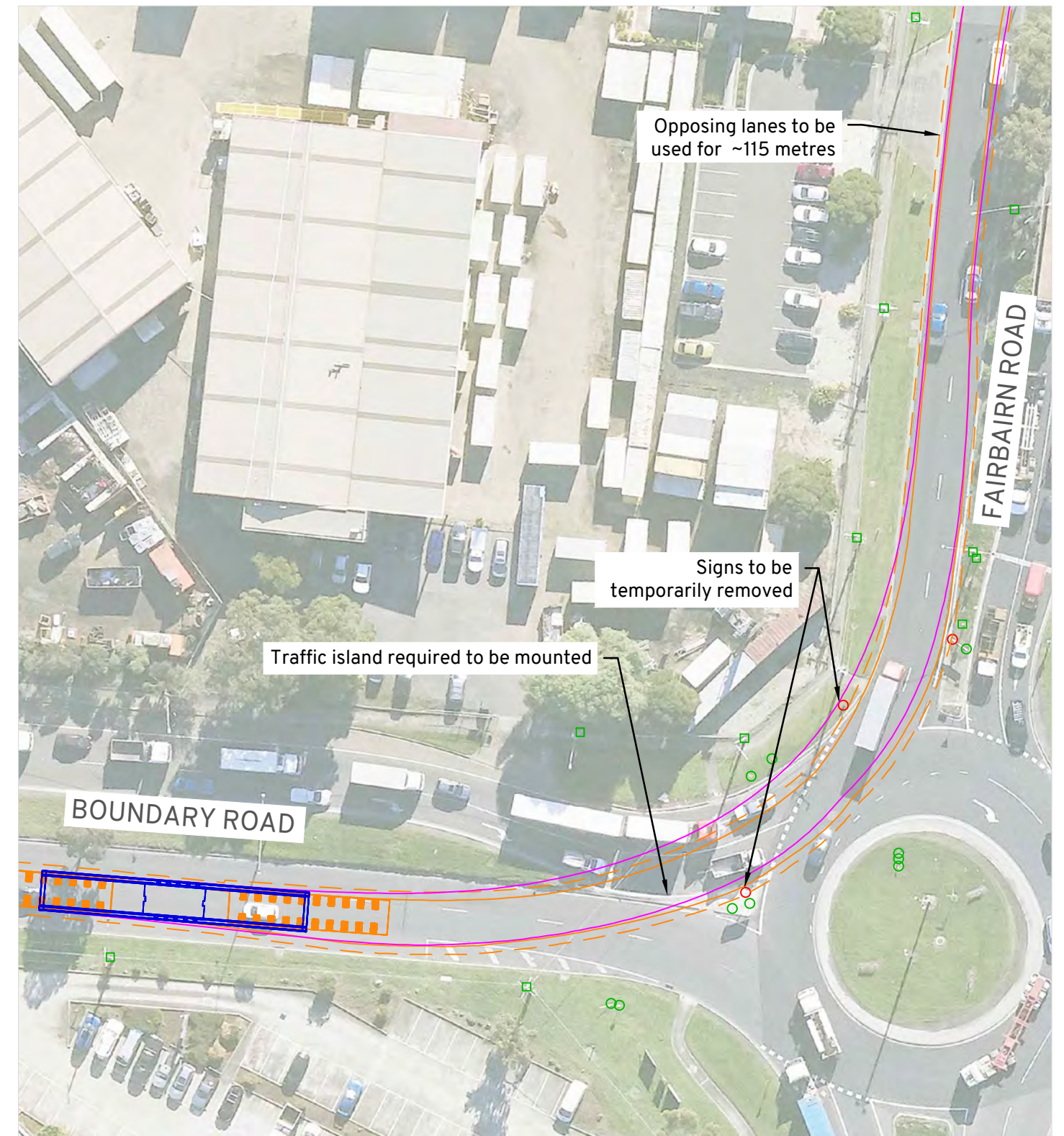
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Ensure parking spaces on Somerville Road on the approach to the intersection are vacant.	 Location: Kingsville, VIC Online Map Link	Somerville Road onto Somerville Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02A - VIC SCALE at A3: 1:1000	 04
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - OSOM vehicle is required to mount the kerb of two islands. - One traffic sign to be temporarily removed.	 Location: Sunshine West, VIC Online Map Link	Somerville Road onto Fairbairn Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02A - VIC SCALE at A3: 1:500  05
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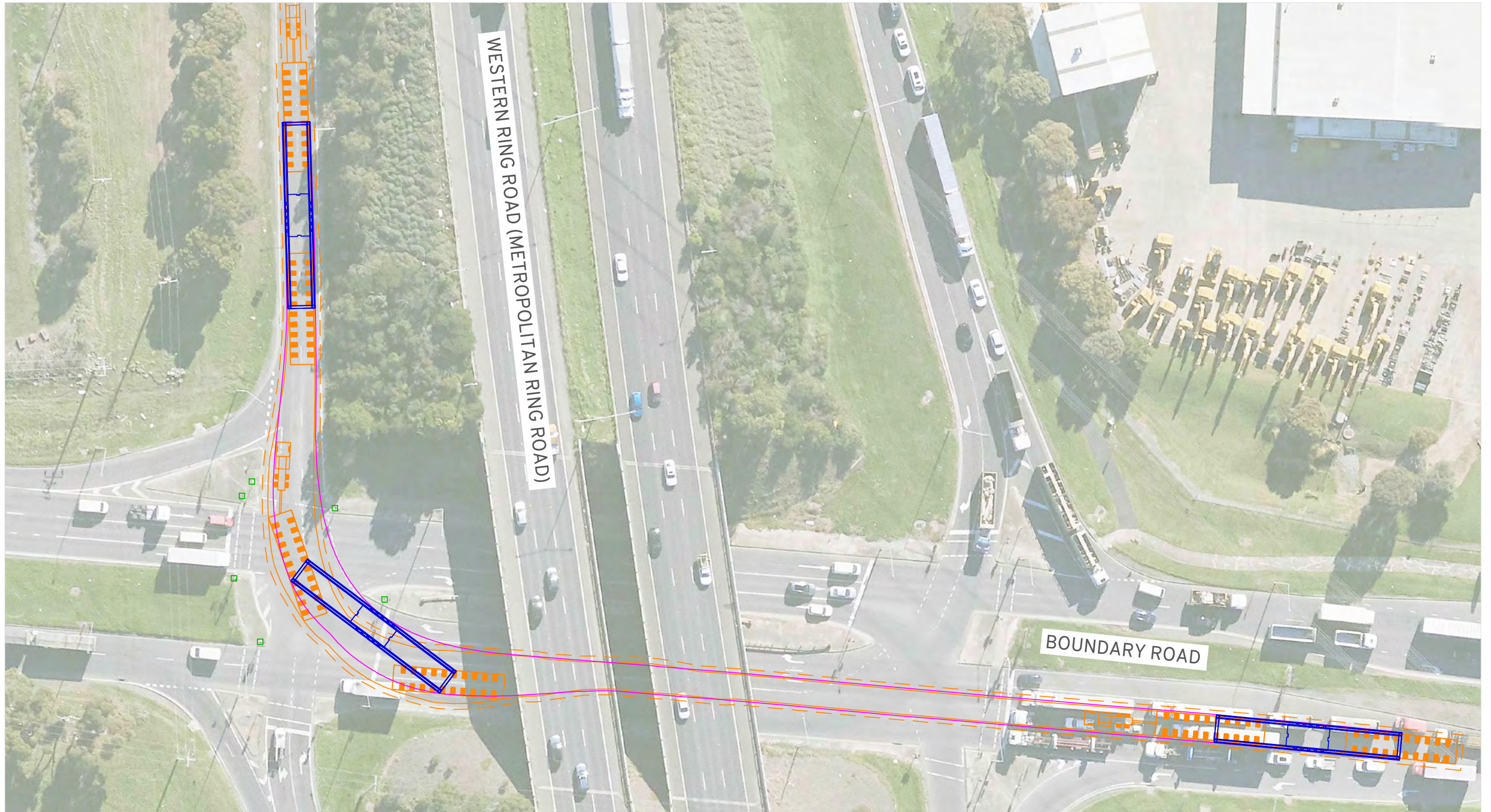


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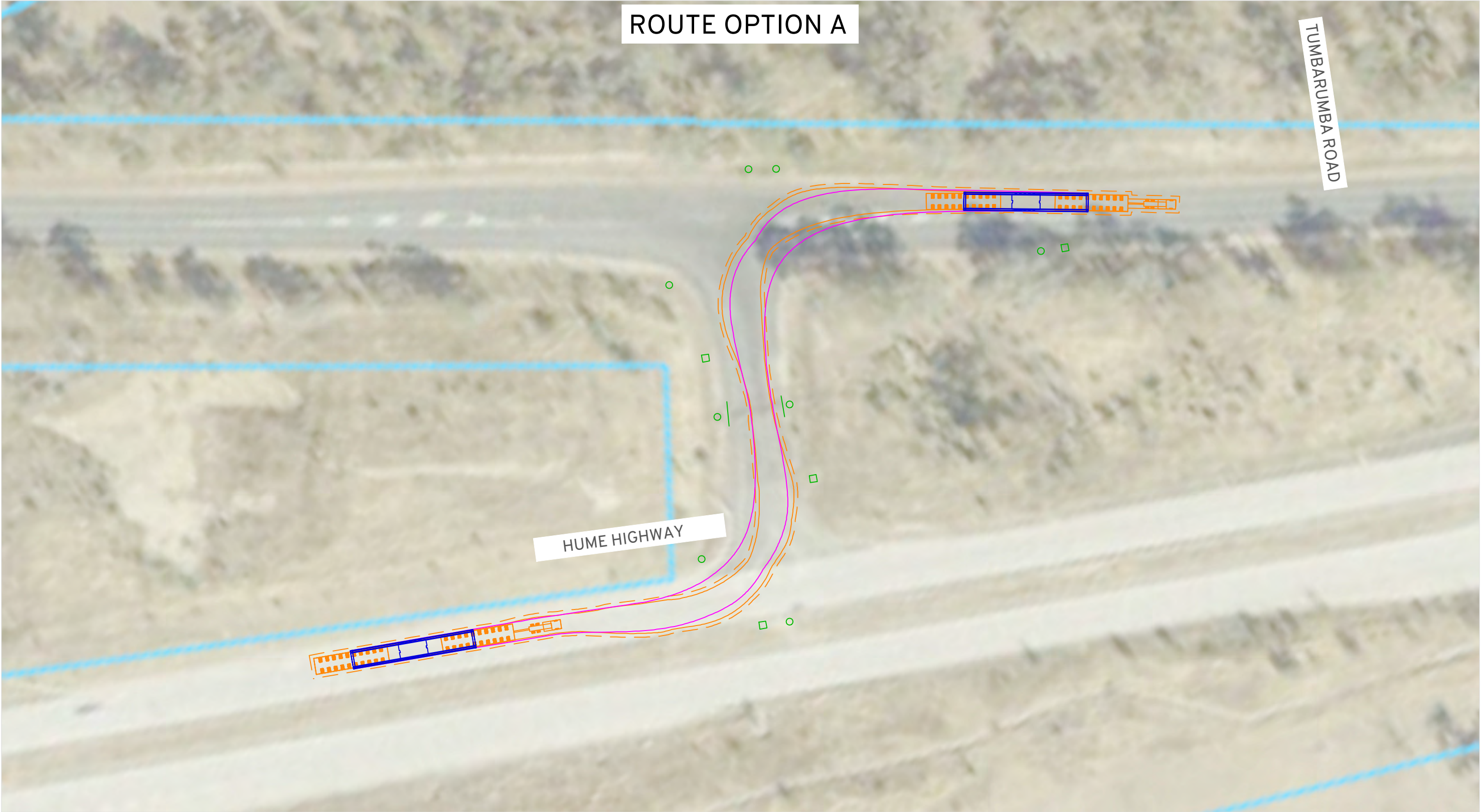


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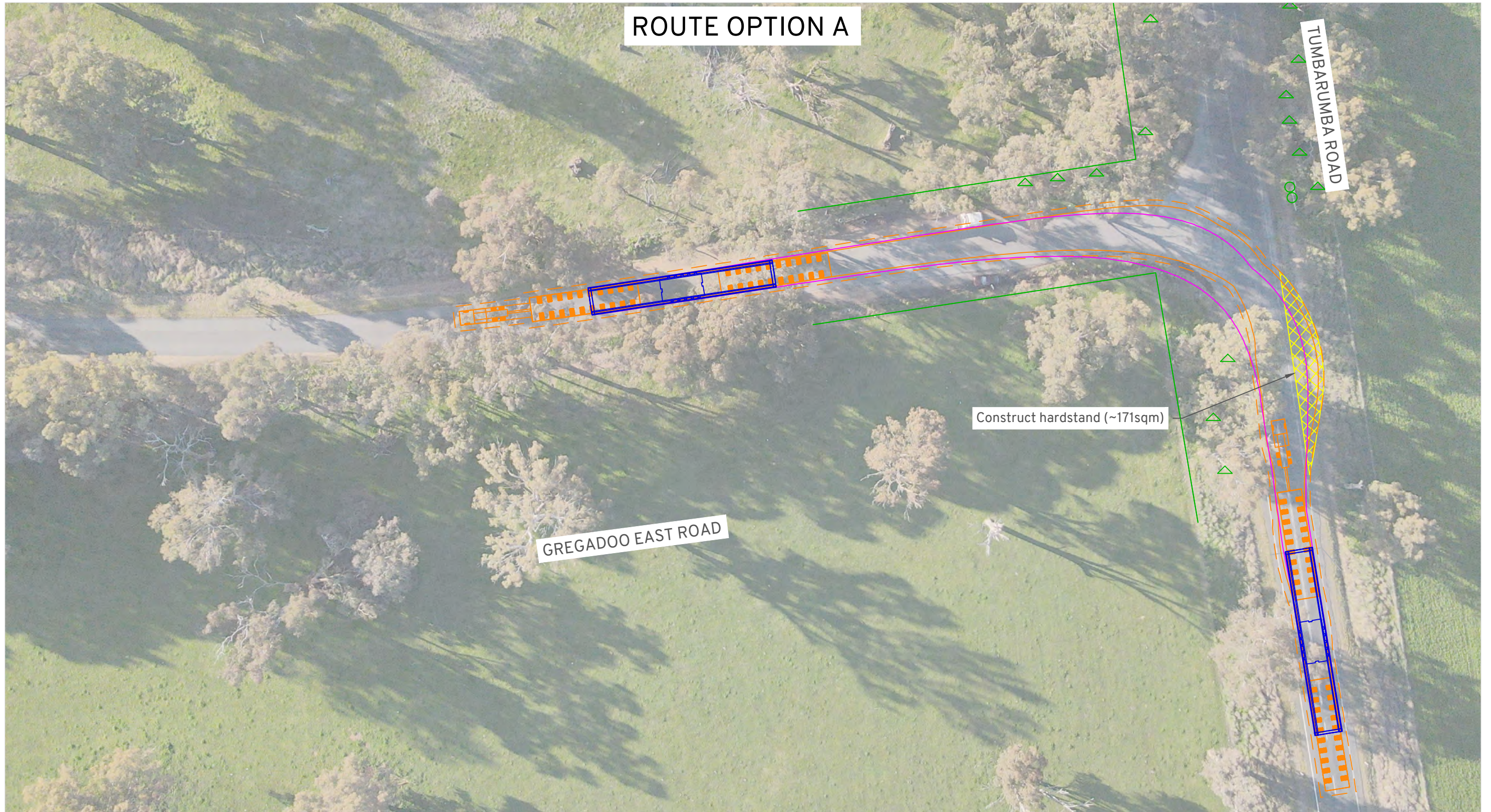
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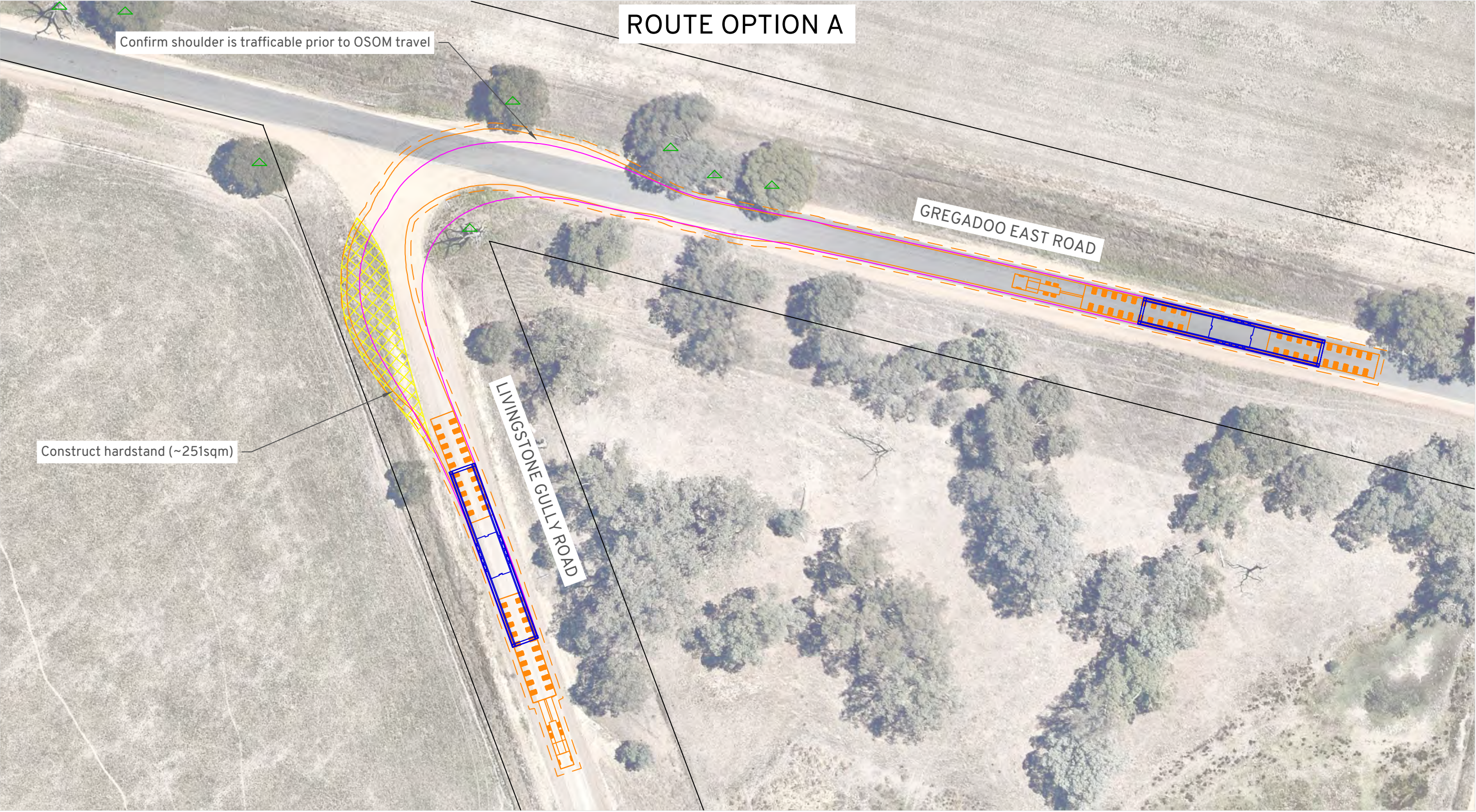
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes.	 Location: Derrimut, VIC Online Map Link	Boundary Road onto Western Ring Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02A - VIC SCALE at A3: 1:750	 07
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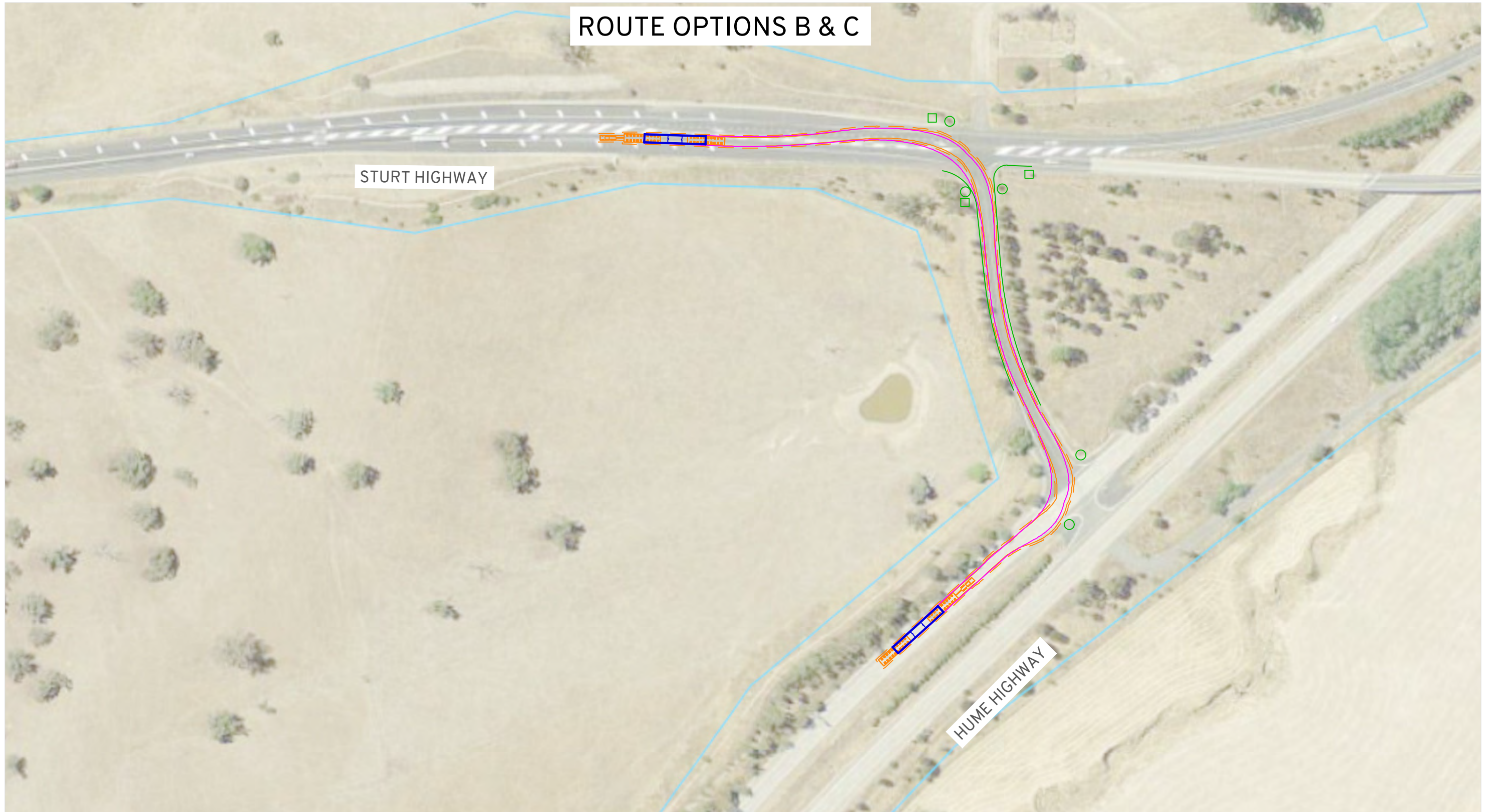
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure.	 Location: Book Book, NSW Online Map Link	Tumbarumba Road onto Gregadoo East Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750  08
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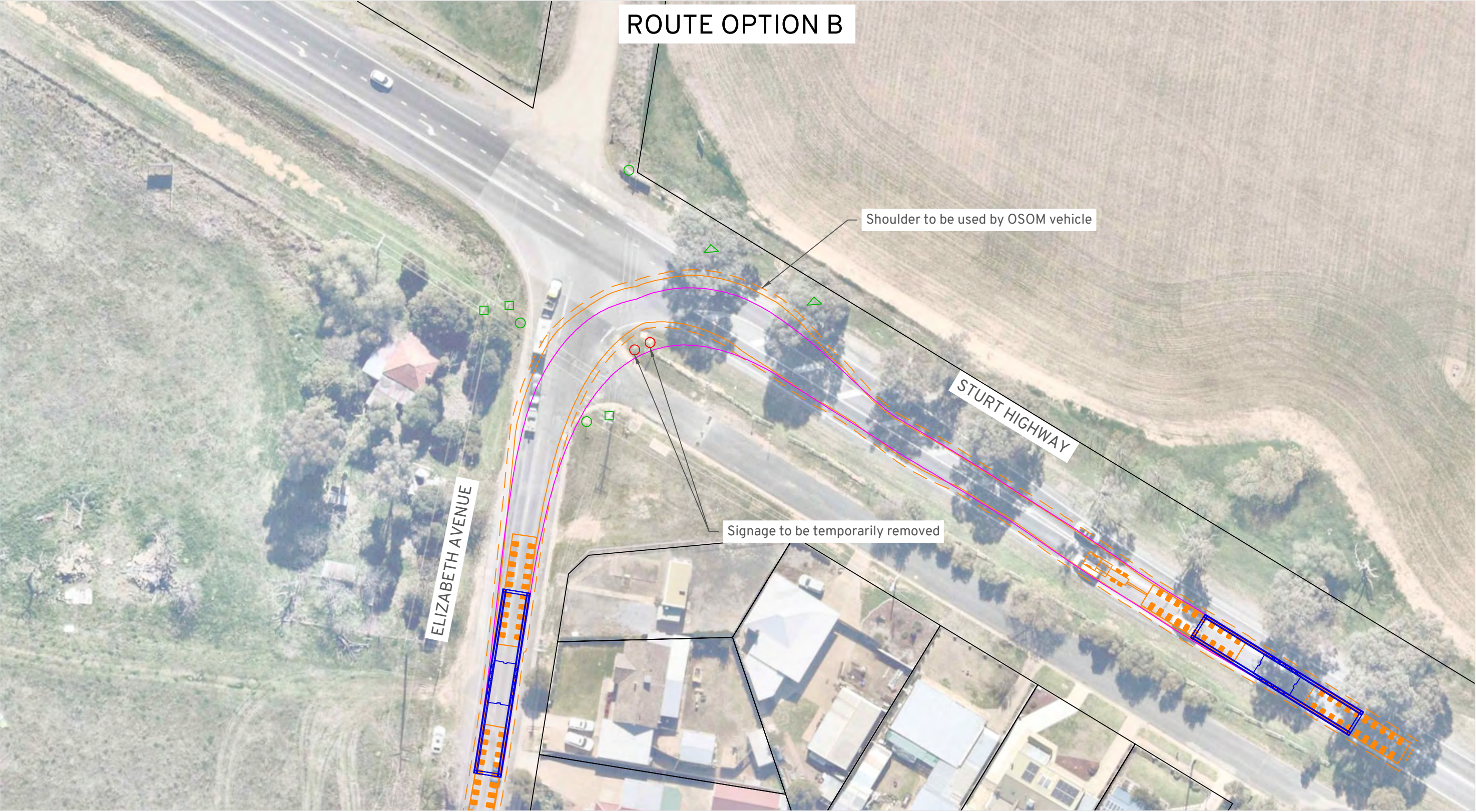
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail Impacted Assets Marked Red	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Construct appropriate hardstand in indicated areas (~171sqm). - Trees/vegetation marked indicatively.	 Location: Book Book, NSW Online Map Link	Tumbarumba Road onto Gregadoo East Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750  09
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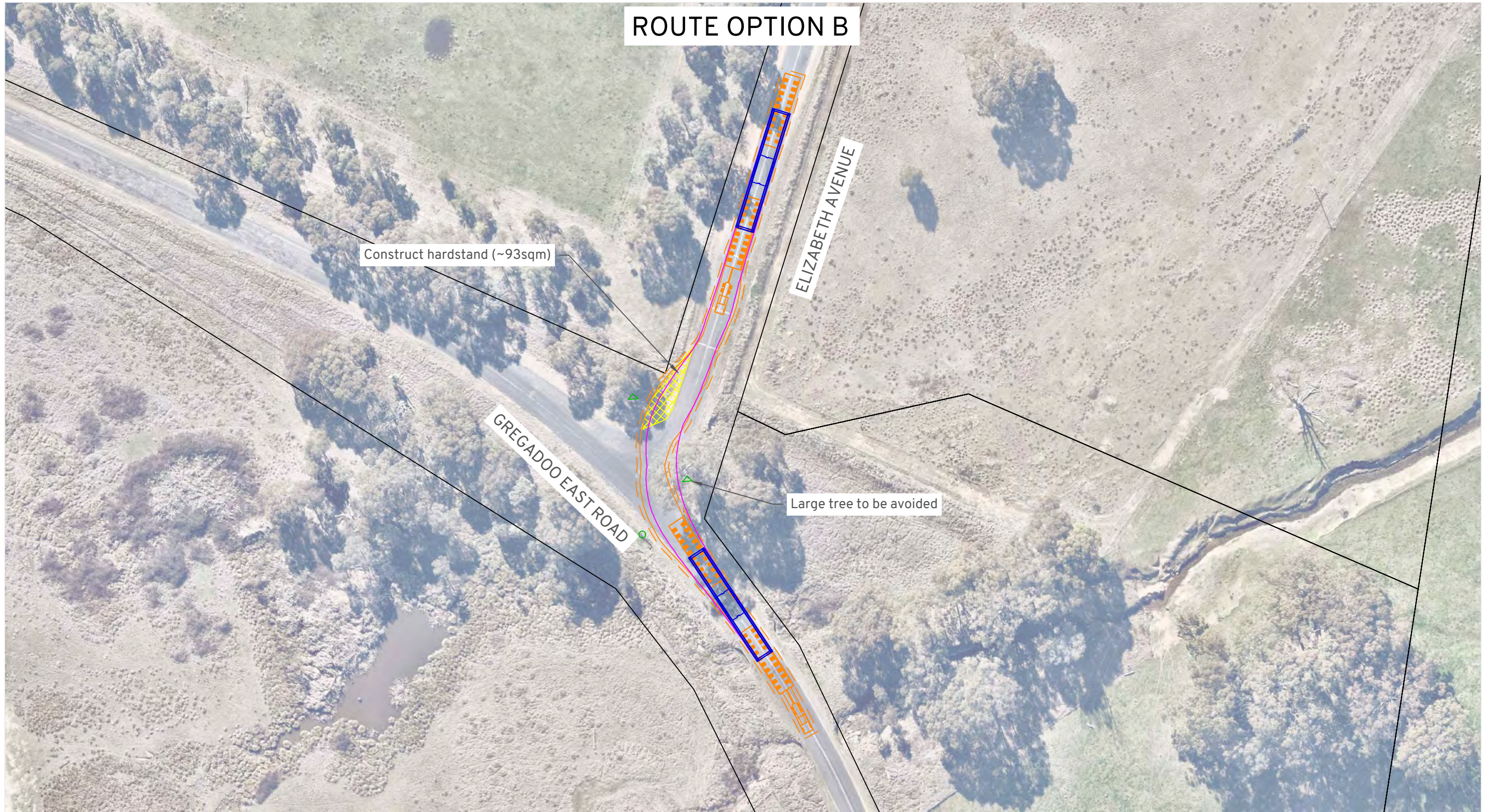
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Trees/vegetation marked indicatively. - Construct appropriate hardstand in indicated areas (~251sqm). - Confirm shoulder is trafficable prior to OSOM travel	 Location: Gregadoo, NSW Online Map Link	Gregadoo East Road onto Livingstone Gully Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750	 10
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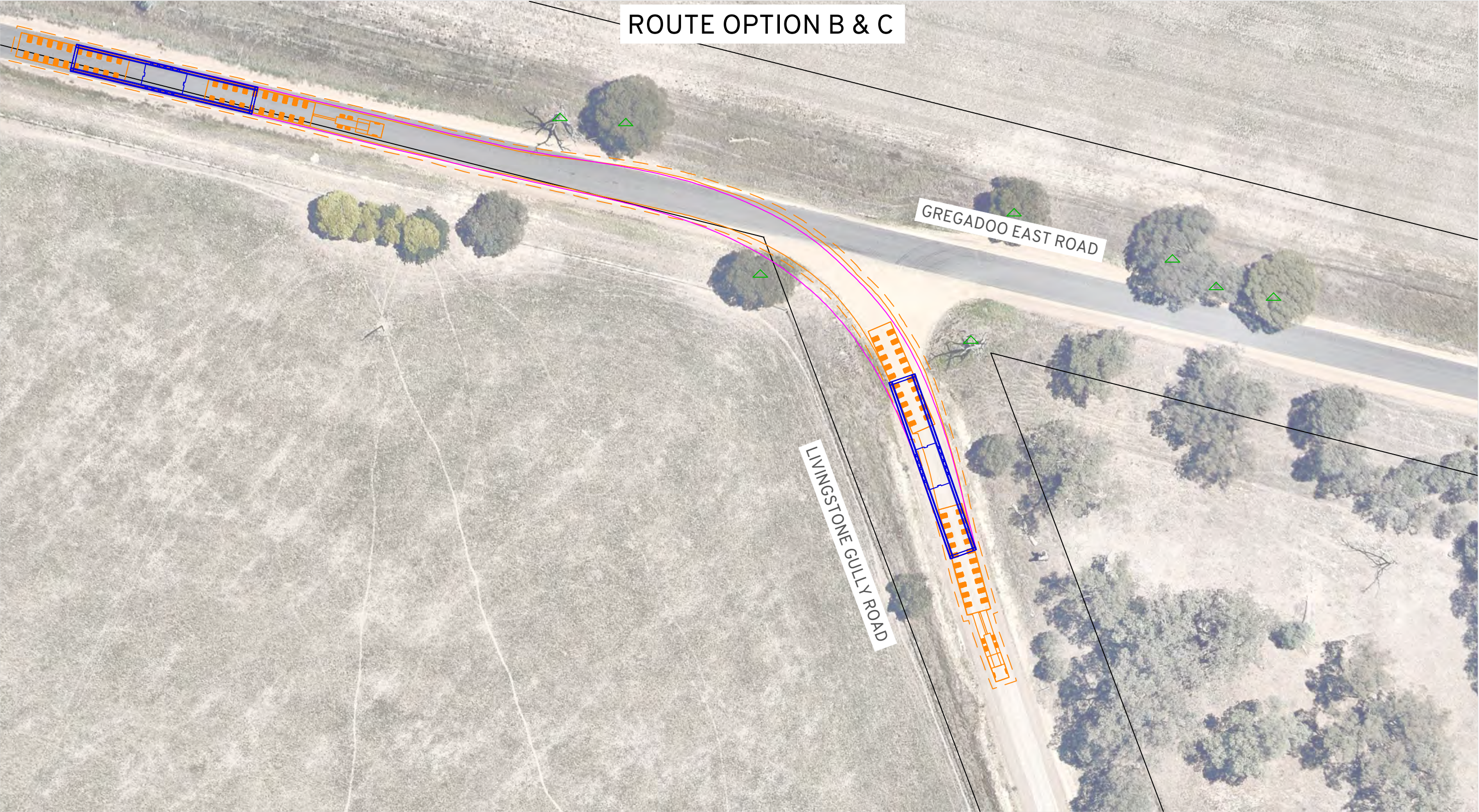
Vehicle Envelope	○ Signage	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure.	 Location: Tarcutta, NSW Online Map Link	Hume Highway onto Sturt Highway Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:2000	 11
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Load Outlines	△ Trees/Vegetation				
Load Path	— Guardrail				
	Impacted Assets Marked Red				

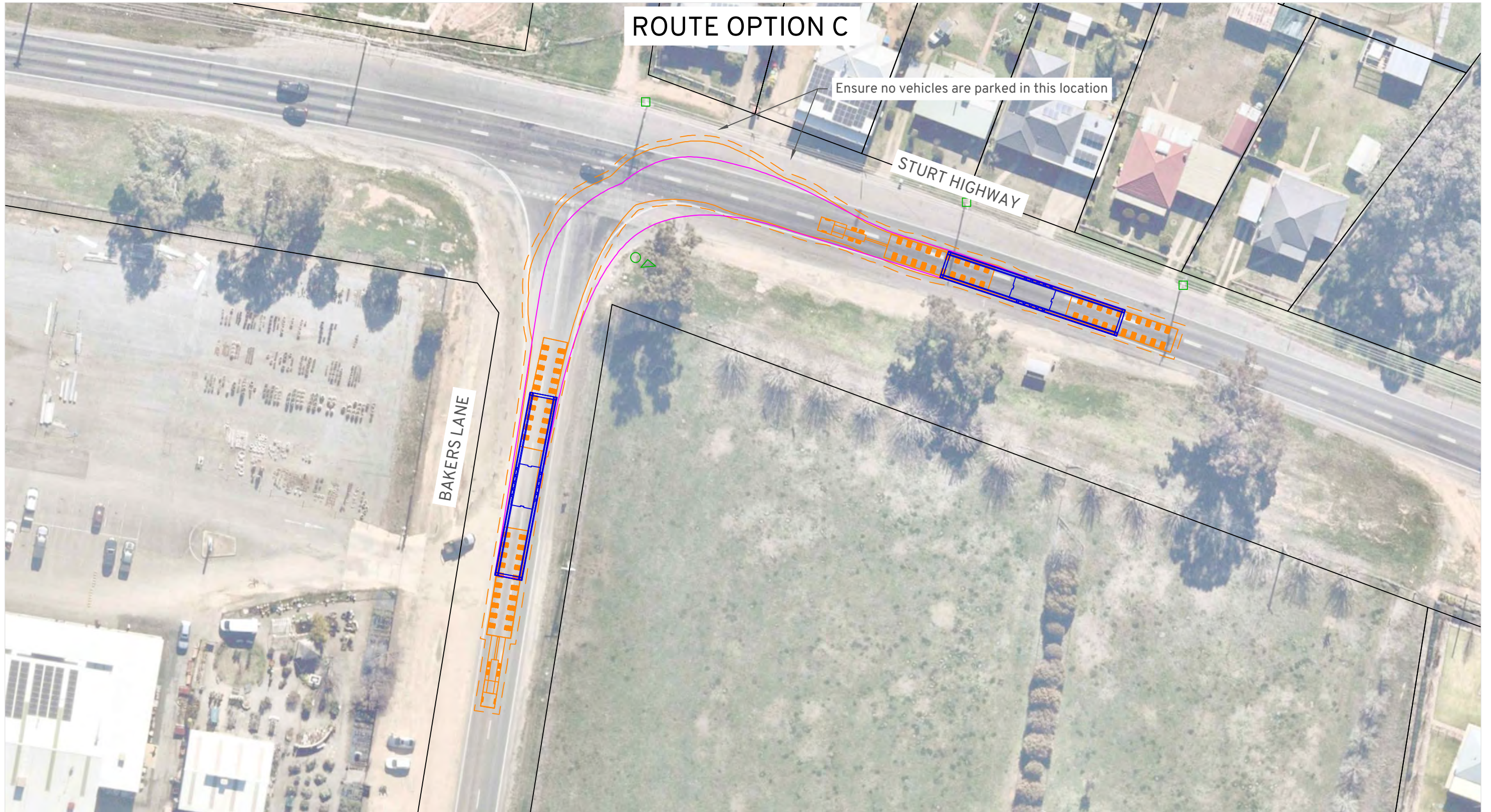


Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Two signs to be temporarily removed.	 Location: Forest Hill, NSW Online Map Link	Sturt Highway onto Elizabeth Avenue Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750  12
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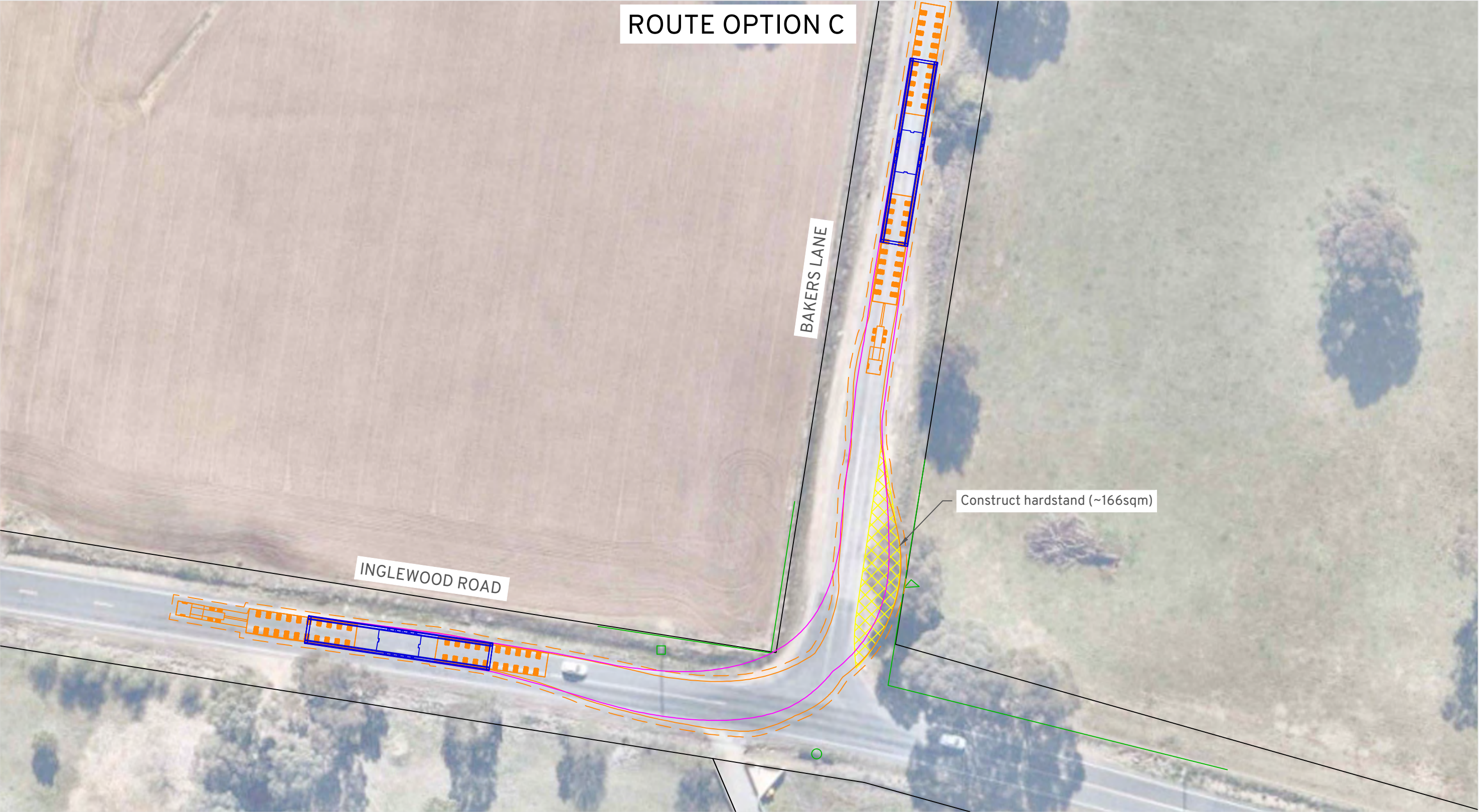


Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Trees/vegetation marked indicatively. - Construct appropriate hardstand in indicated areas (~93sqm).	 Location: Gregadoo, NSW Online Map Link	Elizabeth Avenue onto Gregadoo East Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:1000	 13
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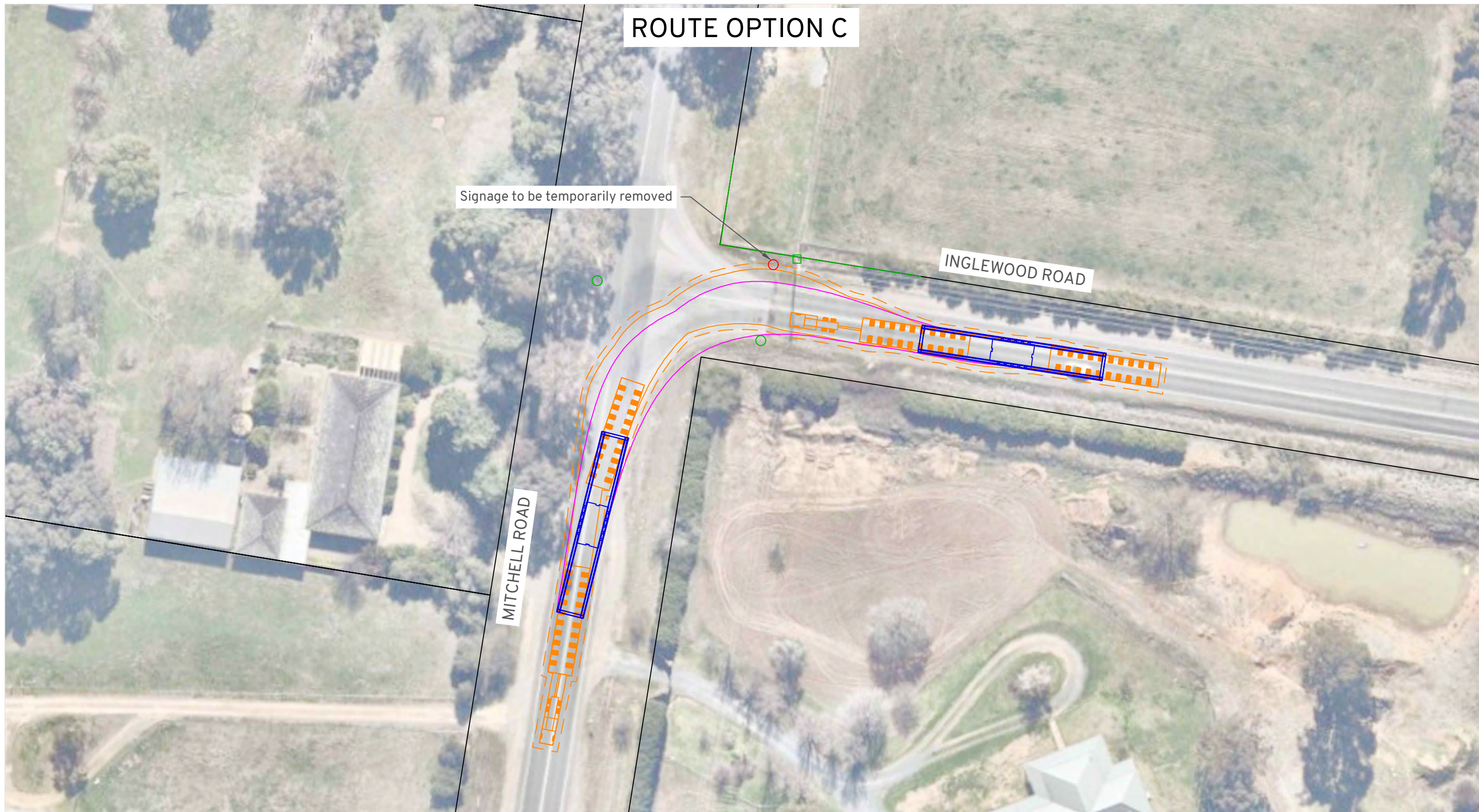




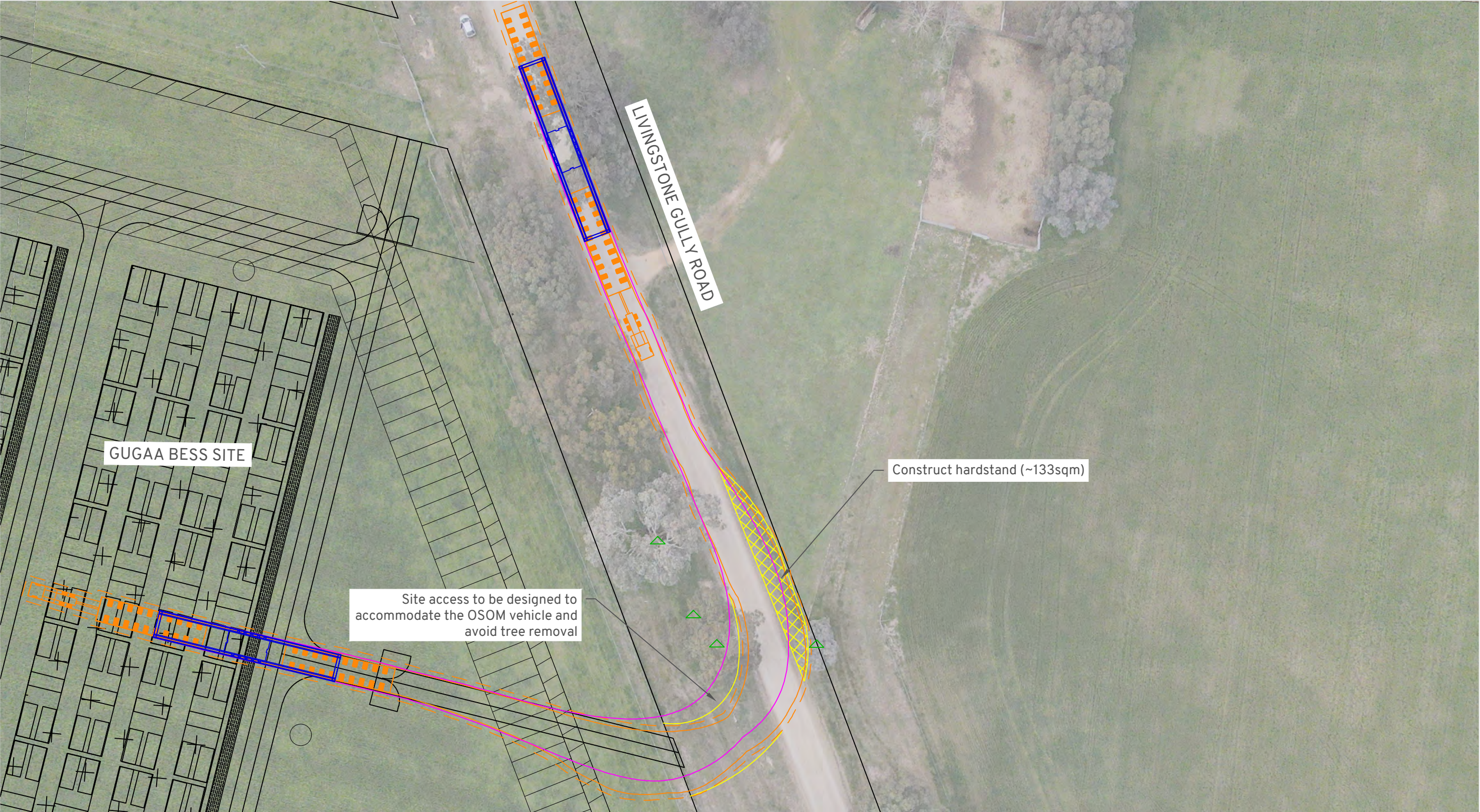
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Ensure no vehicles are parked along the side of the road prior to travel.	 Location: Gumly Gumly, NSW Online Map Link	Sturt Highway onto Bakers Lane Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750  15
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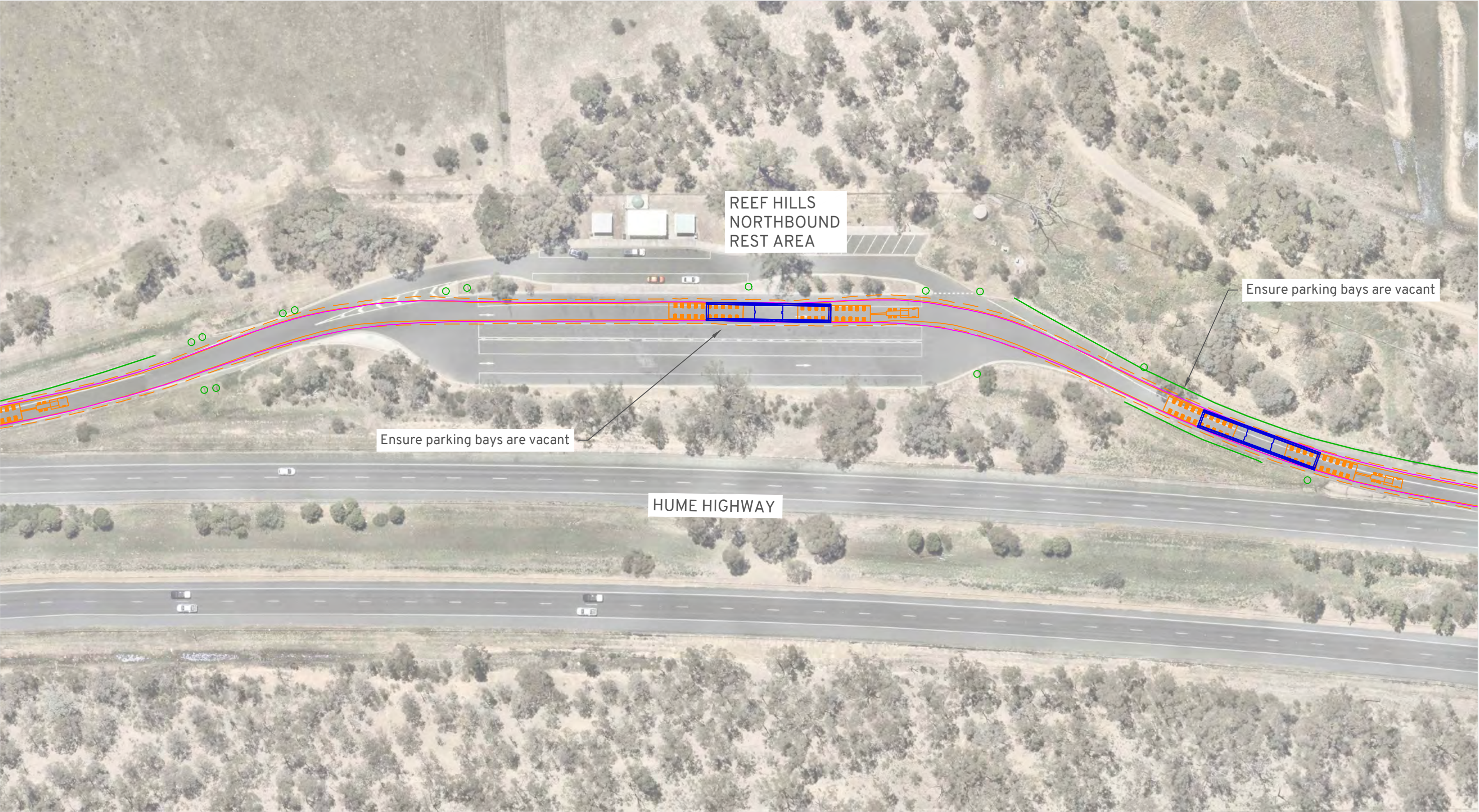
Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Construct appropriate hardstand in indicated areas (~166sqm).	 Location: Lake Albert, NSW Online Map Link	Bakers Lane onto Inglewood Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750  16
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - One sign to be temporarily removed.	 Location: Lake Albert, NSW Online Map Link	Inglewood Road onto Mitchell Road Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750	 17
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail Impacted Assets Marked Red	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure. - Trees/vegetation marked indicatively. - Construct appropriate hardstand in indicated areas (~133sqm). - Site access to be designed to accommodate the OSOM vehicle movement and avoid tree removal.	 Location: Gregadoo, NSW Online Map Link	Livingstone Gully Road onto Gugaa BESS Site Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:750	 18
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Vehicle Envelope 1.0m Clearance Load Outlines Load Path	○ Signage □ Light/Power Poles △ Trees/Vegetation — Guardrail <i>Impacted Assets Marked Red</i>	Notes: - Escort vehicles to facilitate use of multiple/opposing lanes. - Spotters to ensure vehicle and load are clear of infrastructure.	 Location: Benalla, NSW Online Map Link	Reef Hills Northbound Rest Area Port of Melbourne to Gugaa BESS Swept Path Assessment DRAWN: EY DATE: 18/11/2025 DWG NO: 1337 RA02B - NSW SCALE at A3: 1:1000	 19
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