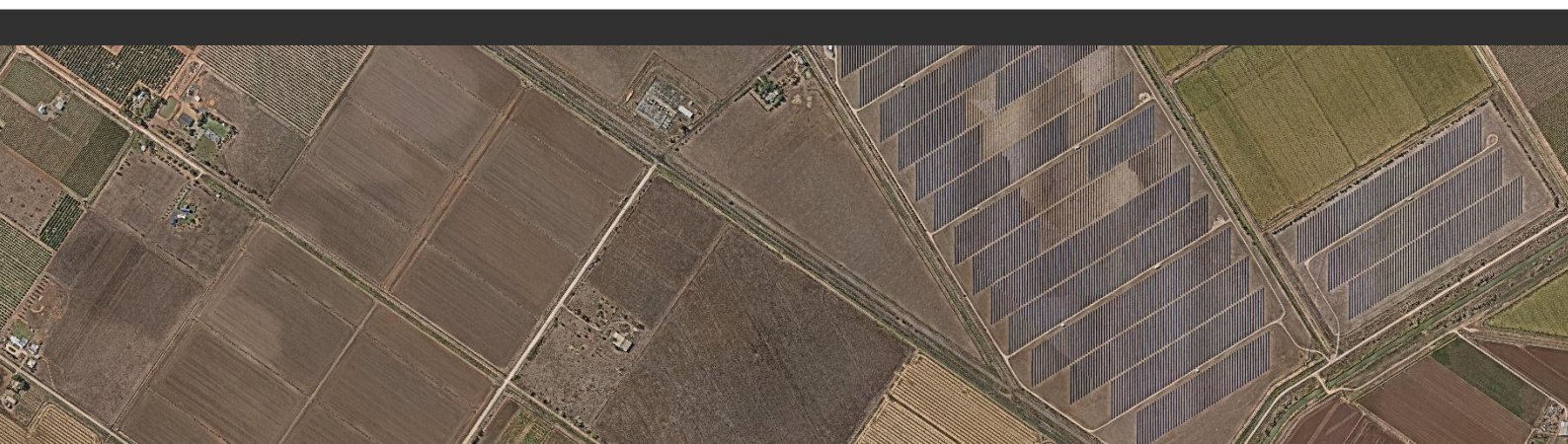


Griffith BESS

Transport Impact Assessment
SSD-85372970



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3 June 2026

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DOCUMENT INFORMATION

Prepared for	Eku Energy on behalf of Griffith BESS Co Pty Ltd		
File Name	250170TIA001F-F.docx	Report Date	3 June 2026
Prepared by	AWG	Reviewed by	VPG

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EXECUTIVE SUMMARY

onemilegrid has been requested by Eku Energy on behalf of Griffith BESS Co Pty Ltd (the Proponent) to undertake a Transport Impact Assessment (TIA) of the proposed Battery Energy Storage System (BESS) at Griffith BESS, located at 15 Bob Irvin Road, Yoogali.

The proposed BESS has a nominal capacity of 100 Megawatts (MW) / 1,000 Megawatt hours (MWh), and will include associated infrastructure such as inverters, transformers, and a cable connection to the Griffith Substation.

In addition to the key components outlined above, temporary infrastructure will be required to facilitate the construction and commissioning phases of the proposed BESS. The construction compound is expected to include:

- Temporary construction offices;
- A site office;
- Laydown areas.

This TIA has been prepared to assess the traffic and transport impacts of the proposed BESS during both the construction and operational phases. Construction of the facility is expected to take place over an 18 to 24-month period.

Vehicle access to the site is proposed via Bob Irvin Road, with primary access through a crossover previously approved for the Yoogali Solar Farm. Secondary/emergency access options are also identified and will be finalised during detailed design.

To support safe and efficient access, a strategic route review was undertaken for general heavy vehicle deliveries and private vehicles. Due to turning constraints and culvert upgrade limitations at the Irrigation Way intersection, inbound heavy vehicles are recommended to approach the site from the south via Hanwood Avenue and Bob Irvin Road. Outbound movements may use the Irrigation Way intersection, which is better suited to exit manoeuvres. The recommended routes prioritise sealed roads and minimise bridge crossings locally, whilst aligning with the NSW Higher Mass Limits (HML) B-Double network further afield. Swept path analysis confirms that 19 m semi-trailers can be accommodated by the Irrigation Way / Bob Irvin Road intersection.

A maximum of five Oversize and/or Overmass (OSOM) vehicles are expected to require access to the site during construction. The proponent has advised that the largest OSOM vehicle will be approximately 37 m long, including a 4 m wide trailer with a payload width of 5.3 metres. Based on constraints of the NHVR OSOM network, it is recommended that OSOM deliveries access the site via the south along Kidman Way and Hanwood Avenue, avoiding the constrained Irrigation Way / Bob Irvin Road intersection.

The peak construction period includes civil and electrical works phases. During the peak civil works phase the development is anticipated to generate a maximum of 230 daily vehicle movements including up to 130 light vehicle movements and 100 heavy vehicle movements per day, including 65 movements during the AM and PM peak periods. During the electrical works phase the site is anticipated to generate a maximum of 170 light vehicle movements and 30 heavy vehicle movements per day, including 83 movements during the AM and PM peak periods. It is anticipated that the surrounding road network will be able to comfortably accommodate the traffic generated during this period, even when considering the cumulative impacts of the Yoogali Solar Farm and Hawkins Road projects.

CONTENTS

EXECUTIVE SUMMARY	3
1 INTRODUCTION.....	7
2 RESPONSE TO TfNSW.....	8
3 EXISTING CONDITIONS	10
3.1 Site Location	10
3.2 Planning Zones and Overlays.....	12
3.3 Road Network.....	13
3.3.1 Bob Irvin Road	13
3.3.2 Irrigation Way	14
3.3.3 Kidman Way	15
3.3.4 Hanwood Avenue	16
3.4 Irrigation Way / Bob Irvin Road / Hamilton Road intersection	17
3.5 Crash History.....	18
4 EXISTING TRAFFIC VOLUMES.....	19
4.1 Overview.....	19
4.2 Peak Hour Counts	20
4.3 Daily Traffic Volume Counts	21
4.4 Existing Intersection Performance	22
5 RELATED AND NEARBY PROJECTS	24
5.1 Yoogali Solar Farm.....	24
5.2 Riverina Solar Farm	25
5.3 Hawkins Road Solar Farm	25
6 DEVELOPMENT PROPOSAL.....	26
6.1 Construction / Installation.....	26
6.1.1 Typical Construction	26
6.1.2 Civil Works Peak	26
6.1.3 Electrical Works Peak	27
6.1.4 Deliveries	27
6.1.5 Potential Busing.....	28
6.2 Operation.....	28
6.3 Access	28
6.4 Car Parking.....	29
7 ACCESS ROUTE REVIEW	30
7.1 General	30
7.2 Irrigation Way / Bob Irvin Road intersection	30
7.3 General Heavy Vehicles.....	31
7.3.1 B-Double Network.....	31
7.3.2 Recommended Route	32
7.4 Staff / Light Vehicles	33
7.5 Traffic Management	34
7.6 OSOM Route Assessment.....	34
8 DESIGN ASSESSMENT	35
8.1 Sight Distance Review	35
8.2 Access Design.....	35
9 TRAFFIC.....	36
9.1 Traffic Generation	36
9.1.1 Overview.....	36
9.1.2 Typical Construction	36
9.1.3 Civil Works Peak	36
9.1.4 Electrical Works Peak	36
9.1.5 Anticipated Daily Traffic Generation	37
9.1.6 Peak Hour Traffic Generation.....	37
9.2 Traffic Distribution.....	38

9.3	Expected Traffic Volume Growth	39
9.4	Cumulative Traffic Impacts (Other Projects)	40
9.5	Resultant Future Traffic Volumes	41
9.6	Traffic Impact	42
9.6.1	Overview	42
9.6.2	Peak Period Impacts	42
9.6.3	Turn Lane Warrant Assessment	43
9.6.4	Intersection Capacity Analysis	46
9.6.5	Daily Traffic Volumes	47
10	CONCLUSIONS.....	49

TABLES

Table 1	TfNSW Comments	8
Table 2	Crash Data Summary	18
Table 3	Traffic Volume and Speed Surveys – Irrigation Way	21
Table 4	Traffic Volume and Speed Surveys – Bob Irvin Road.....	22
Table 5	Traffic Volume and Speed Surveys – Hanwood Avenue	22
Table 6	SIDRA Intersection Parameters	22
Table 7	Rating of Delay and Level of Service	23
Table 8	Irrigation Way / Bob Irvin Road / Hamilton Road – Existing Conditions.....	23
Table 9	Kidman Way / Hanwood Avenue / Beaumont Road – Existing Conditions	23
Table 10	Recommended General Heavy Vehicle Access Routes summary	33
Table 11	Anticipated Daily Traffic Movements.....	37
Table 12	Anticipated Peak Hour Traffic Movements	37
Table 13	Cumulative projects summary	40
Table 14	Cumulative projects estimated construction traffic volumes	40
Table 15	Irrigation Way / Bob Irvin Road / Hamilton Road – Existing/Future Conditions	46
Table 16	Kidman Way / Hanwood Avenue / Beaumont Road – Existing/Future Conditions	46
Table 17	Resultant Daily Traffic Volumes	47
Table 18	Daily Traffic Volume Assessment	48

FIGURES

Figure 1	Site Location	10
Figure 2	Site Context (22 March 2025)	11
Figure 3	Land Zoning Map	12
Figure 4	Bob Irvin Road, looking north adjacent to the site	13
Figure 5	Irrigation Way, looking east adjacent to the site	14
Figure 6	Kidman Way, looking north towards Hanwood Avenue	15
Figure 7	Hanwood Avenue, looking east towards Bob Irvin Road	16
Figure 8	Irrigation Way / Bob Irvin Road / Hamilton Road intersection	17
Figure 9	Crash History	18
Figure 10	Traffic Survey Locations	19
Figure 11	Existing Volumes – AM Peak (8:15 am to 9:15 am)	20
Figure 12	Existing Volumes – PM Peak (3:00 pm to 4:00 pm)	20
Figure 13	Existing Volumes – Kidman Way / Hanwood Avenue Peak Hours	21
Figure 14	Site Plan	25
Figure 15	8-axle platform trailer	27
Figure 16	TES25012 Extended Trailer (36.95 m long)	28
Figure 17	Site Layout	29
Figure 18	Expected Origin / Destination Locations	30
Figure 19	NSW HML 25/26 m B-double Routes	31
Figure 20	Recommended Access Routes	33
Figure 21	Austroads SISD	35
Figure 22	Generated Traffic Volumes – Irrigation Way / Bob Irvin Road	38
Figure 23	Generated Traffic Volumes – Kidman Way / Hanwood Avenue	39
Figure 24	Resultant Traffic Volumes – AM Peak	41
Figure 25	Resultant Traffic Volumes – PM Peak	42
Figure 26	Austroads Turn Treatment Warrants – Irrigation Way / Bob Irvin Road	43
Figure 27	Austroads Turn Treatment Warrants – Kidman Way / Hanwood Avenue	44
Figure 28	Griffith Rural/Rural Residential Road widths	47

APPENDICES

APPENDIX A	RAW SURVEY DATA
APPENDIX B	SWEPT PATH DIAGRAMS
APPENDIX C	OSOM ROUTE ASSESSMENT

1 INTRODUCTION

onemilegrid previously prepared a Transport Impact Assessment of the proposed Battery Energy Storage System (BESS) development at 15 Bob Irvin Road, Yoogali. This report has been prepared to provide additional information as requested in the Transport for New South Wales (TfNSW) Response to Environmental Impact Statement dated 24 December 2025.

The proposed BESS, hereafter referred to as the Griffith BESS, is a State Significant Development, SSD-85372970. This Transport Impact Assessment forms part of the Response to Submissions (RTS) which has been prepared by Cogency Australia Pty Ltd (Cogency) to support assessment of the project.

As part of this assessment the subject site has been inspected with due consideration of the development proposal, traffic data has been sourced, and relevant background information has been reviewed.

2 RESPONSE TO TfNSW

Our responses and references to the items relevant to traffic engineering and transport planning of the TfNSW RFI dated 24 December 2025 are provided below.

Table 1 TfNSW Comments

Comment	Response
Key Issue 1 – Access Intersection Assessments	
Figure 17 of the TIA proposes utilising a four-state road intersection as part of the project's construction traffic routes; each intersection must assess the traffic requirements stated in TfNSW's SEAR response to the proposed project. Currently, the TIA only addresses the four-way intersection of Irrigation Way / Bob Irvin Way; however, an assessment of Kidman Way/Hanwood Avenue, Murray Road / Irrigation Way will also need to be provided.	It is no longer proposed to utilise the Murray Road / Irrigation Way intersection, therefore no further assessment has been undertaken.
a) Swept paths are required, demonstrating the largest vehicle to use the intersection. Must be prepared in accordance with Austroads Design Vehicles and Turning Path	Please refer to Appendix B for swept path diagrams for Irrigation Way / Bob Irvin Way and Kidman Way / Hanwood Avenue intersections.
b) A turn warrant assessment for different scenarios (i.e project peak hour is different to network peak hour, for the worst case scenario (i.e overlap of construction, pre-construction works and occupation of stages of workforce accommodation camp). The turn warrant assessments are to be prepared in accordance with section 3.25 of Part 6 of the Austroads Guide to Traffic Management. A turn warrant assessment will be required for each scenario identified above and for each access, access track and any other access along the project's identified routes with an interface or connection to the state road network. The methodology to be used for the turn warrants assessment is: • Applied to existing AM/PM network peak background traffic, • Include linear growth to the year of peak construction. • Including the cumulative traffic volumes for projects at EIS and approved stages that will be present in the background, and turning traffic volumes at the site access or intersection.	Turn warrant assessments have been undertaken for the worst-case scenario, that is peak project traffic generation occurring during the existing commuter peak hours. Please refer to Section 9.6.3.
c) TIA is to detail the required intersection treatments and scope of upgrades at each intersection and proposed access point and must be designed to facilitate the traffic volumes and safe turning of project traffic for each identified access or intersection with the State Road network. All strategic concept designs must be developed to demonstrate compliance with Austroads, TfNSW supplements, and TfNSW technical directions.	In accordance with the assessments provided throughout the report, no intersection upgrades are proposed along the state road network. Justification for these configurations are included throughout the report.

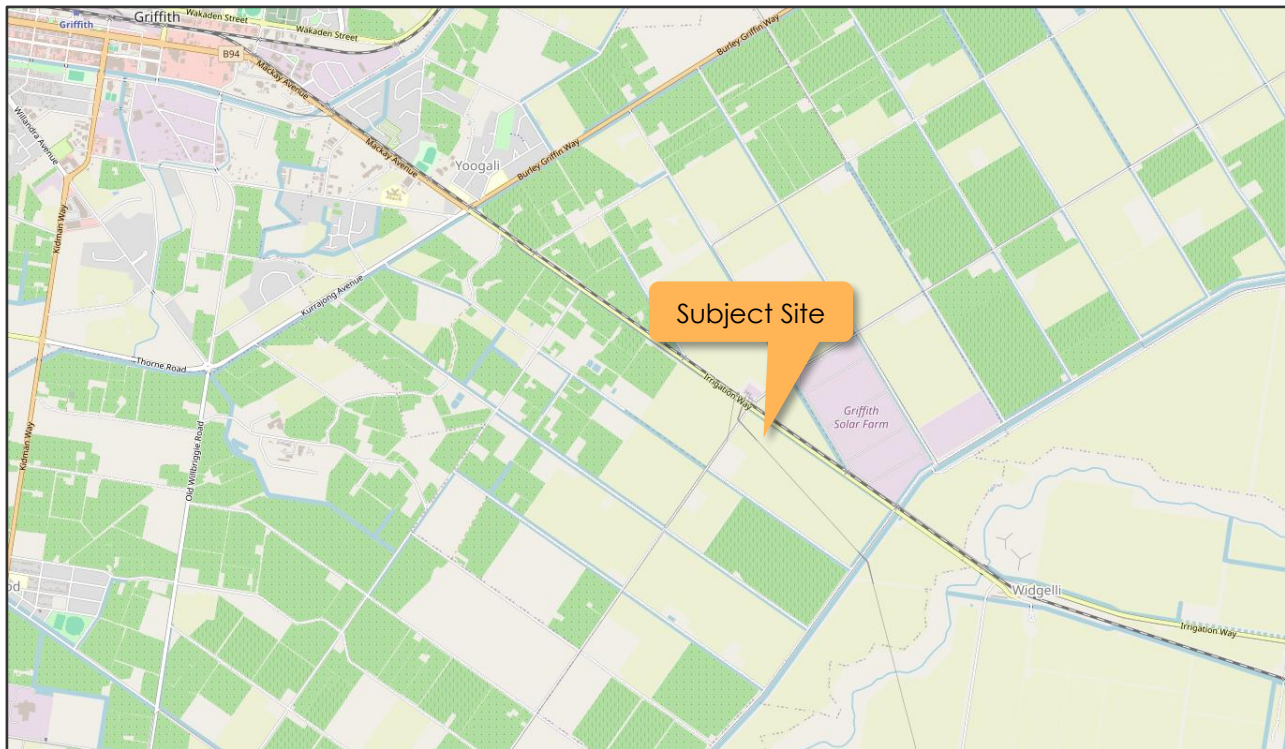
d) For the intersection of Bob Irvin Road / Irrigation Way and Murray Road / Irrigation Way, the culvert over the irrigation channel needs to be understood for its capacity to withstand the load of the trucks travelling over the top. The culvert is within the state road reserve; however, consultation with Council and Murrumbidgee Irrigation Ltd is to occur for the intersection of Irrigation Way / Bob Irvin Road:	The project team has reached out to Council to understand the load capacity for the culvert at the intersection of Bob Irvin Road / Irrigation Way. Further investigations will be required as part of the detailed design phase.
e) Swept path diagram indicates that simultaneous forward entry and exit is not possible. Mitigation measures to prevent ingress of vehicles from Irrigation Way is to be detailed and included within the TMP.	Please refer to Section 7.5 for recommended traffic management measures to support the proposed one-way route arrangement.
f) The 19 metre semi-trailer swept path analysis shows the left turn movement crossing the centreline of Irrigation Way. The swept path also demonstrates tracking off the pavement near the unprotected MI channel. Left-turning movements onto the state road network must be contained within the lane and must not cross the state road centreline.	The swept paths have been refined, demonstrating the semi-trailer remains within the carriageway and can turn left onto Irrigation Way without crossing the centre line. Please refer to Appendix B.
For all intersections: g) Raw traffic data for all intersections is to be provided as an appendix.	Please refer to Appendix A for raw survey data.
3. Pre-Construction Minor Works	
As required by the Secretary's Environmental Assessment Requirements (SEARs) response, the proponent is to provide a separate analysis of pre-construction minor works to the construction analysis. The paragraph analysis in Section 4.2 is not sufficient. This should include the list of requirements provided by the SEARs, including:	The development is not proposing to undertake any pre-construction minor works to the external road network. There are no road upgrades to be undertaken to the state road network as part of the proposed development.
Key Issue 3 – The high-risk OSOM route assessment scope and mitigation measures	
The proponent has confirmed in Table 9 that high-risk oversized overmass (OSOM) vehicles are required. Detail regarding these movements is requested to ensure the compliance of the road upgrades and mitigation measures in accordance with the Austroads Guide to Road Design, the Austroads Guide to Temporary Traffic Management, and TfNSW requirements	Please refer to Appendix C for OSOM Route Assessment.

3 EXISTING CONDITIONS

3.1 Site Location

The [subject site](#) is located on the south side of Irrigation Way, the east side of Bob Irvin Road, and the north side of Morley Road, and is located on the same land as the approved but yet to be constructed Yoogali Solar Farm project (DA: 291/2018) as shown in Figure 1. The overall site is comprised of two lots currently titled as 1 & 2/ DP12527790, though the subject development is to be addressed as 15 Bob Irvin Road, Yoogali.

Figure 1 Site Location



Source: OpenStreetMap

The site largely accommodates rural farm land. A dwelling was previously located on the site of the Yoogali Solar Farm, though has now been demolished.

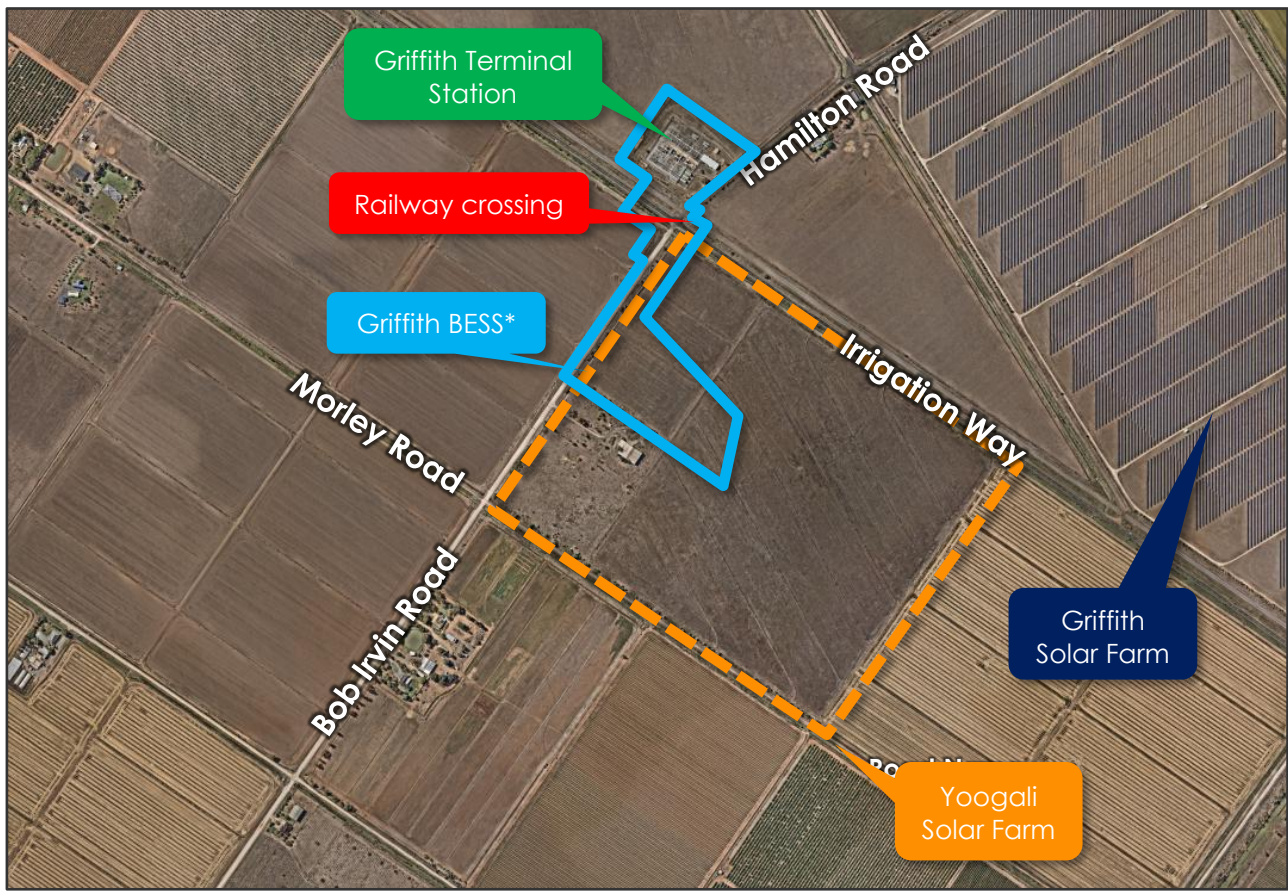
No access is provided to the site of the Griffith BESS.

Land use in the immediate vicinity of the site is generally agricultural farming, though the Griffith Solar Farm is located to the northeast of the site.

The site is located within the Murrumbidgee Irrigation Area (MIA), and therefore several supply and drainage channels traverse the vicinity of the site, with bridges and culverts provided at locations where channels intersect with roads.

An aerial view of the subject site is provided in Figure 2.

Figure 2 Site Context (22 March 2025)



**Note: The Development Area includes the indicative BESS area, transmission corridor and Griffith substation works area*
 Copyright Nearthmap

3.2 Planning Zones and Overlays

It is shown in Figure 3 that the site is located within a RU1 Primary Production Zone.

Figure 3 Land Zoning Map



Additionally, the site abuts Irrigation Way which is designated as a State Road under the control of TfNSW.

3.3 Road Network

3.3.1 Bob Irvin Road

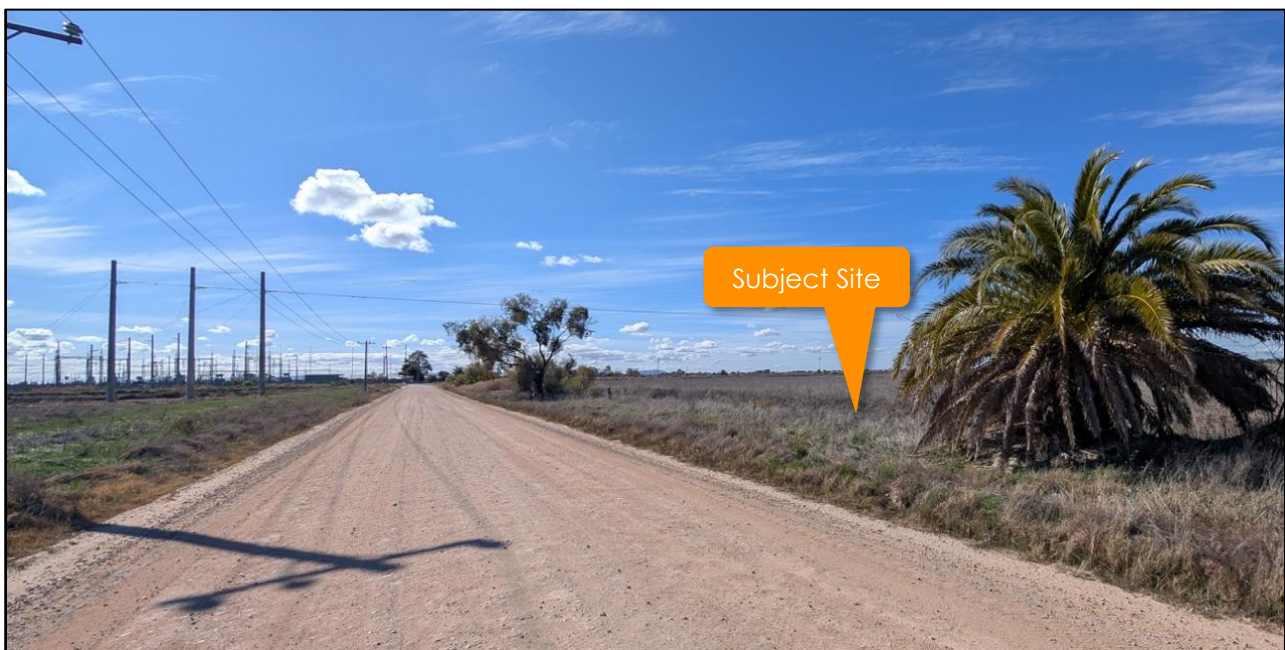
Bob Irvin Road is a local road generally aligned north-south, running between Irrigation Way in the north, and Hanwood Avenue in the south.

Bob Irvin Road is unsealed for the 2.5 km section from Irrigation Way to Wincey Road, including adjacent to the site. The unsealed section provides for a wide formation of approximately 10 metres which offers two-way traffic movements.

The section of Bob Irvin Road from Wincey Road to Hanwood Avenue is sealed with an approximately 5 m wide pavement with gravel shoulders.

The cross-section of Bob Irvin Road at the frontage of the site is shown in Figure 4.

Figure 4 Bob Irvin Road, looking north adjacent to the site



3.3.2 Irrigation Way

Irrigation Way is a state controlled arterial road running between Kidman Way in Griffith and Newell Highway in Narrandera.

Irrigation Way operates as a single carriageway road that provides a single traffic lane in each direction with a combination of sealed and gravel shoulders on both sides. A drainage channel runs parallel to the alignment of Irrigation Way on the south side of the road reservation, which sits between the subject site and the Irrigation Way carriageway.

The cross-section of Irrigation Way at the frontage of the site is shown in Figure 5.

Figure 5 Irrigation Way, looking east adjacent to the site



Copyright Google (Image date: January 2025)

A 100 km/h speed limit applies to Irrigation Way in the vicinity of the site.

3.3.3 Kidman Way

Irrigation Way is a state controlled arterial road running between Mitchell Highway in Bourke and Newell Highway in Bondure.

In the vicinity of the site, Kidman Way is provided with a single traffic lane in each direction. A shared path is provided on the western side of the road in the vicinity of Hanwood Avenue.

Figure 6 Kidman Way, looking north towards Hanwood Avenue



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A 50 km/h speed limit applies to Kidman Way in the vicinity of Hanwood Avenue. School zone restrictions are in place, lowering the speed limit to 40 km/h between 8:00 am and 9:30 am, and 2:30 pm and 4:00 pm.

3.3.4 Hanwood Avenue

Hanwood Avenue is a local road generally aligned east-west, running between Mirrool Branch Canal Road in the east, and Kidman Way in the west.

Hanwood Avenue is provided with an approximately 6 m paved carriageway from Kidman Way to Bob Irvin Road.

Figure 7 Hanwood Avenue, looking east towards Bob Irvin Road



Copyright Google (Image date: March 2010)

3.4 Irrigation Way / Bob Irvin Road / Hamilton Road intersection

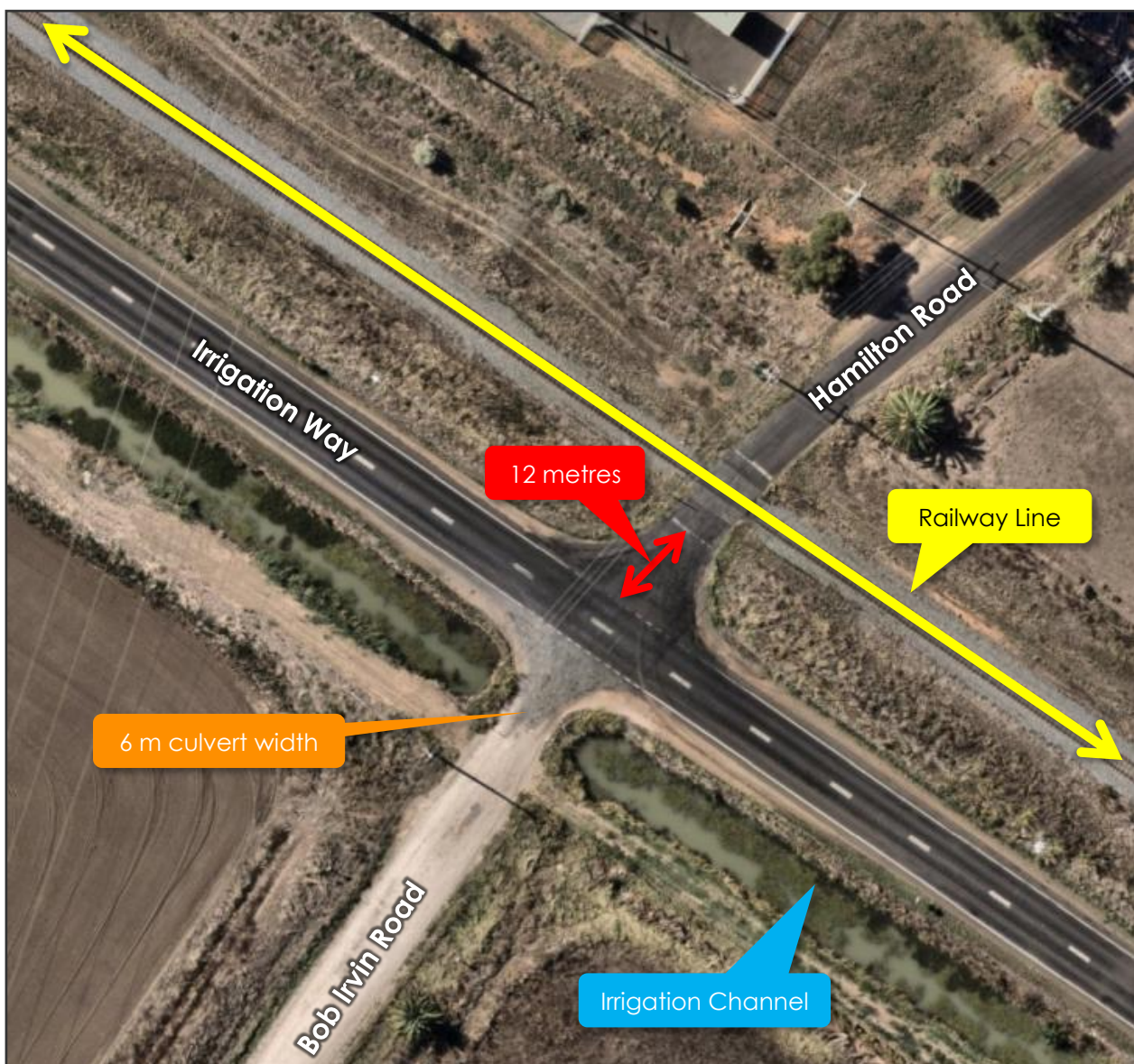
The intersection between Irrigation Way / Bob Irvin Road / Hamilton Road is provided as a standard four-way intersection, with no formal turn lanes provided on either approach.

As identified above, an irrigation channel runs parallel to Irrigation Way on its southern side, bisecting the subject site and Irrigation Way. Immediately south of the intersection, the culvert passing over the channel is approximately 6 m wide.

Hamilton Road is a local road running between Cain Road in the northeast and Irrigation Way in the southwest. Hamilton Road is provided with an approximately 6 m wide paved carriageway. An at-grade railway crossing is provided north of the intersection along Hamilton Road. The edge of the Irrigation Way carriageway is offset from the level crossing stop line by approximately 12 metres.

A view of the Irrigation Way / Bob Irvin Road / Hamilton Road intersection is provided below.

Figure 8 Irrigation Way / Bob Irvin Road / Hamilton Road intersection



Copyright Nearmap

3.5 Crash History

Crash history information in the vicinity of the site was obtained through the TfNSW Interactive crash statistics map for the latest available 5-year period from 2020 to 2024. The severity of each incident is classified in accordance with the below:

- **Fatal:** At least one person was killed or died within 30 days of the crash
- **Serious Injury:** At least one person was injured and admitted to hospital and did not die within 30 days of the crash
- **Moderate Injury:** Those involved were injured and required medical treatment and were not admitted to hospital nor died within 30 days of the crash, or a previously defined Minor/Other or No Injury CrashLink record matched to a SIRA CTP record with a MAIS score of 2 (Moderate) or higher
- **Minor/Other Injury:** Those involved were injured and isn't matched to a hospital admission record, or previously defined No Injury CrashLink record matched to a SIRA CTP record with a MAIS score of 1 (Minor)
- **Non-casualty (towaway):** A crash where a vehicle was towed away however no death or injuries are recorded.

It is acknowledged that the crash stats only include the incidents recorded by police and therefore may exclude minor incidents which were not reported.

Each of the recorded crashes is shown below in Figure 9 and summarised in Table 2.

Figure 9 Crash History



Table 2 Crash Data Summary

Crash id	Year	Description	Type of Location	Lighting	Severity	Number Killed / Injured
1270511	2021	Off road to left	2-way undivided	Darkness	Serious injury	0 / 1
1271520	2021	Right rear	X-intersection	Daylight	Moderate injury	0 / 1
1305278	2022	Right rear	T-junction	Daylight	Serious injury	0 / 2
1312239	2022	Right off road into object / parked vehicle	X-intersection	Darkness	Non-casualty (towaway)	0 / 0
1315848	2023	Struck train	2-way undivided	Daylight	Non-casualty (towaway)	0 / 0

The above does not demonstrate any road safety issues or trends in the nearby area.

4 EXISTING TRAFFIC VOLUMES

4.1 Overview

To understand existing traffic conditions in the vicinity of the site a series of traffic counts were undertaken on behalf of **onemilegrid** in the vicinity of the site. The data collection process sought to collect peak hour turning movement counts at key intersections as well as daily 'mid-block' volumes to establish fluctuations across 24 hour periods.

The survey locations are shown in Figure 10, whilst the volumes are provided in the following sections.

Figure 10 Traffic Survey Locations



Source: OpenStreetMap

The raw survey data is attached in Appendix A.

4.2 Peak Hour Counts

Peak hour turning movement traffic volume surveys were undertaken by Trans Traffic Survey on behalf of **onemilegrid** on Thursday 29th May 2025, between 6:30am and 9:30am, and between 2:30pm and 7:00pm at the following intersections in the vicinity of the site:

- Irrigation Way / Bob Irvin Road / Hamilton Road;
- Irrigation Way / Murray Road;
- Burley Griffin Way / Irrigation Way / Kurrajong Avenue; and
- Kidman Way / Hanwood Avenue / Beaumont Road.

The peak hour results of the surveys are shown in Figure 11, Figure 12 and Figure 13.

Figure 11 Existing Volumes – AM Peak (8:15 am to 9:15 am)

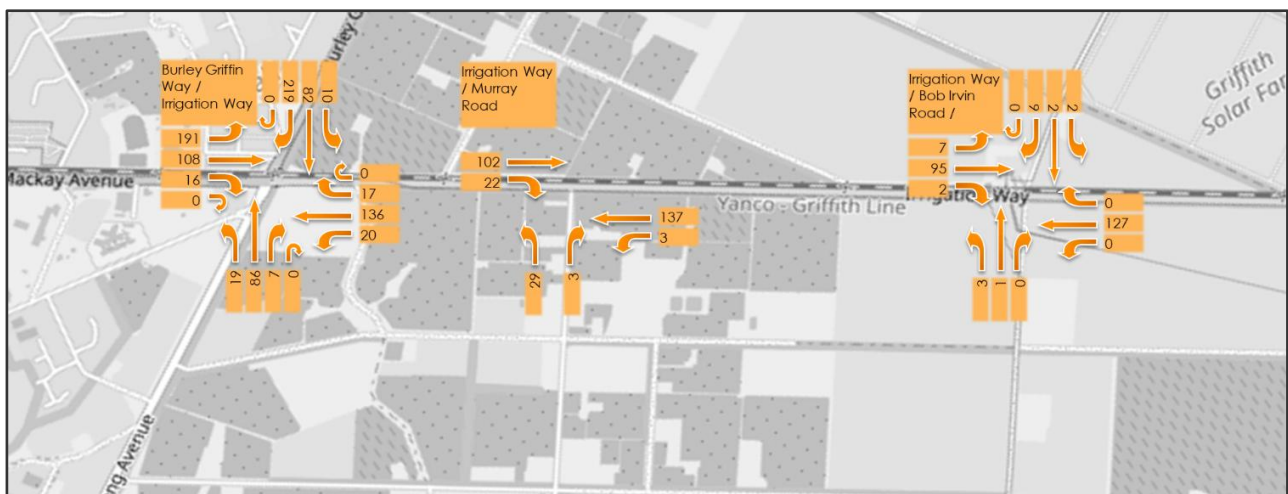


Figure 12 Existing Volumes – PM Peak (3:00 pm to 4:00 pm)

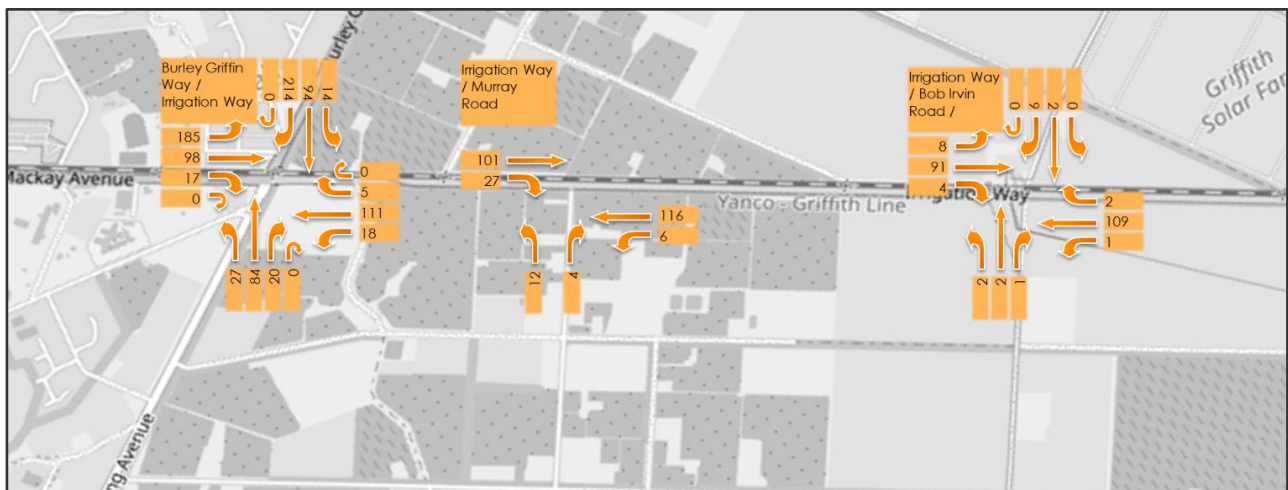
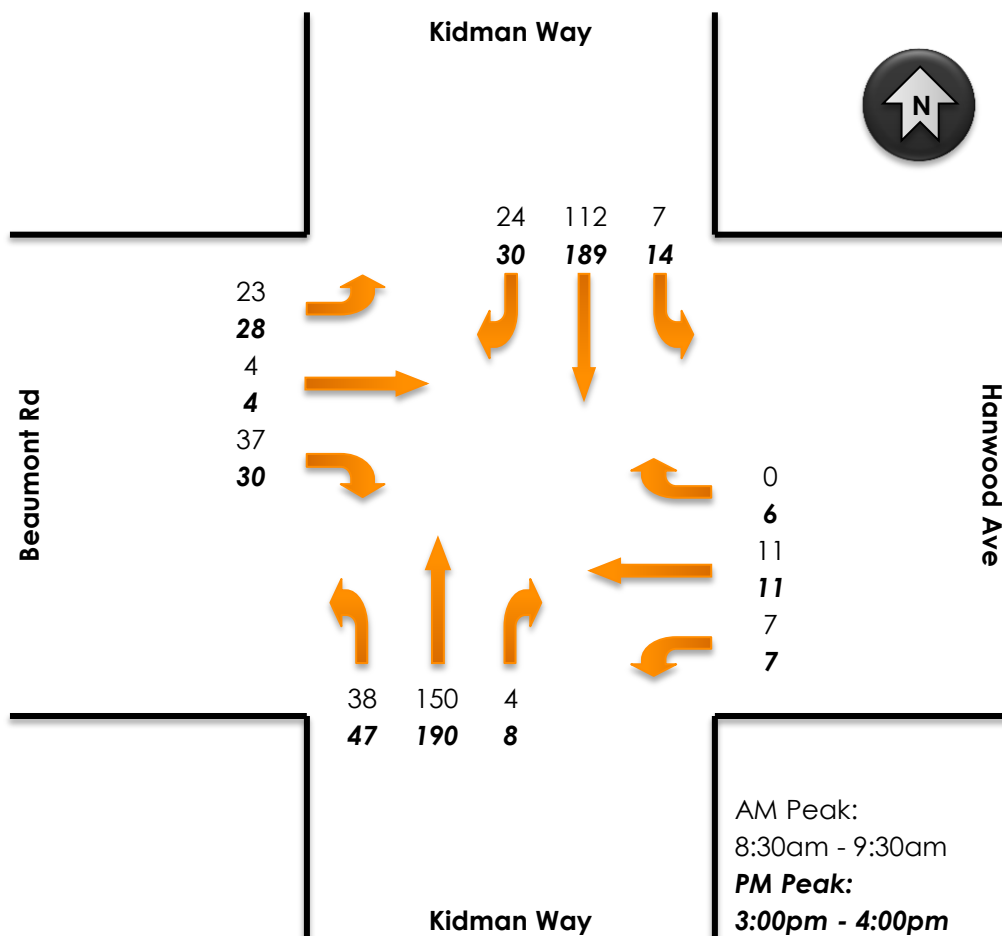


Figure 13 Existing Volumes – Kidman Way / Hanwood Avenue Peak Hours



4.3 Daily Traffic Volume Counts

Traffic volume, speed and classification surveys were undertaken by Trans Traffic Survey on behalf of **onemilegrid** on Bob Irvin Road and Irrigation Way adjacent the site, and Hanwood Avenue southwest of the site for a one-week period from Thursday 29th May 2025 to Wednesday 4th June 2025 inclusive. The results of the surveys are summarised in Table 4, Table 4 and Table 5.

Table 3 Traffic Volume and Speed Surveys – Irrigation Way

Time Period	Direction	Traffic Volume (vpd)	Average Speed (km/h)	85 th Percentile Speed (km/h)
Weekday Average	Eastbound	1,225	96.7	107.1
	Westbound	1,287	88.6	97.3
	Both Directions	2,512	92.3	101.5
7 Day Average	Eastbound	1,092	97.7	107.5
	Westbound	1,146	88.8	97.7
	Both Directions	2,238	93.2	102.6

The surveys identified a heavy vehicle percentage of 13.8% along Irrigation Way, with average speeds generally in line with the posted limit, although higher speeds 85th percentile speeds were noted heading east.

Table 4 Traffic Volume and Speed Surveys – Bob Irvin Road

Time Period	Direction	Traffic Volume (vpd)	Average Speed (km/h)	85 th Percentile Speed (km/h)
Weekday Average	Northbound	62	58.1	65.4
	Southbound	57	55.0	61.5
	Both Directions	119	57.4	63.8
7 Day Average	Northbound	56	58.7	65.4
	Southbound	53	54.5	60.3
	Both Directions	109	57.0	62.5

The surveys identified a heavy vehicle percentage of 13.9% along Bob Irvin Road. In relation to speeds, the average speed was around 60km/h which is lower than the default speed limit of 100 km/h. This is not unexpected noting the nature of construction of Bob Irvin Road and that default speed limits apply to a variety of road types and are not necessarily fit for all purposes.

Table 5 Traffic Volume and Speed Surveys – Hanwood Avenue

Time Period	Direction	Traffic Volume (vpd)	Average Speed (km/h)	85 th Percentile Speed (km/h)
Weekday Average	Eastbound	258	58.7	65.2
	Westbound	236	63.5	71.4
	Both Directions	494	61.0	68.2
7 Day Average	Eastbound	237	59.1	65.6
	Westbound	224	64.1	71.8
	Both Directions	461	61.6	68.6

The surveys identified a heavy vehicle percentage of 9.0% along Hanwood Avenue. In relation to speeds, the average speed was around 62 km/h, which is again lower than the default speed limit of 100 km/h, which is again not unexpected.

4.4 Existing Intersection Performance

To assess the operation of the Irrigation Way / Bob Irvin Road and Kidman Way / Hanwood Avenue intersections the traffic volumes have been input into SIDRA Intersection, a traffic modelling software package.

The SIDRA Intersection software package has been developed to provide information on the capacity of an intersection with regard to a number of parameters. Those parameters considered relevant are, Degree of Saturation (DoS), 95th Percentile Queue, and Average Delay, and Level of Service (LoS), as described in Table 6 below.

Table 6 SIDRA Intersection Parameters

Parameter	Description
Degree of Saturation (DoS)	The DoS represents the ratio of the traffic volume making a particular movement compared to the maximum capacity for that particular movement.
Average Delay (seconds)	Average delay is the time delay that can be expected for all vehicles undertaking a particular movement in seconds. This includes time taken to accelerate or decelerate, time taken to undertake the manoeuvre, and delay at a hold line or stop line.
95th Percentile (95 th ile) Queue	95 th ile queue represents the maximum queue length in metres that can be expected in 95% of observed queue lengths in the peak hour.

Level of Service (LoS)	A qualitative measure of sign-controlled intersection performance, based on the average delay experienced by a driver. A LoS of A, B, C or D suggests acceptable intersection performance. A LoS of E or F suggests mitigation measures or upgrades may be warranted.
------------------------	---

The value of the average delay and Level of Service for a sign-controlled intersection has a corresponding rating, as shown in Table 7 below.

Table 7 Rating of Delay and Level of Service

Rating	Delay in seconds (d)	Level of Service
Excellent	$d \leq 10$	A
Very Good	$10 < d \leq 15$	B
Good	$15 < d \leq 25$	C
Fair	$25 < d \leq 35$	D
Poor	$35 < d \leq 50$	E
Very Poor	$50 < d$	F

The results of the analysis are provided in Table 8 and Table 9.

Table 8 Irrigation Way / Bob Irvin Road / Hamilton Road – Existing Conditions

Approach	DoS	Avg. Delay (sec)	Queue (m)	Level of Service
AM Peak				
Bob Irvin Road (S)	0.004	6.0	0.1	A
Irrigation Way (E)	0.075	0.0	0.0	A
Hamilton Road (N)	0.016	6.7	0.4	A
Irrigation Way (W)	0.062	0.5	0.2	A
PM Peak				
Bob Irvin Road (S)	0.005	5.8	0.1	A
Irrigation Way (E)	0.064	0.2	0.1	A
Hamilton Road (N)	0.013	6.5	0.3	A
Irrigation Way (W)	0.060	0.7	0.3	A

Table 9 Kidman Way / Hanwood Avenue / Beaumont Road – Existing Conditions

Approach	DoS	Avg. Delay (sec)	Queue (m)	Level of Service
AM Peak				
Kidman Way (S)	0.114	1.0	0.2	A
Hanwood Avenue (E)	0.019	5.1	0.5	A
Kidman Way (N)	0.088	1.3	1.4	A
Beaumont Road (W)	0.079	6.3	2.1	A
PM Peak				
Kidman Way (S)	0.146	1.1	0.5	A
Hanwood Avenue (E)	0.032	6.3	0.8	A
Kidman Way (N)	0.144	1.2	1.9	A
Beaumont Road (W)	0.146	2.0	2.3	A

It is shown that both the intersections of Irrigation Way / Bob Irvin Road and Kidman Way / Hanwood Avenue operates within the excellent category with a Level of Service of A with minimal delays to through traffic on the state road network.

5 RELATED AND NEARBY PROJECTS

5.1 Yoogali Solar Farm

The Yoogali Solar Farm is an approved Solar Farm project co-located on the same land as the subject site, to be developed by EDP Renewables (EDPR). The project is understood to have received approval in 2019 via DA291/2018, though construction has not yet commenced. Concurrent to the proposed development, EDPR is seeking a modification of DA 291/2018 to realign the title boundary to accommodate the proposed BESS.

The proposed BESS and Yoogali Solar Farm will be operated separately and delivered by separate entities, however these entities are working closely together to ensure a coordinated construction and functional outcome.

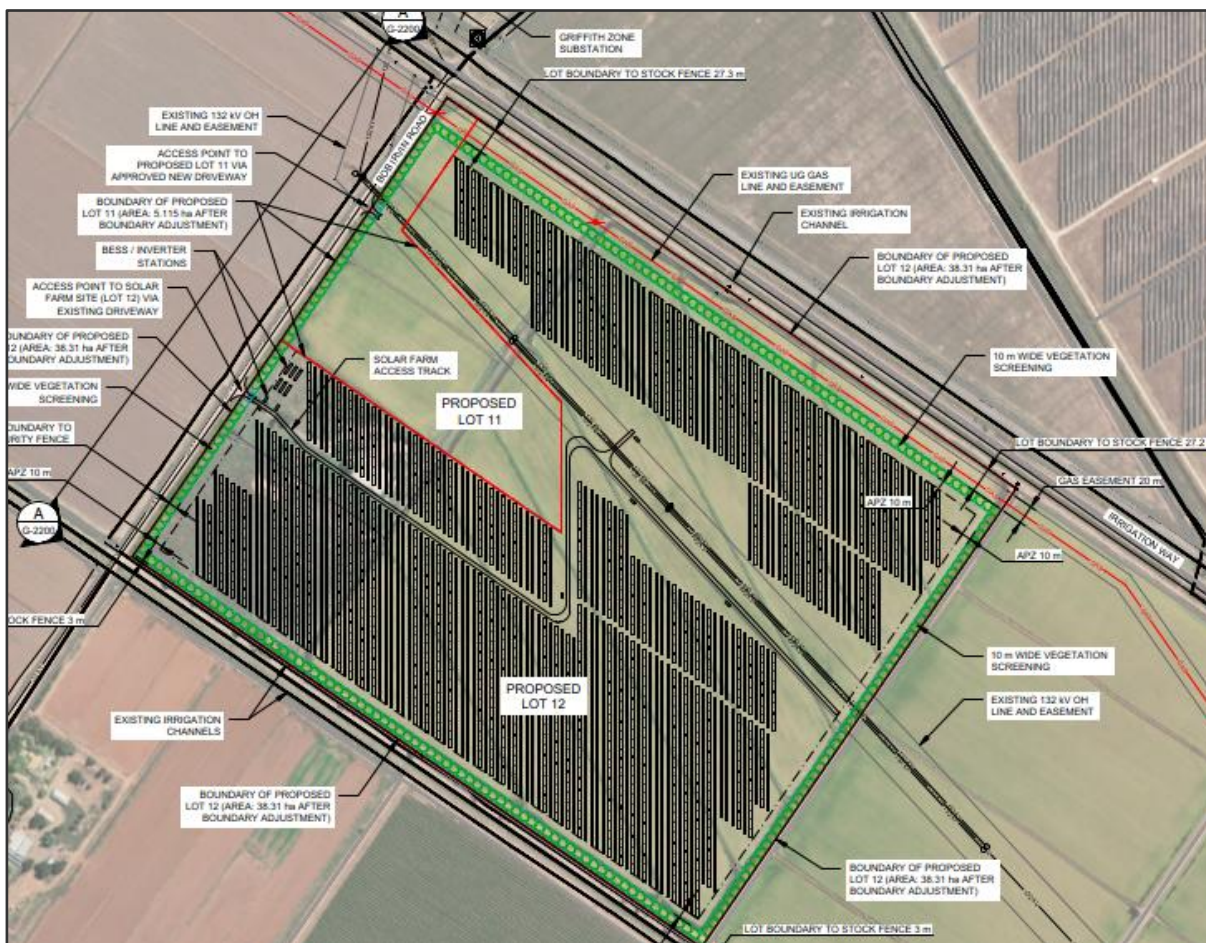
onemilegrid has reviewed relevant material prepared for the Yoogali Solar Farm, including the Traffic Impact Assessment and Construction Traffic Management Plan prepared by ML Traffic Engineers both dated October 2018. The reports identify that primary vehicle access to the site was to be provided via the north from Irrigation Way, with secondary vehicle access being provided via Kidman Way, Mirrool Branch Canal Road, Old Willbriggie Road, Hanwood Avenue and Bob Irvin Road.

A temporary traffic control plan was proposed, which involved stopping vehicles approaching Irrigation Way on Bob Irvin Road from the south via traffic signals.

The Transport Impact Assessment identified a maximum of 40 traffic movements during the peak hours would be generated by the site, associated with construction staff arriving and departing the site. A maximum of 6 heavy vehicle deliveries were expected per day.

The approved site plan from the modification application is shown below in Figure 14.

Figure 14 Site Plan



5.2 Riverina Solar Farm

The Riverina Solar Farm (SSD 7482) is an approved solar facility project currently under construction, located approximately 500 m northwest of the subject site, although it is understood that limited activity has been undertaken on-site. It is understood that the project team has undertaken sensitivity testing, and it has been concluded this project is unlikely to be built.

5.3 Hawkins Road Solar Farm

The Hawkins Road Solar Farm (DA189/2023) is an approved 5 MW Solar Farm and BESS project, located approximately 1 km south of the site on Hawkins Road.

6 DEVELOPMENT PROPOSAL

It is proposed to develop the site for the purposes of a nominal 100MW / 1,000 MWh Battery Energy Storage System (BESS), including associated infrastructure including inverters, a transformer, and a mixed underground and overhead cable connection to the Griffith Substation. As previously noted, the proposed BESS will be co-located on the same land as the approved but yet to be constructed Yoogali Solar Farm.

In addition to the key components outlined above, there will be temporary infrastructure required to facilitate the construction and decommissioning phases of the proposed BESS. The construction compound would likely include:

- Temporary construction offices;
- A site office; and
- Laydown areas.

These will all be accommodated within the subject site.

The proposed BESS units are to be located along the southern boundary of the site, with the Yoogali Solar Farm modules on the southern, northern and eastern peripheries of the site.

6.1 Construction / Installation

Construction of the facility is expected to take place over an 18 to 24-month period. Construction personnel and heavy vehicle deliveries are expected to vary significantly during the construction period, though two key peak periods have been identified, during the peak earth works, and for BESS delivery and installation works.

Additionally, construction hours are generally to be limited to the following (unless required for specific activities):

- Monday to Friday: 7:00 AM to 5:00 PM;
- Saturday: 7:00 AM to 1:00 PM.

A breakdown of the typical construction periods and peak construction periods is discussed below.

6.1.1 Typical Construction

During a typical construction period associated with the facility, the site is expected to accommodate a maximum of 45 staff on-site at a given time. Additionally, up to 20 heavy vehicle deliveries are expected per day, with the timing of these deliveries distributed throughout the day.

6.1.2 Civil Works Peak

The operator has advised that heavy vehicle activity is expected to be at its peak during the earthworks phase of construction. It is anticipated that the site will accommodate a maximum of 50 heavy vehicles deliveries/pick-ups per day. Additionally, the site is expected to accommodate a maximum of 55 construction personnel during the peak earthworks phase.

6.1.3 Electrical Works Peak

The second peak for construction activity is anticipated to occur during the BESS deliveries and installation phase.

During this phase, a maximum of 105 construction staff and maximum of 15 heavy vehicle deliveries are anticipated.

6.1.4 Deliveries

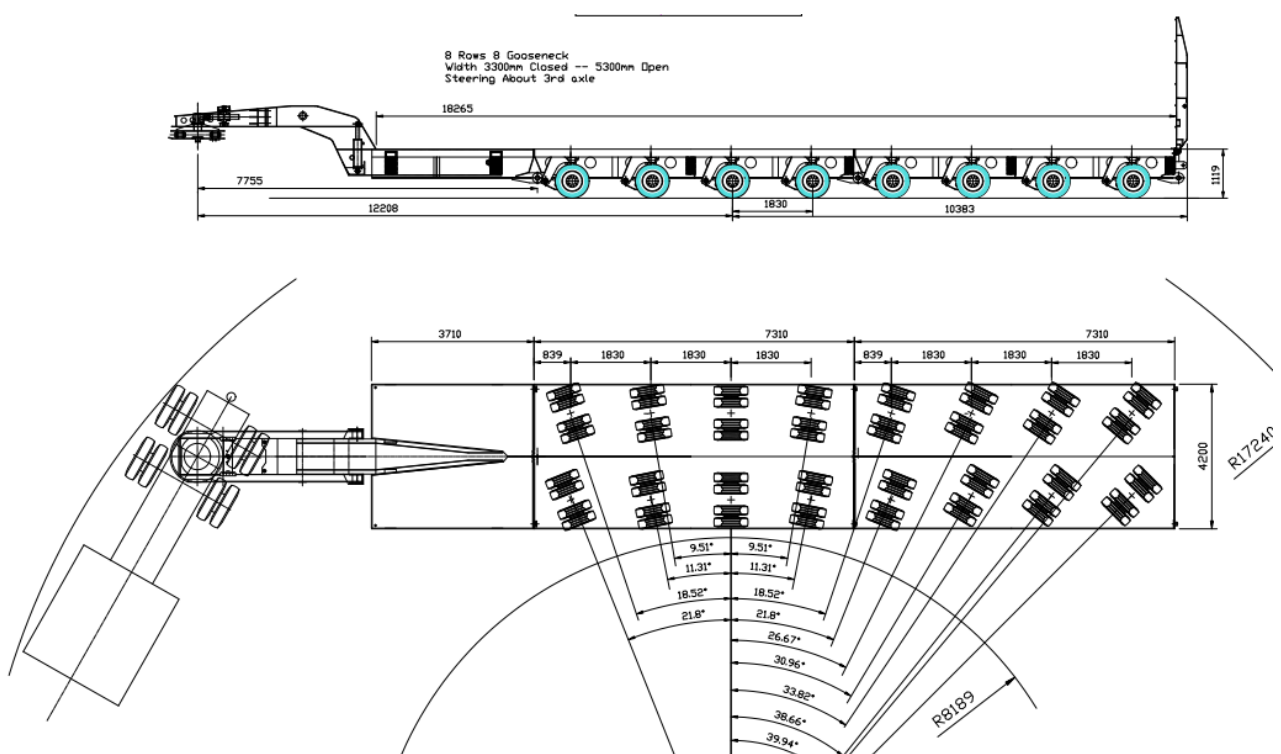
The majority of heavy vehicle deliveries are expected to be via 6.4 m to 12.5m rigid trucks, 19 m semi-trailers and 20 m tandem tipper and trailers (truck and dogs). Other heavy vehicles that will require occasional access are low loader trailers and 26 m B-Double's (BD).

The proponent has advised that the largest vehicles that will access the site will be OSOM vehicles between 30 and 40 metres in length associated with the delivery of the Main Transformer, and switch room / control room buildings. It is expected that a maximum of 5 OSOM vehicle deliveries will occur over the course of the construction of the facility. As the design of the BESS components is still in initial phases, the details of the power transformer and buildings are still subject to refinement, and therefore the OSOM vehicles are subject to change.

Notwithstanding this, **onemilegrid** have been advised the 'worst case' vehicles for assessment purposes.

The power transformer is expected to be transported via an 8 to 12-axle platform trailer. An example of an 8-axle platform trailer is provided below.

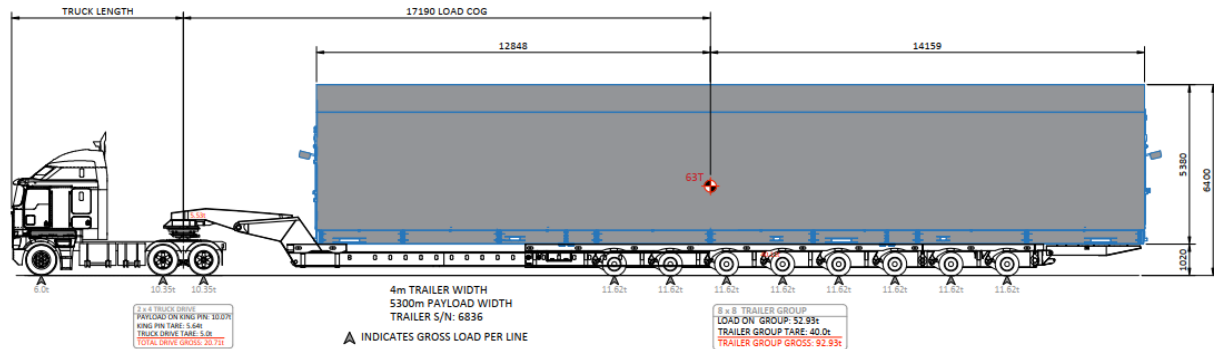
Figure 15 8-axle platform trailer



The combined switchgear and control building is expected to be transported via a 36.95 m long extended trailer, including a 4 m wide trailer and a 5.3 m wide payload. This vehicle is provided below. As this vehicle is essentially the same as the one described above, but longer, it will be considered the 'worst-case' scenario. Although the diagram shows a vehicle height of 6.4 m, the

proponent has confirmed that the maximum height for vehicles associated with this development will be 5.3 m.

Figure 16 TES25012 Extended Trailer (36.95 m long)



6.1.5 Potential Busing

The operator has advised that, in consultation with construction contractors, buses will be provided to transport staff to the site during peak construction periods. Staff will meet at a designated point and coordinate travel to the site during these periods if provided.

6.2 Operation

The proponent has outlined the site will accommodate up to 5 maintenance staff on-site during the typical operations of the site.

Annual access to the site will be necessary for major maintenance and inspections, with a maximum of 10 staff expected on-site, including two heavy vehicles.

6.3 Access

Vehicular access to the site is proposed to be established from Bob Irvin Road.

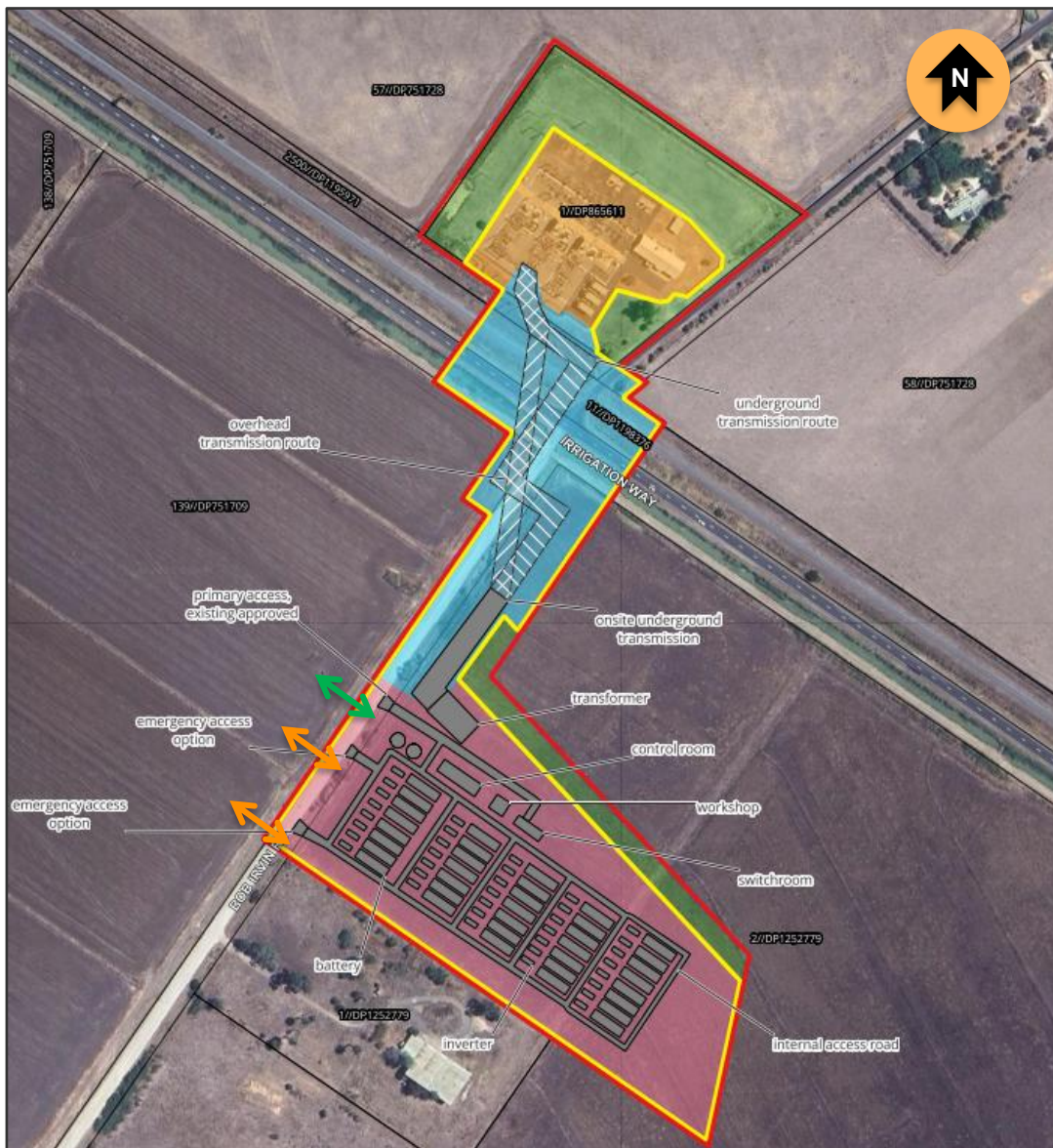
Primary access to the site is to be provided via a crossover previously approved for the Yoogali Solar farm project. The site layout plan identifies two options for secondary / emergency access, with the final location to be determined during the detailed design process.

The proposed access crossovers will facilitate fully directional vehicle movements into and out of the site to Bob Irvin Road.

It is anticipated that access to the site will be secured against unauthorised access outside of construction hours/days, and at all times once operational.

The indicative site layout plan is shown below in Figure 17.

Figure 17 Site Layout



6.4 Car Parking

Car parking for construction staff will be provided within a dedicated area on-site. Given the size of the site, all parking demands are expected to be adequately accommodated on-site.

7 ACCESS ROUTE REVIEW

7.1 General

Based on the limited arterial road connections to the east along Irrigation Way, it is expected that the majority of construction related traffic will travel to and from the wider road network via Kidman Way to the south, Burley Griffin Way to the north and Mackay Avenue to the west.

Figure 18 Expected Origin / Destination Locations



7.2 Irrigation Way / Bob Irvin Road intersection

Over the course of our involvement with the project, we have identified the Irrigation Way / Bob Irvin Road intersection as the key constraint in relation to access to the site. This intersection provides the primary connection between the site and the arterial road network.

onemilegrid has prepared swept path diagrams for the Irrigation Way / Bob Irvin Road intersection, based on a feature survey provided by the project team. The swept paths demonstrate that 19 metre semi-trailers can turn left out of Bob Irvin Road using the existing road width, with the wheels remaining within the carriageway, and not crossing over the Irrigation Way centreline. It is acknowledged that movements from Irrigation Way into Bob Irvin Road are constrained, with the 500 mm clearance envelope overhanging outside of the roadway and potentially impacting the landscaping and reflector poles, though the wheels do remain within the roadway.

The results of the swept path assessment are attached in Appendix A.

Critically, the swept path assessment highlights that simultaneous heavy vehicle movements cannot be accommodated without widening the existing culvert and potentially modifying the intersection geometry. Due to the proximity of the irrigation channel, such upgrades would be highly complex and limited to short seasonal windows.

Furthermore, through the RFI process the Development Services – Renewables team at TfNSW were engaged. TfNSW advised that traffic management measures along Irrigation Way to facilitate site access are not supported. This advice explicitly excluded the use of traffic controllers, traffic signals (as previously approved for the Yoogali Solar Farm) and speed reductions along Irrigation Way. Given the geometric constraints of the intersection and this guidance, the Irrigation Way / Bob Irvin Road intersection cannot facilitate both inbound and outbound construction traffic movements.

In response, the project team has adopted an access strategy that seeks to:

- Divert heavy vehicle inbound movements away from the Irrigation Way / Bob Irvin intersection, directing them instead to approach from the south via Hanwood Avenue and Bob Irvin Road.
- Utilises the Irrigation Way / Bob Irvin Road intersection primarily for outbound movements, which are unconstrained as demonstrated by the swept path analysis.

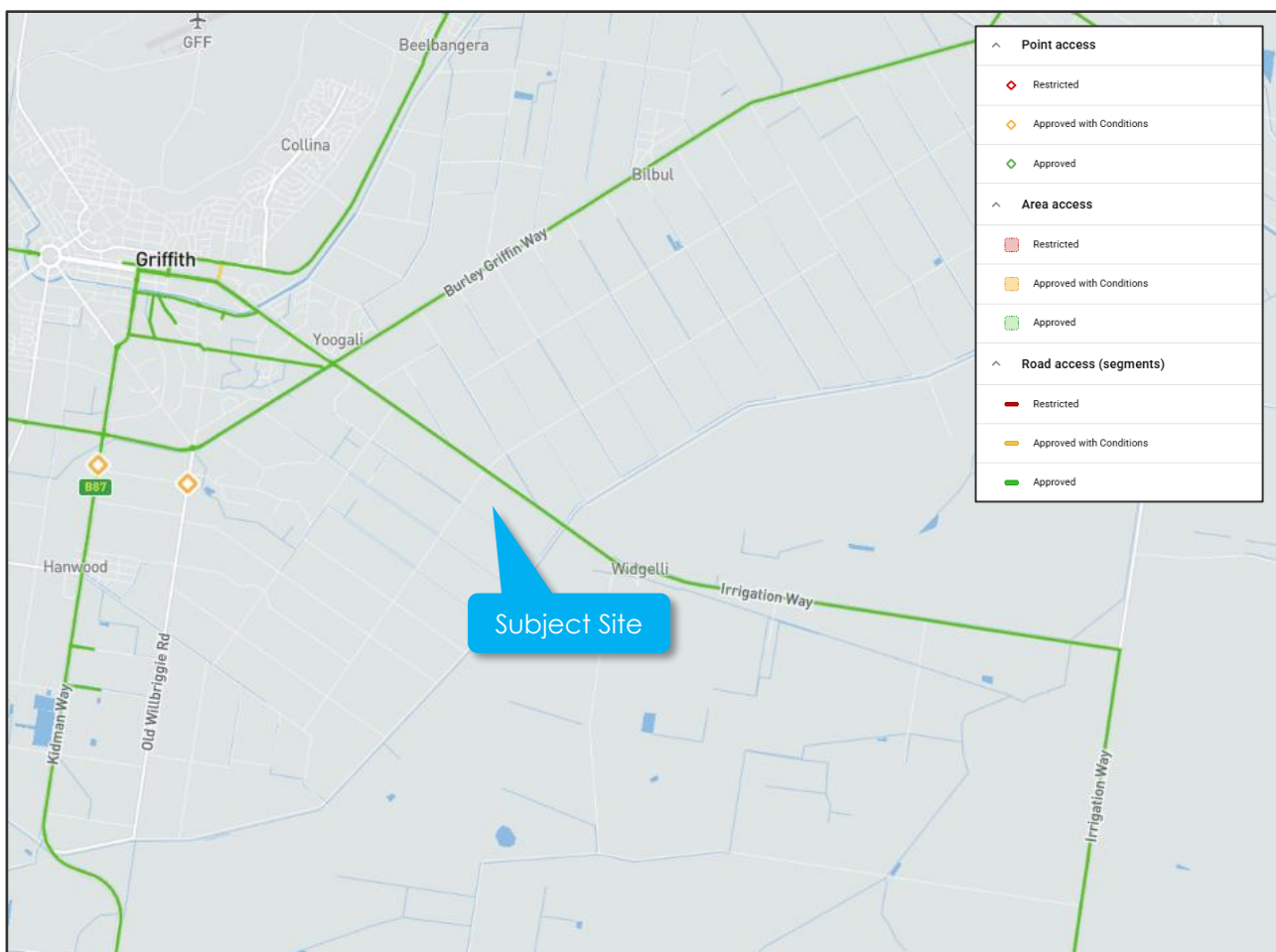
This approach minimises safety risks and avoids unnecessary infrastructure upgrades for short-term construction traffic.

7.3 General Heavy Vehicles

7.3.1 B-Double Network

New South Wales Higher Mass Limits (HML) 25/26 m B-Double Routes in the vicinity of the subject site are shown below in Figure 19.

Figure 19 NSW HML 25/26 m B-double Routes



It is shown that Irrigation Way, Burley Griffin Way and Kidman Way and Sunraysia Highway approved roads, in addition to a number of roads further afield.

7.3.2 Recommended Route

Based on the above, it is recommended that inbound heavy vehicles access the site from the south along Bob Irvin Road.

Standard sized heavy vehicle deliveries from the northeast are expected to arrive via Burley Griffin Way, and vehicles from the south are expected to arrive via Hanwood Avenue.

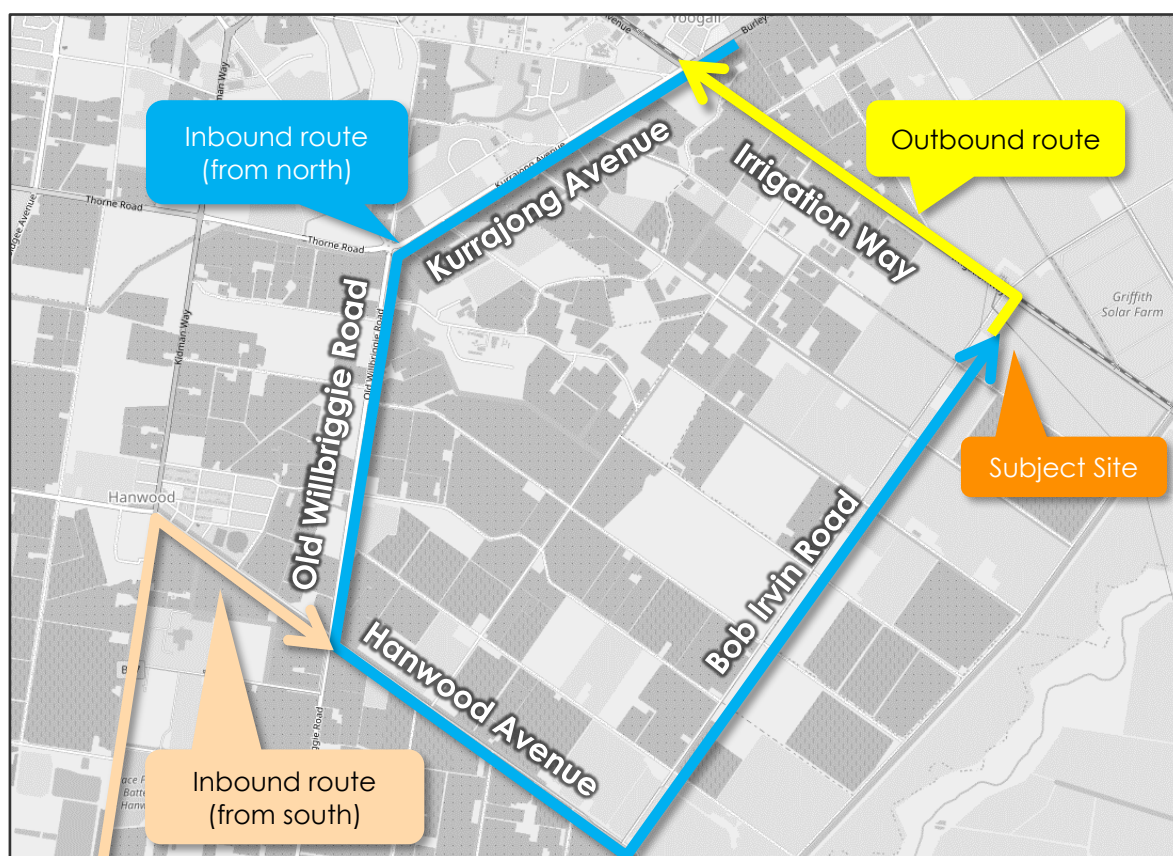
The recommended route from the northeast (via Burley Griffin Way), is to continue along Kurrajong Avenue, turn left at Old Willbriggie Road, continue along Old Willbriggie Road, turn left at Hanwood Avenue, continue along Hanwood Avenue, turn left at Bob Irvin Road and approach the site from the south. This route minimises the number of turning movements to access the site and the use of unsealed roads, with the only unsealed section of road being Bob Irvin Road from Wincey Road to Irrigation Way. Additionally, this route minimises the need for travelling over bridges and culverts to access the site.

Vehicles travelling from the south will approach from the south via Kidman Way and turn right onto Hanwood Avenue and continue on the same route as vehicles approaching from the north.

While the Bob Irvin Road / Irrigation Way intersection is not considered appropriate for simultaneous (inbound and outbound) access without the use of traffic management measures along Irrigation Way as outlined in Section 7.2, it is considered appropriate to provide outbound truck movements. This would also reduce the interaction and potential conflict between heavy vehicles on the local roads surrounding the site.

As shown in the swept paths attached in Appendix A, the Bob Irvin Road / Irrigation Way intersection is capable of accommodating outbound movements for 19 m semi-trailers.

Figure 20 Recommended Access Routes



Source: OpenStreetMap

Table 10 Recommended General Heavy Vehicle Access Routes summary

Origin/Destination	Inbound	Outbound
North	Burley Griffin Way, Kurrajong Avenue, Old Willbriggie Road, Hanwood Avenue, Bob Irvin Road.	Bob Irvin Road, Irrigation Way, Burley Griffin Way
South	Kidman Way, Hanwood Avenue, Bob Irvin Road.	Bob Irvin Road, Irrigation Way, Kurrajong Avenue, Kidman Way.

7.4 Staff / Light Vehicles

It is expected that staff will be accommodated locally in Griffith during the construction period, and therefore all staff / light vehicles will be assumed to originate from the west.

To reduce interaction between opposing traffic generated by the proposed development, it is recommended that staff and other light vehicle traffic follow the same heavy vehicle routes identified above.

7.5 Traffic Management

The proponent and lead contractor will require all subcontractors to advise (and induct as required) operators/drivers of the recommended access route plan demonstrated in Figure 20 and the construction traffic management plan for the proposed development. Driver induction processes will explicitly address approved inbound and outbound routes, site access arrangements, restricted movements, and any applicable time-of-day or vehicle type constraints.

All drivers will be provided with a map clearly identifying the approved haulage routes throughout Yoogali, Hanwood and Griffith, site access points, and prohibited movements. These route maps will be distributed electronically prior to first site access opening and made available in hard copy where required. Directional signage will be installed along Kidman Way, Hanwood Avenue and Bob Irvin Road to guide inbound construction vehicles to the site. Signage and traffic controllers will also be located at the site exit directing all departing vehicles to turn right onto Bob Irvin Road and travel northbound.

Route compliance requirements will be reinforced through toolbox talks, site signage, and ongoing communication with subcontractors.

The lead contractor will be responsible for monitoring adherence to the approved routes throughout the construction period and will implement corrective actions if non-compliance is identified, including re-induction of drivers or subcontractors where necessary. Traffic controllers are anticipated to be deployed along Bob Irvin Road to assist with monitoring route compliance, including identifying vehicles approaching the site from the north via the Irrigation Way / Bob Irvin Road intersection.

7.6 OSOM Route Assessment

Please refer to the OSOM Route Assessment attached in Appendix C.

8 DESIGN ASSESSMENT

8.1 Sight Distance Review

As part of onemilegrid's investigations, Google Streetview imagery was reviewed to assess the sight lines along the frontage of the site. The safe intersection sight distance (SISD) requirements, as outlined within *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*, is summarised below in Figure 21.

Figure 21 Austroads SISD

Design speed (km/h)	Based on safe intersection sight distance for cars ⁽¹⁾ $h_1 = 1.1$; $h_2 = 1.25$, $d = 0.36$ ⁽²⁾ ; Observation time = 3 sec					
	$R_T = 1.5 \text{ sec}^{(3)}$		$R_T = 2.0 \text{ sec}$		$R_T = 2.5 \text{ sec}$	
	SISD (m)	K	SISD (m)	K	SISD (m)	K
40	67	4.9	73	6	–	–
50	90	8.6	97	10	–	–
60	114	14	123	16	–	–
70	141	22	151	25	–	–
80	170	31	181	35	–	–
90	201	43	214	49	226	55
100	234	59	248	66	262	74
110	–	–	285	87	300	97
120	–	–	324	112	341	124
130	–	–	365	143	383	157

Source: *Austroads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections*

Noting the observed 85th percentile speed of 62.8 km/hr on Bob Irvin Road, the design speed of 70 km/h applies to the site access. Regardless, sight distances are expected to be appropriate with clear sight lines available in both directions along Bob Irvin Road.

8.2 Access Design

Detailed designs for the site access points have not been undertaken at this stage. The site access should be designed to accommodate the largest typical vehicles that will access the site during the construction and operational phases of the facility.

9 TRAFFIC

9.1 Traffic Generation

9.1.1 Overview

The majority of traffic generated by the proposed development will be generated during the construction / installation phases associated with trade persons, facility staff and deliveries. During the future operational phase, the level of traffic generated will be significantly reduced due to the low employee intensity requirements of the facility. Notwithstanding, an assessment of the anticipated traffic generated by the site during each phase of the project follows.

9.1.2 Typical Construction

As noted in Section 6.1.1, approximately 45 staff will be accommodated on-site during the typical construction phase. To provide for a conservative analysis, it will be assumed that each staff member drives to the site independently, and it will be assumed that all staff travelling via private vehicles arrive and depart during a single peak hour.

During the typical construction phase, it is expected that the 20 heavy vehicle deliveries will occur at regular intervals throughout the day, and therefore 10% will be assumed to occur during the peak periods, equating to 2 trucks arriving and departing during the peak periods.

9.1.3 Civil Works Peak

The peak civil works phase of the project requires a maximum of 55 construction staff on-site. To provide for a conservative analysis, it will be assumed that each staff member drives to the site independently, and it will be assumed that all staff travelling via private vehicles arrive and depart during a single peak hour. This equates to 55 vehicle movements during the AM and PM peak hours.

It will again be assumed that the 50 heavy vehicle deliveries will occur at regular intervals throughout the day, with 10% occurring during the peak periods. This equates to 5 trucks arriving and departing during the peak periods.

9.1.4 Electrical Works Peak

The peak electrical works phase of the project requires a maximum of 105 construction staff on-site.

Due to the large volume of staff travelling to the site during the peak construction phases, the operator has outlined that they will consider the opportunity for staff to travel to the site via buses, with a communal meeting point or accommodation venue for staff.

Based on this, it will be assumed that one third of staff will arrive via buses provided by the operator. It will be assumed that 2 standard buses will be provided, each accommodating 10-20 staff, therefore approximately 30 staff will arrive via bus. This equates to 2 vehicle trips associated with buses arriving and departing the site during the peak hours (2 arrivals and 2 departures).

To provide for a conservative analysis, it will be assumed that the remaining 75 staff members drive to the site independently. This equates to 75 vehicle movements during the AM and PM peak hours.

It will again be assumed that 10% of the 15 heavy vehicle deliveries occur during the peak periods, equating to 2 trucks arriving and departing during the peak periods.

9.1.5 Anticipated Daily Traffic Generation

Based on the above, the anticipated daily traffic generation of the proposed development is shown below. For clarity the traffic generation of the operational phases, as discussed in Section 6.2 has been included.

Noting the location of the site approximately 7 km from Central Griffith, there has been an allowance made for return trips to the site for staff to purchase lunch. For the purposes of analysis, it will be assumed that 10 private vehicles that access the site during each the construction periods will depart and return back to the site over the course of the day.

Table 11 Anticipated Daily Traffic Movements

Stage	Light Vehicles	Buses	Heavy Vehicles	Total
Typical Construction	110	0	40	150
Civil Works Peak	130	0	100	230
Electrical Works Peak	170	8	30	208
Typical Operation	10	0	0	10
Annual Inspections	20	0	4	24

As shown above, the peak period for traffic generation of the site is during the civil works peak construction period, when the site is expected to generate 230 daily trips. For the purposes of analysis, the civil works peak will be considered the 'worst case' scenario for daily traffic movements.

9.1.6 Peak Hour Traffic Generation

Based on the above, the following traffic generation is expected during the AM and PM peak periods.

Table 12 Anticipated Peak Hour Traffic Movements

Stage	Light Vehicles	Buses	Heavy Vehicles	Total
Typical Construction	45	0	4 (2 arrivals 2 departures)	49
Civil Works Peak	55	0	10 (5 arrivals 5 departures)	65
Electrical Works Peak	75	4 (2 arrivals 2 departures)	4 (2 arrivals 2 departures)	83
Typical Operation	5	0	0	5
Annual Inspections	10	0	2	12

As detailed above, during the electrical works peak the site is anticipated to generate a maximum of 83 vehicle movements during the AM and PM peak periods. For the purposes of analysis, the electrical works peak will be considered the 'worst case' scenario for AM and PM peak hour traffic movements.

9.2 Traffic Distribution

As noted in Section 7 above, it is proposed to have vehicles approach the site via the Kidman Way / Hanwood Avenue intersection, whilst outbound traffic movements will be via the north and the intersection with Irrigation Way.

Due to the proximity of Griffith, and the connections to Burley Griffin Way and Kidman Way, it will be assumed that 75% of traffic will originate/depart from the central Griffith area. The remaining 25% of inbound traffic will be assumed to originate/depart from the south along Kidman Way.

Application of the above assumptions returns the anticipated turning movements at the Irrigation Way / Bob Irvin Road and Kidman Way / Hanwood Avenue intersections during the AM and PM peak hours of the electrical works peak.

Figure 22 Generated Traffic Volumes – Irrigation Way / Bob Irvin Road

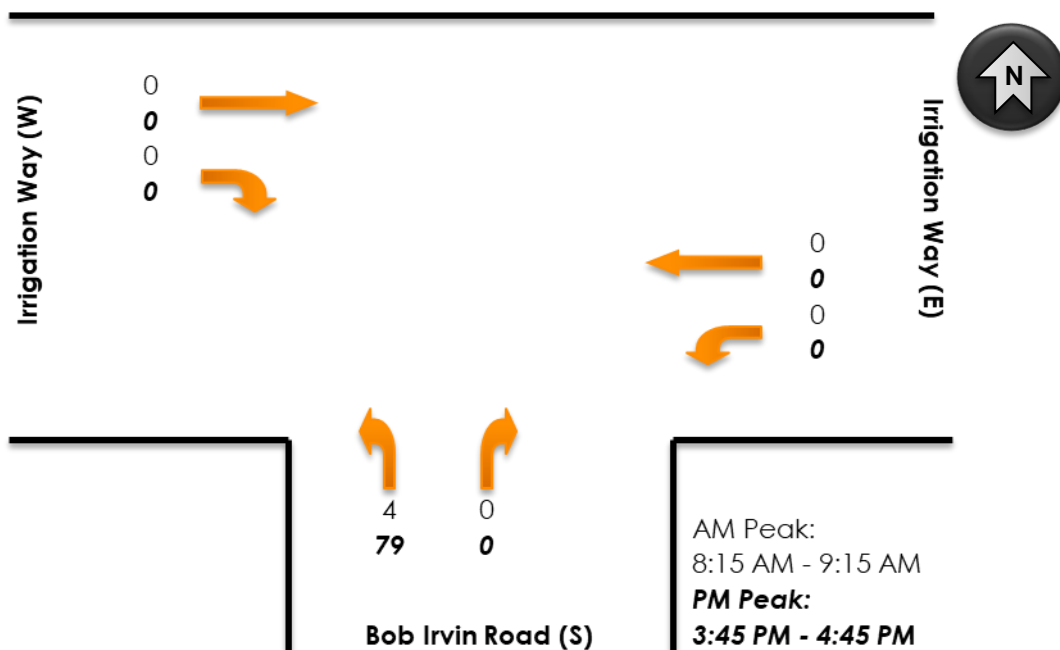
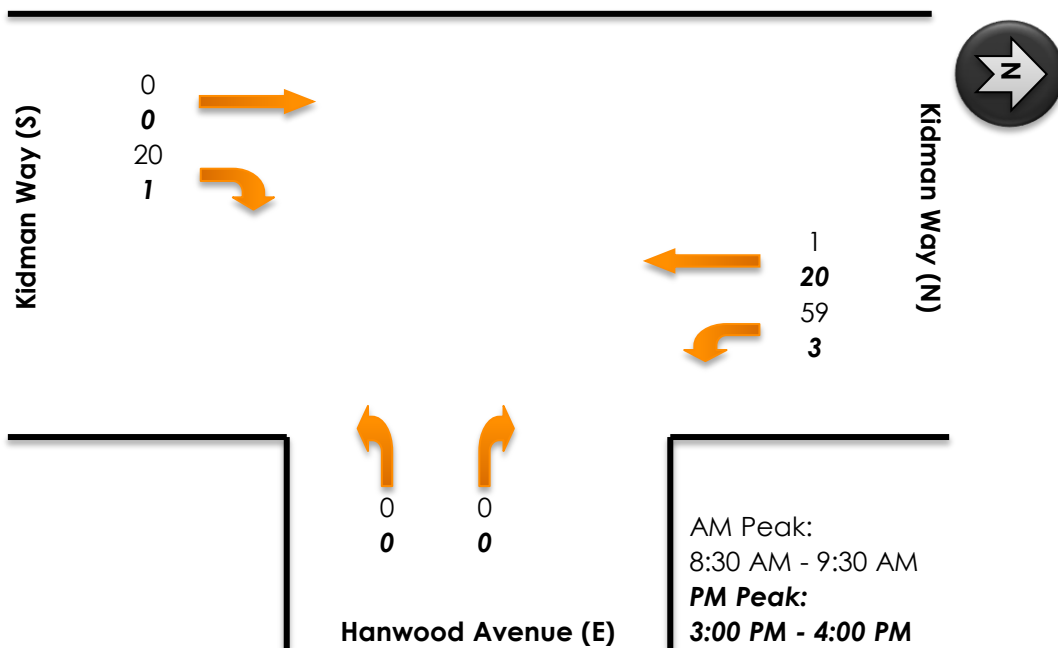


Figure 23 Generated Traffic Volumes – Kidman Way / Hanwood Avenue



9.3 Expected Traffic Volume Growth

The TfNSW advice for SEARs specifically requests the addition of linear growth to the year of peak construction. The construction contractor has advised that the electrical works peak is anticipated in March 2027, less than 2 years after the traffic surveys described in Section 4. It is therefore anticipated that growth on the external road network will be negligible prior to the peak construction period.

Regardless, for the purposes of a conservative analysis, growth rates of 2% per year (compound) have been applied to the existing traffic volumes over a 3-year period, equivalent to a 6.1% increase in traffic volumes.

9.4 Cumulative Traffic Impacts (Other Projects)

onemilegrid and the project team has undertaken research on developments in the vicinity of the site. The key project to be considered is the Yoogali Solar Farm project, which is to be delivered concurrently with the proposed development. The Riverina Solar Farm is the other project that is relevant for cumulative purposes, however it should be noted that this project is considered unlikely to be built by the project team. A description of each project is provided below in Table 13.

Table 13 Cumulative projects summary

<i>Project</i>	<i>Description</i>	<i>Location</i>	<i>Status</i>
Yoogali Solar Farm (DA291/2018)	15 MW Solar Farm	Shared property	Approved, seeking modification
Riverina Solar Farm (SSD 7482)	40 MW Solar Farm	Approx. 500 m northwest	Approved, pre-construction (Understood to be unlikely to be built)
Hawkins Road Solar Farm (DA189/2023)	5 MW Solar Farm and 5 MW BESS	Approx. 1 km south	Approved, modification application submitted August 2025

Based on publicly available information, the estimated traffic volumes for each project are demonstrated below. It is understood that commensurate with the proposed development, all cumulative projects listed above will generate limited traffic once operational, and therefore further assessment is not required.

Table 14 Cumulative projects estimated construction traffic volumes

<i>Project</i>	<i>Construction Period</i>	<i>Peak Light Vehicles per day</i>	<i>Peak Heavy Vehicles per day</i>	<i>Total movements per day</i>
Yoogali Solar Farm (DA291/2018)	10 weeks	40	6	92
Riverina Solar Farm (SSD 7482)	12 months	100	46	292
Hawkins Road Solar Farm (DA189/2023)	6 months	15	4	38

A review of the information available for the Riverina Solar Farm project reveals that the preferred access route for construction materials and private vehicles was from the north, via Burley Griffin Way and Ross Road, rather than via Irrigation Way. This approach is understood to have been adopted due to the low level of separation provided on Hamilton Road between the railway line and Irrigation Way, and the required upgrades to provide a compliant turning treatment. Given the low likelihood of the Riverina Solar Farm being constructed, and the differences in access routes, the Riverina Solar Farm project is not anticipated to have a material cumulative impact on the proposed development, and has been excluded from further analysis.

For the Yoogali Solar Farm and Hawkins Road Solar Farm project, it will be assumed that each light vehicle will equate to an additional one inbound movement during the AM peak, and one outbound movement during the PM peak, equating to a total of 40 movements during the peak periods.

As the Yoogali Solar Farm is proposed to utilise the same routes as the subject development, the same traffic distribution as described in Section 9.2 will be applied to traffic generated by this development.

The Traffic Impact Assessment prepared for Hawkins Road Solar Farm identifies that inbound and outbound access is to be provided via Mirrool Branch Road, east of Bob Irvin Road. The traffic generated by the Hawkins Road Solar Farm will therefore be included within the traffic analysis as additional through volumes along Irrigation Way.

9.5 Resultant Future Traffic Volumes

Based on the above, the future intersection volumes can be calculated by combining the existing volumes with the expected traffic volume growth, and superimposing the traffic anticipated to be generated by the proposed development and cumulative projects.

The resultant peak hour traffic volumes are shown in Figure 24 and Figure 25.

Figure 24 Resultant Traffic Volumes – AM Peak



Figure 25 Resultant Traffic Volumes – PM Peak



9.6 Traffic Impact

9.6.1 Overview

The above traffic volumes represent the combined impact of the proposed BESS development alongside the Yoogali Solar Farm and Hawkins Road Solar Farm projects. Although each project has distinct construction schedules and peak activity periods, this assessment adopts a conservative approach by aggregating all peak traffic volumes into a single scenario. This 'worst-case' methodology ensures that any potential overlaps in construction activity are fully captured.

However, it is highly unlikely that all projects will experience peak construction activity simultaneously. In practice, this means actual cumulative traffic volumes will almost certainly be lower than those assessed. By applying this conservative approach, the analysis provides a robust evaluation of intersection performance, road capacity, and safety implications under the highest anticipated cumulative traffic generation.

The traffic impacts are as follows.

9.6.2 Peak Period Impacts

During the electrical works peak construction phase of the proposed development, the anticipated traffic generation of the development is 83 vehicle movements during the peak periods. When accounting for the cumulative volumes including the Yoogali Solar Farm project, a total of 123 movements are expected.

It should be noted the traffic generation of the proposed development and the Yoogali Solar Farm is expected to be highly tidal, with arrivals during the AM peak and departures during the PM peak. The separation of inbound and outbound routes will also reduce the impact of the construction traffic on the surrounding road network.

It should be noted the above analysis conservatively assumes that all staff arrive during the AM peak hour, and all staff depart during the PM peak hour. Based on the proposed construction hours 7:00 AM to 5:00 PM on weekdays, it is expected that the majority of staff will arrive prior to the

existing AM peak period. Similarly, outbound staff movements are expected to be more evenly distributed throughout the afternoon, rather than being concentrated within the PM peak period.

9.6.3 Turn Lane Warrant Assessment

9.6.3.1 Overview

onemilegrid has undertaken a review of peak hour volumes for each of the intersections in the immediate vicinity of the site against the turn lane treatment warrants specified in the *Austrroads Guide to Traffic Management Part 6: Intersections, Interchanges and Crossings*.

It should be noted that the minimum treatment contemplated by the turn lane warrants is a Basic turn lane, which would therefore apply to even to a single residential dwelling accessed from a court bowl. Application of the turn lane warrants to any intersection or site access point can therefore not conclude that no turn lane is required. Consequently, it is considered that the design process should initially decide whether a turn lane is actually required, and then, if it is decided that a turn lane is required, the Austrroads Turn Lane Warrants may be used as guidance as to what turn lane design may be the most appropriate.

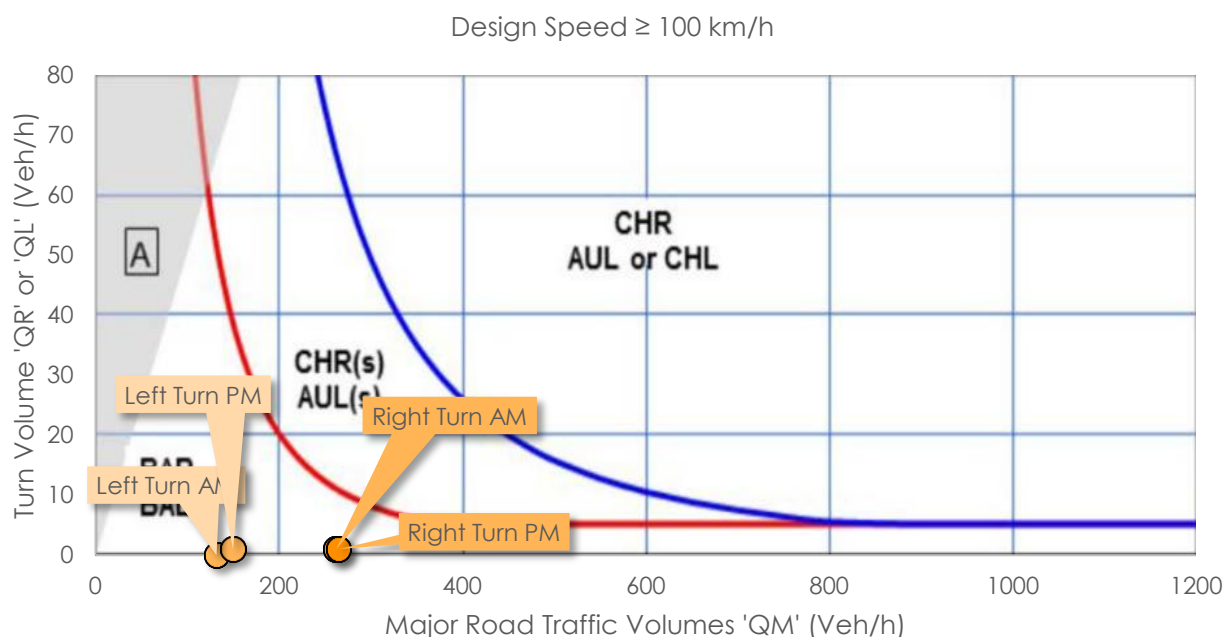
Additionally, it is noted that the warrants do not allow any consideration of the duration of traffic impacts, instead assuming that traffic volumes continue in perpetuity. In the case of the proposed BESS, the increase in traffic volumes will only be applicable during the 18 to 24-month construction period, after which the use will be operational and volumes generated through the intersection will effectively cease, leaving any upgrades disused.

A review of the warrants for Basic, Auxiliary and Channelised turn treatments has been undertaken for the Irrigation Way / Bob Irvin Road and Kidman Way / Hanwood Avenue intersections based on the traffic volumes presented above.

9.6.3.2 Irrigation Way / Bob Irvin Road

The turn lane requirements for the Irrigation Way / Bob Irvin Road intersection are provided below.

Figure 26 Austrroads Turn Treatment Warrants – Irrigation Way / Bob Irvin Road



The figure above suggests that peak hour traffic volumes to and from the development would warrant provision of at most a basic right turn treatment (BAR) and basic left turn treatment (BAL) for the Irrigation Way approaches.

In this regard it should be noted that as the development is not proposing to utilise the Irrigation Way / Bob Irvin Road intersection for inbound traffic movements, the warrants are not triggered by any traffic generated by the proposed development. The only traffic that will be added to the intersection will be from the minor road approach, with all traffic expected to turn left onto Irrigation Way.

Noting the warrants are the same before and during construction of site, it is not considered that the proposed development in isolation triggers requirements to upgrade the intersection.

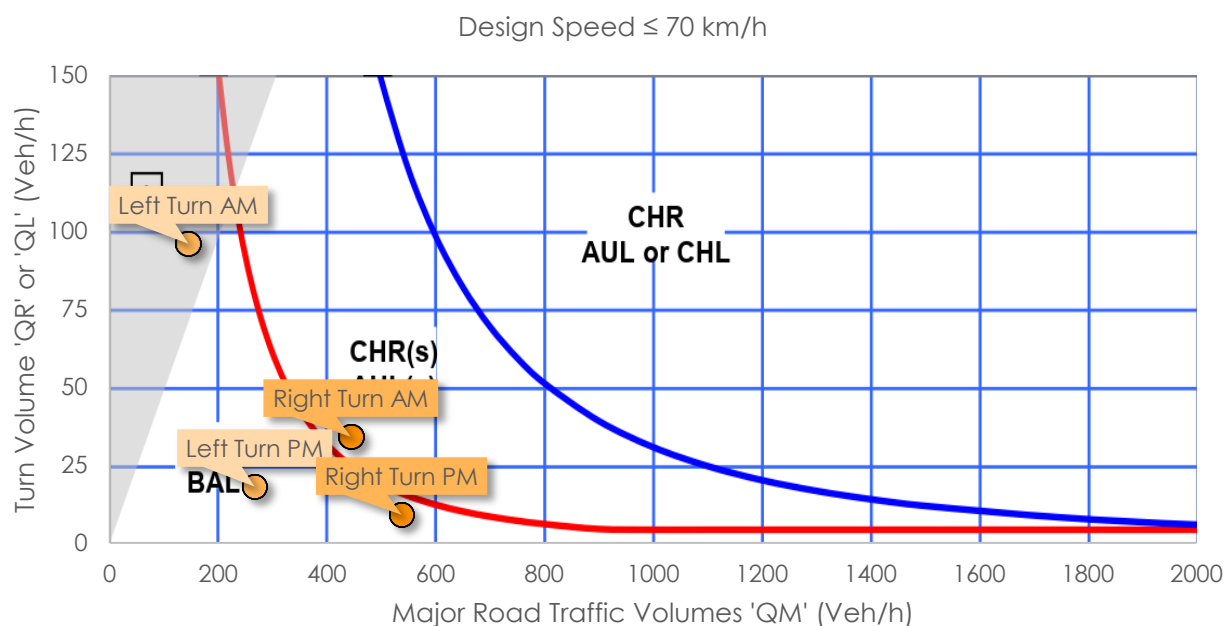
The diagrams above show that the generated turning volumes do not influence the warrants, whilst the observed through traffic volumes are low, therefore the operation of the intersection is not expected to be compromised under this scenario.

Nevertheless, it is recommended to implement advanced warning signage along Irrigation Way in the vicinity of the site as part of the construction traffic management strategy during the construction period to assist with vehicle access.

9.6.3.3 Kidman Way / Hanwood Avenue

The turn lane warrant assessment for Kidman Way / Hanwood Avenue intersection are provided below.

Figure 27 Austroads Turn Treatment Warrants – Kidman Way / Hanwood Avenue



The figure above suggests that peak hour traffic volumes to and from the development would warrant provision of at most a short channelised right turn treatment (CHR(S)) and basic left turn treatment (BAL) for the Kidman Way / Hanwood Avenue intersection.

As noted above, the design process should initially decide whether a turn lane is required, and then, if it is decided that a turn lane is required, the Austroads Turn Lane Warrants may be used as guidance as to what turn lane design may be the most appropriate.

With regard to the initial assessment, there are a number of considerations which should be reviewed in deciding whether a turn lane should be provided. This is discussed in Section 3.3.5 of Austroads Guide to Traffic Management Part 6, which states that:

"The need for deceleration turn lanes cannot be stated definitively in all instances because of the many factors to be considered, such as speeds, traffic volumes, capacity, type of road, service provided, traffic control and crash history.

However, the need is usually established on the basis of ensuring that turning traffic does not impede through traffic to the extent that:

- *the operational efficiency of an intersection or intersection approach is compromised*
- *an unacceptable level of safety would result due to turning traffic slowing or stopping in a through lane."*

The Guide goes on to further state that:

"The need for auxiliary lanes and the type of treatment should consider:

- *the function of the road and its strategic significance*
- *the volume of heavy vehicles using the road*
- *operating speeds at the intersection*
- *available sight distance to drivers of turning vehicles*
- *consistency of treatment along a corridor to meet driver expectations*
- *traffic volumes."*

These points above are further discussed below, with specific regard to the Kidman Way / Hanwood Avenue intersection.

- **the function of the road and its strategic significance** – Hanwood Avenue is a local road, which operates as an access road for adjacent dwellings and links to other local streets in the immediately surrounding area. It has no broader significance;
- **the volume of heavy vehicles using the road** – It is acknowledged that heavy vehicle traffic will be temporarily increased during the construction period, however will be expected to return to existing levels after the construction period;
- **operating speeds at the intersection** – An existing default speed limit of 50 km/h applies along Kidman Way, with school zone speed limits reducing the speed limit to 40 km/h during peak periods;
- **available sight distance to drivers of turning vehicles** – Kidman Way is straight and flat in the vicinity of Hanwood Avenue, with no sight distance concerns;
- **consistency of treatment along a corridor to meet driver expectations** – The other intersections immediately to the north of Hanwood Avenue do not provide turn lanes;
- **traffic volumes** – traffic volumes are generally low, and even allowing for temporary elevated levels during peak construction periods, are not expected to exceed 5,000 vehicles per day.

Reviewing the points above, and relating this back to the two initial points identified by Austroads in establishing the need for turn lanes:

- The operational efficiency of Kidman Way is certainly **not** compromised by not providing turn lanes, with absolutely minimal volumes on each approach, and no capacity concerns even during peak periods; and
- Not providing turn lanes would **not** result in an unacceptable level of safety, as speeds are expected to be low, drivers are alert and aware of turning traffic (due to constant direct property access points, existing intersections with no turn lanes, sight distances are good, and drivers would not expect turn lanes to be provided.

It is therefore considered that turn lanes are **not** required, and the Austroads Turn Lane Warrants should **not** be applied to the intersection of Kidman Way / Bob Irvin Road. Furthermore, it is anticipated that the provision of turn lanes would be contrary to the intended speed environment of Kidman Way and would allow through traffic to travel along Kidman Way at higher speeds, not having to slow down for occasional turning traffic. The provision of no turn lanes at the intersection of Kidman Way / Hanwood Avenue would therefore assist in maintaining speed control along Kidman Way.

9.6.4 Intersection Capacity Analysis

To assess the future operation of the Irrigation Way / Bob Irvin Road and Kidman Way / Hanwood Avenue intersections the future traffic cumulative volumes in Figure 24 and Figure 25 have been input into SIDRA Intersection, a traffic modelling software package.

Table 15 Irrigation Way / Bob Irvin Road / Hamilton Road – Existing/Future Conditions

Approach	DoS		Avg. Delay (sec)		Queue (m)		Level of Service	
	Existing	Future	Existing	Future	Existing	Future	Existing	Future
AM Peak								
Bob Irvin Road (S)	0.004	0.008	6.0	6.1	0.1	0.2	A	A
Irrigation Way (E)	0.075	0.078	0.0	0.0	0.0	0.0	A	A
Hamilton Road (N)	0.016	0.017	6.7	6.9	0.4	0.4	A	A
Irrigation Way (W)	0.062	0.076	0.5	0.4	0.2	0.2	A	A
PM Peak								
Bob Irvin Road (S)	0.005	0.099	5.8	6.2	0.1	3.1	A	A
Irrigation Way (E)	0.064	0.087	0.2	0.1	0.1	0.1	A	A
Hamilton Road (N)	0.013	0.016	6.5	7.6	0.3	0.4	A	A
Irrigation Way (W)	0.060	0.069	0.7	0.6	0.3	0.3	A	A

Table 16 Kidman Way / Hanwood Avenue / Beaumont Road – Existing/Future Conditions

Approach	DoS		Avg. Delay (sec)		Queue (m)		Level of Service	
	Existing	Future	Existing	Future	Existing	Future	Existing	Future
AM Peak								
Kidman Way (S)	0.114	0.147	1.0	1.8	0.2	2.1	A	A
Hanwood Avenue (E)	0.019	0.023	5.1	5.6	0.5	0.6	A	A
Kidman Way (N)	0.088	0.149	1.3	2.6	1.4	1.6	A	A
Beaumont Road (W)	0.079	0.089	6.3	6.7	2.1	2.4	A	A
PM Peak								
Kidman Way (S)	0.146	0.156	1.1	1.2	0.5	0.6	A	A
Hanwood Avenue (E)	0.032	0.037	6.3	6.8	0.8	0.9	A	A
Kidman Way (N)	0.144	0.175	1.2	1.1	1.9	2.2	A	A
Beaumont Road (W)	0.146	0.096	6.9	7.4	2.3	2.6	A	A

The tables above indicates that performance of both intersections are not anticipated to be materially impacted during the peak construction period, even when considering the cumulative

impacts of the nearby projects, with nominal increases to delays and queues and importantly no change to the through operation of Irrigation Way or Kidman Way.

9.6.5 Daily Traffic Volumes

The standard road widths for Rural/Rural Residential Roads from the Griffith Engineering Guidelines for Subdivisions and Development Standards, Part 2 Road Design are provided below.

Figure 28 Griffith Rural/Rural Residential Road widths

AADT	ROAD RESERVE	CARRIAGEWAY	SHOULDER	FORMATION
<500	20	6.0	1.2	8.4
500-1000	20	6.5	1.2	8.9
1000-2000	20	6.5	1.8	10.1
>2000 (and all B double routes)	25	7.0	1.8	10.6

onemilegrid has undertaken an assessment of existing and future daily traffic volumes for roads impacted by the proposed routes described in Section 7. As previously noted, this is based on the civil works peak which is considered the critical case for daily traffic volumes.

Table 17 Resultant Daily Traffic Volumes

Road	Existing Volumes	Additional Daily Volumes*	Resultant Traffic Volumes
Irrigation Way	2,512	161	2,673
Bob Irvin Road	119	161	280
Hanwood Avenue	494	161	655

*Including Yoogali Solar Farm project

A review of the resultant traffic volumes during the construction period against the Griffith design standards is provided above.

Table 18 Daily Traffic Volume Assessment

Road	Resultant Traffic Volumes	Design Standard	Existing road condition	Will meet standard?
Irrigation Way	2,673	25 m road reserve and 7 m carriageway	Sealed with a single lane in each direction and a carriageway width of 7.2 m	Yes
Bob Irvin Road	280	20 m road reserve and 6 m carriageway	Adjacent the site: Unsealed with a carriageway width of 10.3 m	Yes
			South of the site: Sealed with a carriageway width of 5.5	No, refer to further discussion below
Hanwood Avenue	655	20 m road reserve and 6.5 m carriageway	Sealed with a carriageway width of 5.9 m	No, refer to further discussion below

It is acknowledged that during the construction period of the proposed development, daily traffic volumes will exceed target road volumes along Bob Irvin Road and Hanwood Avenue.

The Griffith City Council Engineering Guidelines identify that Rural roads should be provided with a 6 m wide carriageway for daily traffic volumes less than 500 vehicles per day (vpd), and a 6.5 m carriageway for traffic volumes between 500-1000 vpd. Both roads are provided with sealed carriageways, though the width is marginally non-compliant of the above requirements.

Considering the relatively short duration of the construction period, with traffic volumes generally to return to existing volumes once construction ceases, the existing road conditions are considered to be appropriate. It is acknowledged that the increased traffic volumes on Bob Irvin Road and Hanwood Avenue during construction may result in increased frequency of vehicles relying on the shoulder to pass one another. However, considering the low speed limit and warning signage expected during the construction period, the seal width is expected to be appropriate to accommodate infrequent passing, with gravel shoulders provided on both sides of Bob Irvin Road and Hanwood Avenue along the length of the road. Additionally, all construction traffic along each of these roads is expected to be inbound traffic, that is east bound for Hanwood Avenue and north bound for Bob Irvin Road. The tidal nature of the construction related traffic is expected to reduce the frequency of opposing traffic.

It is recommended that the pavement is monitored by the construction contractor and operator to identify if any maintenance is required during or after completion of the construction phase of the project. This process may be supported through the preparation of a pre-construction condition report and a post-construction dilapidation report, carried out by a suitably qualified professional.

10 CONCLUSIONS

Based on the foregoing assessment, it is concluded as follows:-

- It is proposed to develop the site in Yoogali for the purposes of a battery energy storage system (BESS);
- The Irrigation Way / Bob Irvin Road intersection is the key access constraint, with swept path analysis confirming that while 19 m semi-trailers can turn into and out of Bob Irvin Road, whilst simultaneous heavy vehicle movements are not possible without major and complex upgrades;
- TfNSW has indicated that traffic management measures on Irrigation Way (including signals, traffic controllers or speed reductions) are not supported;
- Based on TfNSW position, a one-way loop is proposed for general construction vehicle traffic:
 - ✦ Inbound vehicles approach the site via Hanwood Avenue and Bob Irvin Road to the south;
 - ✦ Outbound vehicles depart to the north via the Irrigation Way / Bob Irvin Road intersection.
- An OSOM route study for oversized deliveries from Port Kembla has been provided, attached in Appendix C.
- Sight lines at the proposed access via Bob Irvin Road are considered appropriate;
- The proposed access via Bob Irvin Road should be designed to accommodate the largest vehicle requiring access to the site during construction;
- During the construction phase, the proposed BESS will create short-term, elevated levels of vehicle movements, though the level of traffic generated is expected to have a minimal impact on the operation of the external road network;
- During operation the site is expected to have a negligible impact on the surrounding road network;
- Car parking will be comfortably provided on-site as required.

Appendix A Raw Survey Data



(v2.3): 25-May-25

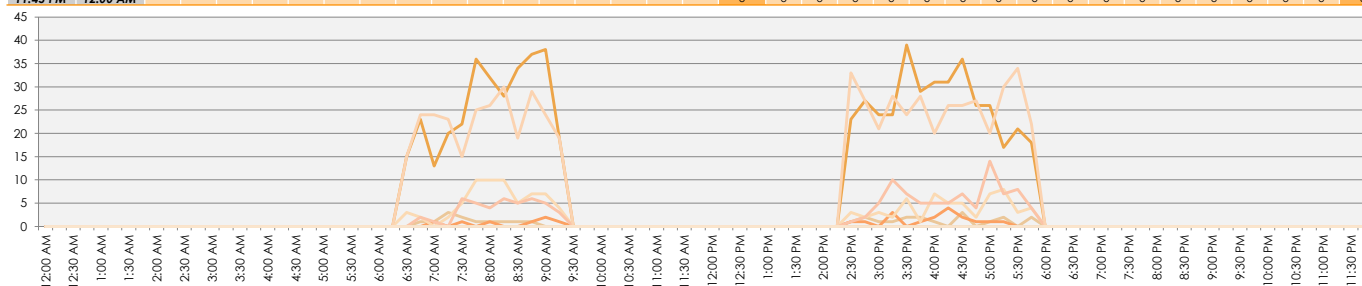
China

Peak
electr☐

Approach 3:	Money Rd
Approach 4:	Irrigation Way

Interval Volumes

Time		(N)				Irrigation Way (E)				Murray Rd (S)				Irrigation Way (W)				Int
From	To	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	Int Total
12:00 AM	12:15 AM																	0
12:15 AM	12:30 AM																	0
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7:30 AM	7:45 AM	0	0	0	0	0	0	93	7	0	2	0	12	0	9	101	0	224
7:45 AM	8:00 AM	0	0	0	0	0	0	129	8	0	2	0	22	0	14	126	0	301
8:00 AM	8:15 AM	0	0	0	0	0	0	161	9	0	3	0	32	0	18	152	0	375
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Project Details

Project Number:	250170
Project Name:	Griffith BESS

[illegible]

Survey Start



Survey End



(v2.31): 25-Mar-20

Peak
select

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Project Name:	Griffith

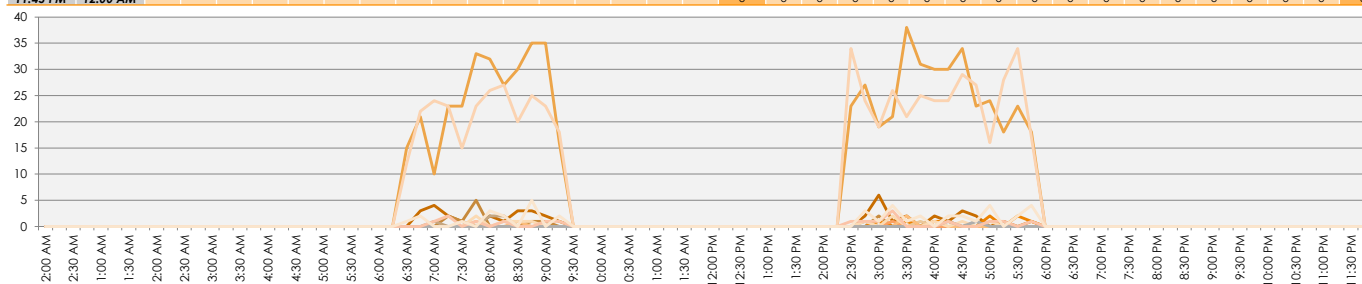
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Approach 2:	Irrigation Way

Peak Select

Approach 3:	Bob Irvin Rd
Approach 4:	Irrigation Way

Interval Volumes

Time		Hamilton Rd (N)				Irrigation Way (E)				Bob Irvin Rd (S)				Irrigation Way (W)				Int	
From	To	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	Total	
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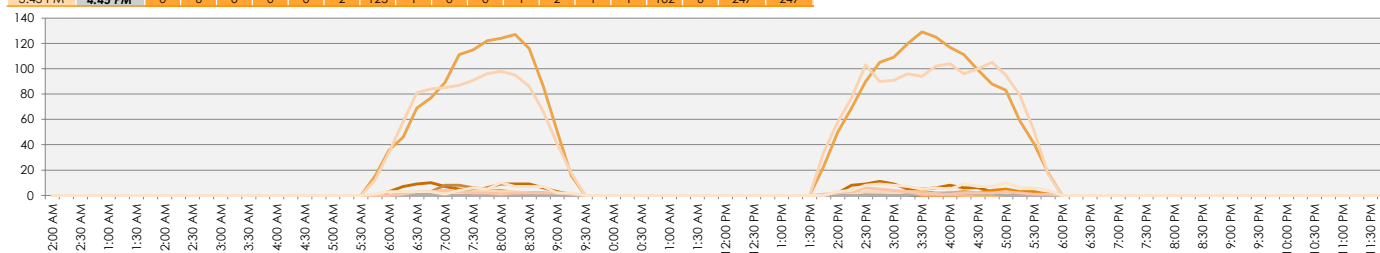
Bank Flow Ratio = 38.94

Peak Flow Period = 30 mins

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Introduction



Project Number:	250170
Project Name:	Griffith BESS

Heavy Vehicles - Cumulative Volumes

[illegible]

Survey Start



Survey End



(v2.31): 25-Mar-20

Peak
Select

Survey Details

Approach 3:	Kurrajong Ave
Approach 4:	Irrigation Way

Interval Volumes

[illegible]

Region	Age
North America	18-24
Europe	25-34
Asia	35-44
Oceania	45-54
South America	55-64
Africa	65-74
Middle East	75-84
Central America	85-94
Caribbean	95-104
South Asia	105-114
East Asia	115-124
South East Asia	125-134
Central Asia	135-144
North Africa	145-154
West Africa	155-164
East Africa	165-174
South Africa	175-184
Central Africa	185-194
North Africa	195-204
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Central Africa	14

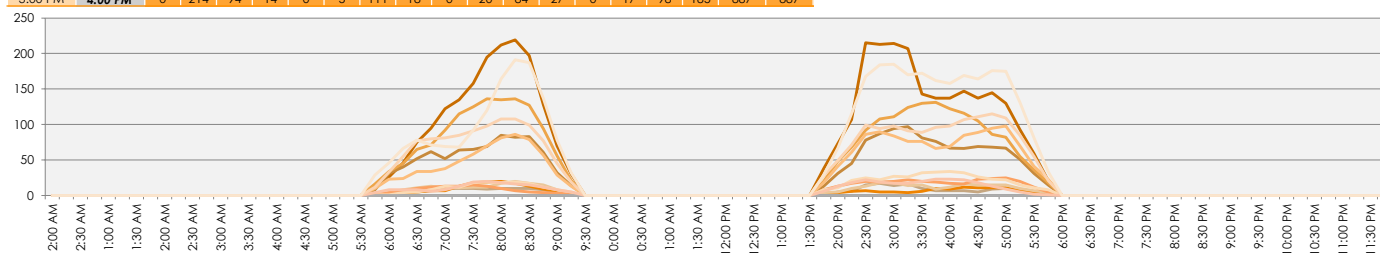
[illegible]

Peak Flow Period = 30 mins

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Introduction



Project Details

Project Number: 250170
Project Name: Griffith BESS

Light Vehicles - Cumulative Volumes														Heavy Vehicles - Cumulative Volumes																								
Time		Burley Griffin Way (N)				Irrigation Way (E)				Kurrajong Ave (S)				Irrigation Way (W)				Total	Interval	Burley Griffin Way (N)				Irrigation Way (E)				Kurrajong Ave (S)				Irrigation Way (W)				Total	Interval	% HV
From	To	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L			U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L			
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6:30 AM	6:45 AM	0	12	6	1	0	1	14	0	0	1	9	1	0	3	8	23	79	79	0	0	2	0	0	0	2	0	0	0	1	0	0	1	4	6	16	16	16.8%
6:45 AM	7:00 AM	0	24	26	1	0	3	31	4	0	4	20	1	0	7	27	38	186	107	0	2	5	0	0	0	3	0	0	0	3	0	0	1	6	8	28	12	10.1%
7:00 AM	7:15 AM	0	42	35	3	0	3	41	7	0	6	21	3	0	7	47	57	272	86	0	4	5	1	0	0	4	1	0	1	3	1	0	1	8	9	38	10	10.4%
7:15 AM	7:30 AM	0	69	44	4	0	5	57	10	0	8	28	3	0	7	65	69	369	97	0	6	8	1	0	0	8	1	0	2	6	2	0	1	12	9	56	18	15.7%
7:30 AM	7:45 AM	0	97	61	7	0	7	79	12	0	11	37	6	0	8	76	88	489	120	0	10	9	1	0	1	8	1	0	2	7	3	0	2	16	12	72	16	11.8%
7:45 AM	8:00 AM	0	136	72	8	0	7	116	14	0	12	50	10	0	13	95	101	634	145	0	12	11	3	0	3	10	1	0	5	11	4	0	3	19	14	96	24	14.2%
8:00 AM	8:15 AM	0	165	89	10	0	12	146	18	0	14	59	12	0	17	116	118	776	142	0	16	15	4	0	4	14	1	0	6	13	4	0	4	24	16	121	25	15.0%
8:15 AM	8:30 AM	0	212	100	10	0	15	175	20	0	18	71	18	0	22	143	152	956	180	0	21	17	5	0	8	15	3	0	7	21	5	0	5	25	18	150	29	13.9%
8:30 AM	8:45 AM	0	276	119	11	0	18	206	22	0	19	89	22	0	24	163	198	1167	211	0	26	20	6	0	9	17	3	0	7	25	6	0	6	27	22	174	24	10.2%
8:45 AM	9:00 AM	0	333	142	14	0	20	240	27	0	20	114	26	0	26	191	254	1407	240	0	27	26	7	0	10	21	5	0	7	28	6	0	8	31	25	201	27	10.1%
9:00 AM	9:15 AM	0	369	158	17	0	23	271	29	0	20	128	29	0	29	215	295	1583	176	0	31	28	7	0	10	25	10	0	7	30	6	0	8	33	30	225	24	12.0%
9:15 AM	9:30 AM	0	396	169	18	0	26	287	30	0	20	135	34	0	33	229	326	1703	120	0	34	31	7	0	10	30	10	0	10	36	6	0	9	38	31	252	27	18.4%
9:30 AM	9:45 AM																																					
9:45 AM	10:00 AM																																					
10:00 AM	10:15 AM																																					
10:15 AM	10:30 AM																																					
10:30 AM	10:45 AM																																					
10:45 AM	11:00 AM																																					
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1:15 PM	1:30 PM																																					
1:30 PM	1:45 PM																																					
1:45 PM	2:00 PM																																					
2:00 PM	2:15 PM																																					
2:15 PM	2:30 PM																																					

Survey Start



Survey End



(v2.31): 25-Mar-20

Peak
Select

Survey Details

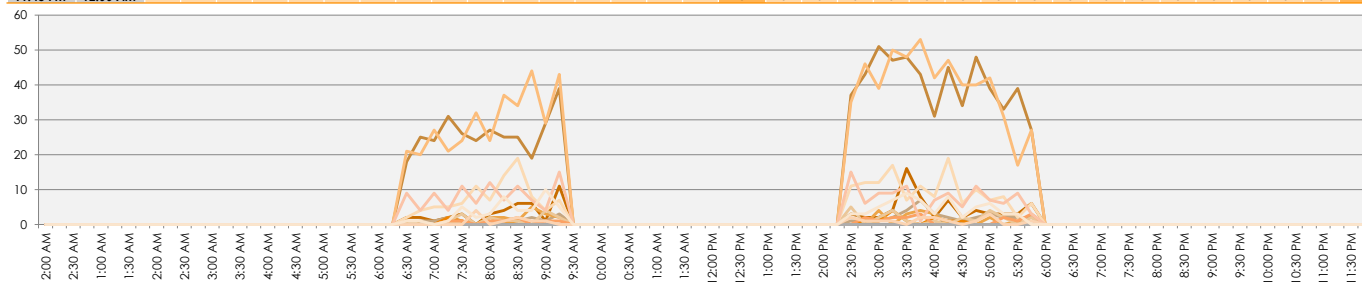
Approach 1:	Hanwood Rd
Approach 2:	Hanwood Ave

Peak
Select

Approach 3:	Hanwood Rd
Approach 4:	Beaumont Rd

Interval Volumes

Time		Hanwood Rd (N)				Hanwood Ave (E)				Hanwood Rd (S)				Beaumont Rd (W)				Int
From	To	U	R	T	L	U	R	T	L	U	R	T	L	U	R	T	L	Total
12:00 AM	12:15 AM																	0
12:15 AM	12:30 AM																	0
12:30 AM	12:45 AM																	0
12:45 AM	1:00 AM																	0
1:00 AM	1:15 AM																	0
1:15 AM	1:30 AM																	0
1:30 AM	1:45 AM																	0
1:45 AM	2:00 AM																	0
2:00 AM	2:15 AM																	0
2:15 AM	2:30 AM																	0
2:30 AM	2:45 AM																	0
2:45 AM	3:00 AM																	0
3:00 AM	3:15 AM																	0
3:15 AM	3:30 AM																	0
3:30 AM	3:45 AM																	0
3:45 AM	4:00 AM																	0
4:00 AM	4:15 AM																	0
4:15 AM	4:30 AM																	0
4:30 AM	4:45 AM																	0
4:45 AM	5:00 AM																	0
5:00 AM	5:15 AM																	0
5:15 AM	5:30 AM																	0
5:30 AM	5:45 AM																	0
5:45 AM	6:00 AM																	0
6:00 AM	6:15 AM																	0
6:15 AM	6:30 AM																	0
6:30 AM	6:45 AM	0	2	18	0	0	1	0	1	0	0	21	2	0	9	0	1	55
6:45 AM	7:00 AM	0	4	43	1	0	1	0	1	0	0	41	6	0	13	0	2	112
7:00 AM	7:15 AM	0	5	67	2	0	1	0	1	0	0	68	11	0	22	0	2	179
7:15 AM	7:30 AM	0	7	98	4	0	3	1	2	0	1	89	16	0	26	0	3	250
7:30 AM	7:45 AM	0	10	124	5	0	4	2	5	0	2	113	22	0	37	0	8	332
7:45 AM	8:00 AM	0	10	148	5	0	4	2	5	0	2	145	33	0	43	4	10	411
8:00 AM	8:15 AM	0	13	175	5	0	6	4	7	0	3	169	40	0	55	4	13	494
8:15 AM	8:30 AM	0	17	200	6	0	7	6	8	0	4	206	54	0	62	5	21	596
8:30 AM	8:45 AM	0	23	225	7	0	7	7	9	0	6	240	73	0	73	7	25	702
8:45 AM	9:00 AM	0	29	244	9	0	7	7	12	9	6	284	81	0	80	8	29	798
9:00 AM	9:15 AM	0	30	273	10	0	7	15	13	0	7	313	85	0	84	9	39	885
9:15 AM	9:30 AM	0	41	312	13	0	7	17	15	0	8	356	92	0	99	9	44	1013
9:30 AM	9:45 AM																	0
9:45 AM	10:00 AM																	0
10:00 AM	10:15 AM																	0
10:15 AM	10:30 AM																	0
10:30 AM	10:45 AM																	0
10:45 AM	11:00 AM																	0
11:00 AM	11:15 AM																	0
11:15 AM	11:30 AM																	0
11:30 AM	11:45 AM																	0
11:45 AM	12:00 PM																	0
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12:15 PM	12:30 PM																	0
12:30 PM	12:45 PM																	0
12:45 PM	1:00 PM																	0
1:00 PM	1:15 PM																	0
1:15 PM	1:30 PM																	0
1:30 PM	1:45 PM																	0
1:45 PM	2:00 PM																	0
2:00 PM	2:15 PM																	0
2:15 PM	2:30 PM																	0
2:30 PM	2:45 PM	0	3	37	1	0	0	0	5	0	0	35	11	0	15	2	3	112
2:45 PM	3:00 PM	0	5	80	2	0	1	0	5	0	2	81	23	0	21	3	6	229
3:00 PM	3:15 PM	0	7	131	3	0	2	4	7	0	3	120	35	0	30	4	11	357
3:15 PM	3:30 PM	0	11	178	5	0	6	4	11	0	5	170	52	0	39	5	18	504
3:30 PM	3:45 PM	0	27	226	9	0	7	7	12	0	7	218	59	0	50	5	27	654
3:45 PM	4:00 PM	0	35	269	16	0	7	11	12	0	10	271	70	0	51	7	34	793
4:00 PM	4:15 PM	0	37	300	19	0	9	14	13	0	10	313	78	0	58	9	37	897
4:15 PM	4:30 PM	1	44	345	21	0	10	14	13	0	10	360	97	0	67	10	45	1037
4:30 PM	4:45 PM	1	46	379	22	0	11	14	15	0	10	400	103	0	72	10	47	1130
4:45 PM	5:00 PM	1	50	427	24	0	11	14	16	0	10	440	113	0	83	11	52	1252
5:00 PM	5:15 PM	1	53	466	27	0	11	16	20	0	10	482	120	0	90	14	58	1368
5:15 PM	5:30 PM	1	56	499	29	0	11	16	22	0	12	513	128	0	96	14	61	1458
5:30 PM	5:45 PM	1	59	538	31	0	11	17	22	0	13	530	130	0	105	14	64	1535
5:45 PM	6:00 PM	1	65	565	33	0	11	17	24	0	16	557	136	0	108	15	64	1612
6:00 PM	6:15 PM																	0
6:15 PM	6:30 PM																	0
6:30 PM	6:45 PM																	0
6:45 PM	7:00 PM																	0
7:00 PM	7:15 PM																	0
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10:30 PM	10:45 PM																	0
10:45 PM	11:00 PM																	0
11:00 PM	11:15 PM																	0
11:15 PM	11:30 PM																	0
11:30 PM	11:45 PM																	0
11:45 PM	12:00 AM																	0



Erstellt:	14.01.2020	Erstellt:	11.01.2020	Erstellt:	11.01.2020	Erstellt:	11.01.2020
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Region	Age
North America	18-24
Europe	25-34
Asia	35-44
Oceania	45-54
South America	55-64
Africa	65-74
Middle East	75-84
Central America	85-94
Caribbean	95-104
South Asia	105-114
East Asia	115-124
South East Asia	125-134
Central Asia	135-144
North Africa	145-154
West Africa	155-164
East Africa	165-174
South Africa	175-184
Central Africa	185-194
North Africa	195-204
West Africa	205-214
East Africa	215-224
South Africa	225-234
Central Africa	235-244
North Africa	245-254
West Africa	255-264
East Africa	265-274
South Africa	275-284
Central Africa	285-294
North Africa	295-304
West Africa	305-314
East Africa	315-324
South Africa	325-334
Central Africa	335-344
North Africa	345-354
West Africa	355-364
East Africa	365-374
South Africa	375-384
Central Africa	385-394
North Africa	395-404
West Africa	405-414
East Africa	415-424
South Africa	425-434
Central Africa	435-444
North Africa	445-454
West Africa	455-464
East Africa	465-474
South Africa	475-484
Central Africa	485-494
North Africa	495-504
West Africa	505-514
East Africa	515-524
South Africa	525-534
Central Africa	535-544
North Africa	545-554
West Africa	555-564
East Africa	565-574
South Africa	575-584
Central Africa	585-594
North Africa	595-604
West Africa	605-614
East Africa	615-624
South Africa	625-634
Central Africa	635-644
North Africa	645-654
West Africa	655-664
East Africa	665-674
South Africa	675-684
Central Africa	685-694
North Africa	695-704
West Africa	705-714
East Africa	715-724
South Africa	725-734
Central Africa	735-744
North Africa	745-754
West Africa	755-764
East Africa	765-774
South Africa	775-784
Central Africa	785-794
North Africa	795-804
West Africa	805-814
East Africa	815-824
South Africa	825-834
Central Africa	835-844
North Africa	845-854
West Africa	855-864
East Africa	865-874
South Africa	875-884
Central Africa	885-894
North Africa	895-904
West Africa	905-914
East Africa	915-924
South Africa	925-934
Central Africa	935-944
North Africa	945-954
West Africa	955-964
East Africa	965-974
South Africa	975-984
Central Africa	985-994
North Africa	995-1004
West Africa	1005-1014
East Africa	1015-1024
South Africa	1025-1034
Central Africa	1035-1044
North Africa	1045-1054
West Africa	1055-1064
East Africa	1065-1074
South Africa	1075-1084
Central Africa	1085-1094
North Africa	1095-1104
West Africa	1105-1114
East Africa	1115-1124
South Africa	1125-1134
Central Africa	1135-1144
North Africa	1145-1154
West Africa	1155-1164
East Africa	1165-1174
South Africa	1175-1184
Central Africa	1185-1194
North Africa	1195-1204
West Africa	1205-1214
East Africa	1215-1224
South Africa	1225-1234
Central Africa	1235-1244
North Africa	1245-1254
West Africa	1255-1264
East Africa	1265-1274
South Africa	1275-1284
Central Africa	1285-1294
North Africa	1295-1304
West Africa	1305-1314
East Africa	1315-1324
South Africa	1325-1334
Central Africa	1335-1344
North Africa	1345-1354
West Africa	1355-1364
East Africa	1365-1374
South Africa	1375-1384
Central Africa	1385-1394
North Africa	1395-1404
West Africa	1405-1414
East Africa	1415-1424
South Africa	1425-1434
Central Africa	14

0.001M	4.001M	0	00	107	11	0	0	11	7	0	0	170	17	0	00	1	20	001	001
050																			

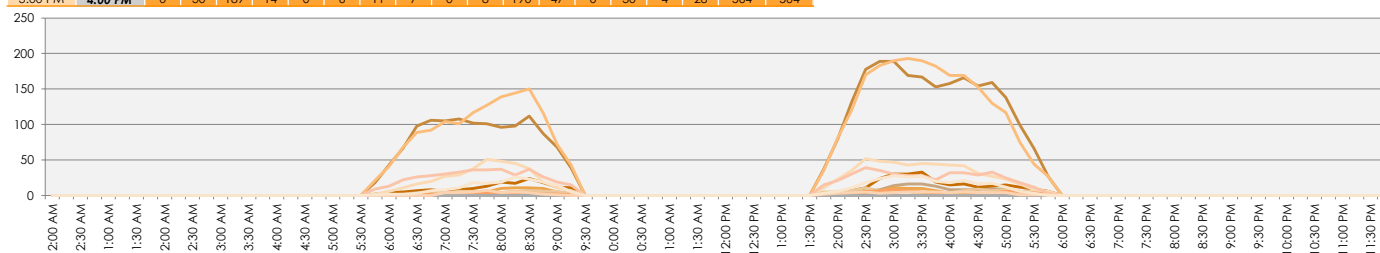
Peak Flow Period = 30 mins

Peak Flow Period = 30 mins

.....



Introduction



Project Number:	250170
Project Name:	Griffith BESS

Total	0.0%	3.1%	15.2%	2.9%	0.0%	16.7%	11.8%	12.0%	0.0%	2.2%	13.4%	7.1%	0.0%	11.1%	6.3%	6.2%	11.7%
AM Peak	0.0%	25.0%	14.3%			9.1%	42.9%			25.0%	20.0%	13.2%		8.1%	25.0%	4.3%	17.7%
PM Peak	3.3%	17.5%	0.0%			0.0%	9.1%	0.0%		25.0%	14.2%	2.1%		10.0%	0.0%	7.1%	12.4%

Survey Start



Survey End



TRANS TRAFFIC SURVEY

trafficsurvey.com.au

T. 1300 82 88 82 - F. 1300 83 88 83 - E. traffic@trafficsurvey.com.au - W. www.trafficsurvey.com.au

AUTOMATIC COUNT SUMMARY

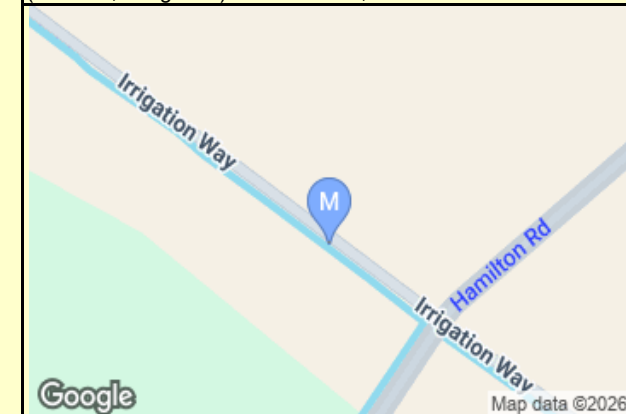
Street Name :	Irrigation Way	Location :	West of Bob Irvin Rd
Suburb :	Yoogali	Start Date :	00:00 Thu 29/May/2025
Machine ID:	YY45DY23	Finish Date :	00:00 Thu 05/June/2025
Site ID:	3899	Speed Zone :	100 km/h
Prepared By :	Vo Son Binh	Email:	binh@trafficsurvey.com.au

GPS information		Lat	34° 18' 57.20 South	Direction of Travel		
		Long	146° 6' 28.60 East	Both directions	Westbound	Eastbound
Traffic Volume : (Vehicles/Day)	Weekdays Average			2,512	1,287	1,225
	7 Day Average			2,238	1,146	1,092
Weekday	AM	08:00		228	136	92
Peak hour start	PM	16:00		233	120	113
Speeds : (Km/Hr)	85th Percentile			102.6	97.7	107.5
	Average			93.2	88.8	97.7
Classification % :	Light Vehicles up to 5.5m			86.2%	86.6%	86.1%

Location

GPS Information [Load Google Map \(internet required\)](#)

(Latitude, Longitude) -34.315890, 146.107945



[Speed Data](#)

[Speed Graph](#)

[Speed Bin](#)

[Volume Data](#)

[Volume Graph](#)

[Classification](#)



QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015



Site Irrigation Way

[Back to Site Summary Page](#)

Direction Both directions ▼

Day Weekdays (Monday to Friday) ▼

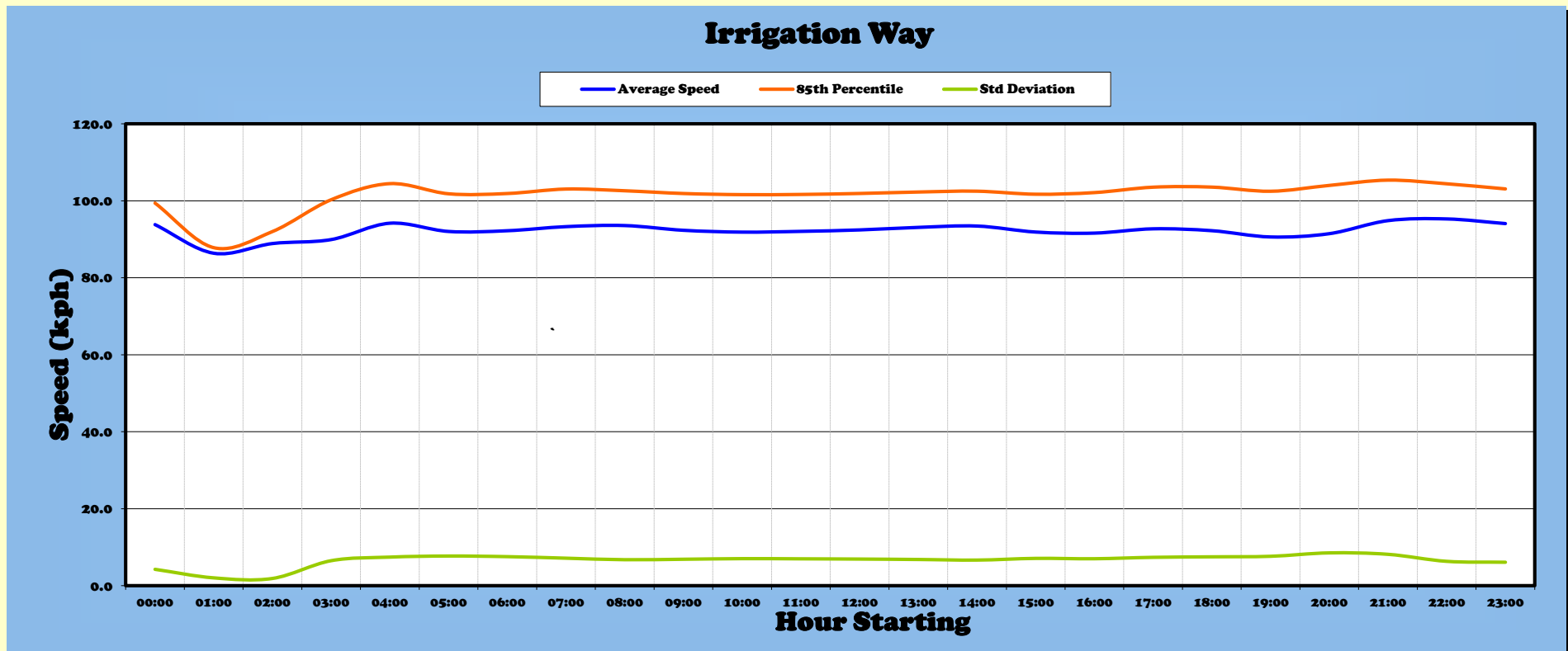
Note: #N/A "Modal Speed" means too few data points

Hour Start	Total Vehicles	Average Speed	85th percentile	Modal Speed	Minimum Speed	Maximum Speed	Standard Deviation
00:00	4	93.8	99.4	92	70.9	121.8	4.2
01:00	1	86.4	87.8	83	63.1	106.0	2.0
02:00	1	88.9	92.0	86	82.3	108.3	1.9
03:00	3	89.9	100.3	100	39.4	110.6	6.5
04:00	10	94.2	104.4	100	43.6	125.0	7.4
05:00	44	92.0	101.8	95	33.7	123.3	7.7
06:00	121	92.2	101.9	96	22.7	122.2	7.5
07:00	195	93.3	103.0	99	33.9	126.6	7.1
08:00	226	93.6	102.6	99	29.8	126.3	6.7
09:00	180	92.3	101.9	97	33.9	122.8	6.9
10:00	164	91.9	101.6	98	33.4	122.8	7.0
11:00	148	92.1	101.6	99	35.0	126.6	7.0
12:00	157	92.4	101.9	99	36.4	126.9	6.9
13:00	166	93.1	102.3	99	27.8	127.0	6.8
14:00	181	93.4	102.5	98	28.6	126.7	6.6
15:00	218	91.9	101.7	97	30.0	125.1	7.1
16:00	231	91.6	102.1	97	36.3	124.7	7.0
17:00	210	92.7	103.5	98	37.2	126.2	7.4
18:00	99	92.2	103.5	98	38.7	128.0	7.5
19:00	51	90.6	102.5	97	43.0	121.0	7.6
20:00	35	91.5	104.0	98	45.0	120.8	8.5
21:00	27	94.8	105.4	98	51.8	122.1	8.1
22:00	15	95.3	104.4	96	53.0	122.8	6.3
23:00	8	94.1	103.1	97	39.7	124.7	6.1
Summary	2495	92.3	101.5	97	22.7	128.0	6.6



Site Irrigation Way
Direction Both directions
Day Weekdays (Monday to Friday)

[Back to Site Summary Page](#)





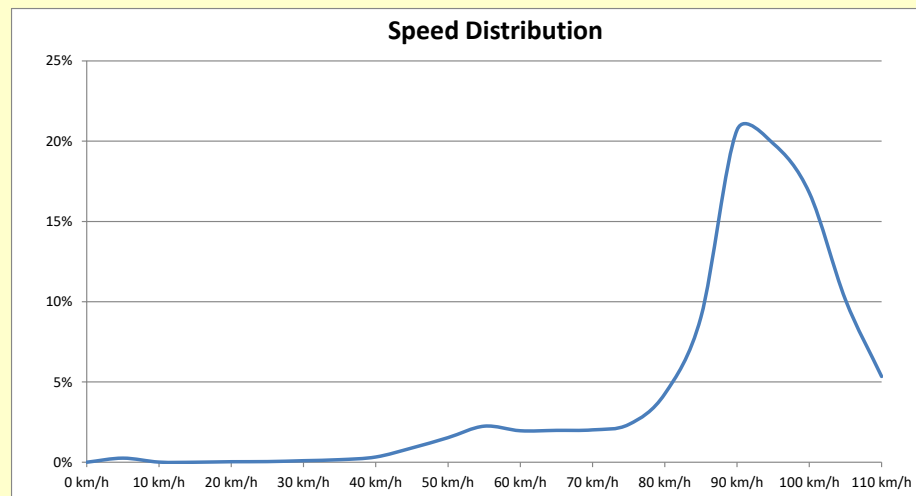
Site Irrigation Way

[Back to Site Summary Page](#)

Direction Both directions

Day Weekdays (Monday to Friday)

10km/h Speed Bin		5km/h Speed Bin		Speed Range Distribution (5km/h bin)	
> 40 km/hr	99.41%	> 0 km/h	100.00%	> 0 km/h & ≤ 5 km/h	0.00%
> 50 km/hr	98.20%	> 5 km/h	100.00%	> 5 km/h & ≤ 10 km/h	0.25%
> 60 km/hr	94.42%	> 10 km/h	99.75%	> 10 km/h & ≤ 15 km/h	0.01%
> 70 km/hr	90.47%	> 15 km/h	99.74%	> 15 km/h & ≤ 20 km/h	0.00%
> 80 km/hr	86.11%	> 20 km/h	99.74%	> 20 km/h & ≤ 25 km/h	0.03%
> 90 km/hr	72.80%	> 25 km/h	99.71%	> 25 km/h & ≤ 30 km/h	0.04%
> 100 km/hr	32.25%	> 30 km/h	99.67%	> 30 km/h & ≤ 35 km/h	0.10%
> 110 km/hr	5.34%	> 35 km/h	99.57%	> 35 km/h & ≤ 40 km/h	0.16%
Ave Traffic Composition Cars 84.94% Trucks 8.61% Heavy Trucks 6.45%		> 40 km/h	99.41%	> 40 km/h & ≤ 45 km/h	0.33%
		> 45 km/h	99.09%	> 45 km/h & ≤ 50 km/h	0.89%
		> 50 km/h	98.20%	> 50 km/h & ≤ 55 km/h	1.53%
		> 55 km/h	96.67%	> 55 km/h & ≤ 60 km/h	2.25%
		> 60 km/h	94.42%	> 60 km/h & ≤ 65 km/h	1.96%
		> 65 km/h	92.46%	> 65 km/h & ≤ 70 km/h	1.98%
		> 70 km/h	90.47%	> 70 km/h & ≤ 75 km/h	2.02%
		> 75 km/h	88.46%	> 75 km/h & ≤ 80 km/h	2.35%
Ave Speed Data 85% P'tile 101.5 km/h Mean Speed 96.5 km/h Min. Speed 22.7 km/h Max. Speed 128.0 km/h Deviation 6.6 km/h		> 80 km/h	86.11%	> 80 km/h & ≤ 85 km/h	4.26%
		> 85 km/h	81.84%	> 85 km/h & ≤ 90 km/h	9.04%
		> 90 km/h	72.80%	> 90 km/h & ≤ 95 km/h	20.70%
		> 95 km/h	52.10%	> 95 km/h & ≤ 100 km/h	19.85%
		> 100 km/h	32.25%	> 100 km/h & ≤ 105 km/h	16.78%
		> 105 km/h	15.46%	> 105 km/h & ≤ 110 km/h	10.12%
		> 110 km/h	5.34%	> 110 km/h	5.34%
		Recommended Speed Zone 110 km/h			





Site Irrigation Way

Direction ▼

[Back to Site Summary Page](#)

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	2/06/2025	3/06/2025	4/06/2025	29/05/2025	30/05/2025	31/05/2025	1/06/2025	Total	Average	Total	Average	Total	Average
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00	N/A	08:00	N/A	08:00	N/A	11:00
PM Peak	16:00	15:00	16:00	16:00	16:00	12:00	14:00	N/A	16:00	N/A	16:00	N/A	13:00
00:00	4	4	5	3	8	6	9	39	6	24	5	15	8
01:00	2	1	1	4	2	8	5	23	3	10	2	13	7
02:00	3	1	1	0	0	7	2	14	2	5	1	9	5
03:00	5	3	2	1	6	3	3	23	3	17	3	6	3
04:00	11	10	14	9	7	4	4	59	8	51	10	8	4
05:00	47	53	45	38	41	30	14	268	38	224	45	44	22
06:00	115	140	141	115	102	74	32	719	103	613	123	106	53
07:00	182	203	210	188	201	81	49	1114	159	984	197	130	65
08:00	234	216	221	245	222	129	57	1324	189	1138	228	186	93
09:00	188	168	186	182	183	123	108	1138	163	907	181	231	116
10:00	158	171	176	159	170	163	98	1095	156	834	167	261	131
11:00	154	139	152	142	153	159	132	1031	147	740	148	291	146
12:00	138	171	159	130	195	150	97	1040	149	793	159	247	124
13:00	135	166	170	159	196	140	132	1098	157	826	165	272	136
14:00	156	188	175	219	165	114	144	1161	166	903	181	258	129
15:00	203	214	223	223	227	111	109	1310	187	1090	218	220	110
16:00	228	212	253	241	231	115	114	1394	199	1165	233	229	115
17:00	224	195	251	194	190	104	105	1263	180	1054	211	209	105
18:00	101	82	106	109	104	76	56	634	91	502	100	132	66
19:00	57	39	53	44	59	40	39	331	47	252	50	79	40
20:00	26	31	51	35	34	31	29	237	34	177	35	60	30
21:00	21	19	33	31	36	24	15	179	26	140	28	39	20
22:00	10	11	23	13	24	21	8	110	16	81	16	29	15
23:00	5	5	6	10	17	17	5	65	9	43	9	22	11
Total	2407	2442	2657	2494	2573	1730	1366	15669	2238	12573	2515	3096	1548
% Heavy	16.49%	15.56%	16.60%	14.80%	14.19%	6.76%	6.30%	13.75%		15.53%		6.56%	

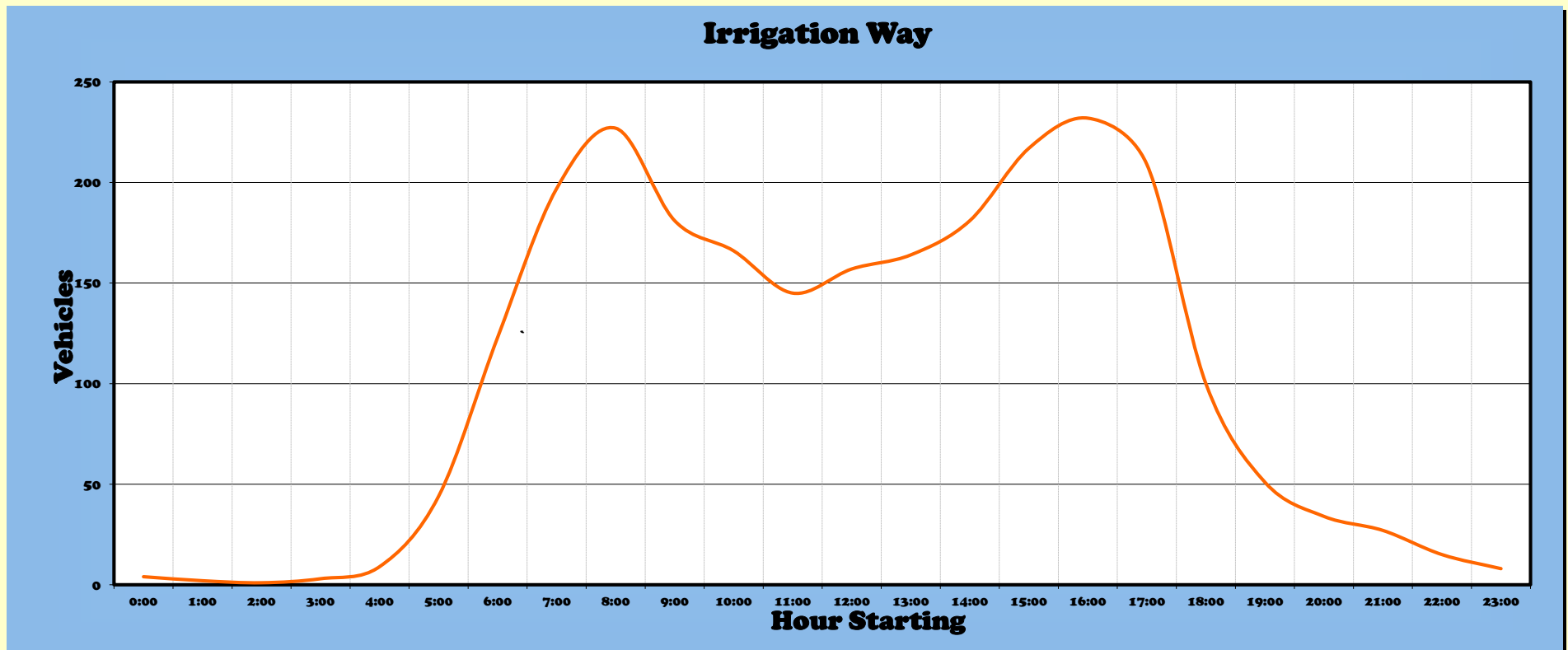


Site Irrigation Way

Direction Both directions

Day Weekdays (Monday to Friday)

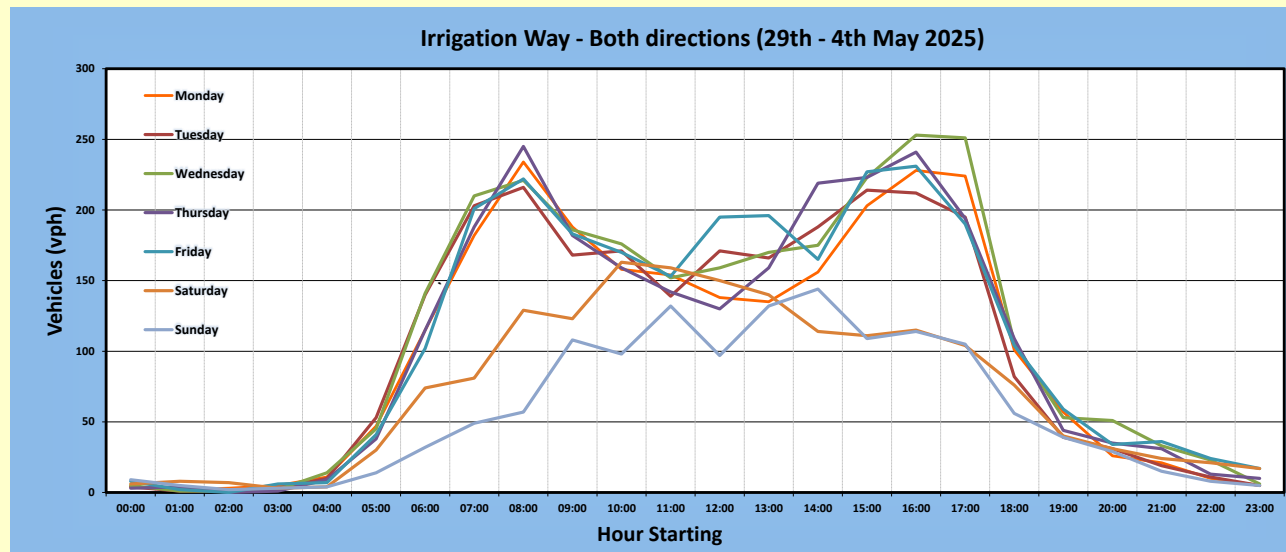
[Back to Site Summary Page](#)





Site Irrigation Way - Both directions (29th - 4th May 2025) [Back to Site Summary Page](#)

Direction Both directions



Volume Summary

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Date	2/06/2025	3/06/2025	4/06/2025	29/05/2025	30/05/2025	31/05/2025	1/06/2025
AM Peak	08:00	08:00	08:00	08:00	08:00	10:00	11:00
PM Peak	16:00	15:00	16:00	16:00	16:00	12:00	14:00
00:00	4	4	5	3	8	6	9
01:00	2	1	1	4	2	8	5
02:00	3	1	1	0	0	7	2
03:00	5	3	2	1	6	3	3
04:00	11	10	14	9	7	4	4
05:00	47	53	45	38	41	30	14
06:00	115	140	141	115	102	74	32
07:00	182	203	210	188	201	81	49
08:00	234	216	221	245	222	129	57
09:00	188	168	186	182	183	123	108
10:00	158	171	176	159	170	163	98
11:00	154	139	152	142	153	159	132
12:00	138	171	159	130	195	150	97
13:00	135	166	170	159	196	140	132
14:00	156	188	175	219	165	114	144
15:00	203	214	223	223	227	111	109
16:00	228	212	253	241	231	115	114
17:00	224	195	251	194	190	104	105
18:00	101	82	106	109	104	76	56
19:00	57	39	53	44	59	40	39
20:00	26	31	51	35	34	31	29
21:00	21	19	33	31	36	24	15
22:00	10	11	23	13	24	21	8
23:00	5	5	6	10	17	17	5
Total	2407	2442	2657	2494	2573	1730	1366
% Heavy	16.49%	15.56%	16.60%	14.80%	14.19%	6.76%	6.30%

AUTOMATIC COUNTER SUMMARY AND DATA SHEET



Site Irrigation Way

Direction Both directions ▼

Day Weekdays (Monday to Friday) ▼

[Back to Site Summary Page](#)

Hour Start	Vehicles Classifications												
	SV	SVT	TB2	TB3	T4	ART3	ART4	ART5	ART6	BD	DRT	TRT	UC
	1	2	3	4	5	6	7	8	9	10	11	12	13
12:00 AM	3	0	1	0	0	0	0	0	0	0	0	0	0
01:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	3	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	7	0	1	1	0	0	0	0	0	0	0	0	0
05:00 AM	40	0	3	1	0	0	0	0	0	0	0	0	0
06:00 AM	100	2	8	1	1	1	0	1	4	2	3	0	0
07:00 AM	159	7	15	3	1	1	2	1	6	1	1	0	0
08:00 AM	183	6	12	4	1	2	1	1	12	4	1	0	0
09:00 AM	145	3	14	4	1	1	0	1	10	2	0	0	0
10:00 AM	133	2	11	4	1	1	1	1	10	2	0	0	0
11:00 AM	111	4	10	3	1	1	1	0	11	3	0	0	0
12:00 PM	123	3	12	3	1	1	1	1	9	3	0	0	0
01:00 PM	131	4	12	2	1	1	1	1	9	2	0	0	0
02:00 PM	147	5	14	2	1	1	0	0	8	2	1	0	0
03:00 PM	176	6	14	6	0	2	1	0	8	3	1	0	0
04:00 PM	199	4	19	2	1	1	0	1	3	1	1	0	0
05:00 PM	191	3	11	0	0	1	0	0	1	1	1	0	0
06:00 PM	90	1	5	1	0	0	0	1	1	1	0	0	0
07:00 PM	45	1	4	0	0	0	0	0	1	0	0	0	0
08:00 PM	32	0	1	0	0	0	0	0	0	1	0	0	0
09:00 PM	26	0	1	0	0	0	0	0	0	0	0	0	0
10:00 PM	15	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	8	0	0	0	0	0	0	0	0	0	0	0	0
Summary	2070	51	168	37	10	14	8	9	93	28	9	0	0



Site Irrigation Way

Direction Both directions ▼

[Back to Site Summary Page](#)

Day Weekdays (Monday to Friday) ▼

AM Peak 8:00 AM

PM Peak 4:00 PM

Hour Start	Vehicle Classification Summary					Hour Total
	Light Vehicles (1-2)	Small Trucks (3)	Medium Trucks (4-5)	Large Trucks (6-12)	Unclassified (13)	
0:00	3	1	0	0	0	4
1:00	2	0	0	0	0	2
2:00	1	0	0	0	0	1
3:00	3	0	0	0	0	3
4:00	7	1	1	0	0	9
5:00	40	3	1	0	0	44
6:00	102	8	2	11	0	123
7:00	166	15	4	12	0	197
8:00	189	12	5	21	0	227
9:00	148	14	5	14	0	181
10:00	135	11	5	15	0	166
11:00	115	10	4	16	0	145
12:00	126	12	4	15	0	157
13:00	135	12	3	14	0	164
14:00	152	14	3	12	0	181
15:00	182	14	6	15	0	217
16:00	203	19	3	7	0	232
17:00	194	11	0	4	0	209
18:00	91	5	1	3	0	100
19:00	46	4	0	1	0	51
20:00	32	1	0	1	0	34
21:00	26	1	0	0	0	27
22:00	15	0	0	0	0	15
23:00	8	0	0	0	0	8
Summary	2121	168	47	161	0	2497

TRANS TRAFFIC SURVEY

trafficsurvey.com.au

T. 1300 82 88 82 - F. 1300 83 88 83 - E. traffic@trafficsurvey.com.au - W. www.trafficsurvey.com.au

AUTOMATIC COUNT SUMMARY

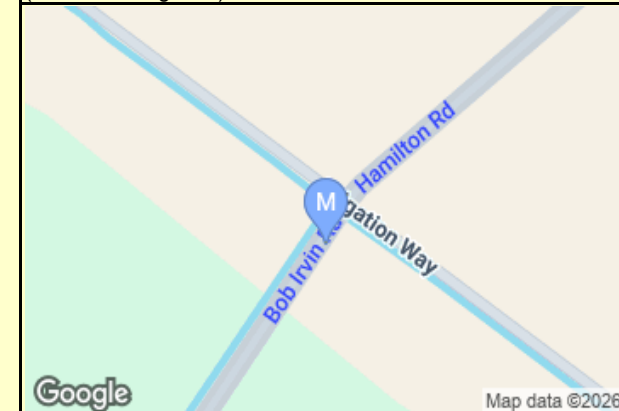
Street Name :	Bob Irvin Rd	Location :	South of Irrigation Way
Suburb :	Yoogali	Start Date :	00:00 Thu 29/May/2025
Machine ID:	ZJ645Z1D	Finish Date :	00:00 Thu 05/June/2025
Site ID:	3900	Speed Zone :	100 km/h
Prepared By :	Vo Son Binh	Email:	binh@trafficsurvey.com.au

GPS information		Lat 34° 19' 1.30 South Long 146° 6' 32.75 East	Direction of Travel		
			Both directions	Northbound	Southbound
Traffic Volume : (Vehicles/Day)		Weekdays Average	119	62	57
		7 Day Average	109	56	53
Weekday	AM	07:00	14	4	9
Peak hour starts	PM	16:00	15	12	4
Speeds : (Km/Hr)		85th Percentile	62.5	65.4	60.3
		Average	57.0	58.7	54.5
Classification % :		Light Vehicles up to 5.5m	86.1%	85.7%	86.5%

Location

GPS Information [Load Google Map \(internet required\)](#)

(Latitude, Longitude) -34.317027, 146.109096



[Speed Data](#)

[Speed Graph](#)

[Speed Bin](#)

[Volume Data](#)

[Volume Graph](#)

[Classification](#)



QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015



Site

[Back to Site Summary Page](#)

Direction

Both directions ▼

Day

7 Days ▼

Note: #N/A "Modal Speed" means too few data points

Hour Start	Total Vehicles	Average Speed	85th percentile	Modal Speed	Minimum Speed	Maximum Speed	Standard Deviation
00:00	1	55.2	56.0	55	35.9	67.5	1.0
01:00	0	N/A	N/A	N/A	N/A	N/A	N/A
02:00	0	N/A	N/A	N/A	N/A	N/A	N/A
03:00	0	N/A	N/A	N/A	N/A	N/A	N/A
04:00	0	N/A	N/A	N/A	N/A	N/A	N/A
05:00	2	66.1	70.5	67	51.2	75.7	6.1
06:00	2	67.0	72.6	76	46.9	85.2	5.6
07:00	10	56.1	64.2	58	33.1	82.9	6.8
08:00	7	54.0	63.6	59	21.7	77.1	6.7
09:00	9	54.5	62.4	54	28.8	91.0	5.8
10:00	5	59.2	66.0	57	31.7	81.9	5.9
11:00	7	55.0	62.5	63	29.0	78.8	7.2
12:00	5	56.1	62.3	62	26.7	83.5	5.3
13:00	8	53.7	61.8	57	25.6	79.7	6.5
14:00	6	54.3	61.3	52	29.3	81.2	5.4
15:00	10	58.7	67.3	59	29.7	82.7	6.9
16:00	12	58.2	65.6	60	25.8	83.5	6.6
17:00	7	56.8	62.6	60	18.9	87.5	4.4
18:00	4	57.5	62.7	59	21.7	87.5	4.4
19:00	1	40.5	41.6	40	20.8	54.7	1.6
20:00	1	63.4	66.6	63	47.8	74.4	4.5
21:00	1	55.7	58.1	61	33.2	71.2	3.5
22:00	1	60.5	60.5	61	53.2	68.2	0.0
23:00	0	N/A	N/A	N/A	N/A	N/A	N/A
Summary	99	57.0	62.5	59	18.9	91.0	5.0

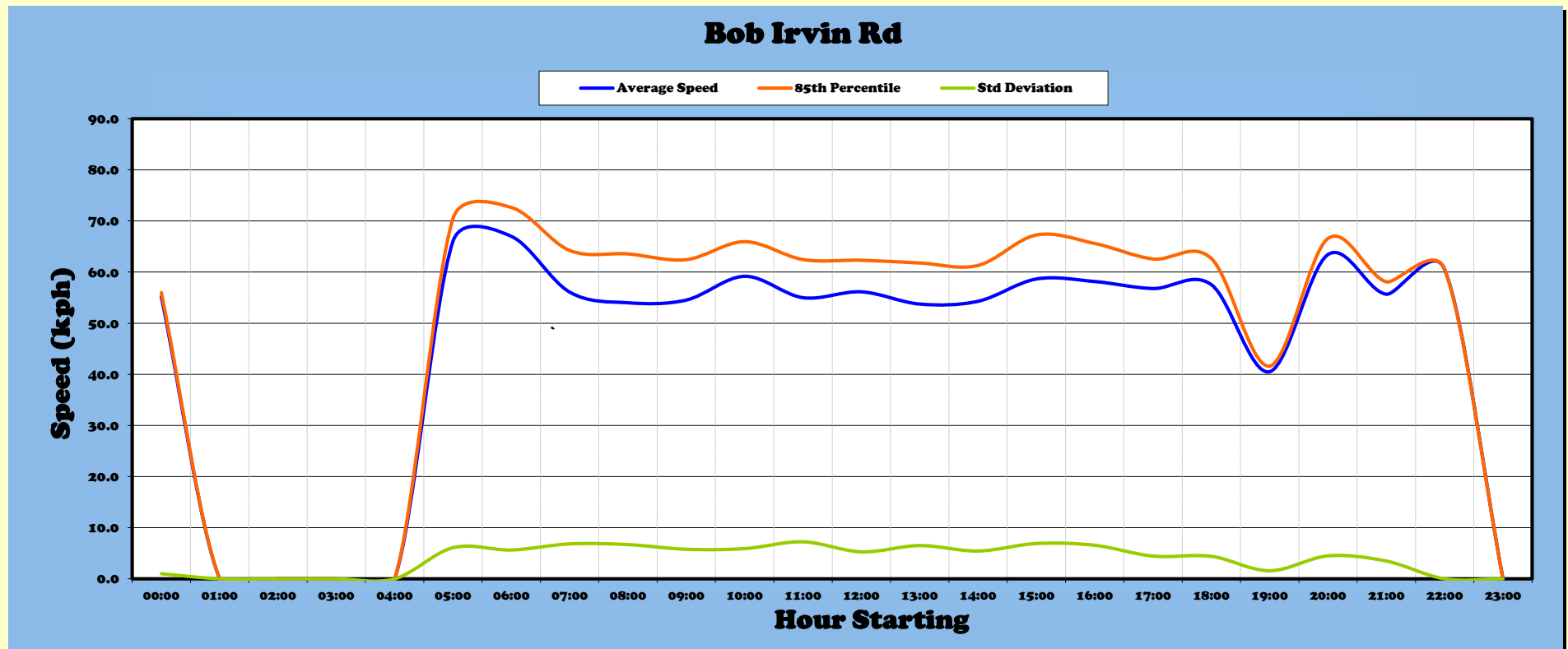


Site Bob Irvin Rd

[Back to Site Summary Page](#)

Direction Both directions ▼

Day 7 Days ▼





Site

[Back to Site Summary Page](#)

Direction

Both directions

Day

7 Days

10km/h Speed Bin	
> 40 km/hr	80.89%
> 50km/hr	63.15%
> 60 km/hr	38.21%
> 70 km/hr	12.53%
> 80 km/hr	1.61%
> 90 km/hr	0.00%
> 100 km/hr	0.00%
> 110 km/hr	0.00%

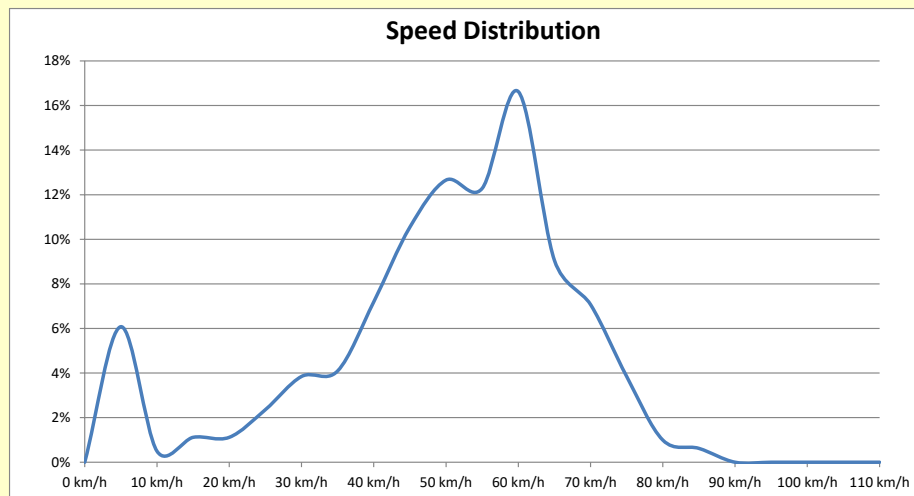
Ave Traffic Composition	
Cars	89.11%
Trucks	9.90%
Heavy Trucks	0.99%

Ave Speed Data	
85% P'tile	62.5 km/h
Mean Speed	59.1 km/h
Min. Speed	18.9 km/h
Max. Speed	91.0 km/h
Deviation	5.0 km/h

Suggestive Speed Zone	
	70 km/h

5km/h Speed Bin	
> 0 km/h	100.00%
> 5 km/h	100.00%
> 10 km/h	93.92%
> 15 km/h	93.42%
> 20 km/h	92.31%
> 25 km/h	91.19%
> 30 km/h	88.83%
> 35 km/h	84.99%
> 40 km/h	80.89%
> 45 km/h	73.70%
> 50 km/h	63.15%
> 55 km/h	50.50%
> 60 km/h	38.21%
> 65 km/h	21.59%
> 70 km/h	12.53%
> 75 km/h	5.46%
> 80 km/h	1.61%
> 85 km/h	0.62%
> 90 km/h	0.00%
> 95 km/h	0.00%
> 100 km/h	0.00%
> 105 km/h	0.00%
> 110 km/h	0.00%

Speed Range Distribution (5km/h bin)	
> 0 km/h & ≤ 5 km/h	0.00%
> 5 km/h & ≤ 10 km/h	6.08%
> 10 km/h & ≤ 15 km/h	0.50%
> 15 km/h & ≤ 20 km/h	1.12%
> 20 km/h & ≤ 25 km/h	1.12%
> 25 km/h & ≤ 30 km/h	2.36%
> 30 km/h & ≤ 35 km/h	3.85%
> 35 km/h & ≤ 40 km/h	4.09%
> 40 km/h & ≤ 45 km/h	7.20%
> 45 km/h & ≤ 50 km/h	10.55%
> 50 km/h & ≤ 55 km/h	12.66%
> 55 km/h & ≤ 60 km/h	12.28%
> 60 km/h & ≤ 65 km/h	16.63%
> 65 km/h & ≤ 70 km/h	9.06%
> 70 km/h & ≤ 75 km/h	7.07%
> 75 km/h & ≤ 80 km/h	3.85%
> 80 km/h & ≤ 85 km/h	0.99%
> 85 km/h & ≤ 90 km/h	0.62%
> 90 km/h & ≤ 95 km/h	0.00%
> 95 km/h & ≤ 100 km/h	0.00%
> 100 km/h & ≤ 105 km/h	0.00%
> 105 km/h & ≤ 110 km/h	0.00%
> 110 km/h	0.00%





Site Bob Irvin Rd

Direction Both directions ▼

[Back to Site Summary Page](#)

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	2/06/2025	3/06/2025	4/06/2025	29/05/2025	30/05/2025	31/05/2025	1/06/2025	Total	Average	Total	Average	Total	Average
AM Peak	08:00	07:00	07:00	07:00	07:00	09:00	11:00	N/A	07:00	N/A	07:00	N/A	11:00
PM Peak	16:00	15:00	16:00	13:00	16:00	13:00	15:00	N/A	16:00	N/A	16:00	N/A	15:00
00:00	0	1	0	0	0	2	4	7	1	1	0	6	3
01:00	0	0	0	0	0	0	1	1	0	0	0	1	1
02:00	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00	1	3	2	4	2	1	0	13	2	12	2	1	1
06:00	4	2	1	2	2	2	0	13	2	11	2	2	1
07:00	8	15	16	15	14	3	7	78	11	68	14	10	5
08:00	13	8	9	6	9	8	0	53	8	45	9	8	4
09:00	9	15	11	14	9	10	2	70	10	58	12	12	6
10:00	6	8	4	3	4	7	3	35	5	25	5	10	5
11:00	5	8	9	7	5	7	12	53	8	34	7	19	10
12:00	3	10	9	4	3	6	3	38	5	29	6	9	5
13:00	11	10	6	13	6	10	5	61	9	46	9	15	8
14:00	9	6	7	5	7	5	8	47	7	34	7	13	7
15:00	12	15	16	12	6	8	11	80	11	61	12	19	10
16:00	21	11	20	4	20	10	4	90	13	76	15	14	7
17:00	8	6	14	4	14	3	6	55	8	46	9	9	5
18:00	3	8	11	1	1	7	0	31	4	24	5	7	4
19:00	0	1	0	1	1	4	1	8	1	3	1	5	3
20:00	0	2	0	1	2	2	2	9	1	5	1	4	2
21:00	1	1	0	0	2	4	2	10	1	4	1	6	3
22:00	1	1	2	2	1	0	1	8	1	7	1	1	1
23:00	0	0	0	1	0	1	0	2	0	1	0	1	1
Total	115	131	137	99	108	100	72	762	109	590	118	172	86
% Heavy	17.39%	11.45%	18.98%	12.12%	10.19%	18.00%	13.89%	14.70%		14.24%		16.28%	

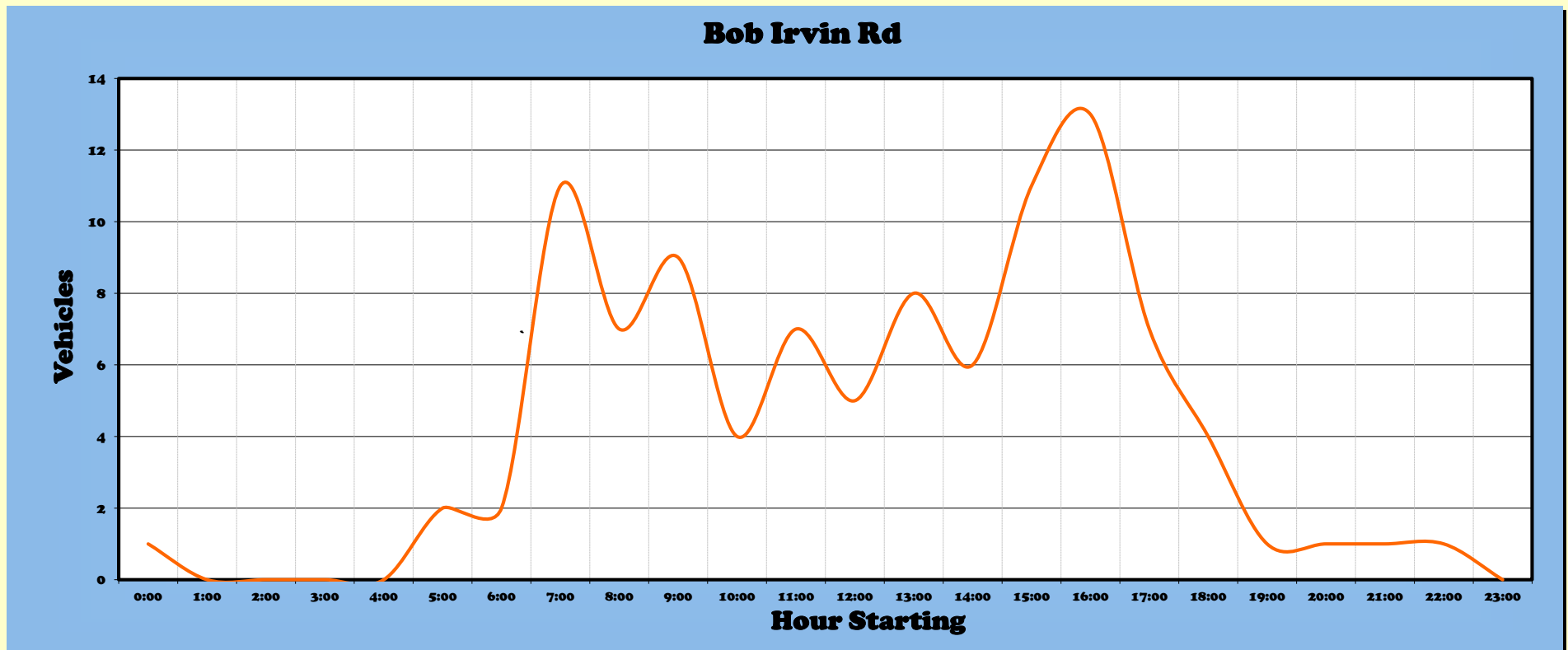


Site Bob Irvin Rd

[Back to Site Summary Page](#)

Direction Both directions ▼

Day 7 Days ▼

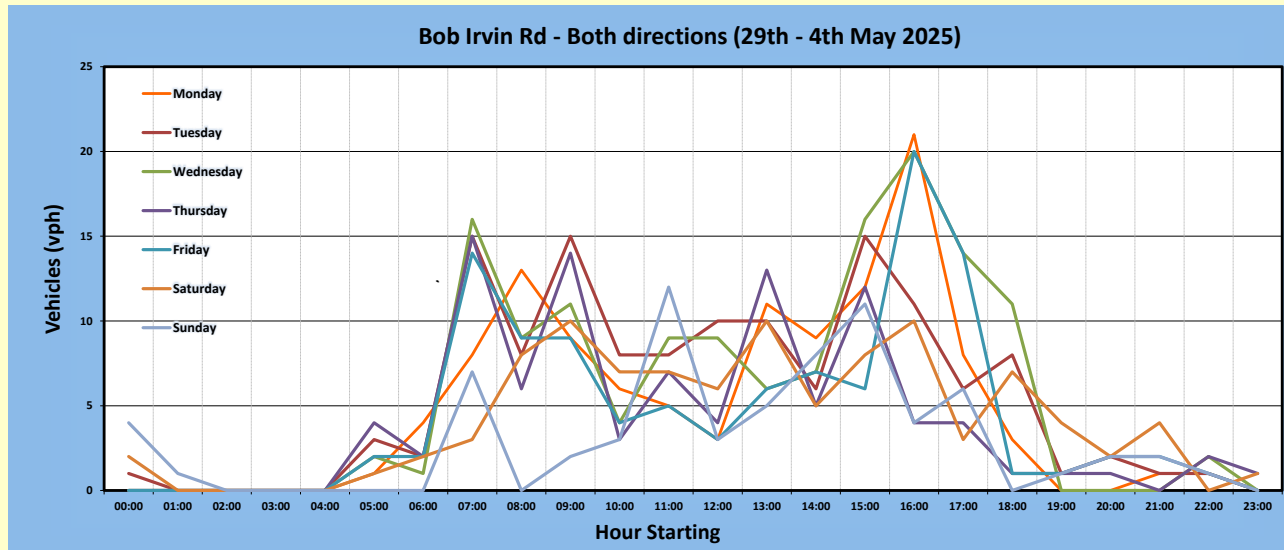




Site Bob Irvin Rd - Both directions (29th - 4th May 2025)

[Back to Site Summary Page](#)

Direction Both directions



Volume Summary

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Date	2/06/2025	3/06/2025	4/06/2025	29/05/2025	30/05/2025	31/05/2025	1/06/2025
AM Peak	08:00	07:00	07:00	07:00	07:00	09:00	11:00
PM Peak	16:00	15:00	16:00	13:00	16:00	13:00	15:00
00:00	0	1	0	0	0	2	4
01:00	0	0	0	0	0	0	1
02:00	0	0	0	0	0	0	0
03:00	0	0	0	0	0	0	0
04:00	0	0	0	0	0	0	0
05:00	1	3	2	4	2	1	0
06:00	4	2	1	2	2	2	0
07:00	8	15	16	15	14	3	7
08:00	13	8	9	6	9	8	0
09:00	9	15	11	14	9	10	2
10:00	6	8	4	3	4	7	3
11:00	5	8	9	7	5	7	12
12:00	3	10	9	4	3	6	3
13:00	11	10	6	13	6	10	5
14:00	9	6	7	5	7	5	8
15:00	12	15	16	12	6	8	11
16:00	21	11	20	4	20	10	4
17:00	8	6	14	4	14	3	6
18:00	3	8	11	1	1	7	0
19:00	0	1	0	1	1	4	1
20:00	0	2	0	1	2	2	2
21:00	1	1	0	0	2	4	2
22:00	1	1	2	2	1	0	1
23:00	0	0	0	1	0	1	0
Total	115	131	137	99	108	100	72
% Heavy	17.39%	11.45%	16.98%	12.12%	10.19%	18.00%	13.89%

AUTOMATIC COUNTER SUMMARY AND DATA SHEET



Site Bob Irvin Rd

Direction Both directions ▼

Day 7 Days ▼

[Back to Site Summary Page](#)

Hour Start	Vehicles Classifications												
	SV	SVT	TB2	TB3	T4	ART3	ART4	ART5	ART6	BD	DRT	TRT	UC
	1	2	3	4	5	6	7	8	9	10	11	12	13
12:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0
01:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	0	0	0	0	0	0	0	0	0	0	0	0	0
05:00 AM	1	0	1	0	0	0	0	0	0	0	0	0	0
06:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0
07:00 AM	10	0	1	0	0	0	0	0	0	0	0	0	0
08:00 AM	7	0	0	0	0	0	0	0	0	0	0	0	0
09:00 AM	7	0	2	0	0	0	0	0	0	0	0	0	0
10:00 AM	4	0	0	0	0	0	0	0	0	0	0	0	0
11:00 AM	7	0	0	0	0	0	0	0	0	0	0	0	0
12:00 PM	4	0	1	0	0	0	0	0	0	0	0	0	0
01:00 PM	7	0	1	0	0	0	0	0	0	0	0	0	0
02:00 PM	5	0	1	0	0	0	0	0	0	0	0	0	0
03:00 PM	9	1	1	0	0	0	0	0	0	0	0	0	0
04:00 PM	11	0	1	0	0	0	0	0	1	0	0	0	0
05:00 PM	6	0	1	0	0	0	0	0	0	0	0	0	0
06:00 PM	4	0	0	0	0	0	0	0	0	0	0	0	0
07:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0
08:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0
09:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	1	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	0	0	0	0	0	0	0	0	0	0	0	0	0
Summary	89	1	10	0	0	0	0	0	1	0	0	0	0



Site Bob Irvin Rd

Direction Both directions ▼

[Back to Site Summary Page](#)

Day 7 Days ▼

AM Peak 7:00 AM

PM Peak 4:00 PM

Hour Start	Vehicle Classification Summary					Hour Total
	Light Vehicles (1-2)	Small Trucks (3)	Medium Trucks (4-5)	Large Trucks (6-12)	Unclassified (13)	
0:00	1	0	0	0	0	1
1:00	0	0	0	0	0	0
2:00	0	0	0	0	0	0
3:00	0	0	0	0	0	0
4:00	0	0	0	0	0	0
5:00	1	1	0	0	0	2
6:00	2	0	0	0	0	2
7:00	10	1	0	0	0	11
8:00	7	0	0	0	0	7
9:00	7	2	0	0	0	9
10:00	4	0	0	0	0	4
11:00	7	0	0	0	0	7
12:00	4	1	0	0	0	5
13:00	7	1	0	0	0	8
14:00	5	1	0	0	0	6
15:00	10	1	0	0	0	11
16:00	11	1	0	1	0	13
17:00	6	1	0	0	0	7
18:00	4	0	0	0	0	4
19:00	1	0	0	0	0	1
20:00	1	0	0	0	0	1
21:00	1	0	0	0	0	1
22:00	1	0	0	0	0	1
23:00	0	0	0	0	0	0
Summary	90	10	0	1	0	101

TRANS TRAFFIC SURVEY

 trafficsurvey.com.au

T. 1300 82 88 82 - F. 1300 83 88 83 - E. traffic@trafficsurvey.com.au - W. www.trafficsurvey.com.au

AUTOMATIC COUNT SUMMARY

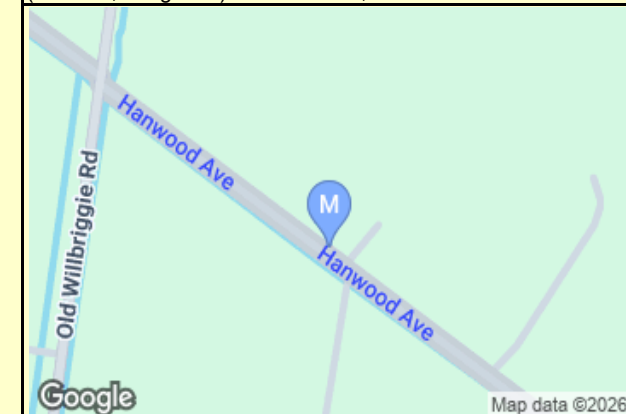
Street Name :	Hanwood Ave	Location :	Outside Property 360
Suburb :	Hanwood	Start Date :	00:00 Thu 29/May/2025
Machine ID:	YY22RW8H	Finish Date :	00:00 Thu 05/June/2025
Site ID:	3901	Speed Zone :	100 km/h
Prepared By :	Vo Son Binh	Email:	binh@trafficsurvey.com.au

GPS information		Lat	34° 20' 27.66 South	Direction of Travel		
		Long	146° 3' 28.45 East	Both directions	Westbound	Eastbound
Traffic Volume : (Vehicles/Day)		Weekdays Average		494	236	258
		7 Day Average		461	224	237
Weekday	AM	09:00		39	20	19
Peak hour start	PM	15:00		43	19	24
Speeds : (Km/Hr)		85th Percentile		68.6	71.8	65.6
		Average		61.6	64.1	59.1
Classification % :		Light Vehicles up to 5.5m		91.0%	90.9%	90.4%

Location

GPS Information [Load Google Map \(internet required\)](#)

(Latitude, Longitude) -34.341018, 146.057903



[Speed Data](#)

[Speed Graph](#)

[Speed Bin](#)

[Volume Data](#)

[Volume Graph](#)

[Classification](#)



QUALITY ASSURED COMPANY BY ISO 9001:2015

OH&S SYSTEM CERTIFIED TO ISO 4801:2001

ENVIRONMENT MANAGEMENT SYSTEM CERTIFIED TO ISO14001:2015



Site Hanwood Ave

[Back to Site Summary Page](#)

Direction Both directions ▼

Day 7 Days ▼

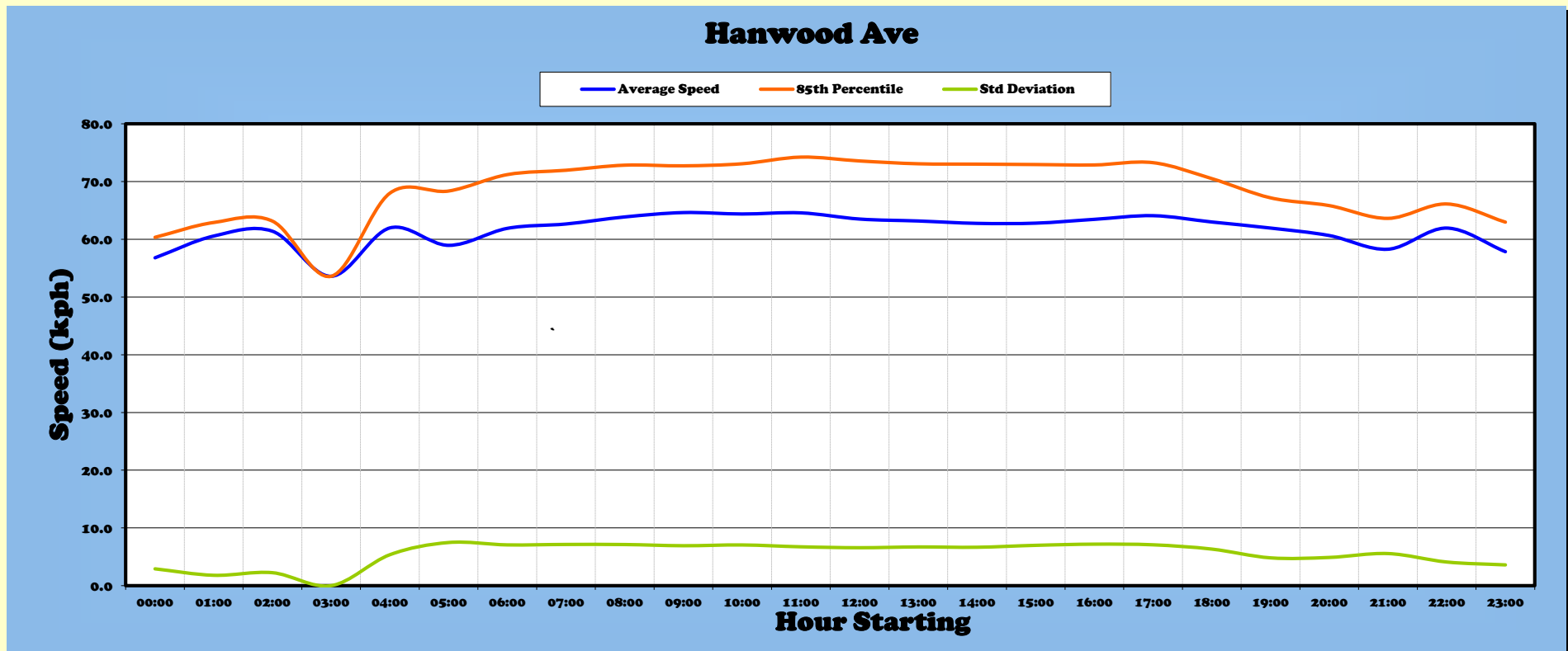
Note: #N/A "Modal Speed" means too few data points

Hour Start	Total Vehicles	Average Speed	85th percentile	Modal Speed	Minimum Speed	Maximum Speed	Standard Deviation
00:00	3	56.8	60.3	58	30.5	77.1	2.9
01:00	1	60.6	62.9	64	28.7	76.5	1.8
02:00	3	61.4	63.1	63	45.4	80.4	2.2
03:00	2	53.6	53.6	54	42.6	60.3	0.0
04:00	3	62.0	68.0	63	34.1	84.6	5.4
05:00	9	58.9	68.4	64	28.7	88.7	7.5
06:00	13	61.9	71.2	66	27.2	97.3	7.1
07:00	23	62.6	72.0	64	31.5	100.8	7.1
08:00	32	63.9	72.8	65	32.5	100.3	7.1
09:00	34	64.6	72.7	64	37.3	94.8	6.9
10:00	29	64.4	73.1	64	29.8	95.9	7.1
11:00	27	64.6	74.2	66	27.8	101.6	6.7
12:00	33	63.5	73.6	63	21.7	102.8	6.6
13:00	37	63.2	73.1	63	26.7	97.9	6.7
14:00	33	62.8	73.0	63	29.3	96.3	6.7
15:00	38	62.8	72.9	62	26.1	96.1	7.0
16:00	33	63.5	72.9	65	22.3	95.7	7.2
17:00	33	64.1	73.3	67	29.6	103.5	7.1
18:00	21	63.0	70.5	66	36.8	94.3	6.3
19:00	10	61.9	67.2	64	31.7	88.7	4.8
20:00	8	60.6	65.8	62	40.1	88.7	4.9
21:00	9	58.3	63.6	57	18.2	81.8	5.6
22:00	4	61.9	66.1	69	40.0	84.1	4.1
23:00	4	57.8	63.0	60	31.4	104.1	3.6
Summary	442	61.6	68.6	63	18.2	104.1	5.5



Site Hanwood Ave
Direction Both directions
Day 7 Days

[Back to Site Summary Page](#)





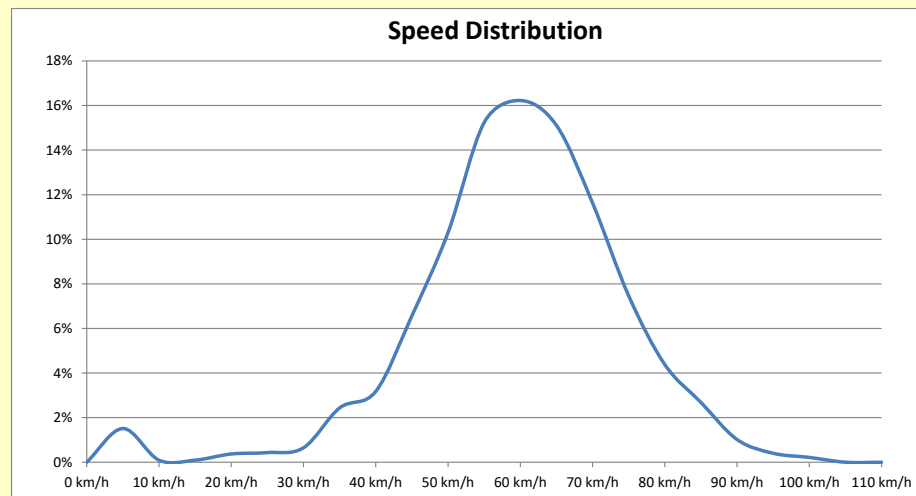
Site Hanwood Ave

[Back to Site Summary Page](#)

Direction Both directions

Day 7 Days

10km/h Speed Bin		5km/h Speed Bin		Speed Range Distribution (5km/h bin)	
> 40 km/hr	94.42%	> 0 km/h	100.00%	> 0 km/h & ≤ 5 km/h	0.00%
> 50 km/hr	84.67%	> 5 km/h	100.00%	> 5 km/h & ≤ 10 km/h	1.51%
> 60 km/hr	59.13%	> 10 km/h	98.49%	> 10 km/h & ≤ 15 km/h	0.09%
> 70 km/hr	27.79%	> 15 km/h	98.40%	> 15 km/h & ≤ 20 km/h	0.09%
> 80 km/hr	8.70%	> 20 km/h	98.30%	> 20 km/h & ≤ 25 km/h	0.37%
> 90 km/hr	1.63%	> 25 km/h	97.93%	> 25 km/h & ≤ 30 km/h	0.43%
> 100 km/hr	0.22%	> 30 km/h	97.50%	> 30 km/h & ≤ 35 km/h	0.65%
> 110 km/hr	0.00%	> 35 km/h	96.85%	> 35 km/h & ≤ 40 km/h	2.44%
Ave Traffic Composition Cars 92.84% Trucks 4.47% Heavy Trucks 2.68%		> 40 km/h	94.42%	> 40 km/h & ≤ 45 km/h	3.18%
		> 45 km/h	91.24%	> 45 km/h & ≤ 50 km/h	6.57%
		> 50 km/h	84.67%	> 50 km/h & ≤ 55 km/h	10.30%
		> 55 km/h	74.37%	> 55 km/h & ≤ 60 km/h	15.24%
		> 60 km/h	59.13%	> 60 km/h & ≤ 65 km/h	16.22%
		> 65 km/h	42.91%	> 65 km/h & ≤ 70 km/h	15.11%
		> 70 km/h	27.79%	> 70 km/h & ≤ 75 km/h	11.63%
		> 75 km/h	16.16%	> 75 km/h & ≤ 80 km/h	7.46%
		> 80 km/h	8.70%	> 80 km/h & ≤ 85 km/h	4.38%
		> 85 km/h	4.32%	> 85 km/h & ≤ 90 km/h	2.68%
Ave Speed Data 85% P'tile 68.6 km/h Mean Speed 63.1 km/h Min. Speed 18.2 km/h Max. Speed 104.1 km/h Deviation 5.5 km/h		> 90 km/h	1.63%	> 90 km/h & ≤ 95 km/h	1.02%
		> 95 km/h	0.62%	> 95 km/h & ≤ 100 km/h	0.40%
		> 100 km/h	0.22%	> 100 km/h & ≤ 105 km/h	0.22%
		> 105 km/h	0.00%	> 105 km/h & ≤ 110 km/h	0.00%
		> 110 km/h	0.00%	> 110 km/h	0.00%
Recommended Speed Zone 70 km/h					





Site Hanwood Ave

Direction ▼

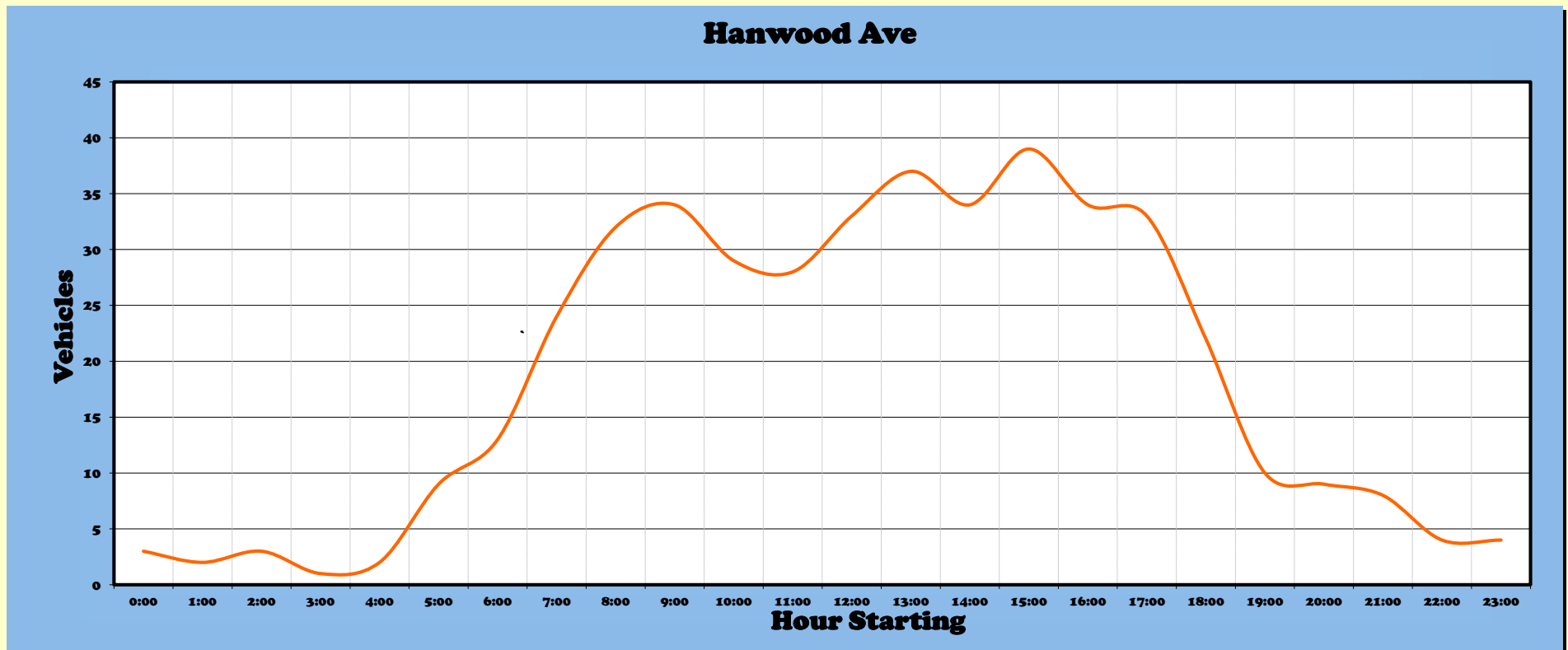
[Back to Site Summary Page](#)

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday	7 days		Weekday		Weekend	
Date	2/06/2025	3/06/2025	4/06/2025	29/05/2025	30/05/2025	31/05/2025	1/06/2025	Total	Average	Total	Average	Total	Average
AM Peak	10:00	08:00	10:00	09:00	09:00	11:00	11:00	N/A	09:00	N/A	09:00	N/A	11:00
PM Peak	17:00	15:00	16:00	16:00	14:00	13:00	12:00	N/A	15:00	N/A	15:00	N/A	13:00
00:00	2	3	2	9	1	1	5	23	3	17	3	6	3
01:00	1	1	2	2	1	1	3	11	2	7	1	4	2
02:00	1	3	7	0	5	3	2	21	3	16	3	5	3
03:00	1	1	2	2	0	2	0	8	1	6	1	2	1
04:00	4	5	1	4	6	0	0	20	3	20	4	0	0
05:00	8	11	10	13	12	10	3	67	10	54	11	13	7
06:00	22	17	20	15	13	9	1	97	14	87	17	10	5
07:00	23	41	40	27	21	10	7	169	24	152	30	17	9
08:00	31	54	41	31	28	23	16	224	32	185	37	39	20
09:00	36	40	34	35	49	25	25	244	35	194	39	50	25
10:00	40	27	43	34	21	16	27	208	30	165	33	43	22
11:00	34	39	29	16	21	30	29	198	28	139	28	59	30
12:00	43	48	34	20	29	27	39	240	34	174	35	66	33
13:00	35	55	26	31	35	45	31	258	37	182	36	76	38
14:00	32	45	23	40	39	28	27	234	33	179	36	55	28
15:00	50	65	40	27	35	35	26	278	40	217	43	61	31
16:00	37	40	47	42	35	26	20	247	35	201	40	46	23
17:00	51	37	43	36	28	28	20	243	35	195	39	48	24
18:00	19	37	28	15	14	25	18	156	22	113	23	43	22
19:00	12	3	10	11	11	13	12	72	10	47	9	25	13
20:00	15	7	10	5	10	4	10	61	9	47	9	14	7
21:00	7	5	8	11	14	10	6	61	9	45	9	16	8
22:00	2	4	6	4	6	6	3	31	4	22	4	9	5
23:00	5	1	2	0	4	11	4	27	4	12	2	15	8
Total	511	589	508	430	438	388	334	3198	457	2476	495	722	361
% Heavy	10.76%	8.32%	12.99%	10.70%	10.27%	5.41%	3.29%	9.16%		10.54%		4.43%	



Site Hanwood Ave
Direction Both directions
Day 7 Days

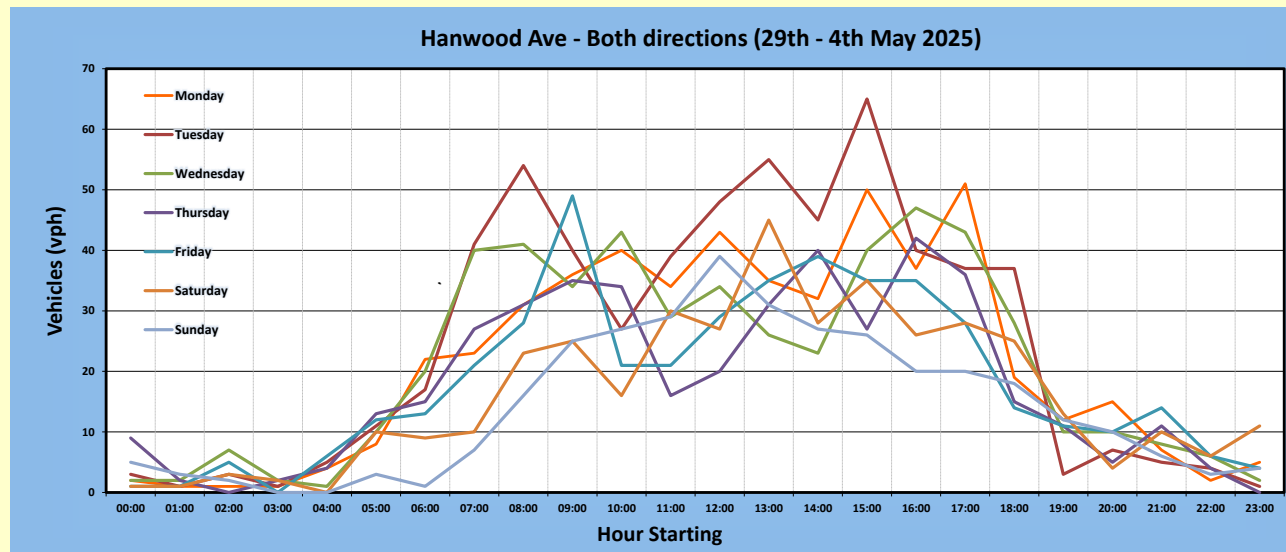
[Back to Site Summary Page](#)





Site Hanwood Ave - Both directions (29th - 4th May 2025) [Back to Site Summary Page](#)

Direction Both directions



Volume Summary

Day	Monday	Tuesday	Wednesday	Thursday	Friday	Saturday	Sunday
Date	2/06/2025	3/06/2025	4/06/2025	29/05/2025	30/05/2025	31/05/2025	1/06/2025
AM Peak	10:00	08:00	10:00	09:00	09:00	11:00	11:00
PM Peak	17:00	15:00	16:00	16:00	14:00	13:00	12:00
00:00	2	3	2	9	1	1	5
01:00	1	1	2	2	1	1	3
02:00	1	3	7	0	5	3	2
03:00	1	1	2	2	0	2	0
04:00	4	5	1	4	6	0	0
05:00	8	11	10	13	12	10	3
06:00	22	17	20	15	13	9	1
07:00	23	41	40	27	21	10	7
08:00	31	54	41	31	28	23	16
09:00	36	40	34	35	49	25	25
10:00	40	27	43	34	21	16	27
11:00	34	39	29	16	21	30	29
12:00	43	48	34	20	29	27	39
13:00	35	55	26	31	35	45	31
14:00	32	45	23	40	39	28	27
15:00	50	65	40	27	35	35	26
16:00	37	40	47	42	35	26	20
17:00	51	37	43	36	28	28	20
18:00	19	37	28	15	14	25	18
19:00	12	3	10	11	11	13	12
20:00	15	7	10	5	10	4	10
21:00	7	5	8	11	14	10	6
22:00	2	4	6	4	6	6	3
23:00	5	1	2	0	4	11	4
Total	511	589	508	430	438	388	334
% Heavy	10.76%	8.32%	12.99%	10.70%	10.27%	5.41%	3.29%

AUTOMATIC COUNTER SUMMARY AND DATA SHEET



Site Hanwood Ave

Direction Both directions ▼

Day 7 Days ▼

[Back to Site Summary Page](#)

Hour Start	Vehicles Classifications												
	SV	SVT	TB2	TB3	T4	ART3	ART4	ART5	ART6	BD	DRT	TRT	UC
	1	2	3	4	5	6	7	8	9	10	11	12	13
12:00 AM	3	0	0	0	0	0	0	0	0	0	0	0	0
01:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0
02:00 AM	3	0	0	0	0	0	0	0	0	0	0	0	0
03:00 AM	1	0	0	0	0	0	0	0	0	0	0	0	0
04:00 AM	2	0	0	0	0	0	0	0	0	0	0	0	0
05:00 AM	9	0	0	0	0	0	0	0	0	0	0	0	0
06:00 AM	12	0	0	0	0	0	1	0	0	0	0	0	0
07:00 AM	20	1	2	0	0	0	1	0	0	0	0	0	0
08:00 AM	29	1	1	0	0	0	0	0	1	0	0	0	0
09:00 AM	30	1	1	1	0	0	0	0	1	0	0	0	0
10:00 AM	26	1	1	0	0	0	0	0	1	0	0	0	0
11:00 AM	25	1	1	0	0	0	0	0	1	0	0	0	0
12:00 PM	31	0	1	0	0	0	0	0	1	0	0	0	0
01:00 PM	33	1	1	1	0	0	0	0	1	0	0	0	0
02:00 PM	27	2	3	0	0	0	1	0	1	0	0	0	0
03:00 PM	35	0	2	0	0	0	0	0	1	1	0	0	0
04:00 PM	31	0	3	0	0	0	0	0	0	0	0	0	0
05:00 PM	31	1	1	0	0	0	0	0	0	0	0	0	0
06:00 PM	20	1	1	0	0	0	0	0	0	0	0	0	0
07:00 PM	10	0	0	0	0	0	0	0	0	0	0	0	0
08:00 PM	9	0	0	0	0	0	0	0	0	0	0	0	0
09:00 PM	8	0	0	0	0	0	0	0	0	0	0	0	0
10:00 PM	4	0	0	0	0	0	0	0	0	0	0	0	0
11:00 PM	4	0	0	0	0	0	0	0	0	0	0	0	0
Summary	405	10	18	2	0	0	3	0	8	1	0	0	0



Site Hanwood Ave

Direction Both directions ▼

Day 7 Days ▼

[Back to Site Summary Page](#)

AM Peak 9:00 AM

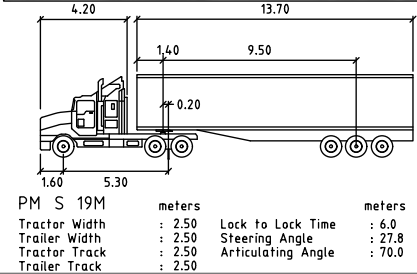
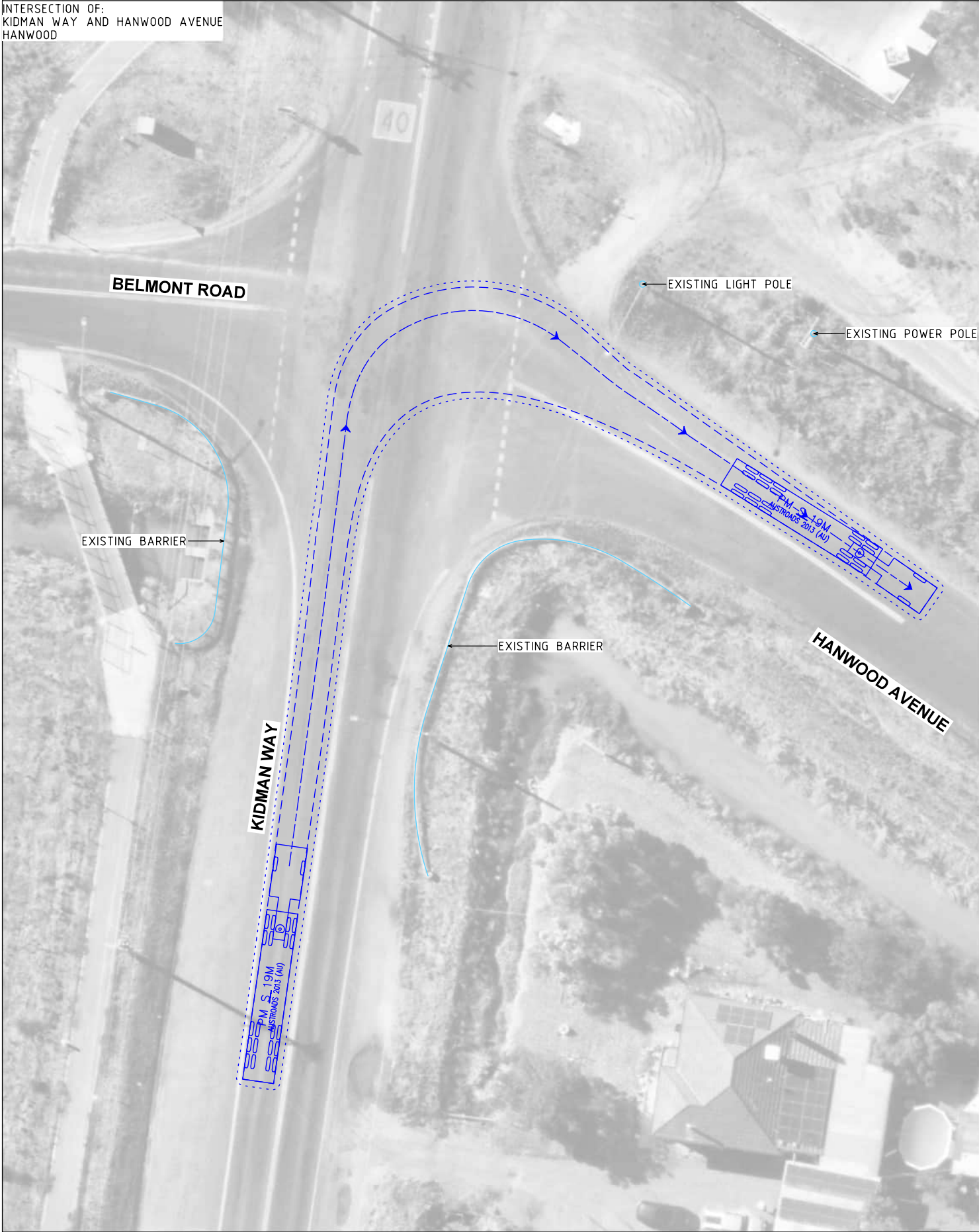
PM Peak 3:00 PM

Hour Start	Vehicle Classification Summary					Hour Total
	Light Vehicles (1-2)	Small Trucks (3)	Medium Trucks (4-5)	Large Trucks (6-12)	Unclassified (13)	
0:00	3	0	0	0	0	3
1:00	2	0	0	0	0	2
2:00	3	0	0	0	0	3
3:00	1	0	0	0	0	1
4:00	2	0	0	0	0	2
5:00	9	0	0	0	0	9
6:00	12	0	0	1	0	13
7:00	21	2	0	1	0	24
8:00	30	1	0	1	0	32
9:00	31	1	1	1	0	34
10:00	27	1	0	1	0	29
11:00	26	1	0	1	0	28
12:00	31	1	0	1	0	33
13:00	34	1	1	1	0	37
14:00	29	3	0	2	0	34
15:00	35	2	0	2	0	39
16:00	31	3	0	0	0	34
17:00	32	1	0	0	0	33
18:00	21	1	0	0	0	22
19:00	10	0	0	0	0	10
20:00	9	0	0	0	0	9
21:00	8	0	0	0	0	8
22:00	4	0	0	0	0	4
23:00	4	0	0	0	0	4
Summary	415	18	2	12	0	447

Appendix B Swept Path Diagrams



INTERSECTION OF:
KIDMAN WAY AND HANWOOD AVENUE
HANWOOD

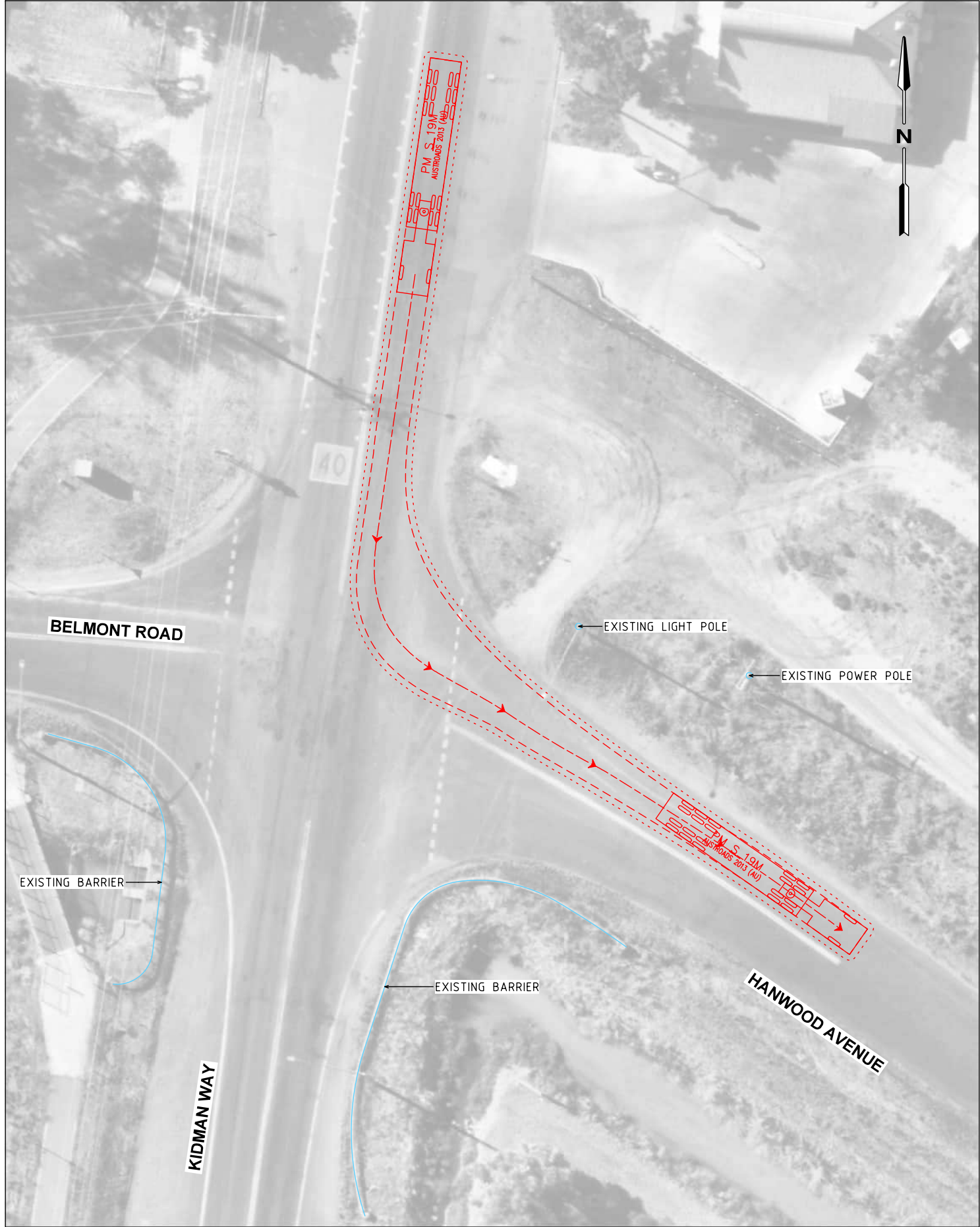


PM S 19M	Tractor Width	: 4.20	Trailer Width	: 13.70	Trailer Track	: 5.30
	Tractor Width	: 2.50	Trailer Width	: 2.50	Trailer Track	: 2.50
	Lock to Lock Time	: 6.0	Steering Angle	: 27.8	Articulating Angle	: 70.0

SWEPT PATH LEGEND
- - - - - DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
- - - - - 500mm CLEARANCE ENVELOPE SHOWN DOTTED

onemilegrid operates from Wurundjeri Woiwurrung Country of the Kulin nation. We acknowledge and extend our appreciation to the Wurundjeri People, the Traditional Owners of the land. We pay our respects to leaders and Elders past, present and emerging for they hold the memories, the traditions, the culture, and the hopes of all Wurundjeri Peoples.

Aerial Photography
Aerial photography provided by Nearmap



Wurundjeri Woiwurrung Country
56 Down Street, Collingwood, VIC 3066
Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
Phone (03) 9939 8250

Scale
1:400 @ A3



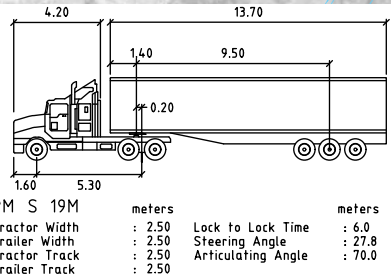
Drawing Title
GRIFFITH BESS
HEAVY VEHICLE INBOUND ROUTE
SWEPT PATH ANALYSIS

Designed DA	Approved VG	Melway Ref NA
----------------	----------------	------------------

Project Number 250170	Drawing Number SPA100	Revision C
--------------------------	--------------------------	---------------

CAD File: N:\Project\2025\250170\Drawings\Griffith Local Routes\250170SPA101.dgn

Date Plotted: 21-04-2026 9:35:40 AM



SWEPT PATH LEGEND

--- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
----- 500mm CLEARANCE ENVELOPE SHOWN DOTTED

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Aerial Photography
Aerial photography provided by Nearmap


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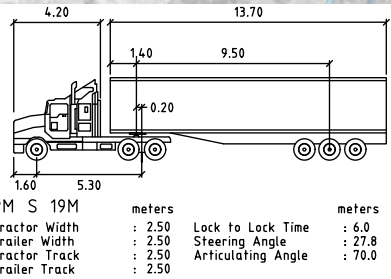
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Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEEP PATH ANALYSIS		
Designed DA	Approved VG	Metway Ref NA
Project Number 250170	Drawing Number SPA101	Revision C

CAD File: N:\Project\2025\250170\Drawings\Griffith Local Routes\250170SPA102.dgn

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SWEPT PATH LEGEND

--- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
----- 500mm CLEARANCE ENVELOPE SHOWN DOTTED

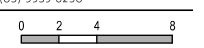
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Aerial Photography
Aerial photography provided by Nearmap



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Drawing Title
GRIFFITH BESS
HEAVY VEHICLE INBOUND ROUTE
SWEPT PATH ANALYSIS

Designed DA	Approved VG	Melway Ref NA

Project Number 250170	Drawing Number SPA102	Revision C

Appendix C OSOM Route Assessment



Griffith BESS

OSOM Route Assessment
SSD-85372970



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2 June 2026

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DOCUMENT INFORMATION

Prepared for	Eku Energy on behalf of Griffith BESS Co Pty Ltd		
File Name	250170REP001B-F.docx	Report Date	2 June 2026
Prepared by	AWG	Reviewed by	VPG



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CONTENTS

1	INTRODUCTION.....	5
2	TfNSW COMMENTS.....	5
3	OSOM TRANSPORT	6
3.1	Vehicle Details	6
3.2	High-Risk Assessment.....	6
4	POINT OF ORIGIN/DESTINATION	7
5	LOCAL CONSTRAINTS.....	7
6	OSOM NETWORK	7
7	PROPOSED ROUTE.....	9
8	AT-RISK STRUCTURES.....	10
8.1	Pinch Points.....	10
8.2	Height Restrictions	12
8.3	Proposed Alternate Routes	15
8.3.1	Sutton Forest Diversion	15
8.3.2	Yarra Diversion	16
8.3.3	Gundagai Diversion.....	17
8.4	Pull-over Bays.....	18
8.5	Bridge Assessments	19
8.6	Railway level crossings	19
9	NEARBY PROJECTS.....	19
9.1	Mount Ousley interchange.....	19
9.2	Benerembah Channel along Kidman Way	19
10	PILOT AND ESCORT REQUIREMENTS.....	20
10.1.1	Overview.....	20
10.1.2	Day Time	20
10.1.3	Night time	20
11	TIMING RESTRICTIONS.....	21
12	GENERAL MITIGATION MEASURES.....	21
13	SUMMARY AND CONCLUSIONS	22

TABLES

Table 1	OSOM Vehicle Details	6
Table 2	OSOM High Risk Criteria	6
Table 3	Pinch points	10
Table 4	Overhead Structures	12
Table 5	Pull-over Bays.....	18

FIGURES

Figure 1	NSW OSOM Network Map	7
Figure 2	NSW OSOM Network Map in the vicinity of the site	8
Figure 3	Proposed OSOM Route from Port Kembla (NHVR Route ID 2NZHH-0 v3)	9
Figure 4	Sutton Forest Diversion	16
Figure 5	Yarra Diversion	17
Figure 6	Gundagai Diversion.....	18

APPENDICES

ATTACHMENT A: SWEEP PATH DIAGRAMS

ATTACHMENT B: CONCEPT LAYOUT PLANS

ATTACHMENT C: TfNSW BRIDGE ASSESSMENT

1 INTRODUCTION

onemilegrid has been requested by Eku Energy on behalf of Griffith BESS Co Pty Ltd to undertake an OSOM Route Assessment of the proposed Battery Energy Storage System (BESS) development at 15 Bob Irvin Road, Yoogali.

The proposed BESS, hereafter referred to as the Griffith BESS, is a State Significant Development, SSD-85372970. This OSOM Route Assessment forms part of the Response to Submissions (RtS) which has been prepared by Cogency Australia Pty Ltd (Cogency) to support assessment of the project.

2 TfNSW COMMENTS

This OSOM route assessment has been undertaken to provide additional information on the OSOM route assessment as requested in the Transport for New South Wales (TfNSW) Response to Environmental Impact Statement dated 24 December 2025. The comments on the OSOM route are provided below.

The proponent has confirmed in Table 9 that high-risk oversized overmass (OSOM) vehicles are required. Detail regarding these movements is requested to ensure the compliance of the road upgrades and mitigation measures in accordance with the Austroads Guide to Road Design, the Austroads Guide to Temporary Traffic Management, and TfNSW requirements. This should include:

a) The high-risk OSOM laden loads, class and vehicle configuration must include the following information regarding the dimensions, weight and length:

- Overall dimensions (width, height and length) of the laden load (laden load is the vehicle combination and the load to be transported),*
- Total weight of laden load,*

b) Swept paths for pull-over bays / rest areas along high risk OSOM routes (including GPS coordinates) that demonstrate that high risk OSOMs can be physically accommodated for the project (in terms of size, width and accessibility).

c) Bridge Assessments for any at risk bridges on classified roads due to dimensions and weight of OSOM vehicles, contact spu@transport.nsw.gov.au to request a bridge assessment of TfNSW assets.

d) Highlighting each at-risk road structures that the haulage route crosses.

e) Potential high level mitigation measures or commitments to mitigate known traffic, safety and impacts to road users along the high risk OSOM route (i.e school bus routes, mining shift changes, TSRs, harvest periods and events).

f) Identify and assess implications of any road and rail projects under construction during the indicative schedule for project related OSOM movements. For example, the Mt Ousley Interchange is a notable project along the route.

g) Identify any rail level crossing along the route.

h) Consider the time frames to complete manoeuvres of pinch points or to travel through rural areas with narrow travel lanes and minimal overtaking opportunities. Traffic modelling may be required to understand the optimal timing for high-risk OSOM movements to occur.

Note: Narrow travel lanes, minimal existing overtaking lanes or pull over bays, high proportion of background traffic or heavy vehicles and constrained road geometry may warrant the requirement for additional pull over or rest area locations to manage the impacts to through traffic

3 OSOM TRANSPORT

3.1 Vehicle Details

The proponent has identified the largest loads that will require delivery to the site are the delivery of the Power Transformer and the Combined Switchgear & Control Building. It is expected that a maximum of 5 OSOM vehicle deliveries will occur over the course of the construction of the facility. It should be noted that the vehicle has been changed from the TIA that was submitted within the EIS.

Details of the proposed OSOM deliveries are provided in Table 1.

Table 1 OSOM Vehicle Details

Parameter	Power Transformer (PT)	Combined Switchgear & Control Building (CS&CB)
Laden Length	32 m	37 m
Laden Width	4.2 m	4.2 m
Laden Height	5.3 m	5.3 m
Platform Type	8 x 8	8 x 8
Axle Loading	17 tonne/axle	11 tonne/axle
Axle Spacing	1.83 m	1.83 m
Total laden mass	155 tonne	110 tonne
Ground Contact Width (GCW)	4.2 m	4.2 m

Based on the above, the delivery of the power transformer is the worst case for axle loading, while the delivery of the combined switchgear and control building is the worst case vehicle from a geometry and swept paths perspective.

3.2 High-Risk Assessment

An assessment of the OSOM 'high-risk' criteria as defined by TfNSW is provided below.

Table 2 OSOM High Risk Criteria

Criteria	Power Transformer Vehicle	Combined Switchgear & Control Building Vehicle	TMP Required if?	High Risk Criteria Met?	
				PT	CB&CB
Length	32 m	37 m	> 40 m on single carriageway sections.	No	No
Height	5.3 m	5.3 m	>5.2 m	Yes	Yes
Rear overhang	10.7 m	10.7 m	> 7.5 m	Yes	Yes
Forward projection	0 m	0 m	>5.5 m	No	No
Width	5.3 m	5.3 m	>6.0 m	No	No
Total combination weight	155 tonne	110 tonne	>184.5 tonne	No	No

Based on the above assessment, both the Power Transformer (PT) and Combined Switchgear & Control Building (CS&CB) OSOM vehicles are considered 'high risk' as they meet the height and rear overhang criteria. It should be noted that the triggers for 'high risk' are not the width or the length of the vehicle, and are therefore not related to the turning circle of the vehicle.

4 POINT OF ORIGIN/DESTINATION

The points of origin and destination for this route are as follows:

- **Point of Origin:** Port Kembla harbour, Wollongong NSW 2505;
- **Destination:** 15 Bob Irvin Road, Yoogali NSW 2680.

5 LOCAL CONSTRAINTS

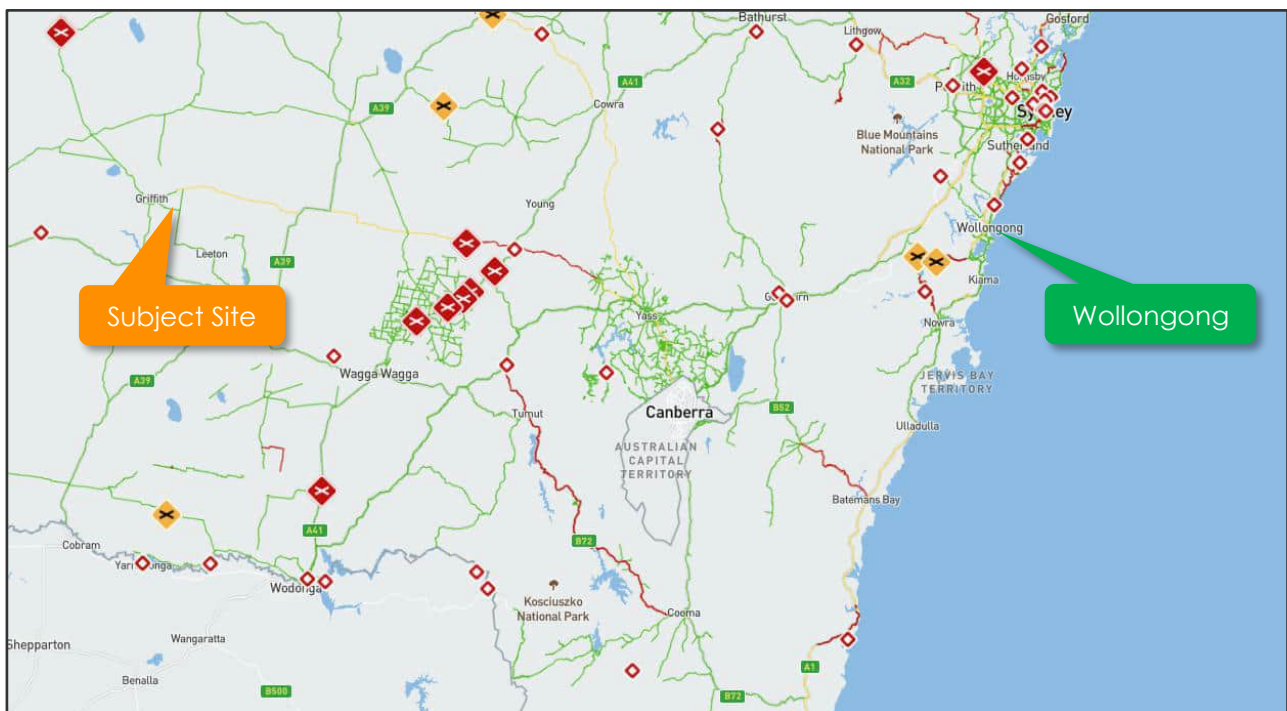
The proponent has undertaken consultation with Griffith City Council to determine the most suitable access route for oversize overmass (OSOM) vehicle movements to the site. Through this process, it was identified that the intersection of Bob Irvin Road and Irrigation Way is heavily constrained and cannot safely accommodate the turning movements required for OSOM vehicles accessing Bob Irvin Road. Having regard to these constraints, Council has confirmed that the preferred access route for OSOM vehicles is from the south via Kidman Way, Hanwood Avenue and Bob Irvin Road.

6 OSOM NETWORK

Vehicles operating under the Multi-State Class 1 Load Carrying Vehicle Mass Exemption Notice are eligible to travel on the NSW OSOM network. This includes vehicles up to 3.5 m wide, 4.6m high, 25.0 m long, 5.5m rear overhang and total mass of 49.5 tonnes, subject to meeting all other relevant eligibility requirements.

The NSW Oversize Overmass (OSOM) Load Carrying Vehicles Network map is shown below.

Figure 1 NSW OSOM Network Map



Furthermore, The NSW OSOM Network in the vicinity of the site is shown below.

Figure 2 NSW OSOM Network Map in the vicinity of the site



In the vicinity of the site Irrigation Way, Kurrajong Avenue, Kidman Way, Whitton Stock Route Road and Burley Griffin Way are all approved roads as part of the OSOM network.

It should be noted that Burley Griffin Way, between Binalong and Stockinbingal, is denoted as a limited access location, with additional travel conditions. It is understood that vehicles must contact Police before travel, and an eligible vehicle that exceeds a dimension limit must obtain a Class 1 permit before travel. Additionally, time travel restrictions are in place along Burley Griffin Way between Hume Highway west of Bowning and Irrigation Way at Yoogali, with vehicles wider than 2.5 m or longer than 22 m not permitted to travel in the daytime on weekends, or state-wide public holiday periods.

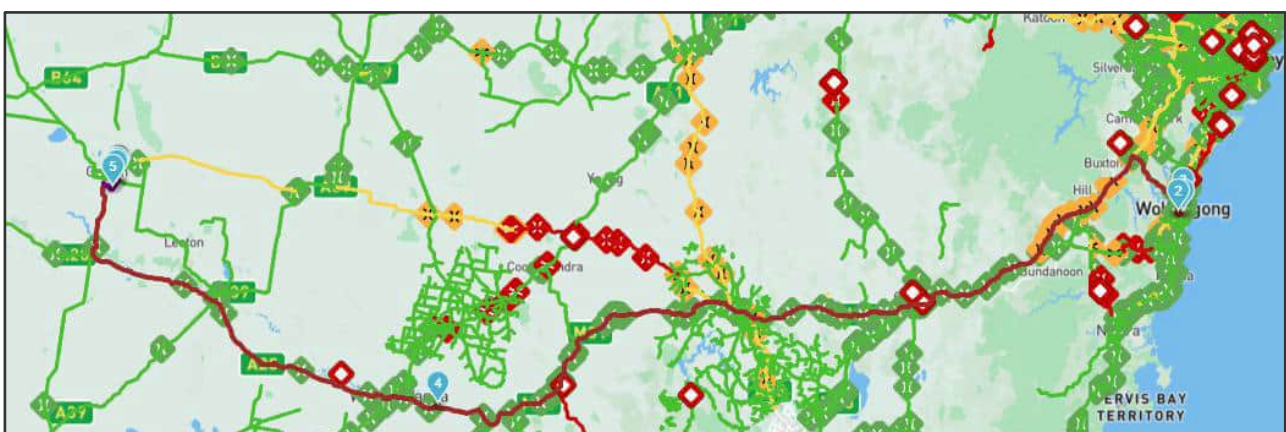
7 PROPOSED ROUTE

The proposed route from Port Kembla is as follows::

- **Start:** Tom Thumb Road, Port Kembla;
- Springhill Road, Port Kembla to Spring Hill;
- Masters Road, Spring Hill;
- Princes Motorway, Figtree to Gwynneville;
- Memorial Drive, Gwynneville to North Wollongong;
- Princes Highway, North Wollongong to Fairy Meadow;
- Mount Ousley Road, Fairy Meadow to Keiraville;
- Princes Motorway, Keiraville to Cataract;
- Picton Road, Cataract to Wilton;
- Hume Motorway, Wilton to Berrima;
- Hume Highway, Berrima to Mount Adrah;
- Sturt Highway, Tarcutta to Gumly Gumly;
- Hammond Avenue, East Wagga Wagga;
- Edward Street, Wagga Wagga;
- Sturt Highway, Ashmont to Darlington Point;
- Kidman Way, Darlington Point;
- Carrington Street, Darlington Point;
- Bridge Street, Darlington Point;
- Narrand Street, Darlington Point;
- Uri Street, Darlington Point;
- Kidman Way, Darlington Point to Hanwood;
- Hanwood Avenue, Hanwood;
- Bob Irvin Road, Hanwood;
- **End:** 15 Bob Irvin Road, Yoogali.

The proposed OSOM Route is shown below, with the total route being approximately 612 km (not including the internal roads at the port).

Figure 3 Proposed OSOM Route from Port Kembla (NHVR Route ID 2NZHH-0 v3)



The route has been limited to areas approved or approved with conditions along the NSW OSOM Load carrying Vehicles Network Map. The eastern section of Burley Griffin Way is limited to vehicles that are 3.5 m wide therefore the route continues on Hume Highway to divert through Wagga Wagga via Sturt Highway. It is noted that the route detours via Memorial Drive to avoid a low clearance bridge on University Avenue over Princes Motorway in Gwynneville.

8 AT-RISK STRUCTURES

8.1 Pinch Points

onemilegrid has undertaken swept paths at pinch points along the route, with the results summarised below. The full swept paths are provided in Attachment A.

Table 3 Pinch points

Location	Swept Path Reference	Notes
Tom Thumb Road / Springhill Road	SPA200	➤ Rubber pad has already been removed; ➤ No modifications to intersection required.
Springhill Road / Masters Road	SPA201	➤ No modifications to intersection required.
Memorial Drive / Princes Highway	SPA202	➤ Vehicle traverses mountable median; ➤ Concept plan has been prepared demonstrating removal of existing concrete median and constructing pavement suitable for heavy vehicle deliveries. Please refer to CLP202; ➤ Existing school zone signage to be retained.
Princes Highway / Mount Ousley Road	SPA203	➤ Existing roundabout signage to be removed; ➤ Body overhang only above traffic island, though wheels remain within roadway.
Mount Ousley Road / Gaynor Avenue	SPA204	➤ Truck wheels navigate apron of roundabout; ➤ Concept plan has been prepared demonstrating removal of existing roundabout apron and median and installation of painted chevron island line marking. Please refer to CLP204; and ➤ Existing roundabout signage to be removed.
Princes Motorway / Mount Ousley Road	SPA205*	➤ No modifications to intersection required.
Princes Motorway / Picton Road	SPA206	➤ Body overhang only above traffic island, though wheels remain within roadway; ➤ No modifications to intersection required.
Picton Road / Hume Motorway	SPA207	➤ Body overhang only outside traffic lanes, though wheels remain within roadway; ➤ No modifications to intersection required.

Hume Highway / Sturt Highway	SPA208	➤ No modifications to intersection required.
Sturt Highway / Tasman Road / Eunony Bridge Road	SPA209	➤ Body overhang only above roundabout island, though wheels remain within roadway; ➤ No modifications to intersection required.
Sturt Highway/ Koorungal Road	SPA210	➤ Body overhang only on eastern approach, wheels remain within roadway; ➤ Truck wheels navigate apron of roundabout; ➤ Concept plan has been prepared demonstrating removal of existing roundabout apron and installation of painted chevron island line marking. Please refer to CLP210; ➤ Existing signage not impacted.
Sturt Highway / Norton Street / Mason Street	SPA211	➤ Existing signage to be removed; ➤ Body overhang only on eastern approach, wheels remain within roadway; ➤ Truck wheels navigate apron of roundabout; ➤ Concept plan has been prepared demonstrating removal of existing roundabout apron and installation of painted chevron island line marking. Please refer to CLP211.
Sturt Highway / Pearson Street / Olympic Highway	SPA212	➤ Body overhang only on eastern approach, wheels remain within roadway; ➤ Truck wheels access apron of roundabout; ➤ Concept plan has been prepared demonstrating removal of existing roundabout apron and installation of painted chevron island line marking. Please refer to CLP212.
Sturt Highway / Newell Highway	SPA213	➤ Existing signage to be removed.
Sturt Highway / Kidman Way	SPA214	➤ Vehicle to utilise full carriageway; ➤ No modifications to intersection required.
Narrand Street / Uri Street	SPA215	➤ Vehicle to utilise full carriageway; ➤ No modifications to intersection required.
Kidman Way / Hanwood Avenue	SPA216	➤ Vehicle to utilise full carriageway; ➤ No modifications to intersection required.

Hanwood Avenue / Bob Irvin Road	SPA217	➤ Vehicle to utilise full carriageway; ➤ Height clearance under power lines will need to be confirmed before passage; ➤ 500 mm clearance is provided to power pole and edge of culvert; ➤ No modifications to intersection required.
Bob Irvin Road access to site	SPA218	➤ Vehicle to utilise full carriageway.

**Please refer to Discussion below regarding Mount Ousley Interchange*

Five locations have been identified where the vehicle is required to traverse traffic islands or roundabout aprons. Detailed investigations should be undertaken prior to travel to confirm that these features are suitable for the proposed OSOM vehicle. Concept plans have been prepared outlining temporary treatments to facilitate vehicle movements where kerbs are found to be not traversable. Please refer to Attachment B.

In addition, five locations along the route will require the temporary removal of existing signage to enable safe access for the vehicle. This is commonplace for OSOM routes noting the limited nature of these movements and the conditions they will travel, i.e via escort.

8.2 Height Restrictions

The proposed OSOM vehicle has a maximum height of 5.3 m. **onemilegrid** has identified the following height restrictions along the route, based on the TfNSW publicly available database.

Table 4 Overhead Structures

Location	Description	Minimum height clearance as per TfNSW	Notes
Princes Motorway, Figtree	Bridge on MR602 over F6 at Mt. St Thomas, The Avenue Bridge	5.3 m	
Princes Motorway, Figtree	Pedestrian Bridge over F6, near Byarong Avenue	5.3 m	
Princes Motorway, West Wollongong	Bridge on SH1 over F6 at Ghosts Creek, Ghosts Creek Bridge	4.9 m	Bridge is understood to provide 5.3 m height clearance as per assessments undertaken for the Yanco BESS and Biala Wind Farm
Princes Motorway, West Wollongong	Bridge over F6 at Mt Keira Road	5.3 m	
Princes Motorway, West Wollongong	Bridge over F6 at Reserve Street	5.3 m	
Princes Motorway, Gwynneville	Bridge on Gipps Rd over F6 West Wollongong	5.0 m	Bridge is understood to provide a minimum height clearance of 5.4 m in left lane as per Yanco BESS assessment

Memorial Drive, Gwynneville	Bridge over MR626 (Memorial Drive) at North Wollongong, Porter Street Bridge	4.7 m	Signage indicates the bridge has a height clearance of 5.1 m, though bridge clearly arches down towards the left lane. It is understood that the bridge provides a height clearance of 5.3 m in the central lane as per Biala Wind Farm assessment.
Mount Ousley Road, Mount Pleasant	Bridge over MR95 (Mount Ousley Road), New Mount Pleasant Road Bridge	5.6 m	
Hume Motorway, Pheasants Nest	Bridge over SH2, Avon Dam Road	5.6 m	
Hume Motorway, Pheasants Nest	MWS & DB Pipeline Bridge over SH2	5.7 m	
Hume Motorway, Yerrinbool	Bridge on Sierra Street, over Hume Highway at Yerrinbool	6.2 m	
Hume Motorway, Alpine	Bridge on Church Avenue over SH2 at Alpine	5.3 m	
Hume Motorway, Braemar	Bridge on Drapers Road over SH2 at Willow Vale	5.6 m	
Hume Highway, Welby	Bridge on MR258 over SH2 at Welby	5.9 m	
Hume Highway, Sutton Forest	Bridge on SH25 over SH2 at Hoddles	5.4 m	
Hume Highway, Sutton Forest	Bridge over SH2 at Sutton Forest	5.2 m	Minimum height clearance signage is only provided for eastbound traffic, therefore actual height clearance for westbound is unknown, however is expected to be greater than or equal to 5.3m. The height clearance of the bridge should be checked before travel under the bridge. If height clearance is less than 5.3 m then it is expected the vehicle can temporarily divert off Hume Motorway via the Sutton Forest rest area. Alternate route discussed in Section 8.3.
Hume Highway, Marulan	Bridge over the Hume Highway at Marulan	5.3 m	
Hume Highway, Boxers Creek	Bridge on S/B unloading ramp over SH2 at North Goulburn	5.3 m	

Hume Highway, Boxers Creek	Bridge over SH2, Windellama Road at Goulburn (Bypass)	5.4 m	
Hume Highway, Goulburn	Eastbound roundabout bridge over SH2, Bridge A	6.1 m	
Hume Highway, Goulburn	Westbound roundabout bridge over SH2, Bridge B	5.4 m	
Hume Highway, Yarra	Northbound load ramp over SH2 at SH3 interchange	5.2 m	Minimum height clearance sign is not provided, therefore actual height clearance is not known. The height clearance of the bridge should be checked before travel under the bridge. If height clearance is less than 5.3 m then it is expected the vehicle can divert off Hume Motorway via the Sutton Forest rest area. Alternate route discussed in Section 8.3.
Hume Highway, Gunning	Bridge on MR52 over SH2 south of Goulburn at Gunning, Sutton Road overbridge	5.8 m	
Hume Highway, Yass	Bridge on SH15 northbound over HW2 Hume	5.7 m	
Hume Highway, Yass	Bridge over HW2 Hume at Coolalie Road	5.34 m	
Hume Highway, Yass	Bridge over HW2 Hume at Cooks Hill Road	5.77 m	
Hume Highway, Yass	Bridge over HW2 Hume at Wargeilla Road	7.95 m	
Hume Highway, Yass	Bridge over HW2 Hume at Yass Valley Way	5.33m	
Hume Highway, Gundagai	Bridge over HW2 Hume West Street Gundagai	5.27 m	Based on street view this minimum clearance appears to apply to the left most traffic lane. It is expected that the minimum 5.3 m clearance is provided to the central traffic lane. Alternate route discussed in Section 8.3.
Hume Highway, Gundagai	Bridge over HW2 Hume O'han Street Gundagai	8.23 m	
Hume Highway, South Gundagai	Interchange bridge over HW2 Hume South Gundagai	5.73 m	

Hume Highway, Mundarlo	Bridge on SH4 Northbound over HW2 Hume Southbound, at SH4 Interchange	6.72 m	
Sturt Highway, Wagga Wagga	Railway Bridge over HW14, Edward Street Bridge	5.23 m	Bridge is understood to provide a minimum height clearance of 5.4 metres, as per assessment undertaken for Yanco BESS.

It is noted that several locations along the route are identified to provide a minimum height clearance of less than 5.5 m. A detailed height clearance assessment will be undertaken at those locations where the available clearance is expected to be within 200 mm of the OSOM vehicle height of 5.3 m. This assessment will be undertaken during the development of the detailed traffic management plan (TMP) for the delivery of the OSOM components.

8.3 Proposed Alternate Routes

There are 3 locations identified within Table 4 where the available clearance may be less than the required height for the proposed OSOM deliveries. Prior to travel, confirmation of height clearance will be undertaken by a suitably qualified surveyor. In the event that the height clearance at the above locations is not sufficient, **onemilegrid** has prepared 3 alternate routes.

The NHVR Route ID for the alternate route is 2NZHH-0 v5.

8.3.1 Sutton Forest Diversion

In the event that the bridge over SH2 at Sutton Forest does not provide the necessary height clearances, it is proposed to divert around the bridge via the Sutton Forest East Service Centre. The vehicle will turn off Hume Highway via the Exeter and Bundanoon exit, and turn left onto Sallys Corner Road, before turning right into the Sallys Corner Service Centre Rest Area and manoeuvring through the site to turn back onto the freeway. It is noted that this will require approval from the operator of the Sallys Corner Service Centre Area.

The Sutton Forest Alternate Route is demonstrated below.

Figure 4 Sutton Forest Diversion



Swept paths demonstrating the vehicle manoeuvring through the diversion are demonstrated in SPA225.

It is noted that the vehicle traverses a concrete island within the Sutton Forest East service centre. A concept plan has been prepared demonstrating the concrete island being removed and replaced with painted chevron island line marking. Please refer to CLP225.

8.3.2 Yarra Diversion

In the event that the northbound load ramp over SH2 at SH3 interchange does not provide the necessary height clearances, it is proposed to divert around the bridge by turning off Hume Highway onto Federal Highway southbound, and using a median break to turnaround back onto Federal Highway and then turnback onto Hume Highway. This will require traffic management to temporarily stop northbound traffic along Federal Highway.

Figure 5 **Yarra Diversion**

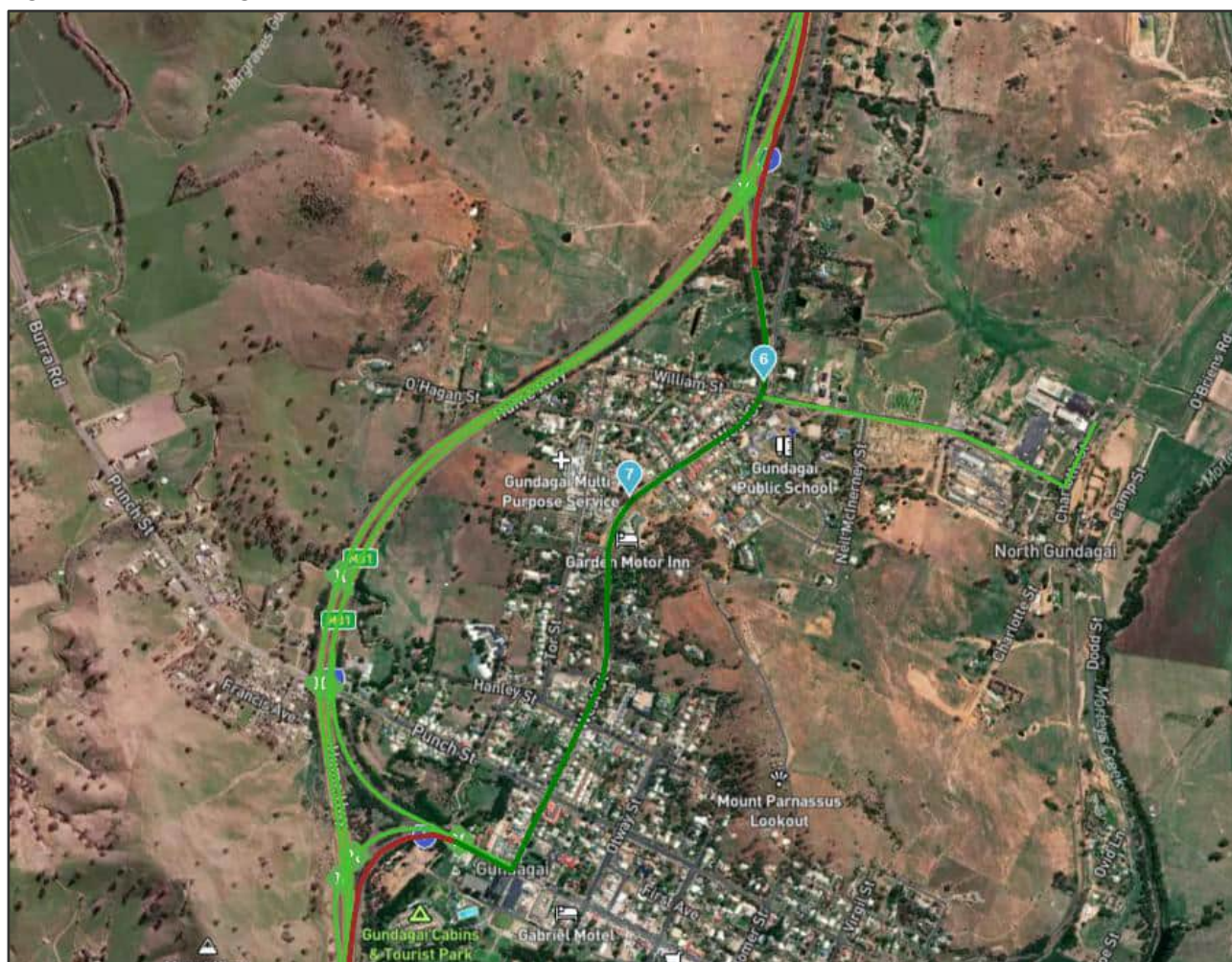


Swept paths demonstrating the vehicle undertaking a U-turn through the existing median break are demonstrated in SPA226.

8.3.3 **Gundagai Diversion**

In the event that the bridge over HW2 Hume West Street Gundagai does not provide the necessary height clearances, it is proposed to divert around the bridge via West Street and Sheridan Street within Gundagai.

Figure 6 Gundagai Diversion



Swept paths demonstrating the vehicle manoeuvring through West Street and Sheridan Street are demonstrated in SPA227 and SPA228. A concept plan has been prepared for the removal of an existing concrete island along West Street, to be replaced with painted chevron island line marking. Please refer to CLP227.

8.4 Pull-over Bays

onemilegrid has investigated pull over/rest locations managed by TfNSW and other authorities. The following locations are considered suitable not only as rest stops but also as safe areas for vehicles to pull over, allowing queued traffic behind the load to pass. Swept paths have been prepared to confirm each of the below pull-over bays are appropriate.

Table 5 Pull-over Bays

GPS Coordinates	Description	Swept Path Reference
-34.61350, 150.21997	Hume Highway, Sutton Forrest Rest Area Southbound	SPA220
-34.80639, 148.47297	Hume Highway, Reddy Creek Truck Parking Bay Southbound	SPA221
-35.10825, 148.05757	Hume Highway, Big Ben Creek Rest Area Westbound	SPA222

-35.21803, 147.79005	Sturt Highway, Hume Highway Exit Stopping Bay Westbound	SPA223
-34.98588, 146.73909	Sturt Highway, Kwong Stopping Bay	SPA224

8.5 Bridge Assessments

A TfNSW bridge assessment has been undertaken for the proposed vehicle combinations and route described above. TfNSW has reviewed the route and identified it is suitable to accommodate a vehicle with an 8x8 platform trailer and 17 tonnes/axle. Please refer to attachments for correspondence with the Special Permits Unit at TfNSW.

It is acknowledged that the route passes over several assets controlled by third parties, such as the culverts provided along Hanwood Avenue and Bob Irvin Road. Third party approvals will need to be obtained when the transport operator applies for the NHVR permits for the proposed OSOM route. The NHVR permit approval process will include assessments of the load capacity for any impacted structures.

8.6 Railway level crossings

There are no railway level crossings along the proposed route.

9 NEARBY PROJECTS

9.1 Mount Ousley interchange

TfNSW is currently building an interchange on the M1 Princes Motorway at the base of Mount Ousley. The interchange will replace the existing intersection of the Princes Motorway and Mount Ousley Road. The project is expected to be completed in 2028.

The proposed route travels westbound along Mount Ousley Road before turning right onto Princes Motorway. Swept paths have been prepared for the intersection configuration from January 2026, demonstrating the intersection is suitable to provide access to the site. Due to the uncertainty involved with the timing of the vehicle route, it is recommended that the transport operator liaises with Transport at least 2 months before commencing the OSOM transport.

9.2 Benerembah Channel along Kidman Way

TfNSW is investigating a project to upgrade an irrigation bridge over Benerembah Channel along Kidman Way, near North Kooba Settlers Road. During early investigations, TfNSW have identified the potential to add turn lanes and realign the road for better turning pathways for heavy vehicles.

The status of the project is unknown. TfNSW have advised that if the bridge is replaced, the new crossing would be built on a new offline alignment, minimising impacts to the proposed OSOM delivery.

10 PILOT AND ESCORT REQUIREMENTS

10.1.1 Overview

In 2025, TfNSW published standardised pilot and escort requirements for Class 1 load carrying vehicles such as the proposed OSOM vehicle.

A pilot vehicle is defined as a motor vehicle that accompanies an oversize vehicle to warn other road users of the oversize vehicles presence.

An escort vehicle is defined as a pilot vehicle that is driven by a police officer or another person authorised to direct traffic under an Australian road law.

The OSOM vehicle delivering the power transformer includes a 4.2 m wide payload and total length of 32 m. The OSOM vehicle delivering the combined switchgear and control building includes a 4.2 m wide payload and total length of 37 m.

An assessment of the pilot and escort requirements for the 2 OSOM vehicle types are provided below.

10.1.2 Day Time

For vehicles travelling during the day time the following requirements apply:

- Vehicles wider than 3.5 metres or longer than 26 metres require **1 pilot vehicle**;
- Vehicles wider than 4.6 metres or longer than 30 metres require **2 pilot vehicles**;
- Vehicles wider than 5.5 metres or longer than 35 metres require **3 pilot vehicles**;
- Vehicles equal to or wider than 6 metres or equal to or longer than 45 metres require an **escort vehicle**.

Based on the above, the transformer delivery requires 2 pilot vehicles and the combined switchgear and control building requires 3 pilot vehicles when travelling during the day time.

10.1.3 Night time

For vehicles travelling during the night time the following requirements apply:

- Vehicles wider than 3.2 metres or longer than 26 metres require **1 pilot vehicle**;
- Vehicles wider than 3.5 metres or longer than 30 metres require **2 pilot vehicles**;
- Vehicles wider than 5.5 metres or longer than 35 metres require **3 pilot vehicles**;
- Vehicles equal to or wider than 6 metres or equal to or longer than 45 metres require an **escort vehicle**.

Based on the above, the transformer delivery requires 2 pilot vehicles and the combined switchgear and control building requires 3 pilot vehicles when travelling during the night time.

11 TIMING RESTRICTIONS

The following timing restrictions apply along the proposed OSOM vehicle route.

- **Princes Motorway:** Vehicles or combinations exceeding 3.5 metres wide or 25.0 metres long are not permitted to travel between 8:00am and sunset on weekends or state-wide public holidays.
- **Hume Motorway/Highway:** 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 state-wide public holidays between the M5/M7 interchange at Prestons and the Illawarra Highway at Suttons Forest. Vehicles exceeding 3 m wide are not permitted to travel after 4:00 pm on Sundays or state-wide public holidays.

12 GENERAL MITIGATION MEASURES

Having regard to the assessments contained within this report, it is recommended that the post-consent TMP and NHVR permit include the following mitigation measures to manage OSOM vehicle impacts.

- **Timing of movements:** OSOM movements will, where practicable, be scheduled outside of known peak traffic periods, including weekday commuter peaks, school start and finish times, mining or industrial shift changeover periods, and major local events. Night-time movements will be prioritised where permitted to minimise interaction with general traffic. Travel along Princes Motorway and Hume Motorway/Highway will be restricted to avoid time restrictions listed in Section 11.
- **School Bus Routes:** The proposed OSOM route is generally confined to motorways and highways, therefore impacts to school bus routes are expected to be relatively minor. Deliveries should be scheduled to avoid travelling through built-up areas such as Wollongong and Wagga Wagga during school pick-up and drop-off periods to minimise the impacts.
- **Harvest Periods and Agricultural Activity:** Portions of the route traverse rural and agricultural areas where seasonal harvest activity may occur. OSOM movements will avoid peak harvest periods where practicable, or implement traffic control measures and pull-over opportunities to manage interactions with agricultural machinery and increased rural traffic.
- **Traffic Control:** Temporary traffic control arrangements will be implemented at constrained locations and pinch points to safely manage opposing and following traffic during manoeuvres.
- **Pilot and Escort Vehicles:** OSOM vehicles will be accompanied by the required number of accredited pilot vehicles in accordance with TfNSW and NHVR requirements.
- **Use of Pull-over Bays and Rest Areas:** Identified pull-over bays and rest areas will be utilised to allow queued traffic to pass the OSOM vehicle, particularly on rural roads with limited overtaking opportunities.
- **Community and Stakeholder Notification:** Where required, advance notification of OSOM movements will be provided to relevant stakeholders, including councils, emergency services and adjacent landowners, particularly where short-term access constraints or traffic delays may be expected.

13 SUMMARY AND CONCLUSIONS

Based on the foregoing assessment, the proposed OSOM haulage route is considered suitable to accommodate the identified high-risk OSOM vehicle movements associated with the Griffith BESS project. The route primarily utilises roads approved under the NSW Oversize Overmass (OSOM) Load Carrying Vehicles Network and has been developed based on geometrical and height constraints.

Swept path assessments undertaken at identified pinch points demonstrate that the proposed OSOM vehicles can be physically accommodated along the route without the need for permanent road infrastructure upgrades. Temporary removal of existing signage will be required at five locations to facilitate safe vehicle passage.

A detailed height clearance assessment will be undertaken at locations where available vertical clearance is within 200 mm of the maximum OSOM vehicle height of 5.3 m. This assessment will be completed as part of the post-consent Traffic Management Plan (TMP) to confirm that all overhead structures can be safely traversed prior to transport.

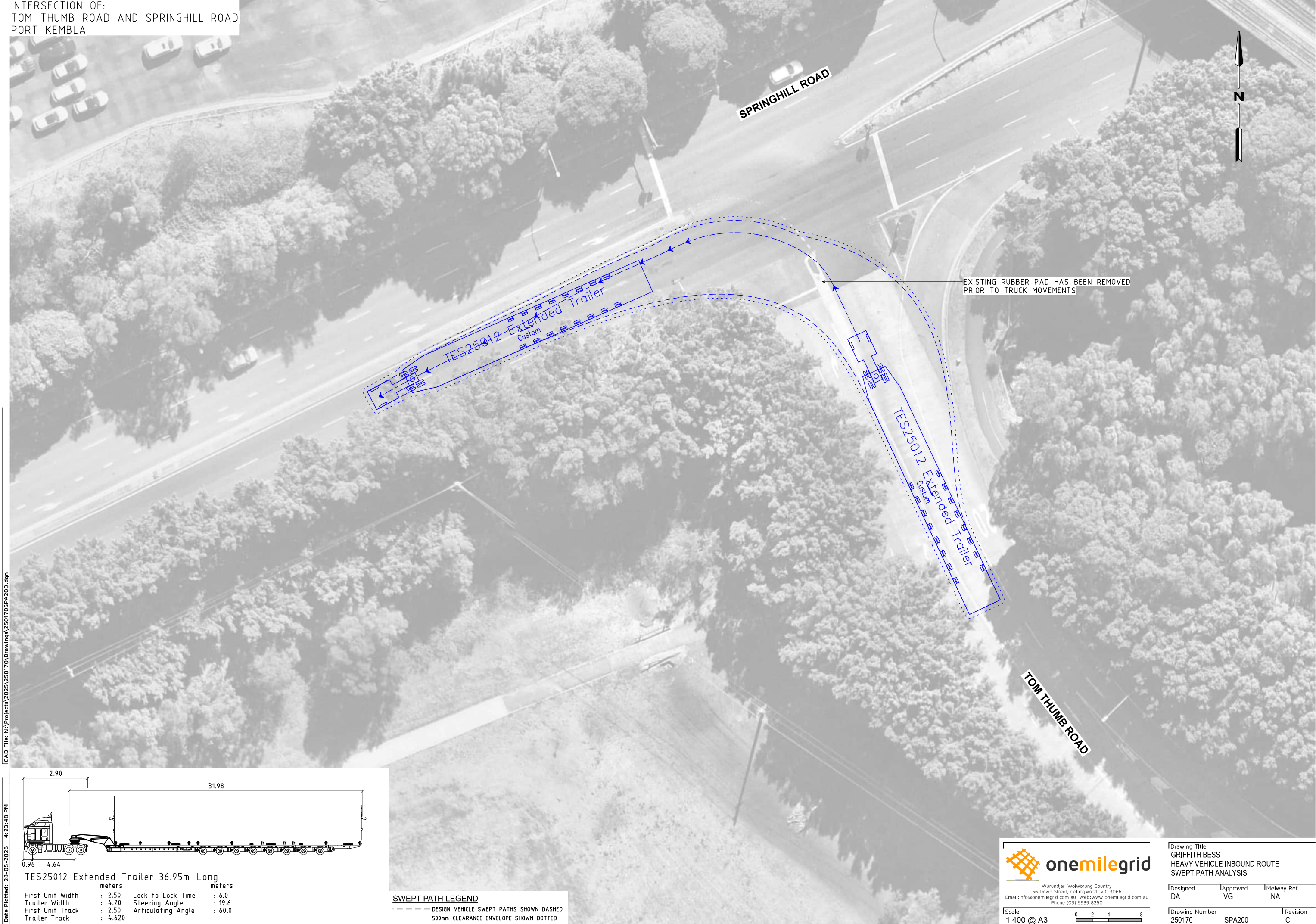
TfNSW bridge assessments have confirmed that the proposed route is suitable for the nominated OSOM vehicle configurations and axle loadings, subject to standard permit and approval requirements. Third-party asset approvals will be obtained as required through the NHVR permitting process.

Given the interface with the Mount Ousley Interchange project, the transport operator will liaise with TfNSW at least two months prior to commencement of OSOM movements to confirm network availability, construction staging, intersection alignment and any additional requirements at the time of transport.

Attachment A: Swept Path Diagrams

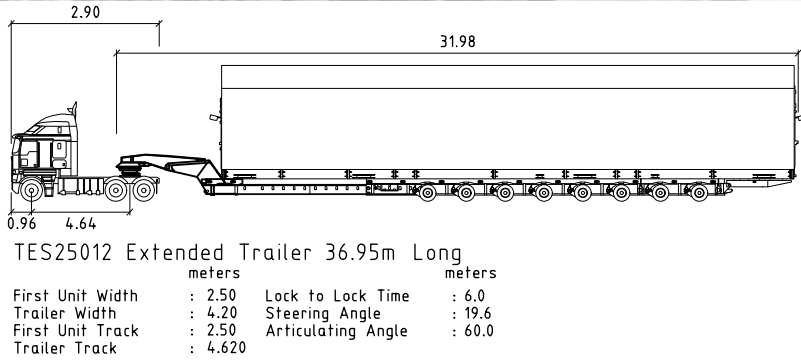


INTERSECTION OF:
TOM THUMB ROAD AND SPRINGHILL ROAD
PORT KEMBLA



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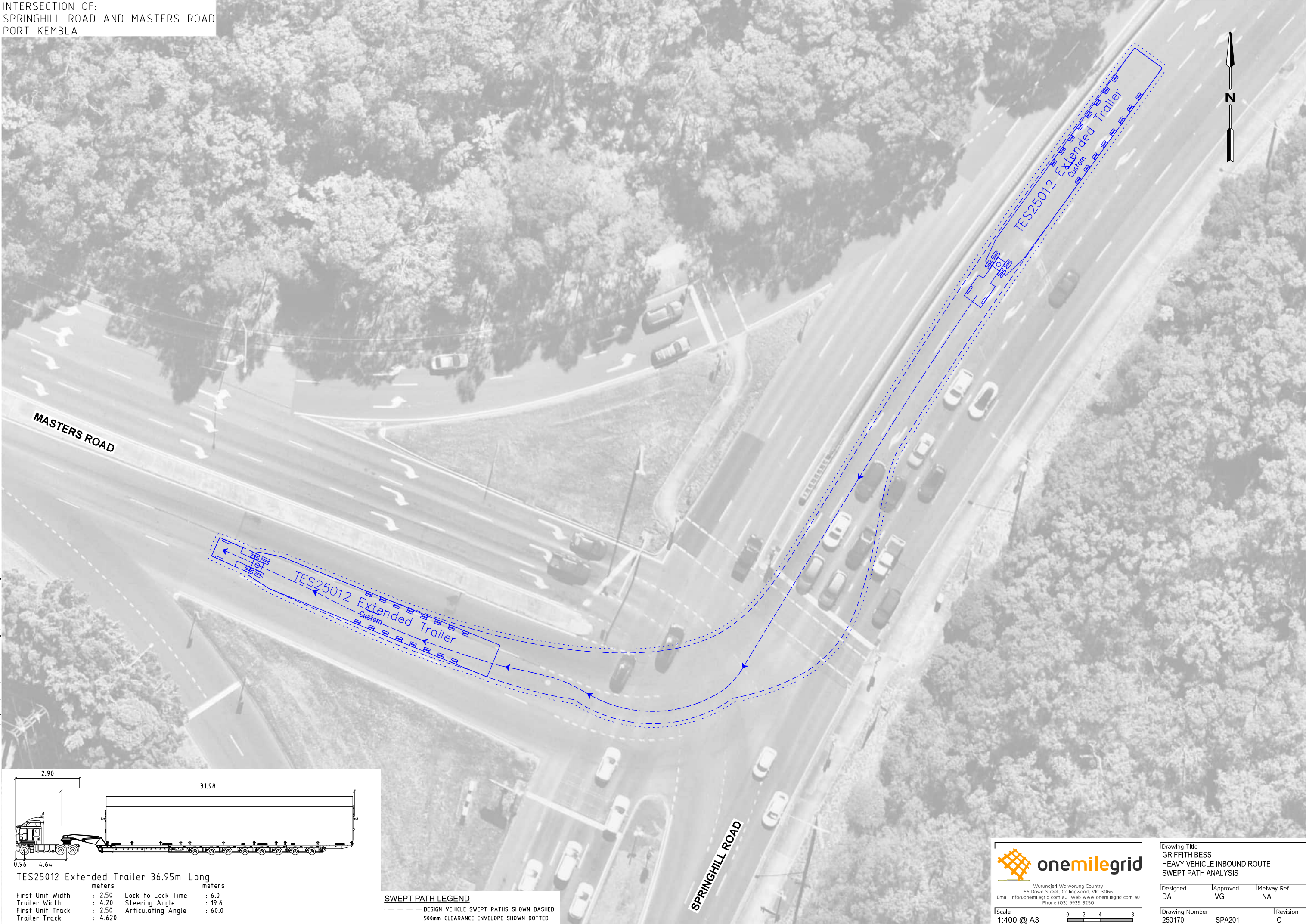
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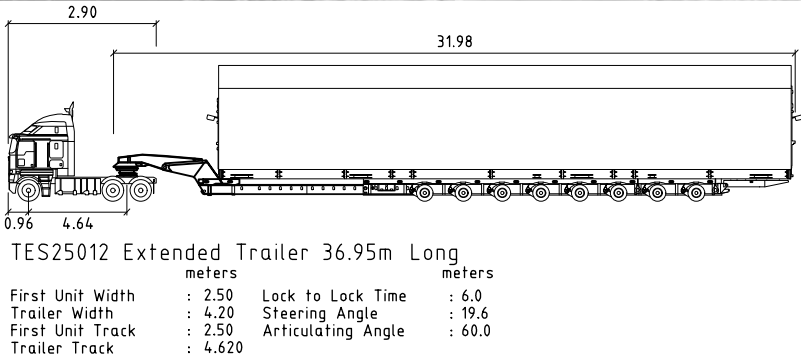
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Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170	SPA200	Revision C

INTERSECTION OF:
SPRINGHILL ROAD AND MASTERS ROAD
PORT KEMBLA



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Date Plotted: 28-05-2026 11:05:21 AM



SWEPT PATH LEGEND
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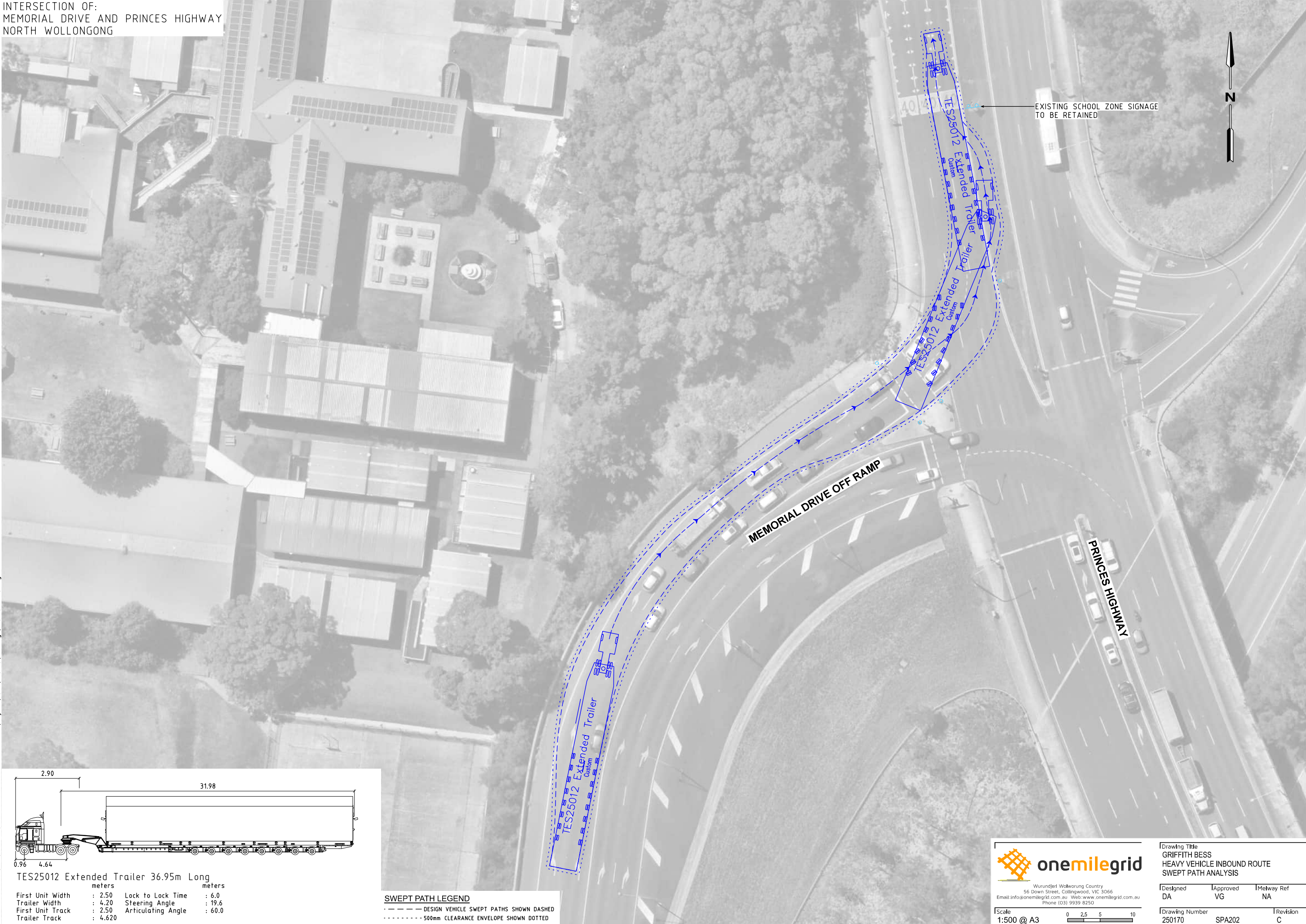
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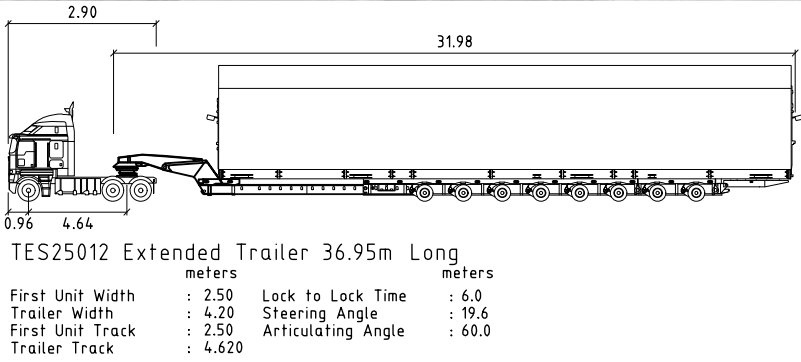
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Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170	SPA201	Revision C

INTERSECTION OF:
MEMORIAL DRIVE AND PRINCES HIGHWAY
NORTH WOLLONGONG



CAD File: N:\Project\2025\250170\Drawings\250170SPA202.dgn

Date Plotted: 28-05-2026 11:06:18 AM



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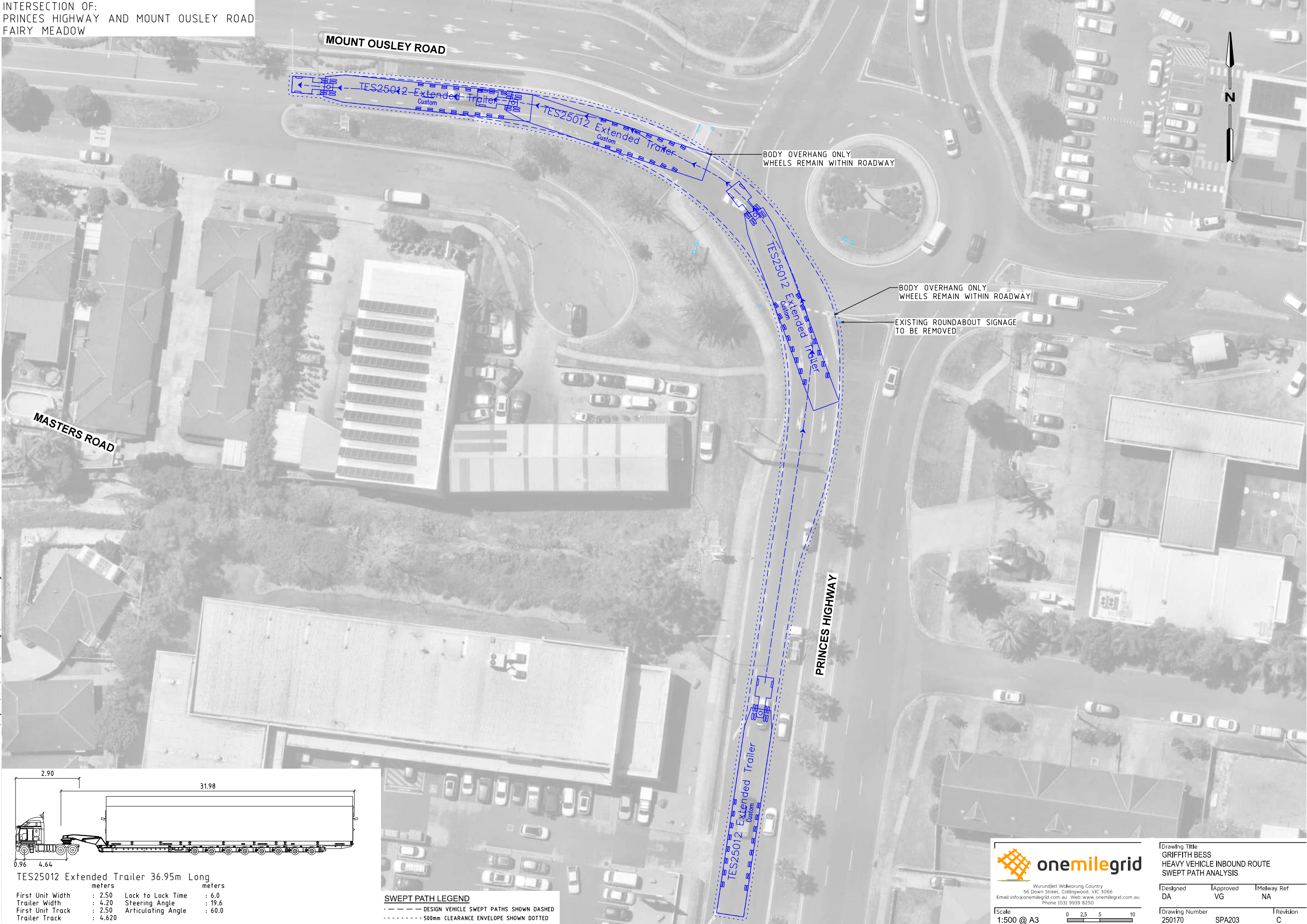
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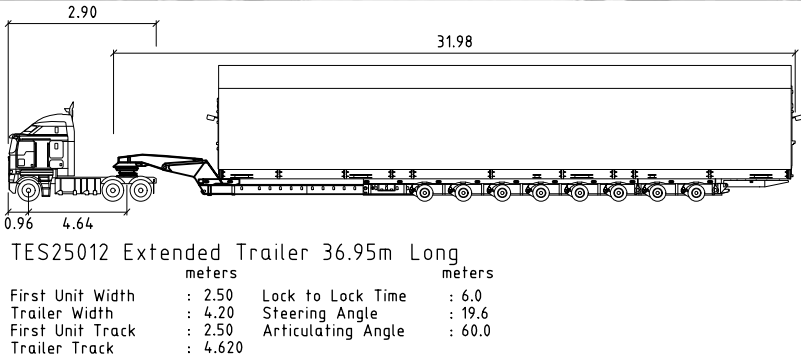
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INTERSECTION OF:
PRINCES HIGHWAY AND MOUNT OUSLEY ROAD
FAIRY MEADOW



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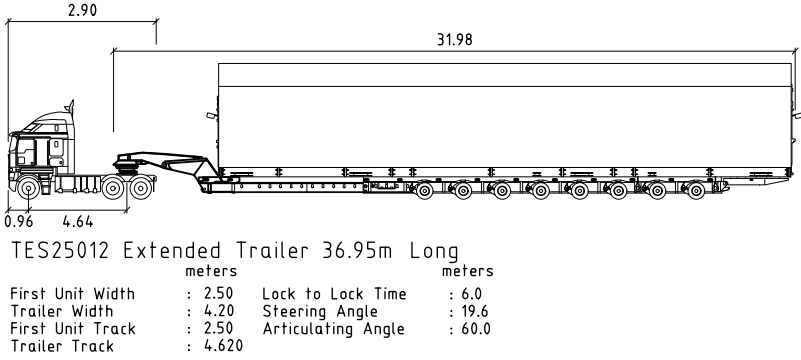
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DA	VG	NA
Drawing Number		Revision
250170		SPA203 C

INTERSECTION OF:
MOUNT OUSLEY ROAD AND GAYNOR AVENUE
MOUNT OUSLEY



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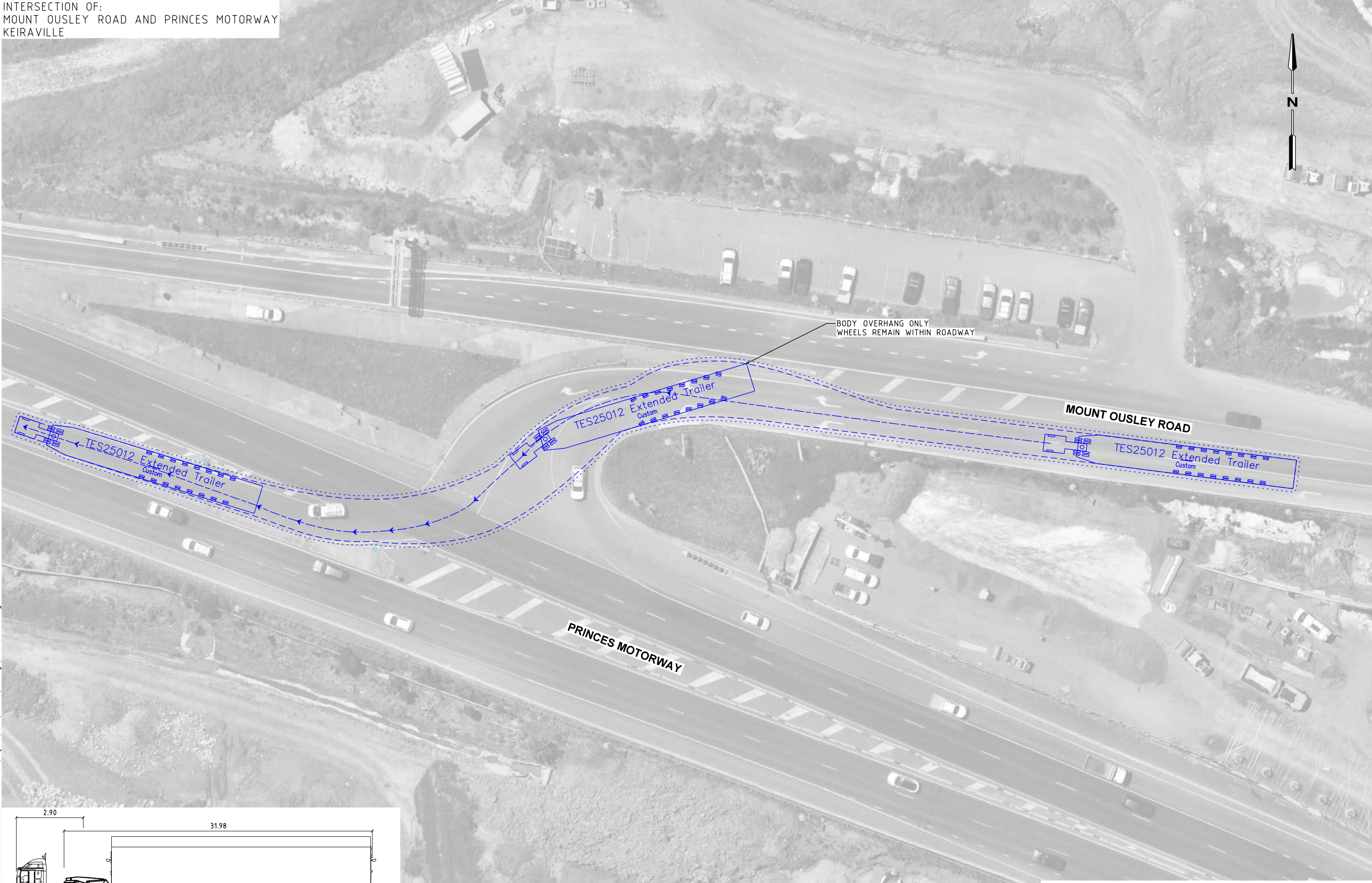
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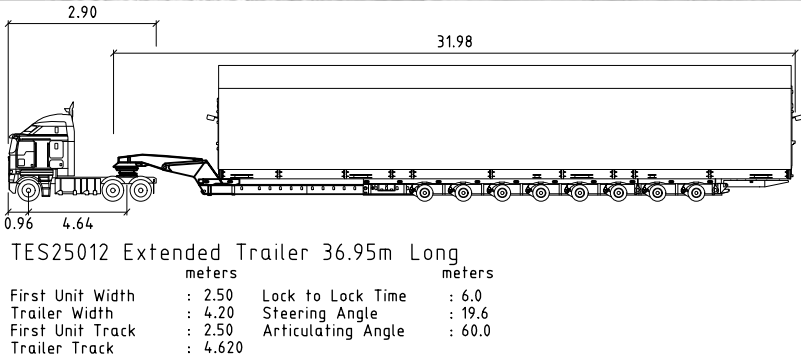
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Drawing Number 250170	SPA204	Revision C

INTERSECTION OF:
MOUNT OUSLEY ROAD AND PRINCES MOTORWAY
KEIRAVILLE



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SWEPT PATH LEGEND
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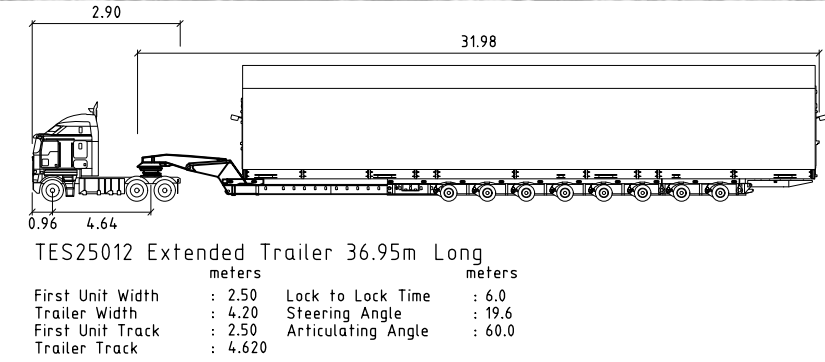
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INTERSECTION OF:
PRINCES MOTORWAY AND PICTON ROAD
CATARACT



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- - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
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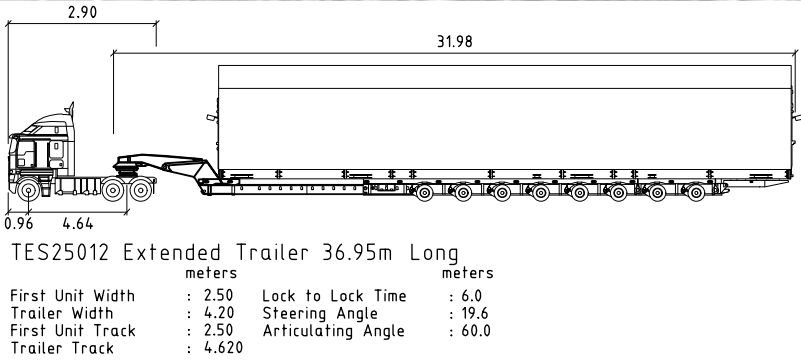
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Drawing Number 250170	SPA206	Revision C

INTERSECTION OF:
PICKTON ROAD AND HUME MOTORWAY
WILTON



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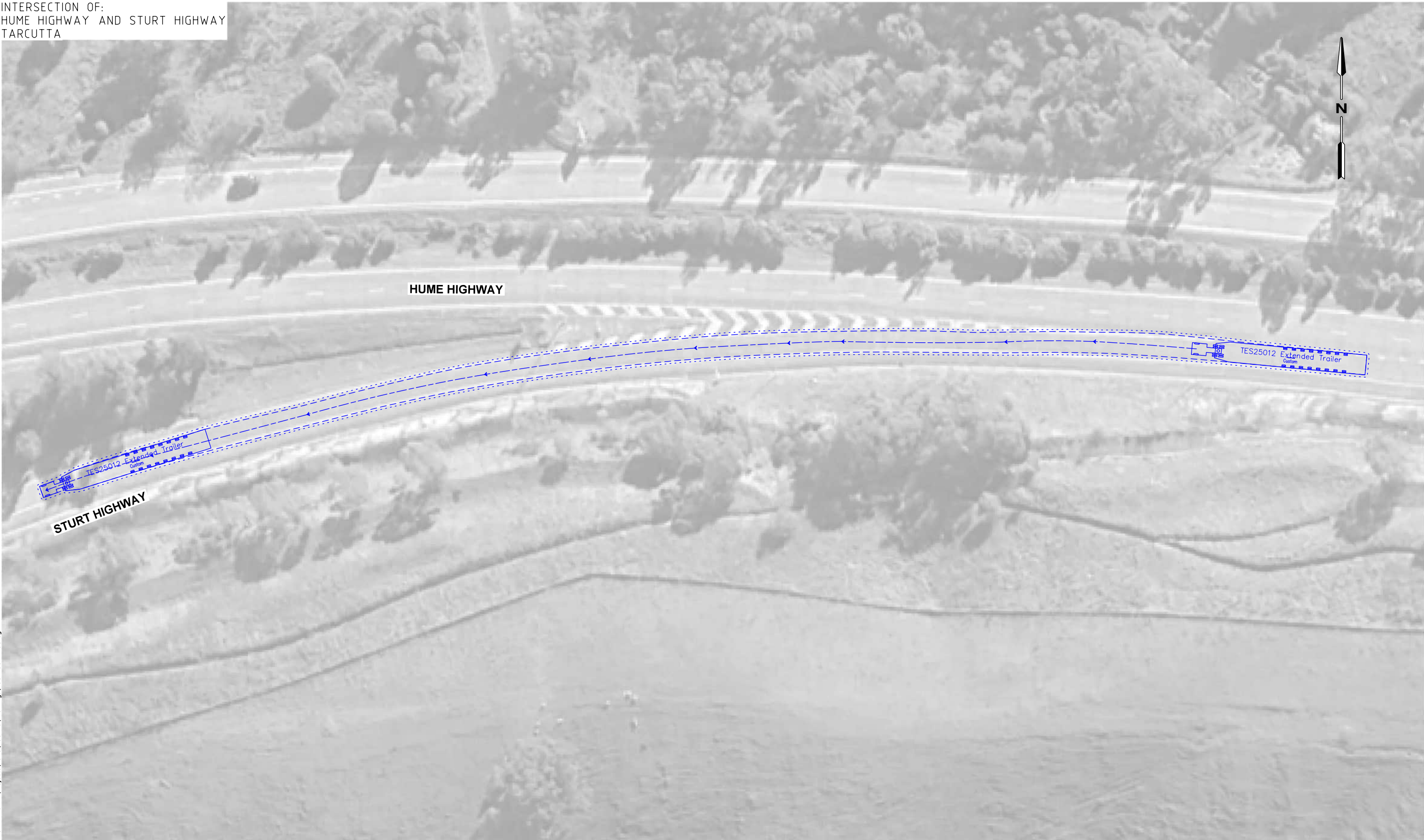
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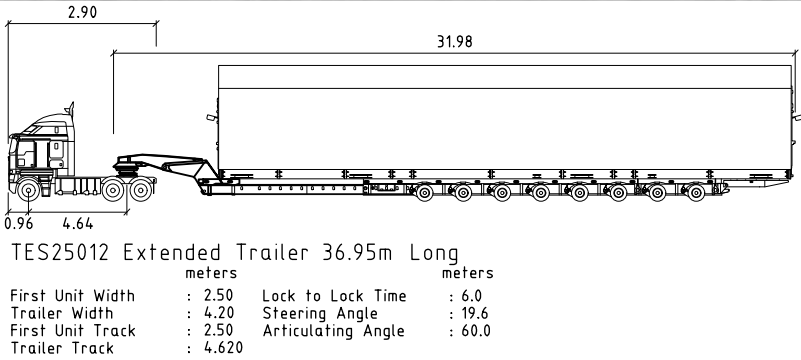
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INTERSECTION OF:
HUME HIGHWAY AND STURT HIGHWAY
TARCUTTA



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Date Plotted: 28-05-2026 11:10:27 AM



SWEPT PATH LEGEND
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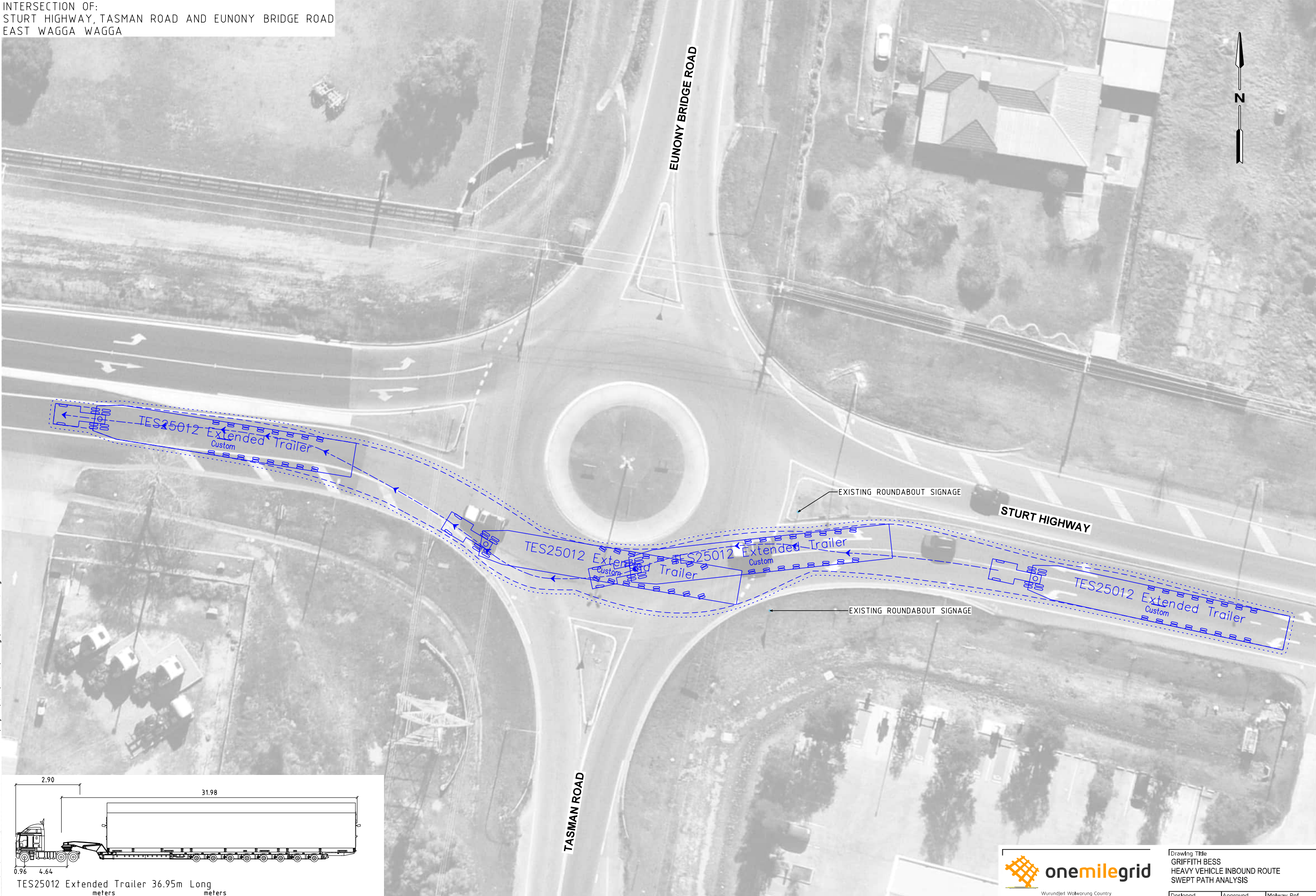
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Drawing Number 250170	SPA208	Revision C

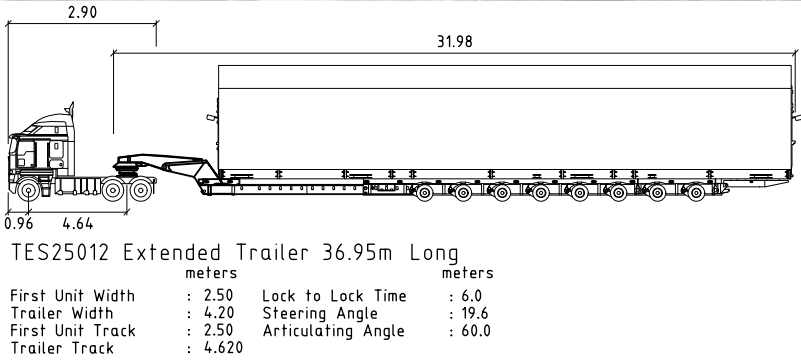
Aerial provided by
Google Earth Pro

INTERSECTION OF:
STURT HIGHWAY, TASMAN ROAD AND EUNONY BRIDGE ROAD
EAST WAGGA WAGGA



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Date Plotted: 28-05-2026 11:10:54 AM



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- - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- - - - - 500mm CLEARANCE ENVELOPE SHOWN DOTTED

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Aerial photography provided by Nearmap



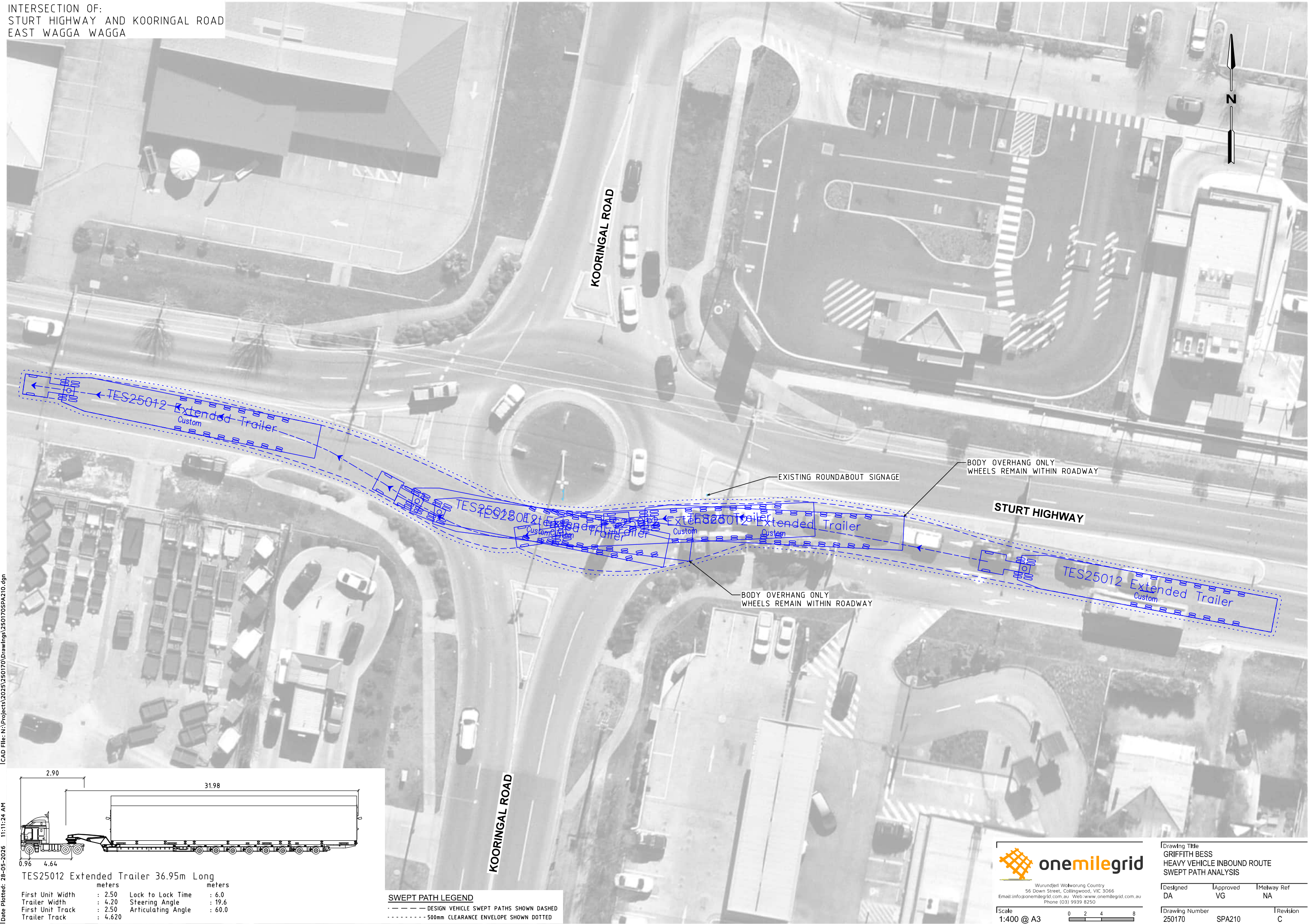
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Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEEP PATH ANALYSIS		
Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170	Revision C	

INTERSECTION OF:
STURT HIGHWAY AND KOORINGAL ROAD
EAST WAGGA WAGGA

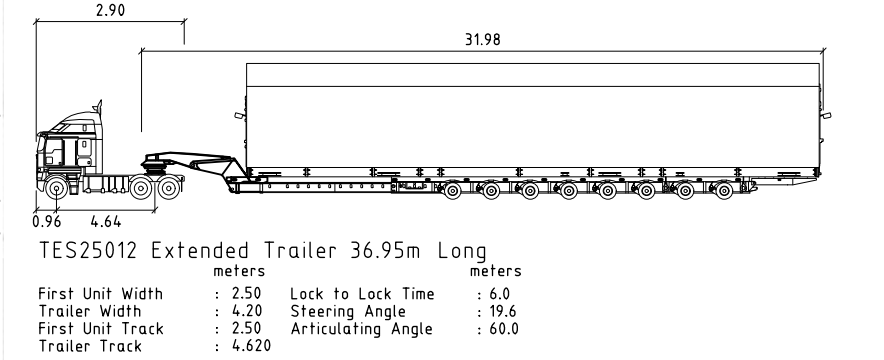
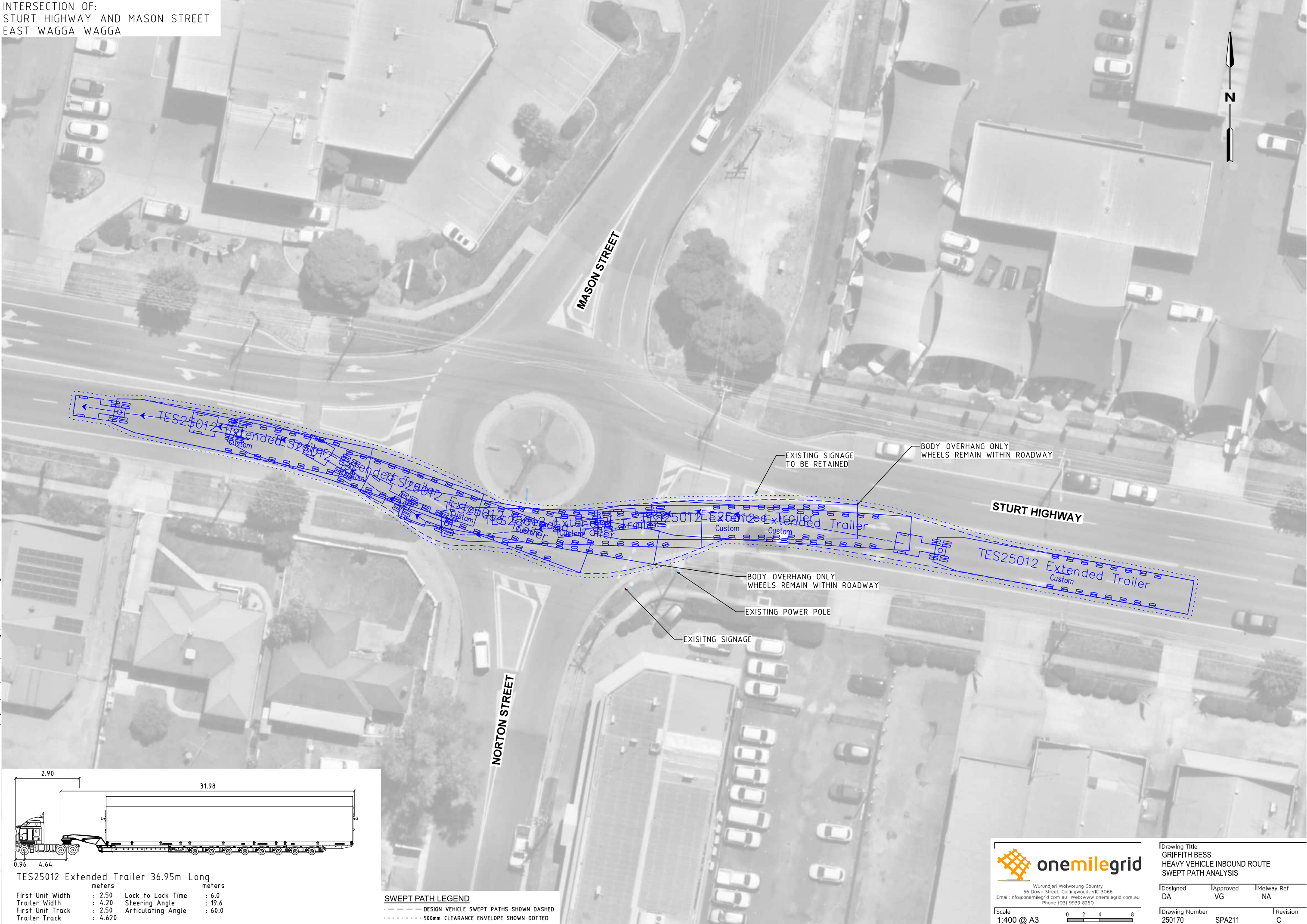


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INTERSECTION OF:
STURT HIGHWAY AND MASON STREET
EAST WAGGA WAGGA



SWEPT PATH LEGEND
--- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
----- 500mm CLEARANCE ENVELOPE SHOWN DOTTED

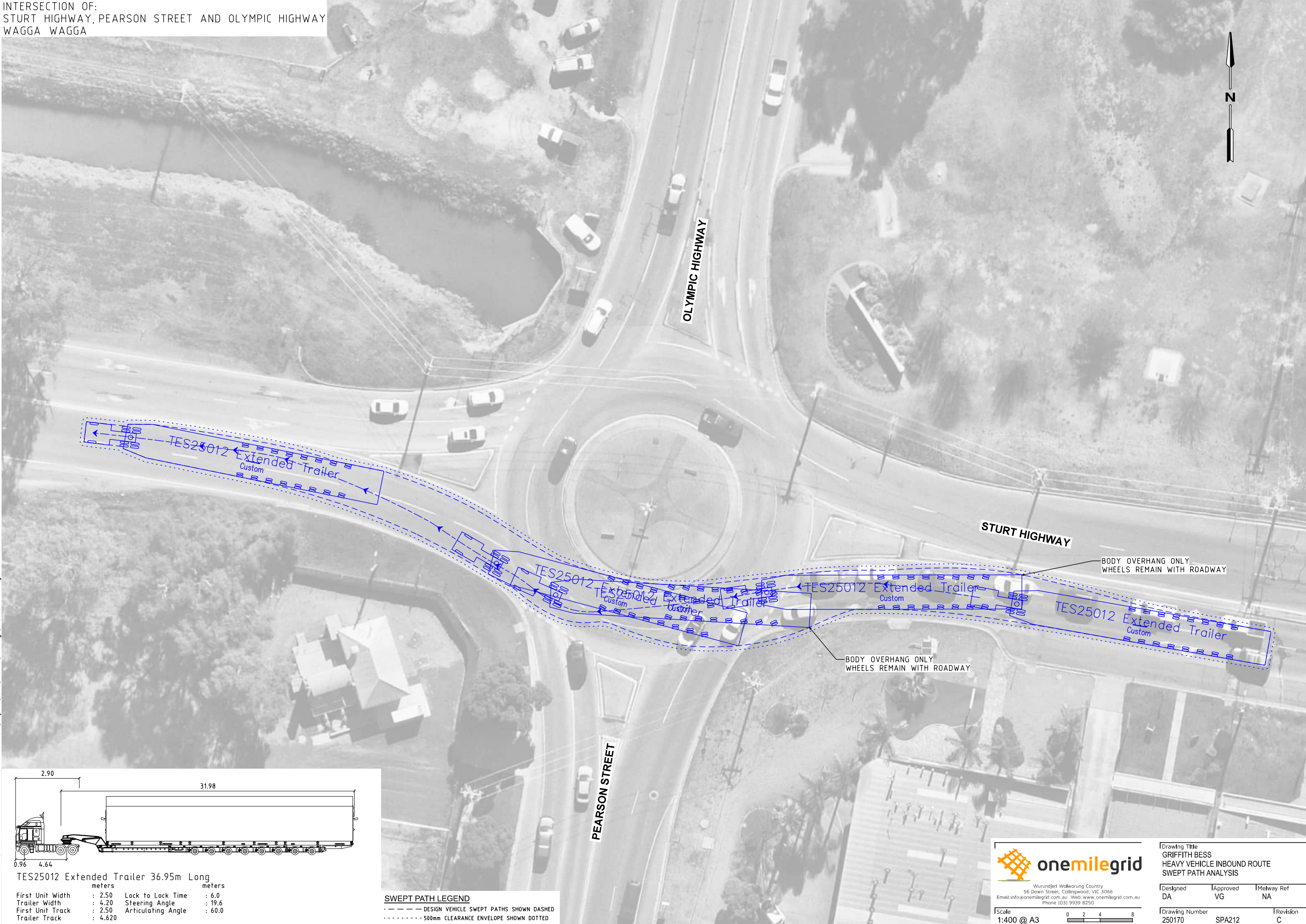
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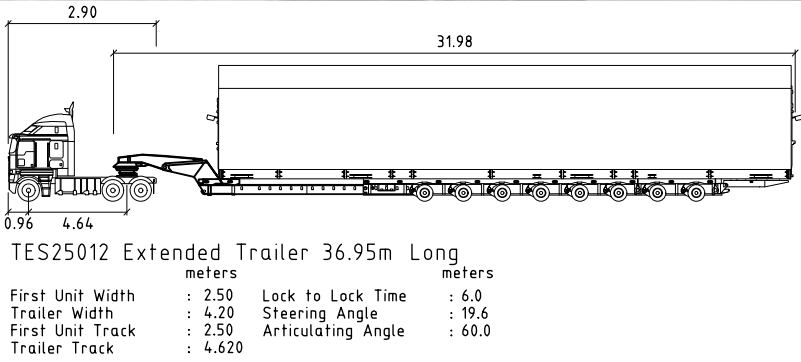
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Designed DA	Approved VG	Melway Ref NA
Drawing Number 250170	SPA211	Revision C

INTERSECTION OF:
STURT HIGHWAY, PEARSON STREET AND OLYMPIC HIGHWAY
WAGGA WAGGA



CAD File: N:\Project\2025\250170\Drawings\250170SPA212.dgn

Date Plotted: 28-05-2026 11:12:35 AM



SWEPT PATH LEGEND
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..... 500mm CLEARANCE ENVELOPE SHOWN DOTTED



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Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEEP PATH ANALYSIS		
Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170	SPA212	Revision C

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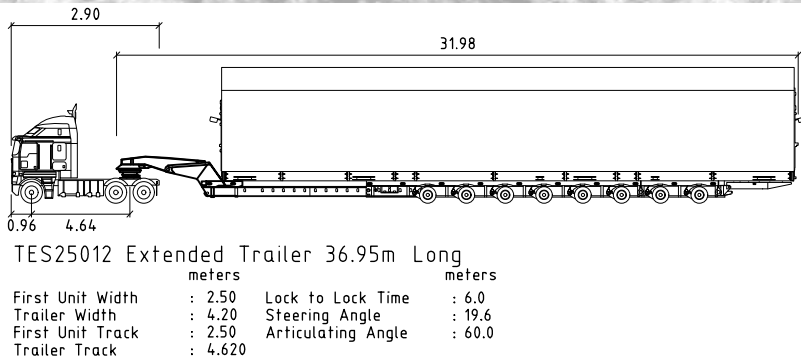
Aerial Photography
Aerial photography provided by Nearmap

INTERSECTION OF:
STURT HIGHWAY AND NEWELL HIGHWAY
GILLENBAH



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Aerial Photography
Aerial photography provided by Nearmap

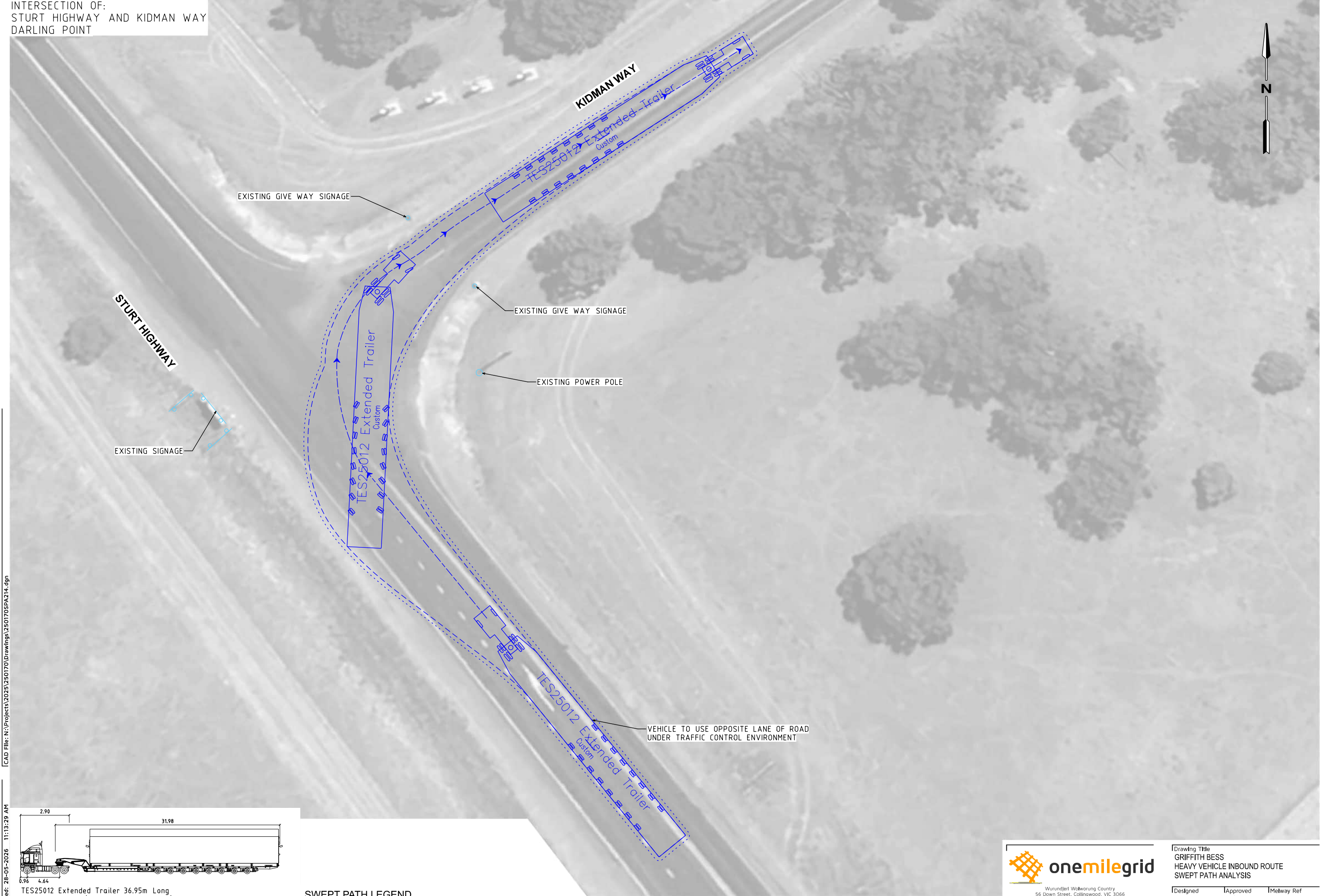

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Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
Phone: (03) 9939 8250

Scale
1:400 @ A3

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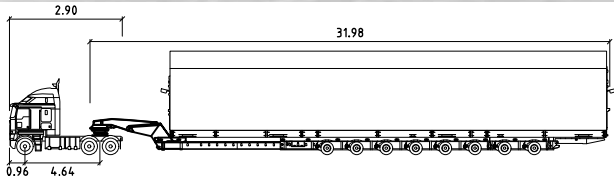
Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEEP PATH ANALYSIS		
Designed DA	Approved VG	Melway Ref NA
Drawing Number 250170	SPA213	Revision C

INTERSECTION OF:
STURT HIGHWAY AND KIDMAN WAY
DARLING POINT



CAD File: N:\Project\2025\250170\Drawings\250170SPA214.dgn

Date Plotted: 28-05-2026 11:13:29 AM



TES25012 Extended Trailer 36.95m Long	
	metres
First Unit Width	: 2.50
Trailer Width	: 4.20
First Unit Track	: 2.50
Trailer Track	: 4.620
Lock to Lock Time	: 6.0
Steering Angle	: 19.6
Articulating Angle	: 60.0

SWEPT PATH LEGEND

- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

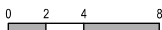
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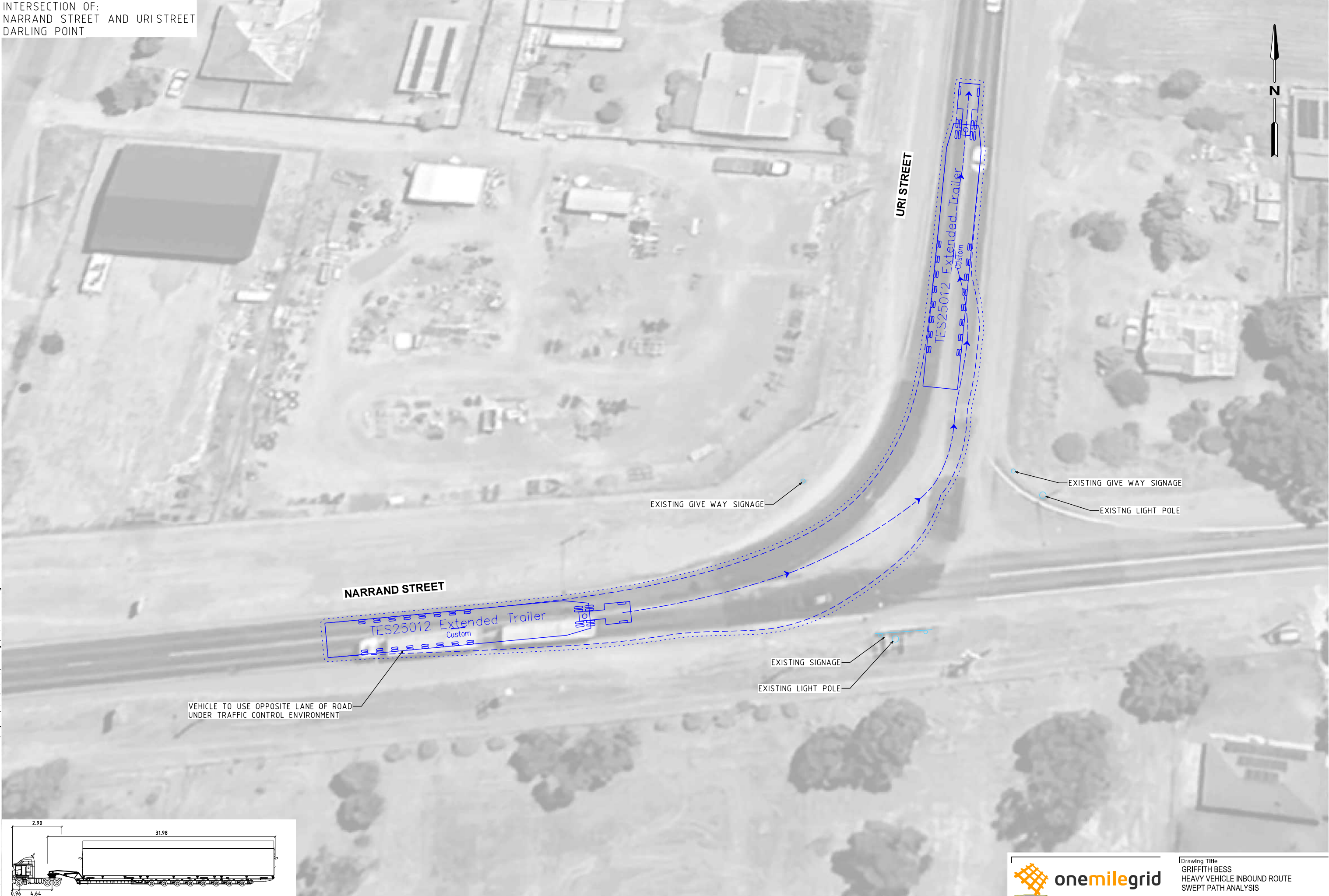
Aerial photography provided
by Google Earth Pro

Scale
1:400 @ A3



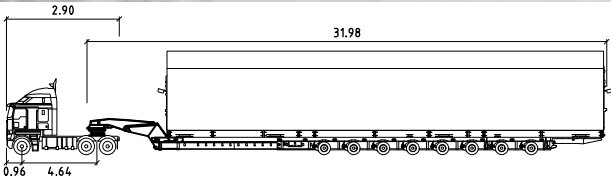
Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEEP PATH ANALYSIS		
Designed DA	Approved VG	Melway Ref NA
Drawing Number 250170	SPA214	Revision C

INTERSECTION OF:
NARRAND STREET AND URI STREET
DARLING POINT



CAD File: N:\Project\2025\250170Drawings\250170SPA215.dgn

Date Plotted: 28-05-2026 11:13:49 AM



TES25012 Extended Trailer 36.95m Long			
	meters		meters
First Unit Width	: 2.50	Lock to Lock Time	: 6.0
Trailer Width	: 4.20	Steering Angle	: 19.6
First Unit Track	: 2.50	Articulating Angle	: 60.0
Trailer Track	: 4.620		

SWEPT PATH LEGEND

- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Aerial photography provided
by Google Earth Pro

Scale
1:400 @ A3

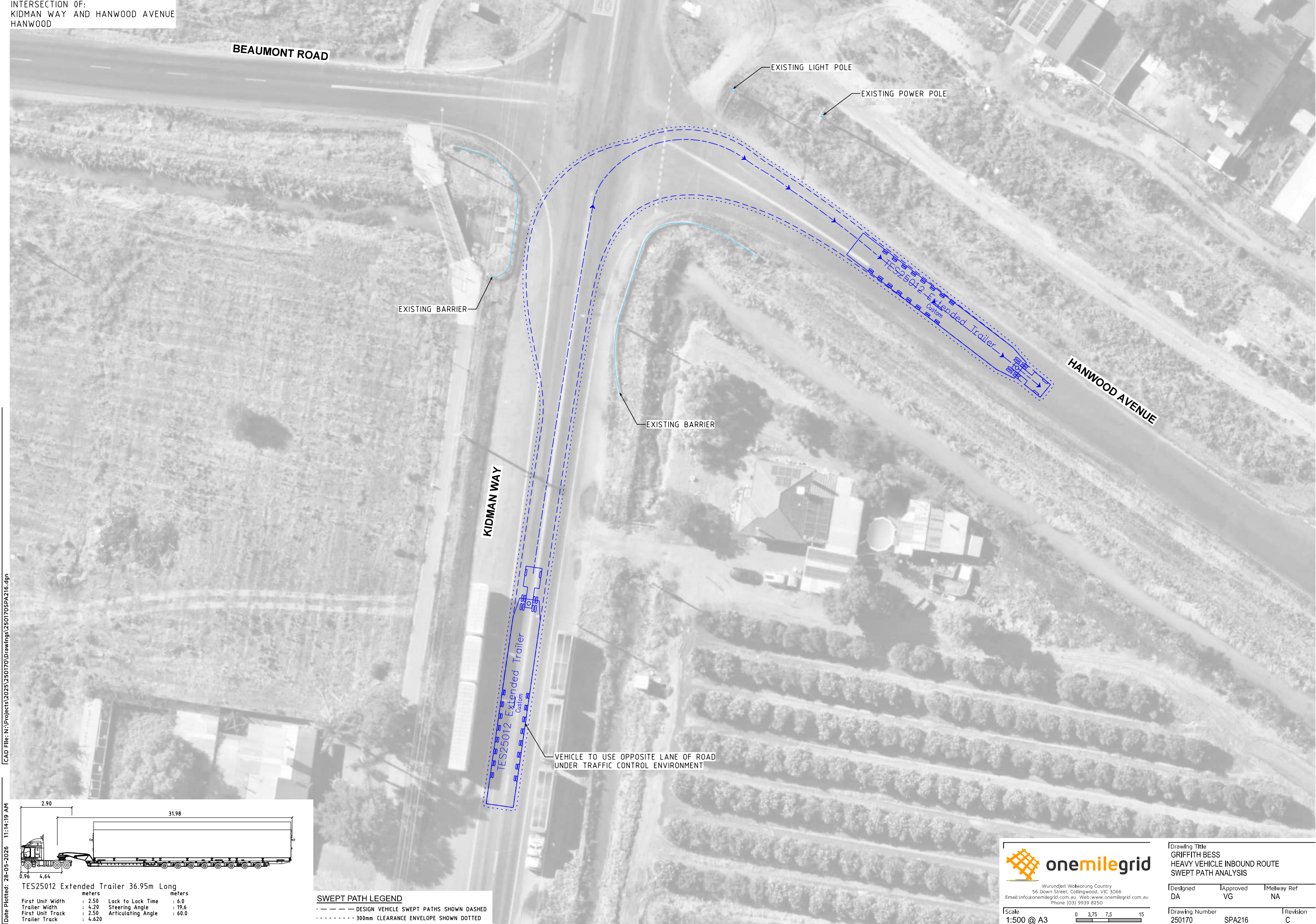


Drawing Title
GRIFFITH BESS
HEAVY VEHICLE INBOUND ROUTE
SWEPT PATH ANALYSIS

Designed DA	Approved VG	Metway Ref NA
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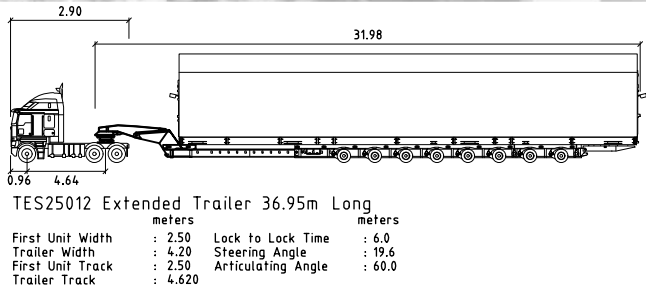
Drawing Number 250170	SPA215	Revision C
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INTERSECTION OF:
KIDMAN WAY AND HANWOOD AVENUE
HANWOOD



CAD File: N:\Project\2025\250170\Drawings\250170SPA216.dgn

Date Plotted: 28-05-2026 11:14:19 AM



SWEPT PATH LEGEND

- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- 300mm CLEARANCE ENVELOPE SHOWN DOTTED

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Aerial Photography
Aerial photography provided by Nearmap

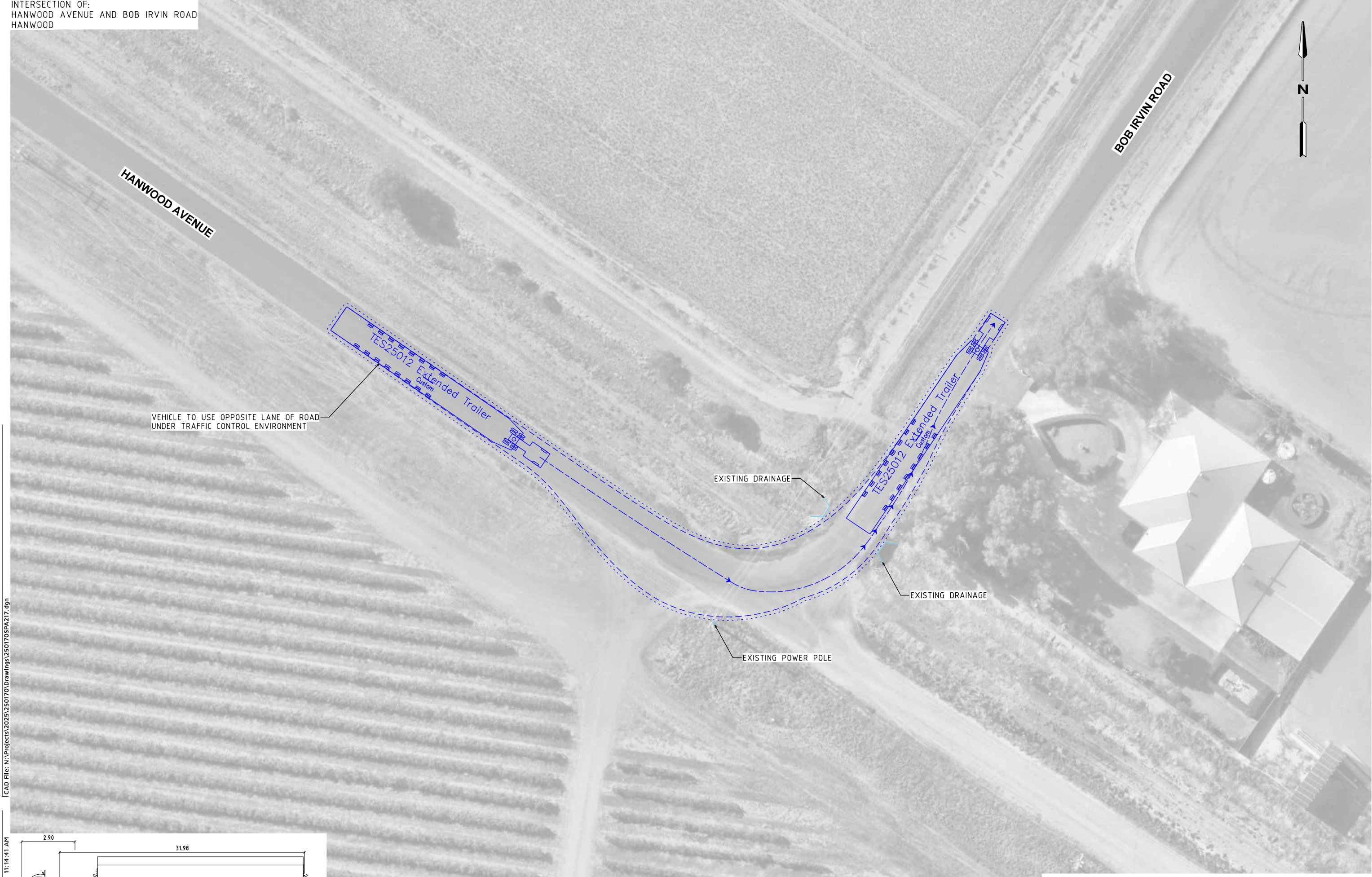
onemilegrid
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Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
Phone (03) 9939 8250

Scale
1:500 @ A3

0 3.75 7.5 15

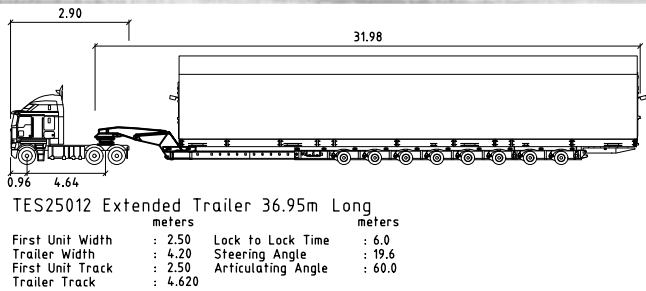
Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEEP PATH ANALYSIS		
Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170	Revision C	

INTERSECTION OF:
HANWOOD AVENUE AND BOB IRVIN ROAD
HANWOOD



CAD File: N:\Project\2025\250170\Drawings\250170SPA217.dgn

Date Plotted: 28-05-2026 11:14:41 AM



SWEPT PATH LEGEND

- DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
- 500mm CLEARANCE ENVELOPE SHOWN DOTTED

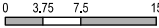
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Aerial Photography
Aerial photography provided by Nearmap



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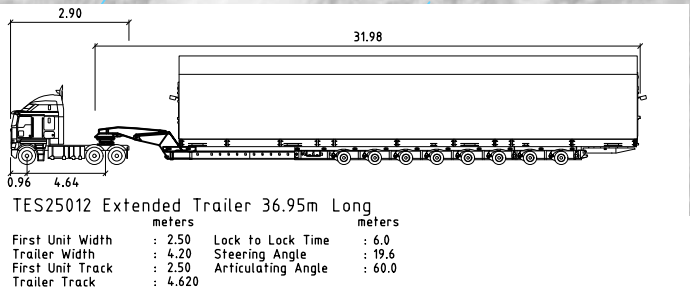
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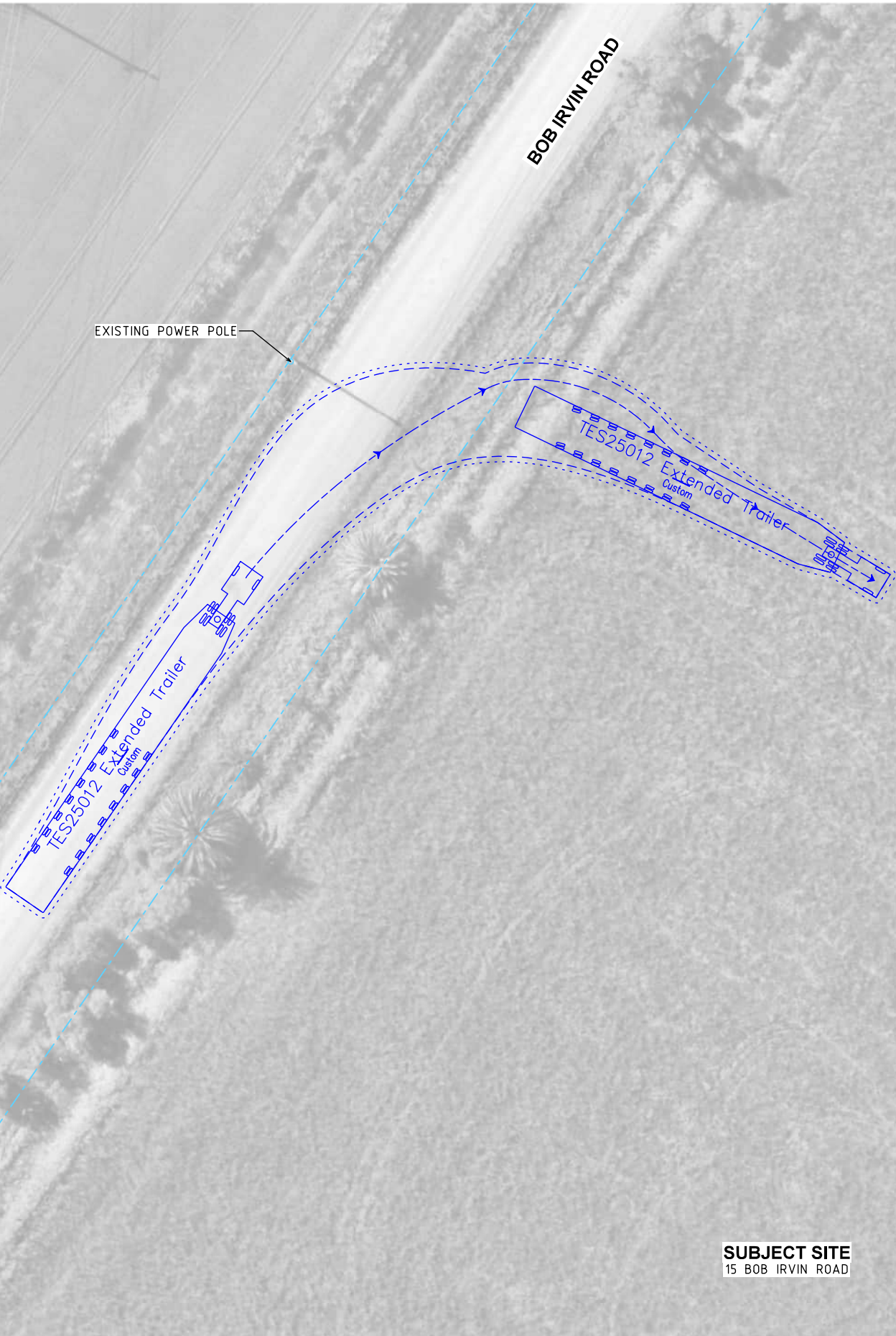
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Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170	SPA217	Revision C

CAD File: N:\Project\2025\250170\Drawings\250170SPA218.dgn

Date Plotted: 28-05-2026 11:15:03 AM



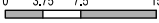
SWEPT PATH LEGEND	
---	DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
----	300mm CLEARANCE ENVELOPE SHOWN DOTTED





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Scale
1:500 @ A3



Drawing Title		
GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEPT PATH ANALYSIS		
Designed	Approved	Metway Ref
DA	VG	NA
Drawing Number		Revision
250170 SPA218		C

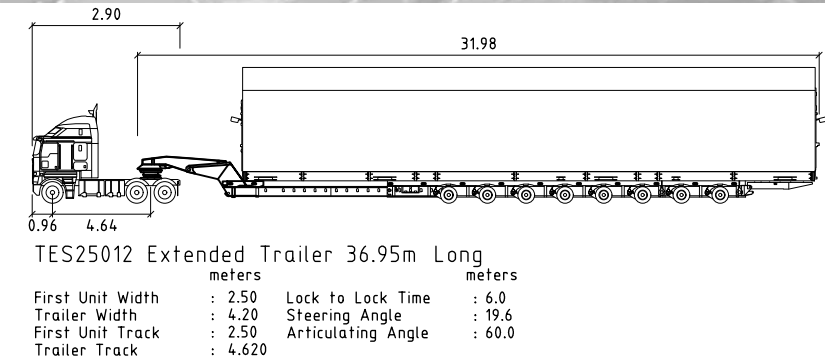
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Aerial Photography
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CAD File: N:\Project\250170\Drawings\250170SPA220.dgn

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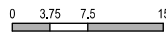
SWEPT PATH LEGEND

--- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
..... 500mm CLEARANCE ENVELOPE SHOWN DOTTED



Aerial provided by
Google Earth Pro

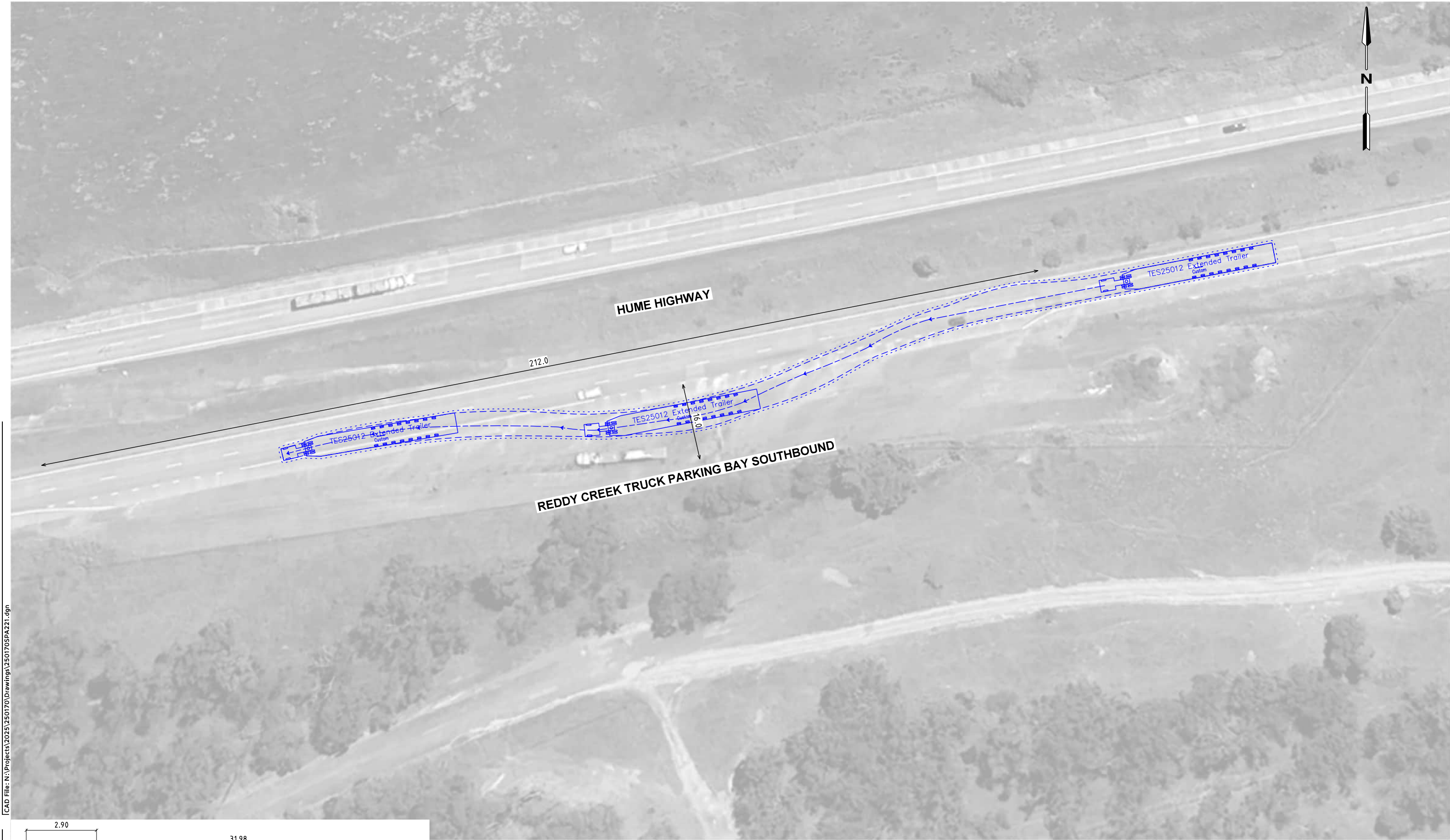
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Drawing Title
GRIFFITH BESS
HEAVY VEHICLE INBOUND ROUTE - PULLOVER MOVEMENTS
SWEPT PATH ANALYSIS

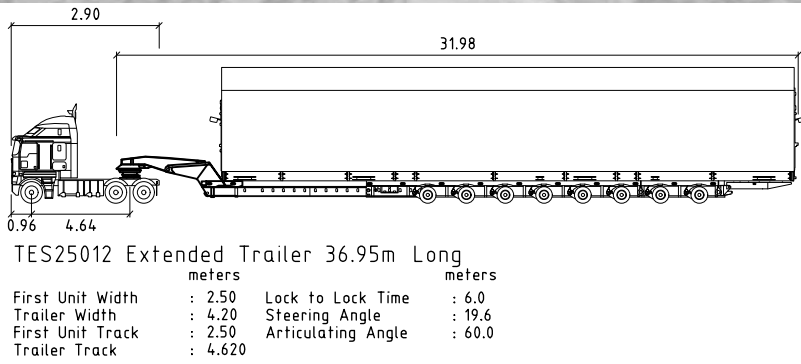
Designed DA	Approved VG	Melway Ref NA

Drawing Number 250170	Revision C
SPA220	



CAD File: N:\Project\2025\250170\Drawings\250170SPA221.dgn

Date Plotted: 28-05-2026 11:15:45 AM



SWEPT PATH LEGEND
- - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- - - - - 500mm CLEARANCE ENVELOPE SHOWN DOTTED

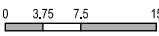
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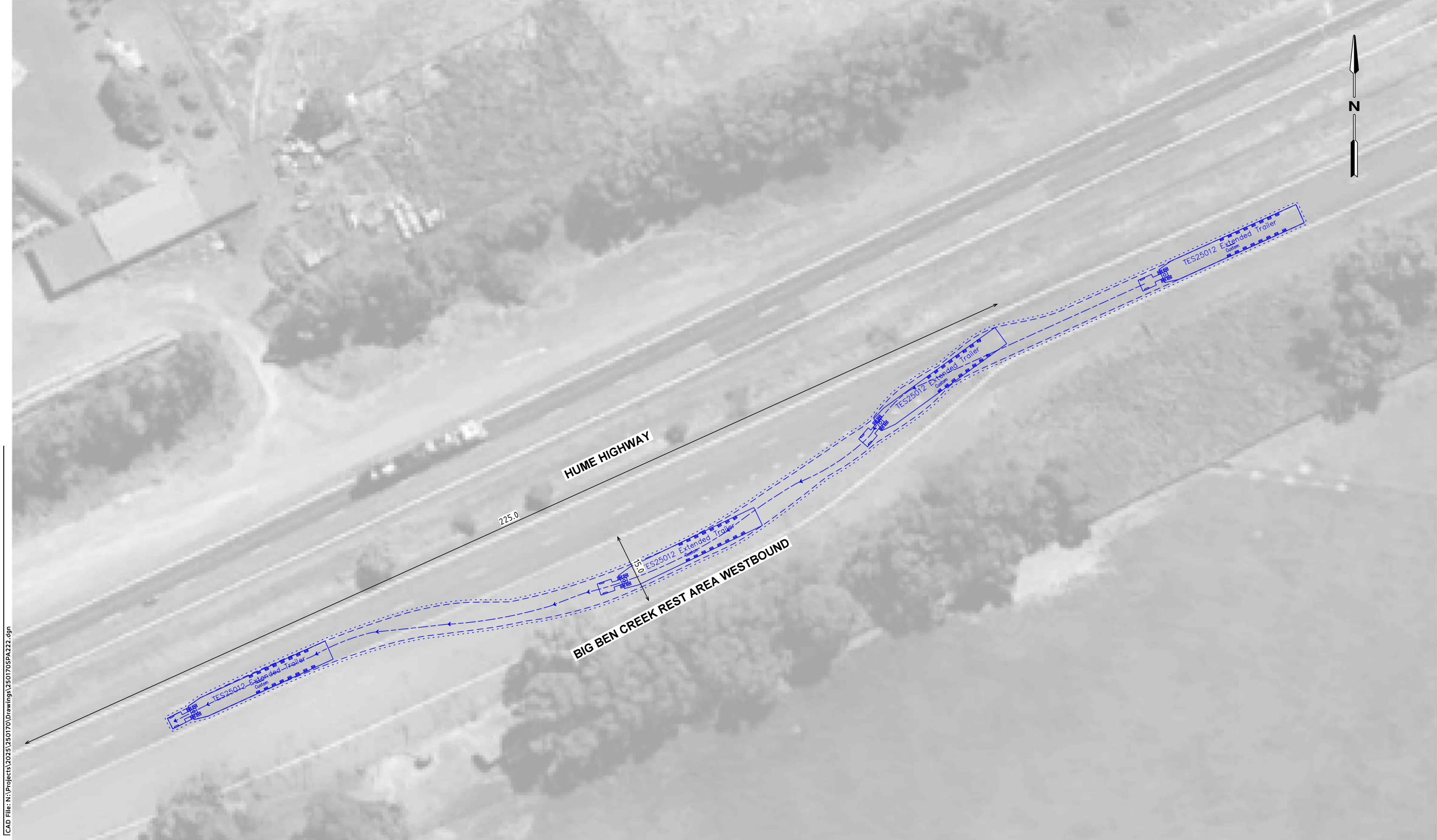


Aerial provided by
Google Earth Pro

Scale
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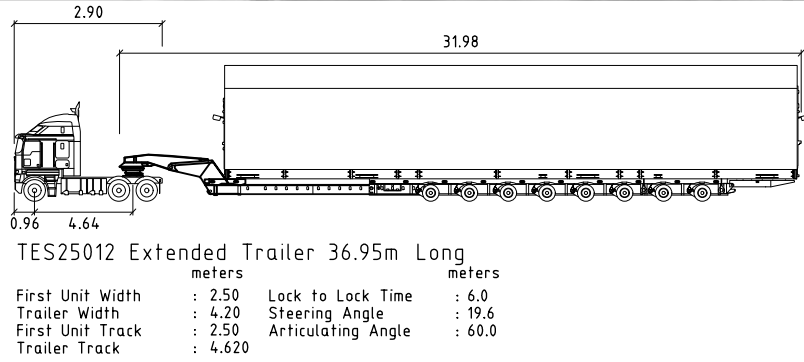


Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE - PULLOVER MOVEMENTS SWEPT PATH ANALYSIS		
Designed DA	Approved VG	Melway Ref NA
Drawing Number 250170	Revision SPA221 C	



CAD File: N:\Project\2025\250170\Drawings\250170SPA222.dgn

Date Plotted: 28-05-2026 11:16:05 AM



SWEPT PATH LEGEND
- - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- - - - - 500mm CLEARANCE ENVELOPE SHOWN DOTTED

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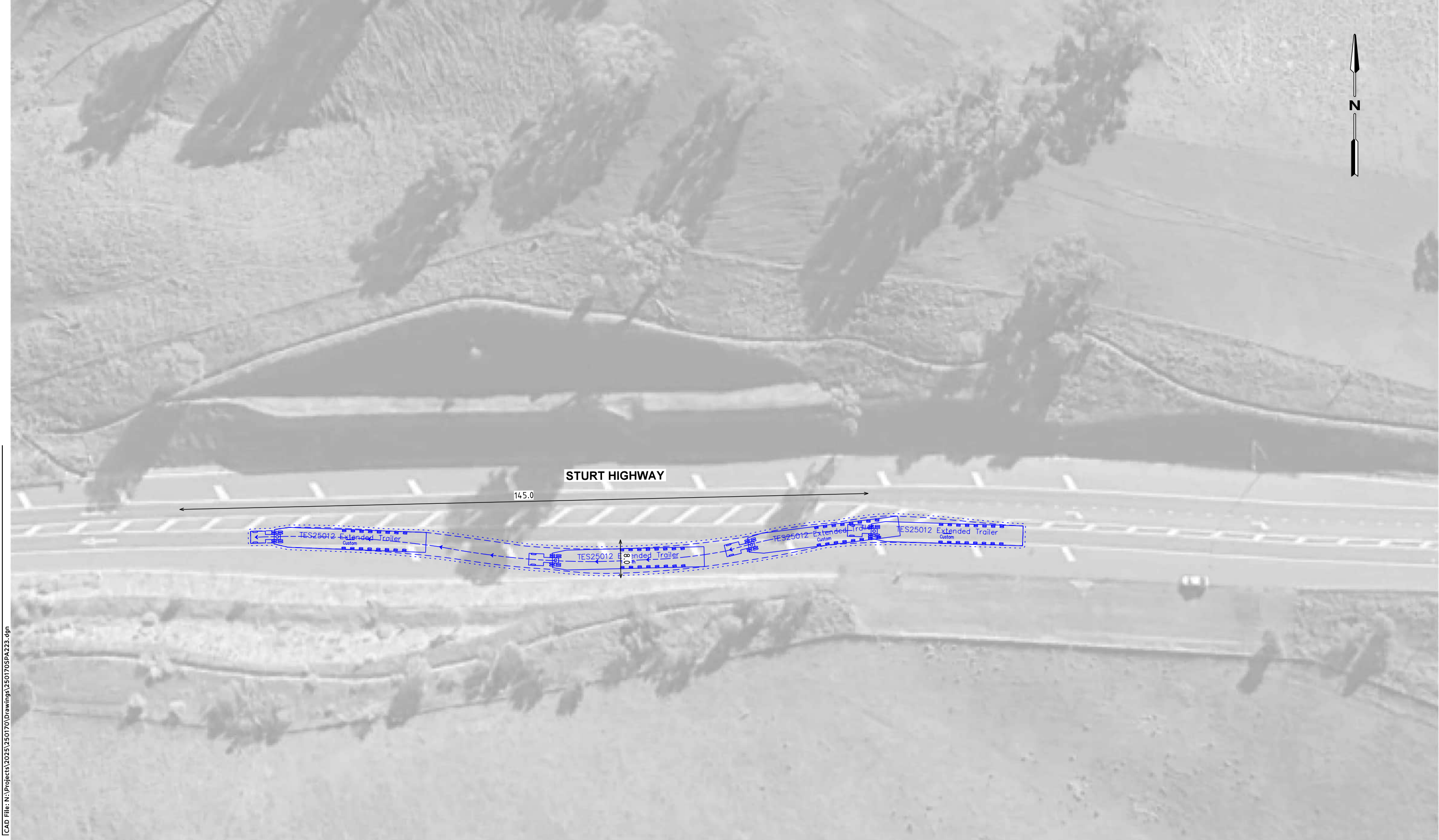

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Phone (03) 9939 8250

Scale
1:750 @ A3

0 3.75 7.5 15

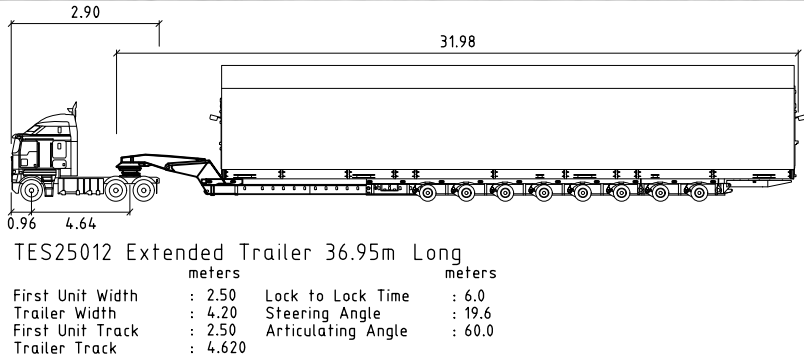
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Designed DA	Approved VG	Melway Ref NA
Drawing Number 250170	SPA222	Revision C

Aerial provided by
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CAD File: N:\Project\2025\250170\Drawings\250170SPA223.dgn

Date Plotted: 28-05-2026 11:16:27 AM



SWEPT PATH LEGEND
- - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
..... 500mm CLEARANCE ENVELOPE SHOWN DOTTED

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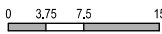
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Scale
1:750 @ A3



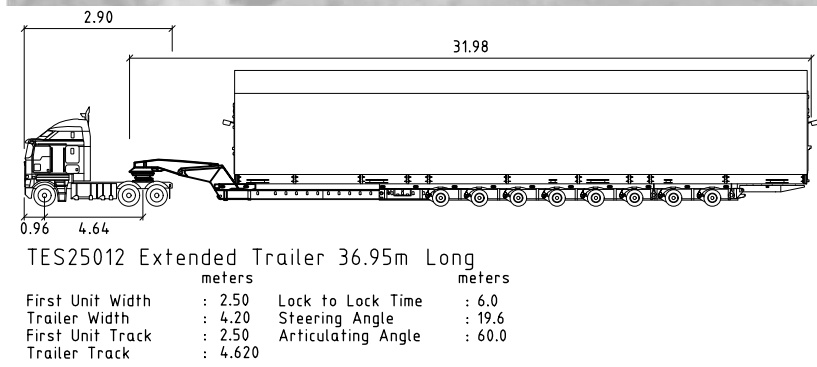
Drawing Title
GRIFFITH BESS
HEAVY VEHICLE INBOUND ROUTE - PULLOVER MOVEMENTS
SWEPT PATH ANALYSIS

Designed DA	Approved VG	Metway Ref NA
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Drawing Number 250170	SPA223	Revision C
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CAD File: N:\Project\2025\250170\Drawings\250170SPA224.dgn

Date Plotted: 28-05-2026 11:16:46 AM



SWEPT PATH LEGEND

- DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
- 500mm CLEARANCE ENVELOPE SHOWN DOTTED

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Phone (03) 9939 8250

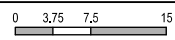
Drawing Title
GRIFFITH BESS
HEAVY VEHICLE INBOUND ROUTE - PULLOVER MOVEMENTS
SWEPT PATH ANALYSIS

Designed	Approved	Metway Ref
DA	VG	NA

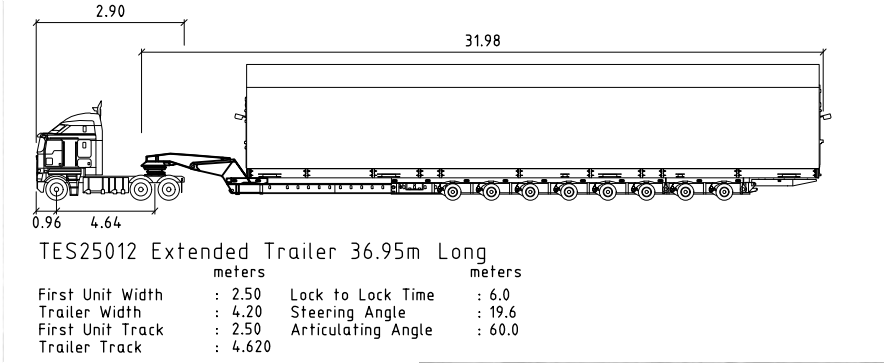
Drawing Number	Revision
250170	SPA224

Aerial provided by
Google Earth Pro

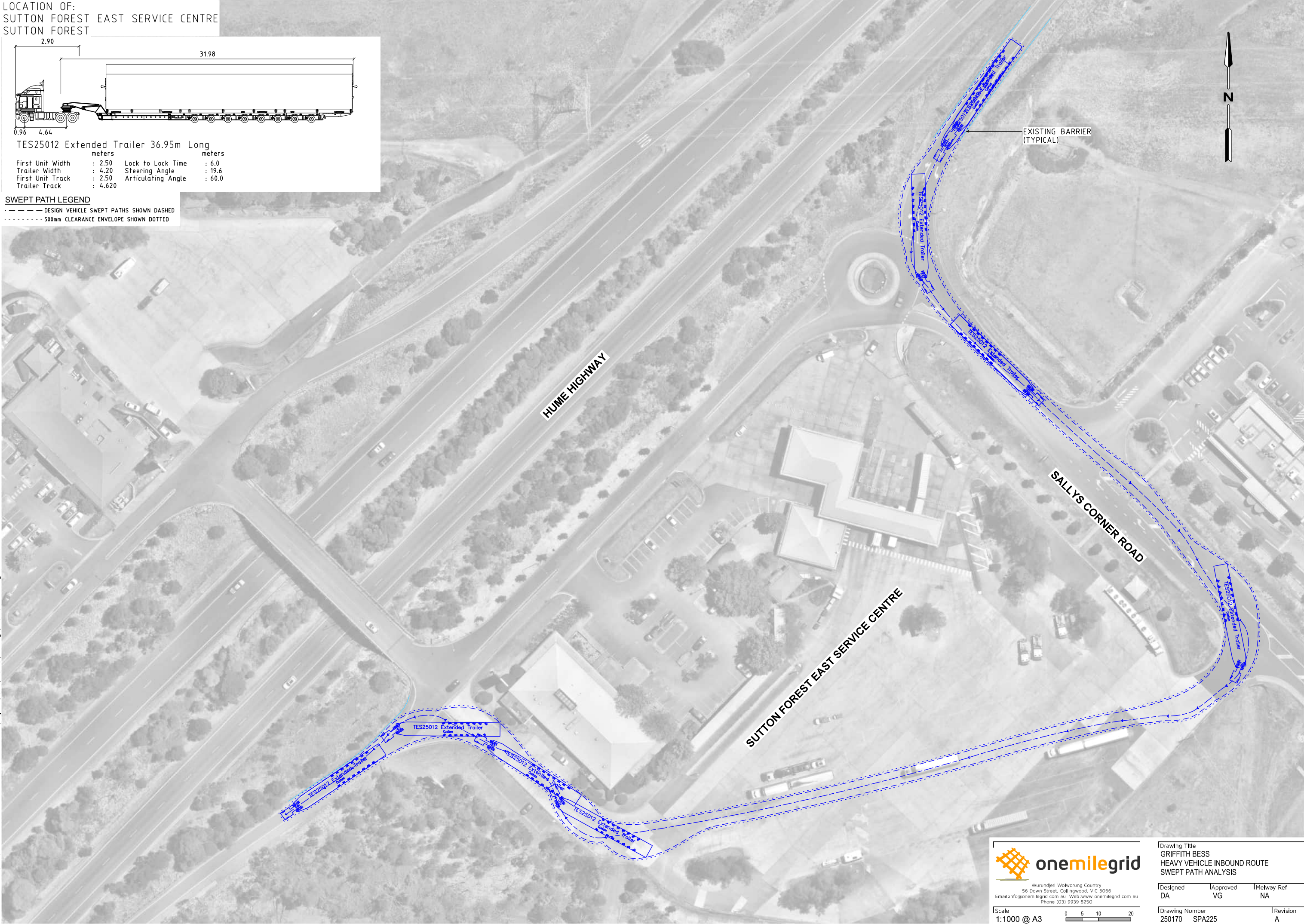
Scale
1:750 @ A3



LOCATION OF:
SUTTON FOREST EAST SERVICE CENTRE
SUTTON FOREST



SWEPT PATH LEGEND
--- DESIGN VEHICLE SWEPT PATHS SHOWN DASHED
..... 500mm CLEARANCE ENVELOPE SHOWN DOTTED



CAD File: N:\Project\2025\250170\Drawings\250170SPA225.dgn

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Aerial Photography
Aerial photography provided by Nearmap

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Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
Phone (03) 9939 8250

Scale
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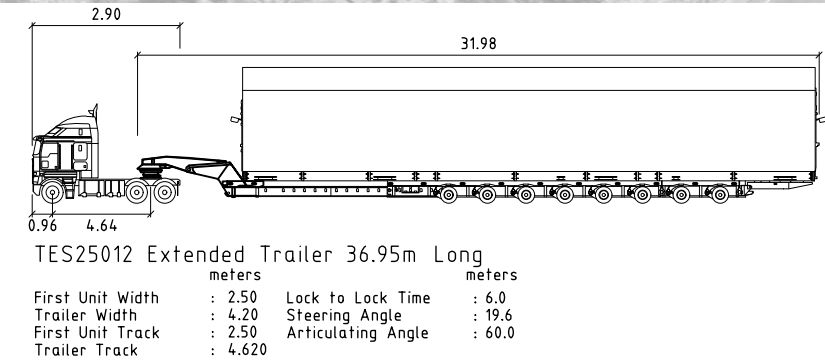
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Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEPT PATH ANALYSIS		
Designed DA	Approved VG	Melway Ref NA
Drawing Number 250170 SPA225	Revision A	

LOCATION OF:
FEDERAL HIGHWAY
YARRA

CAD File: N:\Project\2025\250170\Drawings\250170SPA226.dgn

Date Plotted: 28-05-2026 11:18:10 AM



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SWEPT PATH LEGEND
- - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- - - - - 500mm CLEARANCE ENVELOPE SHOWN DOTTED

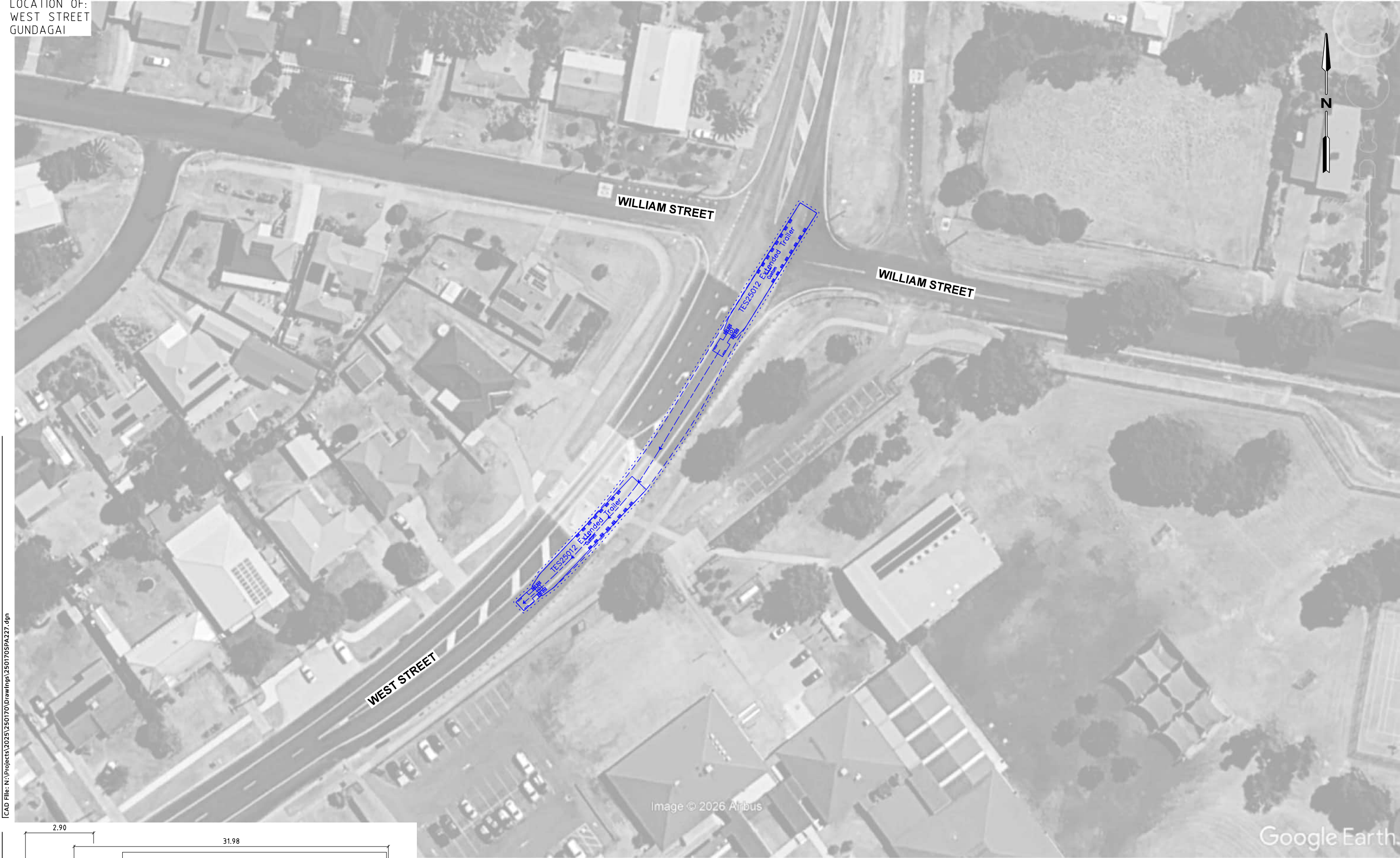

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Phone (03) 9939 8250

Scale
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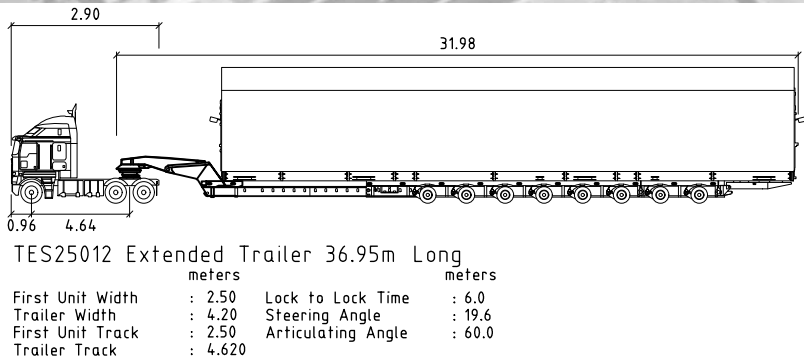
Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEPT PATH ANALYSIS		
Designed DA	Approved VG	Melway Ref NA
Drawing Number 250170 SPA226	Revision A	

LOCATION OF:
WEST STREET
GUNDAGAI



CAD File: N:\Project\2025\250170\Drawings\250170SPA227.dgn

Date Plotted: 28-05-2026 11:18:54 AM



SWEPT PATH LEGEND

--- DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
----- 500mm CLEARANCE ENVELOPE SHOWN DOTTED

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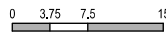
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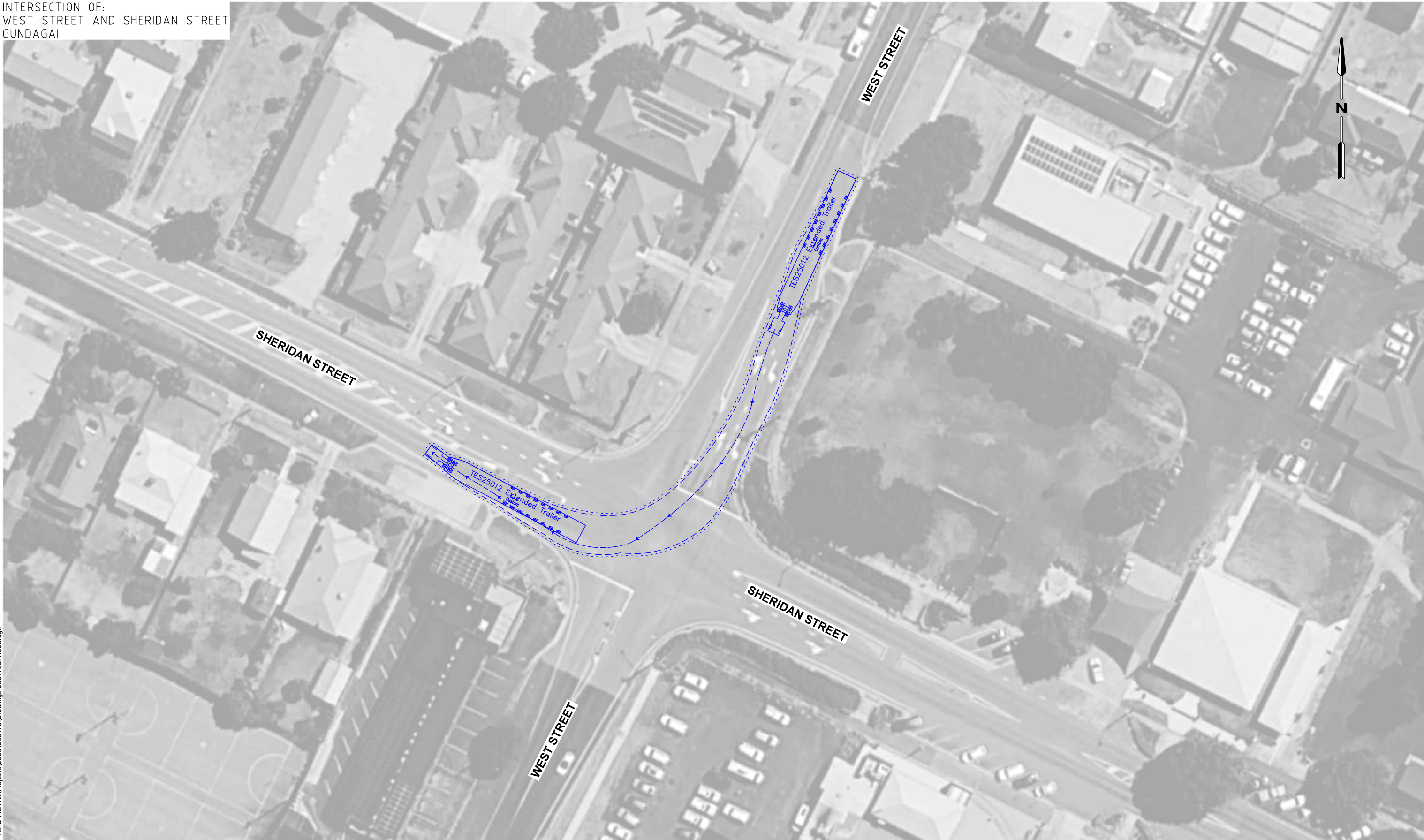
Aerial provided by
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Scale
1:750 @ A3



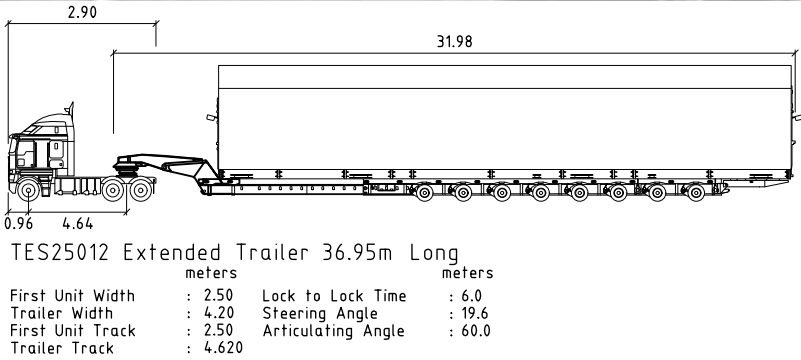
Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEPT PATH ANALYSIS		
Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170 SPA227	Revision A	

INTERSECTION OF:
WEST STREET AND SHERIDAN STREET
GUNDAGAI



CAD File: N:\Project\2025\250170\Drawings\250170SPA228.dgn

Date Plotted: 28-05-2026 11:19:33 AM

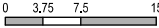


SWEPT PATH LEGEND
- - - - - DESIGN VEHICLE SWEEP PATHS SHOWN DASHED
- - - - - 500mm CLEARANCE ENVELOPE SHOWN DOTTED



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Email: info@onemilegrid.com.au Web: www.onemilegrid.com.au
Phone: (03) 9939 8250

Scale
1:750 @ A3



Drawing Title GRIFFITH BESS HEAVY VEHICLE INBOUND ROUTE SWEEP PATH ANALYSIS		
Designed DA	Approved VG	Metway Ref NA
Drawing Number 250170 SPA228	Revision A	

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Attachment B: Concept Layout Plans



INTERSECTION OF:
MEMORIAL DRIVE AND PRINCES HIGHWAY
NORTH WOLLONGONG



CAD File: N:\Project\2025\250170\Drawings\250170CLP202.dgn

Date Plotted: 28-05-2026 10:46:10 AM

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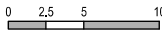
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Aerial Photography
Aerial photography provided by Nearmap



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Drawing Title
GRIFFITH BESS
CONSTRUCTION PLAN
CONCEPT LAYOUT PLAN

Designed DA	Approved VG	Metway Ref NA
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Drawing Number 250170	CLP202	Revision A
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INTERSECTION OF:
MOUNT OUSLEY ROAD AND GAYNOR AVENUE
MOUNT OUSLEY



LINEMARKING PLAN



CONSTRUCTION PLAN

SIGN AND LINE MARKING GENERAL NOTES

1. SIGNS AND LINE MARKING TO BE INSTALLED IN ACCORDANCE WITH AS1742.2
2. LINE MARKING MATERIALS (THERMOPLASTIC, GLASS BEADS, ETC) TO BE INSTALLED IN ACCORDANCE WITH AUSTRROADS GUIDE TO TRAFFIC MANAGEMENT PART 10, SECTION 8.3
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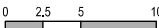
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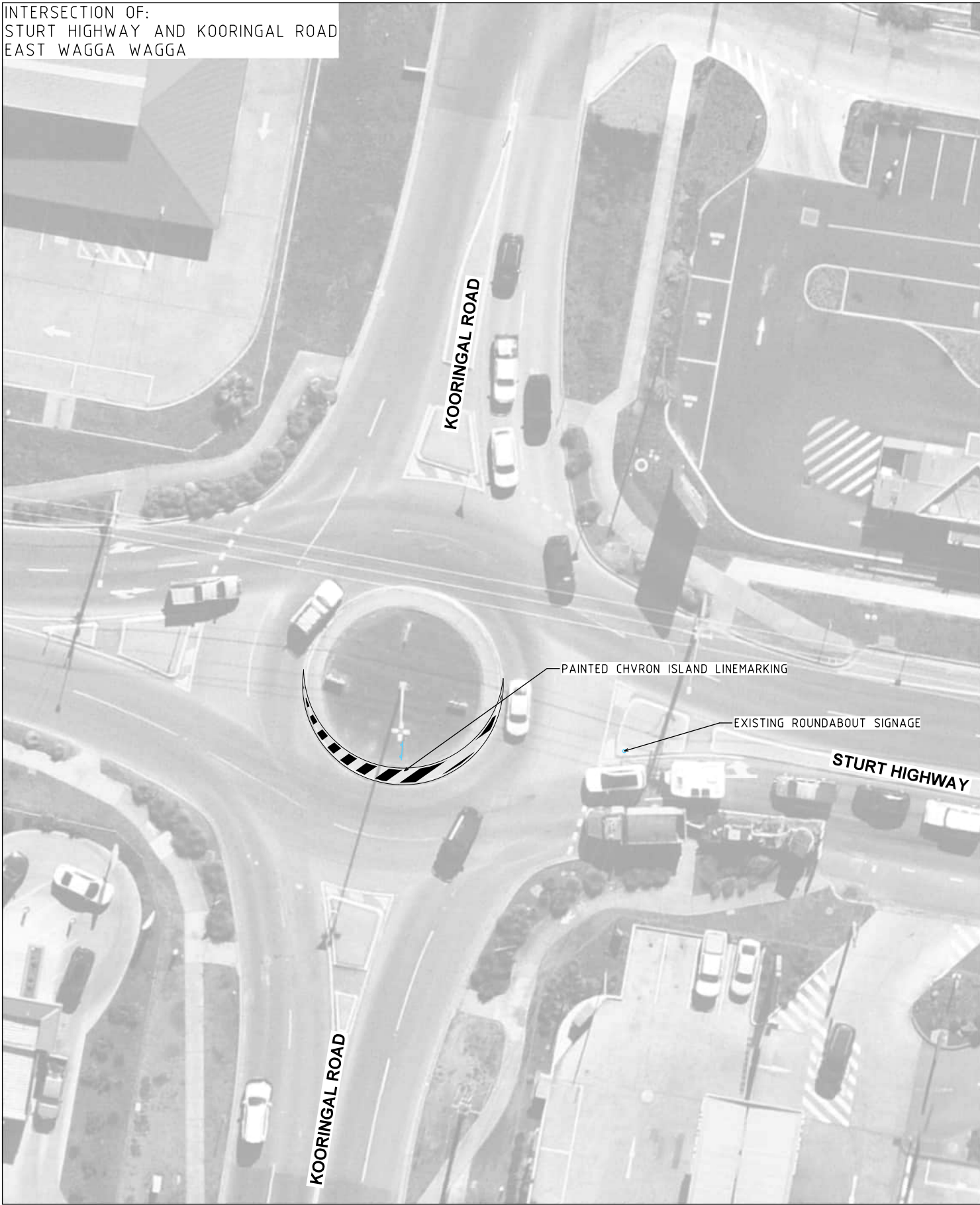


Drawing Title
GRIFFITH BESS
CONSTRUCTION PLAN
CONCEPT LAYOUT PLAN

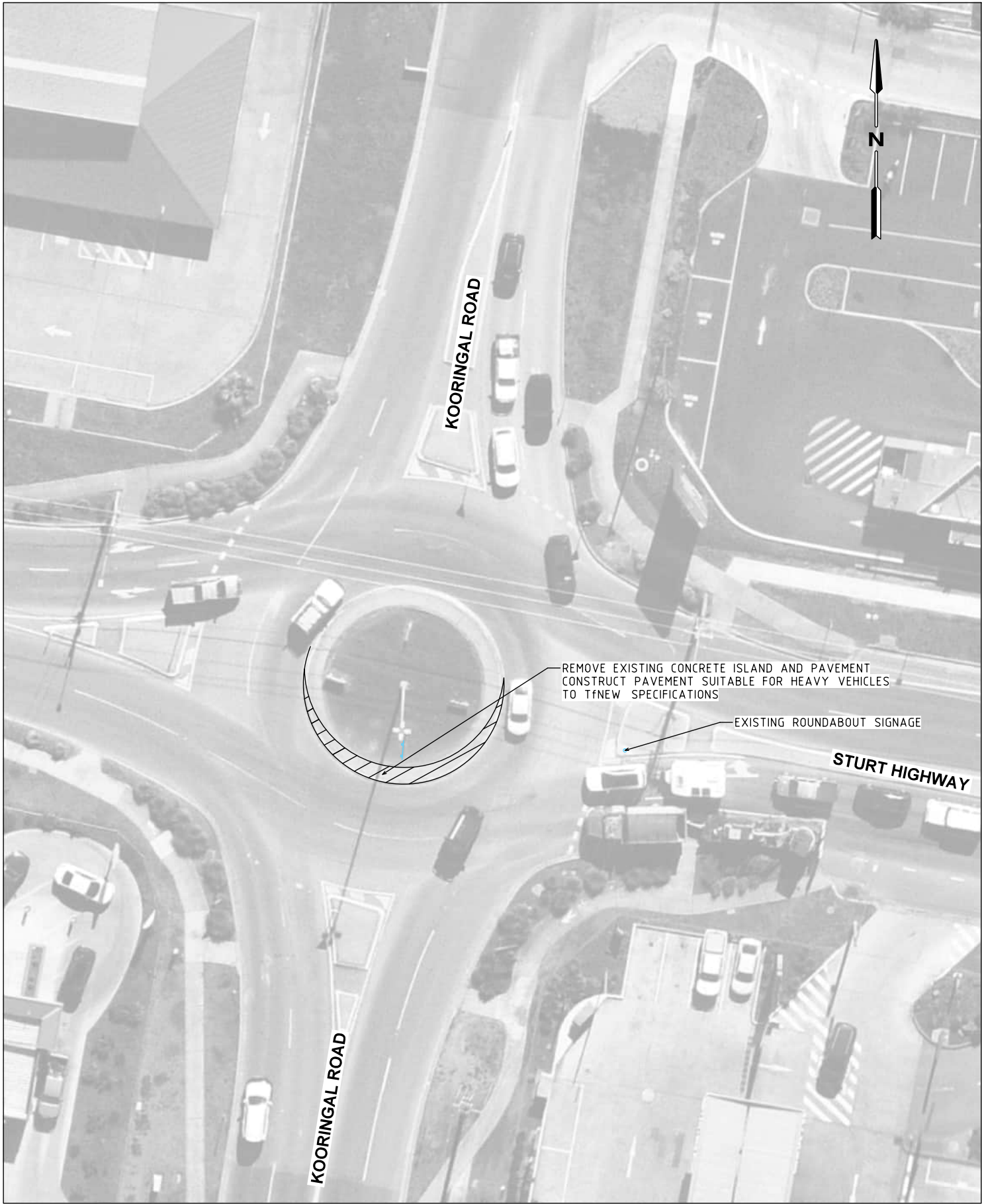
Designed DA	Approved VG	Melway Ref NA
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Drawing Number 250170	Revision A
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INTERSECTION OF:
STURT HIGHWAY AND KOORINGAL ROAD
EAST WAGGA WAGGA



LINEMARKING PLAN



CONSTRUCTION PLAN

SIGN AND LINE MARKING GENERAL NOTES

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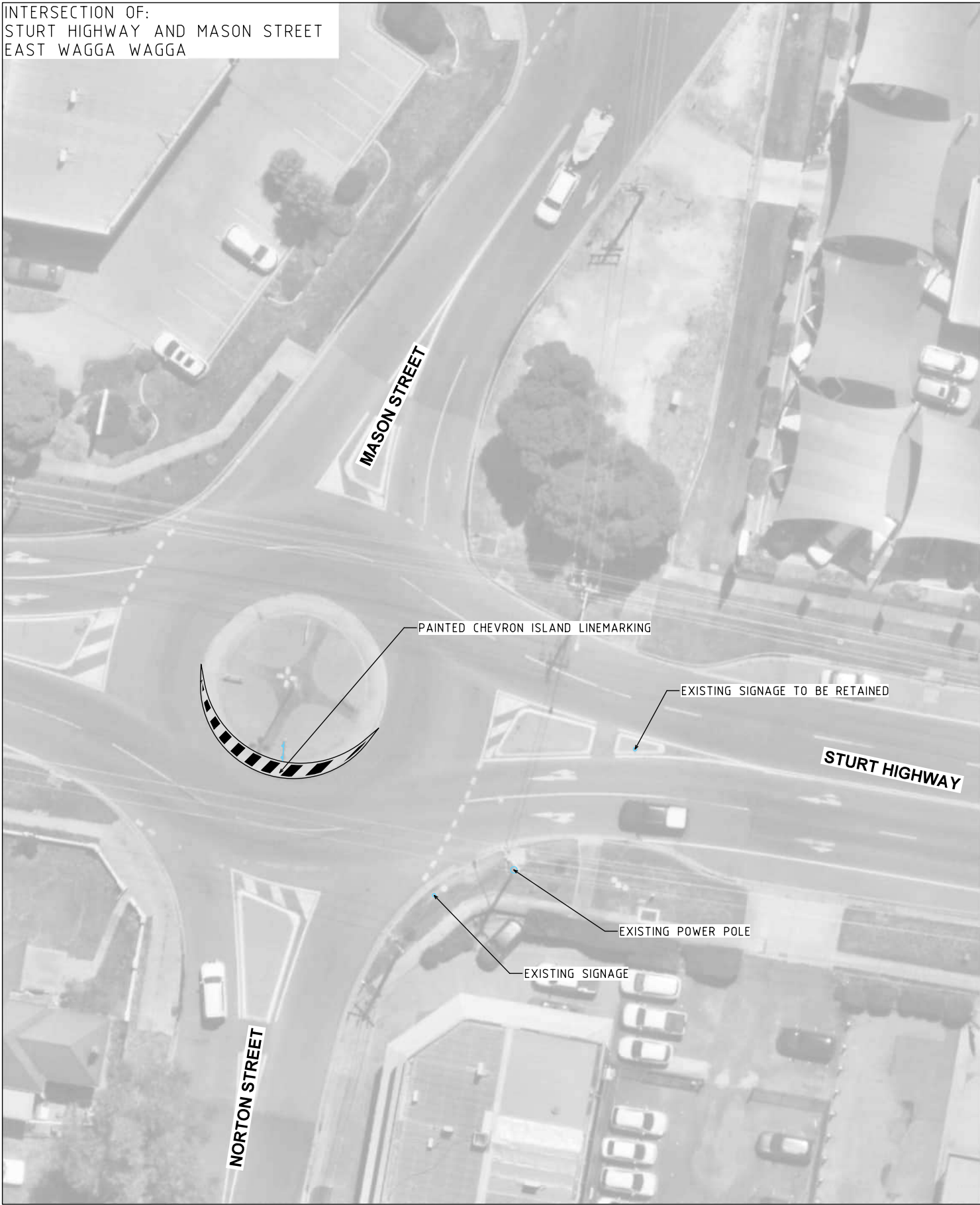


Drawing Title
GRIFFITH BESS
CONSTRUCTION PLAN
CONCEPT LAYOUT PLAN

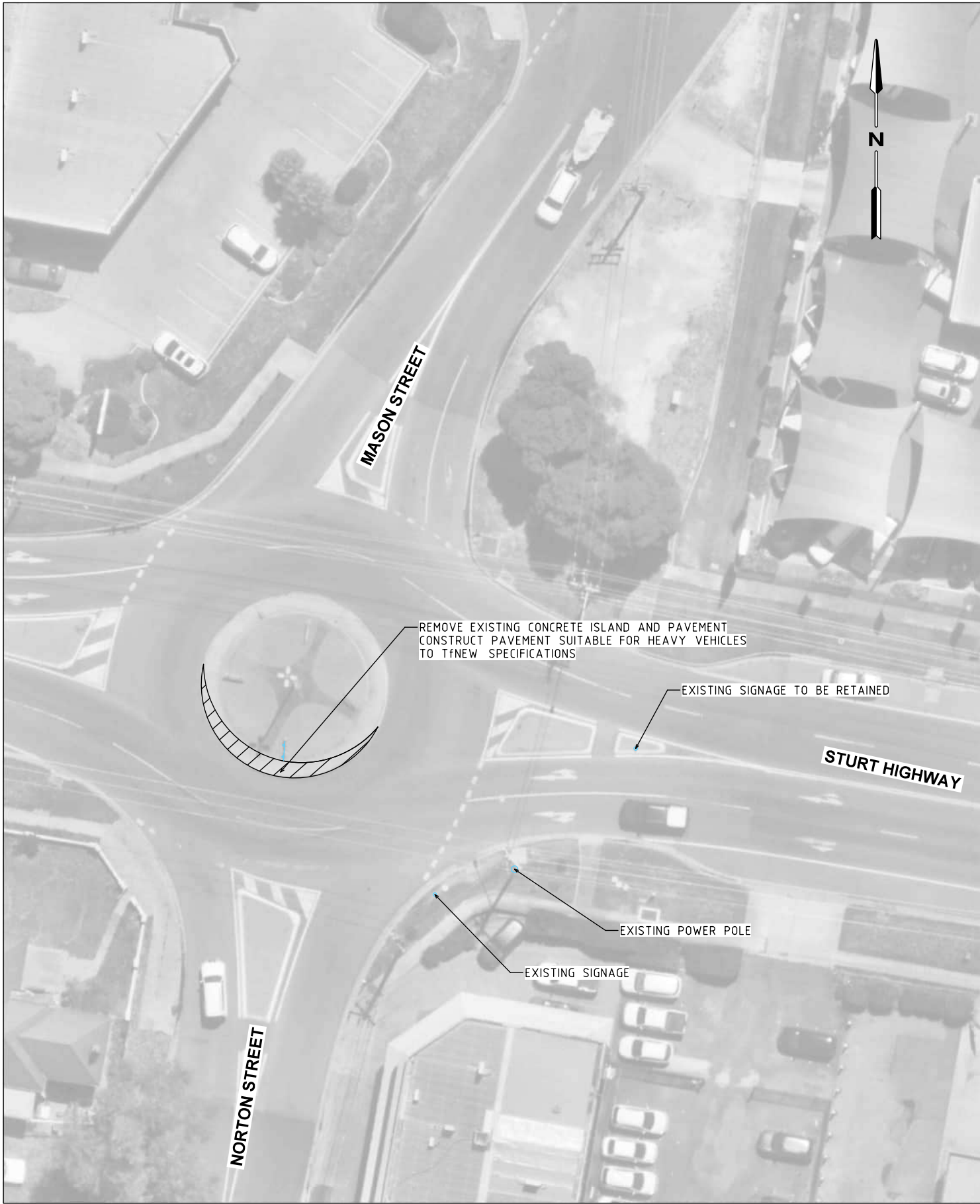
Designed DA	Approved VG	Metway Ref NA
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Drawing Number 250170	Revision A
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INTERSECTION OF:
STURT HIGHWAY AND MASON STREET
EAST WAGGA WAGGA



LINEMARKING PLAN



CONSTRUCTION PLAN

SIGN AND LINE MARKING GENERAL NOTES

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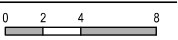
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Drawing Title
GRIFFITH BESS
CONSTRUCTION PLAN
CONCEPT LAYOUT PLAN

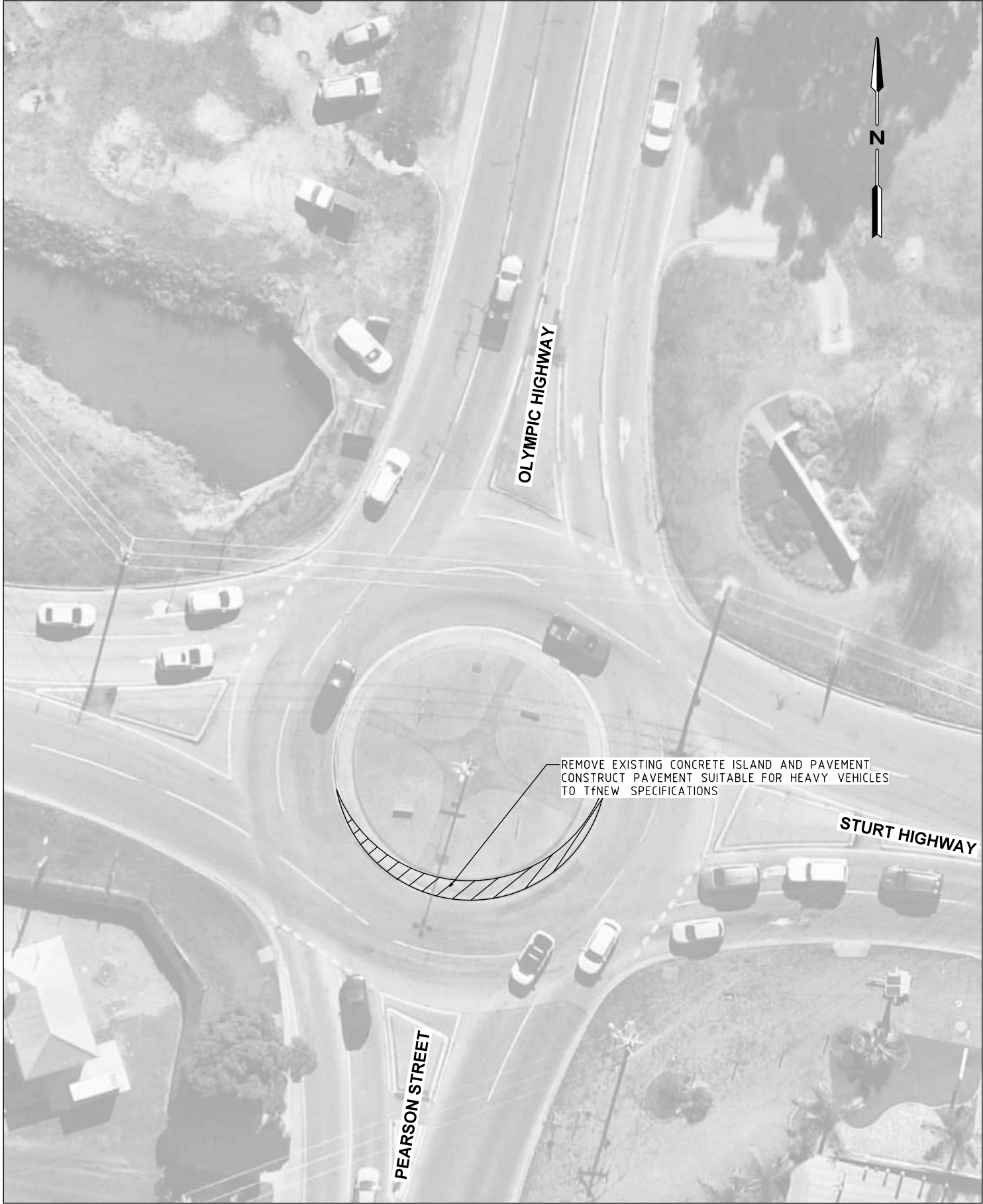
Designed DA	Approved VG	Melway Ref NA
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Drawing Number 250170	Revision A
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INTERSECTION OF:
STURT HIGHWAY, PEARSON STREET AND OLYMPIC HIGHWAY
WAGGA WAGGA



LINEMARKING PLAN



CONSTRUCTION PLAN

CAD File: N:\Project\250170\Drawings\250170CLP212.dgn

Date Plotted: 28-05-2026 10:48:13 AM

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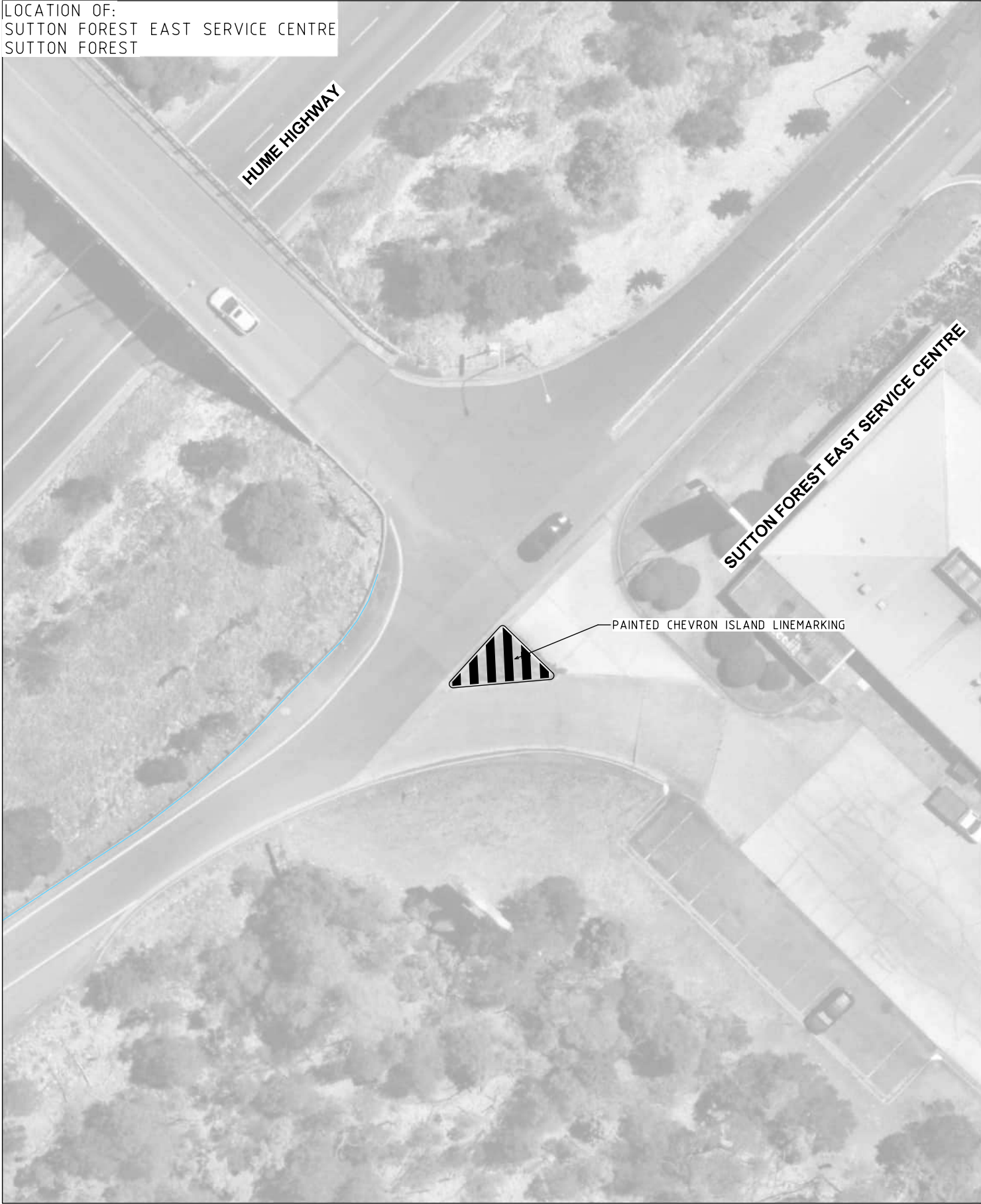


Drawing Title
GRIFFITH BESS
CONSTRUCTION PLAN
CONCEPT LAYOUT PLAN

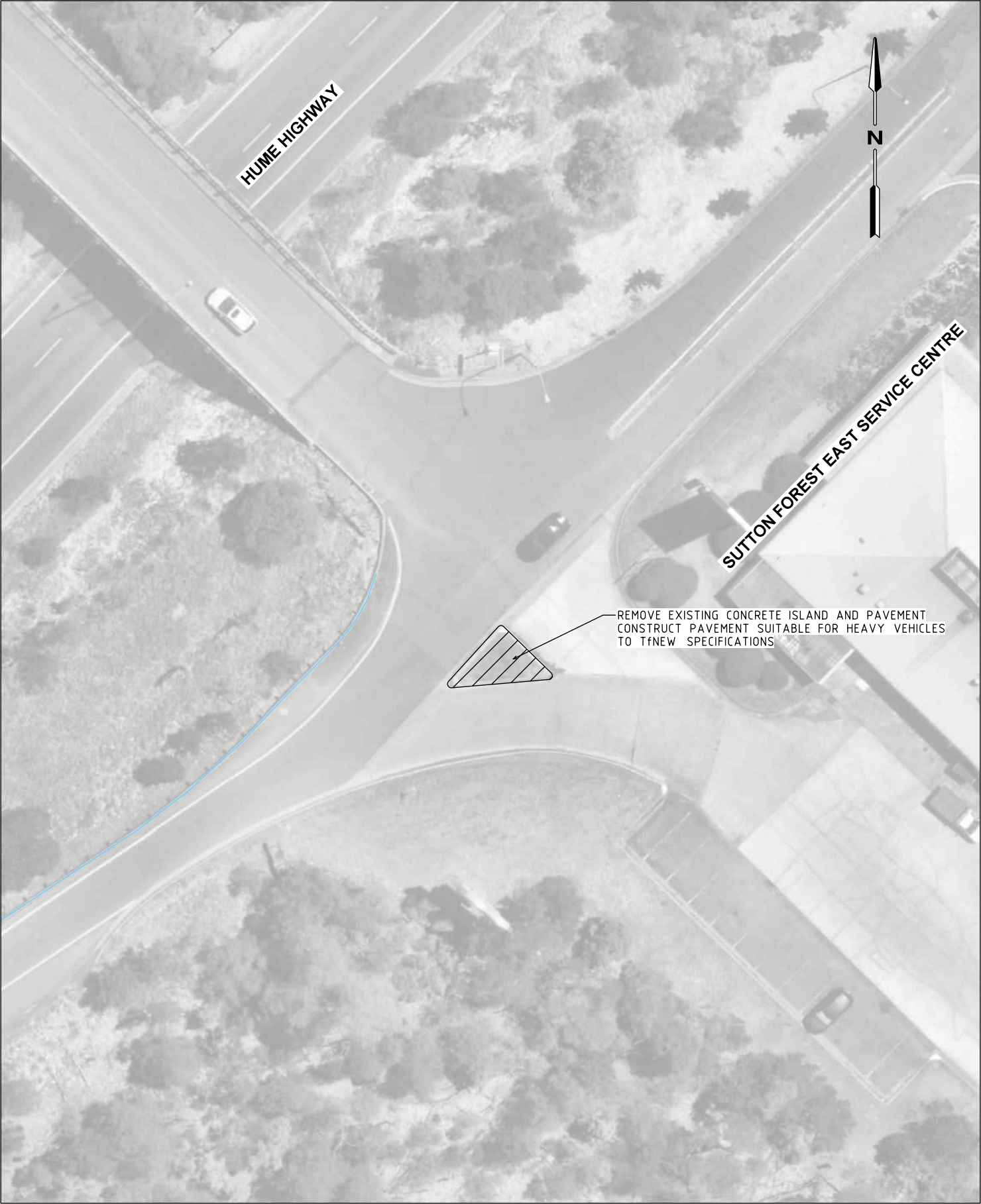
Designed	Approved	Metway Ref
DA	VG	NA

Drawing Number	Revision
250170	CLP212 A

LOCATION OF:
SUTTON FOREST EAST SERVICE CENTRE
SUTTON FOREST



LINEMARKING PLAN



CONSTRUCTION PLAN

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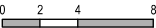
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Drawing Title
GRIFFITH BESS
CONSTRUCTION PLAN
CONCEPT LAYOUT PLAN

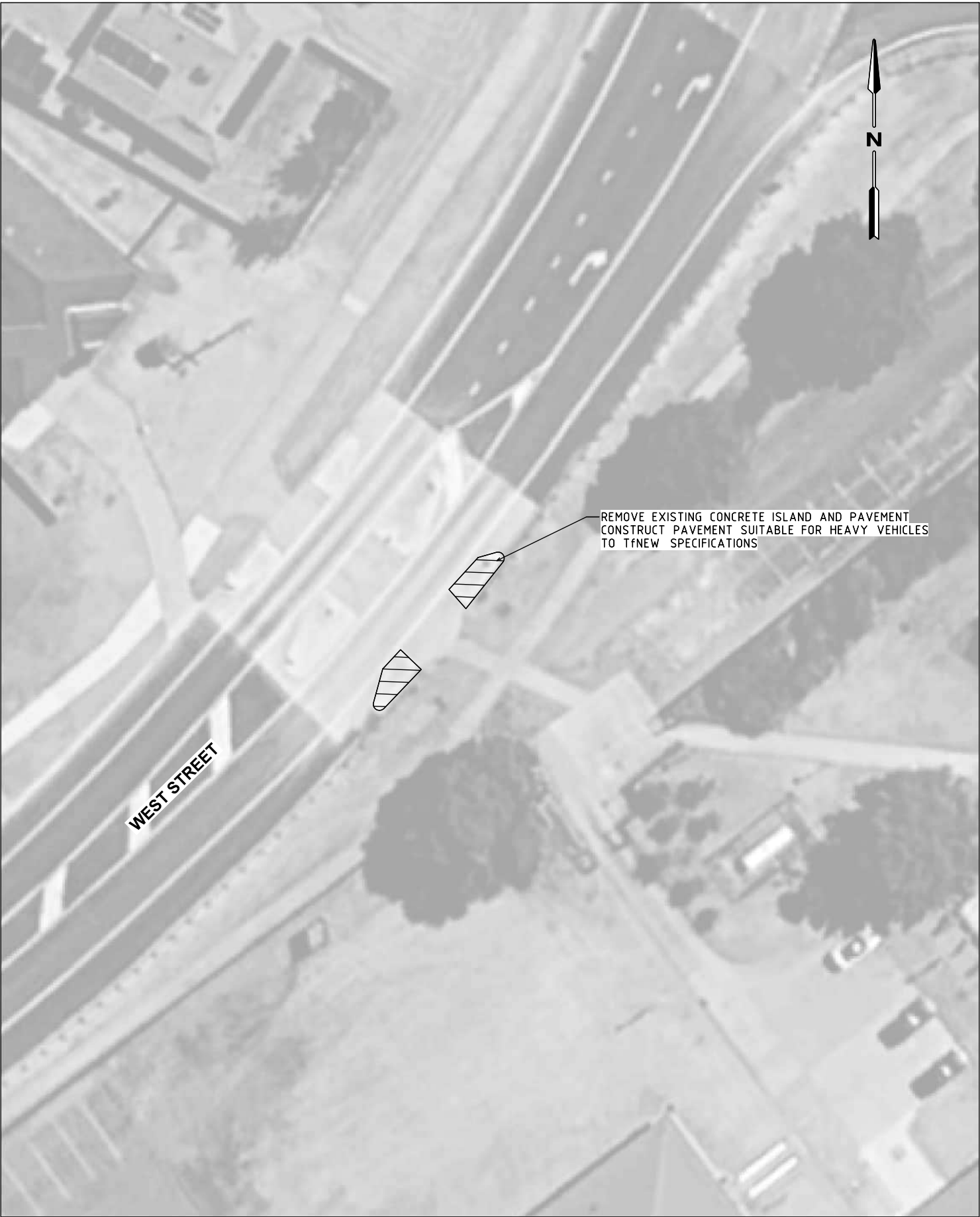
Designed DA	Approved VG	Melway Ref NA
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Drawing Number 250170 CLP225	Revision A
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LOCATION OF:
WEST STREET
GUNDAGAI



LINEMARKING PLAN



CONSTRUCTION PLAN

CAD File: N:\Project\2025\250170Drawings\250170CLP227.dgn

Date Plotted: 28-05-2026 10:49:31 AM

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0 2 4 8

Drawing Title
GRIFFITH BESS
CONSTRUCTION PLAN
CONCEPT LAYOUT PLAN

Designed DA	Approved VG	Melway Ref NA
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Drawing Number 250170 CLP227	Revision A
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Attachment C: TfNSW Bridge Assessment



James Reece

From: Sam Correy <Saleem.Correy@transport.nsw.gov.au>
Sent: Monday, 23 March 2026 9:32 AM
To: James Reece
Cc: Valentine Gnanakone; Fernando Torres-Moncayo; Kait Goudge; Robert Asquith
Subject: RE: Griffith BESS - Bridge Assessment - P250170-Y

Saved: 250170

Good morning James,

According to the OSOM dashboard your selected route is suitable for an 8x8 platform trailer with standard 1.8m spacings or greater and a GCW of 4.2m at up to 17t/axle. Subject to approval of third party structures listed below.

3rd Party Bridge Restrictions

Bridge Number	Bridge Description	Controlled By
941	N/B AND S/B BRIDGE, OVER RAILWAY, AT CONISTON - TRIANGLE BRIDGES	Sydney Trains
942	N/B AND S/B BRIDGE, OVER RAILWAY, AT CONISTON - JJ MATTHEWS BRIDGE	Sydney Trains
5823	IRRIGATION BRIDGE, D.C. 1964 SOUTH, 13 N DARLINGTON PT	Dept. of Water Resources
5824	IRRIGATION BRIDGE, BENEREMBAH CHANNEL, 14.5 S GRIFFITH	Dept. of Water Resources
5825	IRRIGATION BRIDGE, D.C. 1964 NORTH, 16.2 S GRIFFITH	Dept. of Water Resources
5826	BRIDGE, MIROOL CREEK, 13.7 S GRIFFITH	Dept. of Water Resources
6250	BRIDGE OVER, RAILWAY (STHBOUND), NEAR YARRA	A.R.T.C
7231	IRRIGATION BRIDGE, LATERAL 264, 16 N DARLINGTON PT	Dept. of Water Resources
7232	MIRROOL CK BRANCH, CANAL, 9.5 S GRIFFITH	Dept. of Water Resources
9139	BRIDGE, COLEAMBALLY CANNAL, 40 KM W NARRANDERA	Dept. of Water Resources
10825	BRIDGE OVER THE, HUME HIGHWAY, AT MARULAN	Private

Kind Regards,

Saleem Correy

A/ Manager Road Access

Freight Branch

Planning, Integration and Passenger

Transport for NSW

T 1300 656 371 E saleem.correy@transport.nsw.gov.au

Level 2

358 – 374 Grey St

Glen Innes NSW 2370



Transport
for NSW



I acknowledge the Aboriginal people of the country on which I work, their traditions, culture and a shared history and identity. I also pay my respects to Elders past and present and recognise the continued connection to country.

Please consider the environment before printing this email.

OFFICIAL

From: James Reece <james.reece@onemilegrid.com.au>

Sent: Thursday, 19 March 2026 2:27 PM

To: Sam Correy <Saleem.Correy@transport.nsw.gov.au>

Cc: Valentine Gnanakone <val.gnanakone@onemilegrid.com.au>; Fernando Torres-Moncayo <fernando.torresmoncayo@ekuenergy.com>; Kait Goudge <kaitlyn.goudge@ekuenergy.com>; Robert Asquith <robert@cogencyaustralia.com.au>

Subject: RE: Griffith BESS - Bridge Assessment - P250170-Y

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Hi Saleem,

Thanks for your timely response. Details are provided below.

Power Transformer

- **Laden dimensions:** 32m x 4.2m x 5.3m
- **Axle masses:** Average loading on trailer will be approx. 16.9 tonnes / axle. Assume axle loading on prime mover will be max 10.35 tonnes/ axle.

- **Axle spacings:** As per standard 8 axle layout shown on attached (Axles spaced at 1.83m). Please note total length of vehicle has been extended to 32 m similar to "TES25012 - Hi Spec - Cape Lambert Switch Room 8x8 (R2) Extended Trailer (002).pdf" (though I note that the load is not correct on this view).
- **Total laden mass:** We have been told the total transportation weight of the power transformer is 89 tonnes without oil and accessories. To allow for trailer and drive mass, and contingencies please use a total laden mass of 155 tonnes.
- **Ground Contact Width (GCW):** 4.2 m.

Combined Switchgear & Control Building:

- **Laden dimensions:** 37m x 4.2mx 5.3m
- **Axle masses:** Average loading on trailer will be approx. 10.8 tonnes / axle. Assume axle loading on prime mover will be max 10.35 tonnes/ axle.
- **Axle spacings:** As per standard 8 axle layout shown on attached (Axles spaced at 1.83m). Please note trailer has been extended as per "TES25012 - Hi Spec - Cape Lambert Switch Room 8x8 (R2) Extended Trailer (002).pdf" (though I note that the load is not correct on this view).
- **Total laden mass:** We have been told the total transportation weight of the building is 42 tonnes. To allow for trailer and drive mass, and contingencies please use a total laden mass of 110 tonnes.
- **Ground Contact Width (GCW):** 4.2 m

Please reach out if you need anything further from our end.

Best regards,

James Reece (he/him)
Engineer



d: (03) 9982 9709

p: (03) 9939 8250

e: james.reece@onemilegrid.com.au

w: www.onemilegrid.com.au

t: [Teams](#)

a: Wurundjeri Woiworung Country; 56 Down Street, Collingwood, VIC 3066



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From: Sam Correy <Saleem.Correy@transport.nsw.gov.au>
Sent: Thursday, 19 March 2026 12:11 PM
To: James Reece <james.reece@onemilegrid.com.au>
Cc: Valentine Gnanakone <val.gnanakone@onemilegrid.com.au>
Subject: RE: Griffith BESS - Bridge Assessment - P250170-Y

Hi James,

Thanks for your email.

In order to begin your bridge assessment for NHVR Route ID: 2NZHH-0 v3 you will need to provide details of the proposed combination including:

- Laden dimensions
- Axle masses
- Axle spacings
- Total laden mass
- Ground Contact Width (GCW)

Kind Regards,

Saleem Correy

A/ Manager Road Access

Freight Branch

Planning, Integration and Passenger

Transport for NSW

T 1300 656 371 E saleem.correy@transport.nsw.gov.au

Level 2
358 – 374 Grey St
Glen Innes NSW 2370

transport.nsw.gov.au



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OFFICIAL

From: Stuart Murray <Stuart.A.MURRAY@transport.nsw.gov.au> **On Behalf Of** special_permits_unit@rms.nsw.gov.au
Sent: Wednesday, 18 March 2026 3:41 PM
To: Sam Correy <Saleem.Correy@transport.nsw.gov.au>
Subject: FW: Griffith BESS - Bridge Assessment - P250170-Y

Hi Sam
Not sure if you can assist with this one or if it's a REZ case or if it should be part of an application case, there doesn't seem to be a case number detailed.

Regards.

Stuart Murray

Road Access Officer
Freight Branch
Planning, Integration and Passenger

Transport for NSW

T 1300 656 371 E stuart.a.murray@transport.nsw.gov.au



Transport
for NSW

OFFICIAL

From: James Reece <james.reece@onemilegrid.com.au>
Sent: Wednesday, 18 March 2026 2:14 PM
To: special_permits_unit@rms.nsw.gov.au <spu@transport.nsw.gov.au>
Cc: Valentine Gnanakone <val.gnanakone@onemilegrid.com.au>
Subject: Griffith BESS - Bridge Assessment - P250170-Y

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Hi,

I am writing to request a bridge assessment for a proposed OSOM Route for the Griffith BESS project (SSD-85372970).

The origin for OSOM deliveries is Port Kembla, and the destination is 15 Bob Irvin Road, Yoogali.

The client has advised the following two vehicles are the worst case for oversized deliveries to the site.

For Power Transformer:

Overall Dimensions of the Power Transformer* (LxWxH)	7050x2600x4100 (LxWxH) transportation dimension
Total weight of Power Transformer	Transportation weight without oil and accessories is approx. 89 tons
Vehicle Configuration	Please refer attached reference drawing "8axle layout.1.pdf".
Vehicle Dimensions (LxWxH)	32m x 4.2mx 5.3m

For Combined Switchgear & Control Building:

Total weight of the building	Transportation weight without steel support structures is approx. 42 tons
------------------------------	---

Vehicle Dimensions (LxWxH)	37m x 4.2mx 5.3m
Load details (LxWxH)	23.7 m x 4.09 m x 3.2 m. Please note that stairs are delivered separately and are installed on site. Please refer attached reference drawing "13843-BU-DR-01000_A.pdf"

Please assume that the weight is approx. 15% higher than stated so that the analysis is conservative.

The NHVR Route ID is: 2NZHH-0 v3. The route is essentially the same as the route for the approved Yanco BESS project. The EIS will be accompanied with the full OSOM including swept paths.

I note that there are 8 locations along the route where the height clearance is less than 200 mm. The load will be checked prior to departing port and load must not exceed 5.3 m in loaded height.

- **Pedestrian Bridge over F6, Near Byarong Ave – Min Clearance 5.3m**
- **Bridge on Gipps Rd over F6 West Wollongong – Min Clearance 5m:** Understand that the height clearance is actually 5.3 m (as per the Yanco BESS assessment)
- **Bridge over F6 Reserve Street – Min Clearance 5.3m**
- **Bridge over MR626 (Memorial Drive) – Min Clearance 4.7m:** Minimum clearance according to signage is 5.1 m according to signage, though bridge clearly arches. Clearance under middle of bridge is understood to be 5.3 m as per Biala Wind Farm OSOM Traffic Management Plan.



-
- **Railway Bridge over HW14, Wagga Wagga – Min Clearance 5.23m** – Actual height clearance is understood to be 5.4 m
- **Bridge over HW2 Hume, South of Goulburn at Coolalie Road – Min Clearance 5.34m**
- **Bridge over HW2 Hume, 84km South of Goulburn – Min Clearance 5.33m**
- **Bridge over HW2, Hume West St Gundagai – West St Interchange – 5.27m:** Based on street view this minimum clearance appears to apply to the left most traffic lane. It is expected that the minimum 5.3 m clearance is provided to the central traffic lane.



Can you please review the attached information at your earliest convenience and provide any comments.

Please do not hesitate to contact me if you would like to discuss the above.

Best regards,

James Reece (he/him)
Engineer



d: (03) 9982 9709

p: (03) 9939 8250

e: james.reece@onemilegrid.com.au

w: www.onemilegrid.com.au

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