Goulburn River
Solar Farm

Traffic Management Plan

turnbull

Document Information

Document Title	Goulburn River Solar Farm – Traffic Management Plan
Document Number	TEJ0416-RPT-0001

Document Revisions

Revision	Description	Author	Reviewer	Approver	Date
v0	Draft TMP for Umwelt review	R. Banzon	D. Lowe	D. Lowe	12/01/2024
Rev 01	Final TMP for Umwelt review	D. Lowe	D. Lowe	D. Shirokov	20/09/2024
Rev 02	Final TMP	D. Lowe	D. Lowe	D.Shirokov	13/11/2024
Rev 03	Final TMP	D. Lowe	D. Lowe	D.Shirokov	18/12/2024

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1. Introduction

Lightsource Development Services Australia Pty Ltd, a wholly owned subsidiary of Lightsource bp Renewable Energy Investments Limited (Lightsource bp) received Development Consent for the Goulburn River Solar Farm (SSD 33964533) in August 2024. The Development Consent was granted by a delegate of the Minister for Planning and Public Spaces under section 4.38 of the NSW *Environmental Planning and Assessment Act 1979* (EP&A Act).

The Project is located approximately 28 kilometres (km) southwest of Merriwa in New South Wales (NSW). It is wholly within the Upper Hunter Local Government Area (LGA).

The Project Area comprises two freehold properties that span across multiple lots, covering an area of approximately 2,000 hectares (ha). The Development Footprint for the solar farm occupies 792.19 ha and road upgrades will cover approximately 8.1 km.

The Project involves the construction, operation and decommissioning of approximately 550-megawatt peak (MWp) of solar photovoltaic (PV) generation as well as a Battery Energy Storage System (BESS) with a maximum 1,030 MWp/2,060-megawatt hour (MWh) capacity.

The Project will include a substation and connection to an existing 500 kilovolt (kV) transmission line which passes through the Project Area. The Project will include road repairs and upgrades to Ringwood Road, Wollara Road, and the Golden Highway intersection. The Project also includes a temporary workers accommodation facility, temporary construction facilities, operation and maintenance buildings, internal access roads, civil works, electrical infrastructure to connect the Project to the existing transmission line and a 30 metre (m) telecommunications tower.

Lightsource bp is a global leader in the development and management of solar energy projects. Its purpose is to deliver affordable and sustainable solar power for businesses and communities around the world. Lightsource bp is active in 19 countries, across six continents, however, are continuing to rapidly expand globally. Lightsource bp provides a full service to its customers, from initial site selection, financing and permitting through to construction, long-term operation, and decommissioning.

1.1. Purpose of this Traffic Management Plan

This Traffic Management Plan (TMP) has been prepared to comply with the relevant conditions within the Development Consent, as well as meet other applicable statutory requirements and obligations during the construction, operation and decommissioning of the Project. The TMP has been informed by the following assessment reports:

- Environmental Impact Statement (EIS) for Goulburn River Solar Farm, dated May 2023 (Umwelt 2023a).
- Goulburn River Solar Farm Amendment Report (Umwelt 2023b).
- Goulburn River Solar Farm Temporary Workers Accommodation Facility Amendment Report (Umwelt 2024).
- Traffic and Transport Impact Assessment (Turnbull 2023).

The Development Consent includes administrative and environmental conditions, as well as environmental management and reporting requirements, that necessitate the preparation of several post-approval management plans and strategies. This TMP has been prepared to meet the requirements of Condition B1-B10 of the Development Consent.

The relevant conditions of consent and where they have been addressed in this document is included in **Table 1-1** below.

Table 1-1: Relevant TMP Development Consent conditions

SSD 33964533 Conditions	Description	Section addressed
Part B Environmental Conditions – General: Transport		
Heavy Vehicles Requiring Escort and Heavy Vehicle Restrictions		
Condition B1	The Applicant must ensure that the:	
	(a) development does not generate more than:	
	(i) 55 heavy vehicle movements a day (a maximum of 15 heavy vehicle movements per hour) during construction, upgrading and decommissioning;	**Section 3.6.3 and Section 4.1**
	(ii) 24 movements of heavy vehicles requiring escort during construction, upgrading or decommissioning; and	**Section 3.6.3 and Section 4.1**
	(b) length of any vehicles (excluding heavy vehicles requiring escort) used for the development does not exceed 19 metres unless the Planning Secretary agrees otherwise.	**Section 3.5.2**
Condition B2	The Applicant must keep accurate records of the number of heavy vehicles and vehicles requiring escort entering or leaving the site each day for the duration of the project.	**Section 5.6**
Access Route		
Condition B3	Unless otherwise agreed by the Planning Secretary, all heavy vehicles and heavy vehicles requiring escort associated with the development must travel to and from the site via the Golden Highway/Ringwood Road Intersection as shown in Figure 3 and Figure 4 in Appendix 4.	**Section 3.5.2 and Appendix D**
Condition B4	All heavy vehicles (excluding heavy vehicles requiring escort) associated with the development accessing the site via the Golden Highway/Ringwood Road intersection:	**Section 3.5.2 , Appendix C and Appendix G**
	a) must access Ringwood Road by turning left from the Golden Highway only, as shown in Figure 4 in 4; and	
	b) must exit Ringwood Road by turning left on to the Golden Highway only, as shown in Figure 4 in Appendix 4.	
Condition B5	All heavy vehicles (excluding vehicles requiring escort) associated with the development departing the site and needing to travel east along the Golden Highway must use the turnaround point at Barnett Street, as shown on Figure 4 in Appendix 4.	**Section 3.5.2, Section 3.7 and Appendix C**

SSD 33964533 Conditions	Description	Section addressed
Site Access		
Condition B6	All vehicles associated with the development must enter and exit the site via the Primary Access point off Wollara Road, as identified in Appendix 1. *Note: Other site access points may be used for emergency purposes.*	**Figure 3-4, Appendix C and Appendix G**
Road Upgrades		
Condition B7	Unless the Planning Secretary agrees otherwise, prior to commencing construction the Applicant must complete the road upgrades detailed in Appendix 4. Unless the relevant road authority agrees otherwise, these upgrades must comply with the current *Austroads Guidelines, Australian Standards* (as amended by TfNSW supplements), and be carried out to the satisfaction of the relevant roads authority.	**Section 3.1, Table 3.1, Section 5.3 and Appendix A and Appendix B**
Road Maintenance		
Condition B8	The Applicant must, in consultation with the relevant roads authority:	
	(a) undertake an independent dilapidation survey to assess the:	**Section 5.7.1**
	(i) existing condition of Ringwood Road and Wollara Road on the transport route, prior to construction, upgrading or decommissioning works; and	
	(ii) condition of Ringwood Road and Wollara Road on the transport route, following construction, upgrading or decommissioning works;	
	(b) on completion of the dilapidation reports undertaken in B8(a)(i) and (ii) provide a copy to the relevant road authority; and (c) repair the roads identified in condition B8(a)(i) if dilapidation surveys identify that the road has been damaged due to development-related traffic during construction, upgrading or decommissioning works; If there is a dispute between the Applicant and the relevant roads authority about road repairs (including timeframes) required under this condition, then either party may refer the matter to the Planning Secretary for resolution.	**Section 5.7.3**
Operating Conditions		
Condition B9	The Applicant must ensure:	
	(a) the internal roads are constructed as all-weather roads;	**Section 5.7.2**
	(b) there is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site;	**Section 2.5 and Section 3.8**
	(c) the capacity of the existing roadside drainage network is not reduced;	**Section 3.1.1**
	(d) all vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction; and	**Section 5.6 and Appendix F**

SSD 33964533 Conditions	Description	Section addressed
	(e) development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the sealed public road network.	**Section 5.7.2**
Traffic Management Plan		
Condition B10	Prior to commencing road upgrades identified in condition B7, the Applicant must prepare a Traffic Management Plan for the development in consultation with TfNSW, Upper Hunter Shire Council and Mid-Western Regional Council, and to the satisfaction of the Planning Secretary. This plan must include:	**This document Appendix H**
	(a) details of the transport route to be used for all development-related traffic;	**Section 3.3, and Appendix G**
	(b) details of the road upgrade works required by condition B7;	**Section 3.1, Section 5.3 Appendix A, Appendix B**
	(c) a reconciliation table to demonstrate all traffic-related management measures and recommendations identified in the EIS have been included in the plan;	**Section 5**
	(d) monitor the compliance of vehicles using the access route described in conditions B3 and B4 and B5;	**Section 5.6**
	(e) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:	
	(i) details of the dilapidation surveys required by condition B8 of this consent;	**Section 5.7.1**
	(ii) temporary traffic controls, including detours and signage, in particular regarding the left in / left out arrangement at the Ringwood Road / Golden Highway intersection, and the turnaround point on Barnett Street;	**Section 3.1, Section 5.3, Section 5.6 Appendix A and Appendix B**
	(iii) monitoring the bi-directional traffic volumes on the Golden Highway at the Ringwood Road intersection;	**Section 3.6.5**
	(iv) limiting construction traffic associated with the development to ensure that vehicle movements along the Golden Highway do not exceed 380 vehicles per hour during the AM peak hour;	**Section 3.6.5**
	(v) scheduling the arrival and departure of heavy vehicles from the site to avoid the PM peak hour where practicable;	**Section 3.6.3**
	(vi) notifying the local community about development-related traffic impacts;	**Section 6.1**
	(vii) procedures for receiving and addressing complaints from the community about development- related traffic;	**Section 6.2**
	(viii) minimising potential cumulative traffic impacts with other projects in the area during construction, upgrading or decommissioning works;	**Section 4.1**
	(ix) minimising dirt tracked onto the public road network from development-related traffic;	**Section 5.7.2**

SSD 33964533 Conditions	Description	Section addressed
	(x) details of any employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to encourage employee use of this service;	**Section 3.6.4**
	(xi) measures for managing light vehicle peak numbers, including car-pooling or ride sharing by employees;	**Section 3.6.3**
	(xii) scheduling of haulage vehicle movements to minimise convoy length or platoons, and to minimise conflict with light vehicles;	**Section 3.5.2** and **Section 5.5.**
	(xiii) responding to local climate conditions that may affect road safety such as fog, dust, wet weather and flooding;	**Section 5.5 and Appendix F**
	(xiv) measures to minimise dust generated by construction traffic;	**Section 5.7.5 and Appendix F**
	(xv) responding to any emergency repair or maintenance requirements; and	**Section 5.7.4**
	(xvi) a traffic management system for managing heavy vehicles requiring escort;	**Section 5.9 and Appendix E (OSOM TMP)**
	(f) a driver's code of conduct that addresses:	**Section 5.5 and Appendix F**
	(i) driver fatigue;	
	(ii) procedures to ensure that drivers adhere to the designated transport routes and speed limits; and	
	(iii) procedures to ensure that drivers implement safe driving practices;	
	(g) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan.	**Section 5.4**
	Following the Planning Secretary's approval, the Applicant must implement the Traffic Management Plan.	**Section 7**

Agency and other stakeholder consultation has been undertaken as per the Development Consent for plans. Preparation of this TMP has been undertaken in consultation with the Transport for NSW (TfNSW), Upper Hunter Shire Council and Mid-Western Regional Council. Stakeholder correspondence, and where this feedback has been addressed in this TMP, is documented in **Appendix H**.

1.2. Quality Assurance

The TMP will be updated by Lightsource bp in response to any incidents (potential or actual), traffic disruptions or other improvements identified through road upgrades and Project construction.

The commencement of intersection upgrades cannot commence until this TMP has been approved by Department of Housing and Infrastructure (DPHI) in accordance with Condition B10 of the Development Consent.

The approvals that will be required are as follows:

- Construction TMP approval – DPHI.
- Road Opening Permit / Works Authorisation Deed for work on the Ringwood Road / Golden Highway intersection.
- Road Occupancy Licence for work on the Ringwood Road / Golden Highway intersection.

2. Overview of the Project

2.1. Project Setting

The Project is comprised of predominantly managed agricultural land, approximately 28 km southwest of the township of Merriwa (refer to **Figure 2-1**) and is surrounded by the Goulburn River National Park.

The solar farm Project Area is located on freehold land which is owned by Lightsource bp. Upgrades to the public road network include roads under the responsibility of TfNSW (Golden Highway) and Upper Hunter Shire Council (Barnett Street, Ringwood Road and Wollara Road).

The Project Area is approximately 15 km from the Central West Orana Renewable Energy Zone (REZ) however it is not related to the REZ, nor is it dependent on the REZ. The REZ location was selected because of the benefits of relatively low transmission build costs due to its proximity to the existing transmission network structures. This Project Area benefits from utilising the existing 500 kV transmission line crossing the south-east portion of the site, allowing connection to the national electricity grid and eliminating the need for the Project to construct a transmission line to connect to the grid.

The Project Area is zoned RU1 Primary Production and is generally flat, with some minor undulation in the landscape which has been disturbed by historical agricultural activity.

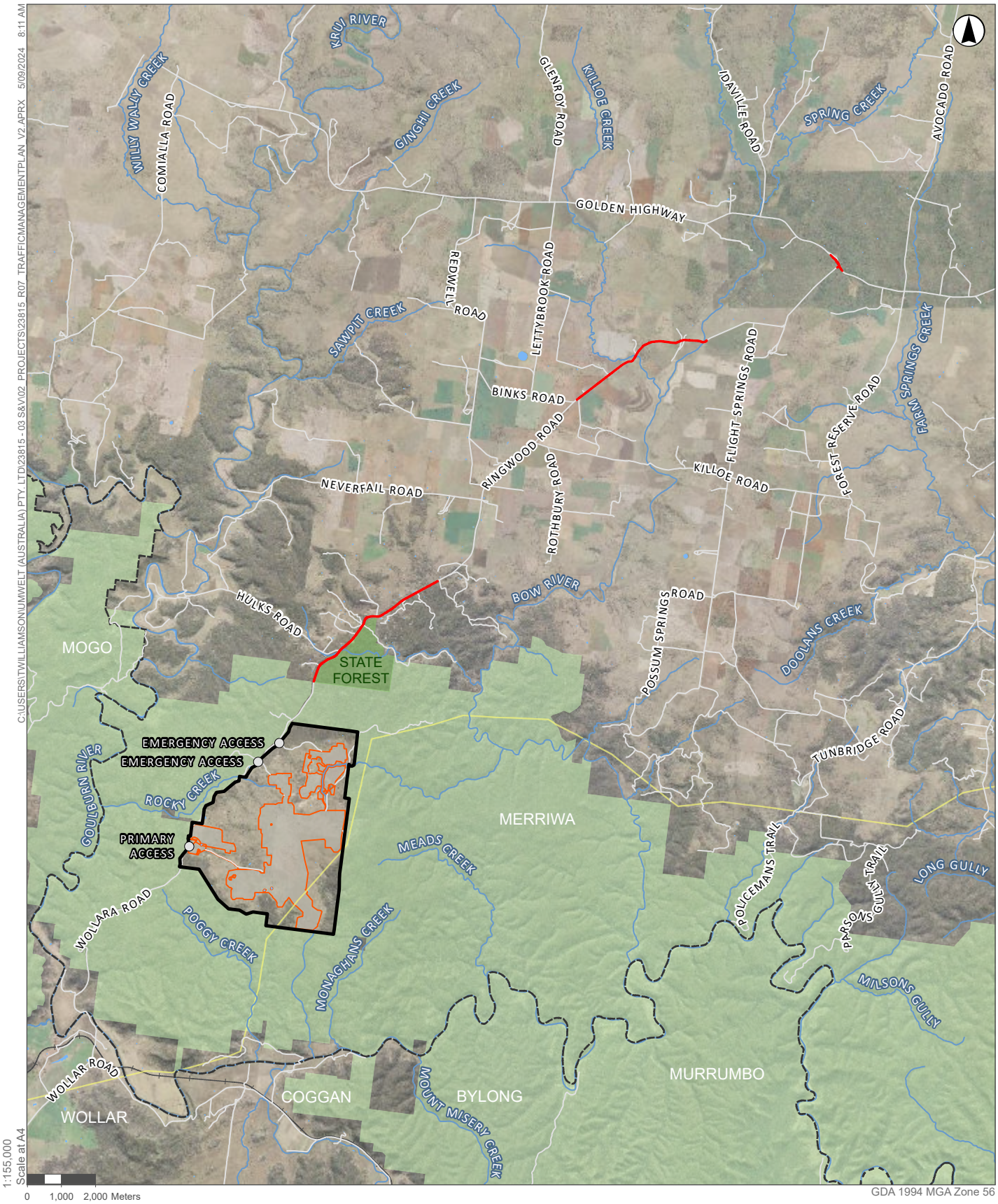
2.2. Development Area

The Project Area is considered as the total area of the development, including the development boundary. It comprises approximately 792.19 ha of freehold land and Crown land contained within the development boundary.

The Project Area is comprised of five key components, including:

- Solar farm footprint.
- Public roads and culverts.
- Substation.
- BESS.
- Temporary Workers Accommodation Facility.

The Project Area is shown below in **Figure 2-2**.



Legend

- Access Points
- Electricity Transmission Line
- Watercourse
- Roads and Tracks
- Railway
- Local Goverment Boundary
- Road Upgrades Area
- Project Area
- Development Footprint (Amended Project)
- NSW National Parks
- NSW State Forests
- Waterbodies

FIGURE 2.1

Regional Locality

Image Source: ESRI Basemap (2022) **Data source:** NSW LPI (2022), NSW DSFI (2022); NPWS Estate (2022); Lightsource BP (2022)

2.3. Project Area and Development Footprint

The Project Area covers approximately 2,000 ha with a Development Footprint of approximately 792.19 ha, as shown in **Figure 2-2**.

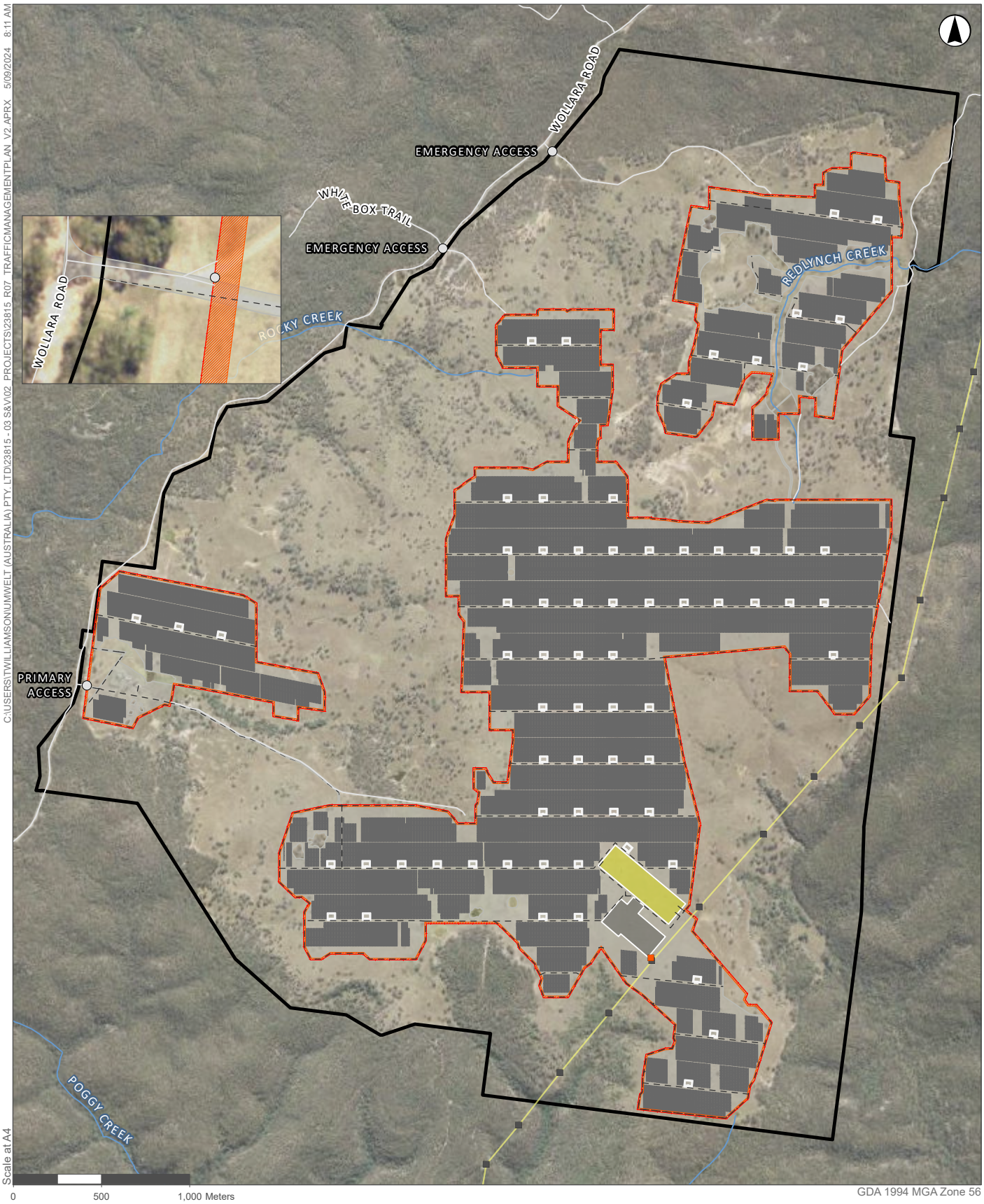
The remainder of the Project Area will be protected and managed as a Biodiversity Stewardship Site (BSS).

Access to the Development Footprint will be off Wollara Road via the existing driveway towards the southern end of the property's western boundary. Two secondary access points, also off Wollara Road, will be available towards the north of the property's western boundary for emergency use. Emergency services and National Parks and Wildlife Service (NPWS) access will be maintained through the Project Area, to be used for emergencies only or on request, refer to **Figure 2-2**.

The layout of the solar arrays associated infrastructure and temporary workers accommodation facility will be entirely contained within the Development Footprint.
The Project also includes road repairs which are located outside of the Project Area (across approximately 8.1 km of existing road). These encompass parts of Ringwood Road (including culverts at two waterway crossings), Wollara Road, the intersection of Barnett Street and Golden Highway, and the intersection of Golden Highway and Ringwood Road. Works on the two culverts and the intersection are required to support Project construction traffic, whilst other road improvements are in response to feedback and represent part of a community benefit offered by the Project. All road upgrades will improve safety outcomes for both the Project and the broader community.

The works on Wollara Road, Ringwood Road and Barnett Street are contained to the road reserve and landowners' consent from Upper Hunter Shire Council has been obtained.
The upgrades to the intersection of the Golden Highway and Ringwood Road require works which will be largely contained within the road reserve but will encroach into the cadastral boundary of Lot 1 DP34496 (outside of the existing fence-line). The formalisation of the bus stop on Ringwood Road at the intersection with Golden Highway will be contained within Lot 7303 DP 1146691.

The Project Area and Development Footprint is shown below in **Figure 2-2**.



Legend

- Existing Tower
- New Tower
- Access Points
- Electricity Transmission Line
- Indicative Access Tracks
- Roads and Tracks
- Security Fence
- Watercourse
- Project Area
- Solar Panels
- Fire Break
- Battery Energy Storage System
- Inverter
- Substation
- Development Footprint (Amended Project)

FIGURE 2.2

Development Footprint - Solar Farm

Image Source: ESRI Basemap (2022) **Data source:** NSW LPI (2022), NSW DSFI (2022); NPWS Estate (2022); Lightsource BP (2022)

2.4. Components and Features

The Project includes the construction, operation, maintenance, and decommissioning of a PV solar farm with a capacity of approximately 550 MWp, which will supply electricity to the national electricity grid.

The key components of the Project are shown in **Figure 2-2** and include:

- Approximately one million bifacial solar PV modules.
- A centralised BESS with an approximate 450 MWp and 900 MWh capacity with the option of a decentralised BESS with an approximate 580 MWp and 1160 MWh capacity.
- Onsite 500 kV switchyard and substation, with underground electrical conduits and cabling.
- On-site power line connection via underground electrical conduits and cabling.
- Telecommunication tower.
- An additional transmission tower within the existing easement of the 500 kV transmission line adjacent to the BESS/substation.
- Road upgrades required on Ringwood Road, Wollara Road and the intersection of Ringwood Road and Barnett Street with the Golden Highway.
- Perimeter security fencing, CCTV and security lighting
- Office amenities, parking and storage facilities.
- Laydown areas suitable for storing plant and equipment, solar panels, cable drums and areas to support waste management activities.
- A temporary helipad for emergency response purposes during construction.
- On-site Temporary Workers Accommodation Facility within the Development Footprint.

The Project is expected to operate for 40 years or more. After the initial 40-year operating period, the solar farm would either be decommissioned, removing all above ground infrastructure, and returning the site to its existing land capability, or repurposed with new PV equipment subject to technical feasibility and planning consents.

2.5. Road Network

2.5.1. Local Road Network

The local road network and key intersections for this Project are shown in **Figure 2-3**. Key roads that would provide access to the Project Area are described below, including Golden Highway, Ringwood Road, Wollar Road and Barnett Street. Wollar Road is outside of the construction traffic route but may be used by locally based workforce. Each of these roads are described below.

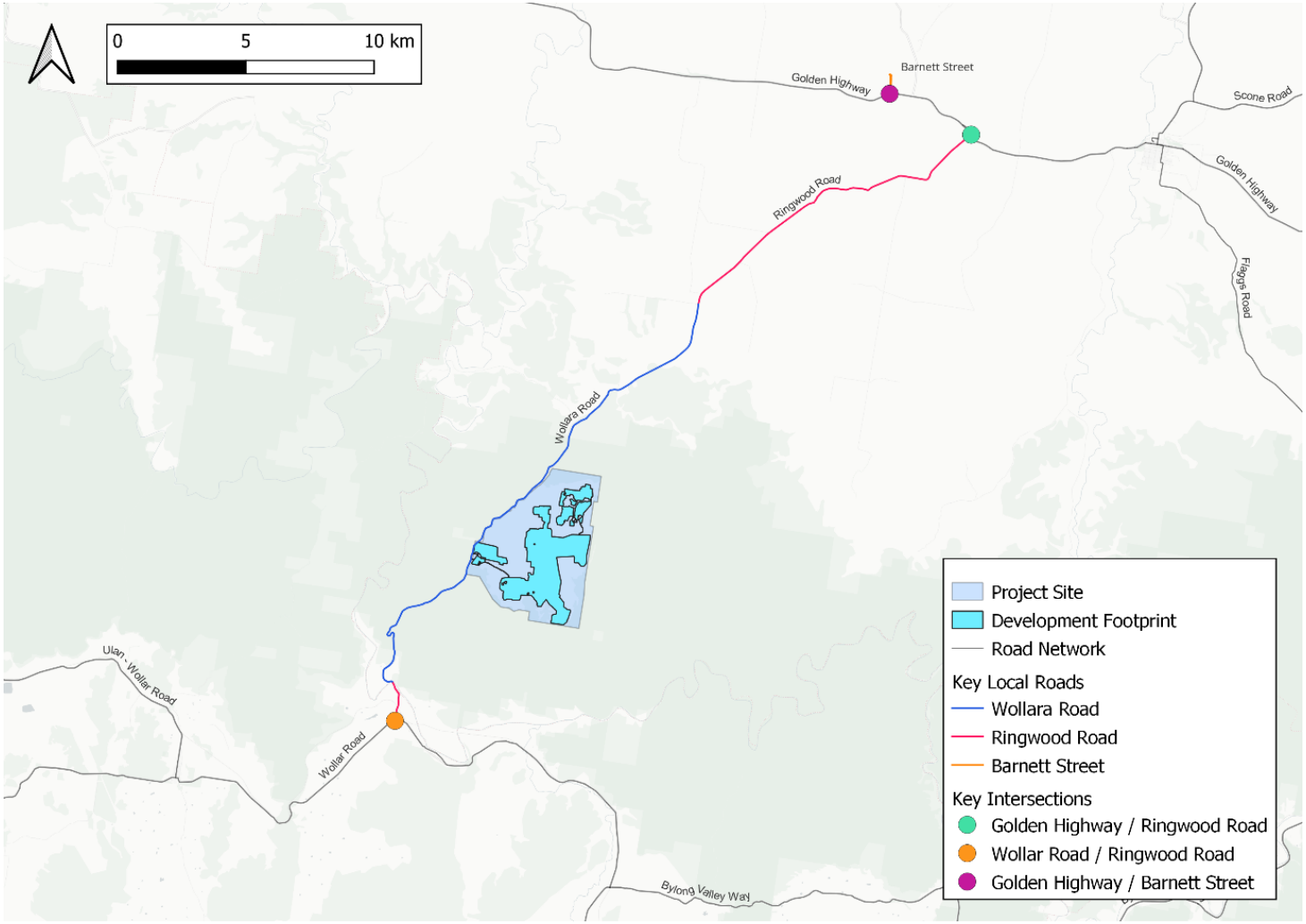


Figure 2-3: Local Road Network

Golden Highway, which is a key east-west corridor located in the Hunter and Orana regions, connecting Newcastle and Dubbo. The highway is an approved B-double route. The highway is classified as a State road and has a posted speed limit of 100 km/h. **Figure 2-4** shows the configuration of the Golden Highway at its intersection with Ringwood Road, as observed during a site visit carried out on 22 September 2021.

Figure 2-4: Golden Highway looking west (left) and east (right)

Ringwood Road, which is a local road forming part of a continuous north-south road corridor with Wollara Road between the Golden Highway and Wollar Road. Ringwood Road is divided into two sections on this corridor, with the northern section running between the Golden Highway and Neverfail Road, and the southern section running between the Goulburn River and Wollar Road. Between these two sections, the road is designated as Wollara Road. Ringwood Road is sealed and generally flat with low vertical grades. The road operates under a default speed limit of 100 km/h as there were no regulatory speed signs observed during a site visit carried out on 22 September 2021. However, advisory speed signs (35, 65 and 85 km/h) were located at bends along the road alignment. **Figure 2-5** shows a typical section of Ringwood Road as observed during the site visit.

Figure 2-5: Ringwood Road looking south (left) and north (right)

Wollara Road, which is a local road forming part of a continuous north-south road corridor with Ringwood Road between the Golden Highway and Wollar Road. The Wollara Road section on this corridor runs between Neverfail Road and the Goulburn River. The road provides direct access to the Project and comprises a combination of sealed and unsealed sections north of the site and unsealed sections south of the site. The road operates under a default speed limit of 100 km/h, as there were no regulatory or advisory speed signs observed during a site visit carried out on 22 September 2021. **Figure 2-6** shows a typical unsealed section of Wollara Road as observed during the site visit.

Figure 2-6: Wollara Road looking north (left) and south (right)

Wollar Road, which is an east-west regional road between Bylong at its junction with Bylong Valley Way and Budgee Budgee at its junction with Ulan Road. The road is sealed and has a posted speed limit of 100 km/h. **Figure 2-7** shows the configuration of Wollar Road at its intersection with Ringwood Road, as observed during a site visit carried out on 22 September 2021.

Figure 2-7: Wollar Road looking east (left) and west (right)

Barnett Street, which is a north-south access road located approximately 3.8 km west of the Golden Highway / Ringwood Road intersection. The road is unsealed and provides access to Lot 1 / DP 1108292. **Figure 2-8** shows the configuration of Barnett Street at its intersection with Golden Highway, based on Google Maps imagery from August 2023.

Figure 2-8: Barnett Street view from the east on Golden Highway (left) and from the west (right)

2.5.2. Existing Traffic Volumes

Intersection turning movement volumes were collected at the Golden Highway / Ringwood Road intersection on Thursday 31 March 2022 from 6.00am to 10.00am and 3.00pm to 7.00pm. On the surveyed day, the Golden Highway / Ringwood Road intersection experienced a morning peak hour from 7.15am to 8.15am and an evening peak hour from 3.00pm to 4.00pm, Peak hour traffic volumes at this intersection are shown in **Figure 2-9**.

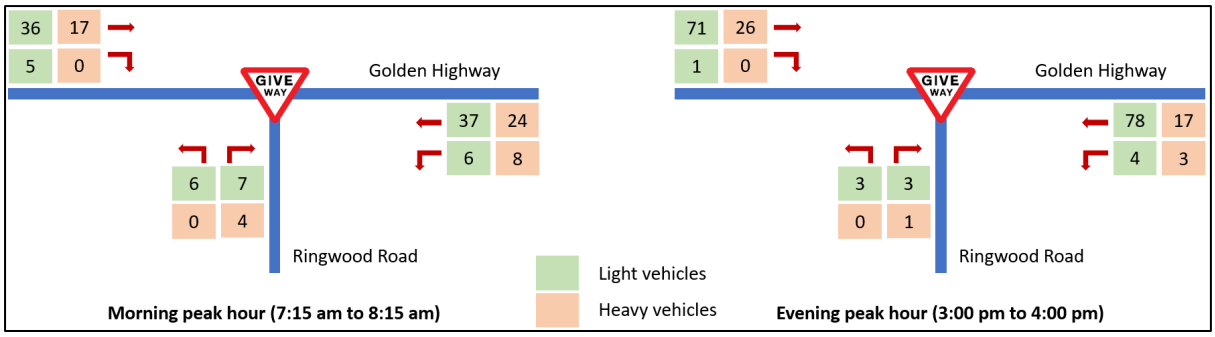


Figure 2-9: Peak hour traffic volumes at the Golden Highway / Ringwood Road intersection

At the Golden Highway / Ringwood Road intersection, evening peak hour volumes are generally higher than morning peak hour volumes. In addition, traffic volumes turning into and out of Ringwood Road are low, with Golden Highway eastbound and westbound through vehicles as the major movements at the intersection.

Traffic volumes on the Golden Highway were collected as part of the speed surveys carried out in 2023 (discussed in **Section 2.5.3**). A review of the 2023 volumes on the Golden Highway from the speed surveys for the same morning and evening peak hours showed a similar volume when compared to the 2022 intersection counts.

Hourly traffic volumes in both directions along Ringwood Road were collected over a one-week period from Thursday 31 March 2022 to Wednesday 6 April 2022. **Figure 2-10** and **Figure 2-11** show the bi-directional hourly average traffic volumes observed on Ringwood Road during the surveyed week on weekdays and weekends, respectively.

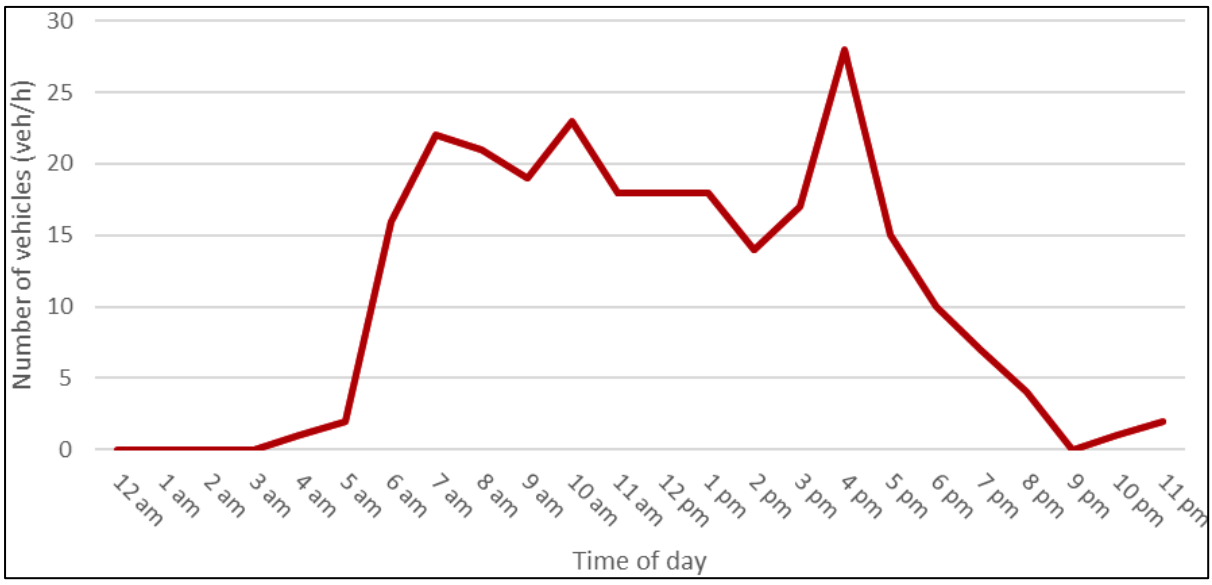


Figure 2-10: Average weekday traffic volumes on Ringwood Road

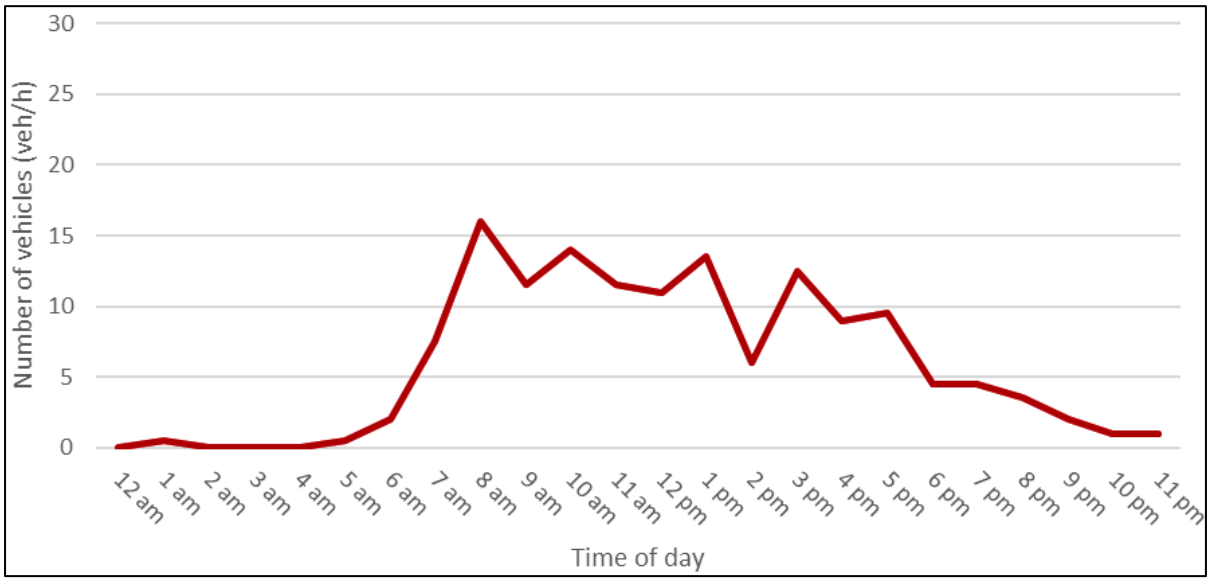


Figure 2-11: Average weekend traffic volumes on Ringwood Road

Ringwood Road carried low traffic volumes on the surveyed weekdays, with a maximum average hourly volume of 28 vehicles observed from 4.00pm to 5.00pm. Traffic volumes were lower on the surveyed weekend, with a maximum average hourly volume of 16 vehicles observed from 8.00am to 9.00am.

2.5.3. Existing Speed

A speed survey on the Golden Highway approximately 70 metres east of Ringwood Road was carried out over a one-week period from Tuesday 31 October 2023, to Monday 6 November 2023**. Table 2-1** shows the 85th percentile speed and average speed recorded on the Golden Highway in both directions over the survey period.

Table 2-1: Golden Highway speed summary (7-days)

Direction	Posted speed limit (km/hr)	85th percentile speed (km/hr)	Average speed (km/hr)
Golden Highway eastbound	100	98.8	84.9
Golden Highway westbound	100	99.9	81.1

As shown in **Table 2-1**, the 85th percentile speed on the Golden Highway in both directions was observed to be close to the posted speed limit (100 km/hr). This suggests that the majority of drivers ignore the advisory speed limit signage (75 km/hr) near the Golden Highway / Ringwood Road intersection. However, average speeds of approximately 85 km/hr in the eastbound direction and 81 km/hr in the westbound direction were closer to the advisory speed limit.

2.5.4. Existing Intersection Performance

An assessment of intersection performance has been based on criteria outlined in the *Guide to Traffic Generating Developments* (Roads and Traffic Authority, 2002). The average delay for signalised intersections is calculated for all movements, while for priority (sign-controlled) intersections, it is determined for the most delayed movements. The delay is expressed in seconds per vehicle. **Table 2-2** shows the criteria adopted for the intersection performance assessment.

Table 2-2: Intersection performance criteria

Level of service	Average delay per vehicle	Traffic signals and roundabouts	Give-way and stop sign
A	Less than 15	Good operation	Good operation
B	15 to 28	Good with acceptable delays and spare capacity	Acceptable delays and spare capacity
C	29 to 42	Satisfactory	Satisfactory, but accident study required
D	43 to 56	Operating near capacity	Near capacity, required other control mode
E	57 to 70	At capacity, at signals, incidents will cause delays. Roundabouts	At capacity, required other control mode
F	Over 70	Extra capacity required	Extreme delay, traffic signal or other major treatment required

Golden Highway / Ringwood Road were modelled using *SIDRA Intersection* modelling software. *SIDRA Intersection* is a micro-analytical tool for evaluation of intersection performance in terms of capacity, Degree of Saturation (DOS), Level of Service (LOS), average delay and queue length, and is an appropriate tool for modelling individual intersections. The performance of the modelled intersections in SIDRA is shown in **Table 2-3.**

Table 2-3: Existing intersection performance (2022) – Golden Highway / Ringwood Road

Period	Approach	DOS	Average delay (sec/veh)	LOS	95% back of queue (m)
Weekday morning peak (7.15am to 8.15am)	Golden Highway eastbound	0.04	8	A	<5
	Golden Highway westbound	0.04	9	A	<5
	Ringwood Road northbound	0.02	7	A	<5
	Overall intersection	**0.04**	**9**	**A**	**<5**
Weekday evening peak (3.00pm to 4.00pm)	Golden Highway eastbound	0.06	8	A	<5
	Golden Highway westbound	0.06	9	A	<5
	Ringwood Road northbound	0.01	7	A	<5
	Overall intersection	**0.06**	**9**	**A**	**<5**

As shown in **Table 2-3**, the intersection of Golden Highway / Ringwood Road operates at LOS A with spare capacity, low average delays and minimal queues on all approaches during the morning and evening peak hour.

2.5.5. Warrants for intersection improvements

The *Guide to Road Traffic Management Part 6: Intersections, Interchanges and Crossings Management* (Austroads, 2020) specifies warrants for additional turning bays at an intersection, based on a combination of peak hour through and turning traffic movements. **Figure 2-12** and **Figure 2-13** show the warrants for turn treatments at unsignalised intersections and the approach to calculate major road traffic volumes, respectively.

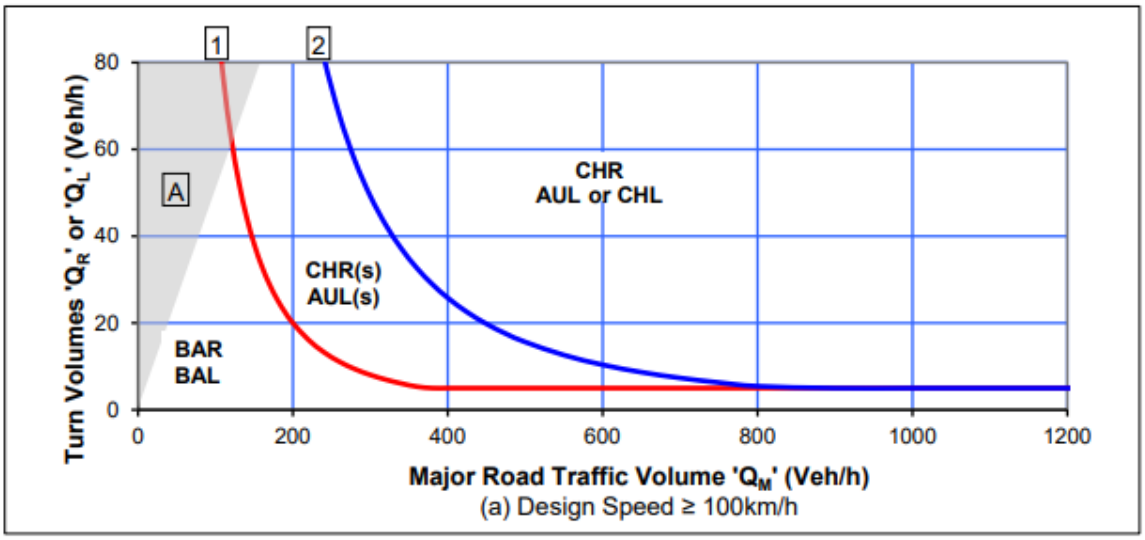
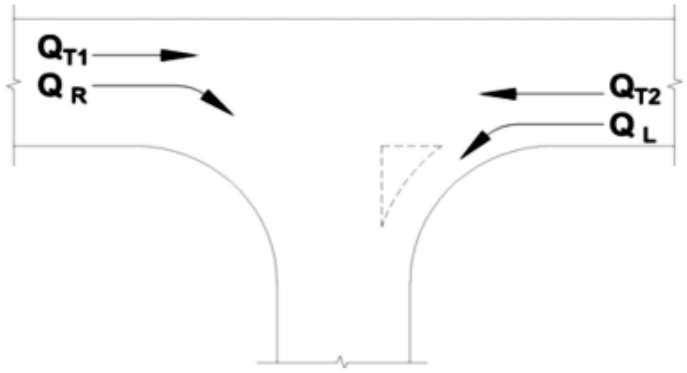


Figure 2-12: Warrants for turn treatments on the major road at unsignalised intersections



Road type	Turn type	Splitter island	Q_M (veh/h)
Two-lane two-way	Right	No	= $Q_{T1} + Q_{T2} + Q_L$
		Yes	= $Q_{T1} + Q_{T2}$
	Left	Yes or no	= Q_{T2}
Four-lane two-way	Right	No	= 50% x $Q_{T1} + Q_{T2} + Q_L$
		Yes	= 50% x $Q_{T1} + Q_{T2}$
	Left	Yes or no	= 50% x Q_{T2}
Six-lane two-way	Right	No	= 33% x $Q_{T1} + Q_{T2} + Q_L$
		Yes	= 33% x $Q_{T1} + Q_{T2}$
	Left	Yes or no	= 33% x Q_{T2}

Figure 2-13: Calculation of major road traffic volume

Approach traffic volumes at the Golden Highway / Ringwood Road intersection in 2025 with and without construction traffic are shown in **Table 2-4** (Project only) and **Table 2-5** (cumulative construction).

Table 2-4: Traffic volumes for turn treatments analysis – Golden Highway / Ringwood Road

Movement	2025 base		2025 construction (Project only)	
	Morning	Evening	Morning	Evening
Major road traffic volume (Q_M) for left turn	64	101	64	101
Major road traffic volume (Q_M) for right turn	145	211	232	298
Left turn volume (Q_L)	14	7	95	13
Right turn volume (Q_R)	5	1	5	1

Table 2-5: Peak hour traffic volumes for turn treatments assessment (cumulative)

Movement	2025 cumulative base		2025 cumulative construction	
	Morning	Evening	Morning	Evening
Major road traffic volume (Q_M) for left turn	246	198	246	198
Major road traffic volume (Q_M) for right turn	424	490	511	577
Left turn volume (Q_L)	14	7	95	13
Right turn volume (Q_R)	5	1	5	1

Applying the volumes above into the graph shown in **Figure 2-12**, additional turn treatments would not be required at the intersection during construction. This conclusion is further supported by the following:

- With Project only construction vehicles, the turn warrants assessment for the right turn is well within the threshold of a Basic Auxiliary Right Turn (BAR).
- The turn warrants assessment with cumulative construction vehicle volumes represents a worst-case scenario and hence traffic volumes would likely be lower.
- The turn warrants assessment includes Project construction heavy vehicles travelling through the intersection three times within the hour (left-in, left-out and eastbound through).
- The right turn in and out of Ringwood Road would be banned for Project construction vehicles and enforced under this TMP.
- An increase in through traffic (Golden Highway eastbound through and westbound through), pushes the right turn treatment horizontally in the turn warrants graph, and hence would always remain on the threshold of a BAR vs Channelised Right Turn (CHR), unless the right turn volume is increased (which Project construction vehicles would not be performing).
- A review of the Golden Highway eastbound right turn volume into Ringwood Road during the survey period showed a maximum hourly volume of five vehicles, which was used in the turn warrants assessment.
- A comparison of the surveyed traffic volumes on the Golden Highway collected in March 2022 vs October 2023 showed negligible increase in traffic volume.
- An on-site Temporary Worker Accommodation Facility (refer to **Section 3.6.2**) has been approved to accommodate the anticipated peak workforce required to construct the Project which will reduce the project generated turning volumes from those used in the EIS Turn Warrants assessment.

This conclusion is further supported by the 2025 intersection performance results where the intersection would operate with spare capacity and at a good LOS during construction (refer to **Section 4.1.1**).

Periodic monitoring of traffic volumes on the Golden Highway will be undertaken throughout the construction period to ensure that the calculation of the warrants for intersection improvements (refer **Section 3.6.5**)

2.6. Parking

There are no formal parking facilities located near the Project Area. A heavy vehicle rest area is located on the northern side of Golden Highway, approximately 300 m west of the Ringwood Road / Golden Highway intersection, as shown in **Figure 2-14**.

The closest formal parking facilities are located in the towns of Merriwa and Wollar, both some 20–30 km from the Project Area.

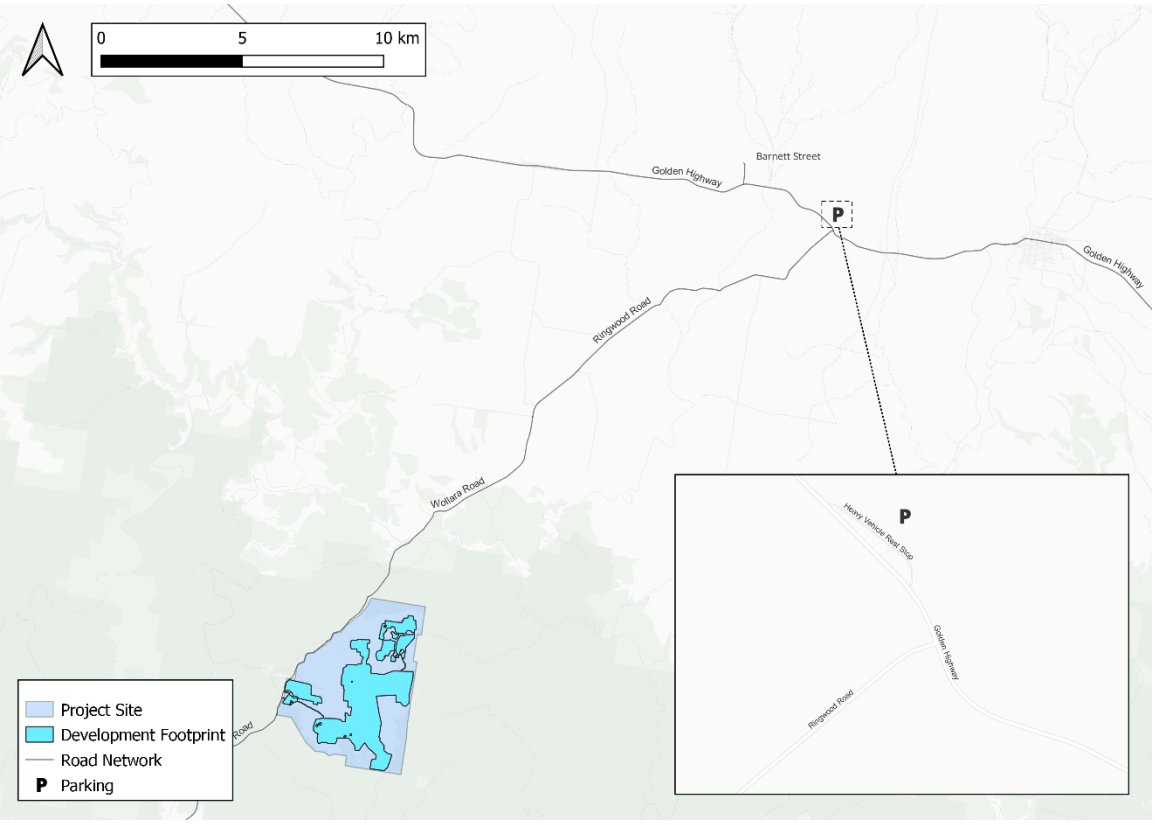


Figure 2-14: Heavy vehicle rest area

2.7. Public Transport

2.7.1. Bus Network

TransCare, a private bus operator, provides a weekday bus service between Merriwa and Scone via the Golden Highway. The bus route operates once per day, with an additional service between Merriwa and Singleton operating once a month. These private bus services connect Merriwa to the NSW rail network at Aberdeen, Scone, Muswellbrook and Singleton.

Merriwa is also served by another private bus operator, Sid Foggs, as part of its Dubbo to Newcastle route. This route operates three days per week. **Figure 2-15** shows the bus routes operated by TransCare and Sid Foggs.

A school bus route operated by Osborn's Transport between Merriwa and Scone serves the Merriwa Pre-School, Scone Grammar School and Scone High School. This route runs along Ringwood Road, Golden Highway and the local road network in Merriwa before proceeding to Scone via Scone Road and Bunnan Road. One service is provided on school days in each direction, corresponding to the school start and finish times.

South of the Project Area, a school bus route operated by Ogden's Coaches runs on the local road network in Wollar before proceeding to Mudgee via Wollar Road and Ulan Road. This route serves students and staff from Cudgegong Valley Public School, Mudgee High School, Mudgee Public School and St Matthews Catholic School. One service is provided on school days in each direction, corresponding to the school start and finish times.

Informal bus stops that serve the Merriwa to Scone school bus route are located on Ringwood Road east of Flight Springs Road, at the intersection of Golden Highway and Ringwood Road, and on Golden Highway near Avocado Road. A bus stop which serves the routes operated by Transcare and Sid Foggs is also located on the Golden Highway in the Merriwa town centre near the Post Office.

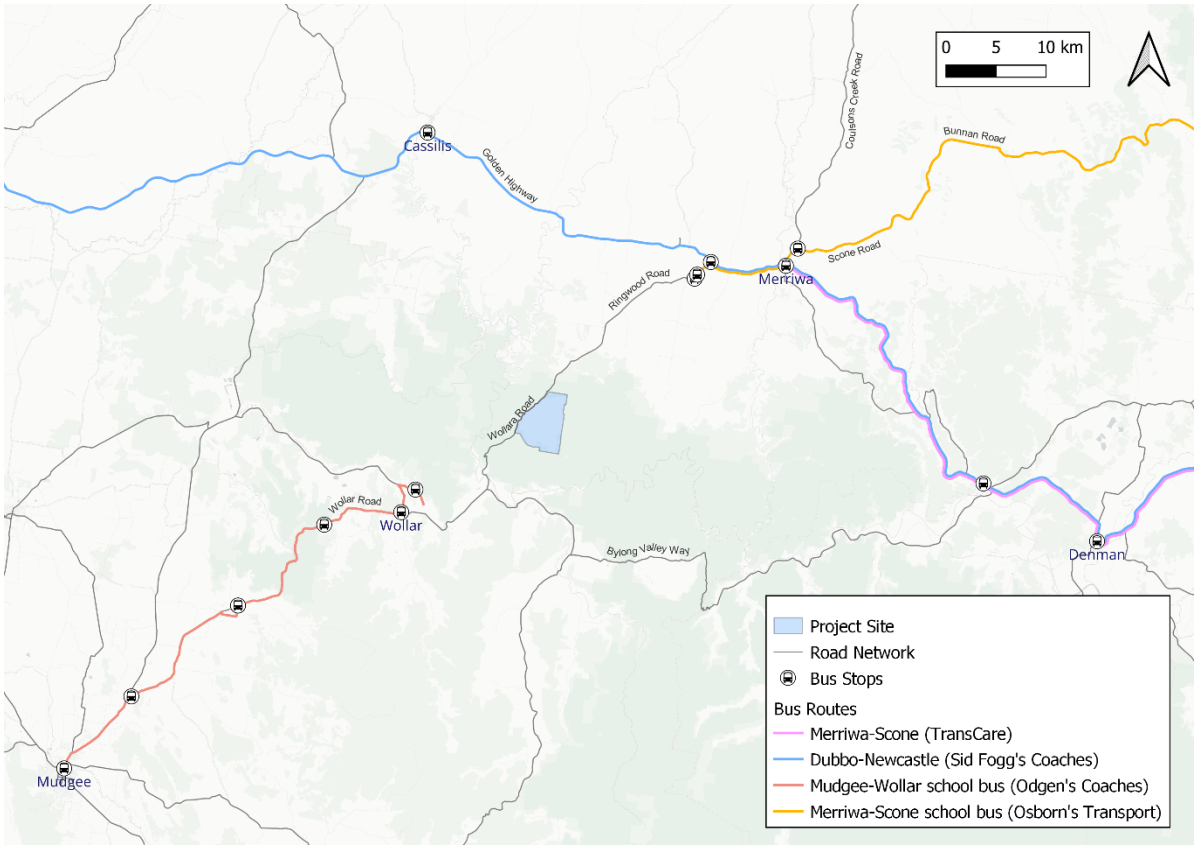


Figure 2-15: Bus routes

Source: Merriwa – Sandy Hollow – Denman – Muswellbrook Bus Timetables (Transcare, 2023), Dubbo to Newcastle Express Coach Services (Sid Foggs, 2023), S823 Merriwa to Scone School via Bunnan Rd (Transport for NSW, 2023) and Mudgee school route – Wollar (Ogden's Coaches, 2023)

2.7.2. Rail Network

The Sandy Hollow – Gulgong rail line, primarily used to transport coal from the Ulan mines, passes through Wollar (refer to **Figure 2-1**). This rail line is owned by TfNSW and is operated by the Australian Rail Track Corporation (ARTC). The rail line has multiple level crossings on Ulan Road, Wollar Road and Ringwood Road, south of the Project Area.

Another rail line exists between Merriwa and Sandy Hollow and is part of the Country Regional Network (CRN), owned by TfNSW. However, this line is currently non-operational.

2.8. Active Transport

The pedestrian and cycle network surrounding the Project Area is limited. There are no formal pedestrian and cycle facilities provided on Golden Highway, Ringwood Road, Wollara Road and Wollar Road. The closest pedestrian facilities are provided at Merriwa town centre. An off-road 700 m long shared path is located in Merriwa and passes underneath the Golden Highway, providing a connection between the Merriwa Showgrounds and Dutton Street.

Sections of the Golden Highway are defined cycle routes by using the road shoulder or parking lane (in Merriwa). There is also a short, shared path in Merriwa along the eastern side of the Merriwa River. **Figure 2-16** shows the cycle network surrounding the site.

Bicycle NSW identifies a scenic cycle route between Bylong and Merriwa. The recommended route travels along Golden Highway, Forest Reserve Road, Killoe Road, Ringwood Road, Wollara Road, Wollar Road and Bylong Valley Way. An additional four scenic cycle routes (Merriwa to Sandy Hollow, Muswellbrook Explorer Loop, Merriwa to Scone and Merriwa to Willow Tree) are also identified. However, these routes travel away from Merriwa and the Project Area to the east. These scenic cycle routes are also shown in **Figure 2-16.**

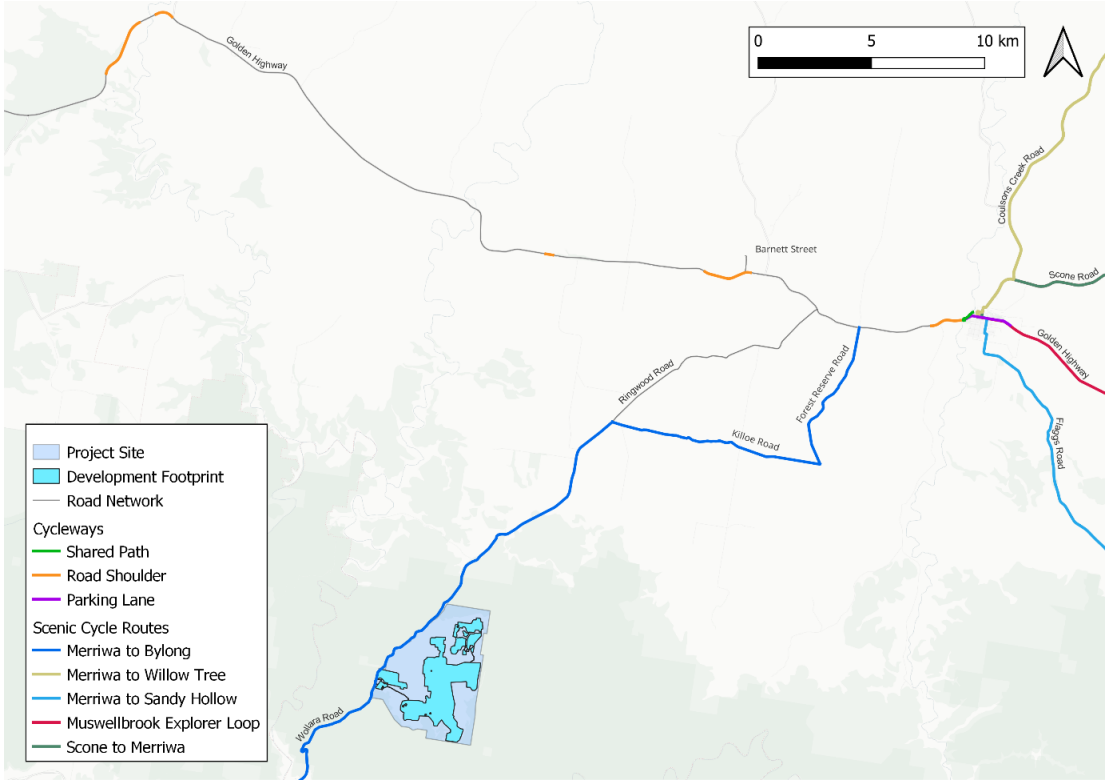


Figure 2-16: Cycle network

Source: Cycleway finder (Transport for NSW, 2023) and NSW Riding Map – Hunter Valley & Northern Tablelands (Bicycle NSW, 2023)

3. Project Phase Activities

3.1. Early Works – Pre-construction

Prior to the commencement of construction of the solar farm, road repairs and upgrades are required on Ringwood Road, Wollara Road and the intersection of Golden Highway and Ringwood Road to facilitate construction vehicle access for the Project.

Conceptual designs for each of these upgrades are provided in **Appendix A.**

3.1.1. Culvert Upgrades

The two culverts on Ringwood Road at the existing road crossings of Bow River and Killoe Creek will be upgraded (refer to **Figure 3-1)**. The scope of works includes:

- Installing culverts designed to accommodate two-way heavy vehicles, including B-doubles and various farm machinery
- Culvert width of 7 m (3.5 m lane width) with a sealed carriageway, guardrails, signage and associated drainage works
- Stockpile site to be located on disturbed land within the road reserve, in consultation with Upper Hunter Shire Council
- Temporary side track at both locations to facilitate access during construction.
- All culvert upgrades designed to B-double standards. However, the Project would only use 19 m semi-trailers, with the exception of Over Size / Over Mass (OSOM) loads under permit.

All culvert and road upgrades that require drainage improvement works must ensure that the capacity of the existing roadside drainage network is not reduced.

3.1.2. Road Upgrades – Ringwood and Wollara Roads

Road upgrades required on Ringwood Road and Wollara Road (**Figure 3-1** and **Figure 3-2)** include:

- Widening and resealing of a 1.8 km section of Ringwood Road between Bow River and Killoe Creek.
- Realignment, widening and sealing of a 1.6 km section of Ringwood Road between Killoe Creek and Binks Road.
- Realignment, widening and sealing of a 4.7 km unpaved section of Wollara Road between the Goulburn River National Park boundary and 1621 Wollara Road.

These upgrades include 8 m bitumen-sealed formation with a minimum of 500 mm unsealed shoulders. The horizontal and vertical alignment of the proposed road will ensure safe sight distance, safe movement of longer vehicles, and an improved road network for the users. All road upgrades have been designed to B-double standards. However, the Project would use 19 m semi-trailers, with the exception of OSOM loads.

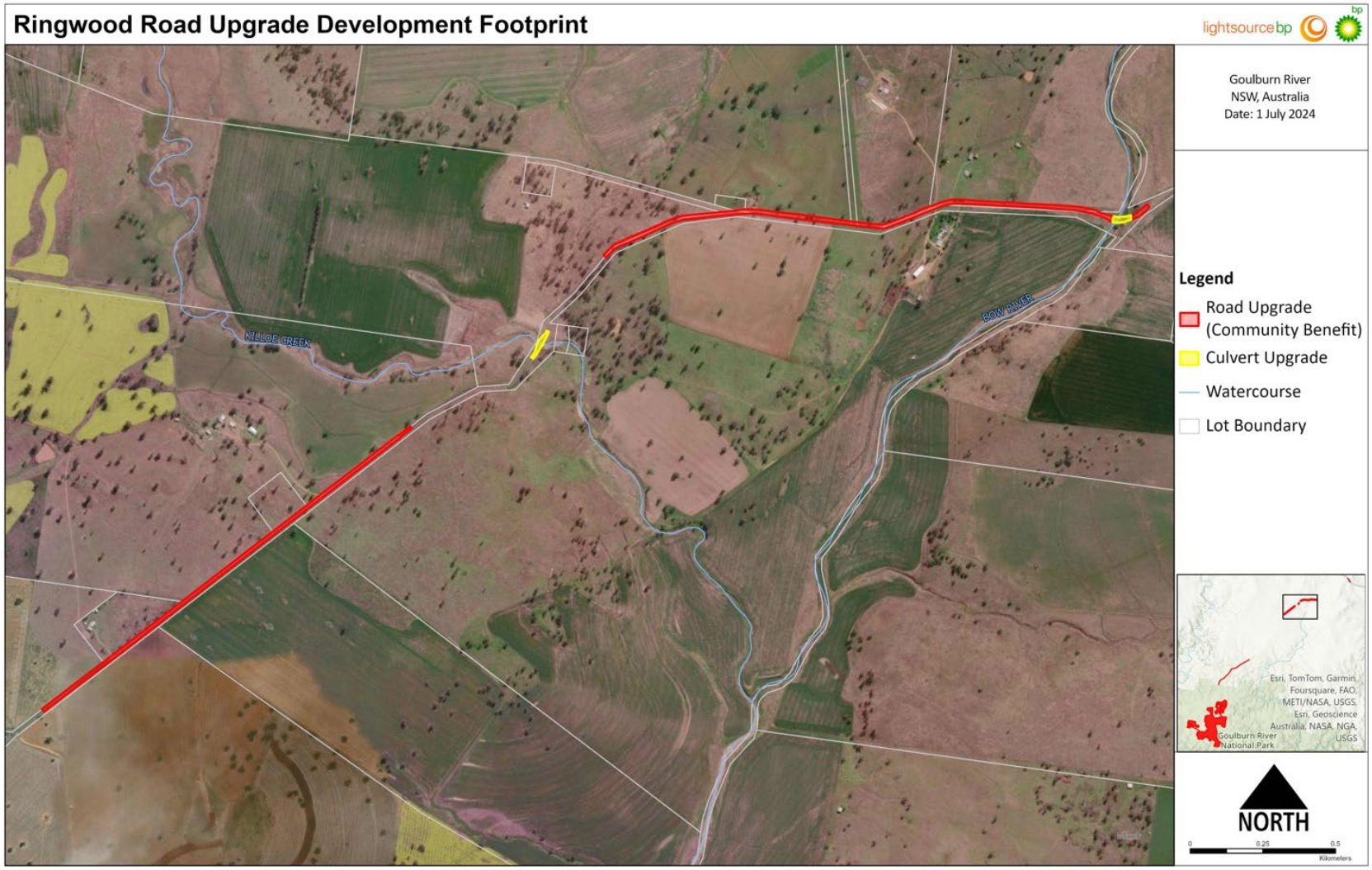
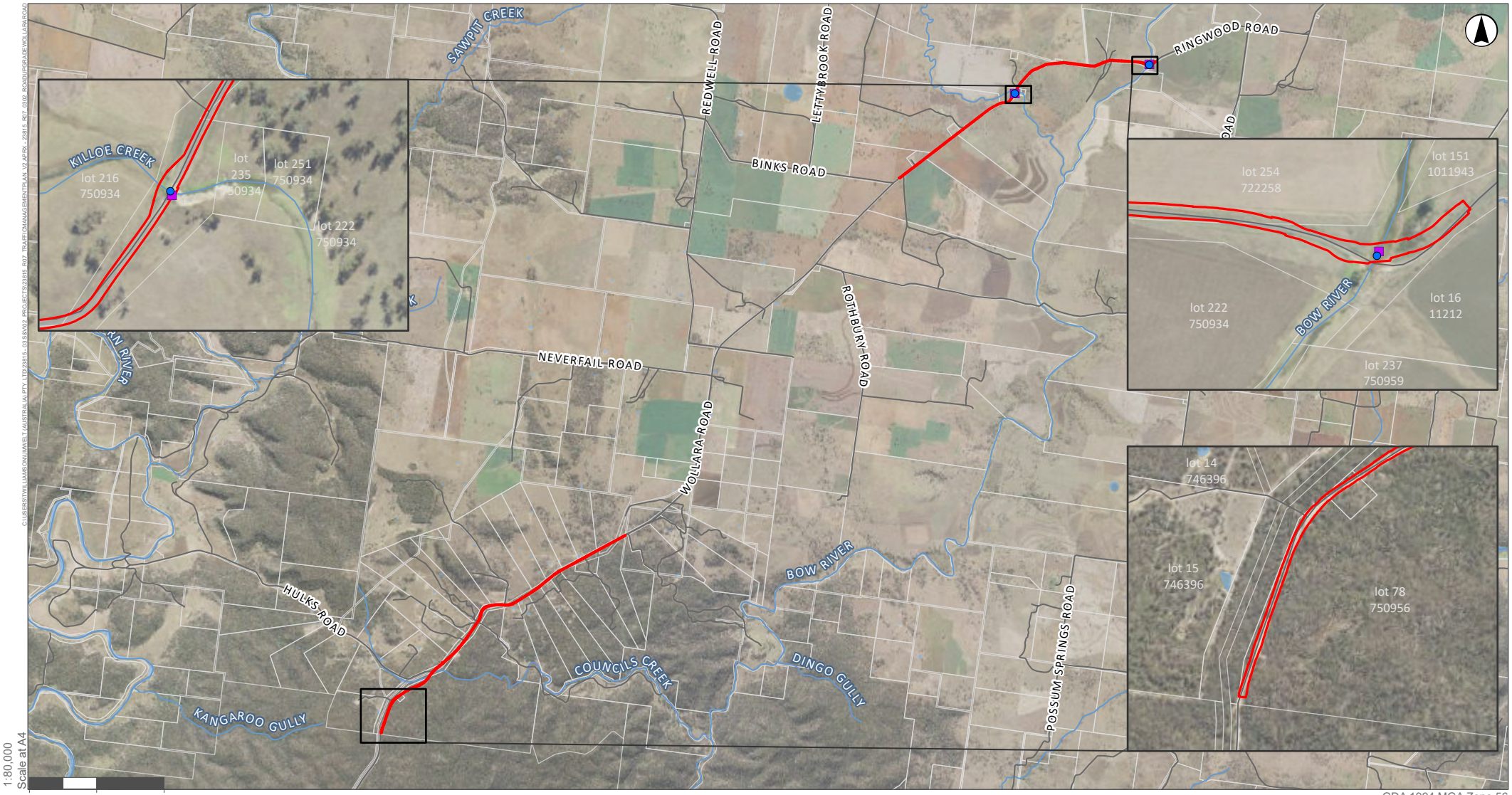


Figure 3-1: Road and culvert upgrade footprint along Ringwood Road



1:80,000
Scale at A4

0 1 2 Kilometres

GDA 1994 MGA Zone 56

Legend

- Culvert Upgrade or Installation
- Water Crossing
- Watercourse
- Road
- Property Boundaries
- Development Footprint
- Waterbodies

FIGURE 3.2

Road upgrade footprint along Wollara Road

Image Source: ESRI Basemap (2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023)

3.1.3. Intersection Upgrades – *Golden Highway and Ringwood Road*

The Golden Highway / Ringwood Road intersection will be upgraded due to existing sight distance issues and to accommodate construction vehicle movements. These upgrades include:

- Pruning and removal of vegetation and select trees on the western side of the intersection on Lot 1 / DP 34496. Currently estimated at six established trees to be removed.
- Construction of a 325 m acceleration/merge lane to allow vehicles to safely turn left onto the Golden Highway from Ringwood Road.
- Earthworks on Lot 1 / DP 34496 and realignment of the existing low voltage power line to provide clearance to the acceleration lane.
- Extension of the existing Golden Highway westbound and Ringwood Road left-in deceleration lane taper to 30 m.
- Formalisation of the informal bus stop on Ringwood Road at the intersection with Golden Highway (Lot 7303 / DP 1146691).

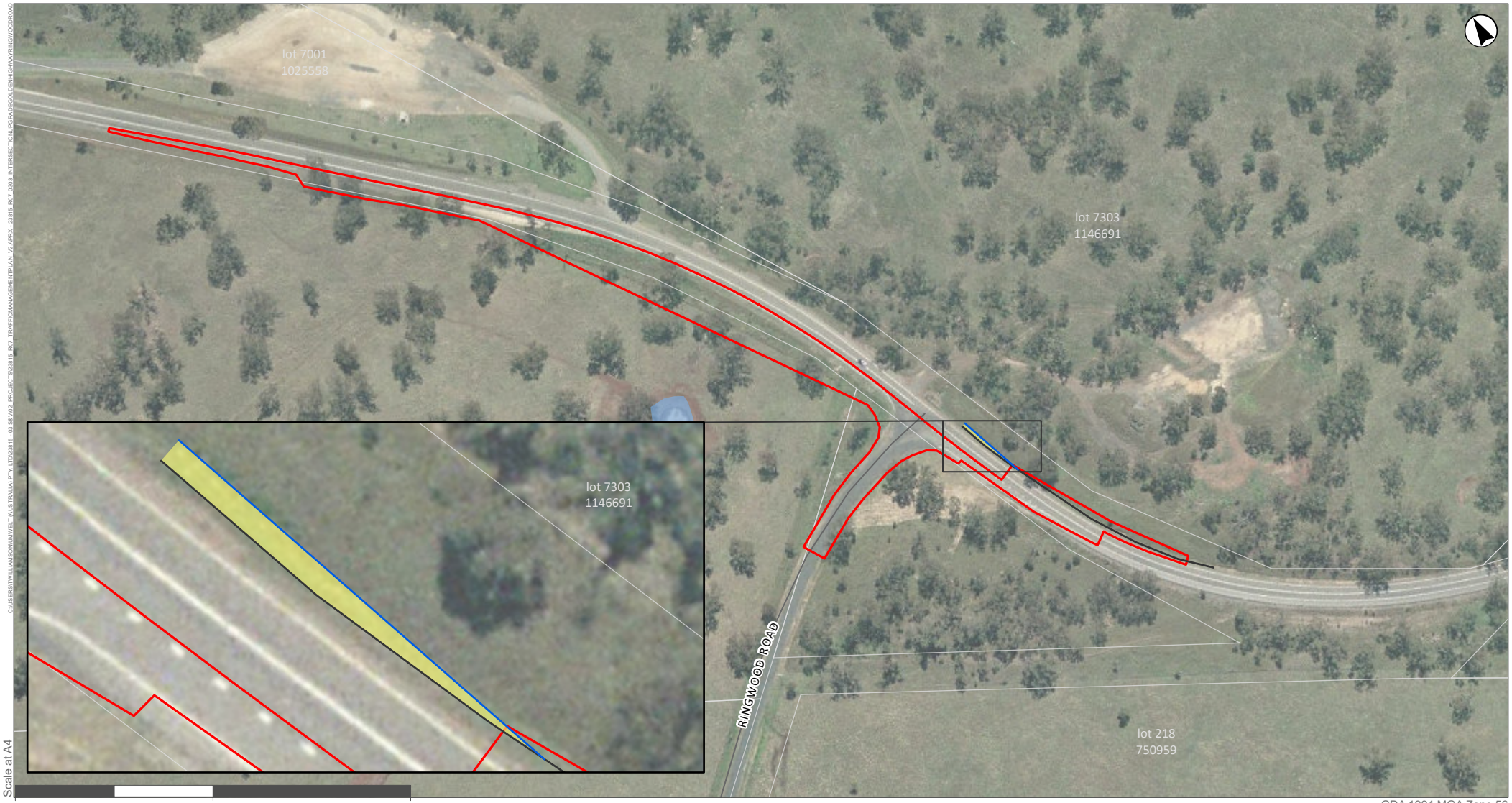
The intersection upgrade footprint is shown in **Figure 3-3**. Drawings of the proposed intersection upgrades are provided in **Appendix B**.

3.1.4. Intersection Upgrade – *Golden Highway and Barnett Street*

The Golden Highway / Barnett Street intersection will be upgraded to accommodate the requirements for the Barnett Street turnaround point. These upgrades will include:

- Reconstruction of the initial 30m of the throat of Barnett Street to a TfNSW compliant sealed pavement, with unsealed shoulders.
- Delineation, line-marking and give-way signage, within Barnett Street.
- Installation of truck turning movement warning signs on both approaches to the intersection.

The intersection upgrade footprint is shown in **Figure 3-4**. Drawings of the proposed intersection upgrades are provided in **Appendix B.**



Legend

- Watercourse
- Road
- Property Boundaries
- Development Footprint
- Waterbodies
- Existing Safety Barrier
- Proposed Indicative Safety Barrier
- Proposed Safety Barrier Disturbance Area

FIGURE 3.3

Intersection Upgrade Footprint at Golden Highway / Ringwood Road Upgrade

Image Source: ESRI Basemap (2023) **Data source:** NSW LPI (2023), NSW DSFI (2023); NPWS Estate (2023)

FIGURE 3.4

Barnett Street Road Upgrades

Legend

- Development Footprint
- Current Dirt Extent

0 25

Metres

Scale: 1:0 at A4
GDA 1994 MGA Zone 56

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Image Source: ESRI Basemap (2024) | **Data Source:** NSW DFSI (2024)

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3.1.5. Early Works – Construction Hours

Early works are currently scheduled to start Q4 in 2024, and the construction period for these early works will be approximately 27 months. As per Condition B17 of the Development Consent, construction hours will generally be limited to Monday to Friday 7.00 am to 6.00 pm and Saturday 8.00 am to 1.00 pm, with no works on Sundays or public holidays. Some works outside these hours may occur as permitted by Condition B18 of the Development Consent. Any variations to these hours will be in accordance with Condition B19.

3.2. Main Works – Construction Activities

Main works are currently scheduled to start Q4 in 2024, and the main works construction period will last up to 27 months, including a peak period of approximately eight months. The main works construction hours will be consistent with the hours specified in **Section 3.1.5** above. The development will have a construction workforce of approximately 350 workers during the peak period.

Construction activities will include:

- Site establishment and enabling works including fencing, ground preparation, construction of the internal access tracks, preliminary civil works and drainage works.
- Construction of the temporary workforce accommodation camp.
- Installation of steel posts and framing system to support the solar panels.
- Installation of PV panels.
- Installation of permanent fencing and security.
- Preparation of foundations for the permanent buildings, BESS and on-site substation.
- Installation of underground cabling (trenching and installation of power conversion stations).
- Construction of site operations and maintenance facility.
- Establishment of the BESS.
- Construction of the onsite substation and associated grid connection infrastructure.
- Removal of temporary construction facilities.
- Revegetation of disturbed areas.

During the peak period, the Project is expected to generate up to 130 two-way construction traffic movements, including 55 heavy vehicle movements, 15 shuttle bus movements (associated with worker transport) and (a maximum of) 60 light vehicle movements.

Road upgrade works in support of the project will be undertaken in accordance with the timetable detailed in **Table 3-1**.

Table 3-1: Timing for road upgrade works

Road / Intersection	Location	Road Upgrade Requirements	Timing
Golden Highway/Ringwood Road intersection	**Figure 3-3**	• Construction of a new 325 m acceleration / merge lane for the left hand turn from Ringwood Road onto Golden Highway for westbound vehicles. • Extension of the existing Golden Highway westbound and Ringwood Road left-in deceleration lane taper to 30 m. • Relocate the safety barrier to ensure complaint BAR treatment.	• Prior to commencing construction.
Barnett Street	**Figure 3-4**	• Sealing of the first 30 m of Barnett St from the intersection with Golden Highway.	• Prior to commencing construction.
Ringwood Road	**Figure 3-3**	• Widening and resealing of a 1.8 km section of Ringwood Road between Bow River and Killoe Creek. • Upgrade/replace culverts at Bow River and Killoe Creek as required.	• Within six months of commencing construction. • Prior to use of Ringwood Road by Heavy Vehicles Requiring Escort.
Ringwood Road	**Figure 3-3**	• Realignment, widening and sealing of an additional 1.6 km section of Ringwood Road between Killoe Creek and Binks Road.	• Within six months of commencing construction.
Wollara Road	**Figure 3-2**	• Realignment, widening and sealing of a 4.7 km unpaved section of Wollara Road between the Goulburn River National Park boundary and 1621 Wollar Road.	• Within six months of commencing construction (with the exception of upgrades to the 1.2 km section of Wollara Road within State Forest land which must be completed prior to commissioning).

3.3. Operation

The expected operational life of the Project is approximately 40 years, however infrastructure upgrades throughout the Project lifecycle may extend its operational life. The key activities that would be undertaken during operation include:

- Visual inspections, maintenance, and cleaning of solar panels and the substation.
- Vegetation management including:
  - potential for grazing of sheep
  - mechanical vegetation maintenance
  - maintaining groundcover vegetation

    - maintenance of landscaping, including the vegetation buffer.
- Site security and operational response.
- Replacement of equipment and infrastructure.
- Pest plant and animal control.
- Livestock operations (i.e., if sheep are grazed onsite).

During the operational phase of the Project, it is anticipated that a workforce of up to 10 FTE personnel would be required, and traffic movements would be restricted to light vehicles for routine operations and maintenance.

3.4. Decommissioning

At the end of the Project's operational life, unless the Planning Secretary agrees otherwise, the solar farm infrastructure will be decommissioned and removed. This will include removal of solar panels and foundation posts, the substation, and associated connections and underground cabling, the operations and maintenance facility, carpark and fencing.

Disturbed areas will be rehabilitated to ensure the Development Footprint is safe, stable, and non-polluting. The Development Footprint will be rehabilitated in accordance the rehabilitation objectives in Condition B41 of the Development Consent.

3.5. Construction Vehicle Routes

Roads forming part of the construction vehicle route for light vehicles and heavy vehicles include the Golden Highway, Ringwood Road, Wollara Road and Barnett Street as follows:

- Ingress: Golden Highway westbound, left-turn onto Ringwood Road southbound, continue straight onto Wollara Road southbound, left-turn into site.
- Egress: Right-turn out of site onto Wollara Road northbound, continue straight onto Ringwood Road northbound, left-turn onto Golden Highway westbound, right-turn onto Barnett Street northbound, U-turn via turnaround facility approximately 190 m north and continue onto Barnett Street southbound, left-turn onto Golden Highway eastbound.

Standard Project construction vehicles, including light vehicles, shuttle buses and heavy vehicles, are anticipated to largely originate from the Golden Highway east of Ringwood Road. This is due to the Port of Newcastle being the main receival port for the Project, the presence of industry and services to the east (Merriwa, Scone, Muswellbrook etc.) and the absence of population centres to the west along the Golden Highway.

With the adoption of an onsite temporary worker accommodation facility, shuttle buses are proposed to transport workers to the township of Merriwa to replenish personal supplies and for general recreation. Although this will contribute to an increase in traffic numbers, overall traffic movements will still be lower than the option to accommodate workers in and around Merriwa.

Standard Project construction vehicles must only perform left-in, left-out movements at the Golden Highway / Ringwood Road intersection. These movements will be facilitated by an upgrade to the intersection as discussed in **Section 3.1.3**, and include a 325 m acceleration lane in the westbound direction. This will ensure a compliant intersection arrangement for these movements.

The left-in, left-out arrangement for construction vehicles at the intersection will be enforced under the construction traffic management measures discussed in **Section 5**.

All deliveries to the Project (excluding oversized loads discussed in **Section 3.5.2** and **Section 3.6.3**) would be carried out by 19 metre semi-trailers to comply with heavy vehicle restrictions on Wollara Road and Ringwood Road. These deliveries would be conducted via the Hunter Expressway, New England Highway, Golden Highway, Ringwood Road, Wollara Road and Barnett Street. One primary access point to the Project Area is proposed on Wollara Road, with an additional two emergency access points also available for the site.

The proposed construction vehicle route and site access are shown in **Figure 3-5**.

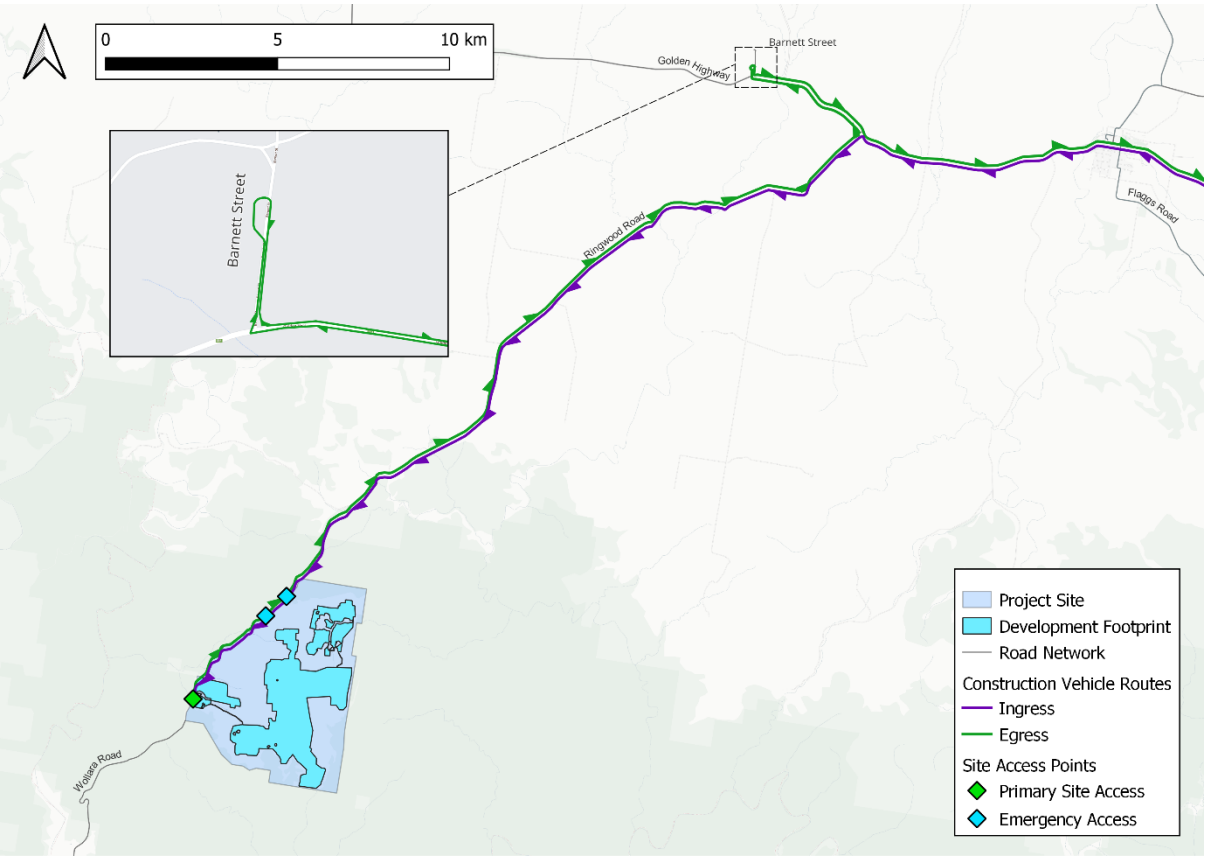

Figure 3-5: Construction vehicle routes and site access

3.5.1. Swept Paths

Swept paths along the proposed construction vehicle route were assessed and are provided in **Appendix C**.

A review of the swept paths for a low loader / semi-trailer (19 metre length as per *Austroads Design Vehicles and Turning Path Templates Guide* (Austroads, 2013) showed the following:

- At the upgraded Golden Highway / Ringwood Road intersection (**Section 3.1.3)**, semi-trailers can safely perform a left-turn into and out of Ringwood Road and light vehicles (non-project related traffic) can safely perform a right-turn into and out of Ringwood Road. This includes modifications to the existing safety barrier and end terminal to allow for a 19 m prime mover and semi-trailer to utilise the shoulder to bypass a 19 m prime mover and semi-trailer waiting to turn into Ringwood Road.
- At the Golden Highway / Barnett Street intersection, semi-trailers can safely perform a right-turn into and left-turn out of Barnett Street, with no intersection upgrades required.
- At the turnaround facility on Barnett Street approximately 190 m north of the Golden Highway, semi-trailers can safely perform a U-turn, with no road upgrades required.
- The primary site access point in its current configuration may only be able to accommodate one vehicle in or out at a time due to the density of surrounding vegetation. Hence, single vehicle entry/exit would be provided at the primary access, with no vegetation removal required. Traffic management would be used to control vehicle movements at the site access by managing vehicles leaving the site and giving right-of-way to vehicles entering the site, as outlined in **Section 5.6**.

The two emergency access points (existing tracks), as shown in **Figure 3-5**, would be used for site emergency access and egress, and as access for National Parks and Wildlife Service only, and not for general construction access.

Swept paths of the proposed site access points with high resolution surveys/aerials would be developed as the project progresses to determine the most appropriate site access arrangements.

3.5.2. Oversize / Overmass Vehicle Routes

Transportation of large Project infrastructure will require OSOM vehicles exceeding the regulatory limits of standard vehicle dimensions of 19 m in length, 2.5 m in width, 4.3 m in height and 42.5 tonnes (t) in weight (depending on axle groups). OSOM vehicles are expected to travel to the site from the Port of Newcastle via Industrial Drive, Pacific Highway, Newcastle Inner City Bypass, Newcastle Road, Hunter Expressway, New England Highway and Golden Highway, as shown in **Figure 3-6**. These are all approved B-double roads and are suitable for the OSOM vehicles considered for this Project.

OSOM vehicles would return via the same roads in the reverse direction. Contrary to standard Project construction vehicles, egressing OSOM vehicles are proposed to perform a right-turn from Ringwood Road to the Golden Highway in the eastbound direction, as these movements would be undertaken outside of peak periods and under additional traffic control and management.

All OSOM and heavy vehicle movement would be appropriately scheduled to avoid creating convoys along the transport routes in order to minimise the impact to other road users.

Depending on the dimensions of the OSOM vehicle and travel conditions, a pilot vehicle and escort vehicle may be required. Whether pilot vehicles and escort vehicles are required will be determined once details of any oversize / over mass development infrastructure is known. All heavy vehicles and heavy vehicles requiring escort associated with the development must travel to and from the site via the Golden Highway / Ringwood Road intersection, as detailed in **Appendix D**.

Prior to any OSOM vehicles travelling to the development, the Construction Contractor will assess the loads and dimensional requirements, and if they are deemed to be oversize or over mass, conduct a review of all National Heavy Vehicle Regulator (NHVR) regulations in conjunction with Council /TfNSW regulations and request all necessary approvals and permits, as required. These management measures will be implemented by the Construction Contractor prior to any OSOM vehicles travelling to the development.

A review of the OSOM vehicle route shown in **Figure 3-6** was undertaken with the infrastructure in its current condition. The causeways at Bow River and Killoe Creek require upgrades (discussed in **Section 3.1.1**) to facilitate the swept path of the OSOM loads, as shown in **Appendix C**. At other locations along the route, traffic management measures are necessary, and would be confirmed by Lightsource bp's Construction contractor during detailed investigation of the OSOM vehicle route at a later stage of the Project.

To inform the OSOM vehicle route assessment, Lightsource bp has obtained a Transport Management Plan developed by Rex J Andrews for a project located further west of the Project Site (Avonlea Solar Farm, see **Appendix E**). The Transport Management Plan includes an assessment of the same OSOM vehicle to be used by this Project and OSOM vehicle route from the Port of Newcastle to the Golden Highway / Ringwood Road intersection. Hence, the required traffic management measures to accommodate OSOM vehicles for this Project would be the same (up until the Golden Highway / Ringwood Road intersection) and includes:

- Pacific Highway / Newcastle Inner City Bypass – Due to the intersection geometry, traffic management may be required so that OSOM vehicles can negotiate the left turn from Pacific Highway onto Newcastle Inner City Bypass.
- Newcastle Inner City Bypass in Sandgate and Jesmond – Due to vertical limitations at four overpasses along the Bypass, OSOM vehicle loads may need to be lowered to ensure enough clearance is provided. As part of the detailed OSOM route assessment, the status of intersection upgrade works at Jesmond will be reviewed to determine if traffic management measures are required.

- New England Highway / Golden Highway – The NSW Government is currently upgrading this intersection as part of the New England Highway Upgrade between Belford and Golden Highway, which is scheduled for completion in late 2024. A review of available public information shows that the existing and proposed intersection design could accommodate OSOM vehicles. As part of the detailed OSOM route assessment, the progress of the New England Highway Upgrade project would be checked to determine if traffic management measures are required.
- Golden Highway / Putty Road / Mount Thorley Road intersection – Due to the intersection geometry, traffic management may be required so that OSOM vehicles can negotiate the right turn from Golden Highway/Putty Road onto Golden Highway/Mount Thorley Road.
- Golden Highway near Ogilvies Hill and Winery Hill – Due to some steep grades, additional pull trucks may be required to assist OSOM vehicle movements through this area.
- Golden Highway at Denman Bridge – Due to vertical and horizontal limitations at the Denman Bridge truss structure, OSOM vehicle loads may need to be lowered to ensure enough clearance is provided.
- Golden Highway / Ringwood Road intersection – Due to the intersection geometry, traffic management may be required so that OSOM vehicles can turn into and out of Ringwood Road.
- Ringwood Road and Wollara Road – The causeways at Bow River and Killoe Creek were identified as inadequate to accommodate OSOM vehicles. Hence, culvert upgrades (discussed in **Section 3.1.1**) are proposed and would be designed and constructed to be able to accommodate the OSOM vehicles required by the Project (see **Appendix A**).

Parking bays for fatigue breaks that can accommodate the proposed OSOM vehicles are located near the New England Highway / Golden Highway interchange in Whittingham (115 m x 9 m clearance), near the Golden Highway / Putty Road intersection in Mount Thorley (100 m x 10 m clearance), on the Golden Highway west of the United Colliery Mine in Warkworth (100 m x 8 m clearance), near the Golden Highway / Honey Lane intersection in Sandy Hollow (50 m x 4 m clearance), near the Golden Highway / Westwood Road intersection in Gungal (70 m x 6 m clearance) and near the Golden Highway / Brisbane Street intersection in Merriwa (100 m x 5 m clearance).

Swept paths of the OSOM vehicles at the Golden Highway / Ringwood Road intersection and at the Project Area access point are discussed in **Section 3.5.1**, and when combined with the Transport Management Plan by Rex J Andrews, provides an assessment of the entire OSOM route proposed for this Project.

Details of the proposed OSOM vehicle dimensions including swept paths along sections of Wollara Road and Ringwood Road are provided in **Appendix D**. The current **Appendix E** and **Appendix G** will be updated prior to the commencement of OSOM movements.

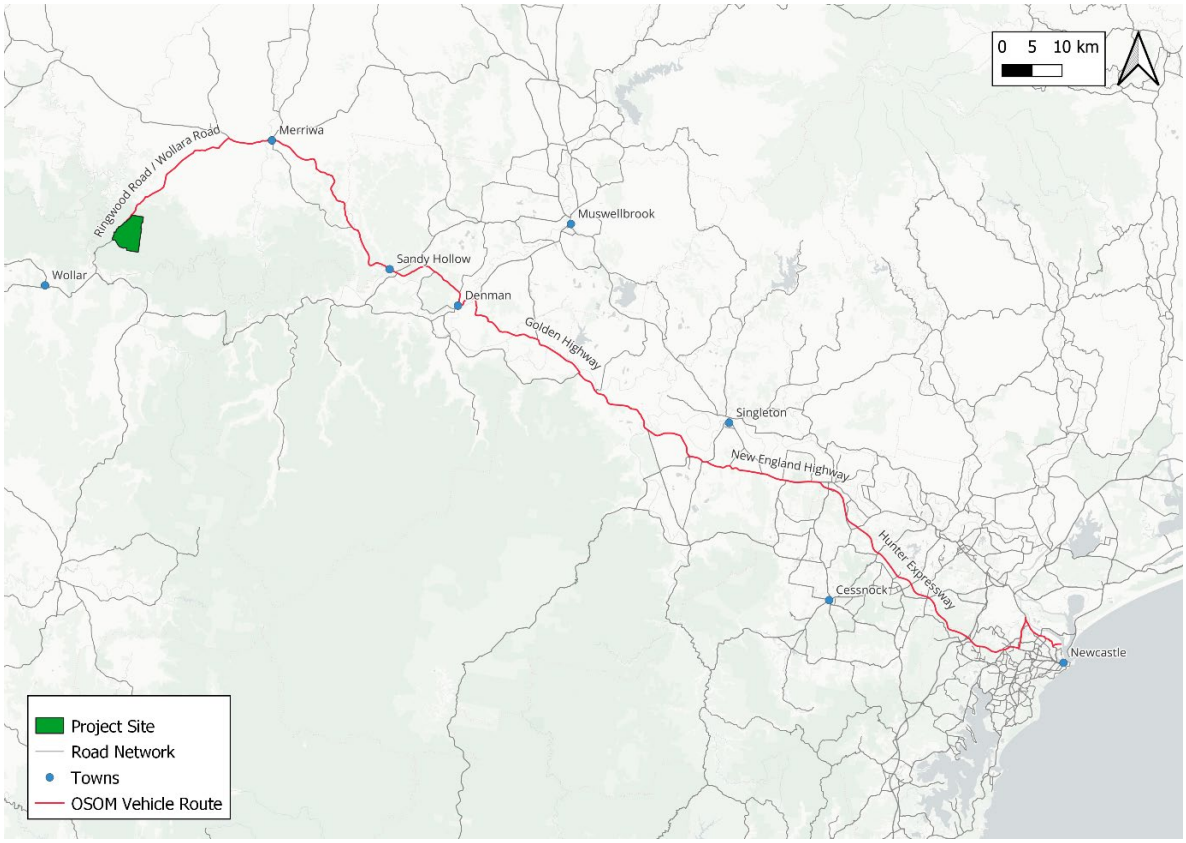

Figure 3-6: OSOM vehicle route

3.6. Traffic Generation

3.6.1. Workforce

The workforce anticipated during construction of the Project includes an approximate 350 construction jobs created during peak construction. This would comprise licensed electrical and mechanical trade personnel, machinery operators, riggers and labourers. The anticipated breakdown of workforce personnel during the 27-month construction program is shown in **Figure 3-7.**

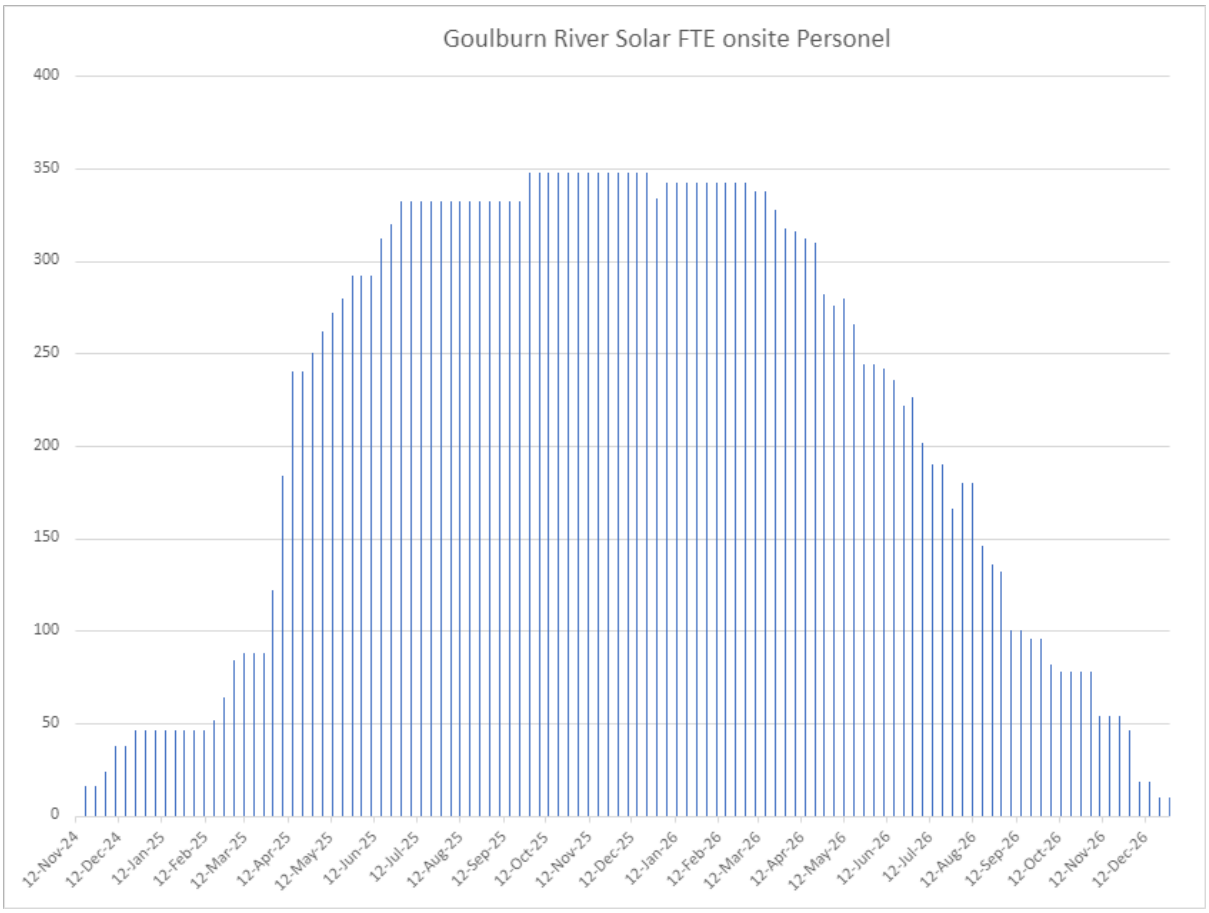

Figure 3-7: Workforce breakdown

3.6.2. Temporary Workers Accommodation

An on-site Temporary Worker Accommodation Facility has been approved to accommodate the anticipated peak workforce required to construct the Project.

The TWA Facility would consist of approximately 400 beds, covering the anticipated peak workforce and staffing required to maintain and operate the TWA Facility. It would consist of prefabricated modular accommodation units, recreational facilities and supported buildings, linked by covered walkways.

The TWA Facility would be self-sufficient, with onsite power generation, potable water storage, water treatment facilities and food storage and preparation facilities. All walkways, covers, awnings, pipes and cables will be modular, above ground and removed from the Project at the end of the hire period.

Vehicle movements to the Project are predicted to be on average lower than those assessed within the Amended Project with the inclusion of the TWA Facility.

3.6.3. Construction Traffic

During peak construction, with the on-site TWA Facility operational, the following trips represent the maximum generated by the Project:

- Light vehicles – there are up to approximately 60 two-way movements expected per day (120 light vehicle movements per day) as estimated in the Amended TTIA (Turnbull 2023).
- Shuttle buses – 15 two-way movements (external roads) expected per day (30 shuttle bus movements per day) as estimated in the Amended TTIA (Turnbull 2023).
- Heavy vehicles – 55 movements a day (a maximum of 15 heavy vehicle movements per hour) during construction, upgrading or decommissioning.
- 24 movements of heavy vehicle requiring escort during construction, upgrading and decommissioning.

As discussed in **Section 3.5**, egressing Project construction vehicles would use the Barnett Street turnaround facility to return east on the Golden Highway. There would be shuttle bus use from 6.00am and delivery (light vehicle) use periodically throughout the day.

In addition, 6 to 12 oversized loads (OSOM vehicles) are expected throughout the construction period, with a maximum of two loads per day. Hence, the Project would generate a maximum total of 12 inbound and 12 outbound OSOM vehicle movements, with no more than 2 inbound and 2 outbound OSOM vehicle movements in one day. As discussed in **Section 3.5.2**, these movements would only occur during off-peak periods when traffic volumes are low and under additional traffic control and management. The requirement for off-peak travel will the dictated by the OSOM road access permit that loads of this nature dictate. Notwithstanding, the road access permit restrictions, contractual arrangements entered into with specialist transport subcontractors will dictate this requirement.

Mobilisation would occur during the first months of the construction program, with more intense construction occurring during mechanical completion. Following this, the Project would move into the commissioning phase following completion of construction.

In efforts to limit light vehicle movements during construction employees will be contractually required to use car-pooling, ride-sharing and use of the employee shuttle bus service (refer to **Section 3.6.4)**. This requirement will also be encouraged for Project engaged subcontractors and suppliers. This will be undertaken by shuttle busses, which are included in the light vehicle volume.

3.6.4. Employee Shuttle Bus Service

As noted in **Section 3.6.3**, a shuttle bus service will be commissioned to assist with employee and contractor transportation during construction of the Project. An estimated 30 one-way shuttle bus journeys (15 return trips) will transport locally-based workers to and from the Project Area. Shuttle buses will also transport workers staying at the TWA Facility into Merriwa to replenish personal supplies and for general recreation.

Within the Project Area, shuttle buses will transport workers from the TWA Facility to construction compounds across the Project. This service is intended to manage vehicle traffic on the local road network as well as internally within the Project Area.

The Merriwa pick/drop off point would be located either on the Golden Highway or on Vennacher Street, close to the intersection with the Golden Highway, as both locations have parallel parking spaces. This location is near the Merriwa Post Office. The shuttle bus may be used to provide workers with connections to the local bus services, for travel to other regional locations such as Scone, Dubbo and Newcastle.

The nominated location is also in close proximity to the local key Merriwa town centre commercial businesses (i.e., IGA supermarket). Shuttle bus services have been successfully used on recent Lightsource bp projects, Wellington Solar Farm and Wellington North Solar Farm.

Measures to actively encourage use of shuttle buses will include:

- Employees will be made aware of the contractual requirements and actively encouraged to use the shuttle bus service. This will be managed through incorporation into site inductions and regular broadcasting (e.g. posters and signage throughout the TWA Facility).
- Use of the shuttle service (and ride-sharing) will be contractually required (see also **Section 3.6.3**).
- Provision of a limited number of on-site car parking spaces which will be monitored through ad hoc visual inspections to identify whether increased parking demand has resulted from reduced usage of the shuttle bus service and/or carpooling.
- Secure storage would be available on-site to trades for safely storing tools/ equipment, which would otherwise necessitate a higher rate of workers driving to site.

3.6.5. Monitoring of Construction Traffic Volumes

Bi-directional traffic volumes on the Golden Highway at its intersection with Ringwood Road will be monitored in the form of tube counts or other approved method at the start of substantial construction and then at three-monthly intervals until construction is complete. Also refer to **Section 5.6** and **Table 5-1**.

Lightsource bp propose to limit Project-related vehicle movements to outside of the AM peak period when cumulative traffic levels along Golden Highway exceed the threshold for a CHRs turn treatment during the AM peak period. The start of the construction day occurs before the measured AM peak period resulting in the majority of the workforce movements occurring outside of the AM peak. In addition, all material deliveries will be scheduled to occur outside of the AM peak through the contractual arrangements entered into with suppliers and subcontractors.

Quarterly monitoring of traffic volumes during construction and proposed response (monitored in the form of tube counts or other approved methods) will ensure that the

threshold for an intersection upgrade of 380 vehicles / hour identified in **Section 2.5.5** is not exceeded for the duration of the construction program.

3.7. Turning Areas

As outlined in **Section 3.5**, the Barnett Street turnaround facility would be used by egressing construction vehicles.

Additionally, while not proposed as part of the Project, should any Project construction vehicles originate from west via the Golden Highway in the eastbound direction, they would be restricted from performing a right turn into Ringwood Road from the Golden Highway. These vehicles would be directed to Merriwa and use the local road network to turn around and travel on the Golden Highway in the westbound direction to access the site. This would enable a left in movement to be undertaken at the Golden Highway / Ringwood Road intersection.

A suitable turn around route in Merriwa could include Dutton Street, Mackenzie Street and Bow Street. Dutton Street south of the Golden Highway is an approved B-double route. Turn around options in Merriwa have been identified for contingency use only, with no Project construction vehicles anticipated to use this route unless they miss the Ringwood Road and Golden Highway intersection and need to re-approach the Project Site from the east. Use of these local roads by construction vehicles (excluding OSOM vehicles) would be subject to swept paths and sight distance checks prior to their use by the Project. Furthermore, Upper Hunter Shire Council would be consulted if regular use of the local road network in Merriwa is required.

3.8. Parking

On-site parking would be provided for all vehicles during construction and operation of the Project, with parking to be located in proximity to the TWA Facility. No parking on the public road network in vicinity of the Project will occur. It is noted that the nearest heavy vehicle rest area is located approximately 300 m west of the Ringwood Road / Golden Highway intersection (refer to **Figure 2-14**). Other general parking areas are located in Merriwa and Wollar.

4. Transport Impact Assessment

4.1. Construction Impacts

4.1.1. Impacts on the Road Network

Intersection Performance

The peak construction year as assessed is expected to occur in 2025, representing a worst-case scenario when background traffic volumes and construction volumes are at their highest. A two per cent-per-year background traffic growth rate has been applied to the 2022 traffic volumes collected, based on corridor growths outlined in the *Golden Highway Corridor Strategy* (Transport for NSW, 2016).

In addition to background traffic growth, peak hour traffic volumes generated by other nearby projects were included in the modelling assessment and were based on a review of the EIS and Transport and Traffic Impact Assessments (TTIAs) available for these projects on the DPE Major Projects website. This review was undertaken to determine the likely peak hour volumes generated by transport movements through the Golden Highway / Ringwood Road intersection.

These individual project volumes are shown in **Table 4-1** and provide an indicative cumulative total for transport movements on the Golden Highway.

Table 4-1: 2025 peak hour volumes from nearby projects

Project name	Light vehicles	Heavy vehicles	Assumptions
Stubbo Solar Farm	N/A	6	• Light vehicle routes do not overlap with Project
Liverpool Range Wind Farm	10	26	• Derived from peak daily volumes • 16 per cent of daily volume to occur during peak hours, as per Austroads Guide to Road Traffic Management Part 6 • One third of daily light vehicle trips to/from Merriwa via Golden Highway, as outlined in planning documents
Valley of the Winds Wind Farm	N/A	4	• Light vehicle routes do not overlap with Project
Tallawang Solar Farm	75	15	• A quarter of light vehicle trips to/from Merriwa via Golden Highway, as outlined in planning documents • 10 per cent of daily heavy vehicle volume to occur during peak hours, as outlined in planning documents
Birriwa Solar Farm	N/A	14	• Light vehicle routes do not overlap with Project
Spicers Creek Wind Farm	N/A	27	• Light vehicle routes do not overlap with Project

Project name	Light vehicles	Heavy vehicles	Assumptions
Bowdens Silver Project	N/A	5	• Light vehicle routes do not overlap with Project • Heavy vehicles derived from peak daily volumes • 16 per cent of daily volume to occur during peak hours, as per Austroads Guide to Road Traffic Management Part 6
Central West Orana REZ	N/A	5	• Light vehicle routes do not overlap with Project • Heavy vehicle movements on Golden Highway not specified in EIS for this project. (5% of total vehicle movements assumed).
Cumulative total	**85***	**102****	

*85 inbound trips during the morning peak hour and 85 outbound trips during the evening peak hour

**102 inbound and 102 outbound trips during the morning peak hour and evening peak hour

Peak hour construction volumes used in this assessment have been determined by applying the following assumptions to the daily construction volumes outlined in **Section 3.6**:

- All light vehicle and shuttle bus trips assumed to travel inbound during the morning peak hour and outbound during the evening peak hour to represent a worst-case scenario. In reality, the majority of light vehicle and shuttle bus trips would likely occur before the morning peak hour and after the evening peak hour.
- All inbound construction vehicles assumed to originate north of the site from Golden Highway east of Ringwood Road.
- All outbound construction vehicles assumed to travel north of the site towards destinations accessible from Golden Highway east of Ringwood Road.
- Ten percent of daily heavy vehicle trips to occur during the peak hours.
- Inbound and outbound heavy vehicle trips to occur during both peak hours.
- Oversized vehicle trips would not occur during the peak hours.
- Shuttle buses have been classified as a heavy vehicle for modelling purposes.

Construction peak hour volumes for the Project and adopted for the intersection performance assessment are shown in **Figure 4-1** and are referenced in **Section 3.6.3**.

The peak hours modelled represent the road network peak hour (when background traffic volumes are highest), with peak Project construction vehicle hourly volumes, representing a worst-case scenario.

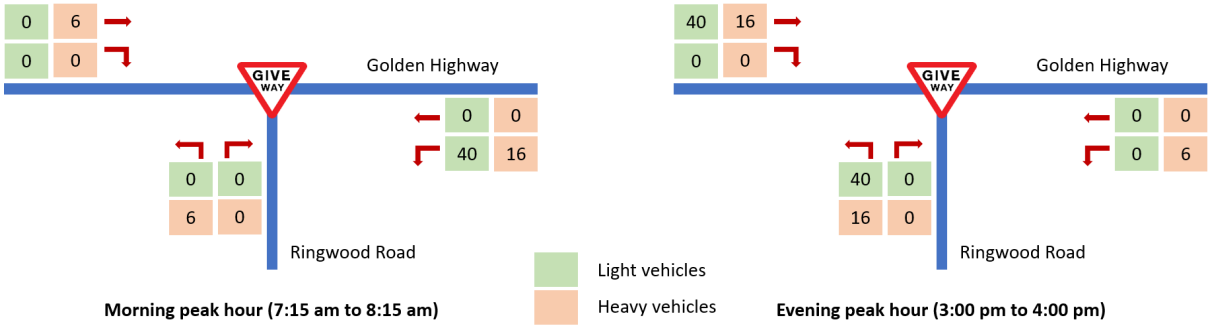

Figure 4-1: Goulburn River Solar Farm Project construction peak hour traffic volumes at the Golden Highway / Ringwood Road intersection

The performance of the modelled Golden Highway / Ringwood Road intersection in SIDRA with and without Project construction vehicles in 2025 is shown in **Table 4-2** (Project only) and **Table 4-3** (cumulative construction).

Table 4-2: Intersection performance during construction (Project only) – Golden Highway / Ringwood Road

Approach and peak period	2025 base				2025 construction			
	DOS	Average delay (sec/veh)	LOS	95% back of queue (m)	DOS	Average delay (sec/veh)	LOS	95% back of queue (m)
Weekday morning peak (7.15am to 8.15am)								
Golden Highway eastbound	0.05	8	A	<5	0.05	8	A	<5
Golden Highway westbound	0.05	9	A	<5	0.05	9	A	<5
Ringwood Road northbound	0.02	7	A	<5	0.02	8	A	<5
Overall intersection	**0.05**	**9**	**A**	**<5**	**0.05**	**9**	**A**	**<5**
Weekday evening peak (3.00pm to 4.00pm)								
Golden Highway eastbound	0.07	8	A	<5	0.10	8	A	<5
Golden Highway westbound	0.06	9	A	<5	0.06	10	A	<5
Ringwood Road northbound	0.01	7	A	<5	0.05	8	A	<5
Overall intersection	**0.07**	**9**	**A**	**<5**	**0.10**	**10**	**A**	**<5**

Table 4-3: Intersection performance during construction (cumulative) – Golden Highway / Ringwood Road

Approach and peak period	2025 cumulative base				2025 cumulative construction			
	DOS	Average delay (sec/veh)	LOS	95% back of queue (m)	DOS	Average delay (sec/veh)	LOS	95% back of queue (m)
Weekday morning peak (7.15am to 8.15am)								
Golden Highway eastbound	0.15	9	A	<5	0.15	10	A	<5
Golden Highway westbound	0.19	9	A	<5	0.19	9	A	<5
Ringwood Road northbound	0.03	12	A	<5	0.04	13	A	<5
Overall intersection	**0.19**	**9**	**A**	**<5**	**0.19**	**13**	**A**	**<5**
Weekday evening peak (3.00pm to 4.00pm)								
Golden Highway eastbound	0.21	8	A	<5	0.25	8	A	<5
Golden Highway westbound	0.16	9	A	<5	0.16	10	A	<5
Ringwood Road northbound	0.01	12	A	<5	0.05	14	A	<5
Overall intersection	**0.21**	**12**	**A**	**<5**	**0.25**	**14**	**A**	**<5**

As shown in **Table 4-2**, the addition of Project only construction traffic on the road network would result in minimal impacts, with average delay increasing by up to one second and no change to LOS.

As shown in **Table 4-3**, the addition of Project construction traffic with cumulative volumes generated by other projects on the road network would result in a minor increase in the average delay at the Golden Highway / Ringwood Road intersection. The increase in delay is calculated to be 4 seconds during the morning peak hour and 2 seconds during the evening peak hour.

As a result of increased traffic volumes on the Golden Highway, vehicles turning right from Ringwood Road to Golden Highway would wait slightly longer at the intersection prior to completing the turning manoeuvre. It is noted that construction vehicles would not be undertaking this movement.

There is a negligible increase in the average delay and the intersection would still operate with spare capacity and at an acceptable LOS A during both peak hour periods.

Overall impacts on intersection performance during construction are anticipated to be negligible.

Intersection, Road and Culvert Upgrades

The proposed intersection, road and culvert upgrades on the Golden Highway, Ringwood Road and Wollara Road would impact vehicles that travel on these roads. These upgrades are discussed further in **Section 3.1**.

Impacts are anticipated to be minor given the low volume of traffic using Ringwood Road and Wollara Road, short term and temporary nature of the works, and the spare capacity available on the Golden Highway. Furthermore, the number of construction vehicles generated during the road upgrades would be significantly lower than the number of construction vehicles generated during construction of the Project. The community would be notified of any works proposed and changed road conditions, so that impacted road users can plan their trips well in advance of the proposed changes.

4.1.2. Impacts on Parking

During construction, impacts on parking are not anticipated given that on-site parking would be provided for all vehicles generated by the Project. Furthermore, no formal parking facilities are located within close proximity to the site. In accordance with Condition B9 of the Development Consent, no parking will occur on the public road network in the vicinity of the Project Area.

4.1.3. Impacts on Public Transport

Bus Network

Minimal impacts are anticipated on bus services that travel on the Golden Highway given the infrequency of these bus services, the low volume of peak hour construction traffic generated by the Project, and the ample spare capacity available on the road network.

The school bus route that operates on Ringwood Road towards Merriwa and Scone would experience minor impacts due to the additional construction traffic using this road and the increase in left-in and left-out movements at the Golden Highway / Ringwood Road intersection. As discussed in **Section 3.1.3**, the informal bus stop at this intersection would be formalised as part of the proposed intersection upgrade, improving amenity for school students and parents/carers that use this bus stop. Furthermore, the school bus service during the morning and afternoon (one service in each direction during school days) would not coincide with peak construction vehicle movements. Hence, restrictions to heavy vehicle movements would not be required.

Osborn’s Transport, Merriwa Pre School, Scone Grammar School and Scone High School will be consulted on the proposed formalisation of the bus stop on Ringwood Road at the Golden Highway intersection and informed of the additional construction traffic that would be generated by the Project.

Rail Network

The level rail crossings located on Ulan Road, Wollar Road and Ringwood Road south of the site would not be traversed by construction vehicles. Hence, no impacts are anticipated on the rail network.

4.1.4. Impacts on Active Transport

No impacts on the pedestrian network are anticipated during construction given the limited pedestrian infrastructure that surrounds the Project Area.

Impacts on the cycle network would be limited to the potential interaction of cyclists with Project construction vehicles on the Golden Highway, Ringwood Road or Wollara Road and during intersection, culvert and road upgrades at these locations.

Given that sections of the Golden Highway are designated cycle routes via the road shoulder or parking lane, cyclists that currently travel on the Golden Highway would be experienced riders. In addition, Ringwood Road and Wollara Road form part of a recommended scenic cycle route. However, no formal cycle infrastructure is provided. Therefore, cyclist volumes on the Golden Highway, Ringwood Road and Wollara Road would likely be low and hence, the overall impact on cyclists is anticipated to be minor.

5. Mitigation and Management

5.1. Overview

Table 5-1 describes the traffic mitigation and management measures for the Project. From left to right, the columns of **Table 5-1** describe:

- The 'Source': where the traffic mitigation and/or management measure has been recommended for the Project.
- The 'ID': a unique identifier for each mitigation strategy identified in this TMP.
- The 'Aspect': a high-level summary of what traffic matter is being mitigated.
- The 'Mitigation / Management Measure': the actions that will be undertaken to reduce the traffic impacts of the Project, including a summary of any proposed techniques that will be used to implement the traffic mitigation and/or management measures.
- The 'Development Phase': identifies the specific Project phase of which traffic mitigation and/or management measures will apply. A traffic mitigation and/or management measure can apply to multiple Project phases.
- The 'Responsible Party': identifies which group is responsible for implementing the applicable traffic mitigation and/or management measure. The 'Personnel Responsible' column identifies the individual from the 'Responsible Party' who is to implement the traffic mitigation and/or management measure. Numbers 1–4 have been used to represent which individual is responsible, as follows:

  1. Lightsource bp Development Principal.
  2. Construction Contractor Site Manager.
  3. Health, Safety and Environment (HSE) Coordinator.
  4. All employees and contractors.

  Note: for some mitigation measures, there is more than one 'Responsible Party' and 'Personnel Responsible'

- The 'Timing/Frequency': describes when a traffic mitigation and/or management measure is to be implemented.
- The 'Implementation Action': describes the procedures that show how the proposed techniques for the traffic mitigation and/or management measures are practically being completed within the Project Area.
- The 'Compliance Record': identifies the record that will be used to maintain compliance with the applicable traffic mitigation and/or management measure.

Table 5-1: TMP Mitigation and Management Measures

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4]			
SSD 33964533 Development Consent	TMP 01a	Traffic (general)	Prepare a TMP in accordance with Schedule 2, Condition B10	✓	✓	-	-	✓	-	-	1	Prior to construction	This TMP	This TMP
SSD 33964533 Development Consent	TMP 01b	Traffic (general)	Implement this TMP in accordance with Schedule 2, Condition B10	✓	✓	-	-	✓	✓	✓	1,2,3 & 4	Prior to Construction	This TMP	This TMP
SSD 33964533 Development Consent	TMP 02	Traffic (general)	The Applicant must ensure that the development does not generate more than 55 heavy vehicle movements a day during construction, upgrading or decommissioning;	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	Construction Traffic (**Section 3.6.3**)	Daily Traffic Movements Register A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance.
SSD 33964533 Development Consent	TMP 03	Traffic (general)	The Applicant must ensure that the development does not generate more than 24 movements of heavy vehicle requiring escort during construction, upgrading and decommissioning	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	Construction Traffic (**Section 3.6.3**)	Daily Traffic Movements Register
SSD 33964533 Development Consent	TMP 04	Traffic (general)	The Applicant must ensure that the length of any vehicles (excluding heavy vehicle requiring escort) used for the development does not exceed 19 metres,	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	Management of Construction Vehicle Routes (**Section 5.6**)	This will be a contractual requirement of the construction contractor and all sub-contractors. Daily Traffic Movements Register

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4]			
SSD 33964533 Development Consent	TMP 05	Traffic (general)	The Applicant must keep accurate records of the number of heavy vehicles and vehicles requiring escort entering or leaving the site each day for the duration of the project.	✓	✓	✓	✓	-	✓	✓	3 & 4	Construction, Operation and Decommissioning	Management of Construction Vehicle Routes (**Section 5.6**)	Daily Traffic Movements Register A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance.
SSD 33964533 Development Consent	TMP 06	Traffic (access routes)	Unless otherwise agreed by the Planning Secretary, all heavy vehicles and heavy vehicles requiring escort associated with the development must travel to and from the site via the Golden Highway / Ringwood Road intersection.	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	OSOM Vehicle Routes (**Section 3.5.2**) OSOM Vehicle Checks (**Appendix D)** Driver Code of Conduct (**Appendix F)**	A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance.
SSD 33964533 Development Consent	TMP 07	Traffic (access routes)	All vehicles (excluding heavy vehicles requiring escort) associated with the development must access Ringwood Road by turning left in from the Golden Highway only.	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	Construction Vehicle Routes (**Section 3.5**) Swept Paths (**Appendix C**) Driver Code of Conduct (**Appendix F)**	A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance.

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4]			
SSD 33964533 Development Consent	TMP 08	Traffic (access routes)	All vehicles (excluding heavy vehicles requiring escort) associated with the development must exit Ringwood Road by turning left on to the Golden Highway only as shown in Figure 4 of Appendix 4;	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	Construction Vehicle Routes (**Section 3.5**) Swept Paths (**Appendix C**) Driver Code of Conduct (**Appendix F**)	Signage will be installed on Ringwood Road stating that “site traffic must turn left”. A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance. The construction contractor will undertake spot checks at the intersection for compliance.
SSD 33964533 Development Consent	TMP 09	Traffic (access routes)	All heavy vehicles associated with the development departing the site and needing to travel east along the Golden Highway must use the turnaround point at Barnett Street, as shown on Figure 4 in Appendix 4.	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	Construction Traffic (**Section 3.6.3**) **Appendix C** **Appendix G**	Signage will be installed on Ringwood Road stating that “site traffic must turn left”. A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance.

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4]			
SSD 33964533 Development Consent	TMP 10	Traffic (site access point)	All vehicles associated with the development must enter and exit the site via the Primary Access point off Ringwood Road, as identified in Appendix 1. Note: Other site access points may be used for emergency purposes.	✓	✓	-	✓	-	✓	✓	3 & 4	Construction and Decommissioning	Construction Vehicle Routes (**Section 3.5**) Swept Paths (**Appendix C**) Driver Code of Conduct (**Appendix F**)	A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance.
SSD 33964533 Development Consent	TMP 11	Traffic (site access point)	Unless the Planning Secretary agrees otherwise, prior to commencing construction the Applicant must complete the road upgrades detailed in Appendix 4. Unless the relevant road authority agrees otherwise, these upgrades must comply with the current Austroads Guidelines, Australian Standards (as amended by TfNSW supplements), and be carried out to the satisfaction of the relevant roads authority.	✓	-	-	✓	✓	✓	-	1 & 2	Pre-construction	Early Works – Pre-Construction **(Section 3.1), T**raffic Guidance Scheme **(Section 5.3)** and Road and Culvert Upgrades **(Appendix A)** and Intersection Upgrades **(Appendix B**)	Stakeholder Consultation Records Detailed Design Council Approval Letter
SSD 33964533 Development Consent	TMP 12	Traffic (site access point)	The Applicant must, in consultation with the relevant roads authority undertake an independent dilapidation survey to assess the: - existing condition of Ringwood Road and Wollara Road on the transport route, prior to construction, upgrading or decommissioning works; and - condition of Ringwood Road and Wollara Road on the transport route, following construction, upgrading or decommissioning works;	✓	-	-	-	✓	✓	-	1 & 2	Pre-construction	Dilapidation Surveys (**Section 5.7.1**)	Stakeholder Consultation Records Pre-Construction Dilapidation Survey Report Post Construction Dilapidation Survey Report

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4,]			
SSD 33964533 Development Consent	TMP 13	Traffic (site access point)	On completion of the dilapidation reports undertaken in B8(a)(i) and (ii) provide a copy to the relevant road authority;	✓	-	-	-	✓	✓	-	1 & 2	Pre-construction	Dilapidation Surveys (**Section 5.7.1**)	Stakeholder Consultation Records
SSD 33964533 Development Consent	TMP 14	Traffic (site access point)	Repair the roads identified in condition B8(a) if dilapidation surveys identify that the road has been damaged due to development-related traffic during construction, upgrading or decommissioning works;	-	-	✓	✓	✓	✓	-	1 & 2	Post-construction	Repair of Roads (**Section 5.7.3**)	Stakeholder Consultation Records
SSD 33964533 Development Consent	TMP 15	Traffic (site access point)	If there is a dispute between the Applicant and the relevant roads authority about road repairs (including timeframes) required under this condition, then either party may refer the matter to the Planning Secretary for resolution.	-	-	✓	✓	✓	✓	-	1 & 2	Post-construction	Repair of Roads (**Section 5.7.3**)	Stakeholder Consultation Records
SSD 33964533 Development Consent	TMP 16	Traffic (operating conditions)	The Applicant must ensure the internal roads are constructed as all-weather roads;	✓	✓	-	-	✓	✓	-	2, 3 & 4	Construction	Tracking of Dirt onto Public Roads (**Section 5.7.2**)	Detailed Design
SSD 33964533 Development Consent	TMP 17	Traffic (operating conditions)	The Applicant must ensure there is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site;	✓	✓	✓	✓	✓	✓	✓	2, 3 & 4	Construction, Operation and Decommissioning	Parking (**Section 3.8**)	Detailed Design Site Induction Complaints Register
SSD 33964533 Development Consent	TMP 18	Traffic (operating conditions)	The Applicant must ensure the capacity of the existing roadside drainage network is not reduced;	✓	✓	-	-	✓	✓	✓	1 & 2	Construction	**Section 3.1.1**	Detailed Design

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4]			
SSD 33964533 Development Consent	TMP 19	Traffic (operating conditions)	The Applicant must ensure all vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction; and	✓	✓	-	✓	-	✓	✓	2, 3 & 4	Construction and Decommissioning	Management of Construction Vehicle Routes (**Section 5.6**) Driver Code of Conduct (**Appendix F**)	A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a non-compliance or complaint to ensure necessary corrective measures are taken to ensure compliance. Traffic controllers will undertake spot checks at the intersection for compliance.
SSD 33964533 Development Consent	TMP 20	Traffic (operating conditions)	The Applicant must ensure development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the sealed public road network.	✓	✓	✓	✓	-	✓	✓	2, 3 & 4	Construction, Operation and Decommissioning	Tracking of Dirt onto Public Roads (**Section 5.7.2**)	Routine road sweeping A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance. Traffic controllers will undertake spot checks at the intersection for compliance.
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 21	Traffic (heavy vehicles)	Deliveries to site (excluding oversized loads) would be carried out by 19 metre semi-trailers to comply with heavy vehicle restrictions on Wollara Road and Ringwood Road	✓	✓	-	-	-	✓	✓	2 & 3	As Required,	Construction Vehicle Routes (**Section 3.5**)	Refer to final Drivers Code of Conduct and Site Induction Daily Traffic Movements Register

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4,]			
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 22	Traffic (oversize overmass vehicles)	A detailed OSOM vehicle route assessment would be undertaken by the construction contractor and outlined in a Transport Management Plan. The Plan would discuss any traffic management measures required and include details on the OSOM vehicle route, duration, road closures, traffic detours, notifications and any required Traffic Guidance Schemes	✓	✓	-	-		✓	-	1	Prior to OSOM movements	OSOM Vehicles (**Sections 3.5.2** and **Section 5.9**)	OSOM TMP (Appendix E of this TMP) *Note: The current Appendix E and G will be updated prior to the commencement of OSOM movements.*
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 23	Traffic (road closures)	The community would be notified in advance of proposed road and transport network changes through appropriate media and other forms of community liaison	✓	✓	-	-	✓	-	-	1	As Required	Community and Stakeholder Consultation (**Section 6.1)**	Community and Stakeholder Consultation Records
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 24	Traffic (transport)	Construction workers would be encouraged to carpool or use the shuttle buses to travel to and from the construction site	✓	✓	-	-	-	✓	-	2 & 3	Construction	Construction Vehicle Routes (**Section 3.5**)	Pre-Start Briefings Site inductions
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 25	Traffic	Parking requirements for the Project during construction and operation would be provided on-site, and parking would not be provided on public roads adjacent to the site	✓	✓	✓	-	-	✓	✓	2 & 3	Construction and Operation	Parking (**Section 3.8**)	Site Induction
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 26	Traffic (signage)	Additional warning signs (“Symbolic Truck”) are to be installed near the primary site access point	✓	✓	-	✓	-	✓	-	2 & 3	Once off	Additional Line marking and Signage (**Section 5.2**)	Environmental/Safety Inspection and site induction
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 27	Traffic (road upgrades)	Upper Hunter Shire Council would continue to be consulted on upgrades required on Ringwood and Wollara Road.	✓	✓	-	-	-	✓	-	1	Construction	Road Condition (**Section 5.7**) Community and Stakeholder Consultation (**Section 6.1**)	Stakeholder Consultation Records
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 28	Traffic (road upgrades)	Upgrades to Ringwood Road and Wollara Road (including culverts) and the Golden Highway / Ringwood Road intersection, as described in this TTIA	✓	-	-	-	-	✓	-	2 & 3	Construction	Road Upgrades (**Section 3.1.2**)	Post construction Road Safety Audit Road upgrade certificates

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4,]			
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 29	Traffic (signage)	Additional warning signs are to be installed along sections of Ringwood Road and Wollara Road where the road narrows and near the site access points.	✓	-	-	-	-	✓	-	2 & 3	Construction	Additional linemarking and signage (**Section 5.2**)	Post construction Road Safety Audit Site inductions Vehicle Movement Plan (**Appendix G**)
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 30	Traffic (general)	As part of the Construction Traffic Management Plan (CTMP) to be prepared post-approval, a Vehicle Movement Plan will be included that clearly shows the construction vehicle routes and permitted movements, including restriction at the Ringwood Road/Golden Highway intersection (left in/left out movement permitted). The CTMP will also encompass a Drivers Code of Conduct that all construction phase vehicle drivers (including of light vehicles) would need to read and sign to confirm their responsibilities and reinforce correct behaviour.	✓	-	-	-	✓	✓	-	1 & 2	Pre-construction	Driver Code of Conduct (**Appendix F**) Vehicle Movement Plan (**Appendix G**)	This TMP Driver Code of Conduct (**Appendix F**) Vehicle Movement Plan (**Appendix G**) Drivers Code of Conduct Record of Acknowledgement
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 31	Traffic (road upgrades)	Osborn's Transport, Merriwa Pre School, Scone Grammar School and Scone High School would be consulted on the proposed formalisation of the bus stop on Ringwood Road at the Golden Highway intersection and informed of the additional construction traffic that would be generated by the Project.	✓	-	-	-	✓	-	-	1	Pre-construction	Impacts on Public Transport (**Section 4.1.3**) Community and Stakeholder Consultation (**Section 6.1**)	Stakeholder Consultation Records
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 32	Traffic (signage)	Additional signage and line marking will be installed at the Golden Highway and Barnett Street intersection and installation of warning signs ("Symbolic Truck") are recommended near the primary site access point.	✓	-	-	-	✓	✓	-	1 & 2	Pre-construction	Additional line marking and signage (**Section 5.2**)	Post construction Road Safety Audit Site inductions

Source	ID	Aspect	Mitigation / Management Measure	Development Phase				Responsible Party				Timing/ Frequency	Implementation Action	Compliance Record
				Early Works Construction	Main Works Construction	Operations and Maintenance	Upgrading or Decommissioning	Principal (Lightsource bp)	Construction Contractor	Operations and Maintenance Contractor	Personnel Responsible[1,2,3,4,]			
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 33	Traffic (general)	Where relevant, Road Occupancy Licences (ROLs) and crane permits would be submitted and approved prior to the closure of any roads.	✓	✓	-	-	✓	✓	-	1 & 2	Construction	Quality Assurance (**Section 1.2**)	Stakeholder Consultation Records
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 34	Traffic (general)	Upgrades and modifications to existing intersections for construction access. Based on turn path assessments and request from TfNSW.	✓	✓	-	-	✓	✓	-	1 & 2	Construction	Swept Paths (**Section 3.5.1**)	Post construction Road Safety Audit Swept Paths (**Appendix C**)
Traffic and Transport Impact Assessment (Turnbull 2023)	TMP 35	Traffic (road upgrades)	Works are to include vehicle volume monitoring during construction to ensure the morning peak traffic volume is not exceeded. Periodic traffic volume surveys on the Golden Highway will be undertaken to ensure Turn Warrants assessment remains valid. Lightsource bp propose to limit Project-related vehicle movements to outside of the AM peak period when cumulative traffic levels along Golden Highway exceed the threshold for a CHRs turn treatment during the AM peak period.		✓	-	-	✓	-	-	1 & 2	Construction	Monitoring of construction traffic (**Section 3.6.5**)	Traffic survey data collected periodically throughout construction.
Response to RFI (Umwelt 2024)	TMP 36	Traffic (site access)	A pre-and post-construction dilapidation survey will also be undertaken along the 1.32 km stretch of Ringwood Rod that sits within the Mid-Western Region LGA, considering potential impacts from use by locally-based workers travelling to site.	✓	-	-	-	✓	✓	-	1&2	Pre-construction	Dilapidation Surveys (**Section 5.7.1**)	Pre-Construction Dilapidation Survey Report Post Construction Dilapidation Survey Report

5.2. Additional Linemarking and Signage

As discussed in **Section 3.5**, Project construction vehicles would use the turnaround facility on Barnett Street to return on the Golden Highway in the eastbound direction. No intersection geometry changes are required to accommodate these movements on Barnett Street. Notwithstanding, a give-way line and associated signage on Barnett Street will be implemented to indicate that vehicles exiting Barnett Street are to provide right of way to vehicles on Golden Highway. Additional signage on both Golden Highway approaches to the intersection will also be provided to warn general traffic that trucks are turning at the intersection. Additionally, installation of warning signs ("Symbolic Truck") will be placed near the primary site access point and along sections of Ringwood Road and Wollara Road where the road narrows. These are shown in **Appendix C**.

5.3. Traffic Guidance Schemes

Traffic Guidance Schemes (TGS) will be required for the road repairs and upgrades to be undertaken prior to construction of the solar farm. TGS' will be developed in accordance with TfNSW and Council requirements. The TGS will include all signage, barriers, traffic controllers, traffic diversions and lighting required. The TGS would be prepared in accordance with AS1742.3 by suitably qualified and accredited personnel.

5.4. Site Induction

All staff will be required to undertake a site induction. The site induction will cover details on the nominated construction vehicles routes, as well as standard environmental, workplace health and safety, driver protocols and emergency procedures.

For subcontractors, inductions will take place prior to arrival. For independent operators and one-off personnel, inductions will take place on arrival at site. Alternatively, independent personnel may be escorted by an inducted employee.

5.5. Driver Code of Conduct

A Driver Code of Conduct has been prepared for the Project and is provided in **Appendix F**.

As per NSW Road Rules (2014) 127 (1), a driver of a long vehicle (7.5 m long or longer), except on a multi-lane road or any length of road in a built-up area, <u>must</u> travel at least 60 m behind any other long vehicle, other than a road train.

The potential for heavy vehicles to convoy or platoon together will be addressed through direction by the Construction Contractor to subcontractors and suppliers. Strategies will include:

- Staggered Scheduling: Heavy vehicle movements will be staggered to prevent convoys and minimise traffic congestion, particularly during peak times.
- Off-Peak Scheduling: Heavy vehicles will operate during off-peak hours to reduce interactions with peak traffic periods on the Golden Highway.
- Break Time Coordination: Managing driver breaks to avoid clustering after rest periods.

All long vehicle drivers and their respective supervisors/ transport managers will be reminded that:

- There is a maximum of 55 (two-way trips; 110 one-way trips) heavy vehicle movements per day, and a maximum of 15 two-way heavy movements per hour.
- when heavy vehicle drivers are leaving their depot/ quarry/ batch plant, or the Project site, that a minimum 1 minute gap in departure times is provided.
- when heavy vehicle drivers stop for breaks (rest, smoko, lunch, etc) together, that on departure from the stop that each subsequent heavy vehicle allows at least 1 minute between each subsequent heavy vehicle departure from the stop.

The Driver Code of Conduct will be communicated to all personnel through site inductions, toolbox talks and pre-start meetings. During these communications all drivers will also be reminded to drive to conditions which will also include providing up to date weather forecast.

Any non-compliance with the Drivers Code of Conduct will be managed through the Construction Contractors' general business code of conduct and the contracts that are in place with their subcontractors and suppliers.

5.6. Management of Construction Vehicle Routes

All construction personnel travelling to and from the site must adhere to the Vehicle Movement Plan (VMP) provided in **Appendix G**, which outlines the proposed access and egress routes.

The construction vehicle route applies to all vehicles associated with the development, including through early works, road upgrades, construction, upgrading and decommissioning.

All heavy vehicles will be required to travel via heavy vehicle approved roads, and all vehicles will be loaded and unloaded on site and will enter and exit the site in a forward direction.

Use of the road network in the Mid-Western Region LGA will largely be limited to locally based workers. There is potential for limited deliveries/supplier movements from adjacent LGAs / areas to the west of the Project Site, with a number of companies based to the west of the Project Site expressing interest in sub-contracting or supplying aspects of the Project. In this instance, adjacent LGA road networks will be utilised, however transport movements will align with the conditions of consent (B3-B5) and approach the site from the east, along the Golden Highway. Suppliers with journeys originating in Mid-Western Regional Council LGA will be limited to locally-based service providers. [1]

[1] An organisation that operates from permanently staffed premises within the boundaries of Mid-Western Regional Council's LGA and has operated from those premises for a minimum period of three (3) months prior, and/or an organisation that has less than 150 employees and is at least 50% owned by an individual (or individuals) that live within the boundaries of Mid-Western Regional Council's LGA and has done so for a minimum period of three (3) months prior, as defined by Lightsource bp

To ensure that construction vehicle drivers adhere to the left-in, left-out arrangement at the Golden Highway / Ringwood Road intersection during construction, the following will be implemented:

- A temporary monitoring camera alongside a traffic artificial intelligence portable traffic detection system will be installed at the Golden Highway/Ringwood Road intersection:
    - prior to construction commencing
    - capturing footage from one hour prior through to one hour post approved construction hours (i.e., from 0600 to 1900)
    - footage will be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint
    - the monitoring approach will be assessed for effectiveness periodically, and any proposed changes discussed proactively with TfNSW
- Installation of additional signage on Ringwood Road stating that “site traffic must turn left”.
- The construction contractor will undertake spot checks at the intersection for compliance. This will involve counts of vehicles leaving site, coupled with vehicle counts at the turn-around bay on Barnett Street. A randomised spot check will occur monthly at a minimum, or in response to a non-compliance, a complaint from the community or feedback from within the Project team.
- the approved vehicle route will be reinforced during site inductions, daily toolbox talks and as part of the Driver Code of Conduct.
- The approved vehicle route will be specified in a pre-arrival flyer which would detail delivery instructions and be distributed to drivers before coming to site.
- Quarterly Inspections and routine audits of the transport route shall be conducted to ensure compliance with site requirements on Traffic Management as outlined in this TMP.

Only locally based workers suppliers in light vehicles will be able to use Wollar Road to the south of the Project Site, with agreement from the Construction Contractor.

Limited traffic movements from suppliers operating under their own permits/licences (i.e. Environmental Authority) may utilise an alternative traffic route (where this is permitted under their licence conditions), with agreement from the Construction Contractor. These movements will be recorded as part of the register for heavy vehicles movements in and out of the Project Area (maintained by the Contractor Site Manager).

In the event that a non-compliance is identified, the driver will be required to undergo a mandatory review of the Driver’s Code of Conduct. This review process will ensure that the driver fully understands their responsibilities and obligations as outlined in the Code.

5.7. Road Condition

The increase in vehicles movements on the surrounding road network has the potential to impact the conditions of these roads.

5.7.1. Dilapidation Surveys

In accordance with Condition B8 of the Development Consent, dilapidation surveys will be undertaken along Ringwood Road and Wollara Road prior to and following construction, upgrading or decommissioning works. In addition, a dilapidation survey will be undertaken along Barnett Street from its intersection with Golden Highway up to and including the turn around facility.

A pre-and post-construction dilapidation survey will also be undertaken along the 1.32 km stretch of Ringwood Road that sits within the Mid-Western Region LGA, despite this area being outside of the approved construction traffic route.

A pre-construction dilapidation report will be prepared documenting the findings of a visual inspection of damage to the roads, including potholes, rutting, scrubbing, cracking, and surface deformations including depressions. Recent maintenance activities undertaken will also be documented.

Upon completion of construction activities on the site, a post-construction dilapidation report will be prepared and follow a similar methodology to the pre-construction dilapidation report. The purpose of this will be to ascertain the impact of the construction activities on the condition of the haulage route.

In accordance with Condition B8, dilapidation survey reports will be provided to the relevant road authority.

5.7.2. Tracking of Dirt onto Public Roads

The Construction Contractor (or delegate) will be responsible for monitoring the condition of the public road network and routinely sweep the road to ensure that there is no build-up of dirt tracked from construction vehicles. Monitoring of the public road network will be undertaken monthly. Additional monitoring of the public road network will be undertaken after period of rainfall (.>10 mm in 24 hours).

All internal roads within the Project Area will be constructed as all-weather roads to minimise the generation of mud or large portions of dirt which can become caught on vehicles and subsequently tracked onto public roads.

5.7.3. Repair of Roads

Lightsource bp will consult with Upper Hunter Shire Council to agree on the damages as a result of construction activity, if any, and what repairs are required. Lightsource bp will support Council to complete required works, either through provision of a civil crew or through funding. If a dispute arises between Council and Lightsource bp regarding road repairs, the dispute resolution process outlined in Section 6.3.1.1 in the EMS would be undertaken.

5.7.4. Emergency Road Repair

The Construction Contractor will have on-site resources to respond to emergency road repairs during construction and decommissioning. On receipt of notification of road damage, the Construction Contractor will dispatch resources to repair the road as required.

5.7.5. Air Quality

The generation of dust from construction traffic movements is expected to be localised.

Protocols to minimise air emissions during construction traffic movements will include:

- Water suppression on all exposed areas, unsealed roads when required (i.e. if visible dust emissions are observed.
- The location and scale of activities which generate dust emissions would be modified and limited during periods of dry and windy weather.
- Engines to switch off when not in use for prolonged periods.
- Development of a complaints procedure to identify and respond to complaints (refer to Section 6.2 and Section 6.3.1 of the EMS).

5.8. Speed Limits

All personnel driving construction vehicles to and from the Project Area will undergo a site induction which would include information on the management of traffic related issues while travelling to and from the site. The induction would include the following points:

- Consideration and courtesy are essential when driving on public roads.
- Speed limits must be strictly adhered to. The posted speed limit on Golden Highway is 100 km/h. The default speed limit on Ringwood Road is 100 km/h (not posted), however, the signposted speed may not always be safe, and personnel should always drive to suit conditions.

The internal speed limit within the Project Area will be 20 km/h. Signage and other controls would be implemented to ensure that any driver operating a vehicle within the Project Area would do so in a safe manner.

5.9. OSOM Vehicles

OSOM vehicles described in **Section 3.5.2** will be required to deliver large equipment to the site. These vehicles require a permit to access public roads with escort vehicles as part of a convoy. In obtaining a permit, the Construction Contractor will engage a transport logistics company to confirm the traffic management measures required to accommodate the OSOM loads, which will be detailed in a separate Transport Management Plan. The Transport Management Plan will include details such as the route, duration, road closures, traffic detours, notifications and any required TGS.

6. Communication

6.1. Stakeholders

The Construction Contractor, in collaboration with Lightsource bp, will implement proactive measures to liaise, consult and communicate with the community, TfNSW, Upper Hunter Shire Council, and any other relevant stakeholders during the construction phase. This is to ensure timely, accurate and comprehensive traffic information to all existing and potential roads users is conveyed, and to accommodate any community and key stakeholder feedback regarding road safety and traffic management issues. Community and stakeholders will also be consulted regarding the road upgrades along the haulage route.

The strategies for community consultation include:

- Pre-construction: Project updates will be distributed to all key stakeholders where relevant contact details will be shared and the community will be informed of impacts of construction activities, including:
  - Planned start and end date of pre-construction early works
  - Timing of construction activities
  - Planned routes for construction vehicles
  - Planned duration and timing of any road or lane closure, if required.
- During construction: A 24-hour phone number will be displayed on the site entrance sign. The phone number will facilitate a line of communication between the community and any project-related matters. Where road access is to be restricted, the site management team will contact impacted community members in advance and advise them of any planned road access disruptions.

Key stakeholder consultation will be undertaken in accordance with the consultation methods outlined in Section 6 of the EMS.

6.2. Complaints Management

In accordance with Condition B10 (vii) of the Development Consent, all complaints will be managed in accordance with the Project's Complaints Procedure outlined in Section 6.3.1 of the EMS.

All complaints will be collated and recorded in the feedback register published on the Project website. The Construction Contractor will provide a collated register of complaints to the Lightsource bp Project team on at least a monthly basis.

7. Roles and Responsibilities

The roles and responsibilities for the implementation of this TMP are shown in **Table 7-1**.

Table 7-1: Roles and responsibilities for TMP

Entity role	Responsibility
Lightsource bp Development Principal (Construction and Operation)	• Oversee the implementation of this TMP and other management plans which interface with the TMP. • Have working knowledge of the TMP. • Implementing mitigation measures as detailed in **Table 5-1**.
Construction Contractor Site Manager (Construction)	• Ensure resources are made available to enable works to comply with this TMP. • Ensure appropriate approvals and licences are held. • Responsible for the implementation of this TMP. • Responsible for the induction of staff and contractors. • Responsible for all aspects of the worksite including the coordination and management of all staff and contractors. • Responsible for addressing corrective actions arising from environmental inspections. • Responsible for notifying Lightsource bp of any non-compliances with this TMP. • Responsible for maintaining the complaints procedure and providing it to Lightsource bp on a monthly basis in accordance with the Complaints Procedure (refer to Section 6.3.1 of the EMS). • Implementing mitigation measures as detailed in **Table 5-1**.
Health, Safety and Environment (HSE) Coordinator (Construction) O&M Site Manager (Operation)	• Maintaining all traffic management documents • Identifying where traffic measures are not meeting the targets and where improvements can be achieved. • Monitoring and reporting traffic compliance. • Reviewing Project traffic documents. • Responsible for reporting traffic incidents in accordance with the Incident Management Procedure (refer to section 10.2 of the EMS). • Carry out routine environmental site inspections. • Implementing mitigation measures as detailed in **Table 5-1**.
All Employees and Contractors (Construction and Operation)	• Follow any instructions provided by Lightsource bp, the Construction Contractor Site Manager, O&M Site Manager or HSE Coordinator. • Work in accordance with the requirements of this TMP. • Report and raise any issues that arise that may have a traffic impact. • Implementing mitigation measures as detailed in **Table 5-1.**

8. Monitoring and Reporting

8.1. Traffic Mitigation and Management Monitoring

Monitoring of the traffic mitigation and management measures for the Project (see **Table 8.1**) will be undertaken to ensure that each measure is being carried out by the Project.

Table 8.1 Traffic Mitigation & Monitoring Methodology

ID	Aspect	Mitigation / Management Measure	Monitoring Methodology
TMP 01a & 01b	Traffic (general)	Prepare & implement a TMP in accordance with Schedule 2, Condition B10	Review of this TMP will be undertaken in accordance with Condition C2 of the Development Consent and also through the ongoing evaluation of the Project's performance against the traffic mitigation and management measures outlined in this TMP
TMP 02	Traffic (general)	The Applicant must ensure that the development does not generate more than 55 heavy vehicle movements a day during construction, upgrading or decommissioning:	A daily traffic movements register will be maintained by the Contractor A monitoring camera will be installed at the intersection of Golden Highway Ringwood Road, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance. In addition, the 19m maximum length restriction excluding heavy vehicle requiring escort) will be a contractual requirement of the construction contractor and all sub-contractors.
TMP 03	Traffic (general)	The Applicant must ensure that the development does not generate more than 24 movements of heavy vehicle requiring escort during construction, upgrading and decommissioning	
TMP 04	Traffic (general)	The Applicant must ensure that the length of any vehicles (excluding heavy vehicle requiring escort) used for the development does not exceed 19 metres,	
TMP 05	Traffic (general)	The Applicant must keep accurate records of the number of heavy vehicles and vehicles requiring escort entering or leaving the site each day for the duration of the project.	
TMP 06	Traffic (access routes)	Unless otherwise agreed by the Planning Secretary, all heavy vehicles and heavy vehicles requiring escort associated with the development must travel to and from the site via the Golden Highway / Ringwood Road intersection.	
TMP 07	Traffic (access routes)	All vehicles (excluding heavy vehicles requiring escort) associated with the development must access Ringwood Road by turning left in from the Golden Highway only.	

ID	Aspect	Mitigation / Management Measure	Monitoring Methodology
TMP 08	Traffic (access routes)	All vehicles (excluding heavy vehicles requiring escort) associated with the development must exit Ringwood Road by turning left on to the Golden Highway only as shown in Figure 4 of Appendix 4;	Signage will be installed on Ringwood Road stating that "site traffic must turn left". A monitoring camera will be installed at the intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance. The construction contractor will undertake spot checks at the intersection for compliance.
TMP 09	Traffic (access routes)	All heavy vehicles associated with the development departing the site and needing to travel east along the Golden Highway must use the turnaround point at Barnett Street, as shown on Figure 4 in Appendix 4.	
TMP 10	Traffic (site access point)	All vehicles associated with the development must enter and exit the site via the Primary Access point off Ringwood Road, as identified in Appendix 1. Note: Other site access points may be used for emergency purposes.	
TMP 11	Traffic (site access point)	Unless the Planning Secretary agrees otherwise, prior to commencing construction the Applicant must complete the road upgrades detailed in Appendix 4. Unless the relevant road authority agrees otherwise, these upgrades must comply with the current Austroads Guidelines, Australian Standards (as amended by TfNSW supplements), and be carried out to the satisfaction of the relevant roads authority.	Detailed Design documentation
TMP 12	Traffic (site access point)	The Applicant must, in consultation with the relevant roads authority undertake an independent dilapidation survey to assess the: - existing condition of Ringwood Road and Wollara Road on the transport route, prior to construction, upgrading or decommissioning works; and - condition of Ringwood Road and Wollara Road on the transport route, following construction, upgrading or decommissioning works;	Pre-Construction Dilapidation Survey Report Post Construction Dilapidation Survey Report
TMP 13	Traffic (site access point)	On completion of the dilapidation reports undertaken in B8(a)(i) and (ii) provide a copy to the relevant road authority;	Stakeholder Consultation Records
TMP 14	Traffic (site access point)	Repair the roads identified in condition B8(a) if dilapidation surveys identify that the road has been damaged due to development-related traffic during construction, upgrading or decommissioning works;	Stakeholder Consultation Records

ID	Aspect	Mitigation / Management Measure	Monitoring Methodology
TMP 15	Traffic (site access point)	If there is a dispute between the Applicant and the relevant roads authority about road repairs (including timeframes) required under this condition, then either party may refer the matter to the Planning Secretary for resolution.	Stakeholder Consultation Records
TMP 16	Traffic (operating conditions)	The Applicant must ensure the internal roads are constructed as all-weather roads;	Detailed Design
TMP 17	Traffic (operating conditions)	The Applicant must ensure there is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site;	Detailed Design Site Induction
TMP 18	Traffic (operating conditions)	The Applicant must ensure the capacity of the existing roadside drainage network is not reduced;	Detailed Design
TMP 19	Traffic (operating conditions)	The Applicant must ensure all vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction; and	A monitoring camera will be installed at the intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance. Traffic controllers will undertake spot checks at the intersection for compliance.
TMP 20	Traffic (operating conditions)	The Applicant must ensure development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the sealed public road network.	Routine road sweeping. A monitoring camera will be installed at the intersection, with footage to be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint to ensure necessary corrective measures are taken to ensure compliance. Traffic controllers will undertake spot checks at the intersection for compliance.
TMP 21	Traffic (heavy vehicles)	Deliveries to site (excluding oversized loads) would be carried out by 19 metre semi-trailers to comply with heavy vehicle restrictions on Wollara Road and Ringwood Road	Refer to final Drivers Code of Conduct and Site Induction Daily Traffic Movements Register

ID	Aspect	Mitigation / Management Measure	Monitoring Methodology
TMP 22	Traffic (oversize overmass vehicles)	A detailed OSOM vehicle route assessment would be undertaken by the construction contractor and outlined in a Transport Management Plan. The Plan would discuss any traffic management measures required and include details on the OSOM vehicle route, duration, road closures, traffic detours, notifications and any required Traffic Guidance Schemes	OSOM TMP (Appendix E of this TMP) *Note: The current Appendix E and G will be updated prior to the commencement of OSOM movements.*
TMP 23	Traffic (road closures)	The community would be notified in advance of proposed road and transport network changes through appropriate media and other forms of community liaison	Community and Stakeholder Consultation Records
TMP 24	Traffic (transport)	Construction workers would be encouraged to carpool or use the shuttle buses to travel to and from the construction site	Pre-Start Briefings and Site inductions
TMP 25	Traffic	Parking requirements for the Project during construction and operation would be provided on-site, and parking would not be provided on public roads adjacent to the site	Site Induction
TMP 26	Traffic (signage)	Additional warning signs ("Symbolic Truck") are to be installed near the primary site access point	Environmental/Safety Inspection and site induction
TMP 27	Traffic (road upgrades)	Upper Hunter Shire Council would continue to be consulted on upgrades required on Ringwood and Wollara Road.	Stakeholder Consultation Records
TMP 28	Traffic (road upgrades)	Upgrades to Ringwood Road and Wollara Road (including culverts) and the Golden Highway / Ringwood Road intersection, as described in this TTIA.	Post construction Road Safety Audit Road upgrade certificates
TMP 29	Traffic (signage)	Additional warning signs are to be installed along sections of Ringwood Road and Wollara Road where the road narrows and near the site access points.	Post construction Road Safety Audit Site inductions Vehicle Movement Plan (**Appendix G**)
TMP 30	Traffic (general)	As part of the Construction Traffic Management Plan (CTMP) to be prepared post-approval, a Vehicle Movement Plan will be included that clearly shows the construction vehicle routes and permitted movements, including restriction at the Ringwood Road/Golden Highway intersection (left in/left out movement permitted). The CTMP will also encompass a Drivers Code of Conduct that all construction phase vehicle drivers (including of light vehicles) would need to read and sign to confirm their responsibilities and reinforce correct behaviour.	This TMP Driver Code of Conduct (**Appendix F**) Vehicle Movement Plan (**Appendix G**)

ID	Aspect	Mitigation / Management Measure	Monitoring Methodology
TMP 31	Traffic (road upgrades)	Osborn's Transport, Merriwa Pre School, Scone Grammar School and Scone High School would be consulted on the proposed formalisation of the bus stop on Ringwood Road at the Golden Highway intersection and informed of the additional construction traffic that would be generated by the Project.	Stakeholder Consultation Records
TMP 32	Traffic (signage)	Additional signage and line marking will be installed at the Golden Highway and Barnett Street intersection and installation of warning signs ("Symbolic Truck") are recommended near the primary site access point.	Post construction Road Safety Audit Site inductions
TMP 33	Traffic (general)	Where relevant, Road Occupancy Licences (ROLs) and crane permits would be submitted and approved prior to the closure of any roads.	Stakeholder Consultation Records
TMP 34	Traffic (general)	Upgrades and modifications to existing intersections for construction access. Based on turn path assessments and request from TfNSW.	Post construction Road Safety Audit Swept Paths (**Appendix C**)
TMP 35	Traffic (road upgrades)	Works are to include vehicle volume monitoring during construction to ensure the morning peak traffic volume is not exceeded. Periodic traffic volume surveys on the Golden Highway will be undertaken to ensure Turn Warrants assessment remains valid. Lightsource bp propose to limit Project-related vehicle movements to outside of the AM peak period when cumulative traffic levels along Golden Highway exceed the threshold for a CHRs turn treatment during the AM peak period.	Traffic survey data collected periodically throughout construction.
TMP 36	Traffic (site access)	A pre-and post-construction dilapidation survey will also be undertaken along the 1.32 km stretch of Ringwood Rod that sits within the Mid-Western Region LGA, considering potential impacts from use by locally-based workers travelling to site.	Pre-Construction Dilapidation Survey Report Post Construction Dilapidation Survey Report

8.2. Training, Awareness and Competencies

All personnel (Lightsource bp employees, contractors and sub-contractors) engaged to carry out the development will complete an online HSEQ induction prior to commencing work on-

site. The induction would include the following information on management of traffic related issues while travelling to and from the Project Area:

- Consideration and courtesy are essential when driving on public roads and the worksite.
- All employees would be required to comply with the onsite VMP (see **Appendix G**).
- Speed limits must be strictly adhered to.

After completing the induction, workers would sign a statement of attendance and records of this would be kept in the site office.

Further details regarding staff induction and training are outlined in the EMS. It will be emphasised to staff during toolbox talks and training that appropriate traffic management onsite is critical to the Project.

8.3. Audit

Auditing of this TMP will be carried out in accordance with Section 11.0 outlined in the EMS.

9. Review and Improvement

Consistent with Condition C2 of the Development Consent, Lightsource bp will:

- Update the TMP to the satisfaction of the Planning Secretary prior to carrying out any upgrading or decommissioning activities on site.
- Review and revise (if necessary) the TMP to the satisfaction of the Planning Secretary within one month of:
  - the submission of an incident report under Condition C11 of Schedule 2 (see **Section 10.1**)
  - the submission of an audit report under Condition C15 of Schedule 2 or
  - any modification to the conditions of the Development Consent.

Review and improvement of this TMP will also be achieved through the ongoing evaluation of the Project's performance against the traffic mitigation and management measures outlined in this TMP.

The improvement process will be designed to:

- Identify areas of opportunity for improvement when implementing the Project's traffic mitigation/management measures outlined in **Section 5**.
- Determine the cause or causes of non-conformances with the Project's traffic mitigation/management measures outlined in **Section 5**.
- Develop and implement a plan of corrective and preventative actions to address any non-conformances and/or deficiencies with the Project's traffic mitigation/ management measures outlined in **Section 5**.
- Verify the effectiveness of the corrective and preventative actions.
- Document any changes in procedures resulting from the improvement process and communicate these changes with the responsible parties that are implementing this TMP.

This TMP may need to be revised if the Project's scope of works or work method, change, if the work methods are found to be ineffective, or if directed by the Lightsource bp Principal. This will occur as needed and in accordance with the process outlined in the Development Consent.

A copy of the updated TMP and changes will be distributed to all relevant stakeholders in accordance with the approved document control procedure identified in the EMS.

10. Incident Reporting

This section describes the incident reporting procedures for the Project, having regard to the requirements of the Development Consent.

10.1. Notification Procedures under Development Consent

10.1.1. Incident Notification

The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident.

Furthermore, a written notification addressing the requirements set out below must be submitted to the Planning Secretary via the Major Projects website within seven days after the Applicant becomes aware of the incident. Notification is required to be given under this condition even if the Applicant fails to give the notification required under Condition C11 of the Development Consent or, having given such notification, subsequently forms the view that an incident has not occurred.

Written notification of an incident must:

a. identify the development and application number (Goulburn River Solar Farm, SSD- 33964533)
b. provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident)
c. identify how the incident was detected
d. identify when the applicant became aware of the incident
e. identify any actual or potential non-compliance with conditions of consent
f. describe what immediate steps were taken in relation to the incident
g. identify further action(s) that will be taken in relation to the incident
h. identify a project contact for further communication regarding the incident.

Within 30 days of the date on which the incident occurred, or as otherwise agreed by the Planning Secretary, Lightsource bp will provide the Planning Secretary and any relevant public authorities (as determined by the Planning Secretary) with a detailed report on the incident addressing all the requirements below, and such further reports as may be requested.

The Incident Report must include:

a. a summary of the incident
b. outcomes of an incident investigation, including identification of the cause of the incident
c. details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence
d. details of any communication with other stakeholders regarding the incident.

10.1.2. Non-Compliance Notification

Non-compliance notification requirements are set out in Condition C12, C13 and C14 of the Development Consent. Under the Development Consent, a non-compliance is defined as an 'occurrence, set of circumstances or development that is a breach of this consent but is not an incident.'

Lightsource bp will notify the DPHI in writing via the Major Projects website within seven days after becoming aware of any non-compliance. Any non-compliance notification will identify the Project and the application number (Goulburn River Solar Farm, SSD 33964533), set out the condition of consent that the Project is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known). The notification will also identify what actions have been taken, or will be undertaken, to address the non-compliance.

Consistent with Condition C14 of Development Consent, a non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

11. References

Austroads (2020). *Guide to Traffic Management Part 6 – Intersections, Interchanges and Crossings*.

Austroads (2023). *Design Vehicles and Turning Path Templates*.

Roads and Traffic Authority (2002). *Guide to Traffic Generating Developments*.

TfNSW (2016). *Golden Highway Corridor Strategy*

Turnbull (2023). *Goulburn River Traffic and Transport Impact Assessment*.

Umwelt (2023a). *Goulburn River Solar Farm Environmental Impact Statement*.

Umwelt (2023b). *Goulburn River Solar Farm Amendment Report*.

Umwelt (2024). *Goulburn River Solar Farm Temporary Workers Accommodation Facility Amendment Report*.

Appendix A Road and culvert upgrades

GOULBURN RIVER SOLAR FARM

WOLLARA ROAD

ROAD UPGRADE

ISSUED FOR INFORMATION

NUMBER	DESCRIPTION			REV
0305-DRG-00-GE-0001	GENERAL	COVER SHEET AND DRAWING INDEX	1 OF 1	A
0305-DRG-00-GE-0031	PAVEMENT	PAVEMENT DETAILS	1 OF 1	A
0305-DRG-00-GE-0051	ROAD	TYPICAL SECTIONS	1 OF 1	A
0305-DRG-00-PV-0101	PAVEMENT	PLAN	1 OF 4	A
0305-DRG-00-PV-0102	PAVEMENT	PLAN	2 OF 4	A
0305-DRG-00-PV-0103	PAVEMENT	PLAN	3 OF 4	A
0305-DRG-00-PV-0104	PAVEMENT	PLAN	4 OF 4	A

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HEIGHT DATUM: AHD

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PLOT BY: KateMercer

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DESIGN CHECK	J.DeWIT	20.09.22
DESIGN MNGR	J.DeWIT	20.09.22
PROJECT MNGR	R.BANZON	20.09.22

DRAWINGS / DESIGN PREPARED BY
DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
GENERAL
COVER SHEET AND DRAWING INDEX

A1

SHEET
1 OF 1

DRAWING NUMBER
0305-DRG-00-GE-0001

ISSUE STATUS
FOR INFORMATION

SHEET No.
00-GE-0001

ISSUE
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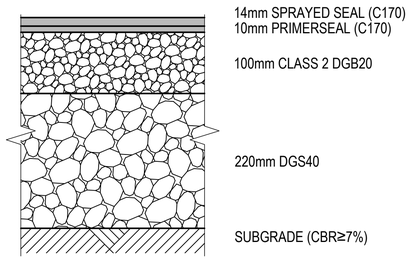

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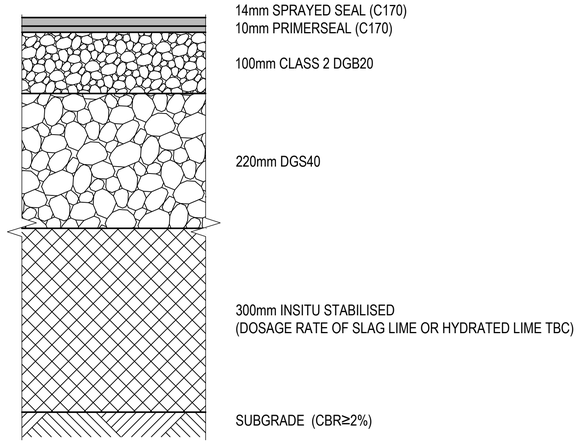

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HOLD - SEE NOTE 1

NOTES

1. PAVEMENT TYPES ARE SUBJECT TO GEOTECHNICAL INVESTIGATION AND ASSUMED BASED ON PAVEMENT REHABILITATION WORKS ON RINGWOOD ROAD COMPLETED IN 2021.

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DESIGN CHECK	J.DeWIT	20.09.22
DESIGN MNGR	J.DeWIT	20.09.22
PROJECT MNGR	R.BANZON	20.09.22

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DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
GENERAL
PAVEMENT DETAILS

A1

SHEET
1 OF 1

DRAWING NUMBER 0305-DRG-00-GE-0031

ISSUE STATUS: FOR INFORMATION
SHEET No.: 00-GE-0031
ISSUE: A

LEGEND

- EXISTING SURFACE
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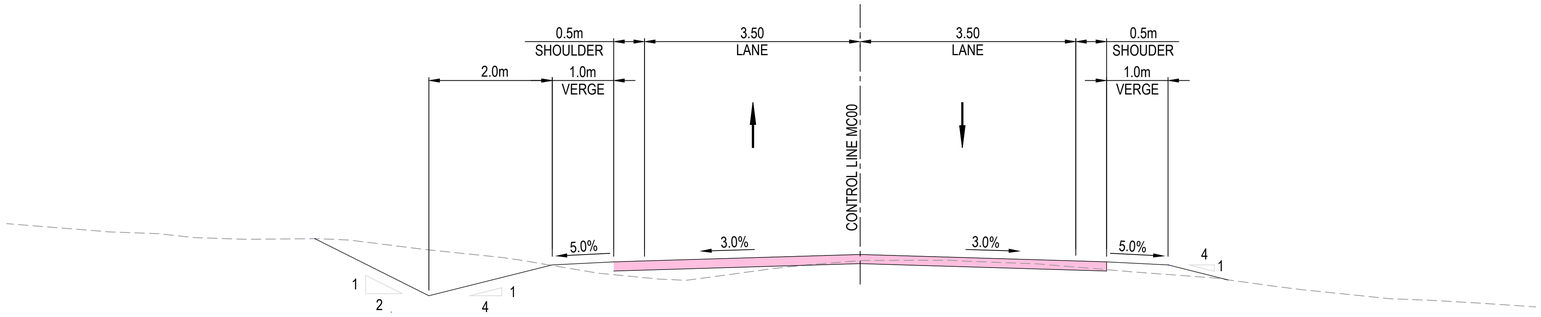
- PAVEMENT TYPE 2

NOTE

1. FOR PAVEMENT TYPE REFER TO 0305-DRG-00-GE-0031.



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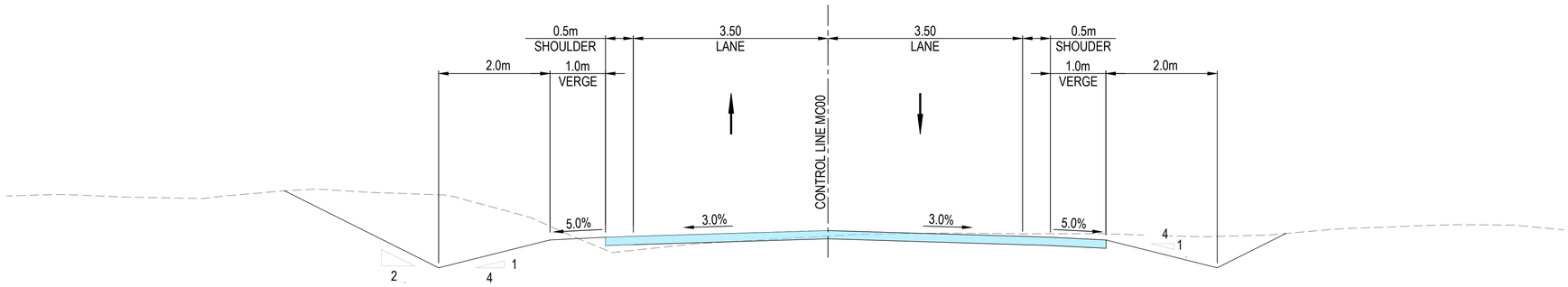

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PLOT BY: KateMercer

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DESIGN MNGR	J.DeWIT	20.09.22
PROJECT MNGR	R.BANZON	20.09.22

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turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
ROAD
TYPICAL SECTIONS

A1

SHEET
1 OF 1

DRAWING NUMBER
0305-DRG-00-GE-0051

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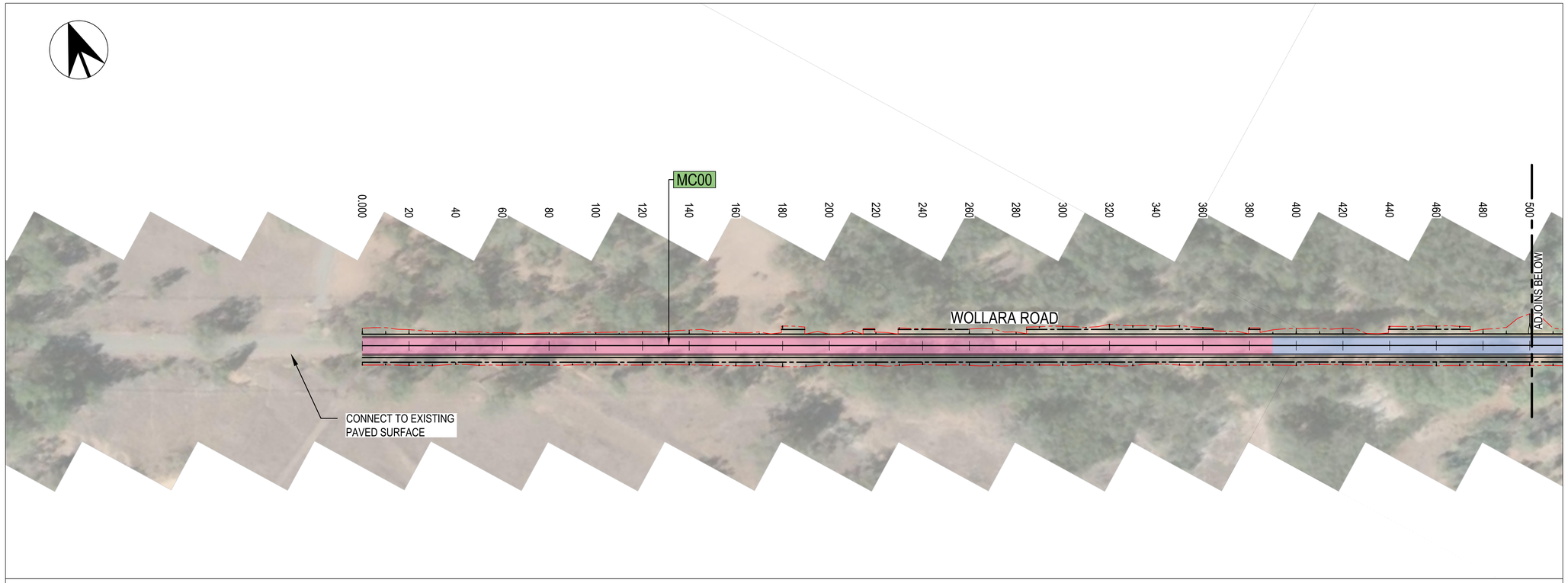

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GENERAL

- REF BOUNDARY
- DESIGN

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (20)
- MCXX — CONTROL LINE LABEL

PAVEMENT AND KERBS

- TYPE 1
- TYPE 2

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DESIGN CHECK	J.DeWIT	20.09.22
DESIGN MNGR	J.DeWIT	20.09.22
PROJECT MNGR	R.BANZON	20.09.22

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DESIGNER

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CLIENT

DRAWING TITLE

GOULBURN RIVER SOLAR FARM, EIS
PAVEMENT
PLAN

A1

SHEET
2 OF 4

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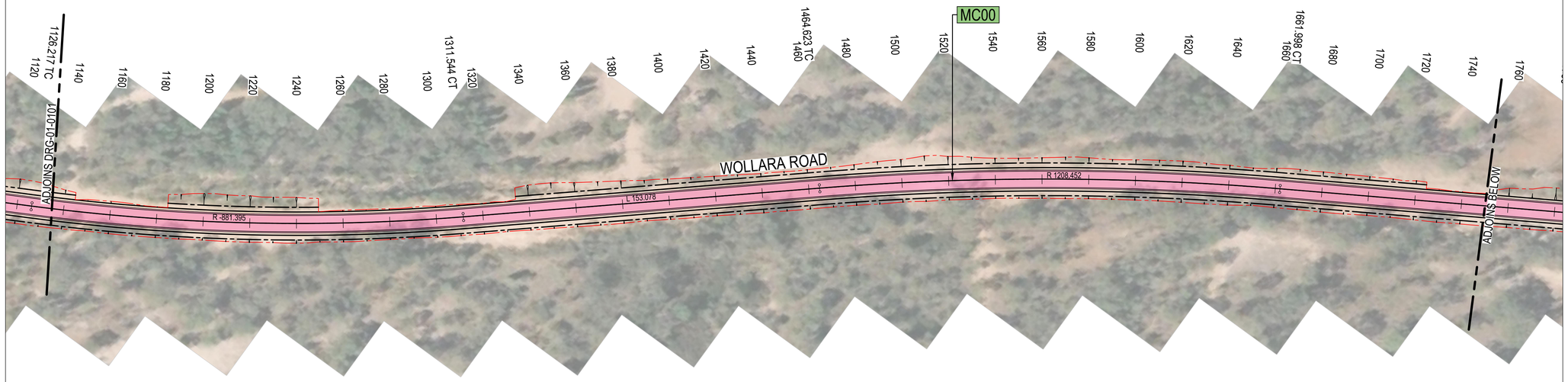

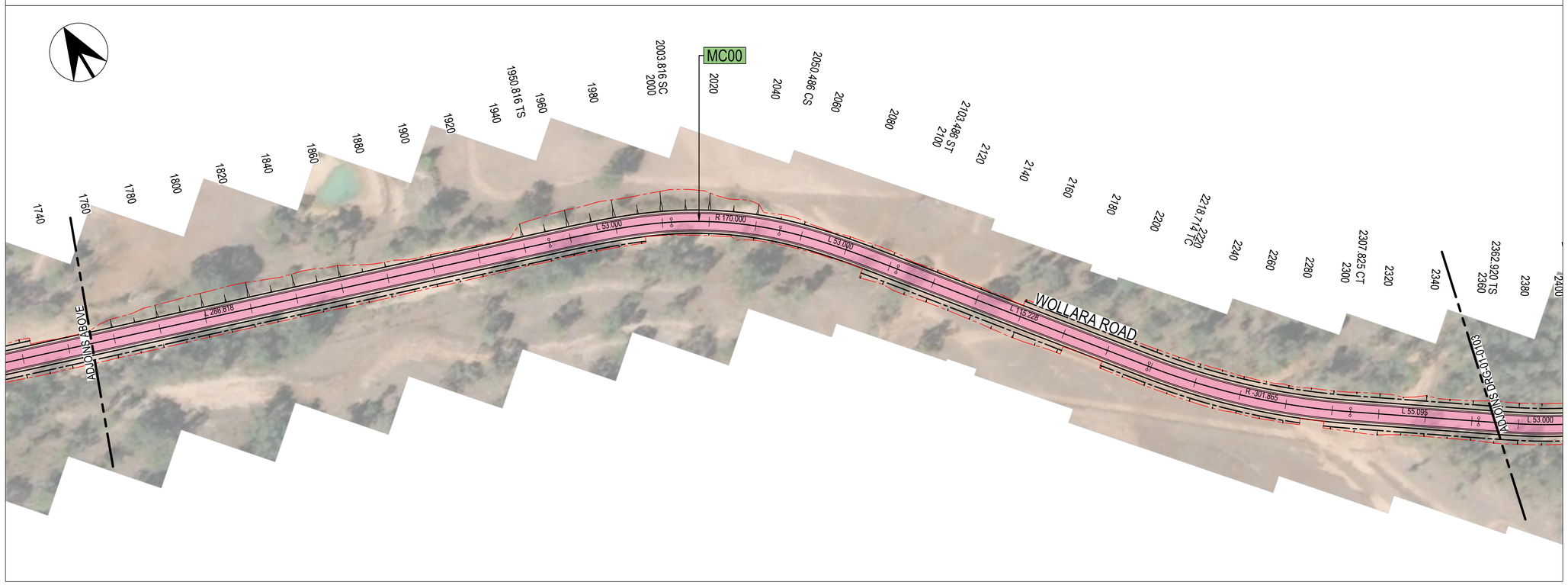

LEGEND

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- MCXX — CONTROL LINE LABEL

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- TYPE 1
- TYPE 2

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CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

PLOT DATE / TIME: 20 September 2022 12:34:19 PM
PLOT BY: KateMercer

TITLE	NAME	DATE
DRAWN	K.MERCER	20.09.22
DRG CHECK	B.EVANS	20.09.22
DESIGN	S.SHAMSODIEN	20.09.22
DESIGN CHECK	J.DeWIT	20.09.22
DESIGN MNGR	J.DeWIT	20.09.22
PROJECT MNGR	R.BANZON	20.09.22

DRAWINGS / DESIGN PREPARED BY
DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
PAVEMENT
PLAN

A1

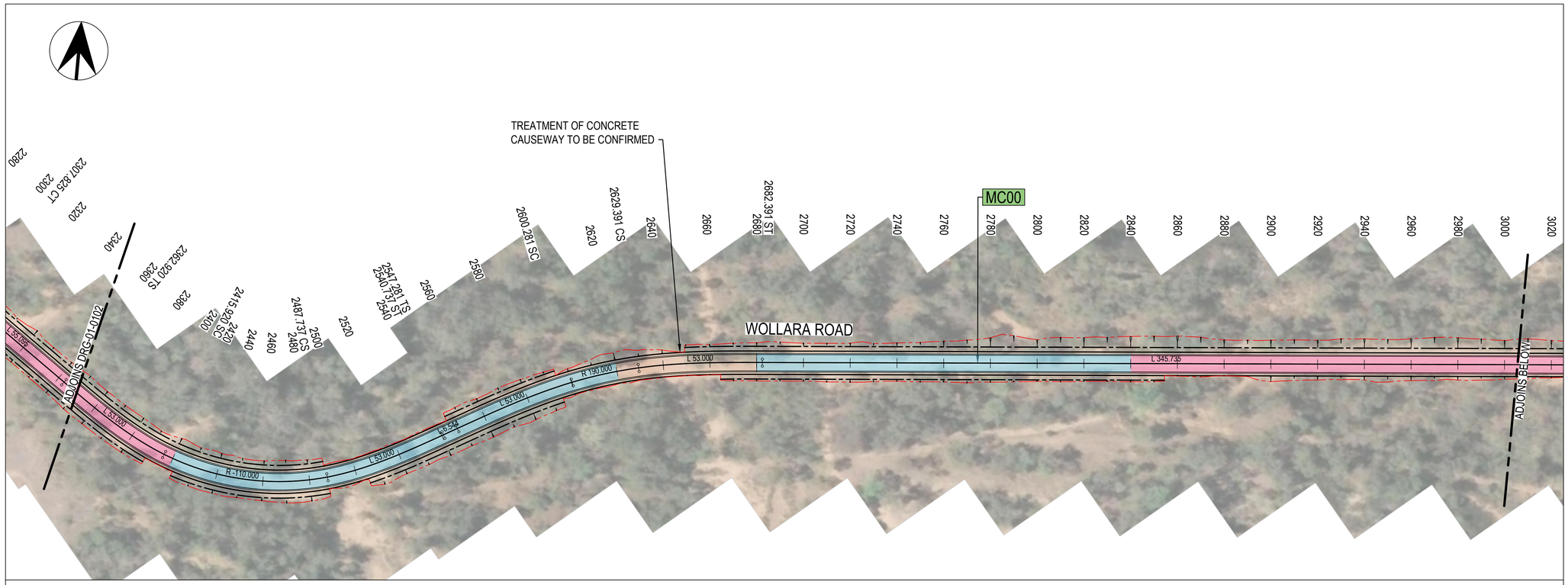
SHEET
2 OF 4

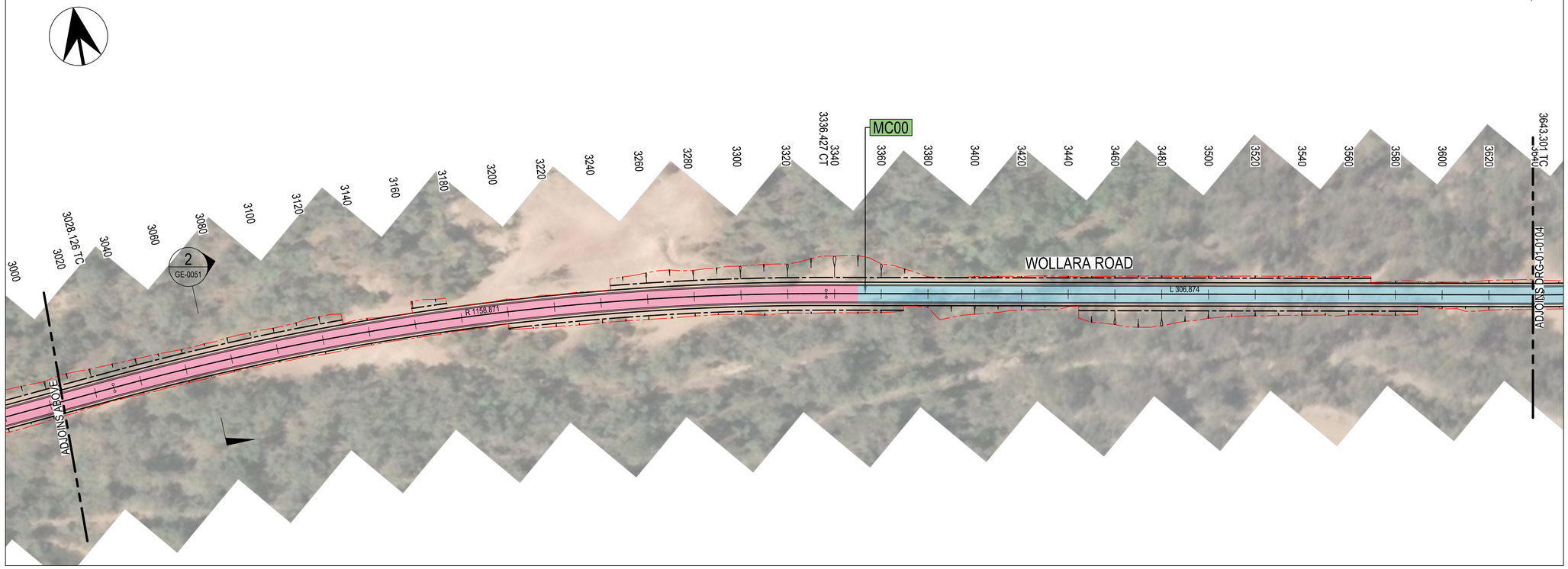
DRAWING NUMBER
0305-DRG-00-PV-0102

ISSUE STATUS
FOR INFORMATION

SHEET No.
00-PV-0102

ISSUE
A





LEGEND

GENERAL

- REF BOUNDARY
- DESIGN

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (20)
- MCXX — CONTROL LINE LABEL

PAVEMENT AND KERBS

- TYPE 1
- TYPE 2

FOR INFORMATION ONLY

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME						PLOT DATE / TIME	PLOT BY	DRAWINGS / DESIGN PREPARED BY	DRAWINGS / DESIGN PREPARED FOR	DRAWING TITLE	
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EXTERNAL REFERENCE FILES	REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL	SCALES ON A1 SIZE DRAWING	TITLE / NAME / DATE	turnbull		SHEET 3 OF 4	
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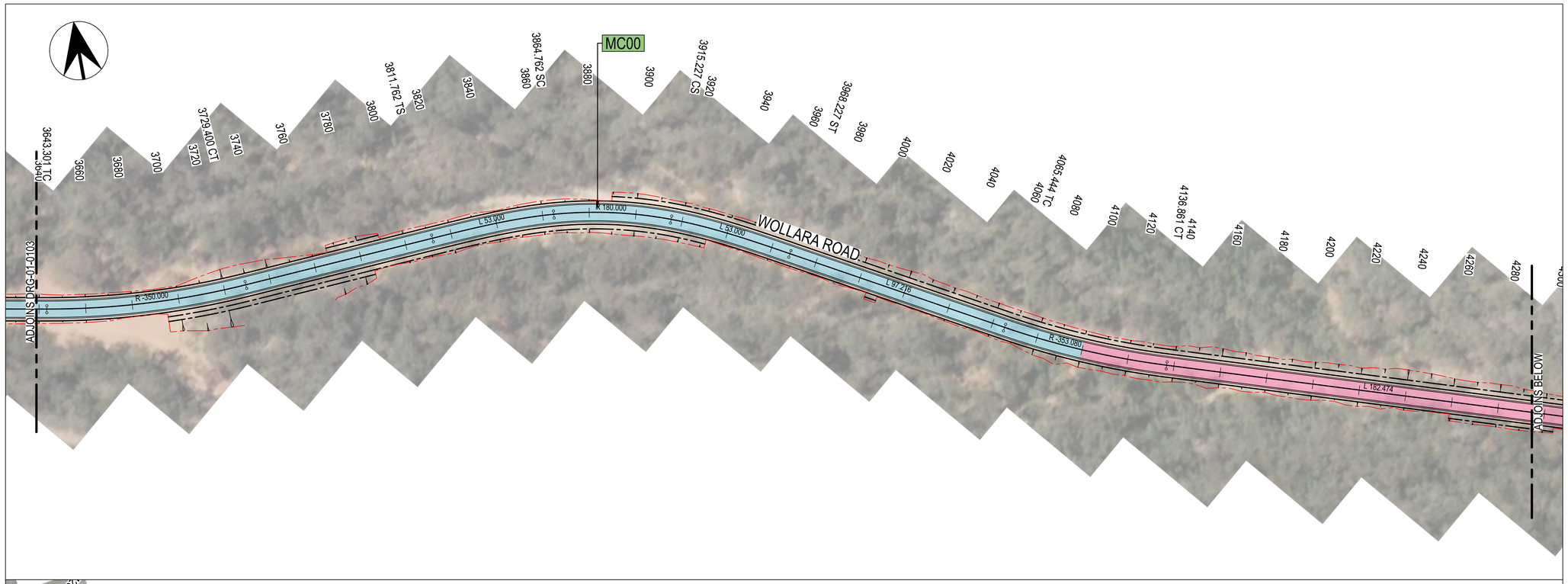

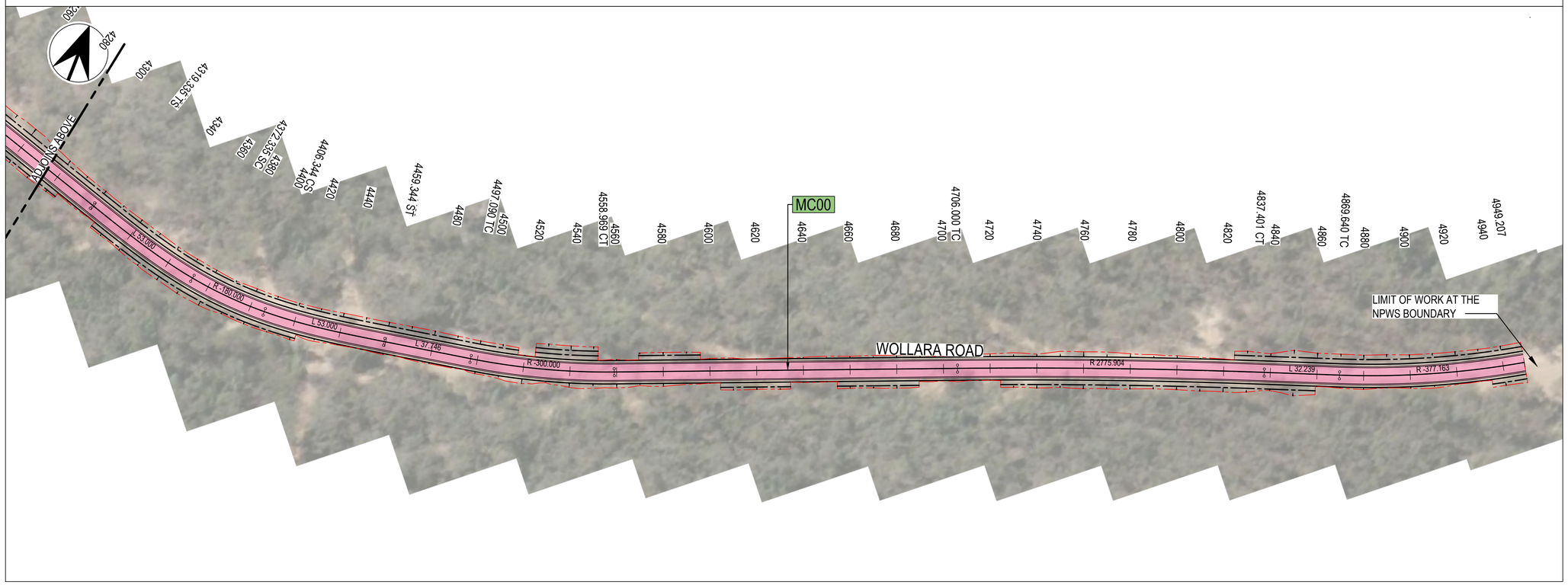

LEGEND

GENERAL

- REF BOUNDARY
- DESIGN

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (20)
- MCXX — CONTROL LINE LABEL

PAVEMENT AND KERBS

- TYPE 1
- TYPE 2

FOR INFORMATION ONLY

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME: C:\12dS\data\TE-Cloud\0305 GRSF EIS_120\4. CAD\Drawings\0305-DRG-00-PV-0104.dwg

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SCALES ON A1 SIZE DRAWING: 0 10 20 30 40 50 — SCALE 1:1000m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020) HEIGHT DATUM: AHD

PLOT DATE / TIME: 20 September 2022 12:36:02 PM PLOT BY: KateMercer

TITLE	NAME	DATE
DRAWN	K.MERCER	20.09.22
DRG CHECK	B.EVANS	20.09.22
DESIGN	S.SHAMSODIEN	20.09.22
DESIGN CHECK	J.DeWIT	20.09.22
DESIGN MNGR	J.DeWIT	20.09.22
PROJECT MNGR	R.BANZON	20.09.22

DRAWINGS / DESIGN PREPARED BY

DESIGNER

turnbull

DRAWINGS / DESIGN PREPARED FOR

CLIENT

DRAWING TITLE: GOULBURN RIVER SOLAR FARM, EIS
PAVEMENT PLAN

A1

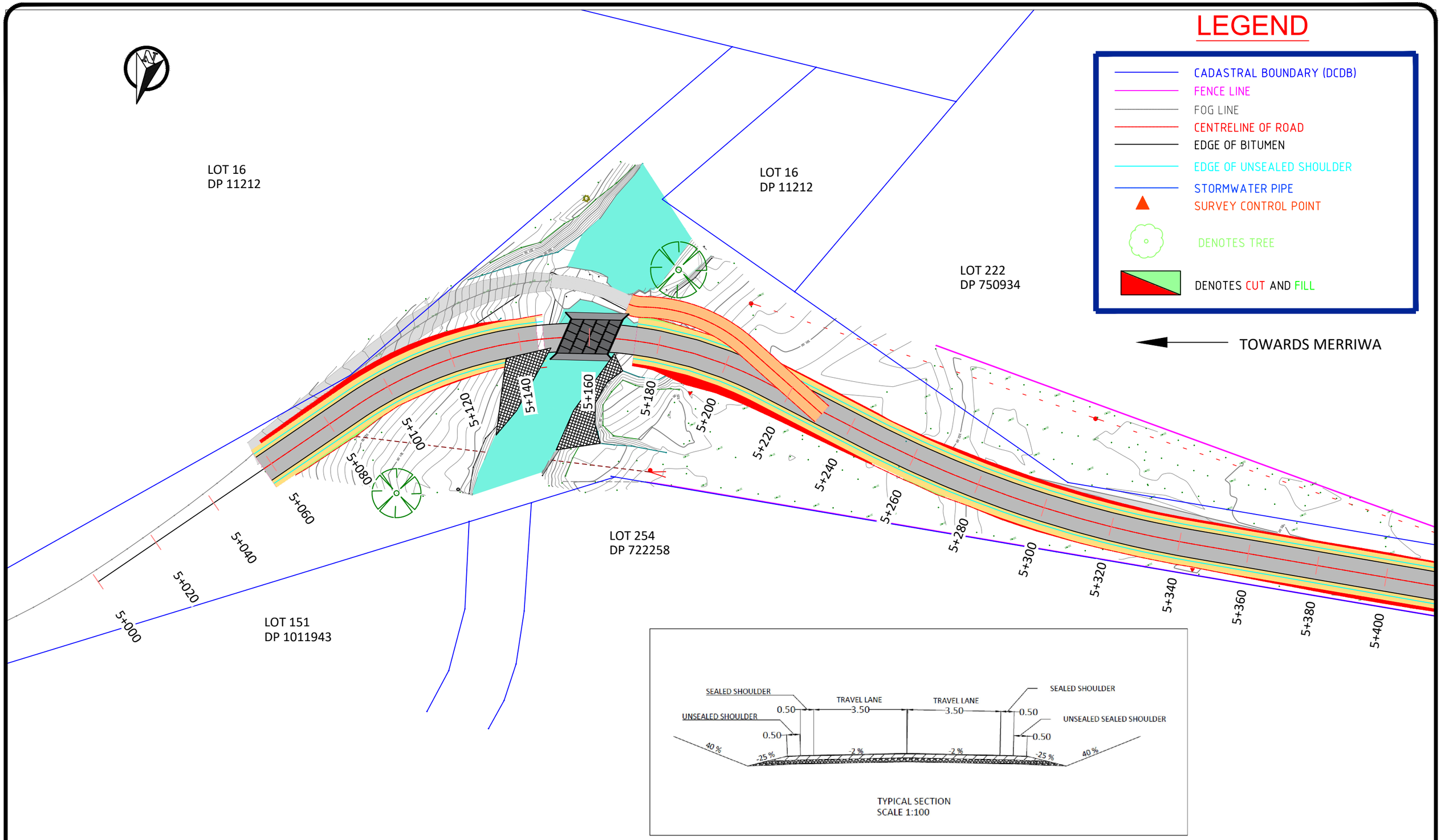
SHEET 4 OF 4

DRAWING NUMBER: 0305-DRG-00-PV-0104

ISSUE STATUS: FOR INFORMATION

SHEET No.: 00-PV-0104

ISSUE: A



HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp
bp

DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

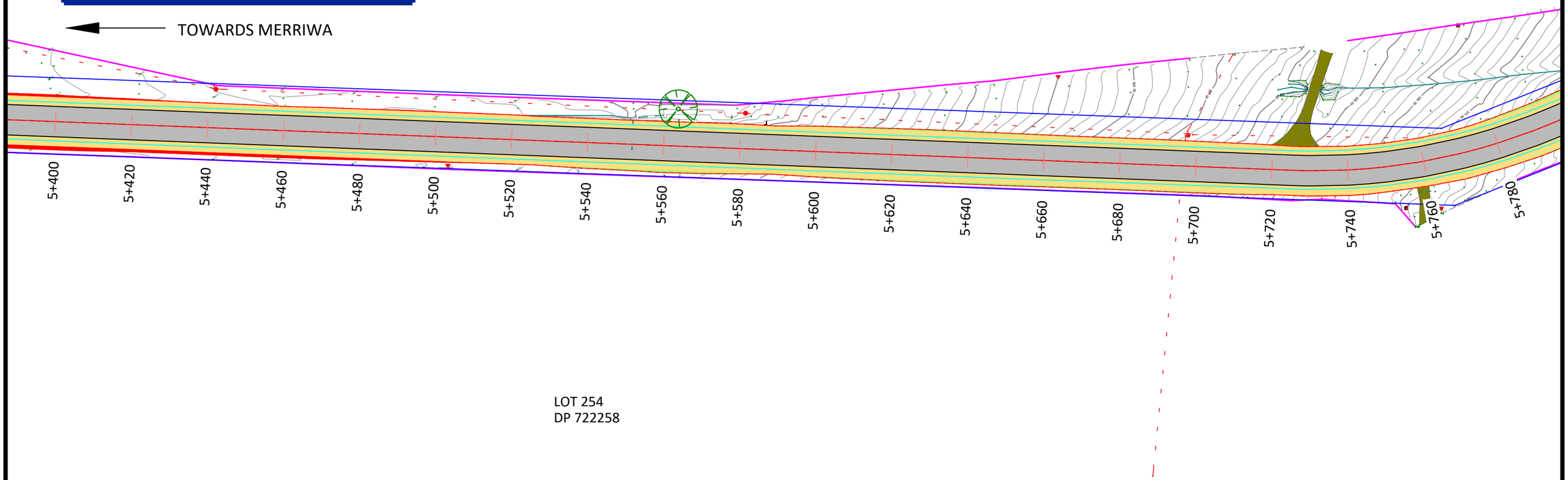
SCALE: 1:1000	SURVEYED: RAP SURVEYING
DWG No: HEC22_	DESIGNED: RS / DRAWN: RJ
JOB No: 22Q3J3	
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020	SHEET: 1 / REV: 0
DATUM: AHD	

LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA

LOT 22
DP 750934



LOT 254
DP 722258

HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp
bp

DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

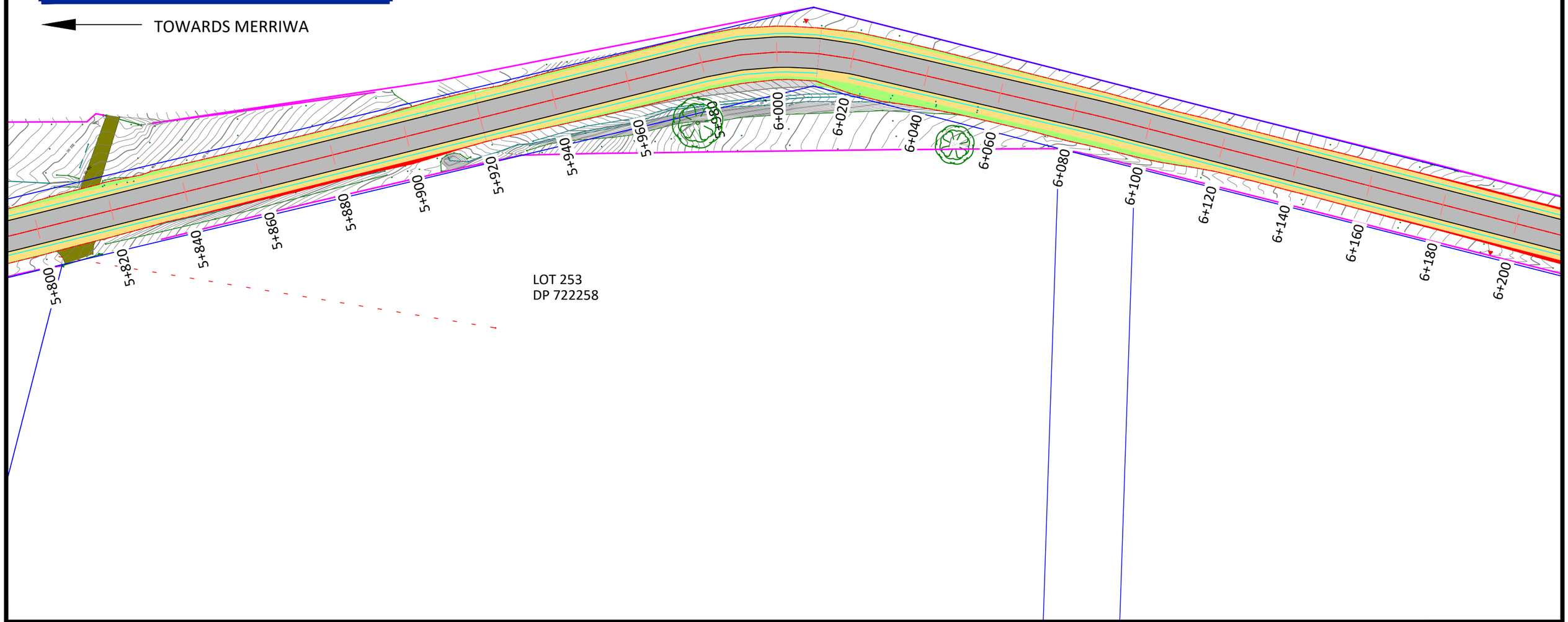
SCALE: 1:1000
DWG No: HEC22_
JOB No: 22Q3J3
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020
DATUM: AHD

SURVEYED: RAP SURVEYING
DESIGNED: RS
DRAWN: RJ
SHEET: 2
REV: 0

LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA



HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp

DATE:	REVISION:	DESCRIPTION:
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PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

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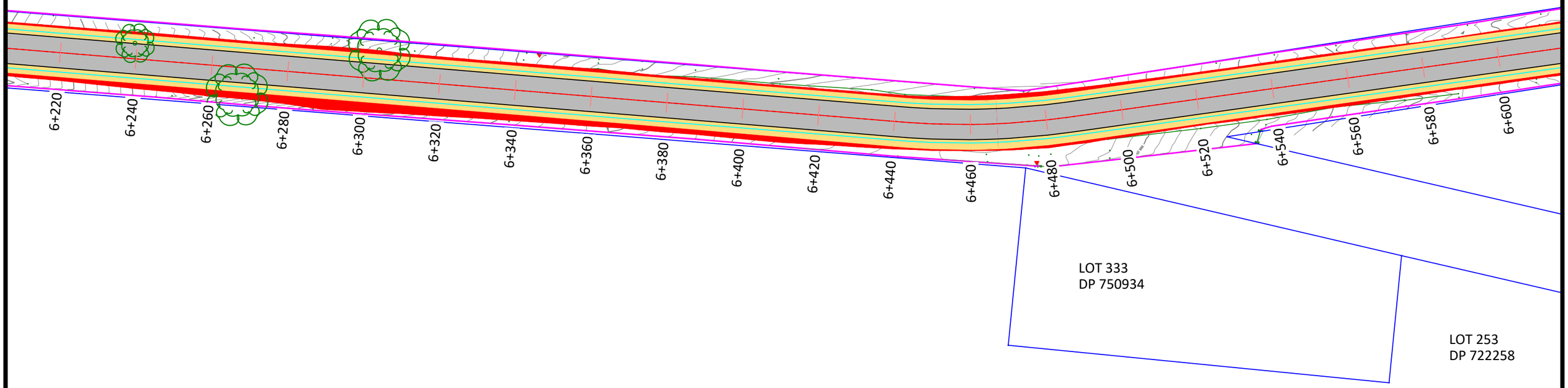
JOB No: 22Q3J3
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020
DATUM: AHD

SURVEYED: RAP SURVEYING
DESIGNED: RS
DRAWN: RJ
SHEET: 3
REV: 0

LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA



HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp

DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

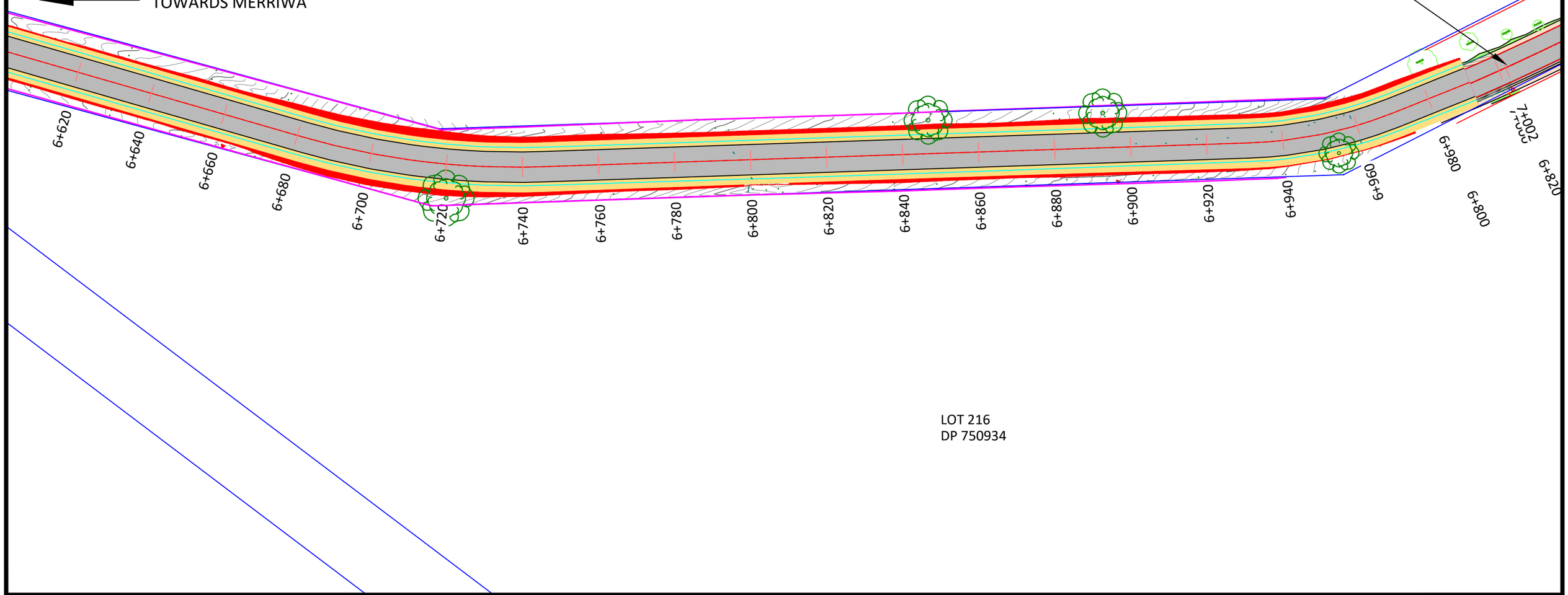
SCALE: 1:1000
DWG No: HEC22_
JOB No: 22Q3J3
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020
DATUM: AHD

SURVEYED: RAP SURVEYING
DESIGNED: RS
DRAWN: RJ
SHEET: 4
REV: 0

LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA



HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp

DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

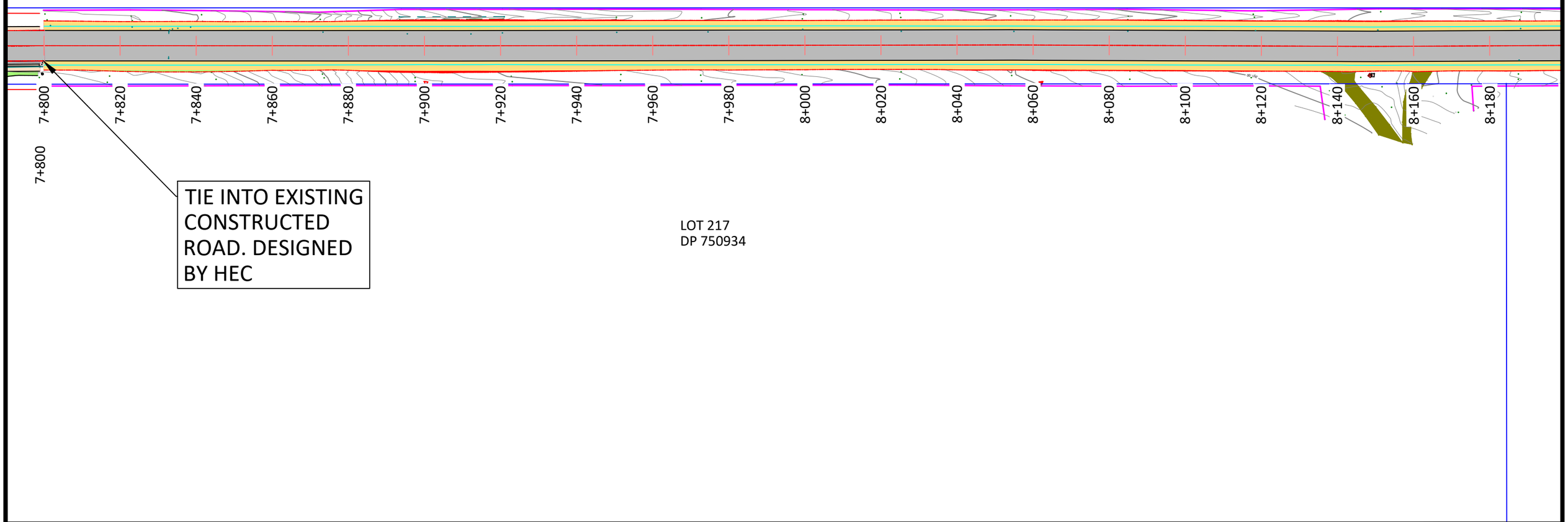
ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

SCALE: 1:1000	SURVEYED: RAP SURVEYING
DWG No: HEC22_	DESIGNED: RS / DRAWN: RJ
JOB No: 22Q3J3	
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020	SHEET: 5 / REV: 0
DATUM: AHD	

LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA



HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp
bp

DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

SCALE: 1:1000
SURVEYED: RAP SURVEYING
DWG No: HEC22_
JOB No: 22Q3J3
DESIGNED: RS
DRAWN: RJ
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020
DATUM: AHD
SHEET: 6
REV: 0

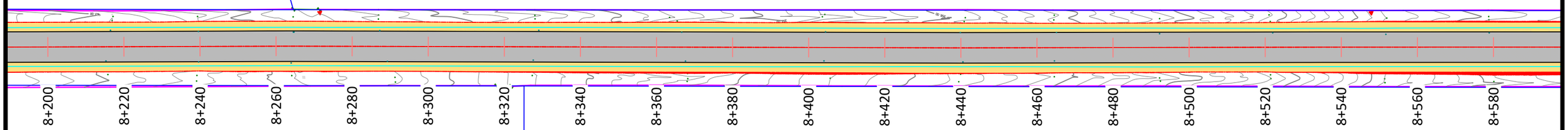
LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA

LOT 222
DP 750934

LOT 223
DP 750934



LOT 237
DP 750934

LOT 217
DP 750934

HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp

DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

SCALE: 1:1000
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JOB No: 22Q3J3
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020
DATUM: AHD

SURVEYED: RAP SURVEYING
DESIGNED: RS
DRAWN: RJ
SHEET: 7
REV: 0

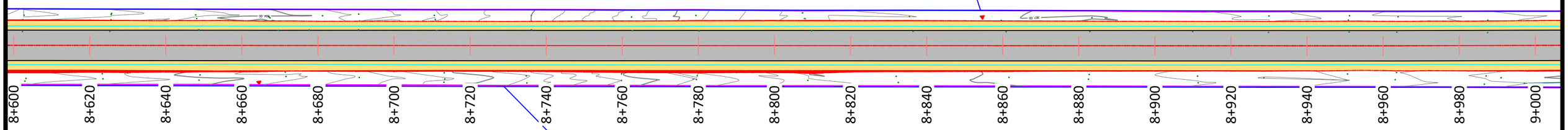
LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA

LOT 223
DP 750934

LOT 224
DP 750934



LOT 220
DP 750934

LOT 217
DP 750934

HARRYAN
ENGINEERING COUNSULTING

CLIENT:
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DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

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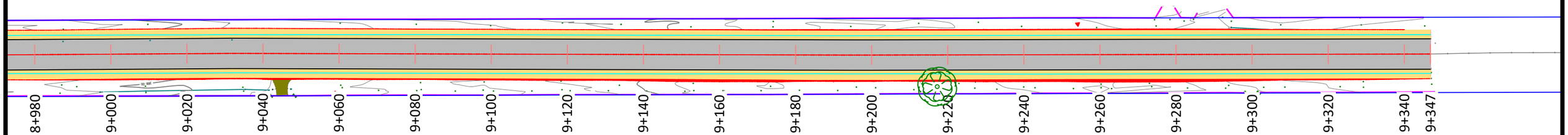
DWG No: HEC22_
JOB No: 22Q3J3
DESIGNED: RS
DRAWN: RJ
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020
DATUM: AHD
SHEET: 8
REV: 0

LEGEND

- CADASTRAL BOUNDARY (DCDB)
- FENCE LINE
- FOG LINE
- CENTRELINE OF ROAD
- EDGE OF BITUMEN
- EDGE OF UNSEALED SHOULDER
- STORMWATER PIPE
- SURVEY CONTROL POINT
- DENOTES TREE
- DENOTES CUT AND FILL

TOWARDS MERRIWA

LOT 224
DP 750934



LOT 220
DP 750934

HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp

DATE:	REVISION:	DESCRIPTION:
24.01.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
Proposed Alignment

ISSUE STATUS:
CONCEPTUAL DESIGN CLIENT REVIEW

SCALE: 1:1000
DWG No: HEC22_
JOB No: 22Q3J3
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020
DATUM: AHD

SURVEYED: RAP SURVEYING
DESIGNED: RS
DRAWN: RJ
SHEET: 9
REV: 0

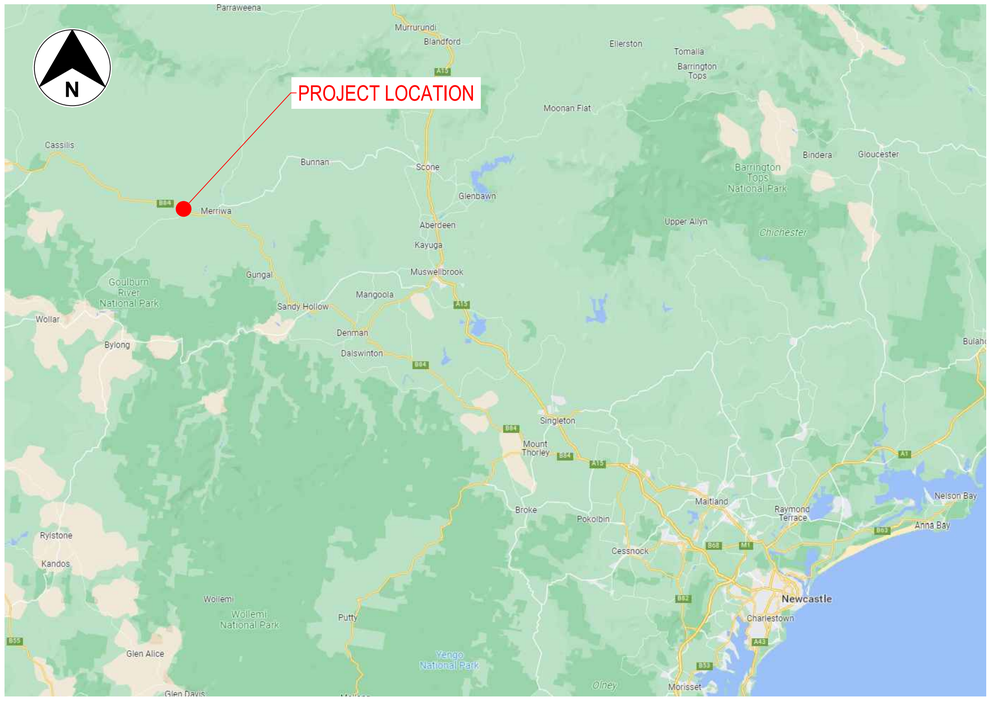
Appendix B Intersection upgrades

GOULBURN RIVER SOLAR FARM

RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION

ROAD UPGRADE

STRATEGIC DESIGN



LOCALITY PLAN
NOT TO SCALE

DRAWING INDEX

SHEET No.	SHEET TYPE	SHEET DETAILS	No. OF SHEETS	ISSUE
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01-RD-0101	ROAD ALIGNMENT	PLAN	1 OF 3	A
01-RD-0102	ROAD ALIGNMENT	PLAN	2 OF 3	A
01-RD-0103	ROAD ALIGNMENT	PLAN	3 OF 3	A
01-RD-0201	ROAD ALIGNMENT	TYPICAL CROSS SECTION	1 OF 1	A

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
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EXTERNAL REFERENCE FILES

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SCALES ON A1 SIZE DRAWING

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

PLOT DATE / TIME: 27 October 2023 04:47:49 PM
PLOT BY: PakWaHo

TITLE	NAME	DATE
DRAWN	A.REIS	27.10.23
DRG CHECK	B.EVANS	27.10.23
DESIGN	P.PHAM	27.10.23
DESIGN CHECK	D.SHIROKOV	27.10.23
DESIGN MNGR	D.SHIROKOV	27.10.23
PROJECT MNGR	R.BANZON	27.10.23

DRAWINGS / DESIGN PREPARED BY
DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
ROAD ALIGNMENT
COVER SHEET AND DRAWING INDEX

A1

SHEET 1 OF 1

DRAWING NUMBER: 0305-DRG-01-RD-0001

ISSUE STATUS: STRATEGIC DESIGN
SHEET No.: 01-RD-0001
ISSUE: A

X:0305-00-GE-A1-SHT

LEGEND

GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (50)
- MCXX — CONTROL LINE LABEL
- C1 — LINE MARKING LABEL
- EXISTING SIGN

PAVEMENT AND KERBS

- NEW PAVEMENT

NOTES

1. DESIGN IS UNDERTAKEN IN 2D.
2. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
3. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".
4. PAVEMENT DESIGN AND JOINTING IS EXCLUDED.
5. PROPOSED BARRIER LOCATION IS SHOWN INDICITIVELY ONLY.
6. EXISTING GUIDE POSTS ALONG BARRIER EXTENTS ARE TO BE REMOVED.

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

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X:0305-01-SU-SURVEY PLAN
X:0305-01-RD-DESIGN-CTRL
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X:0305-01-RD-MNRX-GOSBARNETT
X:0305-01-RD-WTCH
X:0305-01-RD-SURVEY

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	27.10.23	STRATEGIC DESIGN	-	RB

SCALES ON A1 SIZE DRAWING
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SCALE 1:500m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

PLOT DATE / TIME: 27 October 2023 04:48:16 PM
PLOT BY: PakWaHo

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DRG CHECK	B.EVANS	27.10.23
DESIGN	P.PHAM	27.10.23
DESIGN CHECK	D.SHIROKOV	27.10.23
DESIGN MNGR	D.SHIROKOV	27.10.23
PROJECT MNGR	R.BANZON	27.10.23

DRAWINGS / DESIGN PREPARED BY
DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
ROAD ALIGNMENT
PLAN

A1

SHEET 1 OF 3

DRAWING NUMBER: 0305-DRG-01-RD-0101

ISSUE STATUS: STRATEGIC DESIGN
SHEET No.: 01-RD-0101
ISSUE: A

LEGEND

GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- 50 — CONTROL LINE AND CHAINAGE
- MCXX — CONTROL LINE LABEL
- C1 — LINE MARKING LABEL
- EXISTING SIGN

PAVEMENT AND KERBS

- NEW PAVEMENT

NOTES

1. DESIGN IS UNDERTAKEN IN 2D.
2. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
3. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".
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6. EXISTING GUIDE POSTS ALONG BARRIER EXTENTS ARE TO BE REMOVED.

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED
50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
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EXTERNAL REFERENCE FILES
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X:0305-00-GE-LEGEND
X:0305-01-SU-CADASTRAL
X:0305-01-RD-DESIGN-PLAN
X:0305-01-RD-DESIGN-CTRL
X:0305-01-RD-AMDD
X:0305-01-RD-PROFILE-DOS-BARNETT
X:0305-01-RD-MATCH
X:0305-01-RD-SURVEY

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	27.10.23	STRATEGIC DESIGN	-	RB

SCALES ON A1 SIZE DRAWING
0 5 10 15 20 25
SCALE 1:500m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

PLOT DATE / TIME: 27 October 2023 04:48:45 PM
PLOT BY: PakWaHo

TITLE	NAME	DATE
DRAWN	A.REIS	27.10.23
DRG CHECK	B.EVANS	27.10.23
DESIGN	P.PHAM	27.10.23
DESIGN CHECK	D.SHIROKOV	27.10.23
DESIGN MNGR	D.SHIROKOV	27.10.23
PROJECT MNGR	R.BANZON	27.10.23

DRAWINGS / DESIGN PREPARED BY
DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
ROAD ALIGNMENT
PLAN

A1

SHEET 2 OF 3

DRAWING NUMBER: 0305-DRG-01-RD-0102

ISSUE STATUS: STRATEGIC DESIGN
SHEET No.: 01-RD-0102
ISSUE: A

LEGEND

GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (50)
- MCXX — CONTROL LINE LABEL
- C1 — LINE MARKING LABEL
- EXISTING SIGN

PAVEMENT AND KERBS

- NEW PAVEMENT

NOTES

1. DESIGN IS UNDERTAKEN IN 2D.
2. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
3. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".
4. PAVEMENT DESIGN AND JOINTING IS EXCLUDED.
5. PROPOSED BARRIER LOCATION IS SHOWN INDICITIVELY ONLY.
6. EXISTING GUIDE POSTS ALONG BARRIER EXTENTS ARE TO BE REMOVED.

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

0 5 10 15 20 25 30 35 40 45 50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
C:\12dS\data\TE-Cloud\0305 GRSF EIS_120\4. CAD\Drawings\0305-DRG-01-RD-0103.dwg

EXTERNAL REFERENCE FILES
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X-0305-01-SU-SURVEY-(A1)
X-0305-01-RD-DESIGN-CTRL
X-0305-01-RD-AMND
X-0305-01-RD-RINGWOOD-BARNETT
X-0305-01-RD-MATCH
X-0305-01-RD-MARKET

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	27.10.23	STRATEGIC DESIGN	-	RB

SCALES ON A1 SIZE DRAWING
0 5 10 15 20 25
SCALE 1:500m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

PLOT DATE / TIME: 27 October 2023 04:49:10 PM
PLOT BY: PakWaHo

TITLE	NAME	DATE
DRAWN	A.REIS	27.10.23
DRG CHECK	B.EVANS	27.10.23
DESIGN	P.PHAM	27.10.23
DESIGN CHECK	D.SHIROKOV	27.10.23
DESIGN MNGR	D.SHIROKOV	27.10.23
PROJECT MNGR	R.BANZON	27.10.23

DRAWINGS / DESIGN PREPARED BY
DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
ROAD ALIGNMENT
PLAN

A1

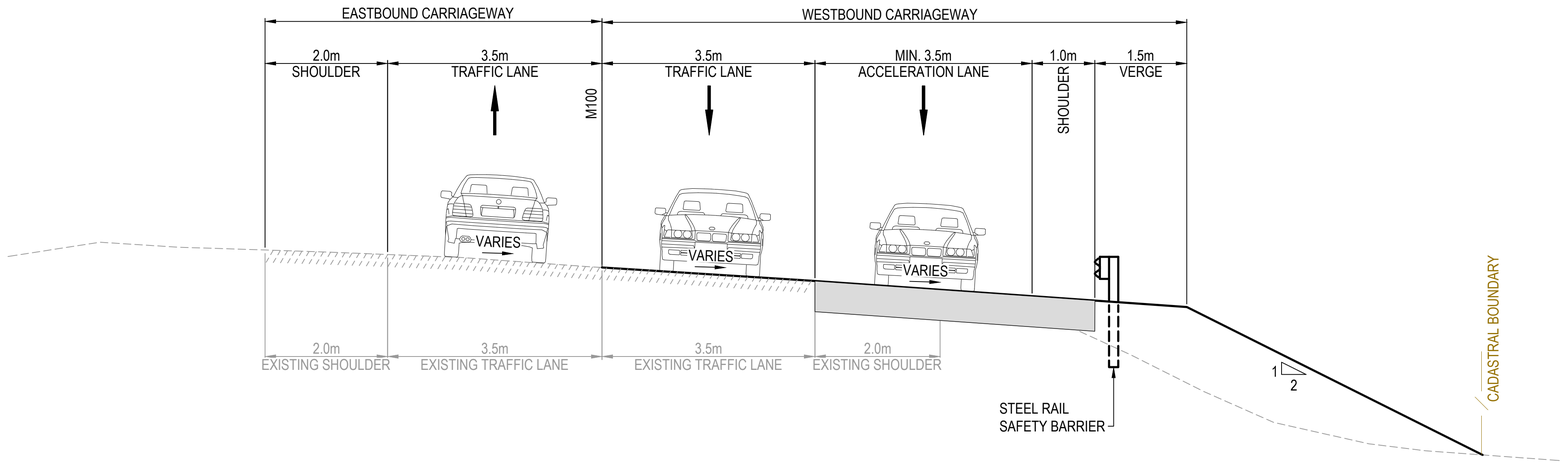
SHEET 3 OF 3

DRAWING NUMBER: 0305-DRG-01-RD-0103

ISSUE STATUS: STRATEGIC DESIGN
SHEET No.: 01-RD-0103
ISSUE: A

LEGEND

- DESIGN SURFACE
- EXISTING SURFACE
- PROPOSED PAVEMENT



SECTION 1 / RD-0102
SCALE 1:50
GOLDEN HIGHWAY

NOTE

1. PROPOSED PAVEMENT SHOWN IS INDICATIVE ONLY. PAVEMENT DESIGN AND JOINTING IS EXCLUDED FROM SCOPE OF WORKS.
2. CADASTRAL BOUNDARY SOURCED FROM SIX MAPS "Clip 'n' SNIP".
3. GRADES OF PROPOSED ACCELERATION LANE AND SHOULDER TO MATCH EXISTING CONDITIONS.
4. PROPOSED BARRIER LOCATION IS SHOWN INDICATIVELY ONLY

NOT FOR CONSTRUCTION

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED

50mm ON A3 SIZE ORIGINAL

DRAWING FILE LOCATION / NAME
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EXTERNAL REFERENCE FILES

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X:0305-01-RD-TYPICAL-SECTIONS

REV	DATE	AMENDMENT / REVISION DESCRIPTION	WVR No.	APPROVAL
A	27.10.23	STRATEGIC DESIGN	-	RB

SCALES ON A1 SIZE DRAWING
0 0.5 1.0 1.5 2.0 2.5
SCALE 1:50m

CO-ORDINATE SYSTEM: MGA ZONE 56 (GDA2020)
HEIGHT DATUM: AHD

PLOT DATE / TIME: 27 October 2023 04:49:13 PM
PLOT BY: PakWaHo

TITLE	NAME	DATE
DRAWN	A.REIS	27.10.23
DRG CHECK	B.EVANS	27.10.23
DESIGN	P.PHAM	27.10.23
DESIGN CHECK	D.SHIROKOV	27.10.23
DESIGN MNGR	D.SHIROKOV	27.10.23
PROJECT MNGR	R.BANZON	27.10.23

DRAWINGS / DESIGN PREPARED BY
DESIGNER
turnbull

DRAWINGS / DESIGN PREPARED FOR
CLIENT

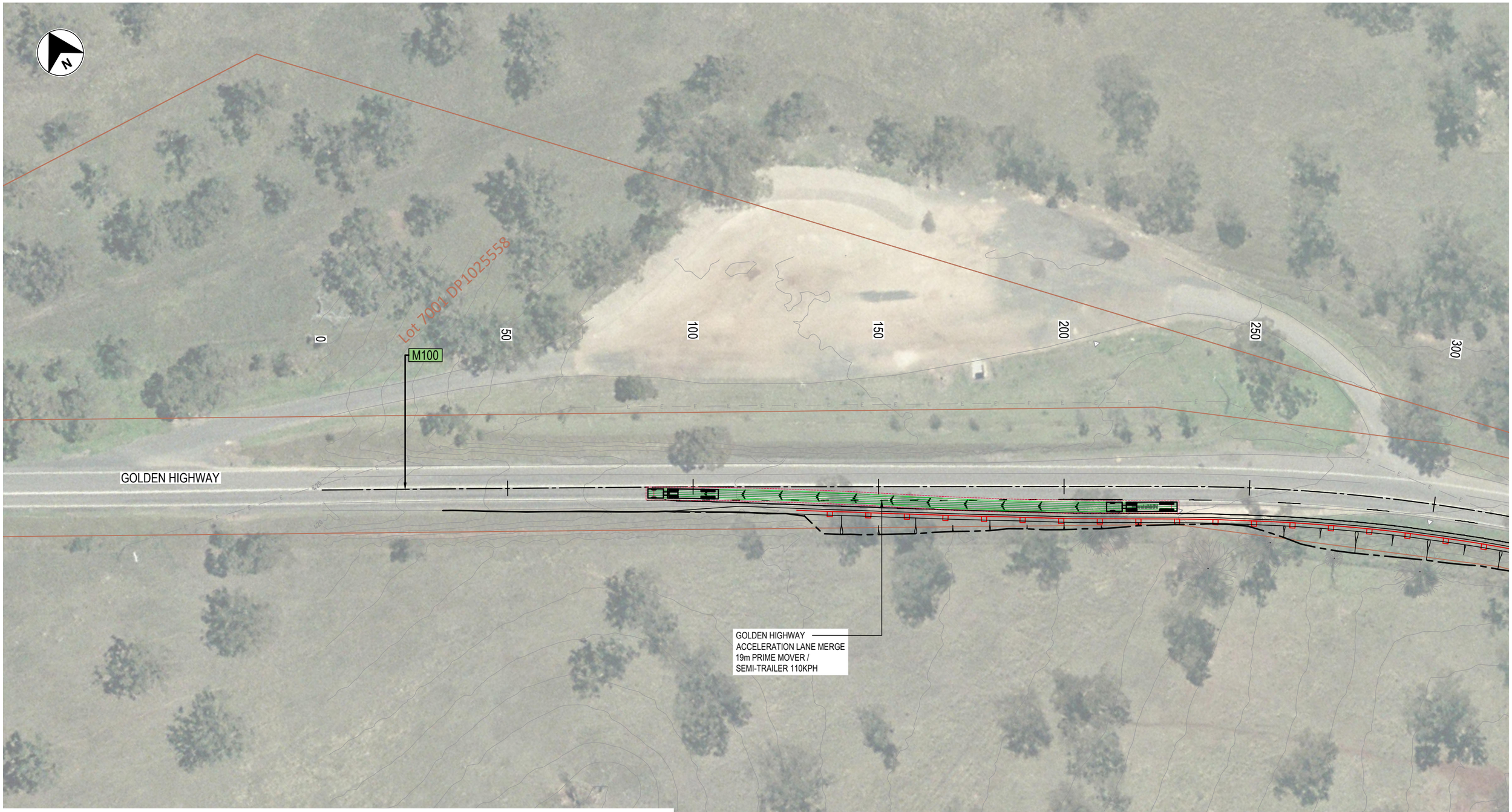
DRAWING TITLE
GOULBURN RIVER SOLAR FARM, EIS
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
ROAD ALIGNMENT
TYPICAL CROSS SECTION

A1

SHEET 1 OF 1

DRAWING NUMBER: 0305-DRG-01-RD-0201

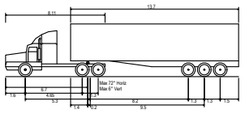
ISSUE STATUS: STRATEGIC DESIGN
SHEET No.: 01-RD-0201
ISSUE: A



NOTES

1. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR EXISTING PAVEMENT.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.
3. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
4. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".
5. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR THE EXISTING GOLDEN HIGHWAY AND RINGWOOD ROAD INTERSECTION RIGHT TURN IN AND RIGHT TURN OUT MOVEMENTS. EXISTING VEHICLE MOVEMENTS AND INTERSECTION LAYOUT TO BE RESPECTED.

VEHICLE TURN PATH PROFILE



Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

FOR INFORMATION ONLY

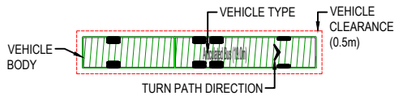
GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- 20 — CONTROL LINE AND CHAINAGE
- MCXX — CONTROL LINE LABEL

VEHICLE TURN PATH LEGEND



0 10 20 30 40
SCALE 1:1000m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SWEPT PATHS
SHEET 1 OF 4
27/10/2023

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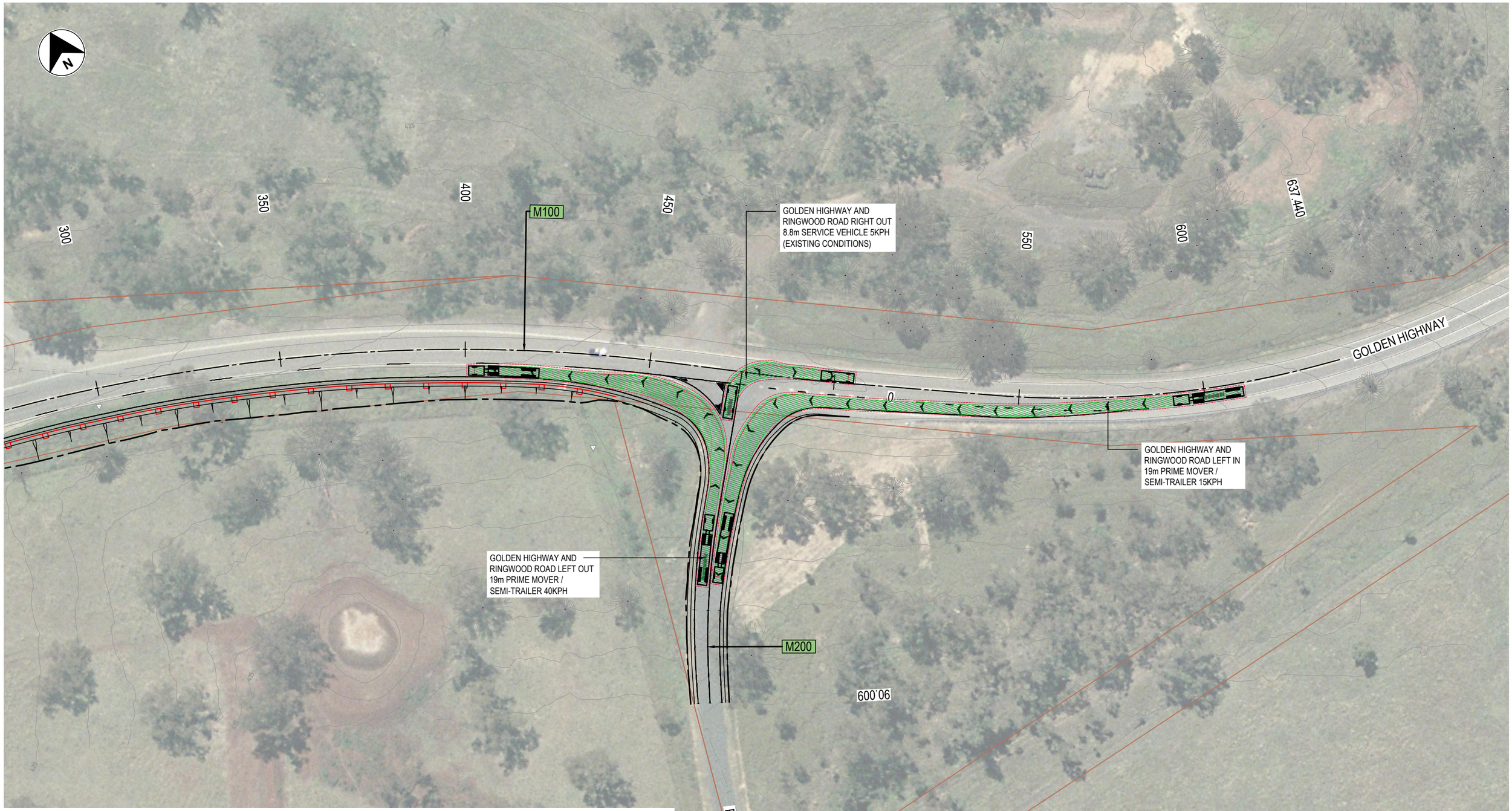
0305-INF-RD-SWEPT-PATH-RINGWOOD-01

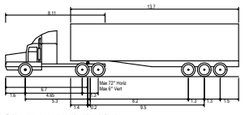


FOR INFORMATION ONLY

NOTES

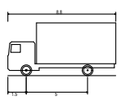
1. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR EXISTING PAVEMENT.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.
3. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
4. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".
5. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR THE EXISTING GOLDEN HIGHWAY AND RINGWOOD ROAD INTERSECTION RIGHT TURN IN AND RIGHT TURN OUT MOVEMENTS. EXISTING VEHICLE MOVEMENTS AND INTERSECTION LAYOUT TO BE RESPECTED.

VEHICLE TURN PATH PROFILE



Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



Service Vehicle (8.8 m)

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

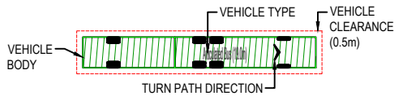
GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (20)
- CONTROL LINE LABEL (MCXX)

VEHICLE TURN PATH LEGEND



0 10 20 30 40
SCALE 1:1000m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SWEPT PATHS
SHEET 2 OF 4
27/10/2023

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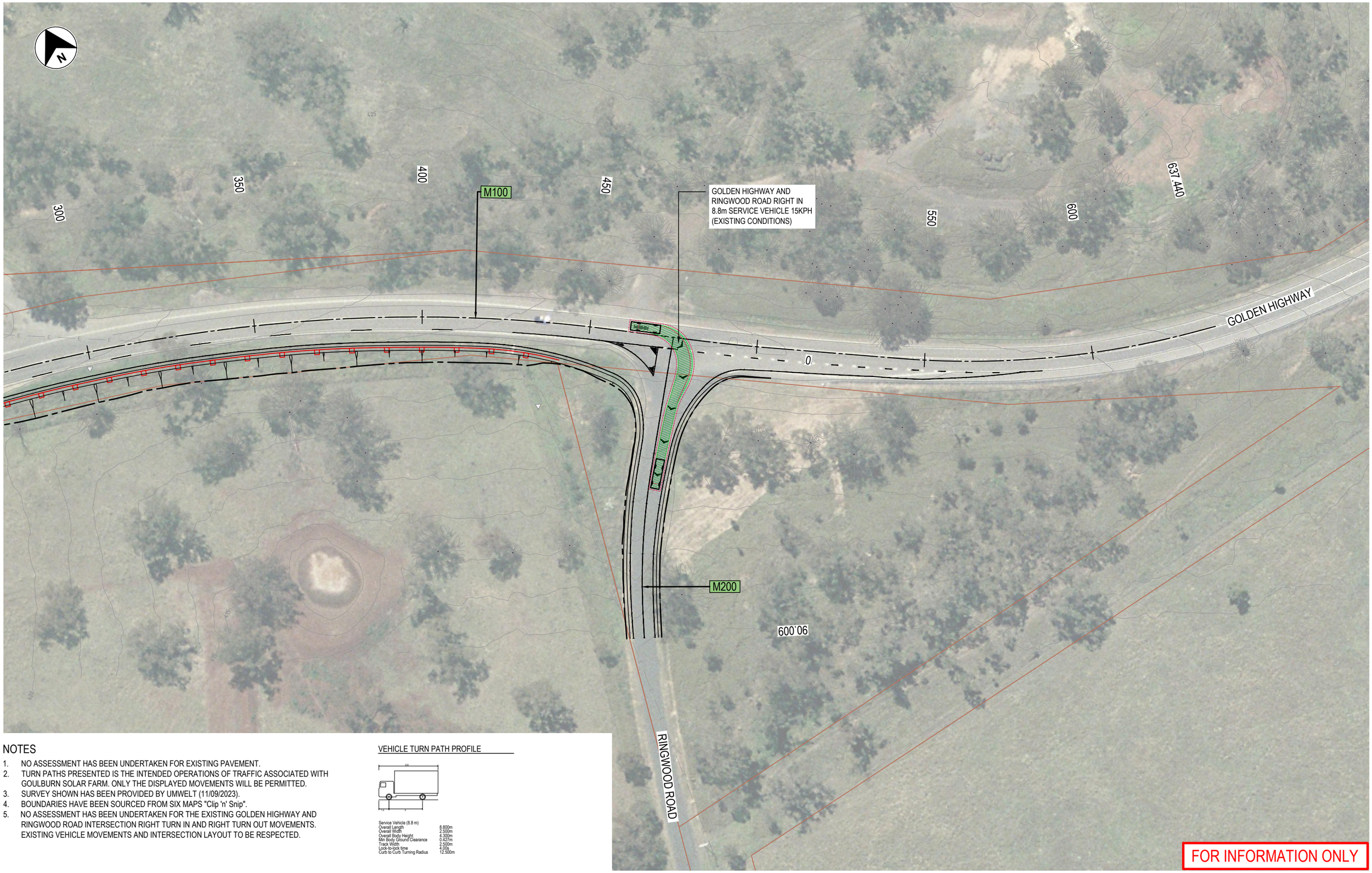
0305-INF-RD-SWEPT-PATH-RINGWOOD-02



NOTES

1. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR EXISTING PAVEMENT.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.
3. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
4. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".
5. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR THE EXISTING GOLDEN HIGHWAY AND RINGWOOD ROAD INTERSECTION RIGHT TURN IN AND RIGHT TURN OUT MOVEMENTS. EXISTING VEHICLE MOVEMENTS AND INTERSECTION LAYOUT TO BE RESPECTED.

VEHICLE TURN PATH PROFILE

Service Vehicle (8.8 m)	
Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

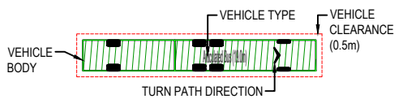
GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- 20 — CONTROL LINE AND CHAINAGE
- MCXX — CONTROL LINE LABEL

VEHICLE TURN PATH LEGEND



0 10 20 30 40
SCALE 1:1000m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SWEPT PATHS
SHEET 3 OF 4
27/10/2023

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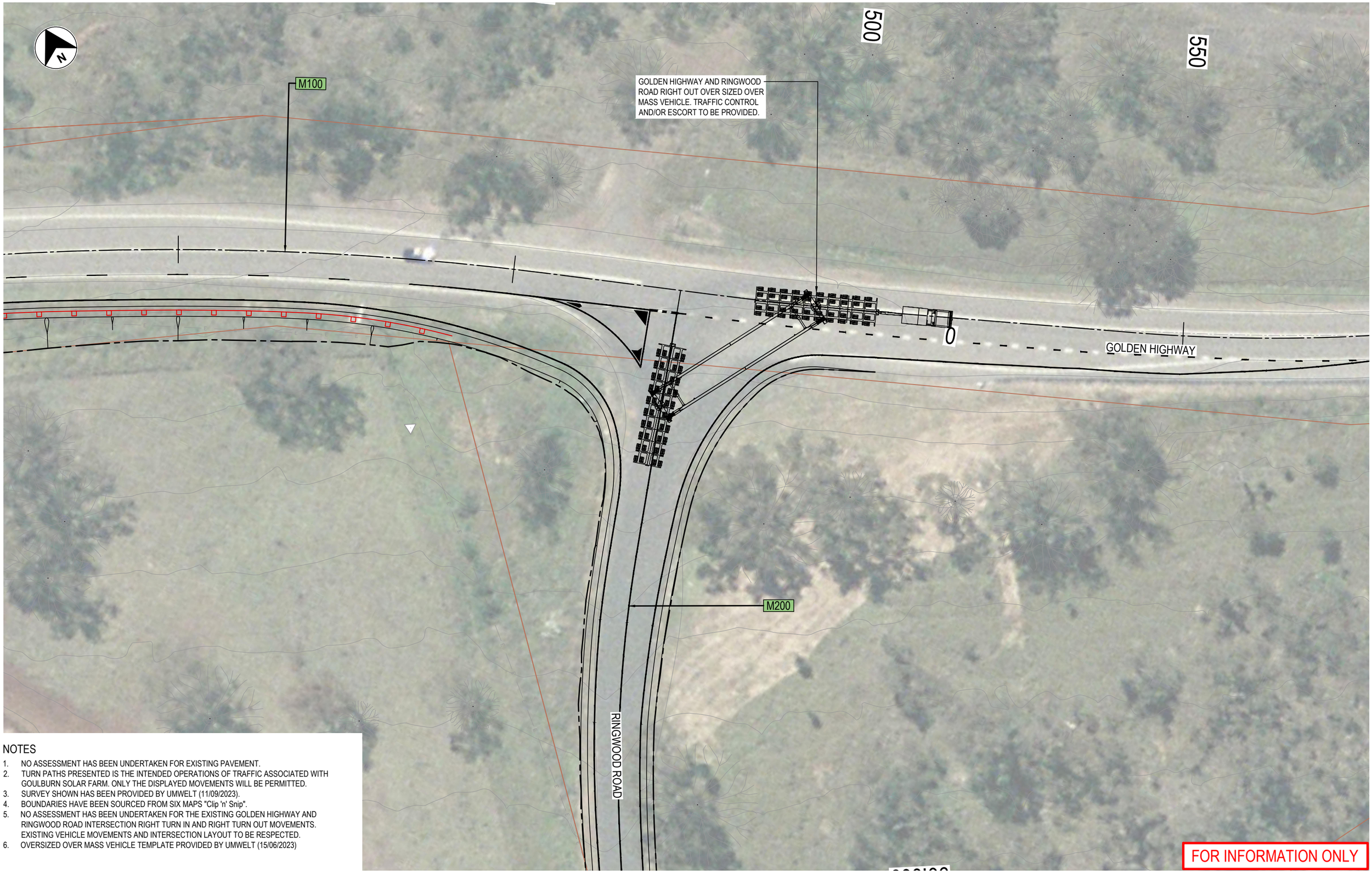
0305-INF-RD-SWEPT-PATH-RINGWOOD-03



NOTES

1. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR EXISTING PAVEMENT.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.
3. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
4. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".
5. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR THE EXISTING GOLDEN HIGHWAY AND RINGWOOD ROAD INTERSECTION RIGHT TURN IN AND RIGHT TURN OUT MOVEMENTS. EXISTING VEHICLE MOVEMENTS AND INTERSECTION LAYOUT TO BE RESPECTED.
6. OVERSIZED OVER MASS VEHICLE TEMPLATE PROVIDED BY UMWELT (15/06/2023)

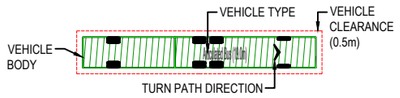
GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (20)
- MCXX — CONTROL LINE LABEL

VEHICLE TURN PATH LEGEND



0 5 10 15 20
SCALE 1:500m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SWEPT PATHS
SHEET 4 OF 4
27/10/2023

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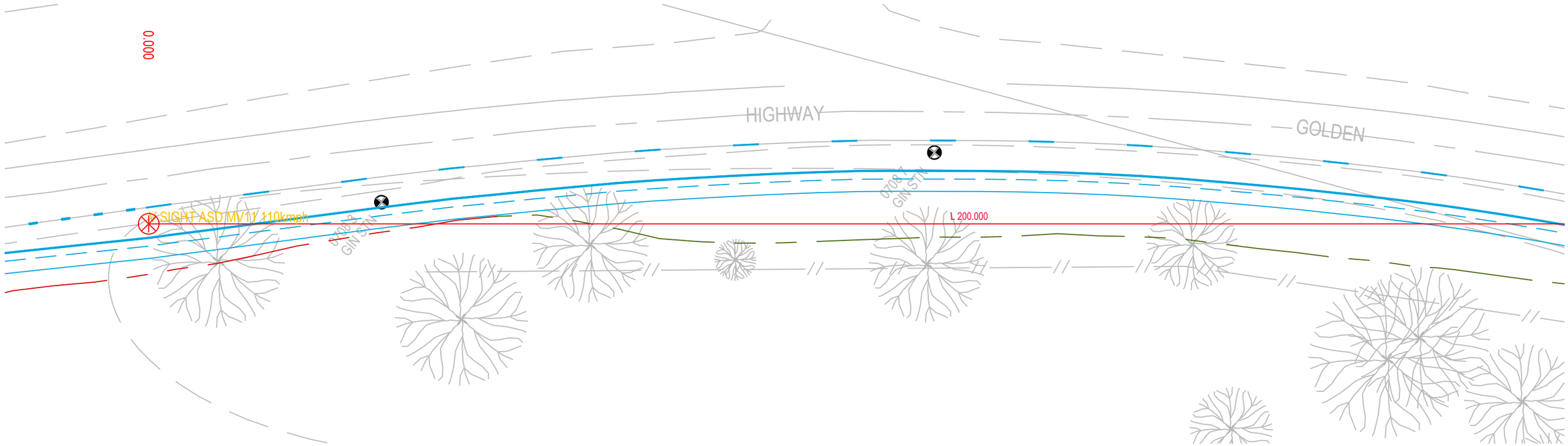
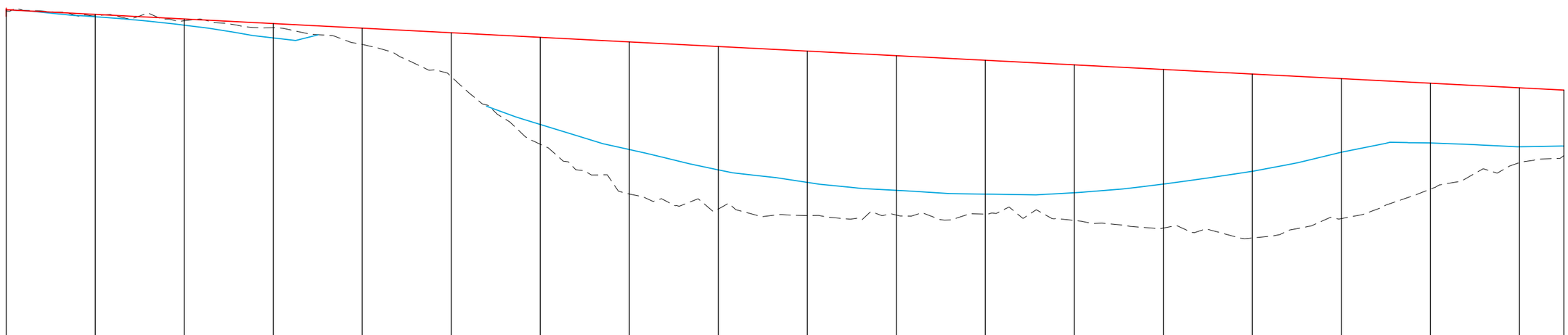
0305-INF-RD-SWEPT-PATH-RINGWOOD-04

Ringwood Road and Golden Highway Intersection and Acceleration Lane

Verification Summary - ASD

Location	Design Speed (km/hr)	Eye Height (m)	Object Height (m)	Reaction time (s)	Grade % (average)	ASD Required (m)	ASD Achieved (m)	ASD Control	Result (Pass/Fail)	Comments
Golden Highway WB Acceleration Lane End Merge Taper	110	1.1	0	N/A	N/A	375	200	MV11	FAIL	Merge Sight Distance value from AGRD Part 3 Table 9.3. Matching existing conditions, start of merge taper is at the crest of Golden Highway. Due to curvature of the existing road sight distance is obstructed by the existing terrain outside the road corridor.
Golden Highway WB Acceleration Lane Start	110	1.1	0	2	2	185.82	185.82	MV12	PASS	
Golden Highway WB Deceleration Lane Start	110	1.1	0	2	2	185.82	60.5	MV15	FAIL	54km/h ASD Achieved. Matching existing conditions, Start of deceleration lane taper is along a curved section of the Golden Highway and is uphill. Sight distance obstructed by existing road geometry.





DATUM R.L. 417.0

VERTICAL ALIGNMENT

HORIZONTAL ALIGNMENT

CHAINAGE	EYE HEIGHT	EXISTING LEVELS
0.000	0	424.376
10.000	0.052	424.275
20.000	0.14	424.162
30.000	0.323	424.004
40.000	0.366	423.629
50.000	0.987	422.904
60.000	1.959	421.385
70.000	2.419	420.264
80.000	2.773	419.926
90.000	2.951	419.780
100.000	3.028	419.793
110.000	3.01	419.813
120.000	2.874	419.671
130.000	2.578	419.499
140.000	2.187	419.277
150.000	1.654	419.713
160.000	1.343	420.376
170.000	1.325	420.970
175.000	1.259	421.128

LONGITUDINAL SECTION ALONG - V SIGHT ASD MV11 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
APPROACH SIGHT DISTANCE
1 OF 5

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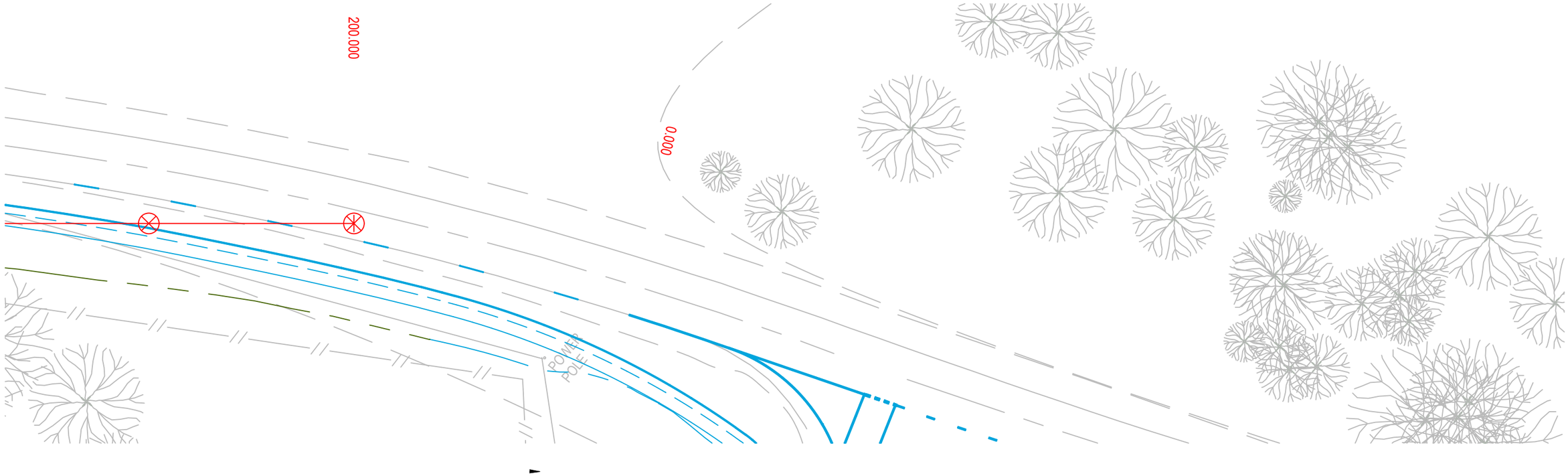
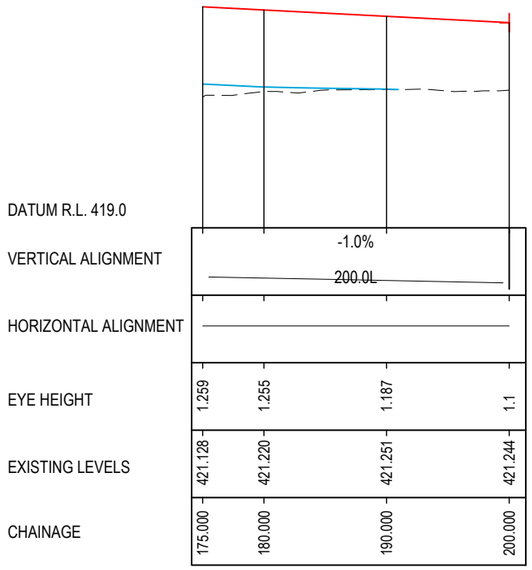
0305-INF-LS-SIGHT_ASD-01





LONGITUDINAL SECTION ALONG - V SIGHT ASD MV11 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
APPROACH SIGHT DISTANCE
2 OF 5

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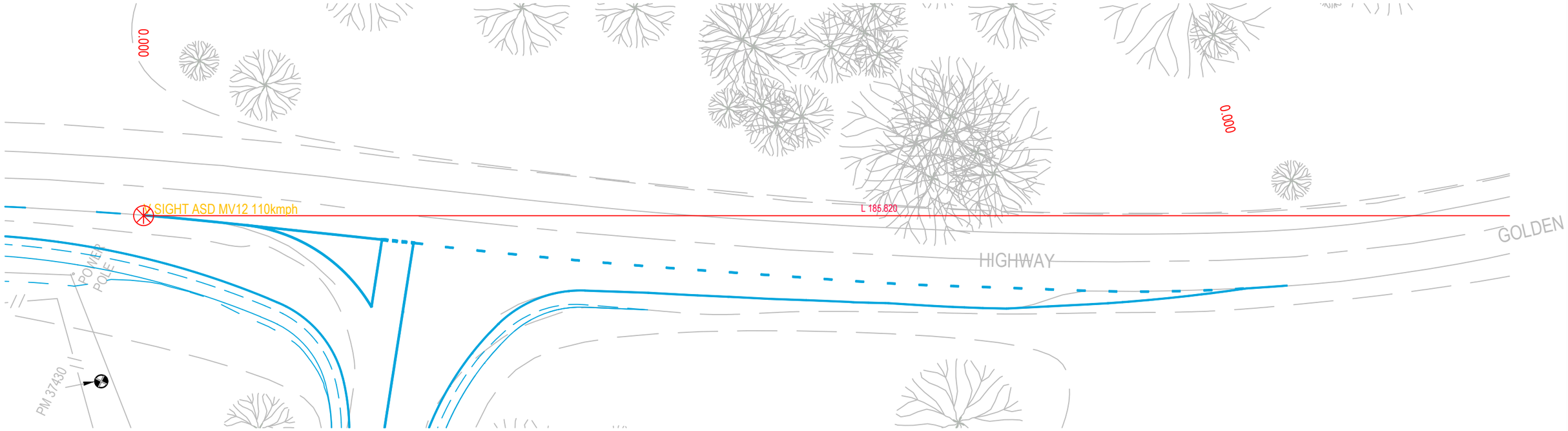
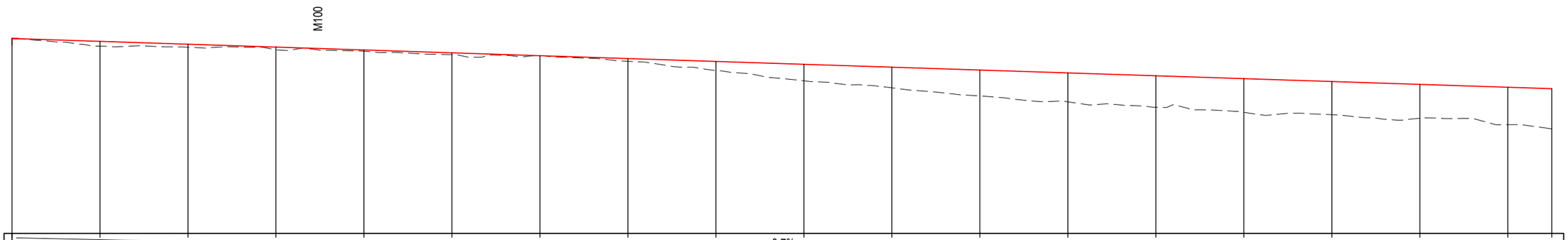
0305-INF-LS-SIGHT_ASD-02





DATUM R.L. 416.0

VERTICAL ALIGNMENT

HORIZONTAL ALIGNMENT

CHAINAGE	EYE HEIGHT	EXISTING LEVELS
0.000	0	420.423
10.000	0.109	420.248
20.000	0.069	420.223
30.000	0.059	420.167
40.000	0.028	420.133
50.000	0.037	420.060
60.000	-0.002	420.033
70.000	0.061	419.905
80.000	0.206	419.695
90.000	0.374	419.462
100.000	0.468	419.303
110.000	0.588	419.118
120.000	0.658	418.983
130.000	0.714	418.862
140.000	0.766	418.745
150.000	0.753	418.693
160.000	0.771	418.610
170.000	0.851	418.465
175.000	0.914	418.370

LONGITUDINAL SECTION ALONG - V SIGHT ASD MV12 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

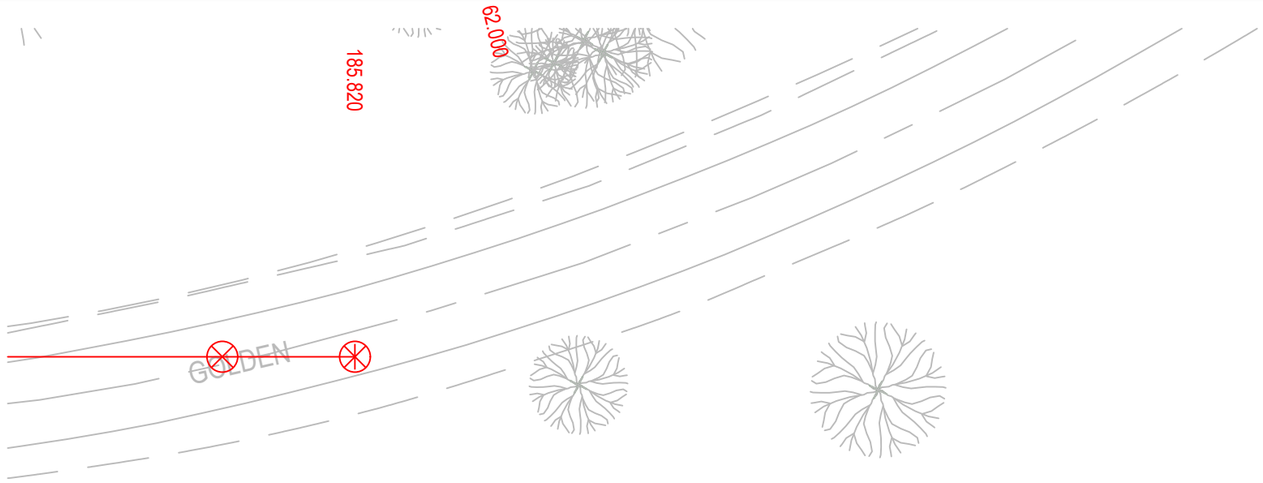
FOR INFORMATION ONLY

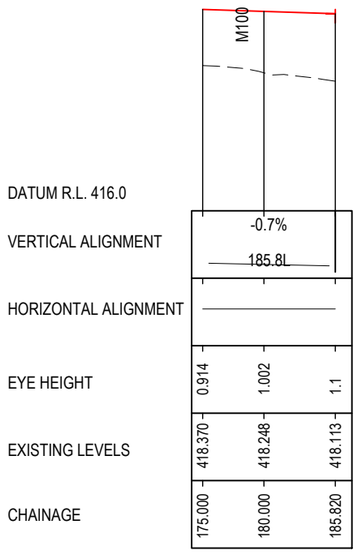
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
APPROACH SIGHT DISTANCE
3 OF 5

turnbull

0305-INF-LS-SIGHT_ASD-03





LONGITUDINAL SECTION ALONG - V SIGHT ASD MV12 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

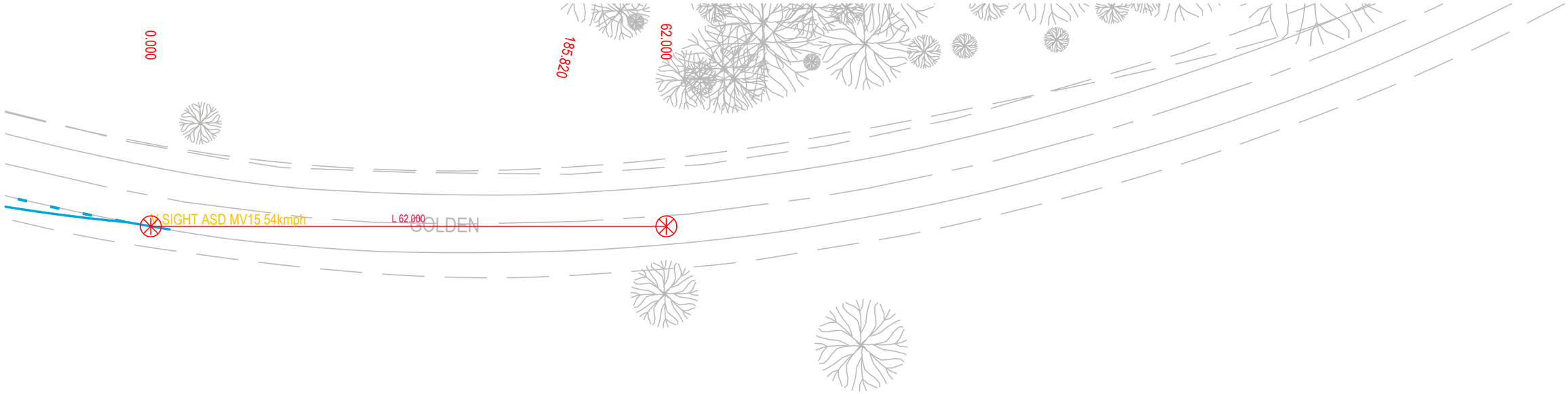
FOR INFORMATION ONLY

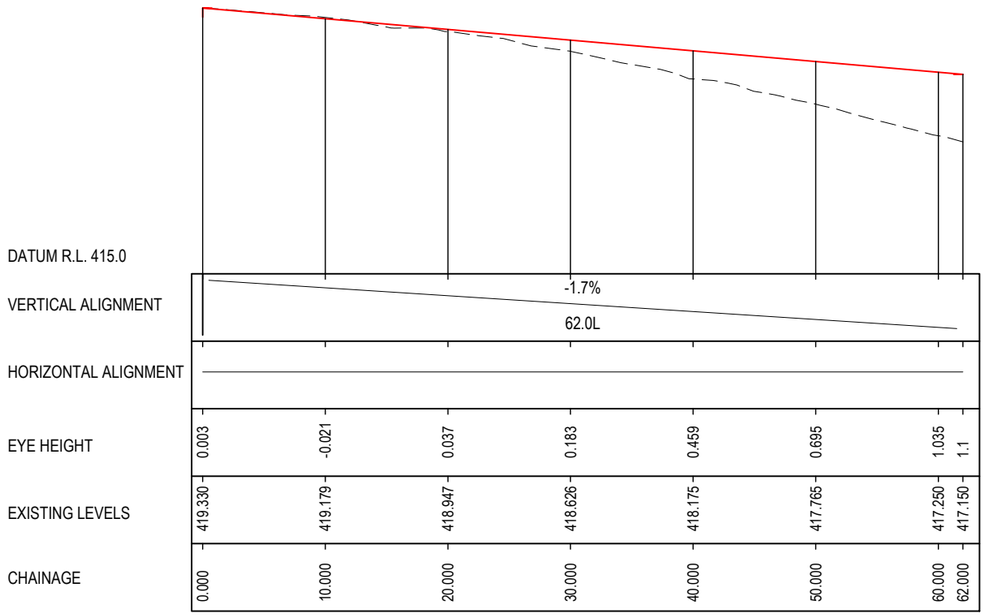
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
APPROACH SIGHT DISTANCE
4 OF 5

turnbull

0305-INF-LS-SIGHT_ASD-04





LONGITUDINAL SECTION ALONG - V SIGHT ASD MV15 54kmph

HORIZONTAL 1:500
VERTICAL 1:100

FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
APPROACH SIGHT DISTANCE
5 OF 5

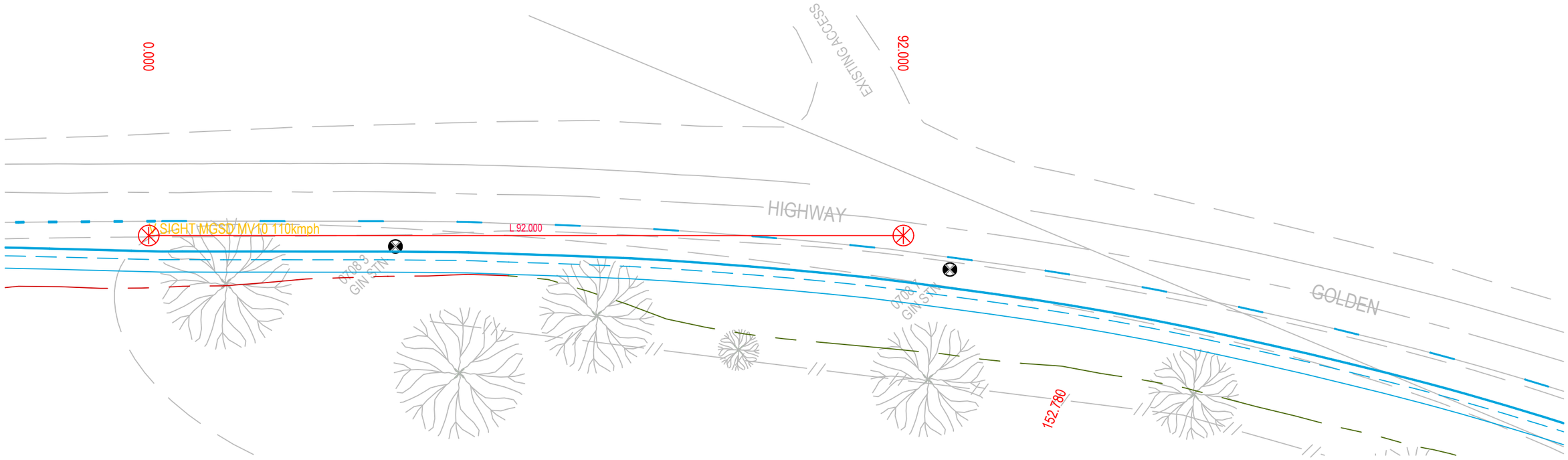
turnbull

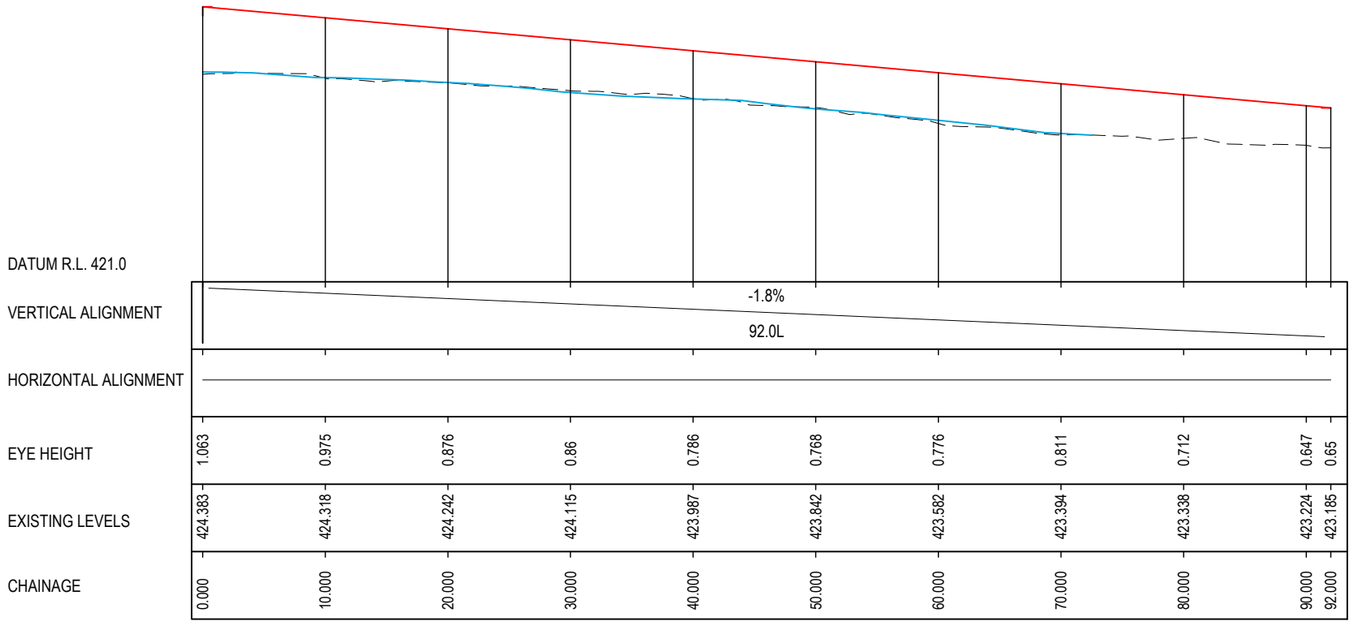
0305-INF-LS-SIGHT_ASD-05

Ringwood Road and Golden Highway Intersection Upgrade and Acceleration Lane

Verification Summary - MGSD

Location	Eye Height (m)	Object Height (m)	Critial Acceptance Gap (s)	MGSD Required (m)	MGSD Achieved (m)	MGSD Control	Result (Pass/Fail)	Comments
Golden Highway WB Acceleration Lane End	1.1	0.65	3	91.67	91.67	MV10	PASS	
Golden Highway EB and Ringwood Road SB Intersection - Right-In Turn	1.1	0.65	4	122.22	122.22	MV17	PASS	
Ringwood Road NB and Golden Highway EB and Intersection - Right-Out Turn	1.1	0.65	5	152.78	152.78	MV20	PASS	





LONGITUDINAL SECTION ALONG - V SIGHT MGSD MV10 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

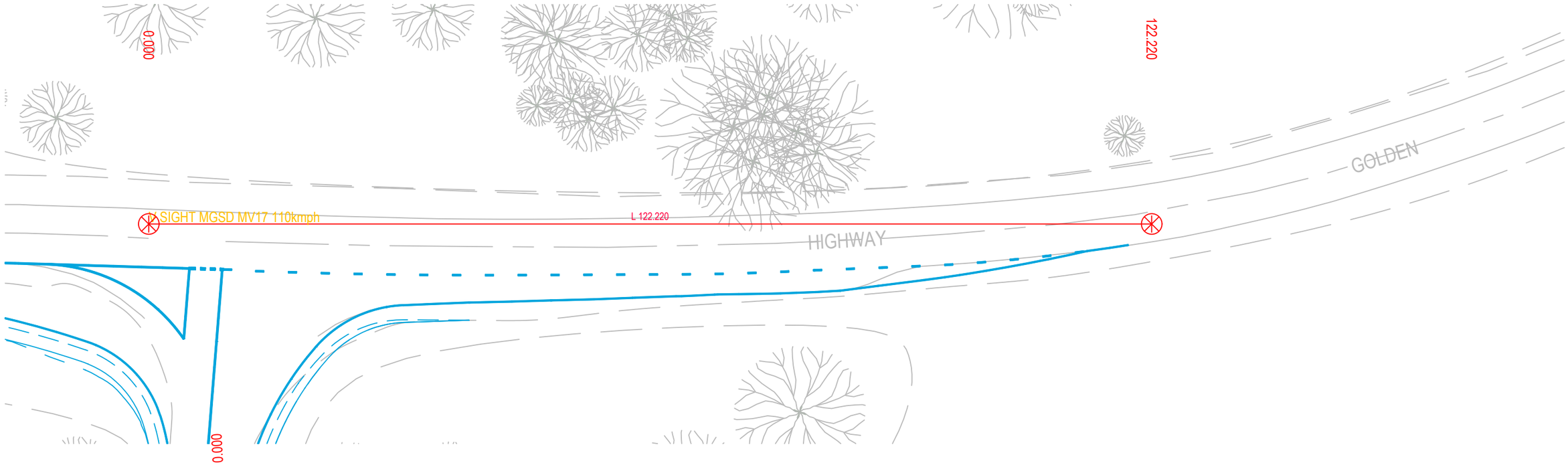
FOR INFORMATION ONLY

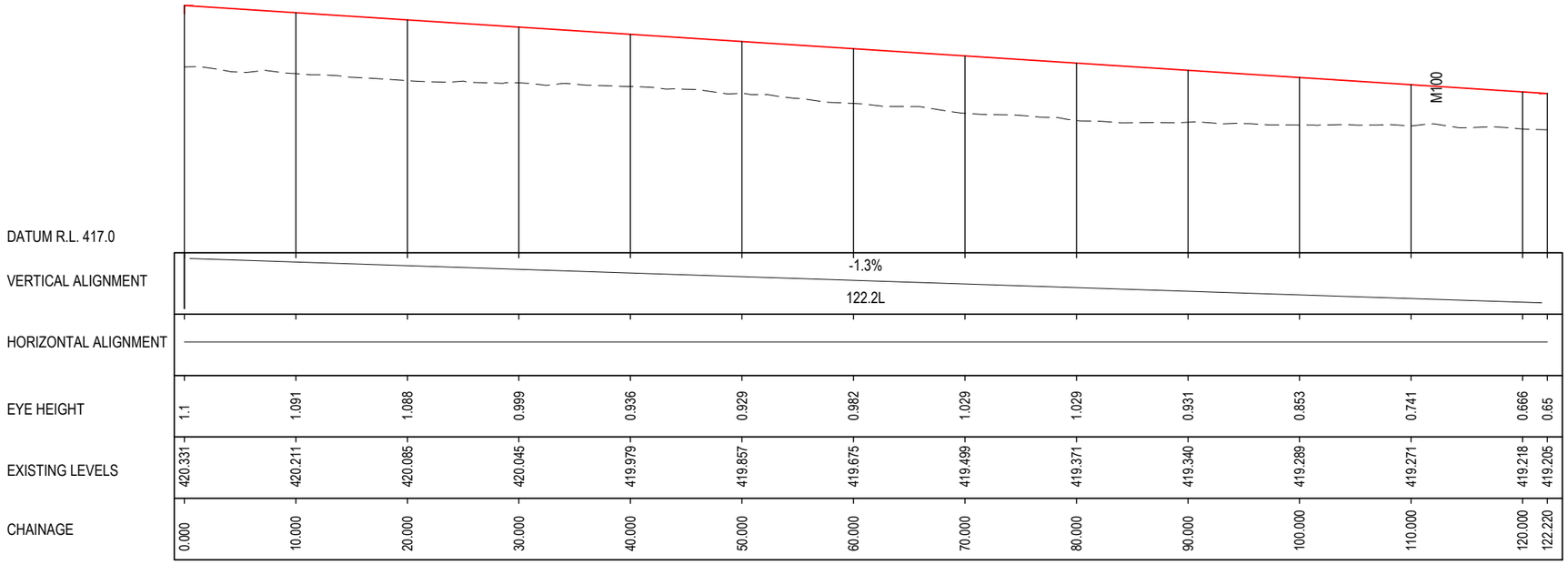
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
MINIMUM GAP SIGHT DISTANCE
1 OF 3

turnbull

0305-INF-LS-SIGHT_MGSD-01





LONGITUDINAL SECTION ALONG - V SIGHT MGSD MV17 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

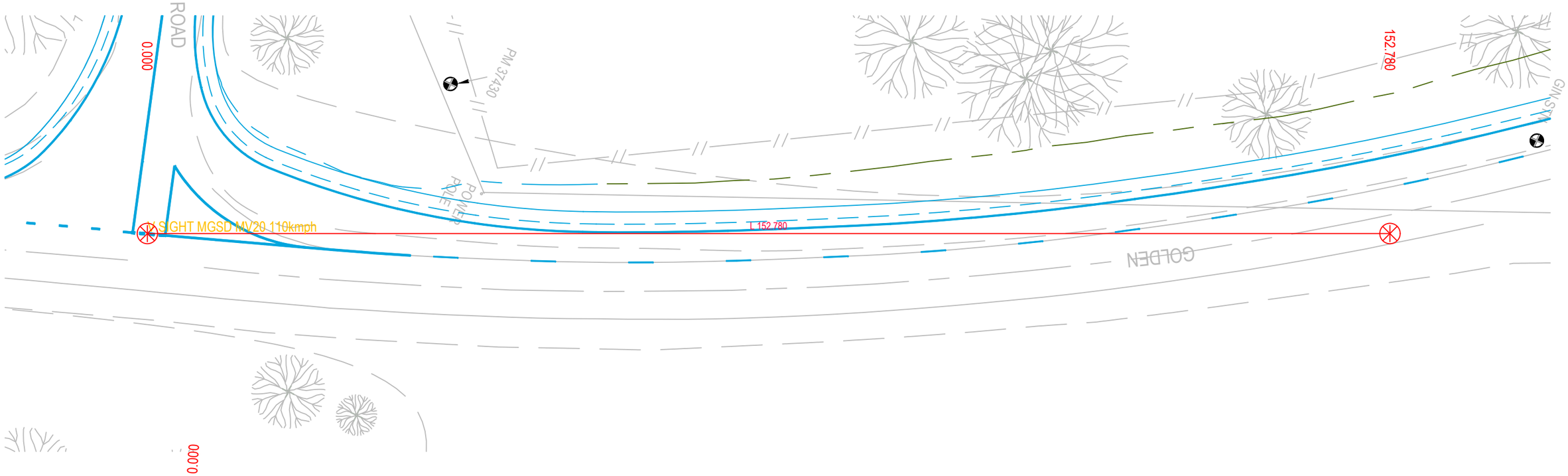
FOR INFORMATION ONLY

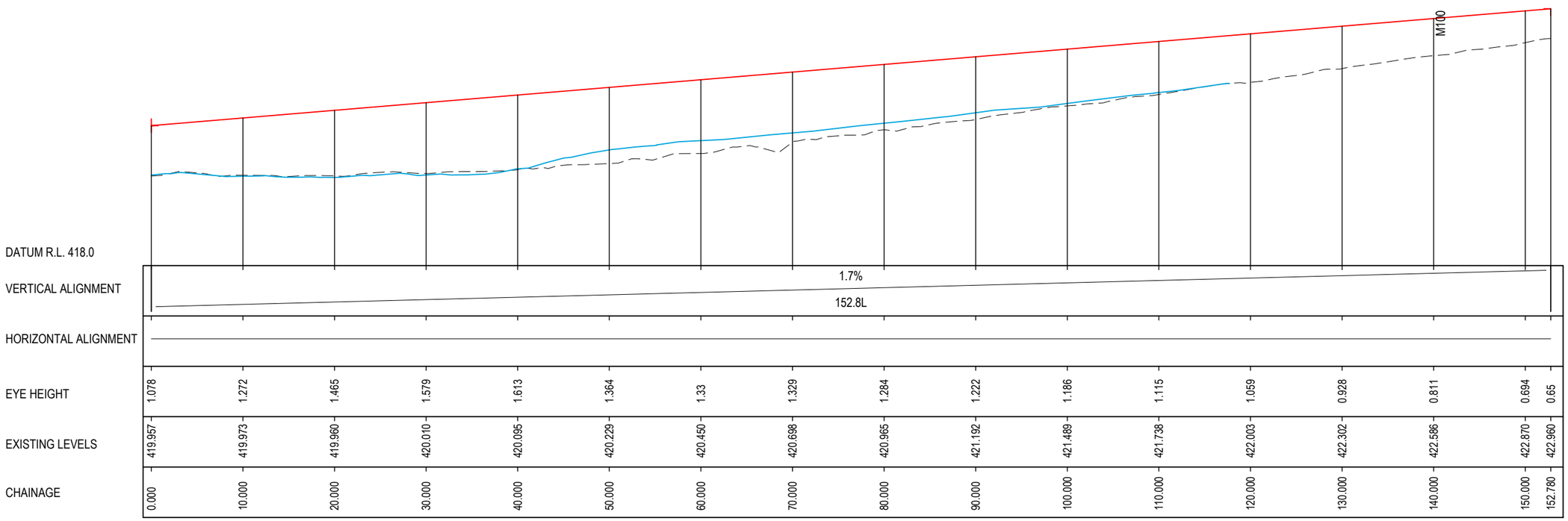
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
MINIMUM GAP SIGHT DISTANCE
2 OF 3

turnbull

0305-INF-LS-SIGHT_MGSD-02





LONGITUDINAL SECTION ALONG - V SIGHT MGSD MV20 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
MINIMUM GAP SIGHT DISTANCE
3 OF 3

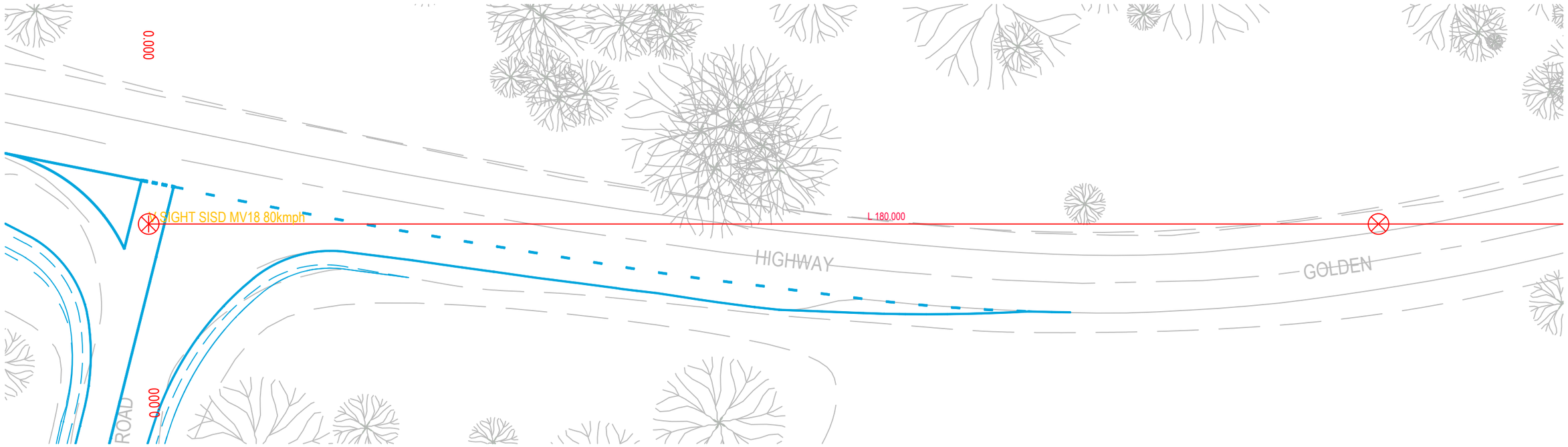
turnbull

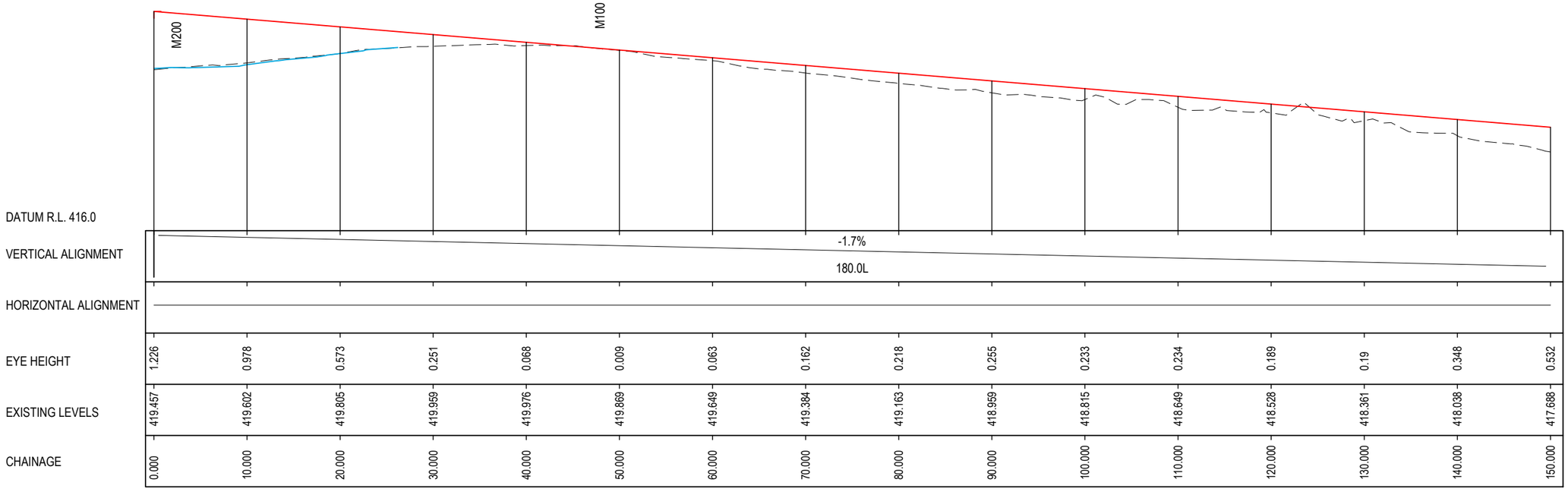
0305-INF-LS-SIGHT_MGSD-03

Ringwood Road and Golden Highway Intersection and Acceleration Lane

Verification Summary - SISD

Location	Design Speed (km/hr)	Eye Height (m)	Object Height (m)	Reaction time (s)	Observation Time (s)	Grade % (average)	SISD Required (m)	SISD Achieved (m)	SISD Control	Result (Pass/Fail)	Comments
Golden Highway WB and Ringwood Road NB Intersection	110	1.25	1.1	2	3	2	277.48	180	MV18	FAIL	80km/h SISD achieved. Matching existing conditions, existing intersection is following a curved section of the Golden Highway and is uphill. Sight distance obstructed by existing road geometry.
Golden Highway EB and Ringwood Road NB Intersection	110	1.25	1.1	2	3	-2	292.07	292.07	MV19	PASS	May be obstructed by existing trees.





CHAINAGE	EYE HEIGHT	EXISTING LEVELS
0.000	1.226	419.457
10.000	0.978	419.602
20.000	0.573	419.805
30.000	0.251	419.959
40.000	0.068	419.976
50.000	0.009	419.869
60.000	0.063	419.649
70.000	0.162	419.384
80.000	0.218	419.163
90.000	0.255	418.959
100.000	0.233	418.815
110.000	0.234	418.649
120.000	0.189	418.528
130.000	0.19	418.361
140.000	0.348	418.038
150.000	0.532	417.688

LONGITUDINAL SECTION ALONG - V SIGHT SISD MV18 80kmph

HORIZONTAL 1:500
VERTICAL 1:100

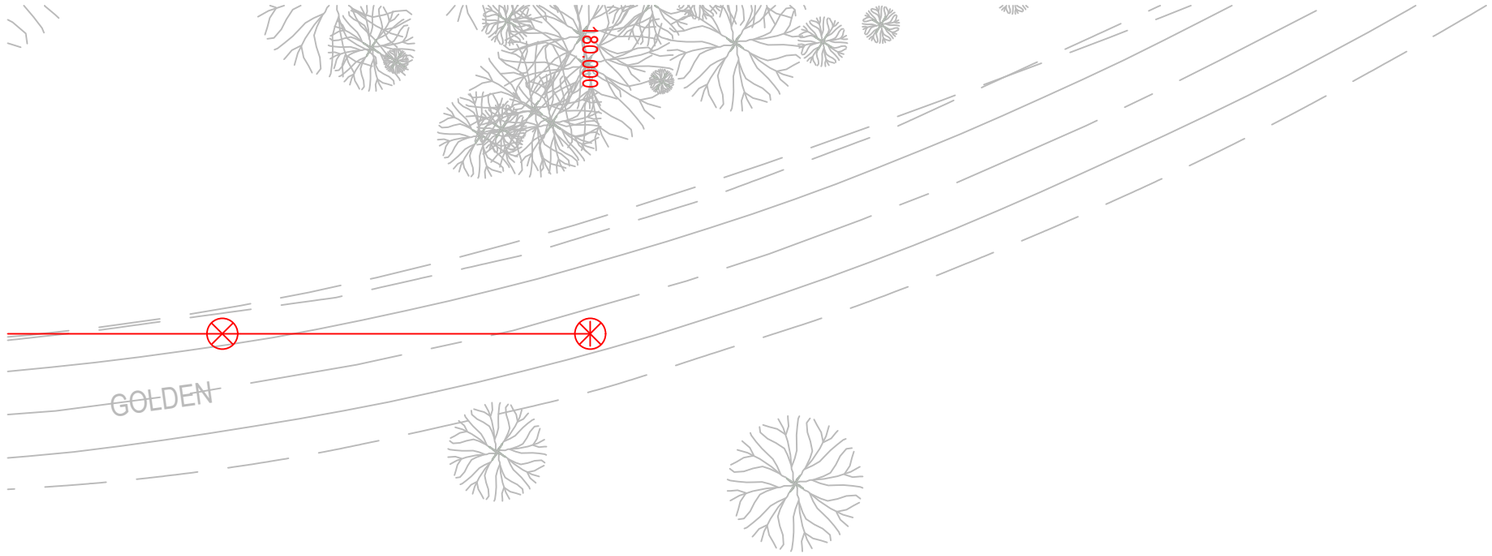
FOR INFORMATION ONLY

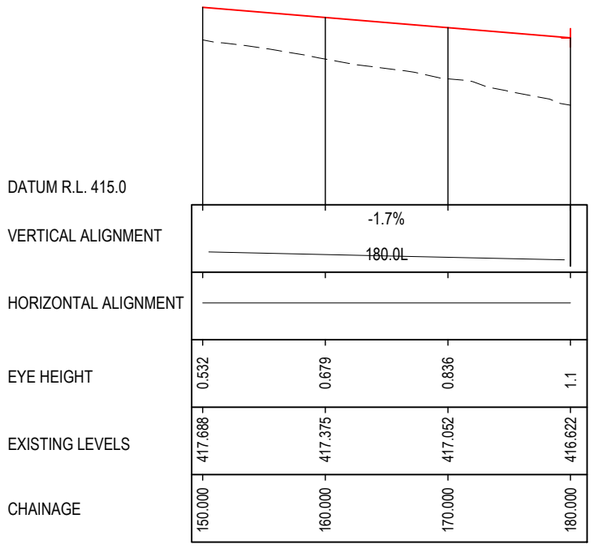
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
SAFE INTERSECTION SIGHT DISTANCE
1 OF 4

turnbull

0305-INF-LS-SIGHT_SISD-01





LONGITUDINAL SECTION ALONG - V SIGHT SISD MV18 80kmph

HORIZONTAL 1:500
VERTICAL 1:100

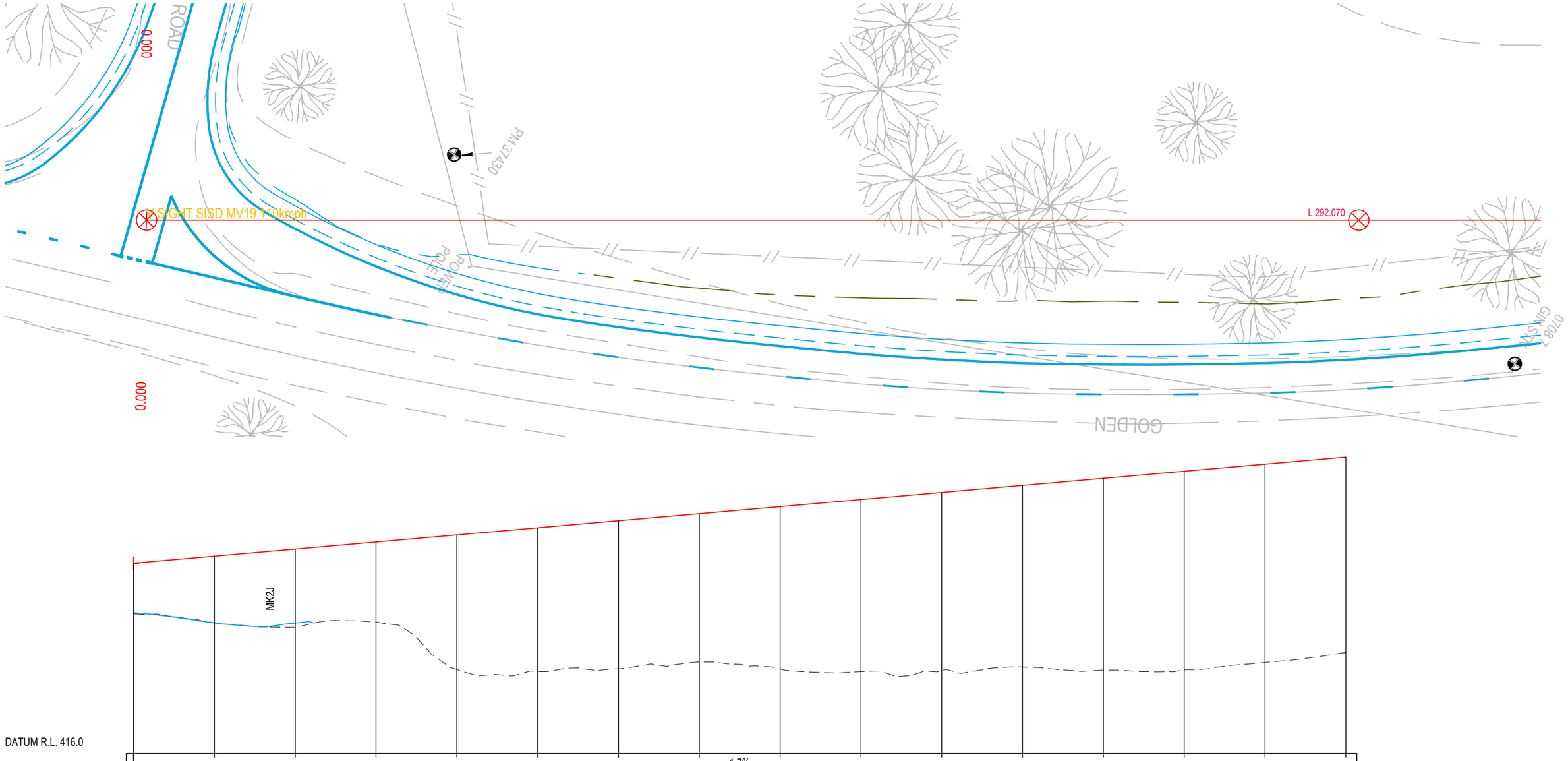
FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
SAFE INTERSECTION SIGHT DISTANCE
2 OF 4

turnbull

0305-INF-LS-SIGHT_SISD-02



DATUM R.L. 416.0

VERTICAL ALIGNMENT: 1.7% — 292.1L

HORIZONTAL ALIGNMENT

CHAINAGE	EYE HEIGHT	EXISTING LEVELS
0.000	1.226	419.457
10.000	1.654	419.239
20.000	1.83	419.118
30.000	1.979	419.253
40.000	3.328	418.079
50.000	3.55	418.031
60.000	3.659	418.097
70.000	3.667	418.264
80.000	4.015	418.090
90.000	4.254	418.027
100.000	4.405	418.051
110.000	4.49	418.140
120.000	4.742	418.062
130.000	4.912	418.068
140.000	4.902	418.253
150.000	4.83	418.499

LONGITUDINAL SECTION ALONG - V SIGHT SISD MV19 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

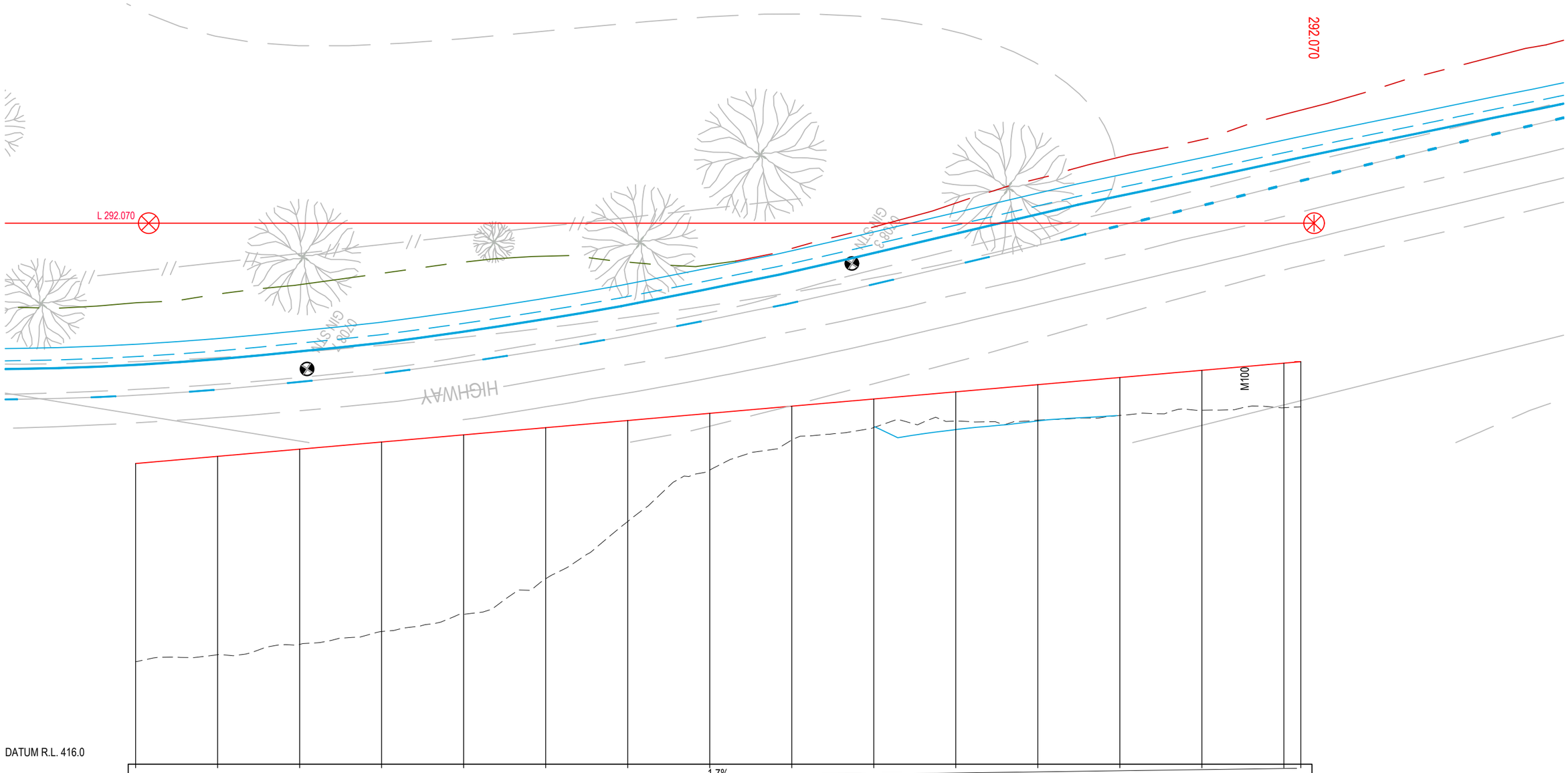
FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
SAFE INTERSECTION SIGHT DISTANCE
3 OF 4

turnbull

0305-INF-LS-SIGHT_SISD-03



EYE HEIGHT	4.83	4.835	4.758	4.621	4.374	3.683	2.461	1.385	0.824	0.696	0.92	0.886	0.924	0.972	1.087	1.1
EXISTING LEVELS	418.499	418.669	418.921	419.233	419.654	420.521	421.917	423.168	423.903	424.207	424.364	424.389	424.503	424.630	424.690	424.713
CHAINAGE	150.000	160.000	170.000	180.000	190.000	200.000	210.000	220.000	230.000	240.000	250.000	260.000	270.000	280.000	290.000	292.070

LONGITUDINAL SECTION ALONG - V SIGHT SISD MV19 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
SAFE INTERSECTION SIGHT DISTANCE
4 OF 4

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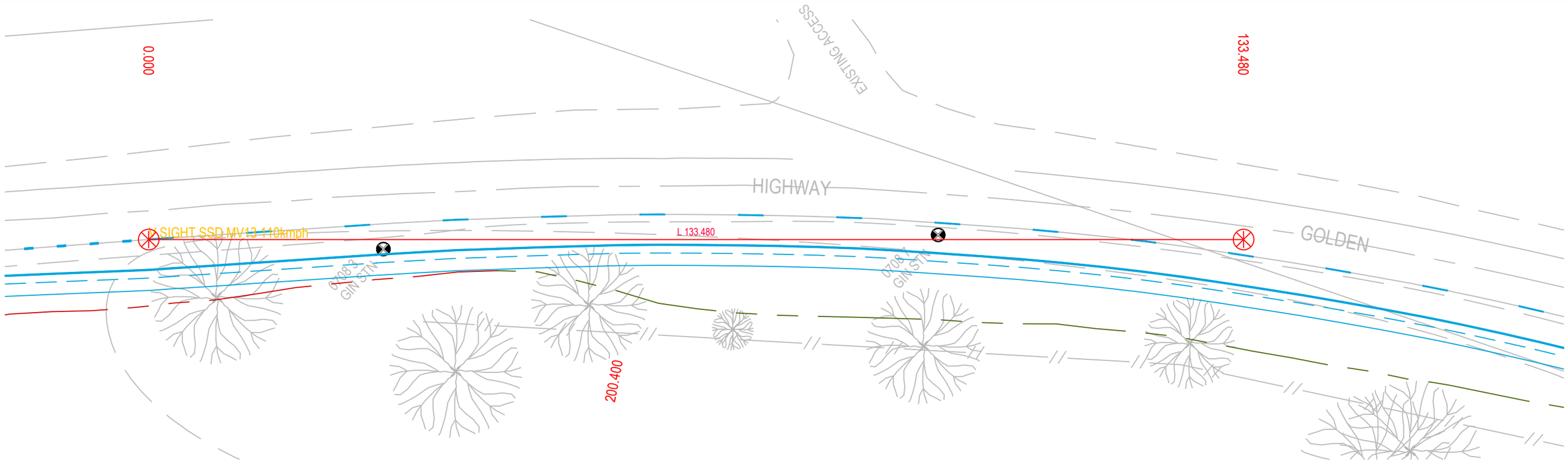
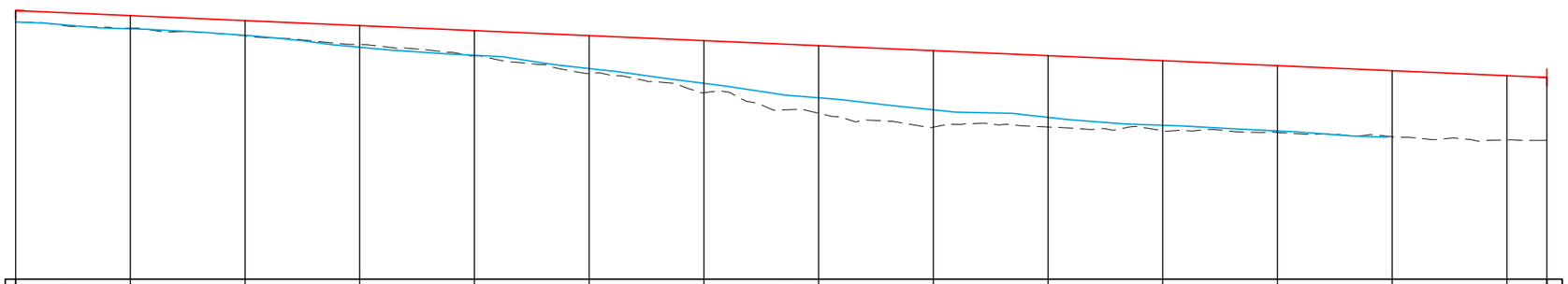
0305-INF-LS-SIGHT_SISD-04

Ringwood Road and Golden Highway Intersection Upgrade and Acceleration Lane

Verification Summary - SSD

Location	Eye Height (m)	Object Height (m)	Design Speed (km/hr)	Reaction time (s)	Grade % (average)	SSD Required (m)	SSD Achieved (m)	SSD Control	Result (Pass/Fail)	Comments
Golden Highway WB Acceleration Lane Merge Taper / End	1.1	0.2	90	2	2	133.48	133.48	MV13	PASS	May be obstructed by existing trees
Golden Highway WB and Ringwood Road Intersection	1.1	0.2	110	2	1	189.17	135	MV16	FAIL	89km/h SSD achieved. Matching existing conditions, existing intersection is following a curved section of the Golden Highway and is uphill. Sight distance obstructed by existing road geometry.
Golden Highway EB and Ringwood Road Intersection	1.1	0.2	110	2	-2	200.4	200.4	MV14	PASS	May be obstructed by existing trees





DATUM R.L. 420.0

VERTICAL ALIGNMENT: -0.9% 133.5L

HORIZONTAL ALIGNMENT

CHAINAGE	EYE HEIGHT	EXISTING LEVELS
0.000	0.2	424.487
10.000	0.232	424.381
20.000	0.257	424.243
30.000	0.379	424.093
40.000	0.431	423.897
50.000	0.576	423.591
60.000	0.745	423.253
70.000	0.911	422.895
80.000	1.034	422.651
90.000	1.077	422.655
100.000	1.128	422.590
110.000	1.139	422.558
120.000	1.154	422.483
130.000	1.12	422.430
133.480	1.1	422.420

LONGITUDINAL SECTION ALONG - V SIGHT SSD MV13 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

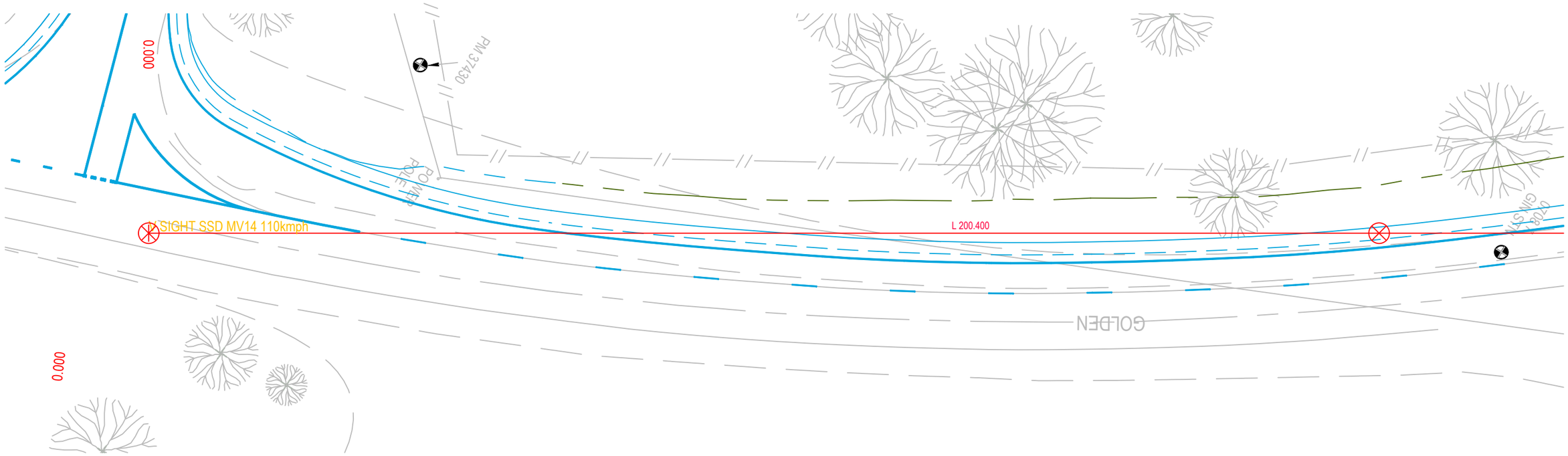
FOR INFORMATION ONLY

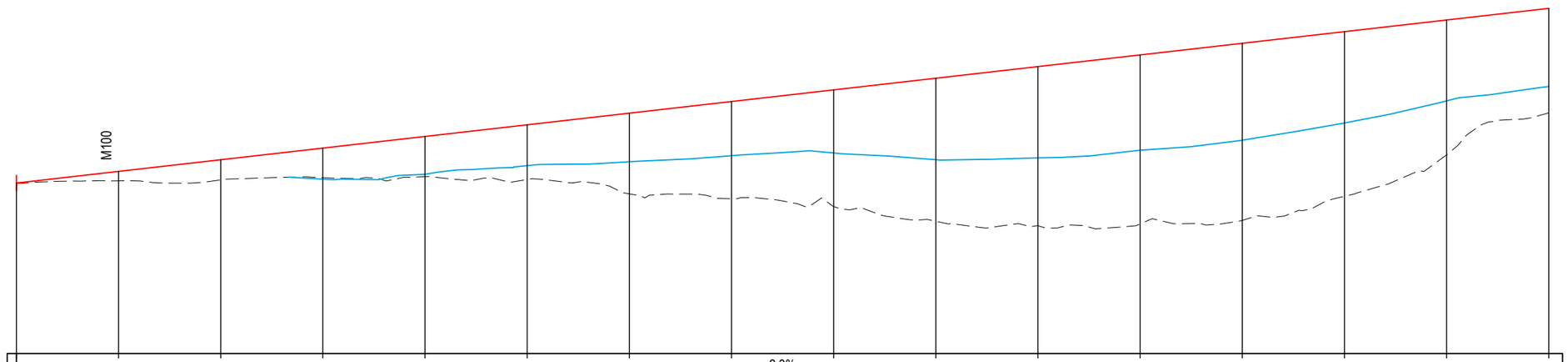
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
STOPPING SIGHT DISTANCE
1 OF 4

turnbull

0305-INF-LS-SIGHT_SSD-01





DATUM R.L. 417.0

VERTICAL ALIGNMENT: 2.3% — 200.4L

HORIZONTAL ALIGNMENT

CHAINAGE	EYE HEIGHT	EXISTING LEVELS
0.000	0	420.331
10.000	0.185	420.374
20.000	0.395	420.392
30.000	0.607	420.435
40.000	0.74	420.456
50.000	0.799	420.400
60.000	0.95	420.120
70.000	1.059	420.023
80.000	1.234	419.873
90.000	1.593	419.584
100.000	1.785	419.497
110.000	1.864	419.532
120.000	1.895	419.600
130.000	1.785	420.072
140.000	1.581	420.881
150.000	1.529	421.703

LONGITUDINAL SECTION ALONG - V SIGHT SSD MV14 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

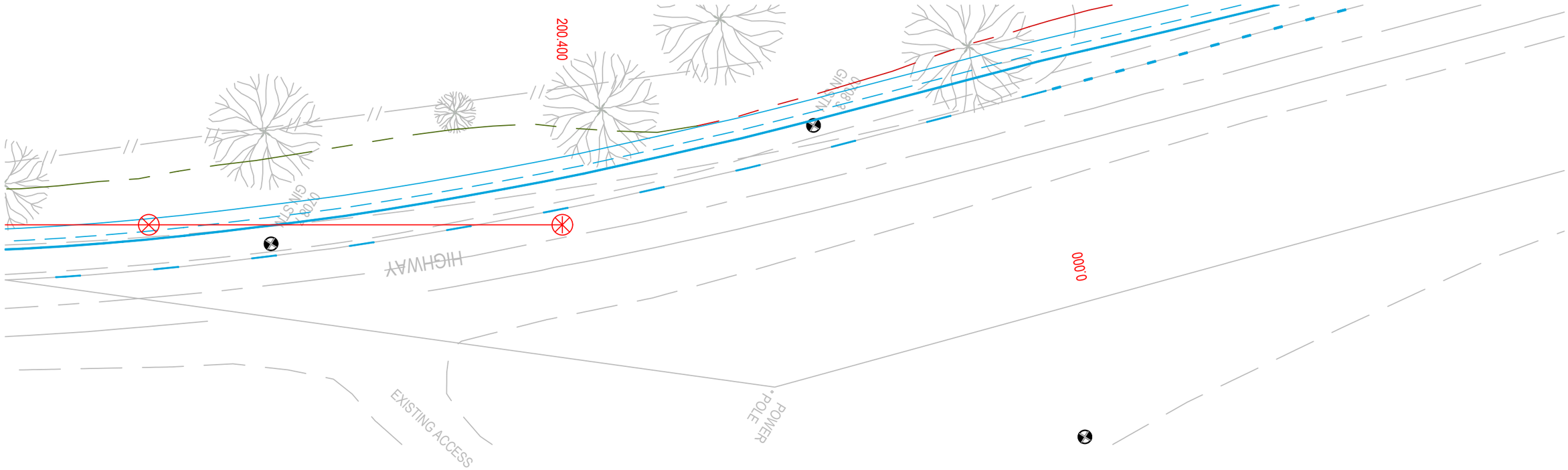
FOR INFORMATION ONLY

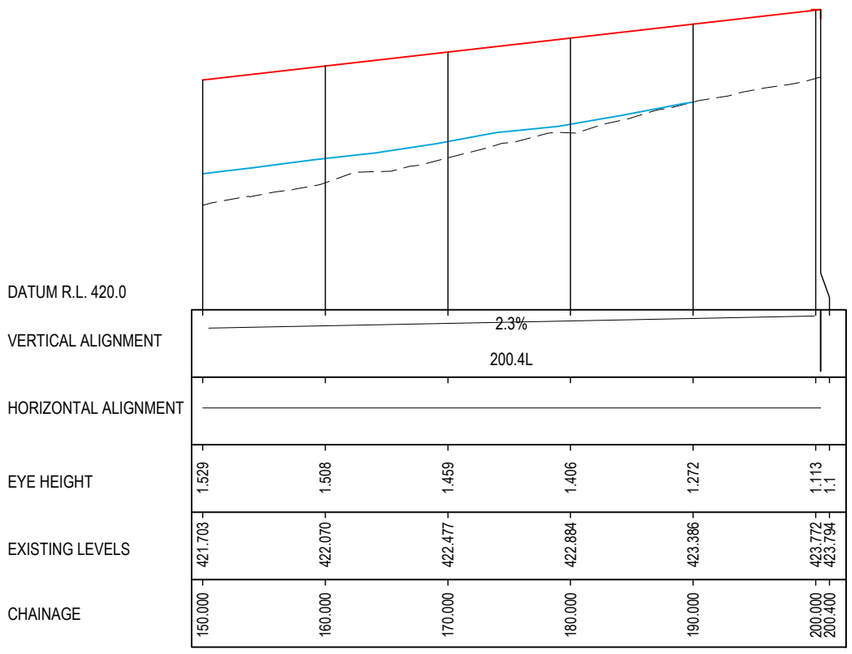
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
STOPPING SIGHT DISTANCE
2 OF 4

turnbull

0305-INF-LS-SIGHT_SSD-02





LONGITUDINAL SECTION ALONG - V SIGHT SSD MV14 110kmph

HORIZONTAL 1:500
VERTICAL 1:100

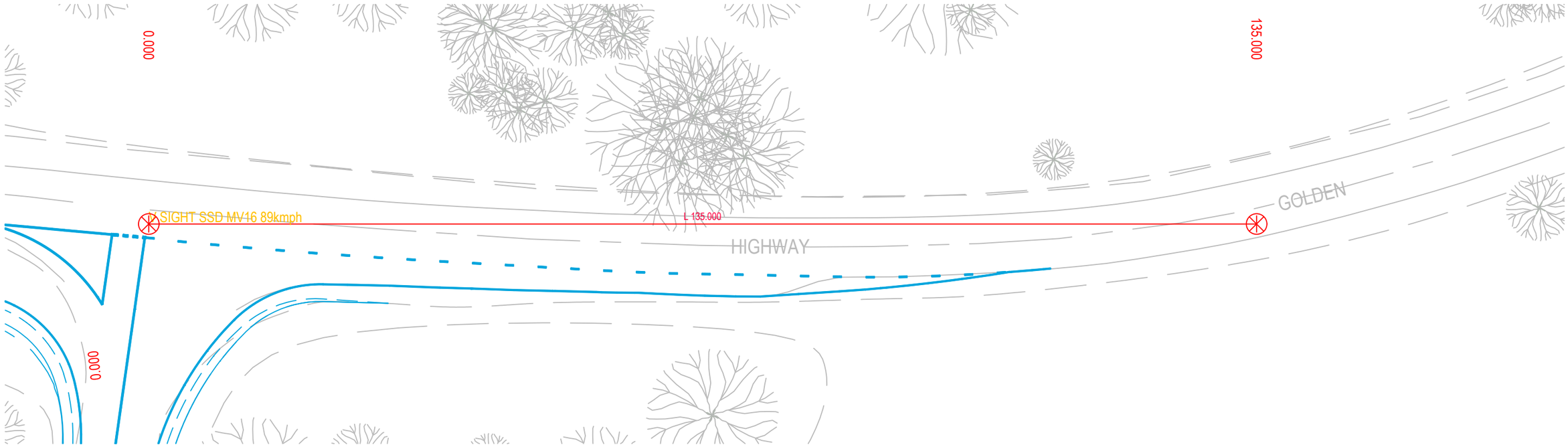
FOR INFORMATION ONLY

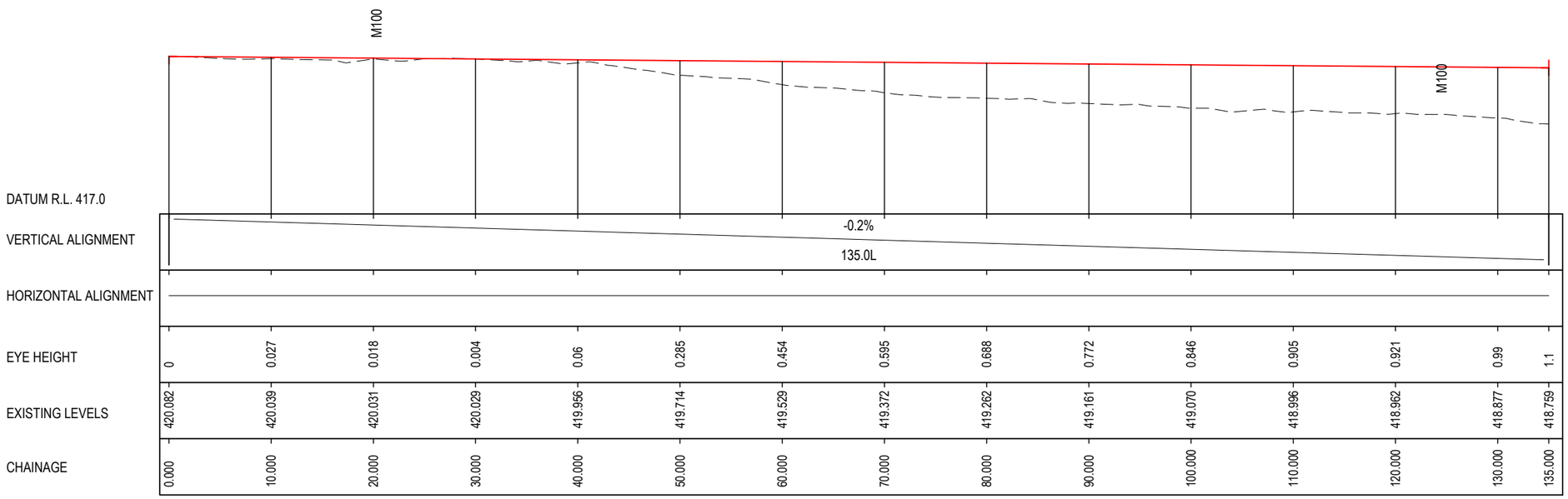
HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
STOPPING SIGHT DISTANCE
3 OF 4

turnbull

0305-INF-LS-SIGHT_SSD-03





EYE HEIGHT	0	0.027	0.018	0.004	0.06	0.285	0.454	0.595	0.688	0.772	0.846	0.905	0.921	0.99	1.1
EXISTING LEVELS	420.082	420.039	420.031	420.029	419.956	419.714	419.529	419.372	419.262	419.161	419.070	418.996	418.962	418.877	418.759
CHAINAGE	0.000	10.000	20.000	30.000	40.000	50.000	60.000	70.000	80.000	90.000	100.000	110.000	120.000	130.000	135.000

LONGITUDINAL SECTION ALONG - V SIGHT SSD MV16 89kmph

HORIZONTAL 1:500
VERTICAL 1:100

FOR INFORMATION ONLY

HORIZ. 1:500m
0 5 10 15 20
0 1 2 3 4
VERT. 1:100m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SIGHT DISTANCE CHECKS
STOPPING SIGHT DISTANCE
4 OF 4

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0305-INF-LS-SIGHT_SSD-04

GOULBURN RIVER SOLAR FARM
GOLDEN HIGHWAY / BARNETT STREET INTERSECTION
80% DETAILED DESIGN
CIVIL ENGINEERING DRAWING

SOURCE: ROADNET MDS 2024

LOCALITY PLAN
NTS

DRAWING INDEX

DRAWING NUMBER	DRAWING TITLE
30019204-200	COVER SHEET, DRAWING INDEX
30019204-201	GENERAL NOTES
30019204-202	SITE PLAN
30019204-210	ROAD LONGITUDINAL SECTION MC01
30019204-211	ROAD LONGITUDINAL SECTION KR01
30019204-212	ROAD LONGITUDINAL SECTION KR02
30019204-213	ROAD CROSS SECTIONS MC01
30019204-220	PAVEMENT DETAILS

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

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REFERENCES:

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED.

REV	DESCRIPTION	DESIGNER INITIAL/DATE	VERIFIED INITIAL/DATE	APPROVED INITIAL/DATE
A	ISSUED FOR 80% DESIGN	24.10.09	24.10.09	24.10.09

COORDINATE SYSTEM: MGA ZONE 56 / GDA2020

HEIGHT DATUM: AHD

SCALE: NTS

DESIGN LOT CODE:

CLIENT:

NSW GOVERNMENT Transport for NSW

PREPARED FOR:

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DRAWN C DERRADA
DESIGNED S BRIGGS
DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
COVER SHEET, DRAWING INDEX

DRAWING SET No:
PART:
SHEET: 1 OF 8
A1
STATUS: DETAILED DESIGN
BRIDGE No:
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DRG No. 30019204-200
REV A
VER
EDMS No.
AMD No.

X:\TNSW_A1

FILE NAME: 30019204-200.dwg
PLOT DATE & TIME: 9/10/2024 3:55:20 PM
Plotted by CD17395

GENERAL NOTES

1. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING.
2. ALL WORK TO BE CARRIED OUT IN ACCORDANCE WITH CURRENT TfNSW STANDARD DRAWINGS AND QA SPECIFICATIONS.
3. ALL LOCATIONS, ORIENTATION AND LEVELS SHALL BE VERIFIED ONSITE BEFORE COMMENCING ANY WORK. ANY DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE REFERRED TO THE PRINCIPAL FOR CLARIFICATION BEFORE PROCEEDING. NATURAL SURFACE LEVELS ARE INDICATIVE ONLY.
4. ALL DIMENSIONS ARE IN METRES UNLESS NOTED OTHERWISE.
5. THE EXISTING SERVICES INFORMATION SHOWN ON THE DRAWINGS HAS BEEN COMPILED FROM SURVEY INFORMATION AND INFORMATION SUPPLIED BY THE CONTRACTOR.
6. REDUNDANT PAVEMENT MARKINGS ARE TO BE REMOVED IN ACCORDANCE WITH TfNSW SPECIFICATION R141 C13.5.
7. ALL BATTERS TO BE HYDRO MULCHED UNLESS NOTED OTHERWISE.

ROADWORKS

GENERAL

1. EXISTING TREES AND PLANTS TO BE REMOVED WITHIN EXTENTS OF BATTERS UNLESS NOTED OTHERWISE.
2. ALL EARTHWORKS TO BE CONSTRUCTED IN ACCORDANCE WITH TfNSW QA SPECIFICATION R44.
3. DESIGN HAS BEEN BASED ON SURVEY SUPPLIED BY SMEC
4. SURVEY DATUM IS AHD.
5. SURVEY AZIMUTH IS BASED ON GDA 2020 ZONE 56.
6. SURVEY MARKS ARE NOT TO BE DISTURBED BEFORE ASSESSMENT BY SURVEYOR.
7. ALL LOCATIONS, ORIENTATION AND LEVELS SHALL BE VERIFIED ONSITE BEFORE COMMENCING ANY WORK. ANY DISCREPANCIES IN THE DRAWINGS AND/OR SPECIFICATIONS SHALL BE REFERRED TO THE PRINCIPAL FOR CLARIFICATION BEFORE PROCEEDING. NATURAL SURFACE LEVELS ARE INDICATIVE ONLY.
8. NO DAMAGE OR DESTRUCTION TO SURVEY PMs OR SSMs MAY OCCUR WITHOUT AUTHORISATION BY THE SURVEYOR GENERAL AS PER THE REQUIREMENTS UNDER SECTION 24 OF THE SURVEYING AND SPATIAL INFORMATION ACT 2002.
9. GUIDE POSTS ARE TO BE INSTALLED IN ACCORDANCE WITH SECTION 16 OF THE RMS DELINEATION GUIDE.

UTILITIES

1. THE LOCATION OF EXISTING UTILITIES SHOWN ON THE PLANS ARE INDICATIVE ONLY. THE CONTRACTOR IS TO REFER TO UTILITY RELOCATION PLANS APPROVED BY THE APPROPRIATE AUTHORITY FOR DETAILS ON ANY PROPOSED UTILITY WORKS.
2. THE CONTRACTOR IS TO CONFIRM THE PRESENCE OF ALL UTILITIES ON SITE PRIOR TO THE COMMENCEMENT OF WORKS. REFERENCE MUST BE MADE TO THESE DRAWINGS PRIOR TO THE COMMENCEMENT OF WORKS, AND THE RELEVANT UTILITY PLANS OBTAINED BY DIALLING PH 1100 OR FAX 1300 652 077 (DIAL BEFORE YOU DIG). CAUTION SHALL BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.

PAVEMENT

1. SUBGRADE TO BE TREATED IN ACCORDANCE WITH TfNSW SPECIFICATION R44.
2. SUBGRADE TREATMENT REQUIRED IF SOAKED CBR IS LESS THAN DESIGN CBR OR SOAKED SWELL IS GREATER THEN 2.5%.
3. DIMENSIONS ARE IN MILLIMETRES AND RELATE TO COMPACTED THICKNESS.

BITUMINOUS TREATMENT

1. SPRAY / SPREAD RATES NOMINATED IN THE DRAWINGS ARE NOMINAL ONLY. THE CONTRACTOR SHALL UNDERTAKE SEAL DESIGNS APPROPRIATE FOR THE CONDITIONS AT THE TIME OF PLACEMENT AND SUBMIT DETAILS IN WRITING TO THE ADMINISTRATOR FOR APPROVAL PRIOR TO UNDERTAKING WORKS.
2. SEAL DESIGN SHALL BE UNDERTAKEN BY AN CERTIFIED SPRAYED SEAL DESIGNER WITH DUE CONSIDERATION TO THE AUSTROADS GUIDE TO PAVEMENT TECHNOLOGY PART 4K, LOCAL EXPERIENCE AND SITE CONDITIONS AT THE TIME OF CONSTRUCTION.

ASPHALT SURFACING AND BASE LAYER

1. ALL ASPHALT LAYERS TO BE CONSTRUCTED IN ACCORDANCE WITH THE TfNSW R116 SPECIFICATIONS.
2. A NOMINAL MIX DESIGN SHALL BE SUBMITTED TO THE ADMINISTRATOR FOR REVIEW AND APPROVAL BEFORE UNDERTAKING WORKS.

PAVEMENT MARKINGS

1. ALL PAVEMENT MARKINGS TO BE INSTALLED IN ACCORDANCE WITH AS1742.2 AND RMS DELINEATION GUIDELINES. ALL PAVEMENT MARKING SHALL BE SET OUT AND APPROVED PRIOR TO SPRAYING.
2. RETROREFLECTIVE RAISED PAVEMENT MARKERS (RRPM'S) SHALL BE PLACED ALONG EDGE LINES UNLESS NOTED OTHERWISE. RRPM'S TO BE INSTALLED IN ACCORDANCE WITH AS1742.2 AND RMS DELINEATION GUIDE.
3. EXISTING LINEMARKING TO BE REMOVED BY HIGH PRESSURE WATER BLASTING OR DURING SAWCUTTING OF PAVEMENT.

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DRAINAGE

GENERAL

1. EXISTING DRAINAGE IS TO REMAIN WHERE POSSIBLE WHILE PERMANENT DRAINAGE INFRASTRUCTURE IS CONSTRUCTED. AREAS OUTSIDE THE TEMPORARY ALIGNMENT THAT ARE PART OF THE CONSTRUCTION SITE(S) WILL HAVE THEIR SURFACE WATER AND SUB-SURFACE WATER MANAGED BY THE CONSTRUCTION SUB CONTRACTOR.
2. THE DOCUMENTED DRAINAGE SYSTEM IS DETAILED ONLY FOR THE PERMANENT ROAD CONFIGURATION UNLESS NOTED OTHERWISE. CONSTRUCTION REQUIREMENTS SHALL BE THE CONTRACTOR'S RESPONSIBILITY, SEDIMENT CONTROL REQUIREMENTS INCLUSIVE.
3. DRAINAGE WORKS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH CURRENT TfNSW STANDARD DRAWINGS AND QA SPECIFICATIONS.
4. THE CONTRACTOR IS RESPONSIBLE FOR EROSION AND SEDIMENTATION CONTROL MEASURES.
5. ANY PERMITS REQUIRED FOR DIVERSION WORKS SHALL BE OBTAINED BY THE CONTRACTOR.

SETOUT

1. SETTING OUT DIMENSIONS AND SIZES OF DRAINAGE STRUCTURES SHALL NOT BE OBTAINED BY SCALING FROM THE DRAWINGS. ANY SETOUT AND/OR DIMENSIONS SHOWN FOR DRAINAGE STRUCTURES SHALL BE CHECKED BY THE CONTRACTOR BEFORE CONSTRUCTION COMMENCES.
2. FOR CHANNEL SETOUT DETAILS REFER TO THE RELEVANT ELECTRONIC MODEL. THE LOCATIONS ON THE PLAN ARE INDICATIVE AND THE ACTUAL ALIGNMENT AND LOCATION IS TO BE DETERMINED ON SITE TO SUIT PURPOSE.
3. FOR CHANNEL GRADING TO AND FROM A CULVERT, REFER LONGITUDINAL SECTIONS AND RELEVANT ELECTRONIC MODEL.
4. THE LOCATION OF DRAINAGE STRUCTURES AND OPEN DRAINS SHALL BE CONFIRMED ON SITE PRIOR TO CONSTRUCTION.

CHANNELS

1. ALL CHANNELS NOT LINED WITH ROCK OR CONCRETE ARE TO BE VEGETATED. CHANNELS ARE TO BE PREPARED, STABILISED AND VEGETATED.

TEMPORARY WORKS NOTES

1. THE CONSTRUCTION SUB CONTRACTOR SHALL ENSURE THAT MEDIANS, TEMPORARY PAVEMENTS, CROSSOVERS AND RAMPS ARE KEPT FREE DRAINING DURING THEIR CONSTRUCTION AND USE.
2. ALL PORTABLE SAFETY BARRIER UNITS USED MUST BE LISTED IN TfNSW ACCEPTANCE DOCUMENTATION AND ARE TO BE INSTALLED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATION OR TfNSW SPECIFICATIONS, WHICHEVER IS HIGHER. WHERE WATER FILLED BARRIERS ARE SPECIFIED AND ARE INTENDED TO ACT AS A CONTAINMENT SYSTEM, THEY SHALL BE FILLED WITH WATER, AS PER THE MANUFACTURER'S SPECIFICATIONS.
3. THE CONSTRUCTION SUB CONTRACTOR SHALL ENSURE ALL WORKERS ARE AWARE OF THE RISKS OF WORKING BEHIND SAFETY BARRIERS INCLUDING;
   A) TO AVOID THE DYNAMIC DEFLECTION ZONE WHERE POSSIBLE AND;
   B) THAT LARGER/HEAVIER VEHICLES MAY NOT BE CONTAINED BY THE BARRIERS
4. THE CONSTRUCTION SUB CONTRACTOR SHALL ASSESS AND MANAGE APPROPRIATELY THE INTERFACE BETWEEN ALL ROAD USERS (PEDESTRIANS, CYCLISTS AND MOTORISTS) AND THE SITE OPERATIONS INCLUDING ACCESS AND EGRESS.
5. ADEQUATE VERGE WIDTH BEHIND ALL PORTABLE SAFETY BARRIERS IS TO BE PROVIDED IN ACCORDANCE WITH MANUFACTURER'S SPECIFICATIONS TO ALLOW SAFE DEFLECTION SHOULD THEY BE STRUCK.
6. TRAFFIC CONTROL IS TO BE IN ACCORDANCE WITH THE TfNSW TRAFFIC CONTROL AT WORK SITES MANUAL AND AS1742.3.
7. EXISTING SIGNAGE CONFLICTING WITH TEMPORARY TRAFFIC WORKS PLAN ARE TO BE COVERED OR REMOVED. PARTICULAR ATTENTION SHALL BE GIVEN TO SIGNAGE ASSOCIATED WITH SPEED CONTROL AND CHANGES IN CARRIAGEWAY WIDTH, SUCH AS OVERTAKING LANES.
8. SIGN LOCATIONS SHOWN ON THE PLANS ARE INDICATIVE ONLY.
9. INTERSECTION AND DIRECTION SIGNS SHALL BE RELOCATED WHERE NECESSARY TO BE VISIBLE AT ALL TIMES.
10. ALL CONSTRUCTION SHALL COMPLY WITH THE RELEVANT CURRENT WORKPLACE HEALTH AND SAFETY LEGISLATION.
11. SITE ACCESS GATES ARE TO BE CLOSED AFTER HOURS OR WHEN NOT IN USE.
12. REFLECTIVE DELINEATORS (RRPMS) ARE TO BE INSTALLED ON ALL NEW PAVEMENT MARKINGS AND TEMPORARY BARRIERS IN ACCORDANCE WITH TfNSW DELINEATION MANUAL SECTION 16.

SPECIFICATIONS

1. THESE DRAWINGS ARE TO BE READ IN CONJUNCTION WITH THE FOLLOWING SPECIFICATION LIST WHERE APPLICABLE.

ROADWORKS SPECIFICATION

TfNSW G10 TRAFFIC MANAGEMENT
TfNSW R11 STORMWATER DRAINAGE
TfNSW R15 KERBS & GUTTERS
TfNSW R16 PRECAST REINFORCED CONCRETE BOX CULVERTS
TfNSW R23 PLASTIC FLEXIBLE PIPES
TfNSW R24 PRECAST CONCRETE ARCHES
TfNSW R31 VERTICAL WICK DRAINS
TfNSW R33 TRENCH DRAINS
TfNSW R37 INTRA-PAVEMENT DETAILS
TfNSW R38 EDGE DRAINS
TfNSW R40 HORIZONTAL DRAINS
TfNSW R44 EARTHWORKS (CUT, FILL, IMPORTED FILL AND IMPORTED SELECTED MATERIAL)
TfNSW R49 CONSTRUCTION OF VERGES
TfNSW R50 STABILISATION OF EARTHWORKS
TfNSW R53 CONCRETE (FOR GENERAL USE) MORTAR AND GROUT
TfNSW R55 ROCK FILLED GABION AND MATTRESSES
TfNSW R57 DESIGN OF REINFORCED SOIL WALLS
TfNSW R58 CONSTRUCTION OF REINFORCED SOIL WALLS (CONTRACTORS DESIGN)
TfNSW R63 GEOTEXTILES (SEPARATION AND FILTRATION)
TfNSW R64 SOIL NAILING
TfNSW R67 HIGH STRENGTH GEOSYNTHETIC REINFORCEMENT
TfNSW R68 SHOTCRETE WORKS WITHOUT STEEL FIBRES
TfNSW R71 UNBOUND AND MODIFIED PAVEMENT COURSE
TfNSW R73 CONSTRUCTION OF PLANT MIXED HEAVILY BOUND PAVEMENT COURSE
TfNSW R75 IN SITU PAVEMENT STABILISATION USING SLOW SETTING BINDERS
TfNSW R82 LEAN-MIX CONCRETE SUBBASE
TfNSW R83 CONCRETE PAVEMENT BASE
TfNSW R106 SPRAYED BITUMINOUS SURFACING (WITH CUTBACK BITUMEN)
TfNSW R107 SPRAYED BITUMINOUS SURFACING (WITH POLYMER MODIFIED BINDER)
TfNSW R109 BITUMINOUS SLURRY SURFACING
TfNSW R110 COLOURED SURFACE COATINGS FOR BUS LANES AND CYCLEWAYS
TfNSW R111 SPRAYED BITUMINOUS SURFACING (WITH BITUMEN EMULSION)
TfNSW R116 HEAVY DUTY DENSE GRADED ASPHALT
TfNSW R119 OPEN GRADED ASPHALT
TfNSW R121 STONE MASTIC ASPHALT
TfNSW R123 THIN OPEN GRADED ASPHALT SURFACING
TfNSW R131 GUIDE POSTS
TfNSW R132 SAFETY BARRIER SYSTEMS
TfNSW R141 PAVEMENT MARKING
TfNSW R142 RAISED PAVEMENT MARKING
TfNSW R143 SIGN POSTING
TfNSW R145 PAVEMENT MARKING (PERFORMANCE BASED)
TfNSW R151 STREET LIGHTING
TfNSW R152 ROADSIDE EMERGENCY TELEPHONE PILLARS
TfNSW R155 DESIGN AND CONSTRUCTION OF UNDERGROUND CABLEWAYS
TfNSW R173 GENERAL CONCRETE PAVING
TfNSW R178 VEGETATION
TfNSW R179 LANDSCAPE PLANTING
TfNSW R201 FENCING
TSI-SP-003 COMMUNICATIONS PROTOCOL FOR ROADSIDE DEVICES
TSI-SP-008 GENERAL REQUIREMENTS FOR THE DESIGN, INSTALLATION, COMMISSIONING AND MAINTENANCE OF VARIABLE MESSAGE SIGNS
TSI-SP-017-DCM SPECIFICATION FOR THE CONSTRUCTION OF UNDERGROUND CABLEWAYS

2. ALL CONSTRUCTION MATERIAL AND WORKMANSHIP SHALL BE IN ACCORDANCE WITH THE SPECIFICATION FOR THE WORKS TOGETHER WITH THE REQUIREMENT OF ALL RELEVANT CODES OF PRACTICE REFERRED TO THEREIN AND THE REQUIREMENTS OF ALL STATUTORY AUTHORITIES WHERE APPLICABLE.
3. THE MAINTENANCE FOR TEMPORARY TRAFFIC WORKS IS TO BE IN ACCORDANCE TfNSW G10.

SPECIFICATIONS CONT.

MATERIALS SPECIFICATION

TfNSW 3051 GRANULAR BASE AND SUBBASE MATERIALS FOR SURFACED ROAD PAVEMENTS
TfNSW 3071 SELECTED MATERIAL IN FORMATION LAYERS
TfNSW 3151 COVER AGGREGATE FOR SPRAYED BITUMINOUS SURFACING
TfNSW 3152 AGGREGATES FOR ASPHALT
TfNSW 3153 RECLAIMED ASPHALT PAVEMENT MATERIAL
TfNSW 3204 PREFORMED JOINT FILLERS FOR CONCRETE ROAD PAVEMENTS AND STRUCTURES
TfNSW 3211 CEMENTS, BINDERS AND FILLERS
TfNSW 3222 NO-FINES CONCRETE (FOR SUBSURFACE DRAINAGE)
TfNSW 3252 POLYMER MODIFIED BINDER FOR PAVEMENTS
TfNSW 3253 BITUMEN FOR PAVEMENTS
TfNSW 3254 BITUMEN EMULSION
TfNSW 3256 COMMINUTED SCRAP RUBBER
TfNSW 3258 AGGREGATE PRECOATING AGENT (BITUMEN CLASSES 170 AND 320)
TfNSW 3259 BITUMEN ADHESION AGENT (BITUMEN CLASSES 170 AND 320)
TfNSW 3261 CUTBACK BITUMEN
TfNSW 3266 COLDMIX ASPHALT
TfNSW 3268 AGGREGATE PRECOATING AGENT (POLYMER MODIFIED BITUMEN)
TfNSW 3269 BITUMEN ADHESION AGENT (POLYMER MODIFIED BITUMEN)
TfNSW 3351 ROAD MARKING PAINT
TfNSW 3352 FLUORESCENT PLASTIC TRAFFIC CONES
TfNSW 3353 GLASS BEADS
TfNSW 3354 ADHESIVES FOR RAISED PAVEMENT MARKER INSTALLATION
TfNSW 3356 WATERBORNE ROAD MARKING PAINT
TfNSW 3357 THERMOPLASTIC ROAD MARKING MATERIAL
TfNSW 3359 PROFILE THERMOPLASTIC ROAD MARKING MATERIAL
TfNSW 3360 TWO PART COLD APPLIED ROAD MARKING MATERIAL
TfNSW 3368 SKID RESISTANT FRICTION COATING FOR TEMPORARY STEEL ROAD PLATES
TfNSW 3385 BARRIER BOARDS
TfNSW 3400 MANUFACTURE AND DELIVERY OF ROAD SIGNS
TfNSW 3411 SUPPLY OF GUIDE POSTS - TIMBER
TfNSW 3412 SUPPLY OF GUIDE POSTS - NON-TIMBER
TfNSW 3552 SUBSURFACE DRAINAGE PIPE (CORRUGATED PERFORATED AND NON-PERFORATED PLASTIC
TfNSW 3553 SEAMLESS TUBULAR FILTER FABRIC
TfNSW 3555 SUBSURFACE DRAINAGE PIPE (SLOTTED AND UNSLOTTED FIBRE-REINFORCED CONCRETE)
TfNSW 3556 RIGID STRIP FILTER DRAINS
TfNSW 3557 FLEXIBLE STRIP FILTER DRAINS
TfNSW 3580 AGGREGATE FILTER MATERIALS FOR SUBSURFACE DRAINAGE
TfNSW 3651 PAINTS AND THINNERS FOR STEELWORK
TfNSW 3851 STEEL TAPERED LIGHTING COLUMNS
TfNSW P3074A DESIGN, SUPPLY AND DELIVERY OF SOLAR POWERED, TRAILER MOUNTED, VARIABLE MESSAGE SIGNS (VMS)

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PLOT DATE & TIME: 9/10/2024 3:55:17 PM

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A	ISSUED FOR 80% DESIGN	24.10.09	24.10.09	24.10.09

COORDINATE SYSTEM: MGA ZONE 56 / GDA2020
HEIGHT DATUM: AHD

SCALE: NTS
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SMEC CIVIL

DRAWN C DERRADA
DESIGNED S BRIGGS
DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
GENERAL NOTES

DRAWING SET No: | PART: | SHEET: 2 OF 8 | A1
STATUS: DETAILED DESIGN | BRIDGE No: | ©
DRG No. 30019204-201 | REV A | VER | EDMS No. | AMD No.

Plotted by CD17395

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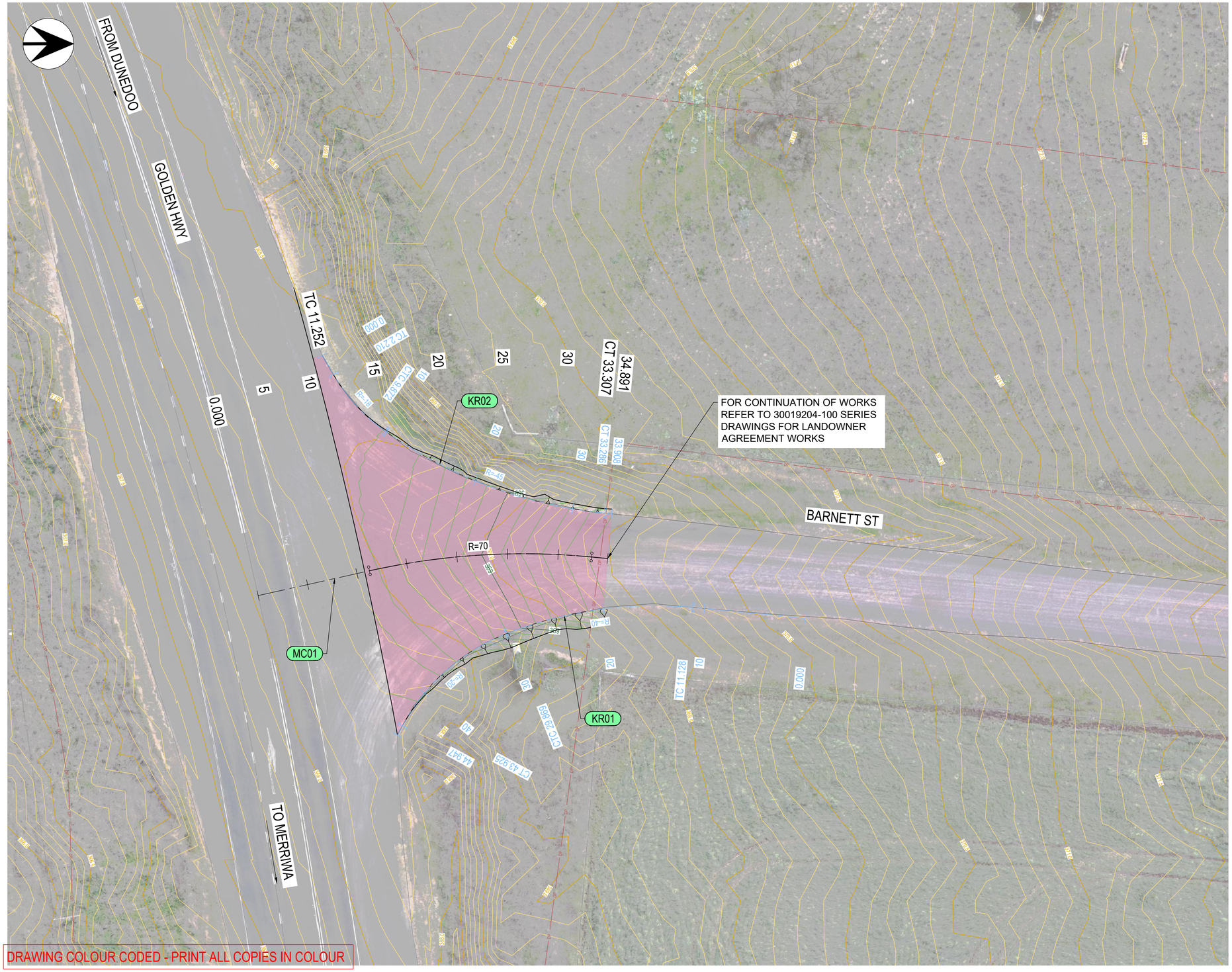

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LEGEND

EXISTING CIVIL

- CADASTRAL BOUNDARY
- FENCE
- EDGE OF TRACK
- CONTOURS (0.5m INTERVAL MAJOR) (0.1m INTERVAL MINOR)
- TREE

PROPOSED CIVIL

- CONTROL LINE - ROAD
- CONTROL CHAINAGES - ROAD
- CONTROL STRING LABEL - ROAD
- CONTROL LINE AND CHAINAGE - KERB
- DESIGN CONTOUR (1.0m INTERVAL)
- DESIGN CONTOUR (0.2m INTERVAL)
- PAVEMENT TYPE 1

NOT FOR CONSTRUCTION

REFERENCES:

X_SURVEY
X_SURV_LEGEND
X_RD_12_DES_CONT
X_RD_12_DES_MAIN
X_RD_12_ALIGN
X_RD_12_ALIGN_TAG
X_DES_BATTER_TICKS
X_SURVEY_CONT_LABELS
X_SURVEY_4_4_BDY
X_CADASTRAL_BDY
X_PAVE_HATCH

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DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
SITE PLAN

DRAWING SET No:	PART:	SHEET: 3 OF 8	A1
STATUS: DETAILED DESIGN	BRIDGE No:		©
DRG No. 30019204-202	REV A	VER	EDMS No.	AMD No.

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PLOT DATE & TIME: 9/10/2024 3:55:21 PM

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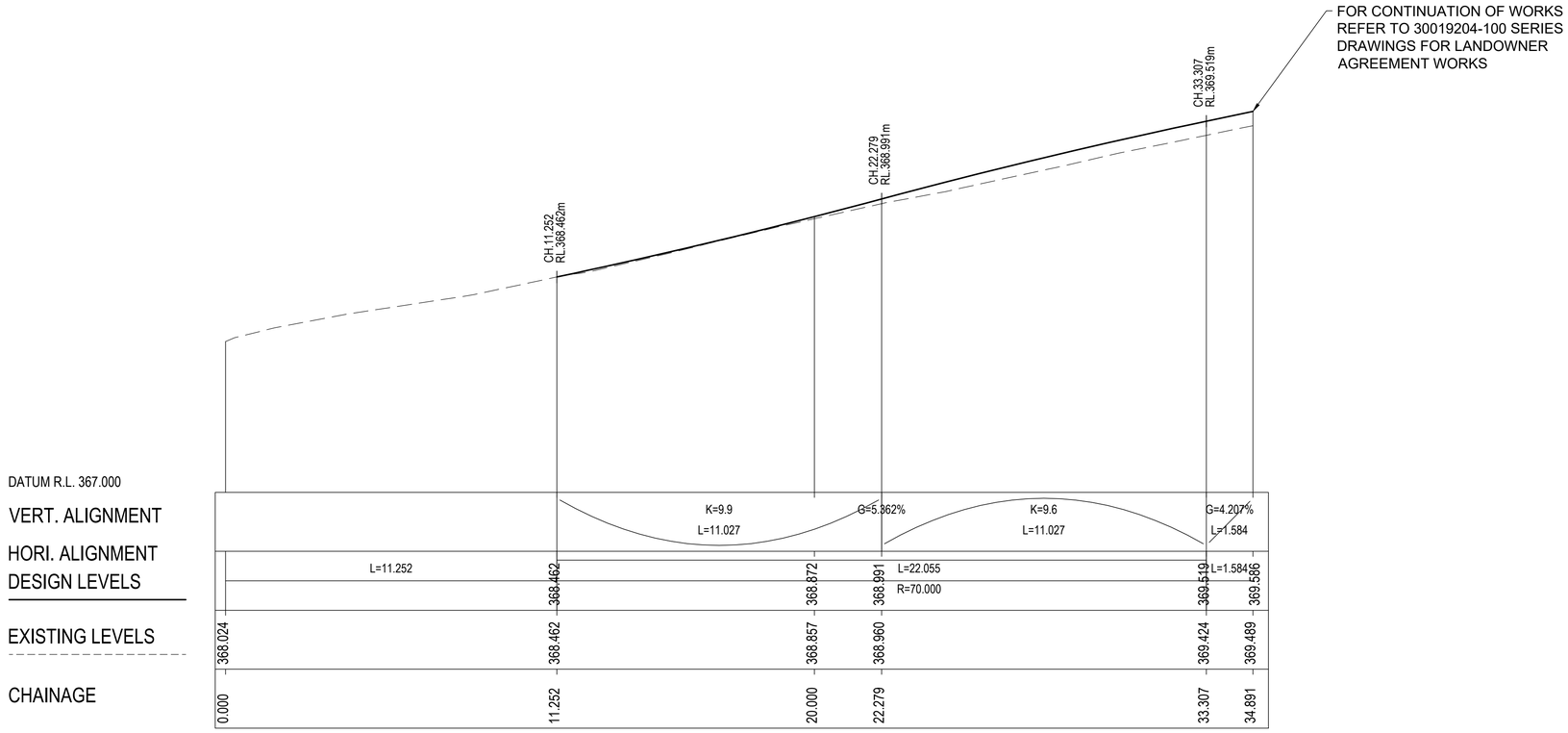

LONGITUDINAL SECTION - MC01
H 1:100
V 1:20

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A	ISSUED FOR 80% DESIGN	24.10.09	24.10.09	24.10.09

COORDINATE SYSTEM: MGA ZONE 56 / GDA2020

HEIGHT DATUM: AHD

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DESIGNED S BRIGGS
DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
ROAD LONGITUDINAL SECTION
MC01

DRAWING SET No: | PART: | SHEET: 4 OF 8 | A1
STATUS: DETAILED DESIGN | BRIDGE No: | ©

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Plotted by CD17395

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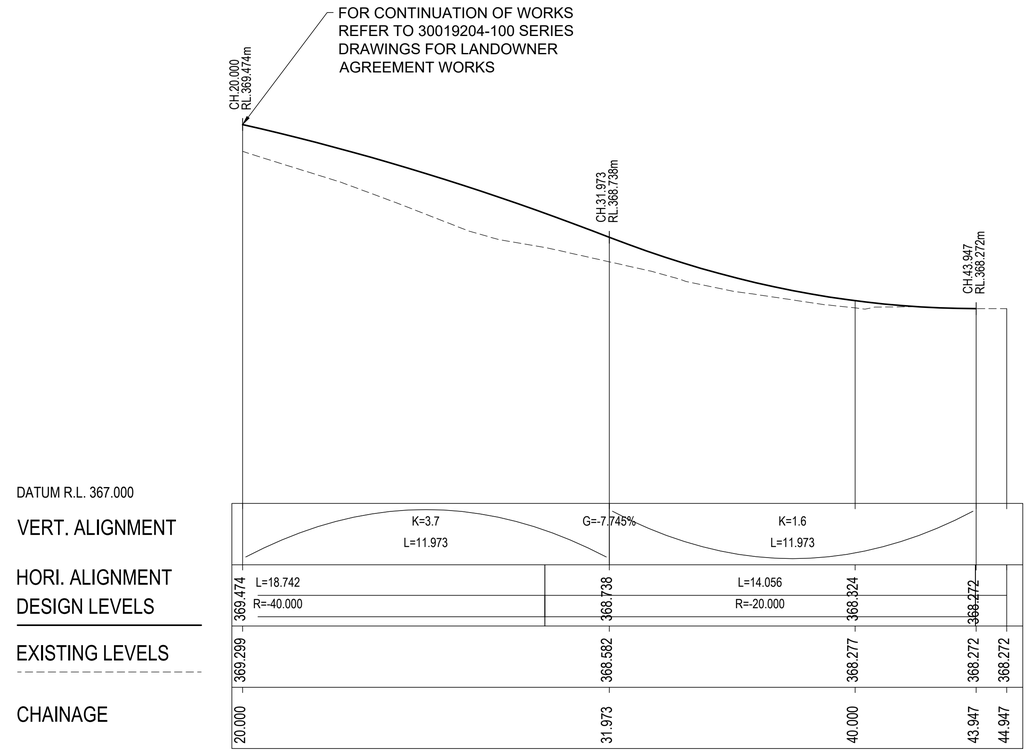

LONGITUDINAL SECTION - KR01
H 1:100
V 1:20

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COORDINATE SYSTEM: MGA ZONE 56 / GDA2020

HEIGHT DATUM: AHD

SCALE: 1:100H,1:20V

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smec an ACI company

SMEC CIVIL

DRAWN C DERRADA
DESIGNED S BRIGGS
DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
ROAD LONGITUDINAL SECTION
KR01

DRAWING SET No:	PART:	SHEET: 5 OF 8	A1
STATUS: DETAILED DESIGN	BRIDGE No:		©
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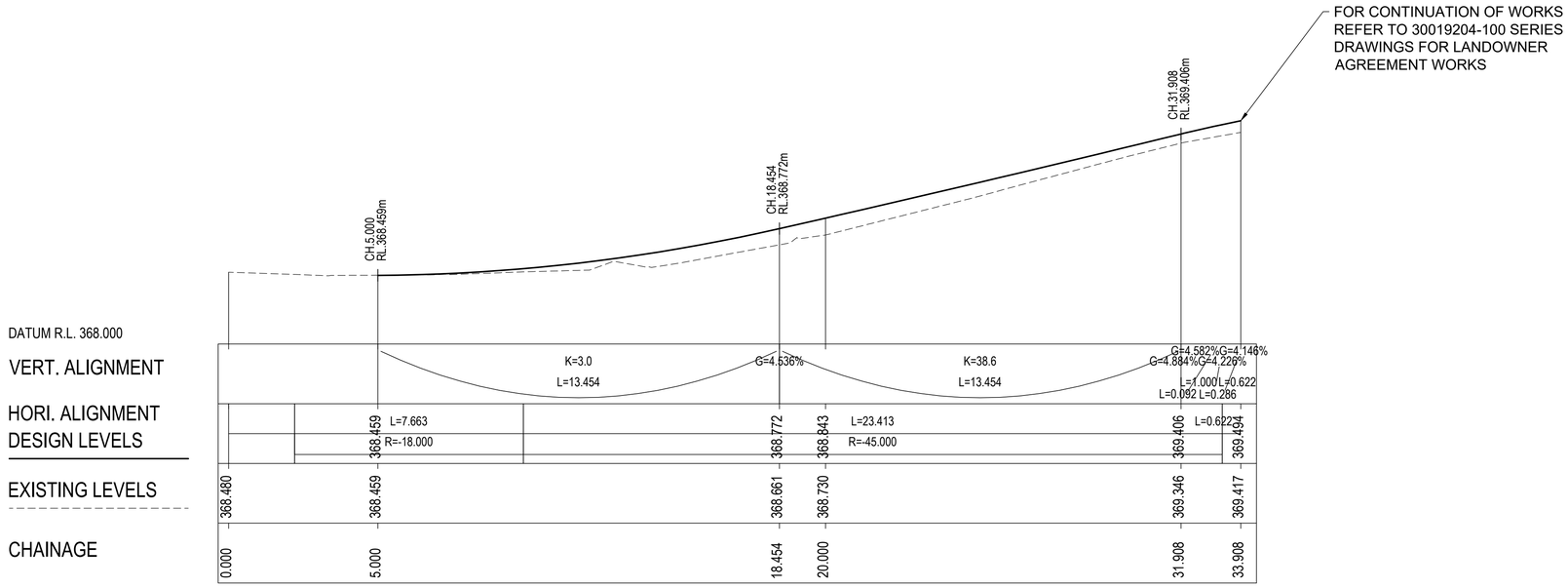

LONGITUDINAL SECTION - KR02
H 1:100
V 1:20

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SCALE: 1:100H,1:20V

1:20 @ A1 0 200 400 600 800 1000 mm

1:100 @ A1 0 1 2 3 4 5 m

DESIGN LOT CODE:

CLIENT:

NSW GOVERNMENT | Transport for NSW

PREPARED FOR:

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smec an SKM company

SMEC CIVIL

DRAWN C DERRADA
DESIGNED S BRIGGS
DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
ROAD LONGITUDINAL SECTION
KR02

DRAWING SET No:	PART:	SHEET: 6 OF 8	A1
STATUS: DETAILED DESIGN	BRIDGE No:		©

DRG No.	REV	VER	EDMS No.	AMD No.
30019204-212	A			

FILE NAME: 30019204-212.dwg

PLOT DATE & TIME: 9/10/2024 3:55:20 PM

Plotted by CD17395

LS_RG_12_KR02_2
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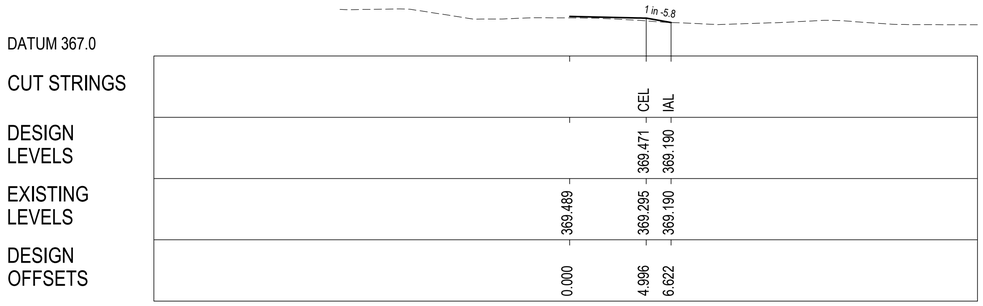

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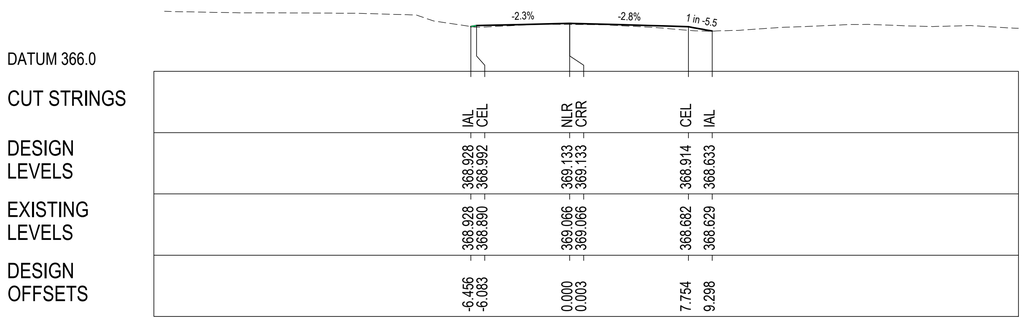

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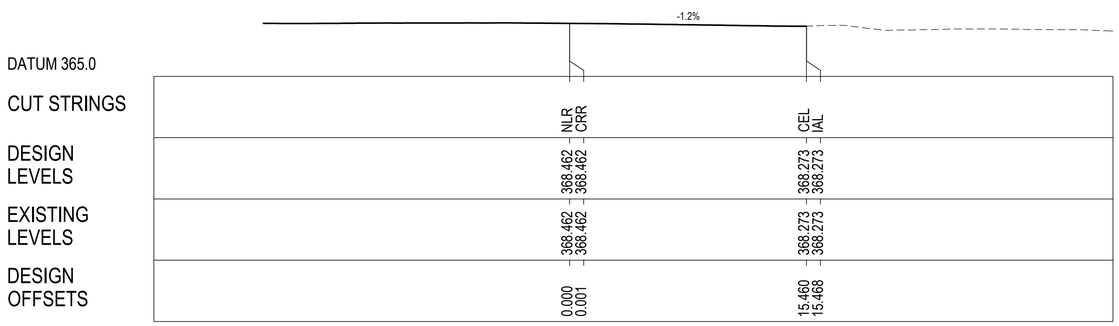

11.252

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION

REFERENCES:

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED.

REV	DESCRIPTION	DESIGNER INITIAL/DATE	VERIFIED INITIAL/DATE	APPROVED INITIAL/DATE
A	ISSUED FOR 80% DESIGN	24.10.09	24.10.09	24.10.09

COORDINATE SYSTEM: MGA ZONE 56 / GDA2020

HEIGHT DATUM: AHD

SCALE: 1:200

1:200 @ A1 0 2 4 6 8 10 m

DESIGN LOT CODE:

CLIENT:

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smec an SNC company

SMEC CIVIL

DRAWN C DERRADA
DESIGNED S BRIGGS
DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

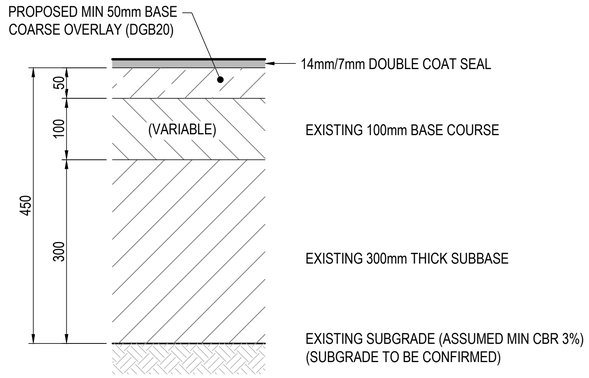
UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
ROAD CROSS SECTIONS
MC01

DRAWING SET No:
PART:
SHEET: 7 OF 8
A1
STATUS: DETAILED DESIGN
BRIDGE No:
©
DRG No. 30019204-213
REV A
VER
EDMS No.
AMD No.

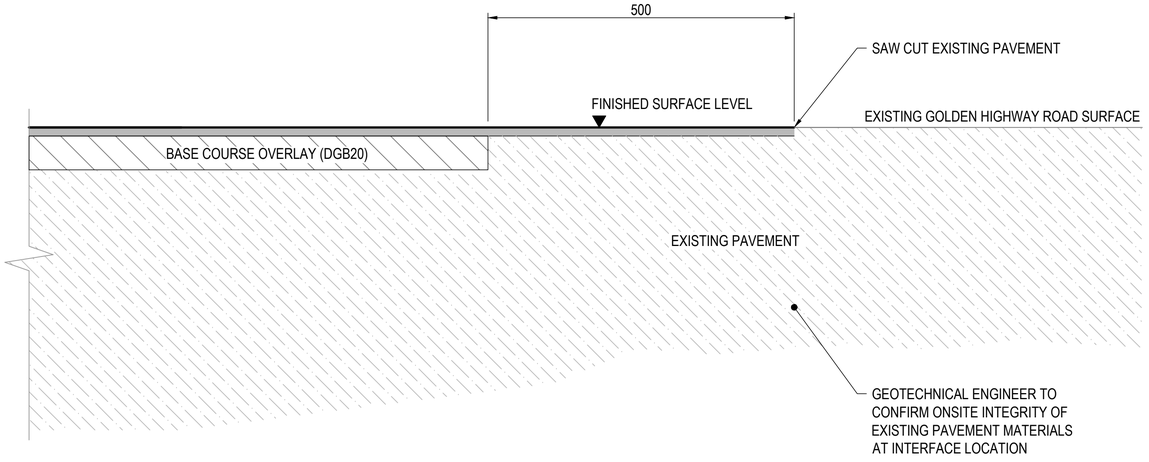
RD_12_PLOT_XS_1
X:\TNSW_A1

FILE NAME: 30019204-213.dwg
PLOT DATE & TIME: 9/10/2024 3:55:17 PM
Plotted by CD17395



OVERLAY PAVEMENT TYPE 1

SCALE 1:5



PAVEMENT LONGITUDINAL INTERFACE DETAIL

SCALE 1:5

DRAWING COLOUR CODED - PRINT ALL COPIES IN COLOUR

NOT FOR CONSTRUCTION

REFERENCES:

THIS DRAWING MAY BE PREPARED IN COLOUR AND MAY BE INCOMPLETE IF COPIED.

REV	DESCRIPTION	DESIGNER INITIAL/DATE	VERIFIED INITIAL/DATE	APPROVED INITIAL/DATE
A	ISSUED FOR 80% DESIGN	24.10.09	24.10.09	24.10.09

COORDINATE SYSTEM: MGA ZONE 56 / GDA2020

HEIGHT DATUM: AHD

SCALE: 1:5

1:5 @ A1 0 50 100 150 200 250 mm

DESIGN LOT CODE:

CLIENT: NSW GOVERNMENT Transport for NSW

PREPARED FOR:

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smec an SNC company

SMEC CIVIL

DRAWN C DERRADA
DESIGNED S BRIGGS
DRG CHECK B KOOPMAN
DESIGN CHECK B KOOPMAN
PROJ/DES MNGR J KNIEST
APPROVED J KNIEST 24.10.09

WORK IN PROGRESS

UPPER HUNTER

GOLDEN HIGHWAY
BARNETT STREET INTERSECTION
PAVEMENT DETAILS

DRAWING SET No:
PART:
SHEET: 8 OF 8
A1
STATUS: DETAILED DESIGN
BRIDGE No:
©
DRG No. 30019204-220
REV A
VER
EDMS No.
AMD No.

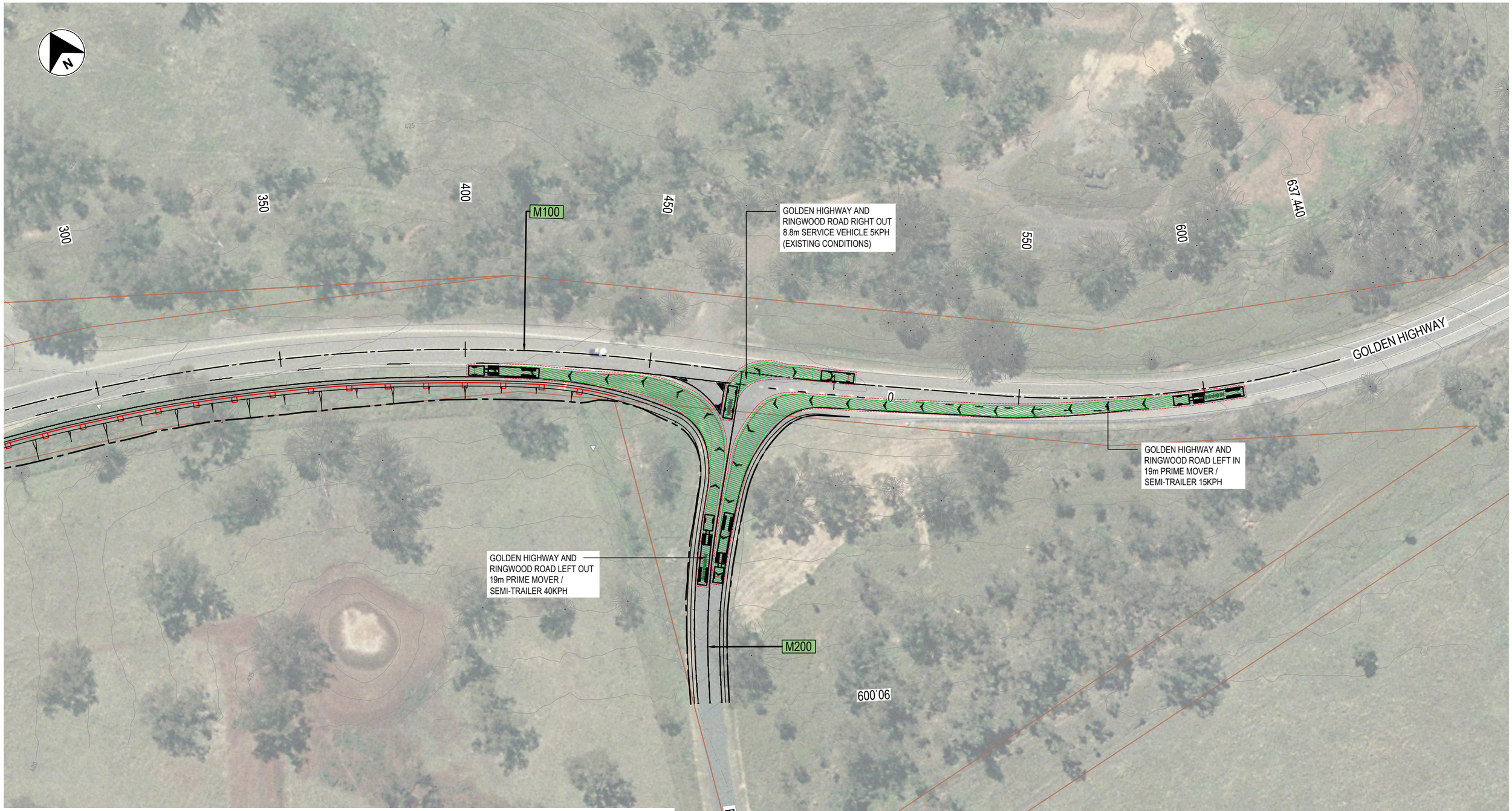
FILE NAME: 30019204-220.dwg

PLOT DATE & TIME: 9/10/2024 3:55:20 PM

Plotted by C017395

X_PAVE_DET
X:\TINSW_A1

Appendix C Swept paths

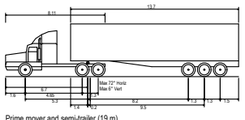


FOR INFORMATION ONLY

NOTES

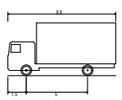
1. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR EXISTING PAVEMENT.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.
3. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
4. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Ship".
5. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR THE EXISTING GOLDEN HIGHWAY AND RINGWOOD ROAD INTERSECTION RIGHT TURN IN AND RIGHT TURN OUT MOVEMENTS. EXISTING VEHICLE MOVEMENTS AND INTERSECTION LAYOUT TO BE RESPECTED.

VEHICLE TURN PATH PROFILE



Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m



Service Vehicle (8.8 m)

Overall Length	8.800m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.427m
Track Width	2.500m
Lock-to-lock time	4.00s
Curb to Curb Turning Radius	12.500m

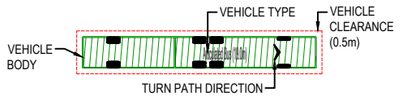
GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- 20 — CONTROL LINE AND CHAINAGE
- MCXX — CONTROL LINE LABEL

VEHICLE TURN PATH LEGEND



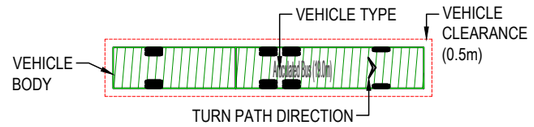
0 10 20 30 40
SCALE 1:1000m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SWEPT PATHS
SHEET 2 OF 4
27/10/2023

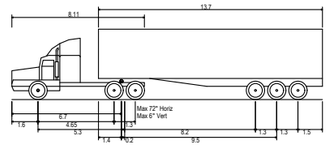
turnbull

0305-INF-RD-SWEPT-PATH-RINGWOOD-02

VEHICLE TURN PATH LEGEND



VEHICLE TURN PATH PROFILE



Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

GENERAL NOTES

1. NO ASSESSMENT HAS BEEN UNDERTAKEN OF EXISTING INTERSECTION ARRANGEMENT OR EXISTING PAVEMENTS.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.

FOR INFORMATION ONLY

3.75 0 3.75 7.5 11.25 15m
1 : 750 FULL SIZE A3

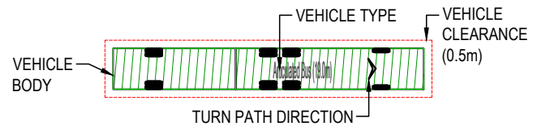
GOULBURN RIVER SOLAR FARM
GOLDEN HIGHWAY AND BARNETT STREET INTERSECTION TURN PATHS
SHEET 1 OF 2

25/09/2023

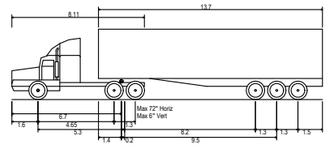
turnbull

0305-INF-RD-SWEPT-PATH-BARNETT-01

VEHICLE TURN PATH LEGEND



VEHICLE TURN PATH PROFILE



Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

GENERAL NOTES

1. NO ASSESSMENT HAS BEEN UNDERTAKEN OF EXISTING INTERSECTION ARRANGEMENT OR EXISTING PAVEMENTS.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.

FOR INFORMATION ONLY

3.75 0 3.75 7.5 11.25 15m
1 : 750 FULL SIZE A3

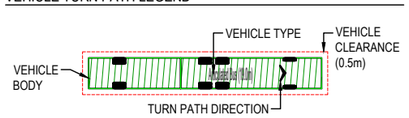
GOULBURN RIVER SOLAR FARM
BARNETT STREET TURN AROUND FACILITY TURN PATHS
SHEET 2 OF 2

25/09/2023

turnbull

0305-INF-RD-SWEPT-PATH-BARNETT-02

VEHICLE TURN PATH LEGEND



SIGNAGE

PROPOSED SIGN POST LOCATION

PROPOSED SIGN

R4-1

EXISTING SIGN POST LOCATION

EXISTING SIGN

R4-1

5 0 5 10 15 20m

1 : 1000 FULL SIZE A3

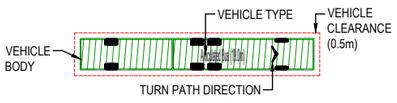
GOULBURN RIVER SOLAR FARM
SIGNAGE & SWEPT PATH
SHEET 2 OF 2

25/01/2023

turnbull

0305-INF-RD-SWEPT-PATH-03

VEHICLE TURN PATH LEGEND



SIGNAGE

PROPOSED SIGN POST LOCATION

PROPOSED SIGN

R4-1

EXISTING SIGN POST LOCATION

EXISTING SIGN

R4-1

5 0 5 10 15 20m

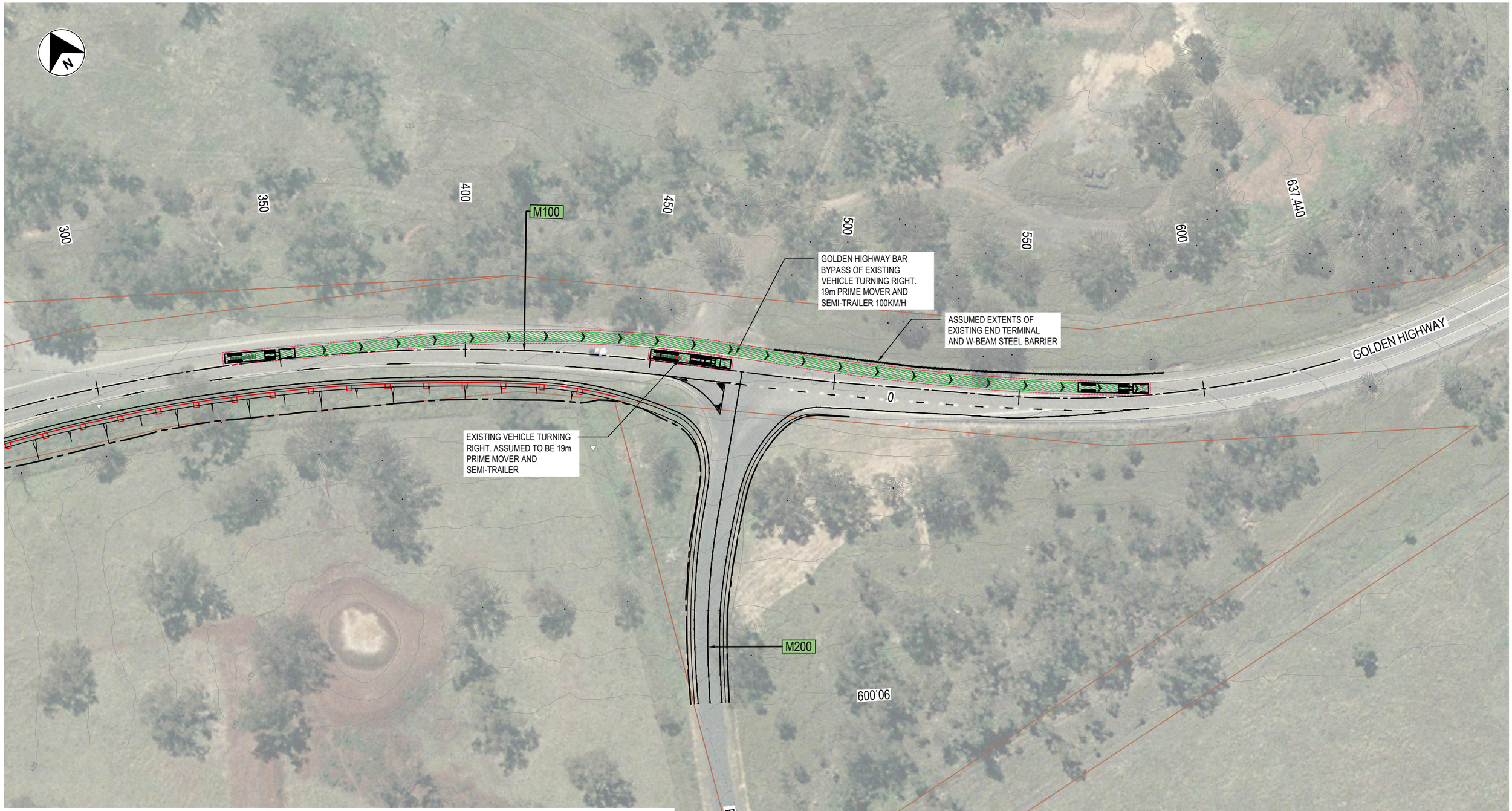
1 : 1000 FULL SIZE A3

GOULBURN RIVER SOLAR FARM
SIGNAGE & SWEPT PATH
SHEET 1 OF 2

25/01/2023

turnbull

0305-INF-RD-SWEPT-PATH-02

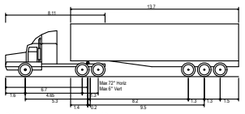


FOR INFORMATION ONLY

NOTES

1. NO ASSESSMENT HAS BEEN UNDERTAKEN FOR EXISTING PAVEMENT.
2. TURN PATHS PRESENTED IS THE INTENDED OPERATIONS OF TRAFFIC ASSOCIATED WITH GOULBURN SOLAR FARM. ONLY THE DISPLAYED MOVEMENTS WILL BE PERMITTED.
3. SURVEY SHOWN HAS BEEN PROVIDED BY UMWELT (11/09/2023).
4. BOUNDARIES HAVE BEEN SOURCED FROM SIX MAPS "Clip 'n' Snip".

VEHICLE TURN PATH PROFILE



Prime mover and semi-trailer (19 m)

Overall Length	19.000m
Overall Width	2.500m
Overall Body Height	4.300m
Min Body Ground Clearance	0.540m
Track Width	2.500m
Lock-to-lock time	6.00s
Curb to Curb Turning Radius	12.500m

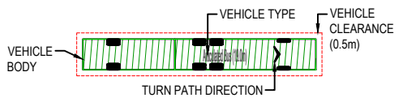
GENERAL

- DESIGN
- CADASTRAL
- SURVEY
- SAFETY BARRIER

ROAD GEOMETRY

- CONTROL LINE AND CHAINAGE (20)
- CONTROL LINE LABEL (MCXX)

VEHICLE TURN PATH LEGEND



0 10 20 30 40
SCALE 1:1000m

GOULBURN RIVER SOLAR FARM
RINGWOOD ROAD AND GOLDEN HIGHWAY INTERSECTION
SWEPT PATHS
SHEET 2 OF 4
27/10/2023

turnbull

0305-INF-RD-SWEPT-PATH-RINGWOOD BAR

Appendix D OSOM vehicle checks

HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp

DATE:	REVISION:	DESCRIPTION:
09.02.2023	0	CLIENT REVIEW

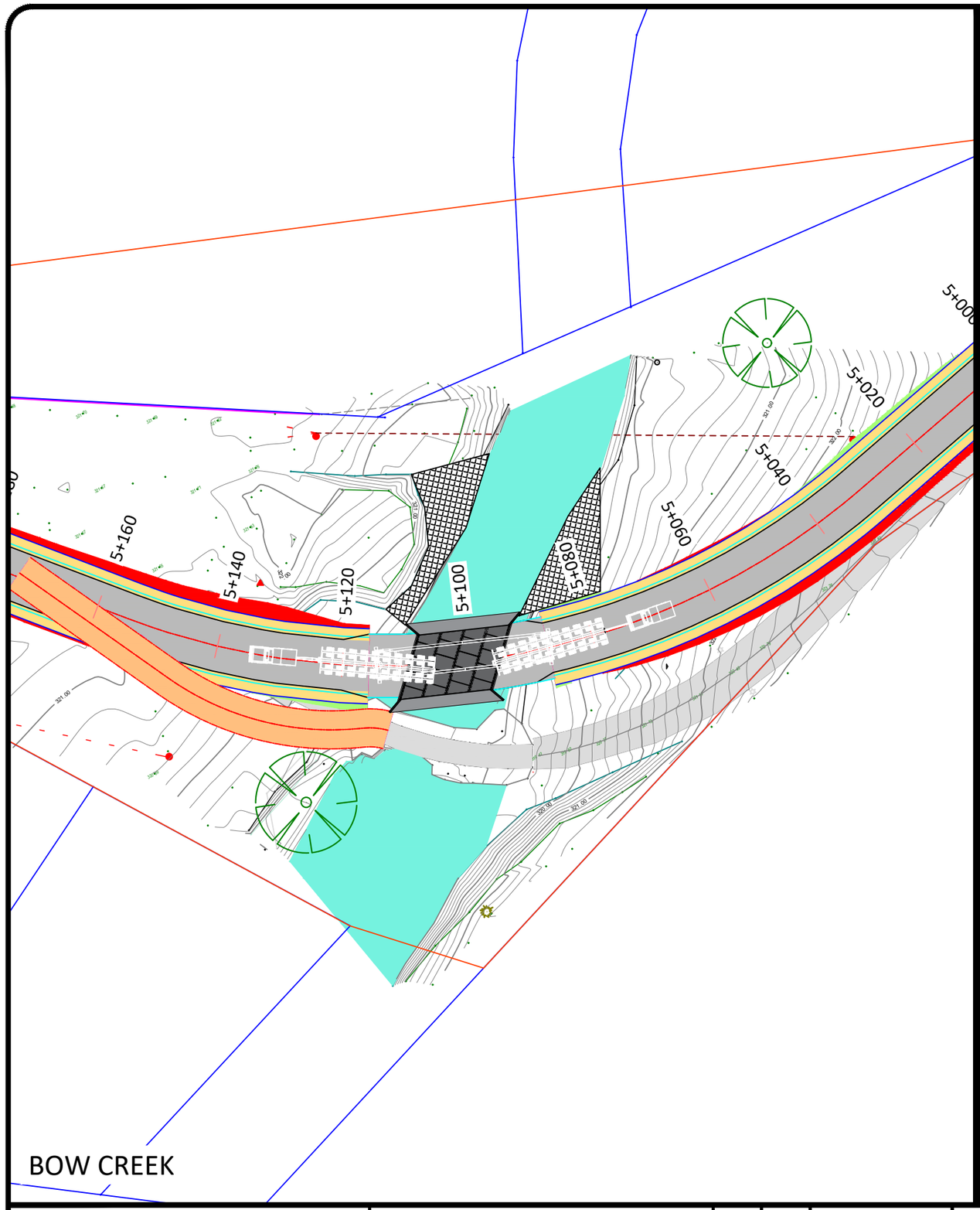
PROJECT:
RINGWOOD ROAD UPGRADE

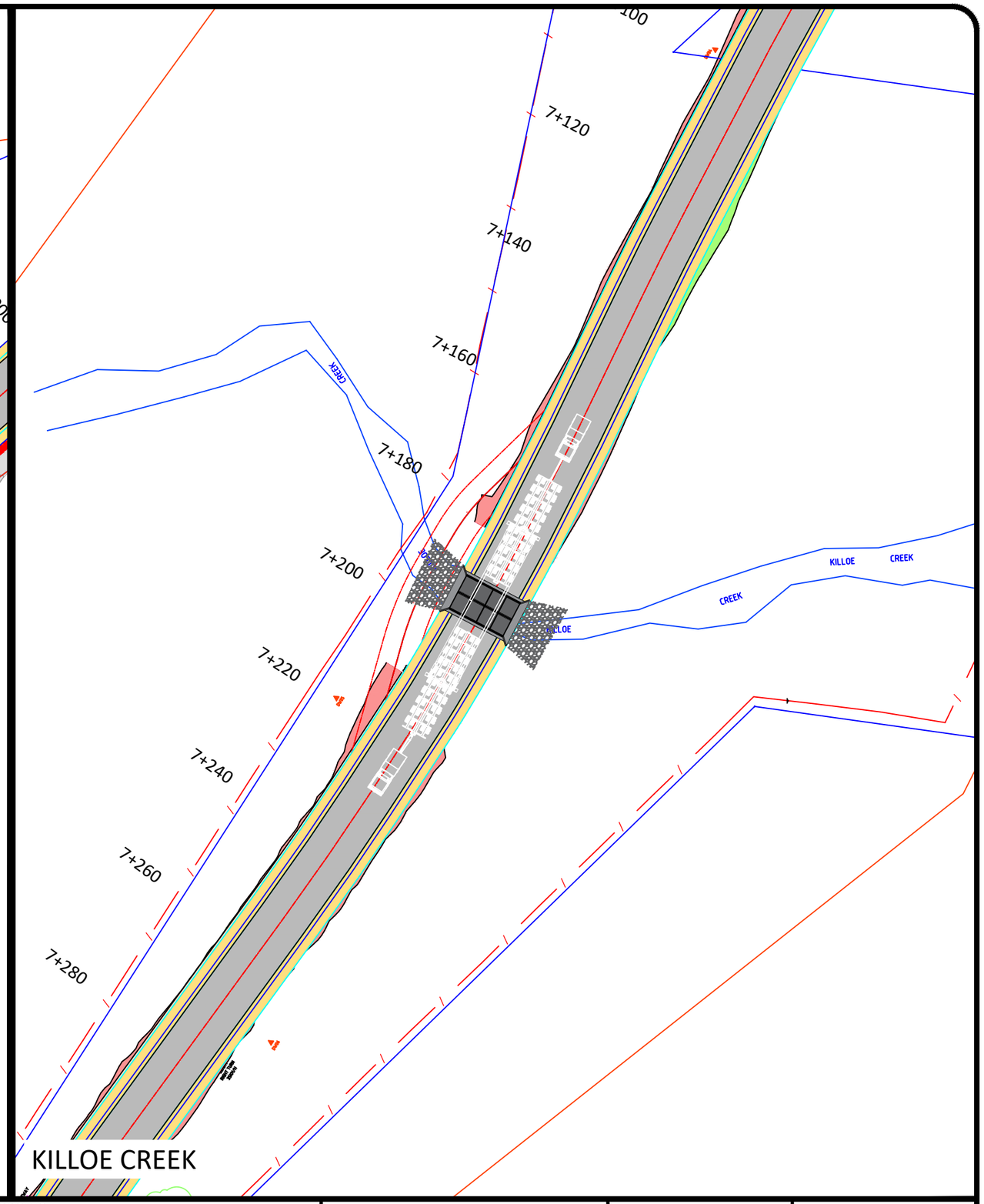
DRAWING TITLE:
SWEPTH PATHS

ISSUE STATUS:
CLIENT REVIEW

N

SCALE: 1:750 @ A3	SURVEYED: OTHERS
DWG No: HEC22_	DESIGNED: RS / DRAWN: RJ
JOB No: 22Q3J3	
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020	SHEET: 1 / REV: 0
DATUM: AHD	





HARRYAN
ENGINEERING COUNSULTING

CLIENT:
lightsource bp
bp

DATE:	REVISION:	DESCRIPTION:
09.02.2023	0	CLIENT REVIEW

PROJECT:
RINGWOOD ROAD UPGRADE

DRAWING TITLE:
SWEPTH PATHS

ISSUE STATUS:
CLIENT REVIEW

N

SCALE: 1:750 @ A3	SURVEYED: OTHERS
DWG No: HEC22_	DESIGNED: RS / DRAWN: RJ
JOB No: 22Q3J3	
COORDINATE SYSTEM: MGA ZONE 56 GDA 2020	SHEET: 2 / REV: 0
DATUM: AHD	

Appendix E Example OSOM TMP

REX J ANDREWS
ENGINEERED TRANSPORTATION

TRANSPORT MANAGEMENT PLAN

CLIENT: DEUGRO

PROJECT: AVONLEA SOLAR FARM

PORT OF IMPORT: MAYFIELD #4 BERTH NEWCASTLE

DELIVERY POINT: MUNTZ ROAD SANDIGO

22/03/2022 REV 02

Rev.	Date	Change	Responsible	Checked
00	24/01/22	Route Assessed	C Ewin	✓
00	14/02/22	Report compiled	W Andrews	✓
00	21/02/22	Report completed	W Andrews	✓
01	22/02/22	Edits.	W Andrews	✓
02	22/03/22	Updated route at Parkes	W Andrews	✓

Index:

INDEX: 2

INDEX: 2

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2.0 EVALUATION 4
3.0 PROJECT DATA. 5
5.0 TRANSPORT ROUTE 8
6.0 TRANSPORT CONDITIONS 9
7.0 FATIGUE SCHEDULING: 10
8.0 TRANSPORT APPROVALS REQUIRED 12
9.0 TRAVEL DATES 13
10.0 MANAGING QUEUED TRAFFIC BEHIND THE LOAD. 14
11.0 INTERACTING WITH ROADWORK: 15
12.0 EMERGENCY CONTACTS & PLANS. 16
13.0 EMERGENCY STOPPING / PULLING UP FOR REST AREAS: 17
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1.0 Introduction

This document describes observations and previous experience on route and explains the Transport of a Transformer from Mayfield, NSW to Sandigo NSW.

This Route study took place on 24.01.22

2.0 Evaluation

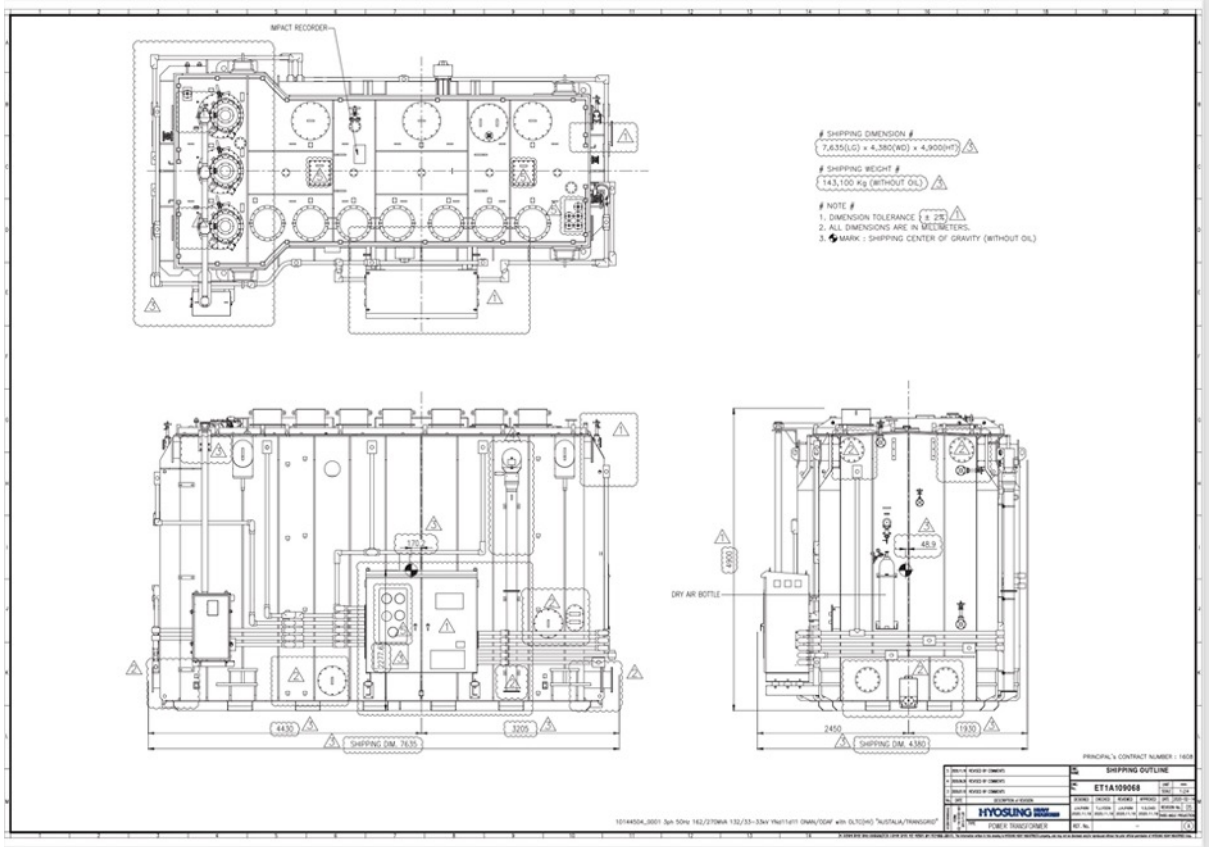
1	No Cost
2	Some Work
3	Urgent Modification
4	Extreme Amount of Work

(Mark below boxes with an X)

		1	**2**	**3**	**4**
A	Harbour	**N/A**			
B	Road Modification	**X**			
C	Road Furnishings	**X**			
D	Trees		**X**		
E	Site Entrance	**X**			
F	Bridge Calculations		**X**		
G	Traffic Control		**X**		

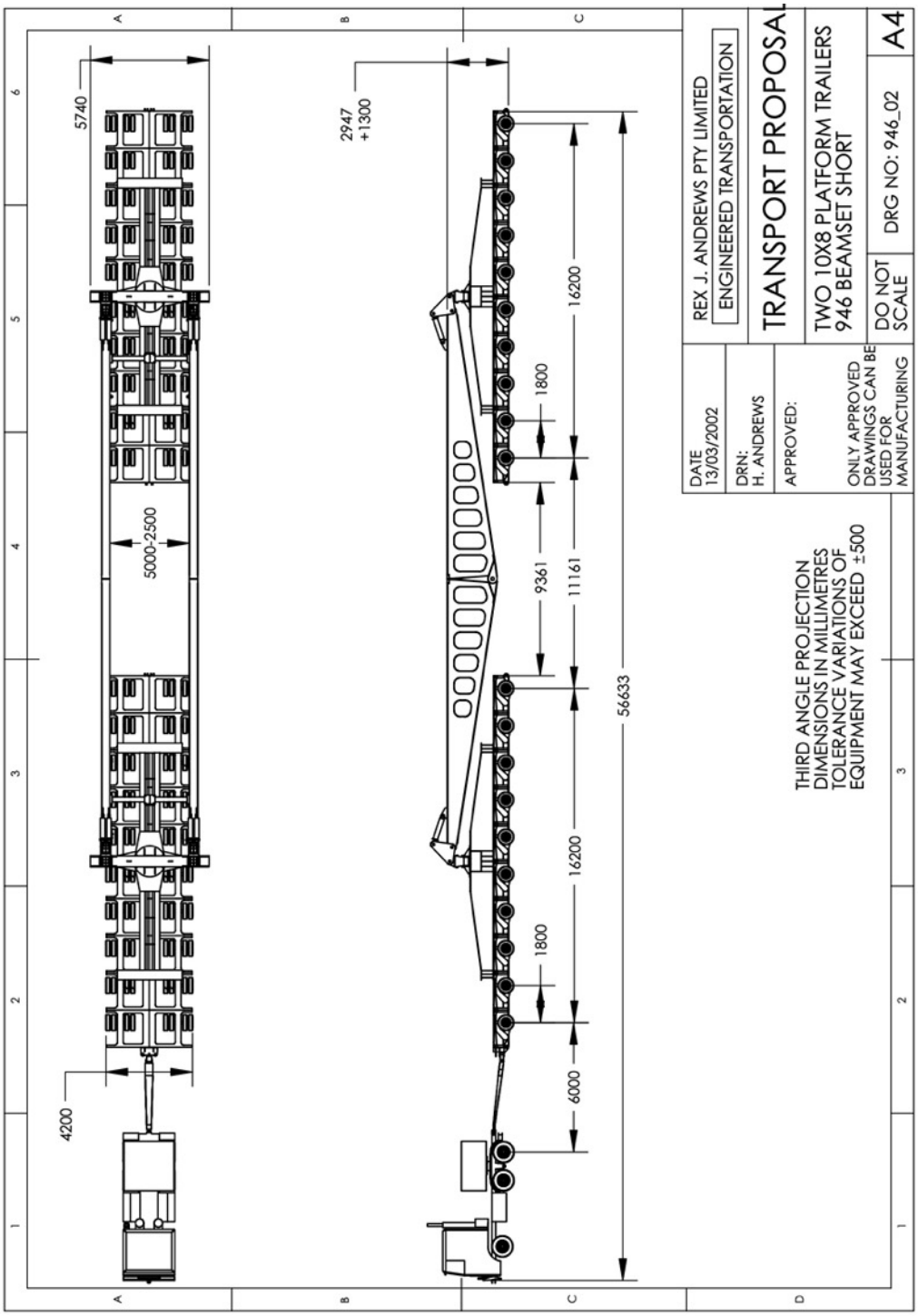
3.0 Project data.

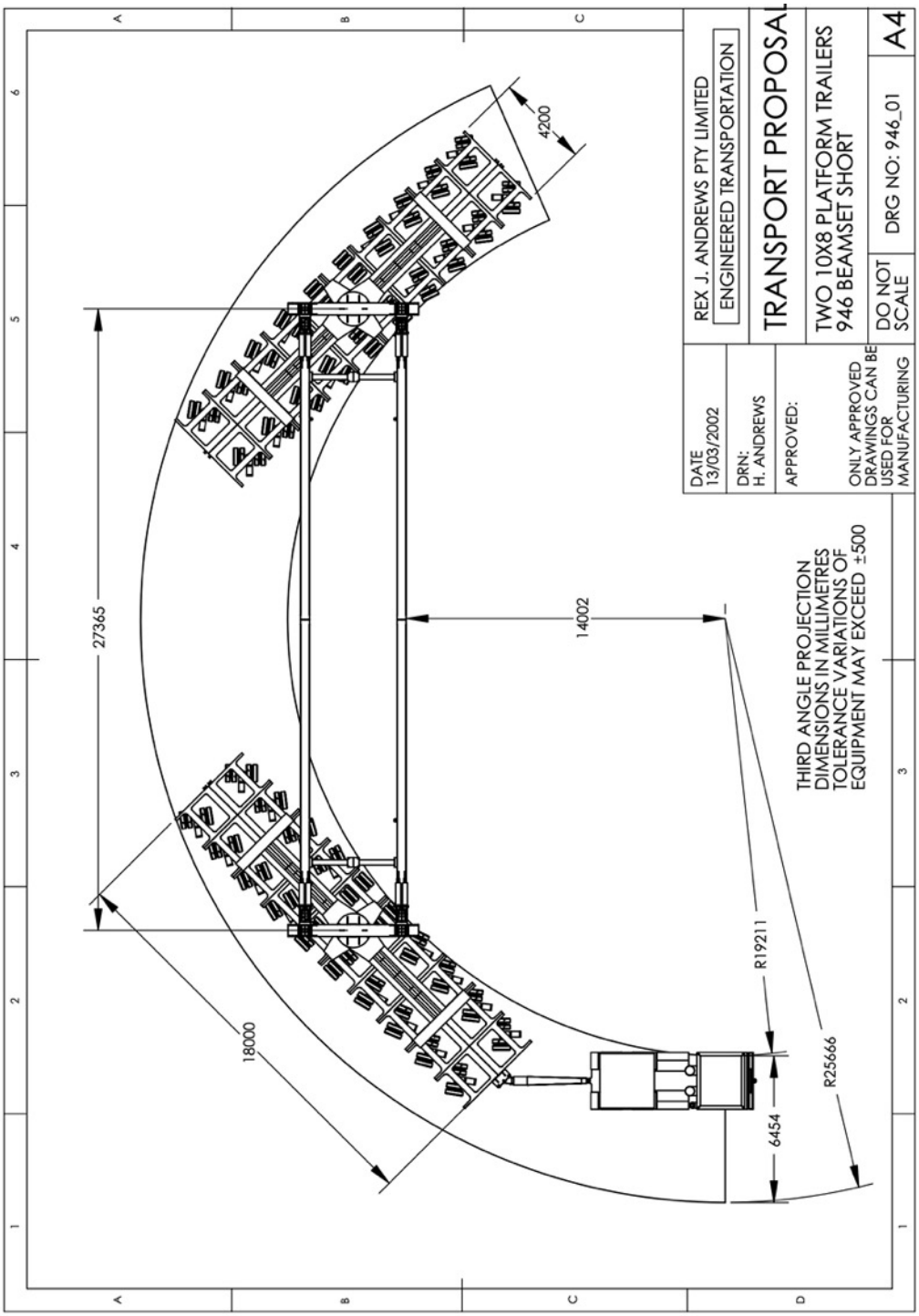
Date of latest Route Study. 24/01/22
Survey undertaken by. (Rex J Andrews P/L)
Project name. Avonleigh Solar Farm
Route. Mayfield NSW to Sandigo NSW Australia
Transformer dimensions: 7.8l x 4.4w x 4.9h x 143.0T



Transport combination type: 4 x block trucks with 10x8-10x8 Beamset
Transport combination tare weight: 216.5T
Transport combination overall dimensions:
110 long x 6.5 wide x 5.6 high x 359.0 Ton

4.0 Transport Drawing.




4200
27365
14002
18000
R19211
6454
R25666
THIRD ANGLE PROJECTION
DIMENSIONS IN MILLIMETRES
TOLERANCE VARIATIONS OF
EQUIPMENT MAY EXCEED ±500
DATE
13/03/2002
DRN:
H. ANDREWS
APPROVED:
ONLY APPROVED
DRAWINGS CAN BE
USED FOR
MANUFACTURING
REX J. ANDREWS PTY LIMITED
ENGINEERED TRANSPORTATION
TRANSPORT PROPOSAL
TWO 10X8 PLATFORM TRAILERS
946 BEAMSET SHORT
DO NOT
SCALE
DRG NO: 946_01
A4

5.0 Transport Route.

ROUTE: Newcastle Port (Mayfield #4 berth) to Sandigo, 823.0 kilometres:

This route took us via Selwyn street, George Street, Industrial Drive, Maitland Road, New England Highway, John Renshaw Drive, Hunter Expressway, New England Highway, Golden Highway, Boothenba Road,Troy Bridge Road, Bunglegumbie Road, Mitchell Highway, Manildra Street, Derribong Avenue, Algalah Street, Tomingley Road, Newell Highway, Thomas Street, Moulden Street,Back Trundle Road, Ross Road, Henry Parkes Way, Westlime Road, Hartigan Avenue, Newell Highway, Compton Road, Showground Road, Newell Highway, Sturt Highway, Sandigo Road, Muntz Road.

GPS LINK: https://goo.gl/maps/Vwd1QXaorcU3KMkX6

6.0 Transport conditions

The following are the conditions and pinch points for this route:

- No unnecessary noise to be made before 7.00am.
- A prestart meeting to be held between the truck drivers, Pilots & Police before load departs.
- If for any reason communications fail between any of the pilot, escort of load vehicle occurs, the load is to cease until such time as it can be re-established.
- Load is to travel in the Newcastle and Sydney Metro between 10.00pm and 5.00am weekdays, and 10.00pm and 8.00am weekends. public holiday period.
- Load is to travel in rural areas in daylight hours only.
- Load will require a minimum 2 x police escort & 4 x Company Pilots.
- Client to give adequate access for load to access Avonleigh Solar farm.
- Roadwork's to be checked with RMS 7 days prior to leaving and relayed to client with any potential problems.
- Load to travel at an average speed of 20 km p/hr. However, the load will slow down for bridge crossings, corners and inclines/declines.
- Portable VMS board to travel with the load.
- Load to traverse bridge structures as per TfNSW bridge investigation report.
- Permits/Approval letters from state government authorities to access their networks on this route are to be carried with load.
- Permits/Approval letter from Local councils to access their networks on this route are to be carried with load.
- Permits/Approval letter from Electrical/Communication authorities to pass under their networks on this route are to be carried with load.

7.0 Fatigue scheduling:

REX J ANDREWS PTY LTD
ENGINEERED TRANSPORTATION

Sydney
PO Box 271, Penrith NSW 2751
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Trip Schedule

Schedule Details Avonleigh Solar Project
Transportation of a power transformer in a beamset

Sch No SCH02274
Date 21/02/2022 1:28:12 pm
Written By Warrick Andrews
Consulted Carl Andrews

Schedule Notes:
- This Schedule has been written based on values known at the time for good driving conditions and no known fatigue related issues prior to starting the trip.
- Do not drive to the schedule if you fell tired. Stop revive survive
- No attempt should be made to make up for lost time on a schedule.
- Please modify all times according to your real start time.
- You must still fill in your Logbook, exactly as the hours you have worked.

Please work with the Scheduler who wrote this to make the schedule better for all.

Start	End	Hr	Day	Km	avg	Type	Location	Notes
0:15am	0:30am	0.25	1	0	0	Working	Mayfield	Toolbox and prestart
0:30am	5:30am	5.00	1	103	21	Driving	Mayfield to Warkworth	Loaded travel
5:30am	6:00am	0.50	1	0	0	Paid Rest	Warkworth	30 Minute rest break
6:00am	11:00am	5.00	1	94	19	Driving	Warkworth to Merriwa	Loaded travel
11:00am	11:59pm	12.98	1	0	0	Rest	Merriwa	Minimum 7 hour rest break
12:00am	5:45am	5.75	2	0	0	Rest	Merriwa	Minimum 7 hour rest break
5:45am	6:00am	0.25	2	0	0	Working	Merriwa	Toolbox and prestart
6:00am	11:00am	5.00	2	109	22	Driving	Merriwa to Dunedoo	Loaded travel
11:00am	11:30am	0.50	2	0	0	Paid Rest	Dunedoo	30 Minute rest break
11:30am	4:30pm	5.00	2	117	23	Driving	Dunedoo to Narromine	Loaded travel
4:30pm	11:59pm	7.48	2	0	0	Rest	Narromine	Minimum 7 hour rest break
12:00am	5:45am	5.75	3	0	0	Rest	Narromine	Minimum 7 hour rest break
5:45am	6:00am	0.25	3	0	0	Working	Narromine	Toolbox and prestart
6:00am	11:00am	5.00	3	112	22	Driving	Narromine to Parkes	Loaded travel
11:00am	11:30am	0.50	3	0	0	Paid Rest	Parkes	30 Minute rest break
11:30am	4:30pm	5.00	3	129	26	Driving	Parkes to West Wyalong	Loaded travel
4:30pm	11:59pm	7.48	3	0	0	Rest	West Wyalong	Minimum 7 hour rest break

Stop, Revive, Survive

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Please work with the Scheduler who wrote this to make the schedule better for all.

Start	End	Hr	Day	Km	avg	Type	Location	Notes
12:00am	5:45am	5.75	4	0	0	Rest	West Wyalong	Minimum 7 hour rest break
5:45am	6:00am	0.25	4	0	0	Working	West Wyalong	Toolbox and prestart
6:00am	11:00am	5.00	4	125	25	Driving	West Wyalong to Grong Grong	Loaded travel
11:00am	11:30am	0.50	4	0	0	Paid Rest	Grong Grong	30 Minute rest break
11:30am	4:30pm	5.00	4	39	8	Driving	Grong Grong To Sandigo	Loaded travel
4:30pm	11:59pm	7.48	4	0	0	Rest		

Stop, Revive, Survive

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8.0 Transport approvals required

Approvals will need to be sought from the following departments.

- NHVR
- TfNSW
- TMC
- NSW Police
- ARTC
- Local councils
- Power service providers
- Telstra

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9.0 Travel dates

TBC, Likely Q3 2022

10.0 Managing queued traffic behind the load.

During the journey the interaction with other road users will require management of queued traffic.

The protocol to provide queued traffic an opportunity to pass the load will be reliant on the rear pilot constantly monitoring the queue of traffic and relaying this information back to the convoy, the lead pilot / Police in conjunction with the driver will identify suitable areas that allow a safe passing point for the passing vehicles.

The lead escort / Police escort will also determine safe areas to halt the load to allow backed up vehicles to pass. Safe pull over areas can include turn off into Private Roads and/or other roads, pull over on the shoulder during over taking lanes, designated pull over/ rest stop areas or service stations, these areas will be a hardstand area, or an area wide enough for the escort to direct vehicles around the combination.

The load MUST pull over or slow to allow the backed-up vehicles to pass. Rear pilot will inform all other pilots and driver when there has been a lag from last pull over and if other cars have been following for a short distance, in this instance apply the passing protocol again, this will continue throughout the journey as required to ensure queued traffic do not experience excessive delays. The driver and pilots will also allow vehicles to pass at any opportunity that allows a safe area for this vehicle and its load to pull over safely and will.

11.0 Interacting with roadwork:

Roadworks to be checked prior to load departing. TfNSW/TMC will provide RJA with a list of conflicts. RJA will contact each of these conflicts and seek approval to pass through their workzone.

The lead pilot will make contact with the road crews to advise of the nature of the load, size, dimensions, to establish if the load is ok to enter the work zone.

In this instance the convoy will work with all reasonable instructions from the road crew to coordinate the safe passage of the load through the affected areas.

Pilots, Police and local traffic controllers will work together to facilitate the necessary actions required to travel through the work zone.

12.0 Emergency Contacts & plans.

1st Point of contact: RJA Operations 0247217633
2nd Point of contact: Rex J Andrews's supervisor 24 hrs. (Carl Andrews 0419219890)

STANDARD EMERGENCY NUMBERS IF REQUIRED

- Main Emergency number (000)
- NSW Traffic Operations (02 88821219)
- TMC Operations room (1800 679782) or (1300725886)
- Essential Energy (132080)
- Ausgrid (131388)
- GRS Towing 1300 550 600

- In the event of an emergency situation, such as breakdown, the load will be moved to the left-hand lane/shoulder to ensure minimal traffic impacts; police and pilots (Under the direction of the police) will manage traffic flow. In such instances the TMC should be promptly advised so that all necessary warnings can be made.
- Where a tow is required, the trailer will be unhooked from the prime mover and a standby truck be called. In such instances the TMC should be promptly advised so that all necessary warnings can be made.
- If police decide that the movement should be suspended as a result of time or potential traffic impacts the trailer with the load will be moved to a safe parking location and the TMC will be notified.
- In the event of bad weather, the driver is to notify the first point of contact before departing.
- If the road is blocked between the pickup location and drop off location, then the load is not to depart.
- Roadwork's to be checked with TfNSW 2 days prior to leaving and relayed to client with any potential problems.
- Route to be checked with Live Traffic and TMC 2 days before travel and on the night of travel before departure

13.0 Emergency stopping / pulling up for rest areas:

In the event of an emergency or scheduled rest break, establish positive communications with all pilots and driver and identify the next suitable area to halt the load, rear pilot should remain 200 metres behind the load to warn approaching traffic.

Ensure the load is as far to the left as possible so as to not impede any traffic from passing.

If the breakdown is major and requires a mechanic to attend contact the TMC and advise them of the disruption to traffic. Minor repairs that can be rectified in a short time do not require the TMC to be advised.

In the event that road works are encountered on route lead pilot is to call in on the nominated UHF channel and advise the local traffic control of the inbound load and await approval to enter the work zone.

Follow normal traffic management procedures as out lined in: SOP_030 Traffic Management Procedures.

The suggested rest areas are an indication only and dependant on the local traffic movements and occupancy of these rest areas it may not be possible to get off the road.

In this instance the lead pilot should travel ahead to identify the next suitable area.

This methodology can also be adopted to allow built up traffic to pass by slowing the load down and easing into break down areas to allow traffic to pass before continuing on.

Listed in the index are Emergency parking areas on route.

14.0 Transport plan & pinch points: Newcastle Port to Sandigo

This route took us via: Selwyn street, George Street, Industrial Drive, Maitland Road, U-Turn at Old Maitland Road, Maitland Road, Newcastle Inner City Bypass, Newcastle Road, Thomas Street, Newcastle Link Road, Hunter Expressway, New England Highway, Golden Highway, Boothenba Road,Troy Bridge Road, Bunglegumbie Road, Mitchell Highway, Manildra Street, Derribong Avenue, Algalah Street, Tomingley Road, Newell Highway, Thomas Street, Moulden Street, Back Trundle Road, Ross Road, Henry Parkes Way, Westlime Road, Hartigan Avenue, Newell Highway, Compton Road, Showground Road, Newell Highway, Sturt Highway, Sandigo Road, Muntz Road.

Distance: 828 Kilometres

GPS Link: https://goo.gl/maps/Vwd1QXaorcU3KMkX6

KEY	
CRITICAL	
CAUTION	
EMERGENCY PARKING	

KM index	Location	Section of road	Current clearance	Procedure	Notes
0.0	Mayfield	Mayfield #4 berth onto Selwyn Street GPS link: https://goo.gl/maps/afLwPYKuNdm	Length: 70.0 metres Width: 8.5 metres Height: N/A	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
0.4	Mayfield	Selwyn Street rail crossing GPS link: https://goo.gl/maps/AmohE54hKSz	Width: 9.0 metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
1.3	Mayfield	Selwyn Street onto Industrial Drive via George Street GPS link: https://goo.gl/maps/gXeHvBtCp4D2	Length: 70.0 metres Width: 9.0 metres Height: N/A	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
5.5	Mayfield West	Industrial Drive onto Maitland Road GPS link: https://goo.gl/maps/Kn49dhWG2qG2	Length: 50.0 metres Width: 9.0 metres Height: 5.8	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
8.0	Sandgate	Maitland Road U-turn procedure at Inner City Bypass intersection GPS link: https://goo.gl/maps/meQGKpGdRuvCTPgr7	Length: 80.0 metres Width: 10.0 metres Height: N/A	Travel to the incorrect side of the road.	Load is to cross to incorrect side (Southbound lanes) of Maitland Road at the intersection of the Inner-City Bypass. Then travel on the incorrect side (Southbound Lanes) of Maitland road through to Old Maitland Road. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
8.4	Sandgate	Maitland Road onto Old Maitland Road GPS link: https://goo.gl/maps/RGSB79x8xbvj4wqe6	Length: 50.0 metres Width: 7.0 metres Height: N/A	Left hand turn	Load is to turn from the southbound lanes on Maitland Road into Old Maitland Road. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

KM index	Location	Section of road	Current clearance	Procedure	Notes
8.5	Sandgate	Old Maitland Road onto Maitland Road GPS link: https://goo.gl/maps/MHtTKSrgbtgGC4T37	Length: 50.0 metres Width: 7.0 metres Height: N/A	Reverse back onto Maitland Road	The load is to reverse back onto the Southbound lanes of Maitland Road, before travelling south on the correct side of Maitland Road towards the Inner-City bypass. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
9.0	Sandgate	Maitland Road onto Newcastle Inner City bypass GPS link: https://goo.gl/maps/WR97pBUPiG7ULd757	Length: 80.0 metres Width: 10.0 metres Height: N/A	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
9.0 to 14.0	Sandgate to Jesmond	Newcastle Inner City bypass GPS link: https://goo.gl/maps/ieyMJatCTV5NHUHK7	HEIGHT: 5.45 metres	Travel directly ahead	The Newcastle inner city bypass has 4 structures that the load will travel under. The lowest of these is Janet street which has a clearance of 5.45 metres in the left lane, and 5.7 metres in the right lane.
14.0	Jesmond	Newcastle Inner City bypass onto Newcastle Road GPS link: https://goo.gl/maps/1MUmyjNyydDakRZx6	Length: 80.0 metres Width: 10.0 metres Height: N/A	Right hand turn at the roundabout before taking the second exit onto Newcastle Road	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
15.5	Wallsend	Newcastle Road onto the Thomas Street GPS link: https://goo.gl/maps/1DCZxPpZT41RFd8w7	Length: 60.0 metres Width: 7.0 metres Height: N/A	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
16.5	Wallsend	Thomas Street onto Newcastle Link Road GPS link: https://goo.gl/maps/J6kSa2e99L5gMxbD8	Length: 100.0 metres Width: 12.0 metres Height: N/A	Travel directly ahead	No problems with this section of road.
19.0	Wallsend	Newcastle Link Road at Transfield Avenue GPS link: https://goo.gl/maps/noHnEkQTa641xHT49	Length: 60.0 metres Width: 9.0 metres Height: N/A	Travel directly ahead through the roundabout	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
21.0	Cameron Park	Newcastle Link Road at Minmi Road GPS link: https://goo.gl/maps/bPWYt3pzVRyWd7QeA	Length: 60.0 metres Width: 9.0 metres Height: N/A	Travel directly ahead through the roundabout	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

KM index	Location	Section of road	Current clearance	Procedure	Notes
23.0	Cameron Park	Newcastle Link Road onto the Hunter Expressway GPS link: https://goo.gl/maps/WNCELytZxc2hV7YR7	Length: 80.0 metres Width: 7.0 metres Height: N/A	Travel directly ahead	No problems with this section of road.
64.0	Branxton	The Hunter Expressway onto The New England Highway https://goo.gl/maps/7rauNuxzqjq	Length: 100.0 Mtrs Width: 12.0 Mtrs	Travel directly ahead	No problems with this section of road.
72.0	Whittingham	The New England Highway onto the Golden Highway https://goo.gl/maps/nAnfkYfeUn42	Length: 70.0 Mtrs Width: 8.0 Mtrs	Left Hand turn	The NSW Government is currently upgrading this intersection. At this stage the data that is available for the upgrades shows that the section of road that we would need to access does not change considerably. However, it is recommended that you monitor the progress of the upgrades, and that any changes are thoroughly looked at.
72.1	Whittingham	Golden Highway https://goo.gl/maps/R86RFuPnmFU2	115.0 x 9.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
73.0	Whittingham	Golden Highway over rail bridge https://goo.gl/maps/5NwDQofandvvMKfY9	Length: 90 metres Width: 9.0 Metres	Travel directly ahead in the centre of the road.	Approval from Rail company required to cross this structure. Travel over this structure may have specific conditions.
82.3	Mount Thorley	Golden Highway over rail bridge https://goo.gl/maps/qTxSbkxPu87L5hx4A	Length: 90 metres Width: 9.0 Metres	Travel directly ahead in the centre of the road.	Approval from Rail company required to cross this structure. Travel over this structure may have specific conditions.
82.4	Whittingham	Golden Highway intersection with the Putty Road https://goo.gl/maps/7hQdEmK1EgE2	Length: 65 metres Width: 6.0 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
82.5	Mount Thorley	Golden Highway https://goo.gl/maps/zGvdupDuixx	100.0 x 10.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
85.6	Mount Thorley	Golden Highway over rail bridge https://goo.gl/maps/ipGU4USXmWZ8GkJs6	Length: 90 metres Width: 9.0 Metres Height: 5.2 metres	Travel directly ahead in the centre of the road.	Approval from Rail company required to cross this structure. Travel over this structure may have specific conditions.
85.8	Mount Thorley	Golden Highway intersection with the Putty Road https://goo.gl/maps/QS9quvSyHYWaFHoX9	Length: 45 metres Width: 6.0 Metres	Right hand turn	Loads to turn onto the incorrect side of the Golden Highway, and travel on the incorrect side for 300 metres. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

KM index	Location	Section of road	Current clearance	Procedure	Notes
103.0	Warkworth	Golden Highway https://goo.gl/maps/Y6V6EXaCwxq	100.0 x 8.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
112.0	Jerrys Plains	Golden Highway through Jerrys Plains village https://goo.gl/maps/WgSCRsJ9ZGt	Length: 60 metres Width: 6.0 Metres	Left hand than right hand turn	No problems with this section of road.
131.0	Ogilvy	Golden Highway https://goo.gl/maps/58Tj9ojs7CC2	6% gradient	Travel directly ahead	This section of road has a steep mountain range that will require additional pull trucks to assists loads that exceed 80T gross weight. Additionally, the NSW Government is currently upgrading this section of road. It is recommended that you monitor the progress of the upgrades, and that any changes are thoroughly looked at.
137.0	Denman	Golden Highway at Denman Road https://goo.gl/maps/sf4PNnycxB32	Length: 55 metres Width: 6.0 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
138.0	Denman	Golden Highway over Denman Bridge GPS link: https://goo.gl/maps/UToXyFe3QKu	5.7 Metres height clearance 6.9 Metres width clearance	Travel directly ahead in the centre of the lane	A width of 6.5 metres and a height of 5.5 metres should not be exceeded of this structure. Load to be lowered to 5.5 metres before travelling over this structure.
158.0	Sandy Hollow	Golden highway https://goo.gl/maps/2THBuV165xx	50.0 x 4.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
159.0	Sandy Hollow	Golden Highway under safety Cam https://goo.gl/maps/b7t9zH2ankJcvWpT6	Height: Left: 6.3 metres	Travel directly ahead on the correct side	No problems with this section of road.
170.0	Gungal	Golden highway https://goo.gl/maps/WDoL2LfeCoP2	70.0 x 6.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
187.0	Merriwa	Golden Highway under safety Cam https://goo.gl/maps/D92rzQ8vnUcYsqj56	Height: Right: 6.4 metres	Travel directly ahead on the correct side	No problems with this section of road.
197.0	Merriwa	Golden highway https://goo.gl/maps/NqrWzTsRmnt	100.0 x 5.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
247.0	Cassilis	Golden highway https://goo.gl/maps/vs6YMT6TxCA2	200.0 x 8.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
273.0	Leadville	Golden highway https://goo.gl/maps/ujxMGukhopeFWRhb8	200.0 x 8.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
306.0	Dunedoo	Golden Highway over rail crossing https://goo.gl/maps/wsyNKfcoAij3SosY9	Length: 90 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.

KM index	Location	Section of road	Current clearance	Procedure	Notes
306.1	Dunedoo	Golden Highway intersection with Wargundy Street https://goo.gl/maps/WzACUHey3jYadj1K7	Length: 60 metres Width: 6.0 Metres	Right hand bend	No problems with this section of road.
357.0	Ballimore	Golden Highway https://goo.gl/maps/RuKKrfHarw1Mjy5E9	150.0 x 8.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
365.0	Ballimore	Golden Highway over rail crossing https://goo.gl/maps/yb15Kz6R2r3E69fj6	Length: 90 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
372.0	Dubbo	Golden Highway onto Boothenba Road https://goo.gl/maps/TJLi5W4ir11ejgtb6	Length: 50 metres Width: 6.5 Metres	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
384.0	Dubbo	Boothenba Road over rail crossing https://goo.gl/maps/72ageimPLqPWYY7M9	Length: 90 metres Width: 6.5 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
384.1	Dubbo	Boothenba Road onto Troy Bridge Road https://goo.gl/maps/2u5uRf2BvKxseoFm9	Length: 90 metres Width: 6.5 Metres	Travel directly ahead	No problems with this section of road.
387.0	Dubbo	Troy Bridge Road onto Bunglegumbie road https://goo.gl/maps/6Uke9jwPypNYVPux5	Length: 90 metres Width: 6.5 Metres	Travel directly ahead	No problems with this section of road.
403.0	Dubbo	Bunglegumbie road onto the Mitchell Highway https://goo.gl/maps/jCWqmaQsd3fChp837	Length: 50 metres Width: 6.5 Metres	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
423.0	Narromine	Mitchell Highway onto Manildra Street https://goo.gl/maps/hFG648tcSMUHxJ8h6	Length: 40 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
423.1	Narromine	Manildra Street over rail crossing https://goo.gl/maps/4s2HYJJfJQ5pGbKg7	Length: 60 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
423.2	Narromine	Manildra Street onto Derribong Avenue https://goo.gl/maps/776aPaxgsFTWi6qL6	Length: 40 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
423.5	Narromine	Derribong Avenue onto Algalah Street https://goo.gl/maps/9s8cb8G4T2c75t1V8	Length: 40 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
425.0	Narromine	Algalah Street onto Tomingley Road https://goo.gl/maps/EWfZYo3Xos6T3J8A8	Length: 60 metres Width: 7.0 Metres	Travel directly ahead	No problems with this section of road.
460.0	Tomingley	Tomingley Road onto the Newell Highway https://goo.gl/maps/NJtXmHCFHxaiMaq39	Length: 60 metres Width: 7.0 Metres	Travel directly ahead	No problems with this section of road.

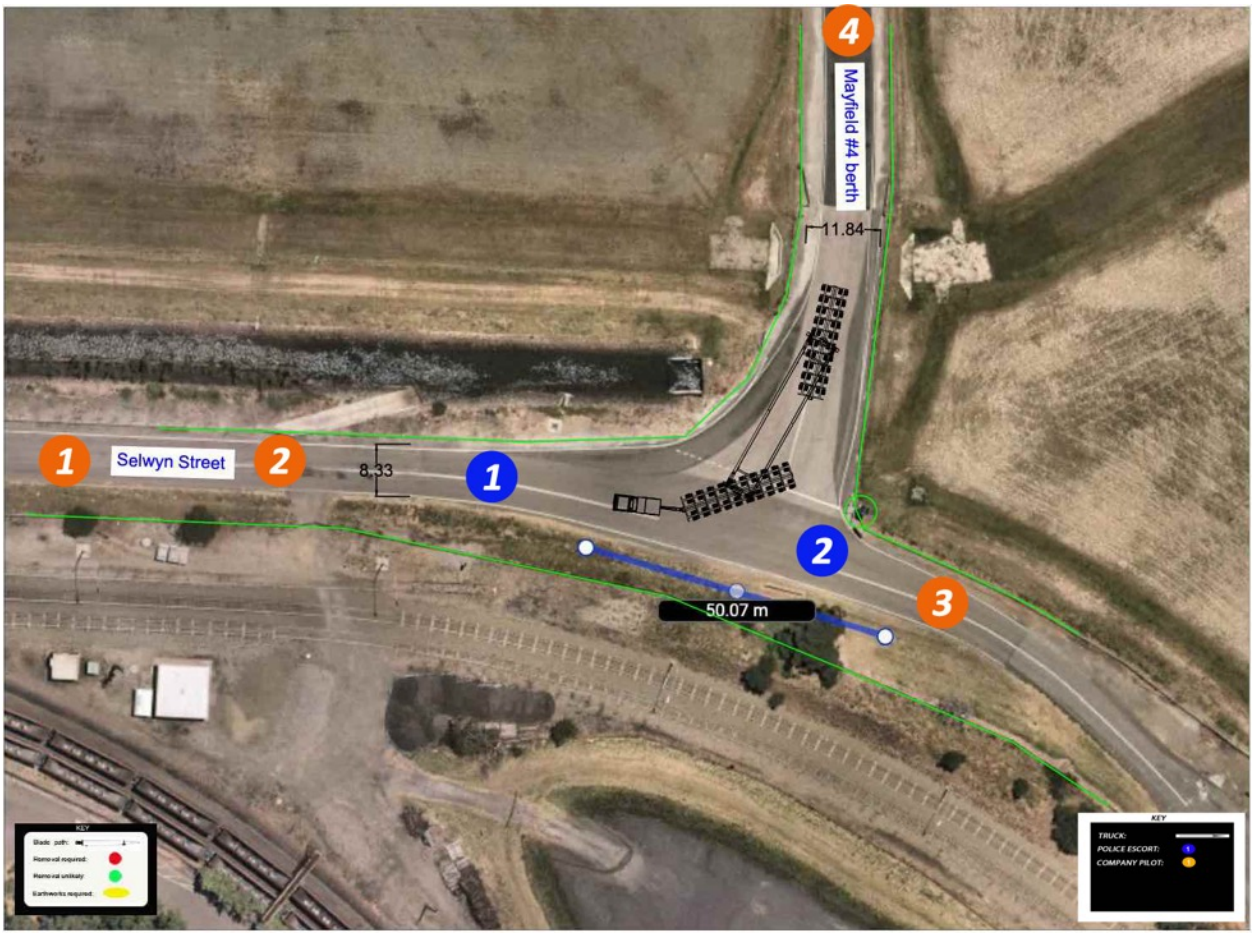
KM index	Location	Section of road	Current clearance	Procedure	Notes
461.0	Tomingley	Newell Highway https://goo.gl/maps/ADMke5At2A1Uy1z4A	200.0 x 15.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
462.0	Tomingley	Newell Highway under safety Cam https://goo.gl/maps/9Vqu9xXxRwhHt4Uk6	Height: Right: 6.8 metres	Travel directly ahead on the correct side	No problems with this section of road.
463.0	South Tomingley	Newell Highway https://goo.gl/maps/1q8f6HJ2zsZSxup66	150.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
475.0	Peak Hill	Newell Highway https://goo.gl/maps/orKTBB8wobK6exsc6	90.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
476.0	Peak Hill	Newell Highway under safety Cam https://goo.gl/maps/sAbh8zwZzZVMriD2A	Height: Right: 6.3 metres	Travel directly ahead on the correct side	No problems with this section of road.
499.0	Alectown	Newell Highway https://goo.gl/maps/GMGbEJHAEkeWuRyz5	90.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
525.0	Parkes	Newell Highway onto Thomas Street https://goo.gl/maps/fSnFVWPr78RePSTz9	Length: 55 metres Width: 6.5 Metres	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
527.0	Parkes	Thomas Street onto Moulden Street https://goo.gl/maps/HpYrcwcx8BHrUmfc8	Length: 55 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
527.4	Parkes	Moulden Street onto Back Trundle Road https://goo.gl/maps/1JA2hh5EMZ3G3QfS9	Length: 55 metres Width: 6.5 Metres	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
527.5	Parkes	Back Trundle Road onto Ross Road https://goo.gl/maps/wTLkjNyCVjLWBSuGA	Length: 55 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
527.8	Parkes	Ross Road onto Henry Parkes Way https://goo.gl/maps/UKvs2QekwwFuP6oS8	Length: 55 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
528.0	Parkes	Henry Parkes Way onto Westlime Road https://goo.gl/maps/Uk2nuLS7xvfnv5dt6	Length: 55 metres Width: 6.5 Metres	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
529.0	Parkes	Westlime Road onto Hartigan Ave https://goo.gl/maps/XtKgPrWcZHY3im65A	Length: 55 metres Width: 6.5 Metres	Travel directly ahead	No problems with this section of road.
530.0	Parkes	Hartigan Avenue under traffic signal https://goo.gl/maps/sQxVxzZivbDX7E3j6	Height: Left: 5.5 metres	Travel around the traffic signal on the incorrect side of the road.	Traffic signal is too low. Pass on right hand side.

KM index	Location	Section of road	Current clearance	Procedure	Notes
532.0	Parkes	Hartigan Ave onto the Newell Highway https://goo.gl/maps/y3rabftt4HGreX9e6	Length: 55 metres Width: 6.5 Metres	Travel directly ahead	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
533.0	Parkes	Newell Highway over rail crossing https://goo.gl/maps/7tSoLfFManXyKV3T9	Length: 60 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
535.0	Parkes	Newell Highway over rail crossing https://goo.gl/maps/Kxa3shUCMiuKe2sX7	Length: 60 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
542.0	Tichborne	Newell Highway over rail crossing https://goo.gl/maps/gxYUZLLe3jsCEJgD7	Length: 60 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
549.0	Daroobalgie rest area	Newell Highway https://goo.gl/maps/swec16PWh1N8ZbUR7	200.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
563.0	Forbes	Newell Highway intersection with Dowling Street https://goo.gl/maps/DqkvxH4qtWnXvLJ26	Length: 45 metres Width: 6.0 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
563.2	Forbes	Newell Highway https://goo.gl/maps/Hsmjs9pqvZ5UYFAH7	100.0 x 6.5 metres	Parking Bay	Suitable parking for Fatigue breaks.
568.0	Forbes	Newell Highway under safety Cam https://goo.gl/maps/hUdv6YJunC9yfoxF7	Height: Right: 6.4 metres	Travel directly ahead on the correct side	No problems with this section of road.
631.0	Marsden	Newell Highway under safety Cam https://goo.gl/maps/fRpjbRoXfup29Swx6	Height: Right: 6.9 metres	Travel directly ahead on the correct side	No problems with this section of road.
632.0	Marsden rest area	Newell Highway https://goo.gl/maps/AfAfr2wuNTjQMdKT8	200.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
662.0	Wyalong	Newell Highway under safety Cam https://goo.gl/maps/sudP4qYXPWbDB6sL6	Height: Centre: 6.2 metres	Travel directly ahead on the correct side	No problems with this section of road.
664.0	West Wyalong	Newell Highway onto Compton Road https://goo.gl/maps/PeM4uWq5hLiyZiPd8	Length: 55 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
666.5	West Wyalong	Compton Road onto Showground Road https://goo.gl/maps/hts5qARMMWZcvW7R7	Length: 50 metres Width: 6.5 Metres	left hand turn	No problems with this section of road.
667.0	West Wyalong	Compton Road over rail crossing https://goo.gl/maps/KQwsqDkEDASMpB9r8	Length: 50 metres Width: 6.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.

KM index	Location	Section of road	Current clearance	Procedure	Notes
668.5	West Wyalong	Showground Road https://goo.gl/maps/C8GevkquVtpkHjkFA	150.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
669.0	West Wyalong	Showground Road onto the Newell Highway https://goo.gl/maps/yAyBdrZcocEeTBnz6	Length: 50 metres Width: 6.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
687.0	Allena	Newell Highway over rail crossing https://goo.gl/maps/GMHsd5ynEFwzjmnXA	Length: 50 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
715.0	Mirrool	Newell Highway over rail crossing https://goo.gl/maps/kFkwMBL9nfKgL954A	Length: 50 metres Width: 6.5 Metres	Travel directly ahead	Loads to travel over the crossing in the center of the road. Approval required crossing this line, likely cross with caution.
750.0	Ardlethan rest area	Newell Highway https://goo.gl/maps/Na3rzBt25sMnsBya6	200.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
789.0	Grong Grong rest area	Newell Highway https://goo.gl/maps/vBTyD3zJVMcbn6wy9	200.0 x 7.0 metres	Parking Bay	Suitable parking for Fatigue breaks.
802.0	Narrandera	Newell Highway over rail bridge https://goo.gl/maps/YBWuYYyVoZfSUTJ37	Length: 50 metres Width: 7.0 Metres	Travel directly ahead	Loads to travel over the bridge in the center of the road.
803.0	Narrandera	Newell Highway at Whitton Street https://goo.gl/maps/EXcuuBeMsXdhVDtm8	Length: 50 metres Width: 7.5 Metres	Left hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
803.0 to 804.0	Narrandera	Newell Highway (Cadell St) https://goo.gl/maps/Z3ptasM9sGGtaB5A8	Length: 50 metres Width: 7.5 Metres	Travel directly ahead	Trees to be trimmed
805.0	Narrandera	Newell Highway onto Sturt Highway https://goo.gl/maps/uFiCyhp9uF147Wie8	Length: 80 metres Width: 7.5 Metres	Left hand turn	No problems with this section of road.
825.0	Sandigo	Sturt Highway onto Sandigo Road https://goo.gl/maps/c3ZDZEj78aMwmqEh8	Length: 60 metres Width: 7.0 Metres	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.
825.0 to 826.0	Sandigo	Sandigo Road https://goo.gl/maps/DMGEho8QouQxWxiH7	Width: 6.5 Metres	Travel directly ahead	Sandigo Road has been recently sealed and is in good condition.
826.0	Sandigo	Sandigo Road into Muntz Road https://goo.gl/maps/WErjz7kPjHWLPRsP6	Length: 40 metres Width: 6.0 Metres	Right hand turn	Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

KM index	Location	Section of road	Current clearance	Procedure	Notes
826.0 to 8238.0	Sandigo	Muntz Road https://goo.gl/maps/tTfFuMmCxNXziRb56	Width: 6.5 Metres	Travel directly ahead	This road is gravel and in average condition. Load to travel at no more than 10 km's per hour for this section of road.
828.0	Sandigo	Muntz Road into Avonleigh Solar farm https://goo.gl/maps/R3T3az3oQiSRg6GV7	Length: 40 metres Width: 6.0 Metres	Right hand turn	Site to make a suitable entrance for the swept path of this load. Spotter to assist at this pinchpoint. Escorts to control traffic as per plan below for this section of road.

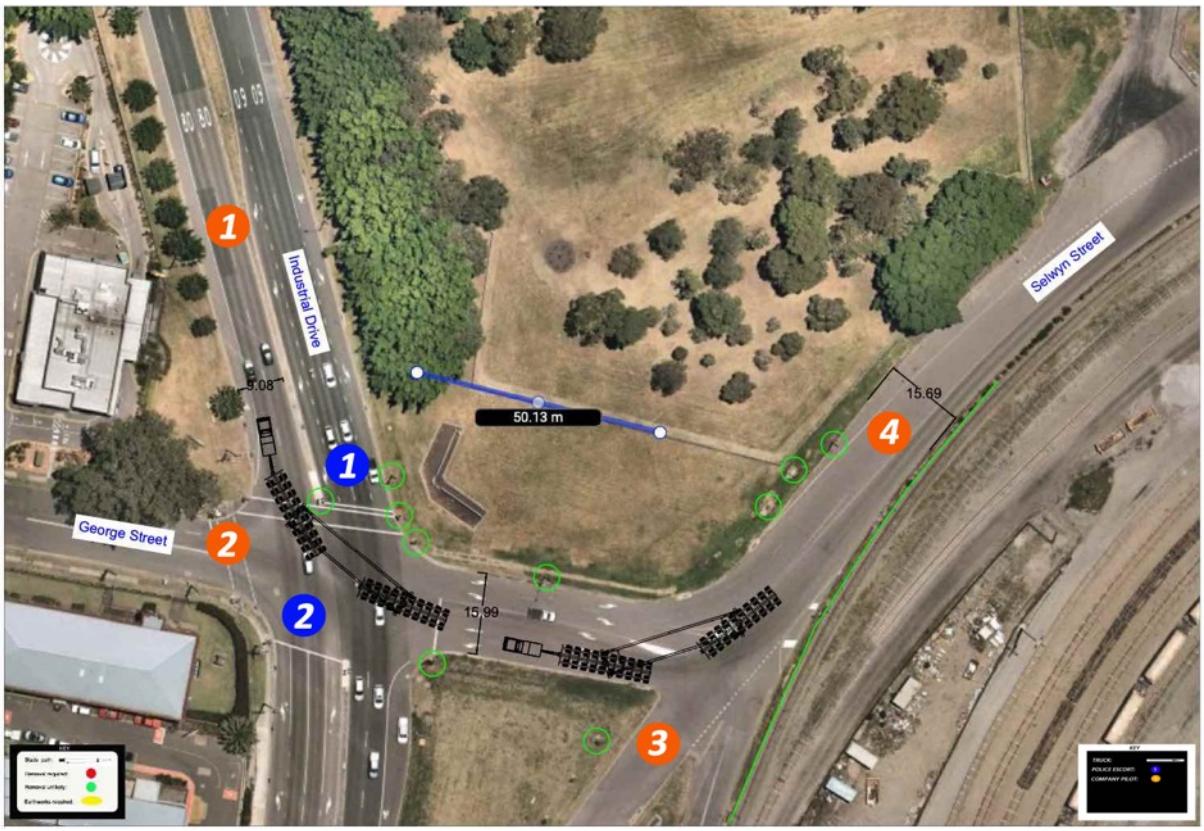
0.0 Km's: Mayfield #4 berth onto Selwyn Street at Mayfield.
Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/afLwPYKuNdm
COMPANY PILOT 1: Warn all eastbound traffic on Selwyn Street.
COMPANY PILOT 2: Warn all eastbound traffic on Selwyn Street.
COMPANY PILOT 3: Warn all westbound traffic on Selwyn Street.
COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.
PINCHPOINT PROCEDURE: Load to turn right from the port access road onto Selwyn Street.
ROAD MODIFICATIONS: Nil.

1.3 Km's: Selwyn Street onto Industrial Drive at Mayfield.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/gXeHvBtCp4D2

COMPANY PILOT 1: Warn all southbound traffic on Industrial Drive.

COMPANY PILOT 2: Warn all eastbound traffic on George Street.

COMPANY PILOT 3: Warn all eastbound traffic on Selwyn Street.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Selwyn Street onto Industrial Drive via George Street.

ROAD MODIFICATIONS: Nil.

5.5 Km's: Industrial Drive onto Maitland Road at Mayfield West.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/Kn49dhWG2qG2

COMPANY PILOT 1: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Industrial Drive onto Maitland Road.

ROAD MODIFICATIONS: Nil.

8.0 Km's: Maitland Road crossover at the intersection of the Newcastle Inner City bypass at Sandgate.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/meQGKpGdRuvCTPgr7

COMPANY PILOT 1: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load is to cross to incorrect side (Southbound lanes) of Maitland Road at the intersection of the Inner-City Bypass. Then travel on the incorrect side (Southbound Lanes) of Maitland Road through to Old Maitland Road.

ROAD MODIFICATIONS: Nil.

8.4 Km's: Maitland Road onto Old Maitland Road at Sandgate.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/RGSB79x8xbvj4wqe6

COMPANY PILOT 1: Warn all traffic in Old Maitland Road.

COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.

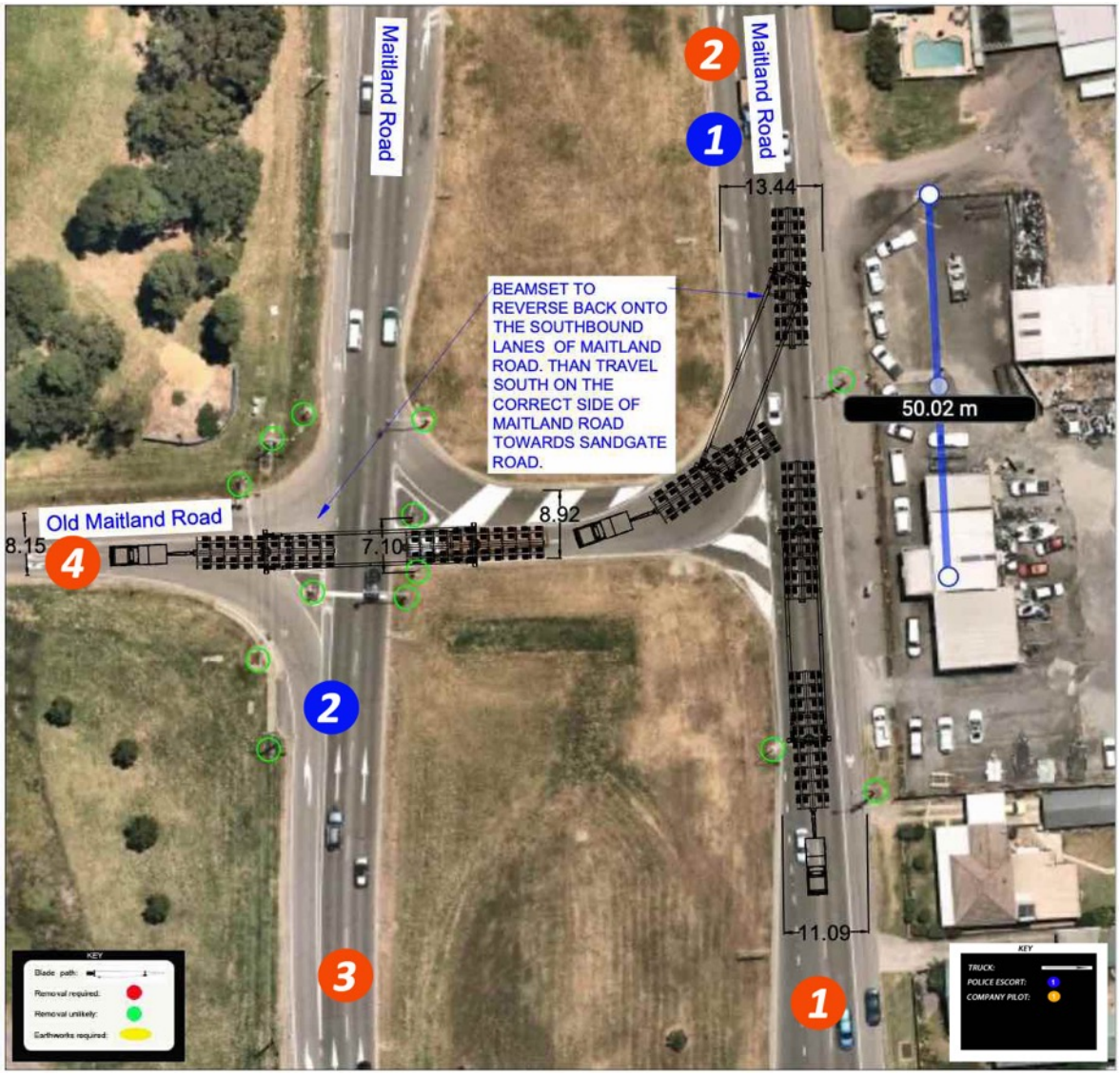
COMPANY PILOT 3: Warn all northbound traffic on Maitland Road.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load is to turn from the southbound lanes on Maitland Road into Old Maitland Road.

ROAD MODIFICATIONS: Nil.

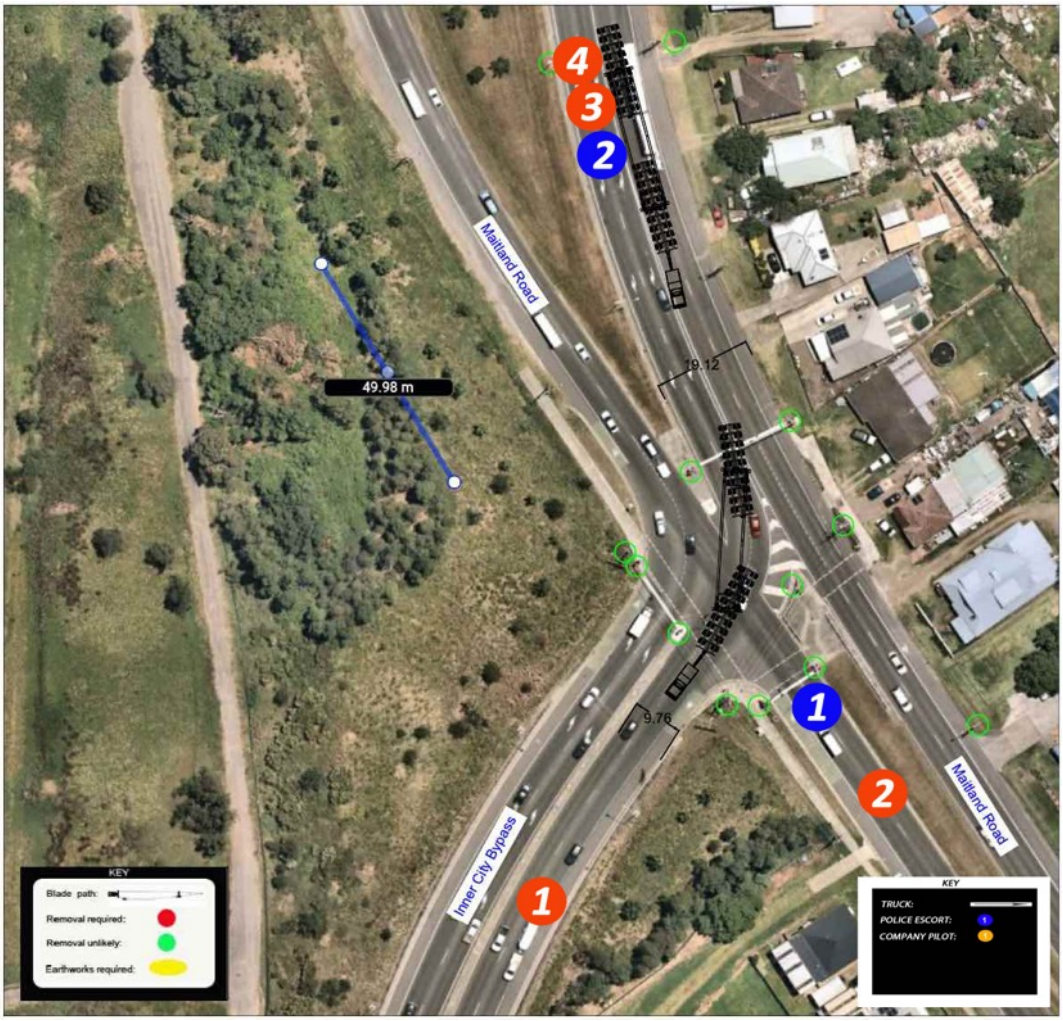
8.5 Km's: Old Maitland Road onto Maitland Road at Sandgate.
Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/MHtTKSrgbtgGC4T37
COMPANY PILOT 1: Warn all northbound traffic on Maitland Road.
COMPANY PILOT 2: Warn all southbound traffic on Maitland Road.
COMPANY PILOT 3: Warn all northbound traffic on Maitland Road.
COMPANY PILOT 4: Warn all traffic in Old Maitland Road.
PINCHPOINT PROCEDURE: The load is to reverse back onto the Southbound lanes of Maitland Road, before travelling south on the correct side of Maitland Road towards the Inner-City bypass.
ROAD MODIFICATIONS: Nil.

9.0 Km's: Maitland Road onto Newcastle Inner City Bypass at Sandgate.

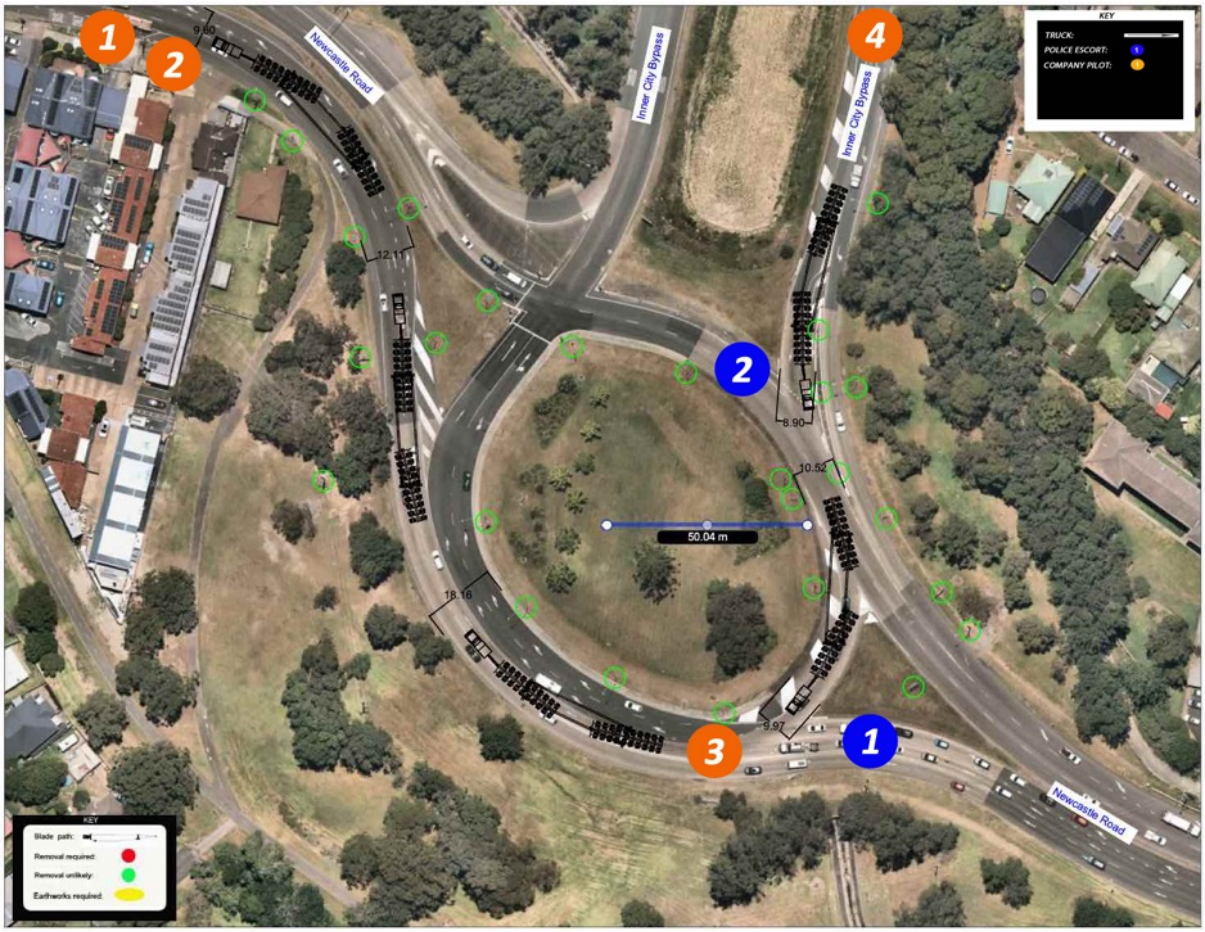
Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/WR97pBUPiG7ULd757
COMPANY PILOT 1: Warn all Northbound traffic on Newcastle Inner City Bypass.
COMPANY PILOT 2: Warn all northbound traffic on Maitland Road.
COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.
COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.
PINCHPOINT PROCEDURE: Load to turn right from Maitland Road onto Sandgate Road.
ROAD MODIFICATIONS: Nil.

14.0 Km's: Newcastle Inner City Bypass onto Newcastle Road at Jesmond.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/1MUmyjNyydDakRZx6

COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Road.

COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Road.

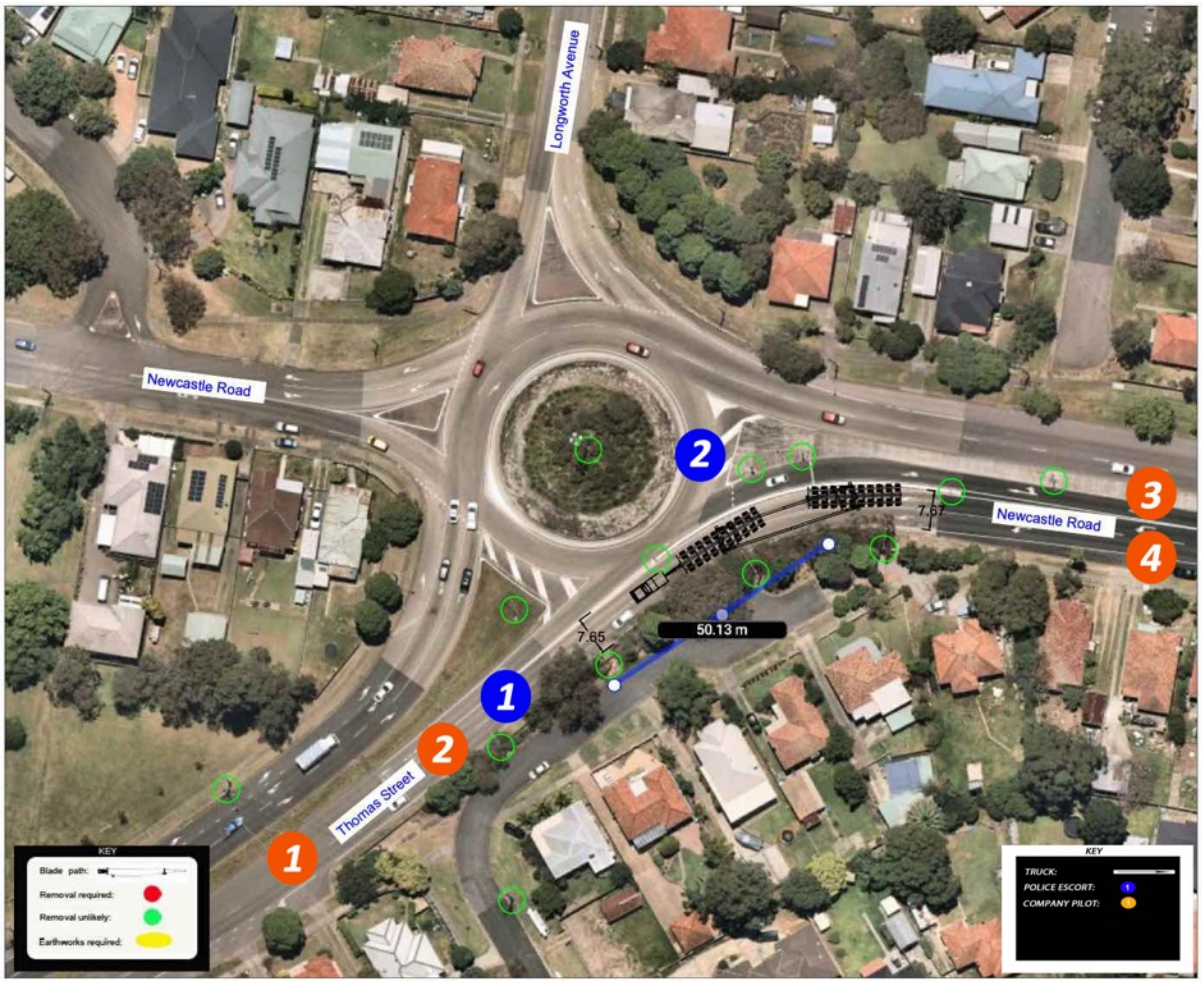
COMPANY PILOT 3: Warn all westbound traffic on Newcastle Road.

COMPANY PILOT 4: Stay 50 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Right hand turn at the roundabout before taking the second exit onto Newcastle Road

ROAD MODIFICATIONS: Nil.

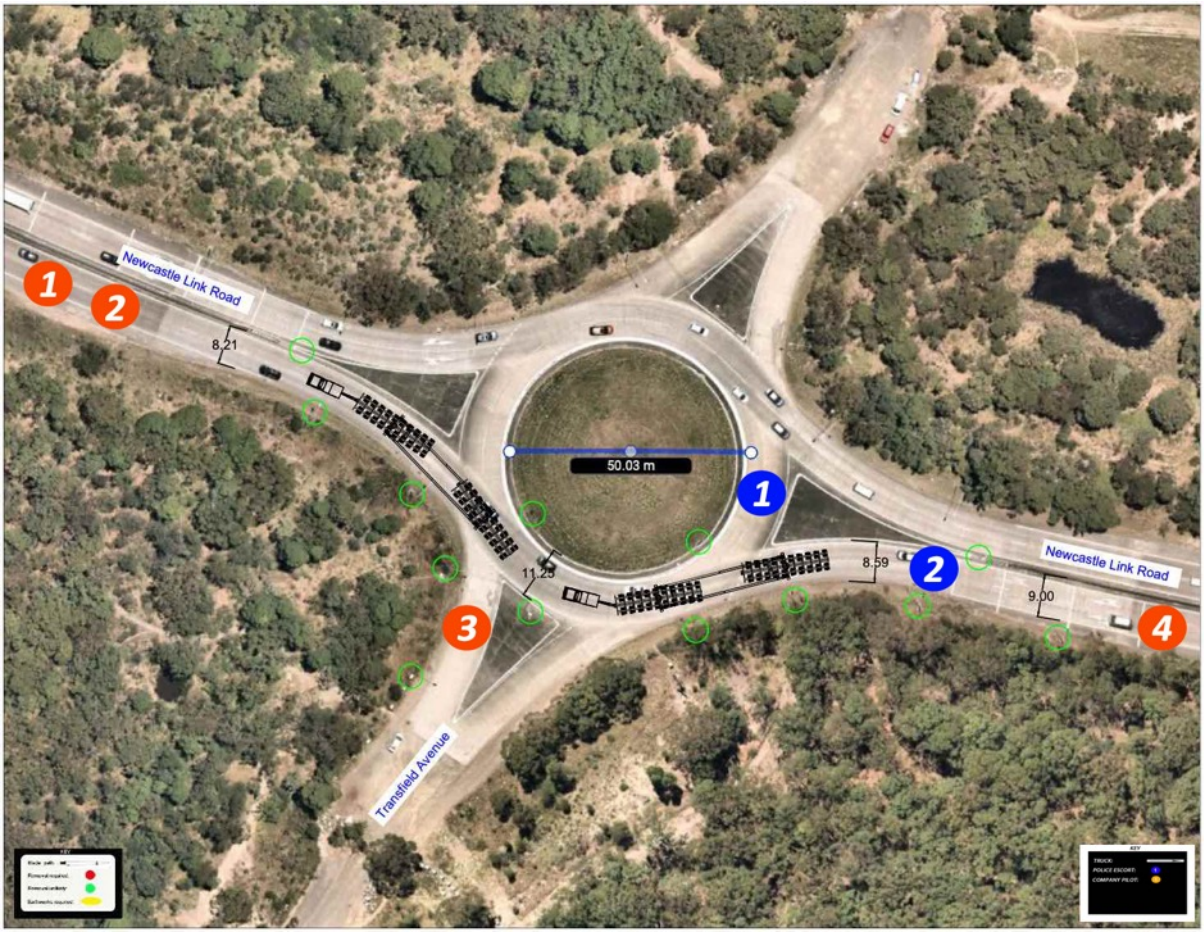
15.5 Km's: Newcastle Road onto Thomas Street at Wallsend.
Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/1DCZxPpZT41RFd8w7
COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Link Road.
COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Link Road.
COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.
PINCHPOINT PROCEDURE: Left hand bend from Newcastle Road onto Thomas Street.
ROAD MODIFICATIONS: Nil.

19.0 Km's: Newcastle Link Road intersection of Transfield Avenue at Wallsend.

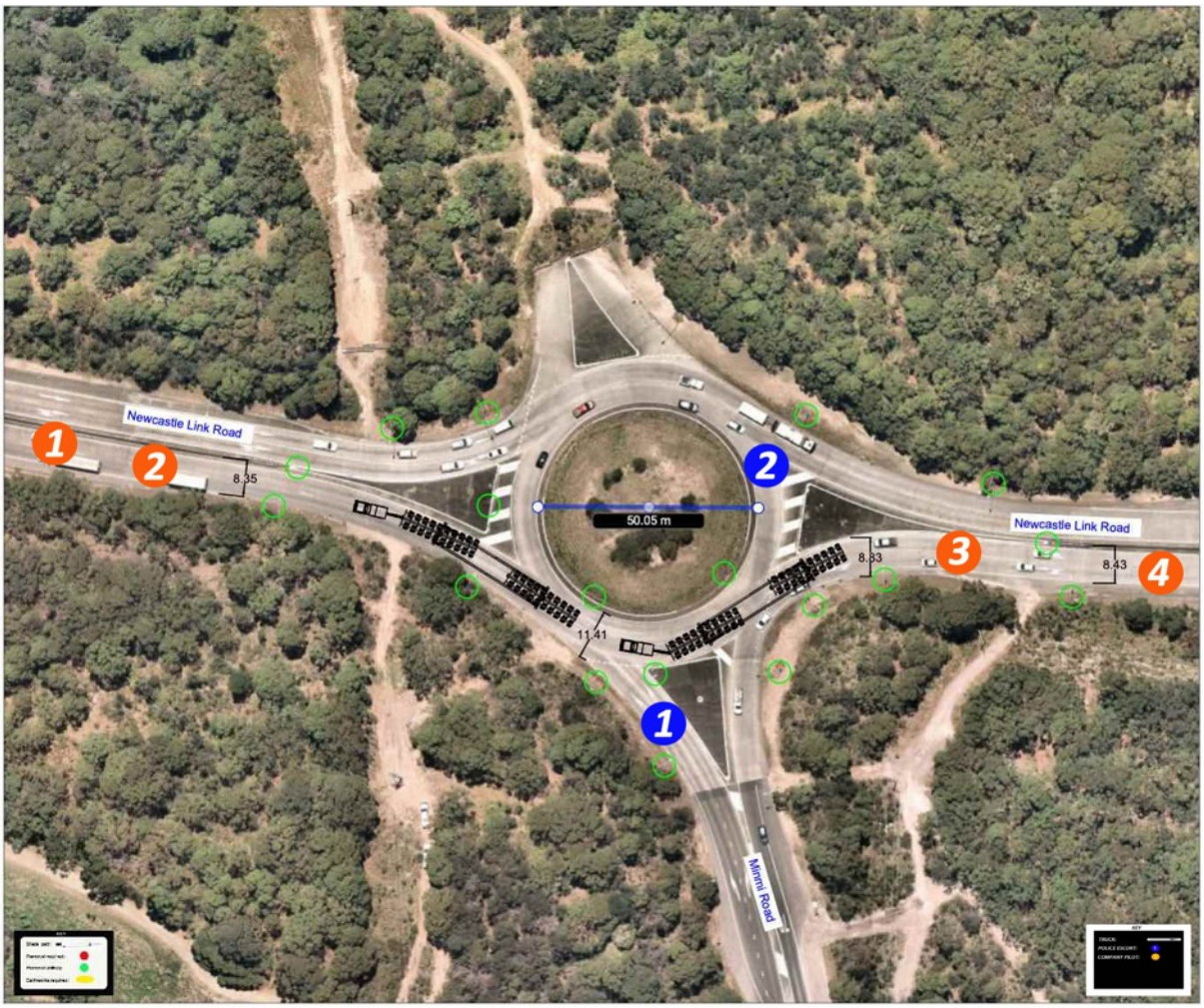
Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/noHnEkQTa641xHT49
COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Link Road.
COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Link Road.
COMPANY PILOT 3: Warn all traffic in Transfield avenue.
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.
PINCHPOINT PROCEDURE: Travel directly ahead through the roundabout.
ROAD MODIFICATIONS: Nil.

21.0 Km's: Newcastle Link Road intersection of Minmi Road at Cameron Park.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/mXYajNbe93622tcLA
COMPANY PILOT 1: Warn all eastbound traffic on Newcastle Link Road.
COMPANY PILOT 2: Warn all eastbound traffic on Newcastle Link Road.
COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.
PINCHPOINT PROCEDURE: Travel directly ahead through the roundabout.
ROAD MODIFICATIONS: Nil.

72.0 Km's: New England Highway onto the Golden Highway at Whttingham.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/nAnfkYfeUn42

COMPANY PILOT 1: Warn all eastbound traffic on the New England Highway.

COMPANY PILOT 2: Warn all eastbound traffic on the Golden Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn left from the New England Highway onto the Golden Highway on the correct side of the road.

ROAD MODIFICATIONS: Nil.

82.4 Km's: Golden Highway at Putty Road intersection at Mount Thorley.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/7hQdEmK1EgE2

COMPANY PILOT 1: Warn all eastbound traffic on the Golden Highway.

COMPANY PILOT 2: Warn all eastbound traffic on the Golden Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

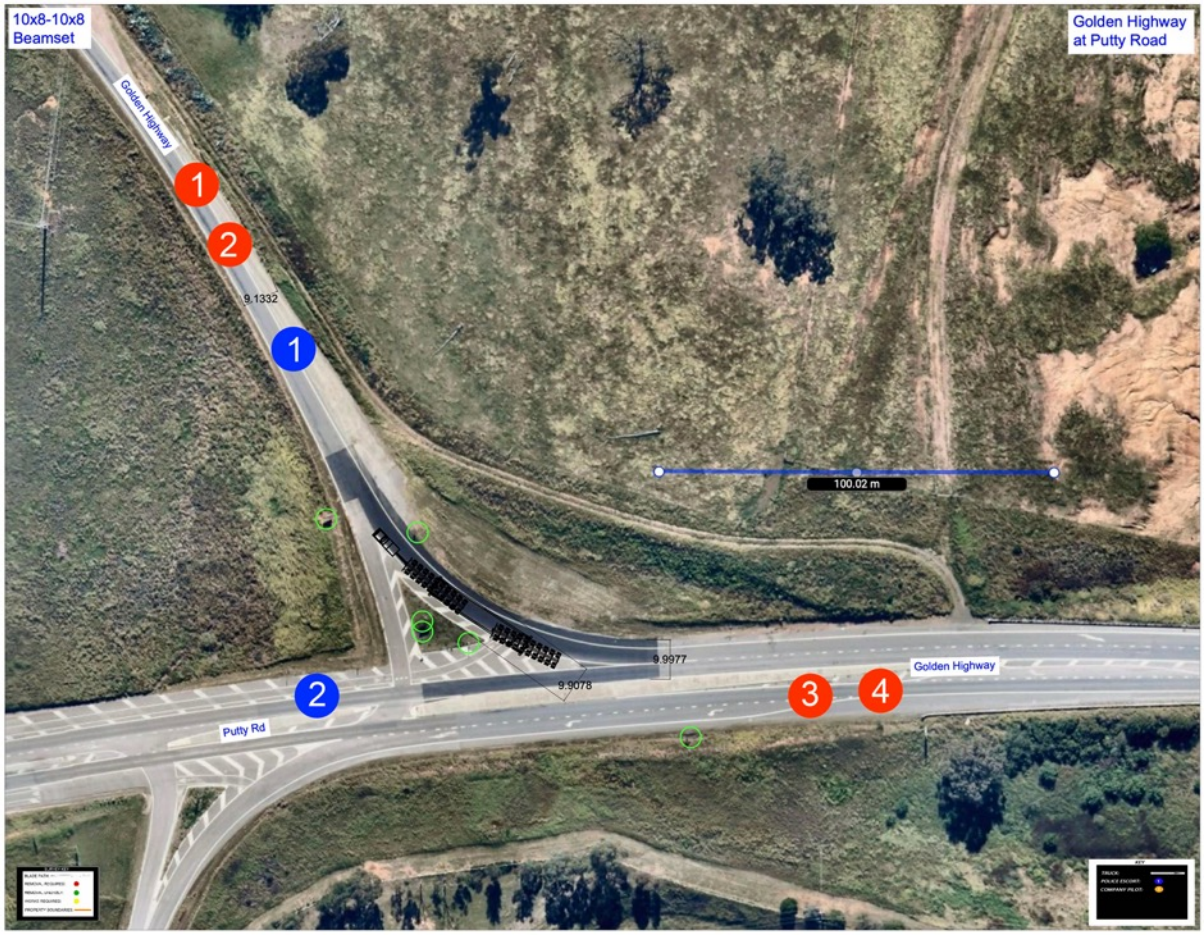
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn left from the Golden Highway onto the Golden Highway on the correct side of the road.

ROAD MODIFICATIONS: Nil.

85.8 Km's: Golden Highway at Putty Road intersection at Mount Thorley.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/QS9quvSyHYWaFHoX9

COMPANY PILOT 1: Warn all eastbound traffic on the Golden Highway.

COMPANY PILOT 2: Warn all eastbound traffic on the Golden Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

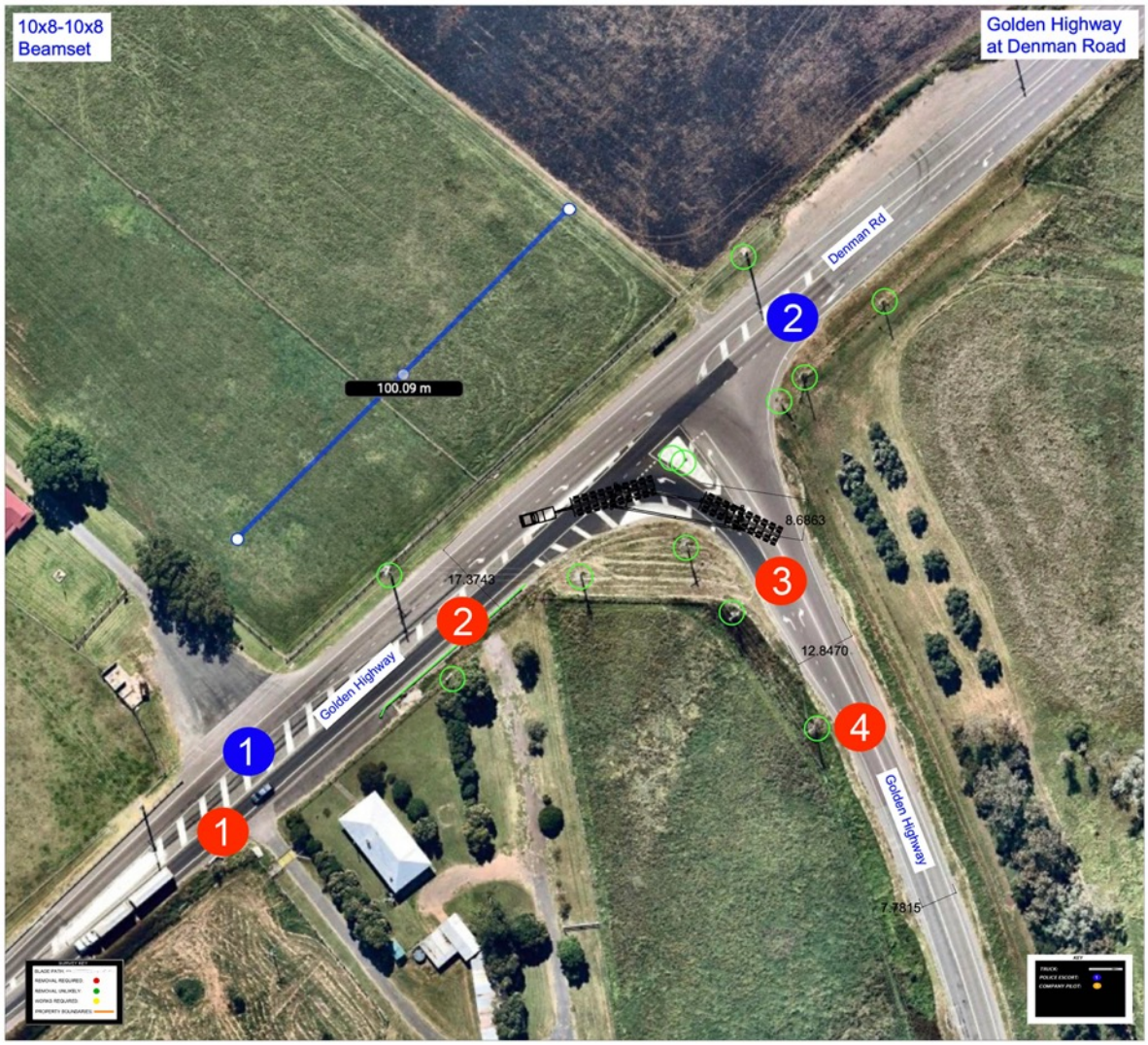
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right onto the incorrect side of the Golden Highway. Pilots and police will need to travel 200 metres west of this intersection and warn/hold all oncoming traffic.

ROAD MODIFICATIONS: Nil.

137.0 Km's: Golden Highway at Denman Road intersection at Denman.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/sf4PNnycxB32

COMPANY PILOT 1: Warn all eastbound traffic on the Golden Highway.

COMPANY PILOT 2: Warn all eastbound traffic on the Golden Highway.

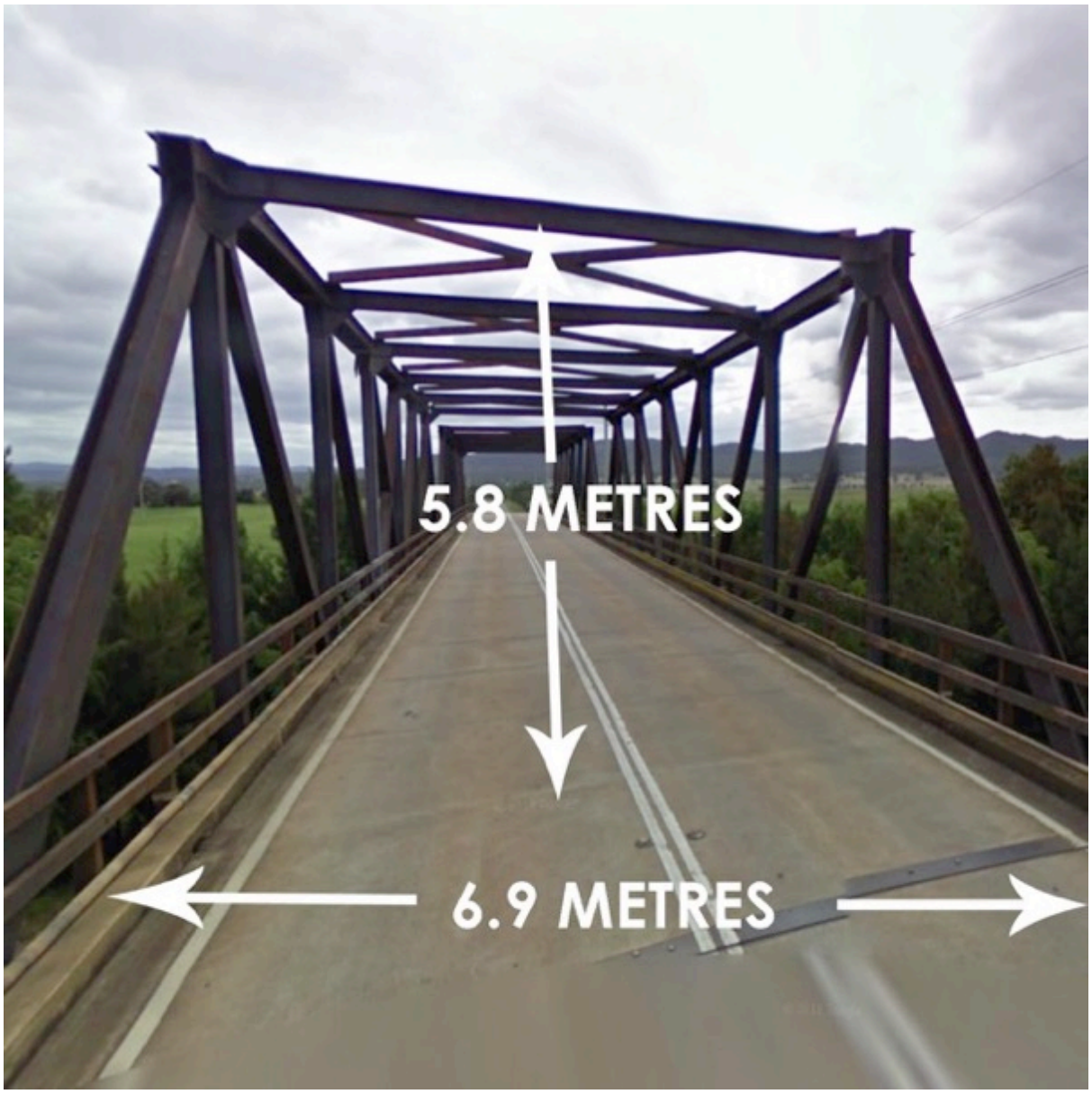
COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn left from the Golden Highway onto the Golden Highway while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

138.0 Km's: Denman Bridge.



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/UToXyFe3QKu

PINCHPOINT PROCEDURE: Travel over the bridge at no more than 10 km's p/hr and on the centre line of the structure.

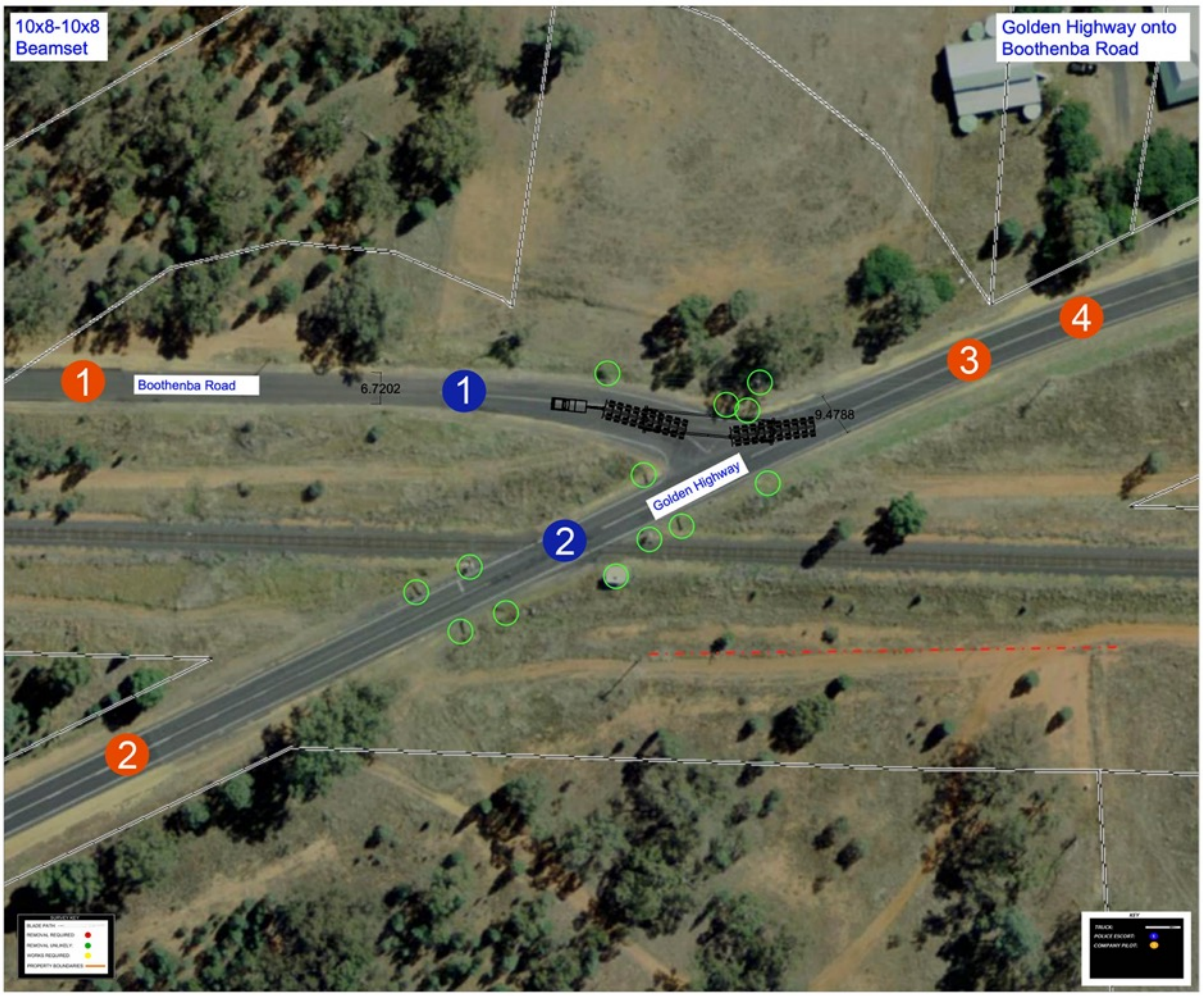
No other vehicles are to be on the structure as at the same time as the load.

Load to hydraulically lower to 5.5 metres before crossing this structure.

ROAD MODIFICATIONS: Nil.

372.0 Km's: Golden Highway onto Boothenba Road at Dubbo.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/TJLi5W4ir11ejgtb6

COMPANY PILOT 1: Warn all eastbound traffic on Boothenba Road.

COMPANY PILOT 2: Warn all eastbound traffic on the Golden Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

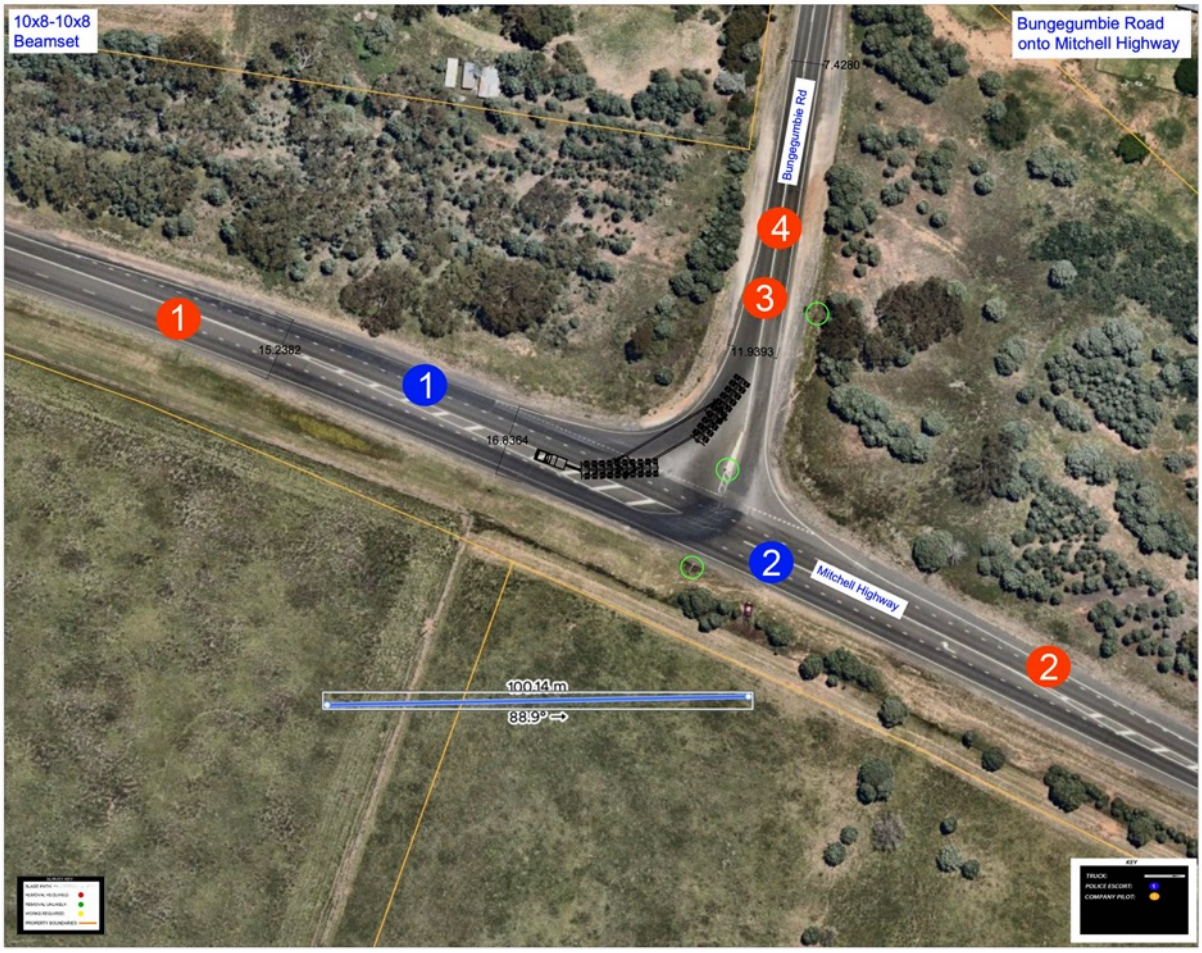
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from the Golden Highway onto Boothenba Road while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

403.0 Km's: Bunglegumbie Road onto the Mitchell Highway at Dubbo.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/jCWqmaQsd3fChp837

COMPANY PILOT 1: Warn all eastbound traffic on the Mitchell Highway.

COMPANY PILOT 2: Warn all westbound traffic on the Mitchell Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Bunglegumbie Road onto the Mitchell Highway while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

423.0 Km's: Mitchell Highway onto Manildra Street at Narromine.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/WPhQahdAKGjRSNvy8

COMPANY PILOT 1: Warn all traffic 150 Metres in front of the load.

COMPANY PILOT 2: Warn all traffic 100 Metres in front of the load.

COMPANY PILOT 3: Warn all traffic 50 Metres in front of the load.

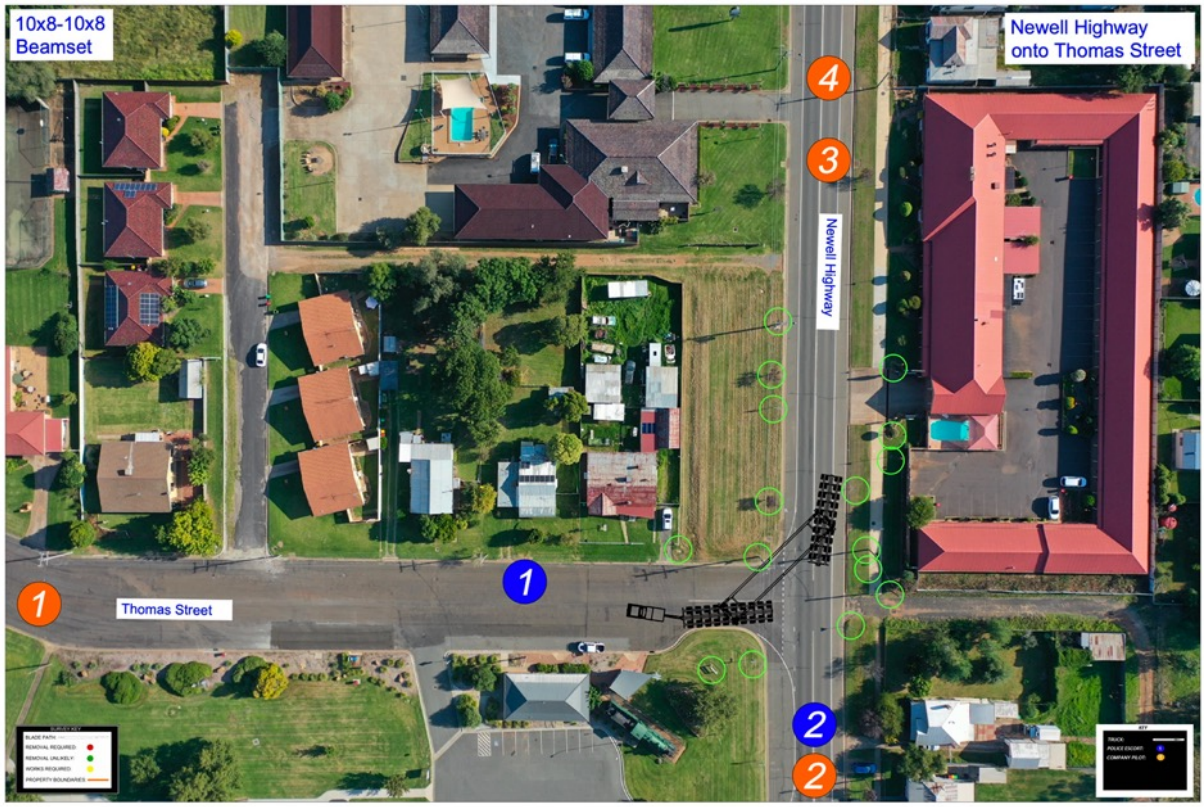
COMPANY PILOT 4: Stay 500 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn left from the Mitchell Highway onto Manildra Street before crossing onto Algalah Street while crossing onto the incorrect side of the road on several intersections.

ROAD MODIFICATIONS: Nil.

525.0 Km's: Newell Highway onto Thomas Street at Parkes.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/fSnFVWPr78RePSTz9

COMPANY PILOT 1: Warn all eastbound traffic on Thomas Street.

COMPANY PILOT 2: Warn all northbound traffic on the Newell Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from the Newell Highway onto Thomas Street while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

527.4 Km's: Moulden Street onto Back Trundle Road onto Ross Road at Parkes.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/1JA2hh5EMZ3G3QfS9

COMPANY PILOT 1: Warn all northbound traffic on Ross Road.

COMPANY PILOT 2: Warn all northbound traffic on Ross Road.

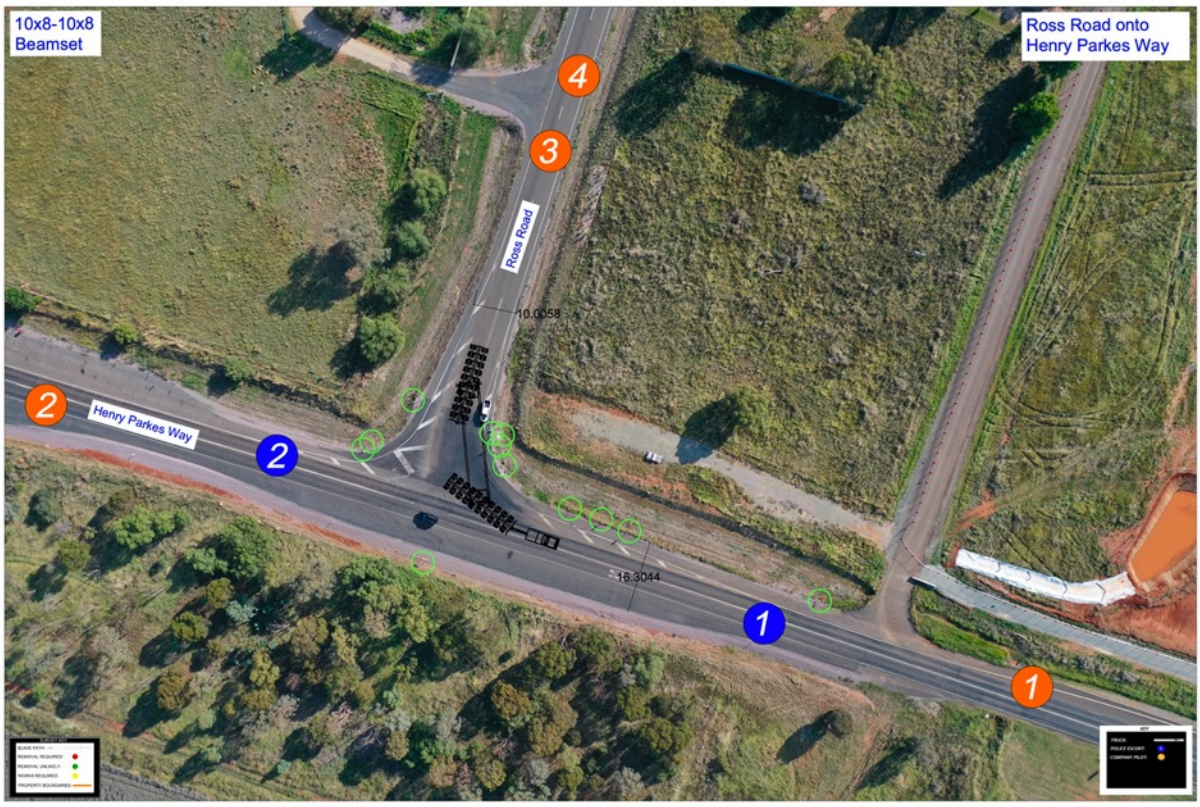
COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right than left from Moulden Street onto Ross Road via Back Trundle Road while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

527.8 Km's: Ross Road onto Henry Parkes Way at Parkes.
Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/UKvs2QekwwFuP6oS8
COMPANY PILOT 1: Warn all westbound traffic on Henry Parkes Way.
COMPANY PILOT 2: Warn all eastbound traffic on Henry Parkes Way.
COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.
PINCHPOINT PROCEDURE: Load to turn left from Ross Road onto henry Parkes Way.
ROAD MODIFICATIONS: Nil.

528.0 Km's: Henry Parkes Way onto Westlime Road at Parkes.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/QhZmTtpL1vNkUE7i8

COMPANY PILOT 1: Warn all northbound traffic on Westlime Road.

COMPANY PILOT 2: Warn all westbound traffic on Henry Parkes Way.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

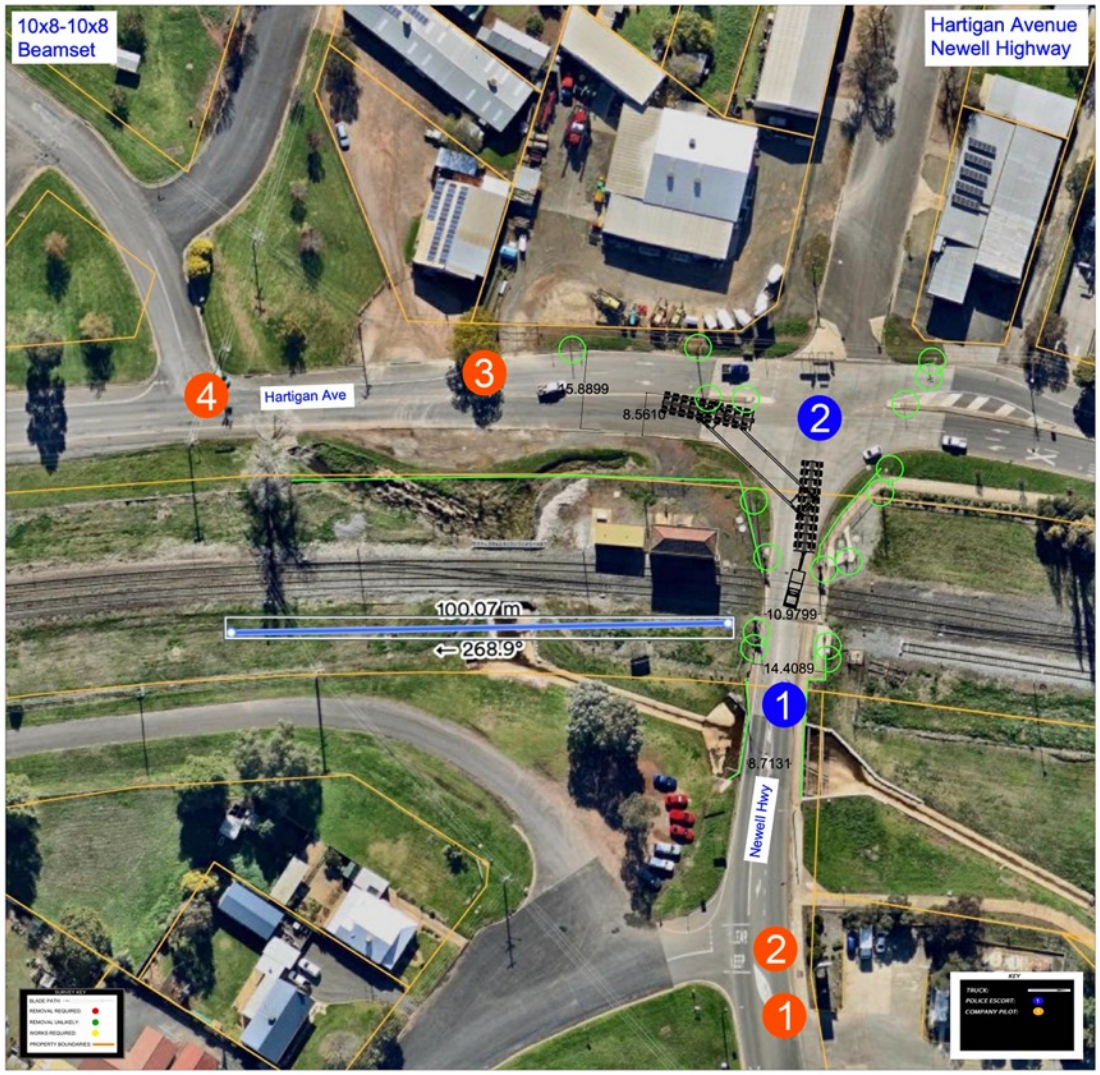
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Henry Parkes Way onto Westlime Road while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

532.0 Km's: Hartigan Avenue onto the Newell Highway at Parkes.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/y3rabftt4HGreX9e6

COMPANY PILOT 1: Warn all northbound traffic on the Newell Highway.

COMPANY PILOT 2: Warn all northbound traffic on the Newell Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

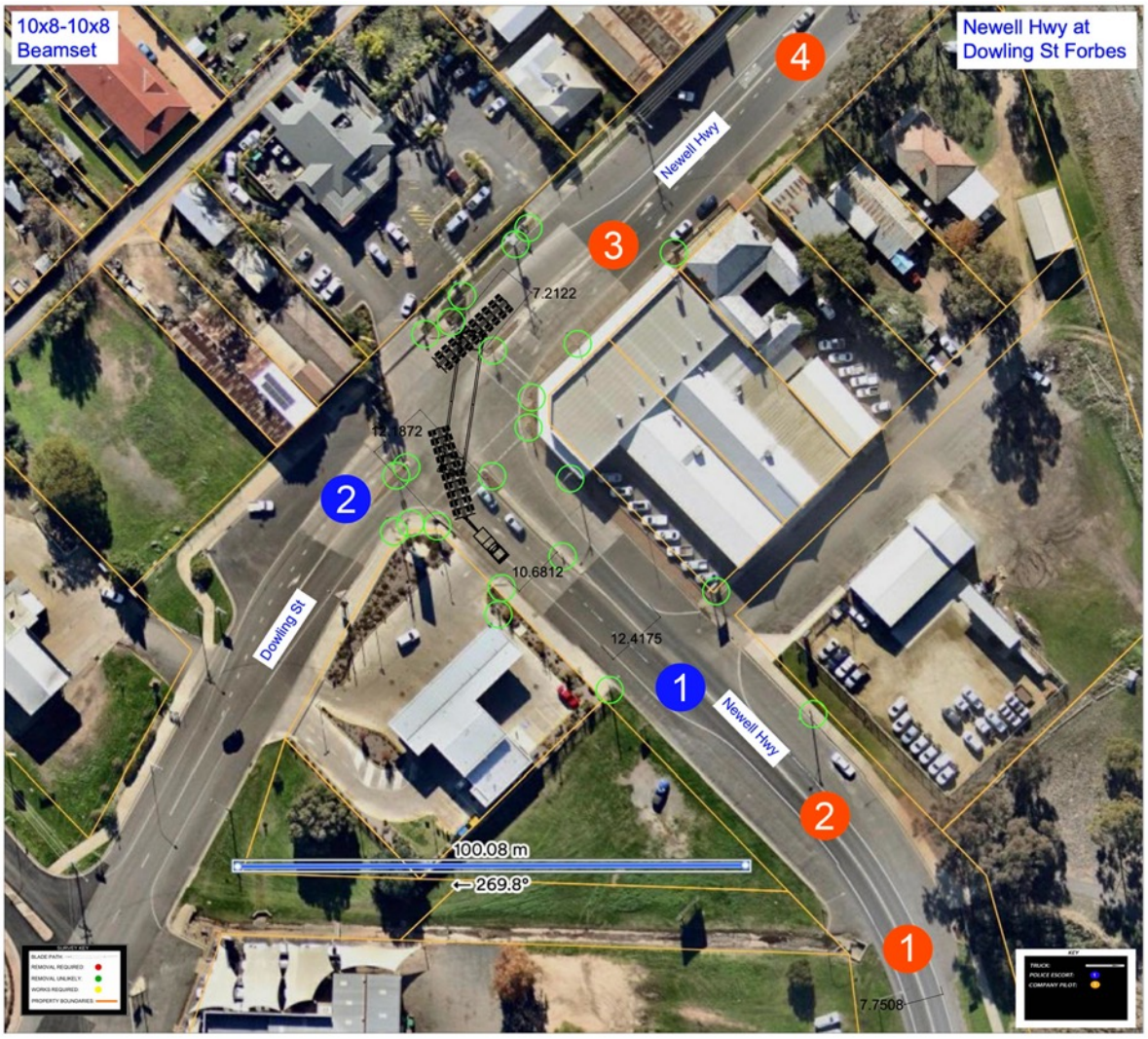
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Hartigan Avenue onto the Newell Highway while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

563.0 Km's: The Newell Highway intersection with Dowling Street at Forbes.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/DqkvxH4qtWnXvLJ26

COMPANY PILOT 1: Warn all northbound traffic on the Newell Highway.

COMPANY PILOT 2: Warn all northbound traffic on the Newell Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn left from the Newell Highway onto the Newell Highway on the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

664.0 Km's: The Newell Highway onto Compton Road at West Wyalong.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/PeM4uWg5hLiyZiPd8

COMPANY PILOT 1: Warn all northbound traffic on Compton Road.

COMPANY PILOT 2: Warn all northbound traffic on Compton Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

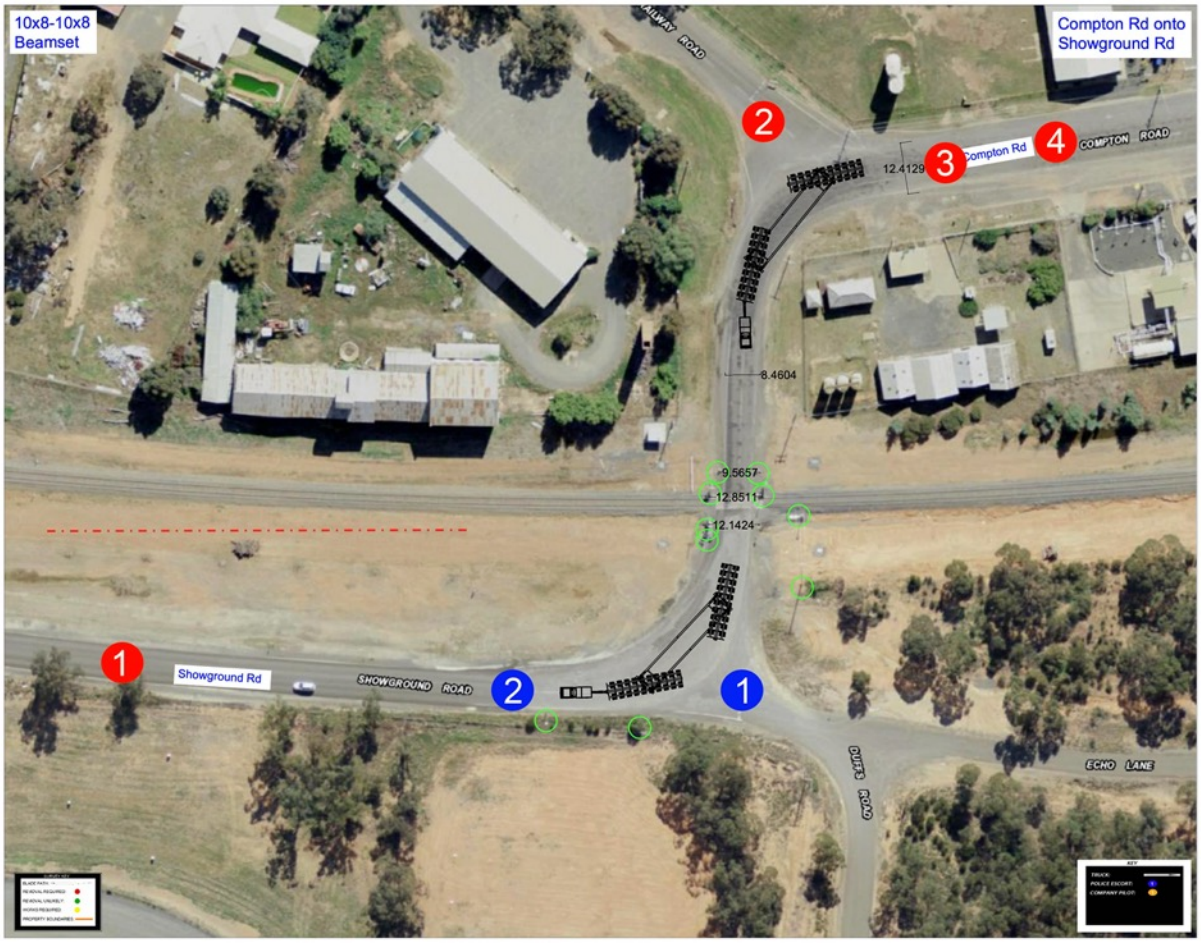
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn left from the Newell Highway onto Compton Road while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

666.5 Km's: Compton Road onto Showground Road at West Wyalong.

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/hts5qARMMWZcvW7R7

COMPANY PILOT 1: Warn all northbound traffic on Compton Road.

COMPANY PILOT 2: Warn all northbound traffic on Compton Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

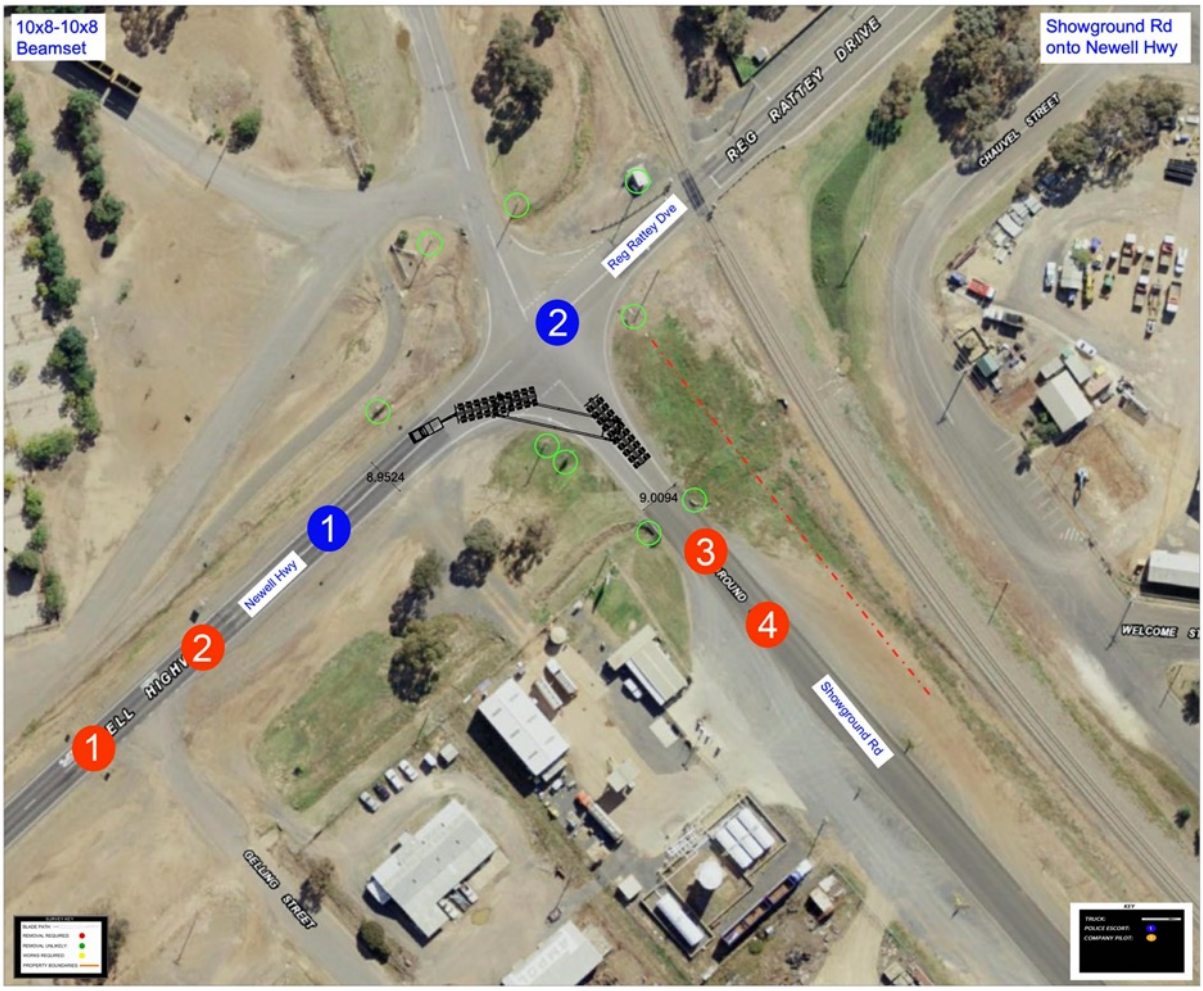
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Dogleg turn from Compton Road onto Showground Road while crossing onto the incorrect side of the road. Rail protection officer may be required to travel over the rail crossing.

ROAD MODIFICATIONS: Nil.

669.0 Km's: Showground Road onto the Newell Highway at West Wyalong.

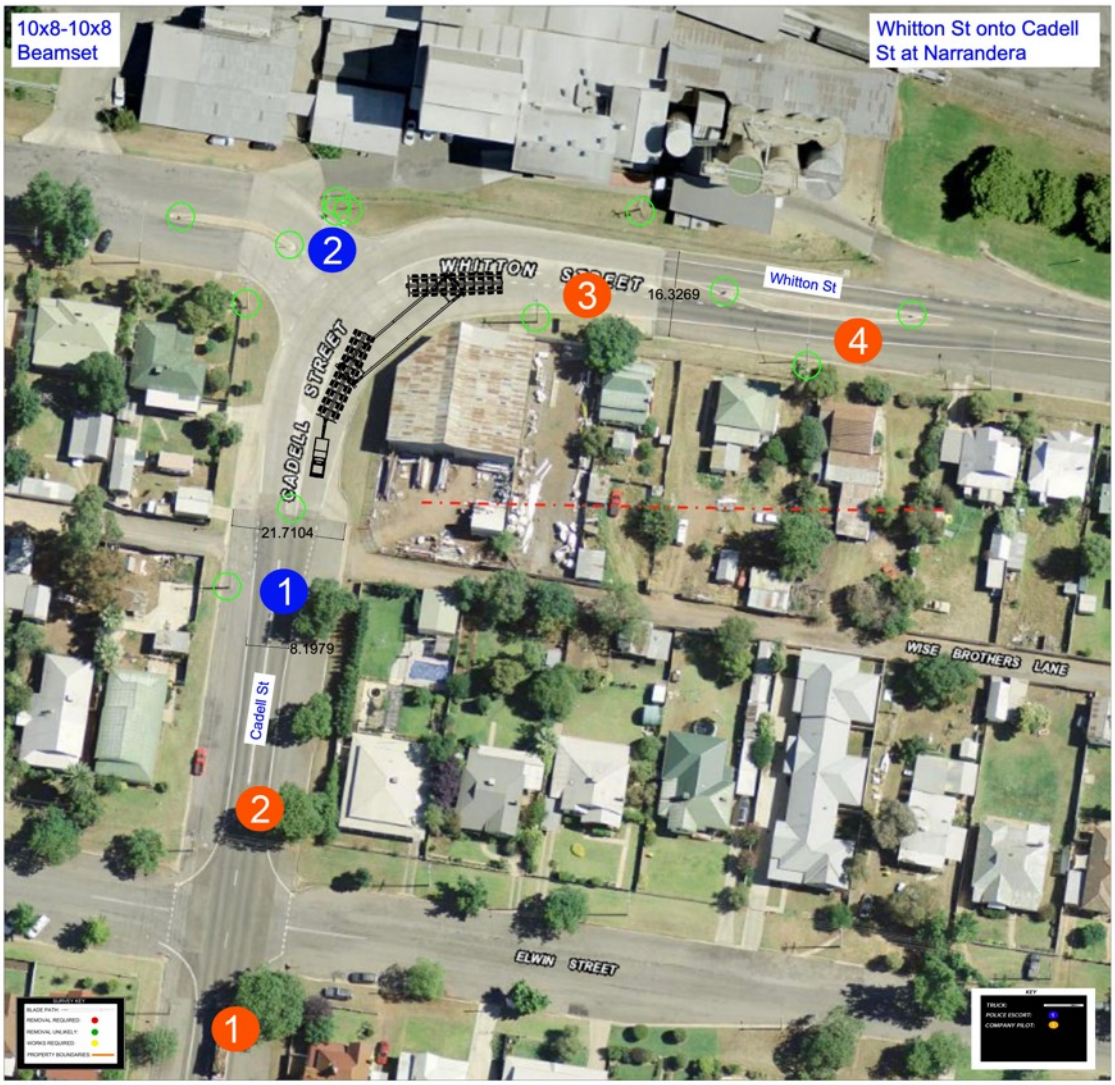
Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/yAyBdrZcocEeTBnz6
COMPANY PILOT 1: Warn all northbound traffic on the Newell Highway.
COMPANY PILOT 2: Warn all northbound traffic on the Newell Highway.
COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.
COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.
PINCHPOINT PROCEDURE: Load to turn left from Showground Road onto the Newell Highway while crossing onto the incorrect side of the road.
ROAD MODIFICATIONS: Nil.

803.0 Km's: Whitton Street onto Cadell Street at Narrandera. (Newell Highway)

Image 1:



GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/EXcuuBeMsXdhVDtm8

COMPANY PILOT 1: Warn all northbound traffic on Caddell Street.

COMPANY PILOT 2: Warn all northbound traffic on Caddell Street.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn left from Whitton Street onto Caddell Street while staying on the correct side of the road.

ROAD MODIFICATIONS: Nil.

825.0 Km's: The Sturt Highway onto Sandigo Road at Sandigo.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/c3ZDZEj78aMwmqEh8

COMPANY PILOT 1: Warn all northbound traffic on Sandigo Road.

COMPANY PILOT 2: Warn all westbound traffic on the Sturt Highway.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from the Sturt Highway onto Sandigo Road while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

826.0 Km's: Sandigo Road onto Muntz Road at Sandigo.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/WErjz7kPjHWLPRsP6

COMPANY PILOT 1: Warn all eastbound traffic on Muntz Road.

COMPANY PILOT 2: Warn all eastbound traffic on Muntz Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Sandigo Road onto Muntz Road while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

828.0 Km's: Muntz Road into Avonleigh Solar Access Road at Sandigo.

Image 1:

GPS LINK FOR SECTION OF ROAD: https://goo.gl/maps/R3T3az3oQiSRg6GV7

COMPANY PILOT 1: Warn all eastbound traffic on Muntz Road.

COMPANY PILOT 2: Warn all eastbound traffic on Muntz Road.

COMPANY PILOT 3: Stay 50 metres behind the load and warn all traffic.

COMPANY PILOT 4: Stay 100 metres behind the load and warn all traffic.

PINCHPOINT PROCEDURE: Load to turn right from Muntz Road onto Avonleigh Solar Access Road while crossing onto the incorrect side of the road.

ROAD MODIFICATIONS: Nil.

15.0 Pinch Points

The following are the pinch points on this route:

- REGULAR ROUTE ASSESMENTS: Prior to the movement Rex J Andrews P/L is to contact TfNSW and local councils regarding any potential roadworks that road stakeholders would have taken place on the route during the proposed delivery dates. Driver/Supervisors are to have full contact details and communicate with these roadwork's managers while on route.

- SWEPT PATH ANALYSIS: This study shows all pinchpoint manoeuvres on route and is a guide to show possible arrangements for traffic control at each of the pinchpoints.

- BRIDGE CROSSINGS: The load is to travel over all structures as per the TfNSW bridge assessment for this movement. Load to take special caution at Denman Bridge and lower the load to 5.5 metres maximum before crossing this structure in the centre of both lanes.

- NEWCASTLE: The load will need to undertake a U-turn on Maitland Road at Sandgate. All personnel are to be tool boxed on the methodology of these procedures.

- NARRENDERA: Some tree pruning is required in Narrendera prior to the load departing Newcastle.

PINCHPOINT PROCEDURES

Whilst some pinch points are known along the route demonstrating a method of negotiating each individual hazard would be flawed as traffic conditions are constantly changing.

It is crucial that appropriate measures are applied to avoid impact to road users and road infrastructure, the chosen route has been assessed and the load is capable of navigating the route, however local traffic conditions can create pinch points.

A pinch point is an area identified by the lead pilot and relayed to the convoy as having the potential to interfere with the swept path of the load, pinch points can be created by road furnishings, roundabouts, narrow sections of road, roadkill, corners, road works, parked vehicles, damaged pavement, this list is not exhaustive.

For the purposes of this traffic management plan identified pinch points will follow the following protocol.

The lead pilot must travel a sufficient distance in front of the load so as to survey the swept path required for the load, this will allow sufficient time to relay back road conditions or choke points to allow the driver to halt the load before causing congestion to other road users.

In the event of parked vehicles or local traffic conditions preventing the load from safely navigating the permitted route, the load cannot proceed until it is safe to do so.

The lead pilot will warn all oncoming traffic of the impending load, when the way forward for the transporter is established as being clear the load may proceed.

If built up queued traffic is behind the load, ensure that an opportunity to allow this traffic to pass is taken at the first safe opportunity.

The procedure for crossing bridges is reliant on only the load being on the bridge during the crossing, this will require a concentrated effort from the escort team to ensure that all vehicular traffic both in front of and behind the load are warned of the hazard.

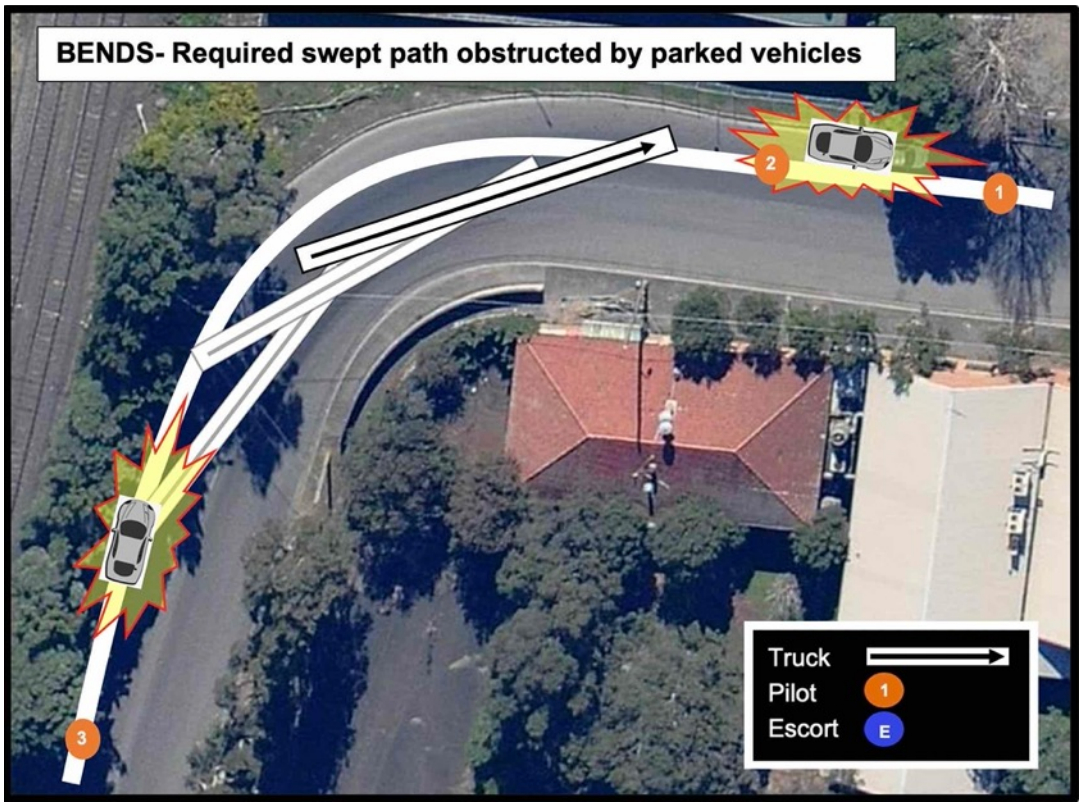
It is crucial that pinch points are discussed at the toolbox briefing and that all parties are aware of the protocols in place.

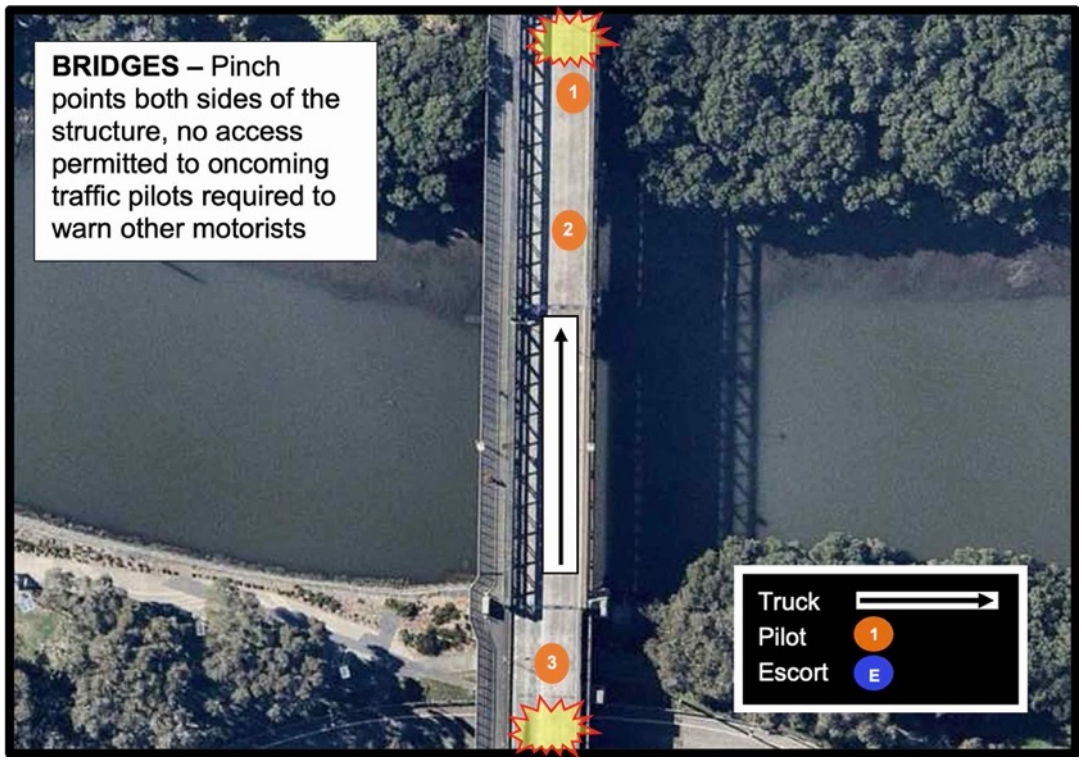
Drivers should familiarise themselves with the route including nominated bypasses for heavy vehicles along the route.

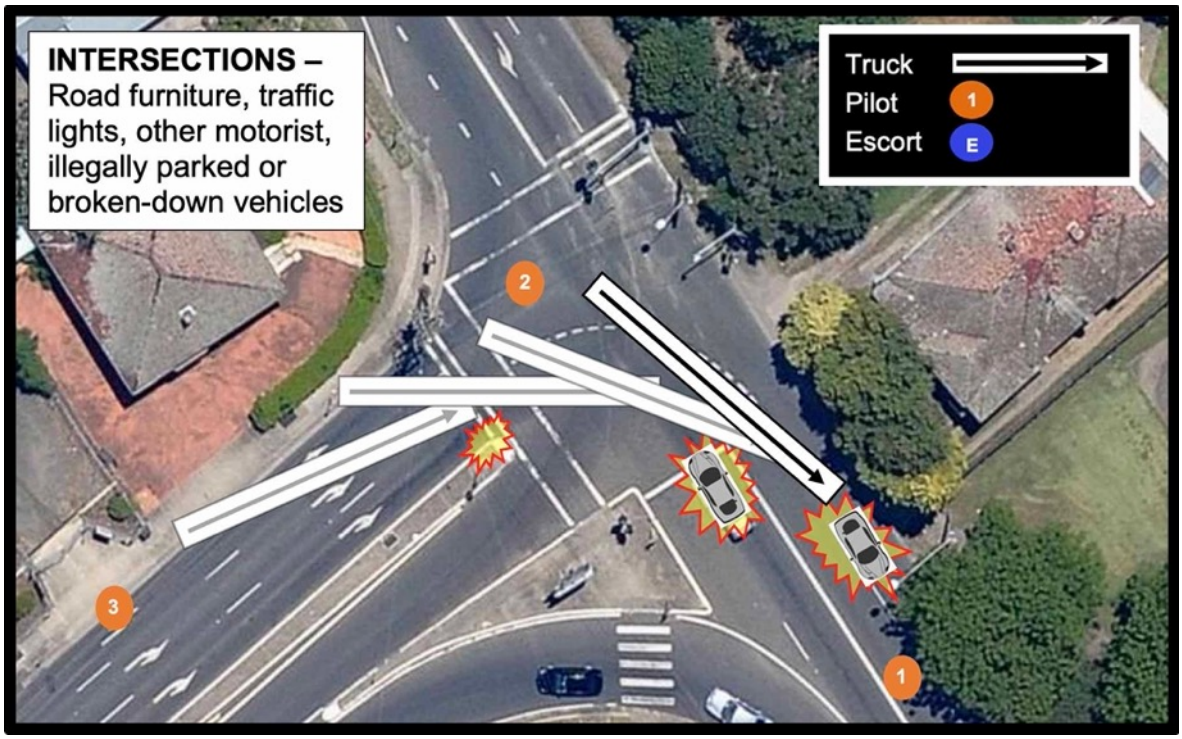
If there is any doubt as to the viability of accessing the permitted route the load must not continue until the way forward has been deemed appropriate.

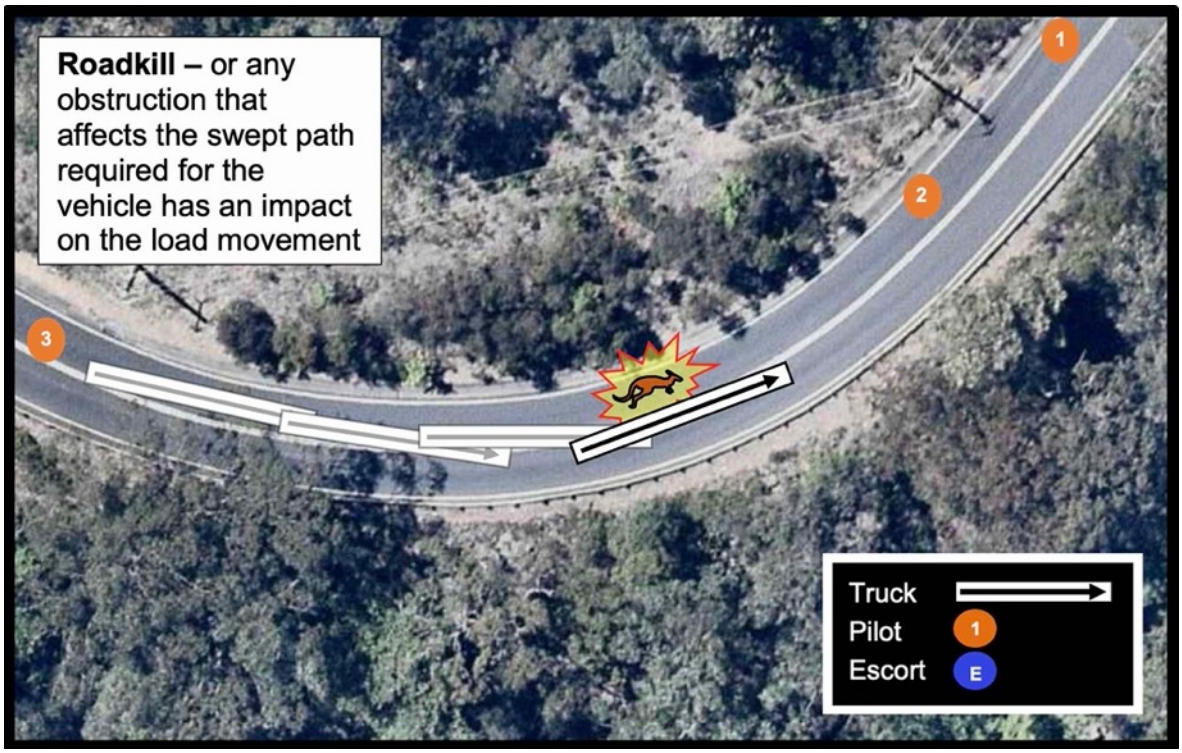
For more detail analysis of coping with roadwork refer to section 11.

Examples of pinch points:




BRIDGES – Pinch points both sides of the structure, no access permitted to oncoming traffic pilots required to warn other motorists
1
2
3
Truck
Pilot 1
Escort E

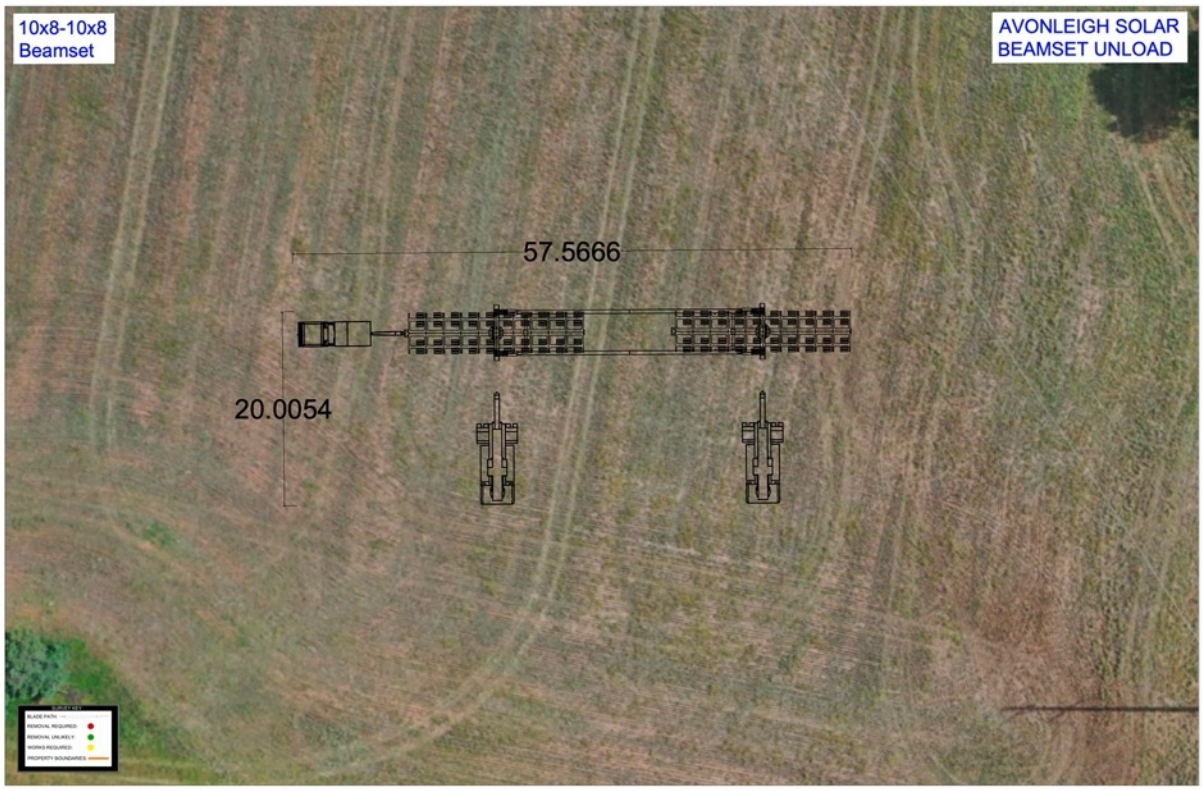

INTERSECTIONS – Road furniture, traffic lights, other motorist, illegally parked or broken-down vehicles
Truck
Pilot 1
Escort E
2
3
1


Roadkill – or any obstruction that affects the swept path required for the vehicle has an impact on the load movement
1
2
3
Truck
Pilot 1
Escort E

16.0 Beamset unload:

The beamset will need to be able to park parallel to the foundation, and enough room provided for 2 x 90T cranes to dissemble the beamset. Please see below image for an idea of the area required to undertake these works.

Image 1:



17.0 TMP Revisions:

Revision number	Revision Date	Author	Description of changes
01	22/02/2022	WA	Section 16: Beamset unload added.

18.0 References:

Australian Load Restraint Guide
Rex J Andrews P/L transport drawing
Hyosung transformer drawing
Rex J Andrews route survey #333 REV00
Google Earth/Maps
Nearmaps
NHVAS Maintenance Management (NHVAS21193)
NHVAS Basic Fatigue Management (NHVAS21193)

19.0 TMP Review:

Final Review	Name	Signature	Date
TMP Checked by:	Warrick Andrews		
	Carl Andrews		
	Mark Sciberras		

Sign On: I confirm that I have received a hard copy of this TMP, I have read and understood the contents; by signing this document I acknowledge that I am now familiar with the identified pinch points, the route and the conditions relating to time of travel. I understand that prior to travel a supervisor may ask me questions specific to this TMP, in the event that I cannot demonstrate awareness of the conditions of the TMP I must delay my departure until I have reviewed its content.

Name	Role	Signature	Date	Company

Appendix F Driver Code of Conduct

The Driver Code of Conduct is to ensure that drivers adhere to safe driving practices. Any non-compliance with the Drivers Code of Conduct will be managed through the Construction Contractors' general business code of conduct.

1. General Controls

Drivers must:

- Comply with the Project Traffic Management Plan.
- Hold the appropriate licence class for the vehicle driven.
- Comply with all road laws and regulations.
- Exercise extra care in adverse weather conditions that may affect road safety. such as fog, dust, wet weather and flooding.
- Report any observations of driver fatigue or misconduct to the HSE Coordinator.
- Respect the rights of all road users to share the road.
- Cover loads when transporting loose materials (e.g. aggregate).
- Avoid travelling in convoys or platoons, with all long vehicles (7.5m long or longer) to be driven at least 60m behind another long vehicle, that they are following.
- Report any incidents in accordance with the Work Health and Safety Management Plan.

2. Driving to and from the Project

Driving presents a serious risk to health and safety and all precautions are to be taken when driving to and from site. Major driving hazards include mobile phone use, speeding and drug and alcohol usage and fatigue.

Mobile Phone Use

The use of mobile phones while operating a motor vehicle is strictly prohibited unless a blue tooth hands-free kit is utilised. Placing mobile phones in 'Do not disturb' mode while driving is encouraged.

Travelling Speeds

The existing posted speed limits for Golden Highway, Ringwood Road and Wollar Road is 100 km/h. Barnett Street does not have a posted speed limit, and the default speed limit of 100 km/h would apply. Drivers must:

- Be aware of the legal speed limit.
- Not exceed the legal speed limit on public roads.
- Not exceed the speed limit designated for internal access roads within the Project.
- Adjust speed to suit the road environment and prevailing weather conditions.
- Adjust speed to ensure the safe movements of the vehicle based on the vehicle configuration.

Drug and Alcohol Usage:

The Project has a zero-alcohol tolerance and zero illicit drugs tolerance or impairment by prescription medication.

Drug and alcohol testing will be conducted at random times.

3. Driver Fatigue

Under the Heavy Vehicle Driver Fatigue Reform (2008), all drivers of trucks and truck combinations over 12 tonne GMV (except for Ministerial Exemption Notices that may apply) are required to operate under one of three fatigue management schemes:

- Standard Hours of Operation
- Basic Fatigue Management
- Advanced Fatigue Management.

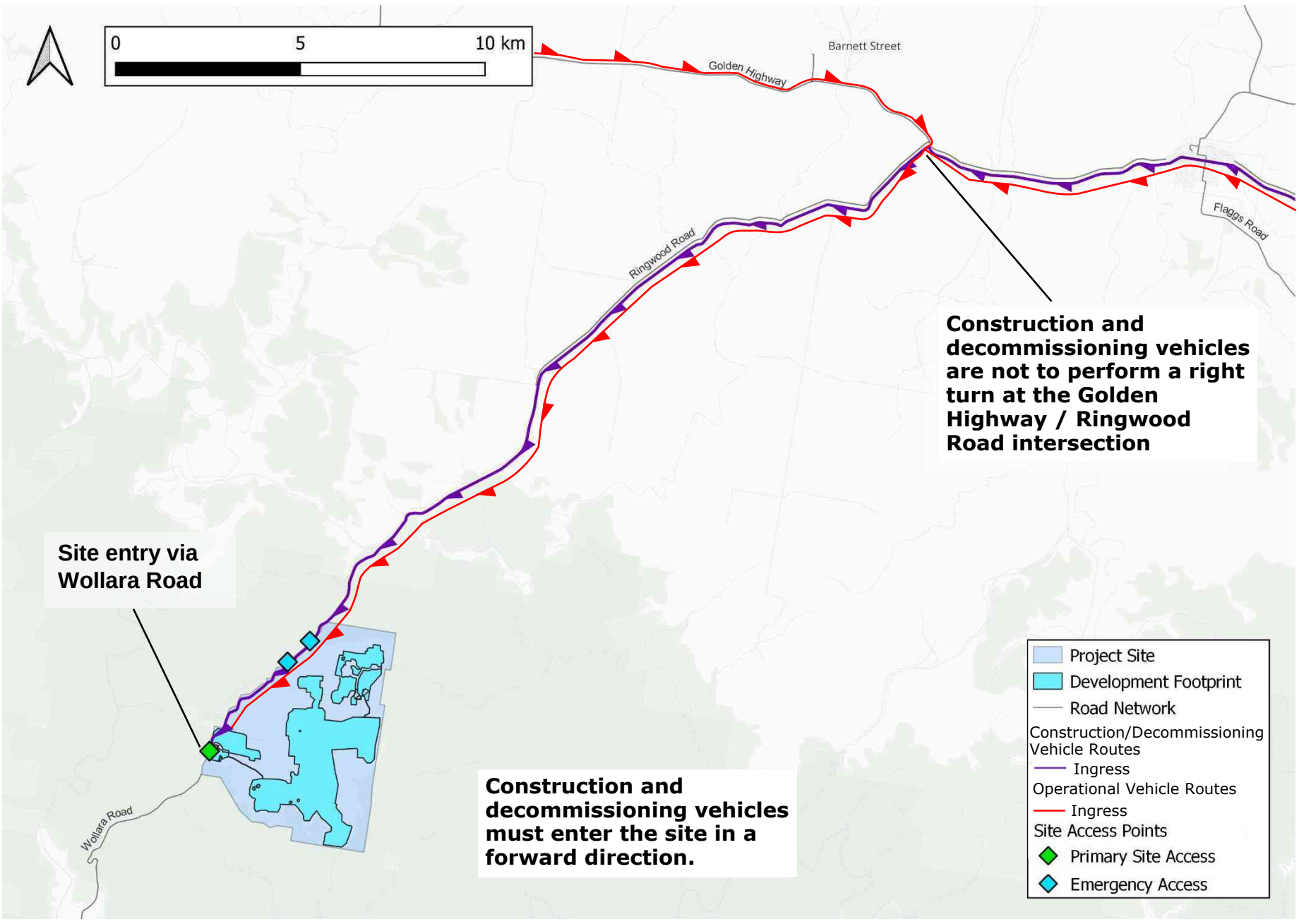
All heavy vehicle operators are to be aware of their adopted fatigue management scheme and operate within its requirements.

4. Designated Transport Routes

Drivers must:

- Travel to the Project via Golden Highway, Ringwood Road, Wollara Road and Barnett Street, with left-in and left-out only permitted at the Golden Highway / Ringwood Road intersection.
- Use only the established Project access point off Wollara Road to enter/exit the Project.
- Use agreed haulage routes as per the VMP (see **Appendix G**) unless an approved alternative route is in place due to an emergency or other unavoidable circumstance.
- Enter and exit the Project in a forward direction.
- Ensure vehicles leaving the Project are in a clean condition.
- Notify the HSE Coordinator immediately if there is any damage to the Project access route which may present a safety hazard.

Appendix G Vehicle Movement Plan



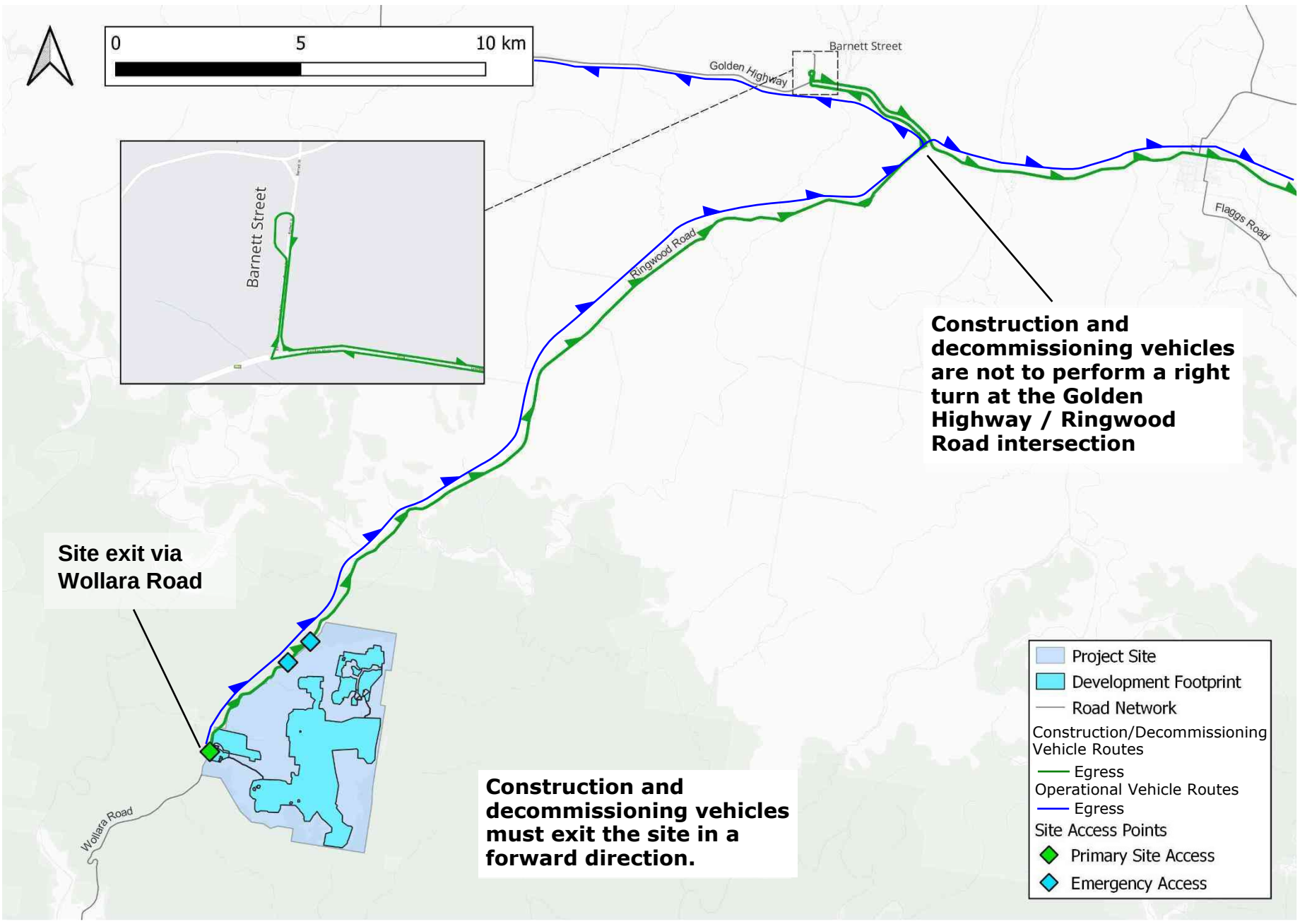
<u>Construction / decommissioning vehicle routes - ingress:</u>
Golden Highway westbound, left turn onto Ringwood Road southbound, continue straight onto Wollara Road southbound and left-turn into the site.

<u>Operational vehicle routes - ingress:</u>
Vehicles can undertake all legal movements associated to their vehicle type.

VEHICLE MOVEMENT PLAN – GOULBURN RIVER SOLAR FARM

SITE ENTRY / INGRESS

Adherence to this VMP is mandatory. Deviation from this plan may find you personally liable and subject to further action.



<u>Construction / decommissioning vehicle routes - egress:</u>
From the site, right turn onto Wollara Road northbound, continue straight onto Ringwood Road northbound, left turn onto Golden Highway westbound, right turn onto Barnett Street northbound, U-turn via turnaround facility approximately 190 metres north and continue onto Barnett Street southbound, left turn on Golden Highway eastbound.

<u>Operational vehicle routes - egress:</u>
Vehicles can undertake all legal movements associated to their vehicle type.

VEHICLE MOVEMENT PLAN – GOULBURN RIVER SOLAR FARM

SITE EXIT / EGRESS

Adherence to this VMP is mandatory. Deviation from this plan may find you personally liable and subject to further action.

Appendix H Stakeholder Consultation

Comments were received from TfNSW on 21 October 2024, Midwestern Regional Council on 1 October 2024 and Upper Hunter Shire Council on 21 October 2024 following review of the Goulburn River Solar Farm – Traffic Management Plan, Lightsource bp have addressed each comment with responses provided in **Table 1** below.

Table 1 Responses from TfNSW, Mid-Western Regional Council and Upper Hunter Shire Council

TfNSW Comment	Lightsource bp's Response
Condition B10 (b) has not been satisfied and is required to include details of the road works required for the sealing of Barnett Street.	a. *Section 2.4, dot point 7 of this TMP* **New Text has been added to this TMP:** Road upgrades required on Ringwood Road, Wollara Road and at the intersections of Ringwood Road **and Barnett Street** with the Golden Highway. b. *Section 3.1.3 Intersection Upgrade* ***– Golden Highway & Ringwood Road*** *"The Golden Highway / Ringwood Road intersection …….* *The intersection upgrade footprint is shown in* ***Figure 3-3****. Drawings of the proposed intersection upgrades are provided in* ***Appendix B****.* ***c.*** Rename Section 3.1.4 *Intersection Upgrade* ***– Golden Highway & Barnett Street*** **New Text has been added to this TMP; Section 3.1.4 Intersection Upgrade – Golden Highway and Barnett Street :** The Golden Highway / Barnett Street intersection will be upgraded to accommodate the requirements for the Barnett Street turnaround point. These upgrades will include: • Reconstruction of the initial 30m of the throat of Barnett Street to a TfNSW compliant sealed pavement, with unsealed shoulders. • Delineation, line-marking and give-way signage, within Barnett Street. Installation of truck turning movement warning signs on both approaches to the intersection. The intersection upgrade footprint is shown in ***Figure 3-4***. Drawings of the proposed intersection upgrades are provided in **Appendix B.**

	We will also include the 80% design drawing for Barnett St intersection, currently being assessed by TfNSW as part of WAD application.

Condition B10 (d) requires greater controls to be implemented to ensure compliance. This should include commitment to surveillance and records to be kept and available for auditing.	**New text has been added to this TMP; Section 5.6 Management of Construction Vehicle Routes:**
	
	• The construction vehicle route applies to all vehicles associated with the development, including through early works, road upgrades, construction, upgrading and decommissioning.
	• To ensure that construction vehicle drivers adhere to the left-in, left-out arrangement at the Golden Highway / Ringwood Road intersection during construction, the following will be implemented:
	  • A monitoring camera will be installed at the Golden Highway/Ringwood Road intersection:
	  ▪ prior to construction commencing
	  ▪ capturing footage from one hour prior through to one hour post approved construction hours (i.e., from 0600 to 1900)
	  ▪ footage will be reviewed weekly for months one and two of construction, then monthly thereafter or in response to a complaint
	  ▪ the monitoring approach will be assessed for effectiveness periodically, and any proposed changes discussed proactively with TfNSW.
	  ▪ Appropriate corrective measures
	  • Installation of additional signage on Ringwood Road stating that “site traffic must turn left”.
	  • The construction contractor will undertake spot checks at the intersection for compliance. This will involve counts of vehicles leaving site, coupled with vehicle counts at the turn-around bay on Barnett Street. A randomised spot check will occur monthly at a minimum, or in response to a complaint from the community or feedback from within the Project team.
	• A register of heavy traffic movements in and out of the Project Area will be maintained during construction. The register will be maintained by the Construction Contractor.
	• The approved vehicle route will be reinforced during site inductions, daily toolbox talks and as part of the Driver Code of Conduct.
	• The approved vehicle route will be specified in a pre-arrival flyer which would detail delivery instructions and be distributed to drivers before coming to site.
	• Quarterly Inspections and routine audits of the transport route shall be conducted to ensure compliance to site requirements on Traffic Management.
	
	There is potential for limited deliveries/supplier movements from adjacent LGAs / areas to the west of the Project Site, with a number of companies based to the west of the Project Site expressing interest in sub-contracting or supplying aspects of the Project. In this instance, adjacent LGA road networks will be utilised, however transport movements will align with the conditions of consent (B3-B5) and approach the site from the east, along the Golden Highway.

	• Only locally based workers in light vehicles will be able to use Wollar Road to the south of the Project Site, with agreement from the Construction Contractor. • Limited traffic movements from suppliers operating under their own permits/licences (i.e., Environmental Authority) may utilise an alternative traffic route (where this is permitted under their licence conditions), with agreement from the Construction Contractor. These movements will be recorded as part of the register of heavy traffic movements in and out of the Project Area (maintained by the Construction Contractor).
Condition B10 (e)(x) is not satisfied suitably. Limited detail is provided regarding pick up/ drop off locations and further information is required on how uptake of the shuttle bus will be enforced	**3.6.4 Employees Shuttle Bus Service** As noted in **Section 3.6.3**, a shuttle bus service will be commissioned to assist with employee and contractor transportation during construction to the Project. An estimated 30 one-way shuttle bus journeys (15 return trips) will transport locally-based workers to and from the Project Area. Shuttle buses will also transport workers staying at the TWA Facility into Merriwa to replenish personal supplies and for general recreation. Within the Project Area, shuttle buses will transport workers from the TWA Facility to construction compounds across the Project. This service is intended to manage vehicle traffic on the local road network as well as internally within the Project Area. The Merriwa pick up/ drop off point would be located either on the Golden Highway or on Vennacher Street, close to the intersection with the Golden Highway, as both locations have parallel parking spaces. This location is near the Merriwa Post Office. The shuttle bus may be used to provide workers with connections to the local bus services, for travel to other regional locations such as Scone, Dubbo and Newcastle. The nominated location is also in close proximity to the local key Merriwa town centre commercial businesses (i.e., IGA supermarket). Shuttle bus services have been successfully used on recent Lightsource bp projects, Wellington Solar Farm and Wellington North Solar Farm. Measures to actively encourage use of shuttle buses will include: • Employees will be made aware of the contractual requirements and actively encouraged to use the shuttle bus service. This will be managed through incorporation into site inductions and regular broadcasting (e.g. posters and signage throughout the TWA Facility). • Use of the shuttle service (and ride-sharing) will be contractually required (see also Section 3.6.3). • Provision of a certain number of on-site car parking spaces will be monitored through ad hoc visual inspections to identify whether increased parking demand has resulted from reduced usage of the shuttle bus service and/pr carpooling.

	• Secure storage would be available on-site to trades for safely storing tools/ equipment, which would otherwise necessitate a higher rate of workers driving to site.
Condition B10 (e)(xi) is not satisfied suitably. Further information is required on how light vehicle numbers will be limited during construction	During peak construction and with the on-site TWA Facility operational the following trips are anticipated to be generated by the Project: • Light vehicles – there are up to approximately 60 two-way movements expected per day (120 light vehicle movements per day), as estimated in the amended TTIA (Turnbull 2023). ○ Contractually, car-pooling and ride-sharing initiatives will be required and encouraged with the Project engaged subcontractors and suppliers, for their Workers. This will be undertaken by shuttle busses, which are included in the light vehicle volume. • Shuttle buses – 15 two-way movements expected per day (30 shuttle bus movements per day), as estimated in the Amended TTIA (Turnbull 2023). • Heavy vehicles – 55 movements a day (a maximum of 15 heavy vehicle movements per hour) during construction, upgrading or decommissioning. 24 movements of heavy vehicles requiring escort during construction, upgrading or decommissioning.
Condition B10 (e)(xii) is not satisfied suitably. Further information on how heavy vehicles would be scheduled to avoid convoys and light vehicles is required. An indicative schedule of movements of heavy vehicles at peak construction is required.	**New text has been added to this TMP; S 5.5 (Driver Code of Conduct)** As per NSW Road Rules (2014) 127 (1), a driver of a long vehicle (7.5m long or longer), except on a multi-lane road or any length of road in a built-up area, <u>must</u> travel at least 60m behind any other long vehicle, other than a road train. The potential for heavy vehicles to convoy or platoon together will be addressed through direction by the Construction Contractor to subcontractors and suppliers. Strategies will include: • Staggered Scheduling: Heavy vehicle movements will be staggered to prevent convoys and minimise traffic congestion, particularly during peak times. • Off-Peak Scheduling: Heavy vehicles will operate during off-peak hours to reduce interactions with peak traffic periods on the Golden Highway. • Break Time Coordination: Managing driver breaks to avoid clustering after rest periods. All long vehicle drivers and their respective supervisors/ transport managers will be reminded that: • There is a maximum of 55 (two-way trips; 110 one-way trips) heavy vehicle movements per day, and a maximum of 15 two-way heavy movements per hour.

	• when heavy vehicle drivers are leaving their depot/ quarry/ batch plant, or the Project site, that a minimum 1 minute gap in departure times is provided. • when heavy vehicle drivers stop for breaks (rest, smoko, lunch, etc) together, that on departure from the stop that each subsequent heavy vehicle allows at least 1 minute between each subsequent heavy vehicle departure from the stop. The Driver Code of Conduct will be communicated to all personnel through site inductions, toolbox talks and pre-start meetings. Any non-compliance with the Drivers Code of Conduct will be managed through the EPC's general business code of conduct, and the Contracts that are in place with their subcontractors and suppliers. ***Appendix F, Section 1 – General Commitments = new text*** Drivers must: • Comply with the Project Traffic Management Plan. • Hold the appropriate licence class for the vehicle being driven. • Comply with road laws and regulations. • Exercise extra care in adverse weather conditions that may affect road safety such as driving at night, fog, dust, wet weather and flooding. • Report any observations of driver fatigue or misconduct to the HSE Coordinator. • Respect the rights of all road users to share the road. • Cover loads when transporting loose materials (e.g. aggregate). • Avoid travelling in convoys or platoons, with all long vehicles (7.5m long or longer) to be driven at least 60m behind any another long vehicle that they are following. • Report any incidents in accordance with the Work Health and Safety Management Plan.
Upper Hunter Shire Council	
We are generally satisfied with the TMP, however, Council does have some concerns in relation to the sizing of the proposed culverts on Ringwood Road identified in the proposed road and culvert upgrades. It is understood that the designs are inconsistent with the previously agreed design parameters. Council is currently working with your design engineers to address this issue.	Lightsource bp will continue to work with UHSC to confirm design suitability prior to commencing road and culvert upgrades on Ringwood and Wollara Roads.

Mid-Western Regional Council	
Council notes: • The only road within the Mid-Western Region (MWR) LGA affected by the proposal is Wollar Road, which is assessed as carrying light vehicle commutes to the construction site only. • There is no truck or specialist heavy haul traffic listed using roads in the MWR LGA • There are no intersections listed in the TMP requiring capacity assessment. Council requests, if the TMP changes, that Council are consulted.	No changes required. Lightsource bp will consult with Mid-Western Regional Council if any changes to the TMP are proposed.