Berrybank Wind Farm

Traffic Management Plan

PLANNING AND ENVIRONMENT ACT 1987
PLANNING SCHEME Golden Plains + Corangamite
PERMIT NO. 20092820-A + 20092821-A
ENDORSED PLAN
SHEET 1 OF 459
SIGNED S. Menzies FOR
MINISTER FOR PLANNING
DATE: 27/3/19

ENDORSED TO COMPLY
WITH CONDITION
10
OF PLANNING PERMIT
20092820-A + 20092821-A

Berrybank Wind Farm

Traffic Management Plan

Client: Global Power Generation Pty Ltd

ABN: N/A

Prepared by

AECOM Australia Pty Ltd
Level 10, Tower Two, 727 Collins Street, Melbourne VIC 3008, Australia
T +61 3 9653 1234 F +61 3 9654 7117 www.aecom.com
ABN 20 093 846 925

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Quality Information

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Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	17/10/2011	Final – Issued to Client	Alex Iljin	
1	01/02/2013	Final – Issued to Client with amendments to number of windfarms	Alex Iljin	
2	02/05/2013	Final – Issued to Client with amendments to early stage works	Emilio De Paulis	
3	23/12/2011	Final – Issued to Client with amendments to Chapter 3, Chapter 5, Appendix C and Appendix D	Emilio De Paulis	
4	24/10/2014	Final – Issued to Client with amendments to Chapter 3, Chapter 5, Appendix C and Appendix D	Gavan Banks	
5	01/10/2015	Report updated for revised development permit application for revised turbine number and capacities	Emilio De Paulis	
6	07/12/2015	Final Report updated with clients comments	Emilio De Paulis	
7	23/03/2017	Final	Emilio De Paulis	
8	20/06/2018	Report update following time lapse and updated permit conditions	Trevor March	
9	30-Oct-2018	Addressing Council comments, construction staging incorporated, Geelong OD route	Joshua Dwyer	
10	13-Dec-2018	Additional information	Joshua Dwyer	
11	07-Jan-2019	Appendix D added	Joshua Dwyer	

12	13-Jan-2019	Appendix E added	Joshua Dwyer	
13	30-Jan-2019	Appendix D and E updates, and DELWP comment updates	Trevor March Associate Director - Infrastructure Services	
14	18-Mar-2019	Table 1 update for condition 10(m) references, consultation March 2019 updates (sections 1.5.1.6, 1.5.2.6 and 1.5.3.6), Appendix A - stakeholder consult evidence added, Appendix E existing condition surveys added	Trevor March Associate Director - Infrastructure Services	
15	25-Mar-2019	Update following DEWLP comments to sections 7.2 and 8.4.2	Trevor March Associate Director - Infrastructure Services	

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1.0 Introduction

AECOM Australia Pty Ltd (AECOM) have been commissioned by Berrybank Development Pty Ltd (BDPL) to produce a Traffic Management Plan (TMP) to consider, plan for and mitigate traffic and transport issues during the construction of the approved Berrybank Wind Farm (BWF).

Before commencing construction activities, a TMP is required to assess, plan for and mitigate any unnecessary traffic impacts associated with the movement of people and goods to / from and around the site.

The requirements of the TMP as detailed in conditions 9 to 11 of the project's planning permits (Permit No. 20092821 – A, Corangamite Planning Scheme and Permit No. 20092820 – A, Golden Plains Planning Scheme) are addressed by this TMP.

As acknowledged by this TMP, there are some gaps in information given the early planning stage of the project. It is therefore proposed that a further addendum TMP be created by the nominated contractor to inform VicRoads, Golden Plains Shire Council and Corangamite Shire Council of such information as and when it is known.

1.1 Project Background

The approved BWF facility is located within the Shires of Corangamite and Golden Plains; it is situated on both sides of the Hamilton Hwy in the south, approximately bounded by Urches Road on the north, and by Wilgul-Werneth Road on the east, and partially by Berrybank-Wallinduc Road on the west.

The development was initially endorsed to construct and operate up to 95 wind turbines, however the development permits were amended so that the latest turbine technology can be utilised, that is both higher in capacity and more efficient. The amended permits reduce the number of turbines in the layout to a maximum of 79 wind turbines.

AECOM were commissioned to carry out the TMP, in response to BDPL fulfilling their requirements of Planning Permit Conditions 10, 11 and 12 under Permit No. 20092820 and 20092821 issued by the Minister for Planning and Environment on 24 August 2010. The most recent TMP addressing the permit conditions was undertaken in March 2017.

The updated planning permits have two additional permit conditions, 10 (f) and 10 (g), both with regards to native vegetation. Accordingly, AECOM have been commissioned to update the TMP report based on their experience, current guidelines and the updated permit conditions.

1.2 TMP Objectives

The objectives of this TMP are as follows:

- Provide a safe environment for all persons working on and traffic travelling along roads in the vicinity of the project.
- Minimise impact of the works required for the BWF on the road network and adjacent landowners / occupiers.
- Minimise delays to bus services (and where possible, give priority to public transport), and minimise interference with people's ability to access buses.
- Cater for the needs of all road users.
- Communicate the arrangements for, and impacts of, any activities affecting traffic.
- Satisfy conditions 9 to 11 of the project's planning permits (Permit No. 20092821 – A, Corangamite Planning Scheme and Permit No. 20092820 – A, Golden Plains Planning Scheme).

This TMP aims to set out the requirements and methods required to achieve these objectives, through appropriate traffic management methods.

1.3 Related Documents

This TMP should be read in conjunction with Permit No. 20092821 – A, Corangamite Planning Scheme and Permit No. 20092820 – A, Golden Plains Planning Scheme. This TMP addresses Conditions 9 to 11 as outlined in Section 1.4.

1.4 Planning Permit Conditions

The planning permit conditions of both permits relating to traffic matters are outlined in Table 1, along with where in this TMP report that they are addressed.

A copy of the planning permits can be made available upon request.

Table 1 Planning permit condition requirements addressed in this TMP

Condition Requirements		TMP Reference	Comment
Number	Details		
9	Prior to the development of a traffic management plan an accurate reassessment of the vehicle numbers for over dimensional, heavy duty and light vehicles must be undertaken in consultation with Corangamite Shire Council and VicRoads, to the satisfaction of the Minister for Planning.	Refer Sections 1.5, and 4.4.	*As per Golden Plains permit number.*
10	Prior to construction commencing and once heavy transportation routes are known a traffic management plan must be prepared in consultation with Corangamite Shire Council and VicRoads and to the satisfaction of the Minister for Planning. When approved, the plan will be endorsed and will then form part of this permit. The plan must include:	Refer Section 1.5	*As per Golden Plains permit number.*
10 (a)	Separate components for construction and operation of the wind energy facility.	Refer Chapters 4.0 and 5.0, including subsections 4.5, 4.6.2, 5.3.5, 7.1.1.3, 8.5.6, 8.6.2 and 9.2	*As per Golden Plains permit number.*
10 (b)	An existing conditions survey of public roads prepared in consultation with Corangamite Shire Council (*Golden Plains Shire Council in associated permit*), and VicRoads that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility, including details of the suitability, design, condition and construction standard of the roads.	Refer Section 7.1 and Appendix E	*As per Golden Plains permit number.*
10 (c)	The designation of appropriate construction and transport vehicle routes to the wind energy facility site.	Refer Section 5.3	*As per Golden Plains permit number.*
10 (d)	The designation of operating hours and speed limits for trucks on routes accessing the site so as to avoid	Refer Sections	*As per Golden Plains permit number.*

Condition Requirements		TMP Reference	Comment
Number	Details		
	school bus routes and school bus times where relevant, and to provide for resident safety.	8.5.7 and 8.6	
10 (e)	The identification and timetabling of any pre-construction works.	Refer Section 4.2 and Chapter 6.0	*As per Golden Plains permit number.*
10 (f)	Protocols for identification of any areas of indigenous roadside vegetation that may require removal or pruning, and the pruning practices to be followed.	Section 8.4	*As per Golden Plains permit number.*
10 (g)	Protocols for, and timing of obtaining all relevant approvals for road works and vegetation removal outside the wind farm site including consent from the landowner to use the land.	Refer Chapter 2 and Section 8.4	*As per Golden Plains permit number.*
10 (h)	The designation of all vehicle access points to the wind energy facility from surrounding roads. The location and detailed design of the connection between the internal access tracks and the public roads must ensure safe sight distances, turning movements and avoid potential through-traffic conflicts.	Refer Chapters 5.0 , 6.0 and Appendix **B**	*As per Golden Plains permit number.*
10 (i)	Recommendations on the need for road and intersection upgrades to accommodate any additional traffic or site access requirements, whether temporary or on-going, and the timing of when these upgrades are to be undertaken. This is to include engineering plans demonstrating how truck movements can be accommodated on sealed roadways and turned where possible without encroaching onto the incorrect side of the road for the Hamilton Highway and Berrybank-Wallinduc road intersection. The plan must include details of any required road construction works.	Refer Chapters 5.0 , 6.0 and Appendix **B**	*Condition only applies to Corangamite permit.*
10 (j)	Measures to be used to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads.	Refer Section 4.6 and Chapters 5.0 , 6.0, 7.0 and 8.0	*Golden Plains permit condition 10(i).*
10 (k)	A program of regular inspections to be carried out during the construction period to identify maintenance works necessary as a result of construction traffic to the satisfaction of Corangamite Shire Council and VicRoads (as relevant).	Chapter 7.0	*Golden Plains permit condition 10(j).*
10 (l)	A program to rehabilitate roads to the condition identified by the surveys required above by Condition 10b), in consultation with Corangamite Shire Council	Chapter 7.0	*Golden Plains permit condition 10(k).*

Condition Requirements		TMP Reference	Comment
Number	Details		
	(*Golden Plains Shire in respective permit*) and VicRoads (as relevant).		
10 (m)	If required by Corangamite Shire Council (*Golden Plains Shire in respective permit*), the payment of a security deposit or bond for a maintenance period of 12 months in respect of works covered by the Traffic Management Plan. Such security deposit or bond is to be applied to roadwork not completed under Traffic Management Plan or to be released at the end of that period.	Refer section 1.5.2.6 and 1.5.3.6	The proponent is committed to meeting Council's requirements. The bond payments will be made within three months of commencement of construction on site.
11	The traffic management and road upgrade and maintenance works associated with the wind energy facility must be carried out in accordance with the traffic management plan to the satisfaction of the Minister for Planning on advice from Corangamite Shire Council (*Golden Plains Shire in respective permit*) and VicRoads (as relevant) and the cost of any works, including maintenance are to be at the expense of the permit holder.	N / A	*As per Golden Plains permit number.* *Noted by BDPL*

1.5 Stakeholder Consultation

AECOM have liaised with VicRoads, Golden Plains Shire Council and Corangamite Shire Council during the preparation of the TMP, copies of correspondence is provided in Appendix **A**.

It should be noted that the Planning Permit conditions have been amended to capture additional stakeholder requirements since the initial stakeholder consultation begun in April 2011.

1.5.1 VicRoads

1.5.1.1 April 2011

Initial advice was given on the project in April 2011, with the following discussed:

- OD vehicle permit process.
- Access to the BWF from the Hamilton Highway (VicRoads road asset) would require an appropriate channelized treatment and be located where suitable sight distances can be achieved. All access upgrades need to consider appropriate design treatments and guidelines.
- The preference for the transmission line arrangement, when crossing VicRoads roads, is via under boring techniques. Overhead crossings are acceptable however no poles or structures are to be located in the road reserve. The overhead clearance of the final design of any transmission line crossing must be approved by VicRoads.
- Identified that OD route via Warrnambool Bypass may be restricted due to the limited road capacity of the Merri River Bridge at Woodford (on Bridge Road). Unclear if overmass vehicles can traverse the bridge. VicRoads would need to determine acceptability of route (*note: this would be via the NHVR permit application process*).

1.5.1.2 2017 planning hearing

VicRoads responded at a planning hearing that it appreciated that some information was not given at the early planning stage of project, notably source of quarry materials. Stated that a TMP must be forwarded to VicRoads and Council/s for approval and information to be provided.

1.5.1.3 June 2018

VicRoads endorsed Revision 8 of the TMP, noting that there is a vast array of unknown elements that will need to be included and reviewed at the appropriate time.

1.5.1.4 October 2018

VicRoads reviewed Revision 9 of the TMP, noting that there is a vast array of unknown elements that will need to be included and reviewed at the appropriate time. Refer to Appendix A for the comments received in the email dated 30 October 2018.

1.5.1.5 January 2019

A meeting was held with VicRoads (Peter Gstrein) on Monday 7th January to discuss Planning Permit condition 10 (b), which relates to the existing condition survey of public roads. VicRoads were satisfied with the proposal of a photographic survey of the Hamilton Highway extending 200m either side of the Berrybank-Wallinduc Road intersection. Refer to Appendix E for written confirmation submitted by VicRoads on their position.

1.5.1.6 March 2019

VicRoads endorsed revision 13 of the TMP via letter received 12 March 2019, which is provided in Appendix A.

As outlined in the letter VicRoads endorsed the TMP with the following stated:

- Understanding that some road/intersection upgrades works are required as detailed in the TMP.
- Applicant must enter into a legally binding agreement with VicRoads before commencement of turbine delivery to the site. Agreement will need to be sought on detailed design of roads and intersections that require upgrades as detailed in the TMP.
- Note that OD transport route sections including arterial roads require approval by Heavy Vehicle Services section of VicRoads, whilst local roads require approval by the relevant municipality. The entire OD transport route requires permit approval by the NHVR.

1.5.2 Golden Plains Shire Council

1.5.2.1 March 2011

Meeting was held on-site with Council officers while conducting a site inspection on Thursday, 17 March 2011. Individuals from Council's Planning and Natural Resources departments attended the meeting in person, with follow-up consultation conducted with the Road Use and Maintenance Division via telephone.

Items and issues identified by Council for consideration in this study included:

- Native vegetation removal is of importance to Council and it should be minimised wherever possible within the road reserve
- Heavy vehicles are common on the local road network within the Shire due to nearby wheat silos and seasonal grain harvesting – with up to an estimated 200 heavy vehicles per day during the peak summer season
- The ownership and maintenance of Boundary Road between Golden Plains and Corangamite Shire Councils is unknown
- The Berrybank site is located within the CFA Region 15 for bushfires
- Contact details for other agencies such as DSE, DEDJTR and VicRoads were also provided.

1.5.2.2 2017 planning hearing

Golden Plains Shires planning submission acknowledged that they supported the development of the BWF subject to native vegetation impact assessment, impacts on road infrastructure to be planning and mitigated for, communication protocols to local community and engagement on project design changes.

1.5.2.3 June 2018

Golden Plains Shire Council reviewed Revision 8 of the TMP and provided several comments and queries. Refer to Appendix A for the Memorandum received.

1.5.2.4 November 2018

Golden Plains Shire Council reviewed Revision 9 of the TMP and provided several comments and queries. Refer to Appendix A for the comments received in the email dated 07 November 2018.

1.5.2.5 January 2019

Golden Plains Shire Council agreed to a dilapidation survey of approximately 39 kms of local roads by way of video recording the roads' existing conditions. Refer to Appendix A for written confirmation received and to section 7.1.1.3 for more information.

1.5.2.6 March 2019

Golden Plains Shire Council have endorsed revision 13 of the TMP via email on 13 March 2019, as provided in Appendix A.

As noted in the email Council's bond requirements are as follows:

The bond must be in the form of a bank guarantee lodged within 3 months from the commencement of works for the amount of $771,450.00 and may be used without referral for the rectification of any road damage. No expiry date should be noted on the bank guarantee. A request can be made for the return of the bond no earlier than 12 months from practical completion and following a satisfactory inspection by the responsible authority deems the roads satisfactory.

1.5.3 Corangamite Shire Council

1.5.3.1 March 2011

Consultation with Corangamite Shire Council was conducted via phone and email as a representative was unavailable to attend the on-site meeting on 17 March 2011. The main point of contact from Council was the Manager Assets Planning.

Items and issues identified by Council for consideration in this study included:

- Boundary Road is confirmed to be a road asset of Corangamite Shire Council and they are responsible for its maintenance;
- Access to the site will need to meet the standard VicRoads design guidelines;
- Recent traffic data for local roads surrounding the site was provided; and
- School bus routes in the area were identified and provided on a map.

1.5.3.2 2017 planning hearing

Council made a number of requests to be considered, with regards to transport and traffic this included:

- Panel recommends that prior to development of the TMP the applicant prepare an updated set of calculation of traffic movements, and particularly heavy-duty vehicle movements. These should be submitted to Corangamite Shire, Golden Plains and VicRoads. *It should be noted that whilst the TMP provides estimates of construction traffic volumes and nominal peak periods, the location and volume trucks from the sourced quarry has yet to be determined and this will likely include the larger traffic volumes to be considered. Given the planning stage this has yet to be established, once known an updated or addendum TMP would be submitted.*

- A TMP be prepared for the project to provide detail on the management framework for traffic.

1.5.3.3 June 2018

Corangamite Shire Council reviewed Revision 8 of the TMP and provided several comments. Refer to Appendix A for the comments received.

1.5.3.4 November 2018

Corangamite Shire Council reviewed Revision 9 of the TMP and provided several comments. Refer to Appendix A for the comments received in the email dated 25 November 2018.

1.5.3.5 December 2018

Corangamite Shire Council agreed to a dilapidation survey of approximately 8km of Corangamite Shire local roads. Refer to Appendix E for the existing conditions surveys undertaken and to Section 7.1.1.2 for more information.

1.5.3.6 March 2019

Corangamite Shire Council have endorsed revision 13 of the TMP via email which is provided in Appendix A.

Further to the above Council's bond requirements are as follows, as sent via email on 1 March 2019 (refer to Appendix A):

Corangamite Shire Council have requested a bond to the value of $100,000 to be paid within three (3) months of commencement of construction on site. The bond would be released once works are completed and the local roads utilised during the wind farm construction are left in a condition that are to Council's satisfaction. P:\605X\60576907\6. Draft Docs\6.1 Reports\Berrybank Wind Farm TMP\Final v.13 - 2019 TMP Report\Appendices

1.5.4 VicTrack / Australian Rail Track Corporation - 2011

Consultation was conducted with VicTrack and the Australian Rail Track Corporation (ARTC) with regards to the railway crossings located on Foxhow-Berrybank Road and Doyles Road to the south of the Hamilton Highway. These are both at-grade crossings that OD vehicles will be required to traverse across in transporting a number of deliveries for sites located south of the railway (i.e the 'Southwest', 'Turbine 42' and 'Southeast' access points). Attention was given to the Doyles Road railway crossing (crossing reference number 1524) given it is constructed approximately 1m above the surrounding natural surface with steep road grades at each road approach. Any road upgrades proposed for this railway crossing as part of this Project and located within 400mm of either side of the track will require approval by ARTC.

Although this railway line predominantly accommodates freight trains, there is one daily interstate service (The Overlander) that travels between Adelaide and Melbourne three times per week in both directions – Monday/Wednesday/Friday eastbound to Melbourne and Tuesday/Thursday/Saturday westbound to Adelaide. Based on the current timetable, it is estimated that the eastbound services will be passing these two crossings at approximately 4:45pm and westbound services at 10:30am. Freight train services are varied and will need to be confirmed with each operator closer to the date of commencing these particular OD vehicle movements.

Train traffic management plans will need to be developed in consultation with V/Line, ARTC, freight operators and 'The Overlander' passenger operator given the length of OD vehicle proposed and the time required to clear the crossing. A piloting vehicle will also need to be requested from ARTC for all OD vehicles crossing the railway to ensure these movements are conducted safely.

1.6 References

The following reports and / or parties have been referenced or consulted in the preparation of this report:

- Victoria Government Gazette – Road Management Act 2004, Code of Practice, Worksite Safety, Traffic Management 2010.

- Road Management Act 2004.
- VicRoads – General Guidance.
- VicRoads Heavy Vehicle Network Maps in Victoria.
- National Heavy Vehicle Regulator (NHVR) website / journey planner.
- VicRoads.
- Golden Plains Shire Council.
- Corangamite Shire Council.

2.0 Policy, Regulatory and Protocol Requirements

The following should be considered by BDPL in the development of the BWF.

2.1 Policy and Regulatory Requirements

2.1.1 Victoria Government Gazette, Road Traffic Management Act 2004, Code of Practice for Worksite Safety, Traffic Management, 2010

It is considered that the aforementioned will need to be considered in the movement of vehicles to / from the site (most particularly OD vehicles) where local road conditions may be constrained or where members of the public will not expect such vehicles to be travelling, therefore requiring traffic management to facilitate safe movement of vehicles.

The main objectives of this document are consistent with this TMP report, as previously outlined in Section 1.2.

The code of practice suggests that consultation with appropriate person/s (contractor hired in this case) with experience in working in trafficked worksites can be beneficial in ensuring a practicable TMP is prepared. It is accordingly considered that this plan is subsequently reviewed by the hired contractor to ensure all measures are implemented to maintain safety.

2.1.2 Australian Standard – Manual of uniform traffic control devices – Part 3: Traffic control for works on roads (AS 1742.3 – 2009)

The standard sets out all matters to be considered as being essential to a TMP, these being as follows:

- Traffic Demand: Capacity to accommodate traffic demand at an acceptable level of service and convenience to road users.
- Traffic Routing: Selection of appropriate means of routing traffic at the site. Ensuring all required traffic movements are provided for.
- Traffic Control: Determination of the need for traffic control, i.e. by traffic controller, traffic signals, police or other means.
- Other Road Users: Determine need to make provisions for road users other than vehicular traffic including, pedestrians, bicycles, school children and emergency vehicles.
- Special Vehicle Requirements: Determine the need to provide for vehicles such as:-
  - Buses, including stops and terminals;
  - Over-dimensional vehicles;
  - Restricted vehicles.

With regards to applicable considerations for construction traffic management the standards outline the following guidance:

Traffic through the work area

Traffic can be permitted through a work area where both the traffic and the work can be adequately controlled. Traffic controllers or traffic signals shall be employed as necessary to slow traffic on the immediate approach to an active work area, to stop traffic for short periods when required for the movement of plant or other operations, or to control single lane shuttle working.

Device Requirements

The standards outline the selection and use of traffic control devices and signs, they are required to:

- Provide advance warning;
- Guide traffic through, around or past the work area; and
- Minimise the possibility of confusion and misinterpretation of the intended instructions.

Advance warning signs and devices shall allow adequate time for correct response under the anticipated worst conditions. All approaches to the work area, including any side roads, shall be provided for. The standards give guidelines for the installation (e.g. orientation of signs facing towards approach traffic at right angles to the line of sight from the driver to the sign) and removal of warning signs and devices.

Approval for erection or removal of certain regulatory traffic control devices may need to be obtained from the appropriate authority.

2.2 Protocols

2.2.1 Road Works

2.2.1.1 VicRoads Roads

VicRoads has approved the preliminary designs of road upgrades and road works proposed to be undertaken on VicRoads roads. Prior to the upgrade and utilisation of these roads, a works agreement will be obtained from VicRoads and subsequent Functional and Detailed Design plans will be submitted to VicRoads for approval.

2.2.1.2 Council Roads

Where Council roads are required to be upgraded, Functional and Details Design plans will be submitted to Council for approval prior to the commencement of any upgrade. A ‘works within the road reserves permit’, ‘road opening permits’ and ‘vehicle crossing permits’ will be sought as required.

2.2.2 Over-Size Vehicle Permits (component deliveries)

The National Heavy Vehicle Regulator (NHVR) issues permits for oversized vehicles. VicRoads, on behalf of NHVR, will require at least 28 days to assess any route.

In addition to the above, permission is required from other key stakeholders, the Department of Economic Development, Jobs, Transport and Resources (DEDJTR) will need to give permission (provide necessary staff on site) for any such OD vehicles crossing or travelling across train tracks. A permit is required when an OD vehicle crossing the railway line is greater than 4.9 metres in height, 3.0 metres wide or 26.0 metres in length.

It will be necessary that all relevant stakeholders are involved at the outset of obtaining necessary permits and the above information should be used as a guide only in relation to those discussions.

2.2.3 Vegetation Removal

Should it appear that a patch of vegetation is to be impacted outside the wind farm site as a result of traffic or works relating to the Wind Farm, the patch of vegetation will be avoided and an assessment by a suitably qualified ecologist will be undertaken to identify whether the vegetation is native.

Should a permit be required to lop, destroy or remove the identified patch, protection measures will be put in place to avoid impacts on the patch of vegetation. Protection measures could include appropriate traffic management or protective fencing, depending on the location and extent of the identified patch.

Should impacts on the identified patch be unavoidable and should a permit to impact the vegetation be required, works in the proximity of the patch will cease protection measures will be put in place and statutory approvals will be sought from the relevant authorities to lop, destroy or remove the patch of vegetation.

2.2.4 Landowner consents

The following protocol will be adopted should it be determined that access to private land is required to undertake roadworks or vegetation removal as necessary for the project:

- If the landowners are contactable via phone or email, contact will be made with them to introduce the project and explain why access to their land will be required.

- The phone call will be followed up with a written request to access the private land and undertake the relevant works.
- The written request will be inclusive of a consent form to be signed by the landowner and a return post-paid envelope to ensure written records of the consent.
- If required, the written consent will form part of any statutory application seeking approval to undertake the works

3.0 Existing Conditions

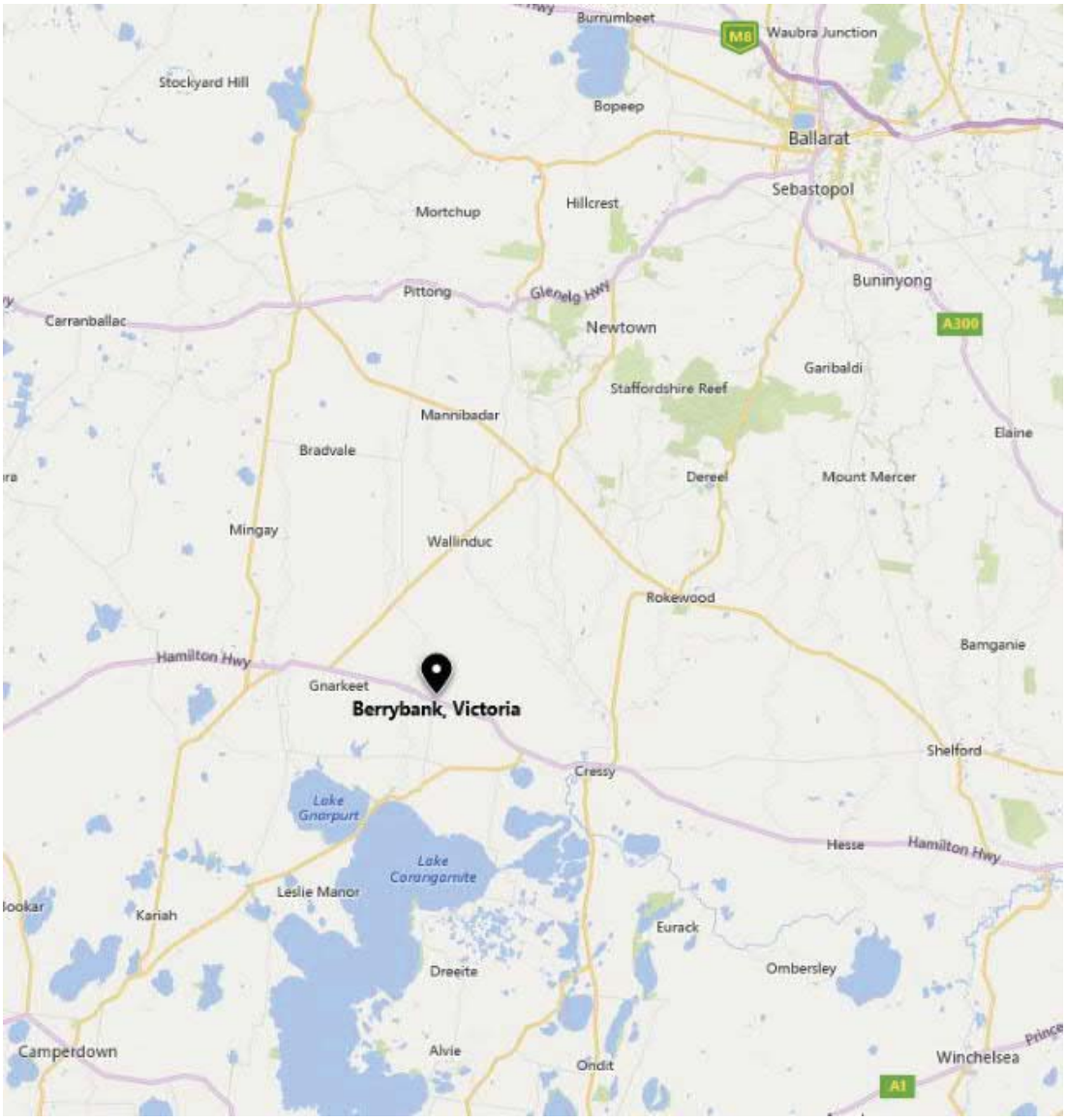
3.1 Subject Site and Locality

The approved BWF development is to consist of 79 wind turbine generators (WTGs) located approximately 14km east of Lismore and 16km to the west of Cressy in southwest Victoria. The site is split between the two municipalities of Golden Plains Shire and Corangamite Shire Councils by Boundary Road. Major regional centres surrounding the site include Lismore (14 km west), Cressy (16 km east), Geelong (82km east), Colac (54 km south), Warrnambool (114km southwest) and Ballarat (65 km northeast).

A railway line runs through the smaller portion of the site south of the Hamilton Highway and as such restricts access options. It should be noted that no additional at-grade railway crossings are permitted and the existing crossings must be utilised by vehicles generated by the BWF project.

A plan showing of the site in relation to the local road network is shown in Figure 1. For a plan of the project refer to Figure 2.

Figure 1 Site Location (Source: BingMaps)



3.2 Road Network

The south-west region of Victoria is serviced by a network of highways that provide connections to Geelong to the east, Ballarat to the north-east, Horsham to the north and Portland and Mt Gambier to the west. A number of these roads are registered on Victoria's Oversize/Overmass (OSOM) Network and/or gazetted roads for B-Doubles. A description of the relevant regional roads is provided below. All surrounding roads to the BWF site are managed and maintained by VicRoads, Corangamite Shire or Golden Plains Shire Councils.

It is assumed that all VicRoads declared roads are maintained to an appropriate standard to allow safe usage by B-double vehicles.

The local council roads include a description of the vehicle type that is intended to use that roadway, together with an estimated traffic volume. The project layout has been developed with the intention of heavy vehicles circulating on the internal access track, and minimising usage of the public roads. There will be a need to utilise some of the local council roads while the internal access tracks are under construction, and occasional utilisation by vehicles attending site for the first time that are not familiar with the arrangements.

3.2.1 VicRoads Road Assets

Henty Highway (Port of Portland to Princes Highway)

The Henty Highway (A200) connects the Port of Portland to the south with the Princes Highway (A1) to the north just beyond Dutton Way/Portland North. The route is a declared OD road and provides larger vehicles an appropriate egress from the Port area without the use of the local Portland road network.

The Henty Highway (A200) is an approved OD route; however, vehicles exceeding the OD mass and dimension standards will require approval from VicRoads who maintain and manage the highway. It is generally a two-lane, two-way road.

The Henty Highway is a registered roadway on Victoria's Oversize/Overmass (OSOM) Network, and a gazetted road for B-Doubles.

Princes Highway (Henty Highway to Warrnambool-Caramut Road)

The Princes Highway (A1) is an A-class highway which links Portland to the west with Geelong in the east via Port Fairy, Koroit, Warrnambool, Terang, Camperdown, Colac and Winchelsea. It is generally a two-lane, two-way road. From Portland, the Princes Highway extends north to Heywood and then west towards the South Australian border.

The Princes Highway splits just north of Dutton Way/Portland North into northern and eastern routes.

The Princes Highway (A1) is an approved OD route; however, vehicles exceeding the OD mass and dimension standards will require approval from VicRoads. Nonetheless, Princes Highway is suitable for standard dimension commercial vehicles. The highway comprises of 3.5 m wide traffic lanes with 2.5 m sealed shoulders. In addition, this length of Princes Highway has numerous rest areas allowing temporary refuge of OD vehicles to allow for queued traffic to pass.

It should be noted that the Princes Highway, between Portland and Port Fairy, passes through the township of Narrawong. This town has a local primary school which operates a 40km/h speed zone during school drop-off and pick-up times.

The Princes Highway is a registered roadway on Victoria's Oversize/Overmass (OSOM) Network, and a gazetted road for B-Doubles.

Warrnambool-Caramut Road (Princes Highway to Bridge Road)

The Warrnambool-Caramut Road (C174) is a north-south road connecting Warrnambool in the south with Caramut to the north. For the purposes of this particular windfarm development, the Warrnambool-Caramut Road forms the western component of the defined Warrnambool Bypass between Princes Highway and Bridge Road. The Bypass is managed by VicRoads and accommodates larger vehicles to travel between the Princes Highway and Hopkins Highway to avoid infrastructure restrictions east of Warrnambool-Caramut Road and avoid interacting with the general Warrnambool traffic.

This section of C174 has one 3.5m wide lane in each direction within a single carriageway. At its southern terminus it is a wide carriageway easily accommodating on-street parking within the shoulder. The width of these shoulders reduces significantly north of Fotheringham Street and in some locations these do not exist.

The Warrnambool Bypass route requires northbound vehicles to turn right into Bridge Road and this intersection has been designed to accommodate for vehicles up to a B-Double.

Warrnambool-Caramut Road is a registered roadway on Victoria's Oversize/Overmass (OSOM) Network, and a gazetted road for B-Doubles.

Bridge Road (Warrnambool-Caramut Road to Hopkins Highway)

Bridge Road forms the northern component of the Warrnambool Bypass and is an east-west road connecting Warrnambool-Caramut Road with the Hopkins Highway. It is of a similar cross-section to the main component of the Warrnambool-Caramut Road discussed above with a single carriageway of one 3.5m wide lane in each direction and narrow or no shoulders.

This road is aligned through the Woodford community where the Merri River Bridge is located. As outlined previously, this bridge can cater for all legally licensed vehicles up to and including the axle loading requirements for B-Doubles. However, it is unclear at this stage whether the overmass vehicles generated by this windfarm development can be safely accommodated when crossing this bridge. Further consultation during the permit application phase of the project is required with VicRoads to determine whether the bridge may be utilised by the defined overmass vehicles or if an alternate route should be used.

Bridge Road is a registered roadway on Victoria's Oversize/Overmass (OSOM) Network, and a gazetted road for B-Doubles.

Hopkins Highway (Bridge Road to Hamilton Highway)

The Hopkins Highway (B120) is a north-south road connecting Warrnambool to the south at the Princes Highway with Mortlake to the north at Hamilton Highway. It has a single carriageway with one lane provided in both directions and narrow shoulders. This section of the Hopkins Highway (between Bridge Road and the Hamilton Highway) is aligned through several rural communities including Bushfield, Purnim West, Purnim, Ballangeich and Ellerslie. At these locations the default 100km/h speed limit reduces to a posted speed limit of 80km/h and/or 60km/h.

The Hopkins Highway is a registered roadway on Victoria's Oversize/Overmass (OSOM) Network, and a gazetted road for B-Doubles.

Hamilton Highway

The Hamilton Highway (B140) is an east-west road connecting the Geelong CBD in the east with the Glenelg Highway at Hamilton to the west. It has a similar construction to the Hopkins Highway whereby it is a single carriageway with one 3.5m width lane provided in each direction with narrow or no shoulders. The project site is located in Berrybank and is dissected by the Hamilton Highway. The Hamilton Highway is aligned through many regional centres including Penshurst, Caramut, Hexham, Mortlake, Darlington, Lismore, Cressy and Inverleigh. The default speed limit of 100km/h reduces to a posted speed limit of 80km/h and/or 60km/h within these centres.

The North Geelong railway corridor runs parallel to the Hamilton Highway and various at-grade intersections are located along its length including east of Inverleigh; Cressy; Duverney; and Derrinallum.

The Hamilton Highway is a registered roadway on Victoria's Oversize/Overmass (OSOM) Network, and a gazetted road for B-Doubles.

Lismore-Scarsdale Road

Lismore-Scarsdale Road (C141) is a northeast-southwest road connecting the Hamilton Highway in the south to Rokewood-Skipton Road in the north. It has a single carriageway with one lane provided in both directions and wide unsealed shoulders.

Lismore-Scarsdale Road is a gazetted road for B-Doubles.

Church Street / McCurdy Road / Hyland Road – Geelong B-Double Route

VicRoads have a defined route for larger vehicles through Geelong in accessing the Hamilton Highway and includes Church Street, McCurdy Road and Hyland Road as part of the C118 route. These roads and their associated infrastructure have been constructed to accommodate vehicles up to and including B-Doubles. The road cross-section varies along these roads with a dual carriageway of two lanes in each direction being provided east of the Midland Highway and reducing to a single carriageway with one lane in each direction for the remainder to the west. On-street parallel parking and abutting residential properties are located along both sides for the majority of the length for this defined B-Double route. An at-grade railway crossing is also situated on Church Street east of Vines Road. The posted speed limit along the Geelong B-Double Route is 60km/h.

Signalised intersections are located at the intersections of Church Street / Midland Highway; Church Street / Shannon Avenue; and Church Street / Mineva Road.

3.2.2 Golden Plains Shire Road Assets

Bennetts Road

Bennetts Road is an unsealed north-south road connecting Boundary J W Road to the south with Urches Road to the north. It is of a single carriageway width with only one traffic stream permitted along its length – although the lack or roadside vegetation does allow for vehicles to pass. This road will dissect the northeast corner of the windfarm site. The abutting properties are of farmland. Speed signs are not displayed and drivers are encouraged to drive to the conditions of the unsealed road.

Of the project traffic only light vehicles are intended to use this road, which is anticipated at 20 vehicles per day during the construction phase and 2 vehicles per day during the operational phase.

Berrybank-Wallinduc Road

Berrybank-Wallinduc Road (within Golden Plains Shire Council – i.e. north of Boundary J W Road) is a sealed north-south road connecting the Hamilton Highway at Berrybank to the south with Lismore Road at Wallinduc to the north. Although there is a wide road reserve available, the sealed width of Berrybank-Wallinduc Road only permits one traffic stream. Therefore, vehicles must veer into the roadside grassy vegetation to permit oncoming vehicles to pass at a reduced speed. Berrybank-Wallinduc Road forms a large section of the western boundary to the windfarm development site. The abutting properties are of farmland. Speed signs are not displayed and drivers are encouraged to drive to the conditions.

Of the project traffic only light vehicles are intended to use this road, which is anticipated at 40 vehicles per day during the construction phase and 10 vehicles per day during the operational phase.

Padgetts Lane

Padgetts Lane is a sealed east-west road connecting Lismore Road to the west with Urches Road to the east. However, the width of the sealed roadway cannot accommodate two-way traffic and as such the grassy roadside is required to be used to allow an oncoming vehicle to pass at a reduced speed. Padgetts Lane will dissect the northern quarter of the windfarm site. The abutting properties are of farmland. Speed signs are not displayed and drivers are encouraged to drive to the conditions.

Of the project traffic only light vehicles are intended to use this road, which is anticipated at 40 vehicles per day during the construction phase and 10 vehicles per day during the operational phase.

Urches Road

Urches Road is an alternate east-west road to Padgetts Lane and connects Lismore Road in the west with Cressy-Werneth Road to the east. It is similar to most other sealed roadways in the area described above whereby the sealed width only permits one traffic stream. It should be noted that no commercial vehicles are permitted to use Urches Road, and the appropriate signage has been installed at major intersections. Speed signs are not displayed and drivers are encouraged to drive to the conditions.

Of the project traffic only light vehicles are intended to use this road, which is anticipated at 30 vehicles per day during the construction phase and 4 vehicles per day during the operational phase.

Wilgul-Werneth Road

Wilgul-Werneth Road is an east-west road and connects Urches Road to the east with Berrybank-Werneth Road (at its intersection with Boundary J W Road) to the west. It is constructed in a similar way to the other sealed roadways in the area whereby it permits only accommodates one traffic stream with vehicles using the roadside to permit oncoming vehicles to pass. Speed signs are not displayed and drivers are encouraged to drive to the conditions of the unsealed road.

Of the project traffic only light vehicles are intended to use this road, which is anticipated at 10 vehicles per day during the construction phase and 2 vehicles per day during the operational phase.

3.2.3 Corangamite Shire Road Assets

Boundary J W Road

Boundary J W Road is an unsealed east-west road connecting Berrybank-Wallinduc Road to the west with Werneth-Cressy Road to the east. It is a single carriageway and varies in width whereby only one stream of traffic can be accommodated in certain locations. The road will dissect through the centre of the windfarm site and forms the boundary between Corangamite and Golden Plains Shire Councils, with Corangamite Shire Council as the road asset manager. The abutting properties are of farmland. Speed signs are not displayed and drivers are encouraged to drive to the conditions of the unsealed road.

Of the project traffic only light vehicles are intended to use this road, which is anticipated at 30 vehicles per day during the construction phase and 4 vehicles per day during the operational phase.

Berrybank-Wallinduc Road

Berrybank-Wallinduc Road (within Corangamite Shire – i.e south of Boundary J W Road) is the same as that outlined for the road in section 3.2.2.

One over-dimensional vehicle access point titled the ‘Main Access’ is located on this section of road.

All project traffic types will use this section of road. Traffic volumes are anticipated at 170 vehicles per day during the construction phase and 10 light vehicles per day during the operational phase.

Berrybank-Werneth Road

Berrybank-Werneth Road is an east-west road and acts as the continuation of Wilgul-Werneth Road eastward to its western terminus at Berrybank-Wallinduc Road. Although Wilgul-Werneth Road is a sealed road, Berrybank-Werneth Road is an unsealed roadway however it can accommodate two-way traffic. The abutting properties are of farmland. Speed signs are not displayed and drivers are encouraged to drive to the conditions of the unsealed road.

One vehicle access point is proposed to be constructed on Berrybank-Werneth Road that will accommodate vehicles up to and including B-Doubles. Over-dimensional vehicles will use a crossover to pass perpendicular to the roadway.

Of the project traffic heavy vehicles and light vehicles are intended to use this road, which is anticipated at 100 vehicles per day during the construction phase and 4 vehicles per day during the operational phase.

Foxhow-Berrybank Road

Foxhow-Berrybank Road is a north-south road connecting the Hamilton Highway at Berrybank to the north with Foxhow Road at Foxhow to the south. It is a sealed single carriageway varying in width to permit two-way traffic at some locations (particularly towards its terminus points at Berrybank and Foxhow) with the remainder accommodating a width for one traffic stream only. Centreline marking is provided where the width accommodates two-way movements, with wide and sandy shoulders provided where it only caters for one traffic stream. Speed signs are not displayed and drivers are encouraged to drive to the conditions. An at-grade railway crossing is located on Foxhow-Berrybank Road approximately 700m south of the Hamilton Highway.

All project vehicle types will use this section of road. Project traffic volumes are anticipated at 60 vehicles per day during the construction phase and 4 light vehicles per day during the operational phase.

Doyles Road

Doyles Road is a north-south road providing direct access to the Hamilton Highway from abutting properties. It is an unsealed road providing two-way traffic varying between a gravel and sandy road surface. An at-grade railway crossing is located on Doyles Road approximately 700m south of the Hamilton Highway. Speed signs are not displayed and drivers are encouraged to drive to the conditions.

Two vehicle access points are proposed to be constructed along Doyles Road.

All project vehicle types will use this section of road. Project traffic volumes are anticipated at 60 vehicles per day during the construction phase and 4 light vehicles per day during the operational phase.

3.3 Existing Sustainable Modes of Transport

3.3.1 Pedestrians and Cyclists

Given the rural area there is no dedicated pedestrian or bicycle infrastructure provided near the BWF.

3.3.2 Public Transport - Bus

School bus routes operate throughout the area and OD and construction vehicles must not interfere with their operation. The current routes identified surrounding the BWF site includes:

- School bus services along OD route
  - Hamilton Highway (west of Doyles Road)
  - Foxhow-Berrybank Road
  - Berrybank-Wallinduc Road (south of 'Main Access')
- Additional services along Construction Vehicle routes
  - Hamilton Highway (east of Doyles Road)
  - Berrybank-Wallinduc Road (north of 'Main Access')
  - Urches Road

The contractor shall consult with the school bus operators to agree operating times when project traffic could be reduced to minimise interaction with school buses in the vicinity of the project. The contractor is required to apply with any relevant acts, as are all public road users.

3.4 Traffic Conditions

Traffic volume data has been collected on the local road network between 2000 and 2010. In order to estimate 2018 traffic volumes a factor of 1.5% growth per year has been applied (typically growth rates of 1 to 2% are assumed). Table 2 outlines the previous traffic data collected with the inclusion of the estimated 2018 traffic volumes.

Table 2 Existing AADT data and 2018 Estimates

Road	Existing Data (Year Collected)	% Heavy Vehicles	2018 Estimate	% Heavy Vehicles*
Hamilton Hwy	1,450 (2008)	18	1,497	18
Berrybank-Wallinduc Rd	68 (2010)	12	70	12
Berrybank-Werneth Rd	12 (2002)	4	13	4
Foxhow-Berrybank Rd	128 (2010)	18	131	18
Doyles Rd	15 (2010)	8	16	8
Boundary J W Rd	17 (2002)	2	19	2
Urches Rd	39 (2000)	18	43	18

Notes:

* *It is assumed that the CV proportion will be the same in 2018 as recorded in the existing data.*

The existing traffic volumes collected have been collated into two-way Annual Average Daily Traffic (AADT) data. However, AADT data is not the preferred value to indicate a normal weekday as it considers all periods throughout the year (including weekends and school holidays). As such, the AADT values are translated into Average Weekday Daily Traffic (AWDT).

Weekly volumes can be estimated by multiplying the AADT by seven days. It is assumed that 80% of weekly volumes will occur on weekdays, with 20% of the weekly volumes occurring over the weekend, therefore a normal weekday will represent 16% of the total weekly traffic volumes. No significant centres are located near the site (i.e urban environments) and as such a 50/50 directional split can be assumed between directions. As such, the AWDT in each direction will be half of the two-way AWDT calculated from the existing traffic data. It is further assumed that the peak period will correspond to 10% of the total AWDT.

Table 3 provides the AWDT values for the roads included in Table 2, as well as their respective estimated AM and PM peak hour periods (assumed peak hours are the same for robustness of review). As shown the local roads to the BWF site are lowly trafficked and any additional trips generated by the development of the BWF are unlikely to impact the local network operations.

Table 3 Existing Average Weekday Daily Traffic Volumes and Peak Hour (one hour) Volumes

Road	Estimated AWDT Volumes		Estimated Peak Hour Volumes		% Heavy Vehicles
	Two-way	One-way*	Two-way	One-way*	
Hamilton Hwy	1,868	934	168	84	18%
Berrybank-Wallinduc Rd	85	43	9	4	12%
Berrybank – Werneth Rd	17	8	2	1	4%
Foxhow-Berrybank Rd	161	80	16	8	18%
Doyles Rd	19	9	2	1	8%
Boundary J W Rd	24	12	2	1	2%
Urches Rd	55	28	6	3	18%

Notes: * *Rounded up to next whole vehicle.*

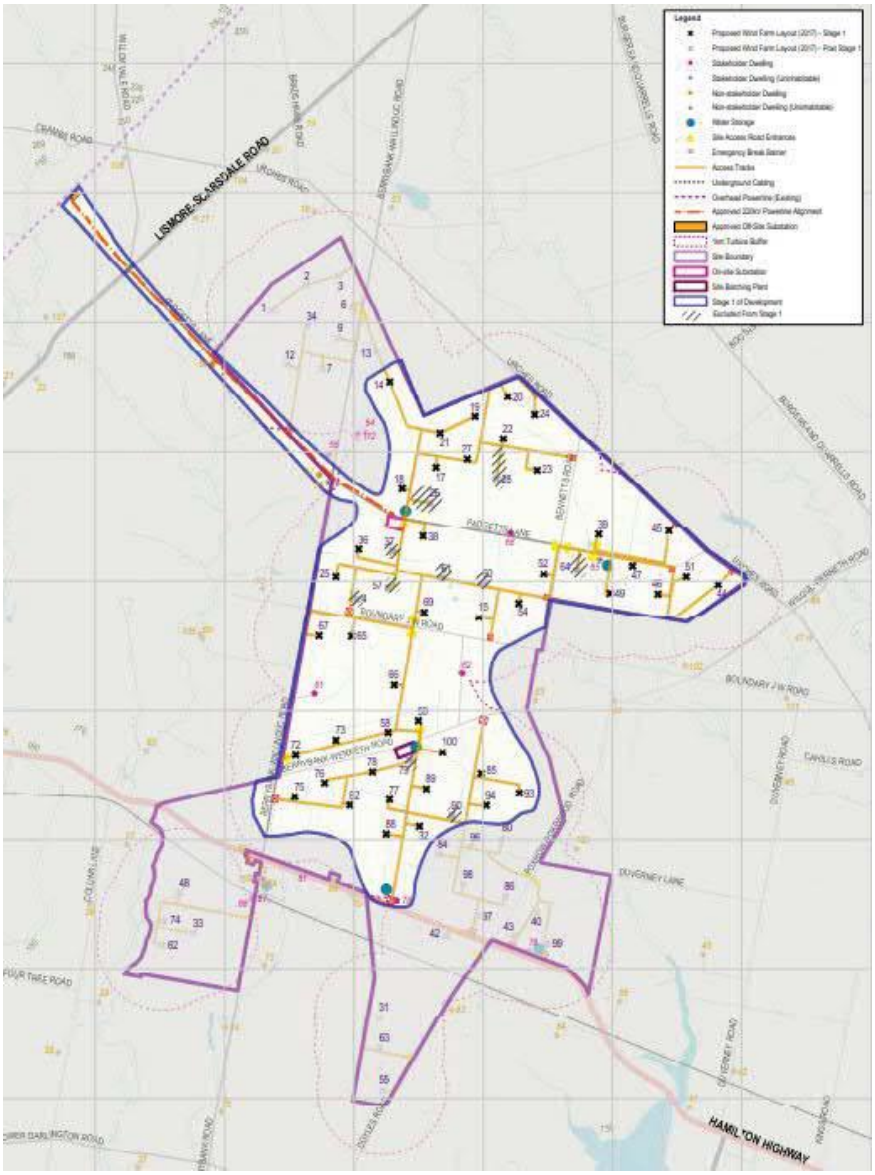
4.0 Approved Project

4.1 Overview

The following is approved as part of the BWF development. The development is proposed to be constructed in two stages; Stage 1 and Post Stage 1. Refer to Sections 4.2.2 and 4.2.3 respectively.

- 79 WTGs
- Number of intersection upgraded to facilitate vehicle access
  - Five priority access intersections
  - Seven vehicle cross-over points
- Transmission line
- Substation/switchyard

Figure 2 Development Staging



4.2 Construction Timetable

The construction program of timeframes for the BWF are outlined below:

- Pre-construction works
  - It is estimated that early works construction period including preparatory works and site clean-up will take approximately two months from site preparation to completion. The typical timeframes for construction of the early works are outlined below:
    - Temporary site compound area – 2 weeks;
    - Access road upgrades – 6 weeks;
    - Access tracks – 5 weeks; and
    - Commissioning and clean-up – 2 weeks.
- Construction works
  - It is estimated that the construction period, including preparatory works and site rehabilitation will take approximately 18 months from site preparation to completion. The typical timelines for construction of the wind farm are outlined below:
    - Access roads and intersection upgrades – 16 weeks;
    - Access tracks – 32 weeks;
    - Foundations – 36 weeks;
    - Wind turbine supply and erection – 70 weeks;
    - Electrical works (cabling & substation) – 42 weeks; and
    - Commissioning and rehabilitation – 13 weeks.

The following indicative stages are proposed to construct BWF, as shown in Figure 2 above.

4.2.1 Completed Early Works

The previously completed Early Works included the construction of the following:

- Works at Padgetts Lane: Construction of the permanent access entrance on the north side of Padgetts Lane located approximately 1,300m east of the intersection of Berrybank-Wallinduc Road. Construction of approximately 200m of permanent access tracks perpendicular to Padgetts Lane, along with a temporary site compound. The works included all necessary drainage, fencing and interface with the existing public road;
- Works at Berrybank-Werneth Road: Construction of the permanent access entrance on the south side of Berrybank-Werneth Road located approximately 2,250m east from the intersection of Berrybank-Wallinduc Road. Construction of approximately 200m of permanent access tracks approximately perpendicular to the Berrybank-Wallinduc Road, along with a temporary site compound. The works included all necessary drainage, fencing and interface with the existing road.
- Construction of water tank hard stands;
- No OD deliveries and turbine installations occurred as part of the Early Works. There has been a distinct cease in construction activities between the completion of the Early Works and the commencement of Stage 1. This period will allow BDPL to optimize the detail design for the remaining works to be completed as part of Stage 1 works, and complete turbine tender and the construction contracts.

4.2.2 Stage 1

Stage 1 proposed works:

- Approved 220kV powerline and off-Site substation in accordance with Planning Permit No. PA1700309 (which requires an independent traffic management plan);

- Water storage tanks in proximity to Padgetts Lane, Berrybank-Werneth Road and Hamilton Highway;
- Three emergency break barriers at Urches Road, two at Bennetts Road, two at Padgetts Lane, two at Boundary J W Road, one at Berrybank-Werneth Road and one at Hamiliton Highway;
- 43 wind turbines and their associated underground caballing and access tracks. Turbine numbers as follows:
  - 14, 21, 19, 20, 24, 23, 22, 27, 17, 18, 38, 39, 45, 44, 51, 46, 47, 49, 52, 54, 15, 36, 25, 67, 65, 69, 66, 72, 73, 58, 59, 100, 85, 93, 94, 89, 32, 88, 77, 82, 78, 76, 75
- Site access roads at Berrybank-Wallinduc Road, Berrybank-Werneth Road, Boundary J W Road and Padgetts Lane;
- On-site substation; and
- On-site batching plant.

4.2.3 Post Stage 1

Post Stage 1 works:

- Water Storage Tanks at Hamilton Highway and Berrybank-Wallinduc Road;
- Three emergency break barriers at Hamilton Highway;
- 36 wind turbines and their associated underground caballing and access tracks. Turbine numbers as follows:
  - 1, 2, 3, 6, 9, 7, 13, 34, 12, 26, 28, 64, 60, 61, 37, 57, 4, 79, 90, 84, 96, 80, 98, 86, 97, 43, 40, 99, 42, 31, 63, 55, 48, 33, 74, 62
- Site access roads at Berrybank-Wallinduc Road, Foxhow-Rokewood Road and Doyles Road.

4.2.4 Post-construction / Operational phase

- Where required, rehabilitate all intersections to their existing pre-construction condition; and
- Downgrade all site access points so that they only cater for B-Double vehicles (no OD movements are expected to be required during the operational phase).

4.3 Construction Vehicles

There are three distinct categories of vehicles required during the construction phase of the BWF, which are outlined below:

1. Over-Dimensional (OD) vehicles will be required to transport the larger and bulkier items including the tower sections, wind turbine blades and nacelles. Certain measurements (height, length, width and/or weight) are beyond the restrictions imposed on the largest unrestricted vehicle permitted on Victorian roads. Therefore, specialised vehicles (some including escort arrangements) need to be arranged in order to safely transport these larger goods to the BWF.
2. A large number of construction vehicles will be required that incorporates the general construction activities on site other than OD deliveries. Construction vehicles will transport goods such as steel, road construction materials, concreting supplies and water. The vehicle classes relating to the construction vehicles will be larger than personnel vehicles (such as cars and utilities) but have a maximum size of a B-Double.
3. The last remaining vehicle category encompasses personnel vehicles. Personnel movement incorporates construction personnel, subcontractors and escort vehicles and will only include cars and light commercial vehicles (LCVs). Any vehicle above 4.5 tonnes (and requiring an endorsed licence) will be considered a construction vehicle and as such be included in the second class of vehicle described above.

4.3.1 OD vehicle details

OD vehicles will be required during the transportation of certain components to the wind farm turbines, particularly in the delivery of the tower sections, nacelles and rotor blades. The selected wind turbine for this project is the Vestas V-136-4.2MW and has been utilised for the assessment.

The delivery of these large components are the critical transport movements as these determine the necessary height clearances, road widths and swept paths required for safe manoeuvrability of the OD vehicles. Indicative criteria are detailed in Table 4. The details, swept paths and associated designs are indicative for this type of vehicle. Further analysis will be required during the detailed design stage.

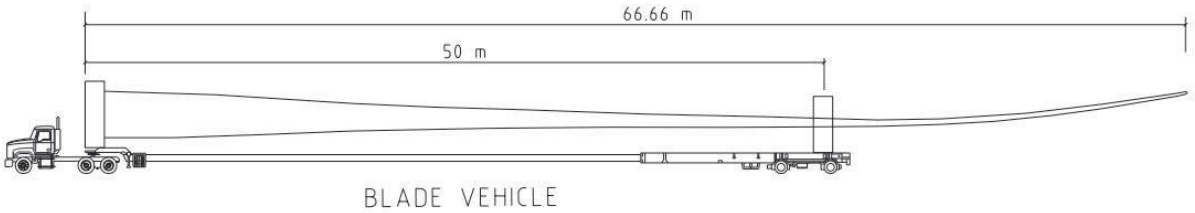
Table 4 Critical measurement for Transport Requirement

Turbine Component	Dimension
Rotor Diameter	136m
Blade Length	66.66m
Indicative Transportation Requirement	
OD Vehicle Length	75 m
Minimum Height Clearance Required	6.0 m
Minimum Road Width Required	5.0 m
Maximum Slope Gradient Permitted	18%
Maximum Side Inclination Permitted	4%

4.3.2 Indicative Swept Paths

The longitudinal profile for the OD (blade) vehicle is defined in Figure 3. This vehicle is transporting the 66.66 m turbine blade. Refer to Appendix C for indicative swept path drawings. Note that the final transportation configuration can vary depending on the blade transport configuration, the transportation subcontractor and their trailer configurations. Detailed design of the intersections and crossovers will require swept path analysis for the worst case vehicles.

Figure 3 OD (Blade) Vehicle Profile



4.4 Traffic Generation

The following parameters have been utilised in determining the peak construction activity generated at the BWF site:

- 15-month construction program;
- 11-hour (7am to 6pm) working weekday; and
- 24 working days per month.

Based on these parameters, the breakdown of vehicles generated at the BWF site during the estimated peak construction phase is outlined in Table 5. The consensus with wind farms is the peak hour is commonly in the morning between 6:00 am – 7:00 am when the majority of construction personnel are arriving in light vehicles. This often does not coincide with the local morning traffic peak hour, which is 7:00 am – 8:00 am or 8:00 am – 9:00 am. Construction personnel commonly finish the days' work at staggered times, and the evening peak hour is less than the morning peak hour. Note

that the peak hour volumes stated are for the project being constructed in its entirety and have not been reduced for the two construction stages.

Table 5 Estimated peak construction vehicle generation at BWF for both construction stages

Vehicle Class	Peak One-Way Vehicle Movements Generated			Activity
	Per month	*Per day**	*Peak Hour***	
Over-Dimensional	44	2	1	Delivery of Tower Sections
	23	1	1	Delivery of Blades/Nacelles etc.
Heavy Vehicles	148	5	1	Gravel for Foundations
	34	1	1	Water for Concreting
	21	1	1	Cement for Foundations
	500	50	5	Concrete Agitators
	9	1	1	Steel for Foundations
	128	4	1	Water for Foundations
	13	1	1	Fuel for Foundation Works
	149	7	1	Gravel for Road Construction*****
	1	1	1	Substation Works
	2	1	1	Sand for Cabling Works
	2	1	1	Cables for Cabling Works
	3	1	1	Conduit for Cabling Works
	3	1	1	Switchgear Works
	2	1	1	Steel for Substation Electricals
	3	1	1	Switchgear for Substation Electricals
Light Vehicles (cars, utes etc.)****	2,000	84	84	Construction Personnel – arriving and departing site
	134	6***	4***	Escort Vehicles for OD Deliveries
Total	3,219	170	84	**Site personnel arriving and departing site will be the peak vehicle movements to and from the BWF site.

Notes:

** Rounded up to next whole vehicle.*

*** During AM or PM peak hour it is assumed that all personnel vehicles will arrive or depart in that hour, with CV and OD vehicle activities being spread evenly over the 11-hour working weekday. NB: all values are rounded up to the next whole vehicle.*

**** It is assumed that no car pooling is taking place.*

***** Due to total number of OD vehicles – based on three escort vehicles per OD vehicle (two pilots and one escort at rear).*

****** These values are estimates only. Final numbers are to be confirmed depending on final quarry site(s) selection.*

4.4.1 Quarry

Refer to Appendix D – Heavy Vehicle Routes for more information. This Appendix outlines the offsite quarry locations nominated by the civil balance of plant contractor, the heavy vehicles routes likely to be trafficked, the estimated volume of material import, and the estimated heavy vehicle traffic volumes.

4.4.2 Concrete materials

An onsite concrete batching plant is proposed to produce concrete for use in constructing the BWF. Raw materials to produce concrete would be transported to site by the designated heavy vehicle routes in the area.

At this stage a suitable on-site water source has not been identified for use during construction as such it is currently proposed that water be transported from Camperdown by Heavy Vehicle.

Selection of the appropriate routes can only be determined once a BoP contractor has been contracted, their construction methodology is understood and a potable water source have been finalised. As such, at a later stage it is recommended that this document is further developed for each quarry site and potable water source selection.

4.5 Operational stage

The ongoing operation of the BWF would be monitored by staff onsite. It is predicted that approximately 7 permanent staff will be on site who would commuter to and from the site every day. An on-site car park of 8 spaces is to be provided at the Substation area.

Typical duties of staff are likely to include:

- Site track reviews and minor maintenance if required.
- Routine wind farm component maintenance (turbine, generators, etc.)
- Other general repairs and monitoring

It is predicted that up to 3 service vans would be travelling around the BWF site on a daily basis attending to any requirements. Minor additional traffic generation of approximately 1 truck per week would be required for the delivery of items to aid in maintenance activities (waster removal).

Major works are not usually required in the first 5 years of wind farm operations, however in the unlikely event of major works being required then an OD vehicle delivery maybe required for example a blade repair may require a crane delivery).

4.6 Peak vehicle frequency and traffic impacts

4.6.1 Construction phase

Trip generation rates and assumptions have been based upon information provided by BDPL.

Private vehicles utilised by construction workers is estimated at approximately 84 return trips per day.

The contractor will typically operate during normal construction hours from Monday to Friday between 7.00am to 6.00pm, with Saturday operations occurring between 7:00am till 4:00pm.

During the peak construction period, peak trips are expected to occur between 6:00 am and 7:00 am, with around 84 vehicle arrivals on a typical weekday.

Based on construction traffic information provided in Table 5, estimated peak construction hour is predicted to equate to approximately 16 trucks, however the timing of these activities in reality are unlikely to coincide. The construction traffic peaks are more likely to occur during the foundation pouring which need to occur over a single day. It is estimated that a total of 96 trucks would operate over the day at a frequency of 10 one-way trips per hour between a WTG site and the nominated batch plant.

It should be noted that the above are estimates only at this stage and could be subject to alterations following appointment of the project contractor. Given the lowly trafficked local road network (see Section 3.4) that any alterations to the above will not cause a detrimental traffic capacity impact.

4.6.2 Operational phase

It is predicted that only 7 staff vehicles per day will commute to and from the site each day. Given the low operational traffic generation no detrimental impacts to the local traffic operations are expected.

5.0 Vehicle Access

5.1 Vehicle Access Points

A total of five vehicle access points (site entrances) are proposed to the BWF site from the public road network. Four of the access points will permit all vehicle types (including OD vehicles) with the remaining access point allowing access up to heavy vehicles.

Table 6 provides a summary of the five vehicle access locations.

Table 6 Vehicle Access

Access Point	Road	Construction Stage	Nearest Turbine	Comment
Main Access	Berrybank-Wallinduc Road	Stage 1	72	OD access
Concrete Batch Plant Access	Berrybank-Werneth Road	Stage 1	79	B-Double access
Southwest Access	Foxhow-Berrybank Road	Post Stage 1	48	OD access
Turbine 42 Access	Doyles Road	Post Stage 1	42	OD access
Southeast Access	Doyles Road	Post Stage 1	63	OD access

5.1.1 'Main Access Point' (Berrybank-Wallinduc Road)

The 'Main Access Point' on Berrybank-Wallinduc Road is located approximately 300m north of Berrybank-Werneth Road.

This site access is to be designed to cater for all vehicles proposed to be generated by the BWF site, up to and including an OD vehicle. Once within the site from this access point, vehicles will be able to access all proposed wind turbine locations located north of Hamilton Highway via the various vehicle crossover points.

5.1.2 'Southwest Access Point' (Foxhow-Berrybank Road)

The 'Southwest Access Point' is located on Foxhow-Berrybank Road approximately 900m south of Hamilton Highway. This access point is located south of the railway aligned through the southern section of the BWF site and provides access to wind turbines 33, 48, 62 and 74. It should be noted that newly constructed railway crossings are contrary to state legislation and as such these wind turbines cannot be accessed via the 'Main Access Point' through vehicle crossover points. Access to this section of the site will be required to be designed to cater for all vehicles up to and including ODs. This access point is only required for the Post Stage 1 works.

5.1.3 'Turbine 42 Access Point' (Doyles Road)

An individual access must be provided on the western side of Doyles Road approximately 300m south of the Hamilton Highway and 400m north of the existing railway line. Access from other locations via vehicle crossover points is not permitted given the restrictions of the Hamilton Highway and railway line. This access point must cater for all vehicles up to and including ODs that will access the turbine 42 location. This access point is only required for the Post Stage 1 works.

5.1.4 'Southeast Access Point' (Doyles Road)

The 'Southeast Access Point' is located approximately 1.7km south of the Hamilton Highway. This access point is located 1km south of the railway line aligned through the southern section of the BWF site and therefore provides access to wind turbines 31, 55 and 63 which cannot be accessed from any other locations via connecting vehicle crossover points. Access to this section of the site will be required to be designed to cater for all vehicles up to and including ODs. This access point is only required for the Post Stage 1 works.

5.1.5 'Concrete Batching Plant Access Point' (Berrybank-Werneth Road)

The 'Concrete Batching Plant Access Point' will be the main access for CVs and personnel accessing the concrete batching plant and is located approximately 2.2km east of Berrybank-Wallinduc Road. The concrete batching plant is proposed to be located near wind turbine 79 and as such the access point will only be constructed on the southern side of Berrybank-Werneth Road. OD vehicles are prohibited to travel along Berrybank-Werneth Road, however this access point to the concrete batching plant will also be a vehicle crossover point between turbine 79 and 59 and as such needs to accommodate this movement. Therefore, the access point is to accommodate vehicles up to and including B-Doubles turning into and out of the site and vehicles including ODs crossing over Berrybank-Werneth Road.

5.2 Vehicle Crossover Points

The BWF site is located on over 5,000 hectares, however given its relatively flat topography it is possible to provide five main access points and circulate vehicles throughout the site via vehicle crossover points. These vehicle crossover points will be located where the internal road layout intersects the public road network and is a defined location for a through movement via an access track perpendicular to the public road.

Heavy vehicles and over-dimensional vehicles will not be permitted to access or egress the public road network at these crossover locations as the swept path would result in a substantial increase in vegetation removal within the public road reserve. However, each site access will be designed to cater for light vehicles permitting access and egress by cars, utes etc.

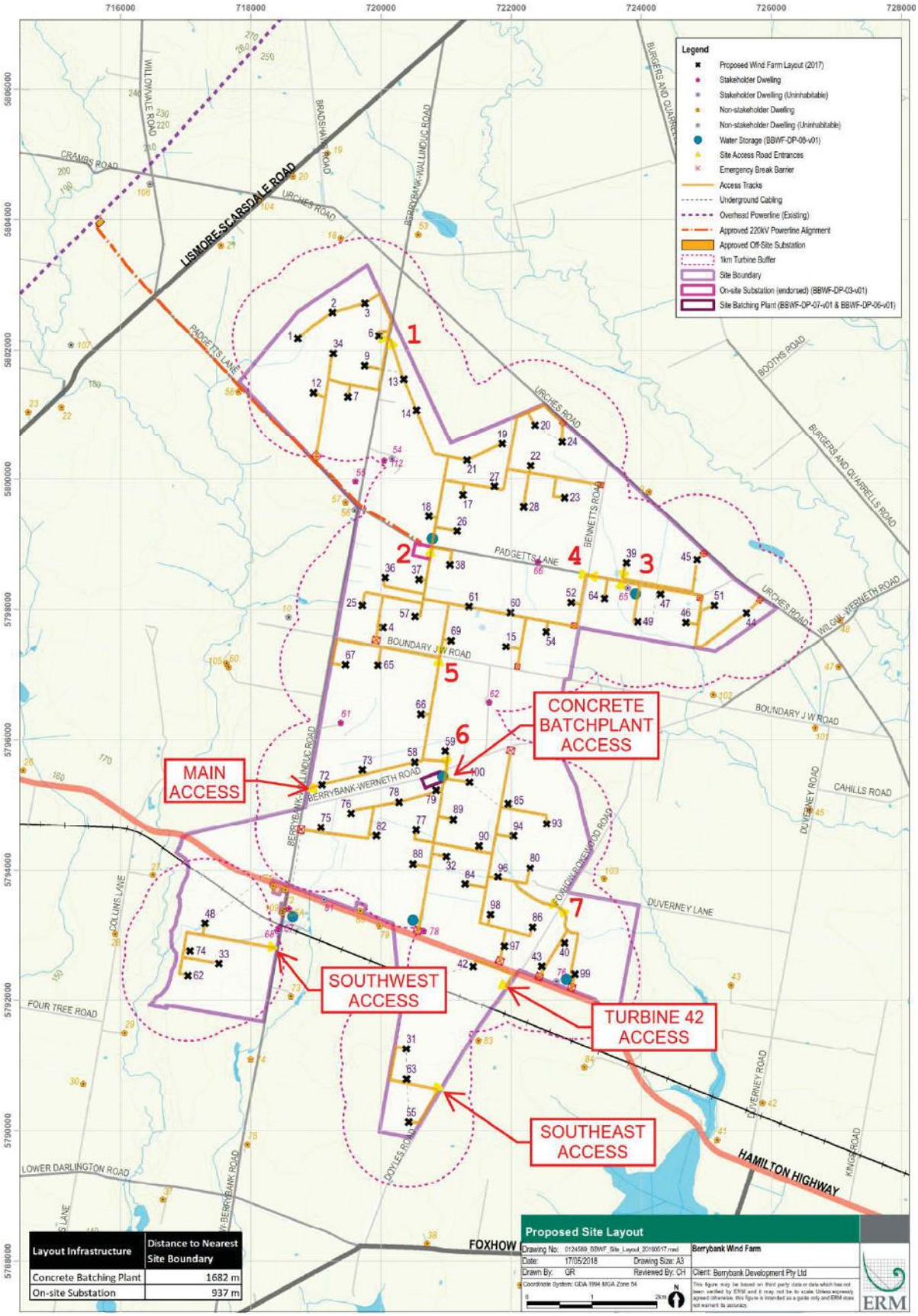
Table 7 provides a summary of the seven vehicle crossover points proposed for the BWF site. Note that the internal site layout has since been revised during the detailed design process. The crossover locations have been microsited, however they remain on the same public roads. The relevant Council will require designs of each location as part of the approval process for construction within the road reserve.

Table 7 Vehicle Crossover Points

Crossover Reference Number	Road	Location On Public Road Network	Nearest Turbines
1	Berrybank-Wallinduc Road (North)	Approximately 1.1km south of Urches Road	6 and 13
2	Padgetts Lane (West)	Approximately 1.3km east of Berrybank-Wallinduc Road	26 and 38
3	Padgetts Lane (East)	Approximately 500m east of Bennetts Lane	39 and 64
4	Bennetts Lane	Approximately 500m south of Padgetts Lane	52 and 64
5	Boundary J W Road	Approximately 1.7km east of Berrybank-Wallinduc Road	66 and 69
6	Berrybank-Werneth Road	Approximately 2.5km east of Berrybank-Wallinduc Road	59 and 79
7	Doyles Road	Approximately 1.5km north of Hamilton Highway	40 and 96

Figure 4 provides a summary of the locations of the six site accesses and the seven vehicle crossover points.

Figure 4 Summary of Site Access and Vehicle Crossover Points for the 79 turbine layout



5.3 Proposed Traffic Routes

Portland and the Port of Geelong are the nominated locations for the commencement of most ground transportation movements. The Port of Geelong is proposed to receive the larger wind turbine components via sea freight and will be the origin for OD vehicle movements to site. Turbine tower sections are proposed to be locally manufactured in Portland, Victoria. The greater Geelong region will be the origin for all raw materials (i.e. construction vehicles). Personnel will reside in the surrounding regional centres.

Confirmation of these OD routes and any associated permits must be attained from the haulage contractor prior to the commencement of OD transport.

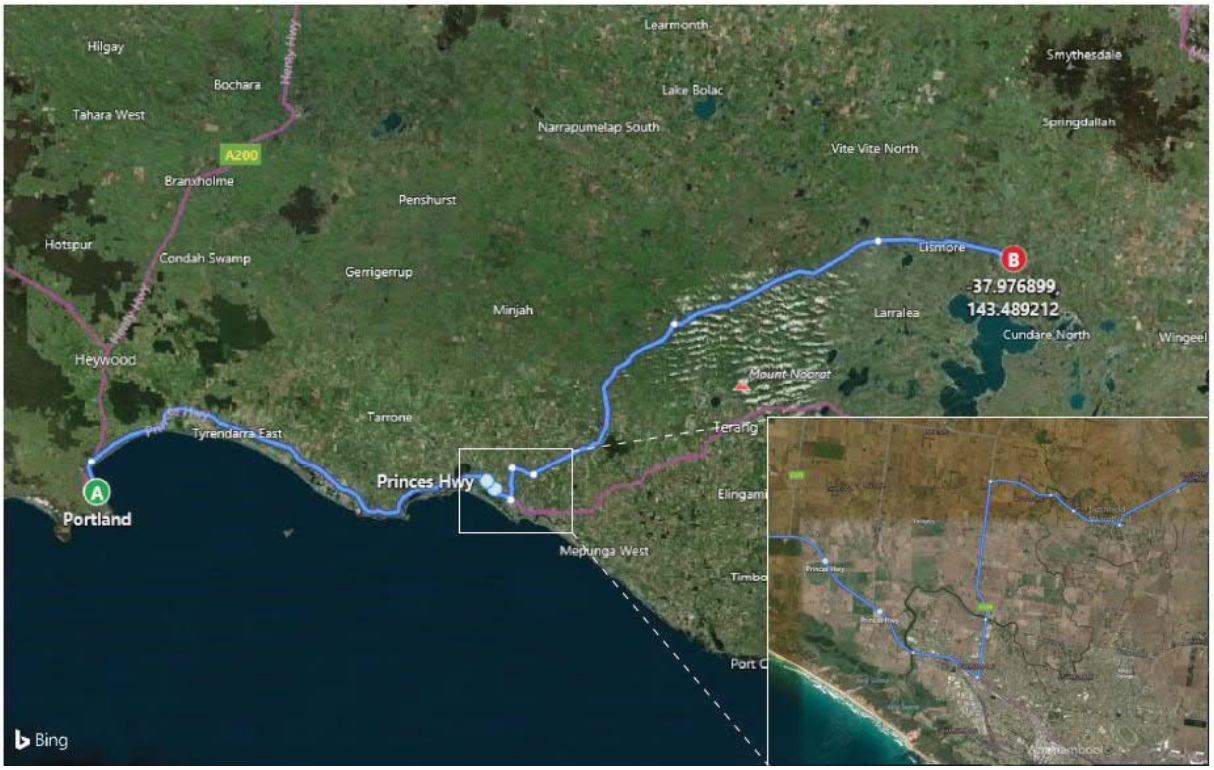
5.3.1 OD vehicles – Option 1 – Portland to Site

OD vehicles will commence their journey in Portland and follow the Henty Highway (A200) until it intersects with the Princes Highway (A1) just north of Dutton Way / Portland North. At the Henty Highway / Princes Highway t-intersection, OD vehicles will turn right to head in an easterly direction along the Princes Highway towards Melbourne. This route will continue along the Princes Highway until its intersection with Warrnambool-Carramut Road (C176) where vehicles will turn left and head north along with 'Warrnambool Bypass'. The bypass continues north to Bridge Road (C494) where vehicles will turn right and head east through the townships of Woodford and Bushfield. Bridge Road terminates at its intersection with Hopkins Highway (B120). OD vehicles will turn left and continue in a north-easterly direction to its northern terminus at the Hamilton Highway (B140) at Mortlake. Vehicles will turn right at this intersection onto the Hamilton Highway and continue in an easterly direction until they reach the site at Berrybank.

It should be noted that passage by overmass vehicles over the Merri Creek Bridge at Woodford (on the Warrnambool Bypass route) may be restricted as identified by the consultation with VicRoads, accordingly an alternative route is discussed subsequently in Section 5.3.2.

Figure 5 shows the route between the Port of Portland and the BWF site.

Figure 5 OD Vehicle Route – Portland to Site (Preferred Option)



5.3.2 OD vehicles – Option 2 – Portland to Site

Overmass vehicles will commence their journey in Portland and follow the Henty Highway (A200) northwards until they intersect South Boundary Road just south of Hamilton. It should be noted that one section of the Henty Highway between Portland and Heywood is classified as the Princes Highway West (A1).

At the Henty Highway / South Boundary Road t-intersection, overmass vehicles will turn right to head in an easterly direction along South Boundary Road to the junction of South Boundary, Rifle Road and Mount Napier Road. Overmass vehicles will then turn left onto Mount Napier Road and continue north.

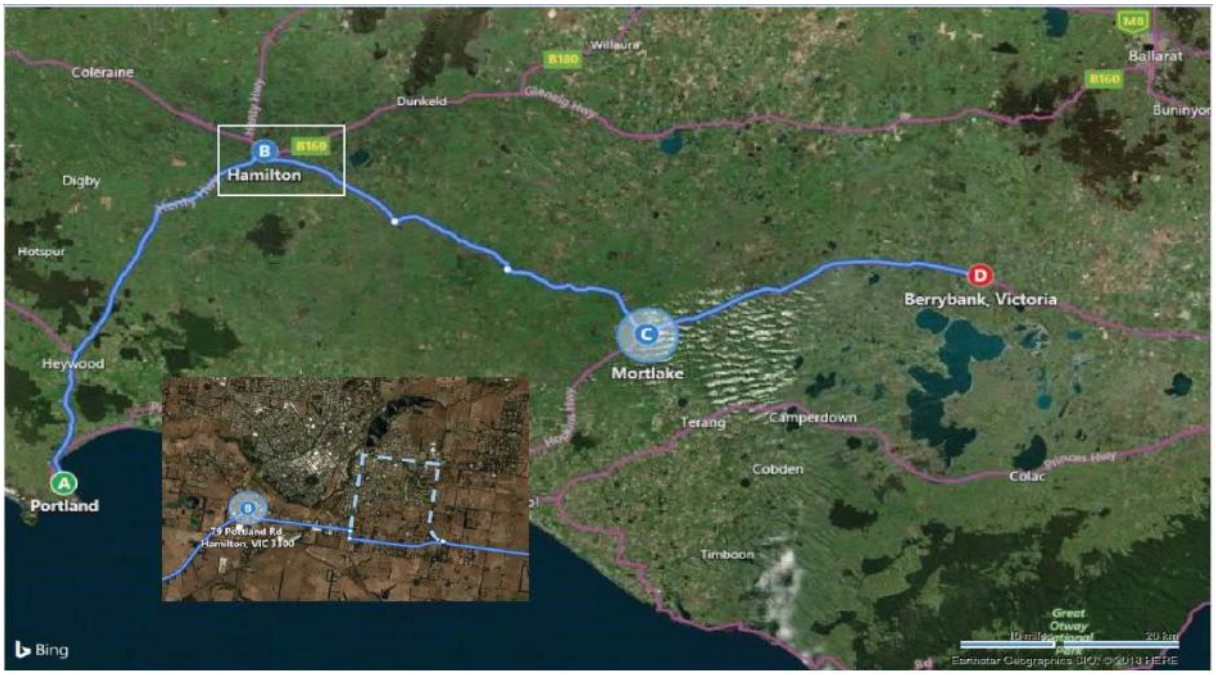
The primary overmass route requires vehicles to turn right onto Petschels Lane and continue east to the intersection with the Hamilton Highway (B140). Vehicles then turn right onto the Hamilton Highway and continue east to the Berrybank windfarm site.

It should be noted that the intersection of Mount Napier Road and Petschels Lane may be constrained and potentially unable to accommodate a right hand turn by some overmass vehicles. A secondary route has therefore been identified whereby vehicles continue north along Mount Napier Road (into George Street) to its intersection with the Glenelg Highway and then turn right to continue east until the Hamilton Highway where they will turn right and continue southeast towards the Berrybank site. A school is located on George Street and therefore OD movements should avoid school drop-off and pick-up times (8-9:30am; 2:30-4pm).

Confirmation of either of these routes via Hamilton must be attained from the haulage contractor prior to the commencement of OD transport using this backup route.

The route outlined in Figure 6 applies to overmass vehicles only not permitted passage across the Merri Creek Bridge at Woodford on the Warrnambool Bypass route. As such, OD vehicles that are within legal load limits can utilise the preferred OD route option indicated in section 5.3.1.

Figure 6 Overmass vehicle route – Portland to Site (backup option)



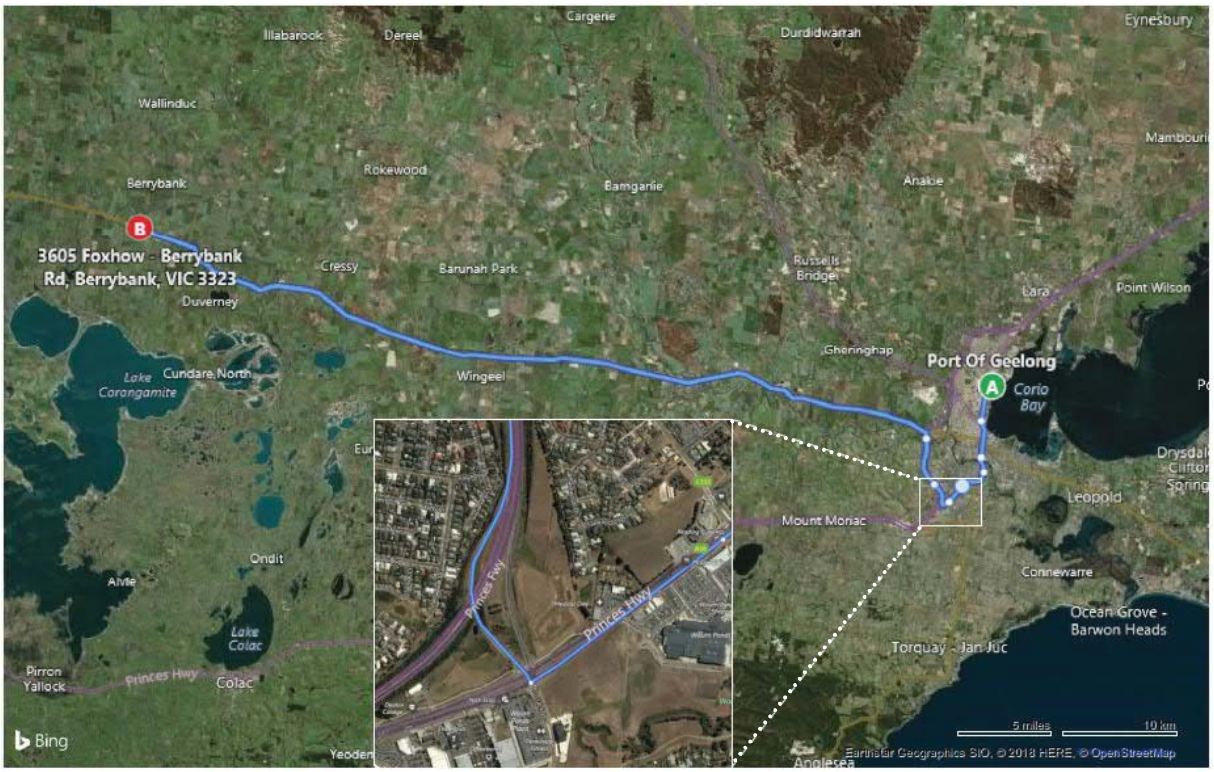
5.3.3 OD vehicles – Option 3 – Port of Geelong to Site

OD vehicles will commence their journey at the port of Geelong and will conduct a left hand turn onto Corio Quay Road (C115) and continue southwards until they merge with Princes Highway. Vehicles will continue along this route through to Melbourne Road, Latrobe Terrace, Settlement Road, High Street and Colac Road.

At the Colac Road / Geelong Ring Road intersection, the OD vehicles will turn right onto the Geelong Ring Road on-ramp to head in a northern direction on the Princess Freeway. This route will continue until its intersection with Hamilton Highway (B140) where vehicles will use the off-ramp and make a left hand turn. Vehicles will then travel in a western direction until they reach the project site in the vicinity of Hamilton Freeway / Wallinduc Road intersection.

Figure 7 shows the route between Port of Geelong and the Berrybank site.

Figure 7 OD Vehicle Route – Port of Geelong to Berrybank site

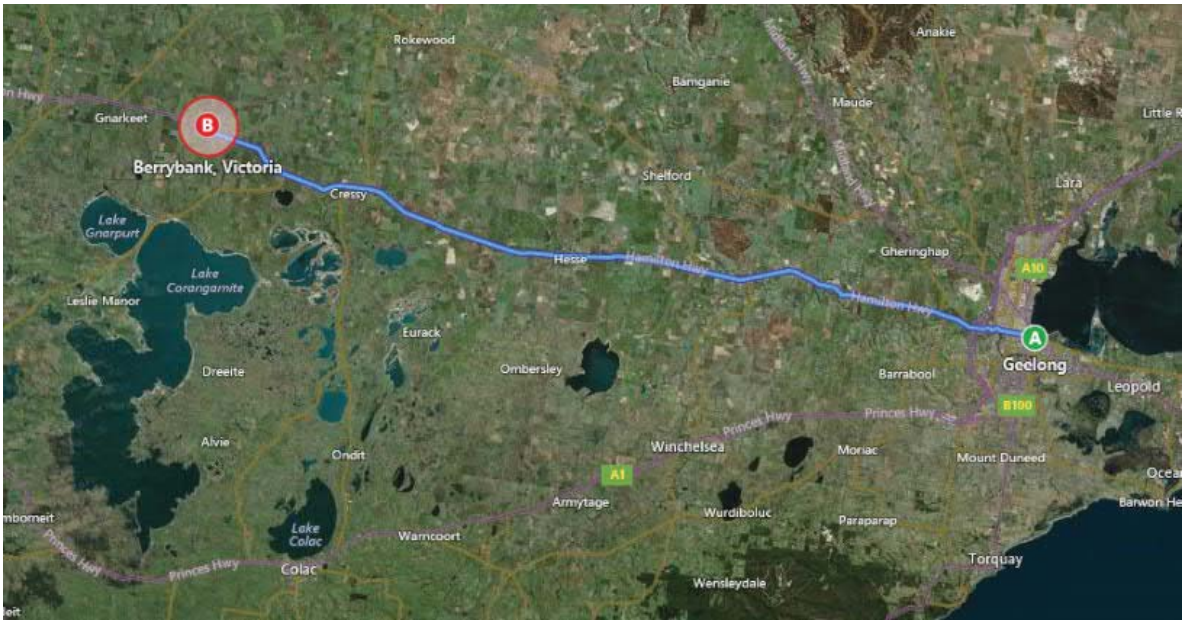


5.3.4 Construction vehicles

Construction vehicles will originate from various locations throughout Victoria. Commonly heavy vehicles may originate from the Port of Geelong and follow the designated B-Double route through the Geelong CBD whereby vehicles will follow Church Street in a westerly direction and continue until its intersection with McCurdy Street (C118) where they will turn left. These vehicles will follow the C118 route which follows McCurdy Street in a southerly direction until its intersection with Hyland Street where they will turn right and continue in a south-westerly direction. The southern terminus of Hyland Street is at its intersection with Hamilton Highway where construction vehicles will turn right and continue in a westerly direction until they reach the site at Berrybank.

Figure 8 shows the construction vehicle route between Geelong and the BWF site.

Figure 8 Construction Vehicle Route – Geelong to Site



5.3.5 Personnel vehicles (construction and operational phases)

Personnel vehicles will be originating from different locations and are able to access the site from all approaches to the BWF site access points during both the construction and operational phases of the BWF.

6.0 Mitigation Measures

Five access points will be provided at the BWF site which together will provide access and egress for all vehicles required during the construction phase of this project. Two main intersections on the Hamilton Highway in Berrybank will be utilised to safely accommodate the swept paths of all vehicles generated by the BWF during both construction stages.

6.1.1 Site Access Points

All access points (site entrances) should intersect the public road network as a T-intersection in accordance with Austroads. A summary of the requirements for each of the five site access points is provided in Table 8.

Table 8 Site Access Point Requirements

		'Main Access'	'SW Access'	'Turbine 42 Access'	'SE Access'	'Concrete Batching Plant'
Design Vehicle	**Left-In**	Light Vehicle	Light Vehicle	Light Vehicle	Light Vehicle	B-Double
	Left-out	OD (shortened)	OD (shortened)	OD (shortened)	OD (shortened)	B-Double
	Right-in	OD	OD	OD	OD	B-Double
	Right-out	Light Vehicle	Light Vehicle	Light Vehicle	Light Vehicle	B-Double
Area to be Constructed within the Road Reserve		700m^2	320m^2	490m^2	220m^2	460m^2
Access Width Required at Property Boundary Line		Gate to be installed inside the site once vehicles have straightened and standard gate width can be used.				

6.1.2 Intersections along OD Route

The critical turning movement along the OD route between Portland and the site are at two intersections on the Hamilton Highway: one at Berrybank-Wallinduc Road / Foxhow-Berrybank Road and one at Doyles Road. This section refers to the requirements for swept paths in accommodating OD vehicles, and the AustRoads design guidelines required for the turning traffic volumes generated by the BWF at these intersections.

6.1.2.1 Hamilton Highway / Berrybank-Wallinduc Road / Foxhow-Berrybank Road Intersection

The critical OD movement at the Hamilton Highway / Berrybank-Wallinduc Road / Foxhow-Berrybank Road intersection will be for deliveries being made to the three access points located on Berrybank-Wallinduc Road and Foxhow-Berrybank Road. Inbound OD vehicles will be arriving at this intersection from both directions. As a result of the construction staging, the BAR/BAL turning treatment is suitable for the predicted traffic volumes.

B-double turning movements can be accommodated on the existing sealed pavement without encroaching onto the incorrect side of the road. It appears this intersection has previously been upgraded to allow for B-doubles. The OD movements cannot occur under the existing geometry of the intersection and requires temporary widening outside of the traffic lanes. The reconstruction works will likely occur on all sides other than the southwest corner given the limitations with existing property boundaries. The total area of constructed works is approximately 740m2 and is contained within the road reserve.

Outbound OD movements will conduct the reverse movements with a southbound turn or northbound turn from the 'Main Access' or 'Southwest Access' points. These movements will occur with the blade trailer shortened resulting in a smaller swept path.

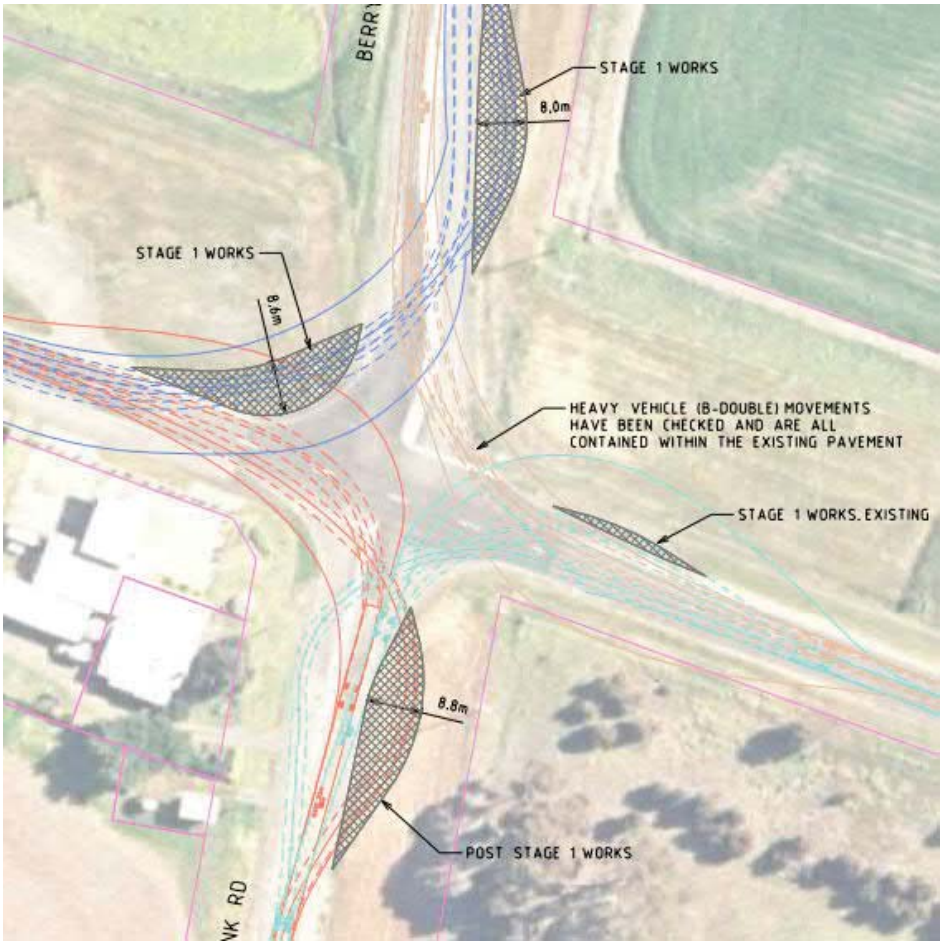
It must be ensured that all existing signs and guideposts at this intersection affected by these turning movements are fully mountable or easily removed. In particular, it was identified at site that the following signs may obstruct OD turning movements:

- 'Keep Left' sign located on splitter island on Berrybank-Wallinduc Road approach;
- Two 'Stop' signs located on the Berrybank-Wallinduc Road approach;
- Road name fingerboard located at the northeast corner of the intersection;
- Guideposts placed on all four corners of the intersection;
- 'Keep Left' sign located on splitter island on Foxhow-Berrybank Road;
- Two 'Stop' signs located on the Foxhow-Berrybank Road approach; and
- B140 road name sign located at the southwest corner of the intersection.

Both inbound and outbound OD turning movements will encroach onto the incorrect side of the road, and as such the appropriate traffic management for all approaches will need to be in place so that the intersection can be temporarily closed to ensure safe manoeuvrability of the vehicles. The corresponding advance temporary warnings signs are to also be in place during these OD movements at this intersection (refer AS1742.3:2009).

Figure 9 illustrates the OD turning movement and swept paths at the Hamilton Highway / Berrybank-Wallinduc Road / Foxhow-Berrybank Road intersection – refer to Appendix B.

Figure 9 Turning Movements - Hamilton Highway / Berrybank-Wallinduc Road / Foxhow-Berrybank Road Intersection



6.1.2.2 Hamilton Highway / Doyles Road Intersection

The critical OD movement at the Hamilton Highway / Doyles Road intersection will be for deliveries being made to the two access points located on Doyles Road for the Post Stage 1 works. Inbound OD

vehicles will be arriving at this intersection from both directions. The BAR/BAL turning treatment is suitable for the predicted traffic volumes.

These OD movements cannot occur under the existing geometry of the intersection and as such a portion of the road reserve will be required to be developed to provide for safe manoeuvrability during these OD movements. The reconstruction works will be required on both sides of the Hamilton Highway to ensure that no encroachment occurs into abutting properties. The total area of constructed works is approximately 750m2 and is contained within the road reserve.

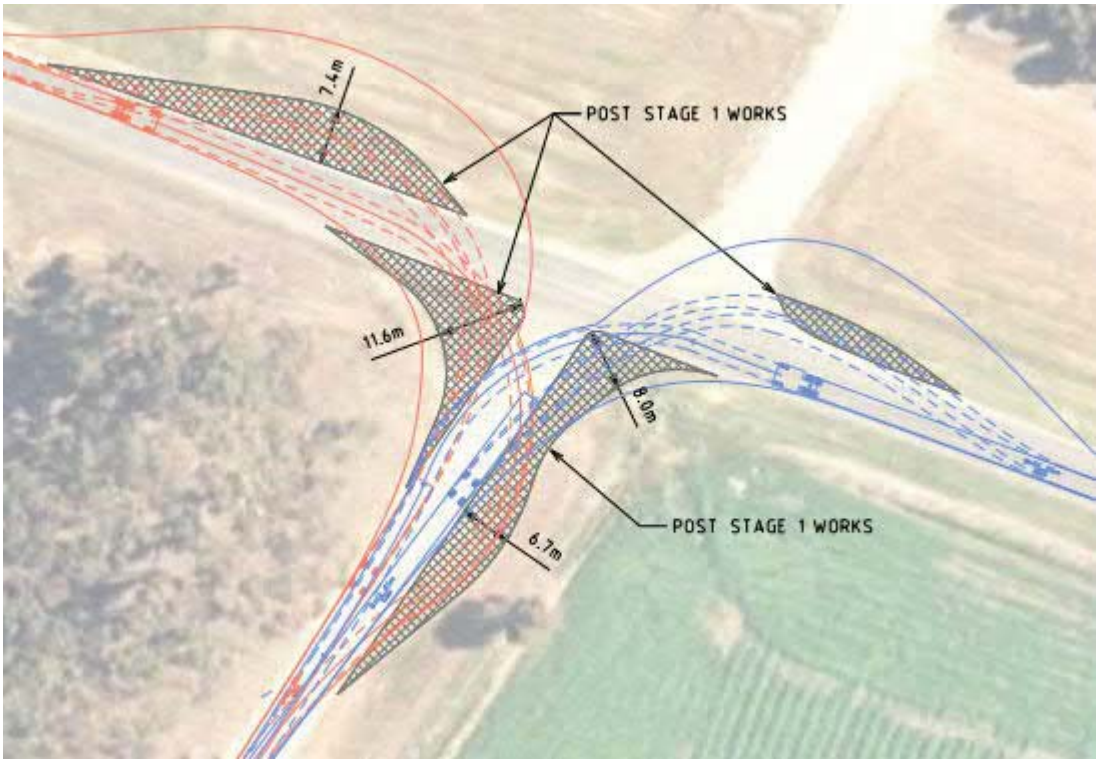
It must be ensured that all existing signs and guideposts at this intersection affected by these turning movements are fully mountable or easily removed. It was identified that the following signs may obstruct OD turning movements:

- 'Give Way' sign located on southwest corner of intersection;
- Letterbox located on southwest corner of intersection; and
- Guideposts placed on both sides of the Hamilton Highway at this intersection.

Both inbound and outbound OD turning movements will encroach onto the incorrect side of the road, and as such the appropriate traffic management for all approaches will need to be in place so that the intersection can be temporarily closed to ensure safe manoeuvrability of the vehicles. The corresponding advance temporary warnings signs are to also be in place during these OD movements at this intersection (refer AS1742.3:2009).

Figure 10 illustrates the OD turning movements at the Hamilton Highway / Doyles Road intersection – refer to Appendix B.

Figure 10 Turning Movements - Hamilton Highway / Doyles Road Intersection

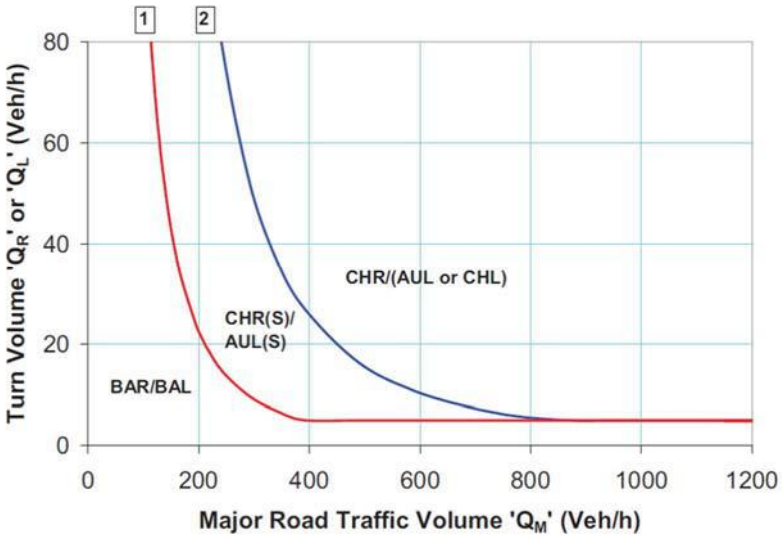


6.1.3 Austroads Design Guideline Requirements

In addition to the turning movement requirements, the AustRoads Guide to Road Design Part 4A: Unsignalised and Signalised Intersections details the warrants for turning treatments on major roads at unsignalised intersections. These guidelines compare the number of turning vehicles into an intersecting road with the total number of vehicles on the major through road. Basic, Auxiliary Lane and Channelised left and right turn treatments are prescribed depending on certain volume minima criteria (see Figure 11). These treatments are prescribed to separate through and turning traffic

streams to improve safety while also minimising delay to through movements by queued turning vehicles.

Figure 11 AustRoads Design Guidelines for Intersections



Source: AustRoads Guide to Road Design Part 4A

Reference to Figure 11 against the estimated peak construction period traffic volumes (background and construction vehicles) has resulted in the following requirements for the two major intersections on the Hamilton Highway. As a result of the construction staging, the BAR/BAL turning treatment is suitable for the predicted traffic volumes.

Hamilton Highway / Berrybank-Wallinduc Road / Foxhow-Berrybank Road intersection

Westbound traffic movements (i.e. from Geelong):

- Basic left turn (BAL) treatment into Foxhow-Berrybank Road
- Basic right turn (BAR) treatment into Berrybank-Wallinduc Road

Eastbound traffic movements (i.e. from Portland):

- Basic left turn (BAL) treatment into Berrybank-Wallinduc Road
- Basic right turn treatment (BAR) into Foxhow-Berrybank Road

Northbound traffic movements (i.e from Foxhow):

- No upgrade turning treatments required

Southbound traffic movements (i.e from Wallinduc):

- No upgrade turning treatments required

Hamilton Highway / Doyles Road intersection

Westbound traffic movements (i.e. from Geelong):

- Basic left turn (BAL) treatment into Doyles Road

Eastbound traffic movements (i.e. from Portland):

- Basic right turn (BAR) treatment into Doyles Road

Northbound traffic movements (i.e from Doyles Road):

- Basic left turn (BAL) treatment into Hamilton Highway

For the purposes of this assessment, the remaining access point intersections on Berrybank-Wallinduc Road, Foxhow-Berrybank Road and Doyles Road are not considered to be major roads given their negligible existing traffic volumes.

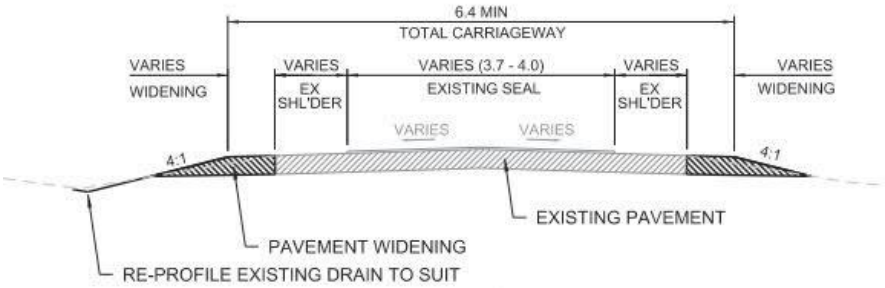
6.1.4 Road Section Upgrades

Roads surrounding the BWF site proposed to be used by construction vehicles are one-lane two-way roads, except for the Hamilton Highway and Berrybank-Werneth Road. One-lane two-way roads produce two concerns with regards to safety risk and reliability of the local road network:

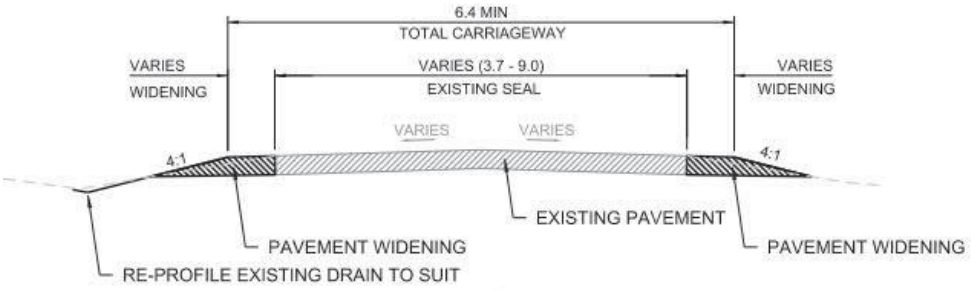
1. The number of vehicles generated by the development travelling along a road of an inadequate width increases the likelihood of an accident. This is further emphasised with the large number of heavy vehicles and OD vehicles generated during the construction phase. This can be mitigated by widening the existing roads or through traffic management and implementing a reduced speed limit during the construction phase.
2. The increased number of heavy vehicles poses a potential durability and reliability issue both during and following a wet weather period. These road sections will require regular inspection and potential maintenance to ensure defects do not impact the level of service. Refer to the ARRB Unsealed Roads Manual and Section 7.2 Road Maintenance.

Should an upgrade be sought by the contractor, it is recommended that transport routes local to the site proposed to be utilised by heavy vehicles and OD vehicles be upgraded to a 6.4m minimum trafficable width – refer to Figures below. Refer to Section 6.2.1 for the potential road upgrade locations.

Table 9 Local road minimum criteria



TYPICAL ROAD UPGRADE CROSS SECTION - SEALED
1:100



TYPICAL ROAD UPGRADE CROSS SECTION - UNSEALED
1:100

6.1.5 Timetabling of proposed mitigation works

The road and intersection upgrade works must align with the timetable proposed for construction activities. Although some activities may be able to occur without these works, OD deliveries cannot commence until most of the intersection upgrades have taken place as certain locations along the route prohibit these vehicles under their current geometry. Furthermore, construction and personnel

vehicles (other than OD vehicles) will require a dedicated location for access and egress to the BWF site. The indicative staging was provided in Section 4.2.

6.2 Summary of Road and Intersection Mitigation Measures

6.2.1 Summary of Road Section Upgrades

A summary of the potential road upgrades required prior to the use by heavy vehicles and OD vehicles in the construction phase of the Berrybank Wind Farm development includes the following.

- Berrybank-Wallinduc Road between the Hamilton Highway and the 'Main Access' to permit two-way traffic movements (approximate distance 1.6km);
- Foxhow-Berrybank Road between railway line and 'Southwest Access' to permit two-way traffic movements (approximate distance 350m);
- Doyles Road between the Hamilton Highway and 'Southeast Access' to permit two-way traffic movements (approximate distance 1.7km) including the at-grade railway crossing to permit passage by all vehicles generated by the development; and
- If the contractor (yet to be awarded) proposes to use heavy vehicles on any other road not listed, they may need to upgrade the road prior to its use. Light vehicles are intended to use the greater local road network as per the existing condition.

6.2.2 Summary of Intersection Upgrades

A summary of the intersection upgrades required prior to the use of OD vehicles in the construction phase (and in compliance with AustRoads design guidelines) of the BWF development includes:

- Intersections works at Hamilton Highway / Berrybank-Wallinduc Road / Foxhow-Berrybank Road to conform with AustRoads design guidelines and OD swept path requirements;
- Intersections works at Hamilton Highway / Doyles Road to conform with AustRoads design guidelines and OD swept path requirements;
- Site access works at Berrybank-Wallinduc Road / 'Main Access';
- Site access works at Foxhow-Berrybank Road / 'Southwest Access' (Post Stage 1 works);
- Site access works at Doyles Road / 'Turbine 42 Access' (Post Stage 1 works);
- Site access works at Doyles Road / 'Southeast Access' (Post Stage 1 works);
- Construct all vehicle crossover points perpendicular to the public roads;
- Reconfigure Berrybank-Wallinduc Road / Berrybank-Werneth Road intersection as required.

6.2.3 Preliminary Design Drawings

The preliminary design drawings detailing the road and intersection recommended mitigation measures are provided in Appendix **C**.

The following is a list of assumptions associated with developing the preliminary design drawings:

- The design of upgrades to all intersections, road sections and access points was based on available high-resolution aerial imagery;
- The blade vehicle has been used for swept path analysis of the largest OD vehicle;
- The drawings are not to be used as an 'issue for construction' document.

All preliminary design drawings included in Appendix C formed part of the TMP submitted to Council and VicRoads for comment. The preliminary design drawings were approved by VicRoads. Prior to commencement on site, Functional and Detailed Design plans will be submitted to VicRoads for approval.

7.0 Road Condition and Maintenance

7.1 Pre-Conditions Investigation

Planning Permit condition 10(b) requires an existing conditions survey of public roads that may be used for access and designated construction vehicle routes. The civil balance of plant contractor, MPC Kinetic, has undertaken an existing condition survey which is provided in **Appendix E**. It should be noted that these roadways will be regularly inspected and monitored throughout the construction phase, as per Section 9.0.

7.1.1 Consultation with Road Asset Owners

Before undertaking the aforementioned existing condition assessment, the following consultation was undertaken.

7.1.1.1 VicRoads

As per Section 1.5.1.5, a meeting was held with Peter Gstrein on 7th January 2019 to discuss Planning Permit condition 10(b). VicRoads were satisfied with the proposal of a photographic survey of the Hamilton Highway extending 200m either side of the Berrybank-Wallinduc Road intersection.

7.1.1.2 Corangamite Shire Council

John Kelly from the Corangamite Shire Council was consulted regarding the extent of local road existing conditions survey, with an email response received on 20th December 2018. Construction vehicles are proposed to use the southern section of Berrybank-Wallinduc Road and the western section of Berrybank-Werneth Road.

7.1.1.3 Golden Plains Shire Council

Matthew McIntyre from the Golden Plains Shire Council was consulted regarding the extent of local road existing conditions survey, with an email response received on 19th December 2018.

Since this consultation was undertaken, MPC Kinetic has planned their traffic management which bans construction vehicles on Golden Plains Shire Council managed roads in the vicinity of the project.

The truck drivers are to be notified of the proposed traffic routes to and from the BBWF, with no truck entry signs also proposed to be posted on the local road network upon entry to these roads to ensure compliance.

Notwithstanding, existing conditions surveys have been undertaken in consultation with Golden Plains Shire Council to assess local roads in Golden Plains Shire expected to be used by lightweight vehicles for access. A dilapidation survey to capture the existing conditions of the following roads was captured by video and submitted to Council and DELWP on USB to form part of this TMP:

- Padgetts Lane – 10.5km
- Urchs Road – 8.5k
- Bennetts Road – 3.5km
- Boundary Road – 6km
- Berrybank – Wallinduc Road – 9.5km

If however, heavy construction vehicle routes alter at a later date and Golden Plains Shire Council local roads are used, then further existing condition surveys will be required prior to any usage and undertaken in agreement and to Golden Plains Shire Council's satisfaction.

7.1.2 Suitability, Design, Condition and Construction

7.1.2.1 Hamilton Highway

Refer to Section 3.2.1 for a description of the Hamilton Highway.

Refer to the MPC Kinetic Memorandum 'Berrybank Wind Farm – VicRoads Hamilton Highway Road Dilapidation Survey' dated 9th January 2019 for the design, condition and construction of the highway.

Construction vehicles will approach the project site traveling in both directions on the Hamilton Highway. The highway is a registered roadway on Victoria's Oversize/Overmass (OSOM) Network, and is a gazetted road for B-Doubles. The highway services a large number of heavy vehicles and the project anticipates to add a small percentage during the construction phase.

The highway is considered suitable for use by the project's construction vehicles.

7.1.2.2 Berrybank-Wallinduc Road

Refer to Section 3.2.3 for a description of the roadway.

Refer to the MPC Kinetic Memorandum 'Berrybank Wind Farm – Corangamite Shire Council Road Dilapidation Survey' dated 9th January 2019 for the design, condition and construction of the road in Appendix E.

Construction vehicles will approach on the Hamilton Highway and travel along Berrybank-Wallinduc Road for 1.6km to the Main Access into the wind farm site. Drivers along the roadway have excellent visibility due to the straight horizontal alignment and flat terrain. The road pavement width suggests the road is categorised as a one-lane two-way road. Vehicles travelling in opposing directions are required to utilise the road shoulders while they pass at a reduced speed.

In the MPC Kinetic Memorandum the total pavement width is documented as approximately 5.5m (including shoulders). As per Section 6.1.4, AECOM understand that MPC Kinetic have applied to the Corangamite Shire Council for an MOA to reduce the speed limit to 60 km/hr during the construction phase. With this reduced speed limit the road is considered suitable for construction vehicles, however the contractor may need to consider additional mitigations (i.e. 40 km/hr speed limit) should safety concerns arise.

7.1.2.3 Berrybank-Werneth Road

Refer to Section 3.2.3 for a description of the roadway.

Refer to the MPC Kinetic Memorandum 'Berrybank Wind Farm – Corangamite Shire Council Road Dilapidation Survey' dated 9th January 2019 for the design, condition and construction of the road in Appendix E.

Construction vehicles will approach via the Berrybank-Wallinduc Road intersection. The existing pavement width is sufficient for two way vehicles. The roadway is considered suitable for use by construction vehicles.

7.1.3 Other considerations

The pre-conditions investigation undertaken prior to the construction phase is intended to provide a fair and accurate baseline representation of the pavement condition as at the commencement of the BWF construction.

The baseline survey report can be used to determine the location and magnitude (or percentage, where applicable) of pre-existing distresses. The existing traffic data in Table 2 shows that there are a large number of heavy vehicles utilising the roadways in the vicinity of the project. The roadways are in variable condition, some with pre-existing distresses. Continued deterioration of these pre-existing distresses should not be the responsibility of BDPL.

The baseline investigation will be used to inform the requirements of routine road maintenance during the construction period, and also to inform the comparison between pre-construction and post construction condition.

Prior to construction commencing it is recommended that BDPL and relevant stakeholders engage on the following:

- The specific distress types and locations that exceed the routine maintenance intervention criteria as described in Section 7.2, and thus do not require treatment by BDPL.
- That BDPL will undertake routine maintenance during the construction period in accordance with the requirements of Section 7.2.

- Specific criteria for comparing the pre-construction and post construction condition of both the sealed and unsealed pavement areas.

Any remedial actions requiring consideration following construction will be identified from comparison with the pre-conditions investigation (to occur during the post-construction stage).

As it is proposed to return the road condition after construction to at least the condition that existed pre- construction, a calculation of equivalent standard axles (ESA) has not been provided within this TMP.

Following the post construction reinstatement of local roads to at least their pre-existing condition, the BWF will not generate any significant traffic volumes discernible from other local road users and thus it should not be liable for on-going routine road maintenance costs.

7.2 Road Maintenance

To meet the planning permit condition BDPL will undertake a drive-over inspection, at a minimum frequency of 1 inspection per month, of the local roads providing immediate access to the site, these being the roads and accesses outlined in Chapter 6.0 of this TMP.

The types of pavement distresses to consider are presented in Table 10. The equipment required for the inspections shall include:

- 1.2m straightedge
- 3m straightedge
- Tape measure
- Marking paint

Observations made during the inspection along with any treatments required should be recorded in a monthly report. The report should also note repairs undertaken in the previous month to address previous observations. If requested, the monthly inspection report can be made available to the relevant Council, VicRoads and Minister for Planning within seven days.

The criteria for identification of new pavement distress requiring rectification, along with maximum rectification response times, are presented in Table 10.

The baseline pavement condition report shall be used to determine the location and magnitude (or percentage) of pre-existing distresses. It is not BDPL's responsibility to rectify distresses existing prior to commencement of the BWF (i.e. existing edge break).

Table 10 Intervention Criteria and Treatments for Routine Pavement Maintenance During Construction

Pavement Distress Type and Rectification (Job Description)	Intervention Criteria	Response Time
POTHOLE PATCHING Treatment of isolated potholed areas using appropriate materials (Refer Note 1) to repair the defect and restore the riding surface to a smooth condition.	All new potholes	Rectify within 10 days
REGULATION OF WHEEL RUTS OR DEPRESSIONS Application of a levelling course of bituminous materials to depressed or rutted areas of pavement to restore the pavement surface to a smooth condition.	New deformations greater than 100 mm under a 3 m straight edge	Within two weeks of inspection or notification.
	All new ruts or depressions >25 mm depth measured with 1.2 m straightedge transverse, or under a 3 m straightedge longitudinal	Rectify within 4 weeks
CRACK SEALING Filling of cracks and joints, excluding	All new cracks greater than 2 mm width at any point.	Rectify within 2 weeks.

Pavement Distress Type and Rectification (Job Description)	Intervention Criteria	Response Time
"crocodile" cracking, using liquid bituminous sealants in accordance with monthly works program.		
SURFACE TREATMENT Application of bituminous materials and cover aggregate to treat pavement surface areas with: (a) loss of aggregate (stripping); (b) bleeding and/or flushing; (c) extensive or "crocodile" cracking.	Treat: (a) when stripping (>50% loss of aggregate for an area >5 m2) (b) when bleeding/flushing for an area >5 m2 (c) all new "crocodile" cracking	Rectify within 4 weeks
PAVEMENT CLEANING Cleaning of pavement, to remove debris which is a danger to road users	When fallen debris, slippery substances, accumulation of granular material, ponding of water or any other obstacle becomes a danger to road users	Materials fallen from vehicles, dead animals, wet clay and other slippery substances, hazardous materials, accumulation of dirt or granular materials on the traffic lane of sealed roads: Within 72 hours of inspection or notification. Trees, shrubs or grasses that have grown to restrict design sight distance to intersections or restrict viewing of safety signs: Within two weeks of inspection or notification.
EDGE BREAK REPAIR Repair of broken edges of sealed pavement to line and level to maintain nominal sealed pavement width.	All new edge breaks that are hazard to road users	When event is detected or made known: Rectify within 7 days.
DIGOUTS Treatment of isolated failed pavement areas by replacement with new material or improvement of existing material, including reinstatement of road surface.	All new failed areas	Rectify within 7 days.
UNSEALED SHOULDER Spot filling, grading and reshaping of unsealed shoulders to correct: (a) drop off from edge of sealed pavement to shoulder; (b) roughness, scouring or potholes; (c) holding of water.	New edge drops onto unsealed shoulder greater than 100 mm	Within two weeks of inspection or notification.
	General: New drop off >50 mm depth measured over a 20 m length	Rectify within 8 weeks.
	Isolated: new potholes, scouring or roughness >50 mm depth measured with a 1.2 m straightedge, or when there is holding of water	Rectify within 8 weeks

Note 1: Refer to VicRoads Specification Section 750 for detailed rectification treatment requirements.

Any dangerous road conditions caused by works relating to the project will be made safe for the public as soon as practicable from the time of the emergency incident being reported. This can include the setting up and operation of detour until the incident is repaired. Emergency repairs will be undertaken to the satisfaction of the road management authority within 48 hours of the emergency incident being notified.

On completion of construction, a final inspection shall be undertaken to determine if any outstanding routine maintenance treatments are required to be undertaken. Any such treatments should be undertaken prior to undertaking the post construction condition assessment.

7.3 Post-Construction

A review and identification of any required reinstatement works are to be undertaken with reference to the pavement condition identified by the dilapidation survey undertaken at the pre-construction phase of the project.

At completion of the project, the local roads and accesses (as outlined in Chapter 6.0 of this TMP) will be returned to a standard at least as good as exists and is documented in the pre-construction dilapidation survey(s).

8.0 Control Measures

8.1 Roles and Responsibilities

The various roles for the project will be clarified before works commence and a nominated contractor is hired.

Contact names and details of responsibilities and necessary training would be formalised prior to works commencing.

8.1.1 Project Management and Co-ordination

The construction manager will be located on-site to act as liaison to various parties throughout the life-cycle of the quarry operations to facilitate the construction of the BWF. They will also be available to liaise with VicRoads, Councils and other stakeholders as required.

8.1.2 Public Consultation, Advertising and Complaints

Public communication will be undertaken by BDPL with regards to any traffic matters causing disruption to local residents in accordance with the Community Engagement Plan. This plan sets out relevant stakeholders and means of communication with local residents, property owners and road users in relation to traffic deliveries, timeframes, and any traffic related activities with potential to disturb or disrupt local traffic. An underlying principle of the plan is that early and frequent communication with local stakeholders will reduce potential for complaints.

Complaints will be managed in accordance with the Complaints Investigation and Response Plan developed for the project. The plan applies on a whole of project basis, including quarry activities and operations, and outlines how complaints will be received, administered, investigated, and managed.

8.1.3 Road Authority Notifications

8.1.3.1 VicRoads

No specifics have been requested outside of the Planning Permit.

8.1.4 Golden Plains Shire Council

Council to be notified 2 weeks prior to the closure and/or construction occurring/commencing;

- VMS boards are put in place at local road/intersection closures at least 2 weeks prior to the closure and/or construction occurring;
- Directly affected residents are to be notified by letter drop;
- A 24 hour phone hotline be set up, that can be contacted by the public to raise concerns and issues directly with the contractor.

8.1.5 Corangamite Shire Council

No specifics have been requested outside of the Planning Permit.

8.2 Training and Site Induction

8.2.1 Driver Induction Training

Prior to commencing construction activities, regular and returning drivers of semi-trailers, rigid vehicles and/or B-Double and OD vehicles who will access and egress the site for pick-up and delivery of material will be required to undertake a driver induction. The induction course will need to be developed early to ensure it is ready prior to construction activity (including any site preparation works) commencing. Irregular and one-off drivers of pick-ups and deliveries would be considered exempt to this induction requirement.

The induction course would be intended to cover:

- Suitable routes to and from the site.
- Suitable times of travel (i.e. outside of school bus times as outlined in TMP).

- Applicable traffic management procedures that will need to be in place prior to approaching or departing the site (if required).
- Communications and notification procedures.
- Speed restrictions (on the road network and the site).
- Safety procedures (during transportation and in the evident of an accident / emergency).

8.3 Contractor Liaison

Liaise with appropriate contractor(s) responsible for delivery of materials to/from the site to ensure that they comply with this TMP including adherence to specified construction traffic routes. It will be the contractor's responsibility to ensure routes are satisfactory and that appropriate measures (traffic management or other mitigation measures as well as liaison with relevant local authorities) are in place to ensure safe movement of vehicles to/from the site.

8.4 Roadside Native Vegetation

8.4.1 Identification protocols

Following protocols for identification of any areas of indigenous roadside vegetation that may require removal or pruning, and the pruning practices to be followed:

- Prior to the removal or pruning of indigenous roadside vegetation, the Swept Path Analysis and transport route of the traffic management plan will be overlaid with native vegetation layers from Native Vegetation Information Management system and suitable scale aerial imagery (NearMap) to determine if there is possible interaction with native vegetation impact from the transport plan.
- If there is potential interaction with native vegetation, a field study will map the surrounding vegetation (10 metre study corridor) according to the habitat hectare method.
- An assessment will be conducted on the potential impacts on native vegetation and if required a planning permit application to remove native vegetation will be prepared according to the 2017 Native Vegetation Guidelines (The 2017 Guidelines) supported by a Native Vegetation Removal Report issued by DELWP. This will include all application requirements of the 2017 Guidelines.
- If there is need for vegetation to be pruned and lopped rather than removed, if required an arborist will assess impacts on the vegetation and whether it meets thresholds set out in the 2017 Guidelines. The arborist will outline pruning practices to be followed and be incorporated into the planning permit application to remove native vegetation.
- A plan for any vegetation lopping and pruning will be prepared according to industry best practice.
- If pruning is required, it will be done by an experienced and qualified arborist to prevent disease and unnecessary damage to the tree or disturbance to understorey vegetation during tree trimming.

8.4.2 Approvals

If native vegetation is required to be removed in accordance with the relevant Planning Scheme (Corangamite Shire or Golden Plains), a planning permit application to remove native vegetation will be submitted to the relevant Council and approval obtained prior to the native vegetation being removed or lopped. It should be noted that this relates to areas outside of the BWF site boundary.

8.5 Vehicle Access

8.5.1 General Vehicle Access

Accesses for general vehicles (i.e. those typically at or below a garbage truck in size) are permitted to use any local roads to travel to the site.

8.5.2 Construction Vehicle Access

Construction vehicles will access the site via the identified site access locations and roads, as discussed in Section 5.3.

8.5.3 Over-dimensional vehicles

The OD transporter contractor will undertake their own route assessment and gain the necessary approvals from various authorities for the transportation of materials from the Port of Portland to the BWF site, including the NHVR, DEDJTR and other authorities as appropriate.

The following should be considered for in the transportation of materials by OD vehicles to BWF.

8.5.3.1 National Heavy Vehicle Regulator

The National Heavy Vehicle Regulator (NHVR) issues permits for oversized vehicles. VicRoads, on behalf of NHVR, will require at least 28 days to assess any route. It is the responsibility of the transportation contractor to seek any related permits.

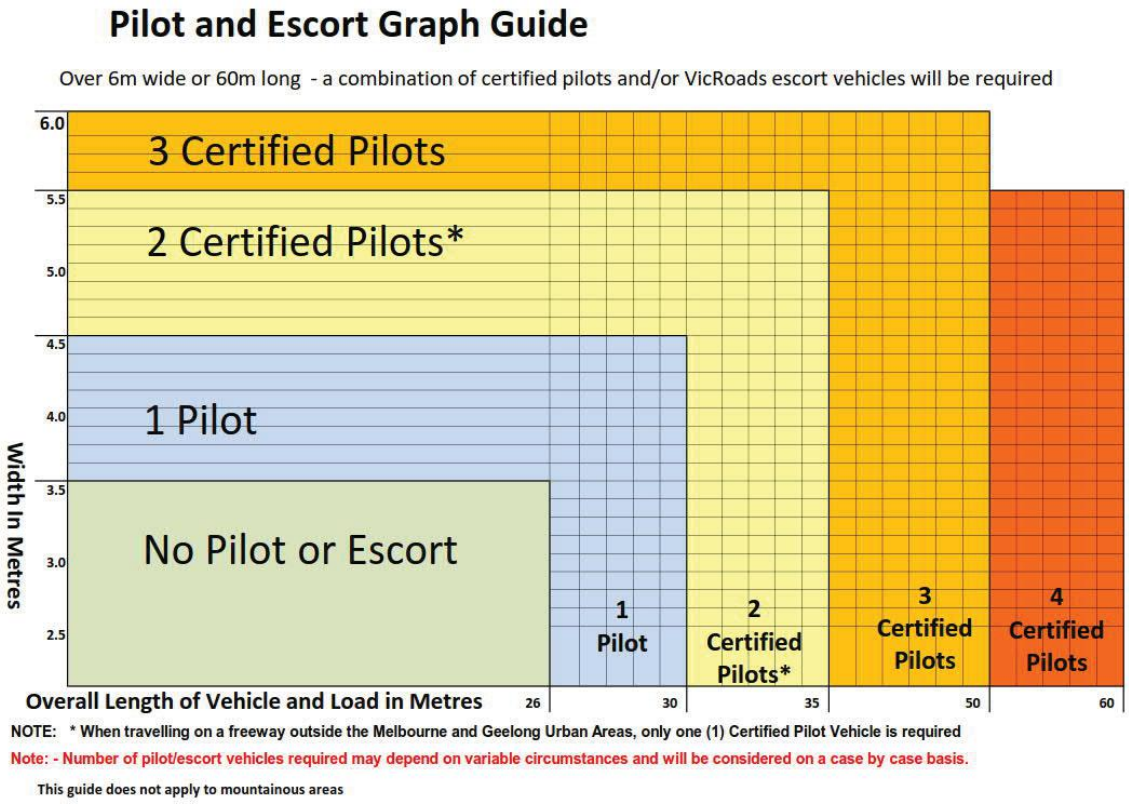
8.5.3.2 Escort arrangements

The NHVR advise that it is the responsibility of the operator to organise pilots or escorts.

VicRoads Transport Safety Services (TTS) provides services to the OD transport industry, which includes escorts for vehicles carrying large items and the inspection of vehicles and loads.

VicRoads provides a basic guide, see Figure 12, to determine the pilot and escort arrangements, the chart was amended to reflect industry best practice and to aid the safe and efficient movement of OD loads. This chart also streamlines the permit application and escort booking process. The graph is only a guide and the requirements for the BWF transportation of materials are likely to require consultation with TTS to determine the best and safest pilot and escort arrangements.

Figure 12 VicRoads Pilot and Escort Graph Guide, November 2017



Source: VicRoads website

8.5.3.3 Department of Economic, Development, Jobs, Transport and Resources

The Department of Economic Development, Jobs, Transport and Resources (DEDJTR) will need to give permission (provide necessary staff on site) for any such OD vehicles crossing or travelling across train tracks. A permit is required when an OD vehicle crossing the railway line is greater than 4.9 metres in height, 3.0 metres wide or 26.0 metres in length.

There are five known railway crossing locations along the preliminary defined OD route between Portland and the site (via Princes and Hopkins Highways), and include:

- The Port of Portland – depending on which access road is used in departing the Port area (No. 2 Quay Road or Cliff Street);
- Hamilton Highway, east of Derrinallum;
- Hamilton Highway, west of Lower Darlington Road;
- Foxhow-Berrybank Road, south of Hamilton Highway; and
- Doyles Road, south of Hamilton Highway.

A coordinated liaison with DEDJTR, VicTrack and ARTC may also be required in this process.

8.5.3.4 Overhead constraints

Overhead cabling (particularly electricity) can pose a hazard in the delivery of wind turbine components both for safety reasons and in restricting vehicle movements. The clearance required for the largest OD deliveries is 6.6m from the ground surface. Temporary raising of overhead cables may be required if they currently do not meet the minimum 6.6m clearance.

The transport contractor will need to ensure that the OD route has sufficient clearance.

Overheads that must have sufficient clearance include wires, structures and trees, this also applies to ground clearance at rail level crossings.

A request for raising overhead cables is to be made with the relevant asset owner who will perform these works for a fee should there be insufficient clearance for passage of the OD vehicles.

8.5.3.5 Temporary road closures

Liaison prior to OD transport movements should be made with VicRoads, Corangamite and Golden Plains Shire Councils (local Council roads) in the event that temporary road closures are required. There may be a need for Worksite Traffic Management Plans (WTMPs) to be produced in this event.

8.5.4 Emergency Services

Emergency service vehicles will be permitted unrestricted access at any entrance gates provided.

8.5.5 Construction Staging / Parking

It is proposed to provide all car parking within the confines of the site and will therefore not encroach on the local road network.

It is considered that there will be sufficient area within the site during differing phases of construction to accommodate vehicle parking, including construction traffic deliveries and on-site manoeuvring as and when required.

The site manager will continually monitor parking provisions within the site boundary, as well as the staging of construction vehicles into and out of the BWF site, to ensure no impact on the local road network occurs. If required the day-to-day vehicle parking demands can be reduced via the promotion and consideration of car sharing of workers to/from the BWF site and mini-bus service transporting workers to/from the BWF site.

8.5.6 Signage

The safety of traffic (both construction and general background) will be managed at the access points through the installation of appropriate construction vehicle signage. Australian Standard AS 1742 defines the signage layout required for entering or crossing construction vehicles. The signage requirements at all intersections will involve similar signage including:

- 'Give Way' (R1-2);
- 'Trucks (crossing or entering)' (T2-25);
- 'T-intersection' with 'Driveway' supplementary (W2-4 with TM1-V100-2 supplementary); and
- 'Windfarm Construction Traffic' with '80km/h supplementary (W9090 with W8-2 supplementary).

Signage plans for each access point, major intersection and midblock locations are provided in Appendix **C**.

It is also proposed to erect 'No truck entry' signage on the local road network to ensure trucks use the prescribed heavy vehicle traffic routes to and from BWF and do not enter Golden Plains Shire Council roads.

8.5.7 Speed limits

Traffic volumes are quite low for Hamilton Highway, Foxhow-Berrybank Road, Berrybank-Wallinduc Road and Doyles Road and sight distances at each access point is generally adequate for larger vehicles.

However, given the expected volumes of traffic and the increase in vehicles on the surrounding road network it is recommended that a reduced speed limit of 80km/h be applied for personnel and construction vehicles in the vicinity of the wind farm site. A lower speed limit may be required on the local roads depending on the final upgrade configuration. Specific advisory signage is recommended to be installed on the road network in the vicinity of the wind farm site, refer to Appendix **C**.

The speed at which OD vehicles will be able to operate will be contingent upon the vehicle configuration, size of the load and any restrictions imposed (whether by the delivery operator or any authority). As such, it is expected that OD vehicles will travel significantly slower than the posted speed limit, with the escort arrangement being configured as to remain in close proximity to the OD vehicle.

There will be occasions where intersections will need to be shutdown to allow for safe passage and manoeuvrability of OD vehicles. During these times the appropriate warning signage, along with temporary reductions in speed limits (from 100 km/h to stationary), will be in place for all affected intersection approaches. The temporary reductions in speed limits are to only be in place while the OD movements are taking place and must not be visible to traffic at all other times (Worksite Traffic Management Plans, WTMPs may be required for these specific circumstances).

8.6 Operating and Working Hours

8.6.1 Construction stages

The normal standard working hours for the proposed construction of the BWF are as follows:

- 7:00 am to 6:00 pm, from Monday to Friday.
- 7:00 am to 4:00 pm on Saturdays.

Activities within the site compounds and other site facilities are expected outside the normal working hours to facilitate pre-starts, safety inductions and tool box talks.

In addition, certain circumstances, such as the delivery of turbine components and construction material along with certain work activities which require completion that day (for example, large concrete pours and turbine erection) may be conducted outside the normal standard hours of operations. This may occur even when work is scheduled for completion during normal standard hours of operations, due to the continuous nature or requirements of the work, such as ongoing concrete delivery. Safety reasons may also dictate that the delivery of turbine components is required to travel outside of normal hours of operation to reduce road network impacts. In this situation, Golden Plans Shire and Corangamite Shire Councils will be notified as appropriate.

Nonetheless, the timings indicated will be adhered to wherever possible to minimise the impact to the local road network, users and local residents. Typical vehicle access times are provided in Table 11.

Table 11 Typical vehicle access times to/from BWF

Vehicle Type	Typical Travel Times	Vehicle Speeds	Comment
General workers vehicles / Medium Rigid Vehicle's and below	6:00am-7:00pm Monday to Saturday	As posted on local road network.	Access as outlined in Section 5.3.
Heavy Rigid and Articulated Vehicles	6:30am-7:00pmand in consultation with school bus operators.	As posted on local road network. Speed on site will be dictated by nominated contractors HSMP.	Access as outlined in Section 5.3. Occur only outside of typical local road network peak operational times in order to minimise disruption.
Over-Dimensional Vehicles	TBC by NHVR permit approval (in consultation with VicRoads, Council and DEDJTR).	Usually undertaken with convoy at controlled speeds of 20kph and lower.	Access as outlined in Section 5.3 (subject to contractor review).

School bus routes operate throughout the area and OD and construction vehicles must not interfere with their operation. The current routes identified surrounding the BWF site includes:

- School bus services along OD route
  - Hamilton Highway (west of Doyles Road)
  - Foxhow-Berrybank Road
  - Berrybank-Wallinduc Road (south of 'Main Access')
- Additional services along Construction Vehicle routes
  - Hamilton Highway (east of Doyles Road)
  - Berrybank-Wallinduc Road (north of 'Main Access')
  - Urches Road

These school bus routes will not be used by construction and over-dimensional vehicles during bus operating times.

8.6.2 Operational phase

The BWF itself will operate 24 hours a day, with 7 operational and maintenance staff working daily.

Typical duties of staff are likely to include:

- Site track reviews and minor maintenance if required.
- Routine wind farm component maintenance (turbine, generators, etc.)
- Other general repairs and monitoring

8.7 Sustainable Transport Modes

8.7.1 Pedestrians / Cyclists

There will be little or no impact to pedestrians or cyclists as a result of the BWF construction.

8.7.2 Public Transport

The construction of the BWF will not have any significant impact on local public transport with major construction vehicles to stop operations during known school bus operations. A co-ordination plan in

conjunction with the local school operators can be put together prior to construction commencing so that construction activity delays can be further reduced.

8.8 Environmental Measures

Environmentally sensitive construction measures will be outlined in the Environmental Management Plan.

8.8.1.1 Dust / Sedimentation

The following measures to be considered for adoption to reduce the impact of dust from the construction of the BWF:

- Keeping vehicles to defined haul roads and minimise vehicle movements on exposed surfaces.
- Enforce vehicle speed limits on the quarry site and road network.
- Minimise soil deposit on the surrounding public roads (utilise rumble grids and wheel washing facility if required).

8.8.1.2 Noise and Vibration

The following measures to be considered for adoption to reduce the impact on noise and vibration from the construction of the BWF:

- Vehicle movements (deliveries) to and from the site are to be undertaken during normal working hours whenever practicable.
- No construction vehicles should be left idling with their engine running, especially if near to residential properties.

9.0 Monitoring, Inspection and Auditing

9.1 Addendum TMP

As acknowledged in the introduction to this TMP there are some gaps in information given the early planning stage of the project. It is therefore proposed that a further addendum TMP will be created by the nominated contractor to inform VicRoads, Golden Plains Shire and Corangamite Shire Councils of such information as and when known.

To ensure timely responses a feedback consultation period of two weeks is proposed to ensure no further delays to the BWF project.

9.2 Monitoring and Inspection

In order to ensure the effectiveness of the TMP, the plan must be monitored and traffic management works inspected regularly.

The aim of the plan is to reduce the impact of the construction traffic on the surrounding road network. Hence it is important to monitor that this is being achieved to reflect any physical or operational changes to the road network.

For example, road network changes may have occurred, such as public transport routes or timetabling or intersection alterations may affect the operation of intersections and how traffic management is implemented.

As such, it is recommended that BDPL review the TMP approximately one month after construction has commenced and half-way through the project cycle to ensure that the TMP is relevant. Consultation may be required with VicRoads, Golden Plains Shire and Corangamite Shire Councils and/or other parties to ensure the latest information from stakeholders.

The TMP should also be updated if any notable changes affecting the expected or actual traffic volumes generated by site works occur, or if changes to working hours, delivery scheduling or other factors of consequence affecting site traffic and transport are proposed.

BDPL will audit the TMP as part of the inspections processes and also ensure that any contractors produced TMP's take into account the prescribed recommendations.

Any identified deficiencies should be reported immediately to the site supervisor/works manager, and rectification carried out immediately to maintain safety and integrity of the TMP.

During the operational phase a key duty of site staff will be to undertake daily monitoring and inspection of both on (for example, blade operations, generators) and off-site (for example, minor road maintenance) assets to ensure compliant and sound operations continue.

9.3 Auditing

In accordance with the Road Management Act 2004, audits of the traffic management plan will be undertaken to achieve worksite safety both within and outside of the works site. The audits may include:

1. **Compliance Audits:** to verify compliance with the TMP, typically undertaken as follows:
    a. At the commencement of works (and at times of erecting any traffic control devices).
    b. At any changes to the TMP (maybe due to unforeseen hazards).
    c. During both day / night operations for long term works (not considered applicable in this case but should be mindful).
    d. If the TMP results in significant disruptions to traffic (considered to be minimal in this case).
    e. If requested by health and safety representative, employees or local community.

2. **Road Safety Audits:** Only if significant construction works on local road network that this needs to be considered. It is likely that the priority access intersection and haul routes should be subject to RSA's to ensure that these safely facilitate the expected vehicular movements.
3. Records of all audits will be kept by BDPL and made available to relevant authorities on request. All audits will be undertaken by suitably qualified and experienced personal.

10.0 TMP Actions

The greatest traffic impact of the BWF development will occur during the construction period of the project. Traffic generated during this phase will consist of OD vehicles, construction vehicles and personnel vehicles.

Prior to commencement of each stage of construction, the surrounding landowners and occupiers that may be impacted by the relevant construction activities to be advised of the upcoming works.

The proposed development is not expected to create a significant adverse impact on the operation of the surrounding road network when compared to background traffic. As such, impacts during the construction and operational phase of this project produce negligible impacts to the surrounding road network. However, the OD movements at key intersections can only be safely performed with the appropriate traffic management in place, including temporary closure of these intersections to allow for safe passage of the OD vehicle.

The use of OD vehicles require that some localised road upgrades are required based on their swept paths and in consultation with relevant authorities. These include:

- Site access works at Berrybank-Wallinduc Road / 'Main Access';
- Site access works at Foxhow-Berrybank Road / 'Southwest Access';
- Site access works at Doyles Road / 'Turbine 42 Access';
- Site access works at Doyles Road / 'Southeast Access';
- Construct all vehicle crossover points perpendicular to the public roads;
- Intersections works at Hamilton Highway / Berrybank-Wallinduc Road / Foxhow-Berrybank Road;
- Intersections works at Hamilton Highway / Doyles Road;
- Upgrade Berrybank-Wallinduc Road between the Hamilton Highway and 'Main Access';
- Upgrade Berrybank-Werneth Road between Berrybank-Wallinduc Road and 'Concrete Batching Plant Access';
- Upgrade Foxhow-Berrybank Road between railway line and 'Southwest Access';
- Upgrades Doyles Road between the Hamilton Highway and 'Southeast Access';
- Post-construction rehabilitate any OD intersection widening to the existing condition; and
- Post-construction downgrade all site access points so that they only cater for B-Double vehicles in both directions (no OD movements are expected to be required during the operational phase).

It is recommended that the following issues be finalised prior to commencing construction of the BWF:

- Oversize vehicles will require permits and approvals from relevant authorities
- Liaise with Corangamite Shire Council, Golden Plains Shire Council and DEDJTR to confirm school bus operating times and routes along roads to be used by construction and OD vehicles;
- Appropriate signage will need to be installed near access points and along the surrounding road network; and
- Finalise the program of regular inspections and rehabilitation works.

A summary of the construction timetabling is provided in Section 4.2.

11.0 Limitations

AECOM Australia Pty Ltd has prepared this report in accordance with the usual care and thoroughness of the consulting profession for the use of BDPL and only those third parties who have been authorised in writing by AECOM to rely on the report. It is based on generally accepted practices and standards at the time it was prepared. No other warranty, expressed or implied, is made as to the professional advice included in this report.

The methodology adopted and sources of information used by AECOM are outlined in this report. AECOM has made no independent verification of this information beyond the agreed scope of works and AECOM assumes no responsibility for any inaccuracies or omissions. No indications were found during our investigations that information contained in this report as provided to AECOM was false.

This report was prepared between January 2011 and March 2017 (and revised October 2014, March 2017, May 2018, October 2018 and December 2018) and is based on the conditions encountered and information reviewed at the time of preparation. AECOM disclaims responsibility for any changes that may have occurred after this time.

This report should be read in full. No responsibility is accepted for use of any part of this report in any other context or for any other purpose or by third parties. This report does not purport to give legal advice. Legal advice can only be given by qualified legal practitioners.

Appendix A

Stakeholder Consultation

vicroads

South Western Region
180 Fyans Street
South Geelong Victoria 3220
PO Box 775 Geelong Victoria 3220

Fax (03) 5221 6102

vicroads.vic.gov.au

Grace Abou Abdallah
ERM
Level 6, 99 King Street
MELBOURNE VIC 3000

12 March 2019
VicRoads File No:15517502
Contact: Peter Gstrein
Telephone: 03 5561 9214

Dear Grace

BERRYBANK WIND FARM – TRAFFIC MANAGEMENT PLAN (TMP)
REVISION 13, DATED 30 JAN 2019

I refer to your email dated 4 March 2019, seeking VicRoads' assessment and endorsement of the above TMP.

VicRoads endorses the TMP, understanding that some road/intersection upgrade works are required as detailed on pages 1 and 2 of Appendix B.

Before commencement of turbine blade delivery to site, the applicant must enter into a legally binding agreement with VicRoads that clearly specifies an agreed framework for determining the wind farm owner's obligations and commitments for addressing all associated transportation and traffic related impacts.

It must be remembered that Over-Dimensional transport route sections encompassing arterial roads require approval by Heavy Vehicle Services section of VicRoads, whilst sections encompassing local roads require approval by the relevant municipality. The entire route requires permit approval by the National Heavy Vehicle Regulator. Kindly ensure that the transport contractor engaged to undertake the delivery of OD loads consults with Regional Roads Victoria (VicRoads) South Western Region per the contact details below.

Should you require further information, please contact Mr Peter Gstrein, at our Warrnambool Office on telephone number 5561 9214/0408 317254 or peter.gstrein@roads.vic.gov.au

Yours sincerely

for

SAM PIRROTTA
MANAGER PLANNING
SOUTH WESTERN REGION

State Government Victoria

Clune, Timothy

APPROVED FOR THE MINISTER FOR PLANNING

SHEET 63 OF 459

From: Laura Wilks <lwilks@gplains.vic.gov.au>
Sent: Wednesday, March 13, 2019 3:26 PM
To: Grace Abou Abdallah <grace.abouabdallah@erm.com>
Cc: Matthew McIntyre <Matthew.McIntyre@gplains.vic.gov.au>; David Greaves <david.greaves@gplains.vic.gov.au>; Tim Waller <twaller@gplains.vic.gov.au>; Greg Anders <ganders@gplains.vic.gov.au>
Subject: Letter of satisfaction from GPSC re Berrybank Wind Farm Traffic Management Plan

Good afternoon Grace.

Golden Plains Shire Council is satisfied with the Traffic Management Plan for the Berrybank Wind Farm.

Council's Development Engineer has reviewed the Berrybank Wind Farm Traffic Management Plan (Revision 13 dated 23-Jan-2019) and deem it to be satisfactory.

Please note the TMP must include Golden Plains Shire Councils bonding requirements. The bond must be in the form of a bank guarantee lodged within 3 months from the commencement of works for the amount of $771,450.00 and may be used without referral for the rectification of any road damage. No expiry date should be noted on the bank guarantee. A request can be made for the return of the bond no earlier than 12 months from practical completion and following a satisfactory inspection by the responsible authority deems the roads satisfactory.

Please ensure a final endorsed copy of the TMP is forwarded to GPSC as soon as possible.

Kind Regards

Laura Wilks
Strategic Planning Team Leader (Mon, Wed and Thur)
Golden Plains Shire Council
P: 03 5220 7271 | F: 03 5220 7100
E: lwilks@gplains.vic.gov.au | W: goldenplains.vic.gov.au

interference or other defects. Golden Plains Shire Council reserves the right to monitor all email communications through its networks.

Clune, Timothy

Subject: Berrybank Wind Farm Traffic Management Plan - Version 13

From: John Kelly <john.kelly@corangamite.vic.gov.au>
Sent: Friday, 22 February 2019 4:34 PM
To: Grace Abou Abdallah <grace.abouabdallah@erm.com>
Subject: Berrybank Wind Farm Traffic Management Plan - Version 13

Hello Grace,

Version 13 of the TMP for the Berrybank Windfarm is ok. My comments previously provided for early versions of the TMP as detailed below still stand.

Regards

John Kelly

John Kelly
Manager Assets Planning

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0409 803 044
Phone: 03 5593 7183
www.corangamite.vic.gov.au

CORANGAMITE SHIRE

Clune, Timothy

Subject: FW: Berrybank Wind Farm - Security Deposit / Bond

From: Aaron Moyne <Aaron.Moyne@corangamite.vic.gov.au>
Sent: Tuesday, March 19, 2019 1:29 PM
To: Grace Abou Abdallah <grace.abouabdallah@erm.com>; John Kelly <john.kelly@corangamite.vic.gov.au>
Cc: Planning <planning@corangamite.vic.gov.au>
Subject: RE: Berrybank Wind Farm - Security Deposit / Bond

Hi Grace,

Thanks for your enquiry.

Further to our discussion, I confirm Council is satisfied for the $100k bond to be paid within three (3) months of the date of on-site construction.

Please contact me if you have any questions.

Regards,

Aaron Moyne
Manager Planning and Building Services

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0417 165 625
Phone: 03 5593 7144
www.corangamite.vic.gov.au

From: Grace Abou Abdallah [mailto:grace.abouabdallah@erm.com]
Sent: Monday, March 18, 2019 9:58 AM
To: John Kelly <john.kelly@corangamite.vic.gov.au>
Cc: Aaron Moyne <Aaron.Moyne@corangamite.vic.gov.au>
Subject: RE: Berrybank Wind Farm - Security Deposit / Bond

Hi John,

Apologies – I forgot to cc you in the email below.

Please see our request to Council as per my email to Aaron below.

Regards,

Grace Abou Abdallah

Town Planner | Impact Assessment and Planning

ERM
Level 6, 99 King Street | Melbourne, Victoria 3000 | Australia
T +61 3 9696 8011 | **M** +61 428585715
E grace.abouabdallah@erm.com | **W** www.erm.com

From: Grace Abou Abdallah
Sent: Monday, March 18, 2019 9:56 AM
To: Aaron Moyne <Aaron.Moyne@corangamite.vic.gov.au>
Subject: RE: Berrybank Wind Farm - Security Deposit / Bond

Hi Aaron,

As discussed, can you please confirm that Council agrees to this bond being organised within three months of commencement of construction on site as opposed to prior to commencement of construction?

It will take GPG a bit of time to organise this bond as they have to go through their own internal procedures etc…GPG are committed to providing the bond ASAP but we have allowed for this time frame just in case.

Please note that the wording which relates to the timeframe will be included in the TMP which is to be endorsed to form part of the planning permits.

Thanks,

Grace Abou Abdallah
Town Planner | Impact Assessment and Planning

ERM
Level 6, 99 King Street | Melbourne, Victoria 3000 | Australia
T +61 3 9696 8011 | **M** +61 428585715
E grace.abouabdallah@erm.com | **W** www.erm.com

Clune, Timothy

From: John Kelly <john.kelly@corangamite.vic.gov.au>
Sent: Friday, 1 March 2019 9:27 AM
To: Grace Abou Abdallah
Cc: Aaron Moyne
Subject: RE: Berrybank Wind Farm - Security Deposit / Bond

Hello Grace,

Please note that a bond to the value of $100,000 is required by Corangamite Shire in respect to works on local roads covered by the Traffic Management Plan for the Berrybank Wind Farm. The bond would be released once works are completed and the local roads utilised during the wind farm construction are left in a condition that are to Council's satisfaction.

Please contact me if you have any queries.

Regards

John Kelly

John Kelly
Manager Assets Planning

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0409 803 044
Phone: 03 5593 7183
www.corangamite.vic.gov.au

CORANGAMITE SHIRE

From: Grace Abou Abdallah [mailto:grace.abouabdallah@erm.com]
Sent: Tuesday, 19 February 2019 10:49 AM
To: John Kelly <john.kelly@corangamite.vic.gov.au>
Subject: Berrybank Wind Farm - Security Deposit / Bond

Hi John,

Thank you for your time on the phone.

ERM acts on behalf of GPG (the proponent) in relation to planning related matters of Berrybank Wind Farm.

I understand that you have previously been in touch with Joshua Dwyer of Aecom in relation to the Traffic Management Plan (TMP) and had provided comments to Aecom on the TMP prior to our submission of it to DELWP for endorsement.

I am emailing you in relation to a planning permit condition of the TMP which states:
"The plan must include…

if required by Council, the payment of a security deposit or bond for a maintenance period of 12 months in respect of works covered by the Traffic Management Plan. Such security deposit or bond is to be applied to roadwork not completed under the Traffic Management Plan or to be released at the end of that period"

In consulting with Council, there has been no mention of a requirement for a security deposit or bond. The last round of feedback we received from Corangamite Shire was confirmation that the dilapidation surveys undertaken were to your satisfaction.

DELWP is now seeking written confirmation that Council does not require a bond or security deposit. Can you please confirm by midday tomorrow by return email?

Thanks,

Grace Abou Abdallah
Town Planner | Impact Assessment and Planning

ERM
Level 6, 99 King Street | Melbourne, Victoria 3000 | Australia
T +61 3 9696 8011 | **M** +61 428585715
E grace.abouabdallah@erm.com | **W** www.erm.com

Clune, Timothy

From: Clune, Timothy
Sent: Monday, 4 February 2019 9:15 PM
To: Clune, Timothy
Subject: FW: Berrybank TMP - GPSC Dilapidation Survey

From: Matthew McIntyre <Matthew.McIntyre@gplains.vic.gov.au>
Sent: Monday, February 04, 2019 9:13 AM
To: Kevin Donnelly <kevin.donnelly@mpckinetic.com>
Cc: Sarah Fisher <sarah.fisher@gplains.vic.gov.au>; Tim Waller <twaller@gplains.vic.gov.au>; David Greaves <david.greaves@gplains.vic.gov.au>; Grace Abou Abdallah <grace.abouabdallah@erm.com>; Christine Hartley <Christine.Hartley@erm.com>; Emilio Urruchi <emuch@vestas.com>; Santo Tomas Menocal, David <dsanto@globalpower-generation.com>; Guillermo Alonso Castro <guillermo.alonso@unionfenosa.com.au>; Scott Kenealy <scott.kenealy@mpckinetic.com>
Subject: Berrybank TMP - GPSC Dilapidation Survey

Hi Kevin,

Regards your email of the 30 January 2019.

I can advise that I have received dilapidation survey and successfully downloaded all MP4 video files (15 files totalling approx. 15,000 MB) and the dilapidation survey appears satisfactory.

Regards

Matthew McIntyre
Development Engineer
Golden Plains Shire Council
P: 03 5220 7119 | M: Golden Plains Shire Council | F: 03 5220 7100
E: matthew.mcintyre@gplains.vic.gov.au | W: goldenplains.vic.gov.au

From: Kevin Donnelly <kevin.donnelly@mpckinetic.com>
Sent: Wednesday, 30 January 2019 11:23 PM
To: Matthew McIntyre <Matthew.McIntyre@gplains.vic.gov.au>
Cc: Sarah Fisher <sarah.fisher@gplains.vic.gov.au>; Tim Waller <twaller@gplains.vic.gov.au>; David Greaves <david.greaves@gplains.vic.gov.au>; Grace Abou Abdallah <grace.abouabdallah@erm.com>; Christine Hartley <Christine.Hartley@erm.com>; Emilio Urruchi <emuch@vestas.com>; Santo Tomas Menocal, David <dsanto@globalpower-generation.com>; Guillermo Alonso Castro <guillermo.alonso@unionfenosa.com.au>; Scott Kenealy <scott.kenealy@mpckinetic.com>
Subject: RE: Berrybank TMP - GPSC Dilapidation Survey

Dear Matthew,

Further to the emails below, please find attached our memo covering the requirements agreed for the GPSC dilapidation survey.
I've split the survey into 15 videos (as described in the report). The link to these videos is below. The files will be uploading overnight and should be completed by morning.

Please confirm receipt of the files. If you have any issues accessing/downloading the files please let me know.

https://www.dropbox.com/sh/ml676iy2iu9bog9/AAC8xCGA1btHMBzQdDsVBc1Ra?dl=0

Regards,
Kevin

Kevin Donnelly
Senior Engineer – Renewables

M: +61 416 919 249
Head Office | 60 Kingsford Smith Drive, Albion QLD 4010
www.mpckinetic.com

Clune, Timothy

To: Clune, Timothy
Subject: FW: Berrybank - VicRoads Baseline Road Dilapidation Survey

From: Peter Gstrein <Peter.Gstrein@roads.vic.gov.au>
Sent: Monday, February 04, 2019 1:52 PM
To: Grace Abou Abdallah <grace.abouabdallah@erm.com>
Cc: Christine Hartley <Christine.Hartley@erm.com>; Alonso Castro, Guillermo <galonsoc@globalpower-generation.com>; Santo Tomas Menocal, David <dsanto@globalpower-generation.com>; Kevin Donnelly <kevin.donnelly@mpckinetic.com>
Subject: RE: Berrybank - VicRoads Baseline Road Dilapidation Survey

Thanks, Grace.

The survey information is extremely detailed and quite acceptable to VicRoads. It will be passed to our maintenance people for their information and advice of upcoming HV traffic movement.

Thanks for providing it so quickly.

Regards,

Peter Gstrein
Senior Statutory Planning Officer

regional roads victoria

South Western Region
29 Jamieson Street Warrnambool
T 03 5561 9214
M 0408 317 254
E peter.gstrein@roads.vic.gov.au
regionalroads.vic.gov.au

I acknowledge the Traditional Aboriginal Owners of Country throughout Victoria and pay my respect to Elders past and present and to the ongoing living culture of Aboriginal people.
Facebook | VicTraffic | LinkedIn

From: Grace Abou Abdallah [mailto:grace.abouabdallah@erm.com]
Sent: Thursday, 31 January 2019 12:16 PM
To: Peter Gstrein <Peter.Gstrein@roads.vic.gov.au>
Cc: Christine Hartley <Christine.Hartley@erm.com>; Alonso Castro, Guillermo <galonsoc@globalpower-generation.com>; Santo Tomas Menocal, David <dsanto@globalpower-generation.com>; Kevin Donnelly <kevin.donnelly@mpckinetic.com>
Subject: Berrybank - VicRoads Baseline Road Dilapidation Survey

Hi Peter,

I hope you have been well.

As per the meeting with ERM/Vestas/AECOM/VicRoads on Monday, please find attached the baseline road condition survey of 400m of the Hamilton Highway, 200m either side of the Junction with the Berrybank – Wallinduc Road. This also addresses your written request to conduct this survey as included in your email dated 11.01.2019

We trust that the attached is to your satisfaction. Please do not hesitate to reach out to Kevin Donnelly on +61 416 919 249 or myself should you have any questions.

APPROVED FOR THE MINISTER FOR PLANNING

SHEET 73 OF 459

Thanks,

Grace Abou Abdallah
Town Planner | Impact Assessment and Planning

ERM
Level 6, 99 King Street | Melbourne, Victoria 3000 | Australia
T +61 3 9696 8011 | **M** +61 428585715
E grace.abouabdallah@erm.com | **W** www.erm.com

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Part of Transport for Victoria

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Clune, Timothy

From: Kevin Donnelly <kevin.donnelly@mpckinetic.com>
Sent: Friday, 25 January 2019 3:56 PM
To: Grace Abou Abdallah; Christine Hartley
Cc: Clune, Timothy; Guillermo Alonso Castro; Steven Culbert; Emilio Urruchi; Scott Kenealy; Santo Tomas Menocal, David
Subject: FW: Berrybank TMP - GPSC Dilapidation Survey

Good result.
This can now be added to TMP addendum for close out and approval with DELWP.

Regards,
Kevin

Kevin Donnelly
Senior Engineer – Renewables

M: +61 416 919 249
Head Office | 60 Kingsford Smith Drive, Albion QLD 4010
www.mpckinetic.com

From: Matthew McIntyre [mailto:Matthew.McIntyre@gplains.vic.gov.au]
Sent: Friday, 25 January 2019 3:52 PM
To: Kevin Donnelly <kevin.donnelly@mpckinetic.com>
Cc: Sarah Fisher <sarah.fisher@gplains.vic.gov.au>; Tim Waller <twaller@gplains.vic.gov.au>; David Greaves <david.greaves@gplains.vic.gov.au>
Subject: Berrybank TMP - GPSC Dilapidation Survey

[EXTERNAL EMAIL] Use caution when opening any links or attachments from unknown senders.

Hi Kevin,

Regards your email of today I can advise Council accepts the proposed approach as outlined in your email.

Regards

Matthew McIntyre
Development Engineer
Golden Plains Shire Council
P: 03 5220 7119 | M: Golden Plains Shire Council | F: 03 5220 7100
E: matthew.mcintyre@gplains.vic.gov.au | W: goldenplains.vic.gov.au

From: Kevin Donnelly [mailto:kevin.donnelly@mpckinetic.com]
Sent: Friday, 25 January 2019 3:09 PM
To: Matthew McIntyre <Matthew.McIntyre@gplains.vic.gov.au>
Cc: Grace Abou Abdallah <grace.abouabdallah@erm.com>; Christine Hartley <Christine.Hartley@erm.com>
Subject: Berrybank TMP - GPSC Dilapidation Survey
Importance: High

Hello Matthew,,

Thank you for your time on the phone this morning.

As discussed, to satisfy Golden Plains Shire Council's request for a dilapidation survey, we agreed to undertake a dilapidation survey to capture the existing conditions of the nominated road (listed below and attached). The survey will be captured by video and accompanied with a cover letter. Any significant areas of distress or failure will also be photographed and noted in the cover letter.

We will undertake this survey next week and post out the video files and letter on Monday the 4th February.
Can you please confirm acceptance of this agreed approach by reply to this email.

Roads to be surveyed:
Padgetts Lane – 10.5km
Urchs Road – 8.5k
Bennetts Road – 3.5km
Boundary Road – 6km
Berrybank – Wallinduc Road – 9.5km

Regards,
Kevin

Kevin Donnelly
Senior Engineer – Renewables

M: +61 416 919 249
Head Office | 60 Kingsford Smith Drive, Albion QLD 4010
www.mpckinetic.com

From: Matthew McIntyre [mailto:Matthew.McIntyre@gplains.vic.gov.au]
Sent: Wednesday, 19 December 2018 12:07 PM
To: Dwyer, Joshua (Melbourne) <joshua.dwyer@aecom.com>
Cc: Laura Wilks <lwilks@gplains.vic.gov.au>; David Greaves <david.greaves@gplains.vic.gov.au>; Tony Talevski <ttalevski@gplains.vic.gov.au>
Subject: Berrybank TMP:

Hi Joshua,

I write regards your email from you to Laura Wilks dated 18 December 2018.

As I understand:

1) Condition 10B of Planning Permit P2009/2820 states that "an existing conditions survey of public roads developed in consultation with Golden Plains Shire Council and VicRoads (as relevant) that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility, including details of the suitability, design, condition and construction standard of the roads."
2) You seek council review of plan of proposed extent of existing conditions survey.

I can advise that:

3) I have reviewed plan titled development Staging – Stage 1 showing proposed extent of existing conditions survey.
4) I attach plan showing highlighted as "orange" detailing addition roads that require existing conditions survey to be undertaken shown #1 to #5.
5) #1 being Padgetts Road between Lismore – Scarsdale Road and Berrybank-Wallinduc Road is proposed to have installed within road reserve 220kV overhead powerline, fronts development site and may be used for access and construction.
6) #2 Boundary Road between Berrybank-Wallinduc Road and Wilgul-Werneth Road this is shown on our road register, is located within development area and may be used for access and construction.
7) #3 and #5 Bennetts Road between Urches Road and Boundary Road is located within the proposed development site and may be used for access and construction.
8) #4 Urches Road between Berrybank-Wallinduc Road and Wilgul-Werneth Road and portion fronts development site and may be used for access and construction.

As you will note I propose that additional roads (including some that TMP propose no heavy vehicle traffic) to what you proposed have existing conditions survey conducted as a precautionary approach and to ensure that in the event that damage to these roads is experienced that we are in an informed position and risk to council is reduced.

As I understand existing conditions survey will be provided to Council for comment and approval.

If you have any queries please call.

Matthew McIntyre
Development Engineer
Golden Plains Shire Council
P: 03 5220 7119 | M: Golden Plains Shire Council | F: 03 5220 7100
E: matthew.mcintyre@gplains.vic.gov.au | W: goldenplains.vic.gov.au

From: Laura Wilks
Sent: Wednesday, 19 December 2018 9:10 AM
To: Matthew McIntyre <Matthew.McIntyre@gplains.vic.gov.au>
Subject: FW: Berrybank TMP:

Hi Matt.

It would be greatly appreciated if you could consider this matter below. It is a little beyond my knowledge. I have just spoken the Joshua and advised that you will give him a call when you have processed this info.

Any questions let me know.

Cheers

Laura Wilks
Strategic Planning Team Leader (Mon, Wed and Thur)
Golden Plains Shire Council
P: 03 5220 7271 | F: 03 5220 7100
E: lwilks@gplains.vic.gov.au | W: goldenplains.vic.gov.au

From: Dwyer, Joshua (Melbourne) <joshua.dwyer@aecom.com>
Sent: Tuesday, 18 December 2018 3:23 PM
To: Laura Wilks <lwilks@gplains.vic.gov.au>
Cc: Grace Abou Abdallah (grace.abouabdallah@erm.com) <grace.abouabdallah@erm.com>; Christine Hartley (Christine.Hartley@erm.com) <Christine.Hartley@erm.com>; 'Guillermo Alonso' (guillermo.alonso@unionfenosa.com.au) <guillermo.alonso@unionfenosa.com.au>; dsanto@globalpower-generation.com
Subject: RE: Berrybank TMP:

Hi Laura,

I tried to call yesterday, appreciate if you can provide a response to the email below this week. The contractor is planning to mobilise to site at the end of Jan, so we need to complete the existing conditions survey in the first couple weeks of the new year. If you'd like we can setup a teleconference to discuss, just let me know.

Cheers,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

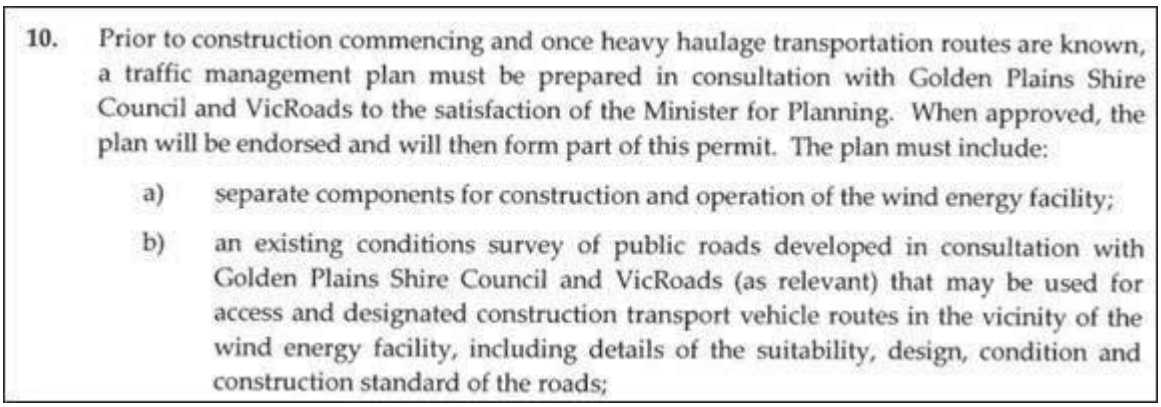
From: Dwyer, Joshua (Melbourne)
Sent: Friday, 14 December 2018 4:22 PM
To: 'Laura Wilks'
Cc: Grace Abou Abdallah (grace.abouabdallah@erm.com); Christine Hartley (Christine.Hartley@erm.com); 'Guillermo Alonso' (guillermo.alonso@unionfenosa.com.au); dsanto@globalpower-generation.com
Subject: RE: Berrybank TMP:

Hi Laura,

Thanks for your comments, we will ensure those items are adhered to.

Currently we are planning to undertake the existing conditions survey of local roads in accordance with Planning Permit condition 10b. Refer to the attached sketch for our proposed ~~Corangamite~~ Golden Plains Shire Council declared roads to be included within the survey. The northern side of the Boundary J W road reserve forms the boundary to the Corangamite Shire Council, who are being consulted separately.

I'll give you a call on Monday (when you are back in the office) to discuss this approach.



10. Prior to construction commencing and once heavy haulage transportation routes are known, a traffic management plan must be prepared in consultation with Golden Plains Shire Council and VicRoads to the satisfaction of the Minister for Planning. When approved, the plan will be endorsed and will then form part of this permit. The plan must include:

    a) separate components for construction and operation of the wind energy facility;

    b) an existing conditions survey of public roads developed in consultation with Golden Plains Shire Council and VicRoads (as relevant) that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility, including details of the suitability, design, condition and construction standard of the roads;

Thanks,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: Laura Wilks [mailto:lwilks@gplains.vic.gov.au]
Sent: Wednesday, 7 November 2018 4:06 PM
To: Dwyer, Joshua (Melbourne)
Subject: RE: Berrybank TMP:

Good afternoon Josh.

I can advise after review that GPSC endorse Berrybank Windfarm TMP Rev 09 prepared by AECOM subject to :

1. Prior to commencement of any works on local road network detailed design for any proposed upgrades to local road network are to be provided to GPSC for approval.
2. Obtain a road opening Permit and Vehicle Crossing Permit where required from Council.
3. GPSC understanding and expectation is that all damage to the local road network that results from the development activity will be rectified in a prompt manner to Council's satisfaction.

Any questions let me know.

Regards

Laura Wilks
Strategic Planning Team Leader (Mon, Wed and Thur)
Golden Plains Shire Council
P: 03 5220 7271 | F: 03 5220 7100
E: lwilks@gplains.vic.gov.au | W: goldenplains.vic.gov.au

From: Dwyer, Joshua (Melbourne) <joshua.dwyer@aecom.com>
Sent: Tuesday, 30 October 2018 3:01 PM
To: Roger Sanders <Roger.Sanders@gplains.vic.gov.au>
Cc: Tony Talevski <ttalevski@gplains.vic.gov.au>; Laura Wilks <lwilks@gplains.vic.gov.au>; Clune, Timothy <timothy.clune@aecom.com>; Grace Abou Abdallah (grace.abouabdallah@erm.com) <grace.abouabdallah@erm.com>; 'Guillermo Alonso' (guillermo.alonso@unionfenosa.com.au) <guillermo.alonso@unionfenosa.com.au>
Subject: FW: Berrybank TMP:

Hi Roger,

Please find attached the revised Berrybank Wind Farm Traffic Management Plan (TMP) for your review / comment. Your previous comments are attached, with a response shown in red.

Can you please notify at your earliest convenience of receipt the expected timescales for feedback?

Let me know if you have any comments or queries.

Thanks,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

-----Original Message-----
From: Clune, Timothy
Sent: Wednesday, 11 July 2018 8:15 AM
To: Dwyer, Joshua (Melbourne)
Subject: FW: Berrybank TMP:

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
mailto:timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008 T +61 3 9653 1234 F +61 3 9654 7117
http://www.aecom.com

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-----Original Message-----
From: Roger Sanders [mailto:Roger.Sanders@gplains.vic.gov.au]
Sent: Wednesday, 11 July 2018 8:13 AM
To: Clune, Timothy <timothy.clune@aecom.com>
Cc: Tony Talevski <ttalevski@gplains.vic.gov.au>; Laura Wilks <lwilks@gplains.vic.gov.au>
Subject: RE: Berrybank TMP:

Good Morning Tim,

Please find attached GPSC's review of the draft TMP. Note that we have some items that we require further clarification on. If there is any further that you require from us, please advise and we can see what we can do.

Thanks.

Roger Sanders
Development Engineer - Contractor
Golden Plains Shire Council
P: 03 5220 7119 | F: 03 5220 7100
E: roger.sanders@gplains.vic.gov.au | W:goldenplains.vic.gov.au

-----Original Message-----
From: Clune, Timothy [mailto:timothy.clune@aecom.com]
Sent: Friday, 6 July 2018 1:13 PM
To: Laura Wilks <lwilks@gplains.vic.gov.au>
Cc: Dwyer, Joshua (Melbourne) <joshua.dwyer@aecom.com>
Subject: Berrybank TMP:
Importance: High

Hi Laura,

Please find attached Berrybank TMP

Thanks

Tim

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
mailto:timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008 T +61 3 9653 1234 F +61 3 9654 7117
http://www.aecom.com

.
-----Original Message-----
From: Laura Wilks [mailto:lwilks@gplains.vic.gov.au]
Sent: Friday, 6 July 2018 9:22 AM
To: Clune, Timothy <timothy.clune@aecom.com>
Subject:

Hi there

So in sarahs absence I was going to forward the TMP for berrybank onto our engineer but I have not seen it. I'm really sorry, can you send it directly to me and I will pass it on and hope we can turn it around quickly.

Regards

Sent from my iPhone

Laura Wilks
Strategic Planning Team Leader (Mon, Wed and Thur) Golden Plains Shire Council
P: 03 5220 7271 | F: 03 5220 7100
E: lwilks@gplains.vic.gov.au | W:goldenplains.vic.gov.au

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Clune, Timothy

From: Peter Gstrein <Peter.Gstrein@roads.vic.gov.au>
Sent: Friday, 11 January 2019 4:01 PM
To: Grace Abou Abdallah
Cc: Christine Hartley; Alonso Castro, Guillermo; Santo Tomas Menocal, David; Kevin Donnelly
Subject: RE: Berrybank Wind Farm - Quarry Routes

Hi Grace.

The first thing that needs to be stressed is that inclusion on the VicRoads OSOM network or Victoria's gazetted B-Double network doesn't automatically indicate that a road is fit for intensive heavy vehicle traffic.

Having said this, it can be presumed that M, A & B class roads are fit for purpose. This includes the sections of the Hamilton, Midland and Princes Highways proposed for use, but not C class roads such as Camperdown-Lismore, Foxhow, Lismore-Ballarat, Rokewood-Skipton, Bannockburn-Shelford, Lismore-Skipton, Colac-Ballarat and Coragulac-Beeac Rds.
Assessment of potential damage to these roads is largely based on differentiation between two-way Average Annualised Daily Traffic (AADT) – depicted in Vehicles Per Day (VPD) and Heavy Vehicle (HV) component and the projected daily HV increase (PI) under construction conditions. The following table provides indicative effects:

	AADT (2-way)		PI	% increase
Road name	VPD	HV	HV	HV
Camperdown-Lismore	1700	307	28	9%
Foxhow	780	150	28	19%
Lismore-Ballarat	880	150	28	19%
Rokewood-Skipton	810	247	28	11%
Bannockburn-Shelford	3600	361	20	6%
Lismore-Skipton	390	91	10	11%
Colac-Ballarat	820	124	12	10%
Coragulac-Beeac	1700	63	4	6%

The proposed increases - at 6 to 20% - don't suggest significant deterioration of pavement structure and/or integrity is likely. Hence, existing condition surveys of these roads won't be necessary. We would request, however, that any emerging defects identified by project operatives are reported to VicRoads as soon as possible (to enable rapid action).

Please note that an existing condition survey of the Hamilton Highway 200 metres either side of the Berrybank-Wallinduc Rd intersection will be required, as this intersection will endure a significant increase in deceleration, turning and acceleration movements.

Regards,

Peter Gstrein
Senior Statutory Planning Officer

regional roads victoria

South Western Region
29 Jamieson Street Warrnambool
T 03 5561 9214
M 0408 317 254
E peter.gstrein@roads.vic.gov.au
regionalroads.vic.gov.au

I acknowledge the Traditional Aboriginal Owners of Country throughout Victoria and pay my respect to Elders past and present and to the ongoing living culture of Aboriginal people.
Facebook | VicTraffic | LinkedIn

From: Grace Abou Abdallah [mailto:grace.abouabdallah@erm.com]
Sent: Tuesday, 8 January 2019 5:10 PM
To: Peter Gstrein <Peter.Gstrein@roads.vic.gov.au>
Cc: Christine Hartley <Christine.Hartley@erm.com>; Alonso Castro, Guillermo <galonsoc@globalpower-generation.com>; Santo Tomas Menocal, David <dsanto@globalpower-generation.com>; Kevin Donnelly <kevin.donnelly@mpckinetic.com>
Subject: Berrybank Wind Farm - Quarry Routes

Hi Peter,

Thank you for your time yesterday to discuss pre-construction surveys of the quarry routes proposed to be used for Berrybank Wind Farm.

Please find attached the updated route analysis which includes the conservative approach of increasing the estimated trips per day by 20%. As discussed, based on this analysis, we are seeking your written confirmation that existing conditions surveys of public VicRoads roads are not required as a result of our consultation with VicRoads, and as such the requirements of condition 10b of Permit 20092820A and 20092821A have been met as they relate to VicRoads.

We would appreciate your earliest attention to this matter.

Kind Regards,

Grace Abou Abdallah
Town Planner | Impact Assessment and Planning

ERM
Level 6, 99 King Street | Melbourne, Victoria 3000 | Australia
T +61 3 9696 8011 | **M** +61 428585715
E grace.abouabdallah@erm.com | **W** www.erm.com

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Clune, Timothy

From: John Kelly <john.kelly@corangamite.vic.gov.au>
Sent: Thursday, 20 December 2018 10:32 PM
To: Dwyer, Joshua (Melbourne)
Cc: Beau Reilly
Subject: RE: Berrybank Wind Farm Traffic Management Plan

Thanks Josh,

For a joint inspection with Council of the roads please contact Beau Reilly on 5593 7141.

Regards

John Kelly

John Kelly
Manager Assets Planning

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0409 803 044
Phone: 03 5593 7183
www.corangamite.vic.gov.au

CORANGAMITE SHIRE

From: Dwyer, Joshua (Melbourne) [mailto:joshua.dwyer@aecom.com]
Sent: Friday, 14 December 2018 4:31 PM
To: John Kelly <john.kelly@corangamite.vic.gov.au>
Cc: Planning <planning@corangamite.vic.gov.au>; Grace Abou Abdallah (grace.abouabdallah@erm.com) <grace.abouabdallah@erm.com>; Christine Hartley (Christine.Hartley@erm.com) <Christine.Hartley@erm.com>; 'Guillermo Alonso' (guillermo.alonso@unionfenosa.com.au) <guillermo.alonso@unionfenosa.com.au>; dsanto@globalpower-generation.com
Subject: RE: Berrybank Wind Farm Traffic Management Plan

Hi John,

Currently we are planning to undertake the existing conditions survey of local roads in accordance with Planning Permit condition 10b. The intention is to record the existing condition and existing distresses of the pavements prior to construction commencing. Refer to the attached sketch for our proposed Corangamite Shire Council declared roads to be included within the survey. The northern side of the Boundary J W road reserve forms the boundary to the Golden Plains Shire Council, who are being consulted separately.

I'll give you a call on Monday to discuss this approach.

10. Prior to construction commencing and once heavy haulage transportation routes are known a traffic management plan must be prepared in consultation with Corangamite Shire Council and VicRoads to the satisfaction of the Minister for Planning. When approved, the plan will be endorsed and will then form part of this permit. The plan must include:

    a) separate components for construction and operation of the wind energy facility;

    b) an existing conditions survey of public roads in consultation with Corangamite Shire Council and VicRoads that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility, including details of the suitability, design, condition and construction standard of the roads;

Cheers,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

From: John Kelly [mailto:john.kelly@corangamite.vic.gov.au]
Sent: Sunday, 25 November 2018 10:45 PM
To: Dwyer, Joshua (Melbourne)
Cc: Planning
Subject: RE: Berrybank Wind Farm Traffic Management Plan

Hi Joshua,

As mentioned there may be instances, particularly when damage and defects to the local road network from the development activities are hazardous to the travelling public, that rectification will need to be undertaken well within the response times noted in Section 7.2 of the Traffic Management Plan.

I have no other comments on the TMP further to what I had previously provided.

Regards

John Kelly

John Kelly
Manager Assets Planning

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0409 803 044
Phone: 03 5593 7183
www.corangamite.vic.gov.au

CORANGAMITE SHIRE

From: Dwyer, Joshua (Melbourne)
Sent: Tuesday, 30 October 2018 2:54 PM
To: john.kelly@corangamite.vic.gov.au
Cc: planning@corangamite.vic.gov.au; Greg.Hayes@corangamite.vic.gov.au; Clune, Timothy; Grace Abou Abdallah (grace.abouabdallah@erm.com); 'Guillermo Alonso' (guillermo.alonso@unionfenosa.com.au)
Subject: RE: Berrybank Wind Farm Traffic Management Plan

Hi John,

Please find attached the revised Berrybank Wind Farm Traffic Management Plan (TMP) for your review / comment. Your previous comments are below, with a response shown in red.

- Detailed designs including pavement designs for the proposed local road upgrades in Corangamite Shire outlined in the TMP are to be submitted to Council for approval prior to works commencing. Noted – to be provided by the contractor.
- Prior to the upgrade works commencing in the local road network, the developer is to obtain Road Opening Permits and Vehicle Crossing Permits where required from Council. Noted – to be sought by the contractor.
- The expectation is that damage and defects to the local road network resulting from the development activities will be rectified in a timely manner by the developer to Council's satisfaction. Noted – refer to Section 7.2 Road Maintenance which includes response times.

Can you please notify at your earliest convenience of receipt the expected timescales for feedback?

Let me know if you have any comments or queries.

Thanks,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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From: Clune, Timothy
Sent: Tuesday, 10 July 2018 7:57 PM
To: Dwyer, Joshua (Melbourne)
Subject: FW: Berrybank Wind Farm Traffic Management Plan

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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From: John Kelly [mailto:john.kelly@corangamite.vic.gov.au]
Sent: Tuesday, 10 July 2018 4:48 PM
To: Clune, Timothy <timothy.clune@aecom.com>
Cc: Planning <planning@corangamite.vic.gov.au>; Greg Hayes <Greg.Hayes@corangamite.vic.gov.au>
Subject: Berrybank Wind Farm Traffic Management Plan

Hello Tim,

Please find below Corangamite Shire comments on the draft Traffic Management Plan for the Berrybank WindFarm:

- Detailed designs including pavement designs for the proposed local road upgrades in Corangamite Shire outlined in the TMP are to be submitted to Council for approval prior to works commencing.
- Prior to the upgrade works commencing in the local road network, the developer is to obtain Road Opening Permits and Vehicle Crossing Permits where required from Council.
- The expectation is that damage and defects to the local road network resulting from the development activities will be rectified in a timely manner by the developer to Council's satisfaction.

Please contact me on 5593 7183 if you have any queries.

Regards

John Kelly

John Kelly
Manager Assets Planning

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0409 803 044
Phone: 03 5593 7183
www.corangamite.vic.gov.au

CORANGAMITE SHIRE

From: Clune, Timothy [mailto:timothy.clune@aecom.com]
Sent: Wednesday, 20 June 2018 1:49 PM
To: Planning <planning@corangamite.vic.gov.au>
Subject: RE: Berrybank Wind Farm TMP Consult
Importance: High

Attn: Greg Hayes

Hope you are well

Please find attached Berrybank Wind Farm Traffic Management Plan (TMP) for your review / comment (as forewarned via email on Sunday 10 June 2018).

Can you please notify me at your earliest convenience of receipt, whom will be reviewing and timescales for feedback (we have allowed for a 2-week turnaround in our indicative program).

Any questions or queries please contact me

Kind Regards

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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From: Clune, Timothy
Sent: Sunday, 10 June 2018 1:59 PM
To: 'planning@corangamite.vic.gov.au'
Subject: Berrybank Wind Farm TMP Consult
Importance: High

Attn: Greg Hayes

Hope you are well

This is a courtesy email to inform that will be submitting a Traffic Management Plan for consultation with regards to the Berryabnk Wind Farm this week for your consultation.

Can you please confirm availability and turnover time for consult (we have allowed for 2 weeks)

Kind Regards

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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Dwyer, Joshua (Melbourne)

From: Peter.Gstrein@roads.vic.gov.au
Sent: Tuesday, 30 October 2018 4:14 PM
To: Dwyer, Joshua (Melbourne)
Cc: Alonso Castro, Guillermo (galonsoc@globalpower-generation.com); Grace Abou Abdallah (grace.abouabdallah@erm.com); Clune, Timothy
Subject: Re: Berrybank Wind Farm - Revised TMP

Follow Up Flag: Follow up
Flag Status: Completed

Hi Josh.

I suspect that you'll run into trouble with the bridge over the Merri River at Woodford - especially with the heavier loads. The 67m blade length may be ok there, though.

The Quarry sub-TMP can really be considered as the detailed (non-OD) construction traffic TMP. It will deal with heavy vehicles (not just quarry materials - all heavy vehicles).

This version that you've provided gives a rough idea of heavy vehicle numbers, but the secondary TMP will go into the nitty gritty of origin, frequency, mass, time of day, etc., etc. It's at that time that we'll be able to determine an appropriate monitoring and mitigation regime.

Regards,

Peter Gstrein
Senior Statutory Planning Officer

regional roads victoria

South Western Region
29 Jamieson Street Warrnambool
T 03 5561 9214
M 0408 317 254
E peter.gstrein@roads.vic.gov.au
regionalroads.vic.gov.au

I acknowledge the Traditional Aboriginal Owners of Country throughout Victoria and pay my respect to Elders past and present and to the ongoing living culture of Aboriginal people.
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"Dwyer, Joshua (Melbourne)" ---30/10/2018 03:07:05 PM---Hi Peter, Please find attached the revised Berrybank Wind Farm Traffic Management Plan (TMP) for you

From: "Dwyer, Joshua (Melbourne)" <joshua.dwyer@aecom.com>
To: "'Peter.Gstrein@roads.vic.gov.au'" <Peter.Gstrein@roads.vic.gov.au>
Cc: "Clune, Timothy" <timothy.clune@aecom.com>, "Grace Abou Abdallah (grace.abouabdallah@erm.com)" <grace.abouabdallah@erm.com>, "Alonso Castro, Guillermo (galonsoc@globalpower-generation.com)" <galonsoc@globalpower-generation.com>
Date: 30/10/2018 03:07 PM
Subject: Berrybank Wind Farm - Revised TMP

Hi Peter,

Please find attached the revised Berrybank Wind Farm Traffic Management Plan (TMP) for your review / comment. Note there is a new OD route proposed from the Port of Geelong to Site, which has been added in Section 5.3.3.

Can you please notify at your earliest convenience of receipt the expected timescales for feedback?

Let me know if you have any comments or queries.

Thanks,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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From: Clune, Timothy
Sent: Friday, 6 July 2018 4:46 PM
To: Dwyer, Joshua (Melbourne)
Subject: FW: Draft Ryan Corner and Hawkesdale Wind Farm TMP Report - For Consultation and Endorsement

HI Josh, you can forward these with your weekly update, although given the required alterations it is likely we will have to ask VicRoads to update based on latest copy of the TMPs

Thanks

Tim

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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From: Peter.Gstrein@roads.vic.gov.au [mailto:Peter.Gstrein@roads.vic.gov.au]
Sent: Friday, 6 July 2018 4:07 PM
To: Clune, Timothy <timothy.clune@aecom.com>

South Western Region
180 Fyans Street
South Geelong Victoria 3220
PO Box 775 Geelong Victoria 3220

Fax (03) 5221 6102

vicroads.vic.gov.au

Timothy Clune
AECOM Australia Pty Ltd
Level 10, Tower Two
727 Collins Street
MELBOURNE VIC 3008

6 July 2018

VicRoads File No: 13409497
Contact: Peter Gstrein
Telephone: 03 5561 9214

Dear Mr Clune

**BERRYBANK WIND FARM – TRAFFIC MANAGEMENT PLAN (TMP)
REVISION 8, DATED 20 JUNE 2018**

I refer to your email dated 18 June 2018, seeking VicRoads' assessment and endorsement of the above TMP.

VicRoads endorses the TMP, bearing in mind that much of the report is focussed on issues associated with over-sized vehicles transporting large components to the construction site, and the report acknowledges that there are still many traffic management issues yet to be confirmed.

VicRoads appreciates the vast array of unknown elements in the early planning stages for a wind farm, such as the decision (or the ability) to quarry onsite, or the precise origin and availability of suitable and large volumes of quarry and other materials used to construct internal access roads, lifting pads, turbine footings and infrastructure foundations.

In reality, it is simply not practical nor desirable to lock in construction transportation routes during the planning process. However, once construction processes are determined and finalised and balance of plant contracts have been awarded, a secondary traffic management plan must be forwarded to VicRoads and Council/s for approval.

The need for, and information required in, this secondary traffic management plan is acknowledged in Section 1.5.1.2 of the TMP provided.

Before the development starts and once construction methods and transportation routes are revealed, the applicant must enter into a legally binding agreement with VicRoads that clearly specifies an agreed framework for determining the wind farm owner's obligations and commitments for addressing all associated transportation and traffic related impacts.

It must be remembered that Over-Dimensional transport route sections encompassing arterial roads require approval by Heavy Vehicle Services section of VicRoads, whilst sections encompassing local roads require approval by the relevant municipality. The entire route requires permit approval by the National Heavy Vehicle Regulator.

Intersection upgrades (if any) required to accommodate swept paths of Over-Length vehicles can be addressed once the route/s has/have been finalised.

Should you require further information, please contact Mr Peter Gstrein, at our Warrnambool Office on telephone number 5561 9214 or peter.gstrein@roads.vic.gov.au

Yours sincerely

for

SAM PIRROTTA
MANAGER PLANNING
SOUTH WESTERN REGION

Dwyer, Joshua (Melbourne)

From: Laura Wilks <lwilks@gplains.vic.gov.au>
Sent: Wednesday, 7 November 2018 4:06 PM
To: Dwyer, Joshua (Melbourne)
Subject: RE: Berrybank TMP:

Follow Up Flag: Follow up
Flag Status: Completed

Good afternoon Josh.

I can advise after review that GPSC endorse Berrybank Windfarm TMP Rev 09 prepared by AECOM subject to :

1. Prior to commencement of any works on local road network detailed design for any proposed upgrades to local road network are to be provided to GPSC for approval.
2. Obtain a road opening Permit and Vehicle Crossing Permit where required from Council.
3. GPSC understanding and expectation is that all damage to the local road network that results from the development activity will be rectified in a prompt manner to Council's satisfaction.

Any questions let me know.

Regards

Laura Wilks
Strategic Planning Team Leader (Mon, Wed and Thur)
Golden Plains Shire Council
P: 03 5220 7271 | F: 03 5220 7100
E: lwilks@gplains.vic.gov.au | W: goldenplains.vic.gov.au

From: Dwyer, Joshua (Melbourne) <joshua.dwyer@aecom.com>
Sent: Tuesday, 30 October 2018 3:01 PM
To: Roger Sanders <Roger.Sanders@gplains.vic.gov.au>
Cc: Tony Talevski <ttalevski@gplains.vic.gov.au>; Laura Wilks <lwilks@gplains.vic.gov.au>; Clune, Timothy <timothy.clune@aecom.com>; Grace Abou Abdallah (grace.abouabdallah@erm.com) <grace.abouabdallah@erm.com>; 'Guillermo Alonso' (guillermo.alonso@unionfenosa.com.au) <guillermo.alonso@unionfenosa.com.au>
Subject: FW: Berrybank TMP:

Hi Roger,

Please find attached the revised Berrybank Wind Farm Traffic Management Plan (TMP) for your review / comment. Your previous comments are attached, with a response shown in red.

Can you please notify at your earliest convenience of receipt the expected timescales for feedback?

Let me know if you have any comments or queries.

Thanks,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

-----Original Message-----
From: Clune, Timothy
Sent: Wednesday, 11 July 2018 8:15 AM
To: Dwyer, Joshua (Melbourne)
Subject: FW: Berrybank TMP:

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
mailto:timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008 T +61 3 9653 1234 F +61 3 9654 7117
http://www.aecom.com

.
-----Original Message-----
From: Roger Sanders [mailto:Roger.Sanders@gplains.vic.gov.au]
Sent: Wednesday, 11 July 2018 8:13 AM
To: Clune, Timothy <timothy.clune@aecom.com>
Cc: Tony Talevski <ttalevski@gplains.vic.gov.au>; Laura Wilks <lwilks@gplains.vic.gov.au>
Subject: RE: Berrybank TMP:

Good Morning Tim,

Please find attached GPSC's review of the draft TMP. Note that we have some items that we require further clarification on. If there is any further that you require from us, please advise and we can see what we can do.

Thanks.

Roger Sanders
Development Engineer - Contractor
Golden Plains Shire Council
P: 03 5220 7119 | F: 03 5220 7100
E: roger.sanders@gplains.vic.gov.au | W:goldenplains.vic.gov.au

-----Original Message-----
From: Clune, Timothy [mailto:timothy.clune@aecom.com]
Sent: Friday, 6 July 2018 1:13 PM
To: Laura Wilks <lwilks@gplains.vic.gov.au>
Cc: Dwyer, Joshua (Melbourne) <joshua.dwyer@aecom.com>
Subject: Berrybank TMP:
Importance: High

Dwyer, Joshua (Melbourne)

From: John Kelly <john.kelly@corangamite.vic.gov.au>
Sent: Sunday, 25 November 2018 10:45 PM
To: Dwyer, Joshua (Melbourne)
Cc: Planning
Subject: RE: Berrybank Wind Farm Traffic Management Plan

Hi Joshua,

As mentioned there may be instances, particularly when damage and defects to the local road network from the development activities are hazardous to the travelling public, that rectification will need to be undertaken well within the response times noted in Section 7.2 of the Traffic Management Plan.

I have no other comments on the TMP further to what I had previously provided.

Regards

John Kelly

John Kelly
Manager Assets Planning

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0409 803 044
Phone: 03 5593 7183
www.corangamite.vic.gov.au

From: Dwyer, Joshua (Melbourne)
Sent: Tuesday, 30 October 2018 2:54 PM
To: john.kelly@corangamite.vic.gov.au
Cc: planning@corangamite.vic.gov.au; Greg.Hayes@corangamite.vic.gov.au; Clune, Timothy; Grace Abou Abdallah (grace.abouabdallah@erm.com); 'Guillermo Alonso' (guillermo.alonso@unionfenosa.com.au)
Subject: RE: Berrybank Wind Farm Traffic Management Plan

Hi John,

Please find attached the revised Berrybank Wind Farm Traffic Management Plan (TMP) for your review / comment. Your previous comments are below, with a response shown in red.

- Detailed designs including pavement designs for the proposed local road upgrades in Corangamite Shire outlined in the TMP are to be submitted to Council for approval prior to works commencing. Noted – to be provided by the contractor.
- Prior to the upgrade works commencing in the local road network, the developer is to obtain Road Opening Permits and Vehicle Crossing Permits where required from Council. Noted – to be sought by the contractor.
- The expectation is that damage and defects to the local road network resulting from the development activities will be rectified in a timely manner by the developer to Council's satisfaction. Noted – refer to Section 7.2 Road Maintenance which includes response times.

Can you please notify at your earliest convenience of receipt the expected timescales for feedback?

Let me know if you have any comments or queries.

Thanks,
Joshua Dwyer
Senior Civil Engineer
D +61 3 9653 8521
joshua.dwyer@aecom.com

AECOM
Collins Square, Level 10, Tower Two 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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From: Clune, Timothy
Sent: Tuesday, 10 July 2018 7:57 PM
To: Dwyer, Joshua (Melbourne)
Subject: FW: Berrybank Wind Farm Traffic Management Plan

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

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From: John Kelly [mailto:john.kelly@corangamite.vic.gov.au]
Sent: Tuesday, 10 July 2018 4:48 PM
To: Clune, Timothy <timothy.clune@aecom.com>
Cc: Planning <planning@corangamite.vic.gov.au>; Greg Hayes <Greg.Hayes@corangamite.vic.gov.au>
Subject: Berrybank Wind Farm Traffic Management Plan

Hello Tim,

Please find below Corangamite Shire comments on the draft Traffic Management Plan for the Berrybank WindFarm:

- Detailed designs including pavement designs for the proposed local road upgrades in Corangamite Shire outlined in the TMP are to be submitted to Council for approval prior to works commencing.
- Prior to the upgrade works commencing in the local road network, the developer is to obtain Road Opening Permits and Vehicle Crossing Permits where required from Council.

- The expectation is that damage and defects to the local road network resulting from the development activities will be rectified in a timely manner by the developer to Council's satisfaction.

Please contact me on 5593 7183 if you have any queries.

Regards

John Kelly

John Kelly
Manager Assets Planning

Corangamite Shire Council
181 Manifold Street (PO Box 84)
CAMPERDOWN VIC 3260

Mobile: 0409 803 044
Phone: 03 5593 7183
www.corangamite.vic.gov.au

From: Clune, Timothy [mailto:timothy.clune@aecom.com]
Sent: Wednesday, 20 June 2018 1:49 PM
To: Planning <planning@corangamite.vic.gov.au>
Subject: RE: Berrybank Wind Farm TMP Consult
Importance: High

Attn: Greg Hayes

Hope you are well

Please find attached Berrybank Wind Farm Traffic Management Plan (TMP) for your review / comment (as forewarned via email on Sunday 10 June 2018).

Can you please notify me at your earliest convenience of receipt, whom will be reviewing and timescales for feedback (we have allowed for a 2-week turnaround in our indicative program).

Any questions or queries please contact me

Kind Regards

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
aecom.com

Imagine it. Delivered.

LinkedIn Twitter Facebook Instagram

From: Clune, Timothy
Sent: Sunday, 10 June 2018 1:59 PM
To: 'planning@corangamite.vic.gov.au'
Subject: Berrybank Wind Farm TMP Consult
Importance: High

Attn: Greg Hayes

Hope you are well

This is a courtesy email to inform that will be submitting a Traffic Management Plan for consultation with regards to the Berryabnk Wind Farm this week for your consultation.

Can you please confirm availability and turnover time for consult (we have allowed for 2 weeks)

Kind Regards

Tim Clune
Principal Technical Officer
D +61 3 9653 8331
timothy.clune@aecom.com

AECOM
Collins Square, Level 10, Tower Two, 727 Collins Street, Melbourne, VIC 3008
T +61 3 9653 1234 F +61 3 9654 7117
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Appendix B

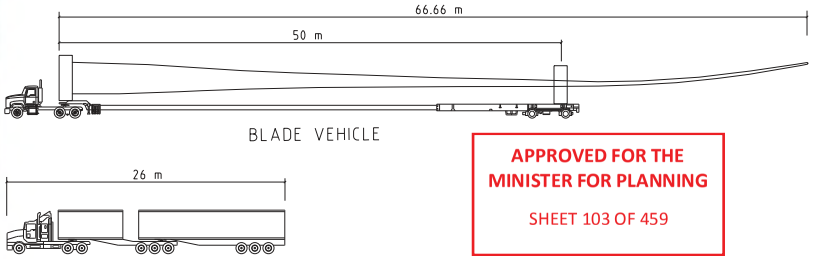
Preliminary Design Drawings

A3

LEGEND

TOTAL AREA TO BE CONSTRUCTED 740 m2

NOTE:
1. APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENROACH ONTO INCORRECT SIDE OF ROAD.
2. MIN TRACK AND ROADWAY WIDTH 5.5m UNLESS OTHERWISE STATED.
3. FOR TYPICAL CROSS SECTIONS REFER TO DRAWING P-TYP
4. SWEPT PATHS FOR THE BLADE VEHICLE HAVE BEEN SHOWN FOR ALL MOVEMENTS. VEHICLE DETAILS TO BE OPTIMISED DURING THE DETAILED DESIGN.



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SHEET 103 OF 459

N

STAGE 1 SITE

BERRYBANK-WALLINDUC RD

STAGE 1 WORKS

8.0m

STAGE 1 WORKS

8.6m

HEAVY VEHICLE (B-DOUBLE) MOVEMENTS HAVE BEEN CHECKED AND ARE ALL CONTAINED WITHIN THE EXISTING PAVEMENT

STAGE 1 WORKS. EXISTING SHOULDER MAY BE SUFFICIENT

POST STAGE 1 SITE

HAMILTON HIGHWAY

8.8m

POST STAGE 1 WORKS

FOXHOW-BERRYBANK RD

POST STAGE 1 SITE

10 0 10 20 30 40 50

DIMENSIONS ARE IN METRES

1:1000 (A3)

PRELIMINARY

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Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
B	JD		29.10.2018	REVISED FOR TURBINE LAYOUT CHANGE
A	JSK		07.05.2011	UNION FENOSA REVIEW

Designed JSK
Drawn JSK
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: PRELIMINARY DESIGN INTERSECTION FOXHOW RD - HAMILTON HWY

Status: PRELIMINARY

Datum: MGA

Date: 07.05.2011

CAD File Number: P-DES-1.dgn

Job No.: 43316001

Sheet Number: P-DES-1

Rev: B

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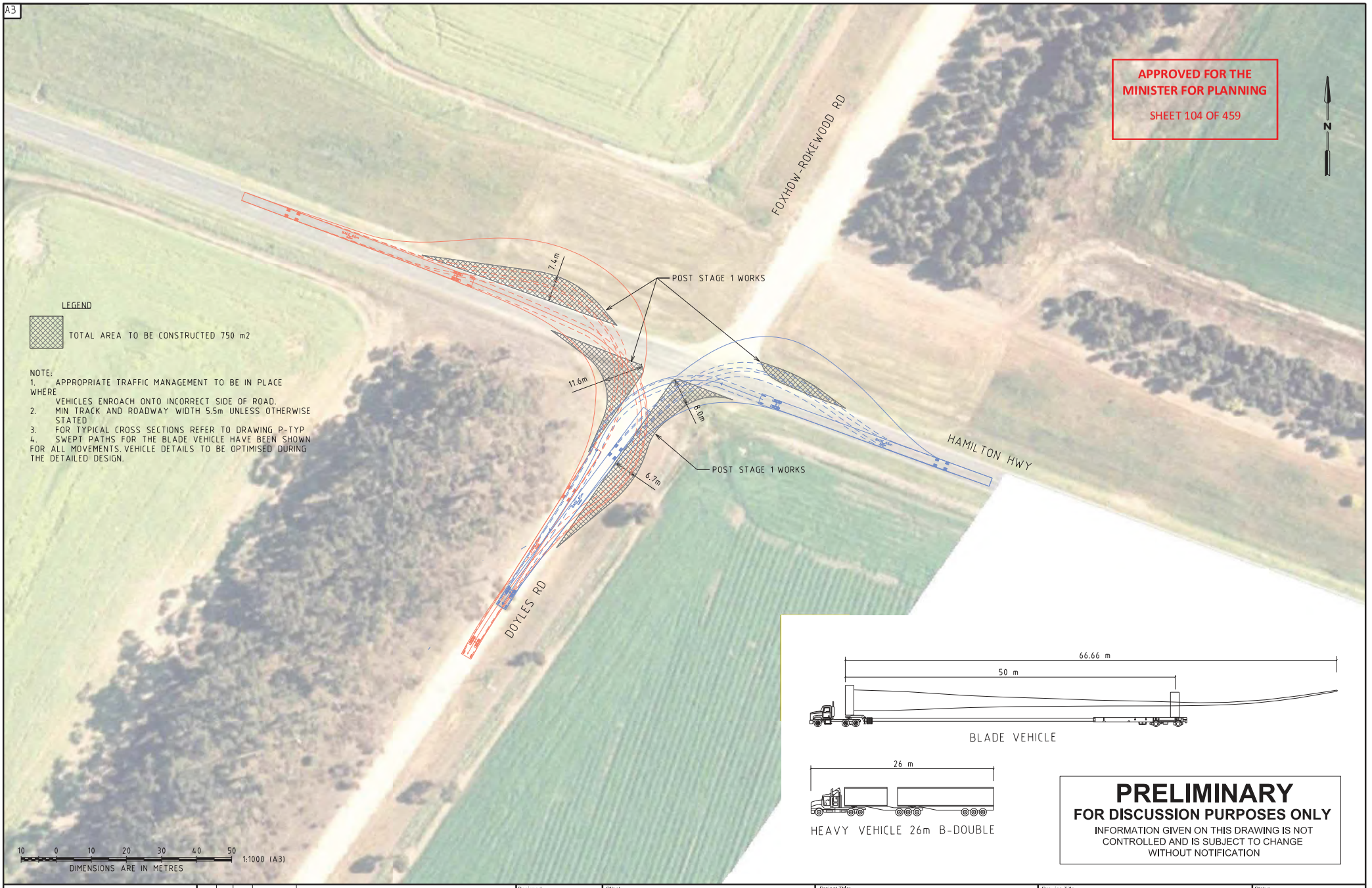

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Rev	By	App	Date	REVISION RECORD
C	JD		29.10.2018	REVISED FOR TURBINE LAYOUT CHANGE
B	RAM		01.08.2013	INCORPORATED CLIENT COMMENTS
A	JSK		07.06.2011	UNION FENOSA REVIEW

Designed JSK
Drawn JSK
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: PRELIMINARY DESIGN INTERSECTION DOYLES RD - HAMILTON HWY

Status: PRELIMINARY
Datum: MGA
Date: 01.08.13
CAD File Number: P-DES-2.dgn
Job No.: 43316001
Sheet Number: P-DES-2
Rev: C

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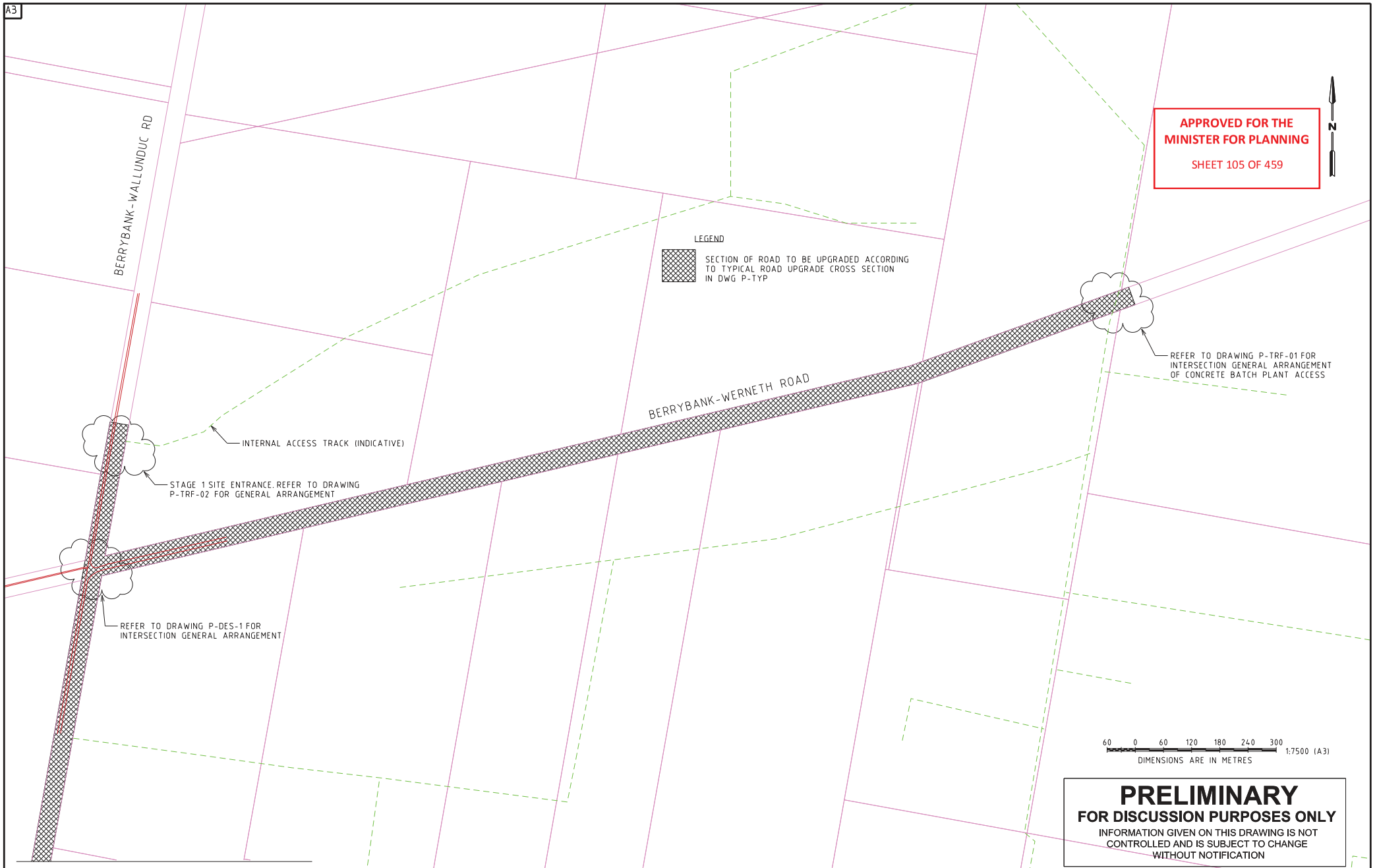

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FOR CONTINUATION REFER TO DRAWING P-PAV-2

PRELIMINARY

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Rev	By	App	Date	REVISION RECORD
B	JD		19.09.2018	REVISED FOR TURBINE LAYOUT CHANGE
A	JSK		07.05.2011	UNION FENOSA REVIEW

Designed: JSK
Drawn: JSK
Checked:
Approved:
Scales: AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: PAVEMENT PLAN ROAD UPGRADE SHEET 1

Status: PRELIMINARY
Datum: MGA
Date: 07.05.2011
CAD File Number: P-PAV-1.dgn
Job No.: 43316001
Sheet Number: P-PAV-1
Rev: B

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A3

FOR CONTINUATION REFER TO DRAWING P-PAV-1

LEGEND

SECTION OF ROAD TO BE UPGRADED ACCORDING TO TYPICAL ROAD UPGRADE CROSS SECTION IN DWG P-TYP

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SHEET 106 OF 459

N

BERRYBANK-WALLINDUC RD

REFER TO DRAWING P-DES-1 FOR INTERSECTION GENERAL ARRANGEMENT

HAMILTON HIGHWAY

RAILWAY LINE

FOXHOW-BERRYBANK RD

INTERNAL ACCESS TRACK (INDICATIVE)

POST STAGE 1 SITE ENTRANCE. REFER TO DRAWING P-TRF-05 FOR GENERAL ARRANGEMENT OF SOUTHWEST ACCESS

60 0 60 120 180 240 300

DIMENSIONS ARE IN METRES

1:7500 (A3)

PRELIMINARY

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Rev	By	App	Date	REVISION RECORD
B	JD		19.09.2018	REVISED FOR TURBINE LAYOUT CHANGE
A	JSK		07.05.2012	UNION FENOSA REVIEW

Designed JSK
Drawn JSK
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: PAVEMENT PLAN ROAD UPGRADE SHEET 2

Status: PRELIMINARY

Datum: MGA

Date: 07.05.2011

CAD File Number: P-PAV-2.dgn

Job No.: 43316001

Sheet Number: P-PAV-2

Rev: B

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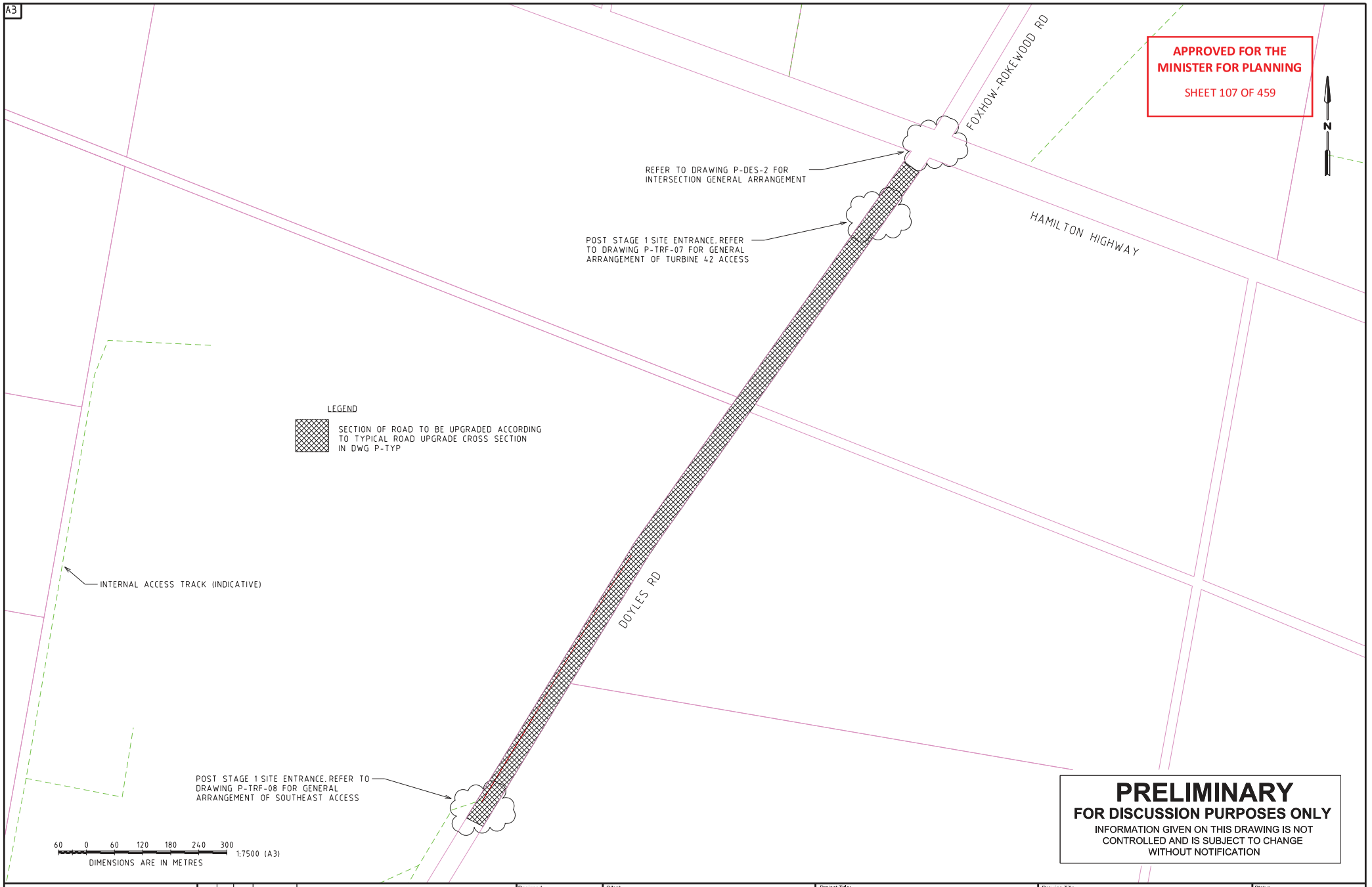

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Rev	By	App	Date	REVISION RECORD
B	JD		19.09.2018	REVISED FOR TURBINE LAYOUT CHANGE
A	JSK		07.06.2012	UNION FENOSA REVIEW

Designed: JSK
Drawn: JSK
Checked:
Approved:
Scales: AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: PAVEMENT PLAN ROAD UPGRADE SHEET 3

Status: PRELIMINARY
Datum: MGA
Date: 07.05.2011
CAD File Number: P-PAV-3.dgn
Job No.: 43316001
Sheet Number: P-PAV-3
Rev: B

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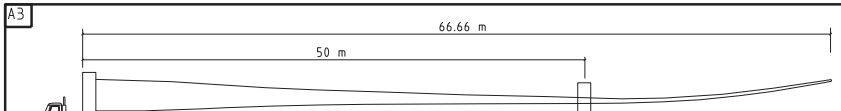
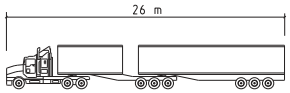


BLADE VEHICLE



HEAVY VEHICLE 26m B-DOUBLE

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SHEET 108 OF 459

N

INTERNAL ACCESS TRACK (INDICATIVE)

BERRYBANK-WERNETH RD

7.0m GATE WIDTH

2.2km TO BERRYBANK-WALLINDUC RD

STAGE 1 WORKS

OVER DIMENSIONAL VEHICLE TO PASS PERPENDICULAR THROUGH THE ROAD RESERVE

7.0m GATE WIDTH

CONCRETE BATCH PLANT

LEGEND

TOTAL AREA TO BE CONSTRUCTED 460 m2

NOTE:
1. APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENROACH ONTO INCORRECT SIDE OF ROAD.
2. MIN TRACK AND ROADWAY WIDTH 5.5m UNLESS OTHERWISE STATED
3. FOR TYPICAL CROSS SECTIONS REFER TO DRAWING P-TYP

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Rev	By	App	Date	REVISION RECORD
E	JD		19.09.18	REVISED FOR TURBINE LAYOUT CHANGE
D	GRS		16.09.15	REVISED OD TURNING VEHICLE
C	RAM		22.10.14	REVISED OD TURNING VEHICLE
B	RAM		01.08.13	INCORPORATED CLIENT COMMENTS
A	JSK		17.05.11	UNION FENOSA REVIEW

Designed: RAM
Drawn: RAM
Checked:
Approved:
Scales: AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: INTERSECTION MOVEMENT PLAN SHEET 1

Status: PRELIMINARY
Datum: MGA
Date: 01.08.13
CAD File Number: P-TRF-01.dgn
Job No.: 43316001
Sheet Number: P-TRF-01
Rev: E

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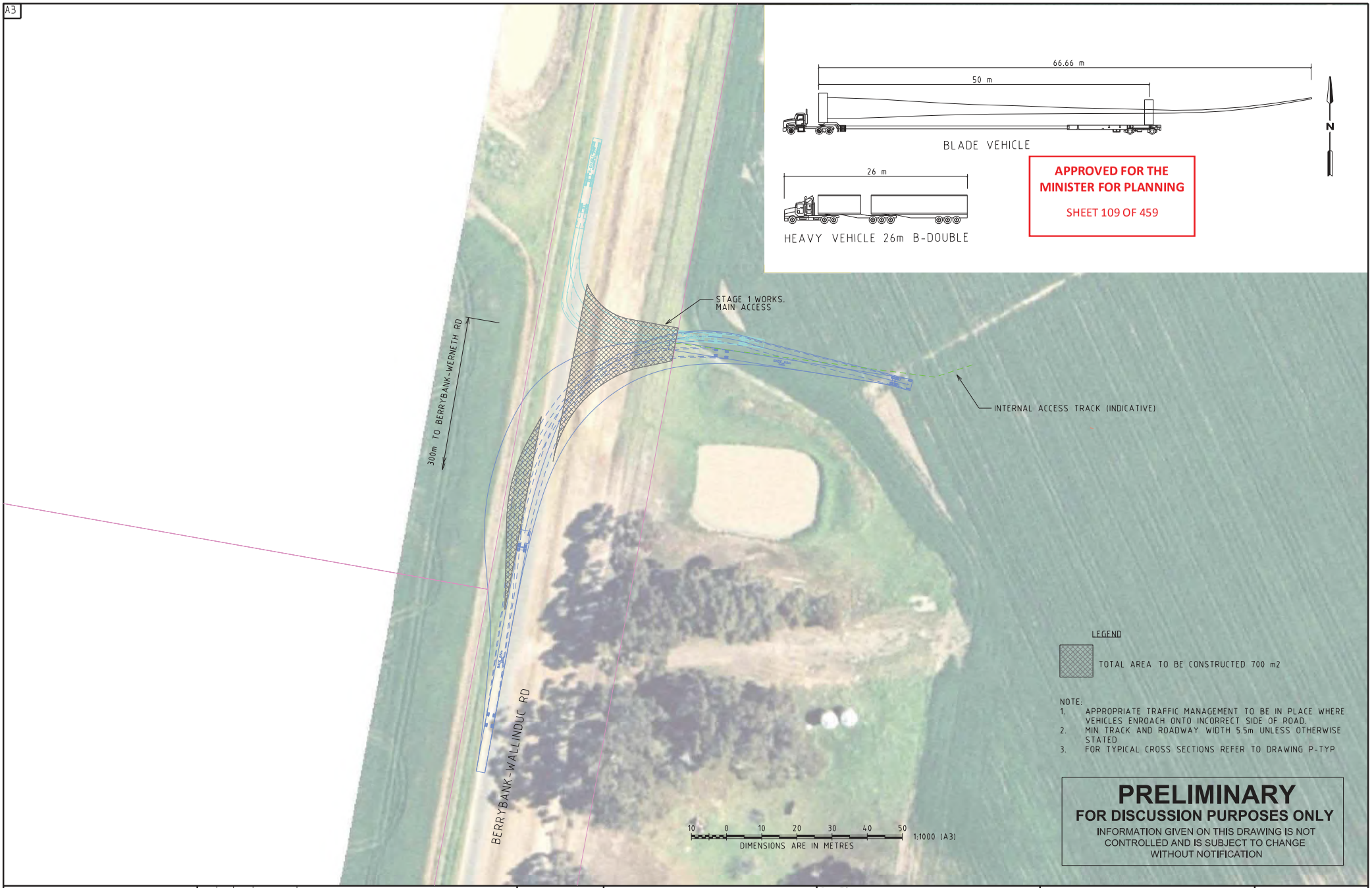

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Rev	By	App	Date	REVISION RECORD
E	JD		19.09.2018	REVISED FOR TURBINE LAYOUT CHANGE
D	GRS		16.09.15	REVISED OD TURNING VEHICLE
C	RAM		22.10.14	REVISED OD TURNING VEHICLE
B	RAM		01.08.13	INCORPORATED CLIENT COMMENTS
A	JSK		17.05.11	UNION FENOSA REVIEW

Designed RAM
Drawn RAM
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: INTERSECTION MOVEMENT PLAN SHEET 2

Status: PRELIMINARY
Datum: MGA
Date: 01.08.13
CAD File Number: P-TRF-02.dgn
Job No.: 43316001
Sheet Number: P-TRF-02
Rev: E

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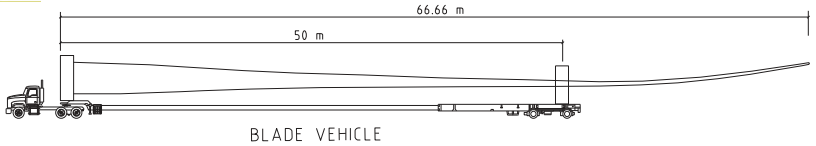
SHEET 110 OF 459

N

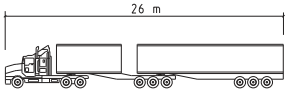
LEGEND

TOTAL AREA TO BE CONSTRUCTED 320 m2

NOTE:
1. APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENROACH ONTO INCORRECT SIDE OF ROAD.
2. MIN TRACK AND ROADWAY WIDTH 5.5m UNLESS OTHERWISE STATED
3. FOR TYPICAL CROSS SECTIONS REFER TO DRAWING P-TYP



BLADE VEHICLE



HEAVY VEHICLE 26m B-DOUBLE

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Rev	By	App	Date	REVISION RECORD
E	JD		19.09.18	REVISED FOR TURBINE LAYOUT CHANGE
D	GRS		16.09.15	REVISED OD TURNING VEHICLE
C	RAM		22.10.14	REVISED OD TURNING VEHICLE
B	RAM		01.08.13	INCORPORATED CLIENT COMMENTS
A	JSK		17.05.11	UNION FENOSA REVIEW

Designed RAM
Drawn RAM
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: INTERSECTION MOVEMENT PLAN SHEET 5

Status: PRELIMINARY
Datum: MGA
Date: 01.08.13
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Job No.: 43316001
Sheet Number: P-TRF-05
Rev: E

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SHEET 111 OF 459

N

LEGEND

TOTAL AREA TO BE CONSTRUCTED 490 m2

NOTE:
1. APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENROACH ONTO INCORRECT SIDE OF ROAD.
2. MIN TRACK AND ROADWAY WIDTH 5.5m UNLESS OTHERWISE STATED
3. FOR TYPICAL CROSS SECTIONS REFER TO DRAWING P-TYP

BLADE VEHICLE

HEAVY VEHICLE 26m B-DOUBLE

PRELIMINARY

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Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
E	JD		19.09.18	REVISED FOR TURBINE LAYOUT CHANGE
D	GRS		16.09.15	REVISED OD TURNING VEHICLE
C	RAM		22.10.14	REVISED OD TURNING VEHICLE
B	RAM		01.08.13	INCORPORATED CLIENT COMMENTS
A	JSK		17.05.11	UNION FENOSA REVIEW

Designed RAM
Drawn RAM
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: INTERSECTION MOVEMENT PLAN SHEET 7

Status: PRELIMINARY
Datum: MGA
Date: 01.08.13
CAD File Number: P-TRF-07.dgn
Job No.: 43316001
Sheet Number: P-TRF-07
Rev: E

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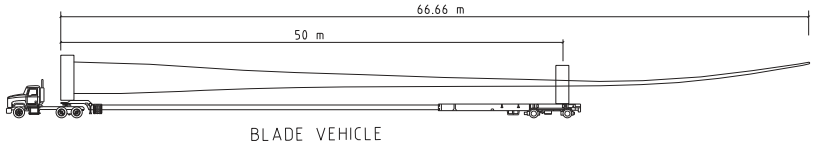
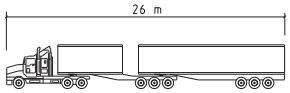


BLADE VEHICLE



HEAVY VEHICLE 26m B-DOUBLE

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SHEET 112 OF 459

N

DOYLES RD

POST STAGE 1 SITE ENTRANCE

1.7km TO HAMILTON HWY

INTERNAL ACCESS TRACK (INDICATIVE)

LEGEND

TOTAL AREA TO BE CONSTRUCTED 220 m2

NOTE:
1. APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENROACH ONTO INCORRECT SIDE OF ROAD.
2. MIN TRACK AND ROADWAY WIDTH 5.5m UNLESS OTHERWISE STATED
3. FOR TYPICAL CROSS SECTIONS REFER TO DRAWING P-TYP

PRELIMINARY

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Rev	By	App	Date	REVISION RECORD
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C	RAM		22.10.14	REVISED OD TURNING VEHICLE
B	RAM		01.08.13	INCORPORATED CLIENT COMMENTS
A	JSK		17.05.11	UNION FENOSA REVIEW

Designed: RAM
Drawn: RAM
Checked:
Approved:
Scales: AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: INTERSECTION MOVEMENT PLAN SHEET 8

Status: PRELIMINARY
Datum: MGA
Date: 01.08.13
CAD File Number: P-TRF-08.dgn
Job No.: 43316001
Sheet Number: P-TRF-08
Rev: E

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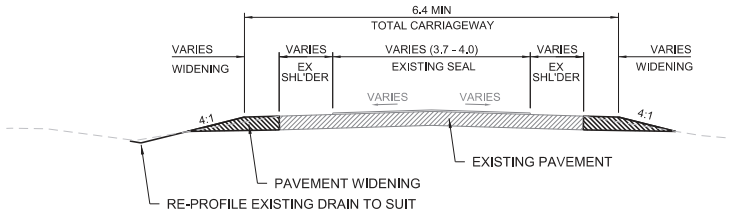
SHEET 113 OF 459



TYPICAL ROAD UPGRADE CROSS SECTION - SEALED

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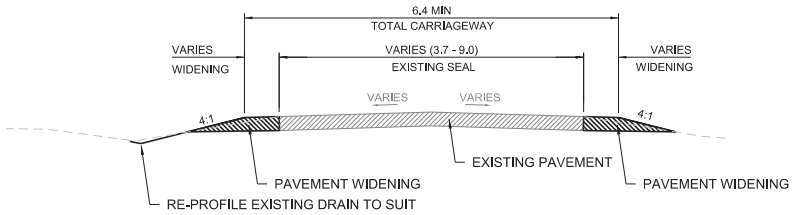

TYPICAL ROAD UPGRADE CROSS SECTION - UNSEALED

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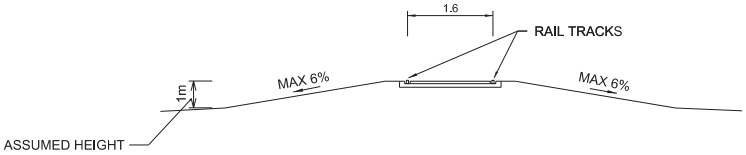
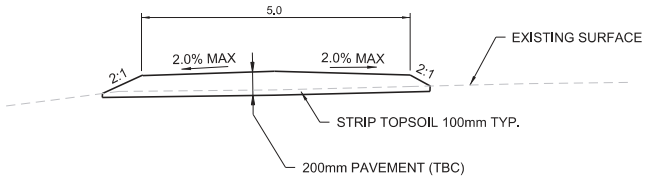


RAIL CROSS SECTION AT GRADE

1:100

NOTE:
1. RAIL CROSSING GEOMETRY TO BE CHECKED BY TURBINE SUPPLIER.
2. ANY WORKS TO BE IN CONSULTATION WITH THE RELEVANT RAIL AUTHORITY.



TYPICAL INTERNAL ACCESS TRACK PAVEMENT SECTION

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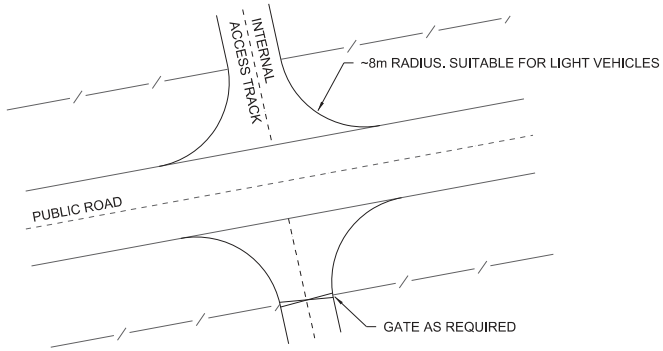

TYPICAL INTERNAL ACCESS TRACK CROSSOVER

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B	JD		19.09.2018	REVISED FOR TURBINE LAYOUT CHANGE
A	JSK		07.05.2015	UNION FENOSA REVIEW

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Drawn JSK
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: TYPICAL CROSS SECTION FOR ROAD AND RAIL CROSSING

CAD File Number: P-TYP.dgn
Job No. 43316001

Status: PRELIMINARY
Datum: MGA
Date: 07.05.2011
Sheet Number: P-TYP
Rev: B

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Appendix C

Preliminary signage layout drawings

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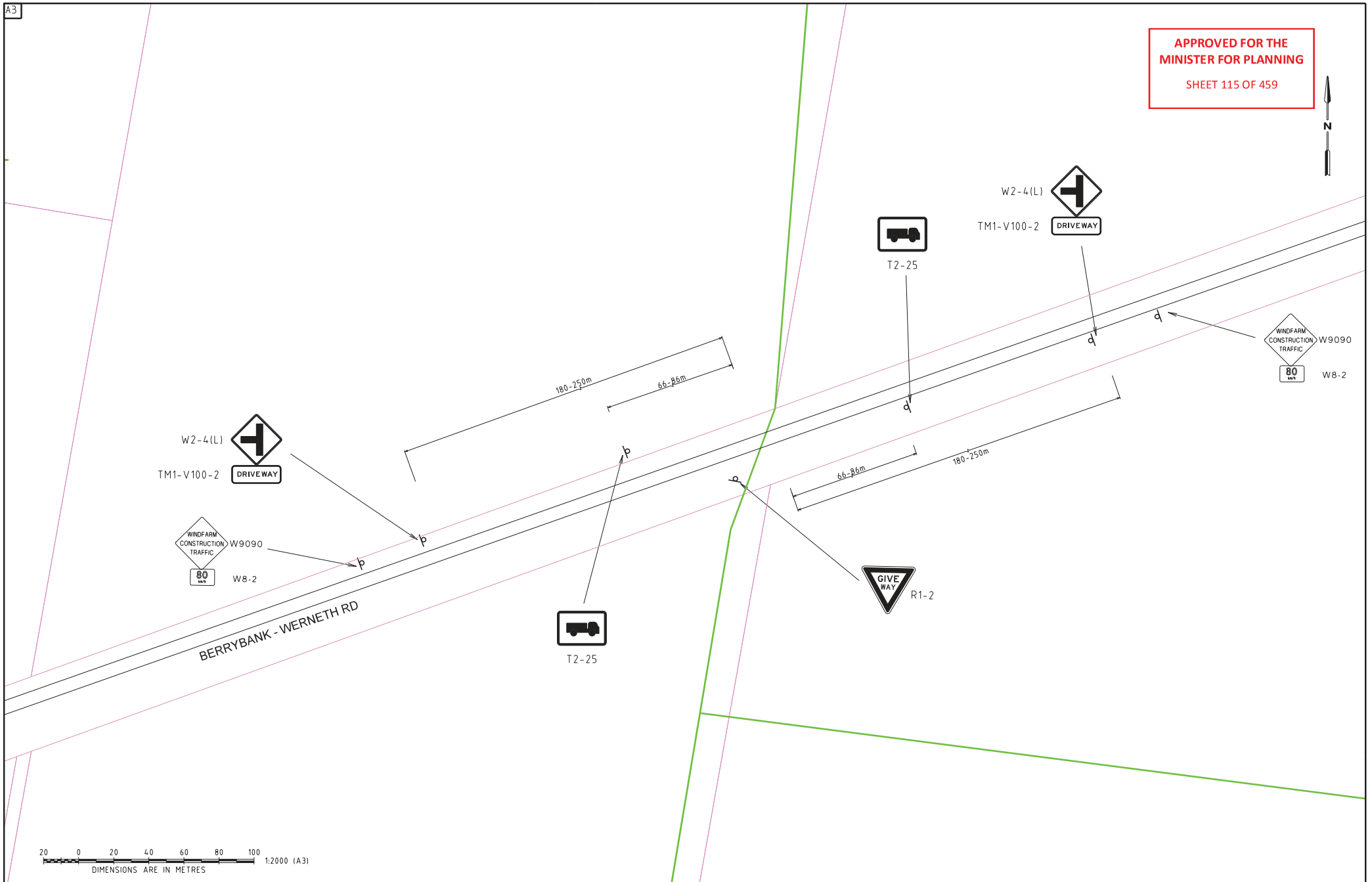
SHEET 115 OF 459



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A	JSK		07.05.2012	UNION FENOSA REVIEW

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Drawn JSK
Checked
Approved
Scales AS SHOWN

Client: UNION FENOSA WIND AUSTRALIA

Project Title:
BERRYBANK
WIND FARM
TRAFFIC IMPACT ASSESSMENT
STAGE-1 (EARLY WORK)

Drawing Title:
TRAFFIC MANAGEMENT PLAN
SHEET 1

CAD File Number: P-TMP-01.dgn
Job No. 43316001
Sheet Number: P-TMP-01
Rev B

Status: STAGE-1 PROVISION
Datum: MGA
Date: 01.08.13

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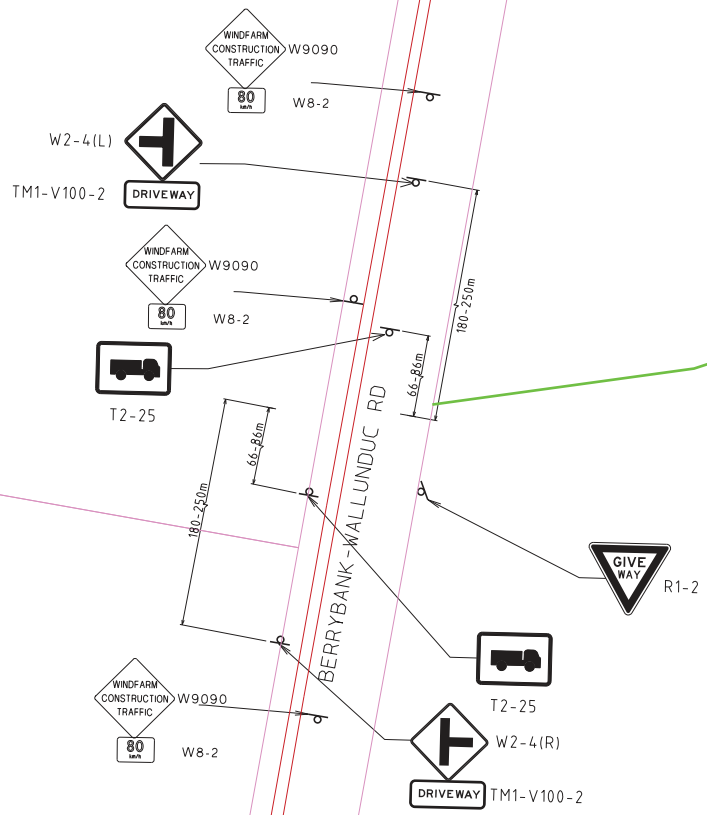

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BERRYBANK-WERNETH RD

20 0 20 40 60 80 100

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Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: TRAFFIC MANAGEMENT PLAN SHEET 2

Status: PRELIMINARY

Datum: MGA

Date: 07.05.2011

CAD File Number: P-TMP-02.dgn

Job No.: 43316001

Sheet Number: P-TMP-02

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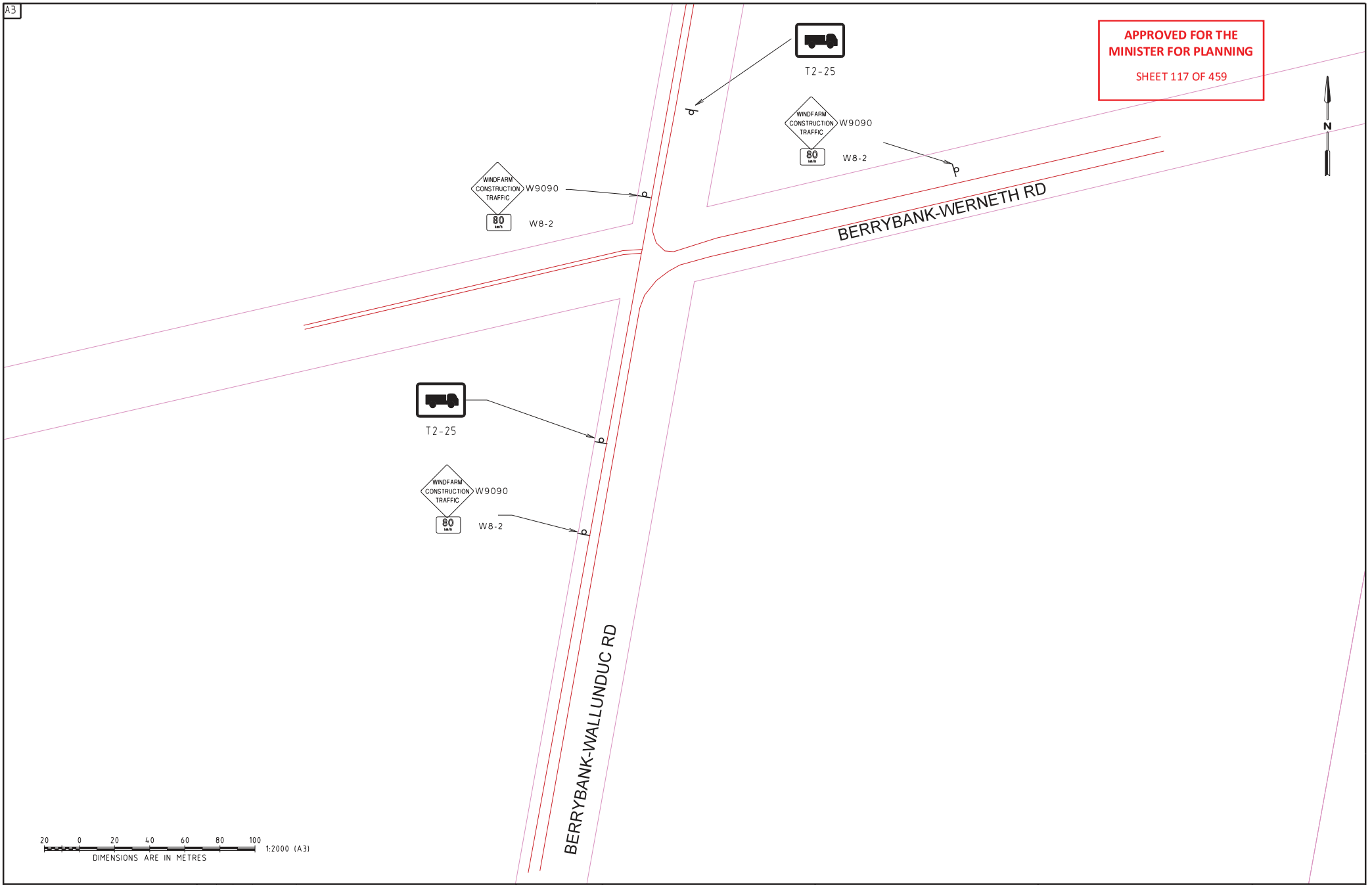

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Client: UNION FENOSA WIND AUSTRALIA

Project Title:
BERRYBANK
WIND FARM
TRAFFIC IMPACT ASSESSMENT
STAGE-1 (EARLY WORK)

Drawing Title:
TRAFFIC MANAGEMENT PLAN
SHEET 3

CAD File Number: P-TMP-03.dgn
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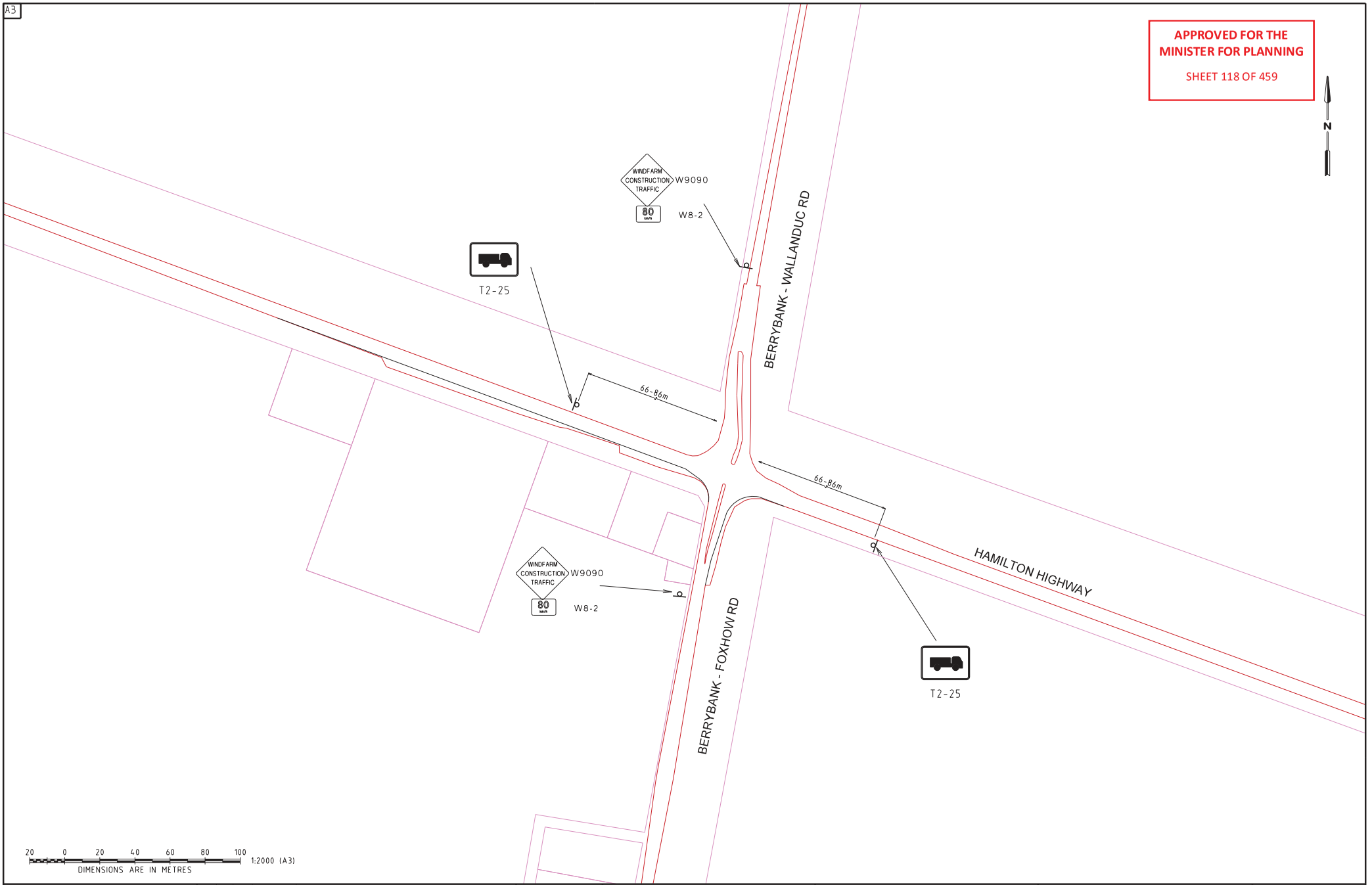

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Project Title:
BERRYBANK
WIND FARM
TRAFFIC IMPACT ASSESSMENT
STAGE-1 (EARLY WORK)

Drawing Title:
TRAFFIC MANAGEMENT PLAN
SHEET 4

CAD File Number: P-TMP-04.dgn
Job No. 43316001

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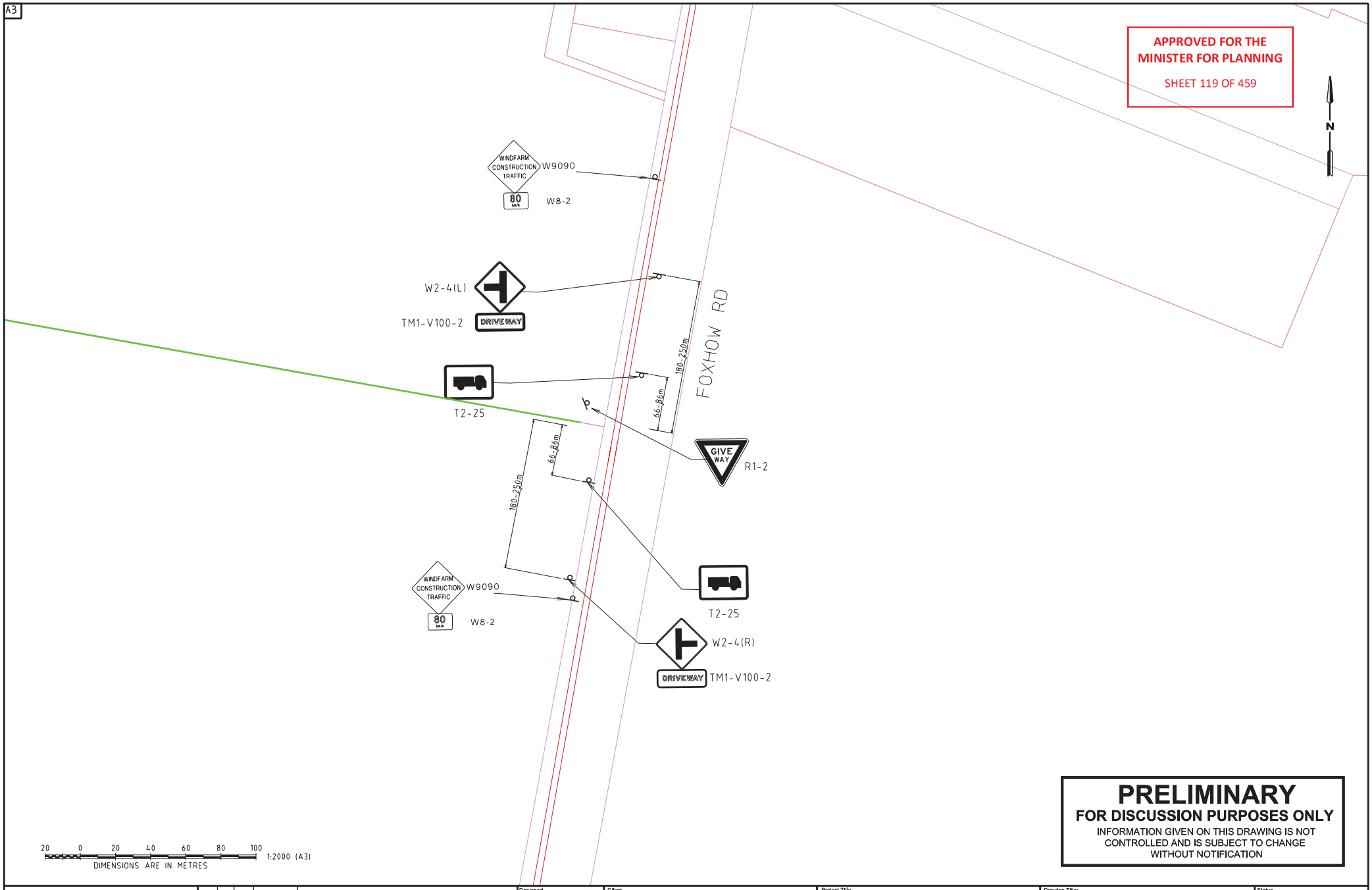

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Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: TRAFFIC MANAGEMENT PLAN SHEET 5

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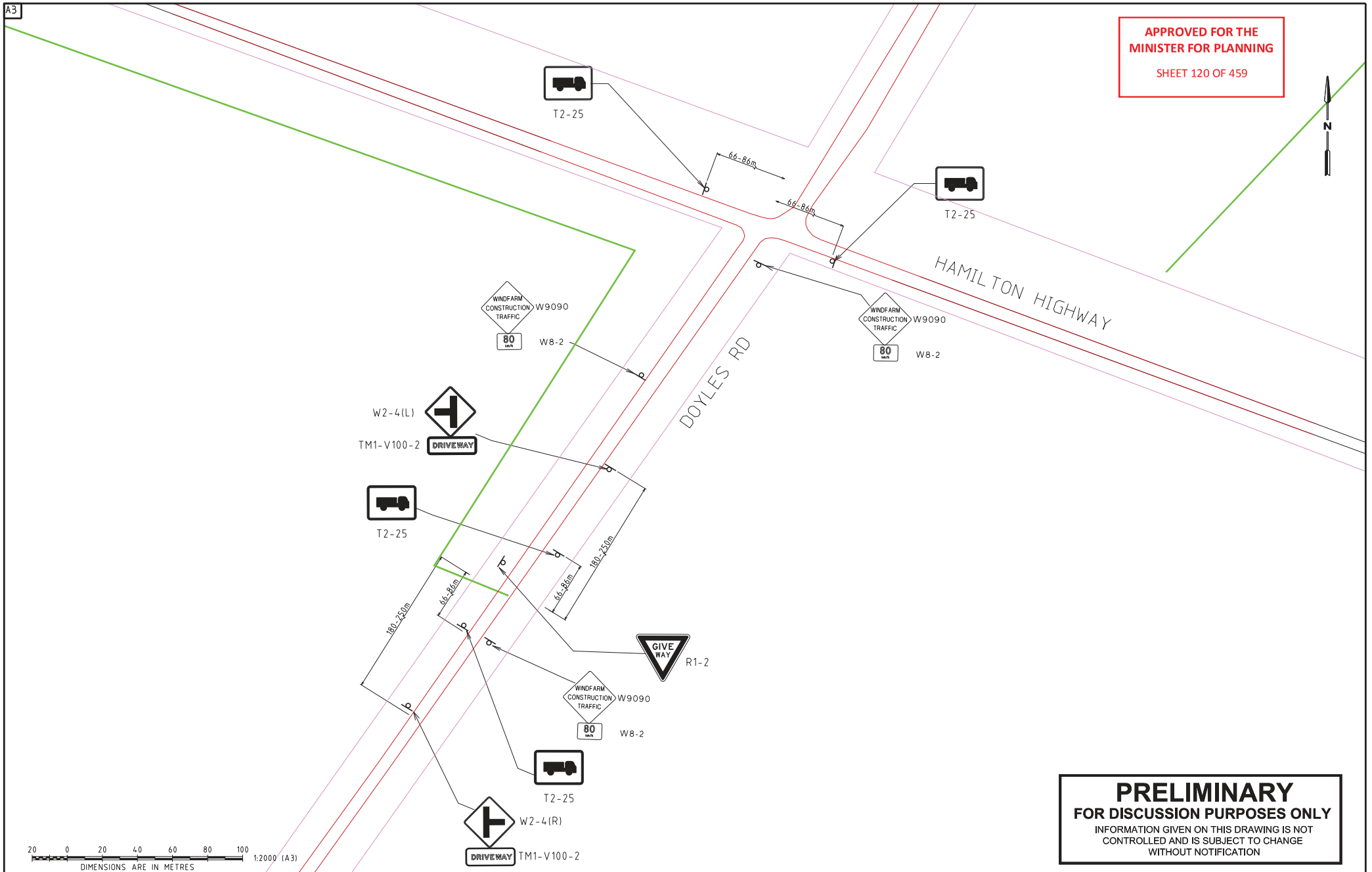

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Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: TRAFFIC MANAGEMENT PLAN SHEET 6

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CAD File Number: P-TMP-06.dgn

Job No. 43316001

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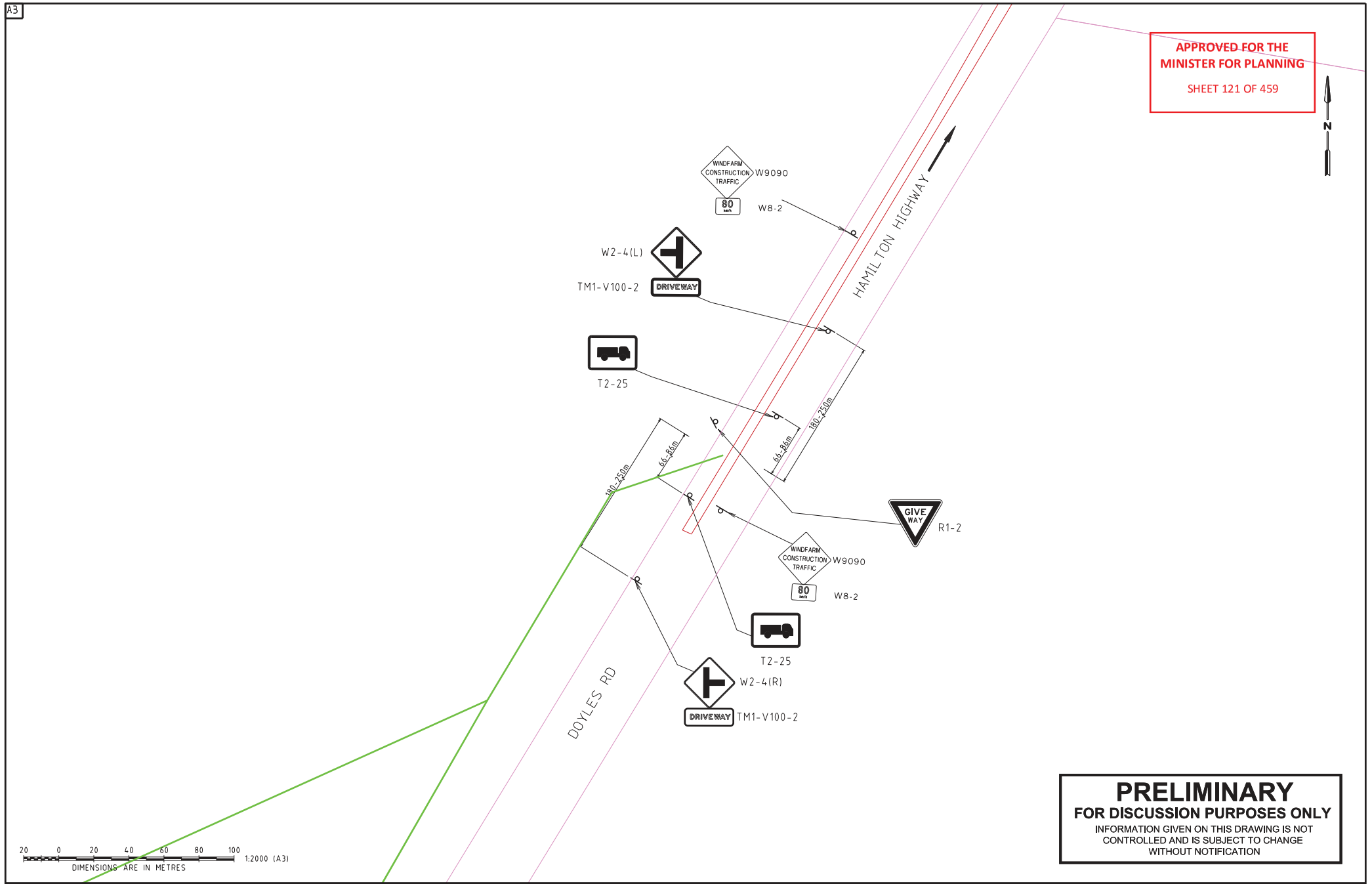

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Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT

Drawing Title: TRAFFIC MANAGEMENT PLAN SHEET 7

CAD File Number: P-TMP-07.dgn

Job No. 43316001

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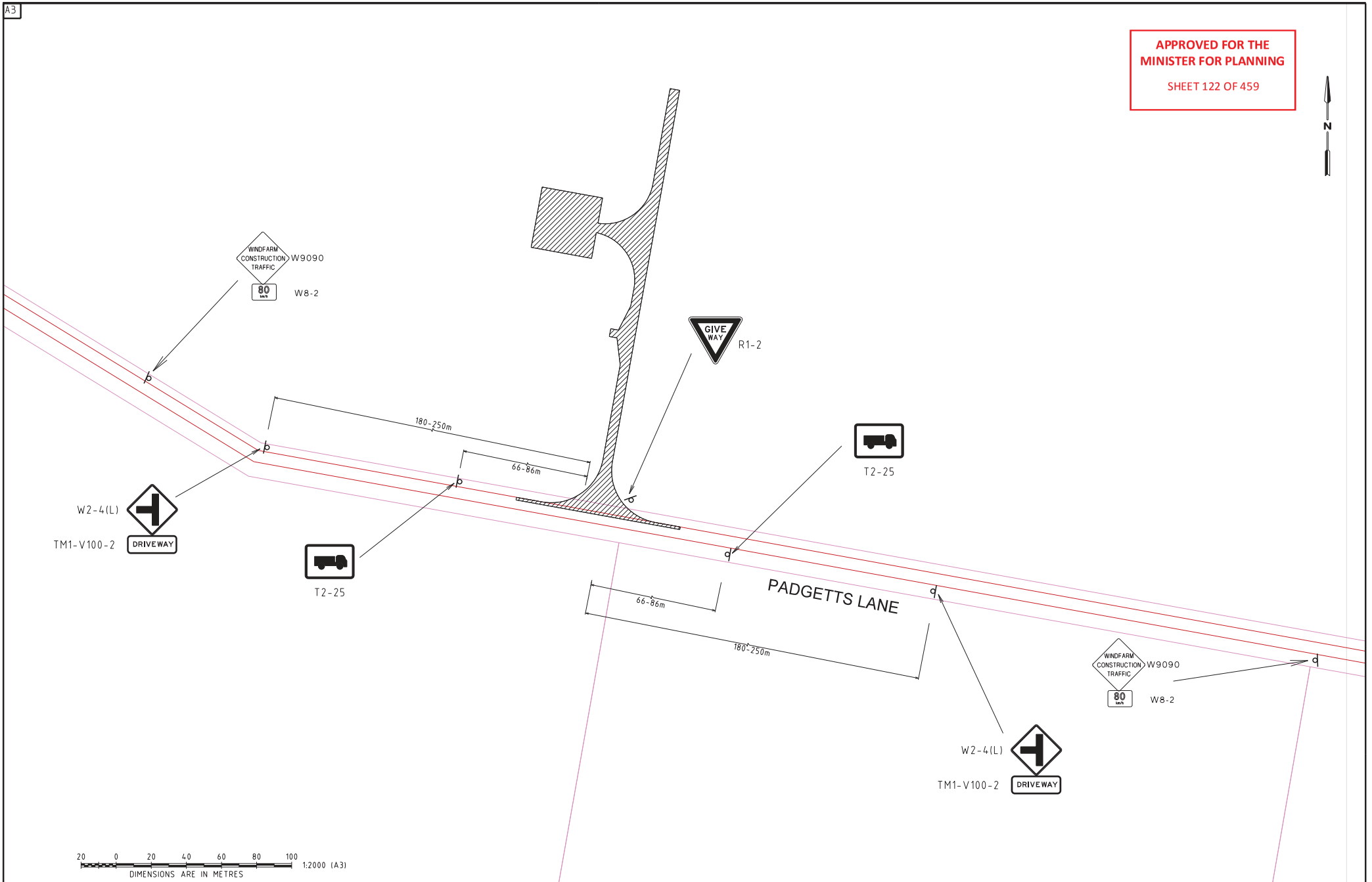

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Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM TRAFFIC IMPACT ASSESSMENT STAGE-1 (EARLY WORK)

Drawing Title: TRAFFIC MANAGEMENT PLAN SHEET 8

CAD File Number: P-TMP-08.dgn

Job No. 43316001

Status: STAGE-1 PROVISION

Datum: MGA

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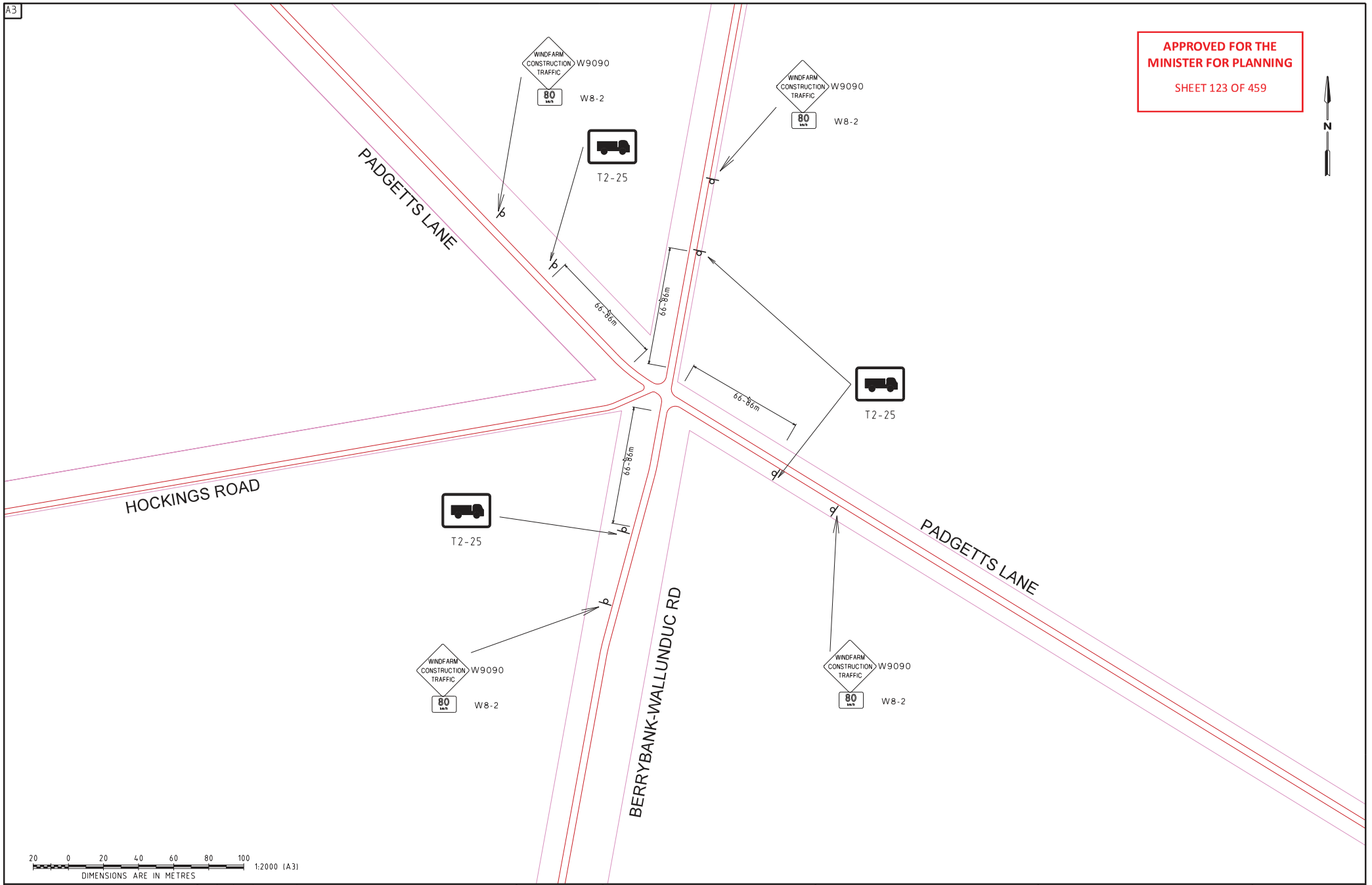

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Client: UNION FENOSA WIND AUSTRALIA

Project Title: BERRYBANK WIND FARM
TRAFFIC IMPACT ASSESSMENT
STAGE-1 (EARLY WORK)

Drawing Title: INTERSECTION MOVEMENT PLAN SHEET 9

Status: STAGE-1 PROVISION
Datum: MGA
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Appendix D

Heavy Vehicle Routes

1.0 Background

The civil balance of plant contractor has identified external quarry sources that will be utilised for the construction. There are a number of projects under construction in the area resulting in strong demand for quarry materials. There is no single quarry source that can service the project requirements, and as a result the contractor has nominated a number of quarries that will be utilised. This is beneficial from a traffic impact perspective as the project traffic is distributed amongst the road network.

In the following sections each quarry is discussed in detail, including an estimate of traffic volumes, description of the vehicle route, and a summary of the road categories travelled. The estimated traffic volumes have been presented in the number of heavy vehicles per day, assuming a six month construction period and a six day working week. The estimated Vehicle Trips Per Day have been presented with an increased 20% capacity factor to allow for a conservative approach when estimating the traffic volumes.

1.1 Road Categories

Each quarry route includes a breakdown of the road category types that the heavy vehicles will travel between the quarry and the project site. The road categories are ranked in the following order:

- Victoria's Oversize/Overmass (OSOM) Network – These are approved Class 1 roadways suitable for vehicle "combinations that operate up to 100.0 tonnes gross mass, 5.0 metres high, 5.0 metres wide, and 30 metres long" (source: VicRoads). The Hamilton Highway, in direct vicinity of the project site, is an approved OSOM route.
- Victoria's gazetted B-Double Network – These are approved roadways suitable for Class 2 and Class 3 heavy vehicles that are B-Double vehicles.
- Local Council Road – The lowest road category level. Each quarry route described in the following sections includes the 1.6km section of Berrybank-Wallinduc Road from the Hamilton Highway to the Main Access.

2.0 Quarry Sources

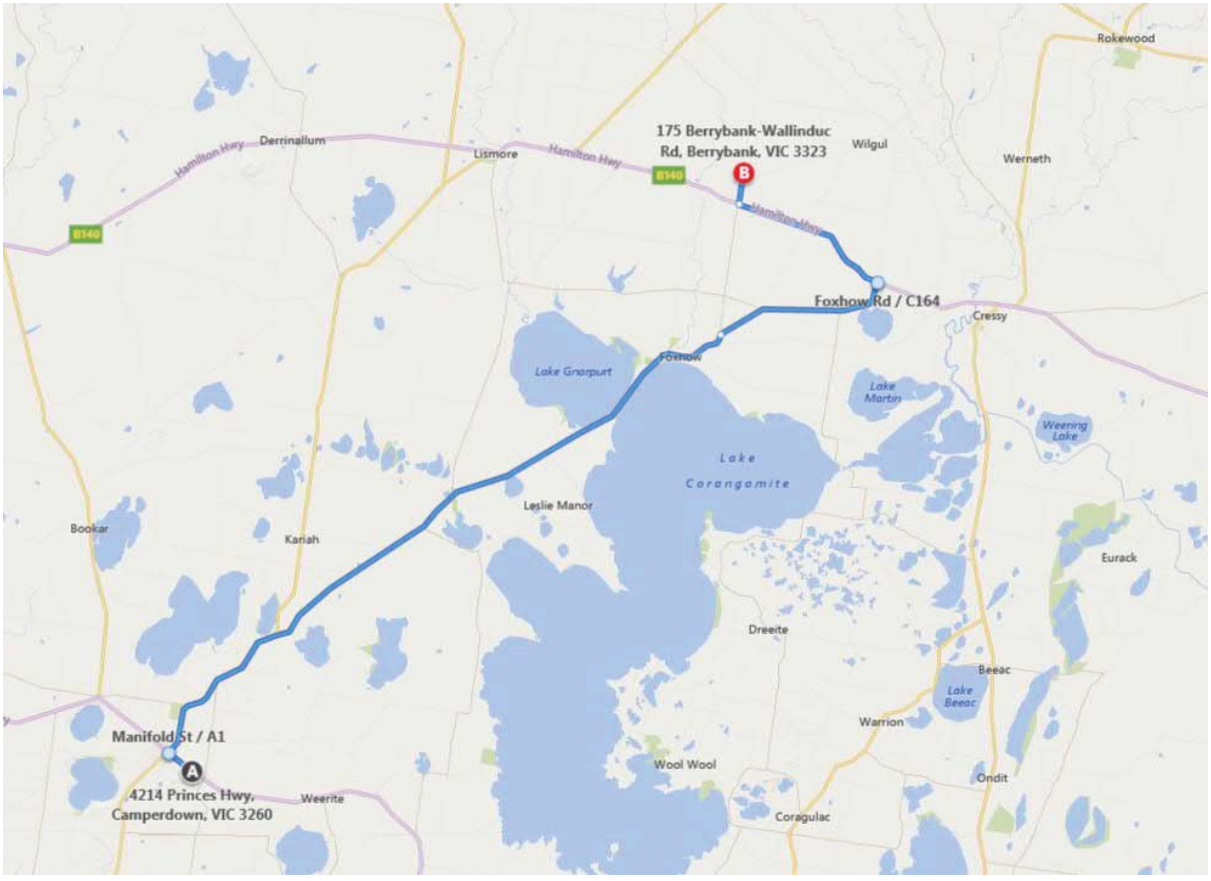
2.1 W.A. Molan & Sons Quarry, Camperdown

The existing quarry is located approximately 2km east of the Camperdown Township on the southern side of the Princes Highway. The total route length from the quarry to the Main Access is provided below. Vehicles will travel on Victoria's gazetted B-Double Network from the quarry site to the intersection of the Hamilton Highway / Berrybank-Wallinduc Road.

The route taken will be as follows: Princes Highway (A1), Cressy Street (C164), Camperdown-Lismore Road (C164), Foxhow Road (C164), Hamilton Highway (B140), Berrybank-Wallinduc Road.

Origin	Indicative Quantity (t)	Vehicle Trips (35t per trip)	Vehicle Trips Per Day	Vehicle Trips Per Day +20%	Vehicle Trips Per Hour
W.A. Molan & Sons Quarry, Camperdown	60,000	1,714	12	14	1.5

Road Category	Length (km)	% of Route
Victoria's Oversize/Overmass (OSOM) Network	16.6	25%
Victoria's gazetted B-Double Network	47.3	72%
Local Council Road	1.6	2%
Total	**65.5**	**100%**



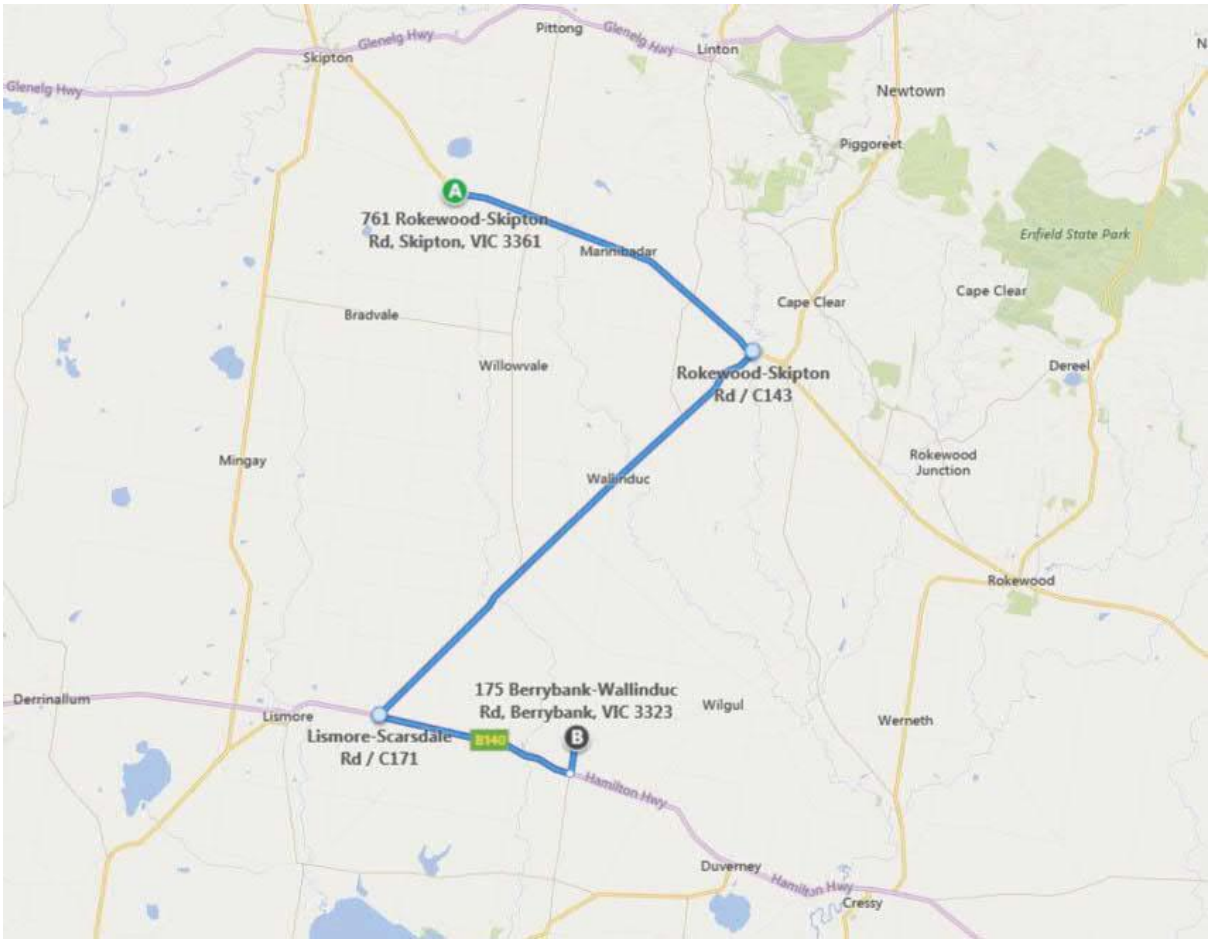
2.2 DE Quarry Solutions, Skipton

The existing quarry is located approximately 8km southeast of the Skipton Township on the northern side of Skipton-Rokewood Road. The total route length from the quarry to the Main Access is provided below. Vehicles will travel on Victoria's Oversize/Overmass (OSOM) Network and Victoria's gazetted B-Double Network from the quarry site to the intersection of the Hamilton Highway / Berrybank-Wallinduc Road.

The route taken will be as follows: Rokewood-Skipton Road (C143), Lismore-Scarsdale Road (C171), Hamilton Highway (B140), Berrybank-Wallinduc Road.

Origin	Indicative Quantity (t)	Vehicle Trips (35t per trip)	Vehicle Trips Per Day	Vehicle Trips Per Day +20%	Vehicle Trips Per Hour
DE Quarry Solutions, Skipton	60,000	1,714	12	14	1.5

Road Category	Length (km)	% of Route
Victoria's Oversize/Overmass (OSOM) Network	15.3	29%
Victoria's gazetted B-Double Network	35	67%
Local Council Road	1.6	3%
Total	**51.9**	**100%**



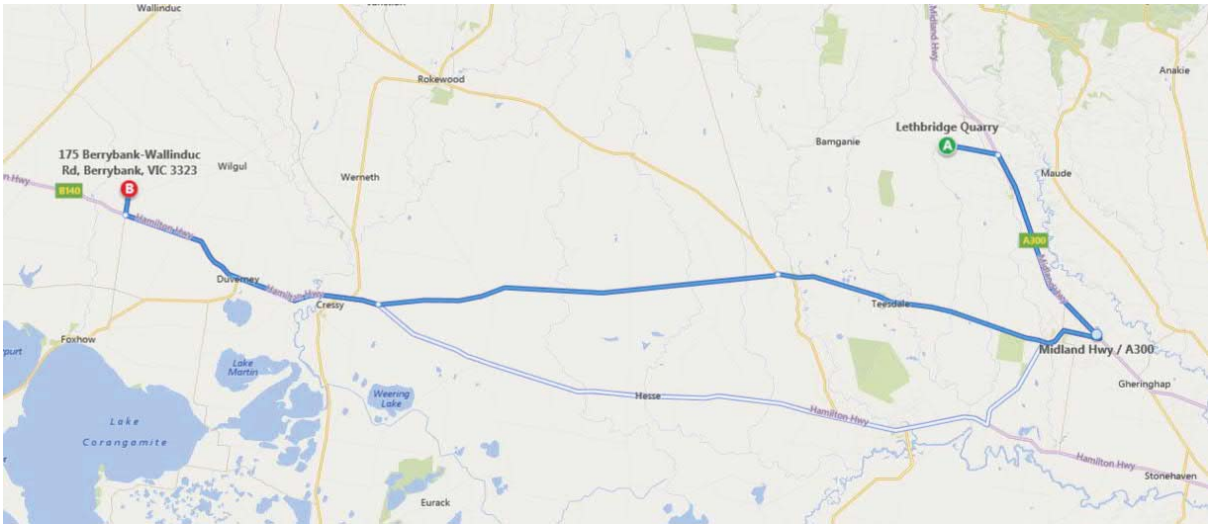
2.3 Lethbridge Quarry, Lethbridge

The existing quarry is located approximately 4km north of the Lethbridge Township on the northern side of Lower Plains Road. The total route length from the quarry to the Main Access is provided below. Vehicles will travel on Victoria's Oversize/Overmass (OSOM) Network and Victoria's gazetted B-Double Network from the quarry site to the intersection of the Hamilton Highway / Berrybank-Wallinduc Road.

The route taken will be as follows: Lower Plains Road, Midland Highway (A300), Geelong Road (C143), High Street (C143), Shelford-Bannockburn Road (C143), Cressy-Shelford Road, Hamilton Highway (B140), Berrybank-Wallinduc Road.

Origin	Indicative Quantity (t)	Vehicle Trips (35t per trip)	Vehicle Trips Per Day	Vehicle Trips Per Day +20%	Vehicle Trips Per Hour
Lethbridge Quarry, Lethbridge	40,000	1,143	8	10	1.0

Road Category	Length (km)	% of Route
Victoria's Oversize/Overmass (OSOM) Network	68.6	95%
Victoria's gazetted B-Double Network	0	0%
Local Council Road	3.4	5%
Total	**72**	**100%**



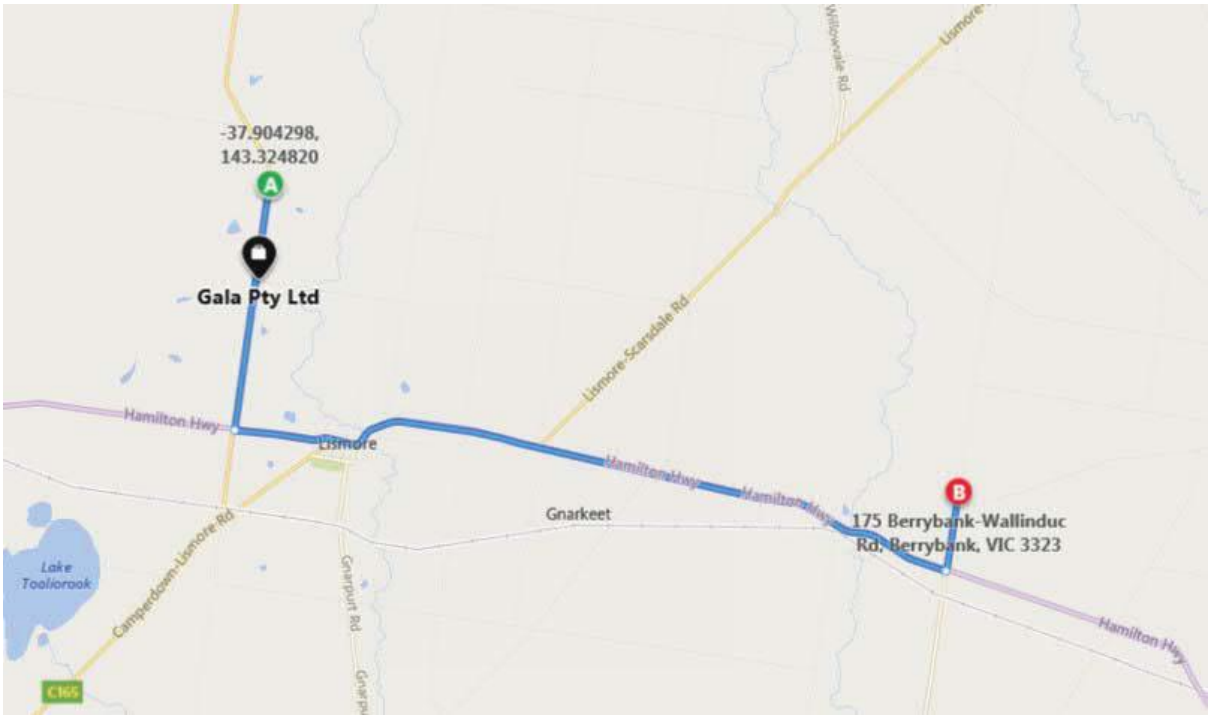
2.4 Gala Gravel, Lismore

The existing quarry is located approximately 3km north of the Lismore Township on the eastern side of Lismore-Skipton Road. The total route length from the quarry to the Main Access is provided below. Vehicles will travel on Victoria's Oversize/Overmass (OSOM) Network and Victoria's gazetted B-Double Network from the quarry site to the intersection of the Hamilton Highway / Berrybank-Wallinduc Road.

The route taken will be as follows: Lismore-Skipton Road (C172), Hamilton Highway (B140), Berrybank-Wallinduc Road.

Origin	Indicative Quantity (t)	Vehicle Trips (35t per trip)	Vehicle Trips Per Day	Vehicle Trips Per Day +20%	Vehicle Trips Per Hour
Gala Gravel, Lismore	20,000	571	4	5	0.5

Road Category	Length (km)	% of Route
Victoria's Oversize/Overmass (OSOM) Network	15.8	69%
Victoria's gazetted B-Double Network	5.4	24%
Local Council Road	1.6	7%
Total	**22.8**	**100%**



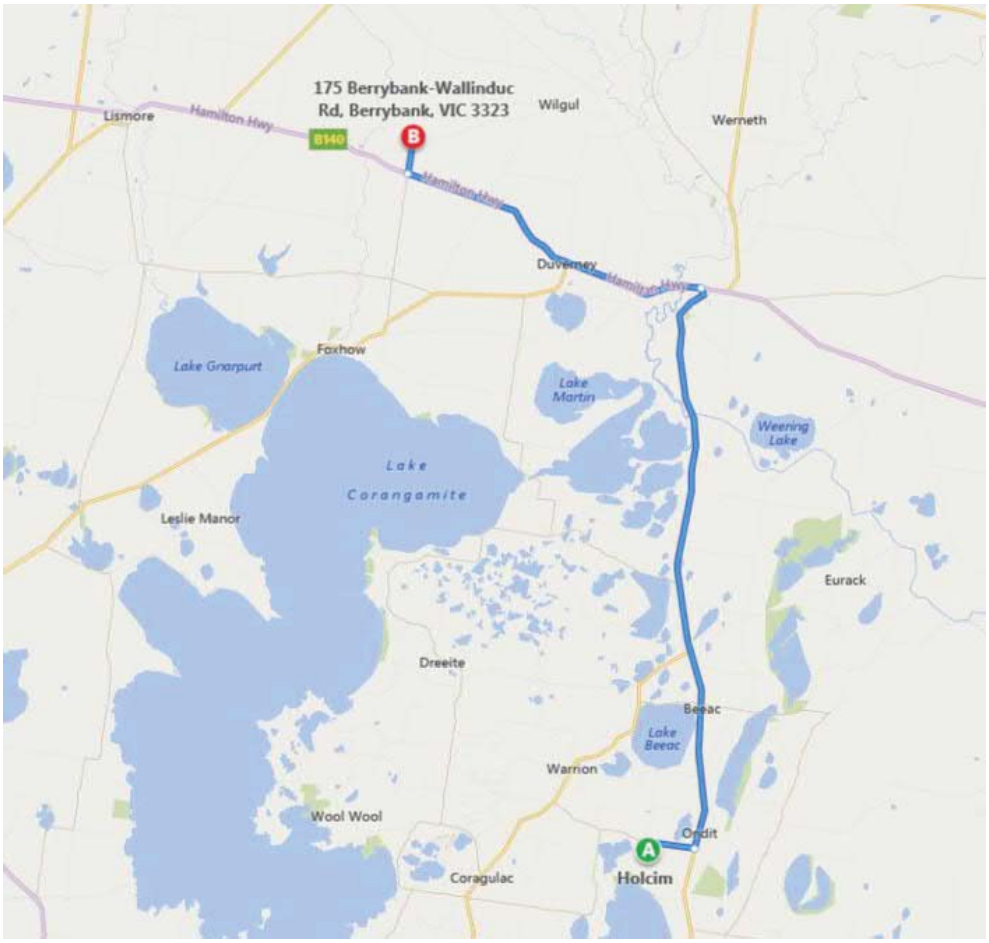
2.5 Holcim Australia Quarry, Ondit

The existing quarry is located approximately 10km north of the Colac Township on the eastern side of Ondit-Warrion Road. The total route length from the quarry to the Main Access is provided below. Vehicles will travel on Victoria's Oversize/Overmass (OSOM) Network from the quarry site to the intersection of the Hamilton Highway / Berrybank-Wallinduc Road.

The route taken will be as follows: Ondit-Warrion Road, Colac-Ballarat Road (C146), Hamilton Highway (B140), Berrybank-Wallinduc Road.

Origin	Indicative Quantity (t)	Vehicle Trips (35t per trip)	Vehicle Trips Per Day	Vehicle Trips Per Day +20%	Vehicle Trips Per Hour
Holcim Australia Quarry, Ondit	15,000	429	3	4	0.4

Road Category	Length (km)	% of Route
Victoria's Oversize/Overmass (OSOM) Network	41.4	92%
Victoria's gazetted B-Double Network	0	0%
Local Council Road	3.7	8%
Total	**45.1**	**100%**



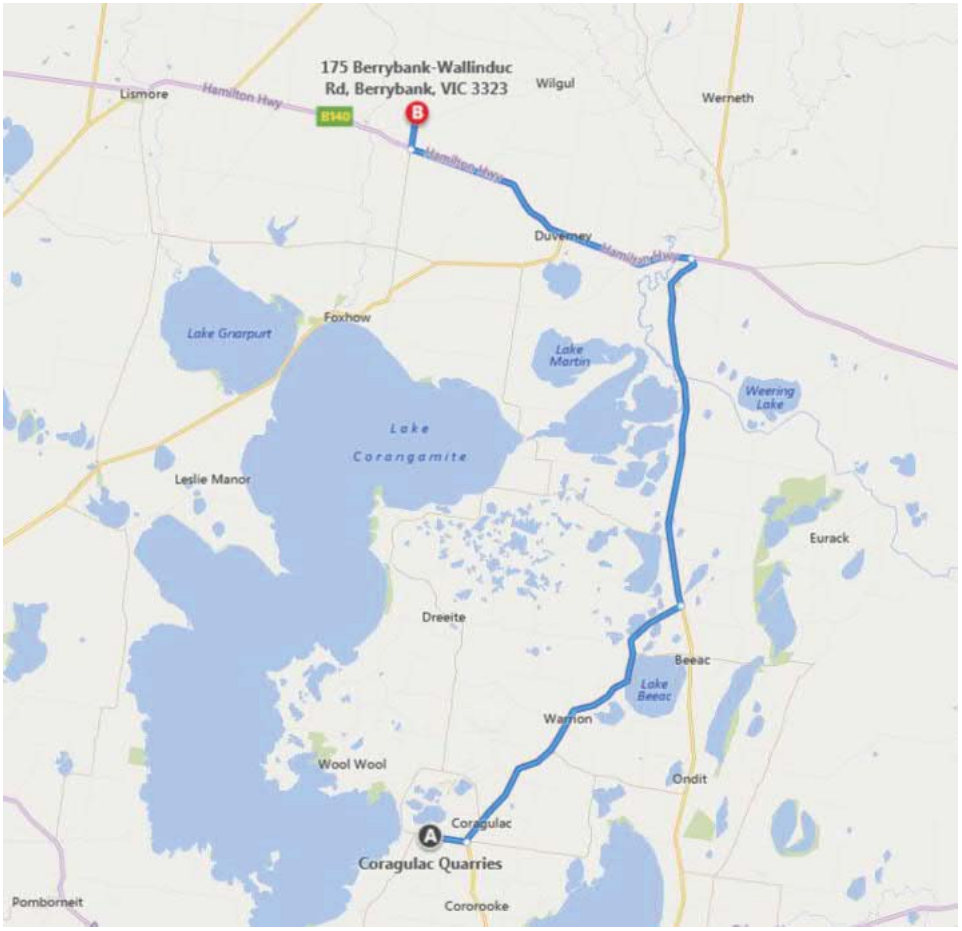
2.6 Coragulac Quarries, Coragulac

The existing quarry is located approximately 11km north-west of the Colac Township on the northern side of Lineens Road. The total route length from the quarry to the Main Access is provided below. Vehicles will travel on Victoria's Oversize/Overmass (OSOM) Network from the quarry site to the intersection of the Hamilton Highway / Berrybank-Wallinduc Road.

The route taken will be as follows: Lineens Road, Cororooke Road (C147), Coragulac-Beeac Road (C147), Grassy Vale Road (C147), Colac-Ballarat Road (C146), Hamilton Highway (B140), Berrybank-Wallinduc Road.

Origin	Indicative Quantity (t)	Vehicle Trips (35t per trip)	Vehicle Trips Per Day	Vehicle Trips Per Day +20%	Vehicle Trips Per Hour
Coragulac Quarries, Coragulac	10,000	286	2	2	0.2

Road Category	Length (km)	% of Route
Victoria's Oversize/Overmass (OSOM) Network	48.4	94%
Victoria's gazetted B-Double Network	0	0%
Local Council Road	3.3	6%
Total	**51.7**	**100%**



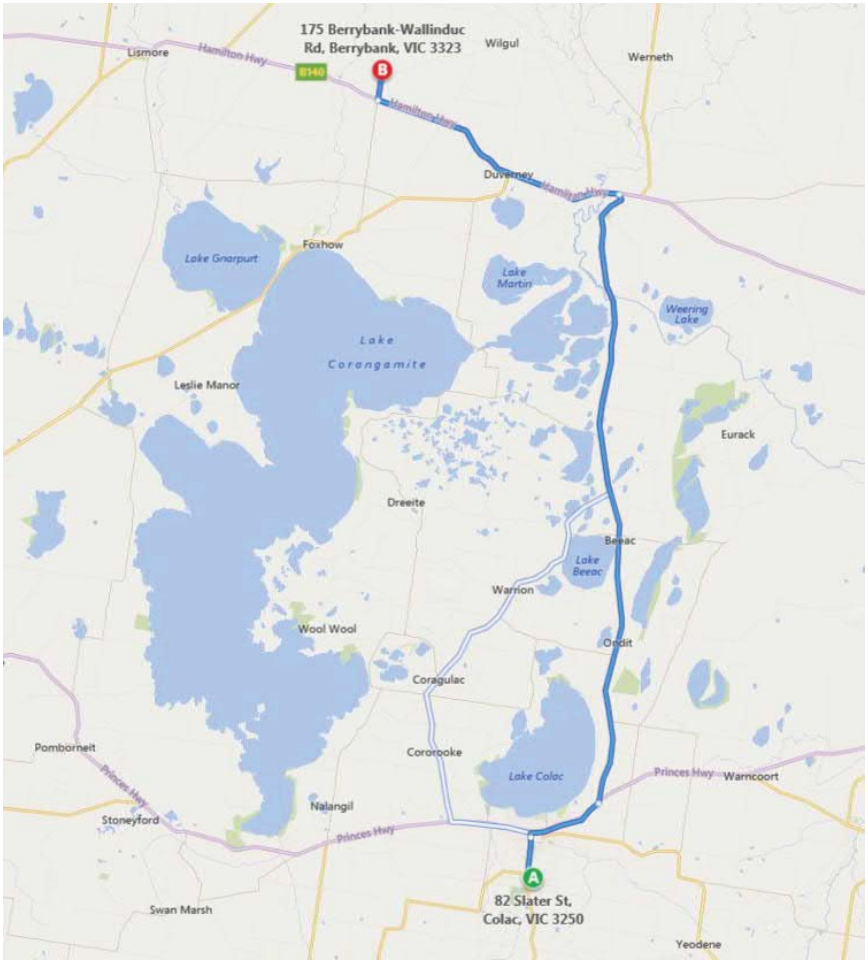
2.7 Russell Frank Quarry, Elliminyt

The existing quarry is located in the Elliminyt Township on the southern side of Slater Street. The total route length from the quarry to the Main Access is provided below. Vehicles will travel on Victoria's Oversize/Overmass (OSOM) Network and Victoria's gazetted B-Double Network from the quarry site to the intersection of the Hamilton Highway / Berrybank-Wallinduc Road.

The route taken will be as follows: Slater Street, Main Street (C155), Murray Street (A1), Princes Highway (A1), Colac-Ballarat Road (C146), Hamilton Highway (B140), Berrybank-Wallinduc Road.

Origin	Indicative Quantity (t)	Vehicle Trips (35t per trip)	Vehicle Trips Per Day	Vehicle Trips Per Day +20%	Vehicle Trips Per Hour
Russell Frank Quarry, Elliminyt	10,000	286	2	2	0.2

Road Category	Length (km)	% of Route
Victoria's Oversize/Overmass (OSOM) Network	54	93%
Victoria's gazetted B-Double Network	2.4	4%
Local Council Road	1.8	3%
Total	**58.2**	**100%**



Appendix E

Existing Conditions Survey

Memorandum

To:	Steven Culbert (Vestas)
From:	Kevin Donnelly (MPC Kinetic)
Date:	9th January 2019
Subject:	Berrybank Wind Farm – VicRoads Hamilton Highway Road Dilapidation Survey

Dear Steven,

Background

During our recent meeting with VicRoads, it was agreed that a baseline photographic dilapidation survey would be undertaken along the Hamilton Highway 200m either side of the intersection with the Berrybank – Wallinduc Road.

This consultation with VicRoads and subsequent baseline dilapidation survey prior to construction commencing is required to meet condition 10b of the of the project planning permit.

To expedite the submission of the updated TMP, MPC Kinetic undertook the photographic survey on behalf of GPG/Vestas on the 8th of January 2019 and is presented in Appendix A.

Survey

Chainage markers were set out every 20m, commencing 200m west of the intersection. Several photos were taken at 20m intervals and at locations where pavement failures were evident. Chainages are typically shown in the photos. Subsequent to this each photo is stamped with GPS coordinates.

Observations

GrainCorp Truck Traffic

During the survey it was noted that a large amount of trucks with semi-trailers were accessing the GrainCorp facility to the south of the junction on Foxhow – Berrybank Road. Over 40 truck movements were observed during the one-hour period of the survey.

Road Condition

Overall the road appears to be in a reasonable condition through the 400m surveyed section. Our general observations are noted below.

1. Bleeding of the asphalt was observed particularly in the wheel paths.
2. Edge break was noted in the entry and exit to the truck layby and from CH. 50 to Ch. 100.
3. Heavy bleeding of the asphalt in the vicinity of Ch. 120.
4. Pavement failure along the change in pavement type at Ch. 175.
5. Pavement failure in the wheel path at Ch. 185. east bound.
6. Slight rutting and pavement cracking in the wheel paths from Ch. 240 to Ch. 400.
7. Significant pavement failure at the interface between the Hamilton Hwy and the Foxhow – Berrybank Road.
8. Significant edge break along the eastern side of the Foxhow – Berrybank Road from vehicle exiting from the highway.

APPENDIX A

Overview Map


IMG_3474.JPG
APPROVED FOR THE
MINISTER FOR PLANNING
SHEET 139 OF 459
S 37.977°
E 143.487°
7/01/2019


Hamilton Hwy
B140
w-Berrybank Rd
Google
Map data ©2019 Google Imagery ©2019 CNES / Airbus, DigitalGlobe


Hamilton Hwy
B140
w-Berrybank Rd
Google
Map data ©2019 Google

APPROVED FOR THE
MINISTER FOR PLANNING

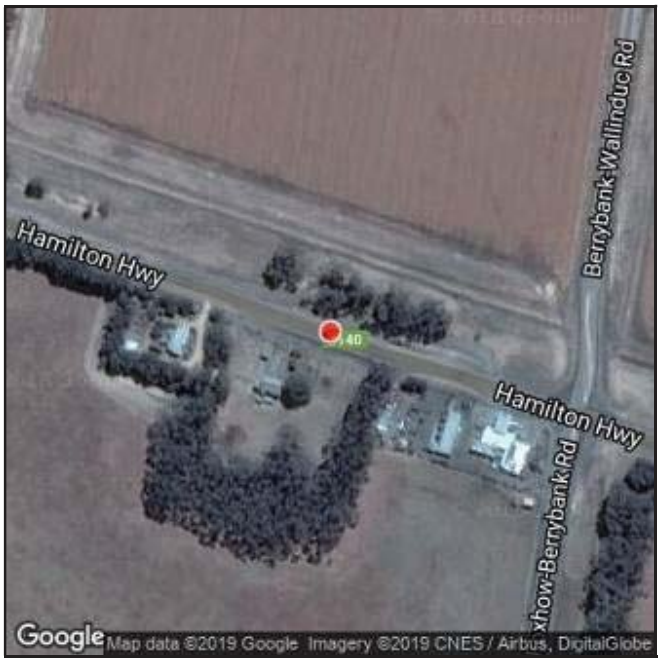
SHEET 140 OF 459

APPROVED FOR THE MINISTER FOR PLANNING

SHEET 141 OF 459

APPROVED FOR THE
MINISTER FOR PLANNING

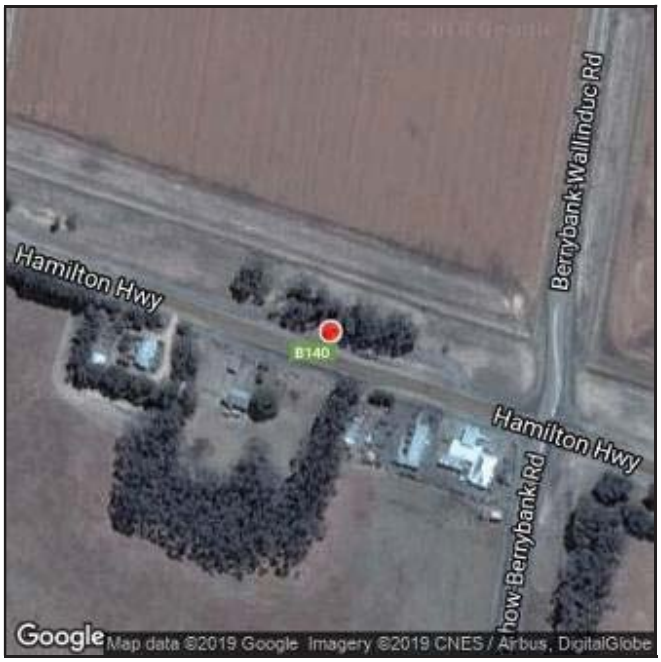
SHEET 142 OF 459

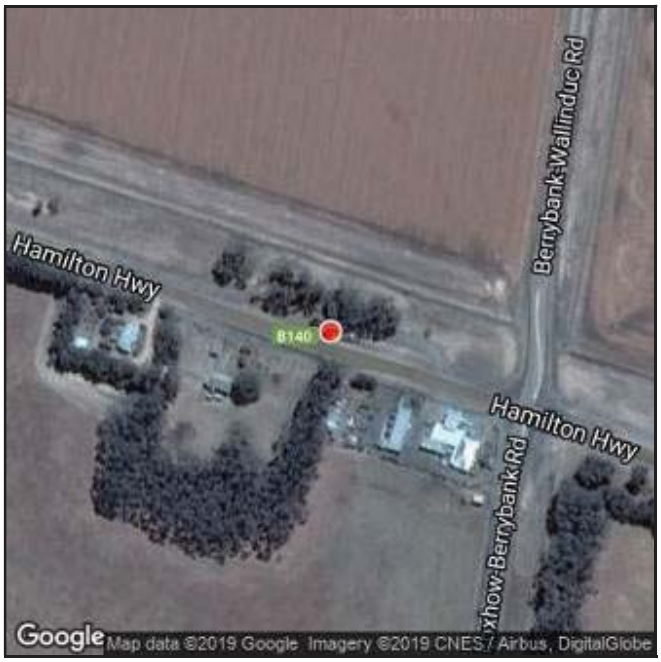



IMG_3479.JPG
APPROVED FOR THE
MINISTER FOR PLANNING
SHEET 144 OF 459
S 37.978°
E 143.487°
7/01/2019


Hamilton Hwy
Berrybank-Wallinduc Rd
Hamilton Hwy
how-Berrybank Rd
Google
Map data ©2019 Google Imagery ©2019 CNES / Airbus, DigitalGlobe

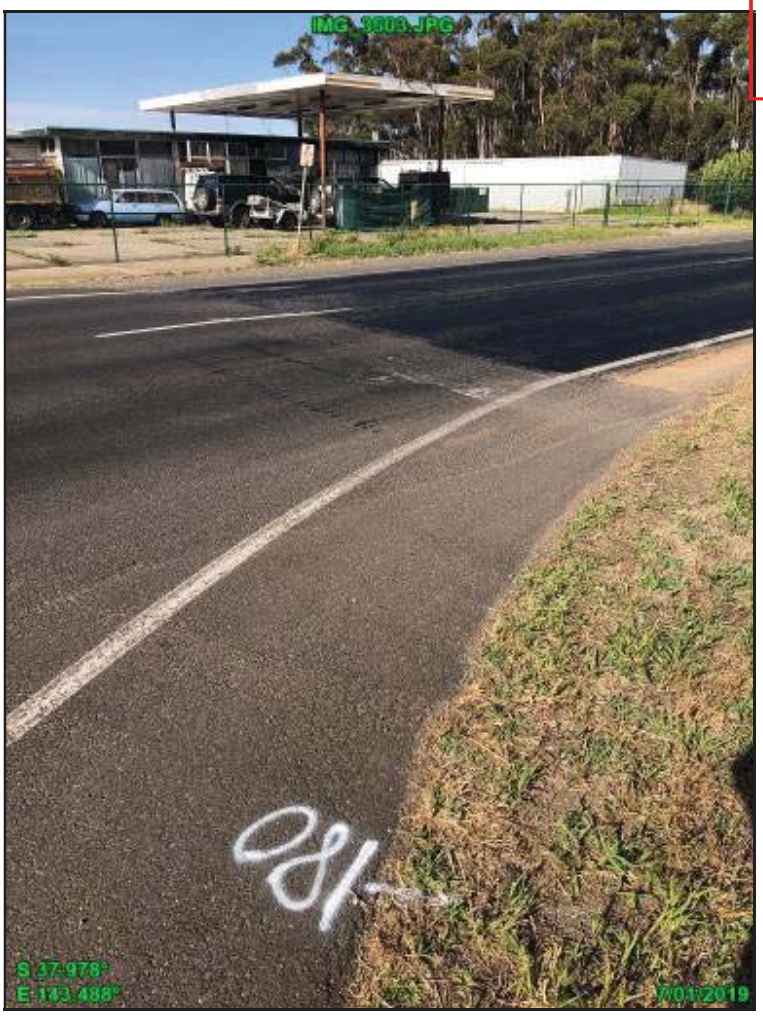

Hamilton Hwy
Berrybank-Wallinduc Rd
Hamilton Hwy
how-Berrybank Rd
Google
Map data ©2019 Google





APPROVED FOR THE MINISTER FOR PLANNING

SHEET 150 OF 459




IMG_3539.JPG
S 37.978°
E 143.490°
7/01/2019


Berrybank-Wallinduc R
Hamilton Hwy
Foxhow-Berrybank Rd
B140
Google
Map data ©2019 Google Imagery ©2019 CNES / Airbus, DigitalGlobe


Berrybank-Wallinduc R
Hamilton Hwy
Foxhow-Berrybank Rd
B140
Google
Map data ©2019 Google

Memorandum

To:	Steven Culbert (Vestas)
From:	Kevin Donnelly (MPC Kinetic)
Date:	9th January 2019
Subject:	Berrybank Wind Farm – Corangamite Shire Council Road Dilapidation Survey

Dear Steven,

Background

During recent consultation with the Corangamite Shire Council undertaken by AECOM, the Shire requested a baseline dilapidation survey of the Berrybank – Wallinduc Road and Berrybank – Werneth Road.

This consultation with Corangamite Shire Council and subsequent baseline dilapidation survey prior to construction commencing is required to meet condition 10b of the of the project planning permit.

To expedite the submission of the updated TMP, MPC Kinetic undertook the photographic survey on behalf of GPG/Vestas on the 8th of January 2019.

Survey

For the section of the Berrybank – Wallinduc Road to be utilised by heavy construction vehicles (between the Hamilton Highway and the wind farm main entrance), circa 1650m in length, chainage markers were set out every 100m, commencing at the intersection of the Hamilton Highway. Several photos were taken at 100m intervals and at locations where pavement failures were evident. Chainages are typically shown in the photos. Subsequent to this each photo is stamped with GPS coordinates. Photos are contained within Appendix A

For the remaining sections of the Berrybank – Wallinduc Road (from the main site entrance to Boundary Road, 2300m) and for the Berrybank – Werneth Road to the batching plant entrance, 2250m, photos were taken at approximately 100m intervals stamped with GPS coordinates. Photos are contained within Appendix B and Appendix C respectively.

Observations

GrainCorp Truck Traffic

During the survey it was noted that a large amount of trucks with semi-trailers were accessing the GrainCorp facility to the south of the junction on Foxhow – Berrybank Road. Over 40 truck movements were observed during the one-hour period of the survey. A large percentage of these truck movements came and went via the Berrybank – Wallinduc Road.

The Berrybank – Wallinduc Road is a ~3.5m wide sealed single lane two way road with ~1m wide shoulders

The Berrybank – Werneth Road is a ~6.5m wide unsealed road which can easily accommodate two-way traffic.

MPC KINETIC

Road Condition Along Berrybank – Wallinduc Road from Junction to Main Site Entrance

Overall the road appears to be in a reasonable condition through the surveyed section. Our general observations are noted below. Photos survey is contained in Appendix A

1. Ch. 0 to Ch. 100 (vicinity of the junctions). The pavement in this area is in poor condition with clear evidence of pavement and subgrade failure, edge break and pothole formation. Repairs through the years are evident however these are also now failing.
2. Ch. 100. The road narrows to a single lane at this location and there is significant edge break. Edge drop off was measured and varied between 50mm and 80mm.
3. Ch. 100 to Ch. 200. Edge drop off
4. Ch. 630. Edge break present.
5. Ch. 815. Sign rutting and subgrade/pavement failure.
6. Ch. 880 to Ch. 1100. Patches of asphalt has been placed to repair previous edge break damage. In numerous areas this repair is not failing and breaking off.
7. Ch. 1100 to Ch1250. Edge break along most of this section.
8. Ch. 1250 to Ch. 1300. In the vicinity of the junction with Berrybank – Werneth Road. High level of edge break due to vehicles entering and exiting the side road. Previous edge break repair also failing.
9. Ch. 1300 to the main site entrance at Ch.1650. Minor edge break with repairs undertaken.

Road Condition Along Berrybank – Wallinduc Road from Main Site Entrance To Boundary Road

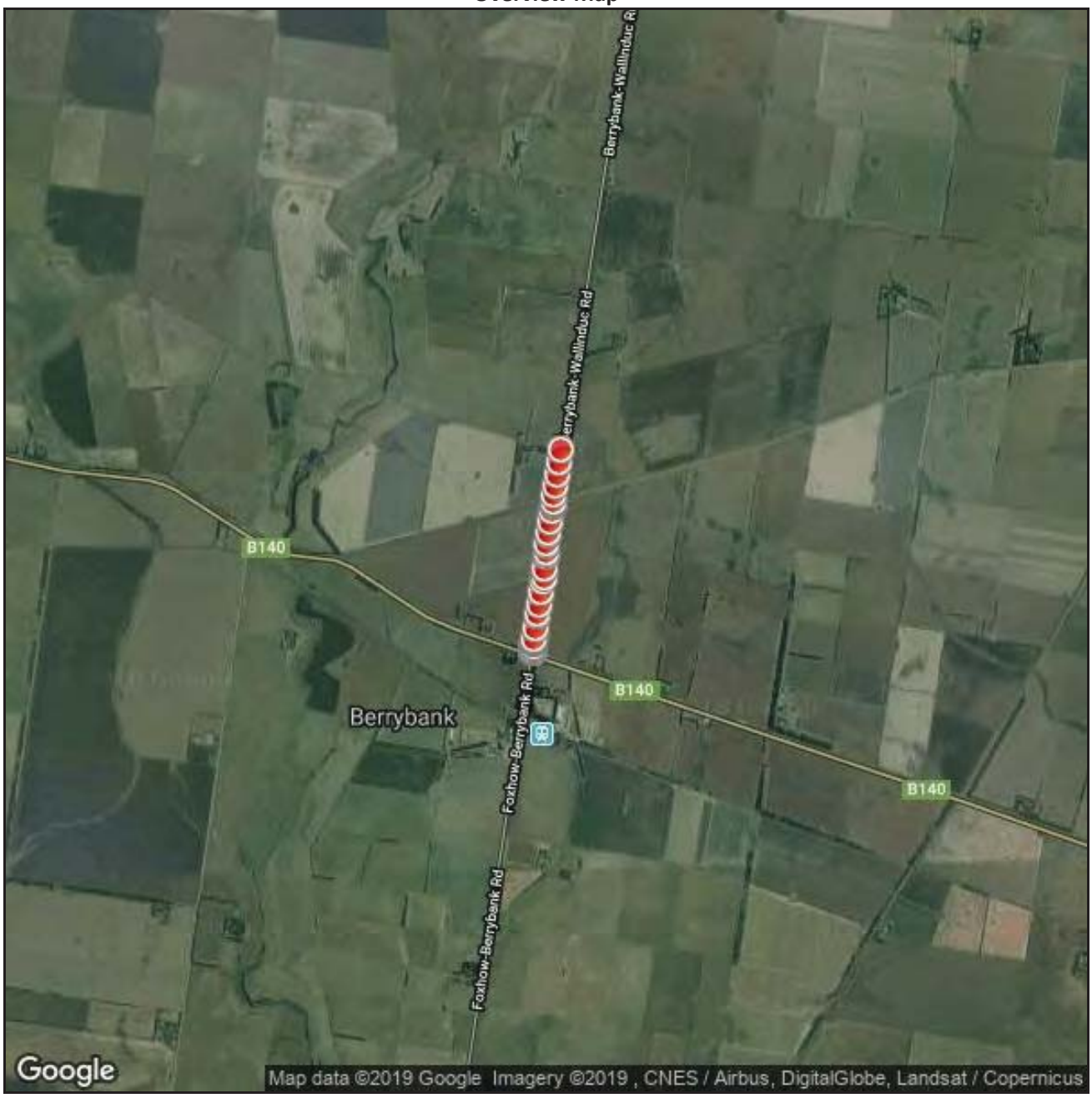
1. The overall surface is in good condition. As can be seen in the photographic survey, edge break is frequent along the road with numerous section having been repaired with asphalt.
2. There is notable edge break and bleeding at the junction to a private property on the eastern side and at the junction of Boundary Road.

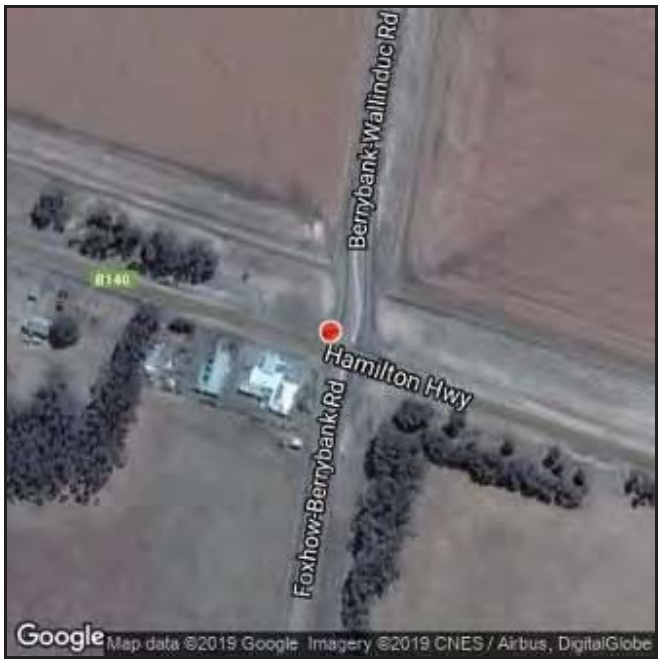
Road Condition Along Berrybank – Werneth Road from Berrybank – Wallinduc Road to the Batching Plant Entrance

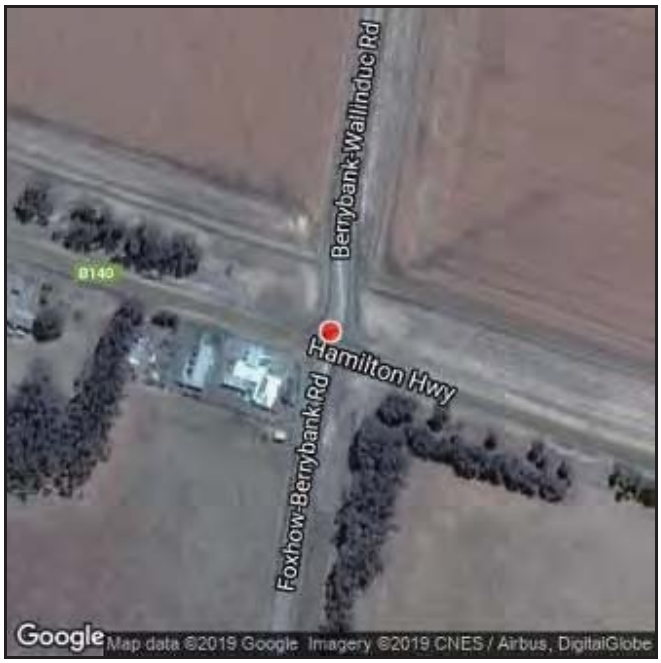
1. The overall surface is in good condition.
2. The gravel pavement has ravelled and windrows of loose material has formed along the edges of the road.

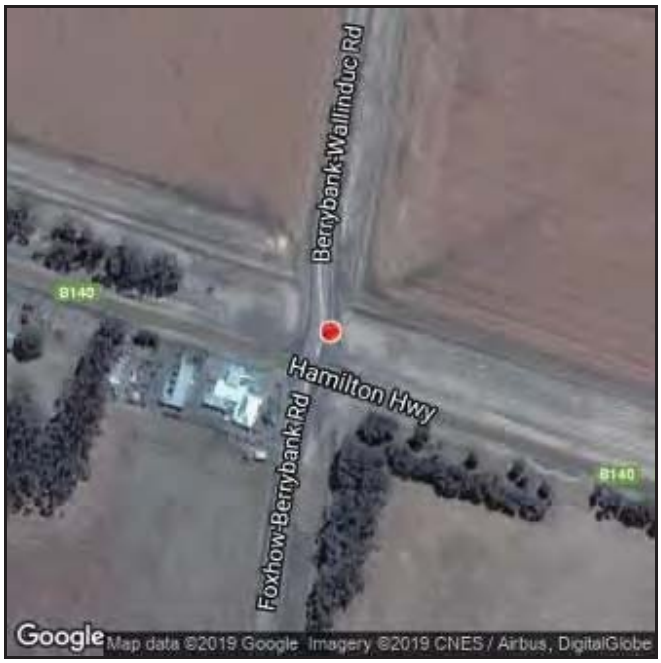
APPENDIX A

Overview Map





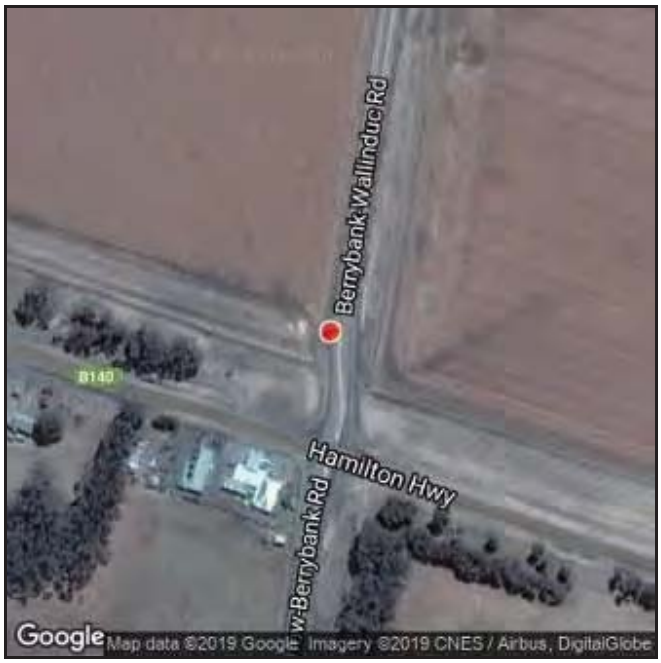


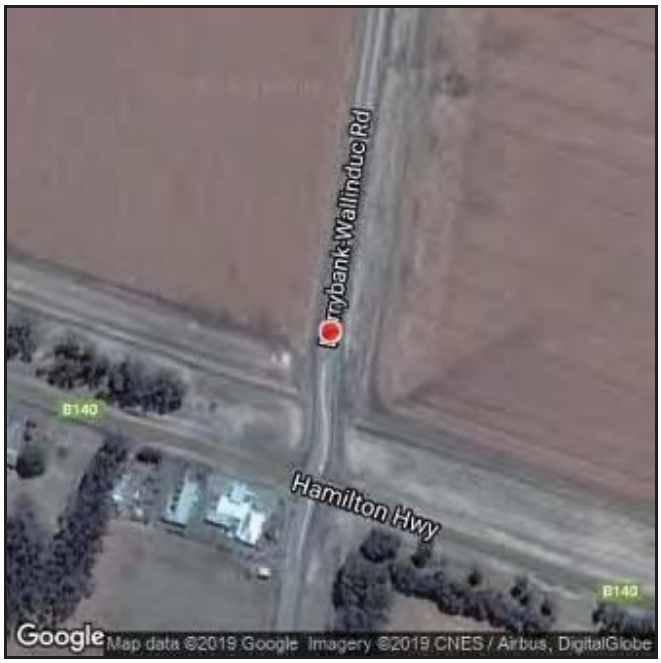


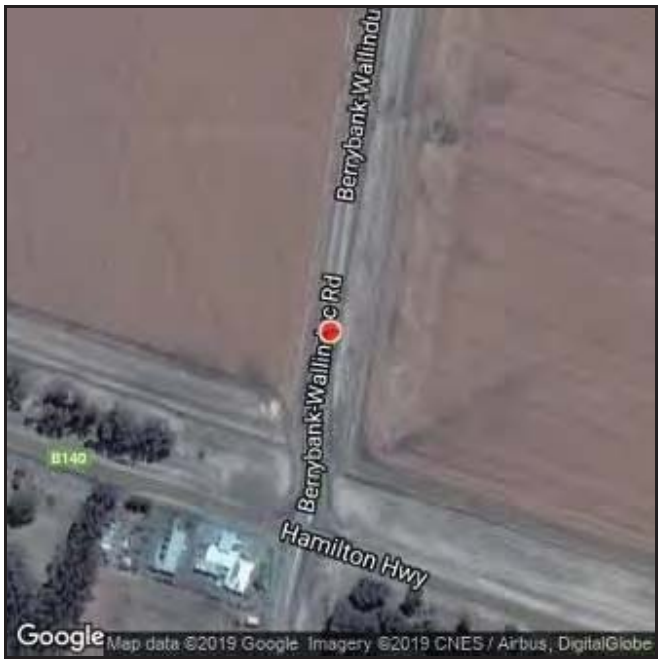

IMG_3562.JPG
S 37° 58' 38.70"
E 143° 29' 19.13"
7/01/2019

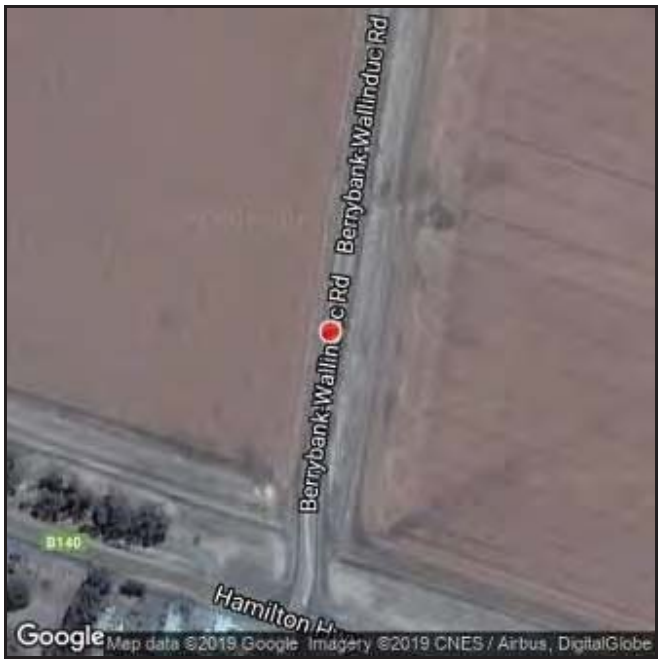

Berrybank-Wallinduc Rd
B140
Hamilton Hwy
Google
Map data ©2019 Google Imagery ©2019 CNES / Airbus, DigitalGlobe

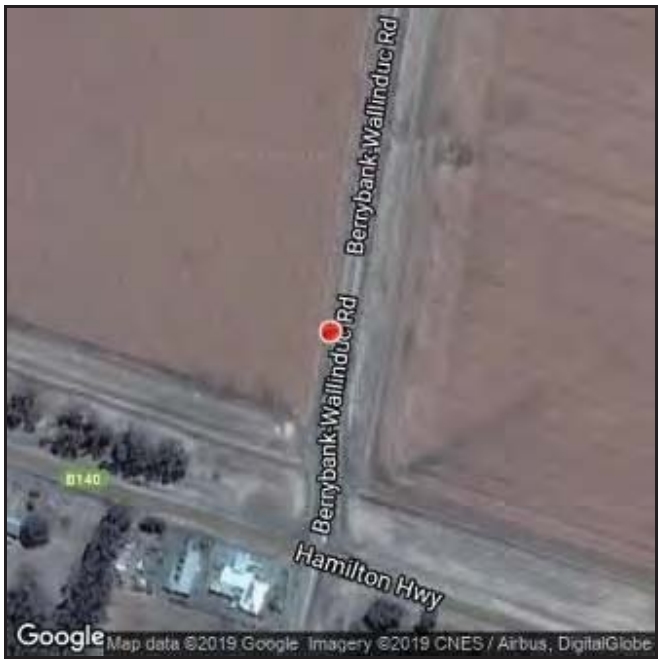

Berrybank-Wallinduc Rd
B140
Hamilton Hwy
Google
Map data ©2019 Google

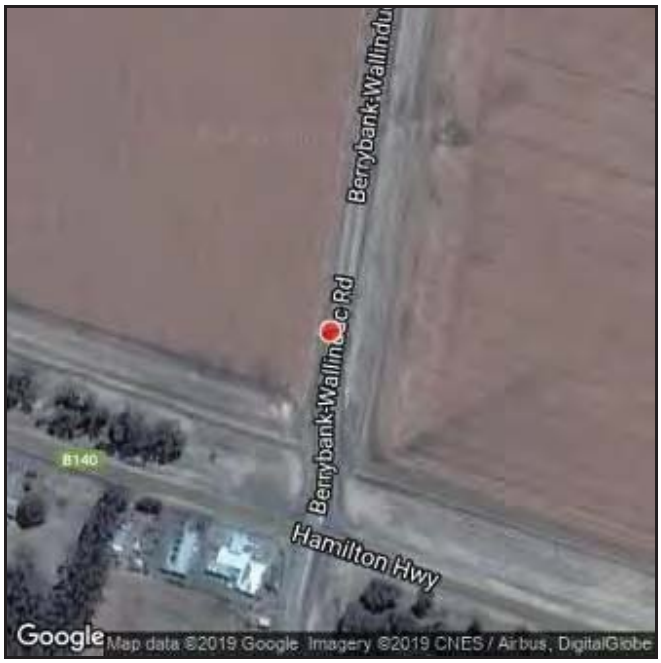


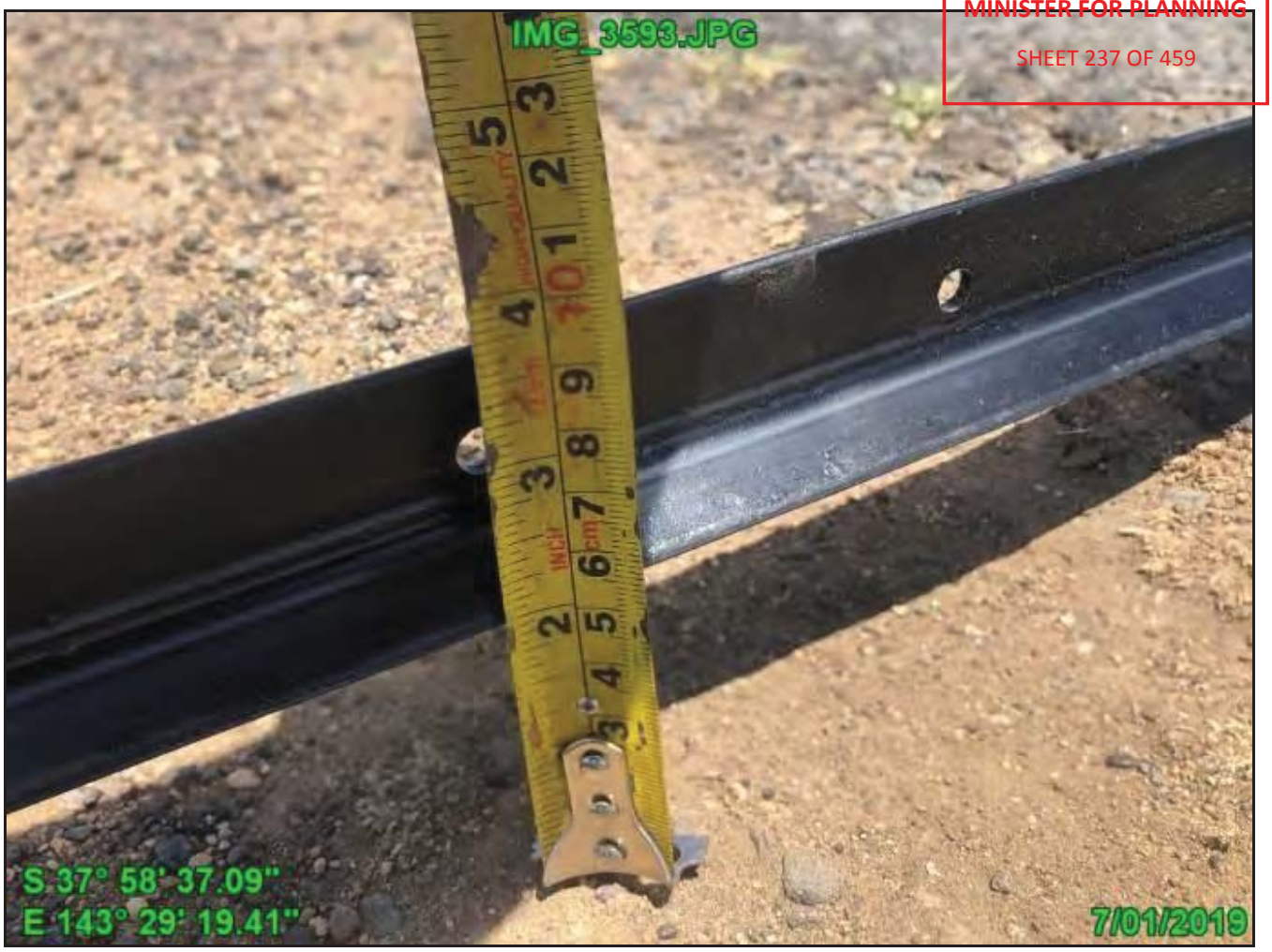


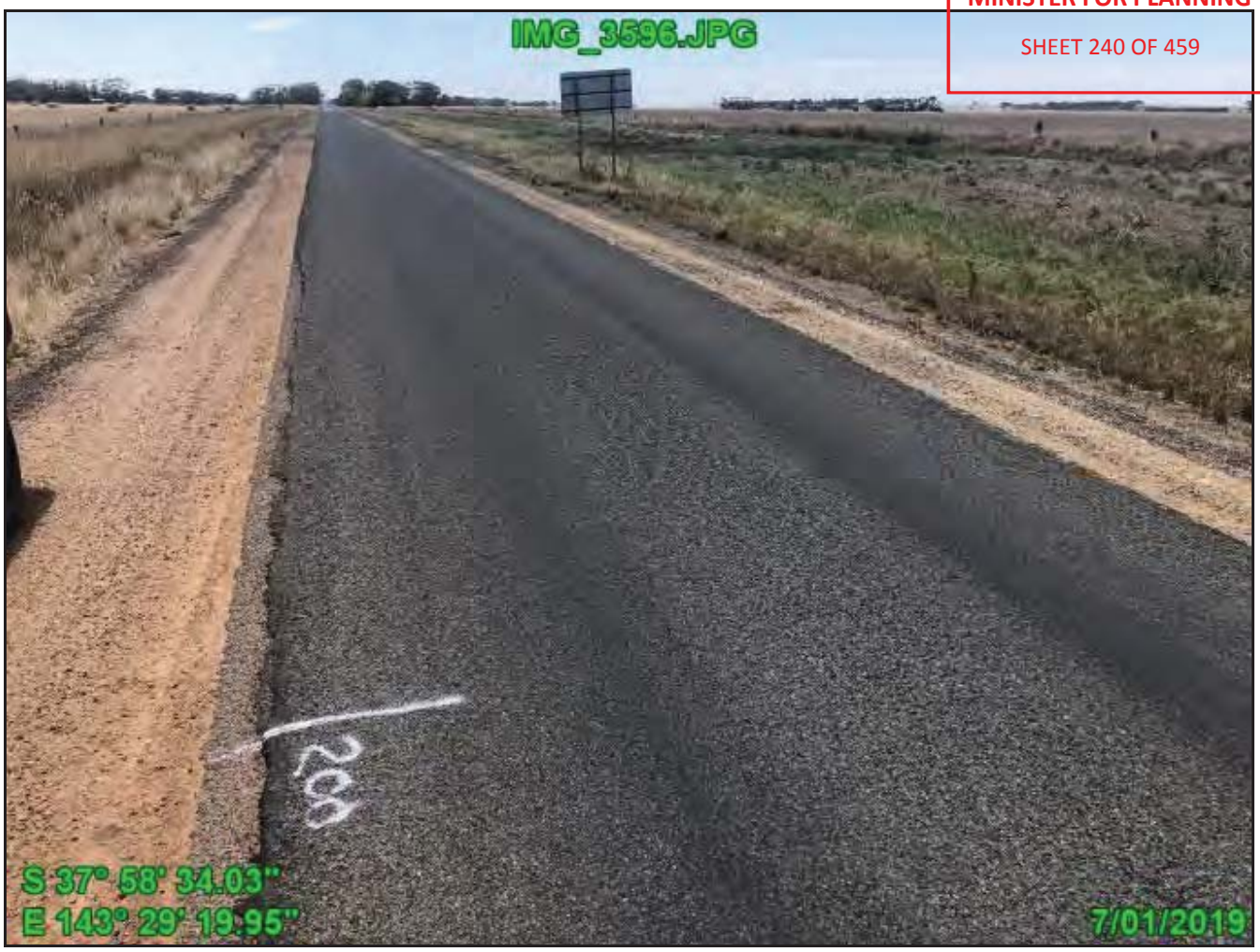


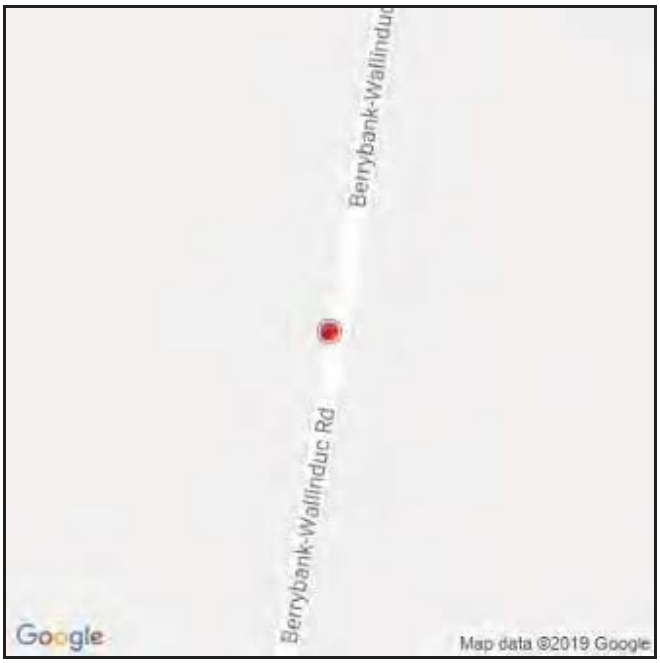


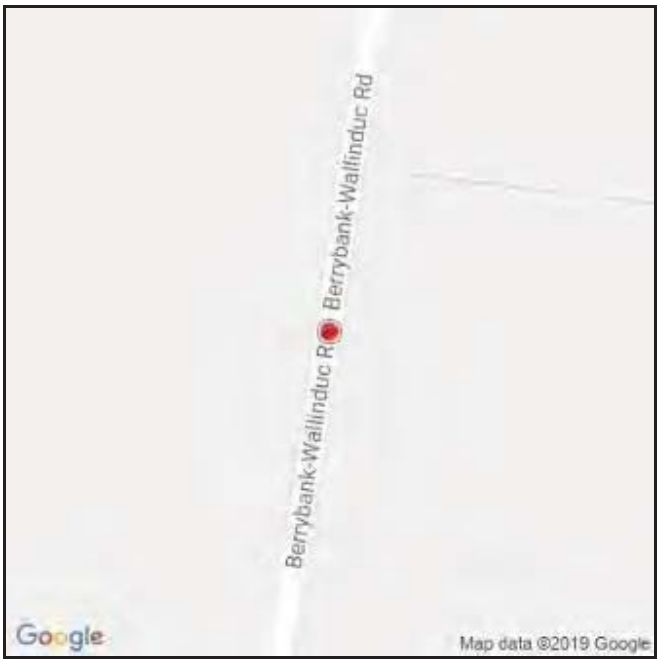


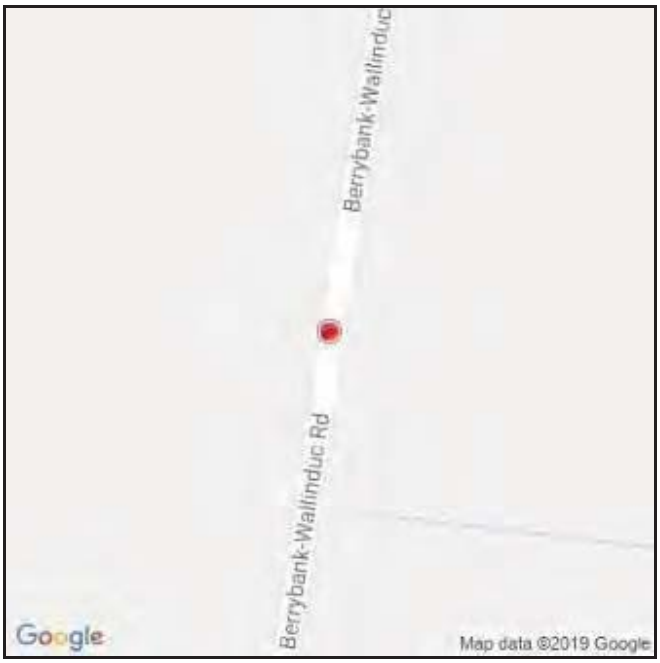


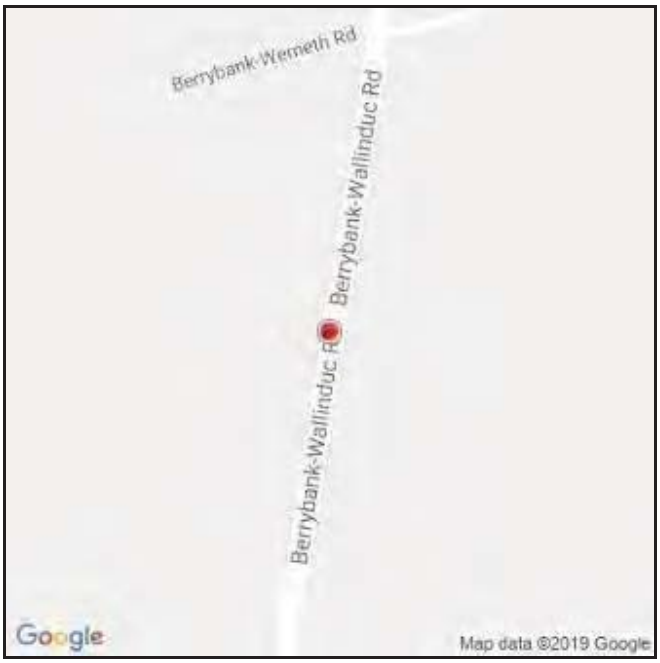


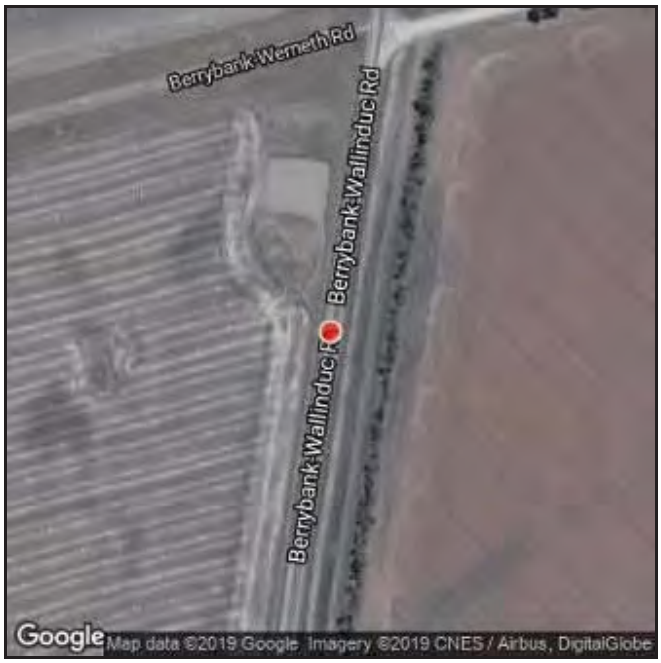


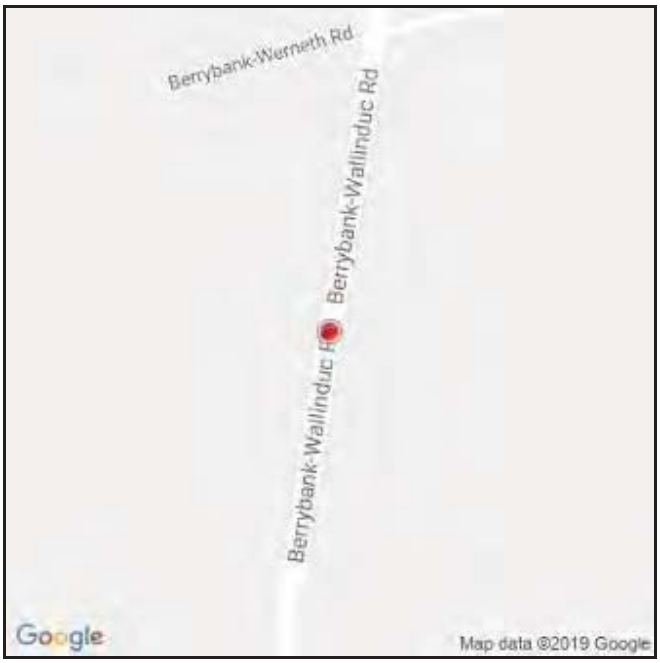


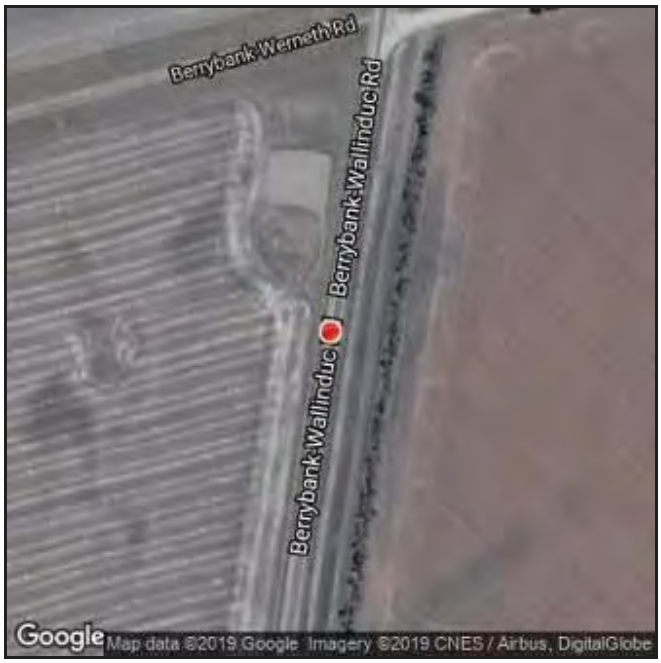


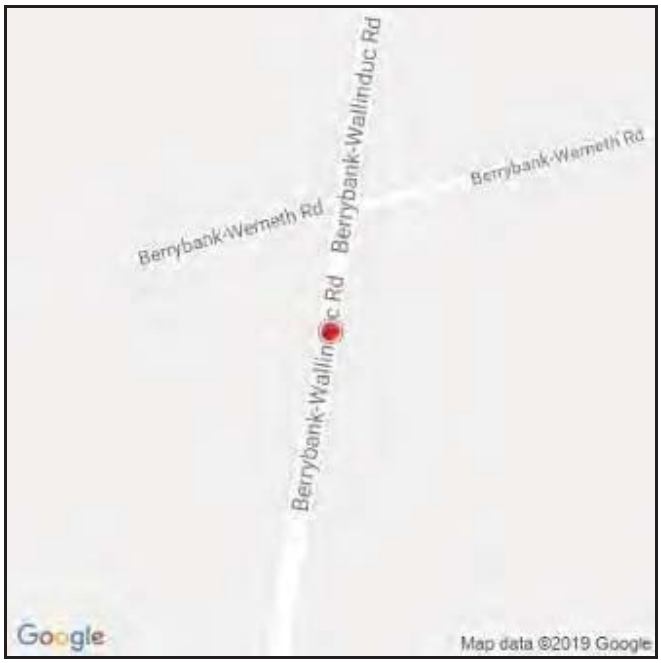


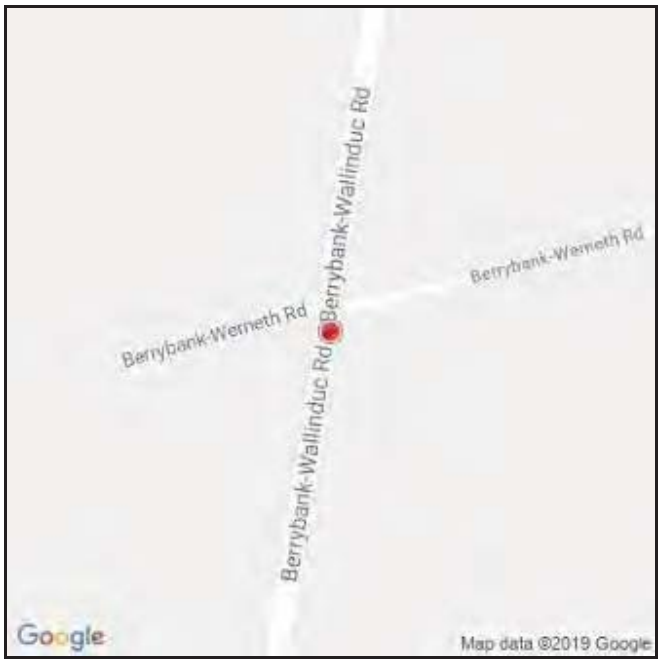


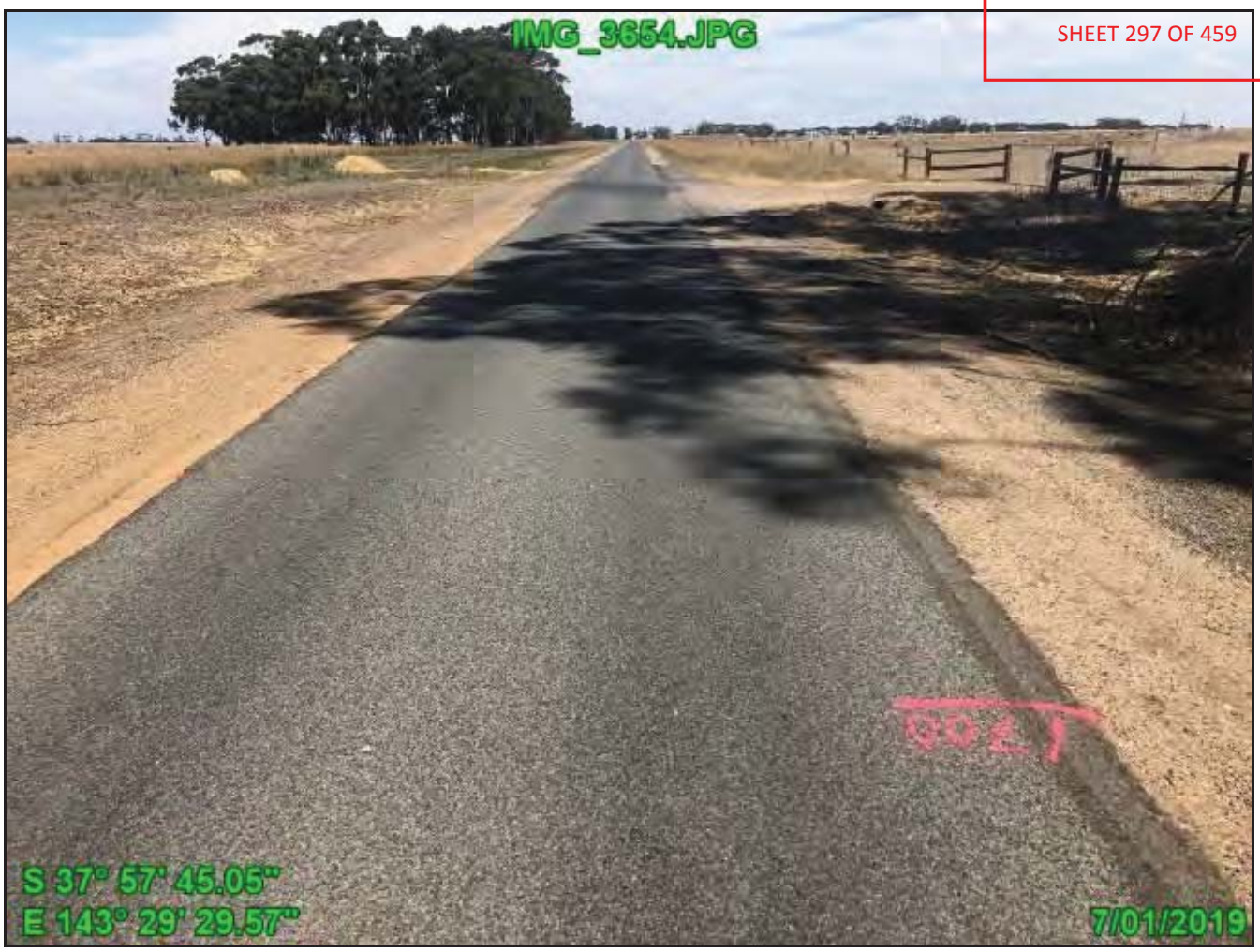


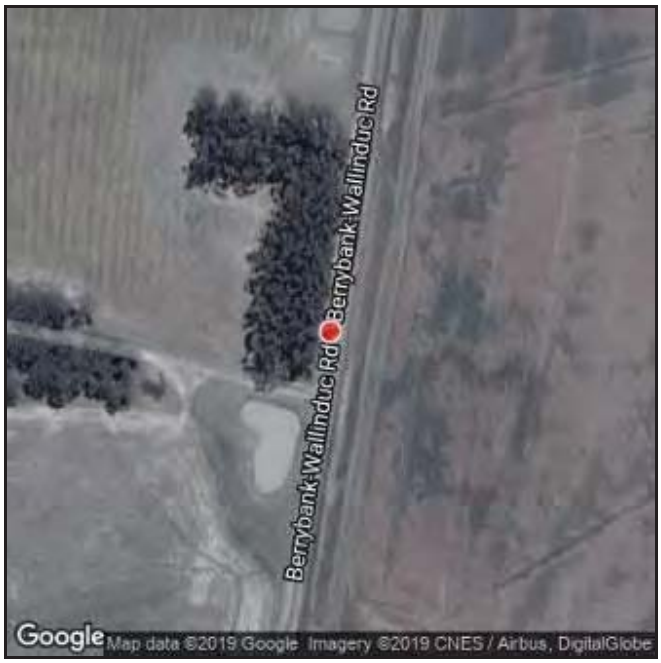


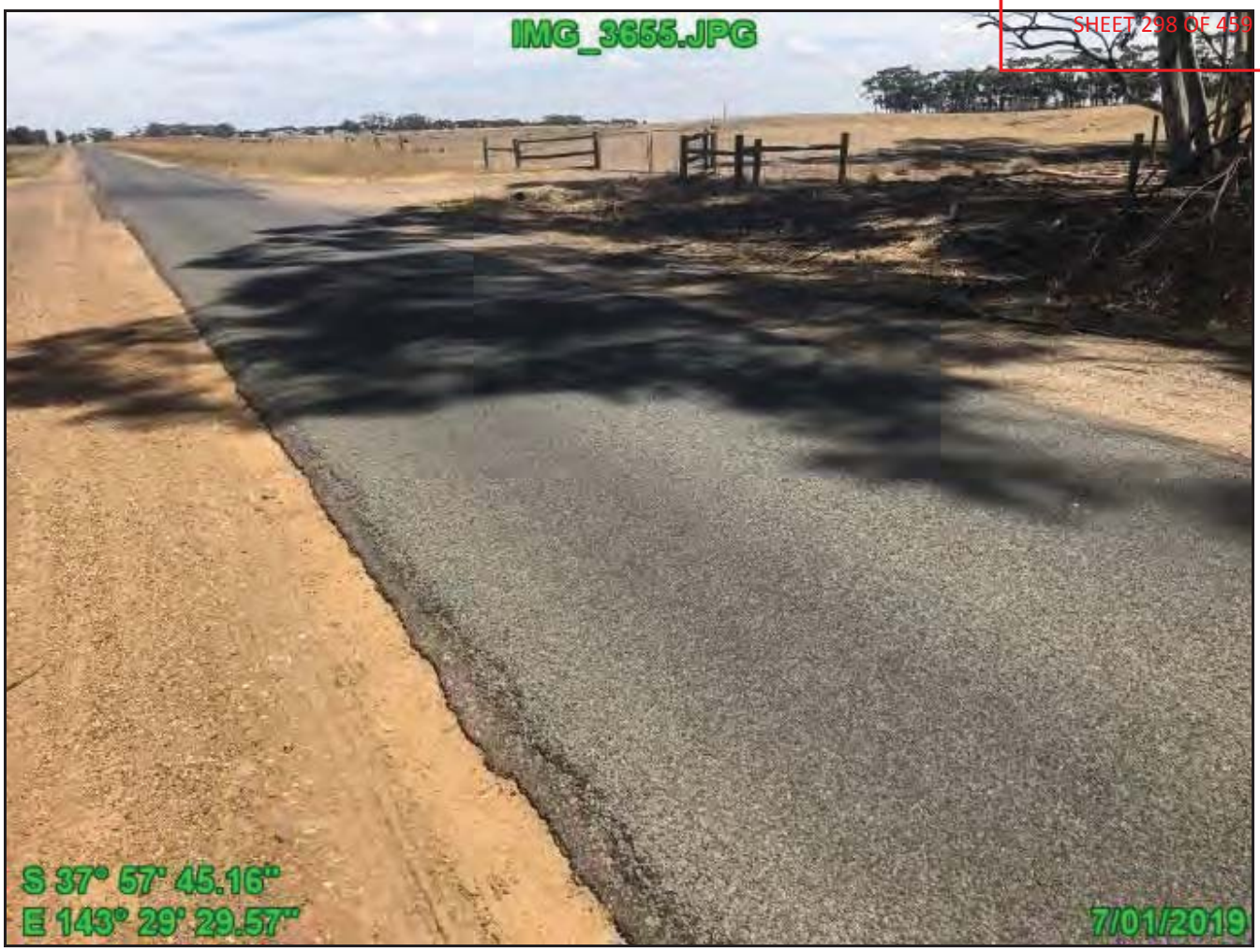






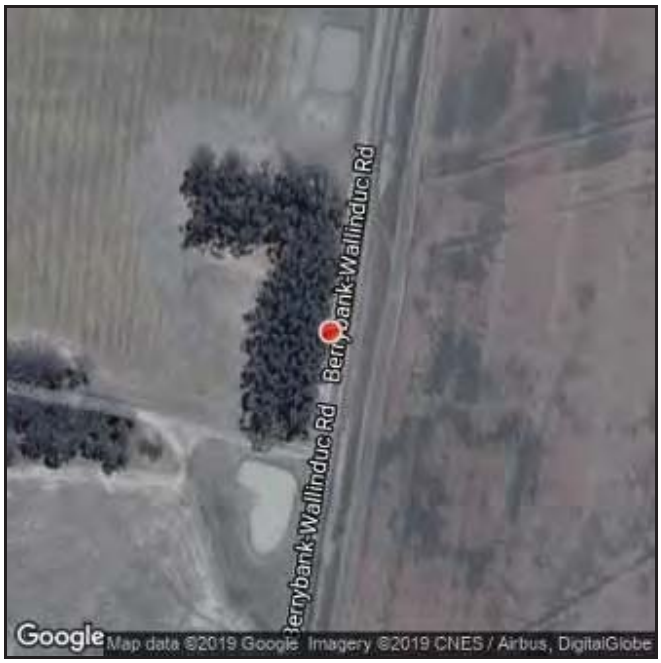


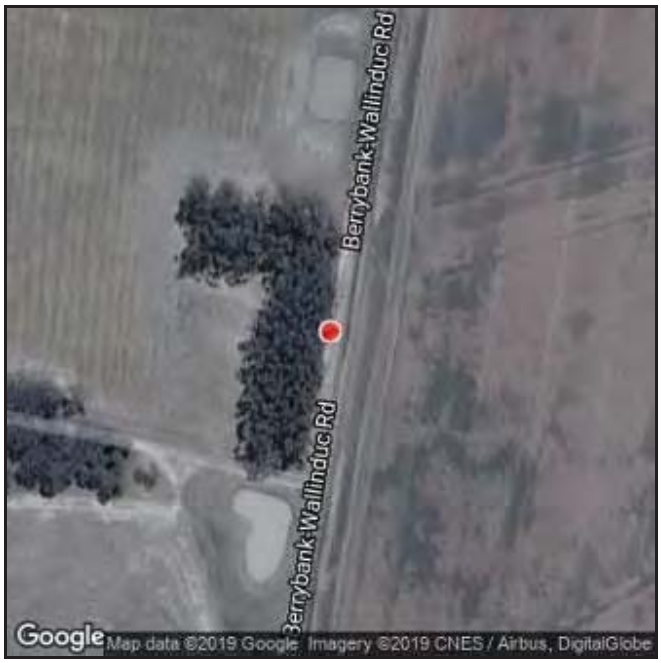


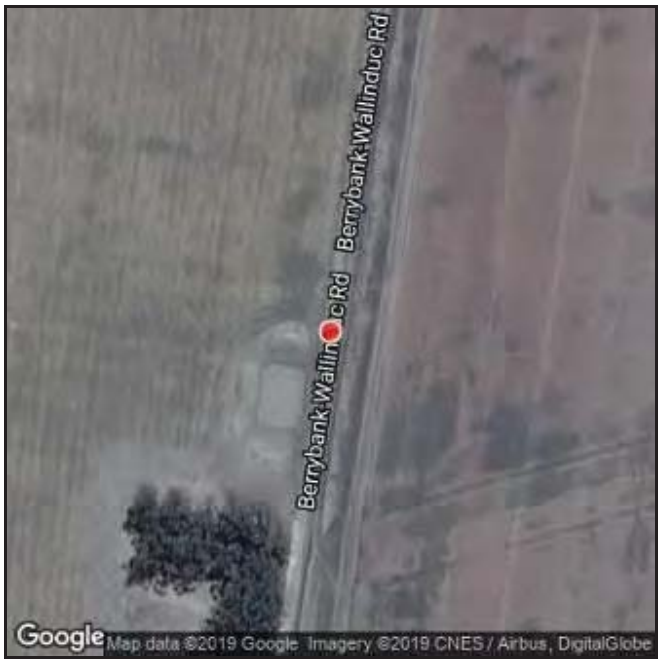


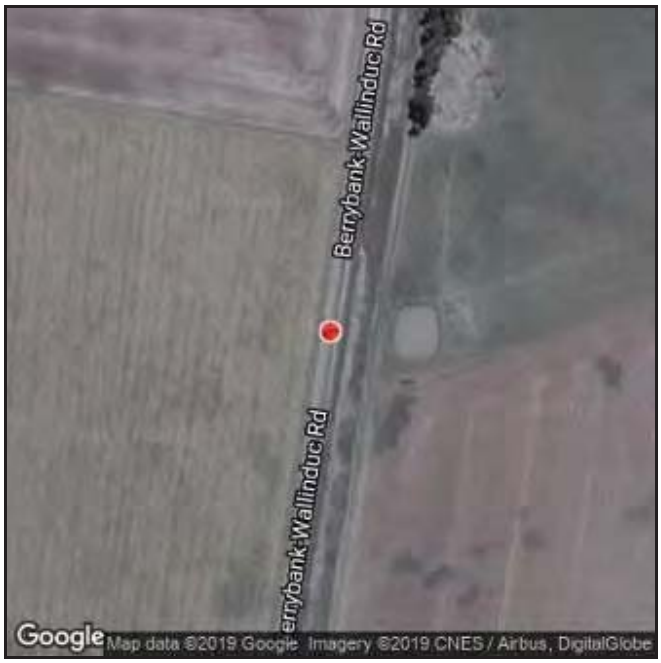
APPENDIX B

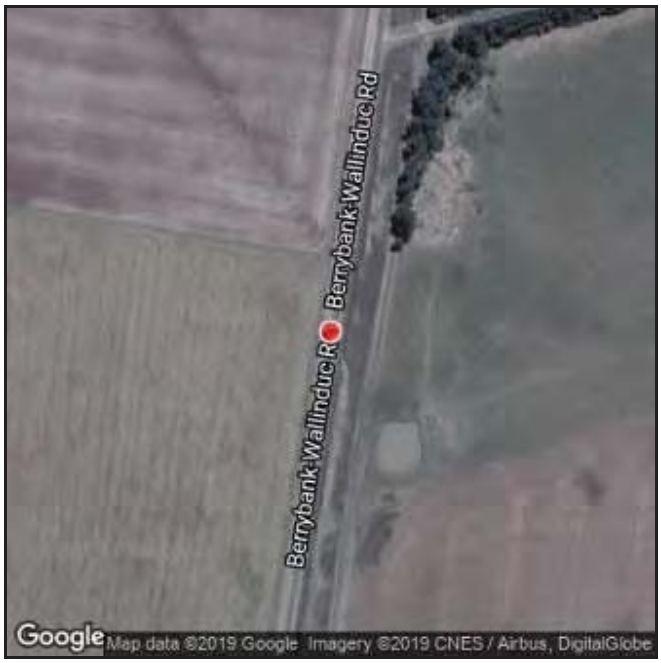
Overview Map

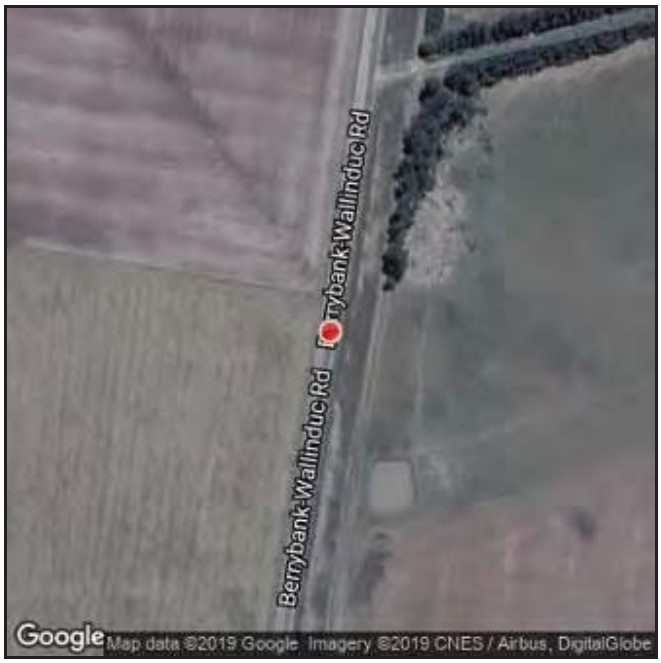


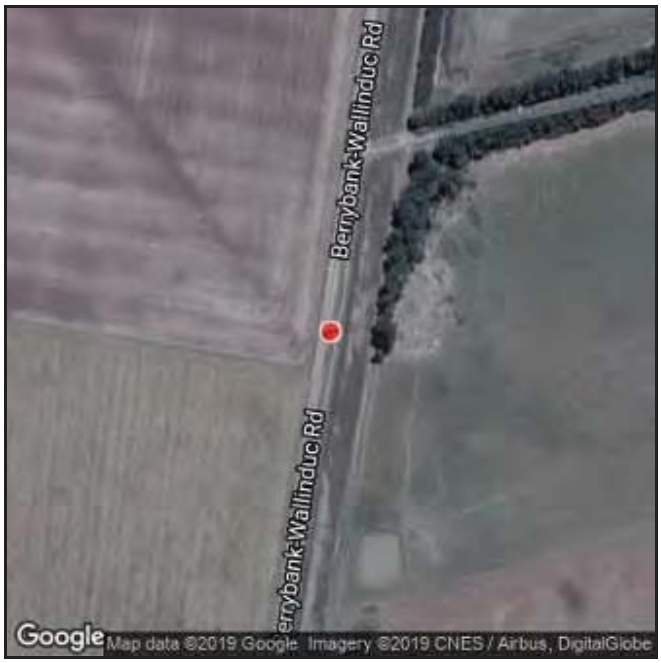


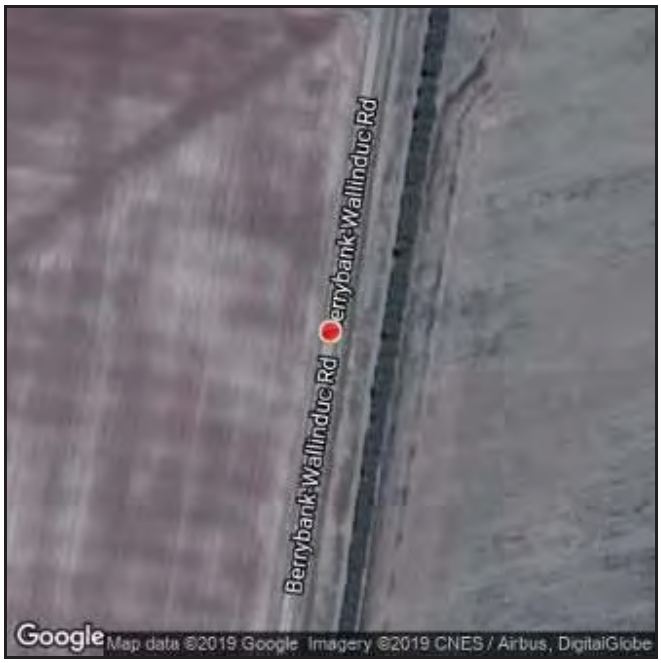


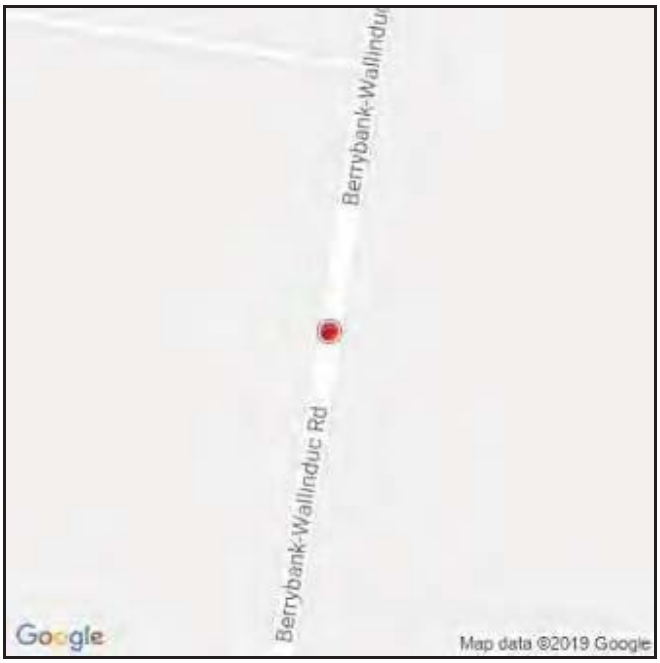


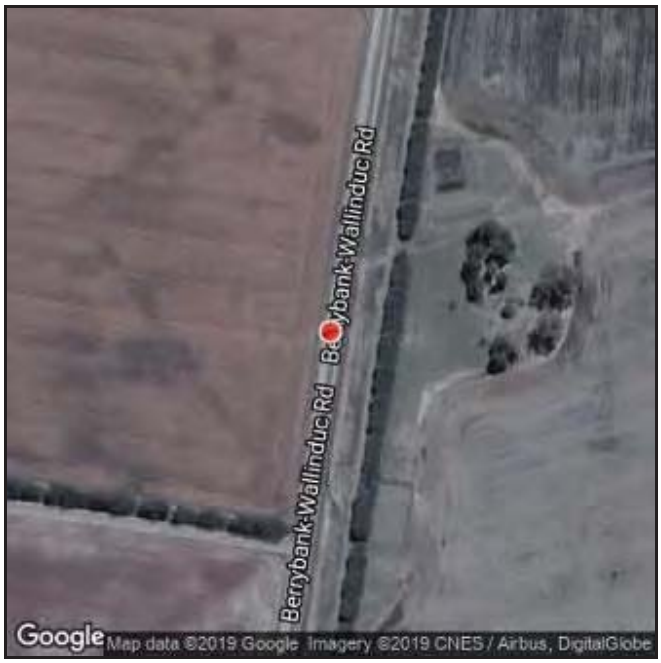


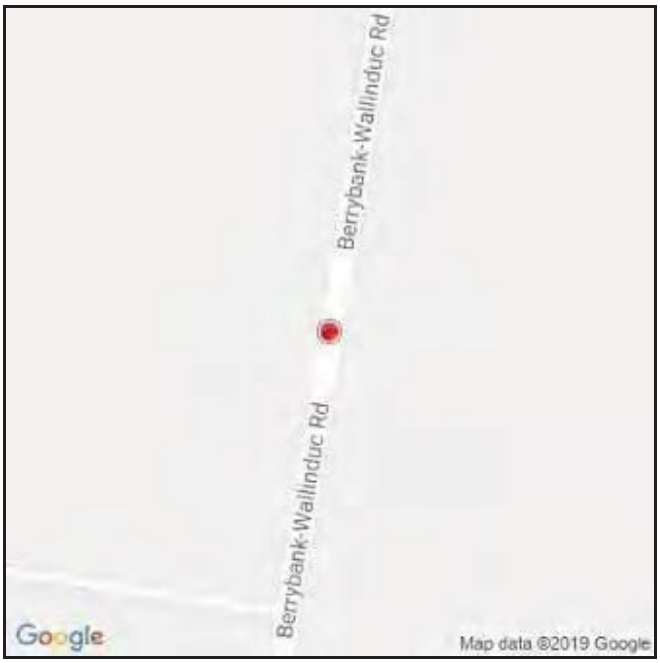


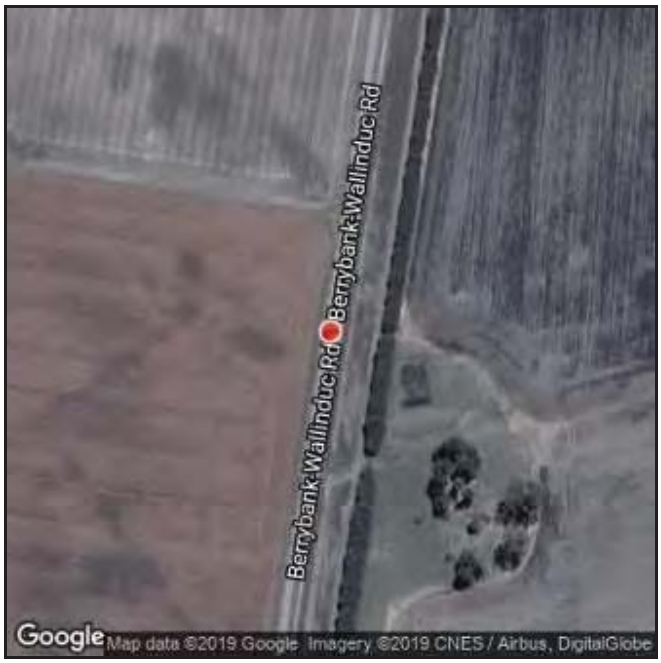


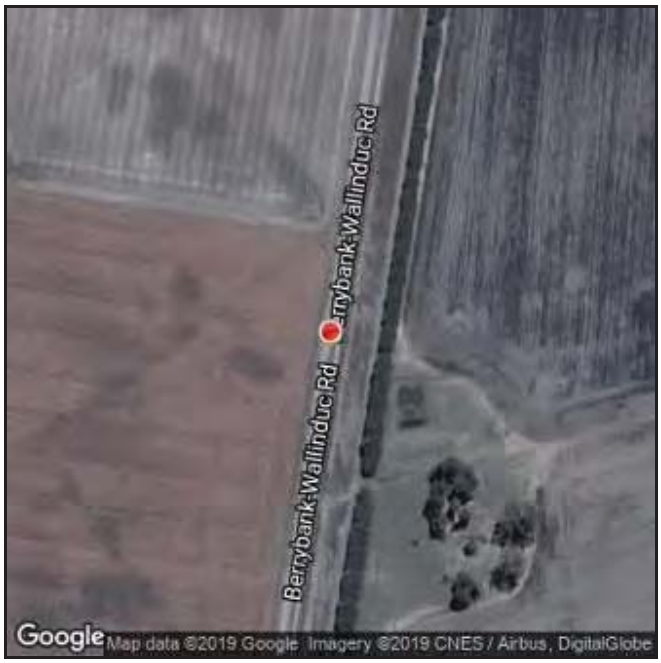


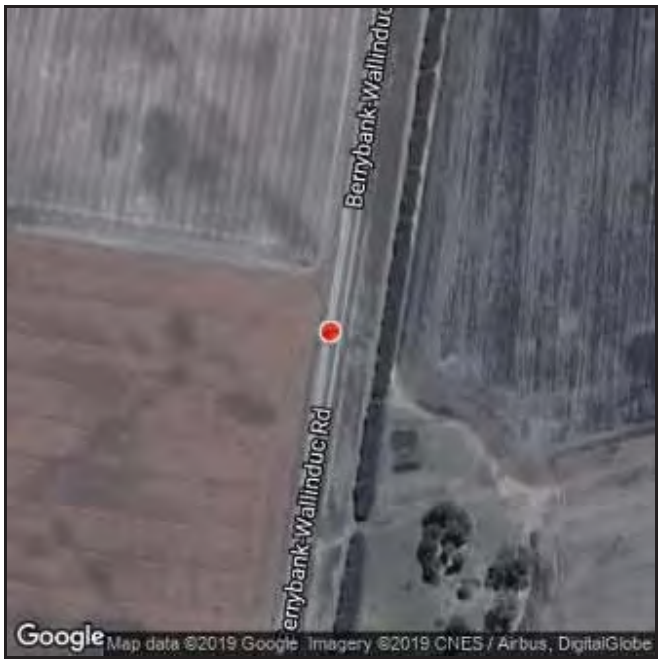












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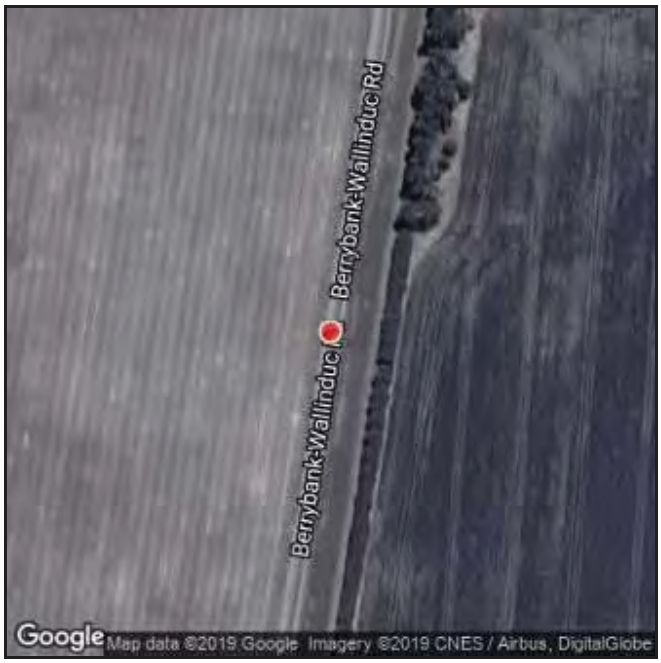

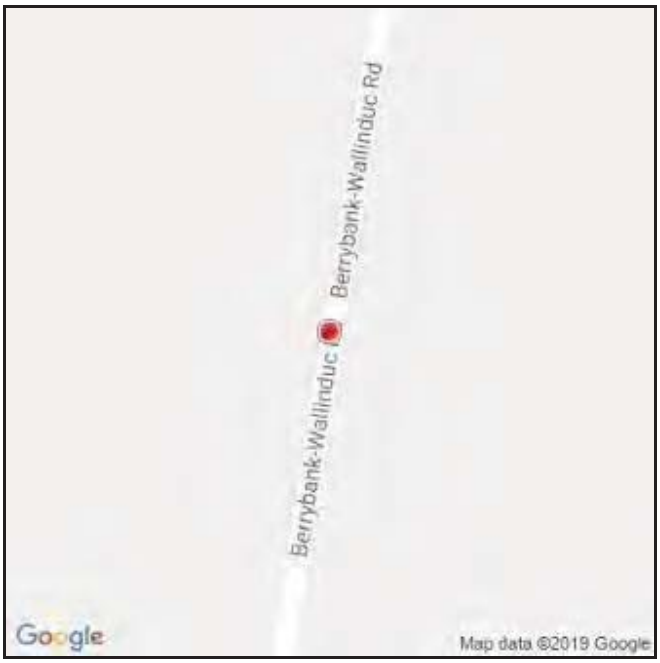

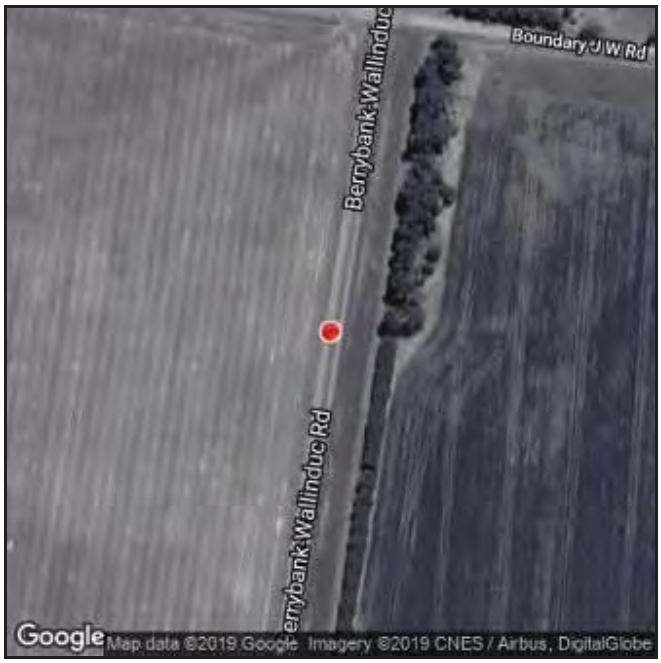

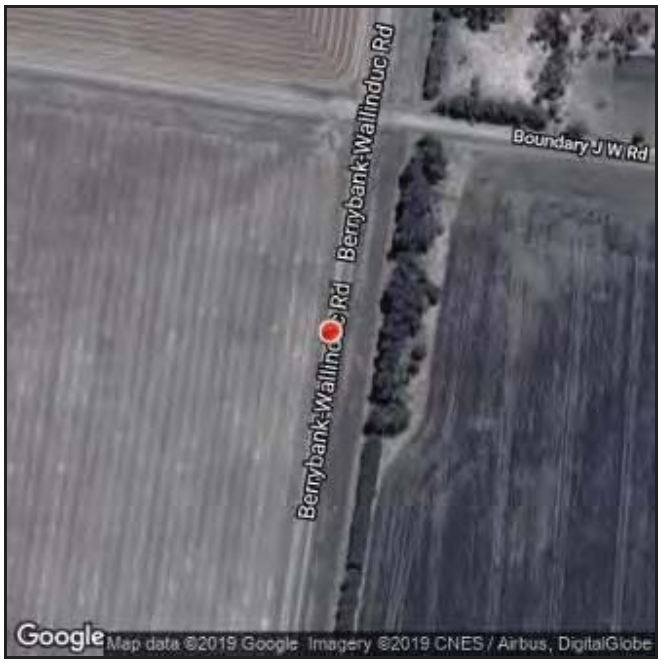

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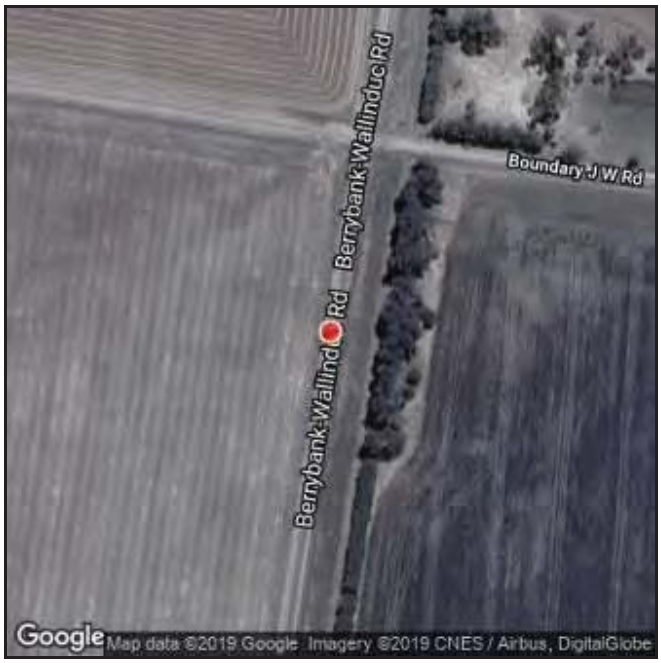
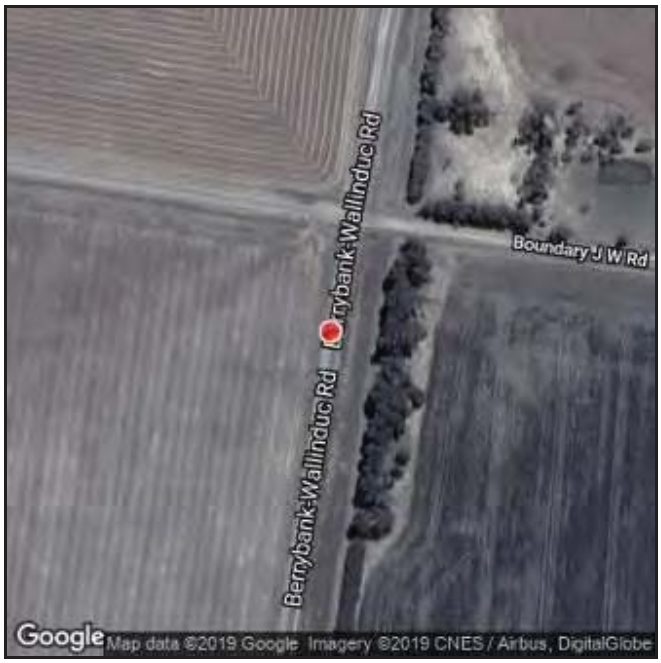
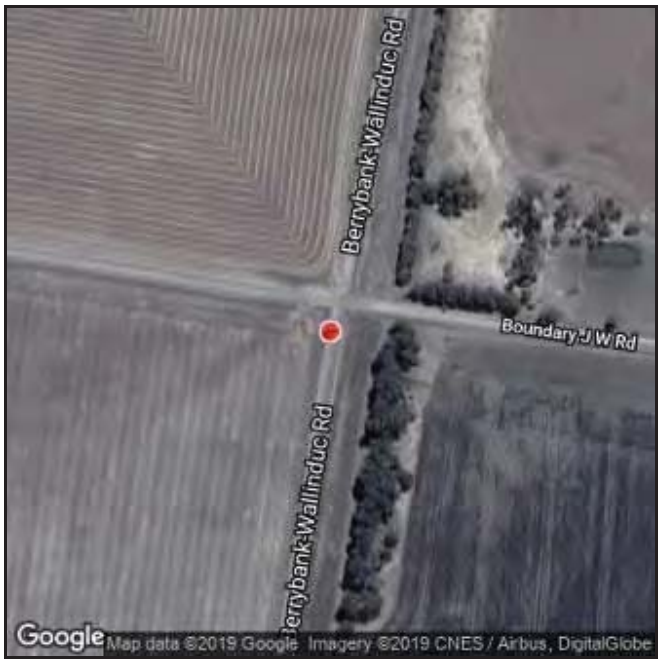
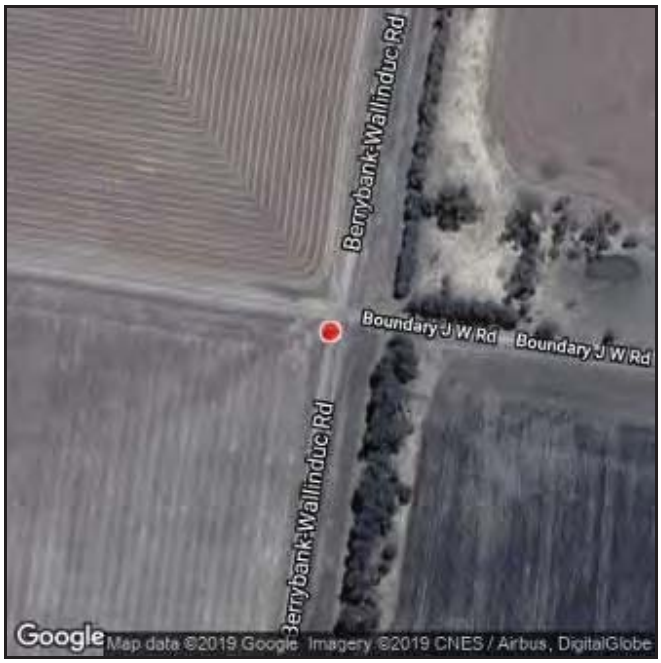


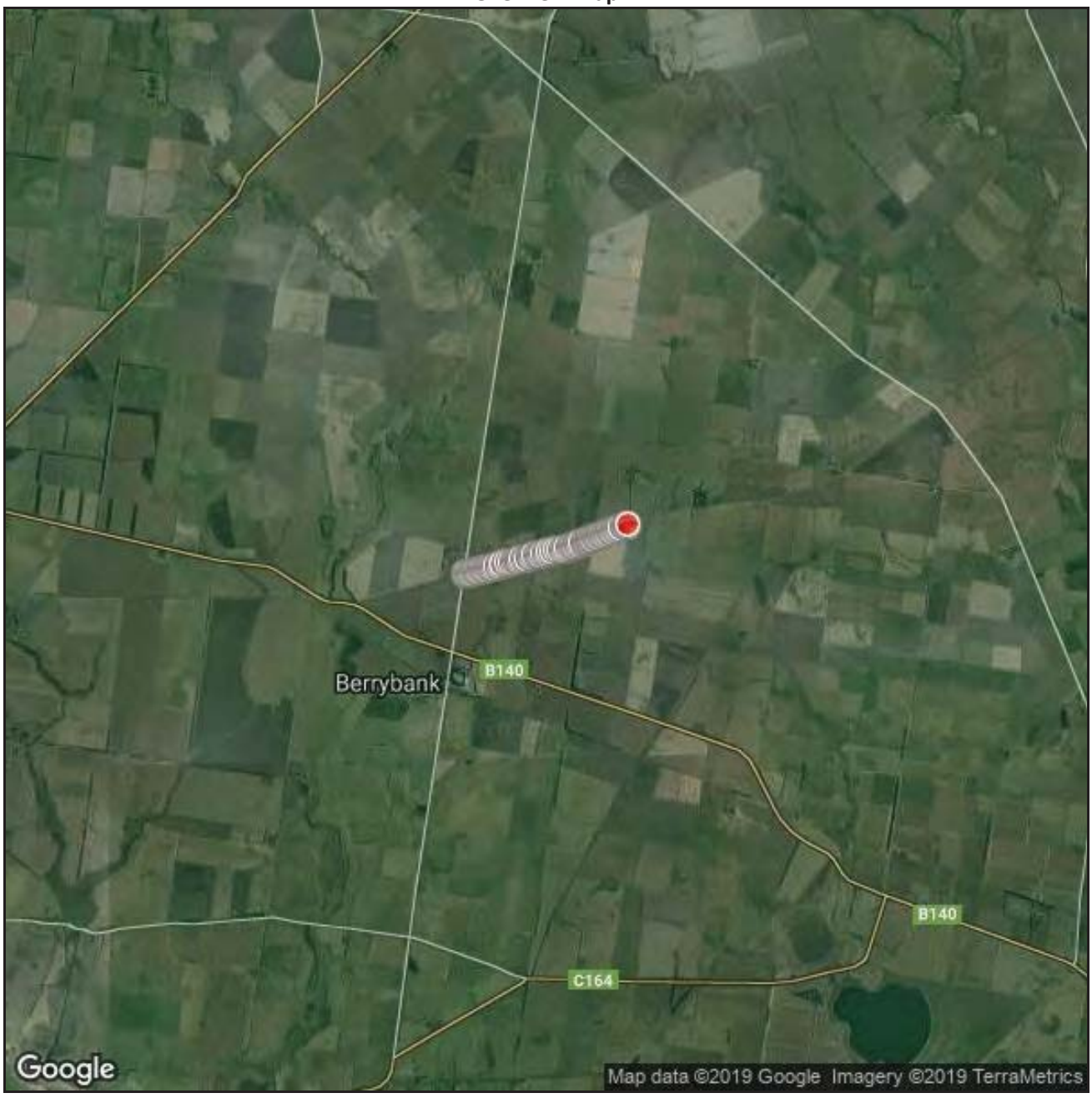


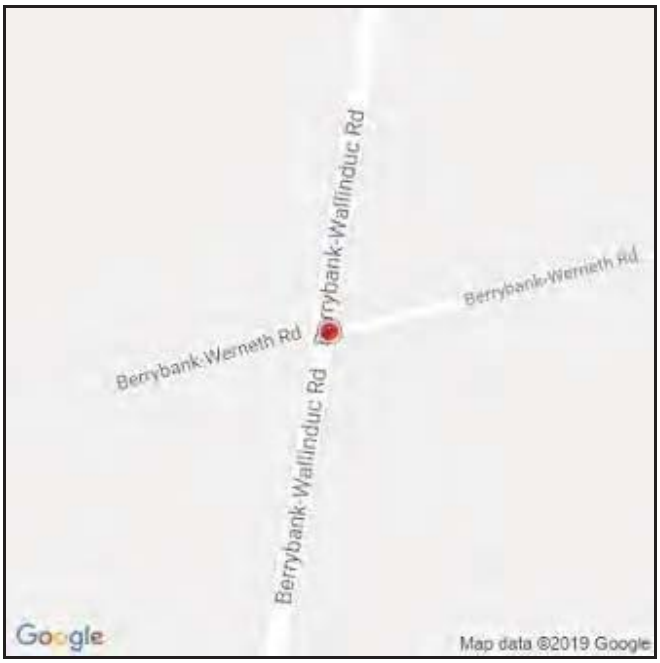


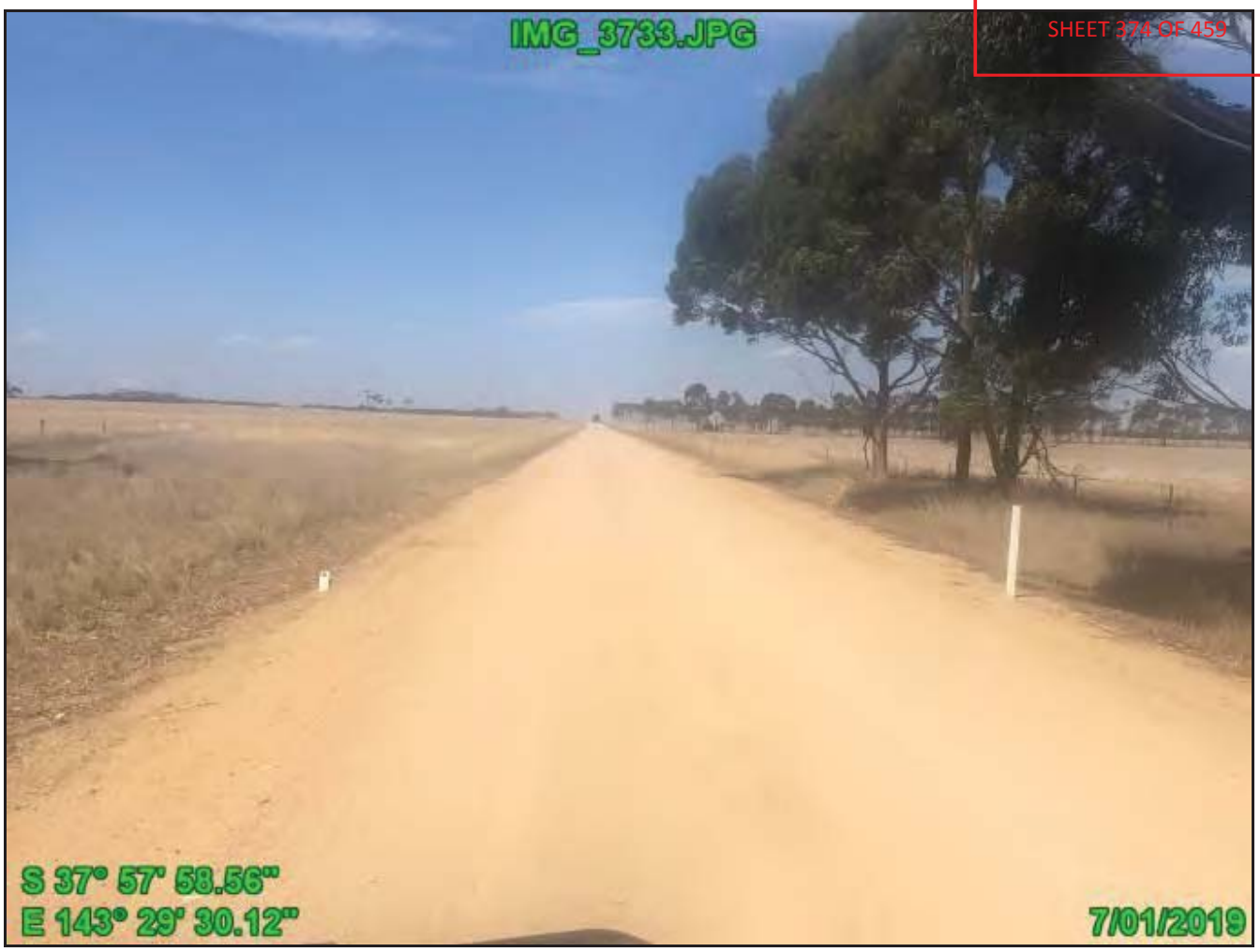


APPENDIX C

Overview Map







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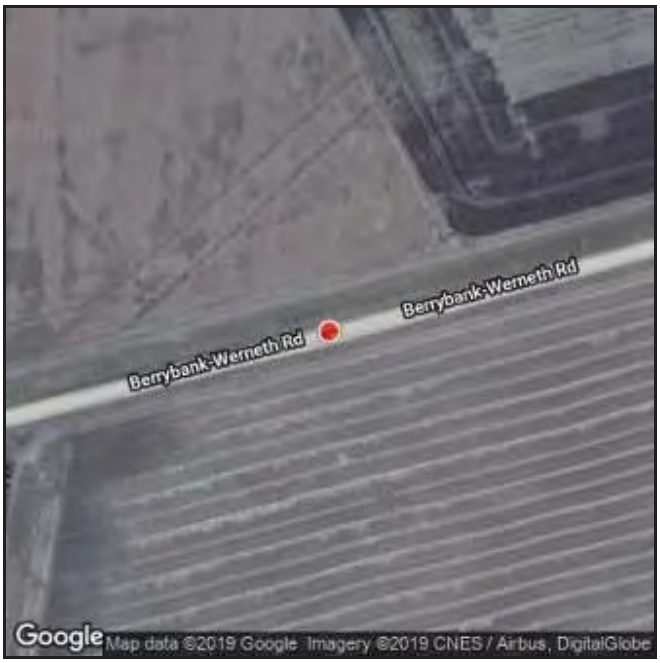

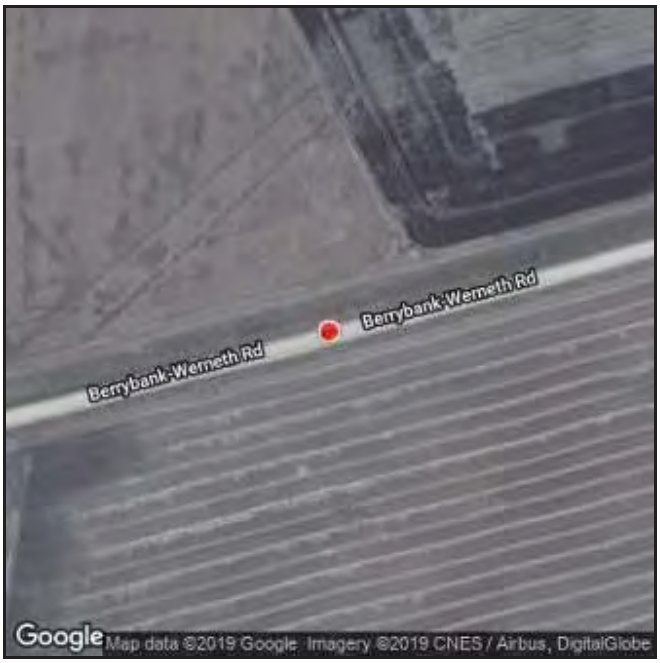

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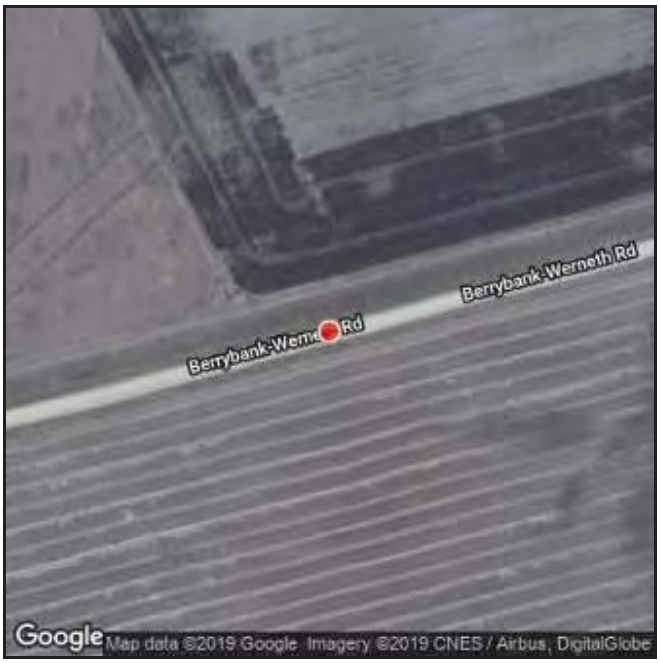

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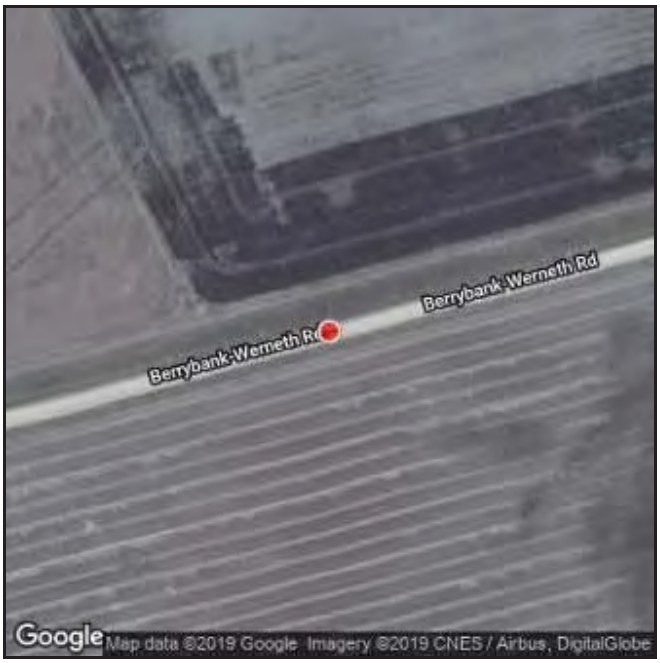

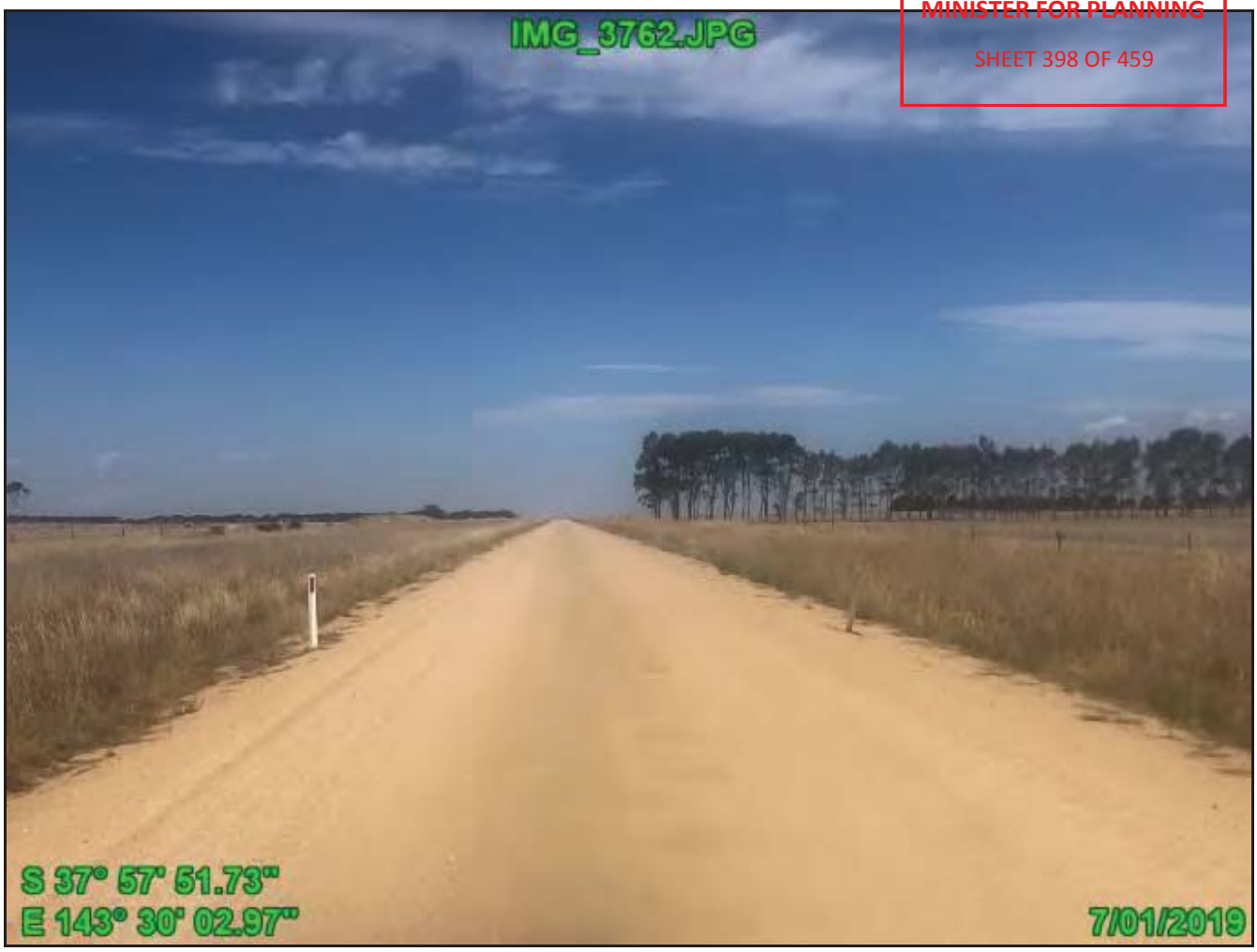

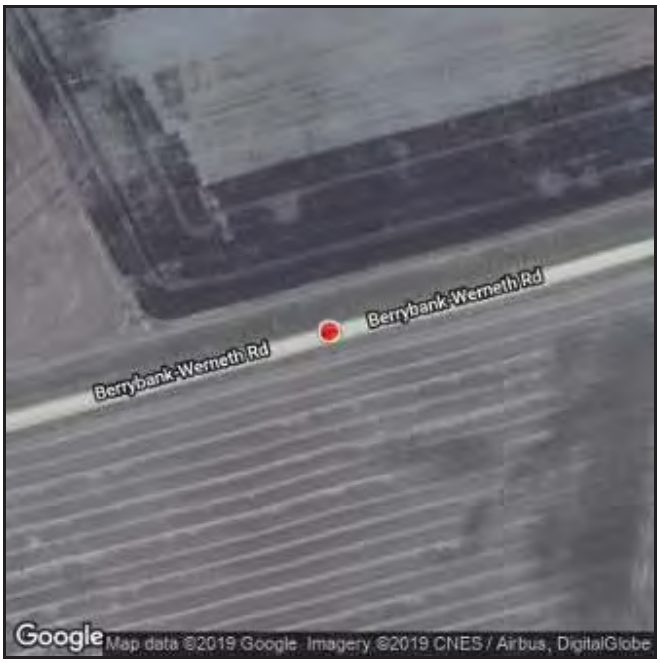

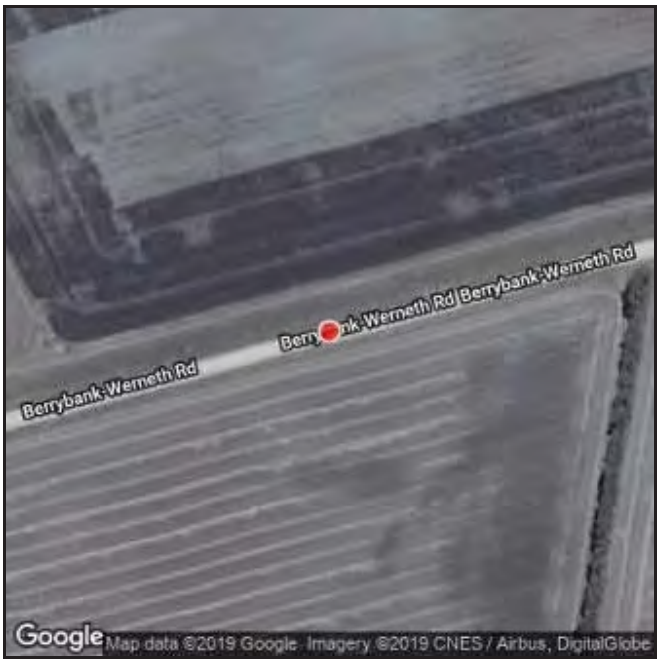

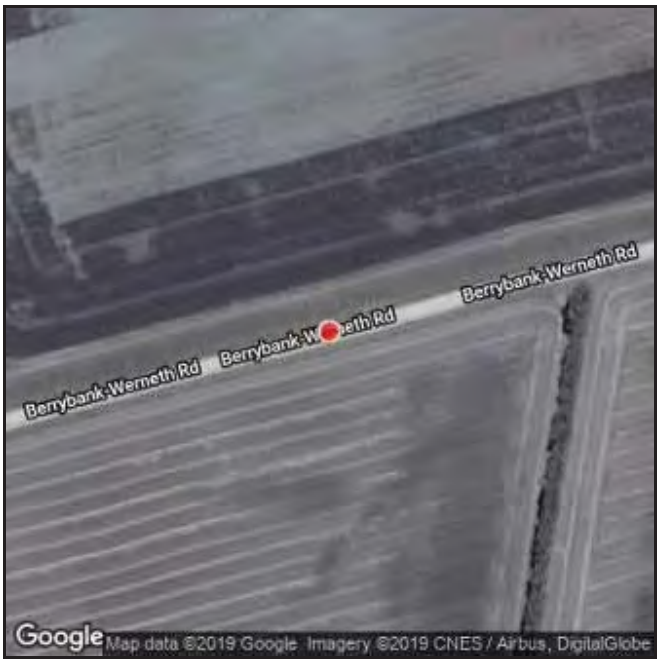

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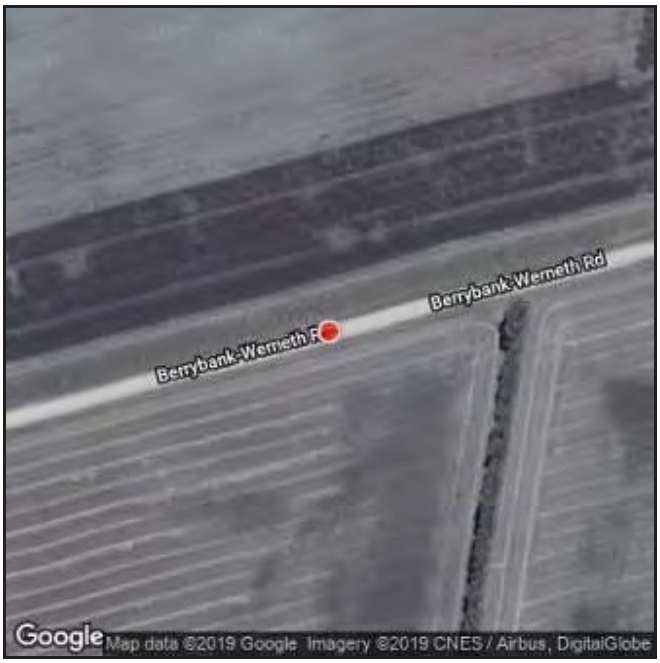

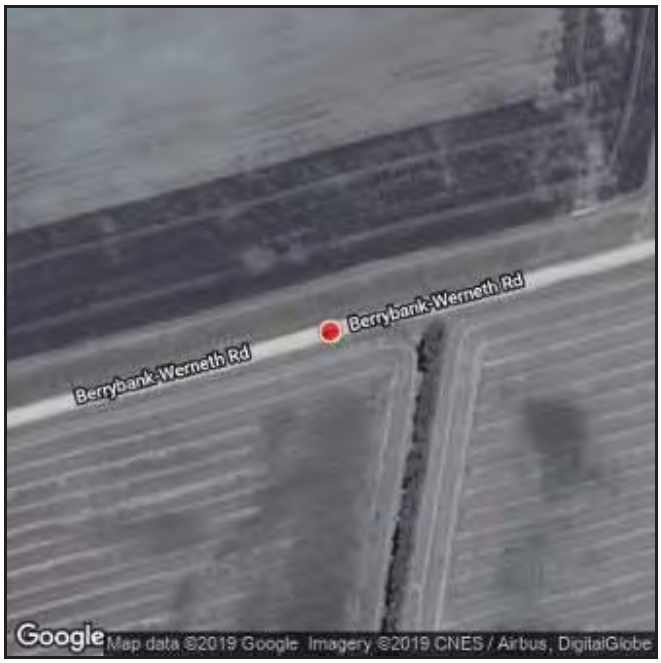

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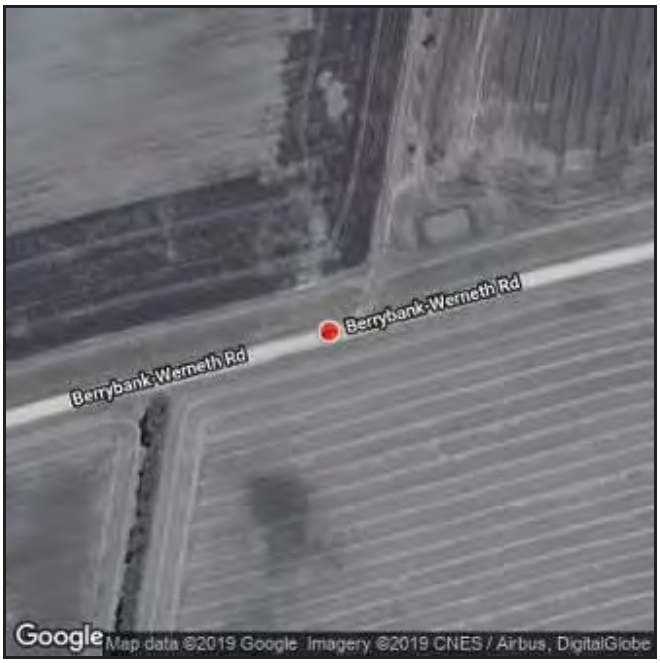

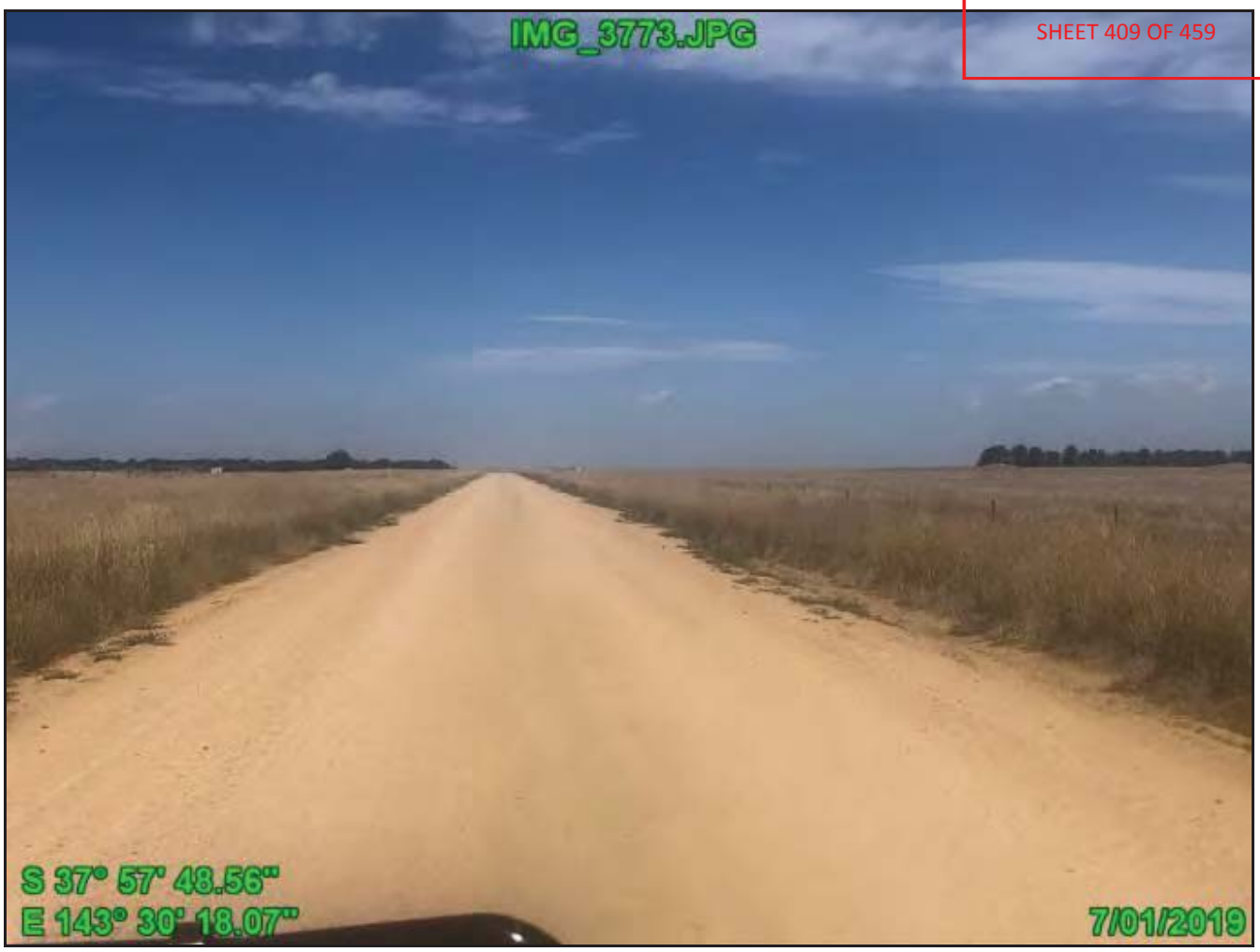

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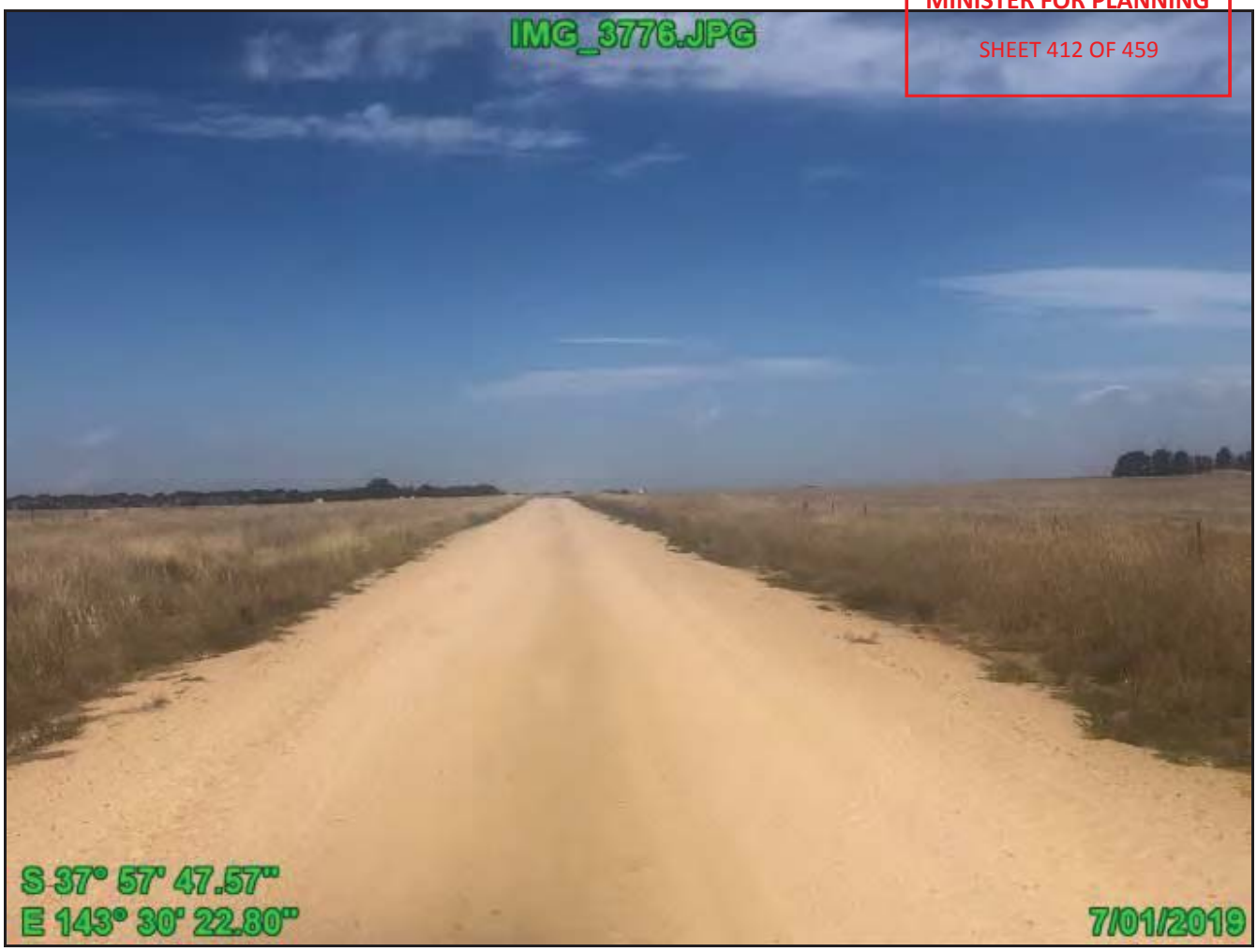
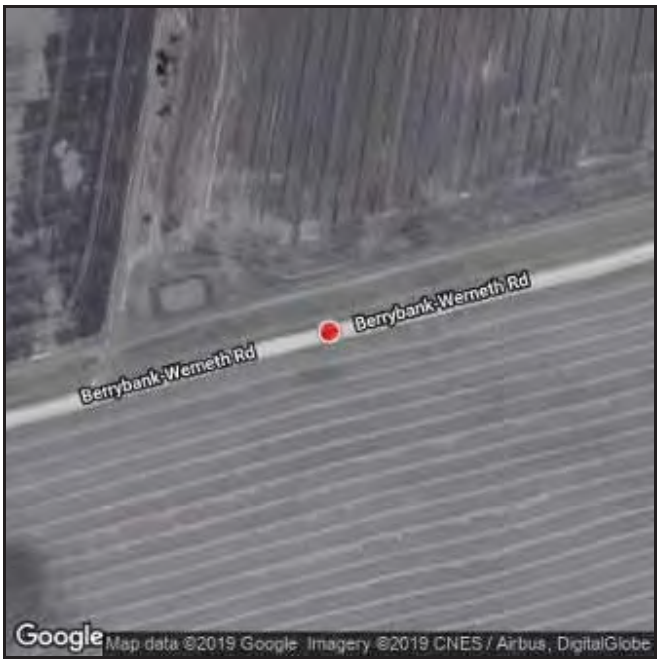
IMG_3775.JPG
S 37° 57' 48.01"
E 143° 30' 20.71"
7/01/2019


Berrybank-Werneth
Berrybank-Werneth Rd
Google
Map data ©2019 Google Imagery ©2019 CNES / Airbus, DigitalGlobe


Berrybank-Werneth
Berrybank-Werneth Rd
Google
Map data ©2019 Google





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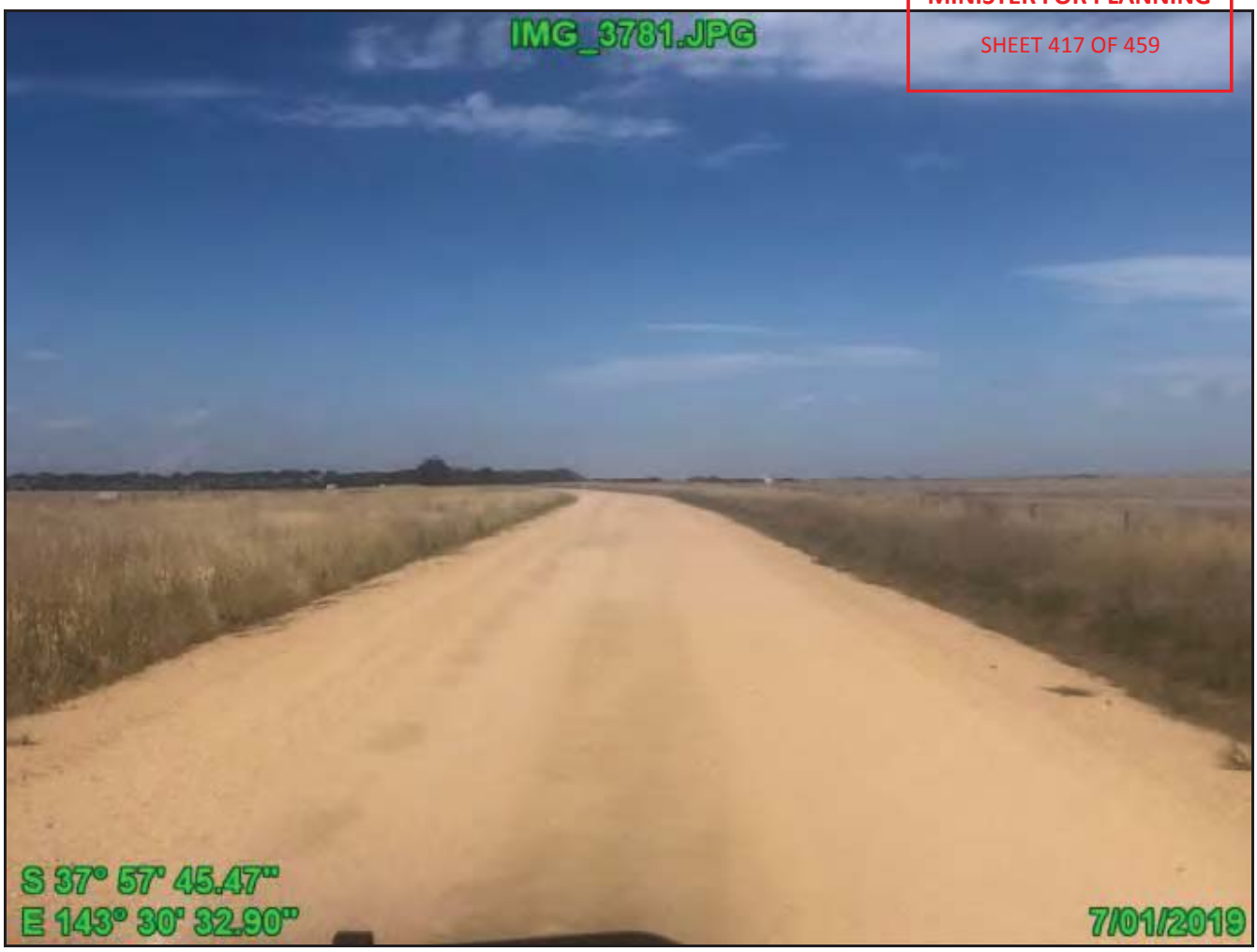


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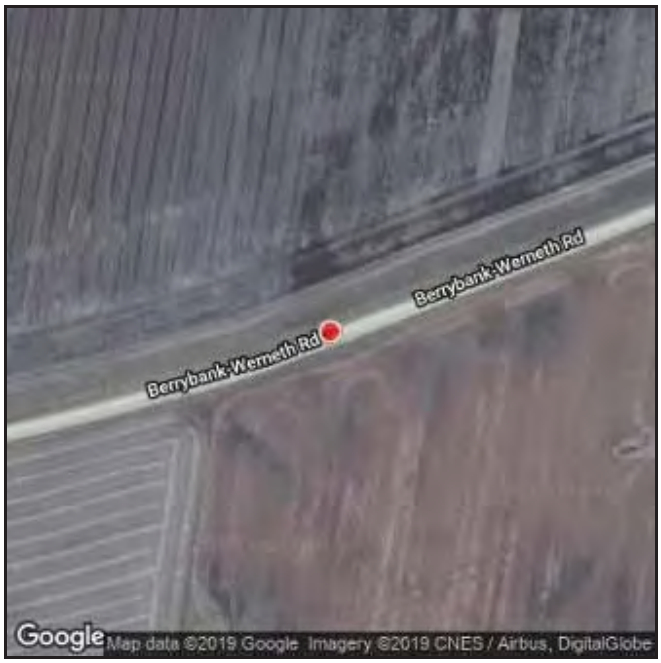
E 143° 30' 40.76"
7/01/2019


Berrybank-Werneth Rd
Berrybank-Werneth Rd
Google
Map data ©2019 Google Imagery ©2019 CNES / Airbus, DigitalGlobe


Berrybank-Werneth Rd
Berrybank-Werneth Rd
Google
Map data ©2019 Google

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MINISTER FOR PLANNING

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MINISTER FOR PLANNING

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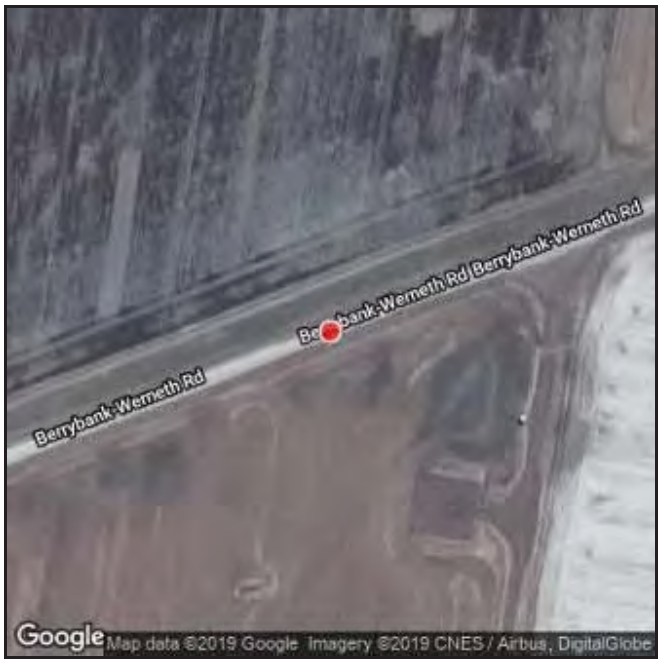

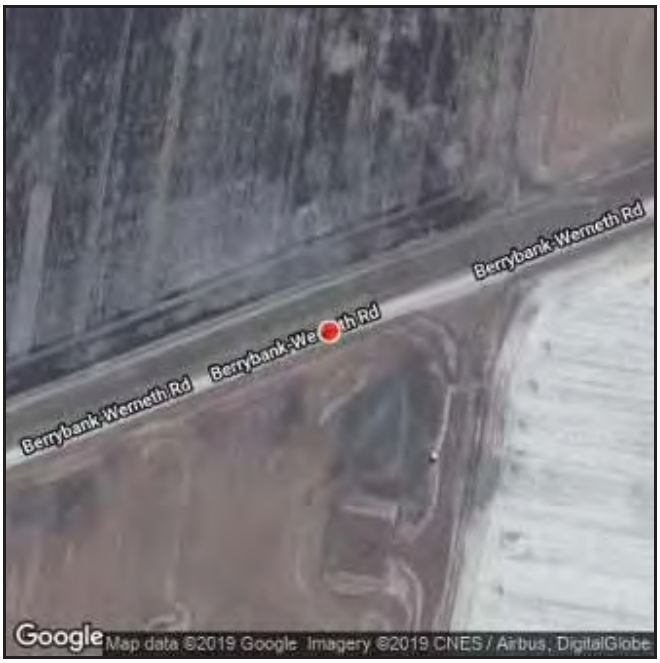

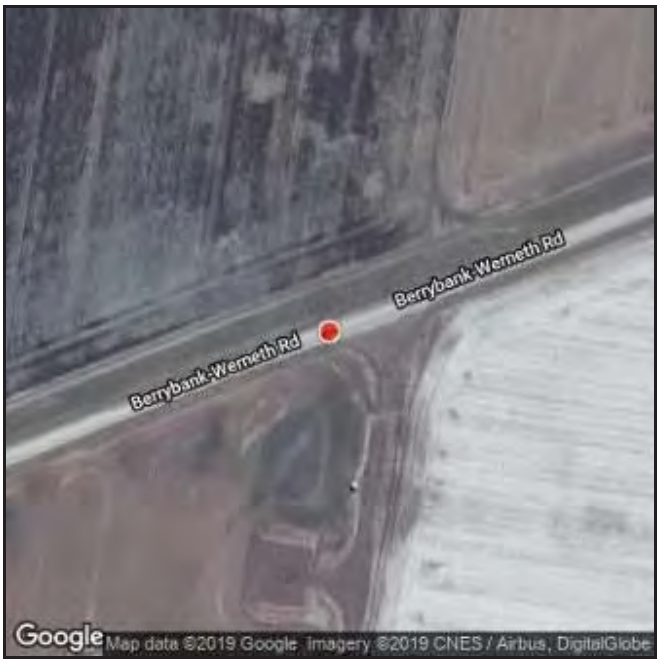

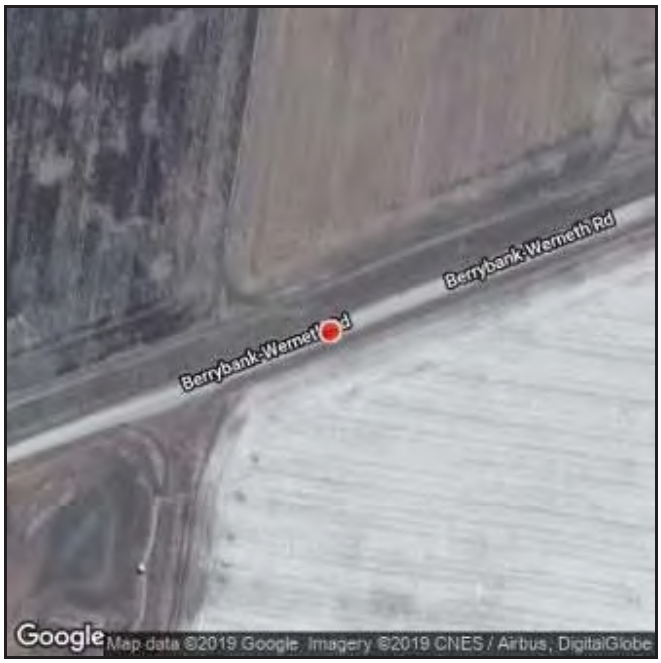

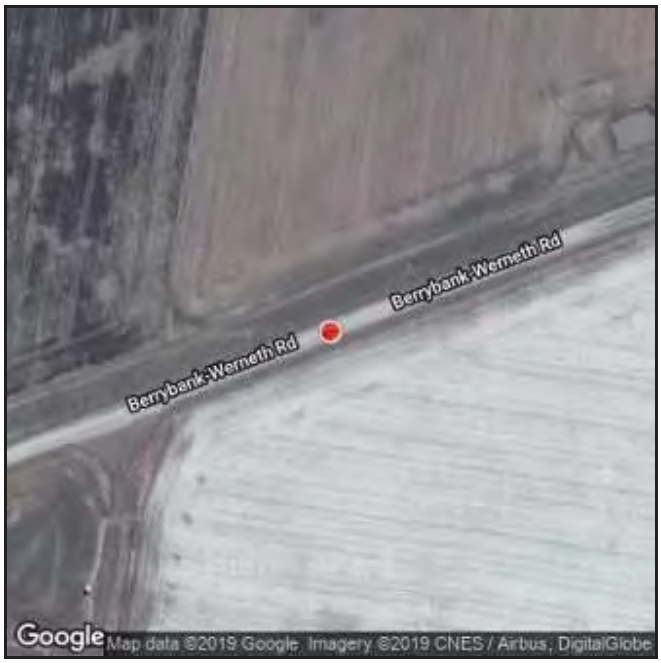

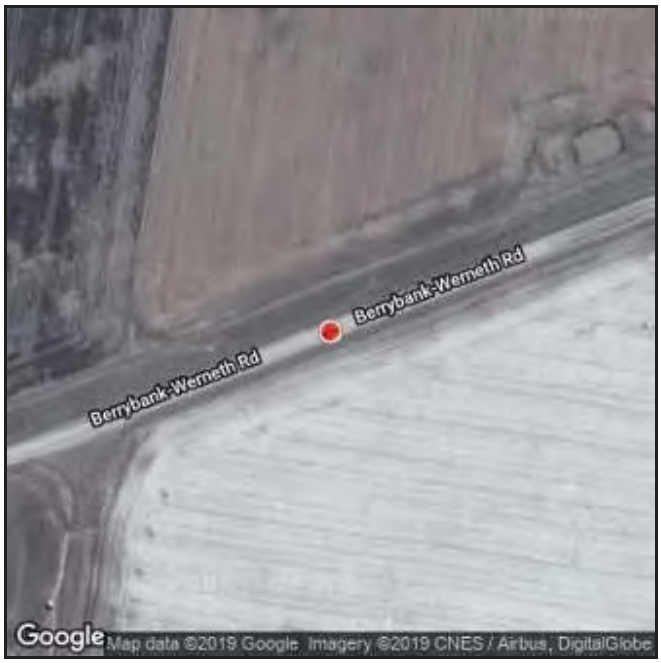

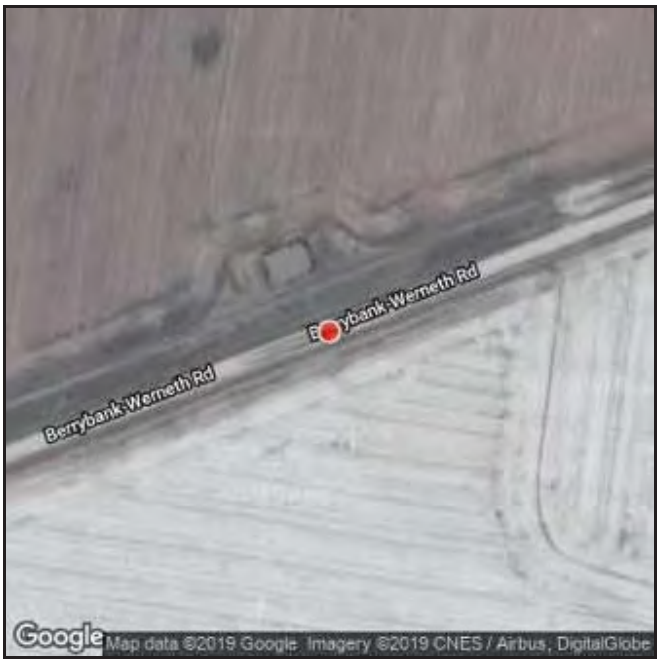

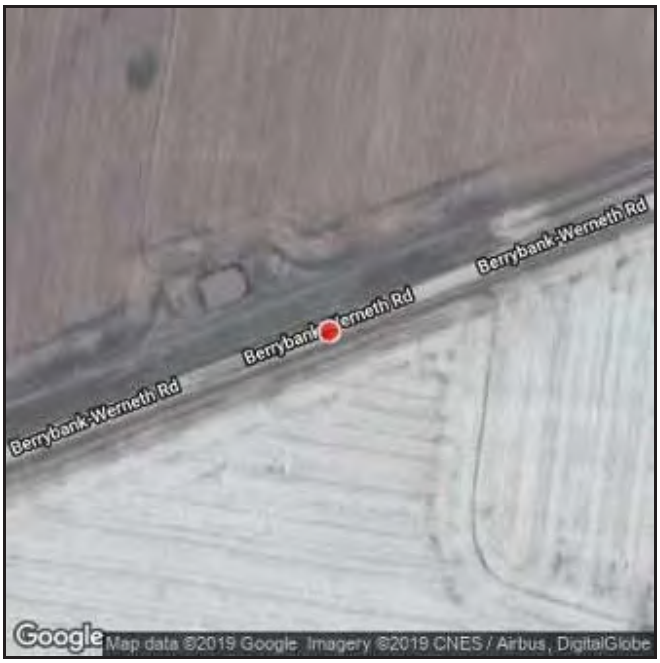

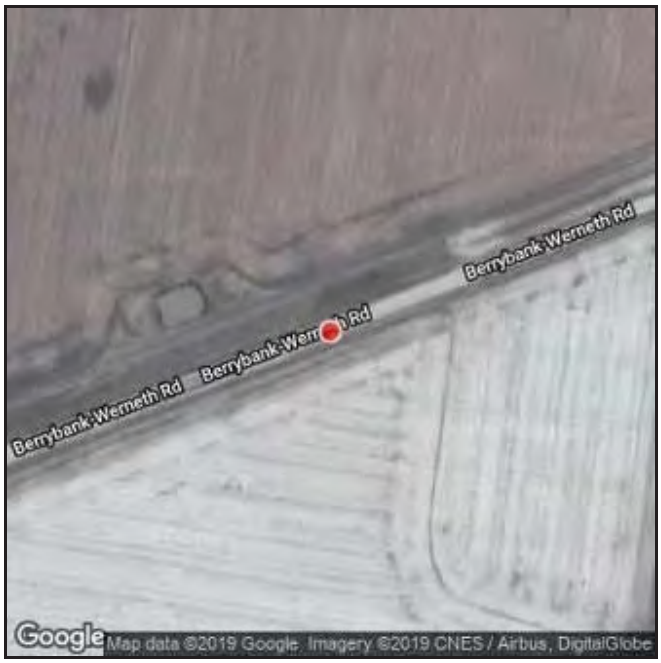

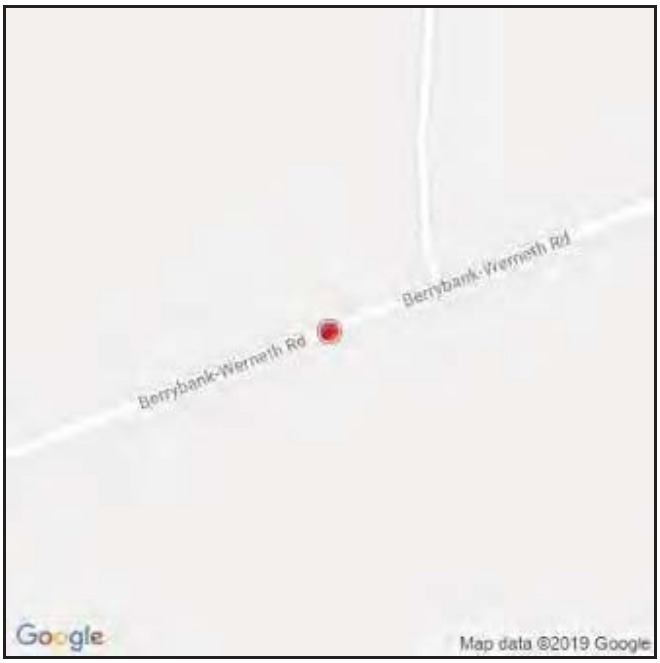

Memorandum

To:	Matthew McIntyre - Development Engineer - Golden Plains Shire Council
From:	Kevin Donnelly (MPC Kinetic)
Date:	30/01/2019
Subject:	Golden Plain Shire Council Requested Public Road Dilapidation Survey in the Vicinity of the Berrybank Wind Farm

Dear Matthew

INTRODUCTION

As per your previous correspondence with Mr Joshua Dwyer of AECOM (email dated 19/12/2018) and with myself on the 25th January 2019, the Berrybank Wind Farm Project agreed to undertake a dilapidation video survey to capture the existing conditions of the nominated roads listed below.

It was agreed that this survey meets Condition 10B of Planning Permit P2009/2820 states that "an existing conditions survey of public roads developed in consultation with Golden Plains Shire Council and VicRoads (as relevant) that may be used for access and designated construction transport vehicle routes in the vicinity of the wind energy facility"

The agreed method was to video these roads and accompanied with a cover letter. Any significant areas of distress or failure will also be photographed and noted in the cover letter.

ROADS TO BE SURVEYED;

1. Padgetts Lane – 10.5km
2. Urchs Road – 8.5k
3. Boundary Road – 6km
4. Bennetts Road – 3.5km
5. Berrybank – Wallinduc Road – 9.5km

SURVEY

This survey was undertaken on the 30/01/2019 prior to the construction works commencing. The survey has been divided up into the following videos files;

1. GOPR0206 – Padgetts Lane from the Lismore Road (Ch. 0) to the Berrybank – Wallinduc Road (Ch. 4500).
2. GOPR0207 – Padgetts Lane from Berrybank – Wallinduc Road (Ch. 4500) to Ch. 7200
3. GOPR0208 – Padgetts Lane from Ch. 7200 to Ch. 10200
4. GOPR0209 – Padgetts Lane from Ch. 10200 to Ch. 10500
5. GOPR0210 – Urchs Road from the Wilgul – Werneth Road Junction (Ch. 0) to Ch. 3200
6. GOPR0211 – Urchs Road Ch. 3200 to Ch. 7200
7. GOPR0212 – Urchs Road Ch. 7200 to Ch. 8600 (Berrybank – Wallinduc Road)
8. GOPR0213 – Boundary Road from Berrybank – Wallinduc Road (Ch. 0) to Ch. 1600
9. GOPR0214 – Boundary Road from Ch. 1600 to Ch. 3700 (intersection with Bennett's Road)
10. GOPR0215 – Boundary Road from Ch. 3700 to Ch. 6000
11. GOPR0216 – Bennetts Road from Boundary Road intersection (Ch. 0) to Padgetts Lane (Ch. 1650)
12. GOPR0217 – Bennetts Road from Padgetts Lane (Ch. 1650) to Urchs Road (Ch. 3400)
13. GOPR0218 - Berrybank – Wallinduc Road from Boundary Road (Ch. 0) to Ch. 5300
14. GOPR0219 - Berrybank – Wallinduc Road from Ch. 5300 to Ch. 8100
15. GOPR0220 - Berrybank – Wallinduc Road from Ch. 8100 to 9400.

FINDINGS

1. Padgetts Lane is a sealed single lane two-way road as far as Bennetts Road where it turns to an unsealed single lane two-way road. The seal was in fair condition with typical pavement failure evident along its route, edge break and subgrade failure being the most common, particularly at junctions and entrances.

GOPR0206 00:12 	GOPR0206 04:17 
GOPR0207 02:15 	GOPR0207 03:52 

2. Urchs Road is a sealed single lane two-way road. The seal was in fair condition with typical pavement failure evident along its route, edge break and subgrade failure being the most common, particularly at junctions and entrances. There was significant evident of pothole repairs and seal patching along the route.

GOPR0210 03:48 	GOPR0211 00:21 
GOPR0211 02:06 	GOPR0212 00:40 
GOPR0212 01:00 	

3. Boundary Road is an unsealed single lane two-way road. The road from the Berrybank – Wallinduc Road to Bennetts Road appears to be constructed on subgrade, with little to no pavement present.
   Overall the condition of Boundary Road in this section is **extremely poor to dangerous.** There is regular deep rutting in the wheel tracks, in places up to 300mm deep.
   Emergency works should be taken immediately to create safe passage along the road and a crushed rock pavement placed to make it accessible to the public during wetter conditions.

GOPR0213 02:14	GOPR0213 02:26
	

4. Bennetts Road is an unsealed single lane two-way road. Overall the road is in good condition.

5. Berrybank – Wallinduc Road is a sealed single lane two-way road. The seal was in fair condition with typical pavement failure evident along its route, edge break and subgrade failure being the most common, particularly at junctions and entrances. There was significant evident of pothole repairs and seal patching along the route.

GOPR0218 03:21	GOPR0218 03:26
	
GOPR0218 03:34	GOPR0219 00:09
	

MPC KINETIC

GOPR0219 00:56	GOPR0219 02:01