Hawkesdale Asset Pty Ltd as trustee for Hawkesdale Asset Trust

Commercial-in-Confidence

14-Sep-2021

Hawkesdale Wind Farm

Traffic Management Plan

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 1 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Hawkesdale Wind Farm

Traffic Management Plan

Client: Hawkesdale Asset Pty Ltd as trustee for Hawkesdale Asset Trust

ABN: 59 553 743 263

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

14-Sep-2021

Job No.: 60576907

AECOM in Australia and New Zealand is certified to ISO9001, ISO14001 AS/NZS4801 and OHSAS18001.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 2 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Quality Information

Document Hawkesdale Wind Farm

Ref 60576907

Date 14-Sep-2021

Prepared by Aaron Musgrave, Timothy Clune

Reviewed by Timothy Clune, Catherine Vick

Revision History

Rev	Revision Date	Details	Authorised	
			Name/Position	Signature
0	January 2011	Final – Issued to Client	Alex Iljin	
1	27 April 2011	Final – Updated with DPCD comments	Alex Iljin	
2	13 May 2011	Final – Updated with DPCD comments	Alex Iljin	
3	23 December 2011	Final – Updated with DPCD comments	Alex Iljin	
4	21 October 2014	Final – Issued to client with amendments to sections 2.6, 3 and Appendix A	Gavan Banks	
5	21 August 2015	Report updated for revised development permit application for new turbine number and size	Emilio De Paulis	
6	4 December 2015	Final - client comments included	Emilio De Paulis	
7	28 February 2017	Final – Tables 2-1, 3-3 & 3-4 updated vehicle volumes for new turbine size.	Emilio De Paulis	
8	24 March 2017	Final – DELWP requested additional information added Section 4.5.1 updated and section 4.5.3 added.	Emilio De Paulis	
9	18-May-2018	Draft v.1 report update following time lapse and updated permit conditions	Trevor March Team Leader and Principal Project Manager	
10	8-June-2018	Final	Trevor March Team Leader and Principal Project Manager	

11	13-Nov-2020	Update for client review and comment	Alison Slater Manager – Infrastructure Services Team	
12	17-Feb-2021	Updates following MSC and DoT-RRV review comments on revision 11	Alison Slater Manager – Infrastructure Services Team	
13	16-Apr-2021	Updates following MSC and DoT-RRV review comments on revision 12	Alison Slater Manager – Infrastructure Services Team	
14	14-Sep-2021	FINAL - updates following MSC and DoT-RRV review comments on revision 13	Alison Slater Manager – Infrastructure Services Team	

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 4 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Table of Contents

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 6 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Abbreviations

Abbreviation	Definition
AADT	Average Annual Daily Traffic
AECOM	AECOM Australia Pty Ltd
AWDT	Average Weekday Daily Traffic
DoT	Department of Transport
HAPL	Hawkesdale Asset Pty Ltd
HDWF	Hawkesdale Wind Farm
HML	Higher Mass Limits
HV	Heavy vehicle (i.e. truck)
LOS	Level of Service
LV	Light vehicle (i.e. car)
km	Kilometre
km/h	Kilometres per hour
MSC	Moyne Shire Council
NHVAS	National Heavy Vehicle Accreditation Scheme
NHVR	National Heavy Vehicle Regulator
NVP	Native Vegetation Plan
OD	Over-dimensional
OSOM	Oversize Overmass
RRV	Regional Roads Victoria
SISD	Safe Intersection Sight Distances
TMP	Traffic Management Plan
WTGs	Wind Turbine Generators

Glossary of terms

Term	Definition
AADT	This measurement provides the total volume of vehicle traffic of a road for a year divided by 365 days.
AWDT	Average daily traffic volume between Monday and Friday.
Average delay	This is the average amount of time it takes a vehicle to negotiate an intersection, including the time to negotiate corners and the time stopped in queues or waiting for a green signal.
Mid-block	A location around the mid-point between two intersections.
Other Injury	Injury sustained in a road crash for which a person did not require hospitalisation.
Permit holder	The permit holder for this project would be Hawkesdale Asset Pty Ltd
Road Quality Auditor (RQA) / Pavement Engineer	Independent Road Quality Auditor and the Road Pavement Engineer are used interchangeably as part of the planning conditions and within this TMP.
Serious Injury	Injury sustained in a road crash for which the person was admitted to hospital.
VicRoads	VicRoads is now referred to as either the Department of Transport (DoT) or Regional Roads Victoria (RRV). VicRoads is however still referred to in older planning permits.

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.
- Department of Transport (VicRoads) – General Guidance.
- Department of Transport (VicRoads) Heavy Vehicle Network Maps in Victoria.
- Department of Transport (VicRoads) Road Management Plan.
- National Heavy Vehicle Regulator (NHVR) website / journey planner.
- Victorian Planning Provisions, clause 52.32 – Wind Energy Facility.
- Best Practice Guidelines for Implementation of Wind Energy Projects in Australia, Clean Energy Council, June 2018.
- Representatives from DoT (RRV) and MSC.

1.0 Introduction

AECOM Australia Pty Ltd (AECOM) have been commissioned by Hawkesdale Asset Pty Ltd as trustee for Hawkesdale Asset Trust (HAPL), a wholly owned subsidiary of Global Power Generation Australia Pty Ltd (GPGA), to produce a Traffic Management Plan (TMP) to consider, plan for and mitigate traffic and transport issues during the construction period of the approved Hawkesdale Wind Farm (HDWF).

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 HDWF site.

The requirements of the TMP as detailed in conditions 10 to 16 of the HDWF planning permit (Permit No. 20060221 - A) are addressed by this TMP.

A further addendum TMP will be created by the nominated contractor to inform VicRoads (now referred to as Department of Transport (DoT) / Regional Roads Victoria (RRV) and Moyne Shire Council (MSC) of any change in information as and when it is known. Further details on addendum TMP triggers are provided in Section 9.1.

1.1 Project background

The proposed HDWF is located north and south of the Woolsthorpe-Heywood Road, approximately bounded by Penshurst-Warrnambool Road to the west, and by Camerons Road to the east.

URS Australia Pty Ltd (now AECOM) was commissioned to carry out the TMP for the public roads defined as the preferred transportation routes for this project in response to the HDWF development fulfilling their requirements of Planning Permit Conditions 10, 11 and 12 under Permit No. 20060221 issued by the Minister for Planning and Environment on 12 August 2008.

The amended Planning Permit No. 20060221 - A was issued by the Minister for Planning on 21st December 2017, in which additional permit conditions had been included, 11 (n) to 11 (z).

AECOM have been commissioned to provide a TMP report to reflect the current HDWF project, address the above permit conditions and stakeholder requirements.

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 HDWF project.
- Minimise impact of the works required for the HDWF development 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 10 to 16 of the HDWF project's planning permit (Permit No. 20060221 - A).

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

1.3 Legislation, policy and guidelines

A review of relevant legislation, policy and guidelines to the be considered in the completion of this TMP has been conducted and is provided in Appendix A.

1.4 Planning Permit Conditions

The planning permit (no. 20060221 - A) conditions 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 permit can be made available upon request.

Table 1 Planning permit condition requirements addressed in this TMP

Condition Requirements		TMP Reference	Comment
Number	Details		
10	Before the installation of wind turbines, the road construction works as shown on the plan(s) endorsed under Condition 11 must be completed by the permit holder and assessed by a suitable qualified road pavement engineer in consultation with Moyne Shire Council and VicRoads to the satisfaction of the Minister for Planning.	Refer Chapter 7.0	
11	Before the development starts, a traffic management plan must be prepared in consultation with Moyne 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 the permit. The plan must include:	Refer Section 1.5 and Appendix B	
11 (a)	An existing condition survey of public roads in the vicinity of the wind energy facility that may be used for access, including details of the suitability, design and construction standard of the roads.	Refer Chapter 7.0	
11 (b)	The designation of appropriate construction and transport vehicle routes to the wind energy facility site.	Refer Chapter 4.0	
11 (c)	The designation of operating hours and speed limits for trucks on routes accessing the site so as to avoid the time and routes of passage of school buses where relevant, and to provide for resident safety.	Refer Sections 8.4.8 and 8.5	
11 (d)	Identify any areas of indigenous roadside vegetation that may require removal or pruning, the pruning practices to be followed and the planning permit requirements for removal of native vegetation.	Noted	*Initial advice from DELWP would be to address this condition as part of the Native Vegetation Plan (NVP) required by planning condition 23.*
11 (e)	The identification and timetabling of any required pre-construction works.	Refer section 2.2.1, Chapter 6.0 and Table 14	*The mitigation measures proposed in Chapter 6 are the pre-construction works. They relate to the road/intersection upgrades and protocols required to be implemented prior to those being used, particularly for*

Condition Requirements		TMP Reference	Comment
Number	Details		
			construction purposes.
11 (f)	The designation of principal and other 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 fully consider desirable standards to ensure safe site distances, turning movements, and potential through traffic conflicts.	Refer Chapters 4.0, 6.0 and Appendix D	
11 (g)	Details of any large over dimension vehicles to be used (such as those used for the transport of the nacelles, blades and tower sections) and details of the transport route to be taken, the proposed escort arrangements and requirements for over dimensional permits from VicRoads.	Refer Section 4.3 and 8.4.4	
11 (h)	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.	Refer Chapters 4.0, 6.0 and Appendix D	
11 (i)	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 Chapter 5.0 and Sections 2.2.2, 4.3.3, and 6.1.5	
11 (j)	Engineering plans demonstrating how truck movements can be accommodated on sealed roadways and turned without encroaching onto the incorrect side of the road must be prepared for the Princess Highway / Penshurst-Port Fairy Road intersection. The plan must include details of any required road construction works.	Refer Chapter 6.0 and Appendix D	*Note subject to final contractor vehicle swept path assessments and functional / detailed designs*
11 (k)	Access roads and intersection upgrades in Penshurst – Warrnambool Road and Woolsthorpe – Heywood Road designed to avoid or minimise disturbance or removal of native vegetation.	Refer Chapter 6.0 and Appendix D	
11 (l)	A program of regular inspections to be carried out during the construction period to identify maintenance works necessary as a result of construction traffic.	Refer Chapter 7.0	
11 (m)	A program to rehabilitate roads to the condition identified by the surveys required above by Condition 11(a); and	Refer Chapter 7.0	
11 (n)	Consideration of road sealing, the construction of gravel shoulders and associated drainage works for roads required for use in the construction of the wind energy facility, depending on anticipated traffic volumes and composition of vehicles movements.	Noted	*Noted. The two site access points are located on VicRoads Class C Arterial Roads.*
11 (p)	Plans prepared under this condition must include cross-sections showing their formation, depth,	Noted	*Task would be subject to the*

Condition Requirements		TMP Reference	Comment
Number	Details		
	drainage, surface levels, in consultation with the relevant road authority, to the satisfaction of the Minister for Planning.		*functional / detailed design stage of the HDWF project.*
11 (q)	The scope of the expertise, duties and role of the nominated suitably qualified road pavement engineer engaged under Condition 13, including inspection frequency and reporting requirements.	Refer Section 7.2	*Independent Road Quality Auditor will be a qualified road pavement engineer agreed with relevant stakeholders*
11 (r)	The number and type of anticipated vehicle movements and the time of day when local roads will be used.	Refer Chapter 5.0 and Section 8.5	
11 (s)	The designation of all vehicle access points to the wind energy facility site from surrounding roads. Vehicular access points must be designed and located to ensure safe line of sight distances and turning movements, and to avoid potential through-traffic conflicts.	Refer Chapters 2.0, 6.0 and Appendix **D**	*Noting eastern access point already constructed*
11 (t)	The designation of appropriate construction and transport vehicle routes to and from the wind energy facility site.	Refer Chapter 4.0	
11 (u)	Provision of designated areas for loading zones.	Refer section 2.2	*Loading zones only required within the project site. Designated storage yards would be used for OD components*
11 (v)	Measures to be undertaken to record traffic volumes on the nominated road network during the construction of the wind energy facility.	Refer Section 8.1.3	
11 (w)	Proposed measures to ensure workers enter and exit the wind energy facility site from the designated site entrance points.	Refer Section 8.2	
11 (x)	Proposed measures to ensure construction vehicles are easily identifiable.	Refer Section 8.4.3	
11 (y)	Proposed measures to manage traffic impacts associated with the ongoing operation of the wind energy facility on the traffic volumes and flows on surrounding roads.	See Chapter 5.0	*Ongoing operation of the facility will induce little or no demand.*
11 (z)	A program to rehabilitate existing public roads (road rehabilitation responsibilities can be assigned to the relevant road authority by way of contract or levy) within agreed timeframes to the condition identified in the surveys carried out under Condition 11 (a) or to the condition to which the roads have been upgraded, whichever is relevant.	Refer Chapter 7.0	
12	Moyne Shire Council may require the payment of a security deposit or bond for a maintenance period of 12 months in respect of works covered by the Traffic	Refer Chapter 7.4.1	*The two site access points are located on*

Condition Requirements		TMP Reference	Comment
Number	Details		
	Management Plan, with such security deposit or bond to be released at the end of that period.		*VicRoads Class C Arterial Roads.*
13	The applicant must submit an updated Traffic Management Plan to the Moyne Shire Council and VicRoads, to the satisfaction of the Minister for Planning, within 28 days of: a. A significant increase in vehicle numbers, determined by a suitably qualified road pavement engineer, above the anticipated vehicle movements identified in the endorsed Traffic Management Plan, or b. Any change to an endorsed vehicle route identified in the endorsed Traffic Management Plan.	Refer Section 9.1	*Noted by HAPL*
14	Before the endorsement of the Traffic Management Plan, the permit holder must submit to Moyne Shire Council and VicRoads for approval, an independent qualified road pavement engineer who will undertake the duties identified in the Traffic Management Plan. Once approved, the permit holder must engage, at its cost, the approved qualified road pavement engineer to fulfil the requirements of the qualified road pavement engineer as defined in the Traffic Management Plan. Once approved, the permit holder must engage, at its cost, the approved qualified road pavement engineer to fulfil the requirements of the qualified road pavement engineer as defined in the Traffic Management Plan.	Refer Section 7.2	*Noted by HAPL,*
15	The traffic management and road upgrade and maintenance works associated with wind energy facility must be carried out in accordance with the traffic management plan and the cost of any works including maintenance are to be at the expense of the permit holder to the satisfaction of the relevant road authority.	N / A	*Noted by HAPL*
16	Before the commencement of construction of wind turbine footings, crane hardstand, internal access roads and substation, all vehicular entrances to the proposed wind energy facility from either the Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road must be designed constructed to standards specified by VicRoads and Moyne Shire Council to the satisfaction of VicRoads.	N / A	*Noted by HAPL – subject to detailed design and appropriate sign-offs as specified*

1.5 Stakeholder Consultation

Stakeholder consultation on the development of the TMP for the HDWF project has occurred over a period of time, the background consultation pre-2020 is provided in Appendix B to give background to how certain HDWF project proposals have been developed.

Given the time lapse and stakeholders renewed thinking on TMP requirements the stakeholder consultation on the TMP have been undertaken anew. AECOM have liaised with DoT – RRV (formerly referred to as VicRoads) and MSC during the preparation of this TMP, a summary of their respective comments is provided below in the relative subsections. Appendix B also contains evidence of this consultation.

1.5.1 Department of Transport – Regional Roads Victoria (formerly VicRoads)

1.5.1.1 November 2020

DoT-RRV provided comments on the updated revision 11 HDWF TMP via email on Monday 30 November 2020, which are provided in Appendix B, along with a response sheet to those comments as to the relative updates as part of the revision 12 report.

1.5.1.2 April 2020

DoT-RRV provided comments on revision 13 of the HDWF TMP via email on 22 April 2021. The detail of the feedback is provided in Appendix B and relates to maximum vehicle volumes permitted without additional approval from DoT-RRV and the costs of damage caused and not remedied by HAPL (according to the RQA report) will be charged to HAPL. DoT-RRV confirmed in their correspondence dated 22 April 2021 that the HDWF TMP would be to their satisfaction once the above-mentioned feedback is addressed in the revised TMP.

1.5.2 Moyne Shire Council

1.5.2.1 September 2020

A teleconference meeting between MSC, GPG and AECOM was held on Wednesday 9 September 2020 to discuss TMP requirements.

The following is an overview of TMP inclusions and other considerations to be made based on MSCs recent project experiences:

- Provide further clarification around the use of Youls Road during construction and necessary upgrade requirements.
- Provide confirmation of local quarries used on the project, including locations and the surrounding local road usage.
- Provide further details around local road condition and monitoring strategy. MSC provided an example document for reference, which is consistent with their expectations around wording and content (however noting that inputs had been further redefined since).
- Ensure TMP requirements are filtered down to subcontractors on the project. MSC have implemented a levy system whereby penalties are incurred for non-compliance.
- Community relations must be a priority to ensure all aspects of project are communicated and managed in a suitable manner.

Following the meeting MSC sent an email on Wednesday 16 September 2020 outlining MSC's requirements with regards to infrastructure condition inspections, rehabilitation program, construction vehicle identification and some initial comments on the TMP submitted in 2018.

1.5.2.2 December 2020

MSC provided comments on the updated revision 11 HDWF TMP via email on Monday 21 December 2020, which are provided in Appendix B, along with a response sheet to those comments as to the relative updates as part of the revision 12 report.

1.5.2.3 February 2021

On 17 February 2021, MSC provided feedback regarding Tarrone Lane, baseline photographic dilapidation report, and confirmation around regular RQA inspection and repair timeframes during construction. In particular, Council requested that a Level 2 bridge assessment be undertaken by an independent engineer and at HAPL's cost to assess the suitability of the bridge for the proposed traffic volumes. More detail around MSC's requirements for Tarrone Lane is provided in Appendix B.

2.0 Project Description

2.1 Subject site and locality

The HDWF development is located approximately two kilometres southeast of Hawkesdale in southwest Victoria. The facility is sited around the intersection of Woolsthorpe-Heywood Road and Penshurst-Warrnambool Road.

Penshurst-Warrnambool Road forms a priority intersection with Penshurst-Port Fairy Road approximately 15 kilometres south of the site near the township of Kirkstall. Princes Highway, an DoT nominated over-dimensional (OD) route, forms a priority intersection with Penshurst-Port Fairy Road approximately 22 kilometres south of the site.

A plan showing the HDWF site in relation to the local road network and other neighbouring projects (Ryan Corner Wind Farm and the Tarrone Terminal Station) is shown in Figure 1.

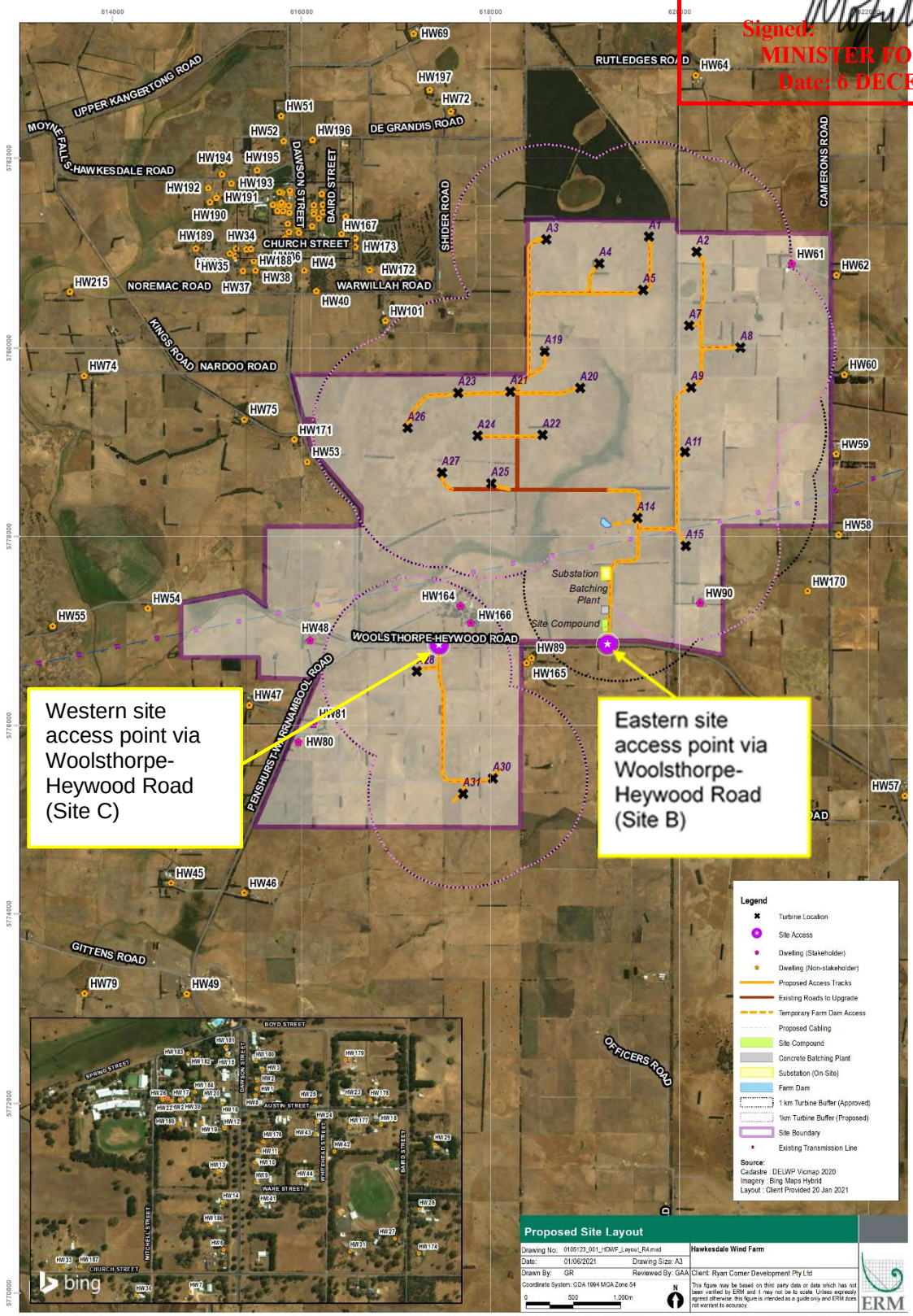
Figure 1 Site location

2.2 Project overview

The HDWF project consists of up to 23 WTGs which includes the following key features:

- Internal access tracks and upgrades to existing/construction of two new access points from the public road network
- Hardstand and laydown areas
- Underground electrical cable installation and substation/switchyard

The HDWF site layout is shown in Figure 2.



Source: ERM Proposed site layout drawing

Figure 2 Proposed HDWF development site layout

2.2.1 Construction program

2.2.1.1 Timing and activities

The construction program for this site is to be a total of approximately 16 months, with a breakdown by work task provided in Figure 3. It should be noted that the commencement date of this program would change following project approval.

The proposed work hours for HDWF are below:

- Monday to Friday: 7am to 6pm.
- Saturday: 7am to 4pm (noting 1pm to 4pm is outside of normal working hours as defined by EPA Publication 1834, referred to as the EPA guidelines).
- Sunday: 7am to 4pm for WTG installation only when weather permits (noting 7am to 4pm is outside of normal working hours as defined by the EPA guidelines).

Works occurring outside of normal working hours as defined by EPA guidelines, will be restricted to:

- Civil works (Saturdays 1pm to 4pm).
- Six-month period for installation of WTGs (Saturdays 1pm to 4pm and Sundays 7am to 4pm).

Outside of normal working hours works will generally be managed impact works or low noise impact works as defined in the EPA guidelines. Outside of normal working hours will also be required for unavoidable works as defined by the EPA guidelines, for a 3-month period and limited to up to 3 days a week for concrete pouring. Please refer to Section 8.5 for more details about proposed works hours and noise and vibration mitigation

The following activities have been identified as pre-construction early works that need to be completed so as not to restrict the safe progress of main construction works:

- Stage 1 – Early Works (completed)

  The Early Works included the construction of the eastern site access off the Woolsthorpe-Heywood Road, along with establishing a site compound, access track from the public road to the compound and ancillary facilities. These works have been undertaken in accordance with the current endorsed TMP (dated December 2011).

- Stage 2 – Main Works

  The Main Works include all other works needed to complete the HDWF development. This includes intersection and public road upgrades recommended from this TMP, construction of the internal access tracks, crane hard stands, wind turbine foundations, substation and grid connection assets and construction of the wind turbine foundations, substation and the installation of all wind turbines. All OD deliveries will be made to HDWF site during Stage 2 works. The eastern site access will require maintenance / upgrade works prior to OD deliveries of WTG components.

2.2.1.2 Construction operations and material sources

At this stage, the following construction material sources and operational requirements are known:

- **Equipment and workers:** transported to the HDWF project site to establish the site. Temporary site offices to be located via the eastern site access point, Site B, via Woolsthorpe-Heywood Road along with associated car parking for private vehicles. If site restrictions exist, then carpooling or mini-bus transfer may need to be considered.
- **Quarry:** The Holcim quarry located on Tarrone Lane is proposed to be used by the project to source material. If any additional secondary quarry sources are required, then an updated TMP would be submitted to relevant stakeholders. At this stage alternative quarries in the event of supply issues are identified as Davidson Quarry and Mt Shadwell Quarry.
- **Concrete batch plant:** an on-site concrete batching plant has been approved on-site (accessed via the eastern site access point, Site B, via Woolsthorpe-Heywood Road) to produce concrete for

use in constructing the WTG foundations. Raw materials to produce concrete would be transported to site by heavy vehicles.

- **Water supply:** a suitable on-site water source has been identified (borehole and existing dam) for dust suppression and road construction, however potable water for concrete production will be imported from Koroit via trucks.
- **WTG components:** sources have yet to be verified and are subject to discussions with manufacturers and Port(s) for delivery logistics. It is likely these components will originate from the west of the site from the Port of Portland (for obvious logistical reasons).
- **On-site loading zones:** as part of the site establishment near each respective WTG, on-site loading zone / areas would be established when HDWF related project materials are delivered. As mentioned, an on-site works compound has been established. Given the site area no construction related vehicles will be parked outside of the HDWF site boundary.

2.2.2 Operations stage

Following commission, HDWF is expected to operate for approximately 30 years. It is predicted that up to five staff vehicles per day will commute to and from the site each day to undertake general maintenance activities. Generally, maintenance type vehicles with be a mixture of light and medium sized vehicles. Given the low operational traffic generation, no detrimental impacts to the local traffic operations are expected. As such, this TMP does not stipulate detailed measures to be used to manage the light traffic expected to be generated during the operational phase of HDWF.

There could be exceptions to general maintenance in the event of components requiring replacement which could include:

- Wind turbine blade replacement, which requires transport and installation activities similar to that of the construction stage of the HDWF project.
- On-site substation maintenance or replacement.
- Generator or gearbox replacement.

In the above events larger vehicles will require access to HDWF, which may include over-dimensional (OD) vehicles. OD deliveries are will be coordinated to occur during off-peak times where possible and are undertaken under convoy. Under such scenarios the access approvals (e.g. NHVR) and mitigation measures to facilitate the safe access of OD vehicles will be required, with a specific TMP completed by the transport contractor under this scenario.

2.2.3 De-commissioning stage

As required by Condition 63 of the planning permit, at the time of decommissioning of HDWF, a decommissioning traffic management plan will be submitted to the Minister for Planning for approval. When approved by the Minister for Planning, the decommissioning traffic management plan will be implemented.

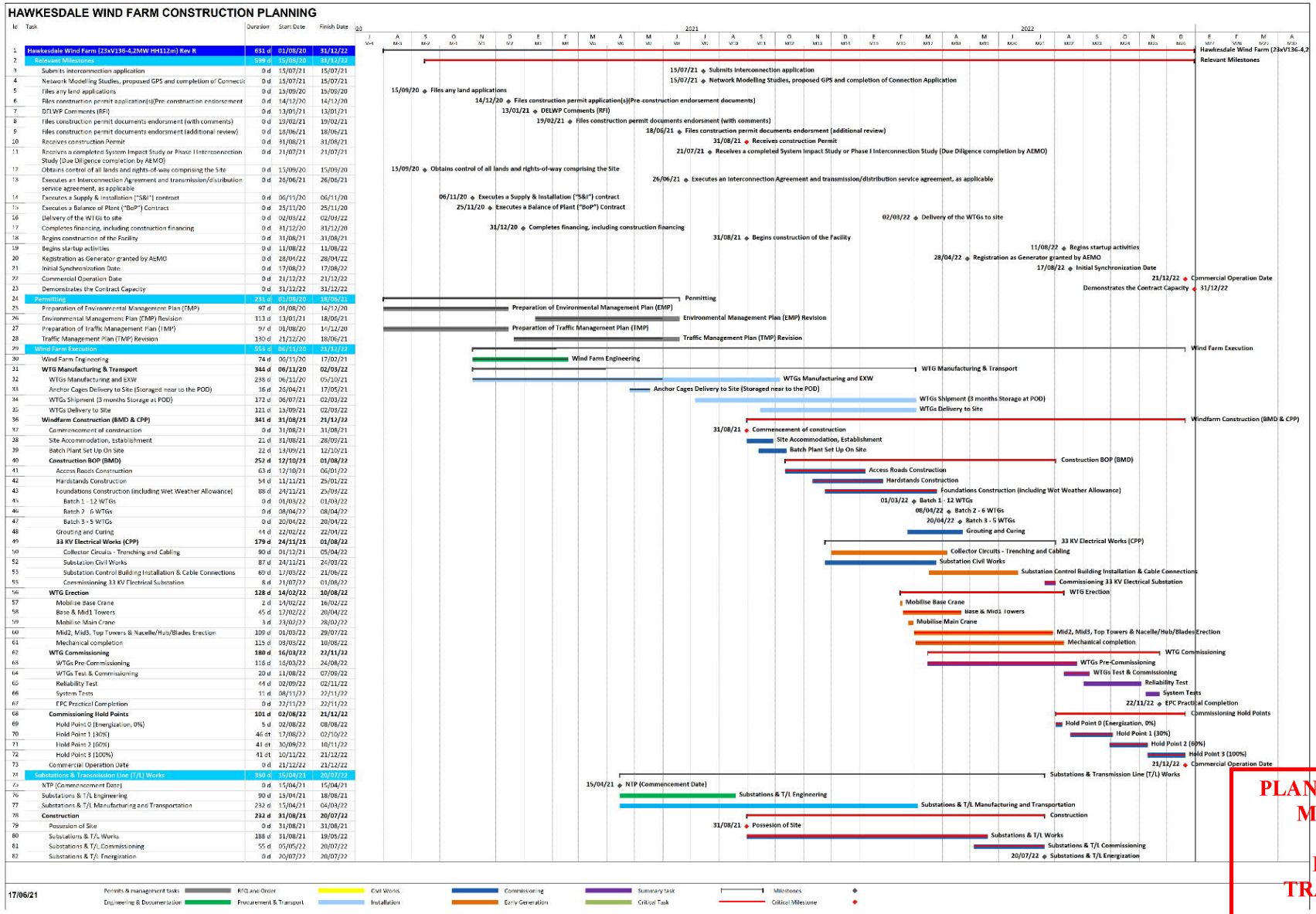


Figure 3 HDWF project program

3.0 Existing Conditions

3.1 Local road network

The site location in the context of the local road network was shown in Figure 1. Table 2 provides a summary of the key transport elements of the existing road network conditions to the HDWF.

Table 2 Existing road conditions near HDWF

Transport element	Henty Highway	Princes Highway	Penshurst-Port Fairy Road	Penshurst-Warrnambool Road	Woolsthorpe-Heywood Road	Tarrone Lane
Speed Limit (kph)	100	100	100	80 / 100	Varies 60 / 80 / 100	100
Classification	Highway	Highway	Arterial	Arterial	Arterial	Local
Managed by	DoT	DoT	DoT	DoT	DoT	MSC
Approx. road width (m)	7.0	7.0	7.3	7.0	6.2	6.4
Road surface	Sealed	Sealed	Sealed	Sealed	Sealed	Sealed
Total number of lanes	Two	Two	Two	Two	Two	Two
Traffic Control	Priority	Priority	Priority	Priority	Priority	Priority
Heavy vehicle classified	Approved route for B-Double and Higher Mass Limit vehicles					B-Double permitted

3.2 Traffic Conditions

Table 3 provides 2020 estimated average weekly daily traffic (AWDT) traffic volumes for the key local roads, as well as their respective estimated AM and PM peak hour traffic volumes (assumed peak hour volumes are the same for robustness of review).

As shown given a typical one-way road capacity is 900 vehicles per hour (two-way 1,800 vehicles per hour) there is spare network capacity to facilitate construction and operational traffic demands associated with HDWF.

Table 3 Existing 2020 Average Weekday Daily Traffic Volumes and Peak Hour (one hour) Volumes

Road	2020 Estimated AWDT Volumes		2020 Estimated Peak Hour Volumes		Commercial Vehicle Proportion (%)
	Two-way	One-way	Two-way	One-way	
Princes Highway	4,368	2,184	437	218	15
Penshurst-Port Fairy Road	829	414	83	41	13
Penshurst-Warrnambool Road	2,352	1,176	235	118	13

Road	2020 Estimated AWDT Volumes		2020 Estimated Peak Hour Volumes		Commercial Vehicle Proportion (%)
	Two-way	One-way	Two-way	One-way	
Woolsthorpe-Heywood Road	907	454	91	45	9
Tarrone Lane	344	172	34	17	34

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 HDWF.

3.3.2 Public Transport - Bus

DoT provided a .kml file of known bus routes in the study area in September 2020. This advised that there are several bus services that operate daily on the local roads near the HDWF site and provided the route information which is shown in Figure 4.

The current bus routes identified surrounding the HDWF site includes:

- School bus services along OD route:
  - Penshurst-Port Fairy Road (Princes Highway to Penshurst-Warrnambool Road)
  - Penshurst-Warrnambool Road (High Street, Koroit to Minjah-Hawkesdale Road)
  - Princes Highway
- Additional service along Construction Vehicle routes:
  - Woolsthorpe-Heywood Road (west of Willatook-Warrong Road)
  - Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road

MSC also advised that local school buses are running along Warrnambool-Caramut Road and Tarrone Lane.

Public bus and school routes are expected to be confirmed prior to construction commencement by the works contractor, with timetabling rechecked prior to recommencement of each school term to ensure that construction vehicles do not operate at the same time.

It should be noted that DoT does not oversee school bus routes for Private Schools (unless a joint route is in operation) and information regarding these routes will have to be sourced separately. However, noting any construction vehicle time restrictions imposed should cover these times periods regardless.

3.4 Crash History Analysis

3.4.1 OD traffic route

VicRoads CrashStats was reviewed for the last five years of crash data (2015 to 2020) for the route from the storage yard at 211 Portland-Nelson Road to the end of the HDWF project boundary at Woolsthorpe-Heywood Road, via Port Fairy Road. A summary of the recorded crashes are provided in Table 4, with the relative location of each crash found shown on Figure 5.

In summary the following has been found:

- A total of 29 crashes were recorded, with 18 ‘other injury’, 10 ‘serious’ and a single fatal crash.
- The single fatal crash occurred in 2019 during night-time conditions and was classified as a non-overtaking head-on crash.
- Of the 10 serious crashes the following was noted:

- No specific re-occurring locations for the crashes found.
- An equal split of crashes occurred in both day and night-time conditions, with weather being dry for all.
- Three of the crashes were classified as off-carriageway into a car/object/bend, with another two crashes classified as non-overtaking head-on.

Table 4 Summary of recorded crashes

Crash No.	Date	Conditions		Vehicles Involved	Crash Type	Severity
		Time	Weather			
1	12/03/2015	Day	Dry	1 Motorcycle	Struck animal	Other injury
2	9/12/2015	Day	Dry	1 LV	Off-carriageway into object/parked car	Other injury
3	23/09/2016	Night	Dry	1 LV	Off-carriageway into object/parked car	Other injury
4	12/10/2016	Night	Dry	2 LV	U turn	Other injury
5	15/02/2017	Day	Dry	1 HV and 1 LV	Sideswipe at intersection	Other injury
6	13/04/2017	Night	Dry	1 LV and 1 Motorcycle	Right near intersection	Other injury
7	15/04/2017	Day	Dry	3 LV	Rear end at intersection	Other injury
8	21/03/2017	Day	Wet	1 HV and 1 LV	Right near intersection	Other injury
9	7/11/2017	Night	Dry	2 LV	Cross intersection traffic	Other injury
10	11/03/2015	Night	Dry	1 LV	Off-carriageway on bend and overturned	Other injury
11	2/12/2015	Day	Dry	2 LV	Right near intersection	Other injury
12	9/02/2016	Day	Dry	1 HV and 1 LV	Left near intersection	Other injury
13	25/01/2016	Day	Dry	2 LV	Right near intersection	Other injury
14	26/07/2017	Day	Wet	2 LV	Rear end in same lane	Other injury
15	15/02/2018	Night	Wet	1 LV	Off-carriageway on bend and overturned	Other injury
16	16/01/2018	Day	Dry	1 LV and 1 Motorcycle	Rear end not at intersection	Other injury
17	9/01/2019	Day	Dry	2 LV	Cross intersection traffic	Other injury
18	2/02/2019	Day	Dry	1 LV	Off-carriageway into object/parked car	Other injury
19	20/09/2015	Day	Dry	1 LV	Off end of road or T-intersection	Serious
20	3/03/2018	Night	Dry	1 Vehicle	Off-carriageway into object/parked car	Serious

Crash No.	Date	Conditions		Vehicles Involved	Crash Type	Severity
		Time	Weather			
21	11/06/2018	Day	Dry	1 LV	Off-carriageway into object/parked car	Serious
22	14/06/2018	Night	Dry	1 LV	Fall in or from vehicle	Serious
23	27/01/2019	Night	Dry	1 LV	Off-carriageway on bend and overturned	Serious
24	9/03/2015	Night	Dry	2 LV	Non-overtaking head-on	Serious
25	21/08/2015	Night	Dry	1 HV	Struck object on carriageway	Serious
26	28/03/2016	Day	Dry	2 LV	Left near intersection	Serious
27	18/02/2018	Day	Dry	2 LV	Right through intersection	Serious
28	1/10/2018	Day	Dry	1 HV and 1 LV	Non-overtaking head-on	Serious
29	20/01/2019	Night	Dry	1 LV and 1 Motorcycle	Non-overtaking head-on	Fatal

3.4.2 Local access to HDWF

VicRoads CrashStats was reviewed for the last five years of crash data (2015 to 2020) for local roads within the immediate vicinity of the site and the route from the Holcim quarry (LIC1128) located on Tarrone Lane to the end of the HDWF project boundary at Penhurst-Warrnambool Road and Woolsthorpe-Heywood Road. A summary of the recorded crashes are provided in Table 5, with the relative location of each crash found shown on Figure 6.

In summary, the crash analysis has shown that:

- A total of ten crashes were recorded on roads located within the vicinity of the HDWF, with seven ‘serious’ and three ‘other injury’ accidents.
- A total of six crashes were recorded along the quarry haulage route, with five ‘serious’ and one ‘other injury’ accident.
- No fatal crash types have occurred.
- Recorded crashes all occurred during the daytime with dry weather conditions.
- There were no crashes involving a secondary vehicle, pedestrians or cyclists, with six involving collisions with a fixed object, and four resulting in an overturned vehicle.

Table 5 Summary of recorded crashes

Crash No.	Date	Conditions		Vehicles Involved	Crash Type	Severity
		Time	Weather			
1	28/01/2016	Day	Dry	1 LV	Collision with a fixed object	Serious
2	21/6/2018	Day	Dry	1 LV	Vehicle overturned (no collision)	Serious
3	9/09/2016	Day	Dry	1 LV	Vehicle overturned (no collision)	Serious
4	13/4/2017	Day	Dry	1 LV	Vehicle overturned (no collision)	Other injury

Crash No.	Date	Conditions		Vehicles Involved	Crash Type	Severity
		Time	Weather			
5	20/09/2015	Day	Dry	1 LV	Collision with a fixed object	Serious
6	16/11/2017	Day	Dry	1 LV	Collision with a fixed object	Serious
7	21/11/2016	Day	Dry	1 LV	Collision with a fixed object	Other injury
8	1/3/2015	Day	Dry	1 LV	Vehicle overturned (no collision)	Serious
9	23/7/2017	Day	Dry	1 LV	Collision with a fixed object	Serious
10	1/1/2018	Day	Dry	1 LV	Collision with a fixed object	Other injury

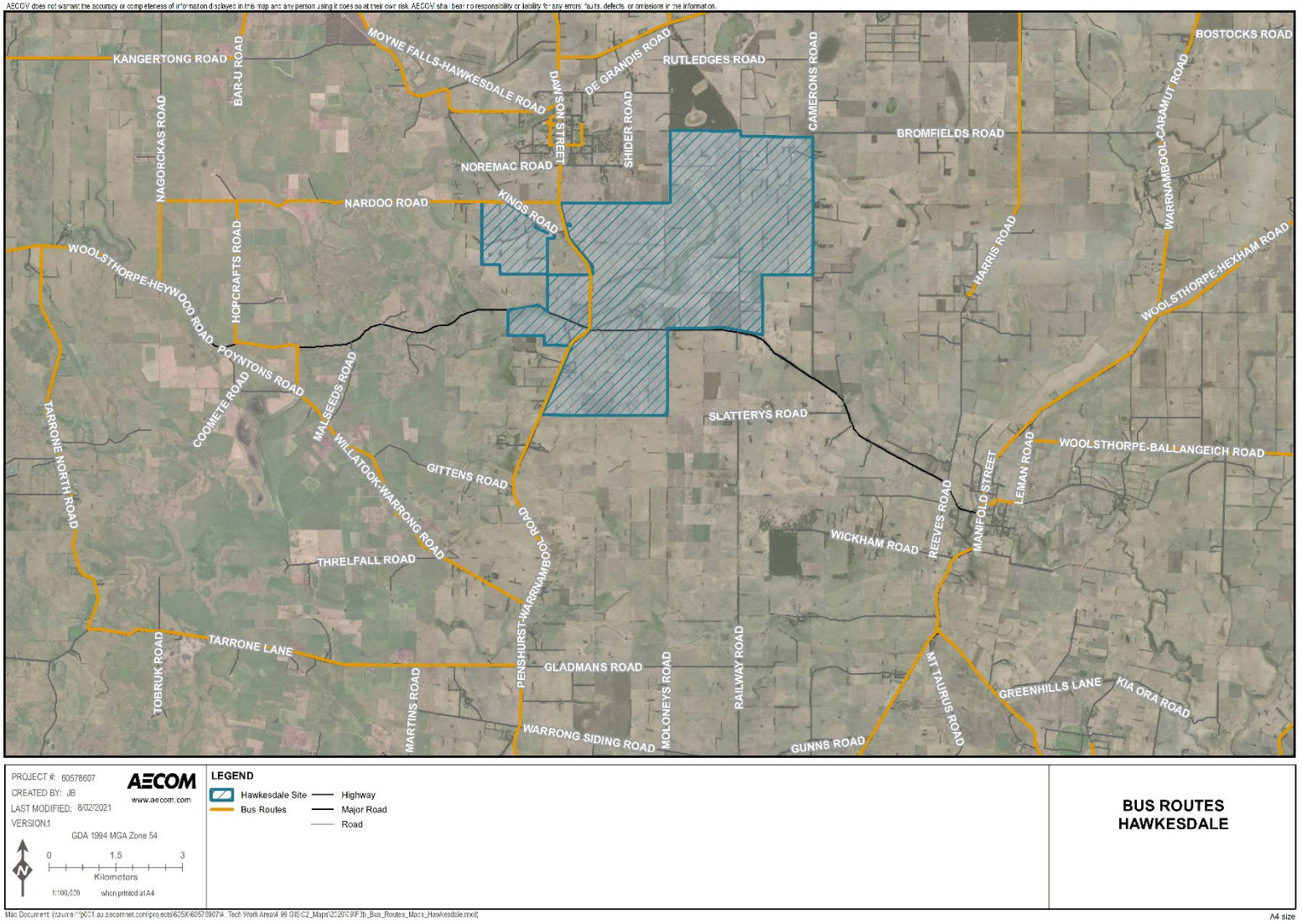
Based on the crash analysis undertaken no infrastructure related improvements have been identified that would require mitigation measures implemented. It is considered that in the case of the OD vehicle transportation that since this is undertaken under convoy and at low speeds that any probability of crash risks would be reduced.

Those crashes occurring on the local road network have all involved a singular vehicle with no fatalities. It is considered that for those to be used by construction vehicles in the immediate vicinity of the site access locations could have reduced speed limits to reduce the potential severity of any crash types, as given that the vast majority of local roads are posted with a 100kph limit which increases the likelihood of more severe crash types.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 26 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

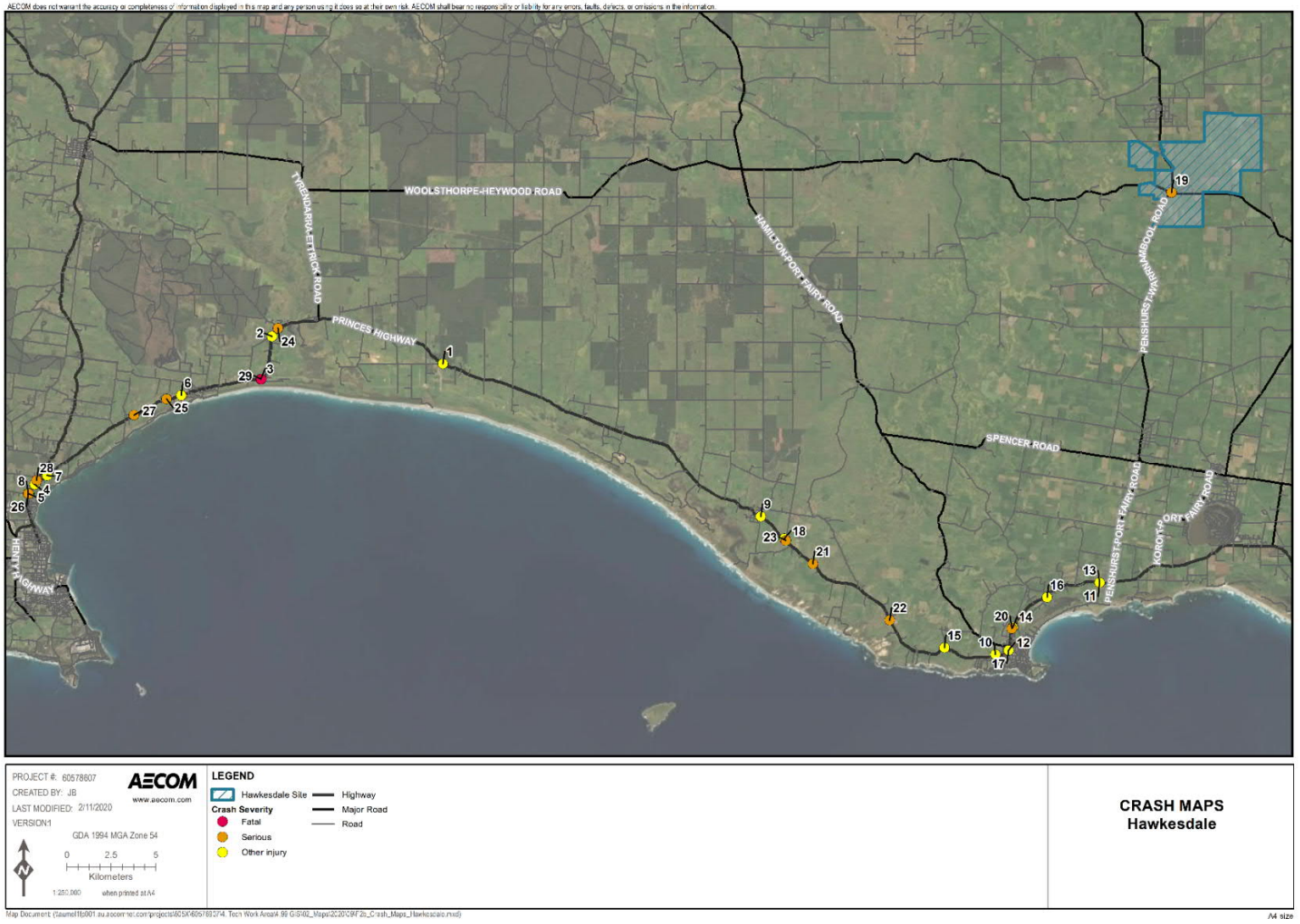


PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 27 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Figure 4 Local bus routes

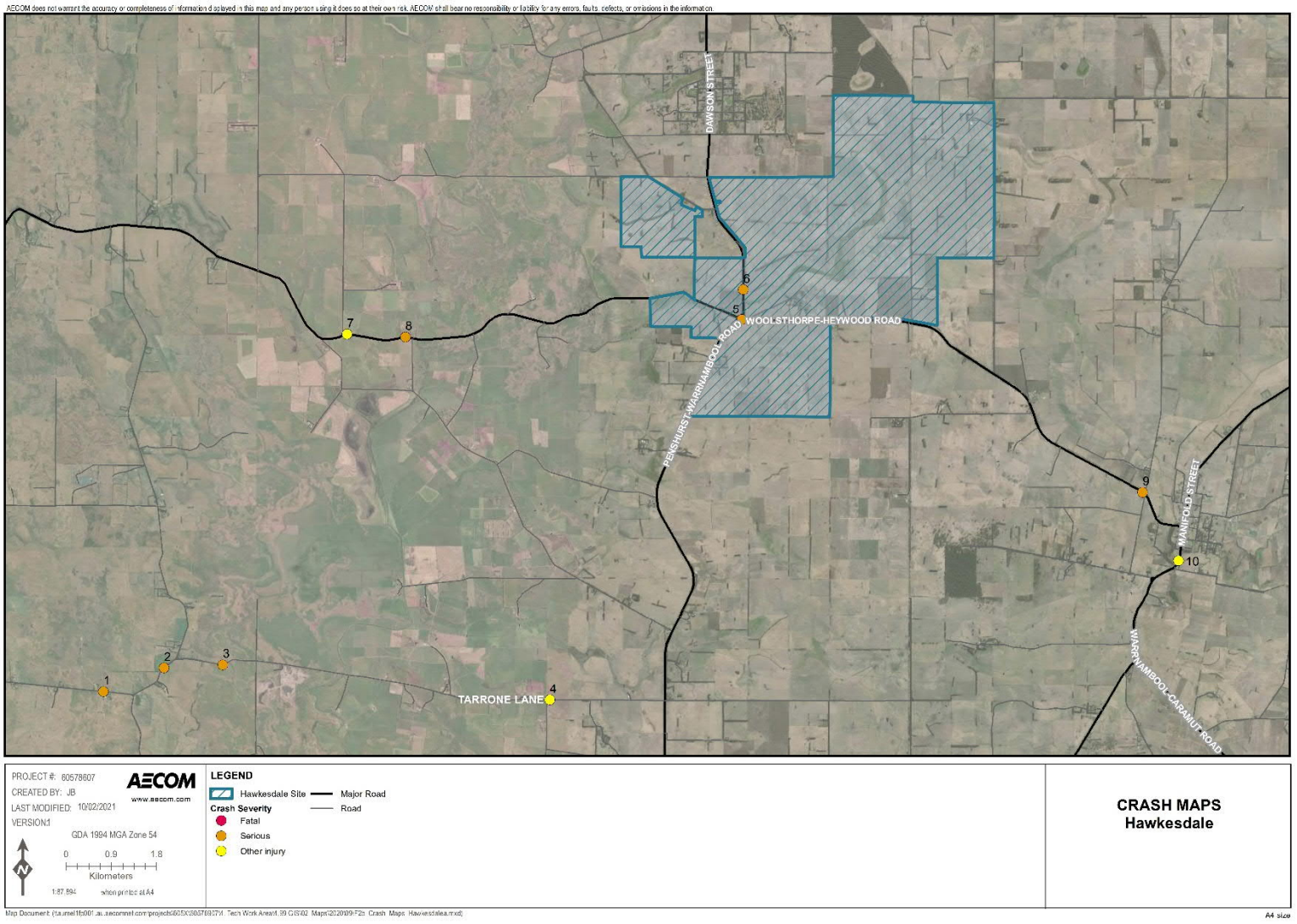


PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 28 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Figure 5 Crash locations – OD traffic route



PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 29 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Figure 6 Crash locations – Local traffic routes

4.0 Vehicle Access Strategy

4.1 Vehicle access types

The construction vehicle types have been consolidated into groupings for the purposes of aiding with the vehicle route strategy and access assessments by their anticipated size, see Table 6.

Table 6 Construction traffic classification consolidation

Over-arching Vehicle Type	Sub-Vehicle Type	Vehicle Classification	Vehicle Length (based upon classification in metres, m)	Transport Vehicles Gross Vehicle Mass (tonnes, t)
Light Vehicles	Private Car	99th percentile passenger vehicle	5.2	-
	Utes			-
Truck	General Purpose Vehicle	Small Rigid Vehicle (SRV) 2-5 Tonne	6.4	-
	EPV (Elevated Platform Vehicle)	Medium Rigid Vehicle (MRV) 10 Tonne	8.8	-
	Rubbish Truck			-
	Concrete Truck	Heavy Rigid Vehicle (HRV)	8.8 to 12.5	22.4
	Rigid Truck			13.5
	Small Crane			TBC
	Semi-trailers	Articulated Vehicle (AV)	25.0	16.5
	Truck and Dog			30.5
	Low Loader			TBC
OD*	Heavy vehicles	Over-Dimensional – WTG Blades	75.0	63.5
		Over-Dimensional – Tower Sections	~55.0	126.5 (worst case)
		Over-Dimensional – Nacelles	~55.0	212.5
		Over-Dimensional - Hubs	~26	54.5
		Over-Dimensional – Main transformer	TBC	TBC

**OD vehicle dimensions and weights will be subject to final WTG specifications. OD vehicles will typically have trailer widths ranging from 4.0 metres to 5.0 metres and heights ranging from 4.9 metres to 5.6 metres.*

4.2 Vehicle access

Two access points are approved for HDWF as outlined below and shown on Figure 2:

- Eastern site access (Site B) – forming a priority access intersection with Woolsthorpe-Heywood Road and providing access to the northern area of the HDWF site.
- Western site access (Site C) – forming a priority access intersection with Woolsthorpe-Heywood Road and providing access to the southern area of the HDWF site.

The selection and location of these two accesses were identified based on appropriate sight lines, safe stopping distances, road geometry (vertical and horizontal), width of road reservation and roadside vegetation. Access by all vehicle types is to be permitted by both site access points.

In terms of local access roads MSC have requested signage on Reeves Road, Wickham Road and Tarrone Lane (west of Holcim Quarry for quarry trucks) to ban the movement of project related vehicles using these roads, this is further detailed in Section 6.3 of this TMP.

4.3 Construction transport routes

The Port of Portland is the nominated location for the commencement of ground transportation for the larger sections of the WTGs – namely the tower sections, blades and nacelles delivered via sea freight. Raw materials to construct the foundation works for the towers will be sourced from local suppliers. Personnel will reside primarily in the surrounding regional centres to the site.

4.3.1 OD vehicles

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 nominated wind turbine for the HDWF project is the V136-4.2MW (Vestas) and has been used for the assessment (pending DELWP approval). The component dimensions and transportation requirements have been summarised in Table 7.

Vestas has been chosen as the final manufacturer for the wind turbines at this site. A 'worst-case scenario' will be adopted whereby the greatest width, height and turning circle requirements are taken into account based on the transport requirements of each manufacturer as detailed in Table 7. The swept paths and associated designs are indicative for this type of vehicle. Further analysis will be required during the detailed design stage.

Table 7 Critical measurement for Transport Requirement

Turbine Component	Dimension
Rotor Diameter	136 m
Blade Length	66.6 m
Indicative Transportation Requirement	
OD Vehicle Length	75 m
Minimum Height Clearance Required	6.0 m
Minimum Road Width Required (trafficable)	5.0 m
Minimum Road Width Required (total)	5.5 m
Maximum Slope Gradient Permitted	14%
Maximum Side Inclination Permitted	4%

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. The swept paths and associated designs are indicative for this type of vehicle. Further analysis will be required during the design stage.

4.3.2 OD swept paths

The longitudinal profile for the OD (blade) vehicle is defined in Figure 7. This vehicle is transporting the 66.66 metre turbine blade. 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.

It should be noted that final assessments of OD swept paths and delivery of WTG components to the HDWF project site will be the responsibility of the nominated transport contractor and the assessment and swept paths provided as part of the TMP were used to inform concept designs (noting subject to subsequent functional and detailed designs and sign-off from relative stakeholders).

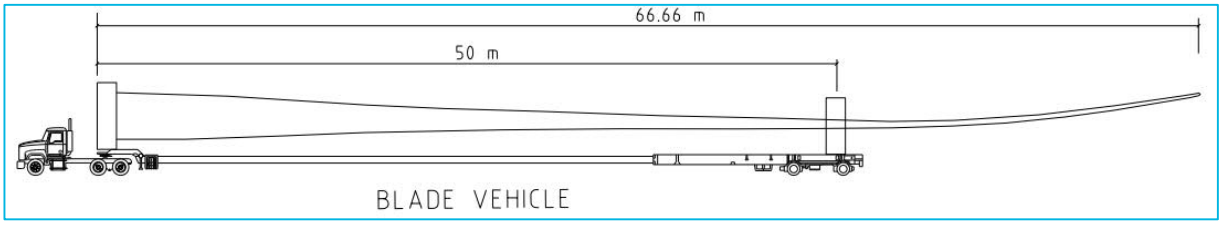


Figure 7 OD (Blade) Vehicle Profile

4.3.2.1 OD transportation route(s)

Rex J Andrews have completed an OD route survey report (dated 18 September 2020) from the Port of Portland to the HDWF site which is provided in Appendix C. The following potential delivery routes have been identified at this stage.

Port of Portland to Storage Yard

OD components for the construction of the HDWF are expected to be delivered to the Port of Portland. From this point there are two potential storage yards that have been used to store WTG components located to the west of Madeira Packet Road (south of the Port) and at 211 Portland-Nelson Road (north-west of the Port).

Depending on the storage yard usage, either taking components to the 211 Portland-Nelson Road storage yard or travelling onwards to the HDWF site, the following OD routes to travel out of Portland have been previously used depending on the height of OD components due to the Bridgewater Road bridge height constraint.

- Route 1 for components less than 4.4 metres in height:
  - Depart Port of Portland and head westbound via Madeira Packet Road and Henty Highway.
  - Continue via Henty Highway northbound
  - Turn left onto Portland-Nelson Road
  - Continue onwards on Portland-Nelson Road to storage yard at 211 Portland-Nelson Road.
- Route 2 for components more than 4.4 metres in height:
  - Depart Port of Portland and head southbound on No. 2 Quay Road
  - Turn right onto Madeira Packet Road
  - Turn left at the roundabout onto Cape Nelson Road
  - Turn right onto Mailings Road
  - Turn right onto Bridgewater Road
  - Turn left onto the Henty Highway
  - Turn left on Portland-Nelson Road and continue along route as noted above.

Storage yard to HDWF

The preferred OD route which has been previously discussed and agreed with both RRV and MSC is from either storage yard and would travel onwards to the site via the following route (as shown on Figure 8):

- From the storage yard, OD vehicles travel east on Portland-Nelson Road
- Continue straight onto Cashmore Road
- Turn left onto Henty Highway
- At the Henty Highway/Princes Highway T-intersection, turn right along Princes Highway.

- Continue along Princes Highway, through Rosebrook, before turning left onto Penshurst-Port Fairy Road.
- Continue north until the road intersects with Penshurst-Warrnambool Road. Turn left onto Penshurt-Warrnambool Road.
- Continue north approximately 15 kilometres before turning right onto Woolsthorpe-Heywood Road.
- From here, vehicles continue on Woolsthorpe-Heywood Road east to access either site entry point:
  - 0.8 kilometres to the western site access point (Site C); or
  - 2.7 kilometres to the eastern site access point (Site B).

In the Rex J Andrews report this is outlined as route survey C and outlines the initial mitigation measures required to facilitate transportation. The report also discusses the possibility of utilising another alternative OD transportation route (route survey D) which would use Woolsthorpe Heywood Road and Hamilton-Port Fairy Road. This route has been identified in this report to not require as many mitigation measures however it has not previously been discussed with key stakeholders.

During the subsequent NHVR application process in consultation with key stakeholders (DoT-RRV and MSC) the final OD transportation routes and mitigation measures will be agreed. The nominated transport contractor will then refine and develop their own specific TMP(s) for the safe delivery of WTG components to the HDWF site.

If OD routes or access points change then an addendum overarching TMP would be resubmitted to notify key stakeholders (DoT-RRV and MSC) of these changes.

4.3.3 Construction and personnel vehicles

Construction and personnel vehicles will be originating from different locations and will be able to access the site from all approaches to the site access points.

BMD staff are likely to have accommodation in Hamilton, Winslow, Port Fairy and Warnambool. Subcontractors/suppliers and Vestas will likely stay in Warnambool and surrounds.

These vehicles will be general road users and have as-of-right access to the road network. There will be numerous construction deliveries from vehicles that may only attend the site once, and hence it is difficult to identify each and every vehicle. Typically, therefore vehicle would arrive via the following routes:

- Vehicles arriving from the south on Penshurst-Warrnambool Road will turn right at the Woolsthorpe-Heywood Road / Penshurst-Warrnambool Road intersection and head eastbound along Woolsthorpe-Heywood Road and turn into either site access on Woolsthorpe-Heywood Road.
- Vehicles arriving from the north on Penshurst-Warrnambool Road will continue through the township of Hawkesdale and turn left at the Woolsthorpe-Heywood Road / Penshurst-Warrnambool Road intersection and head eastbound along Woolsthorpe-Heywood Road and turn into either site access on Woolsthorpe-Heywood Road.
- Vehicles arriving from the west are to head eastbound along Woolsthorpe-Heywood Road, pass through the Penshurst-Warrnambool Road intersection and turn into either site access on Woolsthorpe-Heywood Road.
- Vehicles arriving from the east are to head westbound along Woolsthorpe-Heywood Road and turn into either site access on Woolsthorpe-Heywood Road.

In terms of local access roads MSC have requested signage on Reeves Road, Wickham Road and Tarrone Lane (west of Holcim Quarry for quarry trucks) to ban the movement of project related vehicles using these roads, this is further detailed in Section 6.3 of this TMP.

4.3.4 Quarry

HAPL have advised at this stage that the Holcim quarry (LIC1128) located on Tarrone Lane, approximately 19 kilometres from the site is the most likely to be used to source material. Access from and to the quarry is proposed via Tarrone Road travelling east via Pensburst-Warnambool Road as shown in Figure 9. Davidson or Mt Shadwell quarries could be used in case of quarry supply difficulties from Holcim quarry. If this occurs an addendum TMP would be submitted.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 35 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Figure 8 OD vehicle transportation route from Port of Portland to HDWF site

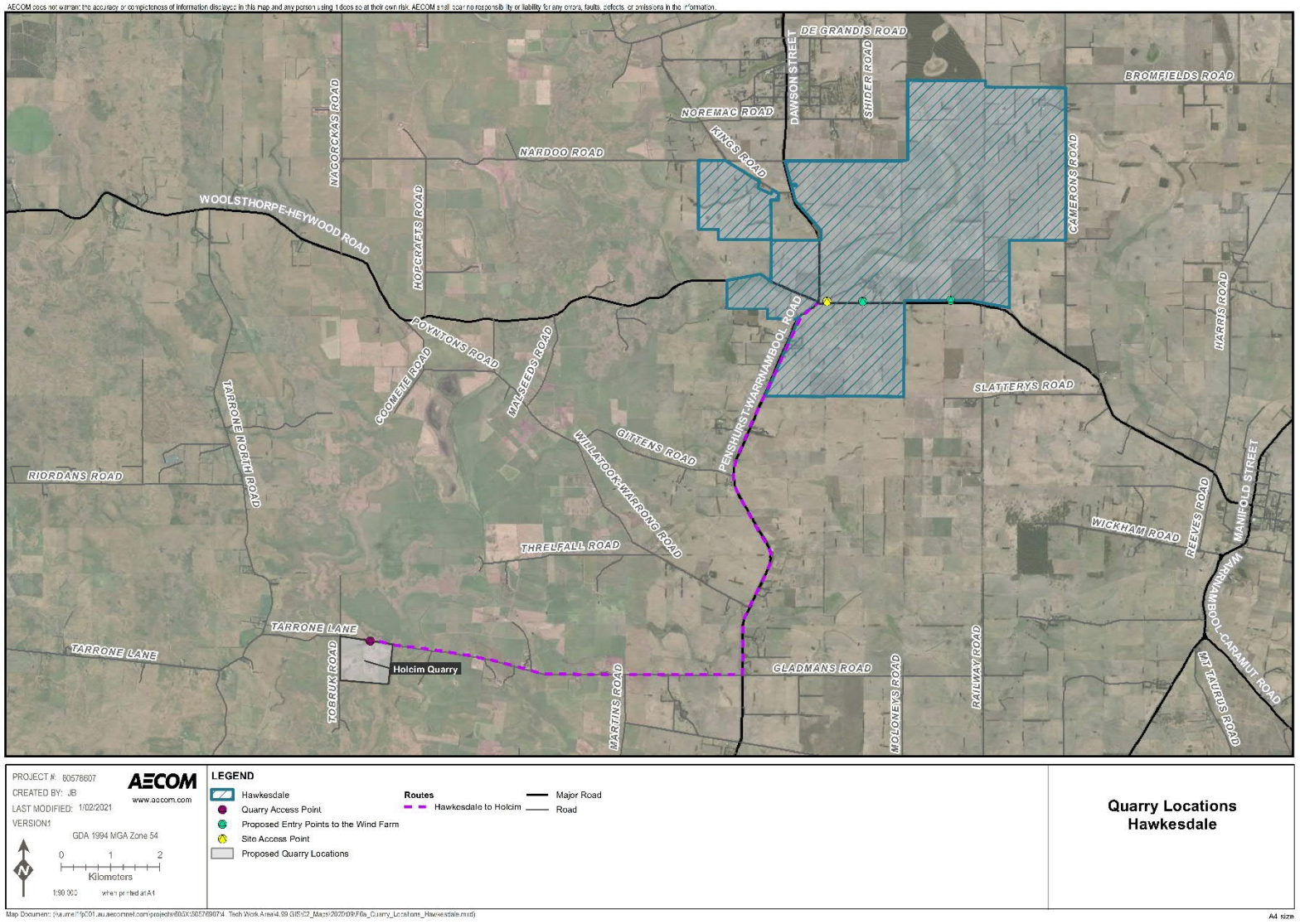


Figure 9 Holcim quarry location and proposed transportation route to/from site access points

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 36 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

5.0 Traffic Generation and Road Capacity Analysis

5.1 Construction traffic generation

The construction program and traffic generation estimates have been provided by the major contractors for the HDWF project.

The construction program is likely to occur over approximately 16 months, commencing on September 2021 (subject to relevant planning approvals), with six day working weeks and seven day working weeks for limited periods of time for the civil and WTG installation works respectively. Full details of the proposed working hours are provided in Section 8.5 of this TMP.

An overview of the construction traffic generation estimates by work item is provided in Table 9.

5.1.1 Quarry materials

It is acknowledged that there is potential for a large number of vehicles using the route between the quarry and the HDWF site to transport the material required for construction of the access tracks and crane hardstand platforms, namely crushed rock pavement.

The Holcim quarry located on Tarrone Lane is to be used to source material (if this was to change an addendum TMP would be submitted to notify key stakeholders).

An estimation of the quarry trucks providing material to the HDWF site is provided in Table 8 for truck and dog delivery vehicles as inferred from the itemised construction traffic estimates in Table 9, this being for access tracks, hardstands, intersection upgrades and site compound laydown area.

Table 8 Estimated quarry traffic volumes on public roads

Estimated Quarry Traffic Volumes on Public Roads	Truck and dog trailer (one-way)	
	Project Total	Peak per Day
Off-Site Quarry – Holcim, Tarrone Lane	2,963	76

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 37 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Table 9 HDWF construction traffic generation

	Item	Quantity	Units	Units per vehicle	Total number of vehicles	Vehicle types	HV/LV	Total trips (two-way)	Origins	Comments
General activites	Access tracks	66,809	T	33	2,025	Truck and trailer	HV	4,050	Holcim Quarry / Davidson Quarry / Mt Shadwell	Located via Tarrone Lane (E)
	Hardstands	11,590	T	33	351	Truck and trailer	HV	702	Holcim Quarry / Davidson Quarry / Mt Shadwell	Located via Tarrone Lane (E)
	Intersection Upgrades	1,700	T	33	52	Truck and Trailer	HV	104	Holcim Quarry	Located via Tarrone Lane (E)
	Site Compound Laydown	7,650	T	33	232	Truck and Trailer	HV	464	Holcim Quarry / Davidson Quarry / Mt Shadwell	Located via Tarrone Lane (E)
	Lime delivery	1,560	T	40	39	Truck and trailer	HV	78	Melbourne	
	Delivery of civil plant	42	No	1	42	Semi trailer	HV	84	Melbourne / Ballarat	
	Site offices	12	No	1	12	Semi trailer	HV	24	Melbourne	
	O&M compound	2,880	T	25	116	Truck and trailer	HV	232	Melbourne	
	Water for road construction	12000	kL	13	923	Semi trailer	HV	1846	On-site source / Holcim Quarry / Davidson Quarry	
	Dust suppression	5000	kL	13	385	Semi trailer	HV	770	As above	
	Waste disposal	96	No	1	96	Semi trailer	HV	192	Warrnambool	Waste removal trucks
	Site deliveries	800	No	1	800	Truck / van	HV	1600	Melbourne / Warrnambool / Ballarat	Small materials and consumables
	Construction work force	80	Persons/Day	1	20,800	Private car / ute	LV	41600	Melbourne / Warrnambool / Ballarat / Mortlake / Port Fairy	Site staff and workforce
WTG construction	Cement	2,381	T	40	60	Truck and trailer	HV	120	Melbourne	
	Sand	3,572	T	33	108	Truck and trailer	HV	216	Winchelsea	
	Aggregates	7,144	T	30	238	Truck and trailer	HV	476	Tarrone	Located via Tarrone Lane (E)
	Water	1,429	KL	60	24	Semi trailer	HV	48	Koroit	
	Steel	1,050	T	15	70	Semi trailer	HV	140	Melbourne	
	Craines 100T	2	No	1	2	Semi trailer	HV	4	Warrnambool / Ballart / Stawell / Melbourne	
	Telehandler	1	No	1	1	Semi trailer	HV	2	Warrnambool / Ballart / Stawell / Melbourne	
	Earthgrid	1	No	1	1	Semi trailer	HV	2	Melbourne	
	Fencing	3	No	1	4	Semi trailer	HV	8	Local	
	Site demobilsation	15	No	1	15	Various	HV	30	Melbourne	
WTG component delivery	Blades	69	No	1	69	Over-dimensional	HV	138	Port of Portland	
	Nacelle	23	No	1	23	Over-dimensional	HV	46	Port of Portland	
	Power equipment'	46	No	1	46	Semi trailer	HV	92	Melbourne Port	
	Hub	23	No	1	23	Over-dimensional	HV	46	Port of Portland	
	Tower sections	92	No	1	92	Over-dimensional	HV	184	Port of Portland	
	Foundation hardware	23	No	1	23	Semi trailer	HV	46	Melbourne Port	
BOP - Electrical	Civil Plant Mobilisation	6	No	1	6	Semi-trailer	HV	12	Stawell VIC	
	Sand/ Road base	128	No	32	4	Tandem-tipper	HV	8	Stawell VIC	
	Sub Civils	40	No	5	8	Concrete truck	HV	16	Portland VIC	
	Construction Water	1	No	1	1	Water tanker	HV	2	On-site source / Holcim Quarry / Davidson Quarry	
	Civil Plant De-Mobilisation	1	No	1	4	Semi-trailer	HV	8	Stawell VIC	
	Electrical Cable Mobilisation	1	No	1	8	Semi-trailer	HV	16	Stawell VIC	
	33kV Cable delivery & drum removal	15	No	2	8	Float	HV	16	Portland VIC	
	Cable Sand delivery	10557	T	32	364	Tandem-tipper	HV	728	Stawell VIC	
	Construction Water	1	No	1	1	Water tanker	HV	2	On-site source / Holcim Quarry / Davidson Quarry	
	Electrical Cable demobilisation	1	No	1	8	Semi-trailer	HV	16	Stawell VIC	
	Electrical Sub Mobilisation	1	No	1	6	Semi-trailer	HV	12	Adelaide SA	
	Control Room delivery	1	No	1	1	Float	HV	2	Adelaide SA (Over Dimensional)	
	Elec Sub De-Mobilisation	1	No	1	6	Semi-trailer	HV	12	Adelaide SA	
	Misc delivery	1	No	1	62	Light truck	HV	124	Melbourne	
	Heavy lift crane	1	No	1	1	Over-dimensional	HV	2	Portland VIC	Control Room
	Crane Estcourt Ute	1	No	1	1	Over-dimensional	HV	2	Portland VIC	Control Room
	Construction work force	476	No	1	476	Private car / ute	LV	952	Melbourne / Warrnambool / Ballarat	

5.1.2 Concrete batch plant and raw materials

An on-site concrete batching plant is approved as part of the HDWF development to produce concrete for use in constructing the WTG foundations, located near the eastern site access point (Site B) via Woolsthorpe-Heywood Road. Raw materials to produce concrete would be transported to site by heavy vehicles.

An on-site water source has been identified (borehole and existing dam) for dust suppression and road construction, however potable water for concrete production will be imported from Koroit via trucks.

An estimate of the total concrete agitator movements required during the WTG foundation pours is summarised below:

- Each WTG foundation equates to approximately 576m^3, totalling for the 23 WTGs at 13,230m^3 of material.
- Concrete agitator volume of 7 m^3, accordingly 83 trips per WTG foundation pour.
- A total of 20 WTGs are located to the north of the on-site concrete batch plant, accordingly a total of 1,643 one-way trips would occur in the northern HDWF development area, with no access to the local road network required.
- A total of three WTGs are located via the western site access (Site C) point via Woolsthorpe-Heywood Road. Accordingly, this will require some concrete agitators to travel via Woolsthorpe-Heywood Road between the site access points, turning right out of the eastern site access (Site B) and turn left into the western site access (Site C). A total 247 one-way trips would be required to complete pours for the three WTGs (undertaken during separate timeframes).

5.1.3 Peak vehicle frequency and traffic impacts

A summary of the total and average daily traffic generation impacts by each respective site access point is provided in Table 10.

Table 10 Traffic generation by access point summary

Site access point	Total trips			One-way average daily trips (Peak daily trips)		
	Light	Heavy	Total	Light	Heavy	Total
Woolsthorpe-Heywood Road – Eastern Access	36,907	11,034	47,942	142	42 (66)	185
Woolsthorpe-Heywood Road – Western Access	5,645	1,688	7,333	22	6 (10)	29

Trip generation rates and assumptions have been based upon information provided by HAPL, with the following noted:

- Private vehicles used by construction workers is estimated during peak operations at approximately 164 return trips per day.
- The contractor will 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. Sunday operations would occasionally be required for wind turbine assembly should weather conditions during the week not allow for this work to be undertaken safely. Sunday work hours would be 7:00am till 4:00pm for WTG installation only when weather permits and will not include civil works. On occasion, work hours may change during certain construction activities, such as concrete pours and lifting operations when it would not be pragmatic to stop works during such activities.
- The consensus with wind farms is the peak hour is commonly on a weekday morning between 6am – 7am when the majority of construction personnel are arriving via light vehicles. This often does not coincide with the local morning traffic peak hour.

- The internal site construction traffic peaks are more likely to occur during the foundation pouring which spans over a single day. It is estimated that a total of 83 concrete agitator trucks would operate over the day at a frequency of seven one-way trips per hour (or as required according to pour requirements). This would occur between the site access points only for the three WTGs located on the southern portion of the HDWF site.
- The worst-case quarry related trips are estimated to be at 76 trips per day based if truck and dog trailers were used.
- Average daily trips (one-way) by each respective site access point are estimated as follows:
    - Eastern Access Point (Site B) – northern site area (20 WTGs), 142 light vehicles and 42 heavy vehicles
    - Western Access Point (Site C) – southern site area (3 WTGs), 22 light vehicles and 6 heavy vehicles

The construction volumes detailed in this Chapter are based on currently available information. As planning and construction progress, figures may vary. If figures are anticipated to vary more than 20% above the figures provided, an addendum TMP will be provided by the nominated contractor to inform both DoT-RRV and MSC of any new information which may impact on the findings or requirements of the TMP. Please refer to Section 9.1 for details with regards to an Addendum TMP.

6.0 Mitigation Measures

The design drawings relating to the mitigation measure recommendations in this chapter can be found in Appendix D. The following is a list of assumptions associated with developing the mitigation measures and associated conceptual drawings:

- The design of upgrades to all intersections, road sections and access points was based on available high-resolution aerial imagery.
- The largest OD vehicles have been modelled, i.e. blade delivery, with locked rear axles (i.e. no independent rear dolly). Accordingly, these should be reviewed once the adopted transportation vehicle is verified as part of detailed design.
- The conceptual drawings are not to be used as an 'issue for construction' document.
- Detailed design drawings will be submitted to the relevant road authority if required for review and approval prior to construction.

The mitigation measures are to be staged in their implementation, with site access works commencing before OD deliveries are required as part of the HDWF construction process. The necessary wider road network mitigation measures will be required before any OD deliveries can take place.

The mitigation measures are identified as pre-construction works to be undertaken prior to the use of identified roads for construction purposes. Measures relating to the access points aim to ensure safe line of sight distances and turning movements and aim to avoid potential through traffic conflicts.

6.1 Site access intersections

6.1.1 Eastern Access Point (Site B) – northern site area access

The eastern access point (Site B) has been constructed as part of Stage 1 works and forms a priority intersection with Woolsthorpe-Heywood Road at a location approximately 2.7 kilometres east of the Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road intersection. The intersection provides access to the northern site area which includes, 23 WTGs, site compound, on-site concrete batch plant and the on-site substation.

This access has been designed to cater for OD, heavy and light vehicles. An OD vehicle is only permitted to enter this access point from the west and will exit to the west when it egresses the site (i.e. movements between Portland and the site). Therefore, the left-in and right-out movements of the eastern access point are designed to cater for OD vehicles. The right-in and left-out movements have only been designed for B-Double vehicles (i.e. construction vehicles).

As the eastern access point was constructed a number of years ago, maintenance works will be carried out as required prior to WTG component delivery by OD vehicles.

The conceptual access layout can be viewed from sheet number 121 Revision F in Appendix D, this also includes the OD swept paths and required clear zones.

6.1.2 Western Access Point (Site C) – southern site area access

The western access point (Site C) is to be constructed as part of Stage 2 works. The access point will form a priority intersection with Woolsthorpe-Heywood Road at a location approximately 0.8 kilometres east of the Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road intersection. The intersection will provide access to three WTGs.

This access will be designed to cater for OD, heavy and light vehicles. An OD vehicle is only permitted to enter this access point from the west and will exit to the west when it egresses the site (i.e. movements between Portland and the site). Therefore, the right-in and left-out movements of the southern access point must be designed to cater for OD vehicles.

The conceptual access layout can be viewed from sheet number 122 Revision F in Appendix D, this also includes the OD swept paths and required clear zones.

6.2 Intersections along OD Route

The turning movements of the OD vehicles have also been analysed at critical intersections along the previously agreed OD route to the site (see Section 4.3.2.1 and Figure 8). Three intersections were identified as potentially constraining OD vehicle movements:

1. Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road priority intersection.
2. Penshurst-Warrnambool Road and Penshurst-Port Fairy Road priority intersection.
3. Princes Highway and Penshurst-Port Fairy Road priority intersection.

The above constraints were also identified as part of Rex J Andrews OD route survey report (dated 18 September 2020) from the Port of Portland to the HDWF site which is provided in Appendix C.

6.2.1 Penshurst-Warrnambool Road / Woolsthorpe-Heywood Road priority intersection

The critical OD movement at this intersection is when OD vehicles will make their deliveries to the site access points. This requires northbound OD vehicles to turn right at this intersection for inbound movements when accessing the site. The return journey will involve westbound vehicles to turn left at this intersection. These two movements cannot occur under the current geometry of the intersection (even when encroaching onto the incorrect side of the road). Therefore, a portion of the road reserve will be required to be developed to provide for safe manoeuvrability during these OD movements.

It is noted that these critical OD movements will most likely not be able to occur under the current intersection configuration. As such, the Botanist indicated that developing the southeast corner of the intersection should be avoided wherever possible due to the native vegetation at this location. It was suggested that the traffic island created by the left-hand slip lane on the northeast corner of the intersection would be ideal for constructing any temporary roads required during OD transportation. Right OD turning movements from Penshurst-Warrnambool Road (S) and left OD turning movements from Woolsthorpe-Heywood Road (E) were analysed based on these comments of the Botanist. As a result, the OD movements at this intersection could occur with only the reconstruction of the traffic island in the northeast corner.

The reconstructed area on the northeast traffic island will be in accordance with the typical cross-section detail supplied in Drawing 110 of Appendix D based on the manufacturer transportation requirements with the surface of the upgraded works to meet the existing surface levels of the traffic island (created by top of kerb). The total area of constructed works within the northeast traffic island is approximately 1,020 m^2.

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:

- ‘Keep Left’ sign located within splitter island for Woolsthorpe-Heywood Road approach on eastern side of intersection.
- Post with fingerboards outlining geographical features on western edge of northeast traffic island.
- Two directional signs located on the western edge of northeast traffic island.
- Guide posts within northeast traffic island.
- ‘No Entry’ sign at eastern tip of northeast traffic island.

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 OD vehicles.

Barricades will be required to be installed along the edge of the northeast traffic island when not in use by OD vehicles. This is to inform general traffic that this constructed area of the traffic island is not to be used as a public road-related area. The reconstructed area within the northeast traffic island will be reinstated once the construction phase of HDWF is complete.

The OD turning movements at the Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road priority intersection can be seen from sheet number 123 Revision D in Appendix D.

6.2.2 Penshurst-Warrnambool Road and Penshurst-Port Fairy Road priority intersection

The Penshurst-Warrnambool Road and Penshurst-Port Fairy priority intersection have the following OD movement requirements:

- Northbound OD vehicles on Penshurst-Port Fairy Road will make a left-hand turn into Penshurst-Warrnambool Road when accessing the HDWF site to the north.
- Southbound OD vehicles on Penshurst-Warrnambool Road will turn right into Penshurst-Port Fairy Road when returning to Portland.

The above OD turning movements cannot occur under the current configuration of the intersection and upgrade works to the western corner of the priority intersection will be required to ensure safe OD vehicle manoeuvrability.

The reconstructed area of the intersection will be in accordance with the typical cross-section detail supplied in Drawing 110 of Appendix D based on the manufacturer transportation requirements with the surface of the upgraded works to meet the existing surface levels. A depression in the existing natural surface at the western corner of this intersection was observed in previous site observations and as such appropriate drainage may also be required. The total area of constructed works required at this intersection is approximately 786 m^2. There will be a large volume of compacted materials required due to the existing natural depressions.

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

- ‘Keep Left’ signs located within splitter island of Penshurst-Port Fairy Road approach.
- Guide posts on the western side of Penshurst-Warrnambool Road at this intersection.
- ‘Give Way’ sign at intersection of Penshurst-Port Fairy Road approach.

Appropriate traffic management will be required during OD movements at this intersection as these vehicles will be encroaching onto the incorrect side of Penshurst-Port Fairy Road and travel over the existing median strip. Traffic control will be required along the Penshurst-Port Fairy Road approach to this intersection with corresponding advance temporary warning signs in place (refer AS1742.3:2009).

The right turn OD movement from Penshurst-Warrnambool Road into Penshurst-Port Fairy Road will sweep across a significant length of the approaching lane of Penshurst-Port Fairy Road and use the splitter island to ensure safe passage of the OD vehicle. As such, traffic management will be required along all approaches to temporarily shut down this intersection to allow this movement to occur safely. Left turn OD movements from Penshurst-Port Fairy Road into Penshurst-Warrnambool Road will encroach onto the incorrect side of the road and as such traffic management will also be required for all approaches.

The OD turning movements at the Penshurst-Warrnambool Road and Penshurst-Port Fairy priority intersection can be seen from sheet number 124 Revision F in Appendix D.

6.2.3 Princes Highway and Penshurst-Port Fairy Road priority intersection

The Princes Highway and Penshurst-Port Fairy Road priority intersection have the following OD movement requirements:

- Eastbound OD vehicles on the Princes Highway will make a left-hand turn into Penshurst-Port Fairy Road.
- Southbound OD vehicles on Penshurst-Port Fairy Road will turn right onto the Princes Highway when returning to Portland (noting some OD vehicles can retract trailer lengths and widths to ensure return trips are not as arduous).

To facilitate the above OD movements upgrade works will be required on the eastern side of Penshurst-Port Fairy Road due to the constraints created by the adjacent properties and electricity poles causing a restricted road reserve width for this approach. This shoulder will be constructed in accordance with the typical cross-section detail supplied in Drawing 110 of Appendix D on the manufacturer transportation requirements with the surface of the upgraded works to meet the existing surface levels. The total area of construction works along the eastern side of Penshurst-Port Fairy Road is approximately 3,492 m^2.

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

- ‘Keep Left’ signs located on intersection splitter island of Penshurst-Port Fairy Road approach.
- ‘Give Way’ sign located on eastern side of Penshurst-Port Fairy Road at intersection.
- Locality fingerboard located on eastern side of Penshurst-Port Fairy Road at intersection.

All other truck movements can be performed within the sealed roadway without encroaching onto the incorrect side of the rode at this intersection.

The OD turning movements at the Princes Highway and Penshurst-Port Fairy Road priority intersection can be seen from sheet number 125 Revision F in Appendix D.

6.3 Restricted Construction Vehicle Access

The following roads have been identified to have restricted HDWF related construction vehicle access during the HDWF Project:

- Reeves Road
- Wickham Road
- Tarrone Lane (west of the Holcim Quarry, for quarry trucks)

As advised by MSC the signage to restrict access to the above roads must state ‘NO HDWF VEHICLE ACCESS’, and such access restrictions will be explained during employee inductions and toolbox meetings. The final sign locations would be confirmed on submitted drawings for review and approval as part of the required approval process (typically known as MoA’s), with the intention being that two signs are placed either side of the road to ensure compliance and mitigate if any one sign is hit or removed. The indicative location of the signage is shown in Figure 10, with an example of the signage to be used is included in Figure 11.

Figure 10 Location of Restricted Access Signage

Figure 11 Example of Restricted Access Signage

6.4 Summary of road and intersection mitigation measures

Based on the vehicle access requirements and traffic impacts previously outlined in this report, the following upgrade works are required as part of the HDWF Development:

- Stage 1 – Early Works (completed):
  - Constructed the eastern site access via Woolsthorpe-Heywood Road.
- Stage 2 – Main Works – prior to delivery of materials for internal site works:
  - Complete construction of the western site access via Woolsthorpe-Heywood Road.
  - Ensure all upgrades have been completed to facilitate the safe movement of OD vehicles to / from the HDWF, subject to review by the relevant transport contractor, detailed design and sign-off from relevant stakeholders, at this time of TMP development these include:

- Road section upgrades:
  - At this stage no specific road section upgrades have been identified. It is recommended that this be reviewed by the nominated works and transport contractors before major construction vehicle deliveries are undertaken. In addition to any geometric upgrades (e.g. carriageway width, kerb radii etc.), the road pavement could require remediation subject to the findings of the pavement engineer (i.e. doing so before construction commences will limit worse impacts once construction commences and limit costs incurred to HAPL).
- Intersection upgrades:
  - Upgrade the Princes Highway / Penshurst-Port Fairy Road intersection to a 'CHR' Treatment.
  - Upgrade the Penshurst-Warrnambool Road / Woolsthorpe-Heywood Road intersection to provide sufficient manoeuvrability of turning OD vehicle movements.
  - Upgrade the Penshurst-Warrnambool Road / Penshurst-Port Fairy Road intersection to provide sufficient manoeuvrability of turning OD vehicle movements.
  - Upgrade the Princes Highway / Penshurst-Port Fairy Road intersection to provide sufficient manoeuvrability of turning OD vehicle movements.

- Installation of signage to prevent project related vehicle access via:
  - Riverside Road (including Harris Road) Reeves Road
  - Wickham Road
  - Tarrone Lane (west of the Holcim Quarry)

- Post-construction / operational phase (subject to contractor and stakeholder review):
  - Rehabilitate all intersections and road sections to the condition they were in as signed off as completed by the respective road authority manager, prior to the commencement of wind farm construction. Both pre and post construction road conditions will need to be signed off by the respective road authority manager.

7.0 Road Condition and Maintenance

7.1 Stakeholder consultation

The following stakeholder consultation has been undertaken with regards to road condition and maintenance, with consultation evidence given in Appendix B:

- A teleconference meeting between MSC, GPG, ERM and AECOM on Wednesday 9 September 2020 to discuss TMP requirements. Following the meeting MSC sent an email on Wednesday 16 September 2020 outlining MSC's requirements with regards to infrastructure condition inspections, rehabilitation program, construction vehicle identification and some initial comments on the TMP submitted in 2018. This advice was revised following review of the revision 11 TMP and comments given on Monday 21 December 2020.
- Liaison and agreement with DoT were given with regards to the maximum number of concrete heavy vehicle movements per day and associated inspection frequencies in emails dated Friday 5 March 2021, Wednesday 24 March 2021 and review of TMP rev 13.
- Correspondence with MSC via email on various condition and maintenance requirements, emails dated Wednesday 17 February 2021, Friday 26 February 2021 and Thursday 25 March 2021.

7.2 Independent Road Quality Auditor

Planning Permit Conditions require the appointment of a qualified pavement engineer. MSC has specifically requested an independent Road Quality Auditor (RQA) be appointed, which has been accepted by HAPL. The terms Road Pavement Engineer and Road Quality Auditor may be used interchangeably.

The RQA shall be a suitably qualified independent consulting engineer. The appointment of the independent RQA shall be made in consultation and agreement with DoT-RRV and MSC.

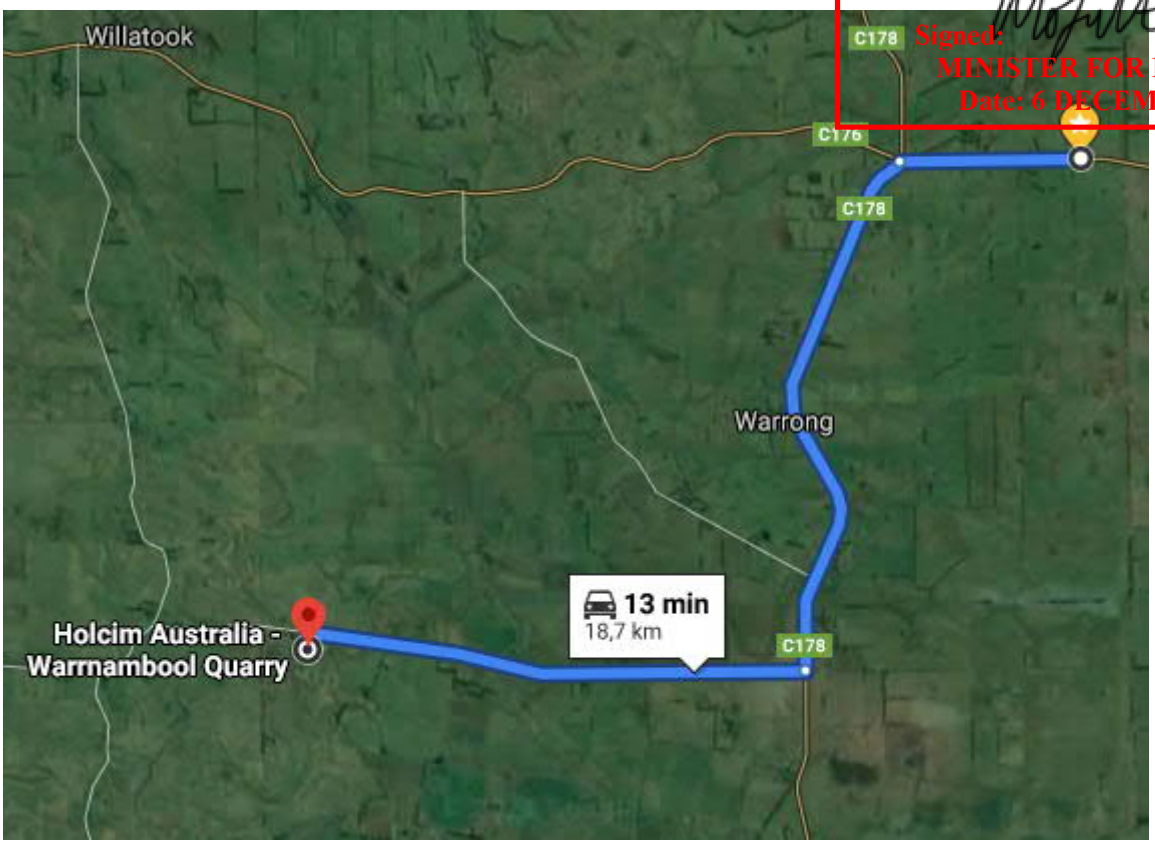
The independent RQA will be engaged for the duration of the project by, and at the cost of HAPL to inspect and provide reports on the condition of road infrastructure as set out in this TMP.

7.3 Road Infrastructure Condition Inspections and Reporting

7.3.1 Roads to be surveyed

The independent RQA will undertake an audit of road infrastructure, including the condition of the pavement, drains and structures on the roads used to carry traffic associated with the construction of HDWF.

- The following scope of haulage roads used for the project will be surveyed (as shown on Figure 12):
  - Tarrone Lane (MSC local road to quarry), from the quarry entrance to the intersection of Penshurst-Warrnambool Road (C178), approximately 7.5 kilometres.
  - Penshurst-Warrnambool Road (C178), OD route, over approximately 8.4 kilometres.
  - Woolsthorpe-Heywood Road (C176), over approximately 2.7 kilometres.



Source – Google Maps

Figure 12 Haulage survey roads

7.3.2 Pre-construction Inspection

The RQA shall undertake a pre-construction condition road infrastructure survey of nominated roads which will be trafficked by HDWF construction traffic to provide a fair and accurate baseline representation of the pavement condition, including details of the suitability, design and construction standard of the roads to satisfy Planning Condition 11(a).

The baseline survey report can be used to determine the location and magnitude (or percentage, where applicable) of pre-existing distresses. To accurately capture distress caused by the development of HDWF, the baseline survey will be commissioned one month prior to the commencement of construction.

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

MSC have advised the following with regards to the existing condition surveys:

- MSC recommends that video is used for the dilapidation surveys, with the speed of the vehicle to not exceed 40km/h to accurately capture road conditions.
- A chainage reading given at the start and end of the survey so that the location of any major defects, bridges or intersections can be recorded.
- File format or videos should be viewable through common software packages (if uncommon the specific software should be supplied to MSC and DoT/RRV free of charge).

Data resulting from the video survey should be made available to MSC and DoT/RRV via dropbox or similar. The existing condition surveys will be carried out as outlined above.

7.3.3 Construction Period Inspections

The RQA shall undertake regular inspections during the construction period of all of the roads identified in Section 7.3.1 (or as amended) at the frequency specified in Table 11 (MSC managed Roads) and Table 12 DoT-RRV managed Roads.

In the case of specific complaints or weather events, MSC and/or DoT/RRV may request the Contractor to arrange additional inspections of the agreed affected road network.

The inspections are to be conducted from commencement of construction up until WTGs footings are completed. Once the bulk of earthworks and footings are completed the maximum daily number of trucks travelling along these roads can be reviewed along with the inspection timeframes (either to monthly or bi-monthly inspection's), this would need to be agreed in consultation with DoT/RRV and MSC.

Following each survey, the RQA shall submit the results of the surveys to HAPL, MSC and DoT-RRV for review.

Should proposed traffic routes change, an Addendum to the TMP shall be submitted for MSC and DoT-RRV review and acceptance in accordance with Section 9.1 of the TMP. Any additional sources of supply will be subject to the same inspection, monitoring and maintenance requirements.

7.4 Construction Period Road Maintenance and Rehabilitation

On receipt of each RQA report, all identified defects must be addressed within ten working days. If this is not possible, due to weather or the nature of the defect, a written submission to MSC must be received within 5 working days regarding why a particular defect is not able to be completed. It is expected that this would be an exception and not the norm. Delays and non-conformance for routine maintenance items will be enforced in accordance with levies as detailed in section 8.2.1.

7.4.1 Bond

A security deposit or bond in the form of an unconditional bank guarantee to the value of AUD100,000.00 shall be provided by HAPL to MSC which may be called upon for the following reasons:

- During the construction period in the event that maintenance levies are charged due to repairs not being completed within the agreed timeframes or repeated defects are not being addressed in two subsequent road audits. Refer Section 7.4.3.
- For a maintenance period of 12 months after completion of the construction period of the HDWF to rectify any defects in the local roads list in Appendix E that are not attended to (Refer Section 7.5).

As required by Condition 12 of the planning permit, the security deposit or bond will be released at the end of the 12 month maintenance period.

7.4.2 Timing for Repairs

7.4.2.1 Moyne Shire Council Roads

The agreed timeframes for inspection and rehabilitation of Moyne Shire Council assets impacted by HDWF construction traffic is provided in Table 11 below. As per Section 7.3.3 above, it is noted that MSC reserves the right to request additional inspections if required.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 49 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Table 11 Local MSC roads – inspection and rehabilitation frequency

Construction activity	Minimum inspection and reporting frequency	Tentative schedule*	Rehabilitation timeframes
During public road upgrade construction activities until practical completion of the upgrade works	Weekly and at construction hold points	Months 1 to 3	In alignment with the defects found according to the local road management plan and response timeframes agreed between stakeholders.
During site civil works until all WTG foundations have been completed	Fortnightly	Months 4 to 9	
From the completion of WTG foundations until the completion of all construction work	Monthly	Months 10 to 24	

7.4.2.2 DoT-RRV Roads

The agreed timeframes for inspection and rehabilitation for of DoT-RRV managed roads are presented below in Table 12.

Table 12 DoT/RRV Intervention Criteria and Treatments for Routine Pavement Maintenance During Construction

Pavement Distress Type and Rectification (Job Description)	Intervention Criteria	Rehabilitation timeframe
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.	Inspection at maximum 14-day intervals. Rehab timeframe 2 days maximum.
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 “crocodile” cracking, using liquid bituminous sealants in accordance with monthly works program.	All new cracks greater than 2 mm width at any point.	Rectify within 2 weeks.

Pavement Distress Type and Rectification (Job Description)	Intervention Criteria	Rehabilitation timeframe
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 m^2) (b) when bleeding/flushing for an area >5 m^2 (c) all new "crocodile" cracking	Inspection at maximum 14 day intervals. Rehab timeframe 7 days maximum
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	Inspection at maximum 14 day intervals. Rehab timeframe 7 days maximum
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	Inspection at maximum 28 day intervals. Rehab timeframe for any defect to be 2 weeks maximum
	General: New drop off >50 mm depth measured over a 20 m length	
	Isolated: new potholes, scouring or roughness >50 mm depth measured with a 1.2 m straightedge, or when there is holding of water	

7.4.3 Maintenance Levies

If rehabilitation work is not completed within agreed timelines in accordance with Section 7.4.2 of this TMP and/or repeated defects are not addressed in two subsequent audits, then DoT/RRV and MSC (as the responsible authority for the relevant section of the road) reserve the right to issue a written notice of breach and levies for each category of defect. All levies must be paid within 14 days of issue.

7.5 Post-Construction

At completion of the HDWF project, existing public roads identified in Section 7.3.1 will be returned to a standard at least as good as the current conditions which will be documented in the pre-construction dilapidation survey(s) or to the condition the roads have been upgraded, whichever is relevant. Traffic levels should drop back down to “preconstruction” levels upon completion of the project.

In the case of the Tarrone Lane bridge a Level 2 bridge assessment will be undertaken to identify any defects caused by the utilisation of this road for the construction of the HDWF project. The identified defects will also be attended to as stated above.

The final condition audit would be undertaken by the RQA once a section of road is no longer required or construction has ceased.

Following review of the report, and all outstanding defects having been addressed, MSC and DoT-RRV, within 10 working days of receipt of the report shall confirm that all outstanding defects have been addressed, or alternatively advise any defects that require attention before accepting the report. Following this certification would be provided that all requirements above have been met on their respective road networks. An alternative arrangement to repairing the roads to pre-development condition is to agree on a financial contribution in the form of a levy to the managing road authority.

8.0 Control Measures

8.1 Roles and responsibilities

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

Contact names and details of responsibilities would be formalised prior to works commencing and those of relevance provided to relevant stakeholders.

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 HDWF. They will also be available to liaise with DoT, Councils and other stakeholders as required.

8.1.2 Public consultation, advertising and complaints

Public communication will be undertaken by HAPL with regards to the 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 HDWF project. The plan applies on a whole of project basis and outlines how complaints will be received, administered, investigated, and managed.

8.1.3 Road authority notifications

8.1.3.1 Department of Transport / Regional Roads Victoria

The works contractor is to be provide a summary of the total vehicles that have visited the site over a working week for RRV's records and the ensure that traffic volumes do not significantly increase above those forecasted as part of this TMP report.

8.1.3.2 Moyne Shire Council

The works contractor is to be provide a summary of the total vehicles that have visited the site over a working week for RRV's records and the ensure that traffic volumes do not significantly increase above those forecasted as part of this TMP report.

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 generally cover the following information:

- Designated site entrance points for entering and exiting the site.
- Suitable / approved routes to and from the site (including any road bans).
- Suitable times of travel (i.e. outside of school bus times, to be confirmed by relevant contractor).
- 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).

Where it is observed or reported that workers and contractors associated with the construction of HDWF do not act in accordance with the approved actions within this TMP, the relevant Responsible Authority may issue a written notice of breach and associated $1,000 levy to be paid.

The Responsible Authority will issue the breach notice to the wind farm permit holder and it will be the permit holders' responsibility to pay the levy and / or pass on to the individual if they wish. Potential non-compliant actions could be but not limited to, utilising non-approved roads or noncompliance with school bus curfew times.

8.3 Contractor liaison

Liaison is required 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.

The principal contractors will be responsible to ensure that all sub-contractors and suppliers are aware of the requirements, and comply with, this TMP.

8.4 Vehicle access

8.4.1 General construction light vehicle access

Accesses for general construction light 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, entering at either the site access point, except for those outlined below.

MSC have requested access to be restricted on roads as detailed in Section 6.3 of this TMP.

8.4.2 Construction vehicle access

Construction vehicles accessing the development would generally follow the same traffic routes as per the OD transportation vehicles detailed in Section 4.2, i.e. using main arterial roads up to the site access points.

MSC have requested access to be restricted on roads as detailed in Section 6.3 of this TMP.

8.4.3 Construction vehicle identification

All construction traffic (including trucks and all light vehicles) will display a magnet or sticker identifying them as being associated with the HDWF, subject to agreement between all parties and privacy waivers in the event of using privately owned vehicles.

As informed by MSC each vehicle is to display:

- Two stickers/magnets (minimum size 550mm x 250mm with lettering at 180mm high) and one small sticker/magnet (minimum size 350mm x180mm with lettering130mm high).
- Each sticker/magnet is to display an identifying number and to be of black.
- Writing on a fluro-coloured background. This identification requirement will apply to both contractor and project workers. (An example of the sticker/magnet for the Hawkesdale Wind Farm would be 'HDWF12').

A final naming convention would be determined at project commencement if there are any efficiencies with neighbouring projects (e.g. Ryan Corner Wind Farm).

8.4.4 Over-dimensional vehicles

The proposed OD transporter contractor has undertaken a preliminary route assessment (refer Appendix C). It will be the OD transport contractor's responsibility to obtain the necessary approvals from the relevant authorities for the transportation of materials from the Port of Portland to the HCWF

site, including but not limited to, the NHVR and Department of Transport. The following subsections outline the recommended considerations in the transportation of materials by OD vehicles to HDWF.

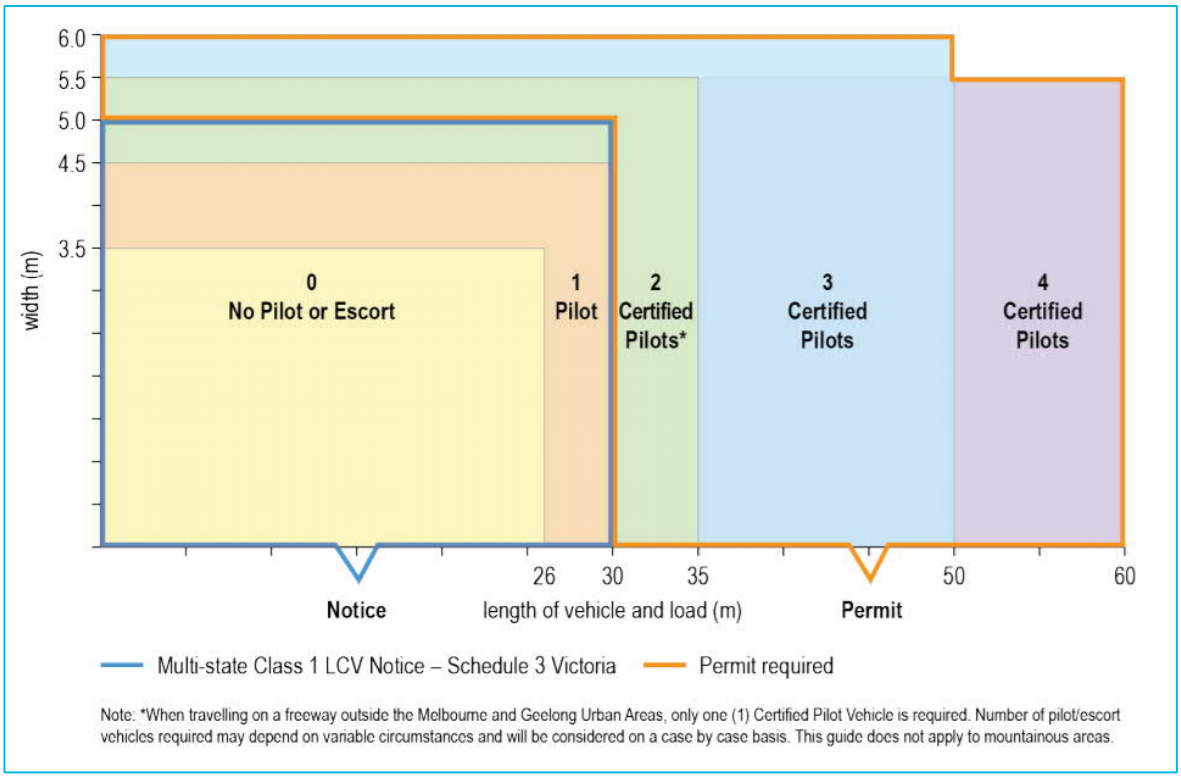
8.4.4.1 National Heavy Vehicle Regulator

The NHVR issues permits for oversized vehicles. DoT, on behalf of NHVR, will require at least 28 days to assess any route.

Copies of issues NHVR permits will need to be supplied to RRV South Western Region (swrresponse@roads.vic.gov.au).

8.4.4.2 Escort arrangements

The NHVR advise that it is the responsibility of the operator to organise pilots or escorts. VicRoads provides a basic guide for determining pilot and escort arrangements, based on industry best practice – see Figure 13. The aim of this guide is to aid the safe and efficient movement of OD loads and to also streamlines the permit application and escort booking process.



Source: NHVR, 2017

Figure 13 Pilot and escort graph guide

It should be noted, this graph is only a guide and the requirements for the HDWF transportation of materials may require consultation with Transport Safety Services (TTS) to determine the best and safest pilot and escort arrangements. TTS are a provider of services to the OD industry, which includes escorts for vehicles carrying large items and the inspection of vehicles and loads.

8.4.4.3 Department of Transport

DoT 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 two potential railway crossing locations at the Port of Portland for OD vehicles. The confirmed crossing location will depend on which access road is used in departing the Port area, being either No. 2 Quay Road or Cliff Street.

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

8.4.4.4 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 6.6 metres 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.

Locations identified where overhead cabling will need to be checked and may need raising include:

- Penshurst-Port Fairy Road:
  - Overhead cable 5.7 kilometres north of Princes Highway.
  - Overhead cable 6.1 kilometres north of Princes Highway.
  - Overhead cable 6.5 kilometres north of Princes Highway.
- Penshurst-Warrnambool Road:
  - Overhead cable 8.7 kilometres north of Princes Highway.
  - Overhead cable 14.9 kilometres north of Princes Highway (high voltage).
  - Overhead cable 15.1 kilometres north of Princes Highway.
  - Overhead cable 17.4 kilometres north of Princes Highway (high voltage).
  - Overhead cable 17.6 kilometres north of Princes Highway (high voltage).
- Woolsthorpe-Heywood Road:
  - No overhead cabling of concern in vicinity of HDWF.
- Princes Highway (Portland to Penshurst-Port Fairy Road):
  - This length of road is a declared OD route and all overheads have been assumed to provide the necessary height clearance.

8.4.4.5 Temporary road closures

If temporary road closures are required than DoT and MSC shall be contacted prior to OD transport movements. There may be a need for Worksite Traffic Management Plans (WTMPs) to be produced in this event.

8.4.5 Emergency Services

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

8.4.6 Construction Staging / Parking

During construction, sufficient car parking will be provided within the confines of the site and will therefore not encroach on the local road network. Sufficient space for construction deliveries and on-site manoeuvring would also be provided as part of the development.

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 HDWF 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 HDWF site and mini-bus service transporting workers to/from the HDWF site.

8.4.7 Indicative 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 AS1742 defines the signage layout required for entering or crossing construction vehicles.

The upgrades to the eastern access intersection will incorporate a CHR treatment and as such the appropriate signage and line marking will be required. Line marking required includes painted median islands and a right hand turning slot. The signage required will be a T-intersection sign (W2-4) on both approaches of Penshurst-Warrnambool Road due to the newly formed intersection layout and the presence of larger turning vehicles. Each W2-4 sign is to be positioned at a distance of 180-250 m before the intersection.

In addition, the 'Trucks (crossing or entering)' sign (T2-25) is to be installed for both approaches along Penshurst-Warrnambool Road. These signs are to be installed between 66 and 86 m from the intersection. Conceptual signage drawings are provided in Appendix D and are discussed in the subsequent subsections.

8.4.7.1 Woolsthorpe-Heywood Road – eastern site access

The 'Trucks (crossing or entering)' sign (T2-25) is to be installed for both approaches along Woolsthorpe-Heywood Road. These signs are to be installed between 66 and 86 metres from the intersection.

Due to the adequate site distance, the control for exiting vehicles from the eastern site access onto Woolsthorpe-Heywood Road will be 'Give Way'. The installation of this sign further emphasises to construction vehicles that the normal t-intersection rule applies (i.e. terminating approach must give way).

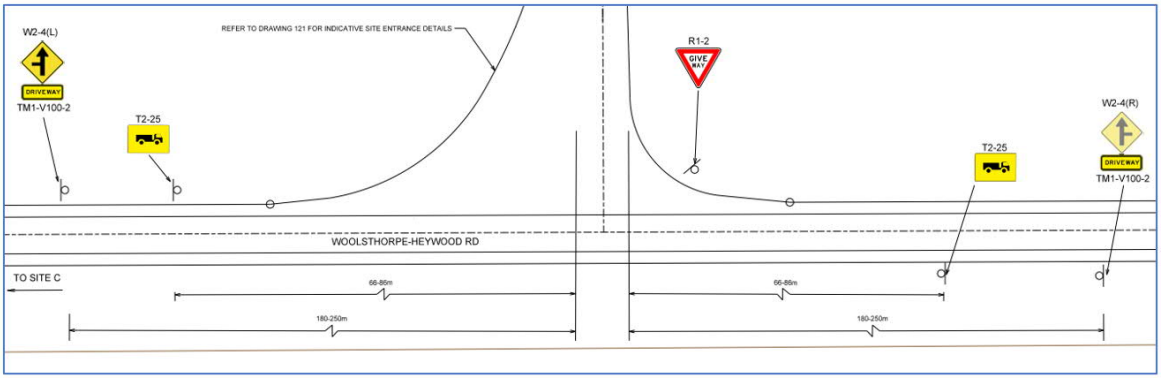


Figure 14 Indicative signage layout – Woolsthorpe-Heywood Road – eastern site access

8.4.7.2 Woolsthorpe-Heywood Road – southern site access

The 'Trucks (crossing or entering)' sign (T2-25) is to be installed for both approaches along Woolsthorpe-Heywood Road. These signs are to be installed between 66 and 86 metres from the intersection.

Due to the adequate site distance, the control for exiting vehicles from the eastern site access onto Woolsthorpe-Heywood Road will be 'Give Way'. The installation of this sign further emphasises to construction vehicles that the normal t-intersection rule applies (i.e. terminating approach must give way).

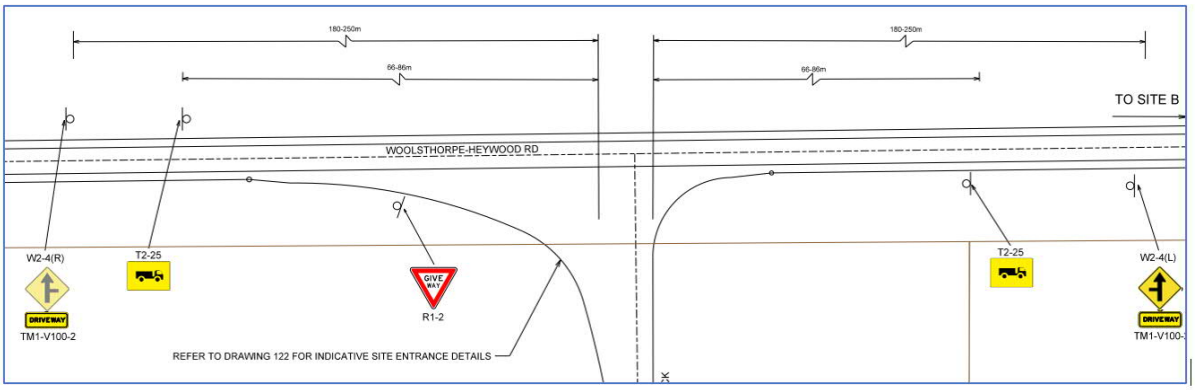


Figure 15 Indicative signage layout – Woolsthorpe-Heywood Road – southern site access

8.4.8 Speed limits

Traffic volumes are quite low for Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road and sight distances at each access point are adequate for larger vehicles. In addition, a CHR treatment is being constructed at the eastern access point due to the number of vehicles turning in and out of the site. These combined factors indicate that the reduction of the unrestricted 100 km/h speed limit along Penshurst-Warrnambool Road and Woolsthorpe-Heywood Road (adjacent to the HDWF site) is not warranted.

It is recommended that appropriate signage be installed at suitable locations the HDWF site accesses to give warning of the increased construction vehicle activity in the area.

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.

8.4.9 Restricted Access

This is detailed in Section 6.3 of this TMP.

8.5 Construction and Working Hours

According to EPA Victoria Publication 1834, November 2020 “Civil Construction Building and Demolition Guide,” ***normal working hours*** for construction of major projects, including power facilities are:

- Normal Working Hours:
  - Monday to Friday: 7am to 6pm
  - Saturday: 7am to 1pm
- Outside of normal working hours:
  - Monday to Friday: 6pm to 10pm
  - Saturday: 1pm to 10pm
  - Sunday (& public holidays): 7am to 10pm

To significantly reduce the overall duration of the construction period of HDWF, it will be necessary to work both ***normal working hours*** and some periods of ***outside of normal work hours***. Activities within the site compounds and other site facilities are expected outside the normal working hours to facilitate pre-starts, safety inductions and toolbox talks.

The ***proposed work hours*** for HDWF are as follows:

- Proposed HDWF Work Hours:
  - Monday to Friday: 7am to 6pm
  - Saturday: 7am to 4pm (noting 1pm to 4pm is ***outside of normal working hours***)
  - Sunday: 7am to 4pm for WTG installation only when weather permits (noting 7am to 4pm is ***outside of normal working hours*** as defined by the EPA guidelines).

Works occurring outside of normal working hours as defined by EPA guidelines will be restricted to ***managed impact works*** or ***low noise impact works*** as defined in the EPA guidelines.

The contractor will develop a Noise and Vibration Management Plan that will assess each work activity, identify sensitive receivers, and put appropriate controls in place to ensure that the community and sensitive receivers are not adversely impacted.

Undertaking works on Sundays will be associated with WTG construction over a 6 month time period.

Controls for ***outside of normal working hours*** activities are expected to include:

- No heavy vehicle delivery of materials to site
- Works restricted to within the site, and away from residential dwellings
- No inherently noisy works (blasting, rock breaking, concrete pours, etc) during out of normal working hours
- Compliance with a noise and vibration management plan

8.5.1 Exceptions to Proposed HDWF Work Hours

It is acknowledged that some activities will be required to occur outside of HDWF general work hours above. These works will include

- Wind turbine foundations concrete pours
- Civil works during summer months
- Delivery of OSOM components
- Installation of wind turbines

8.5.1.1 Foundation Concrete Pours

There are 23 wind turbine foundations to construct. These will be completed over a 3-month period, with 2 to 3 pours per week (the maximum pour size is approx. 576$m^{3.}$). At 50 m^3 / hour (min pour rate with a single batch plant) it would take 12 hours to place 576 m^3 of concrete, with approx. 1 to 2 hours required for set up before the pour commences and approx. 2 hours to finish the concrete and clean up once placing the concrete is complete. This is potentially a worst case 16-hour workday, with noisy works (batching and placing concrete) for 12 hours of the day.

Typically works on site for concrete pours would commence at 5am with a worst-case noisy works potentially extending from 6am to 9pm. It is noted that from 6pm to 9pm is ***outside of normal work hours*** when noisy work would normally be restricted under EPA guidelines, however this may be occasionally necessary to complete large pours in a single pour. Concrete pours extending beyond 6pm would be classified under the EPA Guidelines as ***unavoidable works*** which have commenced but cannot be stopped.

Please also note that this estimate of work hours for large pours is an expected worst case, and all going well, pour rates of around 80 m^3/hr could be expected, which would typically result in noisy works being completed before 6pm.

Therefore, the proposed extended construction hours relating to foundation concrete pours will occur 5am – 9pm, up to three days a week, for a period of three months. Foundation concrete pours will not occur on the weekends.

8.5.1.2 Civil Works during summer months

It is anticipated that the bulk of the civil works will be completed during the summer daylight saving time months. To take full advantage of the good weather and longer days, it is proposed that Monday to Friday construction hours work hours may be extended up until 10pm on occasion to accelerate works and reduce the overall construction duration of the project. Works after 6pm would be subject to ***outside of normal working hours*** restrictions with only ***managed impact works*** or ***low noise impact works*** able to be performed.

8.5.1.3 Delivery of OSOM Equipment

The timing of delivery of OSOM equipment will depend on the conditions placed on the NHVR Permit. Based on previous experience, NHVR Permit is expected to require delivery of OSOM equipment to site before sunrise.

Typically, OSOM equipment will be delivered to site under escort and be parked up until ***Normal Working Hours*** to be unloaded on site. This can be done on Monday to Saturday, with no deliveries on Sunday.

Noise from early morning deliveries will be assessed as part of the Noise and Vibration Management Plan but is not expected to be disruptive to the community or sensitive receivers.

Component deliveries depend on installation activities and are expected to occur over a period of six months.

8.5.1.4 Installation of Wind Turbines

Installation of wind turbine equipment will need to be installed when weather/wind conditions allow. This will necessitate ***works outside of normal work hours*** to take advantage of any favourable weather conditions. Installation of wind turbines is expected to occur over a six-month period and is expected to be restricted to daylight hours.

Noise from wind turbine installation will be assessed as part of the contractors Noise and Vibration Management Plan but is not expected to be disruptive to the community or sensitive receivers.

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, MSC 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 13.

Table 13 Typical vehicle access times to/from HDWF

Vehicle Type	Typical Travel Times	Vehicle Speeds	Comment
General workers vehicles / Medium Rigid Vehicle's and below	7:00am-6:00pm Monday to Friday 7:00am to 4:00pm Saturday	As posted on local road network.	Access as outlined in Section 4.2.
Heavy Rigid and Articulated Vehicles	TBC once material delivery routes are known and 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 4.2. 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 DoT, Council and DEDJTR).	Usually undertaken with convoy at controlled speeds of 20 km/h and lower.	Access as outlined in Section 4.2. (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 HDWF site includes:

- School bus services along OD route:
  - Penshurst-Port Fairy Road (Princes Highway to Penshurst-Warrnambool Road).
  - Penshurst-Warrnambool Road (High Street, Koroit to Minjah-Hawkesdale Road).
  - Princes Highway.
- Additional service along Construction Vehicle routes:
  - Woolsthorpe-Heywood Road (west of Willatook-Warrong Road).
  - Tarrone Lane.

These school bus routes will not be used by heavy construction and OD vehicles during bus operating times. The nominated works contractors will need to review and verify school bus (both public and private) operating times/routes and the commencement of the HDWF project and review prior to each new school term commencing.

8.6 Sustainable Transport Modes

8.6.1 Pedestrians / Cyclists

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

Site compounds should be secured to prevent unauthorised access and workers / construction vehicles should follow the road rules and specified signage on the road network to ensure the safety of pedestrians and cyclists is upheld.

8.6.2 Public Transport

The construction of the HDWF 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

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

8.7 Environmental Measures

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

8.7.1.1 Dust / Sedimentation

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

- Keeping vehicles to defined haul roads and access tracks and minimise vehicle movements on exposed surfaces.
- Enforce vehicle speed limits on the local road network.
- Minimise soil deposit on the surrounding public roads (use rumble grids and wheel washing facility if required).
- Complying with additional measures relating to vehicular movement and dust suppression included in the Environmental Management Plan.

8.7.1.2 Noise and Vibration

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

- With the exception of OD vehicle movements, vehicle movements (deliveries) to and from the site are to be undertaken during normal working hours.
- 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, information provided for or assumed in this TMP may change as contractors are engaged for the construction of HDWF and construction planning progresses. Consequently, a further addendum TMP will be created by the nominated contractor to inform both RRV and MSC of any new information which may impact on the findings or requirements of the TMP, as and when known.

An addendum to the TMP will also be prepared and submitted to the MSC and RRV, to the satisfaction for the Minister for Planning within:

- 28 days prior to a 20% or greater increase in construction vehicle numbers above the anticipated construction volumes documented in the endorsed TMP or
- Prior to any change to an endorsed construction vehicle routes (notably OD related) identified in the endorsed TMP.

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 HAPL review the TMP approximately one month after construction has commenced and half-way through the HDWF project cycle to ensure that the TMP is relevant. Consultation may be required with DoT and MSC 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.

HAPL 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.

9.3 TMP 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, undertaken as follows:
    a. Prior to the commencement of works (at the completion of road construction works approved as part of this TMP).
    b. At the commencement of works (and at times of erecting any traffic control devices).
    c. At any changes to the TMP (maybe due to unforeseen hazards).
    d. During both day / night operations for long term works (not considered applicable in this case but should be mindful).

e. If the TMP results in significant disruptions to traffic (considered to be minimal in this case).

f. If requested by health and safety representative, employees or local community.

2. **Road Safety Audits (RSA):** Only if significant construction works occur on the local road network. It is likely that the priority access intersection and haul routes would be subject to RSAs to ensure safe facilitation of the expected vehicular movements.

3. Audits will include an action plan to implement any recommendations and will be lodged with MSC and DoT-RRV for review. All audits will be undertaken by suitably qualified and experienced personnel.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 64 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

10.0 TMP Actions

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

The approved HDWF development is not expected to create a significant adverse impact on the operation of the surrounding road network when compared to background traffic.

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:

- Construct Woolsthorpe-Heywood Road / western site access intersection (noting eastern site access complete for heavy vehicle access).
- Upgrade Princes Highway / Penshurst.
- T-Port Fairy Road intersection.
- Upgrade Penshurst-Port Fairy Road / Penshurst-Warrnambool Road intersection.
- Upgrade Penshurst-Warrnambool Road / Woolsthorpe-Heywood Road intersection.
- Rehabilitate all intersections to their existing condition during the pre-construction phase.
- 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 unless major WTG components required replacement).

It is recommended that the following be finalised prior to commencing construction of the main works for the HDWF:

- Liaise with MSC and DoT-RRV to confirm school bus operating times and routes along roads to be used by construction and OD vehicles (and if found identified private schools themselves).
- Install road safety signage near wind farm access points, including cautionary/advisory signage on surrounding roads.
- Finalise program of regular inspections and rehabilitation works with MSC and DoT-RRV, including the commission of agreed RQA.
- Prepare community engagement program to notifications of activities.
- Commission transport contractor and finalise final OD route assessments and approvals in consultation with all necessary stakeholders. This would include obtaining necessary permits and approvals for OD vehicle transportation from DoT; NHVR and other relevant stakeholders.

A summary of key traffic management activities during the construction phase is presented in Table 14.

Table 14 Timetable for HDWF TMP

PRE-INTERNAL SITE CONSTRUCTION	INTERNAL SITE CONSTRUCTION	POST CONSTRUCTION
• Update TMP if local roads not assessed in this document are to be used by construction vehicles (i.e. commercial vehicles to/from local quarries and industries). • Agreements be made with the relevant bodies to confirm certain details of this TMP. • Prepare community engagement program to notifications of activities. • Construct Penshurst-Warrnambool Road / western site access intersection. • Construct Penshurst-Warrnambool Road / eastern site access intersection. • Submit permits and attain approvals from the relevant authorities (including NHVR, DoT and DEDJTR). • Install signage. • Perform first monthly inspection to note baseline conditions of upgraded intersections and road network. • OD delivery contractor to perform own audit of route and required mitigation measures, using this TMP as a guide.	• Upgrade Princes Highway / Penshurst-Port Fairy Road intersection (prior to first OD delivery). • Upgrade Penshurst-Port Fairy Road / Penshurst-Warrnambool Road intersection (prior to first OD delivery). • Upgrade Penshurst-Warrnambool Road / Woolsthorpe-Heywood Road intersection (prior to first OD delivery). • Deliver material and goods to the site. • Conduct monthly road quality inspections of upgraded intersections and road network. • Perform maintenance works based on outcomes of monthly inspections. • Independent Engineer to conduct agreed quality inspections road network. • Perform maintenance works based on outcomes of regular inspections as identified by Independent Engineer in agreement with RRV and MSC. • Undertake measures required by the Environmental Management Plan relating to supressing dust generated by vehicular movement.	• Rehabilitate all upgraded intersections and road sections to their existing pre-construction condition from Independent Engineer and in agreement with RRV and MSC. • Remediate all site access points to only cater for operational phase traffic. • Continue operational phase of HDWF.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 66 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Appendix A

Legislation, policy and guidelines

Appendix A Legislation, policy and guidelines

Table 15 summarises the relevant legislation, policy and guidelines that applies to the HDWF project and this TMP.

Table 15 Primary legislation and associated information

Legislation / policy guidelines	Key policies / strategies
Victoria Planning Provisions – 52.32 Wind Energy Facility	The purpose of VPP planning clause 52.32 is to facilitate the establishment and expansion of wind energy facilities, in appropriate locations, with minimal impact on the amenity of the area. With regards to traffic and transport 52.34-4 stated that the as part of the design response that access road options need to be considered. 52.32-6 states that before deciding on an application, in addition to the decision guidelines of Clause 65, the responsible authority must consider several documents and guides as appropriate. The most applicable document to traffic impacts being the Development of Wind Energy Facilities in Victoria, Policy and Planning Guidelines (March 2019).
Development of Wind Energy Facilities in Victoria, Policy and Planning Guidelines (March 2019)	Guide set out: • A framework to provide a consistent and balanced approach to the assessment of wind energy projects across the state; • A set of consistent operational performance standards to inform the assessment and operation of a wind energy facility project; and • Guidance as to how planning permit application requirements might be met. With regards to traffic impacts the guide states: • In section 4.2.2 Seek Expert Advice, the document states that an application should be accompanied by an assessment considering the traffic impacts (amongst others) of the proposal, with the assessment undertaken by a suitably qualified person. • Model planning permit conditions for wind energy facilitates are provided in Appendix B of the guidelines with reference to Traffic Management and the following to be considered as an example to local authorities: - Vehicle access points - Pre-construction public road surveys - Traffic Management Plan (TMP). Traffic upgrade works.
Road Management Act 2004 (Victoria)	Road Management Act (General) Regulations 2016. Road Management Act (Works and Infrastructure) Regulations 2015. Code of Practice – Worksite Safety Traffic Management.
Department of Transport (VicRoads) – Road Management Plan	The VicRoads Road Management Plan details the management and maintenance of roads registered under the VicRoads register of public roads. VicRoads manages its infrastructure in five phases; development of standards and guidelines, development of a maintenance program, implementation of the management program, auditing and review. The VicRoads road management plan also details maintenance inspection and response schedules.

Legislation / policy guidelines	Key policies / strategies
Transport Integration Act 2010	The Act provides a legislative framework for transport in Victoria. The Act seeks to integrate land use and transport planning and decision-making by applying the framework to land use agencies whose decisions can significantly impact on transport. The Act requires agencies, including the Department of Transport and Planning Authorities, to consider the potential impact of land use planning proposals on transport.
Road Safety Act 1986	Road Safety Road Rules, 2017.
	Road Safety (Traffic Management) Regulations, 2009.
Towards Zero 2016-2020 – Victoria's Road Safety Strategy & Action Plan	This strategy aims to reduce fatalities and serious injuries by 15 per cent, with the ultimate aim of bringing the annual road toll under 200 per year by 2020.
AS1742.3 2009 – Traffic control for works on road	This standard sets out all matters to be considered as being essential to a Traffic Management Plan (TMP) such as traffic demand, traffic routing, traffic control, special vehicle requirements and over-dimensional vehicles which will be developed at later stage of the Project following this TIA.
Austroads – Guide to Road Design Part 3: Geometric Design	The Guide to Road Design is one of a set of comprehensive Austroads Guides developed to provide a primary national reference for the development of safe, economical and efficient road design solutions.
Austroads – Guide to Road Design Part 4: Intersections and Crossings	
Infrastructure Design Manual (2020)	The Infrastructure design manual (IDM) is a standardised set of requirements for the design and development of infrastructure – required by a set of participating Victorian rural and regional councils

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 69 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Appendix B

Stakeholder consultation

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 70 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Appendix B Stakeholder consultation

VicRoads (now DoT)

September 2009

URS (now AECOM) liaised with VicRoads officers during the development of the TMP. The Traffic Safety Services, Works and Program Development Divisions were contacted with regards to the movements of the over-dimensional loads and proposed transmission line locations.

The consultation with the Works Division involved the process requirements of the transmission lines layout where they intersected road reserves. VicRoads require detail of Traffic Management Plans where transmission lines intersect road crossings. The detail of pavement restoration is required where road under boring techniques are adopted prior to VicRoads approving transmission line installation. However, it is proposed for this project that the high voltage transmission lines will intersect public roads overhead with all poles being erected within private land and will therefore avoid any installations within road reserves.

The consultation with the Program Development Division concerned the design and footprint required for the site access locations where they intersected VicRoads declared roads. The access driveways will be larger than a standard crossover as the turning movement of an OD vehicle will generate a far greater footprint than a normal heavy or light vehicle. As such, the final design for construction drawings of these accesses will need to be submitted to VicRoads prior to construction.

August 2017

Following a direction hearing held on 24 July 2017 VicRoads notified DEWLP their willingness to present at the hearing with regards to the Hawkesdale and Ryan Corner wind farm planning applications.

VicRoads letter dated 2 August 2017 gave an initial assessment which in summary stated the following:

- Reasonable to state that the submitted TMPs at the time generally met the relevant planning conditions. However, it noted that due to planning stage of project that once approved traffic volumes and routes known (particularly with regards to quarry materials) that a secondary TMP must be forwarded to VicRoads and Council(s) for approval.
- VicRoads requested that any secondary TMP to consider:
  - Nominate all haulage routes from potential quarries to the project site.
  - Avoid arterial and local roads that present potential road safety risks due to increased heavy vehicle movements e.g. roads with existing fragile pavements or narrow seals, and road that travel through local Townships.
  - Avoid potential road safety issues with school buses by nominating appropriate non-conflicting haulage routes or imposing “no-go” time periods.
  - Describe all mitigating road works associated with access to the project site, and outline the level of the developer’s obligations regarding the works, e.g. construction methods and the timing of the works, and associated traffic management issues.
  - Describe the maintenance methods and financial obligations for addressing potential damage and impacts to arterial and local roads during the construction of the project.
- VicRoads suggested that the applicant entered into an agreement with VicRoads and the relevant authority, on a framework for developing a secondary TMP, which determines the applicant’s obligations and commitments for addressing all associated transportation and traffic related impacts during the construction of the projects.

June 2018

On 18 June 2018, AECOM submitted draft TMP version 10 to VicRoads for assessment and endorsement. VicRoads endorsed the TMP, whilst also providing the following comments:

- The report acknowledges many traffic management issues are still yet to be confirmed.
- VicRoads appreciates that there are several unknown elements in the early planning phase of a wind farm project, including but not limited to quarry locations (on site vs. off site) and sources for construction materials, i.e., crushed rock, fill, cement.
- Once construction processes are determined and BoP contracts have been awarded, a secondary TMP must be forward to VicRoads and Council(s) for approval.
- VicRoads reiterated the need for the applicant to enter into an agreement with VicRoads and relevant authorities for a secondary TMP, as previously noted by Moyne Shire Council

November 2020

DoT-RRV provided comments on the updated revision 11 HDWF TMP via email on Monday 30 November 2020, which are provided in Appendix B, along with a response sheet to those comments as to the relative updates as part of the revision 12 report.

April 2020

DoT-RRV provided comments on revision 13 of the HDWF TMP via email on 22 April 2021. The detail of the feedback is provided in Appendix B and relates to maximum vehicle volumes permitted without additional approval from DoT-RRV and the costs of damage caused and not remedied by HAPL (according to the RQA report) will be charged to HAPL. DoT-RRV confirmed in their correspondence dated 22 April 2021 that the HDWF TMP would be to their satisfaction once the above-mentioned feedback is addressed in the revised TMP.

March 2021

DoT-RRV provided email acceptance with regards to the proposed maximum vehicles/day and inspections frequencies being undertaken on a fortnightly basis along Penshurt-Warrnambool Road (C178) and Woolsthorpe-Heywood Road (C176), from commencement of construction until WTGs footing are completed. Once works complete, the number of trucks per day would be revisited, and the potential inspection frequency adjusted to monthly or bi-monthly inspections, following consultation with DoT-RRV and MSC.

Moyne Shire Council

September 2009

A meeting was held with the Director of Physical Services from Moyne Shire Council at Council's offices in Port Fairy on 15 September 2009 along with subsequent phone and email correspondence. During the meeting the planning permit conditions were discussed and Council outlined several concerns and suggested several recommendations to be considered in the development of the TMP.

Woolsthorpe-Heywood Road and Penshurst-Warrnambool Road are not local Council roads and as such the access arrangements into site are to be discussed with VicRoads.

Sufficient and appropriate signs (such as Give Way, Construction Vehicles etc.) are to be in place at the two access points into the site. Signage for local roads unsuitable for construction traffic is to also be installed.

School bus routes operate throughout the area and OD and construction vehicles must not interfere with their operation.

Council does not wish to impose a blanket ban of '8am – 9:30am, 2:30pm – 4pm', but rather provide a smaller window of 30 minutes where it is anticipated that the school bus will be utilising a certain road. This window of timeframe will be confirmed upon finalisation of the wind farms delivery timetable.

Although Council does not impose mandatory curfew hours of operation, they expect that all construction activities will occur during reasonable hours of the day. As an indication, it was suggested that this refers to daylight hours for most of the year (e.g. 6am – 7pm Monday to Friday).

Council does not require a security deposit due to the number of heavy construction vehicles generated during the construction phase of the project. This is due to all access points intersecting VicRoads declared roads. Council would expect that any upgrades occurring to these roads would be rehabilitated into their former state to the satisfaction of VicRoads. Due to local climatic conditions, upgrade works may need to align with summer months in order to avoid boggy conditions. Council has requested that consultation be made with them with regards to power line post locations and traffic routing associated with the installation of the transmission lines.

Council has advised that they currently do not require the payment of a security deposit as all proposed routes for OD and construction vehicles remain within VicRoads declared roads.

2017

Council made the following requests following panel hearing in 2017:

- Traffic Impact Assessment (TIA) should be submitted for the HDWF amendment application, to enable Minister, VicRoads and Council to properly review and assess the potential road and traffic impacts result from the amended project.
- Council requested the opportunity to review an updated TIA prior to any final Panel assessment and determination for the amendment application, and be provided with an opportunity to make submission on this matter 'on the papers' with the Panel.
- Council requests that the Panel directly seek advice from VicRoads on any comments or requirements it has for updates or changes to the permit conditions, as the relevant authority responsible for the management of the arterial road network.
- Council request that the Panel review and update the TMP conditions for the HDWF planning permit, to ensure that they are consistent with the Planning and Policy Guidelines for Wind Energy Facilities (DELWP 2016) and meet best practice industry standards.
- Council request that any amended conditions of HDWF planning permit include specific requirements for an Independent Road Quality Auditor to be appointed for the project by the proponent.

June 2018

Upon review of the latest draft TMP (Version 10), Council made specific reference to the importance of an appointed Road Quality Auditor, as part of the TMP, to uphold appropriate traffic management and maintenance overall for the project.

September 2020

A teleconference meeting between MSC, GPG and AECOM was held on Wednesday 9 September 2020 to discuss TMP requirements.

The following is an overview of TMP inclusions and other considerations to be made based on MSCs recent project experiences:

- Provide further clarification around the use of Youls Road during construction and necessary upgrade requirements.
- Provide confirmation of local quarries used on the project, including locations and the surrounding local road usage.
- Provide further details around local road condition and monitoring strategy. MSC provided an example document for reference, which is consistent with their expectations around wording and content (however noting that inputs had been further redefined since).
- Ensure TMP requirements are filtered down to subcontractors on the project. MSC have implemented a levy system whereby penalties are incurred for non-compliance.
- Community relations must be a priority to ensure all aspects of project are communicated and managed in a suitable manner.

Following the meeting MSC sent an email on Wednesday 16 September 2020 outlining MSC's requirements with regards to infrastructure condition inspections, rehabilitation program, construction vehicle identification and some initial comments on the TMP submitted in 2018.

December 2020

MSC provided comments on the updated revision 11 HDWF TMP via email on Monday 21 December 2020, which are provided in Appendix B, along with a response sheet to those comments as to the relative updates as part of the revision 12 report.

February 2021

On 17 February 2021, MSC provided feedback regarding Tarrone Lane, baseline photographic dilapidation report, and confirmation around regular RQA inspection and repair timeframes during construction. In particular, Council requested that a Level 2 bridge assessment be undertaken by an independent engineer and at HAPL's cost to assess the suitability of the bridge for the proposed traffic volumes. Depending upon the result of that assessment, MSC could require HAPL to undertake works at their cost prior to using Tarrone Lane as a haulage route for construction of the wind farm. Further Level 2 bridge inspections may be required throughout the duration of the project. These assessments/reports may be requested by Council as required, or via the independent RQA inspection reports. At a minimum, another Level 2 bridge assessment will be required at the end of the project and any defects attended to prior to Council signing off.
In the same correspondence, MSC provided detail on how they require the baseline photographic dilapidation report to be undertaken.

March 2021

GPG sent information to MSC (email dated 25 March 2021) on the appointed Road Quality Audior and nominated routes for inspection, these included:

- Tarrone Lane – MSC local road quarry to intersection of the C178 (7.5km of sealed 2 lane road).
- Penhurst-Warrnambool Road (OSOM) route of 8.4km in length.
- Woolsthorpe-Heywood Road C178 – total of 2.7km in length.

Following inspections confirmed to be undertaken:

- Pre-construction inspection of the haulage route
- Level 2 bridge inspection of the bridge located to the east of the Holcim quarry on Tarrone Lane.
- Fortnightly inspections of the haulage route.
- Final comparison route.

Advised that once bulk earthworks and footings are completed that the daily truck numbers can be reviewed and the requirement for fortnightly inspections revisited, with monthly or bi-monthly inspection frequencies proposed, pending consultation with DoT-RRV and MSC.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 75 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Appendix C

RJA OD Route Survey for HDWF

REX J ANDREWS
ENGINEERED TRANSPORTATION

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 77 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

ROUTE SURVEY: VESTAS HAWKESDALE WIND FARM: EX PORT OF PORTLAND

02/09/2021 REV 01

Rev.	Date	Change	Responsible	Checked
00	16/09/20	Route Assessed	W Andrews	✓
00	16/09/20	Report compiled	W Andrews	✓
00	18/09/20	Report completed	W Andrews	✓
01	02/09/21	Minor updates	C Ewin	✓

Index:

1.0 Introduction

This document describes observations and previous experience on route and explains the Transport of Wind turbine equipment from Port of Portland to the Hawkesdale wind farm.

This Route survey took place on 16-09-20.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 79 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

2.0 Evaluation

1	No work
2	Some amount of work
3	Moderate amount of work
4	Extreme amount of work

(Mark below boxes with an X)

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

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 80 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

3.0 Project data.

Date of latest Route Assessment. 16/09/2020
Survey undertaken by. (Rex J Andrews P/L)
Project name. Hawkesdale Windfarm
Location. Portland (VIC) to Hawkesdale (VIC)
Turbine type. 23 x Vestas V136-4.2MW 112m H/H 4 section

4.0 Transport combinations.

23 x Nacelles (13.5l x 4.1 w x 4.2h x 126.0T)
Configuration. Prime mover with 2x8-10x8 Low loader with backup prime mover
Overall dimensions: 48.0l x 4.2w x 5.2h x 212.5T.

23 x Hubs (5.5l x 3.8w x 3.9h x 36.0T)
Configuration. Prime mover with 4x4 Low Loader.
Overall dimension: 19.0l x 4.0w x 4.9h x 54.5T.

69 x Blades (67.0l x 4.26w x 3.4h x 21T)
Configuration. Prime mover with 1x4 dolly 4x4 Extendable Blade trailers.
Overall dimension: 75.0l x 4.3w x 5.0h x 63.5T.

23 x Base Towers (21.3l x 4.95 x 4.65 x 78.0T)
Configuration. Prime mover with 8x8 Low extending platform trailer.
Overall dimension: 35.0l x 5.0w x 5.6h x 122.5T.

23 x Mid1 towers (28.0l x 4.65 x 4.4 x 64.0T)
Configuration. Prime mover with 4x8 4x8 extending platform trailer.
Overall dimension: 42.0l x 4.8w x 5.6h x 126.5T.

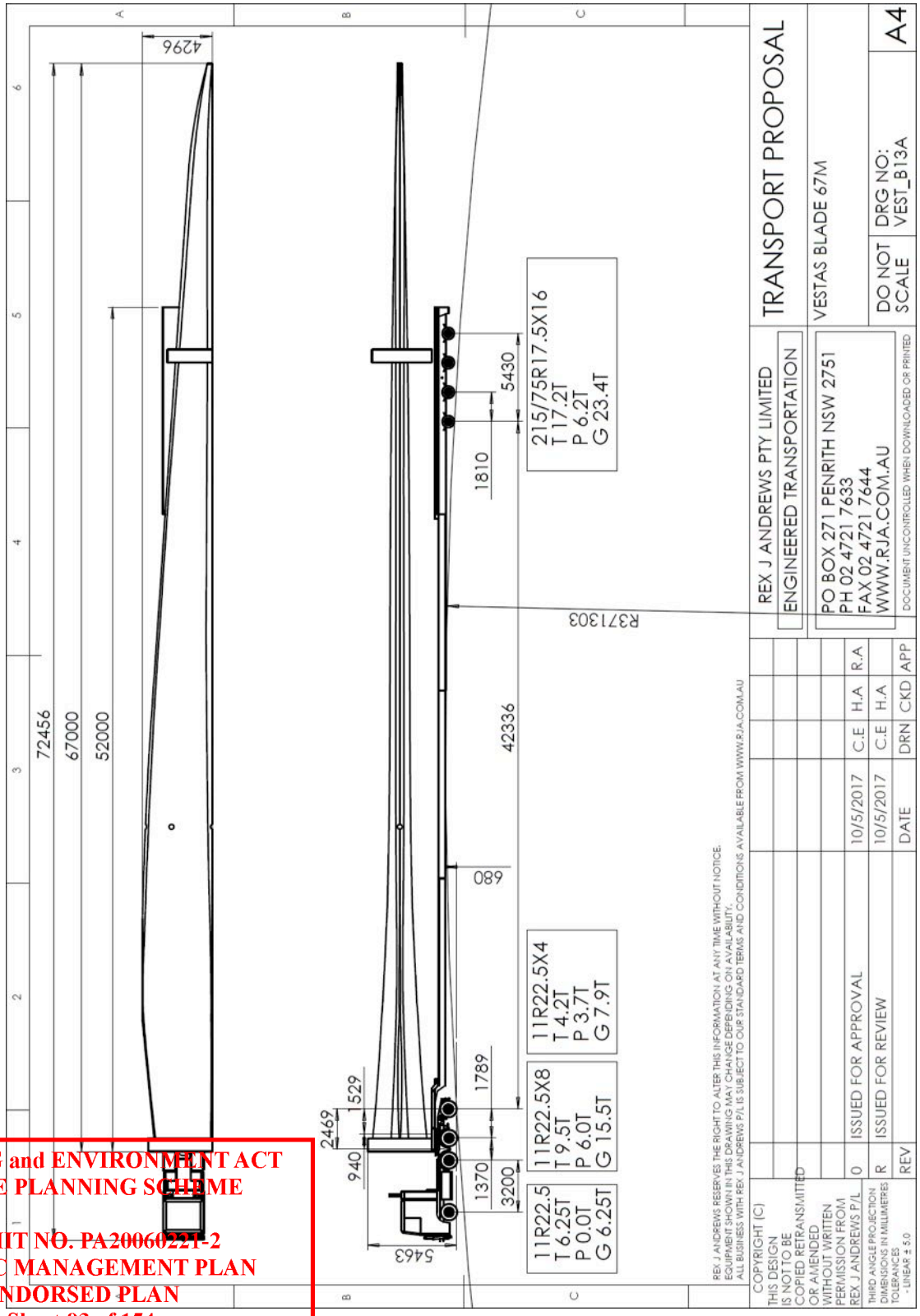
23 x Mid 2 towers (29.9l x 4.4 x 3.9h x 52T)
Configuration. Prime mover with 4x4 Dolly 3x8 Jinker
Overall dimension: 44.0l x 4.5w x 5.6h x 97.5T.

23 x Top Towers (30.0l x 3.9w x 3.3h x 47T)
Configuration. Prime mover with 3x4 Dolly 2x8 Jinker
Overall dimension: 42.0l x 4.3w x 5.2h x 77.5T.

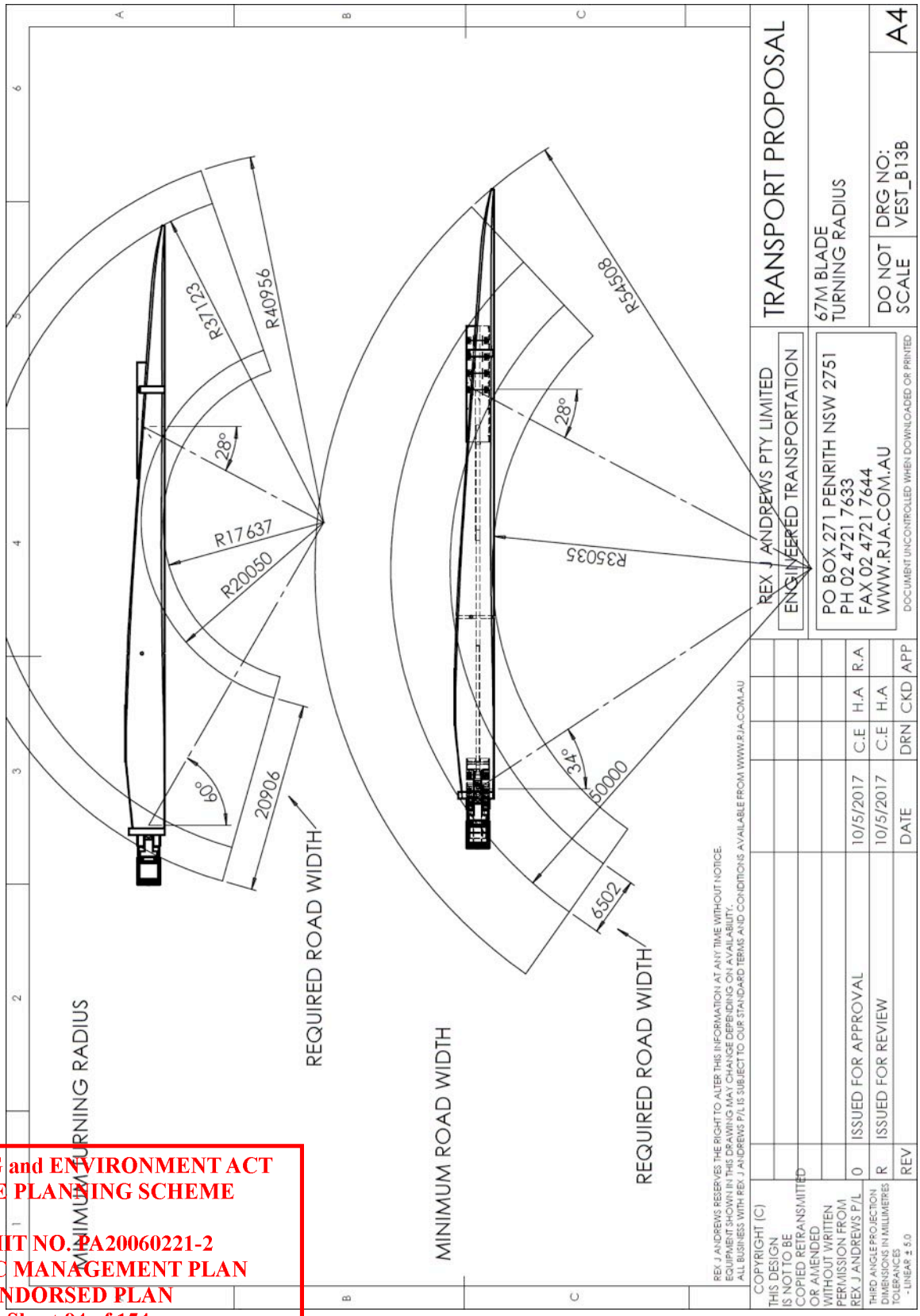
54 x 40ft Containers (12.0l x 2.4w x 2.4h x 12.0T)
Configuration. Prime mover with 3x4 Sideloader
Overall dimension: 19.0l x 2.5w x 4.3h x 42.5T.

5.0 Transport drawings.

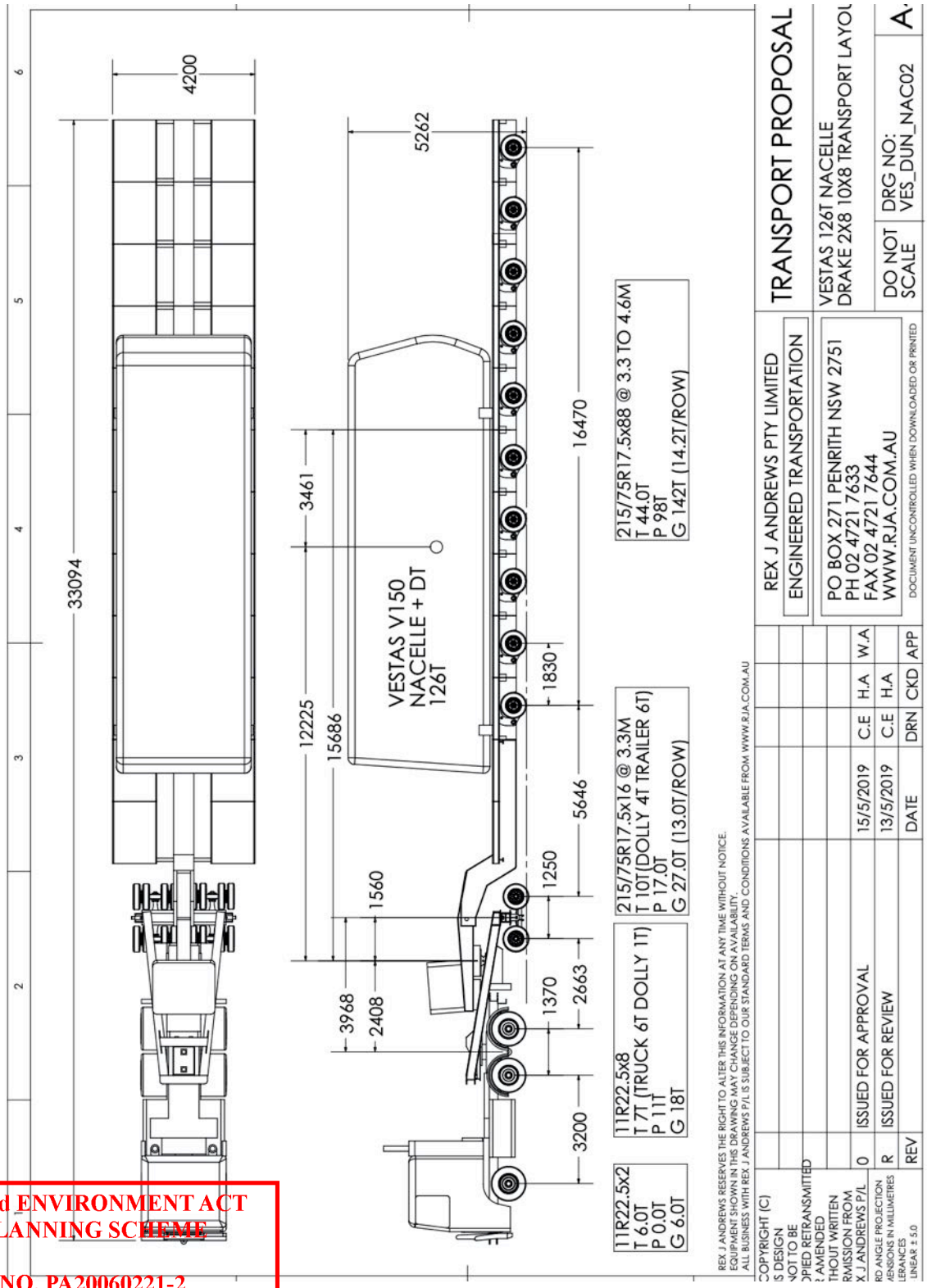
Blade transport drawing



Blade swept path drawing



Nacelle transport drawing:

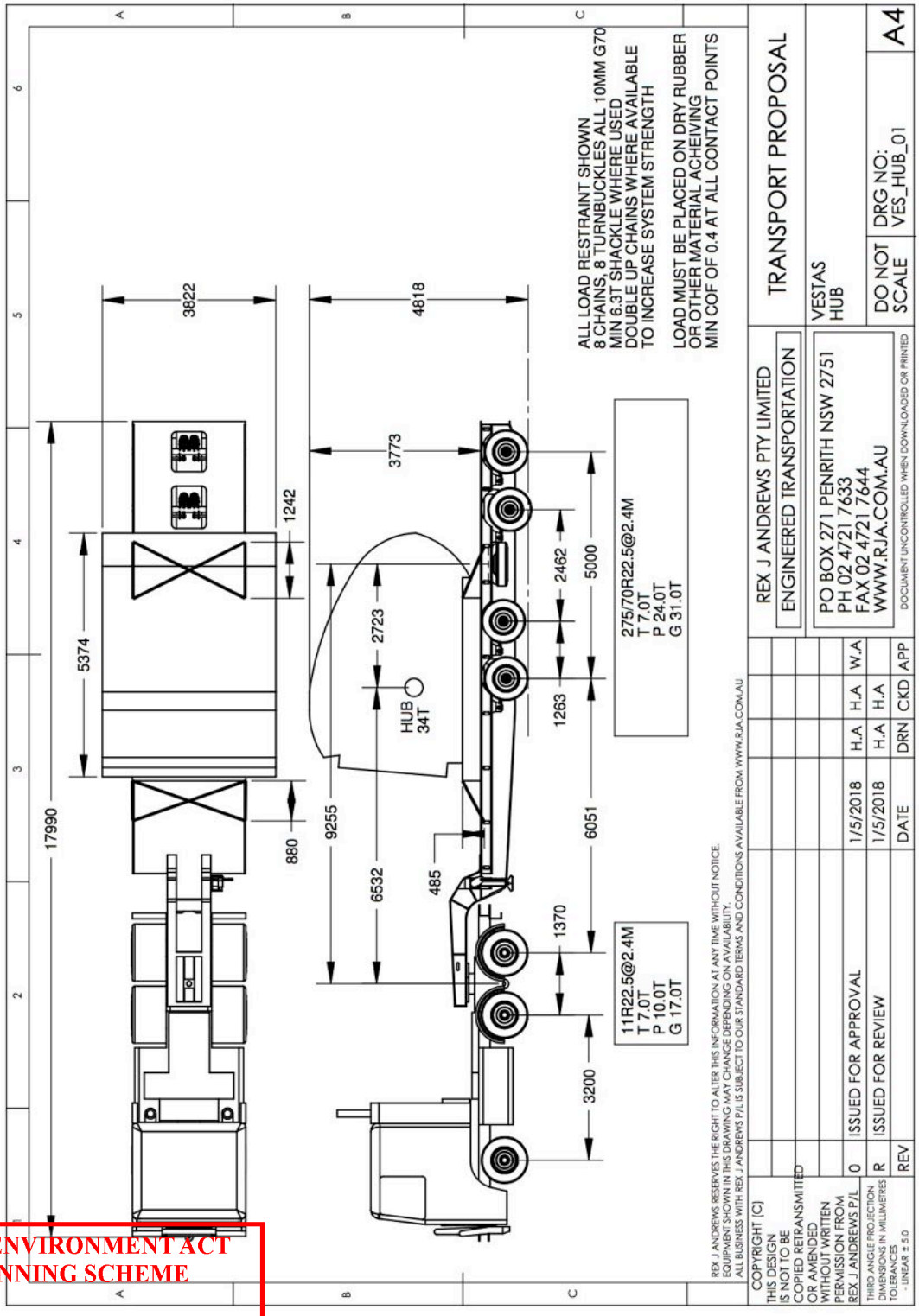


PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

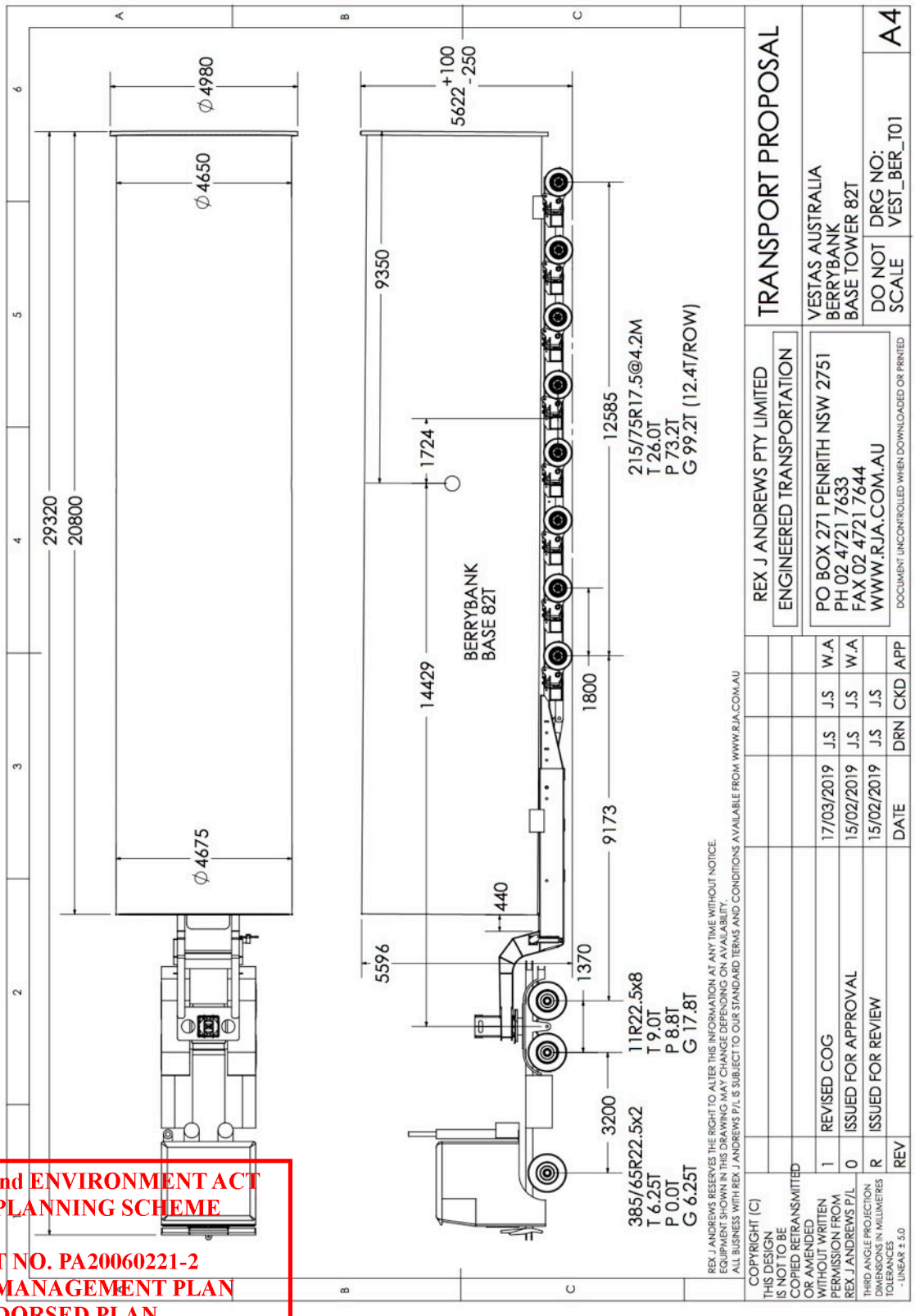
PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 85 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

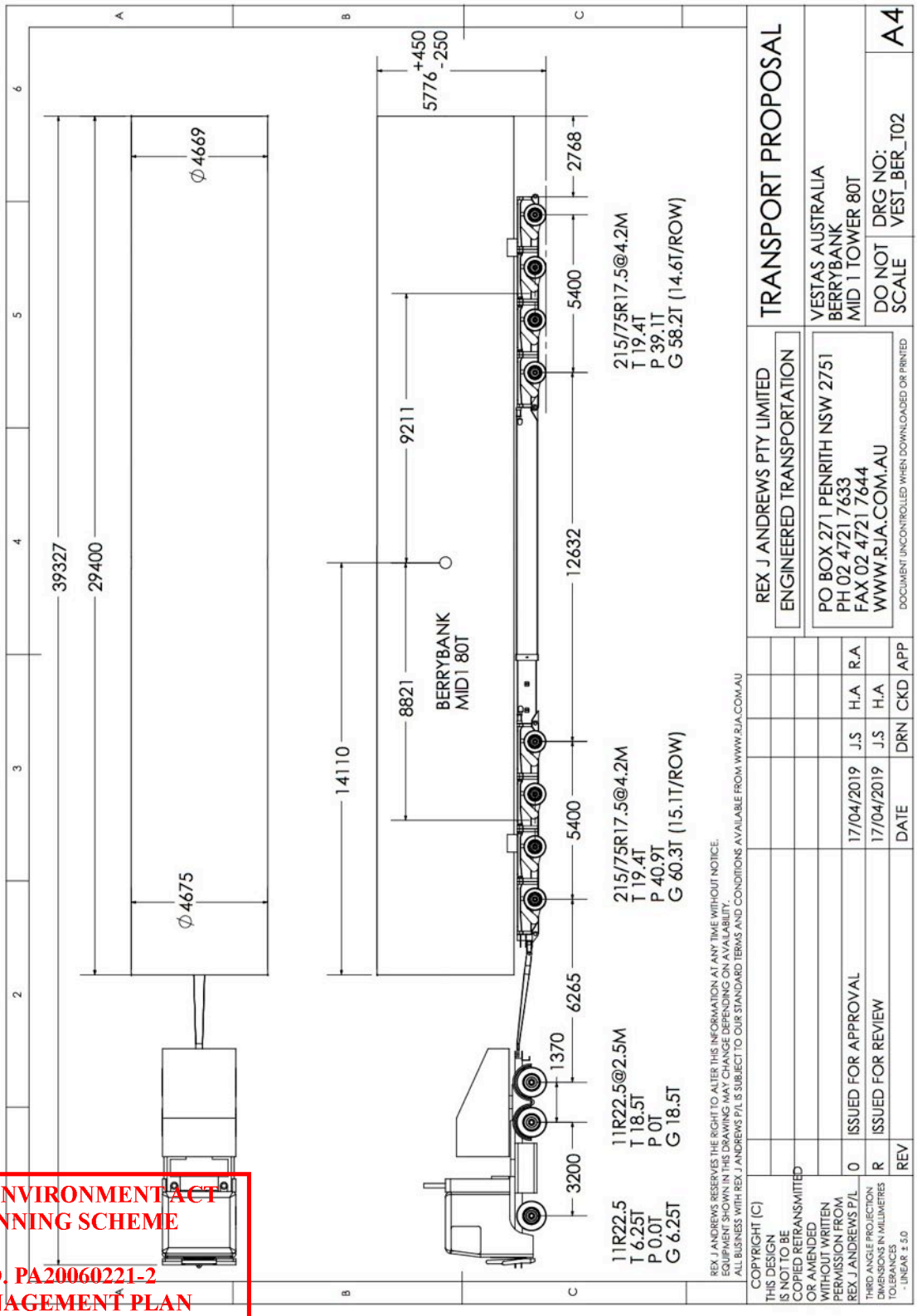
Hub transport drawing:



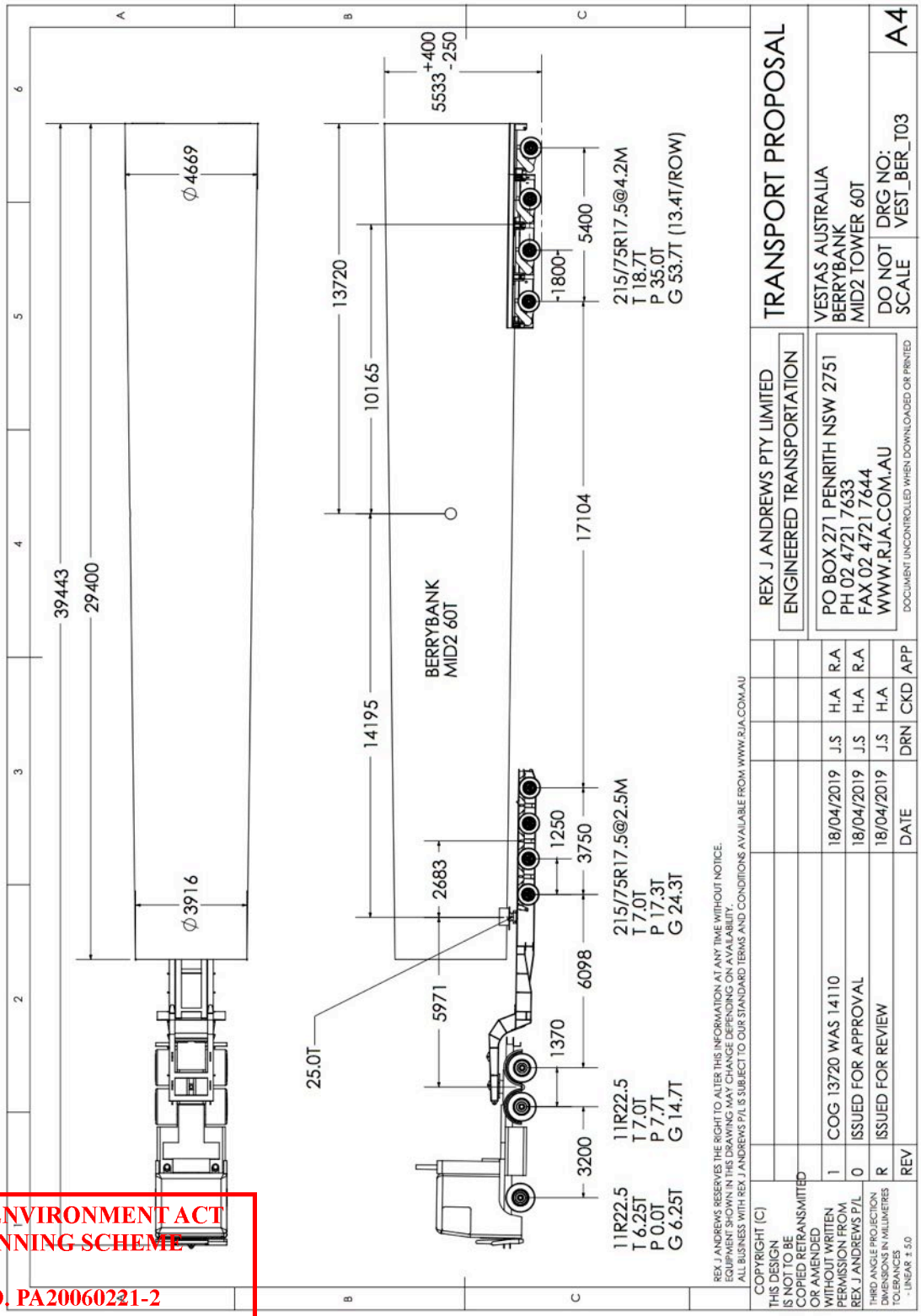
Base tower transport drawing:



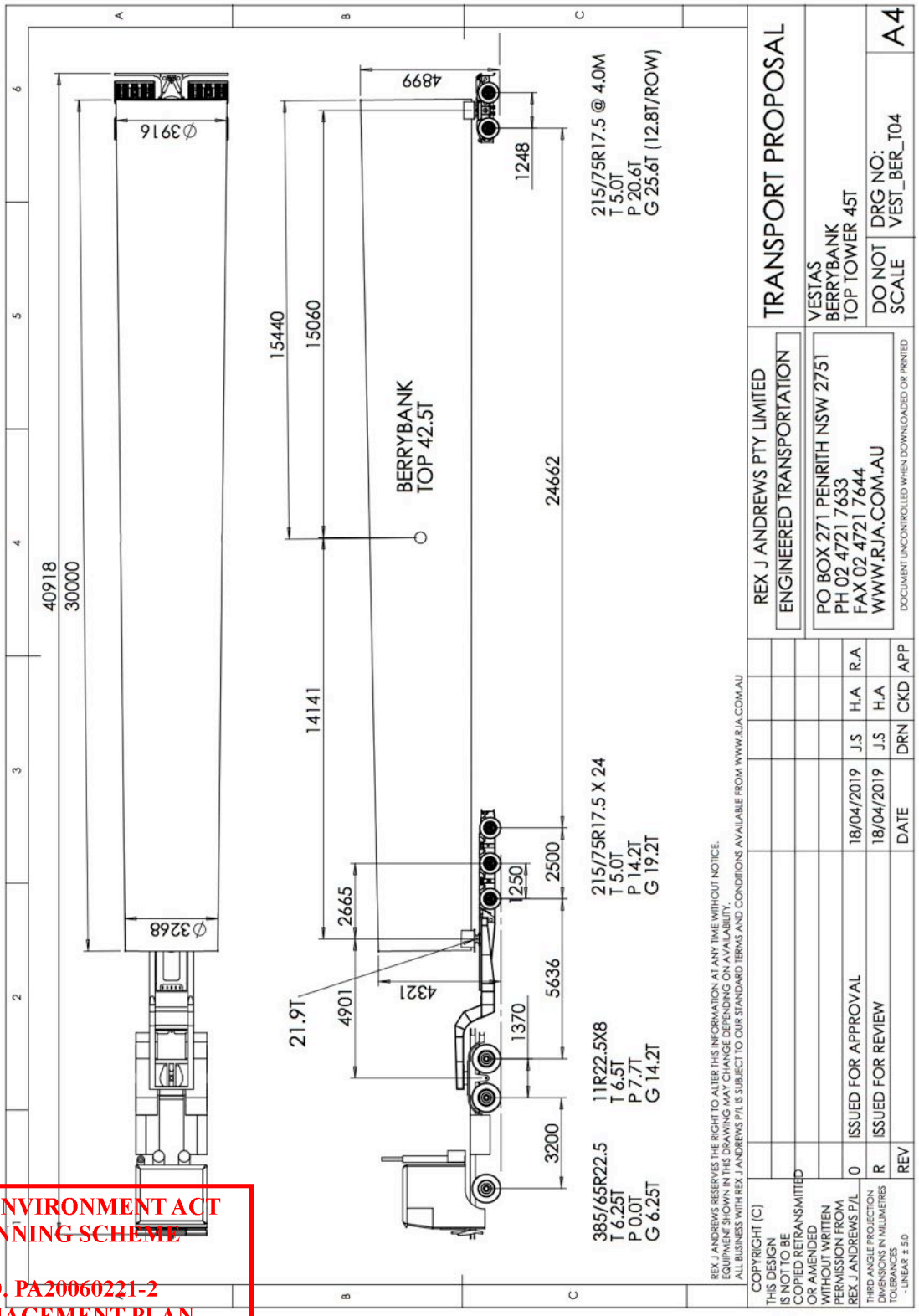
Mid tower 1 transport drawing:



Mid tower 2 transport drawing:

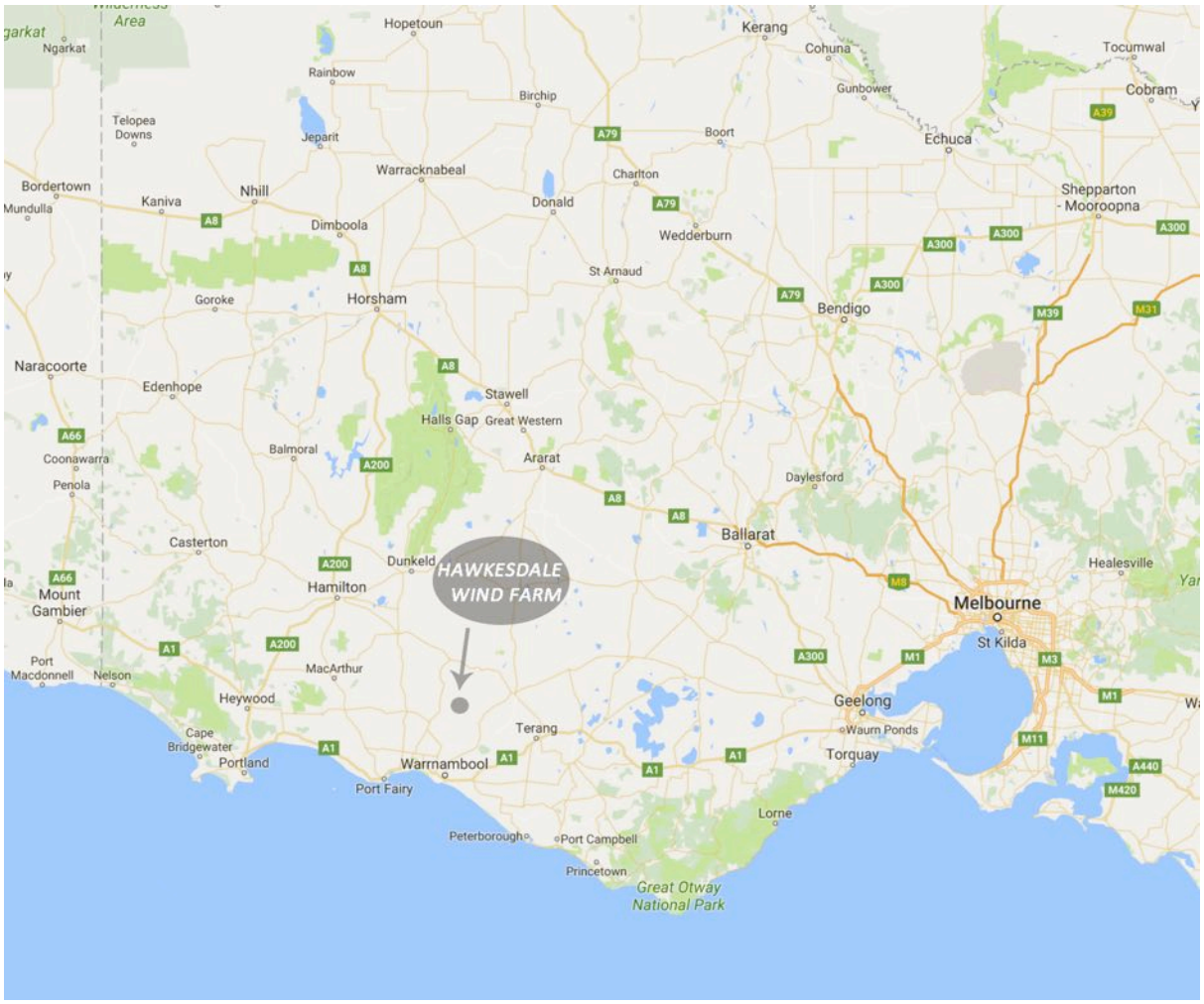


Top tower transport drawing:



6.0 Site Location.

The Hawkesdale Windfarm is Located in South-Western Victoria ~5km south-east of Hawkesdale township, 30km north-west of Warrnambool within the Moyne Shire Local Government Area. The project area covers an area of ~2280 ha currently used primarily for agricultural activities including grazing of sheep and cattle. Modification made to reduce the number of turbines to 26 larger capacity models instead of 31. The project will connect to the grid via a 132kV overhead transmission circuit to the existing 500kV Tarrone Terminal Station.



7.0 Port of Import (Port of Portland).

The ideal berth for discharge would be the #5 Berth. This berth is situated in Portland harbour, and has road access via Madeira Packet Road Portland.

This berth has handled various wind farm projects in South-West Victoria and has accommodated blades of up to 63 metres in length in the past.

We see no problems with wind turbines exiting the port.

Storage at the port may be available for short-term lease of up to 10,000 S/Q metres; alternatively, Rex J Andrews Pty Ltd currently has 60,000 s/q metres of Hardstand and Keppel Prince has 40,000 s/q metres of hardstand.

PORT IMAGE:

RJA STORAGE YARD IMAGE:

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 93 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

8.0 Transport summary.

We have based this study on the turbine components, and all imported towers entering Australia via the Port of Portland (Berth #5) Local towers may also be sourced from KP Portland (VIC). The wind farm will need to be accessed by two different routes for the deliveries.

ROUTE SURVEY A: Port of Portland to RJA storage "Blades and Turbines"

(7.4 kilometres): After completing this route survey, we believe the following is the most suitable option.

This route took us via Quay Road, Madeira Packet Way, Henty Highway, Portland-Nelson Road.

GPS Link: https://goo.gl/maps/NDGHdqba9sz3KJCw5

ROUTE SURVEY B: Port of Portland to RJA storage "Towers"

(20.4 kilometres): After completing this route survey, we believe the following is the most suitable option for towers loads that exceed an overall height of 5.4 metres.

This route took us via No 2 Quay Road, Madeira Packet Road, Cape Nelson Road, Mailings Road, Thorns Road, Bridgewater Road, Henty Highway, Portland-Nelson Road.

GPS Link: https://goo.gl/maps/VTpyHtcD7Y5Nuq4y9

ROUTE SURVEY C: RJA Storage to Hawkesdale – Option 1 (105.0 kilometres): After completing this route survey, we believe the following is a possible option.

This route took us via Portland-Nelson Road, Cashmore Road, Henty Highway, Princes Highway, Penshurst-Port Fairy Road, Penshurst-Warnambool Road, Woolsthorpe Heywood Road.

GPS Link: https://goo.gl/maps/XkpgagUzudLUaMhD8

ROUTE SURVEY D: RJA Storage to Hawkesdale – Option 2 (94.3 kilometres): After completing this route survey, we believe the following is a possible option.

This route took us via Portland-Nelson Road, Cashmore Road, Henty Highway, Woolsthorpe Heywood Road, Hamilton-Port Fairy Road, Woolsthorpe Heywood Road.

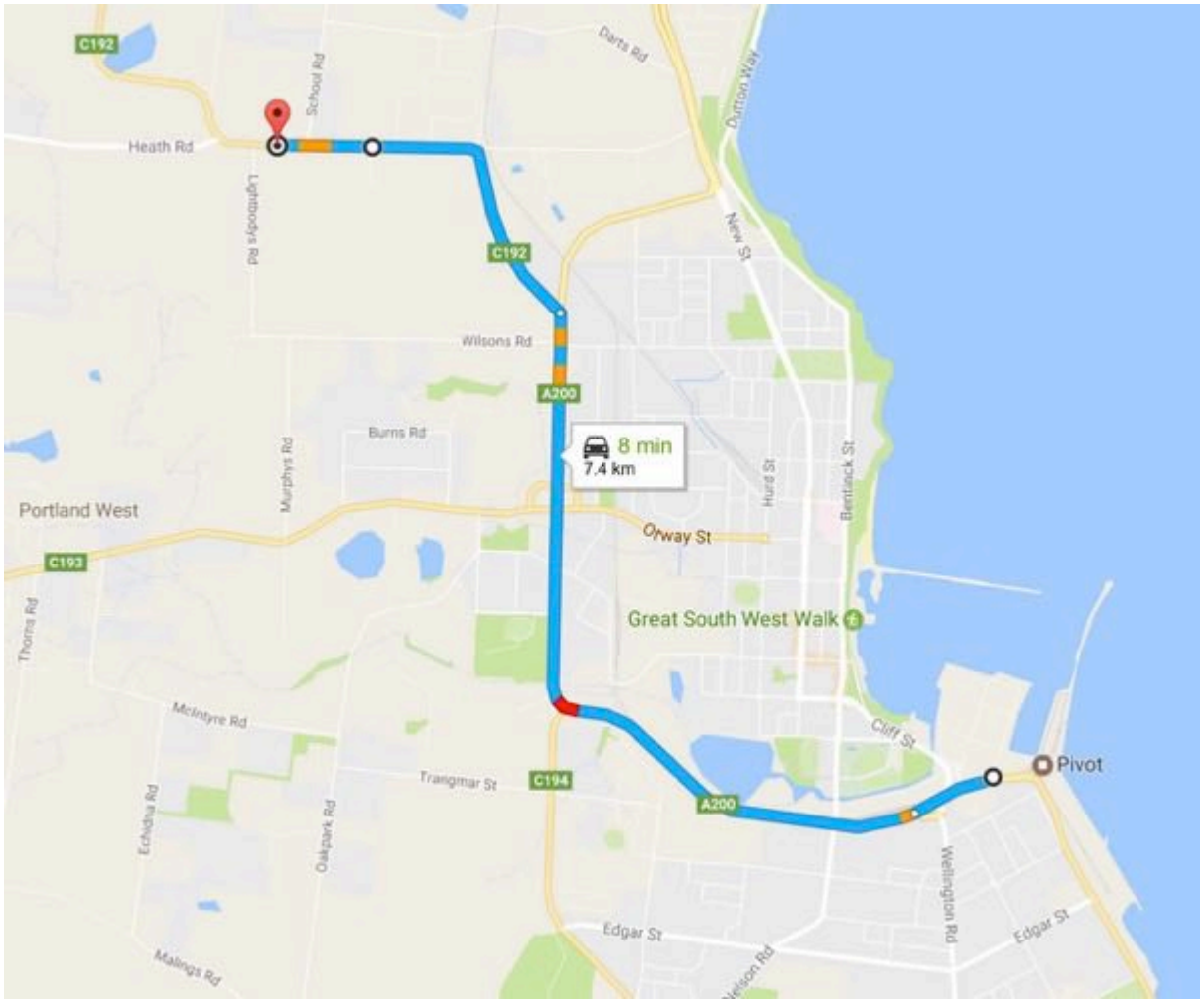
GPS Link: https://goo.gl/maps/8KKPyqFPsdHsyef49

9.0 Route Survey A: Port of Portland to RJA storage "Loads under 5.3 metres high".

ROUTE: Port of Portland to RJA storage (7.4 kilometres):

GPS LINK: https://goo.gl/maps/tGkVQPUu7Yu

This route took us via Quay Road, Madeira Packet Way, Henty Highway, Portland-Nelson Road.



PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 95 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

KEY	
MODIFICATIONS REQUIRED	
PINCH POINT	

KM index	Location	Section of road	Critical Measurement	Procedure	Notes
0.0	Portland	Port of Portland onto Madeira Packet Road GPS Link: https://goo.gl/maps/Dmb15XGtrSK2	Length: 75 metres Width: 9.0m at the gate	Right hand turn	Port has been modified to allow blades of up to 75 meters to exit the port. A spotter will need to assist with the loads as they exit the gate.
0.2	Portland	Madiera Packet Road under Cliff Street GPS Link: https://goo.gl/maps/RWN8fJMUcpt	Height: 5.5 metres	Travel directly under the overbridge	The Bridge has a clearance of 5.5 meters high in the right lane. Loads can stay in the right-hand lane if the exceed 5.2 meters.
4.0	Portland	Henty Highway under Bridgewater Road GPS Link: https://goo.gl/maps/boWmnu6TuUo	Height: Left lane: 5.2 metres Centre lane: 5.3 metres Right lane: 5.5 metres	Travel directly under the overbridge	The Bridge has a clearance of 5.2 meters high in the right lane. However, if the loads travel on the far-right hand side of the bridge, they can pass under at up to 5.5 meters high. Loads that exceed 5.4 meters will need to use the detour.
5.1	Portland	Henty Highway onto Portland-Nelson Road GPS Link: https://goo.gl/maps/unep2nCFK7J2	Length: 75.0 Metres	Slight left-hand turn	The blades will need to cross from the incorrect side to the incorrect side. Spotter to guide load through the corner.
6.2	Portland	Portland-Nelson Road at the intersection of Cashmore Road GPS Link: https://goo.gl/maps/PQNj2mgLGhm	Length: 75.0 Metres	Left hand turn	The blades will need to cross from the incorrect side to the incorrect side. Signs to be removed and replaced for each movement. A spotter to guide load through the corner and pay close attention to the pole on the inside of the turn.
7.4	Portland	Portland-Nelson Road into RJA storage. GPS Link: https://goo.gl/maps/LMkBd4NyBZ82	Length: 75.0 Metres Width: 9.0 Metres	Left hand turn	The blades will need to cross from the incorrect into the storage area. Spotter to guide load through the corner.

0.0 Km's: Exiting Portland Port.

Image 1:

Procedure: Exit port heading south and turn right onto Madiera Packet Road.

GPS link: https://goo.gl/maps/DGyXgynapAH2

Comments: The corner has been upgraded to allow 73.0 metre blades to exit the port. Spotter to guide the load through this section of road.

Road modifications: No works required.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 97 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

4.0 Km's: Henty Highway Bridge Water Road over pass at Portland.

Image 1:

Procedure: Pass under overhead bridge.

GPS link: https://goo.gl/maps/yR5syUkJJyP2

Comments: The Bridge has a clearance of 5.23 metres high in the left lane and 5.5 metres in the right lane. Care to be taken. It would be advisable to pass under this structure in the right-hand lane. Loads that exceed 5.4 metres are to take the tower detour route.

Road modifications: Loads that exceed 5.4 metres in height will need to detour this bridge.

5.1 Km's: Henty Highway onto Portland-Nelson Road.

Image 1:

Procedure: Left hand turn from the Henty Highway onto Portland Nelson Road.
GPS link: https://goo.gl/maps/unep2nCFK7J2
Comments: Loads to turn from the incorrect side to the incorrect side of the road.
Road modifications: No works required on this section of road.

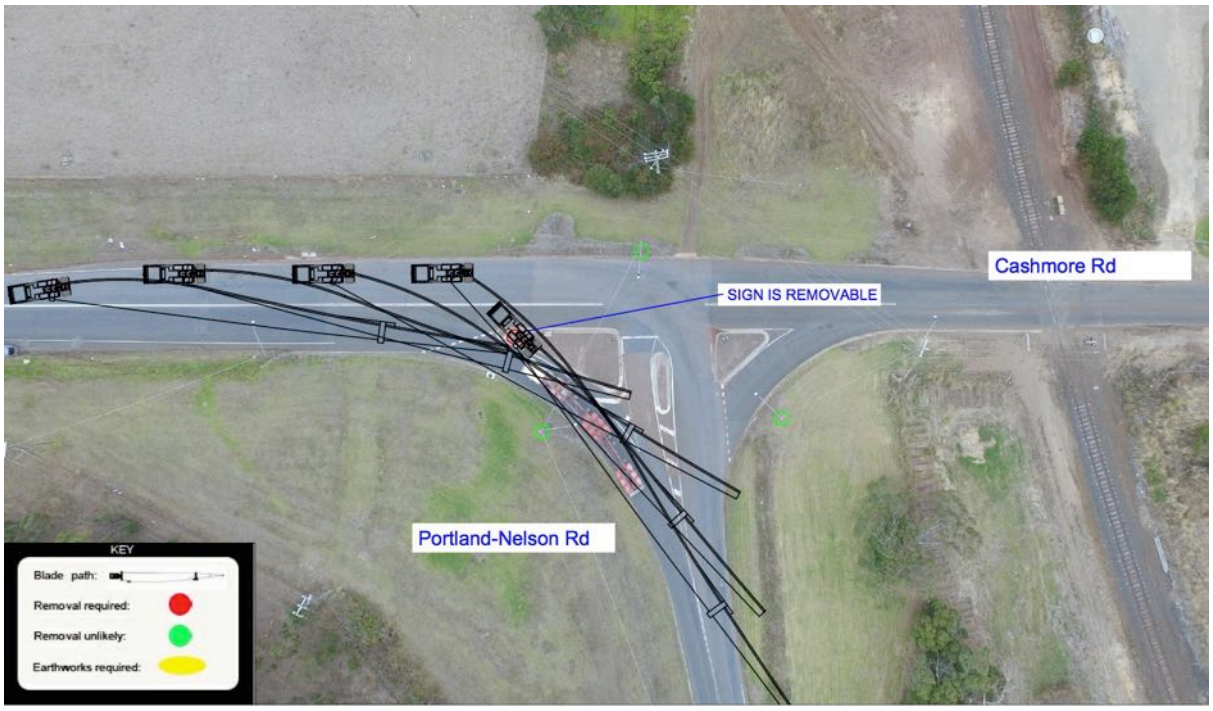
PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 99 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

6.2 Km's: Portland-Nelson Road intersection of Cashmore Road.

Image 1:



Procedure: Left hand turn from Portland Nelson Road and remain on Portland-Nelson Road.

GPS link: https://goo.gl/maps/PQNj2mgLGhm

Comments: Loads to turn from the incorrect side to the incorrect side of the road. Spotter to guide load through this corner.

Road modifications: No works required on this section of road.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 100 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

7.4 Km's: Portland-Nelson Road into RJA storage yard

Image 1:

Procedure: Left hand turn from Portland Nelson Road into RJA storage yard.
GPS link: https://goo.gl/maps/LMkBd4NyBZ82
Comments: Loads to turn from the incorrect side to the incorrect side of the road. Spotter to guide load through this corner.
Road modifications: No works required on this section of road.

Conclusion Route A:

After studying all options and undertaking a route survey, we believe the loads could be transported from the Port to the RJA storage yard in its current condition.

The following are the key points that need to be taken into consideration, if the project moves forward with this route.

PORT OF PORTLAND TO RJA STORAGE:

- The blades, Nacelles, Hubs and smaller components will use this route.
- All loads that exceed a loaded height of 5.3 metres are to use Route B, between the Port and storage yard.
- Route A currently has power approvals for loads up to 5.3 metres in height.
- No travel on this route on schooldays between 7:00am-9:00am and 3:00pm-5:00pm.
- Blades will need to be turned at the port prior to departing.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 102 of 154

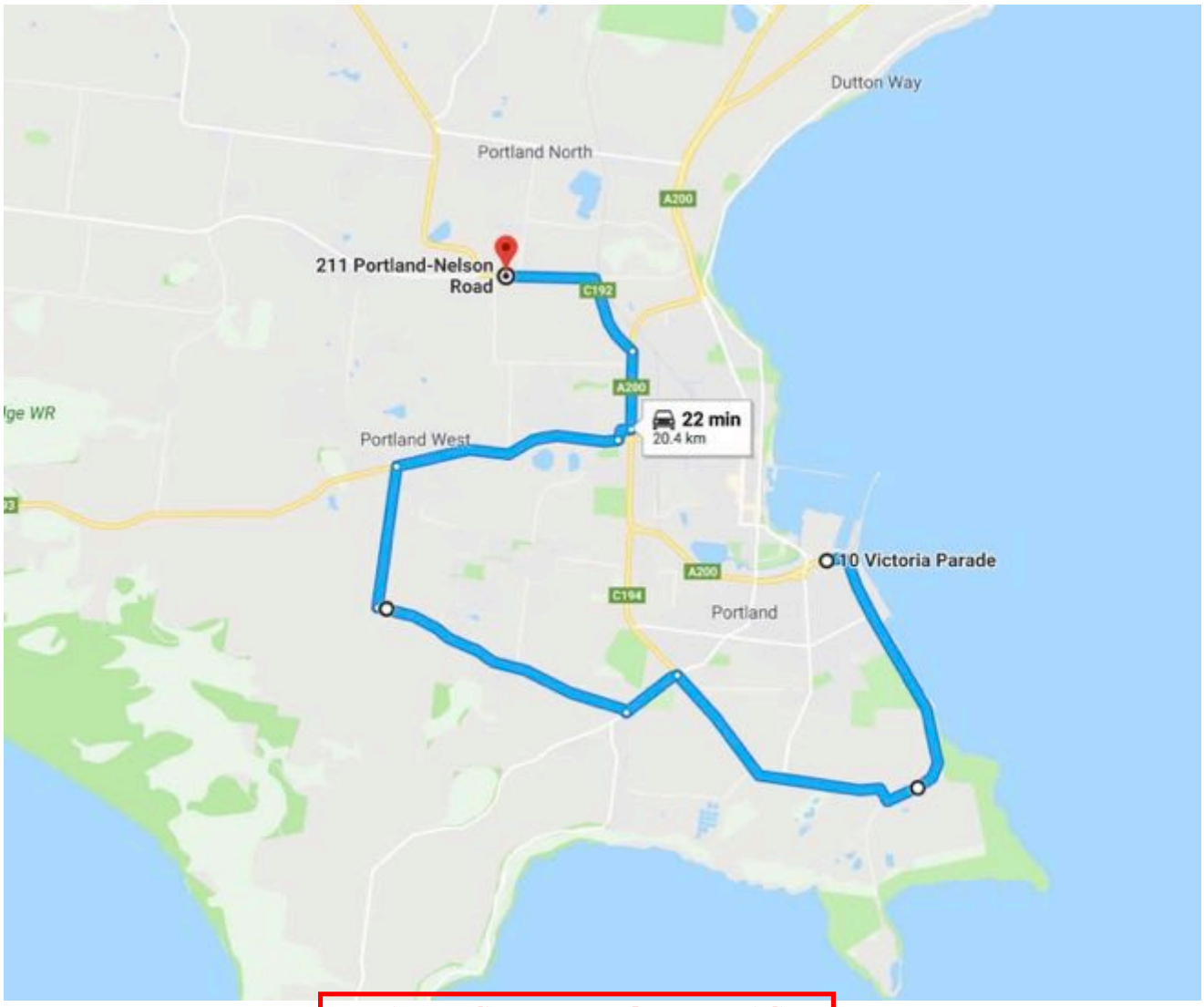
Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

10.0 Route survey B: Port of Portland to RJA Storage "Loads exceeding 5.3 metres high".

ROUTE: Port of Portland to RJA storage (20.4 kilometres):

GPS LINK: https://goo.gl/maps/sdqypxEdnV32

This route took us via Quay Road, Madeira Packet Way, Cape Nelson Road, Mailings Road, Thorns Road, Bridgewater Road, Henty Highway, Portland-Nelson Road.



KEY	
PINCH POINT	
CAUTION	

KM index	Location	Section of road	Critical Measurement	Procedure	Notes
0.0	Portland	Port access Road onto Madiera Packet Road GPS Link: https://goo.gl/maps/Dmb15XGtrSK2	Length: 75.0 Metres Width: 9.0 Metres	Left hand turn	No Problems with this section of road.
0.2	Portland	Madiera Packet Road GPS Link: https://goo.gl/maps/5q7JLgBymao	Height: 8.5 metres	Travel under pipe	No problems with this section of road.
4.1	Portland	Madiera Packet Road, corner of Quarry Road GPS Link: https://goo.gl/maps/WVU9NgB8Utu	Length: 50.0 Metres Width: 8.0 Metres	Right than left hand turn	No problems with this section of road.
7.5	Portland	Madiera Packet Road onto Cape Nelson Road. GPS Link: https://goo.gl/maps/wQ39hnCqzxK2	Length: 40.0 Metres Width: 6.5 Metres	Left hand turn	Spotter to guide load through the corner.
8.4	Portland	Cape Nelson Road onto Mailings Road. GPS Link: https://goo.gl/maps/eM6FTqeoiyE2	Length: 45.0 Metres Width: 7.0 Metres	Tight right-hand turn	Spotter to guide load through the corner.
9.3 to 12.8	Portland	Mailings Road. GPS Link: https://goo.gl/maps/9ynH1BDn1US2	Width: 6.0 Metres	Travel directly ahead	No problems with this section of road.
12.0	Portland	Mailings Road onto Thorns Road. GPS Link: https://goo.gl/maps/bqjgsYLCQDK2	Length: 40.0 Metres Width: 6.0 Metres	Right hand turn	Spotter to guide load through the corner.
13.9	Portland	Thorns Road onto Bridgewater Road. GPS Link: https://goo.gl/maps/r525dg63MKr	Length: 45.0 Metres Width: 7.0 Metres	Right hand turn	Spotter to guide load through the corner.
15.5	Portland	Bridgewater Road onto Henty Highway GPS Link: https://goo.gl/maps/z2ZGQsSWbG42	Length: 45.0 Metres Width: 8.0 Metres	Left hand turn	No problems with this section of road.

KM index	Location	Section of road	Critical Measurement	Procedure	Notes
16.3	Portland	Henty Highway onto Portland-Nelson Road GPS Link: https://goo.gl/maps/unep2nCFK7J2	Length: 75.0 Metres Width: 8.0 Metres	Left hand turn	No problems with this section of road.
19.2	Portland	Portland-Nelson Road, intersection of Cashmore Road. GPS Link: https://goo.gl/maps/PQNj2mgLGhm	Length: 75.0 Metres Width: 8.0 Metres	Left hand turn	Spotter to guide load through the corner.
20.4	Portland	Portland-Nelson Road into RJA storage. GPS Link: https://goo.gl/maps/LMkBd4NyBZ82	Length: 75.0 Metres Width: 9.0 Metres	Left hand turn	No problems with this section of road.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 105 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Conclusion Route B:

After studying all options and undertaking a route survey, we believe the loads that exceed a loaded height that of 5.3 metres could be transported from the Port to the RJA storage yard in its current condition.

The following are the key points that need to be taken into consideration, if the project moves forward with this route.

PORT OF PORTLAND TO RJA STORAGE:

- Route A currently has power approvals for loads up to 6.0 metres in height.
- No travel on this route on schooldays between 7:00am-9:00am and 3:00pm-5:00pm.
- Mailings Road to be Watered daily during ship discharges.
- Trucks to travel at no more than 40 kilometres per hour on Mailings Road, and to limit the use of Exhaust or Jake brakes.

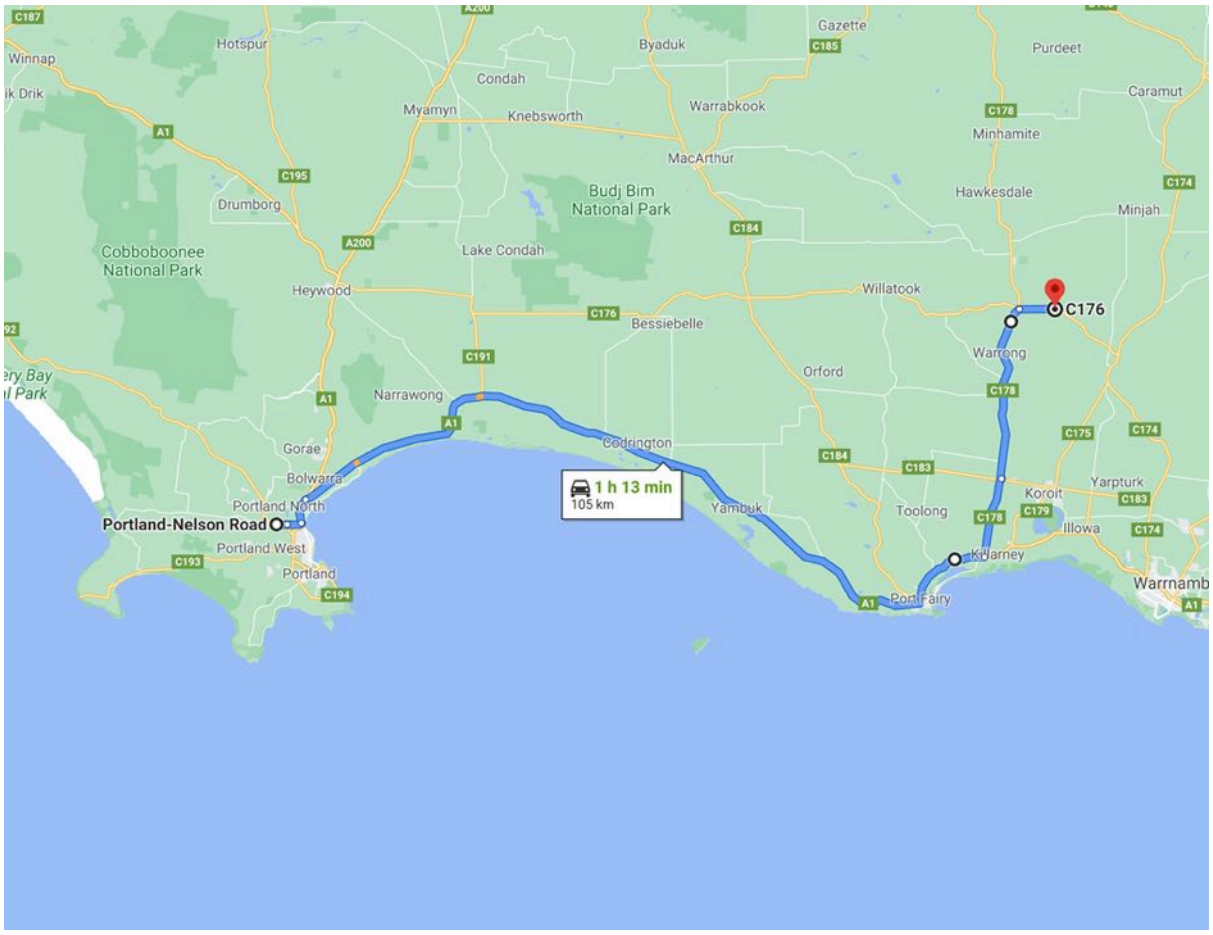
PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 106 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

11.0 Route Survey C: Portland storage to Hawkesdale (Option 1).

Route: Port of Portland to Hawkesdale (105.0 Km's): Via Portland-Nelson Road, Cashmore Road, Henty Highway, Princes Highway, Penshurst-Port Fairy Road, Penshurst-Warnambool Road, Woolsthorpe Heywood Road.



GPS link for the proposed route: https://goo.gl/maps/XkpgagUzudLUaMhD8

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 107 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

KEY	
CRITICAL	
CAUTION	
EMERGENCY PARKING	

KM index	Location	Section of road	Critical Measurement	Procedure	Notes
0.0	Portland	RJA Storage area onto Portland-Nelson Road GPS Link: https://goo.gl/maps/LMkBd4NyBZ82	Length: 75.0 Metres Width: 9.0 Metres	Right hand turn	No problems with this section of road.
1.3	Portland	Cashmore Road GPS Link: https://goo.gl/maps/wdVnDdbYoa82	Width: 8.0 Metres	Travel over rail crossing	Rail clearance required to travel over this asset.
2.5	Portland	Cashmore Road onto the Henty Highway GPS Link: https://goo.gl/maps/sco2CViKjfH2	Length: 75.0 Metres Width: 7.0 Metres	Sweeping left hand turn	Loads will cross from the incorrect side to the correct side. A sign will need to be removed and replaced for each load. Spotter to guide load through the pinchpoint.
4.7	Portland	Henty Highway onto Princes Highway GPS Link: https://goo.gl/maps/Vk1NEoMK4bJ98oig6	50.0 Metres long	Right hand turn	Loads to turn from the correct side to the correct side but pass across the incorrect side of the corner. Some hardstand will need to be placed in both centre median strips, and some signs made removable.
70.0	Port Fairy	Princes Highway GPS Link: https://goo.gl/maps/XKAFHVidHc9CLoQE8	75.0 Metres long	Left hand bend	Spotter to guide load through the corner.
78.0	Killarney	Princes Highway onto Penshurst-Port Fairy Road GPS Link: https://goo.gl/maps/cXNJejTwEiQAJjnn9	50.0 Metres in length	Left hand turn	Loads to turn from the incorrect side to the incorrect side. Some hardstand will need to be placed on the outside of the corner, and some signs made removable.
85.0	Kirkstall	Penshurst-Port Fairy Road onto Penshurst-Warrnambool Road GPS Link: https://goo.gl/maps/n53v2WFW4LWaZVTs9	70.0 Metres in length	Left hand turn	Loads to turn from the incorrect side to the incorrect side. Some hardstand will need to be placed on the inside of the corner, and some signs made removable.
101.0	Hawkesdale	Penshurst-Warrnambool Road onto Woolsthorpe-Heywood Road GPS Link: https://goo.gl/maps/KsXh9V7t5feHw37y7	50.0 Metres in length	Right hand turn	Loads turn from the correct side of the road onto the incorrect side of the road. Hardstand will need to be added to the inside of the corner and some signs made removable.

KM index	Location	Section of road	Critical Measurement	Procedure	Notes
105.0	Hawkesdale	Woolsthorpe-Heywood Road GPS Link: https://goo.gl/maps/WF8bNvRaeCuxK4eGA		Various turns	There are likely to be several site entrances off the Woolsthorpe-Heywood Road into site. These entrances will be on the left and right side of the road. Spotter to help guide the load through the corner.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 109 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

0.0 Km's: Storage yard onto Portland-Nelson Road.

Image 1:

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 110 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Right hand turn from storage yard onto Portland-Nelson Road.

GPS link: https://goo.gl/maps/LMkBd4NyBZ82

Comments: This is a large right-hand turn that has been modified to allow blades of up to 75 metres to exit the yard. A spotter will need to keep the driver informed throughout the procedure.

Police and escorts to control local traffic either side of the gateway.

ROAD MODIFICATIONS: No works required on this section of road.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 111 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

1.3 Km's: Rail crossing on Cashmore Road at Portland.

Procedure: Straight ahead through crossing on Cashmore Road.

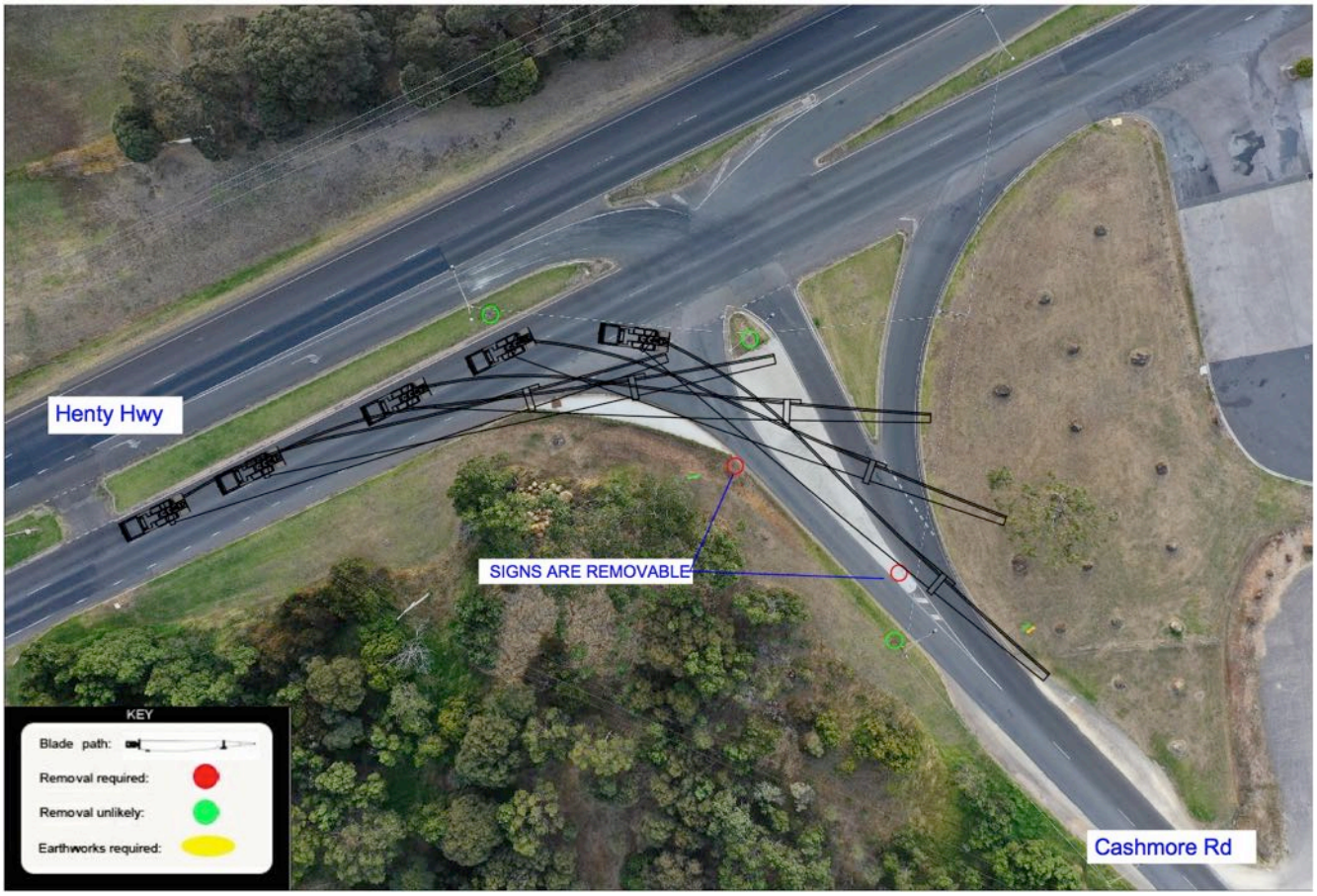
GPS link: https://goo.gl/maps/wdVnDdbYoa82

Comments: Clearance required to traverse this crossing, and all other crossings on route.

Road modifications: No works required on this section of road.

2.5 Km's: Cashmore Road onto the Henty Highway at Portland.

Image 1:



PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 113 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Left-hand corner from Cashmore Road onto the Henty Highway.

GPS link: https://goo.gl/maps/sco2CViKjfH2

Comments: The blades will need to cross to the incorrect side prior to the turn than travel across the median strip on Cashmore Road, and enter the Henty Highway on the correct side of the road. Signs to be removed and replaced for each movement.

Spotter to guide the load through this pinch point.

Road modifications: No works required on this section of road.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 114 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

4.7 Km's: Henty Highway onto the Princes Highway at Portland.

Image 1:

Procedure: Right hand turn from the Henty Highway onto the Princes Highway.

GPS link: https://goo.gl/maps/Vk1NEoMK4bJ98oig6

Comments: Load to turn from the correct side to the correct side but pass across the incorrect side of the corner. Some hardstand will need to be placed in both centre median strips. And some signs made removable. Spotter will need to guide load through this section of road.

Road modifications: Large amounts of work are required.

70.0 Km's: Princes Highway bend at Port Fairy.

Image 1:

Procedure: Left-hand bend on the Princes Highway.

GPS link: https://goo.gl/maps/XKAFHVidHc9CLoQE8

Comments: The loads will need to travel around this bend on the incorrect side. A spotter will need to guide the load through this pinchpoint.

Road modifications: No works required on this section of road.

78.0 Km's: Princes Highway onto Penshurst-Port Fairy Road at Killarney.

Image 1:

Procedure: Left hand turn from the Princes Highway onto the Penshurst-Port Fairy Road.

GPS link: https://goo.gl/maps/cXNJejTwEiQAJinn9

Comments: Load to turn from the incorrect side to the incorrect side. Some hardstand will need to be placed on the outside of the corner, and some signs made removable. Spotter will need to guide load through this section of road.

Road modifications: Large amounts of work are required.

85.0 Km's: Penshurst-Port Fairy Road onto the Penshurst-Warrnambool Road at Kirkstall.

Image 1:

Procedure: Left hand turn from Penshurst-Port Fairy Road onto Penshurst-Warrnambool Road.

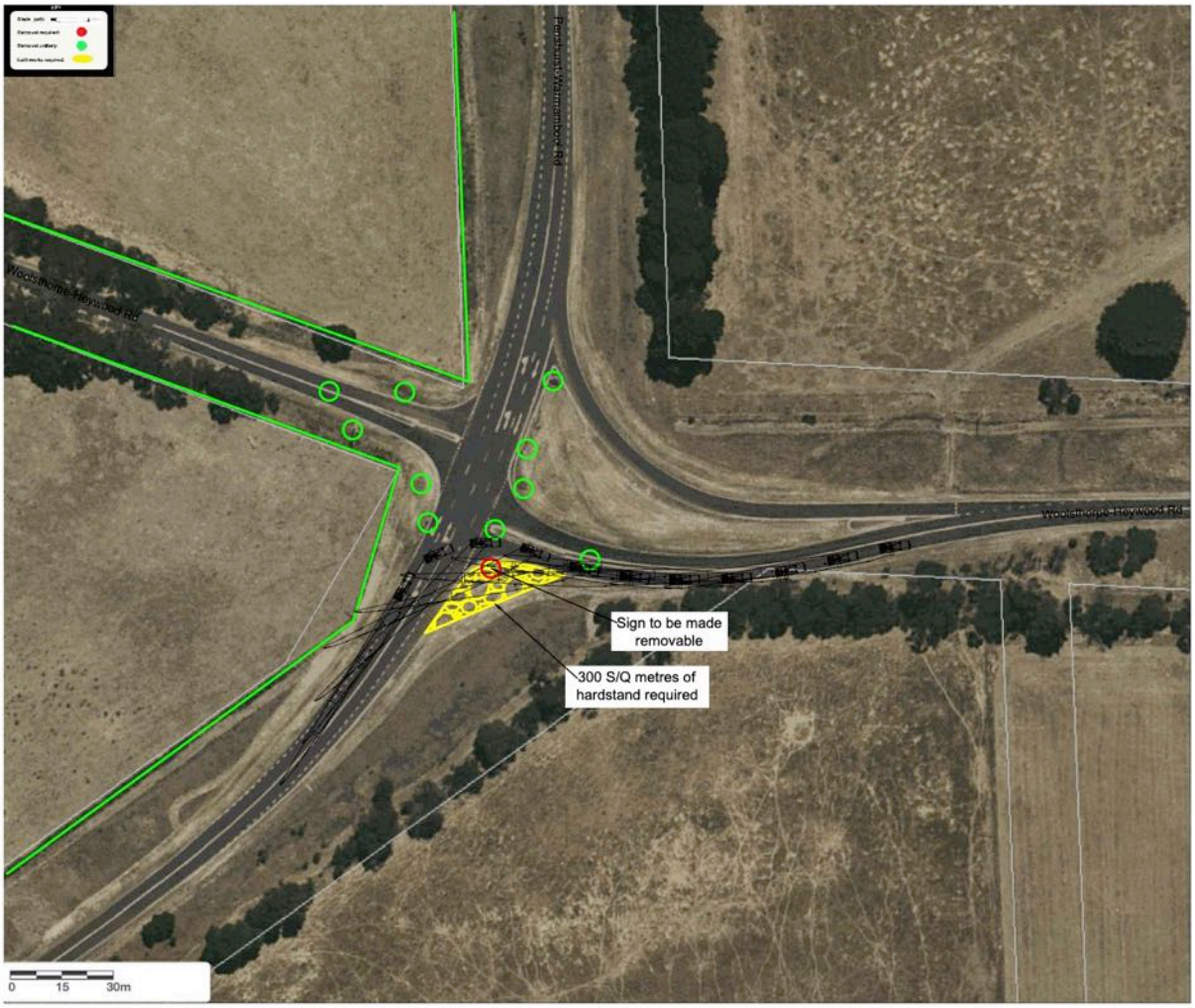
GPS link: https://goo.gl/maps/n53v2WFW4LWaZVTs9

Comments: Load to turn from the incorrect side to the incorrect side. Some hardstand will need to be placed on the inside of the corner, and some signs made removable. Spotter will need to guide load through this section of road.

Road modifications: Large amounts of work are required.

101.0 Km's: Penshurst-Warrnambool Road onto Woolsthorpe-Heywood Road at Hawkesdale.

Image 1:



Procedure: Right hand turn from Penshurst-Warrnambool Road onto Woolsthorpe-Heywood Road.

GPS link for section of road: https://goo.gl/maps/2GjzF2qRT4wy8FkG8

Comments: Load to turn from the correct side to the incorrect side. Some hardstand will need to be placed on the inside of the corner, and a sign made removable. Spotter will need to guide load through this section of road.

Road modifications: Large amounts of work are required.

Conclusion Route C:

After studying all options and undertaking a route survey, we believe the loads could be transported on this route in its current condition, with a large number of upgrades.

The following are the key points that need to be taken into consideration, if the project moves forward with this route.

PORTLAND:

- No problems with this size blade from the storage through to the Henty Highway.
- Hardstand required on the Henty Highway intersection with the Princes Highway. Additionally, some signs will need to be made removable.

PORT FAIRY:

- Hardstand required on the Princes Highway intersection of Penshurst-Port Fairy Road. Additionally, some signs will need to be made removable.

KIRKSTALL:

- Hardstand required on the Penshurst-Port Fairy Road intersection of Penshurst-Warrnambool Road. Additionally, some signs will need to be made removable.

HAWKESDALE:

- Hardstand required on the Penshurst-Warrnambool intersection with the Woolsthorpe-Heywood Road. Additionally, a sign will need to be made removable.
- It is likely that there will be several site entrances off the Woolsthorpe-Heywood Road. These entrances will need to be made suitable for the swept path of the largest loads.

DIMENSION-LENGTH:

- Likely to be okay on this route, if upgrades are completed.

DIMENSION-WIDTH:

- The route in its current form is suitable for the width of towers of 5.0 metres. However, it is recommended that roadwork's be checked prior to departing.

DIMENSION-HEIGHT UNDER STRUCTURES:

- There are no structures between the storage area and site.

DIMENSION-WEIGHT OVER STRUCTURES:

- Bridge structures to be assessed by VIC Roads and local councils.

OVERHEAD UTILITIES:

- An additional assessment is required for this route for a loaded height of 5.8 metres.

RAIL CROSSINGS:

- Permit to be submitted to ECO DEV for approval.

VEGETATION:

- No problems with this route.

ROADWORKS:

- To be checked closer to the date of movement.

ROAD PAVEMENT:

- The Henty Highway and Princes Highway looks to be okay in its current condition. From the Princes Highway through to site the roads are of an okay standard.

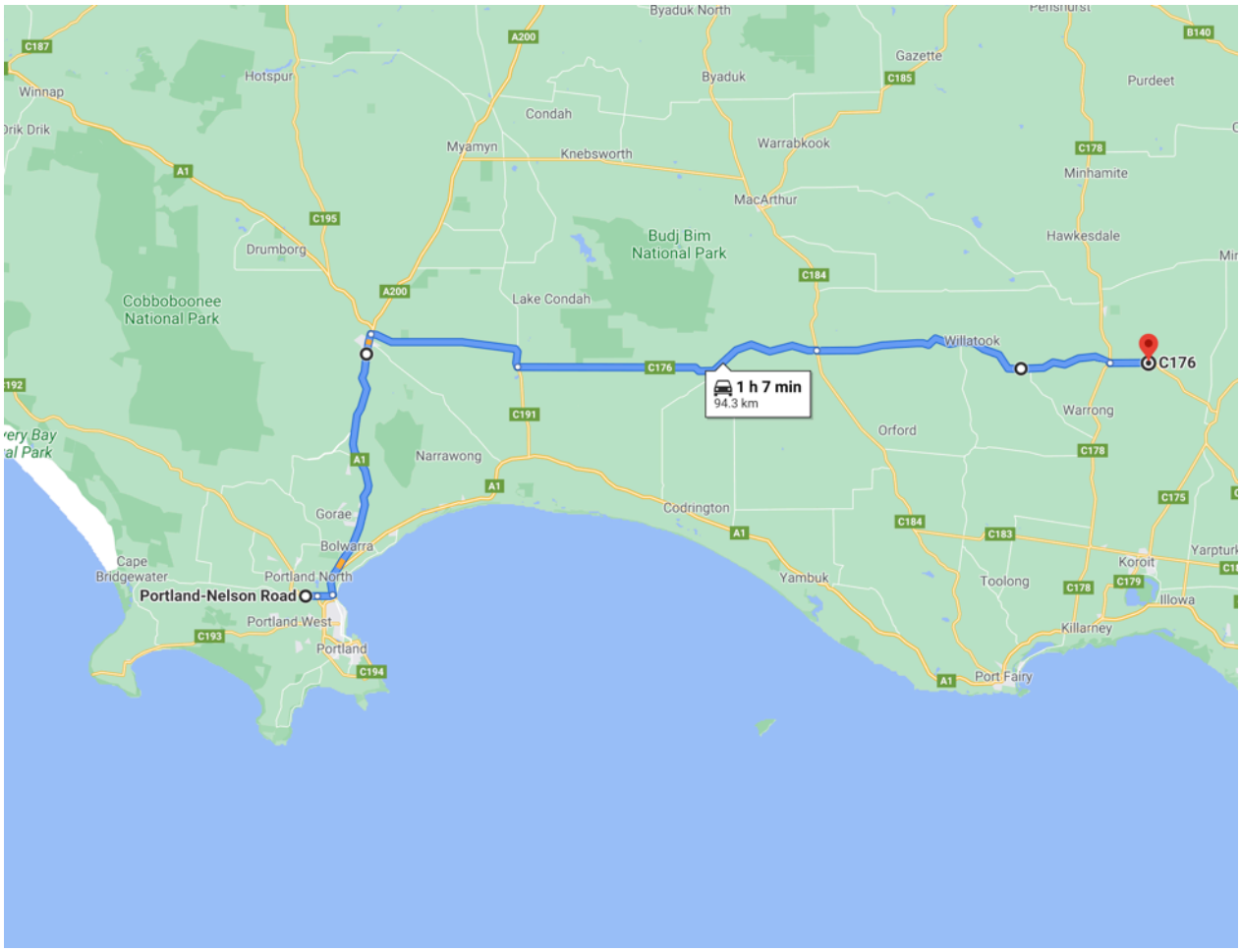
PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 121 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

12.0 Route Survey D: Portland storage to Hawkesdale (Option 2).

Route: Port of Portland to Hawkesdale (94.3 Km's): Via Portland-Nelson Road, Cashmore Road, Henty Highway, Woolsthorpe Heywood Road, Hamilton-Port Fairy Road, Woolsthorpe Heywood Road.



GPS link for the proposed route: https://goo.gl/maps/8KKPyqFPsdHsyef49

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 122 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

KEY	
CRITICAL	
CAUTION	
EMERGENCY PARKING	

KM index	Location	Section of road	Critical Measurement	Procedure	Notes
0.0	Portland	RJA Storage area onto Portland-Nelson Road GPS Link: https://goo.gl/maps/LMkBd4NyBZ82	Length: 75.0 Metres Width: 9.0 Metres	Right hand turn	No problems with this section of road.
1.3	Portland	Cashmore Road GPS Link: https://goo.gl/maps/wdVnDdbYoa82	Width: 8.0 Metres	Travel over rail crossing	Rail clearance required to travel over this asset.
2.5	Portland	Cashmore Road onto the Henty Highway GPS Link: https://goo.gl/maps/sco2CViKjfH2	Length: 75.0 Metres Width: 7.0 Metres	Sweeping left hand turn	Loads will cross from the incorrect side to the correct side. A sign will need to be removed and replaced for each load. Spotter to guide load through the pinchpoint.
14.6	Heathmere	Henty Highway GPS Link: https://goo.gl/maps/frhxovwmcpp	8.0 Metres	Travel over rail crossing	Rail clearance required to travel over this asset.
27.2	Heywood	Henty Highway onto Woolsthorpe-Heywood Road. GPS Link: https://goo.gl/maps/MvrNpMqud5n	50.0 Metres in length	Right hand turn	Loads will cross from the correct side to the correct side. A sign will need to be made removable. Spotter to guide load through the pinchpoint.
27.3	Heywood	Woolsthorpe-Heywood Road GPS Link: https://goo.gl/maps/LRhTgAHwozt	80.0 Metres x 6.0 metres	Cross to right	Medium size parking bay
33.5	Heywood	Woolsthorpe-Heywood Road GPS Link: https://goo.gl/maps/BJtcb1wrqsm	8.0 Metres	Travel over rail crossing	Rail clearance required to travel over this asset.
37.7	Homerton	Woolsthorpe-Heywood Road. GPS Link: https://goo.gl/maps/riZTJYqNuMx	90.0 Metres in length	Right hand bend	No problem with this section of road.

KM index	Location	Section of road	Critical Measurement	Procedure	Notes
39.2	Homerton	Woolsthorpe-Heywood Road intersection with Tyrendarra-Ettrick Road. GPS Link: https://goo.gl/maps/QYTJoqVHbm22	90.0 Metres in length	Left hand turn	Loads will need to cross from the incorrect side to the correct side. Spotter to help guide the load through the corner.
53.9	Homerton	Woolsthorpe-Heywood Road GPS Link: https://goo.gl/maps/nKqHFq9hwz72	70.0 Metres in length	Several bends	There are several sweeping corners on this section of the Woolsthorpe-Heywood Road. Some of these will be tight; A spotter will need to assist the loads through the tight sections.
65.0	Broadwater	Woolsthorpe-Heywood Road intersection with Hamilton-Port Fairy Road. GPS Link: https://goo.gl/maps/1kr1Fu3A8Y12	50.0 Metres in length	Right than left hand turn	The center of the intersection will need to have the existing path upgraded with a better road base material. This will allow the loads to travel through the intersection with no obstructions. Spotter to help guide the load through the corner.
75.2	Willatook	Woolsthorpe-Heywood Road GPS Link: https://goo.gl/maps/2b5ifAWsKmD2	70.0 Metres in length	Several bends	There are several sweeping corners on this section of the Woolsthorpe-Heywood Road. Some of these will be tight; A spotter will need to assist the loads through the tight sections.
91.1	Hawkesdale	Woolsthorpe-Heywood Road intersection of Penshurst-Warrnambool Road. GPS Link: https://goo.gl/maps/2GjzF2qRT4wy8FkG8	77.0 Metres in length	Travel directly ahead through a gentle dogleg turn.	Loads to stay on the correct side throughout the procedure. Spotter to help guide the load through the corner.
98.8	Hawkesdale	Woolsthorpe-Heywood Road GPS Link: https://goo.gl/maps/WF8bNvRaeCuxK4cGA		Various turns	There are likely to be several site entrances off the Woolsthorpe-Heywood Road into site. These entrances will be on the left and right side of the road. Spotter to help guide the load through the corner.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 124 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

0.0 Km's: Storage yard onto Portland-Nelson Road.

Image 1:

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 125 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Right hand turn from storage yard onto Portland-Nelson Road.

GPS link: https://goo.gl/maps/LMkBd4NyBZ82

Comments: This is a large right-hand turn that has been modified to allow blades of up to 75 metres to exit the yard. A spotter will need to keep the driver informed throughout the procedure.

Police and escorts to control local traffic either side of the gateway.

ROAD MODIFICATIONS: No works required on this section of road.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 126 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

1.3 Km's: Rail crossing on Cashmore Road at Portland.

Procedure: Straight ahead through crossing on Cashmore Road.

GPS link: https://goo.gl/maps/wdVnDdbYoa82

Comments: Clearance required to traverse this crossing, and all other crossings on route.

Road modifications: No works required on this section of road.

2.5 Km's: Cashmore Road onto the Henty Highway at Portland.

Image 1:

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 128 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Left-hand corner from Cashmore Road onto the Henty Highway.

GPS link: https://goo.gl/maps/sco2CViKjfH2

Comments: The blades will need to cross to the incorrect side prior to the turn than travel across the median strip on Cashmore Road, and enter the Henty Highway on the correct side of the road. Signs to be removed and replaced for each movement.

Spotter to guide the load through this pinch point.

Road modifications: No works required on this section of road.

14.6 Km's: Rail crossing on the Henty Highway at Heathmere.

Procedure: Straight ahead through crossing on the Henty Highway.

GPS link for section of road: https://goo.gl/maps/frhxovwmcpp

Comments: The trailers may need to be lifted for this crossing. Approval form the VIC rail authority must be obtained before crossing this rail line.

Police and escorts to control local traffic either side of the crossing.

Road modifications: No works required.

27.2 Km's: Henty Highway onto the Woolsthorpe-Heywood Road at Heywood.

Image 1:

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 131 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Right hand turn from the Henty Highway onto Woolsthorpe-Heywood Road.

GPS link for section of road: https://goo.gl/maps/MvrNpMgud5n

Comments: Loads will cross from the correct side to the correct side. A sign will need to be made removable.

Road modifications: Yes, small amounts of work are required.

37.7 Km's: Woolsthorpe-Heywood Road intersection with Tyrendarra-Ettrick Road at Homerton.

Image 1:

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 133 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Left hand turn at the intersection of Woolsthorpe-Heywood Road and Tyrendarra-Ettrick Road.

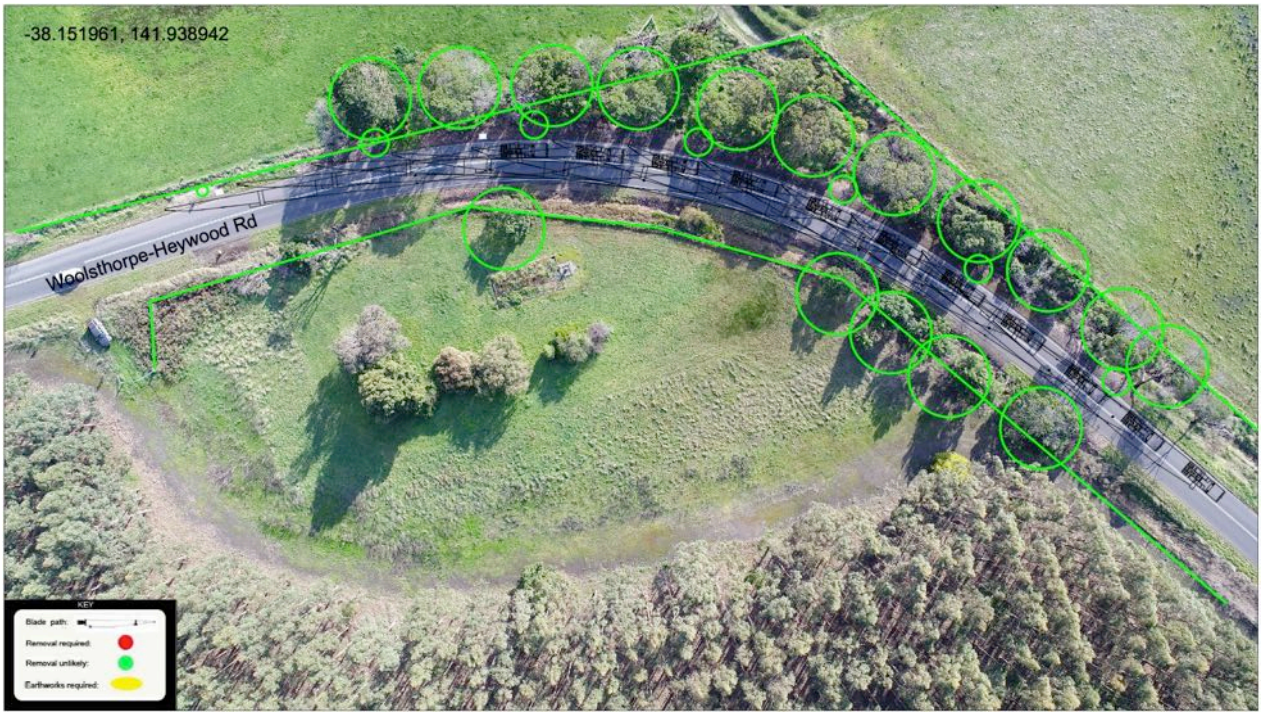
GPS link for section of road: https://goo.gl/maps/QYTJoqVHbm22

Comments: Loads will need to cross from the incorrect side to the incorrect side. Spotter to help guide the load through the corner.

Road modifications: No works required.

53.9 Km's: Woolsthorpe-Heywood Road. (Tight bends)

Image 1:



PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 135 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Sweeping corners on the Woolsthorpe-Heywood Road.

GPS link for section of road: https://goo.gl/maps/nKqHFg9hwz72

Comments: There are several sweeping corners on this section of the Woolsthorpe-Heywood Road. Some of these will be tight; A spotter will need to assist the loads through the tight sections.

Road modifications: No works required.

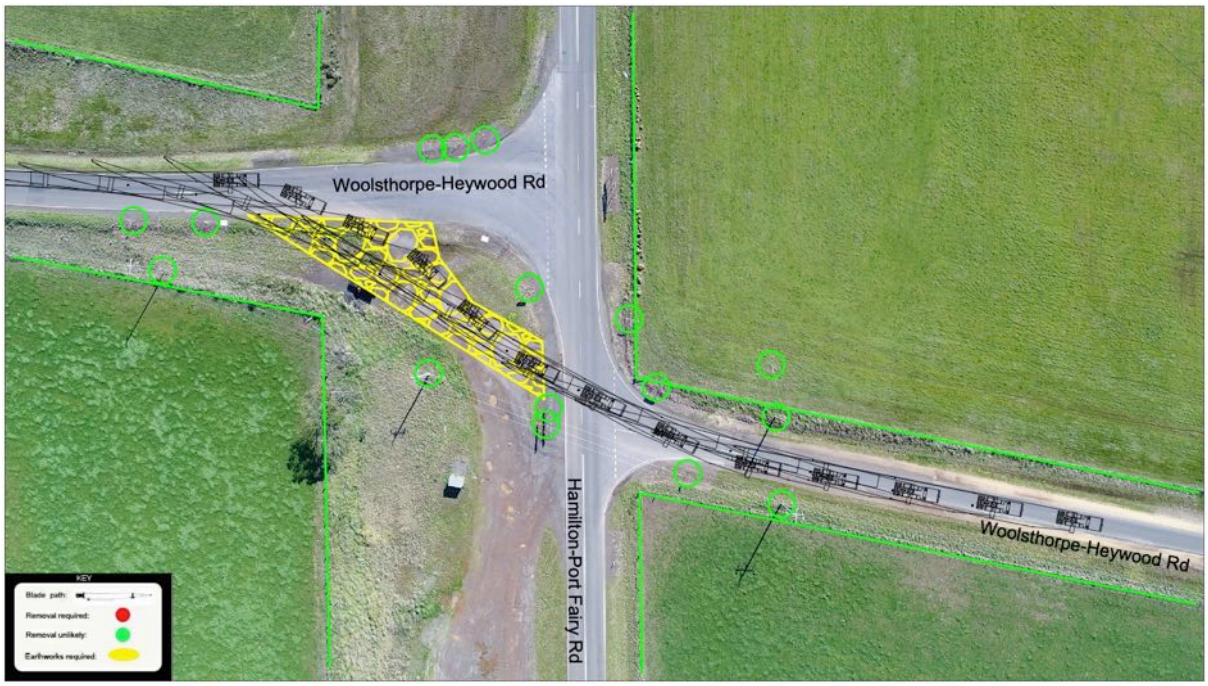
PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 136 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

65.1 Km's: Woolsthorpe-Heywood Road crossing at the Hamilton Port Fairy Rd at Willatook.

Image 1:



PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 137 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Travel directly ahead through the intersection.

GPS link for section of road: https://goo.gl/maps/1kr1Fu3A8Y12

Comments: The center of the intersection will need to have the existing path upgraded with a better road base material. This will allow the loads to travel through the intersection with no obstructions.

Road modifications: Yes, small amounts of work are required.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 138 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

75.2 Km's: Woolsthorpe-Heywood Road. (Tight bends)

Image 1:

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 139 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

Image 2:

Procedure: Sweeping corners on the Woolsthorpe-Heywood Road.

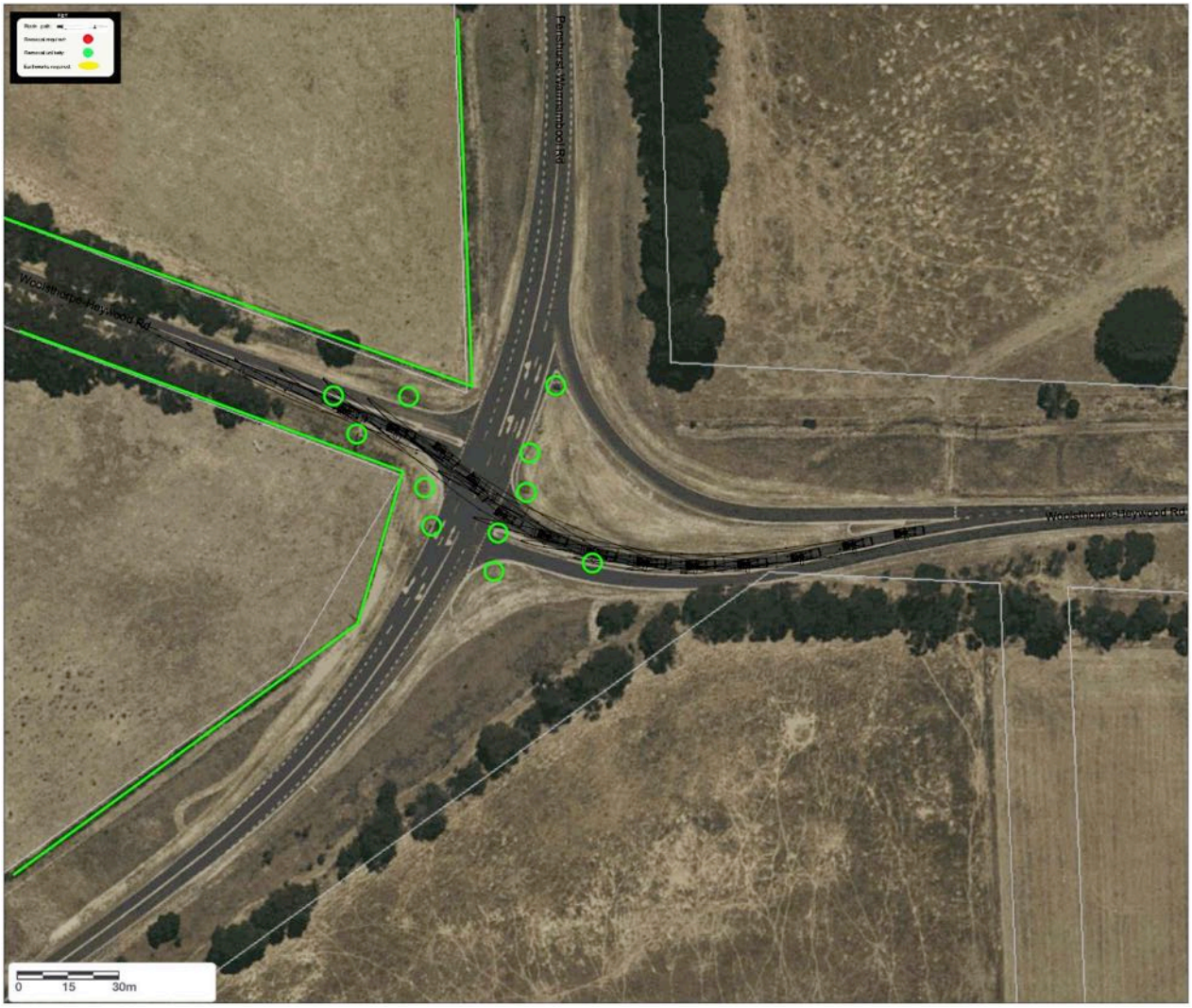
GPS link for section of road: https://goo.gl/maps/2b5ifAWsKmD2

Comments: There are several sweeping corners on this section of the Woolsthorpe-Heywood Road. Some of these will be tight. A spotter will need to assist the loads through the tight sections.

Road modifications: No works required.

91.1 Km's: Woolsthorpe-Heywood Road intersection of Penshurst-Warrnambool Road at Hawkesdale.

Image 1:



Procedure: Travel directly ahead on Woolsthorpe-Heywood Road through Penshurst-Warrnambool Road.

GPS link for section of road: https://goo.gl/maps/2GjzF2qRT4wy8FkG8

Comments: Loads to stay on the correct side throughout the procedure. Spotter to guide load through this pinchpoint.

Road modifications: No works required.

Conclusion Route D:

After studying all options and undertaking a route survey, we believe the loads could be transported on this route in its current condition, with a small number of upgrades.

The following are the key points that need to be taken into consideration, if the project moves forward with this route.

PORTLAND:

- No problems with this size blade from the storage through to the Henty Highway.

HEYWOOD:

- The intersection of the Henty Highway and Woolsthorpe-Heywood Road will require a sign to be made removable.
-

WOOLSTHORPE-HEYWOOD ROAD:

- The intersection of the Hamilton-Port Fairy Road will need to have some road base added to the existing side-track.
- The bends on this section of road are okay but would need a spotter to guide the loads through them.

HAWKESDALE:

- It is likely that there will be several site entrances off the Woolsthorpe-Heywood Road. These entrances will need to be made suitable for the swept path of the largest loads.

DIMENSION-LENGTH:

- Likely to be okay on this route, if upgrades are completed.

DIMENSION-WIDTH:

- The route in its current form is suitable for the width of towers of 5.0 metres. However, it is recommended that roadwork's be checked prior to departing.

DIMENSION-HEIGHT UNDER STRUCTURES:

- There are no structures between the storage area and site.

DIMENSION-WEIGHT OVER STRUCTURES:

- Bridge structures to be assessed by VIC Roads and local councils.

OVERHEAD UTILITIES:

- An additional assessment is required for this route for a loaded height of 5.8 metres.

RAIL CROSSINGS:

- Permit to be submitted to ECO DEV for approval.

VEGETATION:

- No problems with this route.

ROADWORKS:

- To be checked closer to the date of movement.

ROAD PAVEMENT:

- The Henty Highway looks to be okay in its current condition. Once onto the Woolsthorpe-Heywood Road, the condition of the pavement is fair. In sections the road narrows down to 3.8 metres in width, which may cause the wider trailers to have axles travel on the edge of the asphalt.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 143 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

13.0 References:

Rex Andrews Engineered Transportation Pty. Ltd.
Vestas
Route Survey LL290REV02.
Google Earth/Maps
Nearmaps
NHVAS Maintenance Management (NHVAS21193)
NHVAS Basic Fatigue Management (NHVAS21193)

Disclaimer: This route study is a guide only; government approvals would be required before these routes could be deemed suitable for transporting the components over the listed routes.

This study was undertaken using data supplied by Rex J Andrews P/L. Equipment and swept paths might vary if using transport methodology other than the data supplied by Rex J Andrews.

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 144 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

DRAFT

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

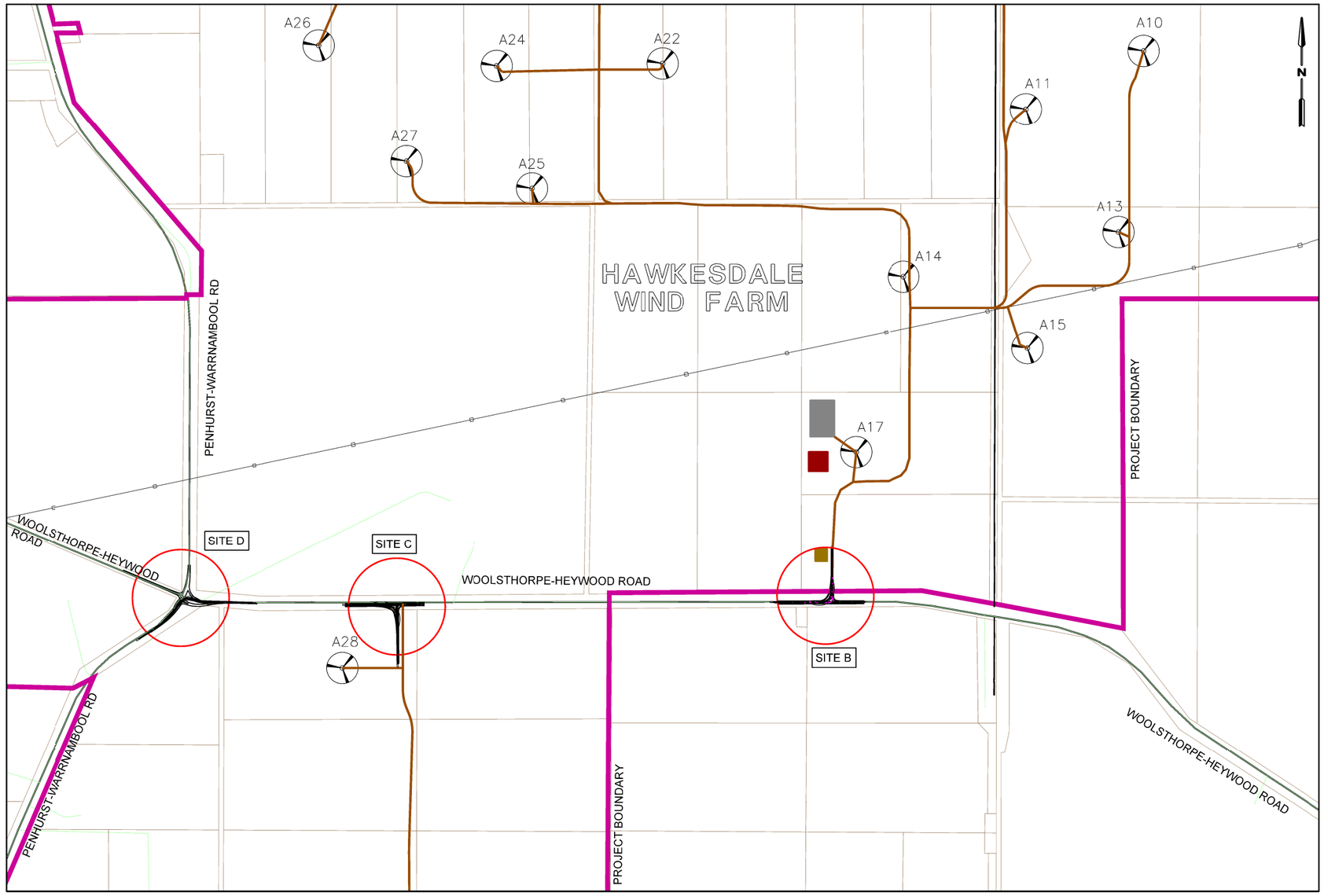
PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 145 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

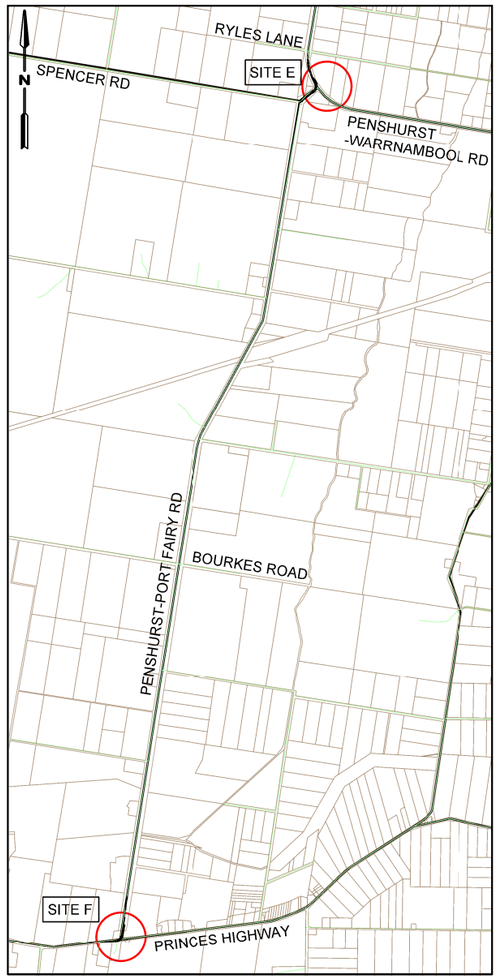
Appendix D

Concept design drawings

A3



LOCALITY PLAN-1
SCALE 1:20 000



LOCALITY PLAN-2
SCALE 1:50 000

DRAWING INDEX

SHEET No.	TITLE
100	LOCALITY PLANS & DRAWING INDEX
110	TYPICAL SECTIONS
120	TURNING MOVEMENTS SITE A
121	TURNING MOVEMENTS SITE B
122	TURNING MOVEMENTS SITE C
123	INTERSECTION TURNING MOVEMENTS SITE D
124	INTERSECTION TURNING MOVEMENTS SITE E
125	INTERSECTION TURNING MOVEMENTS SITE F

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 146 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
E	JD	JD	08.05.18	UPDATED ROAD NAMES
D	GRS	EDP	09.09.15	UPDATED TURBINE LAYOUT
C	LL	P.C.	14.01.10	AS PER CLIENT REVIEW
B	L.L	P.C.	07.12.09	REALIGNED WITH NEW AERIAL PHOTOS
A	L.L	P.C.	21.10.09	CONCEPT ISSUE

Designed: L.L
Drawn: L.L
Checked: P.C.
Approved: B.S.
Scale in meters: AS SHOWN

Client: HAWKESDALE DEVELOPMENT P/L

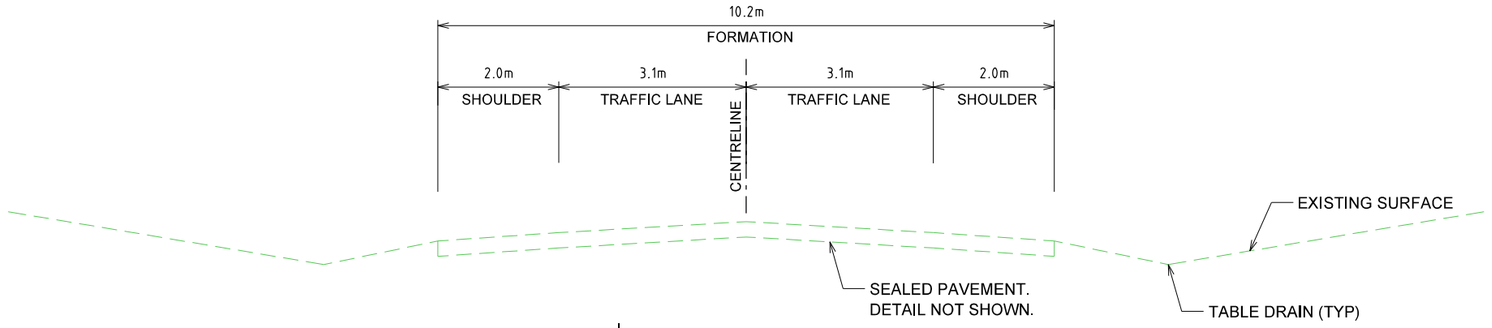
Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: LOCALITY PLANS AND DRAWING INDEX

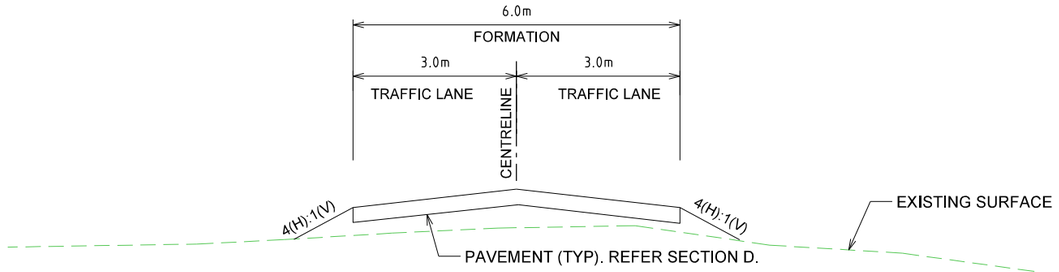
Status: CONCEPT
Datum: AMG66/54
Date: 16.10.09
CAD File Number: $FILES
Jcb Number: 43315957
Sheet Number: 100
Rev: E

U:\JOBS\43315957\AMASTER\43315957-C100.dgn
8/05/2018 3:24:35 PM

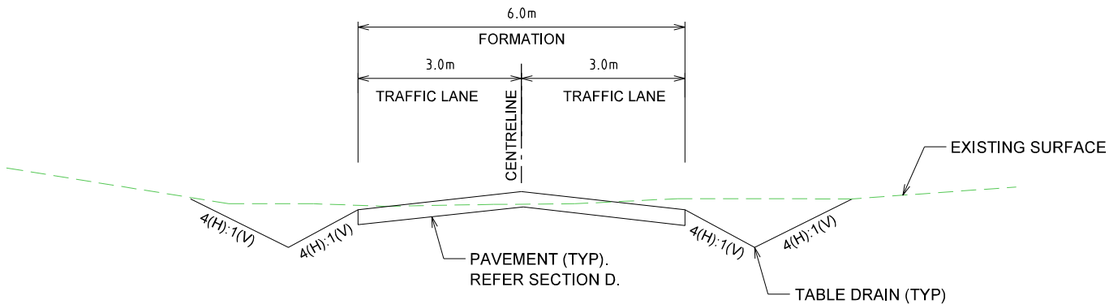
A3



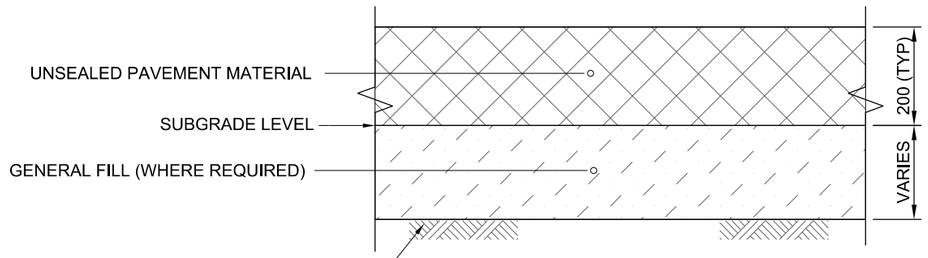
A | EXISTING VICROADS ROAD
SEE NOTE 1



B | ACCESS TRACK IN FILL



C | ACCESS TRACK IN CUT



D | UNSEALED PAVEMENT

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 147 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

NOTES:
1. TYPICAL EXISTING CROSS SECTION AS PER VICROADS SUPPLEMENT TO AGRD PART 3, TABLE 4.2 'WIDTHS OF RURAL CARRIAGEWAY ELEMENTS' ROAD CLASSIFICATION C.
2. TYPICAL ACCESS TRACK FORMATION WIDTH OF 6.0m IS USED FOR THE INTERNAL ROADS. WIDTH CAN VARY DEPENDING ON THE TURBINE SUPPLIER AND PROJECT REQUIREMENTS. THESE ARE PRIVATE ROADS AND ARE INACCESSIBLE TO THE PUBLIC.
3. TYPICAL UNSEALED PAVEMENT DETAIL SHOWN FOR PRIVATE ACCESS TRACK. SUBJECT TO GEOTECHNICAL INVESTIGATION AND PAVEMENT DESIGN.

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
C	JD	JD	08.05.18	UPDATED TYPICAL DETAILS
B	L.L	P.C.	07.12.09	REALIGNED WITH NEW AERIAL PHOTOS
A	L.L	P.C.	21.10.09	CONCEPT ISSUE

Designed L.L
Drawn L.L
Checked P.C.
Approved B.S.
N.T.S

Client: HAWKESDALE DEVELOPMENT P/L

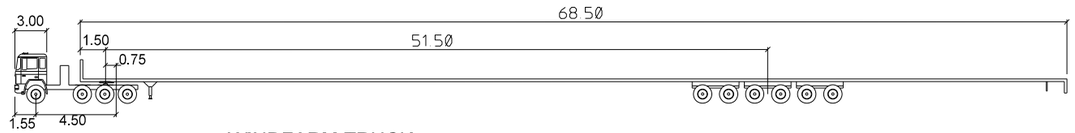
Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: TYPICAL SECTIONS

Status: CONCEPT
Datum: AMG66/54
Date: 16.10.09
CAD File Number: STILES
Job Number: 43315957
Sheet Number: 110
Rev: C

U:\JOBS\43315957\AMASTER\43315957-C110.dgn
8/05/2018 2:56:39 PM

A3



WINDFARM TRUCK

meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.00
Trailer Width	: 5.00	Steering Angle	: 7.66
Tractor Track	: 2.50	Articulating Angle	: 70.00
Trailer Track	: 2.50		

(N.T.S)

B-DOUBLE 25M

meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.00
Trailer Width	: 2.50	Steering Angle	: 20.60
Tractor Track	: 2.50	Articulating Angle	: 70.00
Trailer Track	: 2.50		

(N.T.S)

LEGEND

SITE ACCESS TO BE CONSTRUCTED (AREA =2018.83m²)

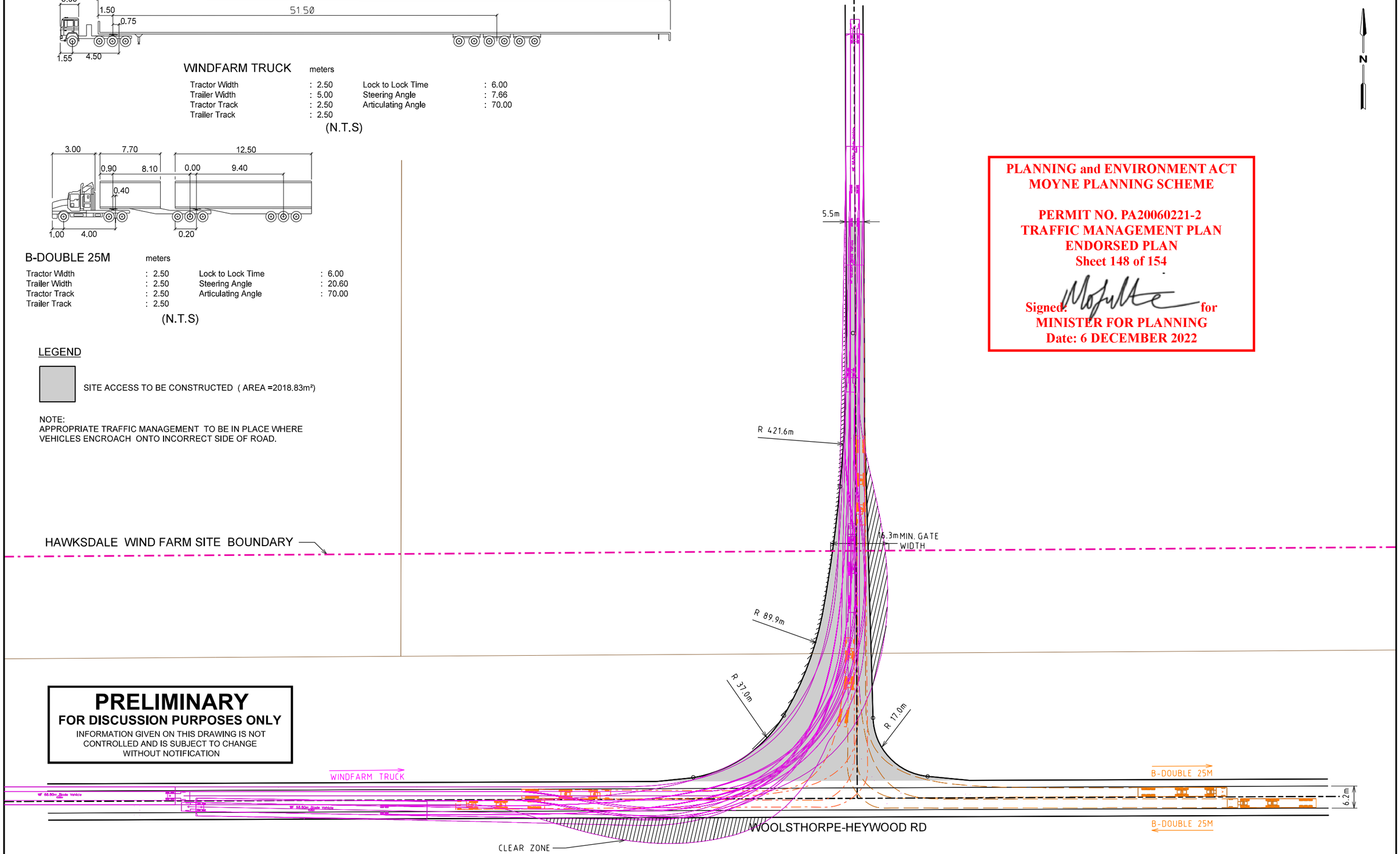
NOTE:
APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENCROACH ONTO INCORRECT SIDE OF ROAD.

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 148 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022



URS
URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
F	JD	JD	28.05.18	UPDATED OD VEHICLE TEMPLATE
E	GRS	EDP	24.08.15	UPDATED OD VEHICLE TEMPLATE
D	GRS	GB	17.10.14	UPDATED OD VEHICLE TEMPLATE
C	LL	P.C.	14.01.10	AS PER CLIENT REVIEW
B	L.L	P.C.	07.12.09	REALIGNED WITH NEW AERIAL PHOTOS
A	L.L	P.C.	21.10.09	CONCEPT ISSUE

Designed: L.L
Drawn: L.L
Checked: P.C.
Approved: B.S.
Scale In meters: Hor 0 10 20, Ver 0

Client: HAWKESDALE DEVELOPMENT P/L

Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

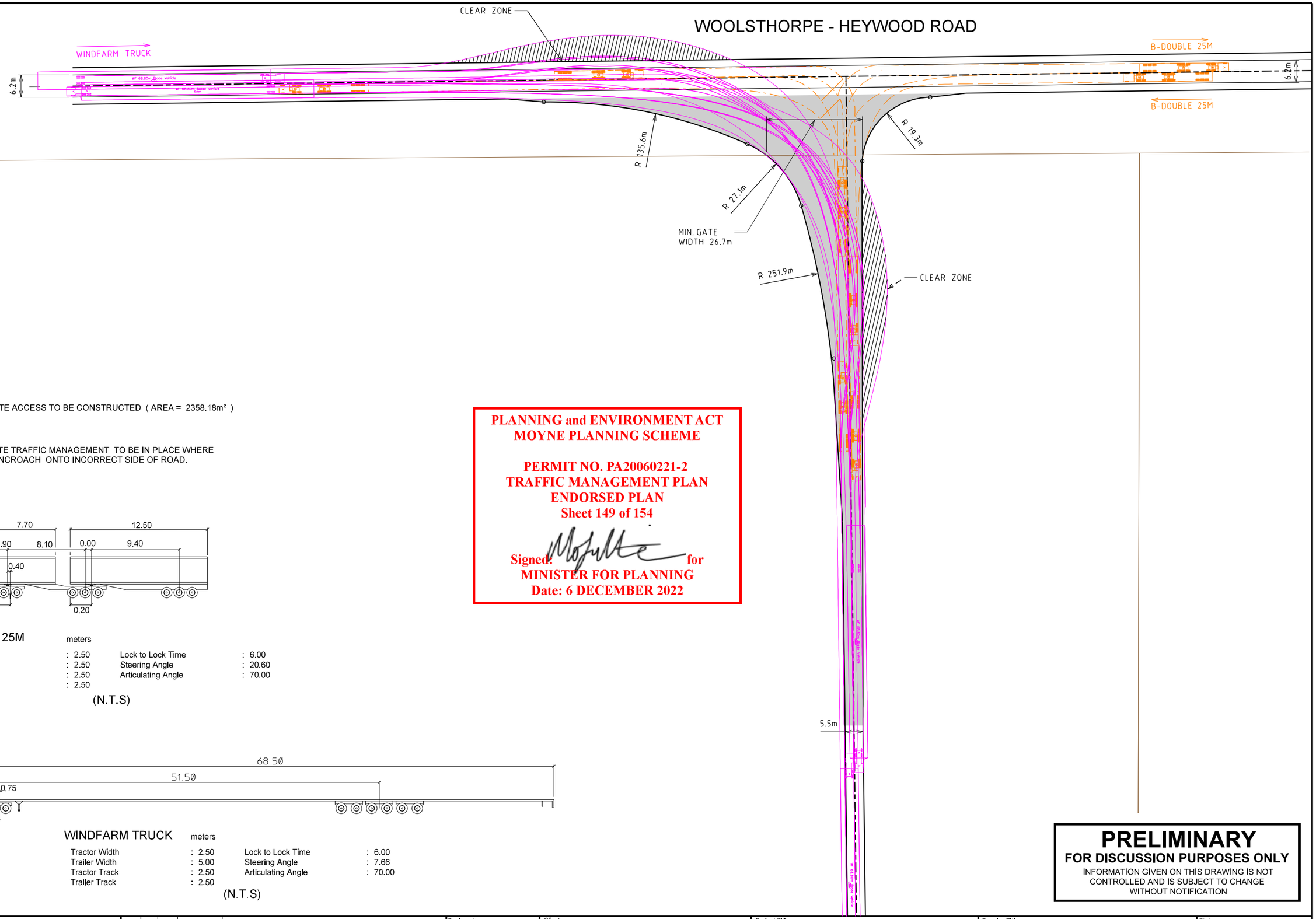
Drawing Title: SITE ACCESS TURNING MOVEMENTS SITE B

Status: CONCEPT
Datum: AMG66/54
Date: 16.10.09
CAD File Number: $FILE$
Job Number: 43315957
Sheet Number: 121
Rev: F

U:\JOBS\43315957\AMASTER\43315957-C121.dgn
28/05/2018 3:10:20 PM

A3

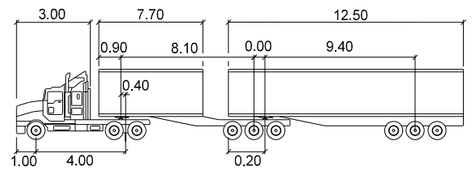
WOOLSTHORPE - HEYWOOD ROAD



LEGEND

SITE ACCESS TO BE CONSTRUCTED (AREA = 2358.18m²)

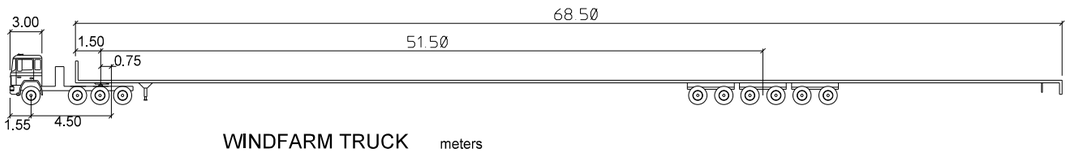
NOTE:
APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENCROACH ONTO INCORRECT SIDE OF ROAD.



B-DOUBLE 25M meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.00
Trailer Width	: 2.50	Steering Angle	: 20.60
Tractor Track	: 2.50	Articulating Angle	: 70.00
Trailer Track	: 2.50		

(N.T.S)



WINDFARM TRUCK meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.00
Trailer Width	: 5.00	Steering Angle	: 7.66
Tractor Track	: 2.50	Articulating Angle	: 70.00
Trailer Track	: 2.50		

(N.T.S)

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 149 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
F	JD	JD	28.05.18	UPDATED OD VEHICLE TEMPLATE
E	GRS	EDP	24.8.15	UPDATED OD VEHICLE TEMPLATE
D	GRS	GB	17.10.14	UPDATED OD VEHICLE TEMPLATE
C	LL	P.C.	14.01.10	AS PER CLIENT REVIEW
B	L.L	P.C.	07.12.09	REALIGNED WITH NEW AERIAL PHOTOS
A	L.L	P.C.	21.10.09	CONCEPT ISSUE

Designed: L.L
Drawn: L.L
Checked: P.C.
Approved: B.S.
Scale in meters: Hor 0 10 20, Ver 0

Client: HAWKESDALE DEVELOPMENT P/L

Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: SITE ACCESS TURNING MOVEMENTS SITE C

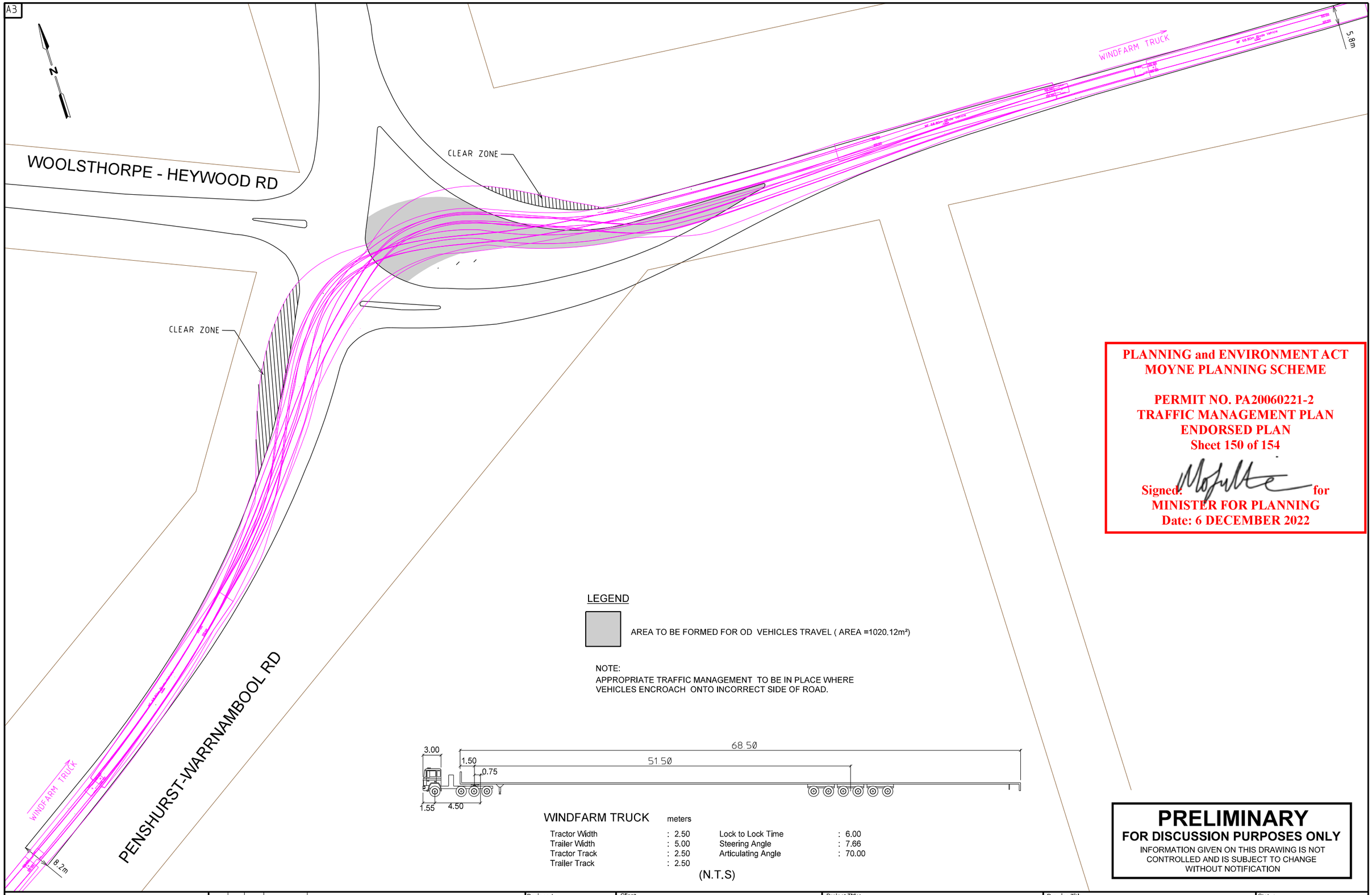
Status: CONCEPT

Datum: AMG66/54 Date: 16.10.09

CAD File Number: $FILE$ Job Number: 43315957 Sheet Number: 122 Rev: F

U:\JOBS\43315957\AMASTER\43315957-C122.dgn
28/05/2018 3:12:18 PM

A3



PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 150 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

LEGEND

AREA TO BE FORMED FOR OD VEHICLES TRAVEL (AREA =1020.12m²)

NOTE:
APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENCROACH ONTO INCORRECT SIDE OF ROAD.

WINDFARM TRUCK meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.00
Trailer Width	: 5.00	Steering Angle	: 7.66
Tractor Track	: 2.50	Articulating Angle	: 70.00
Trailer Track	: 2.50		

(N.T.S)

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS
URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
D	GRS	EDP	24.08.15	UPDATED OD VEHICLE TEMPLATE
C	GRS	GB	17.10.14	UPDATED OD VEHICLE TEMPLATE
B	L.L	P.C.	07.12.09	REALIGNED WITH NEW AERIAL PHOTOS
A	L.L	P.C.	21.10.09	CONCEPT ISSUE

Designed L.L
Drawn L.L
Checked P.C.
Approved B.S.
Scale In meters Hor 0 10 20 Ver 0

Client: HAWKESDALE DEVELOPMENT P/L

Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: INTERSECTION TURNING MOVEMENTS SITE D

Status: CONCEPT
Datum: AMG66/54
Date: 16.10.09
CAD File Number: $FILE$
Job Number: 43315957
Sheet Number: 123
Rev: D

U:\JOBS\43315957\AMASTER\43315957-C123.dgn
29/05/2018 3:12:58 PM

A3

N

7.0m

WINDFARM TRUCK

PENSHURST-PORT FAIRY RD

PENHURST - WARRNAMBOOL RD

WINDFARM TRUCK

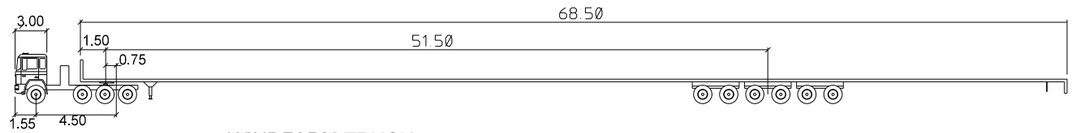
PENHURST - WARRNAMBOOL RD

PENSHURST-PORT FAIRY RD

LEGEND

AREA TO BE FORMED FOR OD VEHICLES TRAVEL (AREA =786m²)

NOTE:
APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENCROACH ONTO INCORRECT SIDE OF ROAD.



WINDFARM TRUCK meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.00
Trailer Width	: 5.00	Steering Angle	: 7.66
Tractor Track	: 2.50	Articulating Angle	: 70.00
Trailer Track	: 2.50		

(N.T.S)

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 151 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
F	JD	JD	28.05.18	UPDATED OD VEHICLE TEMPLATE
E	GRS	EDP	24.08.15	UPDATED OD VEHICLE TEMPLATE
D	GRS	GB	17.10.14	UPDATED OD VEHICLE TEMPLATE
C	LL	P.C.	14.01.10	AS PER CLIENT REVIEW
B	L.L	P.C.	07.12.09	REALIGNED WITH NEW AERIAL PHOTOS
A	L.L	P.C.	21.10.09	CONCEPT ISSUE

Designed L.L
Drawn L.L
Checked P.C.
Approved B.S.
Scale in meters Hor 0 10 20 Ver 0

Client: HAWKESDALE DEVELOPMENT P/L

Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: INTERSECTION TURNING MOVEMENTS SITE E

Status: CONCEPT
Datum: AMG66/54
Date: 16.10.09
CAD File Number: $FILES
Job Number: 43315957
Sheet Number: 124
Rev: F

U:\JOBS\43315957\AMASTER\43315957-C124.dgn
28/05/2018 3:15:26 PM

A3

N

7.0m

WINDFARM TRUCK

PROPOSED NEW LINE MARKING

PROPOSED HP WEARING COURSE REPLACEMENT 1300m2

R 10m

PENHURST - PORT FAIRY RD

6.2m

WINDFARM TRUCK

PROPOSED NEW LINE MARKING

PRINCES HWY

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

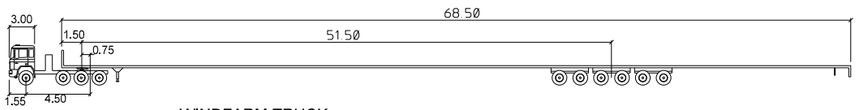
PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 152 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

LEGEND

SHOULDER TO BE CONSTRUCTED (AREA =600 m2)

NOTE:
APPROPRIATE TRAFFIC MANAGEMENT TO BE IN PLACE WHERE VEHICLES ENCROACH ONTO INCORRECT SIDE OF ROAD.



WINDFARM TRUCK meters

Tractor Width	: 2.50	Lock to Lock Time	: 6.00
Trailer Width	: 5.00	Steering Angle	: 7.66
Tractor Track	: 2.50	Articulating Angle	: 70.00
Trailer Track	: 2.50		

(N.T.S)

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
F	JD	JD	28.05.18	UPDATED OF VEHICLE TEMPLATE
E	GRS	EDP	04.12.15	HP OVERLAY ADDED
D	GRS	EDP	24.08.15	UPDATED OD VEHICLE TEMPLATE
C	GRS	GB	17.10.14	UPDATED OD VEHICLE TEMPLATE
B	L.L	P.C.	07.12.09	REALIGNED WITH NEW AERIAL PHOTOS
A	L.L	P.C.	21.10.09	CONCEPT ISSUE

Designed L.L
Drawn L.L
Checked P.C.
Approved B.S.
Scale In meters Hor 0 12.5 25 Ver 0

Client: HAWKESDALE DEVELOPMENT P/L

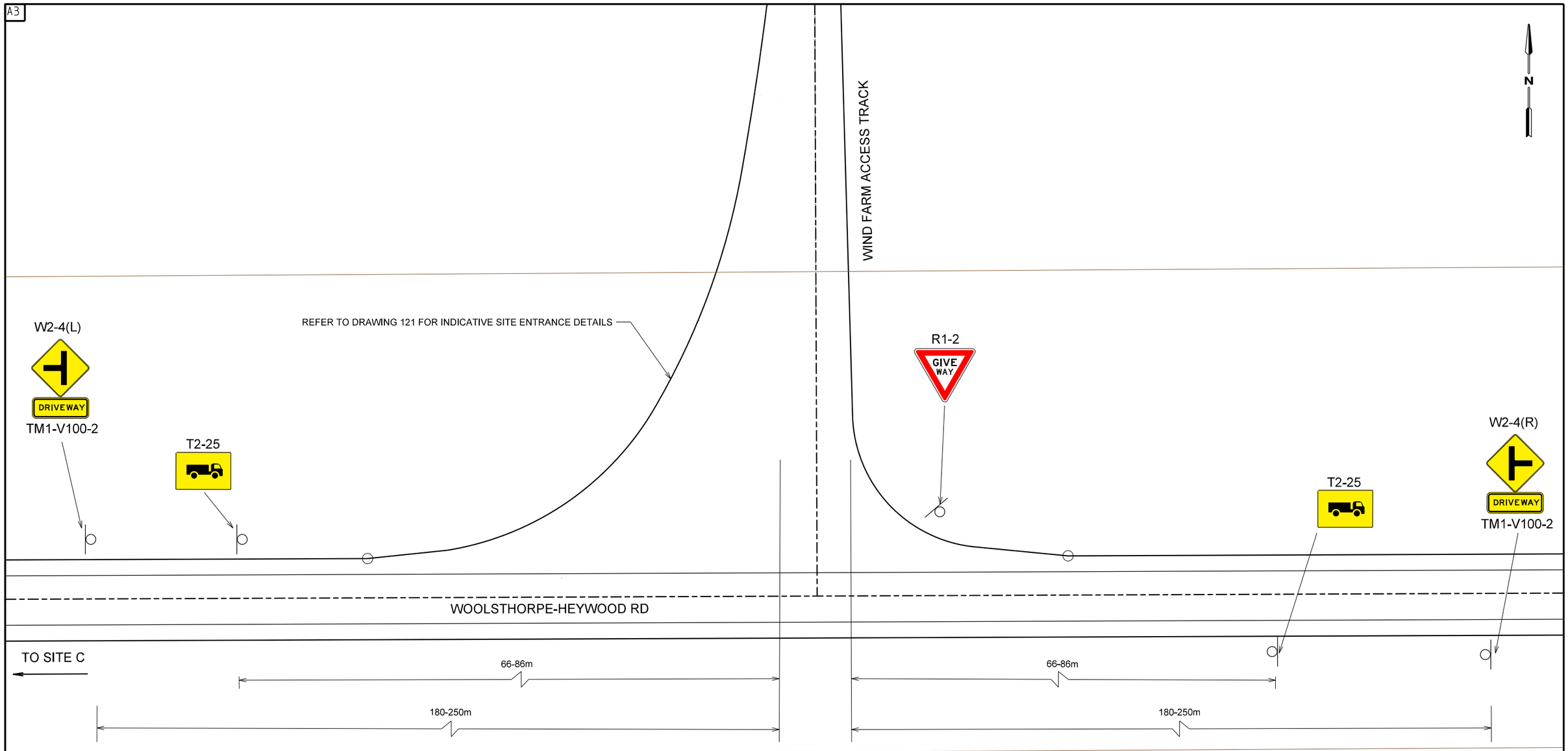
Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: INTERSECTION TURNING MOVEMENTS SITE F

Status: CONCEPT
Datum: AMG66/54
Date: 16.10.09
CAD File Number: $FILE$
Job Number: 43315957
Sheet Number: 125
Rev: F

U:\JOBS\43315957\AMASTER\43315957-C125.dgn
29/05/2018 3:45:31 PM

A3



PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 153 of 154

Signed: **for**
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS
URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
B	JD	JD	15.05.18	UPDATED
A	L.L	P.C.	18.11.09	SKETCH ONLY

Designed P.C.
Drawn L.L
Checked P.C.
Approved B.S.
NOT TO SCALE

Client: HAWKESDALE DEVELOPMENT P/L

Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: SIGNAGE LAYOUT SITE B

Status: SKETCH
Datum: AMG66/54
Date: 18.11.09
CAD File Number: $FILE$
Job Number: 43315957
Sheet Number: SKETCH 131
Rev: B

U:\JOBS\43315957\MASTER\43315957-C131.dgn
15/05/2018 1:49:32 PM

A3

PLANNING and ENVIRONMENT ACT
MOYNE PLANNING SCHEME

PERMIT NO. PA20060221-2
TRAFFIC MANAGEMENT PLAN
ENDORSED PLAN
Sheet 154 of 154

Signed: for
MINISTER FOR PLANNING
Date: 6 DECEMBER 2022

N

180-250m

66-86m

180-250m

66-86m

TO SITE B

WOOLSTHORPE-HEYWOOD RD

W2-4(R)

DRIVEWAY

TM1-V100-2

T2-25

GIVE WAY

R1-2

REFER TO DRAWING 122 FOR INDICATIVE SITE ENTRANCE DETAILS

WIND FARM ACCESS TRACK

T2-25

W2-4(L)

DRIVEWAY

TM1-V100-2

PRELIMINARY
FOR DISCUSSION PURPOSES ONLY
INFORMATION GIVEN ON THIS DRAWING IS NOT CONTROLLED AND IS SUBJECT TO CHANGE WITHOUT NOTIFICATION

URS Australia Pty Ltd.
Level 6, 1 Southbank Boulevard,
SOUTHBANK, VIC, 3006, AUSTRALIA
Telephone: (03) 8699 7500
Facsimile: (03) 8699 7550

Rev	By	App	Date	REVISION RECORD
B	JD	JD	15.05.18	UPDATED
A	L.L	P.C.	18.11.09	SKETCH ONLY

Designed P.C.
Drawn L.L
Checked P.C.
Approved B.S.
Scale In meters NOT TO SCALE

Client: HAWKESDALE DEVELOPMENT P/L

Project Title: HAWKESDALE WINDFARM TRAFFIC MANAGEMENT

Drawing Title: SIGNAGE LAYOUT SITE C

Status: SKETCH
Datum: AMG66/54
Date: 18.11.09
CAD File Number: $FILES
Job Number: 43315957
Sheet Number: SKETCH 132
Rev: B

U:\JOBS\43315957\AMASTER\43315957-C132.dgn
15/05/2018 1:43:25 PM