Amber

Traffic & Transportation Direction

Bellambi Heights Battery Energy Storage System

696 Castlereagh Highway, Beryl

Stage 1 Traffic Management Plan

April 2025

Reference: 1019 tmp s1 250423 final

Bellambi Heights Battery Energy Storage System

696 Castlereagh Highway, Beryl

Stage 1 Traffic Management Plan

Prepared for: Vena Energy Services Australia Pty Ltd

Status: Final report

Date: 23 April 2025

Reference: 1019 tmp S1 250423 final

Revision	Date	Description	Author	Reviewed	Approved
A	09/10/24	Preliminary Draft for Comment	Rico Kobelt	Tom Dwyer	Tom Dwyer
B	05/11/24	Draft for Issue	Rico Kobelt	Tom Dwyer	Tom Dwyer
C	20/12/24	Update after Authority Feedback	Rico Kobelt	Tom Dwyer	Tom Dwyer
D	23/04/25	Update after DPHI Comments	Rico Kobelt	Tom Dwyer	Tom Dwyer

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1. Introduction

1.1 Project Background

The Bellambi Heights Battery Energy Storage System (BESS) (the Project) is a 408MW BESS located at 696 Castlereagh Highway, Beryl.

Access to the site will be provided via a new connection with Castlereagh Highway with the existing access to be removed.

The Development Consent (DC) – Application Number: SSD-33344237– requires the preparation of a Traffic Management Plan (TMP).

Amber Organisation Pty Ltd has been engaged by Vena Energy to prepare a TMP to detail the proposed traffic management measures to be implemented during the construction works and respond to this requirement.

Figure 1 shows the proposed layout of the site in relation to the road network, access locations and existing infrastructure.

Stage 1 of the project comprises construction of the new site access, construction of an internal access road and laydown area then permanently closing the existing access (Stage 1 as outlined in Section 1.3). Stage 1 is anticipated to start in late Q1 2025.

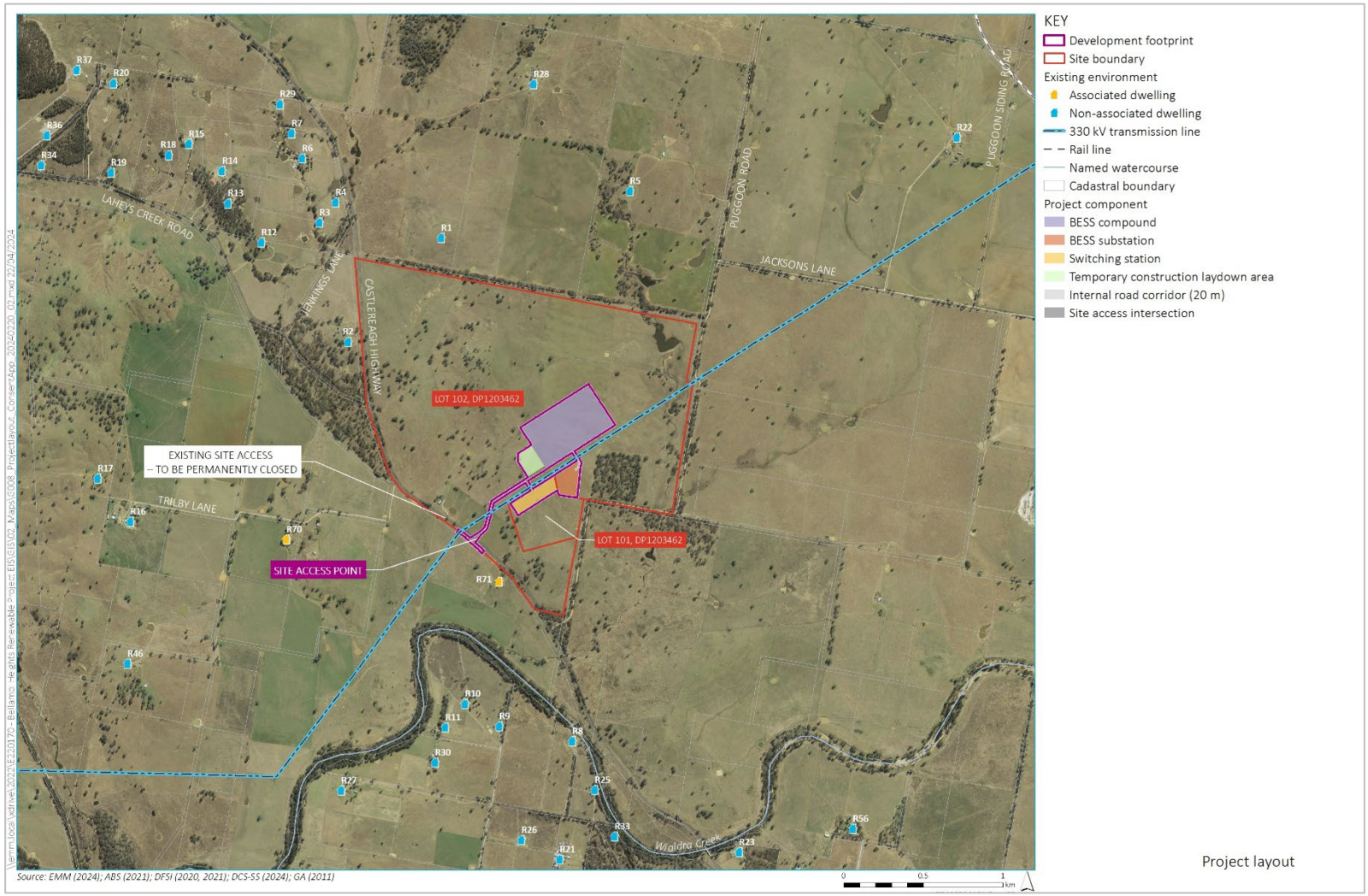
Construction of the BESS and ancillary infrastructure are scheduled to start only once the new site access is fully complete and the existing site access permanently closed.

The primary traffic impacts relate to the traffic generation associated with the transport of materials and the workforce to and from the site, with these effects able to be managed with minimal impact to the road network.

This TMP applies only to Stage 1 as outlined in Section 1.3. Separate TMPs are to be prepared for the balance of the construction, operation and decommissioning phases of the project.

This TMP has been prepared based on the available construction information at the time of writing.

Figure 1: Project Layout



Source: Development Consent

1.2 Objectives

The key objective of this TMP is to ensure safe and efficient movement of vehicles to/from the site, whilst minimising disruptions and impacts, and maintaining a safe environment for vehicular traffic external to the site. More specifically, the objectives of the TMP are to:

- Provide a safe environment for the travelling public and construction personnel;
- Cater for the needs of all traffic;
- Communicate the purpose of the proposed traffic management measures; and
- Communicate the arrangements for and impacts of any management measures affecting traffic.

To assist in meeting these objectives the TMP provides information on:

- The Scope of Works;
- Site conditions;
- Permissible working times; and
- Procedures and responsibilities.

The Applicant shall ensure that the requirements of the document and other relevant information will be monitored and the TMP adjusted to meet changing requirements where necessary.

1.3 TMP Staging

The TMP is to be staged as follows:

- Stage 1: Construction of the road upgrades at the intersection of the new site access to the Castlereagh Highway, and construction of internal access road and laydown area and permanent closure of the existing access.
- Stage 2: On-site construction activities of the BESS and ancillary infrastructure, comprising of all civil, structural and electrical works.
- Stage 3: Operation of the BESS.
- Stage 4: Decommissioning the BESS at end of life.

This TMP applies to Stage 1, with separate TMPs to be prepared for Stage 2 onwards.

1.4 Statutory Requirements

This document fulfills the requirements of Environmental Condition B9 of the Development Consent (Application Number: SSD-33344237) which requires the provision of a Traffic Management Plan and has been prepared with consideration to the other transport conditions outlined within the Development Consent. The matters relevant to transport outlined within Part A, Part B and Part C of the Development Consent have been summarised within Table 1, Table 2 and Table 3 respectively.

Table 1: Development Consent Requirements – Part A

	CONDITION	REFERENCE LOCATION
	Obligation To Minimise Harm To The Environment	
A1	In meeting the specific environmental performance criteria established under this consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction, commissioning, operation, upgrading, rehabilitation or decommissioning of the development.	**Complies:** Refer Section 8.3
	Evidence of Consultation	
A13	Where conditions of this consent require consultation with an identified party, the Applicant must: (a) consult with the relevant party prior to submitting the subject document to the Planning Secretary for approval; and (b) provide details of the consultation undertaken including: (i) the outcome of that consultation, matters resolved and unresolved; and (ii) details of any disagreement remaining between the party consulted and the Applicant and how the Applicant has addressed the matters not resolved.	**Complies:** A draft TMP (Rev B) was provided to authorities. This revision includes updates as a result of the feedback as outlined in Section 1.5, Records of the feedback and response are included in Appendix F.

Table 2: Development Consent Requirements – Part B

	CONDITION	REFERENCE LOCATION
	Heavy Vehicles Requiring Escort and Heavy Vehicle Restrictions	
B1	The Applicant must ensure that the: a) development does not generate more than: i) 40 heavy vehicle movements a day during construction, upgrading and decommissioning; ii) 20 light vehicle movements and 4 heavy vehicle movements during the AM (6-7 am) or PM (5-6 pm) project peak hours during construction, upgrading or decommissioning; and iii) 4 movements of heavy vehicles requiring escort during construction, upgrading or decommissioning; and b) length of any vehicles (excluding heavy vehicle requiring escort) used for the development does not exceed 26 metres, unless the Planning Secretary agrees otherwise.	**Complies:** Refer Section 3.6.1 As this TMP only applies to the Stage 1 of the project (refer Section 1.3); further detail of the traffic movements for construction, operational and decommissioning will be managed by way of future TMP/s, including heavy vehicles requiring escort.
B2	The Applicant must keep accurate records of the number of heavy vehicles requiring escort and heavy vehicles entering or leaving the site each day for the duration of the project.	**Complies:** Section 4.2
	Access Route	
B3	All heavy vehicles associated with the development must travel to and from the site via: a) Golden Highway and Castlereagh Highway north of the development; or b) Castlereagh Highway south of the development, as described in the EIS.	**Complies:** Section 3.6.2. This TMP only applies to Stage 1 of the project (refer Section 1.3).

	CONDITION	REFERENCE LOCATION
B4	All heavy vehicles requiring escort associated with the development must travel to and from the site via the Golden Highway and Castlereagh Highway north of the development as identified in Figure 2 of Appendix 3.	No heavy vehicles requiring escort are required during this Stage. Impacts of these vehicles will be managed by way of future TMP/s.
	Site Access	
B5 B6	All vehicles associated with the development must enter and exit the site via the site access point off Castlereagh Highway as identified in Appendix 1. Unless the Planning Secretary agrees otherwise, the existing site access off the Castlereagh Highway must be closed before any development related vehicles enter the site.	**Complies:** This TMP applies to Stage 1 of the project (refer Section 1.3). Once these works are complete, all vehicles will enter the site via this access. Road design plans are included in Appendix A. The existing site access is to be locked during construction and formally closed after the completion of the turn treatments at the site access as outlined in Section 3.2 and 4.5.
	Road Upgrades	
B7	Unless the Planning Secretary agrees otherwise, prior to commencing construction the Applicant must complete the road upgrades detailed in Appendix 3. Unless the relevant road authority agrees otherwise, these upgrades must comply with the current *Austroads Guidelines*, *Australian Standards* (as amended by *TfNSW supplements*), and be carried out to the satisfaction of the relevant roads authority.	**Complies:** This TMP applies to Stage 1 of the project (refer Section 1.3) which will enable the road upgrade to be completed before construction of the battery storage and ancillary infrastructure. Site access design plans are to be finalised in accordance with relevant TfNSW requirements.
	Operating Conditions	
B8	The Applicant must ensure: a) any new internal roads are constructed and maintained as all-weather roads; b) any existing internal roads are maintained as all-weather roads; c) there is sufficient parking on site for all vehicles, and no parking occurs on the public road network in the vicinity of the site; d) the capacity of the existing roadside drainage network is not reduced;	**Complies where applicable:** Section 4.6, 4.7, 4.9 and 4.11

	CONDITION	REFERENCE LOCATION
	e) all vehicles are loaded and unloaded on site, and enter and leave the site in a forward direction; and f) development-related vehicles leaving the site are in a clean condition to minimise dirt being tracked onto the public road network.	
	Traffic Management Plan	
B9	Prior to commencing road upgrades identified in condition B7, the Applicant must prepare a Traffic Management Plan for the development in consultation with TfNSW and Council, and to the satisfaction of the Planning Secretary. This plan must include:	**Complies where applicable:**
	a) details of the transport route to be used for all development-related traffic;	Section 3.6.2.
	b) details of the road upgrade works required by condition B7;	Section 3.5, Design plans included in Appendix A.
	c) details of the closure of the existing site access as required by condition B6;	The existing site access is to be locked during construction and formally closed after the completion of the turn treatments at the site access as outlined in Section 3.2 and 4.5.
	d) details of the measures that would be implemented to minimise traffic impacts during construction, upgrading or decommissioning works, including:	-
	i) temporary traffic controls, including detours and signage;	Temporary Traffic Control measures to enable Stage 1 works are provided in Appendix E.
	ii) notifying the local community about development-related traffic impacts;	Section 4.3
	iii) procedures for receiving and addressing complaints from the community about development related traffic;	Section 8.5
	iv) minimising potential cumulative traffic impacts with other State significant development projects in the area (including consultation with the applicant of Tallawang Solar Farm regarding scheduling of peak construction movements and further traffic management measures (if required) to ensure the road upgrades identified in condition B7 are compliant with Austroads Guidelines);	Section 4.2. Monthly updates are to be sought from the Tallawang Solar Farm (and other state significant development projects) and haulage movements scheduled accordingly. It is noted that the most recent advice from Tallawang Solar Farm is that the construction is scheduled late Q4 2026, 18 months after the anticipated completion of Stage 1 works. Vena Energy will notify TfNSW on any advice received

	CONDITION	REFERENCE LOCATION
		from Tallawang Solar Farm during the process of construction.
	v) minimising potential for conflict with school buses and other road users as far as practicable, including preventing queuing on the public road network;	Section 4.2
	vi) minimising dirt tracked onto the public road network from development-related traffic;	Section 4.9
	vii) details of the employee shuttle bus service, including pick-up and drop-off points and associated parking arrangements for construction workers, and measures to encourage employee use of this service as described in the EIS;	**Not applicable:** Stage 1 works will require only (up to) a workforce of 12 staff so shuttle buses are not required. Details and measures around shuttle buses will be provided in future TMP/s, as required.
	viii) encouraging car-pooling or ride sharing by employees;	Section 4.7
	ix) scheduling of heavy vehicle movements to minimise convoy length or platoons, and to minimise conflict with light vehicles;	Section 4.2
	x) responding to local climate conditions that may affect road safety such as fog, dust, wet weather and flooding;	Section 4.11
	xi) responding to any emergency repair or maintenance requirements; and	Section 4.10
	xii) a traffic management system for managing heavy vehicles requiring escort;	**Not applicable:** No heavy vehicles requiring escort are to be required for the Stage 1 works. Management of these vehicles will be outlined in future TMP/s.
	e) a driver's code of conduct that addresses:	
	i. driver fatigue;	Appendix C Appendix D
	ii. procedures to ensure that drivers adhere to the designated transport routes and speed limits; and	Appendix C
	iii. procedures to ensure that drivers implement safe driving practices; and	Appendix C
	f) a program to ensure drivers working on the development receive suitable training on the code of conduct and any other relevant obligations under the Traffic Management Plan.	Section 4.1, Appendix C
Following the Planning Secretary's approval, the Applicant must implement the Traffic Management Plan.		

Table 3: Development Consent Requirements – Part C

	CONDITION	REFERENCE LOCATION
	Revision of Strategies, Plans and Programs	
C2	The Applicant must: a) update the strategies, plans or programs required under this consent to the satisfaction of the Planning Secretary prior to carrying out any upgrading or decommissioning activities on site; and	**Complies:** Refer Section 9.3
	b) review and, if necessary, revise the strategies, plans or programs required under this consent to the satisfaction of the Planning Secretary within 1 month of the: ▪ submission of an incident report under condition C10 of Schedule 2; ▪ submission of an audit report under condition C14 of Schedule 2; or ▪ any modification to the conditions of this consent.	**Complies:** Refer Section 9.3
	Updating and Staging of Strategies, Plans or Programs	
C3	With the approval of the Planning Secretary, the Applicant may stage the development and may: (a) prepare and submit any strategy, plan or program required by this consent on a staged basis (if a clear description is provided as to the specific stage and scope of the development to which the strategy, plan or program applies, the relationship of the stage to any future stages and the trigger for updating the strategy, plan or program); (b) combine any strategy, plan or program required by this consent (if a clear relationship is demonstrated between the strategies, plans or programs that are proposed to be combined); and (c) update any strategy, plan or program required by this consent (to ensure the strategies, plans and programs required under this consent are updated on a regular basis and incorporate additional measures or amendments to improve the environmental performance of the development).	**Complies:** Refer Section 9.3
C4	If the Planning Secretary agrees, a strategy, plan or program may be staged or updated without consultation being undertaken with all parties required to be consulted in the relevant condition in this consent.	**Complies:** Refer Section 9.3
C5	If approved by the Planning Secretary, updated strategies, plans or programs supersede the previous versions of them and must be implemented in accordance with the condition that requires the strategy, plan or program.	**Complies:** Refer Section 9.3
C6	If the Planning Secretary agrees, a strategy, plan or program may be staged without addressing particular requirements of the relevant condition of this consent if those requirements are not applicable to the particular stage.	**Complies:** Refer Section 9.3
	Notification of Department	
C7	Prior to commencing the construction, operations, upgrading or decommissioning of the development or the cessation of operations, the Applicant must notify the Department in writing via the Major Projects website portal of the date of commencement, or cessation, of the relevant phase. If any of these phases of the development are to be staged, then the Applicant must notify the Department in writing prior to commencing the	**Complies:** Refer Section 9.4

	relevant stage, and clearly identify the development that would be carried out during the relevant stage.	
	Incident Notification	
C10	The Planning Secretary must be notified in writing via the Major Projects website immediately after the Applicant becomes aware of an incident. The notification must identify the development (including the development application number and the name of the development if it has one) and set out the location and nature of the incident. Subsequent notification requirements must be given, and reports submitted in accordance with the requirements set out in Appendix 5.	**Complies:** Refer Section 8.4
	Non-Compliance Notification	
C11	The Planning Secretary must be notified in writing via the Major Projects website within seven days after the Applicant becomes aware of any non-compliance.	**Complies:** Refer Section 8.4
C12	A non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.	**Complies:** Refer Section 8.4
C13	A non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.	**Complies:** Refer Section 8.4
	Independent Environmental Audit	
C14	Independent Audits of the development must be conducted and carried out at the frequency and in accordance with the Independent Audit Post Approval Requirements (2020) to the following frequency: (a) within 3 months of commencing construction; and (b) within 3 months of commencement of operations.	**Complies:** Refer Section 9.5
C15	Proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.	**Complies:** Refer Section 9.5
C16	The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in condition C14 of Schedule 2 upon giving at least 4 weeks' notice to the Applicant of the date upon which the audit must be commenced.	**Complies:** Refer Section 9.5
C17	In accordance with the specific requirements in the Independent Audit Post Approval Requirements (2020), the Applicant must: (a) review and respond to each Independent Audit Report prepared under condition 6 of Schedule 4 of this consent, or condition 6B of Schedule 4 where notice is given by the Planning Secretary; (b) submit the response to the Planning Secretary; and (c) make each Independent Audit Report, and response to it, publicly available within 60 days of submission to the Planning Secretary, unless otherwise agreed by the Planning Secretary.	**Complies:** Refer Section 9.5
C18.	Independent Audit Reports and the Applicant's response to audit findings must be submitted to the Planning Secretary within 2 months of undertaking the independent audit site inspection as outlined in the Independent Audit Post Approvals Requirements (2020) unless otherwise agreed by the Planning Secretary.	**Complies:** Refer Section 9.5

C19	Notwithstanding the requirements of the Independent Audit Post Approvals Requirements (2020), the Planning Secretary may approve a request for ongoing independent operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that independent operational audits have demonstrated operational compliance.	**Complies:** Refer Section 9.5
	Access to information	
C20	The Applicant must: a) make the following information publicly available on its website as relevant to the stage of the development: ▪ the EIS; ▪ the final layout plans for the development; ▪ current statutory approvals for the development; ▪ approved strategies, plans or programs required under the conditions of this consent; ▪ the proposed staging plans for the development if the construction, operation or decommissioning of the development is to be staged; ▪ how complaints about the development can be made; ▪ any independent environmental audit, and the Applicant's response to the recommendations in any audit; and ▪ any other matter required by the Planning Secretary; and	**Complies:** Refer Section 4.3
	b) keep this information up to date.	**Complies:** Refer Section 4.3

1.4.1 Relevant Definitions

Key traffic and transportation terms used in this document are provided below, consistent with the Development Consent (where appropriate):

Heavy vehicle: As defined by the *Heavy Vehicle National Regulator* under the *Heavy Vehicle National Law (NSW)*

Heavy vehicle requiring escort: Any vehicle that requires a pilot vehicle and/or escort vehicle, as defined by the National Heavy Vehicle Regulator's NSW Class 1 Load Carrying Vehicle Operator's Guide

Light vehicle: As defined by the Transport for NSW Vehicle standards information sheet VSI 05 Light vehicle dimension limits Rev 6 (TfNSW, 11 March 2015)

Vehicle movement: One vehicle entering and leaving the site.

Vehicle trip: A one-way vehicular trip from one point to another excluding the return journey. Therefore, a return trip to and from the site is counted as two trips.

When used in this TMP, the words are consistent with the definition outlined.

1.4.2 Related Documents

A Traffic Impact Assessment[1] (TIA) was previously prepared by EMM Consulting Pty Ltd as part of the EIS submission, along with three further elements that relate to traffic and transport matters comprising:

- *Response to TfNSW – RTS* (EMM Consulting Pty Ltd)
- *Response to Submissions* (EMM Consulting Pty Ltd)
- *Additional Information 23 February 2023* (EMM Consulting Pty Ltd)

The TIA and supplementary information are available in the public domain from the NSW Major Projects website[2].

Where relevant, reference is made to these reports in this TMP.

1.5 Road Authority Consultation

A draft revision of this TMP (Rev. B) was shared with representatives from TfNSW and Mid-Western Regional Council for comment and review in November 2024.

TfNSW provided comments to the draft TMP. Matters relevant to be addressed in a revised TMP are summarised in Table 4 along with a response and reference location.

Table 4: TfNSW Comments and Response

Matter	TfNSW Comment	Response	Reference Location
Use of the existing site access	*Condition B5 of the determination of SSD-33344237 issued 2 May 2024 limits all vehicles associated with the development to entering and exiting the site via the upgraded site access (BAR/BAL) off Castlereagh Highway. Condition B6 also requires the existing site access off Castlereagh Highway to be closed before any development related vehicles enter this site. The applicant is to adhere to this condition by amending the TMP, otherwise a modification application will need to be lodged to DPHI to amend these conditions.* and *The TMP makes clear that the existing access is to be closed. TfNSW requests that it is notified with evidence of a dated completed closure process with Council and photographic evidence when this occurs.*	TMP has been amended to clearly outline that the existing site access will not be used during Stage 1	Section 3.2 and 4.5.

[1] Addendum Traffic Impact Assessment, EMM Consulting Pty Ltd, dated 30 November 2023. https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-33344237%2120230807T121633.166%20GMT

[2] https://www.planningportal.nsw.gov.au/major-projects/projects/bellambi-heights-battery-energy-storage-system

Matter	TfNSW Comment	Response	Reference Location
Consultation with Tallawang Solar Farm	*Condition B9, Part D, Section iv also requires potential cumulative traffic impacts with other State Significant projects in the area to be managed and consultation with the Tallawang Solar Farm to occur. The applicant has noted in Section 4.2 that advice has been received from Tallawang Solar Farm regarding timing of their works (18 months after the anticipated completion of Stage 1 works). Evidence of consultation with the proponent of the Tallawang Solar project must be provided attached to any future lodged TMP. TfNSW is to be notified of any updated advice received from Tallawang Solar Farm during the process of construction indicating the potential for cumulative impacts.*	The TMP has been updated with a commitment that Vena Energy will notify TfNSW on any advice received from Tallawang Solar Farm during the process of construction.	Section 4.2.

Mid-Western Regional Council had no comments or objections to the draft TMP but sought more information on the port to site haulage route which will be provided as part of future TMP stages.

Records of the feedback received from the authorities and the subsequent responses are provided for reference in Appendix F.

2. Existing Conditions

2.1 Site Location

The Project Area is located at 696 Castlereagh Highway (the site), approximately 6.5 kilometres northwest of the township of Gulgong. Situated on Lots 101 and 102 on the northeast side of Castlereagh Highway, it lies within the Central-West Orana (CWO) Renewable Energy Zone (REZ) of New South Wales. Figure 2 shows the location of the site in relation to the surrounding transport network.

Figure 2: Site Location

Source: OpenStreetMap

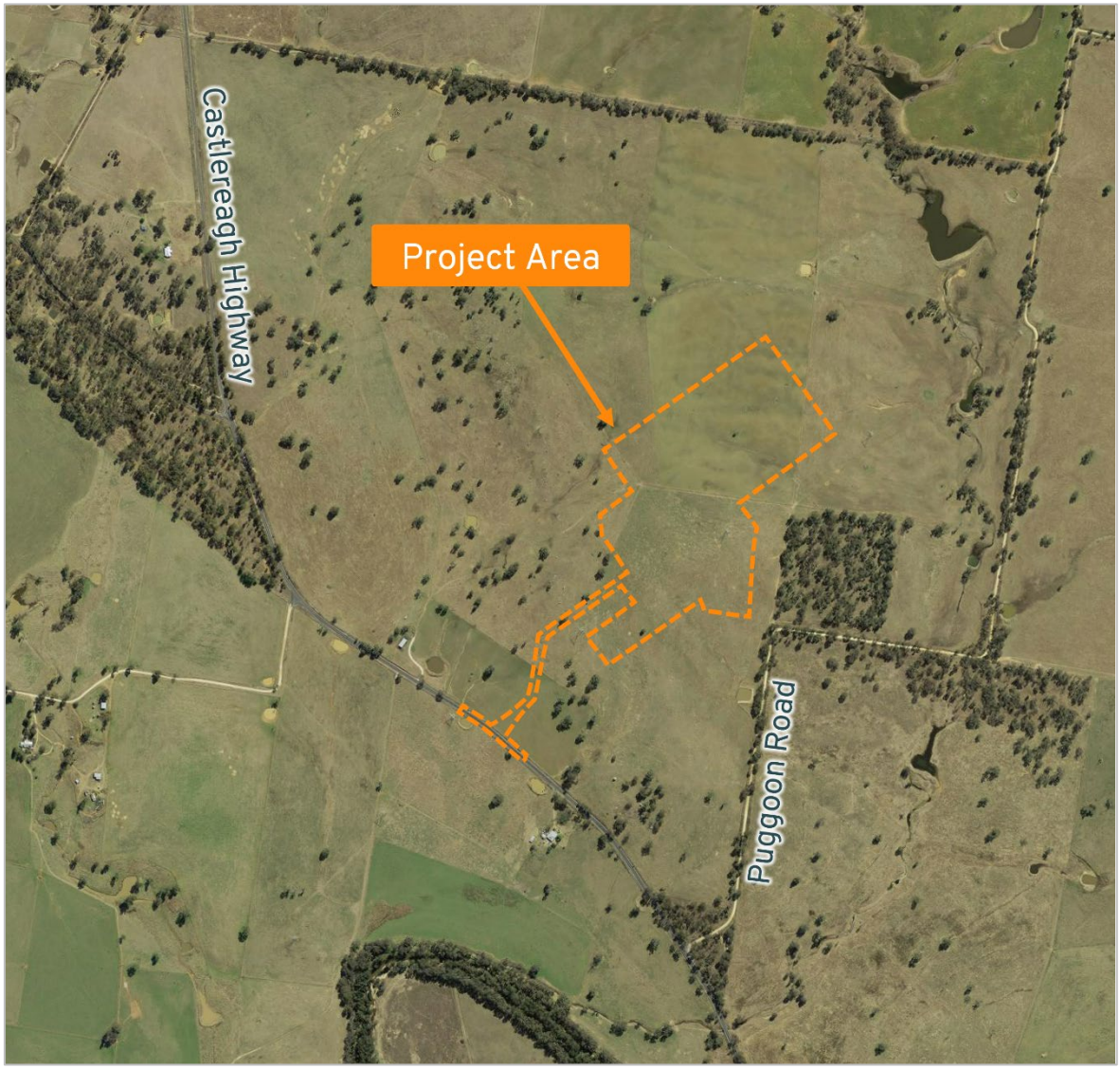
The figure shows the site is well connected with the surrounding State Road network with Castlereagh Highway running past the site which provides access to the nearby towns of Gulgong, Dunedoo and Mudgee.

The site and surrounding areas are zoned RU1 - Primary Production and are primarily occupied by agricultural or vegetated land. Land further to the south is zoned R5 – Large Lot Residential.

The existing property access connecting with the northeastern side of Castlereagh Highway was built by Transgrid to provide access to the existing overhead electricity lines that the traverse the site to facilitate maintenance and/or repair works as may be required. Continuity of access to its existing infrastructure is a Transgrid requirement.

Figure 3 provides an aerial photograph of the site and the surrounding area.

Figure 3: Aerial Photograph of Site and Surrounding Area



Source: SixMaps

2.2 Road Network

Castlereagh Highway is a State Road that runs in a general northwest-southeast alignment between its intersection with Golden Highway near Dunedoo (northwest) and its intersection with Great Western Highway near Wallerawang (southeast). In the vicinity of the site, it has a speed limit of 100 km/h and a sealed carriageway width of approximately 8.0m accommodating one lane of traffic in each direction with sealed shoulders and grassed verges on both sides of the road.

Puggoon Road is a local road that runs in a general northeast-southeast alignment between its intersection with Barneys Reef Road (northeast) and its intersection with Castlereagh Highway (southwest). Near the site it has a default rural speed limit of 100 km/h and an unsealed carriageway width of approximately 5.0m accommodating two-way vehicle movement and grassed verges on both sides of the road.

2.3 Traffic Volumes

The Traffic Impact Assessment[3] (TIA) previously prepared by EMM Consulting Pty Ltd included a pneumatic tube count survey undertaken on Castlereagh Highway near the site for a seven-day period between 19 June 2021 to 26 June 2021. These volumes were also verified by an EMM Traffic Engineer on-site as in September 2022 as outlined in the Response to TfNSW matters[4].

The data indicated that the average bidirectional traffic volume was approximately 1,400 vehicles per day, which was split evenly between northwest bound and southeast bound vehicles. This indicates Castlereagh Highway experiences a relatively low level of daily traffic for its road classification.

2.4 Restricted Vehicle Access

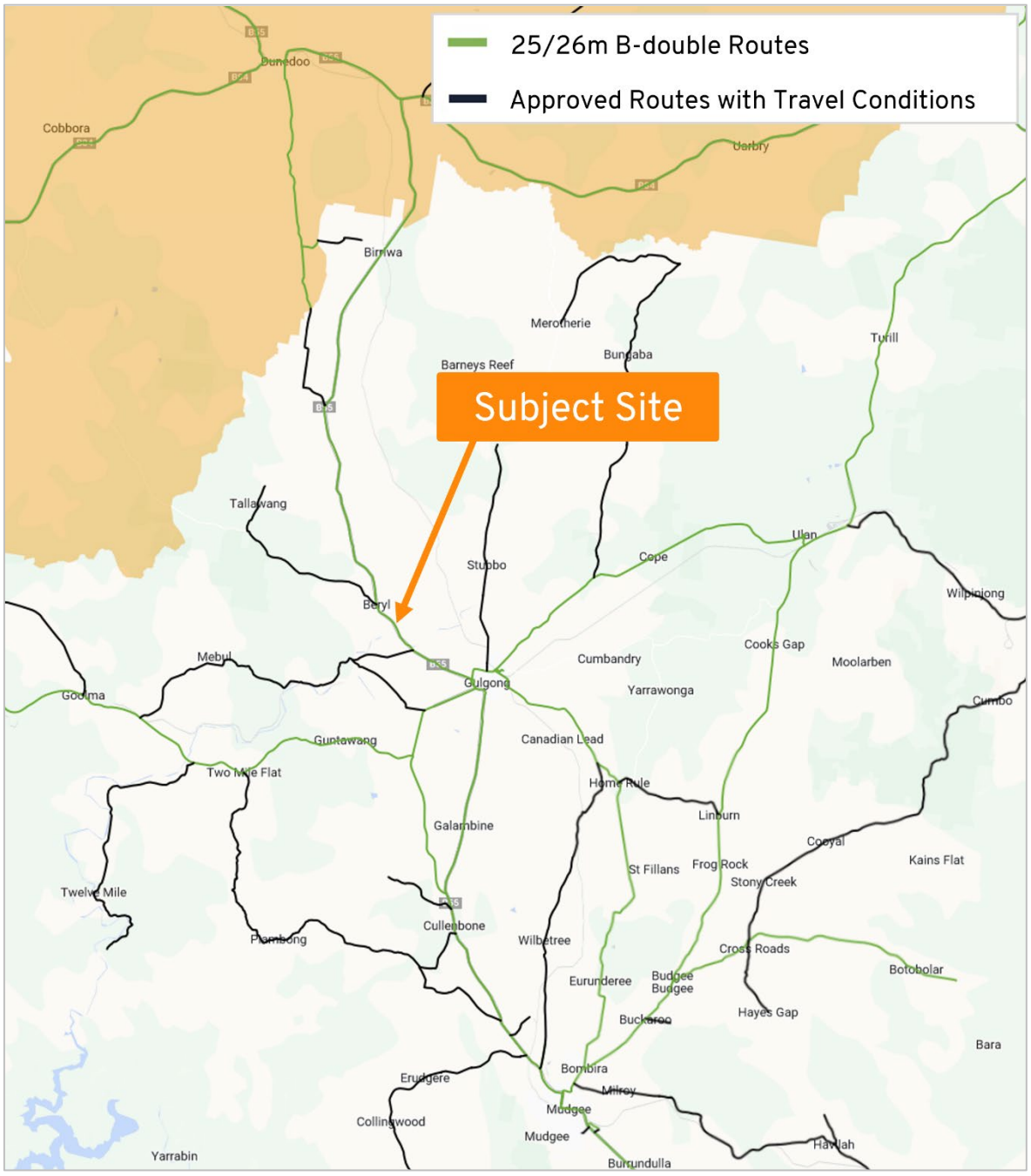
2.4.1 B-Doubles

The NHVR Restricted Access Vehicle Map for the surrounding area is provided within Figure 4. The green lines indicate approved B-Double routes while the black lines represent approved routes with travel conditions. The figure shows that Castlereagh Highway and the surrounding State Road network are B-Double approved routes. Accordingly, the site has access to the B-Double approved road network via Castlereagh Highway.

[3] Addendum Traffic Impact Assessment, EMM Consulting Pty Ltd, dated 30 November 2023. https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=SSD-33344237%2120230807T121633.166%20GMT

[4] Response to TfNSw Matters, EMM Consulting Pty Ltd, dated 22 April 2024. https://majorprojects.planningportal.nsw.gov.au/prweb/PRRestService/mp/01/getContent?AttachRef=RFI-66927476%2120240422T232513.983%20GMT

Figure 4: NHVR 26m B-Double Network Approved Roads



Source: NHVR Restricted Access Vehicle Map

2.4.2 Class 1 OSOM Vehicles

The NHVR Oversize Overmass (OSOM) Load Carrying Vehicles Network map for the surrounding area is provided within Figure 5. The map shows approved routes for eligible vehicles operating under the Multi-State Class 1 Load Carrying Vehicles Mass and Mass Exemption Notices. A summary of the allowances under each exemption within New South Wales is provided below:

- Dimension: up to 5.5m wide, 5.0m high, 35.0m long and 7.5m rear overhang on approved (state owned) routes in NSW.

- Mass: up to 115.0 tonnes for rows of 8 tyres low loaders and up to 77.5 tonnes for rows of 4 tyres low loader combinations.

Vehicles operating in the daytime and not exceeding 3.5m wide or 26m long generally do not require a pilot or escort vehicle.

No heavy vehicles requiring a pilot or escort vehicle are required for Stage 1 of this project.

The green lines indicate approved Class 1 OSOM Vehicle routes.

Accordingly, the site has access to the Class 1 OSOM approved road network via Castlereagh Highway.

Figure 5: NHVR Class 1 Oversize Overmass Load Carrying Vehicles Network Approved Roads

Source: NHVR Restricted Access Vehicle Map

2.5 Public Transport Services

There are NSW TrainLink coach services which travel along Castlereagh Highway. The coach services operate between Lithgow and Coonabarabran and between Lithgow and Baradine, in both directions.

Two school bus routes operate past 696 Castlereagh Highway which are operated by Ogden's Coaches. The S307 Laheys Creek and S305 Tucklan each travel past the site at 8:30-8:40am and 3:45-3:55 pm on school days.

The nearest stops and school routes near the site are shown in Figure 6.

Figure 6: School Bus Routes and Stops

Source: Ogden Coaches

Ogden Coaches are to be contacted prior to construction to confirm the school bus information is still accurate. Contact details are provided below:

- Name: Phillip Cooper
- Phone: 02 6372 2489
- Email: phillip@ogdenscoaches.com.au

3. Construction Overview

3.1 Project Description

The Project will involve the construction and operation of a major grid-scale battery project immediately adjacent to Transgrid's Wollar to Wellington 330 kV transmission line. The project will have a generation capacity of approximately 408 MW and approximately 816 MWh storage capacity.

Key development and infrastructure components will include[5]:

- BESS compound – comprising battery enclosures/containers (lithium-ion (Li-ion) or similar batteries inside battery enclosures/containers), power conversion systems and ancillary infrastructure, operation and maintenance buildings and spare parts warehouses.
- BESS substation – on-site substation comprising two 330/33 kilovolt (kV) transformer bays including oil retention bunds, indoor medium voltage switchgear units and control rooms housed in buildings, and other ancillary infrastructure.
- Switching station – a switching station that will connect the BESS to the transmission network, and will include overhead transmission lines, high voltage switchgear, current and voltage transformers, a control room and other high voltage electrical equipment.
- Site access intersection – a new site access intersection with the Castlereagh Highway will replace the existing access for the property at 696 Castlereagh Highway.

The works are to be undertaken by appointed construction contractors.

3.2 Stage 1 Works

This TMP applies to Stage 1 of the project which comprises the following three sub-stages:

Stage 01A Construction of a temporary gravel access road to the laydown area.

Stage 01B: Construction of BAR / BAL intersection treatment at the upgrade for the proposed site access, then immediate closure of the existing site access upon completion.

Stage 01C: Construction of the finished internal access road.

Design plans showing the physical outline of each sub-stage are include for reference in Appendix B. The works have been staged to minimise on-site works prior to the new site access being constructed.

These works will be undertaken as the first construction activity with all other on-site project works only commencing once the road upgrades are fully complete.

The TMP will be updated for future stages of the project.

3.3 Construction Schedule

The key construction activities during Stage 1 are summarised in Table 5.

[5] Per summary in Addendum Traffic Impact Assessment, EMM Consulting Pty Ltd, dated 30 November 2023.

Table 5: Construction Details

Project Activity	Commencement (Quarter, Year)	Anticipated Duration	Staffing Requirements
Temporary Access Road Construction	Q1 2025	4.5 weeks	Up to 10 on-site
Site Access Intersection Upgrade Construction	Q1/Q2 2025	9 weeks	Up to 12 on-site
Internal Access Road Construction	Q1/Q2 2025	9.5 weeks	Up to 9 on-site

As shown, a peak workforce of up to 12 will be on-site during Stage 1.

Project activities associated with construction of the battery storage and ancillary infrastructure will be provided as part of future TMP/s.

3.4 Construction Times

Construction activities shall be undertaken during standard daytime construction hours, as follows:

- Monday to Friday: 7am – 6pm
- Saturday: 8am – 1pm
- At no time on Sundays and NSW public holidays

The following construction, upgrading or decommissioning activities may be undertaken outside these hours without the approval of the Planning Secretary:

- The delivery of materials as requested by the NSW Police Force or other authorities for safety reasons; or
- Emergency work to avoid the loss of life, property and/or material harm to the environment.

Any other construction activities outside the approved hours require the approval of the Planning Secretary.

3.5 Road Upgrade Details

The required road upgrades are included in Condition B7 and Appendix 3 of the Development Consent. The table from Appendix 3 is reproduced below in Table 6.

Table 6: Road Upgrades and Site Access

Location	Upgrade Requirements	Timing
New site access intersection at Castlereagh Highway, 720 m north-west of Puggoon Road or 240 m south-east of the existing site access	Basic Left Turn (BAL) and Basic Right Turn (BAR) treatments to be undertaken in accordance with the Austroads guide.	New site access to be established prior to the commencement of construction of the BESS.

Design plans have been drafted to meet these conditions which are being reviewed and are to be subject to a Minor Works WAD[6] (Ref. WST24/00004).

The design plans are attached to this TMP for reference in Appendix A.

Records of the consultation undertaken with road authorities are to be included with this plan.

3.6 Traffic Movements

3.6.1 Traffic Generation

The expected traffic generated for the road upgrades can be broadly separated into the following categories:

- Light vehicles associated with transporting staff to/from the site;
- Heavy vehicles associated with the construction activities, as follows:
  - Medium and Heavy Rigid Trucks (MRV and HRV as defined within AS 2890.2:2018) between 8 and 13 metres in length, to deliver materials and smaller plant;
  - Truck and Dog vehicles will be used to transport material to/from the site;
  - Articulated Vehicles; and
  - Non-High Risk Class 1 OSOM vehicle combinations up to 26 metres in length associated with the delivery of construction plant and equipment. This includes but not limited to the delivery of the 30-34T excavator, D6 Dozer and Front Loader. These vehicle combinations will not require pilot or escort.

The construction traffic volumes for Stage 1 of the project have been provided by Vena's authorised WAD representative undertaking the road design and are summarised in Table 7.

Table 7: Expected Vehicles by Project Activity within Stage 1

Stage	Timeframe	Project Activities	Light Vehicles		Heavy Vehicles	
			Daily Vehicle Movements	AM and PM Peak Trips	Daily Vehicle Movements	AM and PM Peak Trips
1A	Commence Q1 2025, duration 4.5 weeks	Temporary Access Road Construction	10	Up to 10	Up to 20	Up to 3
1B	Commence Q1/Q2 2025, duration 9 weeks	Site Access Intersection Upgrade Construction	12	Up to 12	Up to 15	Up to 3
1C	Commence Q1/Q2 2025, duration 9.5 weeks	Internal Access Road Construction	9	Up to 9	Up to 15	Up to 3

[6] Works Authorisation Deed

As shown in Table 7, the site will generate the following movements during construction activities undertaken in Stage 1:

- 20 heavy vehicles per day; and
- 12 light vehicles and 3 heavy vehicles during the AM (6-7 am) or PM (5-6 pm) project peak hours.

Condition B1 of the Development Consent requires the development to not generate more than:

- 40 heavy vehicle movements a day during construction.
- 20 light vehicle movements and 4 heavy vehicle movements during the AM (6-7 am) or PM (5-6 pm) project peak hours during construction.

A vehicle movement is defined as *one vehicle entering and leaving the site*. The traffic volumes during construction must comply with the requirements of the condition.

Heavy vehicles requiring escort that may be required for the later stages of the project will be addressed in future stages of the TMP.

Vehicle movements will be provided for future project stages as part of updated TMPs.

3.6.2 Vehicle Access Route

Light vehicles associated with staff will enter the works area via Castlereagh Highway.

All heavy vehicles associated with Stage 1 will also enter the works area via Castlereagh Highway.

The access routes for all vehicles are shown in Figure 7. All vehicles will access the site via this route.

Figure 7: Vehicle Access Route

Source: OpenStreetMap

Condition B3 of the Development Consent requires all heavy vehicles associated with the development must travel to and from the site via Golden Highway and Castlereagh Highway north of the development, or Castlereagh Highway south of the development. These routes are to be complied with at all times.

3.7 Other Construction Stages and Operations

As this TMP only applies to Stage 1, separate TMPs and associated consultation will be undertaken for other project stages as discussed in Section 1.3.

4. Traffic Management Strategy

4.1 Driver Protocols

Management of vehicular access to and from the site is essential to maintain the safety of the general public as well as the labour force. Exemplar driver protocols are to be implemented and a driver code of conduct established. The Driver's Code of Conduct is provided within Appendix C. All vehicle drivers that visit the site are required to read, agree to and sign the Driver's Code of Conduct.

The following measures will be implemented by the Vena Energy Project Manager and the relevant Construction Project Manager:

- Mandatory site induction given to all workers on the site which clearly sets out the TMP requirements including approved routes, speed restrictions and the Driver Code of Conduct.
- Pre-engagement with delivery companies to ensure information on approved routes are known and understood before commencement of journey.
- Monitoring complaints, safety issues and near misses.
- Undertake improvements in relation to routes and driving behaviour to address any identified issues.

4.2 Delivery Logistics

The Site Construction Manager will be responsible for managing the heavy vehicle movements to and from the site during Stage 1. Their responsibilities comprise:

- Ensuring that accurate records are kept of heavy vehicles to and from the site. These will be reported monthly to the Vena Energy Project Manager. The records will list the number of heavy vehicles accessing the site each day, including:
  - The amount and type of material / plant transported;
  - The time each truck arrived and departed the site and the vehicle classification; and
  - The direction the vehicle was travelling to/from (i.e. north/east, south/west).
- Ensuring that the maximum number of heavy vehicle movements per day is adhered to;
- Schedule of next day and 2-day forecast of all deliveries, including inventory and timing;
- Transit time;
- Estimated time of arrival;
- Minimum daily communication with transport company/s; and
- Ensure construction drivers/staff must be provided a copy of assigned haulage routes.

The Vena Energy Project Manager is to ensure that records of the heavy vehicles are kept until the Stage 1 works are complete.

Updates will be sought from nearby significant renewable projects by the Vena Energy Project Manager on any increase to traffic volumes on the access route. This includes seeking monthly updates on the Tallawang Solar Farm construction program to identify peak periods when the use of the Castlereagh Highway will be elevated.

The most recent advice received from Tallawang Solar Farm[7] is that the construction works are scheduled late Q4 2026, 18 months after the anticipated completion of Stage 1 works to which this TMP applies.

Vena Energy will notify TfNSW on any advice received from Tallawang Solar Farm during the process of construction.

This information will be provided to the Site Construction Manager for them to schedule deliveries outside periods if significant increases of traffic are expected on the access route.

The Site Construction Manager is to liaise with transport companies to ensure major deliveries are minimised:

- during peak hours and to avoid conflict with local traffic
- avoids constriction peaks associated with other state significant projects including the Tallawang Solar Farm
- any school zones during peak school times, and
- during latent weather conditions such as fog, dust, wet weather and flooding.

Furthermore, the varying origins of the haulage movements and limited number of deliveries to site each day will limit the potential for haulage vehicles to form convoys or platoons.

4.3 Information and Communications

Immediate neighbours and Council representatives will be contacted by the Vena Energy Project Manager at the commencement of site access works and advised on the construction timeframes and impacts on the road network as a result of the works.

A program of consultation will be undertaken to ensure local stakeholders are aware of the construction activities. This program will include elements of the following as appropriate:

- Neighbour consultation and neighbour meetings;
- Provision of a website providing details of the status of works and contact details for any complaints or enquiries, which will also include up to date information on the:
  - EIS;
  - the final layout plans;
  - current statutory approvals;
  - approved strategies, plans or programs;
  - the proposed staging plans (if staging is proposed);
  - a summary of the monitoring results of the development;
  - details on how complaints can be made; and

    any independent environmental audit and response.
- Provide key contact personnel and contact details, including out of hours contact information to residents.

[7] Based on feedback provided to the Bellambi BESS project team in October 2024.

4.4 School Buses and Public Transport

Delivery of construction plant like the excavators and dozers are to be scheduled by the Site Construction Manager to occur outside of school bus service times to prevent larger vehicles interacting with school buses.

Ogden Coaches are to be contacted prior to construction to confirm the school bus information is still accurate. Contact details are provided below:

- Name: Phillip Cooper
- Phone: 02 6372 2489
- Email: phillip@ogdenscoaches.com.au

4.5 Existing Property Access

On receipt of the TfNSW Notice of Practical Completion for the new BAL/BAR (WST24/00004) and while the BAL/BAR is being built the existing access will remain locked, with its use restricted for emergency only (eg. RFS).

The Site Construction Manager will notify TfNSW notification with evidence of a dated completed closure process with Council and photographic evidence when this occurs.

4.6 On-Site Mitigation Measures

The following on-site traffic management measures will be implemented:

- All vehicles will enter the site through the designated access point and all vehicles will stop at security.
- On-site speed restrictions (40 km/hr maximum limit).
- All internal roads are constructed as all-weather roads.
- Appropriate dust suppression measures be implemented, including:
  - Vehicles will drive at slower speeds when travelling on unsealed roads. This can reduce the amount of dust created and the amount of dirt tracked onto the public road network. Standard mitigation measures, such as a water trucks to dampen the roads and reduce the amount of dust in the air, shall be considered to reduce dust levels.
  - Vehicles entering/exiting the project loaded with materials shall be covered.
- Loading and unloading will occur within the site. No street or roads will be used for material storage at any time.
- Sufficient car parking will be provided on-site and adjacent to work areas to ensure vehicles do not park on the surrounding road network.

4.7 Car-Pooling

Opportunities to car-pool with other staff using private vehicles will be identified and car-pooling will be encouraged by the Construction Project Manager. A summary of the car-pooling opportunities will also be provided to staff at induction and toolbox meetings.

4.8 Hazardous Goods and Dangerous Materials

All transport vehicles will be required to operate in accordance with State Environmental Planning Policy No. 33 – Hazardous and Offensive Development, Australian Dangerous Goods Code and Australian Standard 4452 Storage and Handling of Toxic Substances including consideration of:

- classification of loads;
- packaging and performance testing;
- use of bulk containers and unit loads;
- marking and placarding;
- vehicle requirements;
- segregation and stowage;
- transfer of bulk dangerous goods;
- documentation;
- safety equipment;
- procedures during transport; and
- operations in emergencies.

The process for the safe transport and use of dangerous goods will be provided to drivers as a part of the training and induction processes as required.

4.9 Environment Management

At regular intervals and/or as required as an outcome of a site inspection, the Site Construction Manager will arrange for any material (mud, gravel) that has been deposited onto the public road network as a result of project activities to be cleaned, either via sweeping or wash down. This would be subject to the implementation of appropriate traffic management measures (signage, personnel etc.) to ensure the safety of members of the public and the road cleaning crew.

Vehicles leaving the site will be in a clean condition prior to leaving the site to minimise dirt being tracked onto the public road network. It will be the driver's responsibility to ensure vehicles are in a clean condition prior to leaving the site. Vehicles will be inspected by individual drivers.

4.10 Emergency Repair or Maintenance Requirements

Monthly inspections of access route to site as outlined in Figure 7 will be made by the Construction Project Manager with findings provided to the Vena Energy Project Manager.

In the event of emergency road repairs caused by construction traffic, appropriate permits and traffic management shall be adopted to complete the work with TFNSW and Council approval prior to works commencing.

4.11 Other Considerations

- All vehicles will enter and exit the site access locations in a forward direction.

- A Road Occupancy Licence (ROL) as part of the WAD will be received from TfNSW prior to works commencing.
- Due to the location of the site, there is an inherent risk that adverse conditions may impact on the movement of transportation vehicles and transport of staff. Consideration for driving in the rain, fog, frost, icy conditions, bright sunlight, flood conditions, and within/near a bush fire is required. Weather forecasts will be checked and posted daily in the site office by the Site Construction Manager. If adverse weather conditions are expected for the following day or days, staff will be informed through daily toolbox talks conducted by supervisors and advised to drive to the road conditions in accordance with the Driver's Code of Conduct.

5. Traffic Management Responsibilities

The key management roles and responsibilities for the construction phase of the Project are described below.

Vena Energy is the Applicant for the Bellambi Heights BESS. Vena Energy is engaging contractors to undertake the construction activities associated with Stage 1 of the project.

5.1 Vena Energy Project Manager

The Vena Energy Project Manager as the Applicant representative has ultimate responsibility for the project and shall:

- Ensure suitable communication and consultation with the affected stakeholders is maintained.
- Ensure all workers are advised on the TMP requirements including approved routes, speed restrictions and Driver's Code of Conduct at site inductions.
- Arrange and/or undertake any necessary audits and incident investigations.
- Engage with nearby significant renewable projects including monthly updates on the Tallawang Solar Farm. This information will be provided to the Construction and Site Project Managers for scheduling purposes to minimise the impact to the Castlereagh Highway.
- Review feedback from the Construction Project Manager.

5.2 Construction Project Manager

The Construction Project Manager shall:

- Ensure traffic control measures for this TMP are implemented and maintained in accordance with this plan and the relevant Acts, Codes, Standards and Guidelines.
- Ensure inspections of the Traffic Controls are undertaken in accordance with the TMP, and results recorded. Any variations shall be actioned and documented.
- Assist the Vena Energy Project Manager to ensure all workers are advised on the TMP requirements including approved routes, speed restrictions and Driver's Code of Conduct at site inductions.
- Monitor on-site traffic movements and ensure that it is in accordance with the requirements of the TMP and the Driver's Code of Conduct, and advise the workforce on car pooling opportunities.
- Engage with delivery companies to ensure information on approved routes and nearby significant renewable projects are known understood and planned for before commencement of journey.
- Review feedback from field inspections, worksite personnel and members of the public, and take action to amend the traffic control measures as appropriate following approval from the TfNSW in accordance with the applicable WAD.
- Arrange and/or undertake any necessary audits and incident investigations.
- Provide reports on the above to the Vena Energy Project Manager.

5.3 Site Construction Manager

The Site Construction Manager is responsible for overseeing the day-to-day activities, and is therefore responsible for the practical application of the TMP, and shall:

- Be responsible for the management of heavy vehicle movements to and from the site including recording daily heavy vehicles movements and scheduling. This includes scheduling to minimise the cumulative impacts of nearby significant renewable projects and interaction with school buses on the access routes.
- Provide the Vena Energy and Construction Project Manager reports details on the daily heavy vehicle movements.
- Undertake regular inspections of the nearby public road network and arrange for any material (mud, gravel) that has been deposited because of project activities to be cleaned.
- Instruct workers on the relevant safety standards, including the correct use of Personal Protective Equipment (PPE).
- Advise the workforce on anticipated weather conditions and provide guidance on suitable behaviour in accordance with the Driver's Code of Conduct.
- Ensure traffic control measures are implemented and maintained in accordance with the TMP.
- Undertake and submit the required inspection and evaluation reports to the Construction Project Manager.
- Render assistance to road users and stakeholders if incidents arising out of the works affect the network performance or the safety of road users and workers.
- Take appropriate action to correct unsafe conditions, including any necessary modifications to the TMP.

5.4 Workers and Subcontractors

Workers and Subcontractors shall:

- Correctly wear high visibility vests, in addition to other protective equipment required (e.g. footwear, eye protection, helmet, sun protection, etc) at all times whilst on the worksite.
- Comply with the requirements of the TMP and Driver's Code of Conduct and ensure no activity is undertaken that will endanger the safety of other workers or the general public.
- Comply with all relevant Safe Work Method Statements (SWMS).
- Ensure that their vehicles are in a clean condition prior to departing the work site.
- Enter and leave the site by approved routes and in accordance with safe work practice.

6. Temporary Traffic Management

6.1 Hazard Identification, Risk Assessment and Control

In establishing adequate controls for the hazards, a structured approach shall be adopted via the use of the hierarchy of control as outlined below:

- Elimination
- Substitution
- Engineering
- Administration
- Personal Protection Equipment

Traffic management practices require that the Site Construction Manager evaluate all traffic arrangements before they are open to traffic and immediately following the opening to traffic. Adjustments are to be made as required and recorded, including reasons for the changes.

6.2 Traffic Guidance Schemes

To safely undertake construction of the road upgrades as part of Stage 1, traffic control will be required.

Traffic Guidance Schemes (TGSs) have been prepared for these arrangements which are shown for reference in Appendix E.

This TGSs will be implemented by the construction contractor prior to any road upgrade construction occurring and removed at the completion of the site access upgrade.

Other TGSs will also be prepared specifically for the major construction activities, as required. They will be designed in accordance with the Australian Standards and the TfNSW Traffic Control at Work Sites Guidelines.

Impacted local community members and developers will be notified of the nature of these traffic changes and their duration two weeks prior to implementation.

6.3 Traffic Control Devices

Traffic control devices shall be erected in accordance with the TGS. Should the use of additional (not shown on the TGS or listing of devices) or reduced number of devices be required due to unforeseen circumstances, they shall be recorded as a variation to the TGS, following prior approval from TfNSW. Work will not commence or continue until all signs, devices and barricades are in place and operational in accordance with the requirements of the TCP/TGS.

The signs and traffic control devices are to be removed in the reverse order of installation.

The number, type and location of signs, devices and barricades shall be to a standard not less than the requirements of AS 1742.3:2019. Devices no longer required shall be promptly and completely removed from road user's lines of sight.

6.3.1 Signs

Prior to the installation, all signs shall be checked for damage and cleanliness and repaired, replaced or cleaned as necessary. Signs and devices shall be erected in accordance with the locations and spacings shown on the TGS such that:

- They are properly displayed and securely mounted;
- They are within the driver's line of sight;
- They cannot be obscured from view;
- They do not obscure other devices from the driver's line of sight;
- They do not become a possible hazard to workers or vehicles; and
- They do not deflect traffic into an undesirable path.

Any existing speed limit signs on the carriageway within the work site shall be covered for the duration of the works whilst temporary speed limit signs are in place.

7. Communicating TMP Requirements

Clear lines of communication through all levels and functions (e.g. management, staff and sub-contractors), is key to minimise impacts and achieving continual improvements in performance.

The methods of communication on-site will include site inductions, pre-start and toolbox meetings, and through Safe Work Method Statements (SWMS).

7.1 Site Inductions

All personnel entering the site are to go through a Site Induction that details the requirements of the TMP, Driver's Code of Conduct, Personal Protective Equipment (PPE), Occupational Health and Safety (OHS), and risk management procedures. All personnel wishing to enter the works zone are to be properly inducted before access is allowed.

The requirements of the TMP will be communicated to all personnel entering the site through the site induction prior to workers and visitors coming to the site, including delivery drivers' online induction.

In accordance with Condition A12 of the Development Consent, the Applicant will ensure that all employees, contractors (and their sub-contractors) are made aware of, and are instructed to comply with, the requirements outlined in this TMP that are relevant to project activities they carry out.

7.2 Pre-Start and Toolbox Meetings

A prestart meeting is to be conducted at the start of works, on a daily basis, and if unforeseen changes are required. Progress, hazard assessment and any new issues, information or changes are to be discussed. Safe Work Method Statements (SWMS) documentation is to be read and signed during prestart meetings.

7.3 Safe Work Method Statements

A site-specific SWMS is to be produced for the set up and shutdown of control of traffic at the site access and the on-site access road and to be read through, discussed, and signed by all personnel working on site.

8. Monitoring and Measurement

8.1 Site Inspections and Record Keeping

The Vena Energy Project Manager will ensure that the TMP is implemented and evaluated for effectiveness. The Construction Project Manager shall inspect and monitor traffic movements on-site. The outcomes of the inspection will be recorded for the information of the Vena Energy Project Manager.

A record of the inspections should be kept indicating:

- When traffic controls were erected;
- When changes to controls occurred and why the changes were undertaken; and
- Any significant incidents or observations associated with the traffic controls and their impacts on road users or adjacent properties.

Where significant changes to the work or traffic environment or adverse impacts are observed, the controls should be reviewed as a matter of urgency. Inspection Sheets shall be completed by the person undertaking the inspections and reviewed by the Construction Project Manager. All variations to the TMP/TGS, non-conformances, incidents and accidents shall be recorded. Copies of the completed report shall be forwarded to the Vena Energy Project Manager.

8.2 TMP Auditing

One internal compliance audit shall be conducted following setting-up of the traffic management and prior to commencement of the works. Audit findings, recommendations and actions taken shall be documented and copies forwarded to the Site Construction Manager.

8.3 Obligation to Minimise Harm

To meet the environmental performance criteria established by the Development Consent, the Applicant must implement all reasonable and feasible measures to prevent, and if prevention is not reasonable and feasible, minimise any material harm to the environment that may result from the construction of the project (being the stages to which this TMP applies).

8.4 Incidents and Non-Compliances

8.4.1 Incidents

An Incident is defined in the Development Consent as *a set of circumstances that causes or threatens to cause material harm to the environment.*

Various environmental incidents may have the potential to occur on site, which may include but not be limited to the following:

- Spills of fuels, oils, chemicals and other hazardous materials
- Unauthorised discharge from sediment basins or other containment devices

- Unauthorised clearing or clearing beyond the extent of the Project boundary or premises
- Inadequate installation and subsequent failure of temporary erosion and sediment controls
- Unauthorised harm or desecration to Aboriginal objects and Aboriginal places
- Potential contamination of waterways or land
- Accidental starting of a fire or a fire breaking out of containment
- Works done that are not covered by the Project approval, or not found to be consistent with the approval, or done without a modification of the approval
- Works undertaken that are not in accordance with the Environmental Assessment documents
- Unauthorised dumping of waste

Should an incident occur, the Construction Project Manager will ensure that work ceases in that area and that the site is not disturbed until the appropriate level of investigation is conducted.

8.4.2 Non-Compliances

A Non-Compliance is defined in the Development Consent as *an occurrence, set of circumstances or development that is a breach of this consent but is not an incident.*

8.4.3 Incident and Non-Compliance Reporting

All workers (employees and contractors) are responsible for ensuring timely and effective initial internal reporting of incidents or non-compliances that they are involved with or witness.

Vena Energy are to be informed of any incidents or non-compliances immediately verbally and within 24 hours in writing. Incident reports will include lessons learnt and proposed measures to prevent the occurrence of a similar incident. All efforts will be undertaken immediately to avoid and reduce impacts of incidents and suitable controls put in place. Incidents will be closed out as quickly as possible.

The Department and Planning Secretary are to be notified by the Vena Energy Project Manager of any incidents or non-compliances.

In accordance with Condition C10 and Appendix 5 of the Development Consent, the Department must be notified in writing via the Major Projects website immediately after the Vena Energy becomes aware of an incident.

Written notification of an incident must:

- Identify the development and application number
- Provide details of the incident (date, time, location, a brief description of what occurred and why it is classified as an incident)
- Identify how the incident was detected
- Identify when the applicant became aware of the incident
- Identify any actual or potential non-compliance with conditions of consent
- Describe what immediate steps were taken in relation to the incident
- Identify further action(s) that will be taken in relation to the incident

- Identify a project contact for further communication regarding the incident.

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

The Incident Report must also include:

- A summary of the incident
- Outcomes of an incident investigation, including identification of the cause of the incident
- Details of the corrective and preventative actions that have been, or will be, implemented to address the incident and prevent recurrence
- Details of any communication with other stakeholders regarding the incident.

In accordance with Condition C11 of the Development Consent, the Planning Secretary must be notified in writing via the Major Projects website within seven days after Vena Energy becomes aware of any non-compliance.

In accordance with Condition C12 of the Development Consent, a non-compliance notification must identify the development and the application number for it, set out the condition of consent that the development is non-compliant with, the way in which it does not comply and the reasons for the non-compliance (if known) and what actions have been, or will be, undertaken to address the non-compliance.

In accordance with Condition C13 of the Development Consent, a non-compliance which has been notified as an incident does not need to also be notified as a non-compliance.

8.5 Complaints Management

Complaints are to be managed in accordance with the Bellambi BESS Environmental Management Strategy (EMS). In accordance with Condition C1 (d) of the Development Consent, the EMS *sets out the procedures that would be implemented to:*

- *keep the local community and relevant agencies informed about the operation and environmental performance of the development;*
- *receive, handle, respond to, and record complaints;*
- *resolve any disputes that may arise;*
- *respond to any non-compliance;*
- *respond to emergencies.*

8.6 Management and Monitoring Summary

A summary of the management and minoring measures is provided within Table 8.

Table 8: Management and Monitoring Summary

Aspect	Potential Problems	Performance Criteria	Mitigation and Control Measures	Monitoring Requirements	Responsibility	Timing	Frequency
Heavy vehicle movements	Number of vehicles exceed DC approval	Maximum limit of 40 heavy vehicle movements a day	Heavy vehicle deliveries will be scheduled to comply with this requirement. Delivery contractors to be advised of this prior to arranging any delivery to site.	Count and record number of vehicle movements	Vena Energy and Contractor	Duration of construction	Daily
Heavy vehicle movements	Heavy vehicle platooning / convoys	No Heavy Vehicle movements resulting in platoons / convoys greater than one vehicle	Heavy vehicle deliveries will be scheduled and staggered to avoid platoons / convoys greater than one heavy vehicles.	Count and record number of vehicle movements	Vena Energy and Contractor	Duration of construction	Daily
Weather conditions	Conditions make driving hazardous	Vehicles should not be travelling in unsafe conditions	Consider options to reduce driver risk such as temporarily halting vehicle movements, re-routing, etc.	Check weather forecast and on-site conditions	Vena Energy and Contractor	Duration of construction	Daily
Driver behaviour	Poor driver behaviour leads to incidents, accidents or near misses	No accidents	Encouraging good driver practice and reinforcing those messages during project meetings	Count and record number of incidents, accidents and near misses Ensure that all drivers have received a copy of the Driver Code of Conduct and are following the requirements.	Vena Energy and Contractor	Duration of construction	Daily
Driver behaviour	The approved route not being followed by staff and deliveries	No use of roads other than those on the approved routes by staff and delivery drivers	Checking driver routes and reinforcing the approved routes to staff and delivery drivers during project meetings	Spot check of routes taken at site entry and adjoining local roads and monitoring any feedback from the Community, Council and TfNSW	Vena Energy and Contractor	Duration of construction	Daily
Driver behaviour	Vehicles have excessive mud or dirt	Dirt transferred from the site onto the external road network to be minimised	Vehicles exiting the site are to be cleaned so that excessive mud and dirt is not transferred to external roads	Vehicles exiting the site are to be inspected (and cleaned as required)	Vehicle Driver	Duration of construction	Daily

9. Management and Reporting

9.1 TMP Review and Improvement

A review of the effectiveness of the TMP will be undertaken by the Construction Project Manager on a monthly basis.

9.2 Variations to Standards and Plans

There are no departures from the requirements of AS 1742.3:2019 or TfNSW Traffic Control at Work Sites Guidelines.

On-site variations, if required, will only be made following approval by the Construction Project Manager. In emergency situations, on-site variations shall be made and recorded and the Construction Project Manager notified as soon as practicable.

9.3 Update of Strategies, Plans or Programs

In accordance with Condition C2 of the Development Consent, the Vena Energy will:

- Update the strategies, plans or programs required under this consent to the satisfaction of the Planning Secretary prior to carrying out any upgrading or decommissioning activities on site.
- Review and, if necessary, revise the strategies, plans or programs required under the Development Consent to the satisfaction of the Planning Secretary within 1 month of the:
  - submission of an incident report under condition C10 of Schedule 4;
  - submission of an audit report under condition C14 of Schedule 2; or
  - any modification to the conditions of this consent.

As stated in Condition C2, with the approval of the Planning Secretary, Vena Energy may submit any strategy, plan or program required by this consent on a progressive basis. To ensure the strategies, plans or programs under the conditions of this consent are updated on a regular basis, Vena Energy may at any time submit revised strategies, plans or programs to the Planning Secretary for approval. With the agreement of the Planning Secretary, Vena Energy may submit any revised strategy, plan or program without undertaking consultation with all the parties referred to under the relevant condition of this consent.

The appointed Construction Contractor will ensure that all development being carried out on site is covered by suitable strategies, plans, or programs at all times.

If the submission of any strategy, plan or program is to be staged, then the relevant strategy, plan or program will clearly describe the specific stage to which the strategy, plan or program applies, the relationship of this stage to any future stages, and the trigger for updating the strategy, plan or program.

Vena Energy will seek the approval of the Planning Secretary when submitting any strategy, plan or program required by this consent on a progressive basis. This includes for this TMP which is to be updated for the stages as outlined in Section 1.3.

To ensure the strategies, plans or programs under the conditions of this consent are updated on a regular basis, Vena Energy may at any time submit revised strategies, plans or programs to the Planning Secretary for approval.

Vena Energy will consult with local community and Council and obtain the agreement of the Planning Secretary, when submitting any revised strategy, plan or program without undertaking consultation with all the parties referred to under the relevant condition of this consent.

Vena Energy notes that while any strategy, plan or program may be submitted on a progressive basis, the Applicant will ensure that all development being carried out on site is covered by suitable strategies, plans or programs at all times.

Vena Energy notes that with the agreement of the Planning Secretary any strategy, plan or program may be staged without addressing particular requirements of the relevant conditions of this consent if those requirements are not applicable to that particular stage.

9.4 Notification of Department

Prior to commencing the road upgrades in Stage 1, the Department will be notified in writing via the Major Projects website portal of the date of commencement, or cessation, of the relevant phase.

9.5 Independent Environmental Audits

In accordance with C14 of the Development Consent, Independent Audits of the development must be conducted and carried out in accordance with the *Independent Audit Post Approval Requirements (2020)* or as updated from time to time and published on the Department's website.

The independent audits must be conducted and carried out at the frequency and in accordance with the *Independent Audit Post Approval Requirements (2020)* to the following frequency:

- within 3 months of commencing construction; and
- within 3 months of commencement of operations.

The proposed independent auditors must be agreed to in writing by the Planning Secretary prior to the commencement of an Independent Audit.

The Planning Secretary may require the initial and subsequent Independent Audits to be undertaken at different times to those specified in condition C14 upon giving at least 4 weeks' notice to the Applicant of the date upon which the audit must be commenced.

In accordance with the specific requirements of the Independent A*udit Post Approval Requirements (2020)*, Vena Energy must:

- review and respond to each Independent Audit Report prepared under the conditions of consent;
- submit the response to the Planning Secretary; and
- make each Independent Audit Report, and response to it, publicly available within 60 days of submission to the Planning Secretary, unless otherwise agreed by the Planning Secretary.

Independent Audit Reports and Vena Energy's response to audit findings must be submitted to the Planning Secretary within two months of undertaking the independent audit site inspection as

outlined in the *Independent Audit Post Approvals Requirements (2020)* unless otherwise agreed by the Planning Secretary.

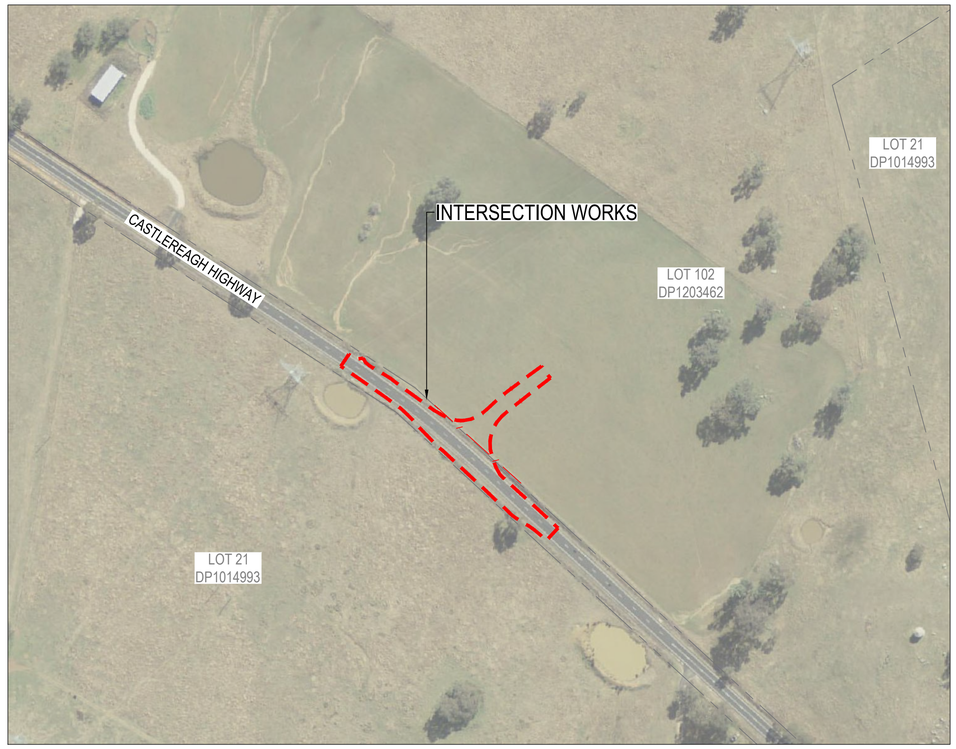
Notwithstanding the requirements of the *Independent Audit Post Approvals Requirements (2020)*, the Planning Secretary may approve a request for ongoing independent operational audits to be ceased, where it has been demonstrated to the Planning Secretary's satisfaction that independent operational audits have demonstrated operational compliance.

Appendix A

Road Design Plans

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
BERYL NEW SOUTH WALES
CONCEPT DESIGN

PLAN NUMBER	DRAWING TITLE
MKRV0099-201-C0000	COVER SHEET AND INDEX
MKRV0099-201-C0010	NOTES
MKRV0099-201-C0040	KEY PLAN
MKRV0099-201-C0050	EXISTING CONDITIONS PLAN
MKRV0099-201-C0100	CIVIL WORKS LAYOUT PLAN
MKRV0099-201-C0310	TYPICAL SECTIONS PLAN
MKRV0099-201-C0350	CIVIL DETAILS
MKRV0099-201-C0500	LONGITUDINAL SECTIONS - ROAD 01 & 02 - 1 OF 2
MKRV0099-201-C0501	LONGITUDINAL SECTIONS - EDGE OF SHOULDER LEFT & RIGHT - 2 OF 2
MKRV0099-201-C0600	ROAD CROSS SECTIONS PLAN - ROAD 01 - 1 OF 2
MKRV0099-201-C0601	ROAD CROSS SECTIONS PLAN - ROAD 02 - 2 OF 2
MKRV0099-201-C0700	KERB RETURN LAYOUT AND SECTIONS
MKRV0099-201-C1700	SWEPT PATH ANALYSIS LAYOUT PLAN - DESIGN VEHICLE - 1 OF 2
MKRV0099-201-C1701	SWEPT PATH ANALYSIS LAYOUT PLAN - DESIGN VEHICLE - 2 OF 2
MKRV0099-201-C1702	SWEPT PATH ANALYSIS LAYOUT PLAN - CHECK VEHICLE
MKRV0099-201-C1800	SIGHT LINE LAYOUT PLAN
MKRV0099-201-C1801	SIGHT LINE LONGITUDINAL SECTIONS
MKRV0099-201-C1900	LOCAL AREA TRAFFIC MANAGEMENT LAYOUT PLAN



LOCALITY DIAGRAM

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 20 40 60 80 100m
SCALE 1:2000 AT ORIGINAL SIZE

VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
COVER SHEET AND INDEX

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0000		A1	1

GENERAL

1. THESE DRAWINGS SHALL BE READ IN CONJUNCTION WITH ALL OTHER SPECIFICATIONS AND WITH SUCH OTHER WRITTEN INSTRUCTIONS THAT MAY BE ISSUED DURING THE COURSE OF THE CONTRACT. ANY DISCREPANCIES IN THESE DOCUMENTS SHALL BE REFERRED TO THE SUPERINTENDENT FOR A DECISION BEFORE PROCEEDING WITH THE WORK.
2. THE CONTRACTOR SHALL CHECK AND BE RESPONSIBLE FOR THE CORRECTNESS OF ALL DIMENSIONS. ANY DISCREPANCY SHALL BE REPORTED IMMEDIATELY TO THE SUPERINTENDENT. DIMENSIONS SHALL NOT BE OBTAINED BY SCALING OFF THE PLANS.
3. ALL WORKMANSHIP AND MATERIALS SHALL BE IN ACCORDANCE WITH THE REQUIREMENTS OF THE CURRENT AUSTRALIAN STANDARDS, THE BY-LAWS AND ORDINANCES OF THE RELEVANT AUTHORITIES AND THE SPECIFICATIONS.
4. NO CHANGES SHALL BE MADE BY THE CONTRACTOR WITHOUT THE WRITTEN CONSENT OF THE SUPERINTENDENT THE SUPERINTENDENT IS TO CONFIRM THE EXACT EXTENTS ON SITE PRIOR TO COMMENCEMENT OF STAGE 1.
5. IT IS THE RESPONSIBILITY OF THE CONTRACTOR TO ENSURE THAT SAFE WORK PRACTICES ARE FOLLOWED AT ALL TIMES DURING THE COURSE OF THE CONTRACT. OH&S REGULATIONS AND WORK COVER REQUIREMENTS ARE TO BE COMPLIED WITH. REFER TO THE SPECIFICATION AND CONTRACT DOCUMENTS.
6. IT IS THE CONTRACTOR'S RESPONSIBILITY TO ENSURE THAT ALL SURVEY MARKS ARE MAINTAINED. IF THE CONTROL MARKS ARE DESTROYED OR MOVED DURING CONSTRUCTION THE CONTRACTOR MUST SUPPLY ADEQUATE MARKS FOR RE-ESTABLISHMENT AND INFORM THE SUPERINTENDENT.
7. CHANGES, REDUCED LEVELS, CHAINAGES, OFFSETS AND ROAD WIDTHS ARE IN METRES UNLESS OTHERWISE SHOWN.
8. LIAISE WITH THE APPOINTED SITE SUPERINTENDENT PRIOR TO COMMENCEMENT OF CONSTRUCTION.
9. ALL SITE FILLING SHALL BE COMPACTED TO 98% STANDARD COMPACTION, CONTROLLED BY THE GEOTECHNICAL ENGINEER OR AS INSTRUCTED BY THE SUPERINTENDENT
10. SURPLUS EXCAVATED MATERIAL SHALL BE PLACED WHERE DIRECTED BY THE SUPERINTENDENT.
11. ALL NEW WORKS SHALL MAKE A SMOOTH JUNCTION WITH EXISTING CONDITIONS.
12. THE CONTRACTOR SHALL NOT ENTER UPON NOR DO ANY WORK WITHIN ADJACENT LANDS WITHOUT THE WRITTEN PERMISSION OF THE OWNERS.
13. SITE FILL AREAS - THE CONTRACTORS REGISTERED SURVEYOR SHALL TAKE LEVELS OF EXISTING SURFACE AFTER STRIPPING TOPSOIL AND PRIOR TO COMMENCING FILL OPERATIONS.
14. DRAINAGE LINES UNDER ROADS SHALL BE BACKFILLED WITH NON-COHESIVE SAND. AND THE SUBSOIL DRAIN WRAPPED IN APPROVED FILTER SOCK, DISCHARGING INTO DOWN STREAM PITS.
15. ALL CONDUITS AND MAINS SHALL BE LAID PRIOR TO LAYING FINAL ASPHALTIC CONCRETE SEAL.
16. STREET NAME SIGNS SHALL BE ERECTED, WHERE SHOWN, IN ACCORDANCE WITH COUNCIL'S STANDARD OR AS DIRECTED BY THE SUPERINTENDENT.
17. THE CONTRACTOR SHALL MAINTAIN DUST CONTROL THROUGHOUT THE DURATION OF THE PROJECT.
18. REFER TO MID-WESTERN REGIONAL COUNCIL SPECIFICATION AND STANDARD DRAWINGS OF KERB INLET PIT AND KERB AND GUTTER.
19. DEWATER AND DESILT EXISTING DAMS TO PREPARE FOR SITE FILLING/OTHER WORKS REFER TO THE GEOTECHNICAL REPORT.
20. PROVIDE FLOODWAY WARNING SIGNS AT APPROPRIATE LOCATIONS AND/OR AS DIRECTED BY COUNCIL'S ENGINEER.

BULK EARTHWORKS NOTES

1. STRIP ALL TOPSOIL/ORGANIC MATERIAL FROM CONSTRUCTION AREA AND REMOVE FROM SITE OR STOCKPILE AS DIRECTED BY SUPERINTENDENT
2. COMPACTION, TESTING, FILING, STANDARD DRY DENSITIES & MOISTURE CONTENTS TO BE IN ACCORDANCE WITH SITE GEOTECHNICAL REPORT
3. ALL FILLING WORKS TO BE CARRIED OUT UNDER LEVEL 1 GEOTECH SUPERVISION AS PER AS 3798.

SITE PREPARATION NOTES

1. ORIGIN OF LEVELS: AHD. COORDINATES TO <MGA 55 (GDA2020)> - MAP GRID AUSTRALIA
2. ASPHALTIC CONCRETE SHALL CONFORM TO R.T.A. FORM R116.
3. ALL BASECOUSE MATERIAL TO BE A MINIMUM NGB20-2C PRODUCT IN ACCORDANCE WITH MID-WESTERN REGIONAL COUNCIL FLEXIBLE PAVEMENTS SPECIFICATION C242
4. ALL SUBBASE MATERIAL TO BE A MINIMUM NGS40 PRODUCT IN ACCORDANCE WITH MID-WESTERN REGIONAL COUNCIL FLEXIBLE PAVEMENTS SPECIFICATION C242
5. EROSION AND SEDIMENT CONTROL MEASURES SHALL BE INSTALLED IN ACCORDANCE WITH THE SPECIFICATION AND CONTRACT DOCUMENTS.
6. ALL EROSION AND SEDIMENT CONTROL MEASURES SHALL BE MAINTAINED THROUGHOUT THE PERIOD OF WORKS, INCLUDING REPAIR AND/OR REPLACEMENT OF DAMAGED SECTIONS. INSPECTIONS ARE TO BE MADE PERIODICALLY DURING PROLONGED RAINFALL EVENTS AND AFTER STORM EVENTS FOR DAMAGE.
7. WHERE NOTED ON THE DRAWINGS THAT WORKS ARE TO BE CARRIED OUT BY OTHERS (EG. ADJUSTMENT OF SERVICES). COORDINATION OF THESE WORKS SHALL BE THE RESPONSIBILITY OF THE CONTRACTOR.

SURVEY NOTES

1. ALL SITE SET OUT POINTS ARE TO BE CERTIFIED BY A REGISTERED SURVEYOR.
2. THE EXISTING SITE CONDITIONS SHOWN ON THE FOLLOWING DRAWINGS HAVE BEEN INVESTIGATED BY THE REGISTERED SURVEYOR. THE INFORMATION IS SHOWN TO PROVIDE A BASIS FOR DESIGN. MAKER ENG DOES NOT GUARANTEE THE ACCURACY OR COMPLETENESS OF THE SURVEY BASE OR ITS SUITABILITY AS A BASIS FOR CONSTRUCTION DRAWINGS.
3. CONTACT SUPERINTENDENT IF DISCREPANCIES ARE ENCOUNTERED DURING CONSTRUCTION BETWEEN THE SURVEY DATA AND FIELD DATA.
4. PROJECT COORDINATE SYSTEM USED: <MGA-55 (GDA2020)>. ALL SETOUT INFORMATION AND DATUM SHALL BE CONFIRMED BY A REGISTERED SURVEYOR PRIOR TO CONSTRUCTION.
5. DIGITAL DATA PROVIDED FOR INFORMATION ONLY AND IS NOT TO BE FOR SETOUT UNLESS NOTED OTHERWISE
6. PLANS TAKE PRECEDENCE OVER DIGITAL DATA UNLESS NOTED OTHERWISE

ASPHALT PAVEMENT

1. PREPARATION FOR PAVMENT:
   - -- CLEAR SITE
   - -- STRIP TOPSOIL
   - -- CUT AND FILL AND PREPARATIONS OF SUBGRADE SHALL BE AS DESCRIBED IN 'EARTHWORKS'
2. SUBGRADE SHALL BE COMPACTED TO 98% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS1289.5.1.1
3. LOWER BASE COURSE SHALL BE CONSTRUCTED FROM CRUSHED SANDSTONE COMPACTED TO 98% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS 1289.5.1.1. OF THICKNESS NOTED ON DRAWINGS.
4. BASE COURSE SHALL BE CONSTRUCTED FROM FINE CRUSHED ROCK DGB20 COMPACTED TO 100% STANDARD DRY DENSITY RATIO AT OPTIMUM MOISTURE CONTENT ± 2% IN ACCORDANCE WITH AS1289.5.1.1. OF THICKNESS NOTED ON DRAWINGS.
5. APPLY TACK COAT 30-120 MINUTES BEFORE ASPHALT SURFACING IS PLACED.
6. COVER THE SURFACE UNIFORMLY AT AN APPLICATION RATE OF 0.10 - 0.30 L/m2 OF RESIDUAL BITUMEN.
7. WEARING SURFACE SHALL BE ASPHALTIC CONCRETE TO STANDARD SPECIFICATION, <MINIMUM THICKNESS = 40mm>, IN ACCORDANCE WITH THE REQUIREMENTS OF MID-WESTERN REGIONAL COUNCILS SUBDIVISION POLICY

PROPOSED SERVICES

1. ALL SERVICES SHOWN ON THIS PLAN ARE APPROXIMATE ONLY AND HAVE BEEN LOCATED FROM SITE INVESTIGATION AND RELEVANT AUTHORITIES' PLANS. THESE SERVICES ARE NOT GUARANTEED CORRECT OR COMPLETE.
2. THE CONTRACTOR MUST OBTAIN UP-TO-DATE PLANS FROM 'DIAL BEFORE YOU DIG' BEFORE COMMENCEMENT OF WORKS. THE EXACT LOCATION OF ALL SERVICES ARE TO BE VERIFIED BY THE CONTRACTOR PRIOR TO THE COMMENCEMENT OF WORKS.
3. EXISTING SERVICES ARE TO BE MAINTAINED OR ADJUSTED AS DETAILED IN THE PLANS. ANY ADJUSTMENT OR PROTECTION MEASURES ARE TO BE CARRIED OUT BY ACCREDITED SERVICE PROVIDERS. REFER ANY CONFLICTS OR UNIDENTIFIED EXISTING SERVICES TO THE SUPERINTENDENT IMMEDIATELY.
4. ELECTRICAL CONDUITS SHOULD BE PROVIDED AND LOCATED TO THE SATISFACTION OF ENDEAVOUR ENERGY.
5. WATER CONDUITS SHOULD BE PROVIDED TO SUIT WATER MAIN LOCATIONS.
6. TELSTRA CONDUITS PROVIDED AND LOCATED TO THE SATISFACTION OF THE RELEVANT TELECOMMUNICATIONS AUTHORITY
8. ALL SERVICES PIT COVERS AND MARKERS ARE TO BE LAID ENTIRELY WITHIN OR OUTSIDE OF THE CONCRETE FOOTPATH. REFER TO MAKER ENG SERVICE COORDINATION DRAWINGS FOR SERVICE COVER LOCATIONS. CONTACT SUPERINTENDENT SHOULD DIFFICULTIES ARISE.
9. WHERE SERVICES COVERS ARE LOCATED WITHIN THE FOOTPATH & ROADWAYS, INFILL COVERS WITH A PAVEMENT SIMILAR TO THAT OF THE FOOTPATH OR ADJACENT ROADWAY SHALL BE USED. PROVIDE CONCRETE INFILL WHERE COVERS ARE WITHIN LANDSCAPE.
10. ALL SERVICES COVERS TO BE PLACED AT FINISHED SURFACE LEVELS, ENSURE LONGITUDINAL AND CROSS FALL GRADES MATCH PROPOSED GRADES
11. ALL WATER AND SEWER TO BE INSTALLED IN ACCORDANCE WITH THE CURRENT MID-WESTERN REGIONAL COUNCIL STANDARDS. CARE TO BE TAKEN WHEN INSTALLING HYDRANTS AND STOP VALVES IN THE FOOTPATH.

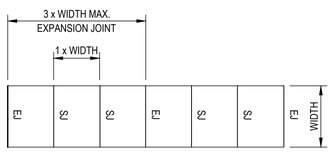
KERBING NOTES

1. ALL CONCRETE TO HAVE A MINIMUM COMPRESSIVE STRENGTH OF 25 MPa. OTHERWISE AS PER COUNCIL SPECIFICATIONS.
2. ALL KERBS, GUTTERS, DISH DRAINS AND CROSSINGS TO BE CONSTRUCTED ON 100mm GRANULAR BASECOURSE COMPACTED TO MINIMUM 95% MODIFIED DRY DENSITY (AS 1289 5.2.11.
3. EXPANSION JOINTS (E.J) TO BE FORMED FROM 10mm COMPRESSIBLE CORK FILLER BOARD FOR THE FULL DEPTH OF THE SECTION AND CUT TO PROFILE. EXPANSION JOINTS TO BE LOCATED AT DRAINAGE PITS, ON TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX 12m CENTRES EXCEPT FOR INTEGRAL KERBS WHERE THE EXPANSION JOINTS ARE TO MATCH THE JOINT LOCATIONS IN THE SLABS.
4. IN THE REPLACEMENT OF ROLL/KERB AND GUTTER, EXISTING ROAD PAVEMENT IS TO BE SAWCUT 500mm U.N.O FROM THE LIP OF GUTTER. UPON COMPLETION OF THE NEW ROLL/KERB AND GUTTER, NEW BASECOURSE AND SURFACE TO BE LAID 900mm WIDE U.N.O.
5. PRAM RAMP GRADES SHALL BE MAX 1 IN 14, IN SPECIAL CIRCUMSTANCES GRADES SHALL BE ABSOLUTE MAX 1 IN 10.
6. WEAKENED PLANE JOINTS TO BE A MINIMUM 3mm WIDE AND LOCATED AT 3m CENTRES EXCEPT ON INTEGRAL KERBS WHERE THE WEAKENED PLANE JOINTS SHALL MATCH THE JOINT LOCATIONS IN THE SLABS.
7. RAMPED AND VEHICULAR CROSSINGS SHALL HAVE AS BROOMED FINISH WITH ALL OTHER KERBING OR DISH GUTTERS TO HAVE STEEL FLOAT FINISHED.

PAVEMENTS AND ROAD WORKS NOTES

PEDESTRIAN PAVEMENT JOINTS

1. ALL PEDESTRIAN PAVEMENTS ARE TO BE JOINTED AS FOLLOWS (U.N.O.)
2. EXPANSION JOINTS ARE TO BE LOCATED, WHERE POSSIBLE, AT INTERVALS NOT EXCEEDING 3 x THE WIDTH, AT TANGENT POINTS OF CURVES AND ELSEWHERE AT MAX. 12m CENTRES.
3. SAW JOINTS ARE TO BE PLACED LATERALLY AT INTERVALS NOT EXCEEDING 1 x WIDTH AND MAX. SPACING OF 4m.
4. JOINTS SHALL BE LOCATED TO MATCH KERBING AND OR ADJACENT PAVEMENT JOINTS WHERE POSSIBLE.
5. PEDESTRIAN PAVEMENT JOINTING DETAILS SHALL BE AS PER RELEVANT COUNCIL STANDARDS.



6. ALL VEHICULAR PAVEMENTS TO BE JOINTED AS PER THE DRAWINGS.
7. VEHICULAR ACCESS IS TO BE MAINTAINED FOR ALL PROPERTIES DURING THE COURSE OF CONSTRUCTION.
8. THE CONTRACTOR SHALL CONTACT RESIDENTS/OWNERS WITHIN 48 HOURS PRIOR TO COMMENCEMENT OF WORKS UNLESS OTHERWISE DIRECTED.
9. ALL DRIVEWAY ADJUSTMENTS ARE TO BE CARRIED OUT IN ACCORDANCE WITH THE DRAWINGS
10. SUBSOIL FLUSHING POINTS ARE TO BE CONSTRUCTED IN ACCORDANCE WITH D.O.H. STANDARD DRAWING NO RM 14. THEY SHALL BE LOCATED AS DIRECTED
11. PROPOSED SERVICES WHICH CROSS THE EXISTING ROADS SHALL BE THRUST BORED UNDER THE ROAD TO AVOID DAMAGING THE EXISTING SURFACE
12. ALL ROADS ARE TO BE TEMPORARILY SEALED WITH A 1 COAT SEAL. THE FINAL ASPHALT CONCRETE TO BE BONDED AND PLACED FOLLOWING APPROVAL FROM COUNCIL.

ALL NOTES ARE TO BE READ IN CONJUNCTION WITH MID-WESTERN REGIONAL COUNCIL AND TRANSPORT FOR NSW (TFNSW) ENGINEERING SPECIFICATIONS. SHOULD A CONFLICT ARISE TRANSPORT FOR NSW (TFNSW) SPECIFCATIONS ARE TO TAKE PRECEDENCE

STORMWATER NOTES

1. STORMWATER DESIGN CRITERIA:
   - 1.1. COUNCIL PIPE DRAINAGE SYSTEM IS DESIGNED FOR <5> YEAR ARI
   - 1.2. INTERALLOTMENT DRAINAGE SYSTEM IS DESIGNED FOR <10> YEAR ARI
   - 1.3. DRAINAGE SYSTEM IS DESIGNED FOR MAJOR EVENT OF <100> YEAR ARI
2. PIPE BACKFILL & BEDDING SHALL BE IN ACCORDANCE WITH COUNCIL SUBDIVISION POLICY
3. ALL BEDDING TO BE TYPE HS3 IN ROAD RESERVES AND TYPE HS2 ELSEWHERE UNLESS A HIGHER STANDARD IS NOTED ON THE DRAWINGS.
4. PIPES GREATER THAN 300 DIA. TO BE REINFORCED CONCRETE 10/20 COVER APPROVED SPIGOT AND SOCKET WITH RUBBER RING JOINT, WITH MINIMUM PIPE CLASS AS STATED BELOW U.N.O.:
   - 4.1. ROAD CROSSINGS: CLASS 4
   - 4.2. ELSEWHERE: CLASS 3
5. PIPES UP TO AND INCLUDING 300 DIA. SHALL BE SEWER GRADE UPVC CLASS SN4 WITH SOLVENT WELDED JOINTS.
6. WHERE SUBSOIL DRAINS PASS UNDER FLOOR SLABS, UNSLOTTED UPVC SEWER GRADE PIPES SHALL BE USED.
7. ALL PITS DEEPER THAN 1.8m TO BE REINFORCED IN ACCORDANCE WITH COUNCIL STANDARD DRAWINGS.
8. ALL PITS, INCLUDING COUNCIL PITS SHALL HAVE A MINIMUM COMPRESSIVE STRENGTH OF 32MPA. ALL REINFORCEMENT SHALL HAVE A MINIMUM COVER OF 50MM
9. MINIMUM 3m SUBSOIL DRAINAGE TO BE INSTALLED UPSLOPE OF ALL PITS.
10. COVERS AND GRATES SHALL CONFORM TO A.S. 3996 AND COUNCIL SPECIFICATIONS.
11. FILTER MATERIAL FOR SUBSOIL SHALL BE IN ACCORDANCE WITH COUNCIL POLICY AND STANDARD DRAWINGS.
12. LINTEL LENGTH SHOWN ON DRAWING INDICATES THE CLEAR OPENING LENGTH.
13. PRIOR TO ISSUE OF PRACTICAL COMPLETION CONTRACTOR SHALL CARRY OUT CCTV ON ALL PIPES AND SUBMIT VIDEO AND WRITTEN REPORT CONFIRMING THAT ALL PIPES ARE FREE OF DEFECTS AND ARE LAID TO SPECIFICATION.
14. A MINIMUM GAP OF 0.2m BELOW FENCING TO BE CONSTRUCTED ACROSS THE FULL WIDTH OF ALL DRAINAGE EASEMENTS TO CONVEY DRAINAGE SURCHARGE FLOWS.
15. CARE IS TO BE TAKEN WITH LEVELS OF STORMWATER LINES. GRADES SHOWN ARE NOT TO BE REDUCED WITHOUT APPROVAL.
16. GRATES AND COVERS SHALL CONFORM WITH THE MID-WESTERN REGIONAL COUNCIL'S SPECIFICATION.
17. AT ALL TIMES DURING CONSTRUCTION OF STORMWATER PITS, ADEQUATE SAFETY PROCEDURES SHALL BE TAKEN TO SAFEGUARD AGAINST THE POSSIBILITY OF PERSONNEL FALLING DOWN PITS.
18. BACKFILLING OF TRENCHES SHALL BE IN ACCORDANCE WITH THE MID-WESTERN REGIONAL COUNCIL'S SPECIFICATIONS.
19. STEP IRONS ARE TO BE PLACED IN PITS GREATER THAN 1.2m DEEP IN ACCORDANCE WITH THE MID-WESTERN REGIONAL COUNCIL'S AND MANUFACTURER REQUIREMENTS.
20. SUBSOIL DRAINS ARE TO BE PROVIDED BEHIND ALL KERBS AS DIRECTED.
21. ALL PITS SHALL BE BENCHED AND FLOW STREAMLINED.
22. ALL MILD STEEL FIXTURES INCLUDING (GRATES, FRAMES, STEP IRONS, LADDERS ETC) SHALL BE HOT DIP GALVANISED WHICH SHALL COMPLY WITH THE REQUIREMENTS OF AS 1214 OR AS 1650, AS APPROPRIATE.
23. GEOFABRIC FILTER SHALL BE PERMEABLE, NON-WOVEN FABRIC MANUFACTURED FROM A POLYPROPYLENE OR POLYESTER OF MASS GREATER THAN 135G/M2.
24. ALL INTERNAL WORKS WITHIN PROPERTY BOUNDARIES ARE TO COMPLY WITH AS/NZS 3500.3 (2021).
25. THE CONTRACTOR SHALL BE RESPONSIBLE FOR MAINTAINING MINIMUM HEIGHTS OF FILL OVER PIPES AND SELECTING APPROPRIATE MACHINERY DURING CONSTRUCTION IN ACCORDANCE WITH AS/NZS 3725:2007 TABLE B1.
26. PRECAST PITS DESIGN TO BE UNDERTAKEN IN ACCORDANCE AS3600 AND SUPPLIER TO BE APPROVED BY LOCAL COUNCIL SUBDIVISION ENGINEER IN WRITING PRIOR TO ORDERING OR INSTALLATION OF ANY PRECAST PITS.
27. REFER TO MID-WESTERN REGIONAL COUNCIL DRAWING 2637-02 FOR STANDARD KERB INLET PIT DETAILS.

TREES

ALL TREES SHALL BE PROTECTED BY THE FOLLOWING MEASURES:

1. PROTECTIVE FENCING CONSTRUCTED OF 1.8m HIGH CHAIN WIRE MESH SUPPORTED BY ROBUST POSTS SHALL BE INSTALLED AT A MINIMUM RADIUS OF 3m FROM THE TRUNK OF EACH TREE.THIS FENCING SHALL BE INSTALLED PRIOR TO THE COMMENCEMENT OF ANY WORKS AND REMAIN IN PLACE UNTIL ALL WORKS ARE COMPLETED.SIGNAGE SHALL BE ERECTED ON THE FENCE IN ACCORDANCE WITH THE ARBORICULTURE REPORT.
2. THE TREE PROTECTION ZONE WITHIN THE PROTECTIVE FENCING SHALL BE MULCHED WITH SUITABLE ORGANIC MULCH (WOOD CHIPS OR COMPOST LEAF CHIP MULCH) AT THE DISCRETION OF THE PROJECT ARBORIST.
3. NO DEVELOPMENT OR ASSOCIATED ACTIVITY IS PERMITTED WITHIN THE FENCED TREE PROTECTION ZONE FOR THE DURATION OF THE WORKS.
4. ANY APPROVED WORKS WITHIN THIS TREE PROTECTION ZONE SHALL BE UNDER THE DIRECTION OF AND TO THE SATISFACTION OF A SUITABLY QUALIFIED AND EXPERIENCED ARBORIST.

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
NOTES

ISSUED FOR INFORMATION

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0010		A1	1

SHEET 1 @ 1:1000

SHEET 1 @ 1:375

CASTLEREAGH HIGHWAY

ROAD 01

ROAD 02

LOT 101
DP1203462

LOT 102
DP1203462

LOT 21
DP1014993

438.0
437.0
436.0
435.0
434.0
433.0
432.0
431.0
430.0
429.0
428.0
427.0
426.0
425.0
424.0
423.0
422.0
421.0
420.0
419.0
418.0
417.0
416.0
415.0
414.0
413.0
412.0
411.0
410.0

LEGEND

PROPOSED

- CIVIL WORKS BOUNDARY
- SHEET LAYOUT (1:375 SCALE)
- SHEET LAYOUT (1:1000 SCALE)

EXISTING

- LOT BOUNDARY
- CONTOURS (0.25m)
- LINEMARKING
- EDGE OF BITUMEN

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 10 20 30 40 50m
SCALE 1:1000 AT ORIGINAL SIZE

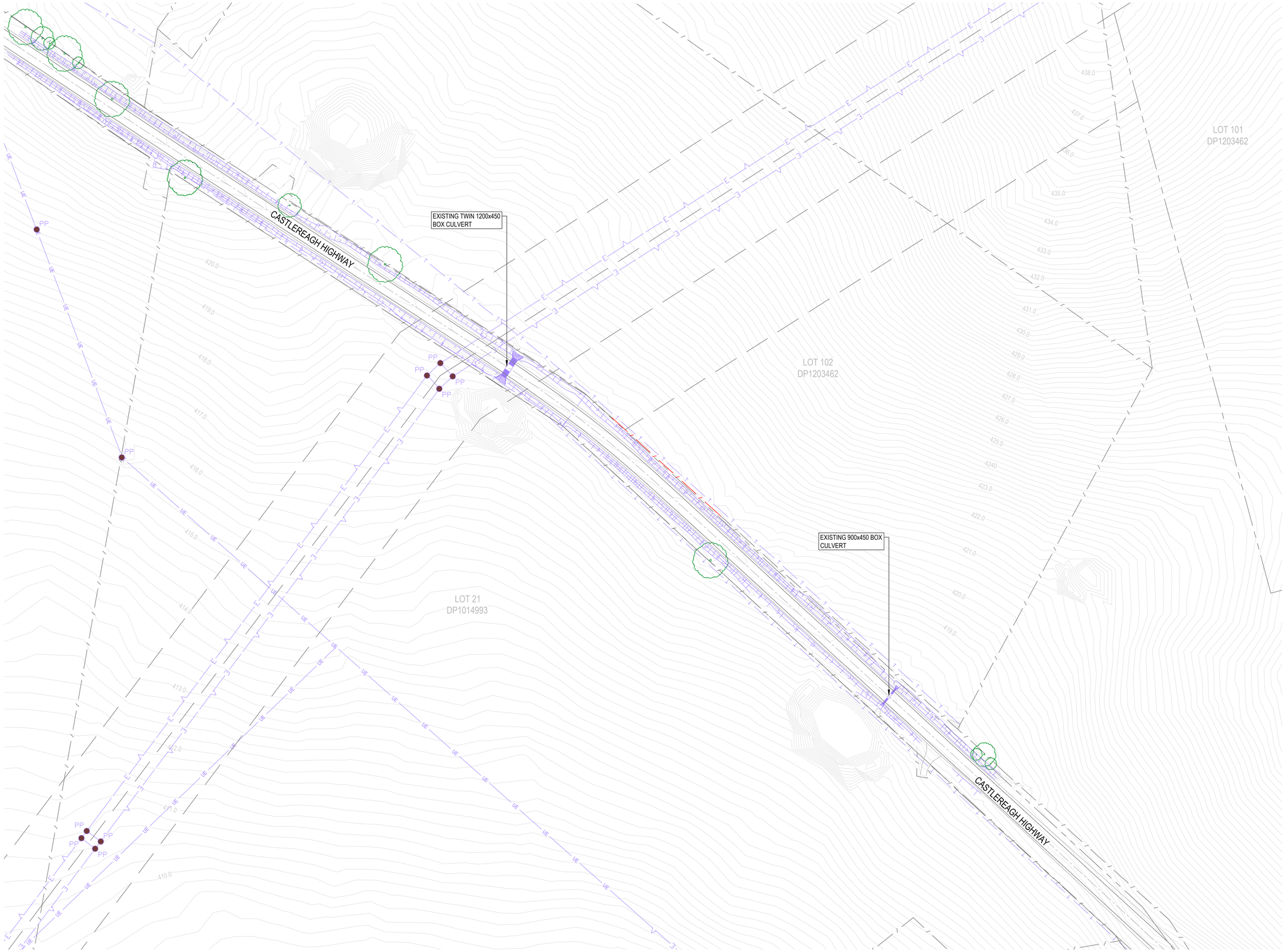
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
KEY PLAN

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0040		A1	1



EXISTING

LEGEND

- LOT BOUNDARY
- EASEMENT
- CONTOURS (0.25m)
- BOX CULVERT
- STORMWATER STRUCTURE
- ELECTRICAL ABOVE GROUND
- ELECTRICAL UNDERGROUND
- COMMUNICATIONS
- BATTER TOP
- SWALE INVERT
- FENCE
- FENCE TO BE REMOVED
- ROAD CENTRELINE
- LINEMARKING
- EDGE OF BITUMEN
- TREE (TO BE RETAINED)

BEFORE YOU DIG
www.byda.com.au

UTILITY INFORMATION SHOWN ON THE PLANS DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE, BASED ON AVAILABLE DOCUMENTARY EVIDENCE. THE PRESENCE OF A UTILITY SERVICE, ITS SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION, PRIOR TO THE COMMENCEMENT OF WORKS AND THE RELEVANT UTILITY PLANS OBTAINED BY DIALLING PH 1100 (BEFORE YOU DIG). CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 10 20 30 40 50m
SCALE 1:1000 AT ORIGINAL SIZE

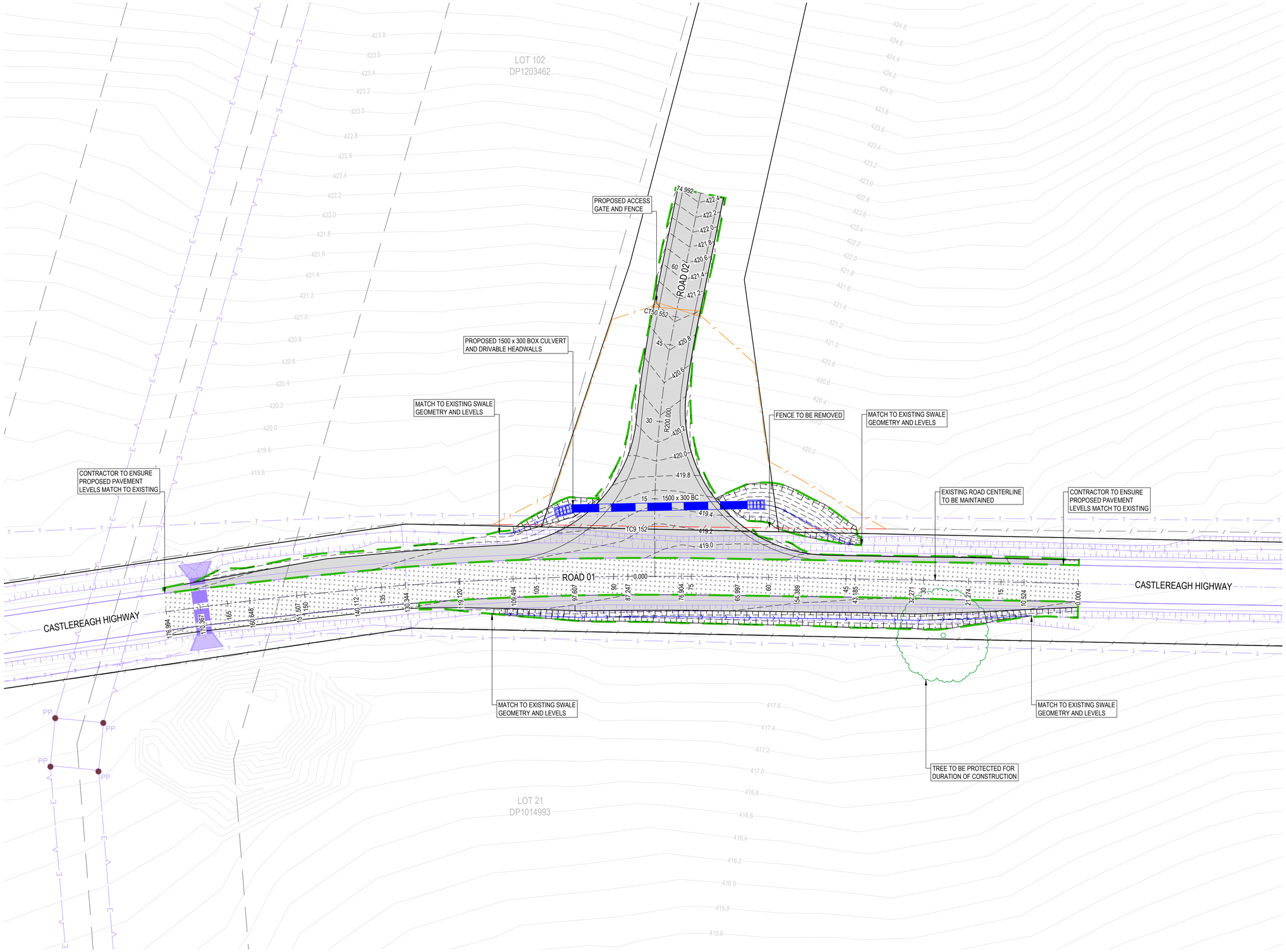
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
EXISTING CONDITIONS PLAN

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0050		A1	1



LEGEND

PROPOSED

- CIVIL WORKS BOUNDARY
- LOT BOUNDARY
- ROAD CENTERLINE AND CHAINAGE
- CONTOURS (0.5m)
- PAVEMENT
- STORMWATER PIPES
- STORMWATER STRUCTURES
- BATTER TOP
- SWALE INVERT
- ACCESS GATE
- FENCE

EXISTING

- LOT BOUNDARY
- CONTOURS (0.5m)
- PAVEMENT
- BOX CULVERT
- STORMWATER STRUCTURE
- ELECTRICAL ABOVE GROUND
- COMMUNICATIONS
- ROAD CENTRELINE
- LINEMARKING
- EDGE OF BITUMEN
- BATTER TOP
- SWALE INVERT
- FENCE
- FENCE TO BE REMOVED
- TREE (TO BE RETAINED)

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UTILITY INFORMATION SHOWN ON THE PLANS DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE, BASED ON AVAILABLE DOCUMENTARY EVIDENCE. THE PRESENCE OF A UTILITY SERVICE, ITS SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION, PRIOR TO THE COMMENCEMENT OF WORKS AND THE RELEVANT UTILITY PLANS OBTAINED BY DIALLING PH 1100 (BEFORE YOU DIG). CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 3.75 7.5 11.25 15 18.75m
SCALE 1:375 AT ORIGINAL SIZE

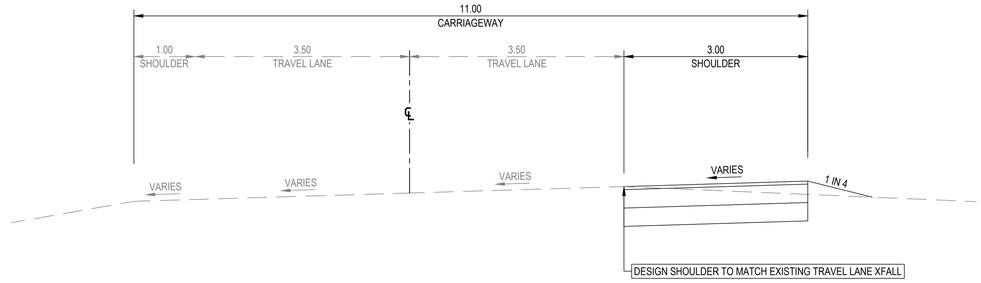
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

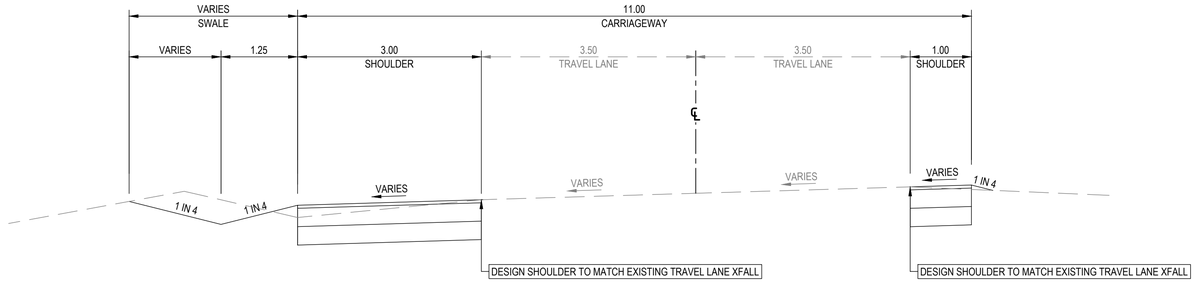
CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
CIVIL WORKS LAYOUT PLAN

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0100		A1	1



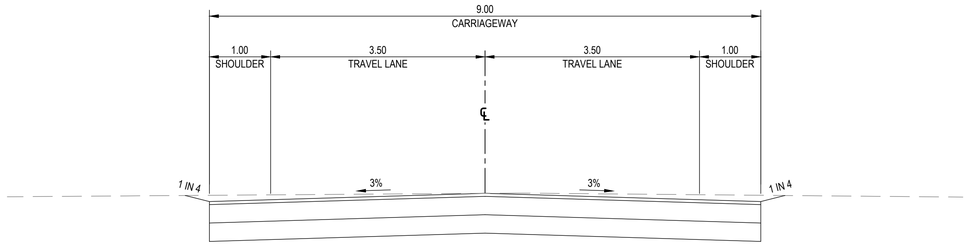
ROAD 01 (CASTLEREAGH HWY 11.0m WIDE)

SECTION 01
SCALE 1:50



ROAD 01 (CASTLEREAGH HWY 11.0m WIDE)

SECTION 02
SCALE 1:50



ROAD 02 (9m WIDE)

SECTION 03
SCALE 1:50

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 0.5 1.0 1.5 2.0 2.5m
SCALE 1:50 AT ORIGINAL SIZE

VENA ENERGY

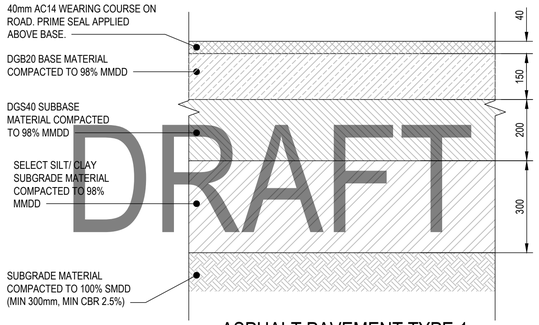
MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	

ISSUED FOR INFORMATION

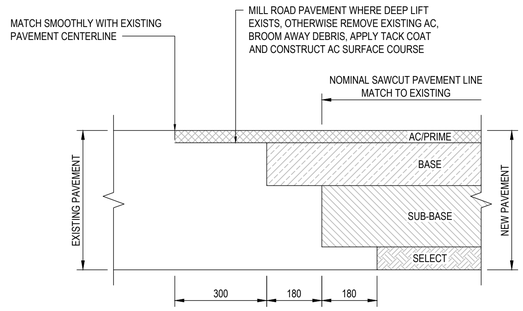
CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
TYPICAL SECTIONS PLAN

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0310		A1	1



ASPHALT PAVEMENT TYPE 1

SCALE: 1:10



TYPICAL JUNCTION WITH EXISTING PAVEMENT

SCALE: 1:10

NOTES

1. SELECT FILL MATERIAL SHOULD HAVE A CBR>33% AND A PLASTICITY INDEX (PI)<15% IN ITS ORIGINAL STATE BEFORE ADDITION OF ADDITIVE.
2. SELECT FILL MATERIAL SHOULD BE MODIFIED WITH APPROPRIATE ADDITIVE IF CBR<33% AND/OR PI>15%.
3. SELECT FILL SPECIFICATION TAKEN FROM TfNSW QA SPECIFICATION 3071.

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 0.1 0.2 0.3 0.4 0.5m

SCALE 1:10 AT ORIGINAL SIZE

VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
CIVIL DETAILS

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0350		A1	1

LOT 102
DP1203462

LOT 21
DP1014993

ROAD 02

ROAD 01

CASTLEREAGH HIGHWAY

CASTLEREAGH HIGHWAY

03
C0310

01
C0310

02
C0310

424.0

423.0

422.0

421.0

420.0

418.0

417.0

LEGEND

PROPOSED

LOT BOUNDARY

P1 — PAVEMENT TYPE 1

EXISTING

LOT BOUNDARY

410.0 — CONTOURS (0.5m)

PAVEMENT

TREE (TO BE RETAINED)

NOTES:

1. REFER MKRV0099-201-C0350 FOR PAVEMENT DETAIL

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 3.75 7.5 11.25 15 18.75m
SCALE 1:375 AT ORIGINAL SIZE

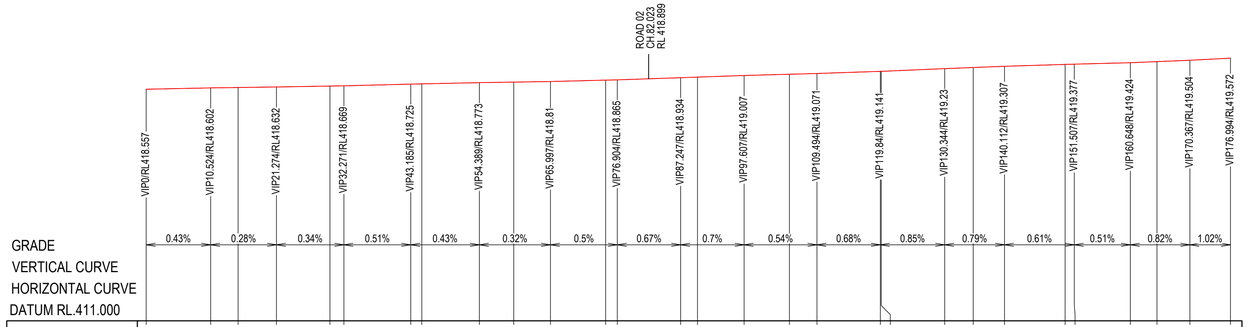
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
PAVEMENT PLAN

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0400		A1	1



GRADE
VERTICAL CURVE
HORIZONTAL CURVE
DATUM RL.411.000

DESIGN SURFACE LEVEL	418.557	418.602	418.614	418.632	418.661	418.669	418.725	418.733	418.773	418.791	418.810	418.855	418.865	418.934	418.953	419.007	419.047	419.071	419.141	419.142	419.230	419.267	419.307	419.368	419.377	419.424	419.460	419.504	419.572
EXISTING SURFACE LEVEL	418.557	418.602	418.614	418.632	418.661	418.669	418.725	418.733	418.773	418.791	418.810	418.855	418.865	418.934	418.953	419.007	419.047	419.071	419.141	419.142	419.230	419.267	419.307	419.368	419.377	419.424	419.460	419.504	419.572
CUT/FILL DEPTHS	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	-0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000	0.000
PEGGED CHAINAGE	0.000	10.524	15.000	21.274	30.000	32.271	43.185	45.000	54.389	60.000	65.997	75.000	76.904	87.247	90.000	97.607	105.000	109.494	119.840	120.000	130.344	135.000	140.112	150.000	151.507	160.648	165.000	170.367	176.994

HOR : 1 IN 500
VERT: 1 IN 100

LONGITUDINAL SECTION - ROAD 01 (EXISTING CENTERLINE)

GRADE
VERTICAL CURVE
HORIZONTAL CURVE
DATUM RL.411.000

DESIGN SURFACE LEVEL	418.899	418.980	419.003	419.154	419.218	419.478	419.590	419.815	420.135	420.347	420.361	420.821	420.835	421.043	421.227	421.526	421.817	422.528
EXISTING SURFACE LEVEL	418.899	418.980	418.982	419.210	419.319	419.451	419.497	419.587	419.744	419.907	419.922	420.649	420.673	420.971	421.186	421.534	421.838	422.528
CUT/FILL DEPTHS	0.000	0.000	0.021	-0.057	-0.101	0.027	0.092	0.227	0.391	0.440	0.440	0.171	0.162	0.072	0.041	-0.008	-0.021	-0.000
PEGGED CHAINAGE	0.000	3.555	4.555	9.152	10.555	15.000	16.555	19.555	24.555	29.555	30.000	44.555	45.000	50.552	54.555	60.000	64.555	74.992

HOR : 1 IN 500
VERT: 1 IN 100

LONGITUDINAL SECTION - ROAD 02

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

HORIZONTAL 1:500
AT ORIGINAL SIZE
0 5 10 15 20 25m

VERTICAL 1:100
AT ORIGINAL SIZE
0 1 2 3 4 5m

VENA
ENERGY

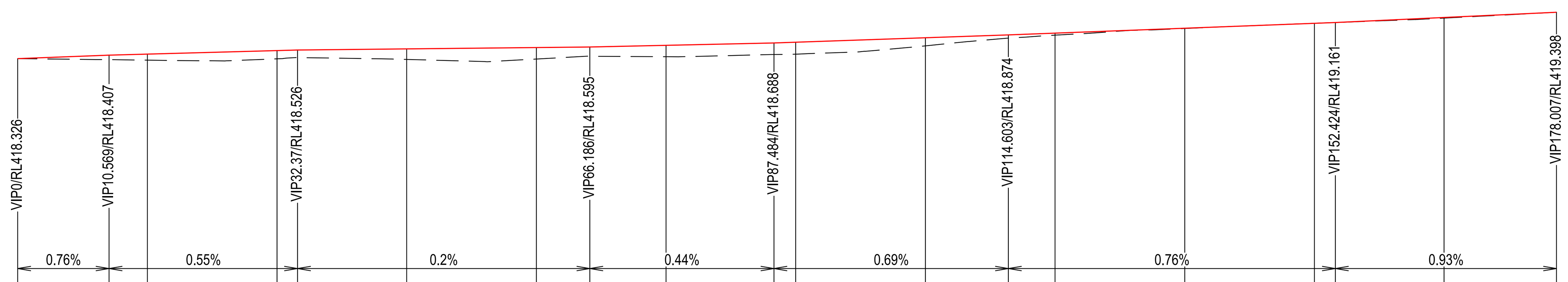
MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
LONGITUDINAL SECTIONS
ROAD 01 & 02

ISSUED FOR INFORMATION

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0500	1 OF 2	A1	1

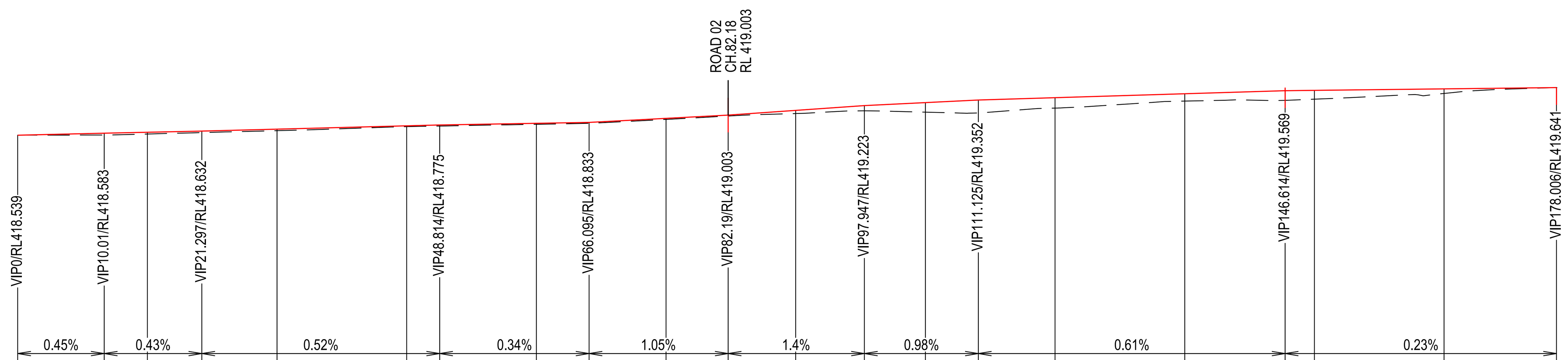


GRADE
VERTICAL CURVE
HORIZONTAL CURVE
DATUM RL.411.000

PEGGED CHAINAGE	DESIGN SURFACE LEVEL	EXISTING SURFACE LEVEL	CUT/FILL DEPTHS
0.000	418.326	418.326	0.000
10.569	418.407	418.304	0.103
15.000	418.431	418.291	0.140
30.000	418.513	418.322	0.192
32.370	418.526	418.352	0.175
45.000	418.552	418.308	0.244
60.000	418.582	418.318	0.264
66.186	418.595	418.386	0.209
75.000	418.633	418.371	0.263
87.484	418.688	418.422	0.266
90.000	418.706	418.430	0.275
105.000	418.808	418.622	0.186
114.603	418.874	418.800	0.074
120.000	418.915	418.870	0.045
135.000	419.029	419.023	0.006
150.000	419.143	419.143	-0.001
152.424	419.161	419.161	0.000
165.000	419.277	419.263	0.014
178.007	419.398	419.398	0.000

HOR : 1 IN 500
VERT: 1 IN 100

LONGITUDINAL SECTION - EDGE OF SHOULDER (LEFT)



GRADE
VERTICAL CURVE
HORIZONTAL CURVE
DATUM RL.411.000

PEGGED CHAINAGE	DESIGN SURFACE LEVEL	EXISTING SURFACE LEVEL	CUT/FILL DEPTHS
0.000	418.539	418.539	0.000
10.010	418.583	418.542	0.042
15.000	418.605	418.565	0.039
21.297	418.632	418.598	0.034
30.000	418.677	418.643	0.034
45.000	418.755	418.736	0.019
48.814	418.775	418.750	0.025
60.000	418.813	418.791	0.022
66.095	418.833	418.814	0.020
75.000	418.927	418.904	0.023
82.190	419.003	418.982	0.021
90.000	419.112	419.040	0.072
97.947	419.223	419.103	0.119
105.000	419.292	419.072	0.221
111.125	419.352	419.053	0.299
120.000	419.406	419.165	0.241
135.000	419.498	419.328	0.170
146.614	419.569	419.345	0.224
150.000	419.577	419.372	0.205
165.000	419.611	419.504	0.107
178.006	419.641	419.641	0.000

HOR : 1 IN 500
VERT: 1 IN 100

LONGITUDINAL SECTION - EDGE OF SHOULDER (RIGHT)

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

HORIZONTAL 1:500 AT ORIGINAL SIZE 0 5 10 15 20 25m
VERTICAL 1:100 AT ORIGINAL SIZE 0 1 2 3 4 5m

VENA ENERGY

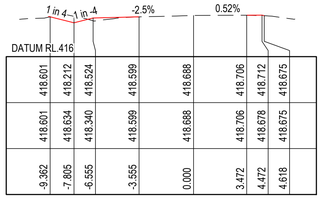
MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	

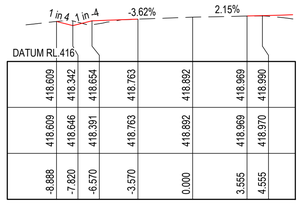
ISSUED FOR INFORMATION

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
LONGITUDINAL SECTIONS
EDGE OF SHOULDER LEFT & RIGHT

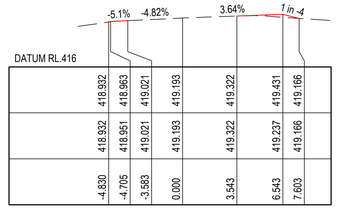
DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0501	2 OF 2	A1	1



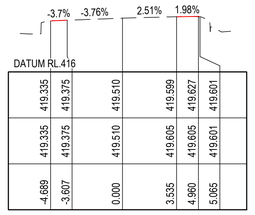
CH 36.000



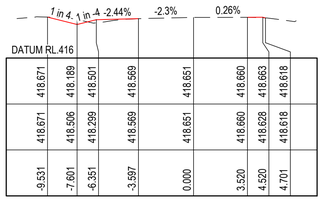
CH 81.000



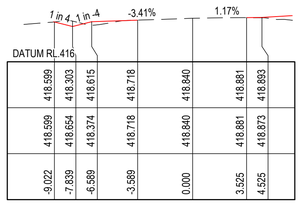
CH 126.000



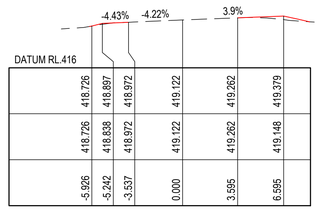
CH 171.000



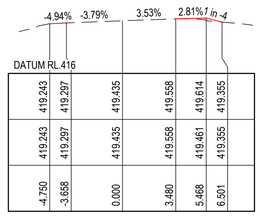
CH 27.000



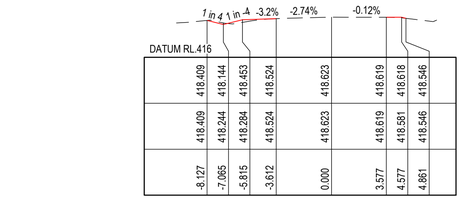
CH 72.000



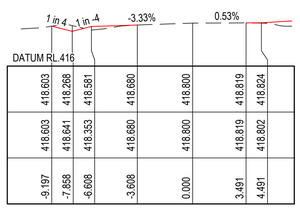
CH 117.000



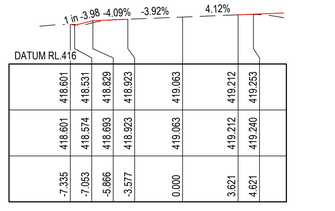
CH 162.000



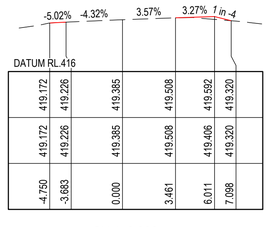
CH 18.000



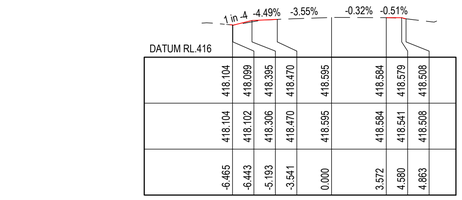
CH 63.000



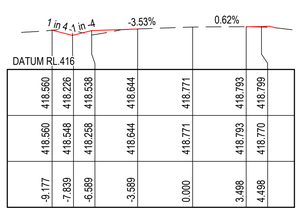
CH 108.000



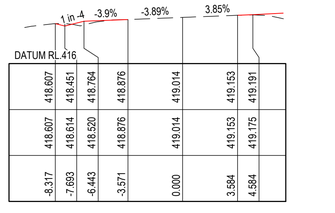
CH 153.000



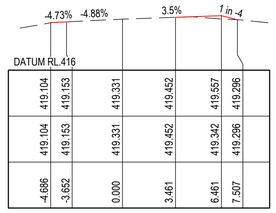
CH 9.000



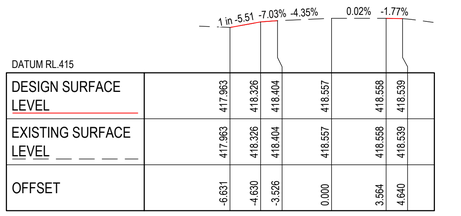
CH 54.000



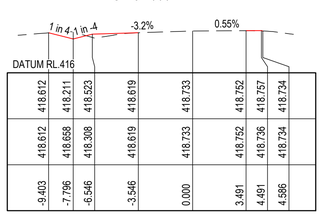
CH 99.000



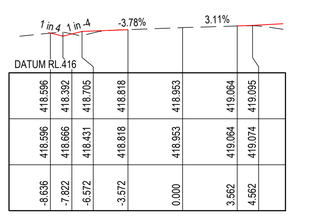
CH 144.000



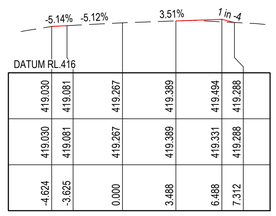
CH 0.000



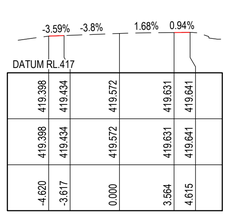
CH 45.000



CH 90.000



CH 135.000



CH 176.994

ROAD 01

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

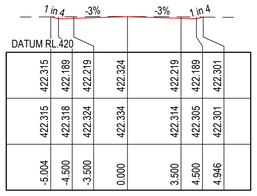
VENA ENERGY

MAKER ENG

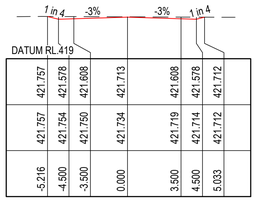
DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
ROAD CROSS SECTIONS PLAN
ROAD 01

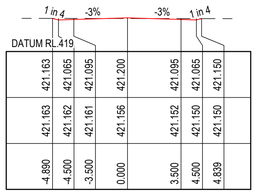
DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0600	1 OF 2	A1	1



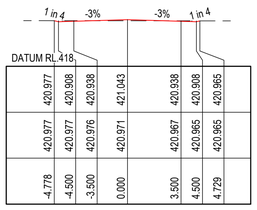
CH 72.000



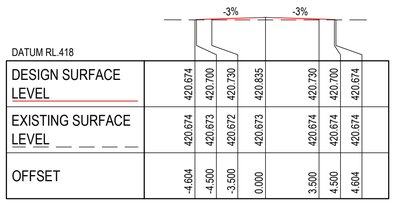
CH 63.000



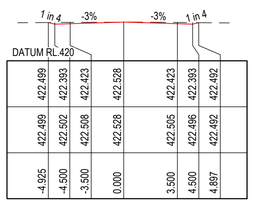
CH 54.000



CH 50.552



CH 45.000



CH 74.992

ROAD 02

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

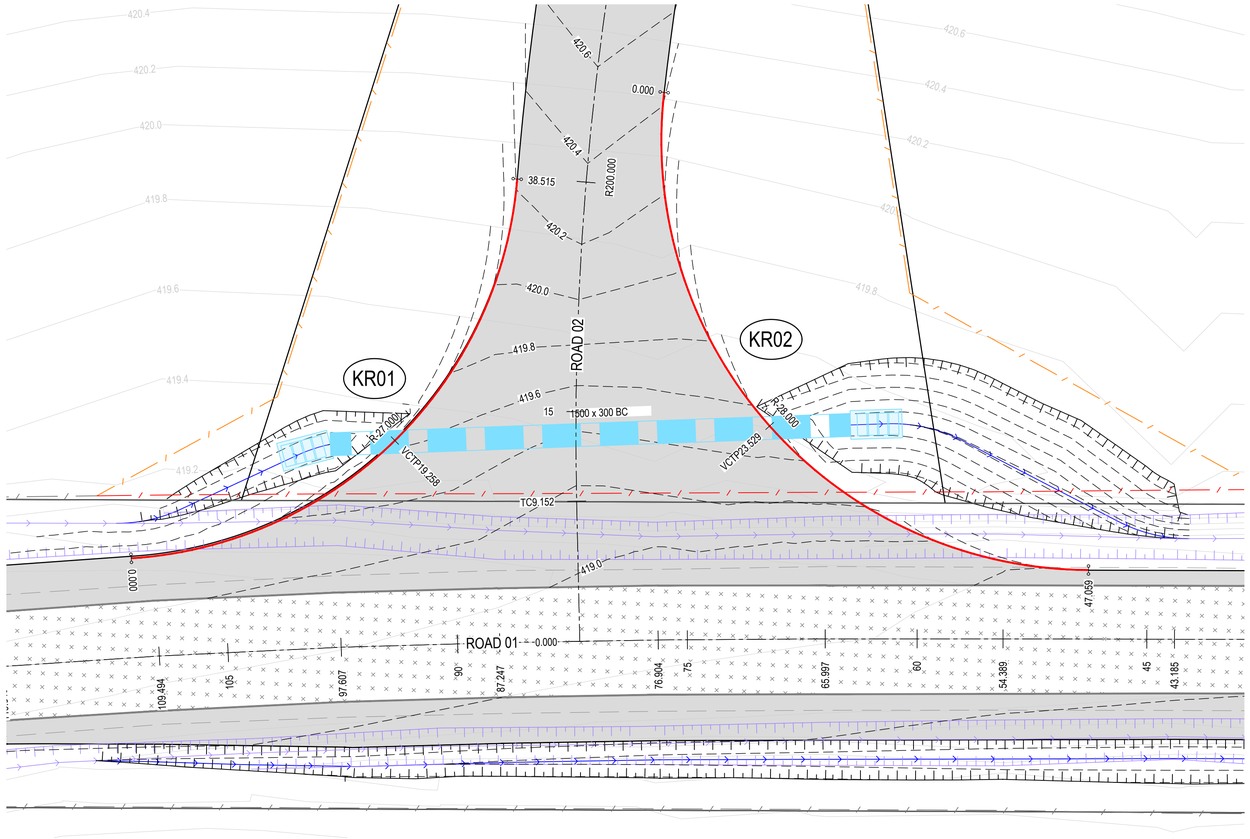
VENA ENERGY

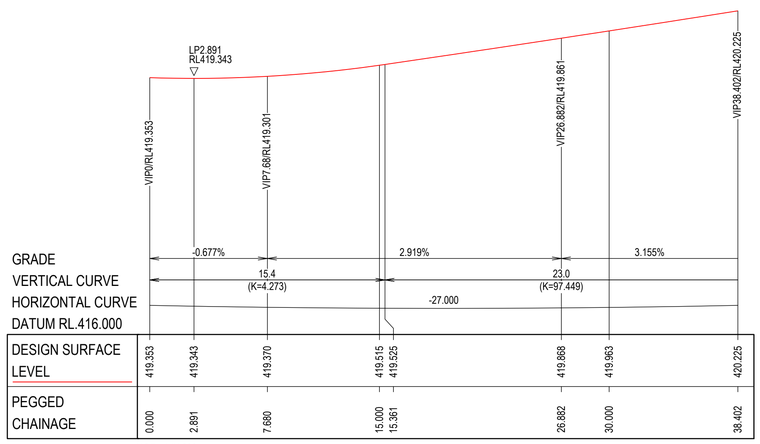
MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
ROAD CROSS SECTIONS PLAN
ROAD 02

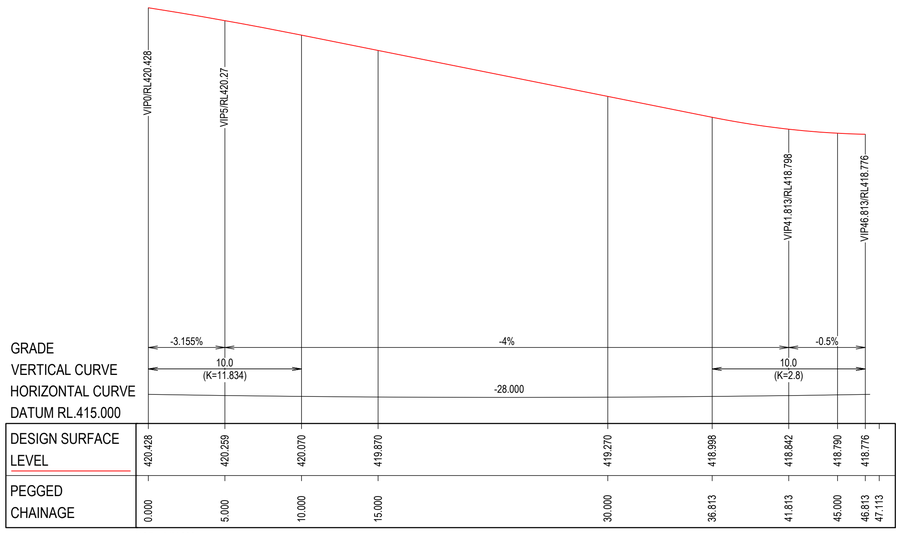
DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0601	2 OF 2	A1	1





HOR : 1 IN 200
VERT: 1 IN 40

LONGITUDINAL SECTION - KR 01



HOR : 1 IN 200
VERT: 1 IN 40

LONGITUDINAL SECTION - KR 02

LEGEND

PROPOSED

- LOT BOUNDARY
- KERB RETURN ALIGNMENT (LIP OF KERB)
- CONTOURS (0.2m) — 410.0
- ROAD CENTERLINE AND CHAINAGE — 15 / 30
- STORMWATER PIPES
- STORMWATER STRUCTURES
- KERB RETURN LABELS — KR01
- PAVEMENT
- BATTER TOP
- SWALE INVERT
- FENCE

EXISTING

- LOT BOUNDARY
- CONTOURS (0.5m) — 410.0
- PAVEMENT
- FENCE
- BATTER TOP
- SWALE INVERT
- FENCE
- FENCE TO BE REMOVED

BEFORE YOU DIG www.byda.com.au

UTILITY INFORMATION SHOWN ON THE PLANS DOES NOT DEPICT ANY MORE THAN THE PRESENCE OF A SERVICE, BASED ON AVAILABLE DOCUMENTARY EVIDENCE. THE PRESENCE OF A UTILITY SERVICE, ITS SIZE AND LOCATION SHOULD BE CONFIRMED BY FIELD INSPECTION, PRIOR TO THE COMMENCEMENT OF WORKS AND THE RELEVANT UTILITY PLANS OBTAINED BY DIALLING PH 1100 (BEFORE YOU DIG). CAUTION SHOULD BE EXERCISED WHEN WORKING IN THE VICINITY OF ALL UTILITY SERVICES.

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

HORIZONTAL 1:200 AT ORIGINAL SIZE — 0 2 4 6 8 10m
VERTICAL 1:40 AT ORIGINAL SIZE — 0 0.4 0.8 1.2 1.6 2m
0 2 4 6 8 10m
SCALE 1:200 AT ORIGINAL SIZE

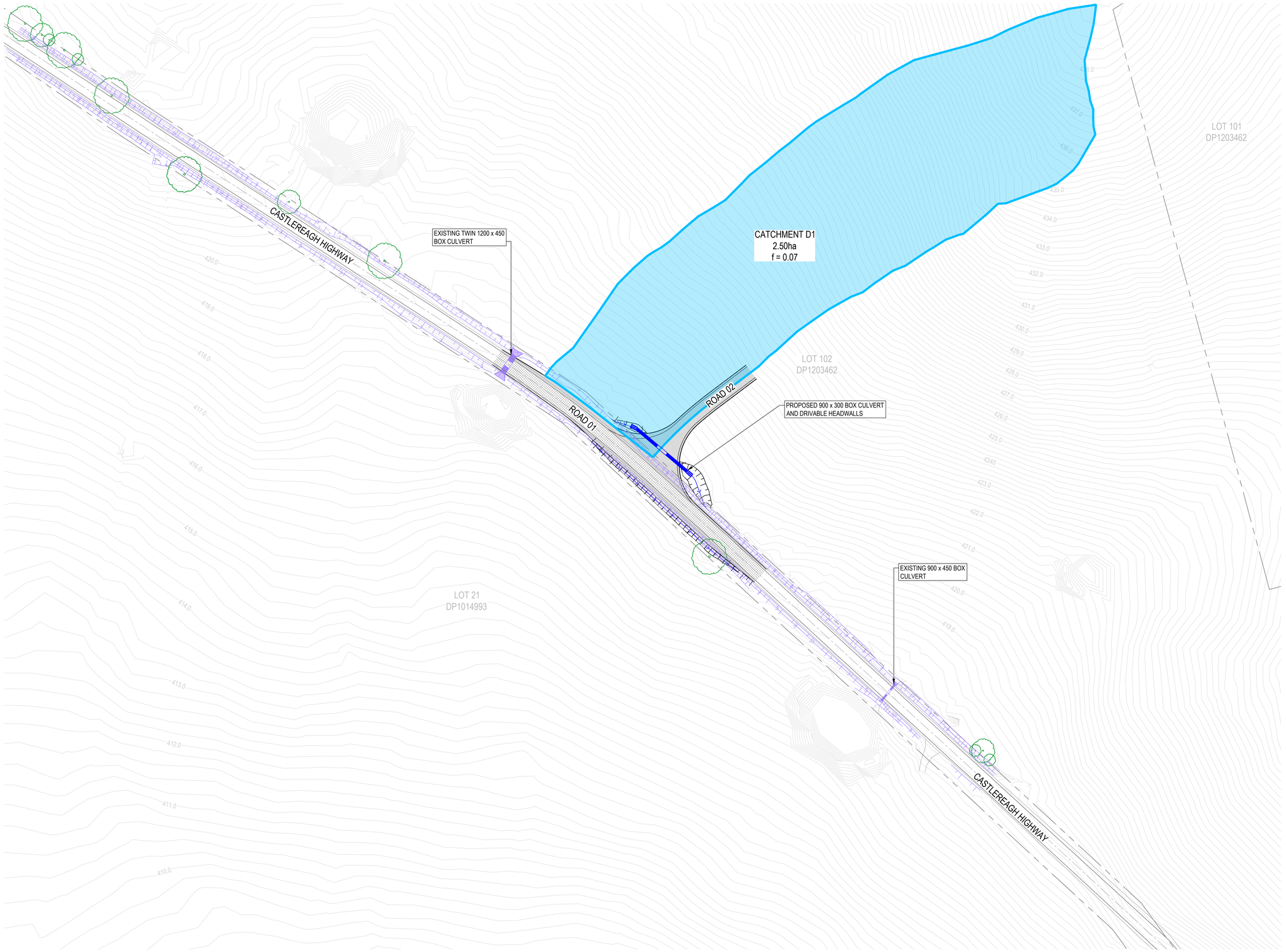
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
KERB RETURN LAYOUT AND SECTIONS

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0700		A1	1



PROPOSED

LEGEND

- CATCHMENT
- CATCHMENT FLOW DIRECTION
- PAVEMENT
- STORMWATER PIPES
- STORMWATER STRUCTURES
- BATTER TOP
- SWALE INVERT

EXISTING

- LOT BOUNDARY
- CONTOURS (0.5m)
- PAVEMENT
- BATTER TOP
- SWALE INVERT
- STORMWATER PIPES
- STORMWATER STRUCTURES
- TREE (TO BE RETAINED)

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 10 20 30 40 50m
SCALE 1:1000 AT ORIGINAL SIZE

VENA ENERGY

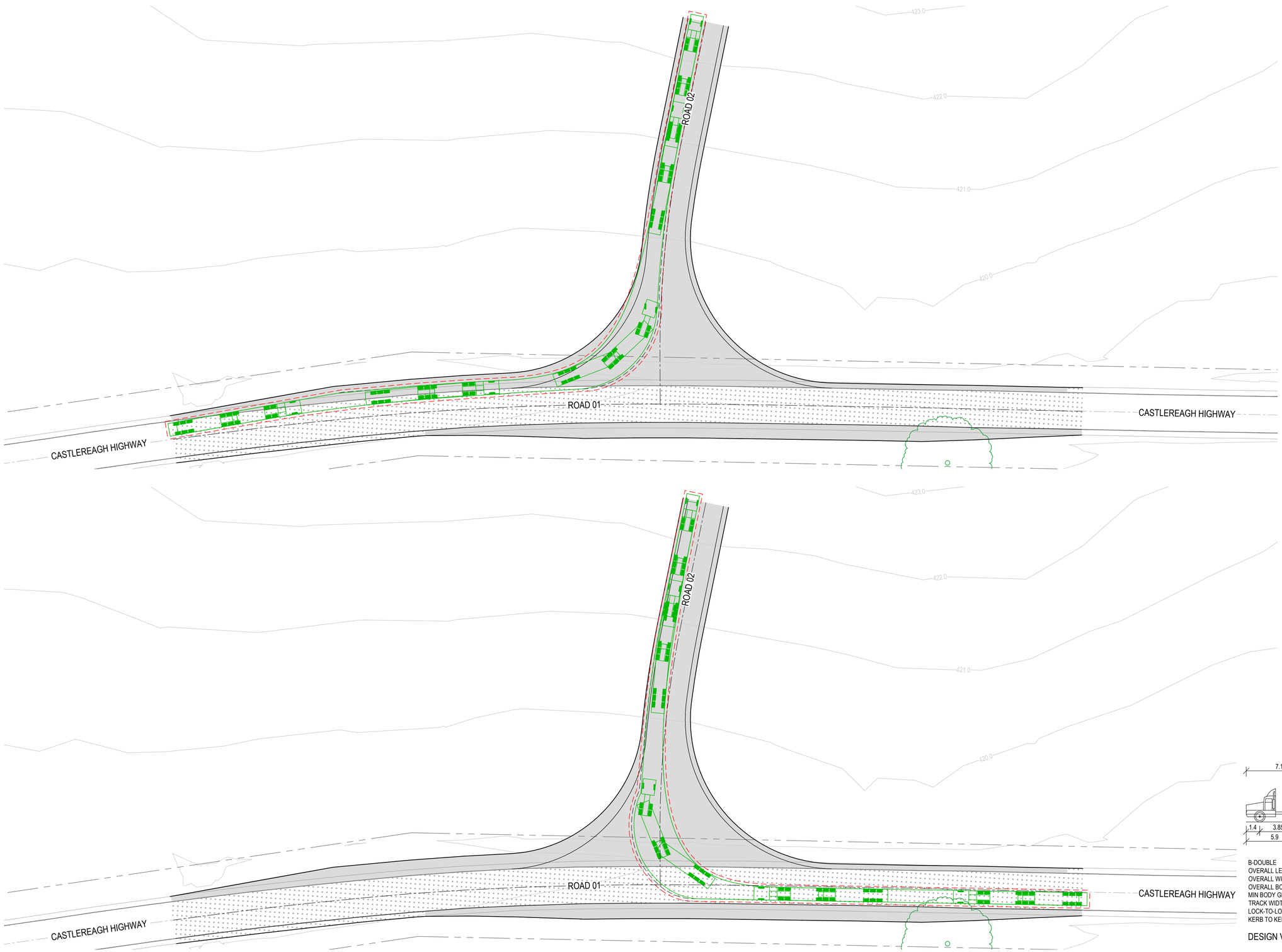
MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	

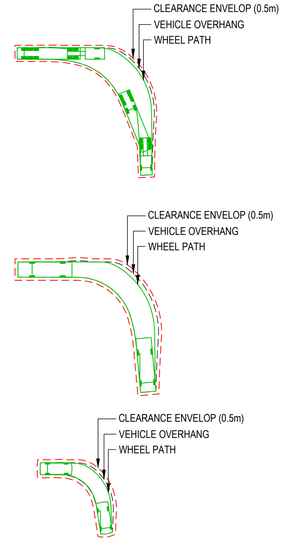
ISSUED FOR INFORMATION

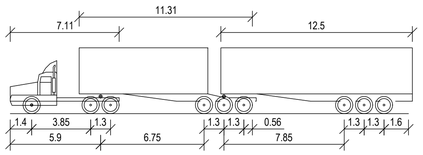
CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
STORMWATER CATCHMENT PLAN

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C0900		A1	1



LEGEND





B-DOUBLE	
OVERALL LENGTH	26.000m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.540m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	12.500m

DESIGN VEHICLE

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 3.75 7.5 11.25 15 18.75m
SCALE 1:375 AT ORIGINAL SIZE

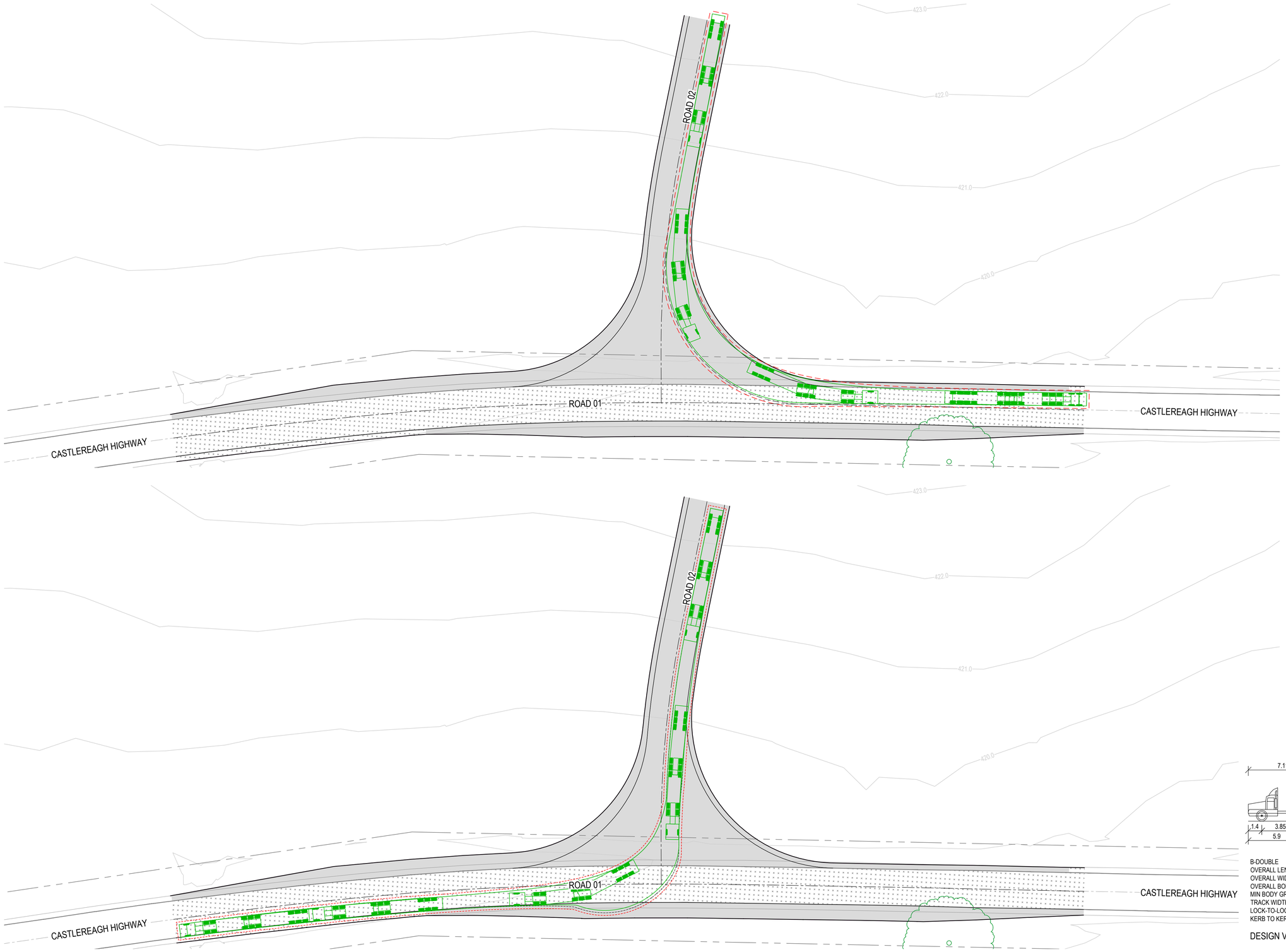
VENA ENERGY

MAKER ENG

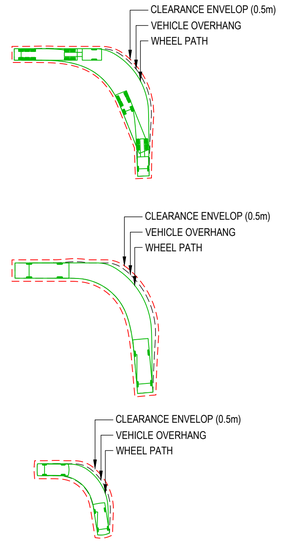
DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

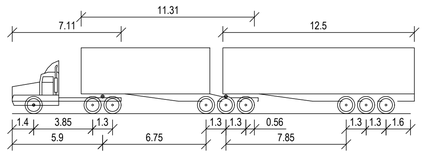
CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
SWEPT PATH ANALYSIS LAYOUT PLAN
DESIGN VEHICLE

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C1700	1 OF 2	A1	1



LEGEND





B-DOUBLE	
OVERALL LENGTH	26.000m
OVERALL WIDTH	2.500m
OVERALL BODY HEIGHT	4.300m
MIN BODY GROUND CLEARANCE	0.540m
TRACK WIDTH	2.500m
LOCK-TO-LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	12.500m

DESIGN VEHICLE

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 3.75 7.5 11.25 15 18.75m

SCALE 1:375 AT ORIGINAL SIZE

VENA ENERGY

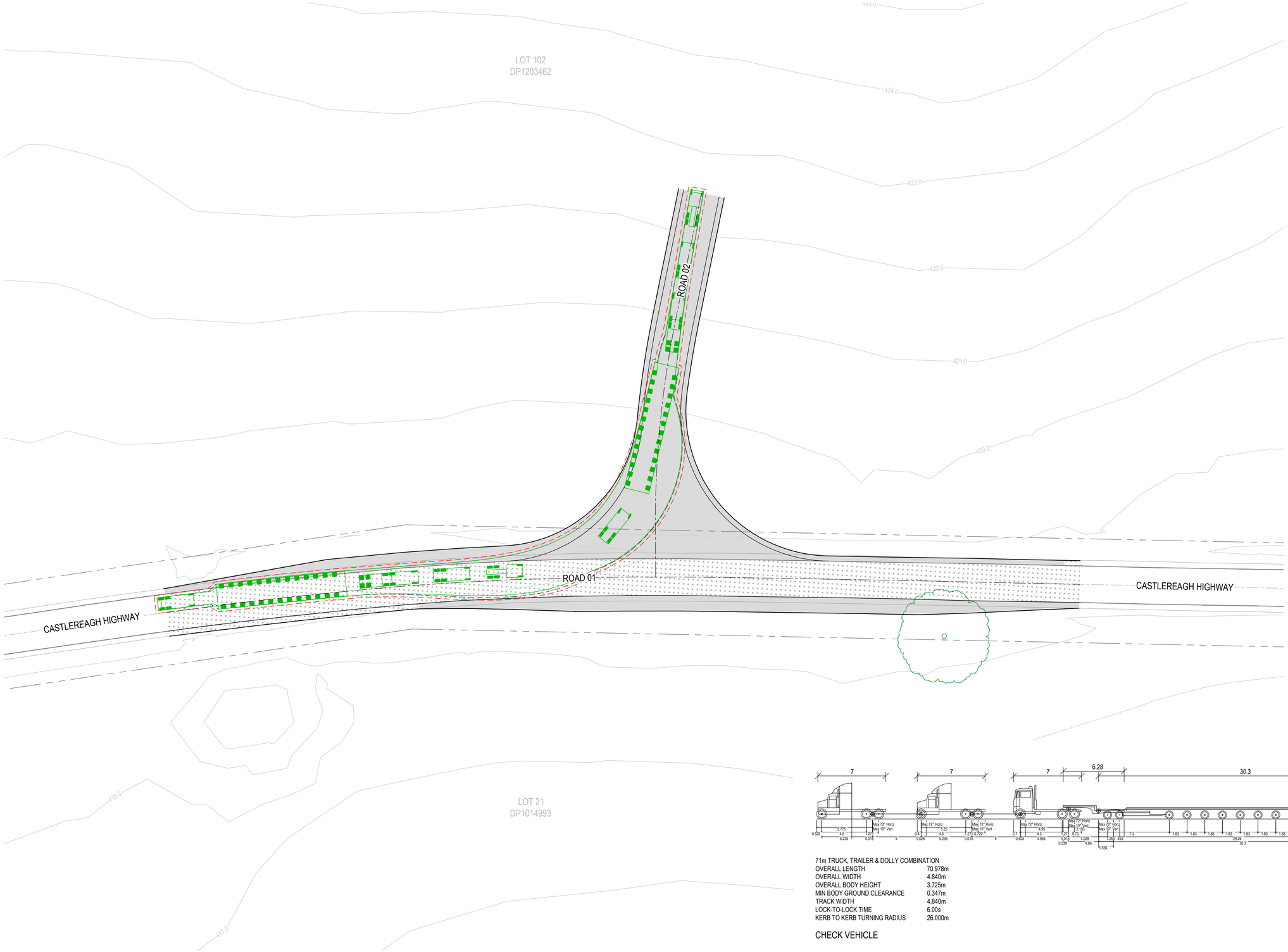
MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	

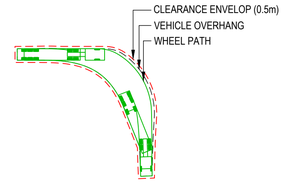
ISSUED FOR INFORMATION

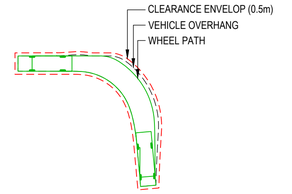
CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
SWEPT PATH ANALYSIS LAYOUT PLAN
DESIGN VEHICLE

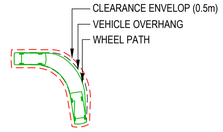
DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C1701	2 OF 2	A1	1

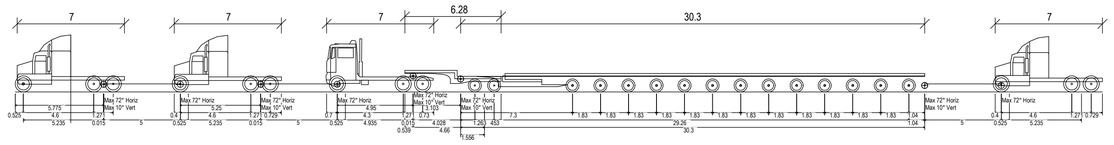


LEGEND









71m TRUCK, TRAILER & DOLLY COMBINATION

OVERALL LENGTH	70.978m
OVERALL WIDTH	4.840m
OVERALL BODY HEIGHT	3.725m
MIN BODY GROUND CLEARANCE	0.347m
TRACK WIDTH	4.840m
LOCK-TO-LOCK TIME	6.00s
KERB TO KERB TURNING RADIUS	26.000m

CHECK VEHICLE

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 3.75 7.5 11.25 15 18.75m
SCALE 1:375 AT ORIGINAL SIZE

VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
SWEPT PATH ANALYSIS LAYOUT PLAN
CHECK VEHICLE

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C1702		A1	1

PROPOSED

LEGEND

- SSID (SAFE INTERSECTION SIGHT DISTANCE)
- LINE OF SIGHT
- VEHICLE

EXISTING

- LOT BOUNDARY
- ROAD CENTRELINE
- LINEMARKING
- EDGE OF BITUMEN
- TREE (TO BE RETAINED)

SIGHT DISTANCE 01 (SISD)	
D_T (DECISION TIME)	5.0s
d (COEFFICIENT OF DELECERATION)	0.29
a (LONGITUDINAL GRADE IN %)	0.5%
V (OPERATING SPEED)	110km/h
SISD	314.3m

SIGHT DISTANCE 02 (SISD)	
D_T (DECISION TIME)	5.0s
d (COEFFICIENT OF DELECERATION)	0.29
a (LONGITUDINAL GRADE IN %)	-0.7%
V (OPERATING SPEED)	110km/h
SISD	321.1m

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 10 20 30 40 50m

SCALE 1:1000 AT ORIGINAL SIZE

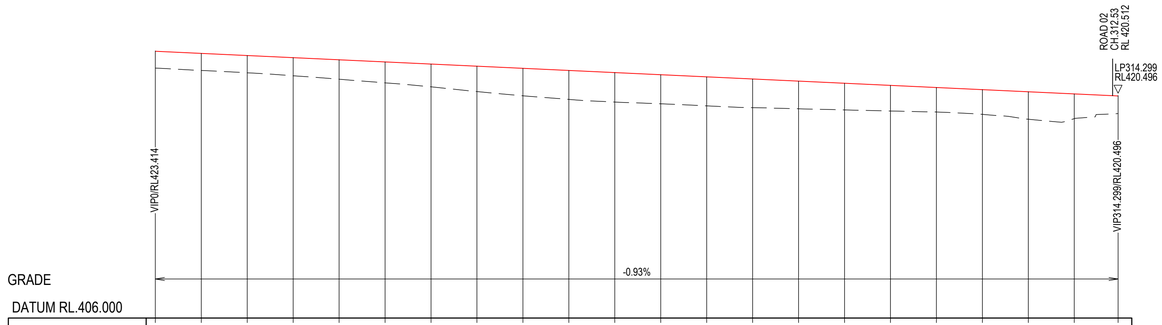
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
SIGHT LINE LAYOUT PLAN

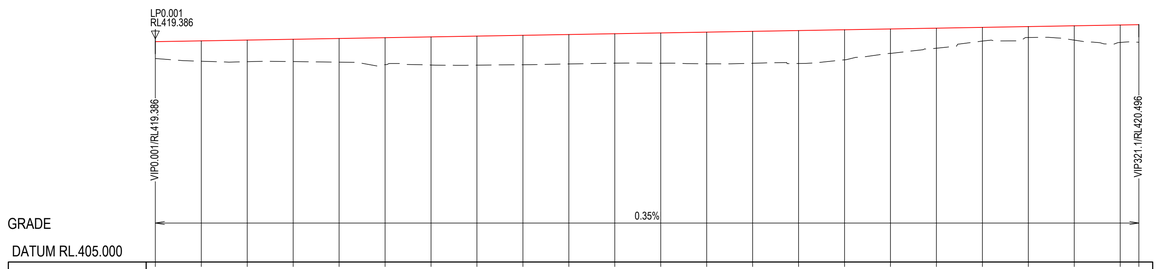
DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C1800		A1	1



GRADE																						
DATUM RL.406.000																						
SIGHT LINE LEVEL	423.414	423.274	423.135	422.996	422.857	422.717	422.578	422.439	422.299	422.160	422.021	421.882	421.742	421.603	421.464	421.325	421.185	421.046	420.907	420.768	420.628	420.496
FINAL SURFACE LEVEL	422.314	422.161	422.010	421.812	421.587	421.350	421.092	420.782	420.508	420.271	420.099	419.984	419.848	419.732	419.660	419.583	419.513	419.446	419.294	418.975	419.016	419.347
CLEARANCE	1.100	1.113	1.125	1.184	1.269	1.367	1.486	1.657	1.792	1.890	1.922	1.898	1.894	1.871	1.804	1.742	1.672	1.600	1.613	1.793	1.613	1.148
PEGGED CHAINAGE	0.000	15.000	30.000	45.000	60.000	75.000	90.000	105.000	120.000	135.000	150.000	165.000	180.000	195.000	210.000	225.000	240.000	255.000	270.000	285.000	300.000	314.300

HOR : 1 IN 1000
VERT: 1 IN 200

LONGITUDINAL SECTION - SIGHT LINE 01



GRADE																							
DATUM RL.405.000																							
SIGHT LINE LEVEL	419.386	419.438	419.490	419.541	419.593	419.645	419.697	419.749	419.801	419.852	419.904	419.956	420.008	420.060	420.112	420.163	420.215	420.267	420.319	420.371	420.423	420.475	420.496
FINAL SURFACE LEVEL	418.286	418.109	418.079	418.085	418.046	417.886	417.861	417.851	417.879	417.931	417.980	417.975	417.938	417.973	417.962	418.199	418.618	418.957	419.422	419.658	419.467	419.332	419.347
CLEARANCE	1.100	1.329	1.411	1.457	1.547	1.759	1.836	1.898	1.922	1.922	1.924	1.982	2.070	2.087	2.150	1.964	1.597	1.310	0.897	0.713	0.936	1.142	1.148
PEGGED CHAINAGE	0.000	15.000	30.000	45.000	60.000	75.000	90.000	105.000	120.000	135.000	150.000	165.000	180.000	195.000	210.000	225.000	240.000	255.000	270.000	285.000	300.000	315.000	321.100

HOR : 1 IN 1000
VERT: 1 IN 200

LONGITUDINAL SECTION - SIGHT LINE 02

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

HORIZONTAL 1:1000 AT ORIGINAL SIZE — 0 10 20 30 40 50m
VERTICAL 1:200 AT ORIGINAL SIZE — 0 2 4 6 8 10m

VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
SIGHT LINE LONGITUDINAL SECTIONS

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C1801		A1	1

LOT 102
DP1203462

LOT 21
DP1014993

ROAD 02

ROAD 01

CASTLEREAGH HIGHWAY

CASTLEREAGH HIGHWAY

EXISTING LINEMARKING TO BE REMOVED AND REPLACED WITH S1

EXISTING LINEMARKING TO BE REMOVED AND REPLACED WITH S1

R1-2B

GIVE WAY

BB

TB1

TB

S1

A=31.00m

P=35.00m

C=3.00m

3.5m

3.5m

C=3.00

A=31.00

15.00

X=15.00

S=26.00

10.00

A=31.00

LEGEND

PROPOSED

- BB — LINEMARKING - BB
- E1 — LINEMARKING - E1
- S1 — LINEMARKING - S1
- TB — LINEMARKING - TB
- TB1 — LINEMARKING - TB1
- NEW SIGN POST

NEW, RELOCATE EXISTING, OR EXISTING SIGN

COLOUR GREY = NEW = EXISTING

RMS TRAFFIC SIGN CODE AND ARROW DIRECTION
(R) - RIGHT
(L) - LEFT
(BW) - BOTH WAYS

NOTES:

1. REFER TO RMS DELINEATION MANUAL FOR FURTHER DETAILS:
   - 1.1. SECTION 4 - LONGITUDINAL MARKINGS
   - 1.2. SECTION 6 - TRANSVERSE MARKINGS
   - 1.3. SECTION 11 - PAVEMENT MARKINGS AT ROUNDABOUTS
2. ALL TRAFFIC SIGN CODES REFER TO STANDARD RMS SIGNAGE

REV	DATE	DESCRIPTION	AMD BY	APP BY
1	23.09.24	ISSUED FOR INFORMATION	JMN	JMA

0 3.75 7.5 11.25 15 18.75m
SCALE 1:375 AT ORIGINAL SIZE

VENA ENERGY

MAKER ENG

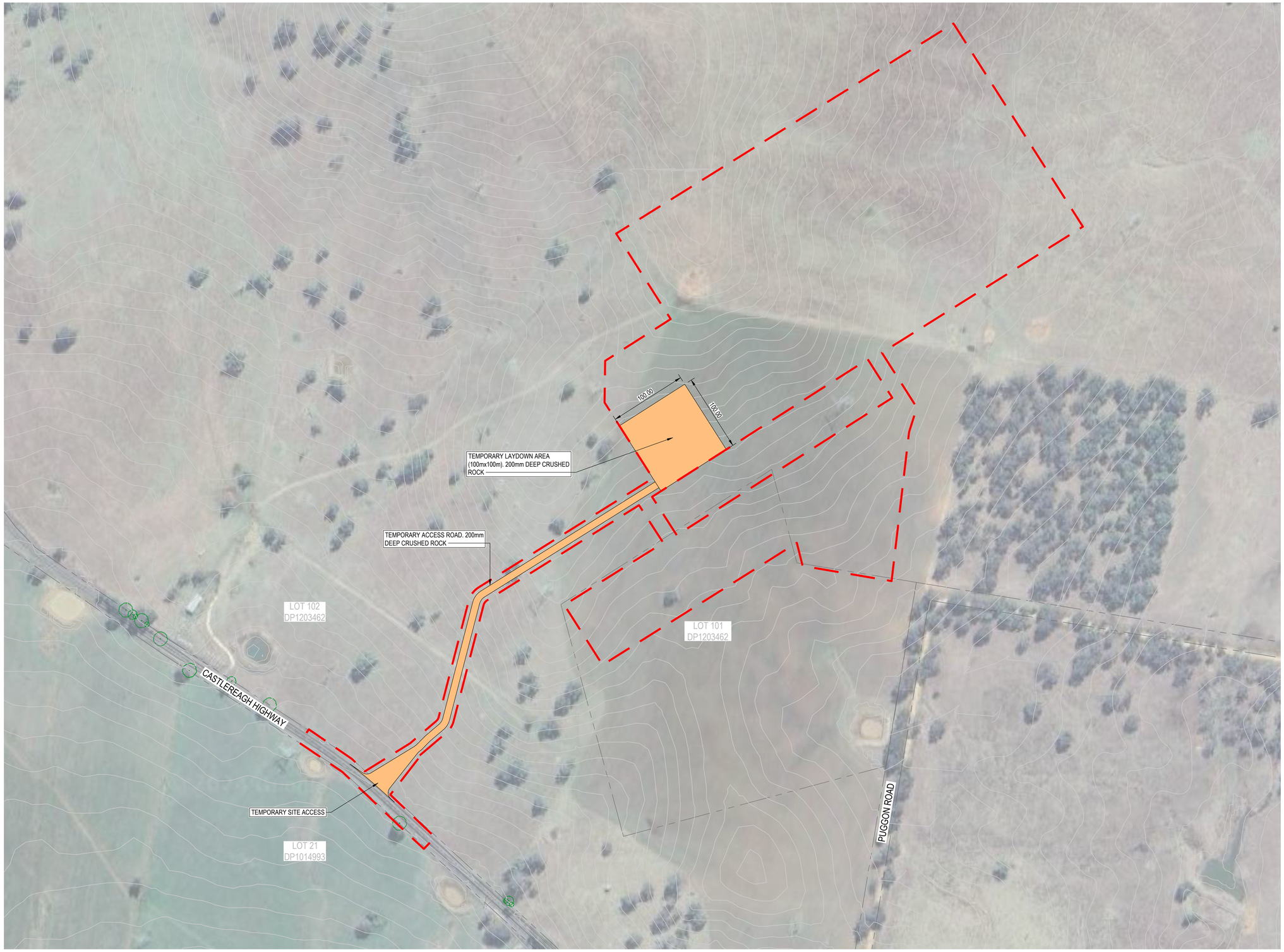
DRAWN: J.NEWELL	DESIGNED: J.NEWELL
DRAFT CHECK: J.AGUSTIN	DESIGN CHECK: J.AGUSTIN
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
LOCAL AREA TRAFFIC MANAGEMENT LAYOUT PLAN

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-201-C1900		A1	1

Appendix B

Staging Plans



LEGEND

EXISTING

- APPROVED DEVELOPMENT FOOTPRINT
- LOT BOUNDARY
- CONTOURS (1.0m) (410.0)
- LINEMARKING
- EDGE OF BITUMEN
- TREE (TO BE RETAINED)

PROPOSED

- 200mm CRUSHED ROCK

REV	DATE	DESCRIPTION	AMD BY	APP BY
P1	03.10.24	ISSUED FOR INFORMATION	JMN	JMA

0 25 50 75 100 125m
SCALE 1:2500 AT ORIGINAL SIZE

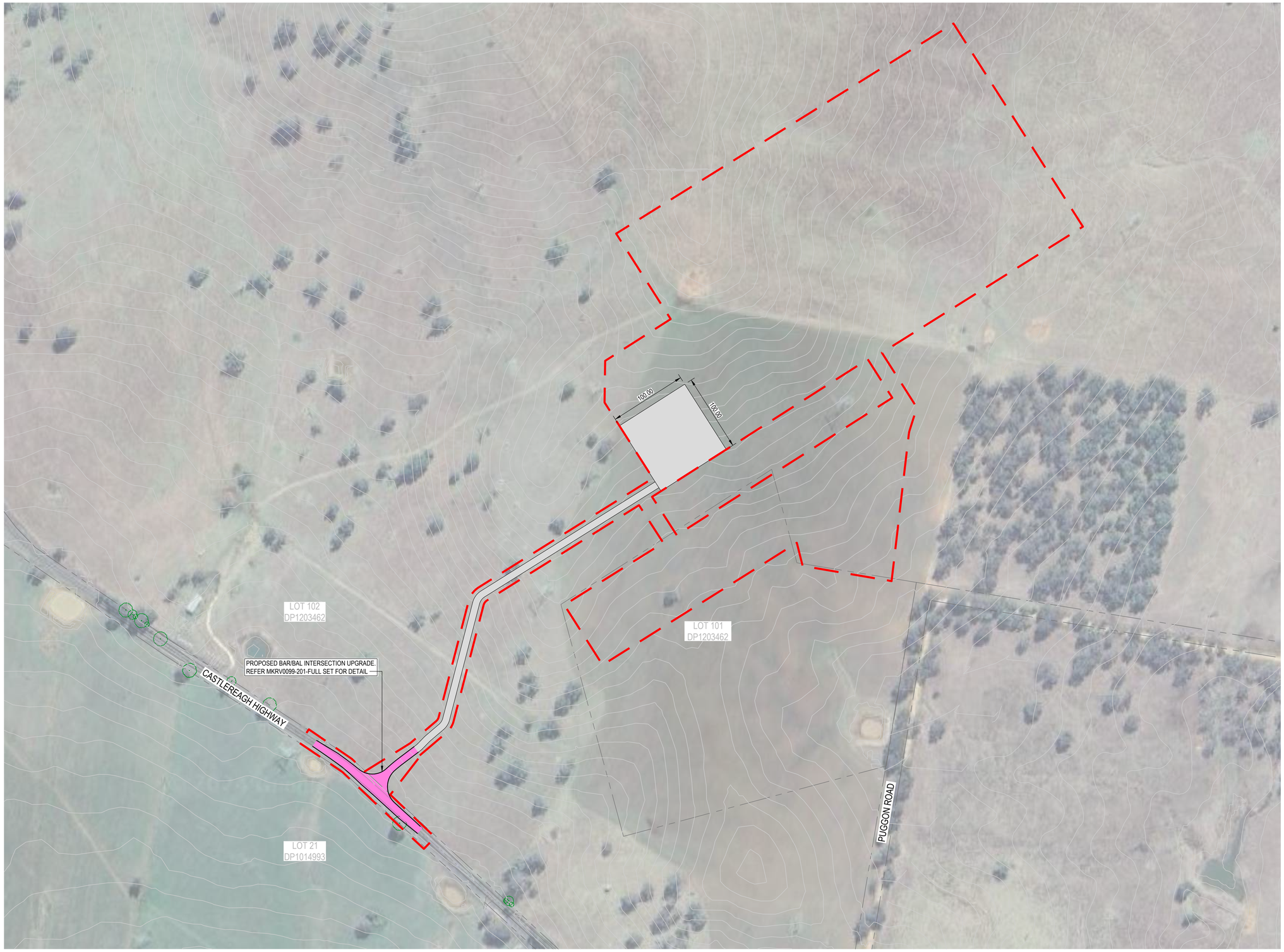
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED:
DRAFT CHECK:	DESIGN CHECK:
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
PROPOSED WORKS STAGING PLAN
STAGE 01A

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-00-SK003	1 OF 3	A1	P1



LEGEND

EXISTING

- APPROVED DEVELOPMENT FOOTPRINT
- LOT BOUNDARY
- CONTOURS (1.0m) (410.0)
- LINEMARKING
- EDGE OF BITUMEN
- TREE (TO BE RETAINED)
- 200mm CRUSHED ROCK

PROPOSED

- PAVEMENT

REV	DATE	DESCRIPTION	AMD BY	APP BY
P1	03.10.24	ISSUED FOR INFORMATION	JMN	JMA

0 25 50 75 100 125m
SCALE 1:2500 AT ORIGINAL SIZE

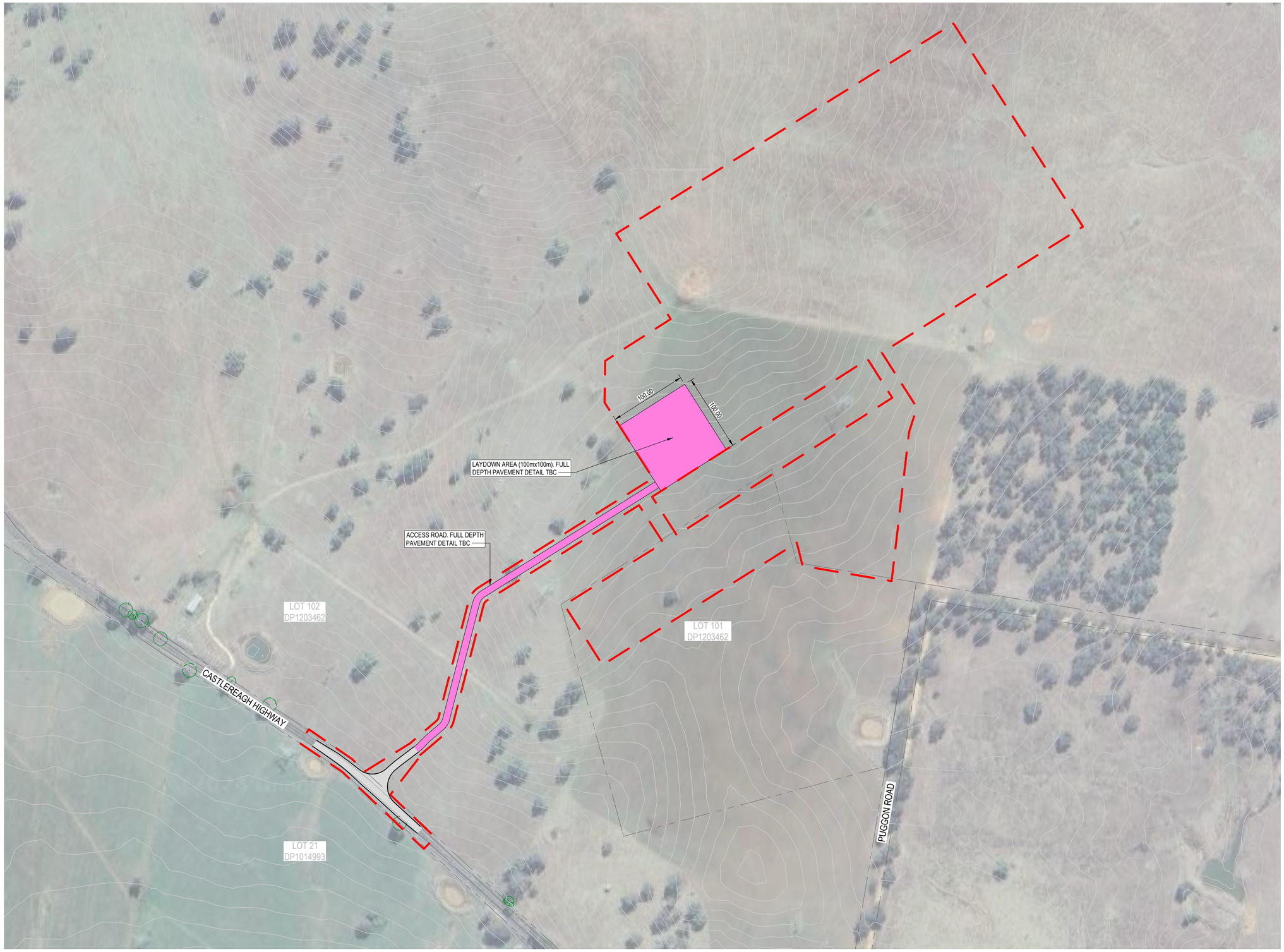
VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED:
DRAFT CHECK:	DESIGN CHECK:
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
PROPOSED WORKS STAGING PLAN
STAGE 01B

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-00-SK004	2 OF 3	A1	P1



EXISTING

LEGEND

- APPROVED DEVELOPMENT FOOTPRINT
- LOT BOUNDARY
- 410.0 CONTOURS (1.0m)
- LINEMARKING
- EDGE OF BITUMEN
- TREE (TO BE RETAINED)
- PAVEMENT

PROPOSED

- PAVEMENT

REV	DATE	DESCRIPTION	AMD BY	APP BY
P1	03.10.24	ISSUED FOR INFORMATION	JMN	JMA

0 25 50 75 100 125m
SCALE 1:2500 AT ORIGINAL SIZE

VENA ENERGY

MAKER ENG

DRAWN: J.NEWELL	DESIGNED:
DRAFT CHECK:	DESIGN CHECK:
APPROVED: J.AGUSTIN	
ISSUED FOR INFORMATION	

CASTLEREAGH HIGHWAY INTERSECTION UPGRADE
CONCEPT DESIGN
PROPOSED WORKS STAGING PLAN
STAGE 01C

DRAWING NUMBER	SHEET No.	ORIG. SIZE	REVISION
MKRV0099-00-SK005	3 OF 3	A1	P1

Appendix C

Driver Code of Conduct

Driver Code of Conduct

This code of conduct applies to all light and heavy vehicle drivers, and heavy vehicles requiring escort drivers, that regularly visit the site. They are required to read, agree to, and sign the Driver Code of Conduct.

This code of conduct will be communicated to all site workers during the site induction process. Workers will be reminded of the requirements of the code of conduct weekly in toolbox meetings.

The Driver Code of Conduct is to be enforced by the Site Construction Manager, and records of the code are to be stored and maintained by the Applicant.

Safe Driving Principles

The operators of all vehicles associated with the site shall respect all other road users. All on-site staff will receive a site induction, which will include:

- Details regarding the TMP and this code of conduct;
- Details of speed limit signs;
- Information on fatigue management;
- Reinforcement that they must drive to conditions;
- Details of vehicle inspections including maintenance records and risk assessments; and
- Details of inspections, and audits.

Regular toolbox meetings will be held to maintain awareness of required controls. Details of the traffic and access training and induction will focus on:

- Objectives of the TMP;
- Performance goals, which include:
  - To complete construction with no Injuries,
  - Safety Key Performance Indicators (KPI's) to be completed including inspections, audits, and training.
- Access routes that are outlined within the TMP;
- Mitigation measures required to be implemented;
- Traffic and access monitoring and reporting requirements; and
- Incident investigation and response protocols.

Training is to be provided prior to start-up of any traffic and access related management tasks and updated if task, equipment or procedures are expected to, or have changed.

Primary Driver Code

The following requirements shall be adhered to at all times:

- Obey all laws and regulations.
- Do not drive whilst under the influence of alcohol, drugs, nor any medication which may affect ability to drive.
- Be medically fit to drive and must inform site coordinators if they have any medical condition which may affect their ability to drive.
- Drive in a considerate manner and respect the rights of others to use and share the road space.
- Report all vehicle defects to their employer. Serious defects (e.g. e.g. brakes, steering) must be corrected immediately, or an alternative vehicle supplied.
- Any vehicle incident resulting in injury or significant damage to property must be reported to the police.
- Report any near misses.
- Always adhere to the site working hours.
- Securely fasten and cover load with the appropriate use of ratchets straps, tarpaulins or covers (loose material), chains and load binders, for example. Relevant vehicular load limits are not to be exceeded and all loads are to be suitably balanced. The maximum rear overhang shall not exceed limits under by relevant road rules for respective vehicle types.
- Keep their vehicle clean and in good mechanical condition to reduce the environmental impact.
- Extra care should be taken when driving at dawn or dusk, being particularly watchful for wildlife and/or livestock.
- Vehicles must give way to pedestrians, cranes, forklifts, mobile plant, emergency vehicles and livestock.
- Drivers must adhere to the required access routes outlined within the TMP (Section 3.6.2 of the TMP), replicated in Figure 8 for reference.

Figure 8: Vehicle Access Route

Source: OpenStreetMap

The following provides further guidance as the required safety procedures for specific incidences:

- Drivers travelling to or from the site must do so safely, in full compliance with the law, including in respect of speed limits, following distances, forward sight when overtaking, being able to stop within the length of road visible (or half the length on roads without centrelines), and not driving carelessly or dangerously;
- Timing of deliveries are to be coordinated by the Applicant in order to prevent heavy vehicles travelling through school zones during peak times;
- When aware of any emergency vehicles, approaching from in front or behind, drivers must pull over well in advance to provide unimpeded movement;
- Drivers must reduce their speed and or stop in accordance with the law when passing a school bus which is slowing down, stopped, or accelerating in relation to picking up or setting down children;
- Drivers must reduce their speed in accordance with the law when:
  - Passing children walking, cycling or waiting on the side of the road;

  - Passing an oncoming school bus;
  - Passing someone riding or leading a horse along the road;
  - Approaching an area where a stock shift is known to be occurring.
- Truck drivers must not use engine brakes in built up areas, except where the load being carried and the grade of the road make use of such braking absolutely necessary for safe driving;
- Truck drivers travelling on school bus routes at the same time as an oncoming school bus to use their CB radio to identify the location of the bus and pull over in a safe location before the school bus reaches and passes them;
- Truck drivers are to let traffic behind them pass at regular locations including those opportunities that occur at intersections, wide driveways, sections of road with adequate forward sight distance, gravel pits etc; and
- Dedicated rest stops are to be established and utilised by drivers to reduce driver fatigue.

Chain of Responsibility

Corporate entities, directors, partners, and managers are accountable for the actions of individuals under their supervision, even if not directly involved in driving or operating a heavy vehicle under the Heavy Vehicle National Law (HVNL). This is referred to as the "Chain of Responsibility" (CoR).

All entities on the CoR will be made aware of the Driver Code of Conduct, along with the responsibilities associated with safe loading practices and fatigue management.

Emergency Procedures

In the event of a breakdown, accident or road failure, the transporter crew shall do the following:

- Park the truck in locations where they maximise safety, considering overhanging components, and blind bends on approaches;
- Contact emergency services (including Police) as is appropriate in the case of an accident;
- Contact the project manager;
- Contact the Council or other road controlling authority as may be appropriate in the case of the incident;
- Contact the site manager to advise all other project traffic, and local traffic via CB radio as appropriate in the case of the incident; and
- Follow all instructions from Police and the road controlling authority.

In the case of an accident, the vehicles involved should not be moved until instructed by Police.

Driver Fatigue

Journey Management Plans

If a person travels more than 100 kilometres because of construction activities in a single trip, then a Journey Management Plan will be required. The person that the Journey Management Plan is for will be required to have breaks every two hours and contact a nominated person and once

they have reached their destination contact the nominated person to let them know they have reached their destination.

The Applicant will identify areas where there is a higher risk of workers becoming fatigued (such as long shifts or physically onerous tasks) and implement control measures to mitigate the risk. This includes ensuring sufficient breaks and rotating staff shifts.

Heavy Vehicle Fatigue Management

In addition to the measure outlines above, there are regulations that apply to heavy vehicles that come from the HVNL which is maintained and improved by the National Transport Commission (NTC) and administered and enforced by the National Heavy Vehicle Regulator (NHVR). The HVNL applies in all states and territories except Western Australia and the Northern Territory and commenced in 2014.

One of the five regulations is the Heavy Vehicle (Fatigue Management) National Regulation, which recognises that fatigue is a key risk and one of the biggest causes of crashes for heavy vehicle drivers.

The fatigue management regulations have four key requirements that apply not just to drivers and all other parties in the Chain of Responsibility (CoR):

- Drivers must not drive a fatigue regulated heavy vehicle on a road while impaired by fatigue. Other parties in the CoR must ensure they prevent a driver from doing this.
- Drivers must work within set limits and have minimum rest requirements. Other parties must not ask or allow drivers to exceed these limits.
- Drivers (or in some cases a driver's record keeper) must make an accurate and complete record of their work and rest time in either a National Driver Work Diary or, if driving within an area with a radius of 100km of the driver's base, alternative work records.
- Drivers must provide their work and rest records to their record keeper within set time frames. A record keeper must retain these records for three years.

Failure to comply with these requirements can result in enforcement action from the NHVR.

A copy of NHVR's Heavy vehicle driver fatigue requirements bulletin is attached in Appendix D. This document outlines the relevant requirements and includes links to further information related to work diaries, CoR, accreditation, trip plans, and safety management systems. This information is to be used and followed when applicable.

Maintenance Requirements

The operators of all vehicles associated with the site shall maintain a high level of maintenance. The following requirements shall be adhered to at all times:

- Ensure their vehicle complies with relevant State legislation in relation to roadworthiness and modifications;
- Undergo regular vehicle checks and maintenance; and
- Ensure their vehicles have correctly fitted mufflers to minimise noise disturbance.

Complaint Resolution and Disciplinary Procedure

All traffic related complaints will be managed in accordance with Section 8.5 of this TMP. All complaints will be collated via the following means and be responded within two business days:

Failure to comply with these complaint management procedures for safe transport may result in disciplinary action. Any subsequent breaches identified by the system shall result in disciplinary action.

Appendix D

NHVR Heavy Vehicle Driver Fatigue Requirements

Heavy vehicle driver fatigue requirements

Compliance and Enforcement bulletin 7

This bulletin provides practical advice to help heavy vehicle drivers and other parties to comply with the requirements of the Heavy Vehicle National Law (HVNL) as they relate to heavy vehicle driver fatigue.

What are my obligations under the HVNL?

Amendments to the HVNL in 2018 will introduce 'safety duties' that must be met by all parties in the Chain of Responsibility (CoR). This requirement means that all parties have a duty to ensure the safety of their transport activities, so far as is reasonably practicable.

Responsible parties in the chain include: employers, prime contractors, operators, schedulers, consignors, consignees, packers, loading managers, loaders, and unloaders.

In addition, the executive officers of each party in the chain must exercise 'due diligence' to ensure the safety of their business's transport activities. The law will require executive officers to:

- keep up-to-date with the safe conduct of transport activities in their business
- fully understand the hazards and risks associated with their transport activities and how these are being managed
- provide appropriate resources–including people, systems and equipment–to manage their safety hazards and risks effectively.

In terms of heavy vehicle driver fatigue, the safety duties provision of the HVNL places a requirement on responsible parties to prevent a driver from driving any heavy vehicle whilst fatigued, not just fatigue-regulated heavy vehicles.

These safety duties extend to identifying any fatigue risks to prevent or reduce potential harm or loss, to yourself and others.

What are the HVNL fatigue requirements?

Driver fatigue is a leading contributor to heavy vehicle crashes in Australia, with some studies showing fatigue involved in one eighth of Australian heavy vehicle crashes.

To assist drivers and operators of heavy vehicles to avoid driver fatigue, the HVNL sets four key requirements.

Four key HVNL requirements to avoid driver fatigue

Requirement	Description
1. Don't drive a heavy vehicle while fatigued	Drivers must not drive a fatigue-regulated heavy vehicle on a road while impaired by fatigue. Other parties in the CoR must ensure they prevent a driver from doing this.
2. Work within set limits	Drivers must work within set limits and have minimum rest requirements. Other parties must not ask or allow drivers to exceed these limits.
3. Keep work and rest records	Drivers (or in some cases a driver's record keeper) must make an accurate and complete record of their work and rest time in either a National Driver Work Diary or, if driving within an area with a radius of 100 km of the driver's base, alternative work records.
4. Provide records to record keeper	Drivers must provide their work and rest records to their record keeper within set time frames. A record keeper must retain these records for three years.

Understanding the HVNL fatigue requirements

1. Don't drive a heavy vehicle while fatigued

Under the HVNL, the safety duty for all heavy vehicle drivers is to not drive a fatigue-related heavy vehicle on a road while impaired by fatigue. A driver is impaired by fatigue when their ability to drive a heavy vehicle safely is affected by fatigue.

The HVNL defines fatigue as including (but not limited to) the following feelings and behaviours:

- feeling sleepy
- feeling physically or mentally tired, weary or drowsy
- feeling exhausted or lacking energy
- behaving in a way consistent with the above.

If a heavy vehicle driver is driving and experiences any of these symptoms, they must stop work immediately (as soon as it is safe to do so). The driver must not work again until they are no longer affected by fatigue.

Tip: Getting plenty of good quality rest and/or sleep are the most effective ways to prevent and recover from fatigue.

A driver can be impaired by fatigue at any time, even when they comply with work and rest hour limits. Regardless of how many hours they may have worked or rested, they must never drive if they are impaired by fatigue.

2. Work within set limits

The scientific evidence shows that fatigue increases the longer a person is awake and or the less sleep they have. To assist heavy vehicle drivers get enough time to sleep and to not work too long, the HVNL requires all heavy vehicle drivers to comply with set work and rest limits.

What is work and rest?

While driving is the most common type of work, it is important to note that any other task relating to the operation of a fatigue-regulated heavy vehicle is regarded as work, including for example:

- instructing/supervising another person driving a fatigue-regulated heavy vehicle
- loading or unloading a fatigue-regulated heavy vehicle
- inspecting, repairing or servicing a fatigue-regulated heavy vehicle
- inspecting or attending to a load (adjusting/securing load) of a fatigue-regulated heavy vehicle (a load includes passengers)
- cleaning and refuelling a fatigue-regulated heavy vehicle
- completing paperwork in relation to a fatigue-regulated heavy vehicle (organising loads/work)
- recording information or completing a document that is required under the HVNL
- helping another person or supervising any of the above
- occupying the driver seat of a fatigue-regulated heavy vehicle while its engine is running
  Note: Exemptions may apply.

These tasks have been limited because they extend the time a person is awake, increasing the risk of being fatigued.

Rest in relation to the operation of a fatigue-regulated heavy vehicle is not doing any of the above.

What work and rest options are available?

The HVNL provides heavy vehicle drivers and operators with various work and rest hours options, each with their own work and rest limits. There are four options available:

1. Standard hours
2. Basic Fatigue Management (BFM) hours
3. Advanced Fatigue Management (AFM) hours
4. Exemption hours.

Note: The following link to the NHVR website provides the work and rest requirements for each of the work and rest hours options.
www.nhvr.gov.au/safety-accreditation-compliance/fatigue-management/work-and-rest-requirements

BFM and AFM provide increased levels of flexibility by managing fatigue risks through the National Heavy Vehicle Accreditation Scheme (NHVAS). Heavy vehicle drivers can only work under these hours if they have been inducted into an accredited operators system.

Exemptions enable operators and drivers to apply for work and rest hours not possible under any of the other work and rest options. Strict constraints apply.

3. Keep work and rest records

When does a driver need to carry a Work Diary?

A driver of a fatigue-regulated heavy vehicle is required to carry a Work Diary when they are, or if they have in the last 28 days, been:

- driving outside a radius of 100km from their driver base (100+km work)
- working under BFM or AFM
- working under an exemption.

At the request of an Authorised Officer, drivers must produce their Work Diary records for the previous 28 days. An Authorised Officer is a police officer, state or territory road agency officer or an NHVR officer.

Note: Some specific state and territory exemptions exist.

Completing a Work Diary (100+km work)

Drivers of a fatigue-regulated vehicle undertaking or planning to undertake a 100+km journey in a day must complete their Work Diary (including all work and rest) for that day. Detailed instructions on how to complete your Work Diary, including examples, are located at the beginning of your Work Diary.

Counting time

There are detailed instructions on pages 21–25 of the Work Diary explaining how to count time. It is important to remember when counting time that:

- each 24-hour period starts at the end of a major rest break relevant to the work/rest hours arrangement under which the driver is working (e.g. standard hours solo (at least) seven hours continuous rest).
- each 24-hour period ends exactly 24 hours after commencement.
- it is possible that you could have more than one 24-hour period running at the same time. This can occur when there are two major rest breaks within a 24-hour period.

Tip: A major rest break does not reset your 24-hour period; it commences another 24-hour period.

Recording work/rest in non-participating jurisdictions

If you are the driver of a fatigue-regulated heavy vehicle travelling into WA or NT for a period of seven days or less, you are required to comply with both the HVNL fatigue requirements and any relevant local laws. To demonstrate your compliance, you should complete your Work Diary as you would if you were working in a participating jurisdiction.

For periods of work longer than seven days carried out in a non-participating jurisdiction, the driver will need to comply with the local heavy vehicle driver fatigue, work rest and record keeping requirements. When driving a fatigue-regulated heavy vehicle and returning from a non-participating jurisdiction to a participating jurisdiction, the driver must complete their Work Diary from the beginning of the last major rest break taken prior to re-entering the participating jurisdiction.

Further information can be found on page 9 of the Work Diary instructions.

4. Provide records to record keeper within set time frames

Record keepers must keep a record of specific information for drivers of fatigue regulated heavy vehicles. A record keeper may be the:

- employer, if the driver is employed
- accredited operator, if the driver is working under BFM or AFM accreditation
- driver (as a self-employed or owner driver).

Drivers must provide their record keeper with their relevant work and rest hours totals and any other relevant vehicle information the record keeper may not reasonably have access to (registration numbers, dates the driver worked, etc.).

The record keeper determines the record location and notifies the driver. The record location is usually the driver's base.

All records must be:

- kept for three years after they are created
- kept at a location accessible to an Authorised Officer for audit or investigation purposes
- in a format that is readable and reasonably assumed it will be readable in at least three years from the date of its creation.

When do HVNL fatigue requirements apply?

The heavy vehicle driver fatigue requirements found in chapter 6 of the HVNL apply to drivers and other parties operating a fatigue-regulated heavy vehicle.

A fatigue-regulated heavy vehicle is defined as a:

- motor vehicle with a Gross Vehicle Mass (GVM) of more than 12t
- combination with a GVM of more than 12t
- fatigue-regulated bus (GVM greater than 4.5t and built or fitted to carry more than 12 adults including the driver).

Some vehicles have been specifically excluded from this definition, these include motor vehicles that are:

- built to operate primarily as a machine or implement off-road and are not capable of carrying goods or passengers by road

or

- motorhomes.

For example, a truck with a GVM of 8.7t towing a trailer with a GVM of 3.4t (8.7t + 3.4t = 12.1t) would be classed as a fatigue-regulated heavy vehicle.

Tip: The manufacturer specifies the GVM and it can be located on the vehicle identification plate, registration label or papers.

What can I do to manage fatigue?

The implementation of a safety management system (SMS) that addresses the risks associated with fatigue will assist in satisfying the requirements of the HVNL as they relate to heavy vehicle driver fatigue.

While this bulletin is not intended to provide an exhaustive list, here are some examples of systems that can be established as part of an effective SMS:

- Reviewing driving or work schedules and work records of relevant drivers
- Regularly assessing fitness for duty of relevant drivers
- Reviewing contractual arrangements and documentation relating to the consignment and delivery of goods
- Reviewing loading and unloading times and delays at loading and unloading places
- Developing and adhering to trip plans
- Implementing formalised processes to engage and consult with other parties in the chain.

What actions can Authorised Officer's take?

Authorised Officers have powers relating to heavy vehicle driver fatigue requirements, including inspecting heavy vehicle driver's work and rest records.

Enforcement action for any breach of fatigue, work/rest hours or Work Diary requirements will depend on the nature and severity of the breach. Options available to Authorised Officers include (but are not limited to) formal warnings, infringement notices and court imposed penalties.

Drivers of fatigue-regulated heavy vehicles that are deemed to be driving while impaired by fatigue may face penalties and be prevented from working, even if they are complying with work and rest requirements.

Drivers of fatigue-regulated heavy vehicles may be directed to immediately stop work and not work again for a stated period if:

- the driver is impaired by fatigue
- the driver has committed a severe or critical work/rest hours breach
- the driver is unable to produce a Work Diary without a reasonable excuse
- the Work Diary produced cannot be relied on as an accurate record of the time the driver recently spent working or resting.

Where can I get more information?

Heavy vehicle driver fatigue or Work Diary requirements

This bulletin summarises the key obligations set out in the HVNL and is not exhaustive. Visit our website for more information about heavy vehicle driver fatigue or Work Diary requirements or contact us on 1300 MYNHVR (1300 696 487). www.nhvr.gov.au/safety-accreditation-compliance/fatigue-management

Chain of Responsibility (CoR)

More information is available on the NHVR website at: www.nhvr.gov.au/safety-accreditation-compliance/chain-of-responsibility

NHVAS

More information is available on the NHVR website at: www.nhvr.gov.au/safety-accreditation-compliance/national-heavy-vehicle-accreditation-scheme

Fatigue management exemptions

More information is available on the NHVR website at: www.nhvr.gov.au/safety-accreditation-compliance/fatigue-management/fatigue-management-exemptions

Safety Management Systems (SMS)

More information is available on the NHVR website at: www.nhvr.gov.au/safety-accreditation-compliance/safety-management-systems

For more information

Subscribe:	www.nhvr.gov.au/subscribe
Visit:	www.nhvr.gov.au
Email:	info@nhvr.gov.au
Telephone:	1300 MYNHVR (1300 696 487)*

*Standard 1300 call charges apply. Please check with your phone provider.
Image source: Volvo Trucks Australia

180703

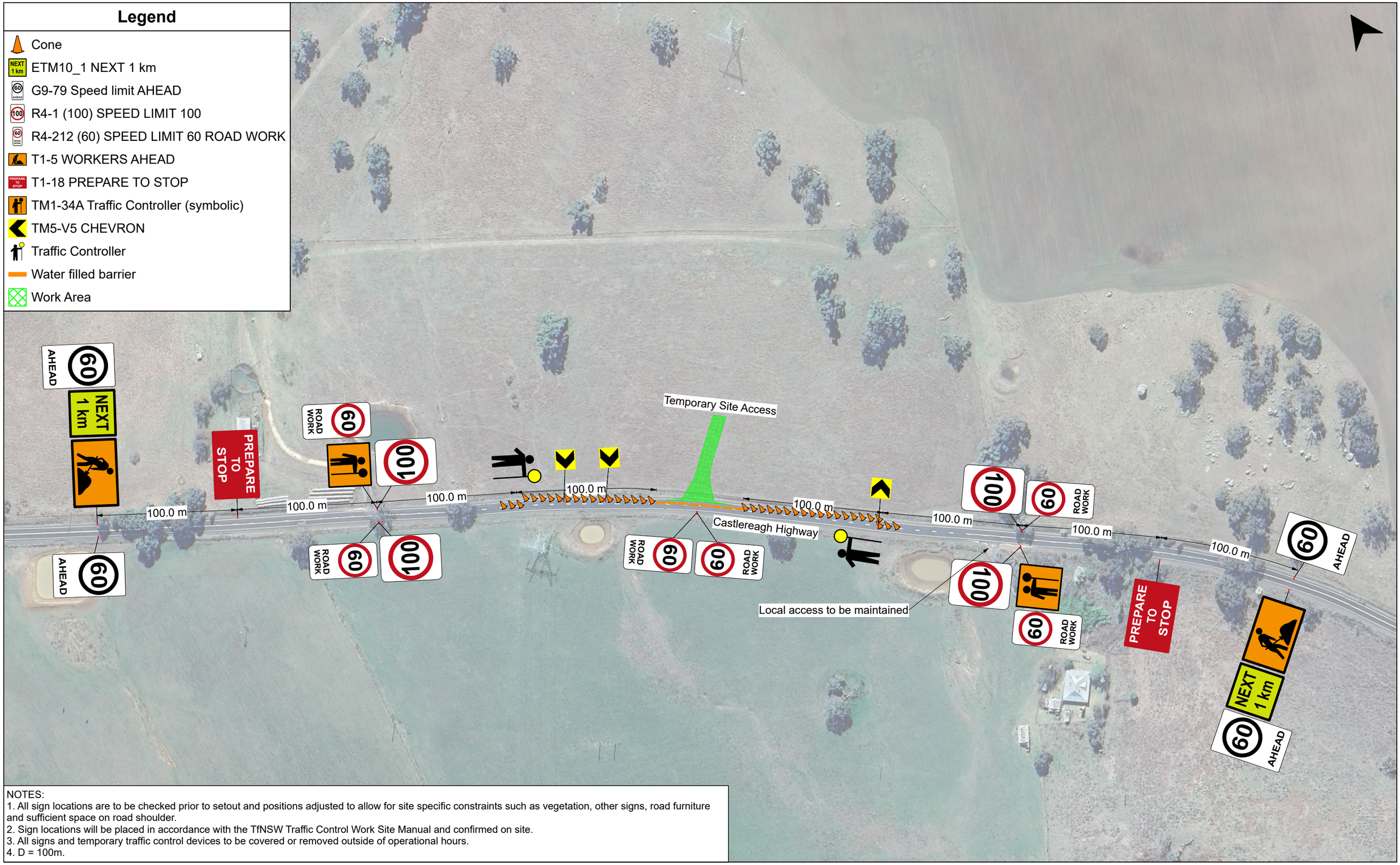
Appendix E

Traffic Guidance Scheme

www.invarion.com

Legend

- Cone
- ETM10_1 NEXT 1 km
- G9-79 Speed limit AHEAD
- R4-1 (100) SPEED LIMIT 100
- R4-212 (60) SPEED LIMIT 60 ROAD WORK
- T1-5 WORKERS AHEAD
- T1-18 PREPARE TO STOP
- TM1-34A Traffic Controller (symbolic)
- TM5-V5 CHEVRON
- Traffic Controller
- Water filled barrier
- Work Area



NOTES:
1. All sign locations are to be checked prior to setout and positions adjusted to allow for site specific constraints such as vegetation, other signs, road furniture and sufficient space on road shoulder.
2. Sign locations will be placed in accordance with the TfNSW Traffic Control Work Site Manual and confirmed on site.
3. All signs and temporary traffic control devices to be covered or removed outside of operational hours.
4. D = 100m.

Temporary Access Construction (Crushed Rock)

Castlereagh Highway, Beryl

Traffic Guidance Scheme

CLIENT: Vena Energy
SCALE: NTS

DRAWN: Rico Kobelt
DATE: 07/10/2024
DWG No: 1019 TGS05A

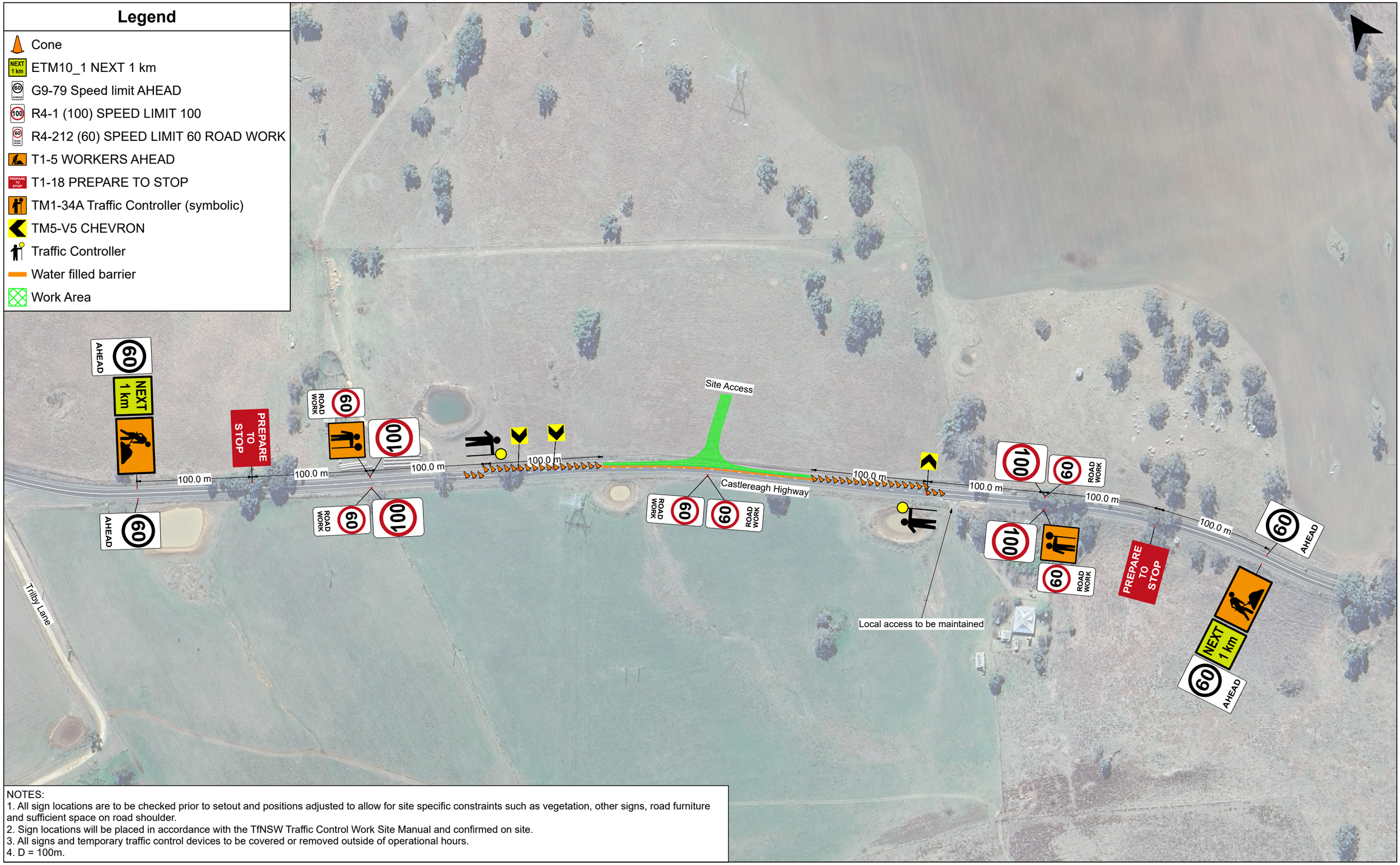
REVISION:
A - For approval

Amber 5

www.invarion.com

Legend

- Cone
- ETM10_1 NEXT 1 km
- G9-79 Speed limit AHEAD
- R4-1 (100) SPEED LIMIT 100
- R4-212 (60) SPEED LIMIT 60 ROAD WORK
- T1-5 WORKERS AHEAD
- T1-18 PREPARE TO STOP
- TM1-34A Traffic Controller (symbolic)
- TM5-V5 CHEVRON
- Traffic Controller
- Water filled barrier
- Work Area



NOTES:
1. All sign locations are to be checked prior to setout and positions adjusted to allow for site specific constraints such as vegetation, other signs, road furniture and sufficient space on road shoulder.
2. Sign locations will be placed in accordance with the TfNSW Traffic Control Work Site Manual and confirmed on site.
3. All signs and temporary traffic control devices to be covered or removed outside of operational hours.
4. D = 100m.

Site Access Intersection Upgrade - Northern Lane Closure

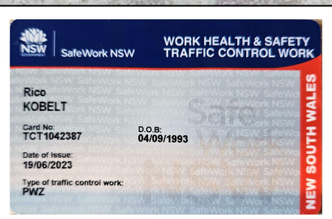
Castlereagh Highway, Beryl

Traffic Guidance Scheme

CLIENT: Vena Energy
SCALE: NTS

DRAWN: Rico Kobelt
DATE: 25/09/2024
DWG No: 1019 TGS01A

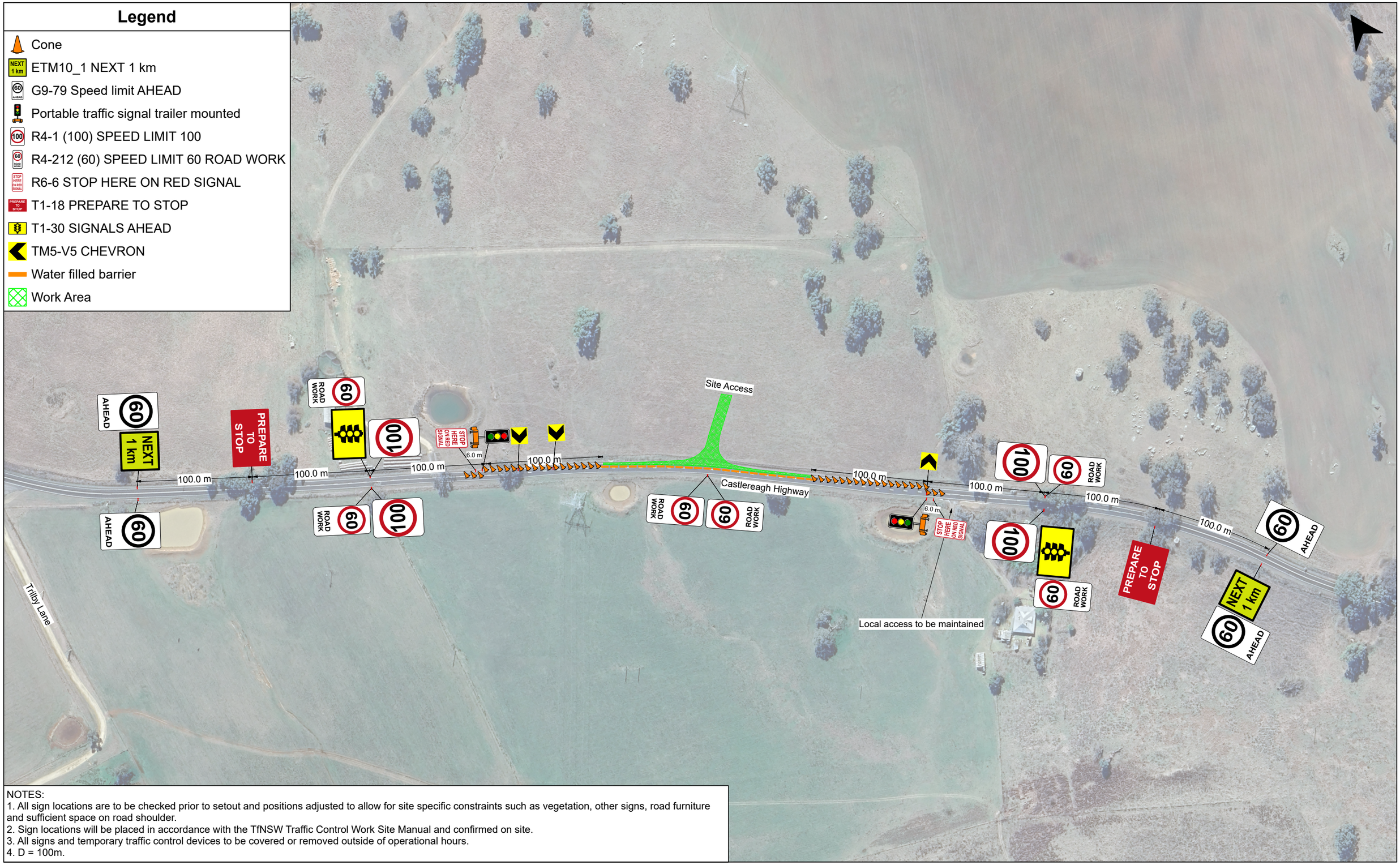
REVISION:
A - For approval



Amber 1

Legend

- Cone
- ETM10_1 NEXT 1 km
- G9-79 Speed limit AHEAD
- Portable traffic signal trailer mounted
- R4-1 (100) SPEED LIMIT 100
- R4-212 (60) SPEED LIMIT 60 ROAD WORK
- R6-6 STOP HERE ON RED SIGNAL
- T1-18 PREPARE TO STOP
- T1-30 SIGNALS AHEAD
- TM5-V5 CHEVRON
- Water filled barrier
- Work Area



NOTES:
1. All sign locations are to be checked prior to setout and positions adjusted to allow for site specific constraints such as vegetation, other signs, road furniture and sufficient space on road shoulder.
2. Sign locations will be placed in accordance with the TfNSW Traffic Control Work Site Manual and confirmed on site.
3. All signs and temporary traffic control devices to be covered or removed outside of operational hours.
4. D = 100m.

Site Access Intersection Upgrade - Northern Lane Closure - Aftercare

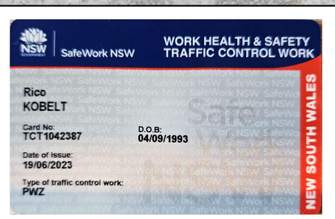
Castlereagh Highway, Beryl

Traffic Guidance Scheme

CLIENT: Vena Energy
SCALE: NTS

DRAWN: Rico Kobelt
DATE: 25/09/2024
DWG No: 1019 TGS02A

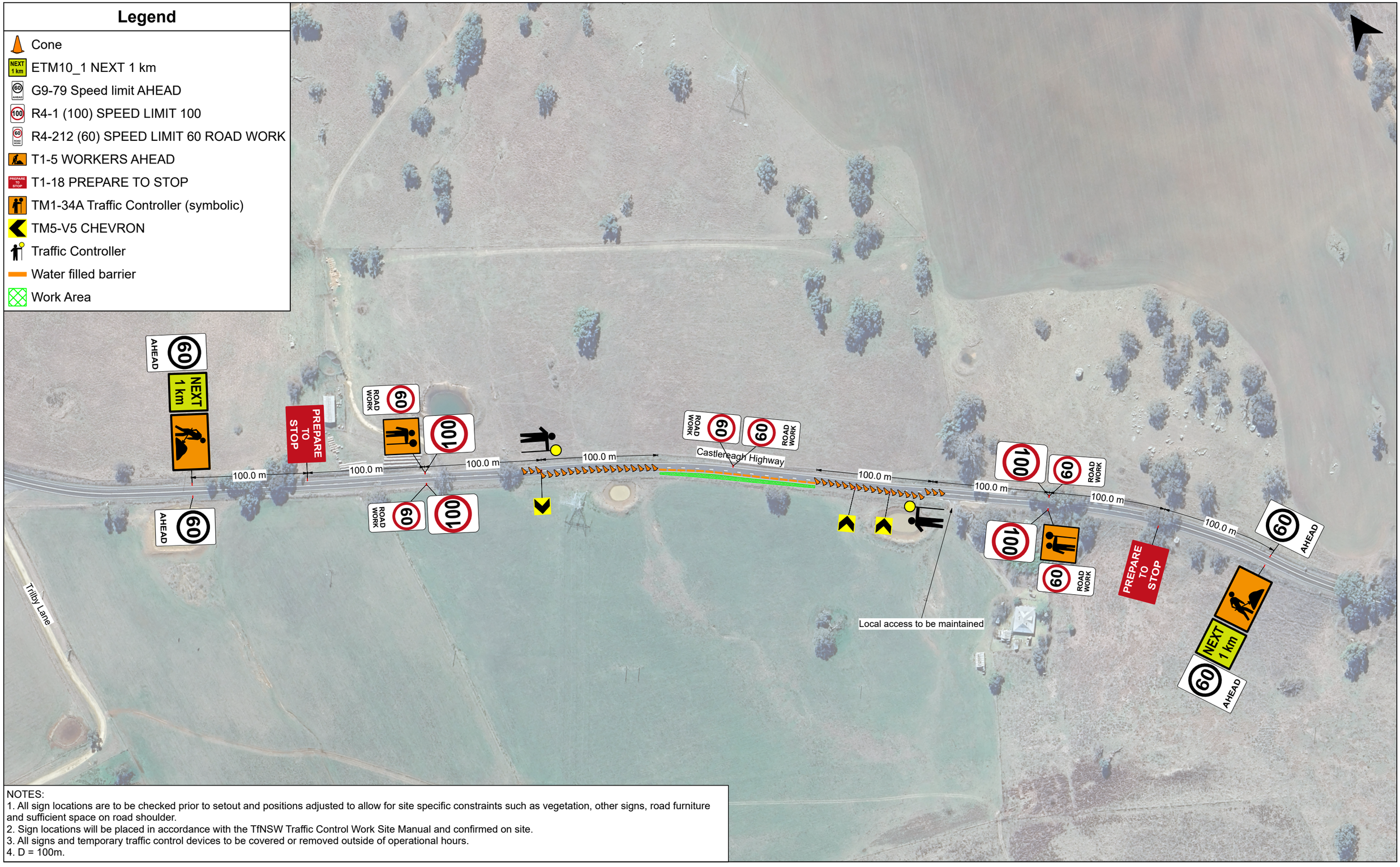
REVISION:
A - For approval



Amber 2

Legend

- Cone
- ETM10_1 NEXT 1 km
- G9-79 Speed limit AHEAD
- R4-1 (100) SPEED LIMIT 100
- R4-212 (60) SPEED LIMIT 60 ROAD WORK
- T1-5 WORKERS AHEAD
- T1-18 PREPARE TO STOP
- TM1-34A Traffic Controller (symbolic)
- TM5-V5 CHEVRON
- Traffic Controller
- Water filled barrier
- Work Area



NOTES:
1. All sign locations are to be checked prior to setout and positions adjusted to allow for site specific constraints such as vegetation, other signs, road furniture and sufficient space on road shoulder.
2. Sign locations will be placed in accordance with the TfNSW Traffic Control Work Site Manual and confirmed on site.
3. All signs and temporary traffic control devices to be covered or removed outside of operational hours.
4. D = 100m.

Site Access Intersection Upgrade - Southern Lane Closure

Castlereagh Highway, Beryl

Traffic Guidance Scheme

CLIENT: Vena Energy
SCALE: NTS

DRAWN: Rico Kobelt
DATE: 25/09/2024
DWG No: 1019 TGS03A

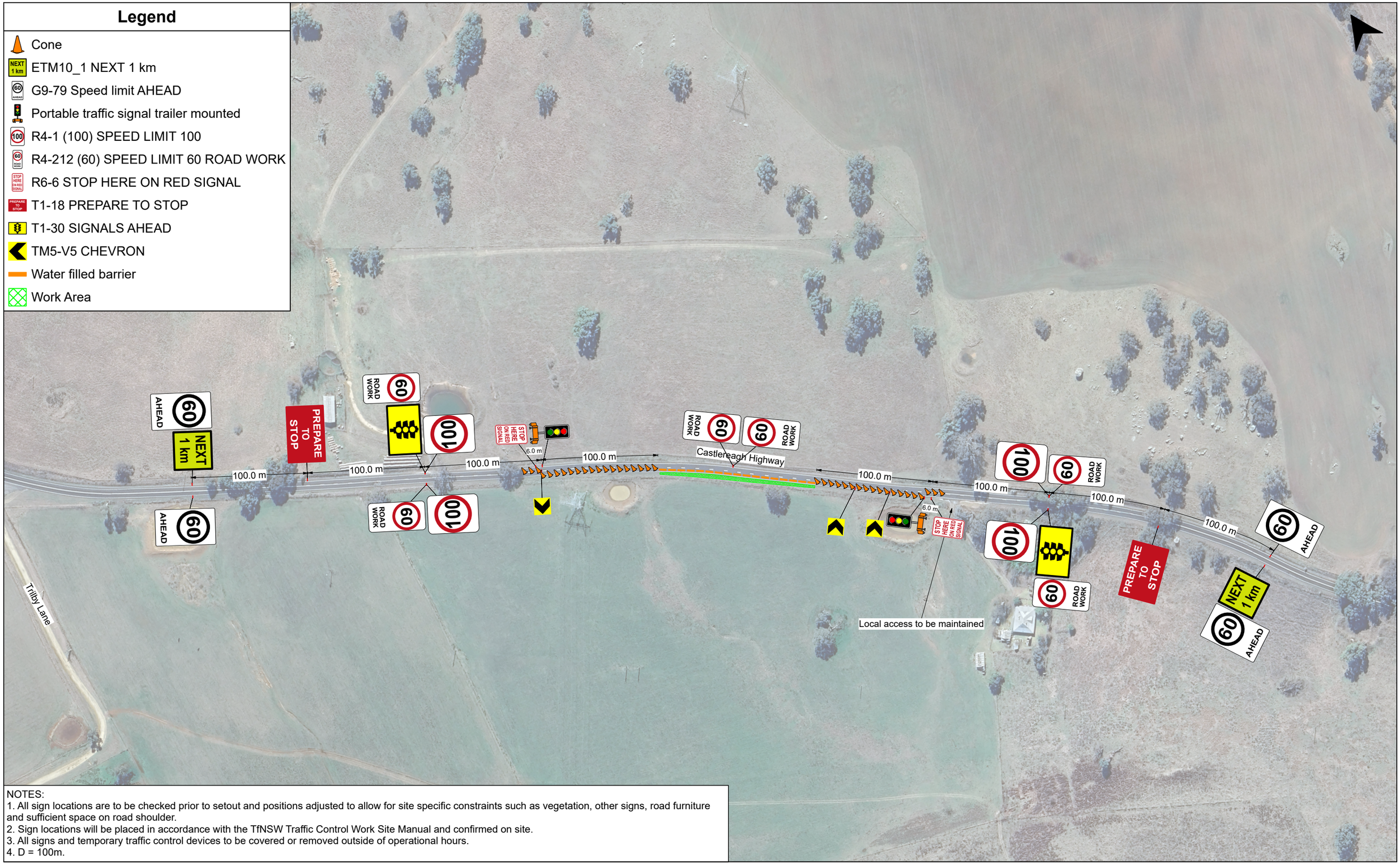
REVISION:
A - For approval

Amber 3

www.invarion.com

Legend

- Cone
- ETM10_1 NEXT 1 km
- G9-79 Speed limit AHEAD
- Portable traffic signal trailer mounted
- R4-1 (100) SPEED LIMIT 100
- R4-212 (60) SPEED LIMIT 60 ROAD WORK
- R6-6 STOP HERE ON RED SIGNAL
- T1-18 PREPARE TO STOP
- T1-30 SIGNALS AHEAD
- TM5-V5 CHEVRON
- Water filled barrier
- Work Area



NOTES:
1. All sign locations are to be checked prior to setout and positions adjusted to allow for site specific constraints such as vegetation, other signs, road furniture and sufficient space on road shoulder.
2. Sign locations will be placed in accordance with the TfNSW Traffic Control Work Site Manual and confirmed on site.
3. All signs and temporary traffic control devices to be covered or removed outside of operational hours.
4. D = 100m.

Site Access Intersection Upgrade - Southern Lane Closure - Aftercare

Castlereagh Highway, Beryl

Traffic Guidance Scheme

CLIENT: Vena Energy
SCALE: NTS

DRAWN: Rico Kobelt
DATE: 25/09/2024
DWG No: 1019 TGS04A

REVISION:
A - For approval

Amber 4

Appendix F

Road Authority Consultation

From: Lisa Penson
To: Andrew Brownlow
Subject: RE: [Ext] Bellambi Heights - Stage 1 Traffic Management Plan for REVIEW
Date: Friday, 15 November 2024 8:07:21 AM
Attachments: image001.jpg

Lisa Penson reacted to your message:

From: Andrew Brownlow <andrew.brownlow@venaenergy.com>
Sent: Thursday, November 14, 2024 7:40:43 PM
To: Lisa Penson <Lisa.Penson@midwestern.nsw.gov.au>
Subject: RE: [Ext] Bellambi Heights - Stage 1 Traffic Management Plan for REVIEW

Lisa

Please thank the roads team for such a quick turnaround.
I will ensure the next stage TMP confirms intent to utilise Golden Highway ex port.
With thanks

Andrew

From: Lisa Penson <Lisa.Penson@midwestern.nsw.gov.au>
Sent: Tuesday, 12 November 2024 8:02 AM
To: Andrew Brownlow <andrew.brownlow@venaenergy.com>
Subject: [Ext] Bellambi Heights - Stage 1 Traffic Management Plan for REVIEW

Hi Andrew,

Please see note from the Roads team below.

There does not appear to be any local or regional roads impacted by this development, all access is from the highway.

Roads do not have any objection to the TMP as proposed for stage 1.

The only clarification is the port to site route for the next stage and if you are using the Golden Hwy.

Kind Regards,
Lisa

Lisa Penson
Economic Development Coordinator
Mid-Western Regional Council

t 02 6378 2984 | **m** 0458 820 756
f 02 6378 2815 | **e** lisa.penson@midwestern.nsw.gov.au
a 86 Market Street | PO Box 156 Mudgee NSW 2850

w www.midwestern.nsw.gov.au
facebook | **twitter** | **youtube**

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5 November 2024

Team Leader Development Services - Renewables
Transport for New South Wales
Regional and Outer Metropolitan

Email: Alexandra.power@transport.nsw.gov.au

SSD 33344237 BELLAMBI HEIGHTS BESS- TRAFFIC MANAGEMENT PLAN STAGING

Alexandra

Vena Energy proposes to stage the development, with the first stage restricted to those activities required to establish site access, enabling compliance with consent conditions Site Access **B5** and Road Upgrades **B7**.

These works would be undertaken in three sub-stages and be limited to:

Stage 01A Construction of a temporary gravel access road to a laydown area.
Stage 01B: Construction of the BAL/BAR intersection treatment.
Stage 01C: Construction of the finished internal access road.

All activity and works are within the approved development footprint.

Detail on scheduling, anticipated duration, daily vehicle movements and AM/PM peak trips for heavy and light vehicles, and peak workforce size, is summarised below.

Stage 1 - Site Access and road Upgrades								
Sub-stage	Commencing Quarter	Activity	Anticipated Duration	Light Vehciles		Heavy Vehciles		Workforce Peak
				Daily vehcile movements	AM and PM Peak Trips	Daily vehcile movements	AM and PM Peak Trips	
01A	Q 25	Temporary access road to laydown	4.5 weeks	10	10	20	3	10
01B	Q1/Q2 25	Site access intersection upgrade	9 weeks	12	12	15	3	12
01C	Q1/Q2 25	Completing internal site access road	9 weeks	9	9	15	3	9

Traffic movements will comply with condition **B1** and not generate more than 40 heavy vehicle movements a day, or 20 light vehicle movements and 4 heavy vehicle movements during the AM (6-7am) or PM (5-6pm) project peak hours. No vehicle will exceed 26m length or require escort, and the approved access routes utilised.

Accurate records will be maintained daily of the number of vehicles entering or leaving the site for the duration of the works.

A draft *Stage 1 – Traffic Management Plan* covering these works is attached for TfNSW consideration.

As discussed, Vena Energy sought approval from the Planning Secretary under **C3** to stage the project Traffic Management Plan **B9**. The Department of Planning Housing and Infrastructure (DPHI) advised that TfNSW concurrence is required, pursuant to condition **B7**.

No traffic associated with the construction of the battery storage or other ancillary infrastructure is proposed or permissible under this TMP. It is Vena Energy's intention to prepare separate TMP(s) for these future activities.

It is also Vena Energy's intention to permanently close the existing property access immediately on receipt of the *Notice of Practical Completion* for the BAL/BAR issued under the WAD (WST24/00004). From commencement of the first stage works, until the public road upgrade works are complete, the existing property access would only be utilized by Transgrid in the circumstance where emergency repair works are required on the existing overhead transmission line that passes through the site. To this end, the existing access gates are lockable, will remain so, and no party except for Transgrid and landowner has a key.

Your consideration of the above would be appreciated and if I can provide any additional information please do not hesitate to contact me.

Yours sincerely,

Andrew Brownlow

Andrew Brownlow
Manager (NSW) Development and Stakeholders

12 December 2024

TfNSW reference: WST24/00004/008
Your reference: SSD-33344237

Andrew Brownlow
Vena Energy
By Email: andrew.brownlow@venaenergy.com

Review of Traffic Management Plan for Bellambi BESS - SSD-33344237

Dear Andrew,

Reference is made to correspondence to TfNSW containing the draft Stage 1 Traffic Management Plan (TMP) submitted in accordance with consent Condition B10 of Notice of Determination for SSD-33344237 issued 2 May 2024.

TfNSW has reviewed the draft TMP prepared by Amber, dated November 2024, and provides the following:

1. **TMP is contradictory to Condition B5 and B6**

   Condition B5 of the determination of SSD-33344237 issued 2 May 2024 limits all vehicles associated with the development to entering and exiting the site via the upgraded site access (BAR/BAL) off Castlereagh Highway. Condition B6 also requires the existing site access off Castlereagh Highway to be closed before any development related vehicles enter this site. The applicant is to adhere to this condition by amending the TMP, otherwise a modification application will need to be lodged to DPHI to amend these conditions.

2. **TMP proposes staging changes that have not been approved.**

   The TMP assumes a change to staging that has not been approved by DPHI. TfNSW held a meeting with Andrew Brownlow from the proponent's team on the 17th of September 2024 which explained that a staging request or modification would have to be sought for any changes proposed supported by an assessment of impacts. The proposed change to staging and use of the existing access has not been assessed and supported by a revised Traffic Impact Assessment.

3. **Traffic Volumes**

   The traffic and turning volumes for the purposes of completing the pre-construction stage 1 works will need to be assessed with any modification or secretary request lodged. This will need to be supported by turn warrants assessments in accordance with *Austroads Guide to Traffic Management Part 6 and Austroads Guide* (see Figure 3.25) for the traffic volumes during the AM/PM peak hour intended for the pre-construction minor works period.

   As a part of the revised traffic assessment details are required regarding the following:

A 51-55 Currajong Street, PARKES NSW 2870 | PO Box 334 PARKES NSW 2870 | DX20256
E development.renewables@transport.nsw.gov.au | ABN 18 804 239 602
P 1300 207 783
transport.nsw.gov.au

a. The vehicle types and duration for the commencement and completion of the pre-construction minor works, inclusive of protocols to notify TfNSW of the commencement and completion.

b. Commitment to no high-risk OSOM being moved during this period and no out of hours work (this is dependent on the SISD assessment).

c. The existing property access is to be reviewed in accordance with *Austroads Part 4a* to determine if the existing access is compliant with Austroads for the level of use during the pre-construction minor works period.

   Note to be suitable for use the traffic volumes for the pre-construction minor works period are to be aligned with the existing land use for the property.

d. Commitment given to staggering the traffic throughout the day and avoiding the AM/PM network peak hours.

   Note: Concept designs will need to be prepared based on the outcome of the above traffic and below SISD and swept path assessment. The strategic concept designs are to be prepared in accordance with TfNSW factsheet and accompany the secretary request or modification to the project.

   Strategic-Design-requirements-for-DA-Factsheet.pdf

4. **Safe Intersection Sight Distance**

   The intersection will need to be assessed for use in terms of Safe Intersection Sight Distance (SISD). A desktop review reveals that the current circumstances of the road (including roadside vegetation) results in a deficient SISD. Limiting use of the intersection in certain directions would likely be required due to the non-compliant SISD at the existing intersection. This will require the identification of an alternative way to turn vehicles around with suitable turn treatments for the design vehicle proposed.

5. **Swept Paths for pre-construction minor works at existing intersection.**

   Swept paths will also need to be provided in the staging request TIA to DPHI Identifying the largest vehicle to use the existing access and that the wheel paths will not track of the pavement. Swept paths will need to conform with Austroads Design Vehicles and Turning Path Template.

   If the largest heavy vehicles cannot turn concurrently, then protocols will need to be included within the TMP to prevent the concurrent use of the existing access for the largest heavy vehicles proposed for the pre-construction minor works stage.

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6. Timing of construction of Stage 1

Considering the above, Condition B9, Part D, Section iv also requires potential cumulative traffic impacts with other State Significant projects in the area to be managed and consultation with the Tallawang Solar Farm to occur. The applicant has noted in Section 4.2 that advice has been received from Tallawang Solar Farm regarding timing of their works (18 months after the anticipated completion of Stage 1 works). Evidence of consultation with the proponent of the Tallawang Solar project must be provided attached to any future lodged TMP. TfNSW is to be notified of any updated advice received from Tallawang Solar Farm during the process of construction indicating the potential for cumulative impacts.

7. Existing access closure

The TMP makes clear that the existing access is to be closed. TfNSW requests that it is notified with evidence of a dated completed closure process with Council and photographic evidence when this occurs.

The Planning Secretary should be satisfied that the above matters have been adequately addressed prior to approving the TMP.

If you have any questions, please contact Glen Hanchard, Development Services Case Officer on 1300 019 680 or email development.renewables@transport.nsw.gov.au.

Yours faithfully,

Alexandra Power
Team Leader Development Services – Renewables
Transport Planning
Planning, Integration and Passenger

Cc. Energy Assessments, Department of Planning, Housing and Infrastructure

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17 December 2024

Team Leader Development Services - Renewables
Transport for New South Wales
Regional and Outer Metropolitan

Email: Alexandra.power@transport.nsw.gov.au

SSD 33344237 BELLAMBI HEIGHTS BESS- TRAFFIC MANAGEMENT PLAN STAGING

Alexandra

There appears to be a misunderstanding of what is proposed and Vena Energy will update the Stage 1 TMP to make it unambiguously clear that no development related vehicles will use the existing site access; including those building the new site access. Use of the existing access by any development related vehicle is not proposed and Vena Energy can and will comply with existing consent conditions.

The Stage 1 TMP does propose a suggested timing for closing the existing access (ie. physically removing the double gates and reinstall boundary fence); that being on receipt of the TfNSW *Notice of Practical Completion* for the new BAL/BAR (WST24/00004). While the BAL/BAR is being built the existing access would remain locked, with its use restricted for emergency only (eg. RFS). As requested, the Stage 1 TMP will be updated to include the requirement to provide TfNSW notification with evidence of a dated completed closure process with Council and photographic evidence when this occurs. Similarly, the Stage 1 TMP will also be updated to include TfNSW notification of any advice received from Tallawang Solar Farm during the process of construction.

So that Vena Energy can progress its consultation with DPHI for approval to stage the project TMP, can we assume TfNSW's concurrence to do this?

Yours sincerely,

Andrew Brownlow

Andrew Brownlow
Manager (NSW) Development and Stakeholders