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Our Ref: P000874_LET_002B

17/04/2025

Jeremy Knox
Yass Valley Council
Via email: JKnox@yass.nsw.gov.au

Dear Jeremy,

RESPONSE TO REQUEST FOR ADDITIONAL INFORMATION 2 – DA 240159

Premise have prepared this letter on behalf of ACEnergy Pty Ltd to respond to a request for additional information (RFI) issued by Yass Valley Council on the 18th of February 2025. The request is made in respect of development application reference number 240159 and relates to the proposed development of Murrumbateman Distribution Battery Energy Storage System at a site addressed as 3 Turton Place, Murrumbateman.

The table contained in this letter has been prepared to respond to council's request and seeks to assist evaluation of the proposed development. We trust that the information included provides a sufficient response to the matters raised.

Please contact the undersigned with any questions.

Yours sincerely,

Hugh Shackcloth-Bertinetti
Environmental Planner

No. of Attachments – 6

1. Tabular response to Council's RFI letter.
2. Project Drawings.
3. Revised Acoustic Report.
4. Revised Bushfire Assessment.
5. Statement from Bushfire Consultant.
6. Revised Landscape Plan.

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ATTACHMENT 1

TABULAR RESPONSE TO COUNCIL'S RFI LETTER

Table 1 – Response to Additional Information Requested

	Additional Information Requested	Comments
1.	***Acoustic Report*** *A revised acoustic report was submitted as part of the additional information package. Following the Planning Panel preliminary briefing, Council engaged the services of another appropriate qualified acoustic expert to conduct a peer review. A copy of the peer review report is attached for your reference.*	A revised acoustic report has been prepared to address the comments provided in the peer review report and is provided as **Attachment 3**.
	• *A response to the acoustic report peer review is to be provided, specifically addressing the recommendations made.*	The revised acoustic report (**Attachment 3**) has been prepared to respond to matters raised within the peer review. The peer review prepared by Rob Bullen Consulting had specifically recommended that either: • *Measurements of existing ambient noise should be conducted before approval, both to confirm A-weighted background sound levels and to confirm the spectrum of the background noise. This may result in adjusted criteria and/or the presence of enough high-frequency ambient noise to mask the tone;* ***OR*** • *The proposed barrier should be constructed as part of the project.* Monitoring has been undertaken via a site investigation in response to the peer review to characterise the existing acoustic environment for the proposed development. It has been concluded in response to monitoring, that the existing noise environment at the site is not sufficiently elevated to 'mask' the potential tonal character of noise associated with the future site equipment. The construction of an acoustic barrier is therefore required as part of the project.
	• *The revised acoustic report has Receptor R07 as commercial premises only. The subject land also contains a dwelling house. The project trigger level for Receptor R07 is to be updated*	The revised acoustic report (**Attachment 3**) considers impacts to both: • R07 – Dwelling at 1 Patemans Lane, Murrumbateman; and, • R07A – 'Dionysus Winery and Woo Chocolate' premises located at 1 Patemans Lane, Murrumbateman

	Additional Information Requested	Comments
	to state the more conservative residential to avoid doubt.	The results of noise modelling details that noise levels at R07 and R07A would not exceed the project trigger noise levels (including tonal adjustment). No significant noise impacts to R07 and R07A are therefore anticipated to result from the operation of the development.
	• *A submission received indicates future intention to make a Development Application for a residential dwelling house at Lot 2 DP 787995, 4 Crisps Lane, Murrumbateman. Whilst there is no dwelling house currently on the site and a Development Application has not been made, to respond to these concerns it would be recommended that the noise model is re-run to consider a potential future receptor. Noting comments received in the peer review, this should also include consideration of reflect of sound from the acoustic barrier back towards the potential receptor.*	The revised acoustic report (**Attachment 3**) consider impacts to: • R08 – Potential future residential dwelling at Lot 2 DP 787995, 4 Crisps Lane, Murrumbateman. The results of noise modelling detailed that that noise levels at R08 would not exceed the project trigger noise levels (including tonal adjustment). No significant noise impacts to R08 are therefore anticipated to result from the operation of the development.
2.	***Acoustic Barrier*** *The response to additional information request indicates that the revised acoustic report provides an indication of the general specifications for the proposed acoustic barrier, including minimum height of 3000mm and the general surface density.* *It is considered that there remains insufficient clarity and detail of the acoustic barrier to enable full assessment of this in accordance with s4.15 Environmental Planning and Assessment Act 1979. In this regard, the following information is to be provided:*	The revised acoustic report (**Attachment 3**) has provided additional clarification on the construction of the barrier and specifications to ensure suitable materials are selected. The proposed acoustic barrier as specified by the acoustic assessment is to be constructed with: • A minimum height of 3000mm. Noting that minor increases to the final height may result according to the assembly of panels. • A surface minimum weight of 12 kg/m^2 • No gaps between panels and between the panels and the ground below. The acoustic barrier must be lined on the equipment side using sound absorbing materials, and WMG have recommended that: *"…the absorption coefficient performance of the sound absorbing lining achieve not less than 0.9 at the 3150Hz one third octave band frequency which has been identified as critical to the assessment. The overall NRC performance can be lower, and in the order of 0.7."*

Additional Information Requested		Comments
		From experience WMG detail that a suitable material for external applications may include Megasorber faced with Soundmesh G8 facing The technical specification sheet for the Soundmesh G8 facing material and other soundproofing products are available via Megasorber's website. The final selection of soundproofing products is subject to the finalisation of design. Several options, however. are available and are capable of being designed to achieve the requirements of the project. The applicant has no objection to a condition of consent requiring the provision of this information to Council's satisfaction prior to issue of a construction certificate.
	• *Separate, dimensioned, elevation drawings of the acoustic barrier, including the maximum height and details of construction type, material, and colours/finishes are to be provided.*	A revised drawing set, including details of the proposed acoustic barrier, is provided as **Attachment 2**. This includes a typical section of the proposed barrier, features of the material proposed and elevations. As noted, final details on the construction type, material, colours and finishes of acoustic products are contingent on the selection of vendors during the detailed design stage. Megasorber's website, however, provides example specification sheets for suitable acoustic products which include dimensions of panels, acoustic properties and options for colours and finishes.
	• *Site plan with clear dimensions for lengths and relative setbacks,*	The revised drawing set (**Attachment 2**) includes an updated site plan to respond to council's request.
3.	***Materials & Colours*** *It is noted in the record of briefing that the Panel considered that visual impacts could be reduced through the use of appropriate materials and colours. In this regard, details of materials and colours are to be provided and should be:* • *Compatible and sympathetic to the surrounding development.* • *Non-reflective.*	The final selection of project infrastructure, including materials and colour for project infrastructure (e.g., batteries and acoustic products), is dependent on the options available during the finalisation of detailed design and the selection of vendor products for the construction of the project. Where possible, suitable materials and finishes would be implemented to minimise the potential for perceived visual effect, and the longevity of materials and durability of the same. A consent condition for the provision of a final schedule would be a practical measure. The applicant has no objection to a condition of consent requiring the provision of this information to Council's satisfaction prior to issue of a construction certificate.

Additional Information Requested		Comments
	• *Such that supports reducing the visual presence within the landscape.*	
4.	***Bushfire*** *Advice received from the NSW Rural Fire Service (RFS) generally supported the assessment and recommendations made in the Bushfire and Emergency Evacuation Plan submitted with the application, with the exception that a 12m wide asset protection zone (APZ) is to be maintained to the west. A revised or supplementary site plan demonstrating that this can be achieved within the boundaries of the subject land is to be provided. The revised site plan is to also show the location of landscaping in relation to the APZ.* *It is noted in the record of briefing with the Panel that Council needs to consider how the APZ and landscaping requirements can coexist. It is recommended that a statement from the accredited bushfire practitioner is provided which confirms that the proposed landscaping per the landscaping plan is consistent with the assessment and recommendations made in their Bushfire and Emergency Evacuation Plan.*	A revised drawing set (**Attachment 2**) includes an updated site plan to respond to council's request. The updated site plan details: • The provision of a minimum 12 m wide APZ to the west of the BESS; and, • The location of landscaping in relation to the proposed APZ. A revised Bushfire Assessment report has been prepared in consideration of the updated site plan and is provided as **Attachment 4**. As shown in the revised drawings the proposed landscaping area is situated outside of the APZ surrounding the BESS. The revised Bushfire Assessment details that the APZ is located wholly in grassland, with no trees within the development footprint and that grass within the APZ should be kept mown (<100mm in height). It should be noted that Section A1.10 of PBP outlines that certain types of vegetation are classified as low threat vegetation. This includes: *"grassland managed in a minimal fuel condition, mangroves and other saline wetlands, maintained lawns, golf courses such as playing areas and fairways, maintained public reserves and parklands, sporting fields, vineyards, orchards, banana plantations, market gardens and other non-curing crops, cultivated gardens, arboretums, commercial nurseries, nature strips and windbreaks.* *Note: 1. Minimal fuel condition means there is insufficient fuel available to significantly increase the severity of the bush fire attack (recognizable as short cropped grass for example, to a nominal height of 100 mm). 2. A windbreak is considered a single row of planted trees located on a boundary and used as a screen or to reduce the effect of wind on the leeward side of the trees."* Low threat vegetation is excluded from *Australian Standard- Construction of buildings in bushfire-prone areas (AS 3959 2009)* and is not required to be considered for the purposes of PBP. A statement from the bushfire consultant, nevertheless, has been prepared by the bushfire consultant to respond to Council's request and is provided as **Appendix 5**. The statement

Additional Information Requested		Comments
		confirms that the proposed landscape plan and planting is consistent with the APZ requirements, with all landscape planting located outside of the identified APZ.
5.	***Firefighting Water Contamination Risk and Mitigation Strategies*** *At the briefing the Applicant provided an outline that potential concerns in relation to firefighting water containment could be resolved through the use of a retention basin and infiltration system. Details of this forming part of the proposal are not considered to have been made sufficiently clear in the application to enable complete understanding or assessment. The following information is to be provided:* • Concept details of any retention basin and infiltration system. • Where appropriate, a revised site plan showing the location of any retention basin or other similar infrastructure. • Any other risk and mitigation strategies that are proposed or will be implemented to control firefighting water contamination.	The evaluation of contamination risks associated with firefighting water is dependent on the final sizing and layout of the facility, the implementation of site management plans and the procurement of battery equipment, including embedded safety devices and battery technology. The applicant has no objection to a condition of consent requiring the provision of the final detailed design of the project and associated management plans (i.e., Construction Environmental Management Plan, Emergency Management Plan, etc.) prior to issue of a construction certificate. The implementation of a basin to capture firefighting water was suggested during the briefing meeting as one potential option to manage the potential for contamination. No commitment to the installation of a basin has been provided. An examination of existing information provided in the development application and a review of measures implemented for similar projects, however, has been undertaken to provide an indication on suitable fire management strategies and measures to minimise contamination risks. It should be noted that the existing Groundwater Assessment prepared in support of the development application (Water Technology, 2024) provides the following statement with respect to groundwater contamination: *"Potential battery fires are expected to be contained within the individual units, as each unit has internal fire suppression systems, including flammable gas, smoke and thermal sensors, pressure release systems and aerosol fire extinguishing systems. Therefore, the risk from small individual fires is not considered significant. However, should a larger fire occur necessitating the use of large volumes of external water and fire-fighting chemicals, then there would be a low risk to groundwater from the infiltration of fire-fighting liquids to the shallow aquifer. However, as discussed, the thick clay layer beneath the Subject Site would reduce any downward migration to the underlying groundwater system and therefore, even in this scenario, the risk of contamination to groundwater is considered minimal."*

Additional Information Requested		Comments
		The groundwater assessment therefore establishes a low risk to groundwater associated with the infiltration of contaminated material during a fire event and details that the risk is further minimised by the impervious nature of a clay layer underlying the development site. Notwithstanding it is recommended by the groundwater assessment that groundwater bores are installed as a contingency measure in response to fire events to ensure contamination risks are appropriately managed. While risks to groundwater have been assessed it is acknowledged that surface water associated with firefighting activities may continue to pose a contamination risk if suitable measures are not implemented. The inherent risk of fire and risk of firefighting water contamination at the proposed facility is minimal due to the project's design, scale, and inherent safety features. Contamination risk primarily arises from combustion products, partially combusted materials, and any stored chemicals or oils. However, this project—limited to 5MW on a 0.5ha site—includes only battery containers, MVPS, and switches. No oils, chemicals, or hazardous substances will be stored on-site. The proposed BESS units utilize Lithium Iron Phosphate (LFP) batteries, which do not contain heavy metals like cobalt or nickel, and have no oil-based cooling systems. Additionally, anti-leakage connectors and self-contained designs significantly mitigate the risk of contamination. **Risk Mitigation and Control Measures** To further ensure safe operations, a range of proactive control measures has been proposed to address and manage any unlikely contamination risks: **1. Primary Control Measures: Prevention at the Source** • Automatic Fire Suppression Systems and Safety Devices: The BESS units adhere to stringent standards such as AS/NZS 5139:2019, UL9540, UL9540a, and NFPA-855. Internal fire detection and suppression systems, including aerosol extinguishing mechanisms and gas/thermal sensors, provide immediate containment of potential fire events • Self-Bunding BESS Containers: The BESS units are housed in self-bunded containers, ensuring that any potential electrolyte leakage remains contained within the system and does not reach the surrounding environment.

Additional Information Requested		Comments
		• LFP Chemistry Advantages: LFP batteries offer enhanced safety due to the absence of heavy metals and their lower thermal runaway nature. • Site Layout and Design: Strategic site planning incorporates safety measures, including asset protection zones, fuel-free zones, static water tanks, site access, battery separations, and setbacks, to minimize fire spread. **2. Secondary Control Measures: Managing Larger Incidents** • Firefighting Strategy: A defensive "controlled burn' approach is intended for fire management and would allow battery units affected by fire to consume themselves. This approach would restrict the application of firefighting water to surrounding areas cooling nearby exposures outside of affected battery containers. The application of water directly to affected battery units is considered to have minimal effect, is unlikely to extinguish a BESS fire and would likely only delay the eventual combustion of an affected unit. The defensive firefighting strategy of applying fire to surrounding areas seeks to prevent the propagation of fire and would avoid generating short circuits in adjacent equipment, minimise the amount of water needed for firefighting activities and reduce the volume of contaminated water produced. • Runoff Management: While permanent retention basins are impractical for a small-scale D-BESS due to space considerations, temporary containment measures such as impermeable surfaces, bunding, and portable spill barriers can effectively handle any potential runoff. • Operation and Maintenance: Well-defined Emergency Response Plans (ERP) and Fire Management Plans (FMP) will ensure that, in the unlikely event of substantial water usage, suitable containment, collection, remediation and off-site disposal measures are implemented effectively through an incident management process. Additional safeguards, including regular inspections, water quality testing, and the installation of monitoring bores, will further support efficient containment, cleanup, and safe disposal of firefighting water as necessary.

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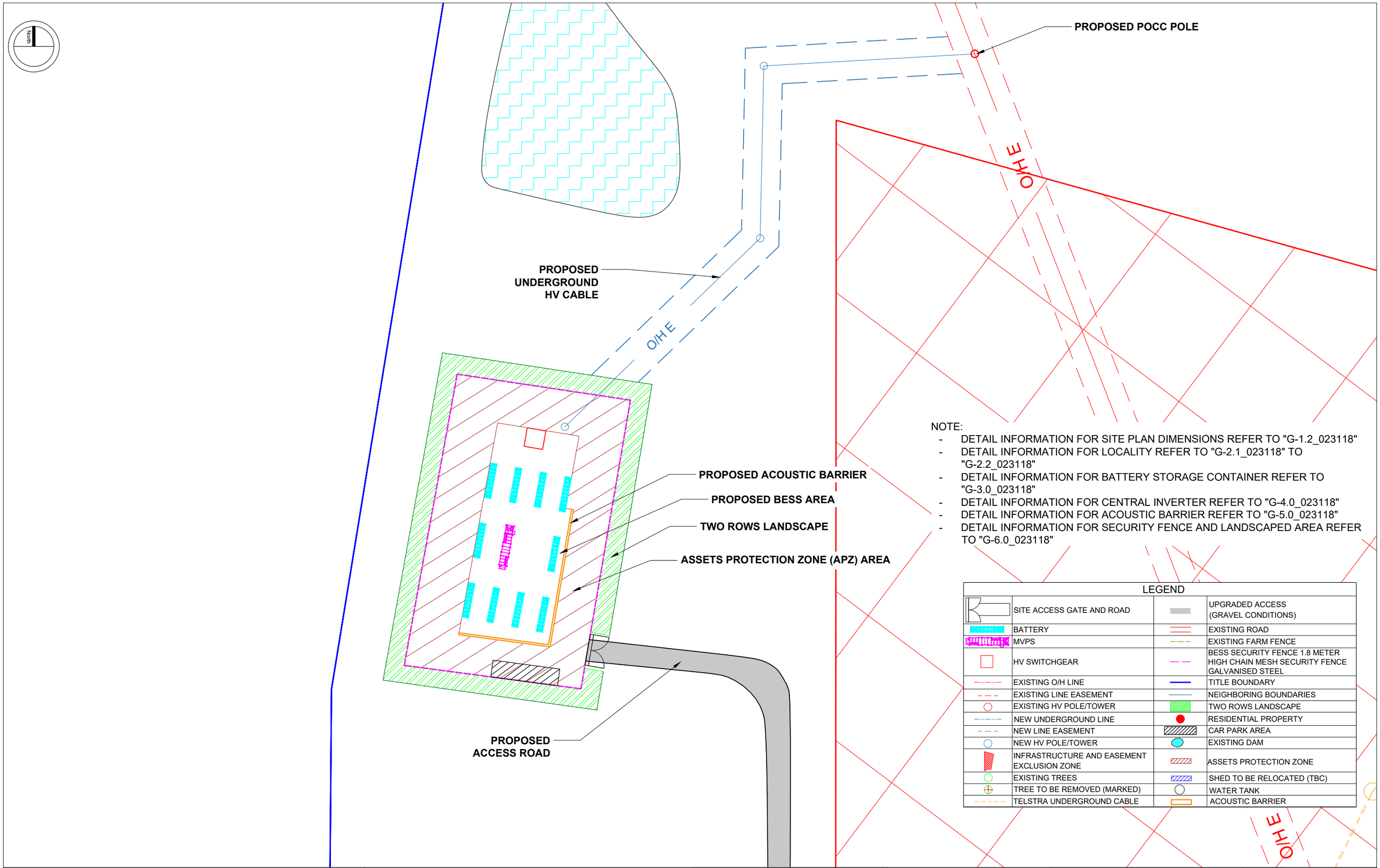
ATTACHMENT 2

PROJECT DRAWINGS



NOTE:

- DETAIL INFORMATION FOR SITE PLAN DIMENSIONS REFER TO "G-1.2_023118"
- DETAIL INFORMATION FOR LOCALITY REFER TO "G-2.1_023118" TO "G-2.2_023118"
- DETAIL INFORMATION FOR BATTERY STORAGE CONTAINER REFER TO "G-3.0_023118"
- DETAIL INFORMATION FOR CENTRAL INVERTER REFER TO "G-4.0_023118"
- DETAIL INFORMATION FOR ACOUSTIC BARRIER REFER TO "G-5.0_023118"
- DETAIL INFORMATION FOR SECURITY FENCE AND LANDSCAPED AREA REFER TO "G-6.0_023118"

LEGEND			
	SITE ACCESS GATE AND ROAD		UPGRADED ACCESS (GRAVEL CONDITIONS)
	BATTERY		EXISTING ROAD
	MVPS		EXISTING FARM FENCE
	HV SWITCHGEAR		BESS SECURITY FENCE 1.8 METER HIGH CHAIN MESH SECURITY FENCE GALVANISED STEEL
	EXISTING O/H LINE		TITLE BOUNDARY
	EXISTING LINE EASEMENT		NEIGHBORING BOUNDARIES
	EXISTING HV POLE/TOWER		TWO ROWS LANDSCAPE
	NEW UNDERGROUND LINE		RESIDENTIAL PROPERTY
	NEW LINE EASEMENT		CAR PARK AREA
	NEW HV POLE/TOWER		EXISTING DAM
	INFRASTRUCTURE AND EASEMENT EXCLUSION ZONE		ASSETS PROTECTION ZONE
	EXISTING TREES		SHED TO BE RELOCATED (TBC)
	TREE TO BE REMOVED (MARKED)		WATER TANK
	TELSTRA UNDERGROUND CABLE		ACOUSTIC BARRIER

REVISIONS

REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	INITIAL ISSUE	30/04/2024	XZ	AJ
B	FA	INITIAL ISSUE	31/10/2024	XZ	AJ
C	FA	DETAILS AMENDED	20/11/2024	XZ	AJ
D	FA	ACOUSTIC BARRIER DETAILS UPDATED	11/04/2025	FA	AJ

PROJECT DETAILS:
MURRUMBATEMAN DISTRIBUTION BESS
3 TURTON PLACE MURRUMBATEMAN, NEW SOUTH WALES 2582
-34.9920, 149.04964

CLIENT DETAILS:
ACENERGY PTY LTD

DRAWING TITLE:
SITE PLAN 1 OF 2

DRAWING NR: G-1.1_023118

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FA	AJ	LZ
SCALE : AS INDICATED	ISSUE : FOR APPROCAL	ISSUE DATE : 11/04/2025
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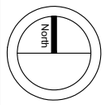

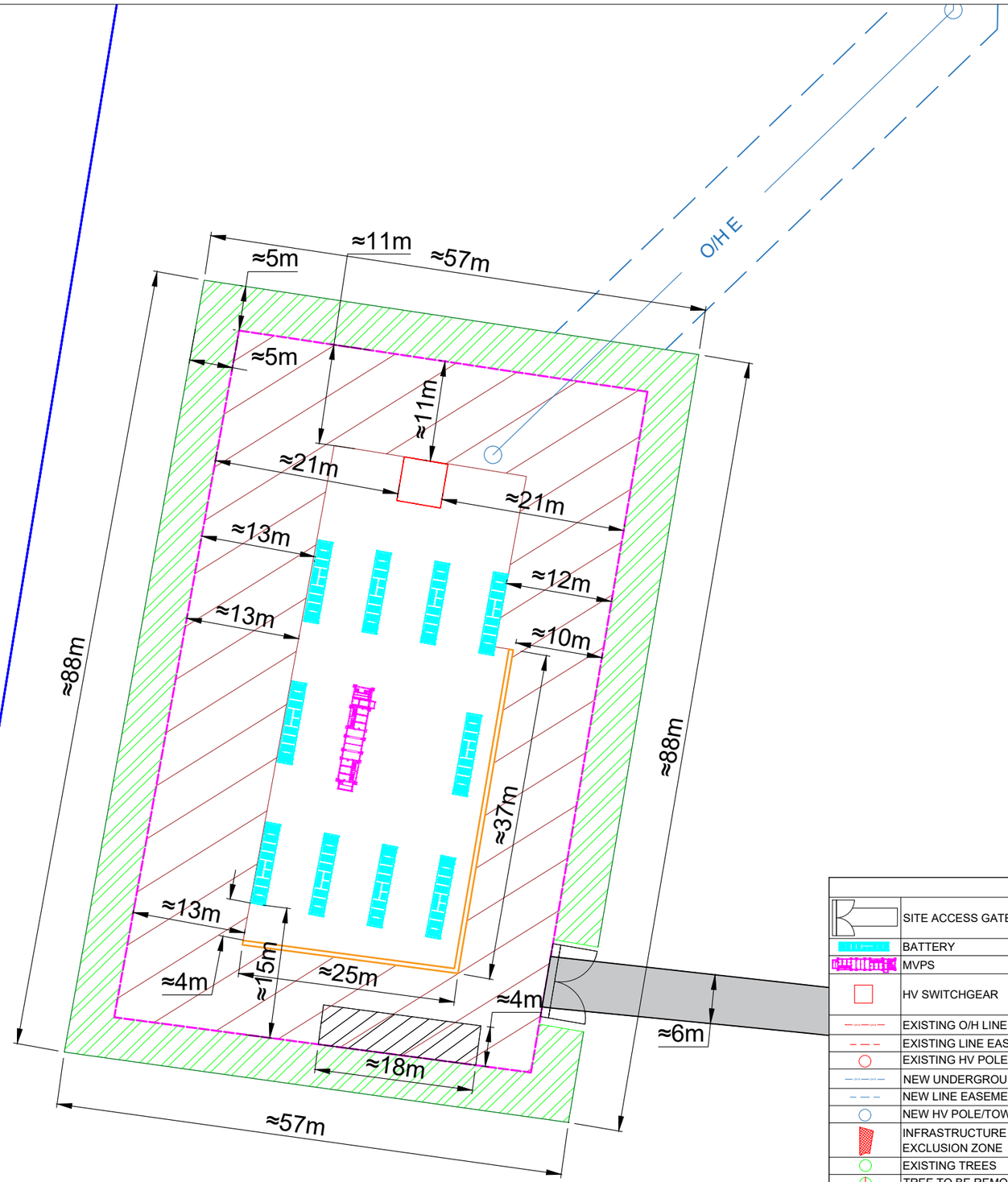

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-34.9920, 149.04964

CLIENT DETAILS:
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DRAWING TITLE:
SITE PLAN 2 OF 2

DRAWING NR: G-1.2_023118

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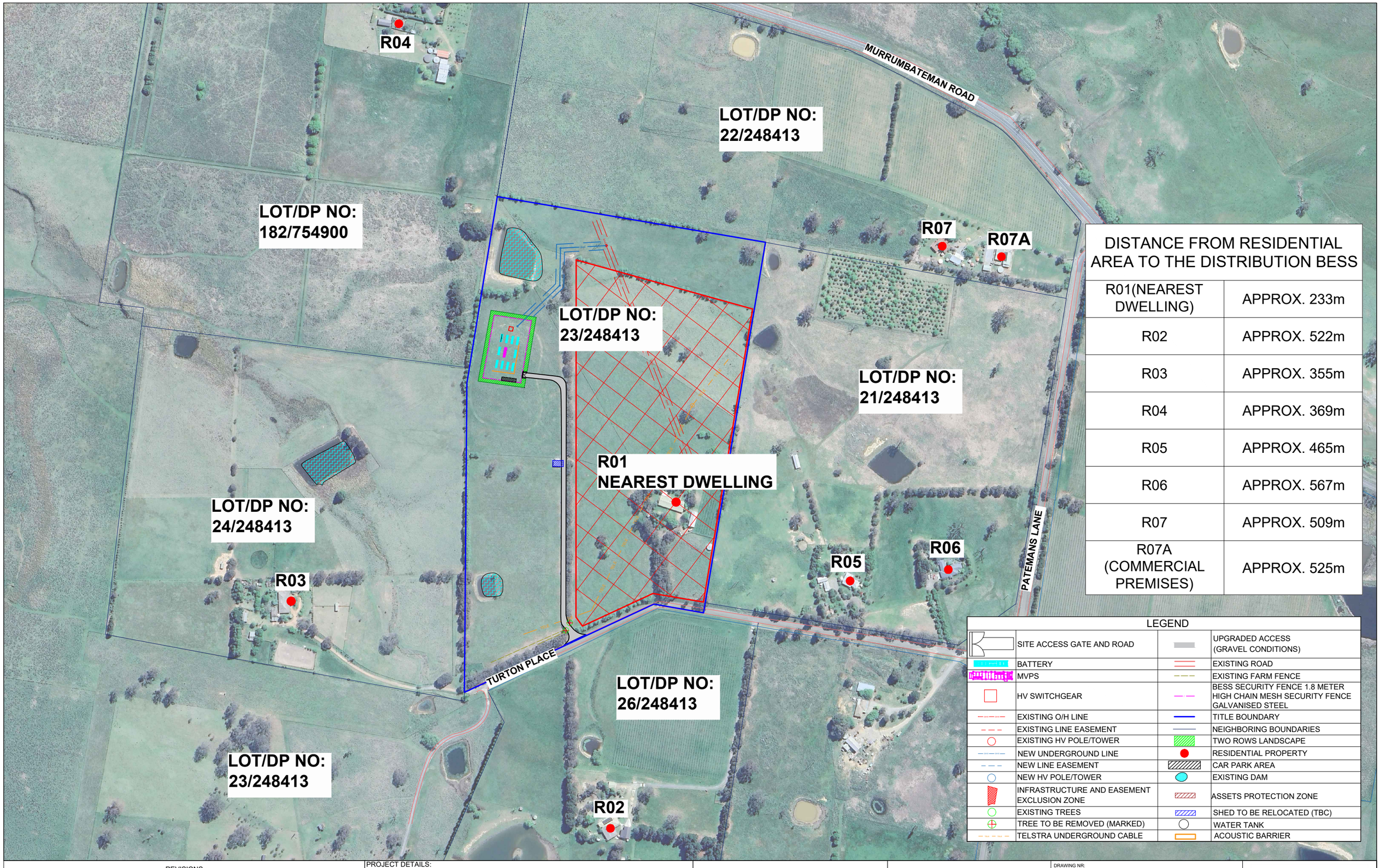

DISTANCE FROM RESIDENTIAL AREA TO THE DISTRIBUTION BESS	
R01(NEAREST DWELLING)	APPROX. 233m
R02	APPROX. 522m
R03	APPROX. 355m
R04	APPROX. 369m
R05	APPROX. 465m
R06	APPROX. 567m
R07	APPROX. 509m
R07A (COMMERCIAL PREMISES)	APPROX. 525m

LEGEND			
	SITE ACCESS GATE AND ROAD		UPGRADED ACCESS (GRAVEL CONDITIONS)
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3 TURTON PLACE MURRUMBATEMAN, NEW SOUTH WALES 2582
-34.9920, 149.04964

CLIENT DETAILS:
ACENERGY PTY LTD

DRAWING TITLE:
LOCALITY DIAGRAM 1 OF 2

DRAWING NR: G-2.1_023118

DRAWN BY :	APPROVED BY :	PROJECT MGR :
FA	AJ	LZ
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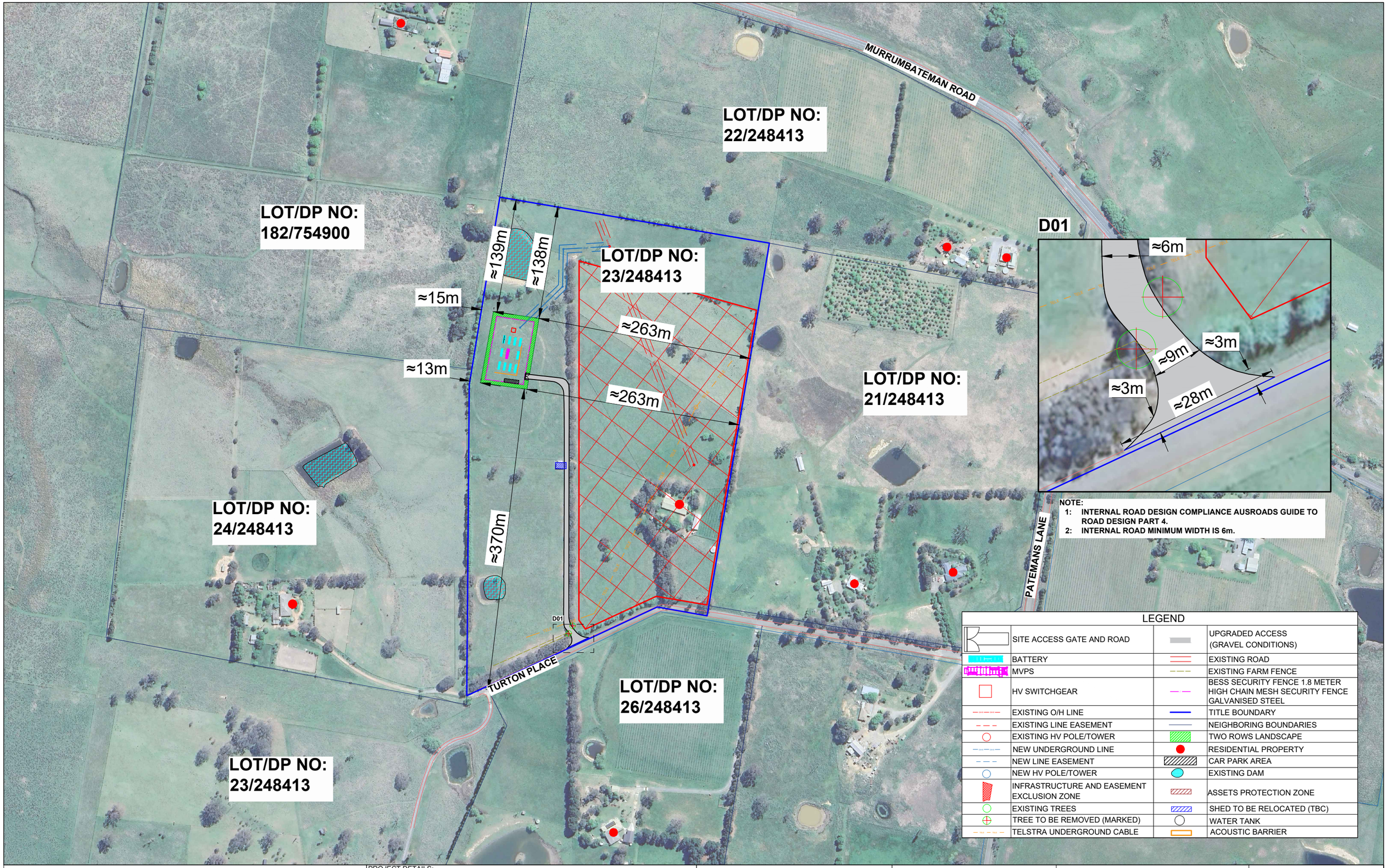

NOTE:
1: INTERNAL ROAD DESIGN COMPLIANCE AUSROADS GUIDE TO ROAD DESIGN PART 4.
2: INTERNAL ROAD MINIMUM WIDTH IS 6m.

LEGEND			
	SITE ACCESS GATE AND ROAD		UPGRADED ACCESS (GRAVEL CONDITIONS)
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-34.9920, 149.04964

CLIENT DETAILS:
ACENERGY PTY LTD

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LOCALITY DIAGRAM 1 OF 2

DRAWING NR: G-2.2_023118

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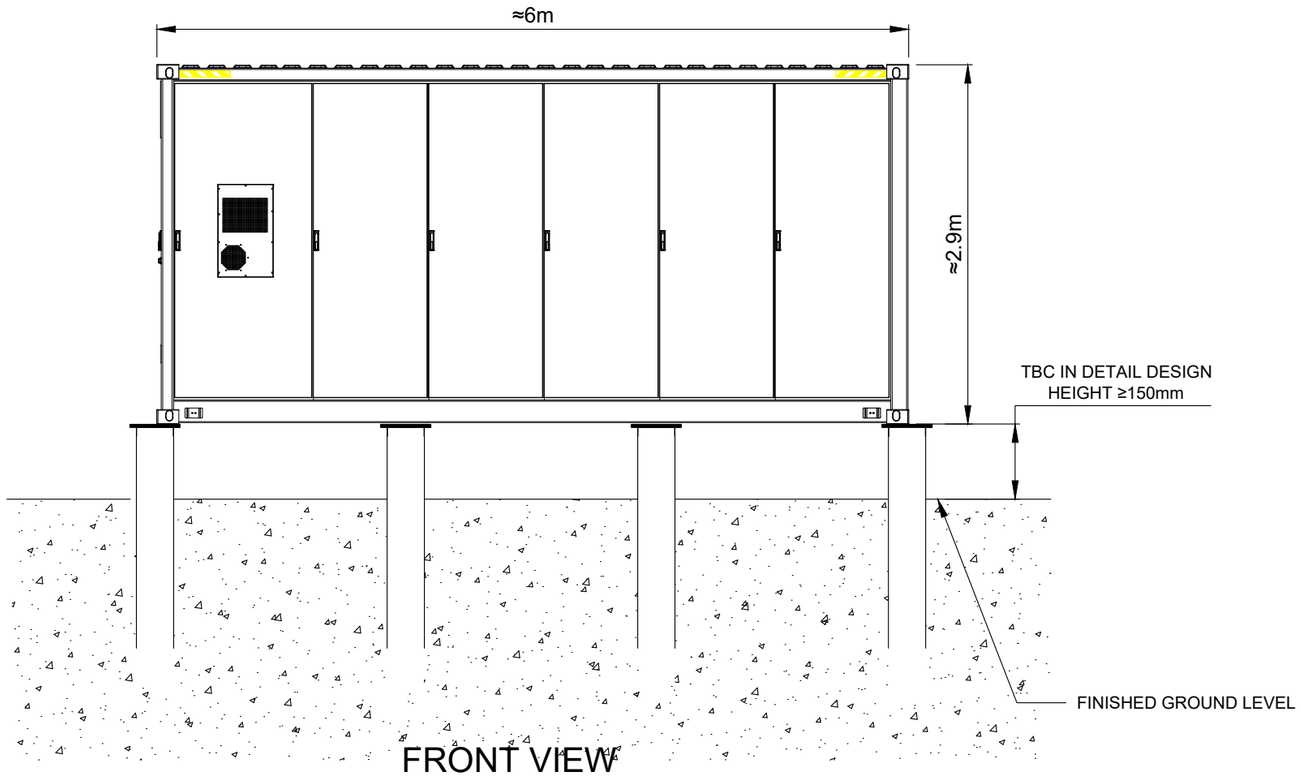
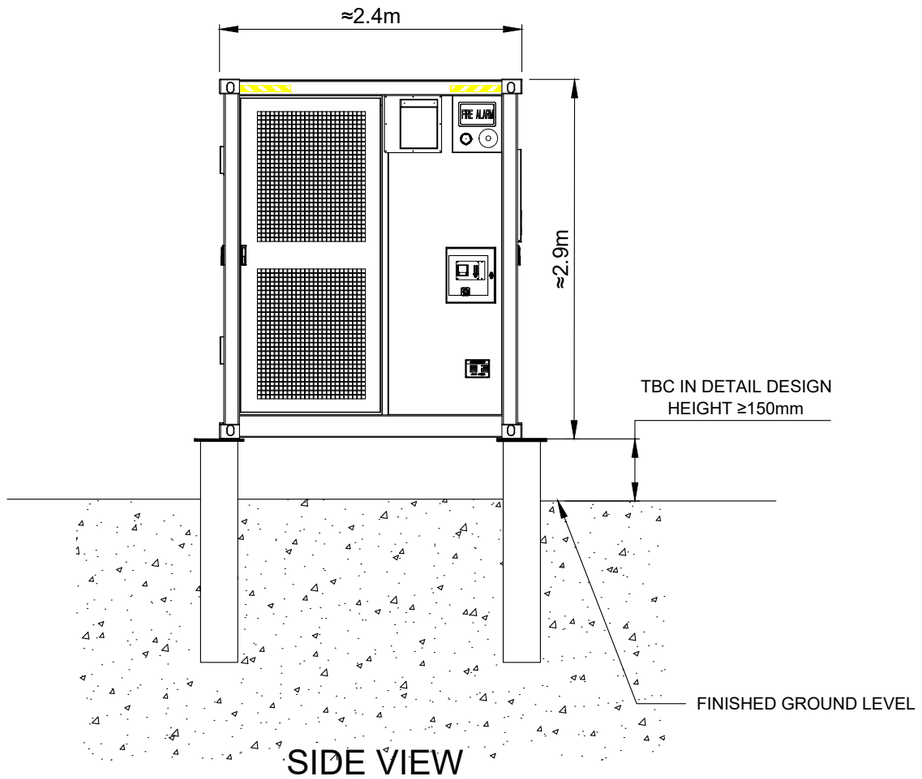
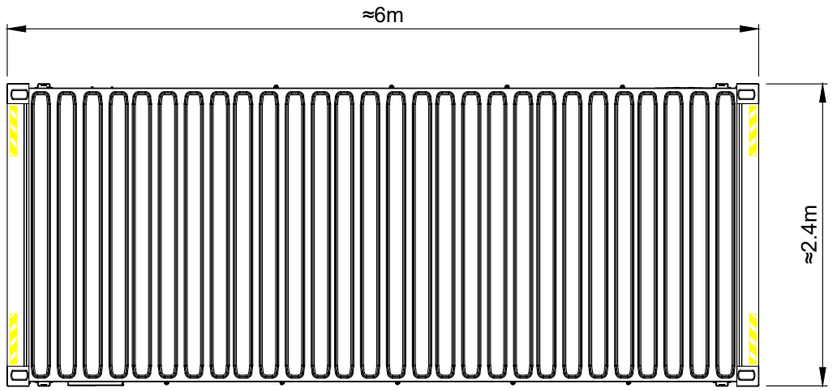
ACENERGY



FRONT VIEW



SIDE VIEW



TOP VIEW

TYPICAL ENERGY STORAGE CONTAINER

NOTE: MATERIAL FINISHES AND COLOUR PALLETE TBC IN DETAILED DESIGN ACCORDING TO MANUFACTURER SPECIFICATIONS.

REVISIONS

REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	INITIAL ISSUE	29/04/2024	XZ	AJ
B	FA	DETAILS AMENDED	31/10/24	XZ	AJ

PROJECT DETAILS: MURRUMBATEMAN DISTRIBUTION BESS
3 TURTON PLACE MURRUMBATEMAN, NEW SOUTH WALES 2582
-34.9920, 149.04964

CLIENT DETAILS: ACENERGY PTY LTD

DRAWING TITLE: ENERGY STORAGE CONTAINER ELEVATIONS

DRAWING NR: G-3.0_23118		
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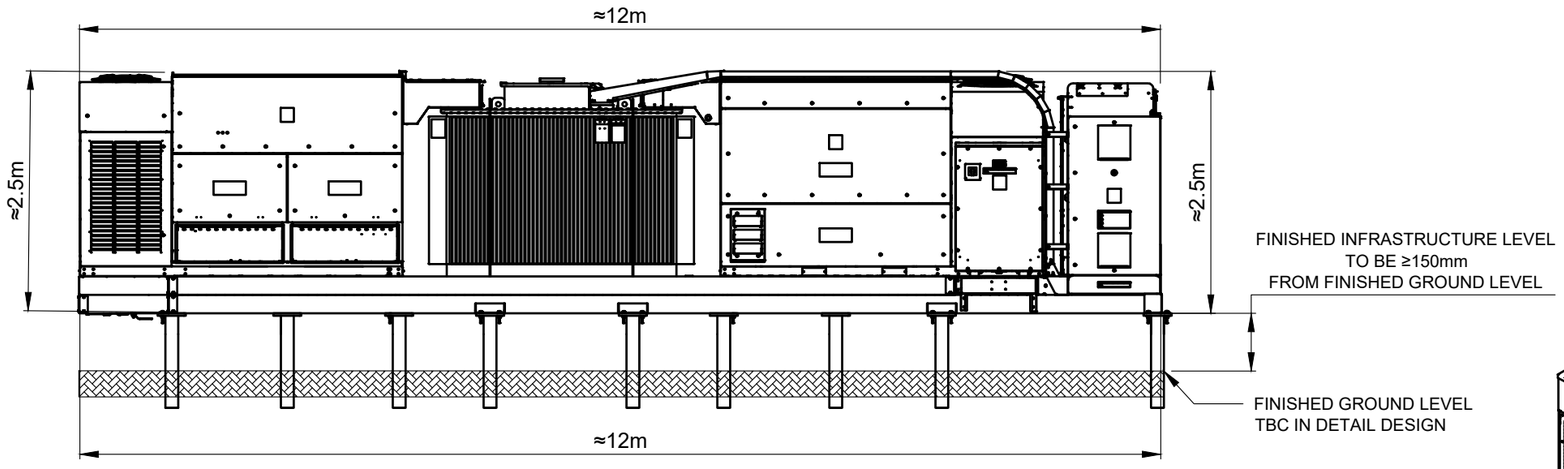
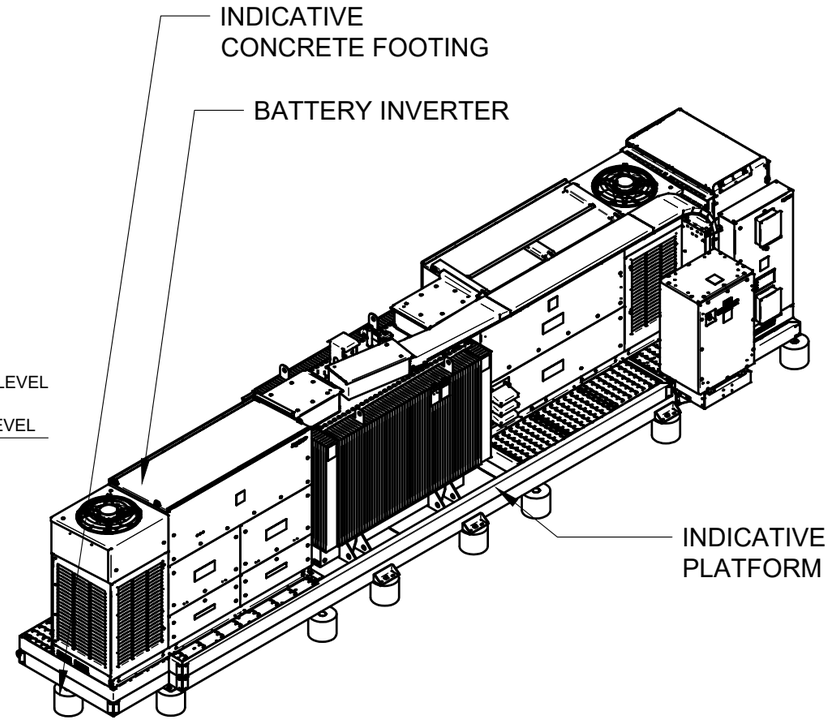
SCALE : AS INDICATED	ISSUE : FOR APPROVAL	ISSUE DATE : 31/10/2024
SHEET SIZE: A3	PROJECT NO: 23118	REV. NO: B

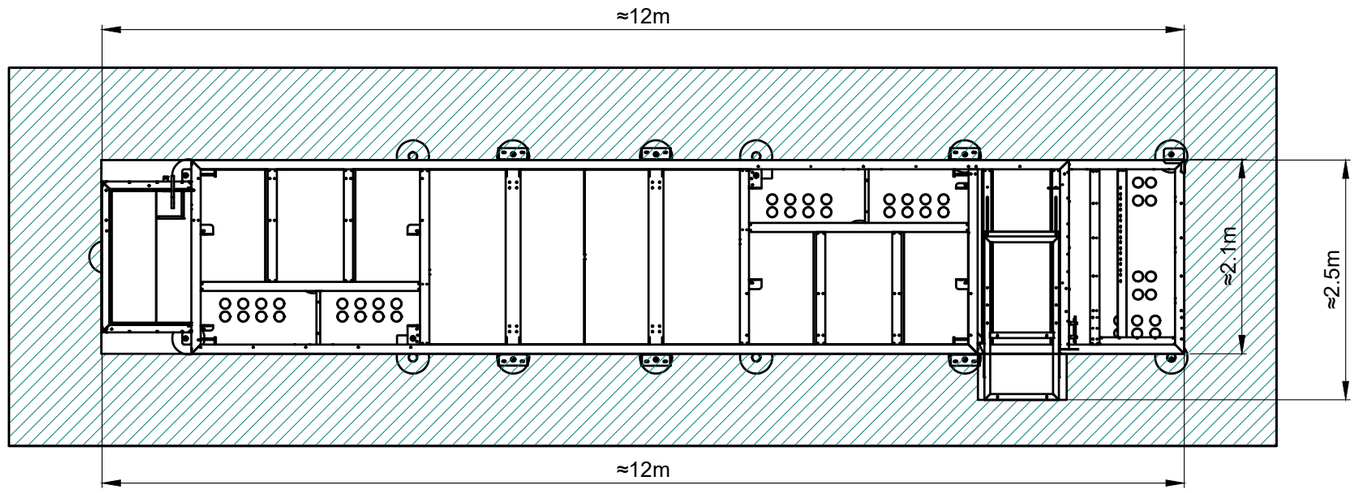
ACENERGY

MVPS FRONT VIEW

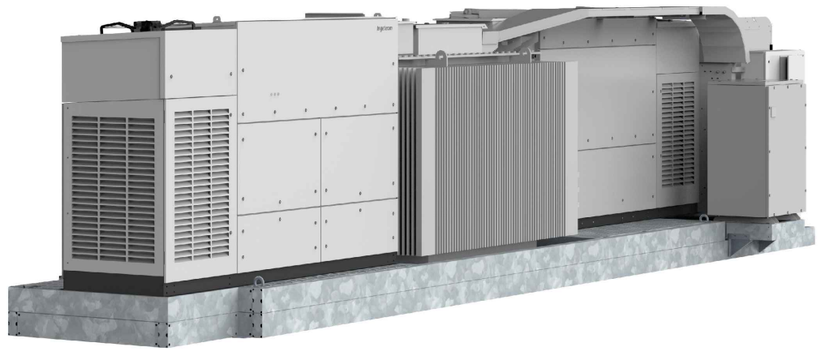




MVPS TOP VIEW



TYPICAL MVPS



NOTE: MATERIAL FINISHES AND COLOUR PALLETE TBC IN DETAILED DESIGN ACCORDING TO MANUFACTURER SPECIFICATIONS.

REVISIONS

REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	INITIAL ISSUE	13/12/23	XZ	AJ
B	FA	DETAILS AMENDED	31/10/24	XZ	AJ

PROJECT DETAILS:
MURRUMBATEMAN DISTRIBUTION BESS
3 TURTON PLACE MURRUMBATEMAN, NEW SOUTH WALES 2582
-34.9920, 149.04964

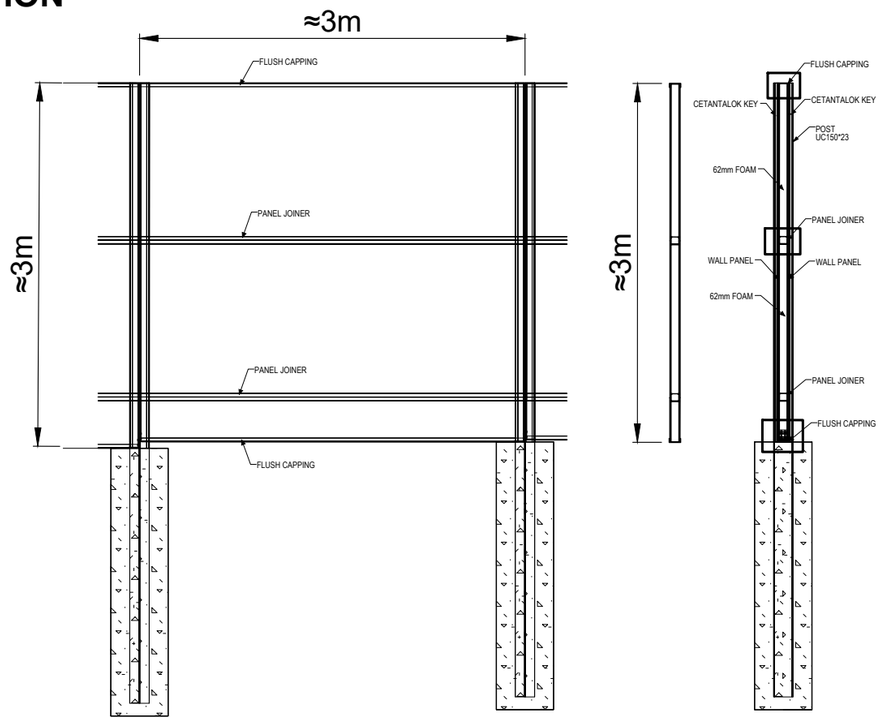
CLIENT DETAILS:
ACENERGY PTY LTD

DRAWING TITLE:
MVPS ELEVATIONS

DRAWING NR: G-4.0_023118		
DRAWN BY : XZ	APPROVED BY : AJ	PROJECT MGR : LZ
SCALE : NO SCALE	ISSUE : FOR APPROVAL	ISSUE DATE : 31/10/2024
SHEET SIZE: A3	PROJECT NO: 23118	REV. NO: B

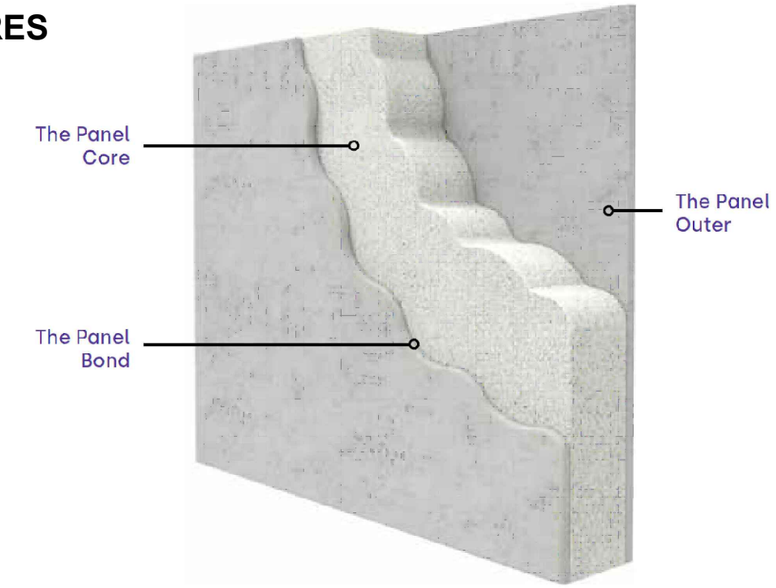
ACENERGY

SECTION



TYPICAL PANEL DETAIL AT 3000 MAX. HEIGHT

FEATURES



The Panel Core

- Termite resistant
- Superb compressive strength to weight ratio
- Absorbs minimal water - no mould or rotting
- Treated with Fire Retardant

The Panel Bond

- Full surface contact adhesion
- High grade Polyurethane glue

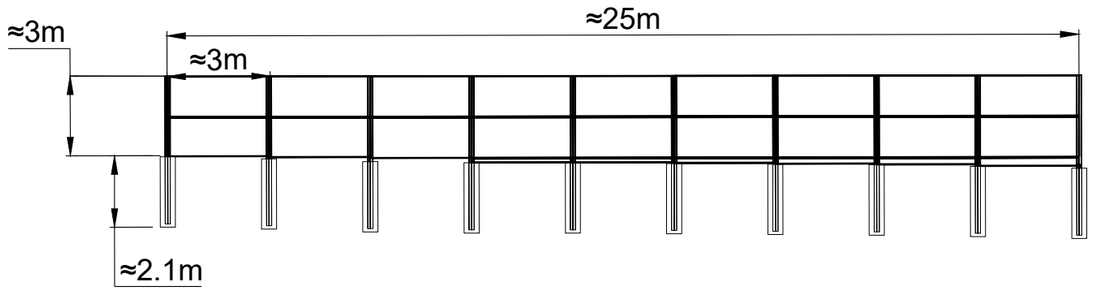
The Panel Outer

- Fire resistant & non-combustible
- Smooth finish - easy to apply paint or render
- Maintenance Free

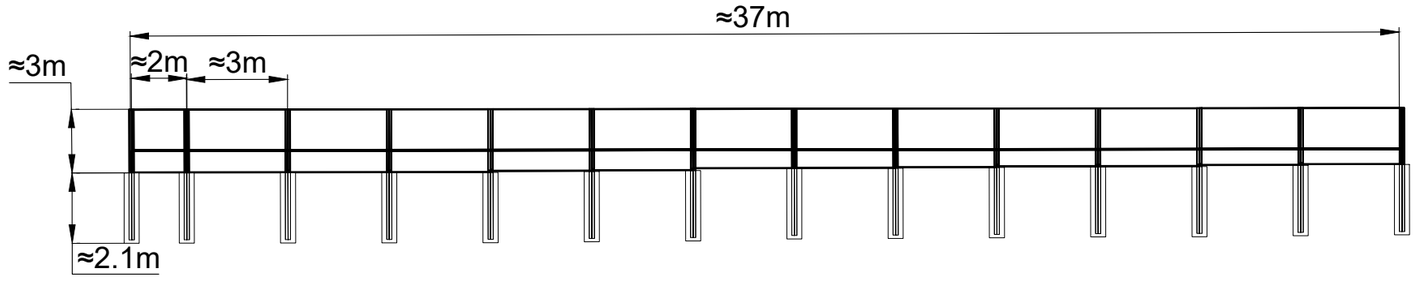
NOTE: MATERIAL FINISHES AND COLOUR PALLETE TBC IN DETAILED DESIGN ACCORDING TO MANUFACTURER SPECIFICATIONS.

ELEVATIONS

EAST TO WEST ALIGNMENT



NORTH SOUTH ALIGNMENT



REVISIONS

REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	INITIAL ISSUE	11/04/25	FA	AJ

PROJECT DETAILS:
MURRUMBATEMAN DISTRIBUTION BESS
3 TURTON PLACE MURRUMBATEMAN, NEW SOUTH WALES 2582
-34.9920, 149.04964

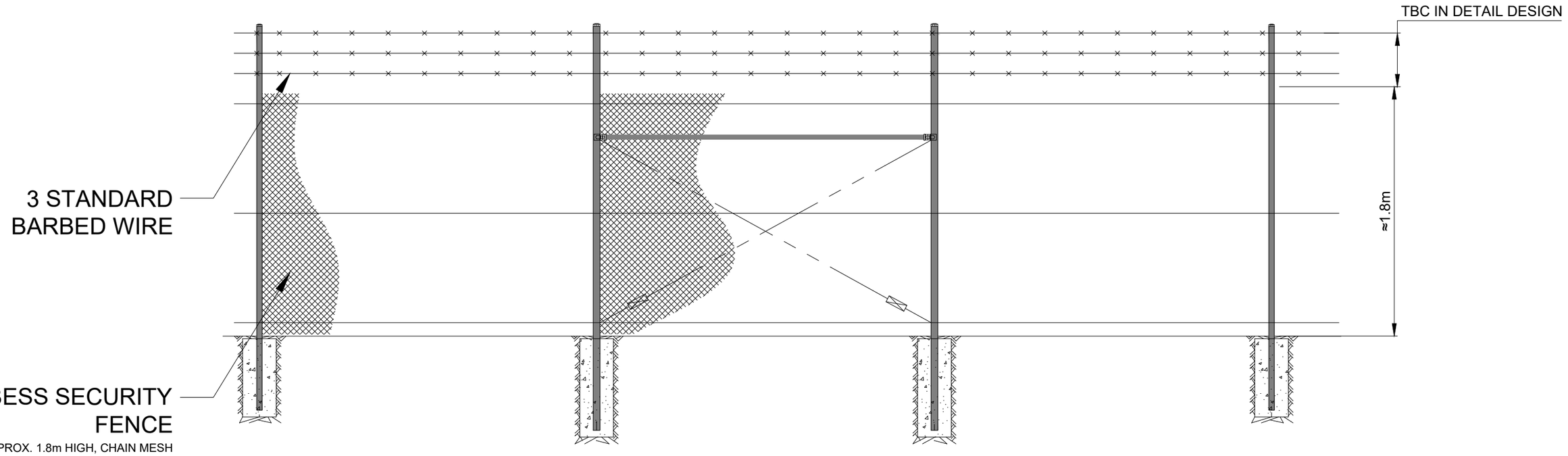
CLIENT DETAILS:
ACENERGY PTY LTD

DRAWING TITLE:
ACOUSTIC BARRIER GENERAL DETAILS (SECTION AND ELEVATIONS)

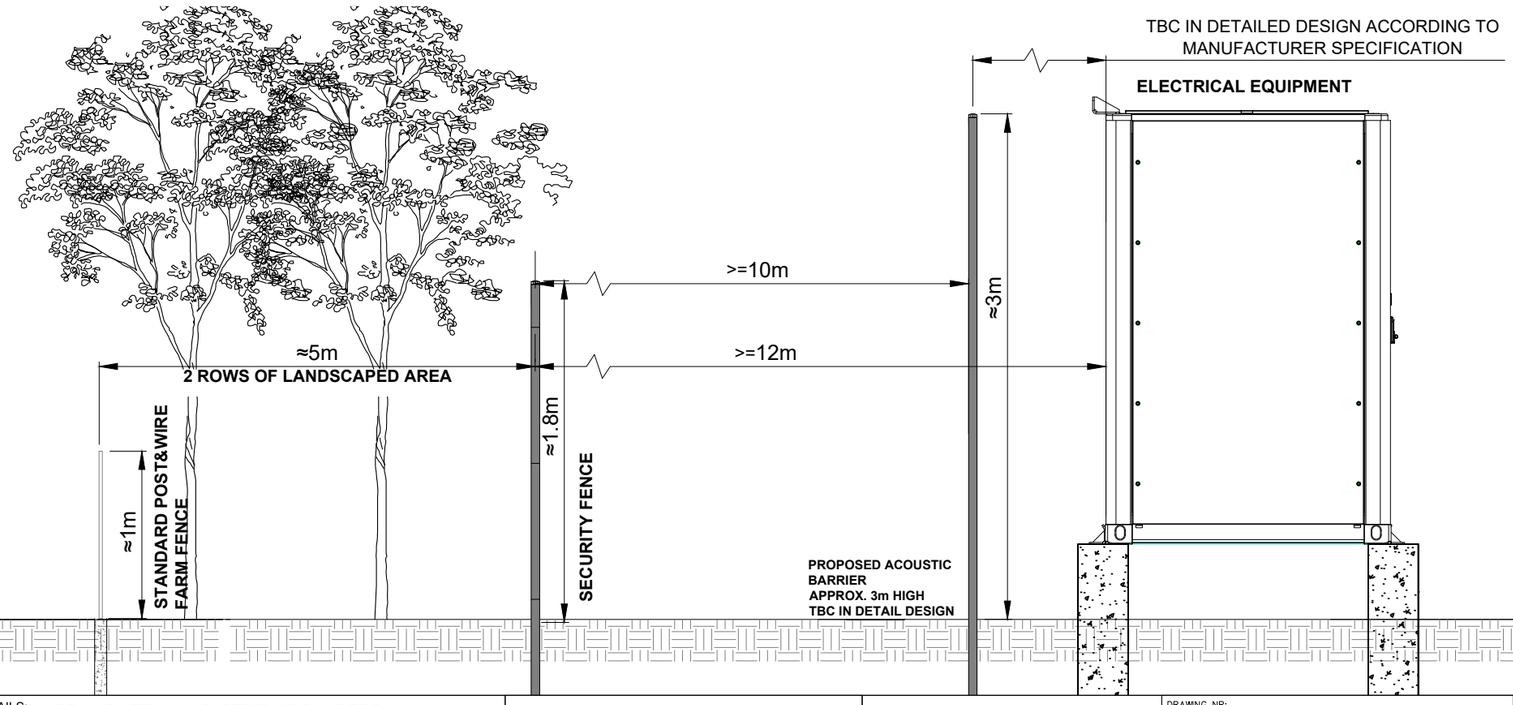
DRAWING NR: G-5.0_023118		
DRAWN BY : FA	APPROVED BY : AJ	PROJECT MGR : LZ
SCALE : NO SCALE	ISSUE : FOR APPROVAL	ISSUE DATE : 11/04/2025
SHEET SIZE: A3	PROJECT NO: 23118	REV. NO: A

ACENERGY

SECURITY FENCE FRONT VIEW



SECURITY FENCE AND TWO ROWS OF LANDSCAPE SIDE VIEW



REVISIONS					
REV	STATUS	DESCRIPTION	DATE	D.B.	C.B.
A	FA	INITIAL ISSUE	13/12/2023	XZ	AJ
B	FA	DETAILS AMENDED	20/11/2024	XZ	AJ

PROJECT DETAILS: MURRUMBATEMAN DISTRIBUTION BESS
3 TURTON PLACE MURRUMBATEMAN, NEW SOUTH WALES 2582
-34.9920, 149.04964

CLIENT DETAILS: ACENERGY PTY LTD

DRAWING TITLE: SECURITY FENCE & LANDSCAPE ELEVATIONS

DRAWING NR: G-6.0_023118		
DRAWN BY : XZ	APPROVED BY : AJ	PROJECT MGR : LZ
SCALE : NOT SCALE	ISSUE : FOR APPROVAL	ISSUE DATE : 20/11/2024
SHEET SIZE: A3	PROJECT NO: 23118	REV. NO: B

ACENERGY

Premise

ATTACHMENT 3

REVISED ACOUSTIC REPORT

Watson Moss Growcott Acoustics Pty Ltd
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ABN 44 445 257 249
Suite 7, 696 High St,
Kew East 3102

Murrumbateman Distribution BESS

3 Turton Place, Murrumbateman, NSW

Acoustic Report – Environmental Noise Emission Assessment

WMGAcoustics.com.au | reception@wmgacoustics.com.au

Project	Proposed Distribution BESS – 3 Turton Place, Murrumbateman, NSW
Project No.	13137
Document Reference	13137-1.5jg
Document Status	Revision 5
Date	Wednesday, April 16, 2025
Author	Jordan Growcott
Client Details	**ACENERGY Pty Ltd** 502, 689 Burke Road Camberwell, VIC 3124

Disclaimer

Watson Moss Growcott Acoustics Pty Ltd has prepared this document for the sole use of the Client and based on a specific scope of works and relevant limitations as agreed between Watson Moss Growcott Acoustics Pty Ltd and the Client.

The information contained within this report and adopted as the basis for any assessment has been provided by the Client.

The findings of any assessment and/or recommendations provided within this document are based on noise and vibration factors only. Any proposal/recommendation nominated within this document must be reviewed and approved by Relevant Authorities, and third-party consultants, as necessary. This may include but is not limited to structural engineers, mechanical services engineers etc.

The information contained within the report should not be used by or relied upon by any other parties other than the Client without the written approval of Watson Moss Growcott Acoustics Pty Ltd.

Table of Contents

Summary of Responses to Rob Bullen Consulting Peer Review

A response to the requirements of the Rob Bullen Consulting Peer Review report is included below.

Noise Criteria

WMG notes the comments made in relation to the assessment criteria, and confirms that the opinions will not impact on the criteria adopted as the basis for the assessment.

WMG has reviewed the commentary provided and has introduced **R07** as a sensitive residential receptor within the updated noise assessment contained within this report.

Calculation Procedures

No additional comment.

Additional Residence

WMG has reviewed the commentary provided and has introduced **R08** as a sensitive residential receptor within the updated noise assessment contained within this report.

Assessment and Proposed Mitigation

Noise monitoring has been conducted at the subject site confirming low levels of ambient background 'masking' noise, and hence a tonal adjustment has been applied at receptors where predicted values indicate it may be present.

In consideration of the above, and in accordance with the recommendations within the peer review report, the WMG report has recommended that an acoustic barrier form part of the proposal.

1. Introduction

The proposal includes the construction and operation of a new 4.95MW battery energy storage system (BESS) facility at the site described as 3 Turton Place, Murrumbateman, New South Wales.

The subject site is currently occupied by farmland, a residential dwelling and rural infrastructure including fencing, roadways and outbuildings. The area designated for the proposed BESS is currently used for agricultural activities.

The new facility will include electrical infrastructure which will generate noise emissions with the potential to impact on the acoustic amenity of the surrounding environment including at residential receptors.

In consideration of the above, Watson Moss Growcott Acoustics (WMG) was previously engaged to undertake a review of the proposal, and assess potential noise emissions to consider the following:

- Noise and vibration associated with electrical infrastructure and vehicle activity at the subject site during general operations associated with the proposed facility.
- Noise and vibration emissions associated with the construction phase of the proposal.

WMG prepared acoustic report *13137-1.3jg*, dated Monday 18th November 2024 which provided an assessment of the above potential noise emissions from the proposed site operations.

The findings of the assessment identified the potential for operational noise emissions from the subject site to exceed relevant noise criteria at off-site sensitive receptors and hence provided recommendations to reduce noise emissions.

The recommendations included the construction of a 3.0m acoustic barrier to the south and east of the equipment.

The assessed exceedances were determined to be substantially due to the tonal character of the noise expected to be emitted by the electrical equipment forming part of the proposal. In the absence of the tonal character adjustment, it was determined that compliance could be achieved at all receptors except for the dwelling which is located within the subject site boundaries and is associated with the proposal.

In consideration of the above, WMG suggested that it may be appropriate for the subject site to be commissioned and for a 'real world' assessment to be undertaken at the nearby sensitive receptors to determine whether an adjustment is necessary to address tonal noise emissions from the new equipment.

This would allow the client to determine the specific noise control requirements, if necessary.

The Yass Valley Council has since reviewed the proposal, and the WMG report, and has issued a request for Additional Information under Development Application No. DA240159. The Council request makes mention of an acoustic peer review report that was prepared by Rob Bullen Consulting, and includes item 1 and item 2 which relate to preparation of an amended acoustic report, and additional commentary in relation to the proposed acoustic barrier.

This report is therefore generally consistent with *13137-1.3jg* previously prepared by WMG but has been amended to reflect the specific requirements of the Council request.

2. Noise Assessment Terminology

Noise assessment terminology used within this report is defined within Table 1 below.

Table 1: Noise Assessment Terminology

Terminology	Definition
dB(A)	Decibels recorded on a sound level meter, which has had its frequency response modified electronically to an international standard, to quantify the average human loudness response to sounds of different character
L_{eq} / L_{Aeq}	The equivalent continuous level that would have the same total acoustic energy over the measurement period as the actual varying noise level under consideration. It is the noise measure defined by the EPA as the measure of the noise to use in assessing compliance with noise limits.
L_{90} / L_{A90}	The level exceeded for 90% of the measurement period, which is representative of the typical lower levels in a varying noise environment. It is the noise measure defined by the EPA as the measure of the background noise level to use in determining noise limits.
Sound Power Level (Lw)	The sound power level of a source is a measure of the amount of energy in the form of sound emitted from the source. The sound power level of a source is an inherent characteristic of that source and does not vary with distance from the source or with a different acoustic environment. The sound power level equals the sound pressure level at a distance from the source plus 10 times the logarithm (to base 10) of the measurement surface area (m^2), and is relative to a reference sound power of 1pW, (10-12 Watts).
Sound Pressure Level (Lp)	Sound that we can hear with our ears or measure with a sound level meter is actually small variations in the pressure of the air around us. The magnitude of the pressure fluctuations vary over a very wide range from the very lowest levels we can just hear to the very high levels we need to be protected from, and for that reason sound is measured on a logarithmic scale. The sound pressure level equals 10 times the logarithm (to base 10) of the sound pressure divided by a reference pressure, which is 20 µPa. The sound pressure level reduces with increasing distance from a source and is influenced by the surroundings.

3. Yass Valley Council Additional Information Request

The acoustic items included within the Council Additional Information Request are included below.

(1) Acoustic Report

A revised acoustic report was submitted as part of the additional information package. Following the Planning Panel preliminary briefing, Council engaged the services of another appropriately qualified acoustic expert to conduct a peer review. A copy of the peer review report is attached for your reference.

- *A response to the acoustic report peer review is to be provided, specifically addressing the recommendations made.*
- *The revised acoustic report has Receptor R07 as commercial premises only. The subject land also contains a dwelling house. The project trigger level for Receptor R07 is to be updated to state the more conservative residential to avoid doubt.*
- *A submission received indicates future intention to make a Development Application for a residential dwelling house at Lot 2 DP 787995, 4 Crisps Lane, Murrumbateman. Whilst there is no dwelling house currently on the site and a Development Application has not been made, to respond to these concerns it would be recommended that the noise model is re-run to consider a potential future receptor. Noting comments received in the peer review, this should also include consideration of reflect of sound from the acoustic consideration of reflect of sound from the acoustic barrier back towards the potential receptor.*

(2) Acoustic Barrier

The response to additional information request indicates that the revised acoustic report provides an indication of the general specifications for the proposed acoustic barrier, including minimum height of 3000mm and the general surface density.

It is considered that there remains insufficient clarity and detail of the acoustic barrier to enable full assessment of this in accordance with s4.15 Environmental Planning and Assessment Act 1979. In this regard, the following information is to be provided:

- *Separate, dimensioned, elevation drawings of the acoustic barrier, including the maximum height and details of construction type, material, and colours/finishes are to be provided.*
- *Site plan with clear dimensions for lengths and relative setbacks.*

4. Site and Surrounding Environment

The land under consideration is located at 3 Turton Place, Murrumbateman, New South Wales.

The subject site boundary adjoins Turton Place to the south and is adjacent to RU4 zoned land to the east, west and north. The area of land under consideration is located in the northwest corner of the subject site and is rectangular in shape.

The land in immediate proximity of the proposal is generally vacant and would not be expected to be noise sensitive in accordance with legislative or guideline criteria.

The closest and therefore most critical sensitive uses located within proximity of the site will include:

- **R01** – 3 Turton Place, Murrumbateman.
- **R02** – 4 Turton Place, Murrumbateman.
- **R03** – 5 Turton Place, Murrumbateman.
- **R04** – 270 Murrumbateman Road, Murrumbateman.
- **R05** – 1A Turton Place, Murrumbateman.
- **R06** – 1 Turton Place, Murrumbateman.
- **R07** – Dwelling at 1 Patemans Lane, Murrumbateman.
- **R07A –** 'Dionysus Winery and Woo Chocolate' premises located at 1 Patemans Lane, Murrumbateman
- **R08 –** Potential future residential dwelling at Lot 2 DP 787995, 4 Crisps Lane, Murrumbateman.

Information regarding the location and the use at the sensitive receptors has been provided by the client.

Figure 1 below provides an aerial photo of the subject site and surrounds including the sensitive receptors which have been considered as part of the noise emission assessment.

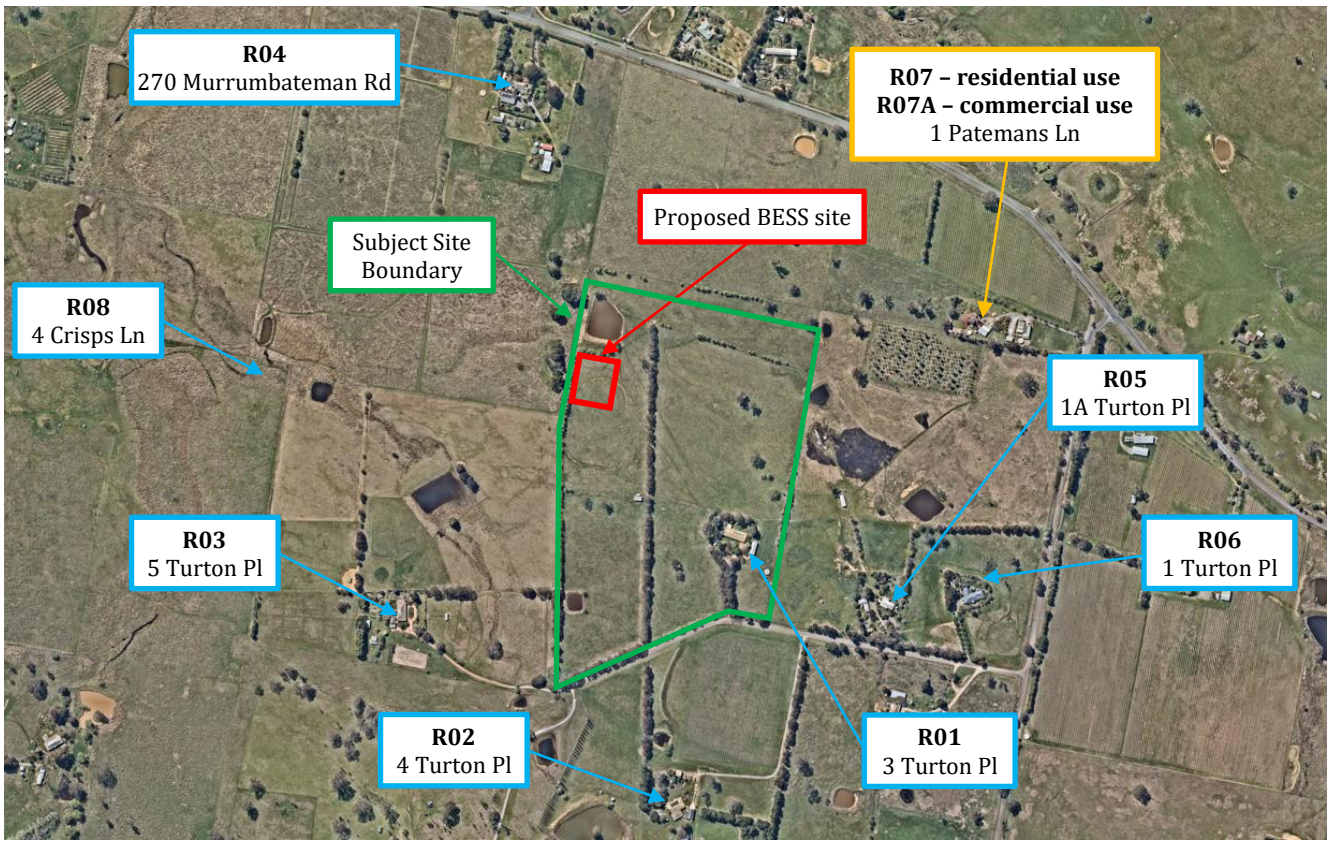


Figure 1: Proposed subject site and surrounding environment

5. Operational Phase Noise Assessment

5.1. Operational Noise Criteria

5.1.1. Overview

The NSW Environment Protection Authority (EPA) Noise Policy for Industry (NPfI) provides criterion for addressing operational noise emissions associated with the proposed use at sensitive receptors. The Policy was released in 2017 and includes relevant methodologies for assessment and management of typical operational noise emissions from industrial premises within NSW.

Within the NPfI, commercial noise emissions are considered during various assessment periods defined as the day, evening, and night to reflect the sensitivity associated within the impacts of noise. The assessment periods defined by the EPA are included within Table 2 below.

Table 2: EPA Defined Assessment Periods

EPA Assessment Period	Relevant Days	Relevant Time Periods
Day	Monday to Saturday	7:00am to 6:00pm
	Sunday	8:00am to 6:00pm
Evening	All Days	6:00pm to 10:00pm
Night	Monday to Saturday	10:00pm to 7:00am
	Sunday	10:00pm to 8:00am

When addressing noise emissions associated with commercial/industrial uses, the NPfi defines project trigger levels which are used to consider potential impacts at sensitive receptors. The levels are determined based on consideration of what the NPfI refers to as the 'Project Intrusiveness Noise Level', and the 'Project Amenity Noise Levels'.

In accordance with the NPfI methodologies, project trigger levels are adopted based on the lower and more stringent of the determined intrusiveness and amenity noise levels.

5.1.2. Project Intrusiveness Noise Criteria

The intent of the project intrusiveness noise level is to minimise the potential for change in the acoustic environment at relevant sensitive receptors by ensuring that impacts associated with a new source are controlled to values 5 dB above a minimum threshold noise level.

The attributable noise levels are defined as L_{Aeq} values assessed over a 15 minute period.

The proposed development is situated in a rural residential environment characterised by RU4 zoned land consisting of agricultural production with scattered dwellings. The site is additionally located in proximity to two major arterial roadways, Murrumbateman Road and the Barton Highway.

In response to commentary provided within the Rob Bullen Consulting report, and in the interest of understanding the existing acoustic environment in proximity to the nearby sensitive receptors, WMG has attended the subject site and has undertaken unattended noise monitoring.

The monitoring was undertaken during the period Friday 14th March to Saturday 22nd March 2025.

The monitoring device was placed at the location identified below and was considered representative of the acoustic environment at the critical residential receptors in proximity to the proposed BESS site.

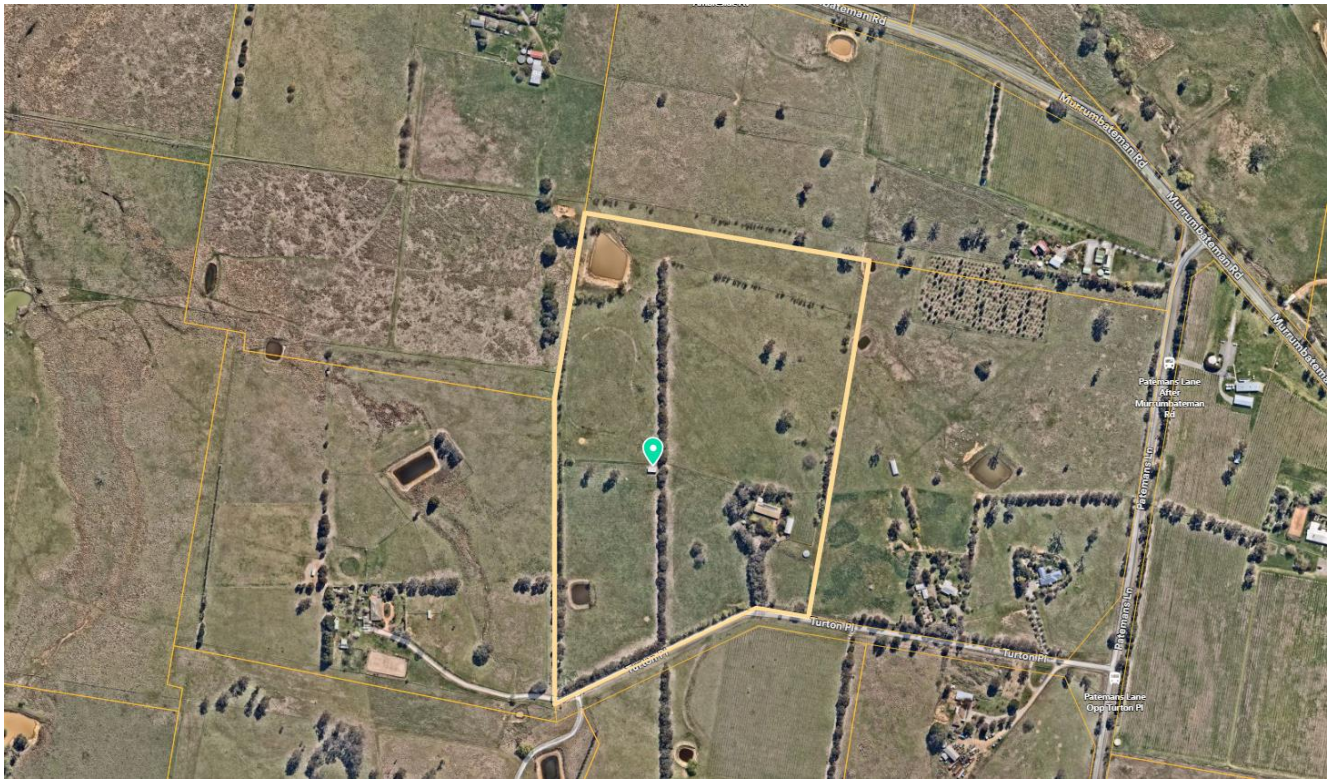


Figure 2: Aerial image including unattended noise monitoring location

Based on observations during deployment and collection of the unattended monitoring device, and through analysis of the data obtained by the device, WMG has concluded that the ambient background noise levels in the surrounding area are low.

During the night period (10:00pm to 7:00am), which is most critical for the assessment, WMG has measured ambient background noise levels in the order of 20-25 dB(A) L_{90}. During the less sensitive day and evening periods, measured values were in the order of 30-31 dB(A) L_{90}.

In consideration of the above, WMG is of the opinion that the NPfI minimum 'rating background levels' (RBLs) will be applicable to the assessment and hence, has adopted these levels as the basis for determining the project intrusiveness noise levels. The minimum RBLs adopted are nominated within the NPFI and are reproduced in Table 3.

Table 3: Minimum RBLs

Descriptor	NPfi Defined Assessment Period		
	Day	Evening	Night
Minimum RBLs	35 L_{A90}	30 L_{A90}	30 L_{A90}

The project intrusiveness noise levels have been determined based on the minimum RBLs in accordance with the methods provided in the NPFI. The adopted project intrusiveness noise levels are detailed in Table 4 and reflect the adopted minimum RBLs plus 5 dB.

Table 4: Project Intrusiveness Noise Levels

Descriptor	NPfi Defined Assessment Period		
	Day	Evening	Night
Project Intrusiveness Noise Levels	40 $L_{Aeq\ 15min}$	35 $L_{Aeq\ 15min}$	35 $L_{Aeq\ 15min}$

5.1.3. Project Amenity Noise Criteria

Project Amenity Noise levels, as detailed by the NPfI, are provided to address the ambient noise levels within an area from all industrial noise sources combined.

The intent of amenity noise levels is to allow for a consideration of noise impacts accumulated from the addition of surrounding commercial/industrial operations. Project amenity noise levels therefore limit the sole independent consideration of intrusiveness levels and the potential for continual increases to noise levels through the addition of separate commercial/industrial operations.

Derivation of the project amenity noise levels is based on the 'recommended amenity noise levels' contained within **Table 2.2: Amenity noise levels** of the NPfI. The values presented in the Table represent the total industrial noise which may impact on a receptor location over an assessment period.

In order to compare the amenity values with the **project intrusiveness level**, the values are adjusted from a $L_{Aeq\ period}$ to $L_{Aeq\ 15min}$, by adding a 3dB correction to the amenity noise level.

When determining the relevant amenity noise levels, WMG has considered the site as 'rural' as the surrounding land is generally comprised of agricultural land uses on RU4 land with scattered residential receptors. The amenity noise levels for 'rural' areas are summarised below.

Table 5: NPfI Amenity Noise Levels

Receiver	Noise Amenity Area	Time of Day	Recommended Amenity Noise Level	
			Raw NPfI Values	Adjusted for 15min*
Residential	Rural	Day	50 $L_{Aeq\ period}$	53 $L_{Aeq\ 15min}$
		Evening	45 $L_{Aeq\ period}$	48 $L_{Aeq\ 15min}$
		Night	40 $L_{Aeq\ period}$	43 $L_{Aeq\ 15min}$

** WMG notes that the Rob Bullen Consulting report does not adopt the same 3dB adjustment but accepts that it will not influence the assessment as the project trigger levels are based on the project intrusiveness criteria.*

New industrial noise sources are then subject to the **project amenity noise level** which is determined to represent an objective for any single commercial/industrial noise source at a receptor location.

Where the surrounds include other commercial/industrial uses which may impact on receptors, the project amenity noise level implements a negative adjustment to account for cumulative contributions.

It is noted that there are two existing wineries located to the northeast of the site identified as 'Dionysus Winery & Woo Chocolate', and 'Found Winds Vineyard'. Based on a review of each of the venue websites, the premises are open 11:00am-4:00pm which will align with the NPfI 'day' period and will avoid the night period which is critical for the proposed BESS site operations.

In consideration of the above, WMG has allowed for potential cumulative contributions due to the wineries during the day period, but not during the more critical evening and night periods at the sensitive receptor locations. The adopted values are therefore as shown below in Table 6.

Table 6: Project Amenity Noise Levels

Descriptor	NPfi Defined Assessment Period		
	Day	Evening	Night
Recommended Amenity Noise Level	50 $L_{Aeq\ period}$	45 $L_{Aeq\ period}$	40 $L_{Aeq\ period}$
Adjustment to allow for additional contributions	minus 5 dB	-	-
Adjustment to reflect 15min assessment period	plus 3 dB	plus 3 dB	plus 3 dB
Project Amenity Noise Levels	48 $L_{Aeq\ 15min}$	48 $L_{Aeq\ 15min}$	43 $L_{Aeq\ 15min}$

5.1.4. Adopted Project Trigger Noise Criteria

5.1.4.1. Residential Receptors

In accordance with the assessment methodologies contained within the NPfI, the project noise trigger levels will be determined based on whichever of the project intrusiveness level and the project amenity level is the lower or more stringent. In consideration of the above, the project trigger noise levels will be as shown in Table 7.

Table 7: Project Trigger Noise Levels

Descriptor	NPfi Defined Assessment Period		
	Day	Evening	Night
Project Intrusiveness Noise Levels	40 $L_{Aeq\ 15min}$	35 $L_{Aeq\ 15min}$	35 $L_{Aeq\ 15min}$
Project Amenity Noise Levels	48 $L_{Aeq\ 15min}$	48 $L_{Aeq\ 15min}$	43 $L_{Aeq\ 15min}$
Project Trigger Noise Levels	**40 $L_{Aeq\ 15min}$**	**35 $L_{Aeq\ 15min}$**	**35 $L_{Aeq\ 15min}$**

For sensitive residential receptors, and in accordance with the NPfI, the project noise trigger levels are to be assessed at the reasonably most-affected point on or within the residential property boundary or, if that is more than 30 metres from the residence, at the reasonably most affected point within 30 metres of the residence, but not closer than 3 metres to a reflective surface and at a height of between 1.2–1.5 metres above ground level.

For multi-storey residential buildings (greater than two storeys) where a ground floor assessment location is deemed to be unrepresentative of the exposure of upper stories, the assessment may be undertaken at a representative elevation and closer than 3 metres to a reflective surface, as agreed with the regulator.

However, the assessed/measured noise level is to be suitably adjusted to reflect a 'free field' (that is, nominally no reflective signals) assessment/measurement location.

Due to the continuous operation of the subject site and new equipment, the critical criteria will be based on the night period when the lowest criteria will be applicable.

5.1.4.2. Commercial Premises

Due to the proximity of the 'Dionysus Winery & Woo Chocolate' commercial premises to the subject site, it would also be considered reasonable to assess potential noise impacts at this receptor.

When considering potential noise impacts on independent commercial premises, the NPfI nominates amenity levels of 65 $L_{Aeq\ period}$ during times when the premises are in use.

When converted to a 15-minute assessment period, this objective will be 68 $L_{Aeq\ 15min}$.

5.1.5. Modifying Factor Corrections

When considering noise impacts on sensitive receptors, NPfI methodology includes relevant adjustment factors which account for the potential for the noise source under consideration to impact on the acoustic amenity of the noise sensitive receptor.

The relevant factors are included within Fact Sheet C of the NPfI and include:

- Tonal noise.
- Low frequency noise.
- Intermittent noise.

Clarification regarding each of the adjustments is shown below in Table 8.

Table 8: NPfI Modifying Factor Corrections

Relevant Factor	Assessment / Measurement	When to Apply	Correction
Tonal Noise	One-third octave band analysis.	Level of one-third octave band exceeds the level of the adjacent bands level on both sides by in the order of 5dB – 15dB as defined in the NPfI.	5 dB
Low-Frequency Noise	Measurement of source contribution C-weighted and A-weighted level and one third octave measurements.	Measure / assess source contribution C and A weighted Leq,t levels over same time period. Correction to be applied where the C minus A level is 15 dB or more and the level defined in Table C2 of the NPfI is exceeded.	2 or 5 dB
Intermittent Noise	Subjectively assessed but should be assisted with measurement to gauge the extent of change in noise level.	The source noise heard at the receiver varies by more than 5 dB(A) and the intermittent nature of the noise is clearly audible.	5 dB

The adjustments are applied to the measured/predicted values at sensitive receptors for consideration relative to the project noise trigger levels. A maximum of 10dB correction will be applied to the measured/predicted noise levels at the sensitive receptor, with a maximum of 5dB applicable when the tonal character is in the low frequency range below 160Hz.

5.2. Noise Modelling Results

5.2.1. Noise Prediction Methodology

Modelling of operational noise emissions from the site has been conducted using DataKustik CadnaA environmental noise modelling software.

Relevant information regarding site elevations, site buildings and the surrounding environment has been provided by the client and sourced from online databases including Nearmaps, NSW Planning Portal, and topography from the ANZLIC Committee on Surveying and Mapping.

With the utilisation of the above, the model has been developed and configured with sufficient detail for appropriate noise emission calculations to be undertaken.

For this assessment, the modelling software has implemented the calculation procedures defined within International Standard ISO 9613-2: 1996 Acoustics – Attenuation of sound during propagation outdoors – Part 2: General method of calculation (ISO 9613).

The described standard has been considered and approved as part of many previous projects requiring noise emission assessment works. Through implementation of the Standard using CadnaA, the noise emission modelling considers the following attenuation measures:

- Geometrical spreading.
- Atmospheric absorption.
- Ground attenuation.
- Meteorological effects.
- Source / Receiver height effects.
- Attenuation due to the surrounding environment including existing buildings / structures.

In addition to the above, and in accordance with the methodologies contained within the NPfI, noise predictions must account for noise enhancing weather conditions in the direction of sensitive receptors.

This can be addressed via two options:

- **Option 1**
  Adopt the **noise-enhancing meteorological conditions** for all assessment periods for noise impact assessment purposes without an assessment of how often these conditions occur – a conservative approach that considers source-to-receiver wind vectors for all receivers and F class temperature inversions with wind speeds up to 2 m/s at night.

- **Option 2**
  Determine the **significance** of noise-enhancing conditions.

Option 1 has been adopted as the basis for predicting noise emissions from the proposed use and is often considered conservative as it represents a worst case operation scenario.

The critical receptors located in proximity of the subject site are understood to be single level dwellings, therefore an assessment height of 1.5m has been adopted as the basis for the noise model.

Predicted values at receptor locations have been calculated in the 'free-field', which do not include reflections from localised surfaces other than the ground.

5.2.2. Source Sound Power Levels

When considering noise emissions associated with the proposal, the client has advised that the relevant noise sources will include the following:

- 1no. MVPS including 2no. inverters and 1no. 5MVA transformer.
- 10no. liquid cooling battery containers.

Figure 2 below provides a site plan for the proposal including the relevant equipment locations.

Figure 3: Site plan including relevant noise sources

For the purposes of this assessment, WMG has considered source noise data provided by the inverter and battery unit manufacturers in combination with input from the client. A summary of the sound power/pressure levels adopted for each item of equipment is included within Table 9.

Table 9: Adopted source sound power levels

Noise Source	Adopted Noise Level
MVPS inverter – per unit	88 dB(A) – sound power
MVPS Transformer – 5MVA unit	65 dB(A) – sound power
Battery cabinet liquid cooling – per unit	81 dB(A) – sound power

Once commissioned, the electrical infrastructure which forms part of the facility will operate continuously 24 hours per day, 7 days per week. The assessment will therefore consider potential noise emissions during the day, evening, and night assessment periods.

5.2.3. Predicted Noise Levels

The noise sources forming part of the proposal have been modelled based on the following assumptions:

- The MVPS unit inverters and transformers have been assessed as omnidirectional noise sources. There may be the potential for the MVPS to include directivity which may reduce noise emissions in some directions pending their orientation.
- The battery units have been assessed with their noise source directivity facing north away from the nearest noise sensitive residential receptors.

The results of the noise model are presented below in Table 10.

Table 10: Noise modelling results compared with Project Trigger Noise Levels

Assessment Location	Predicted Noise Level (15_{min})	Project Trigger Noise Levels L_{Aeq}		
		Day	Evening	Night
R01	36 dB(A) L_{eq}	40	35	35
R02	26 dB(A) L_{eq}	40	35	35
R03	32 dB(A) L_{eq}	40	35	35
R04	30 dB(A) L_{eq}	40	35	35
R05	23 dB(A) L_{eq}	40	35	35
R06	<20 dB(A) L_{eq}	40	35	35
R07	22 dB(A) L_{eq}	40	35	35
R07A - commercial	22 dB(A) L_{eq}	68		
R08	28 dB(A) L_{eq}	40	35	35

The outcomes of the noise model indicate that in the absence of noise control, and without consideration of any NPfI modifying factors, predicted noise levels at the R02-R08 receptors are compliant with the project trigger noise levels.

When considered at R01 however, the predicted values indicate the potential for marginal exceedances of the project trigger levels by 1 dB(A) during the evening and night periods.

As part of previous assessments, WMG has identified that electrical infrastructure has the potential to include a tonal character which may be audible at nearby receptors and warrant an adjustment in accordance with the NPfI.

Due to the distance separation between the electrical infrastructure and nearby sensitive receptors however, there is potential that residual tonal noise may not be present and therefore not require an adjustment for this project.

In order to consider the potential for tonality at the sensitive receptors, WMG has reviewed the following:

- The one-third octave bands associated with the existing ambient background noise levels measured at the site.
- The results of the noise modelling which includes predicted one-third octave band noise levels at the receptors.

For the purposes of this assessment, WMG has focused on the 3150Hz one-third octave band frequency as this is the frequency where noise emissions from the subject site are predicted to be most prominent.

Based on a review of the ambient background noise levels measured at the site, the noise levels at the relevant 3150Hz during the critical night period are regularly below 15dB, and on occasion below 10dB.

The measured values are very low, and generally much lower than the values predicted using the noise model.

In consideration of the above, and in order to provide some basis for understanding the presence of modifying factors, WMG has compared the predicted one-third octave band values with the criteria nominated within the NPfI relating to tonal noise and low frequency noise.

The predicted one-third octave band noise levels at each of the sensitive receptors are summarised below.

Table 11: Predicted one-third octave band noise levels - dB

Rec	25Hz	31.5Hz	40Hz	50Hz	63Hz	80Hz	100Hz	125Hz	160Hz	200Hz	250Hz	315Hz	400Hz	500Hz	630Hz	800Hz	1kHz	1.25kHz	1.6kHz	2kHz	2.5kHz	3.15kHz	4kHz	5kHz	6.3kHz	8kHz	10kHz
R01	24	21	25	23	23	23	29	33	26	25	32	25	22	25	24	26	25	26	25	22	23	29	14	<10	<10	<10	<10
R02	19	17	21	19	18	19	21	24	20	16	22	15	15	17	16	18	16	17	16	12	11	16	<10	<10	<10	<10	<10
R03	23	21	25	23	23	23	27	31	24	22	29	21	20	22	21	22	22	22	21	18	18	24	<10	<10	<10	<10	<10
R04	18	16	20	18	17	19	20	24	21	16	22	15	14	16	17	19	17	17	16	13	11	16	<10	<10	<10	<10	<10
R05	17	15	19	17	16	17	19	23	17	14	20	13	12	14	13	14	13	14	12	<10	<10	14	<10	<10	<10	<10	<10
R06	16	13	17	15	14	15	16	20	15	11	17	10	9	11	10	11	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10	<10
R07 R07A	17	15	18	17	16	18	18	21	19	14	19	12	12	13	14	15	13	12	11	<10	<10	<10	<10	<10	<10	<10	<10
R08	21	19	22	20	20	21	23	26	21	17	24	17	16	18	17	18	18	18	17	13	14	19	<10	<10	<10	<10	<10

Based on the predicted one-third octave band values, WMG provides the following commentary:

Tonal noise
When considered at R02, R04, R06 and R07, the predicted values do not exceed the level of the adjacent one-third octave bands on both sides by the 5dB, 8dB and 15dB thresholds nominated in the NPfI. A tonal adjustment will not be applicable for the assessment at these receptors. For the R01, R03, R05 and R08 receptors, the acoustic energy at 3150Hz is sufficiently elevated that a tonal adjustment of +5dB(A) will be applicable.

Low frequency noise
The predicted values do not exceed the low-frequency noise threshold values, and hence an adjustment will not be applicable for the assessment.

The results of the updated assessment including the +5dB(A) tonal adjustment at the R01, R03, R05 and R08 receptors is summarised below.

Table 12: Noise modelling results compared with Project Trigger Noise Levels (including tonal adjustment)

Assessment Location	Predicted Noise Level (15_{min})	Project Trigger Noise Levels L_{Aeq}		
		Day	Evening	Night
R01	41 dB(A) L_{eq}	40	35	35
R02	26 dB(A) L_{eq}	40	35	35
R03	37 dB(A) L_{eq}	40	35	35
R04	30 dB(A) L_{eq}	40	35	35
R05	28 dB(A) L_{eq}	40	35	35
R06	<20 dB(A) L_{eq}	40	35	35
R07	22 dB(A) L_{eq}	40	35	35
R07A - Commercial	22 dB(A) L_{eq}	68		
R08	33 dB(A) L_{eq}	40	35	35

As shown above, with the inclusion of the +5dB(A) tonal adjustment, WMG has determined that residual noise impacts at the R01 and R03 receptors have the potential to exceed the project trigger levels, and hence additional noise control should be considered at the subject site.

5.2.4. Noise Control and Response to Peer Review Report Recommendations

The findings of the assessment identify potential exceedances of the project trigger levels by up to 6 dB(A) at the R01 receptor and 2 dB(A) at the R02 receptor.

Due to the predicted non-compliances, WMG has amended the noise model to include a 3.0m high acoustic barrier to the east and south of the electrical infrastructure which will provide noise shielding in the direction of these receptors.

The barrier will effectively block line of sight between the receptors and the electrical infrastructure forming part of the site operations, and hence will reduce the noise impacts. The barrier construction requirements are discussed in Section 5.2.5.

The proposed barrier alignment is included below.

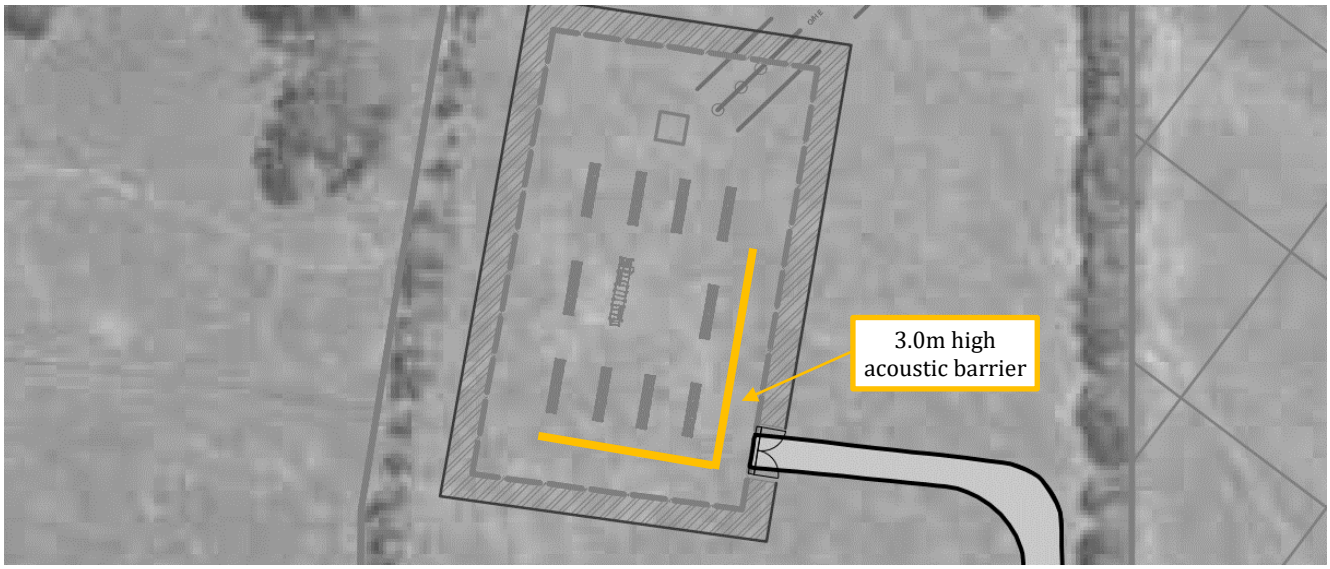


Figure 4: Proposed acoustic barrier arrangement

With the inclusion of the acoustic barrier, and the relevant tonal adjustment, WMG has determined that the predicted noise levels at each of the surrounding sensitive receptors will be compliant with the project trigger levels.

The results of the updated noise model are summarised below.

Table 13: Noise modelling results compared with Project Trigger Noise Levels (including tonal adjustment)

Assessment Location	Predicted Noise Level (15_{min})	Project Trigger Noise Levels L_{Aeq}		
		Day	Evening	Night
R01	35 dB(A) L_{eq}	40	35	35
R02	20 dB(A) L_{eq}	40	35	35
R03	34 dB(A) L_{eq}	40	35	35
R04	30 dB(A) L_{eq}	40	35	35
R05	28 dB(A) L_{eq}	40	35	35
R06	<20 dB(A) L_{eq}	40	35	35
R07	22 dB(A) L_{eq}	40	35	35
R07A - Commercial	22 dB(A) L_{eq}	68		
R08	33 dB(A) L_{eq}	40	35	35

The peer review report prepared by Rob Bullen Consulting recommended that EITHER:

- Measurements of existing ambient noise should be conducted before approval, both to confirm A-weighted background sound levels and to confirm the spectrum of the background noise. This may result in adjusted criteria and/or the presence of enough high-frequency ambient noise to mask the tone; OR
- The proposed barrier should be constructed as part of the project.

The findings of the site investigations have concluded that the existing noise environment at the site is not sufficiently elevated to 'mask' the potential tonal character of noise associated with the future site equipment.

In consideration of the above, and in accordance with the recommendation provided within the peer review report, it is expected that the client will be required to construct the acoustic barrier as part of the project, and not as part of a post commissioning compliance assessment.

5.2.5. Acoustic Barrier Construction

Based on the results of the noise model the acoustic barrier will need to be constructed to be 3000mm high and located to the south and east of the equipment to provide sufficient noise shielding in the direction of the nearby receptors.

To provide noise reduction qualities, the barrier must be constructed of materials with a surface minimum weight of 12 kg/m^2 and be constructed with no gaps between panels and between the panels and the ground below.

Where practical, the acoustic barrier location should be selected to maximise its height on the land topography, hence maximising the noise shielding in the direction of the sensitive receptors.

In addition to the above, the acoustic barrier must be lined on the equipment side using sound absorbing materials.

WMG recommends that the absorption coefficient performance of the sound absorbing lining achieve not less than 0.9 at the 3150Hz one third octave band frequency which has been identified as critical to the assessment. The overall NRC performance can be lower, and in the order of 0.7.

Suitability of the materials for external applications, and for installation within proximity of the proposed equipment must be considered and approved by others. From previous experience, a suitable material may include Megasorber faced with Soundmesh G8 facing. Fibrous insulation faced with perforated metal may also be a suitable alternative, however, will require a specific detail to ensure it was suitable for outdoor applications and could prevent rain ingress.

6. Construction Noise Assessment

6.1. Duration of Construction Works and Construction Program

The construction program for the proposed BESS facility is expected to have a duration of four weeks, during which various activities will be undertaken at the subject site.

The client has advised that the construction hours will be limited in accordance with the 'recommended standard hours' nominated by the EPA which include:

- Monday to Friday, 7:00am to 6:00pm.
- Saturday, 8:00am to 1:00pm.
- Sunday and Public Holidays, no construction works.

In consideration of the above, assessment of noise emissions due to construction activities at the site has been limited to the above 'recommended standard hours', as the client has advised that there is no need for works to be completed during other times.

For the purposes of this assessment, the client has provided a breakdown of the proposed construction program to assist with calculating residual noise levels at the critical sensitive receptors within proximity of the subject site.

The construction program is included below in Table 14 and indicates that the potentially 'noisy' activities including excavation, crane usage and heavy delivery vehicles will generally be limited to week 1 and week 2 of the program.

Table 14: Proposed construction program

Period	Site Works	No. of Vehicle Access per week
Week 1	• Drainage, road, and fencing works • Installation of concrete footings	Light – 10 (2 per day) Heavy – 2
Week 2	• Cable installation • Delivery of battery shipping containers and inverter station • Installation of battery shipping containers and inverter station	Light – 15 (3 per day) Heavy – 12
Week 3	• Electrical installation and cable termination • Electrical testing	Light – 15 (3 per day)
Week 4	• commissioning / demobilisation	Light – 10 (2 per day) Heavy – 1

6.2. Interim Construction Noise Guideline

6.2.1. General Assessment Methodologies

Construction noise and vibration associated with demolition, remediation, renewal, maintenance, and general building works has been identified as a major environmental issue within NSW. Construction activities can generate high levels of noise which can adversely impact on the surrounding acoustic environment including affecting sleep, concentration, mental and physical health.

In consideration of the above, several agencies including the Department of Environment and Climate Change (DECC), NSW Department of Planning, Roads and Traffic Authority (RTA), WorkCover NSW, NSW Health together with the Local Government and Shires Association of NSW prepared the *Interim Construction Noise Guideline* (INCG) to assist with addressing construction noise and vibration impacts.

The guideline was released in 2009 and provides methodologies for assessing and managing the potential impacts of construction noise on residences and other sensitive land uses.

The INCG document is currently under review by the EPA with a new draft guideline having been issued for *public consultation purposes only*, however had not been superseded at this stage.

In consideration of the above, WMG has adopted the currently applicable INCG document as the basis for providing an assessment of construction noise and vibration emissions associated with the project.

The main objectives of the ICNG are to:

- Promote a clear understanding of ways to identify and minimise noise from construction works.
- Focus on applying all 'feasible' and 'reasonable' work practices to minimise construction noise.
- Encourage construction activities to be undertaken only during the 'recommended standard hours' unless approval is given for works that cannot be undertaken during these hours.
- Streamline the assessment and approval stages and reduce time spent dealing with complaints at the project implementation stage.
- Provide flexibility in selecting site-specific feasible and reasonable work practices to minimise noise impacts.

When addressing construction noise and vibration, the guideline presents two alternative assessment methodologies expressed as either quantitative or qualitative and which vary based on the proposed construction project duration.

For shorter duration projects which are nominally defined as less than three weeks in total, the qualitative assessment procedures are commonly adopted which require the proponent to consider the guideline's checklist of work practices to minimise noise and implement appropriate strategies.

Where projects have a duration of greater than three weeks, the quantitative assessment procedure is recommended which includes derivation of 'noise management levels' (NML) and noise predictions to consider the potential noise impacts at sensitive receptor locations.

This BESS project will be undertaken for a period of four weeks and will therefore marginally exceed the timeframe which is nominated for a qualitative assessment. Furthermore, due to the proximity of the site to the nearest sensitive receptors, it is considered appropriate that a detailed investigation consistent with the quantitative assessment approach is undertaken for the proposal.

6.2.2. Determination of Project Noise Management Levels

The NMLs are determined based on an emergence of the construction noise impacts above the RBLs defined within the NPfI for the 'recommended standard hours' as shown within Table 15.

Table 15: Hours Nominated within ICNG

Period Designation	Relevant Hours
Recommended Standard Hours	Monday to Friday – 7:00am to 6:00pm Saturday – 8:00am to 1:00pm
Outside Recommended Standard Hours	All Days – 6:00pm to 7:00am Saturday – 1:00pm to 6:00pm Sunday / Public Holidays – All Day

A summary of the methodologies associated with determining the NMLs and the methods of application are included within Table 16 below.

Table 16: Noise impacts at residences using quantitative assessment procedure.

Time of Day	NML L_{Aeq} (15 min)	How to Apply
Recommended standard hours.	Noise affected RBL + 10 dB	The noise affected level represents the point above which there may be some community reaction to noise. ▪ Where the predicted or measured LAeq (15 min) is greater than the noise affected level, the proponent should apply all feasible and reasonable work practices to meet the noise affected level. ▪ The proponent should also inform all potentially impacted residents of the nature of works to be carried out, the expected noise levels and duration, as well as contact details.
	Highly noise affected 75 dB(A)	The highly noise affected level represents the point above which there may be strong community reaction to noise. ▪ Where noise is above this level, the relevant authority (consent, determining or regulatory) may require respite periods by restricting the hours that the very noisy activities can occur, taking into account: 1. Times identified by the community when they are less sensitive to noise (such as before and after school for works near schools, or mid-morning or mid-afternoon for works near residences. 2. If the community is prepared to accept a longer period of construction in exchange for restrictions on construction times.
Outside recommended standard hours	Noise affected RBL + 5 dB	▪ A strong justification would typically be required for works outside the recommended standard hours. ▪ The proponent should apply all feasible and reasonable work practices to meet the noise affected level. ▪ Where all feasible and reasonable practices have been applied and noise is more than 5 dB(A) above the noise affected level, the proponent should negotiate with the community.

The NMLs are not mandatory limits, however where construction noise levels are predicted to exceed the NMLs, it is considered appropriate that the proponent implement feasible and reasonable work practices to minimise the potential impacts on noise sensitive receptors.

Guidance in relation to what is considered feasible and reasonable is included in the ICNG and generally relates to practical implementation and ongoing maintenance associated with the proposed treatment.

It also considers whether the overall noise benefits associated with the noise control approach outweigh the overall adverse social, economic, and environmental effects, including the cost of the measure.

When determining the noise management levels for the construction phase of the project, and in the absence of site measured data, WMG has adopted the minimum RBLs which form part of the NPfI.

The adopted NMLs for the project are therefore as shown below in Table 17.

Table 17: Residential Receptor Noise Management Levels for Construction

Descriptor	NPfi Defined Assessment Period		
	Day	Evening	Night
Recommended Standard Hours – Noise Affected	45 L_{Aeq}	N/A	N/A
Recommended Standard Hours – Highly Affected	75 L_{Aeq}	N/A	N/A

Where appropriate, the ICNG also requires consideration of ground borne noise impacts at residential receptors as well as the potential for noise emissions to cause sleep disturbance at residential receptors during the night periods.

Given the distance setback of the closest sensitive receptor to the site and the proposed construction hours which are limited to the day period, potential ground borne noise emissions, and the potential for sleep disturbance has not been considered further.

6.3. Proposed Construction Activities and Noise Assessment

Based on information provided by the client, equipment which will form part of the construction works associated with preparation and commissioning of the subject site will include:

- Excavator.
- Grader.
- Drum roller.
- Water dust suppression truck.
- Truck mounted crane (60 tonne) – lifting and positioning works expected to be completed in 1 day.
- Concrete truck and associated agitator.
- Power hand tools.

In addition to the above, a total of fifteen (15) heavy vehicles will attend the subject site throughout the four week construction program, with fourteen (14) expected within the first two weeks. The heavy vehicles will deliver the battery containers and inverter station. The final truck will likely be for waste collection.

An indicative breakdown of the construction stages during which each type of equipment will be utilised is included below within Table 18.

Table 18: Summary of Construction Activities.

Construction Stage	Equipment and Activity
Access road construction.	▪ Excavator. ▪ 10t smooth drum roller. ▪ Grader for gravel road construction. ▪ Water trucks for dust suppression.
Drainage and fencing works.	▪ Excavator for landscaping. ▪ Water trucks for dust suppression. ▪ Concrete truck and associated agitator for fence construction. ▪ Private vehicles.
Installation of concrete footings	▪ Concrete truck and associated agitator. ▪ Private vehicles.
Delivery of battery shipping containers and inverter station unit.	▪ Semi-trucks for good deliveries. ▪ Crane truck to move containers and place in position. ▪ Private vehicles.
Cable installation	▪ Excavator for cable trenching. ▪ Water trucks for dust suppression. ▪ Powered hand tools for connection. ▪ Private vehicles.
Electrical installation, cable termination and electrical testing.	▪ Powered hand tools for connection. ▪ Private vehicles.
Commissioning and demobilisation	▪ Private vehicles. ▪ Waste truck.

Private vehicles, although relevant, will have source sound power levels significantly lower than other potential noise sources forming part of the proposed construction activities and will not contribute to the calculated value at the sensitive receptors. In consideration of the above, WMG has not considered noise associated with private vehicles further within the construction noise assessment.

Transient sources such as trucks may travel within the site boundaries, however, for the purposes of this assessment, WMG has considered that the construction activities will generally occur where the electrical infrastructure will be located.

The exception to this will be that trucks will need to travel along the access road to enter the site, and hence will be in closer proximity to R01 at various times throughout the construction period. Furthermore, specific road preparation and construction works will also need to occur in proximity to R01, and hence have been considered at this location as part of the assessment.

When addressing source noise levels associated with the construction activities, WMG has considered the following:

- Maximum noise levels from plant and equipment nominated within Appendix C of the Construction Noise and Vibration Strategy document issued by Transport for NSW 2019.
- Noise level data provided by the manufacturer/equipment suppliers.
- Noise level data obtained by WMG as part of previous independent investigations.

Based on the above, and with input from the client, the equipment types and adopted sound power levels are included within Table 19 below.

Table 19: Summary of Equipment and Associated Sound Power Levels

Construction Stage	Equipment Type	No. of Units	Adopted Sound Power Level	Operating Time in 15min period	Adopted L_{WA} per Stage
Access road construction.	Excavator	1	95 dB(A)	100 %	111 dB(A)
	Roller	1	107 dB(A)	50 %	
	Grader	1	113 dB(A)	50 %	
	Water Cart	1	102 dB(A)	50 %	
Drainage and fencing works.	Excavator	1	95 dB(A)	100 %	111 dB(A)
	Water Cart	1	102 dB(A)	50 %	
	Concrete Truck	1	104 dB(A)	25 %	
	Concrete pouring	1	110 dB(A)	100 %	
Concrete footings install	Concrete Truck	1	104 dB(A)	25 %	110 dB(A)
	Concrete pouring	1	110 dB(A)	100 %	
Delivery of battery shipping containers and inverter station unit	Truck movements	1	101 dB(A)	25 %	102 dB(A)
	Crane truck	1	104 dB(A)	50 %	
Cable installation.	Excavator	1	95 dB(A)	100 %	102 dB(A)
	Water Cart	1	102 dB(A)	50 %	
	Hand Tools	3	96 dB(A)	50 %	
Electrical installation, cable termination and electrical testing	Hand Tools	3	96 dB(A)	50 %	98 dB(A)
Commissioning and demobilisation.	Waste Truck	1	101 dB(A)	50 %	98 dB(A)

The client has advised that each phase of the construction program will be undertaken progressively which will result in cumulative noise levels during each stage rather than due to multiple construction stages.

Using the adopted sound power levels and usage rates described in Table 19, the calculated resultant noise levels at the critical receptors are summarised within Table 20 below.

Table 20: Predicted Construction Noise Levels

Construction Phase	Predicted Noise Levels $L_{Aeq\ (15\ minute)}$								Predicted Noise Levels relative to Derived NMLs $L_{Aeq\ (15\ minute)}$							
	R1	R2	R3	R4	R5	R6	R7	R8	R1	R2	R3	R4	R5	R6	R7	R8
Access road construction.	59	49	49	42	45	42	40	43	45	45	45	45	45	45	45	45
Drainage and fencing works.	53	44	49	48	46	39	40	46	45	45	45	45	45	45	45	45
Concrete footings install	52	44	48	47	45	38	39	45	45	45	45	45	45	45	45	45
Battery containers and inverter station unit delivery and placement	45	37	40	39	37	30	32	37	45	45	45	45	45	45	45	45
Cable installation.	45	37	40	39	37	30	32	37	45	45	45	45	45	45	45	45
Electrical installation, cable termination and electrical testing	40	31	36	35	33	26	28	34	45	45	45	45	45	45	45	45
Commissioning and demobilisation.	40	31	36	35	33	26	27	34	45	45	45	45	45	45	45	45

The results of the noise model indicate that during the initial stages of the construction program, noise emissions associated with the construction of the access road, concrete truck use, and more particularly, the concrete pouring process have the potential to be higher than the 'Noise Affected' NMLs during the recommended standard hours.

The calculated values will continue to be well below the 'highly affected' NML of 75 dB(A).

Given the calculated NML exceedances, construction noise mitigation strategies have been included in Section 6.4.

It must be noted that the R01 receptor who is predicted to receive exposure to the higher levels of construction noise, is associated with the proposal, and hence has open communication with the client regarding the proposed works and construction methodology.

In consideration of the above, it is expected that this receptor will be more tolerant of the potential construction noise impacts that other nearby receptors.

6.4. Construction Noise Mitigation and Management

The NSW ICNG requires that noise emissions associated with construction are assessed against NMLs.

The NMLs are not mandatory noise limits, however where construction activity noise levels are predicted to exceed the NMLs, it is considered appropriate that the proponent implement feasible and reasonable work practices to minimise the potential impacts on noise sensitive receptors.

Guidance regarding minimisation of disturbance due to construction is included within *AS2436-2010 Guide to noise and vibration control on construction, demolition and maintenance sites'* as well as the ICNG and includes the reference to the following:

- Implementation of universal work practices relating to minimising noise.
- Selection of low noise plant and equipment.
- Consultation and transparency with the surrounding community.

In addition, due to the calculated exceedances of NMLs at the R01, R03 and R04 receptors, specific noise control for some activities should be considered by the client.

6.4.1. General Work Practices

Universal work practices which should form part of a construction management plan will include:

- Regular enforcement (ie toolbox talks) of the need to minimise noise and vibration. This will include educating heavy vehicle drivers regarding expectations of their vehicle use (eg. avoid engine brakes, sudden acceleration, minimising reversing etc).
- Regular identification of noisy activities and adoption of improvement techniques.
- Avoiding the use of portable radios, public address systems or other methods of site communication that may unnecessarily impact upon nearby residents.
- Developing routes for the delivery of materials and parking of vehicles to minimise noise.
- Where possible avoiding the use of equipment that generates impulsive noise.
- Minimising the need for vehicles reversing at the site and within proximity of receptors.
- Use of broadband audible alarms on vehicles and elevating work platforms used on site.
- Minimising the movement of materials and plant and unnecessary metal-on-metal contact.
- Minimising truck movements.
- Scheduling respite periods (eg. noisy periods limited to 3 hours).
- Prioritise ensuring that construction works, and heavy vehicle movements occur during standard work hours between 7am and 6pm Monday to Friday, and 7am to 1pm Saturday.

6.4.2. Plant and Equipment

General work practices which will minimise the potential for noise emissions to cause disturbance at sensitive receptors will include:

- Where possible, implementing quieter techniques for high noise activities.
- Choosing quieter mobile and fixed equipment based on the site requirements.
- Operating equipment in the quietest and most efficient manner.
- Regular inspection and maintenance of equipment to ensure it is in good working order.

6.4.3. Community Relations

Communication and transparency with the surrounding community will be critical in minimising the potential for adverse impacts on the acoustic amenity at sensitive receptors. In order to orchestrate the above, it is advised that the client implement the following:

- Appoint a relevant community relations manager prior to project commencement.
- The manager must approach and communicate with sensitive receptors information regarding the project timeline, construction methodologies, potentially noisy periods.
- Maintain contact with receptors throughout duration of project to ensure that they are up to date on when certain events will commence and finish.
- Provide a construction noise management plan to the sensitive receptors which includes site contact information for residents to call regarding complaints and other queries.

Where complaints are received, they must be recorded on a centralised system and handled in a prompt and responsive manner. This may involve noise monitoring or a review or processes.

6.4.4. Specific Construction Activity Noise Control

6.4.4.1. Concrete Truck Pouring

The noise emission assessment has identified the potential for exceedances of NMLs at the critical R01, R03, R04 and R08 receptors due to the concrete pouring works which will occur during fencing and concrete footing installation.

Predicted values at all other identified receptor locations will be < 45 L_{Aeq} during the described works which is below the NML for the recommended standard hours at these locations.

Due to the calculated exceedances, it would be recommended that the client engage in consultation with the receptors and ensure that they are aware of the works proposed and the duration of the works.

It would be expected that the main source of noise associated with the pouring activity will be the truck engine revs, therefore the contractor should minimise this where possible to minimise noise emissions.

Furthermore, in accordance with information provided in AS2436-2010, where feasible, the contractor should:

- Locate static mixing activities as far as possible from sensitive receptors.
- Ensure that workers do not hammer the drum as part of cleaning.
- Fit more efficient silencers to diesel or petrol engines.

6.4.4.2. Reversing and Warning Alarms

Community concerns in relation to construction noise have often resulted from the use of tonal reversing beepers associated with mobile equipment at construction sites. In consideration of the above, WMG provide the following recommendations:

- Equipment which is based at site should be fitted with ‘new generation’ broadband reverse alarms which vary their noise output according to the ambient noise level in the surrounding environment.
- Encourage operators of commercial vehicles making deliveries / collection at site to replace any tonal revering beepers with the described ‘new generation’ broadband reverse alarms.
- Configure the site to minimise the requirement for non-site based vehicles to reverse.

Where possible, non-audible warning systems (eg. flashing lights, reversing cameras) should be used to reduce noise and must be approved by relevant safety authorities.

7. Vibration Assessment

The project construction and operational phase will not include any vibration intense activities such as piling and ramming and hence, have not been considered further.

8. Road Traffic Noise Assessment

During the operational phase of the BESS project, it is understood that there will be no permanent staff based at the site, and therefore no regular traffic movements.

Site inspections and maintenance works will be undertaken intermittently as required.

Given the infrequency of the operational vehicle movements, noise impacts during these times will be negligible and are not expected to impact adversely on the acoustic environment at sensitive receptors.

The focus of any vehicle movements will therefore be based on the project construction phase during which there will be weekly vehicle movements. It is understood that during this phase, vehicles will access the site via the internal access road from Turton Place.

When addressing the potential noise impacts associated with vehicle movements along public roads, commonly adopted criterion is provided within the NSW Department of Environment Climate Change and Water (DECCW) Road Noise Policy, March 2011.

The Policy includes assessment criteria to consider the potential noise impacts at residences affected by traffic on existing roadways generated by land use developments as shown in Table 21.

Table 21: Road Traffic Noise Assessment Criteria for Residential Land Uses

Road Category	Type of Project / Land Use	Assessment Criteria L_{Aeq}	
		Day (7am to 10pm)	Night (10pm to 7am)
Freeway	Existing residences affected by additional traffic on described roadway generated by land use developments	60 (15 HOUR)	55 (9 HOUR)
Local Roads	Existing residences affected by additional traffic on described roadway generated by land use developments	55 (1 HOUR)	50 (1 HOUR)

Based on guidance provided by the client, it is understood that the following light and heavy vehicle movements will form part of the four week project construction program:

- **Week 1** – two light vehicles accessing the site per day, and a total of two heavy vehicles accessing the site across the week period. No more than one heavy vehicle in a one hour period.
- **Week 2** – three light vehicles accessing the site per day, and a total of twelve heavy vehicles accessing the site across the week period. No more than one heavy vehicle in a one hour period.
- **Week 3** – three light vehicles accessing the site per day, and no heavy vehicles.
- **Week 4** – two light vehicles accessing the site per day, and a total of one heavy vehicle accessing the site across the week period.

The heavy vehicles will be delivering materials to the site including the new battery storage containers and the MVPS containers. Light vehicles will be associated with construction staff and their personal vehicles.

Based on a review of aerial photography of the surrounding area, it is understood that dwellings will be setback from access roads which may carry site vehicles by 40-50m.

Based on calculations, the proposed construction program traffic movements will be below the assessment criteria values nominated in Table 20 above.

9. Conclusion

WMG has undertaken an acoustic assessment to address potential operational and construction noise and vibration impacts associated with the BESS facility proposed at the site described as 3 Turton Place, Murrumbateman, New South Wales.

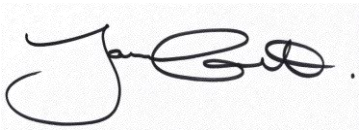
Assessment of noise emissions from the proposed site operations, and construction activities have been based on the methodologies described within the following documentation:

- NSW EPA Noise Policy for Industry.
- NSW Interim Construction Noise Guideline 2009.
- Department of Environment and Conservation's 'Assessing Vibration: a technical guideline'.
- NSW Department of Environment Climate Change and Water Road Noise Policy 2011.

The findings of the assessment have concluded that noise control, including the construction of a 3.0m acoustic barrier will be required to reduce operational noise emissions from the subject site to comply with the adopted project trigger levels at sensitive receptors.

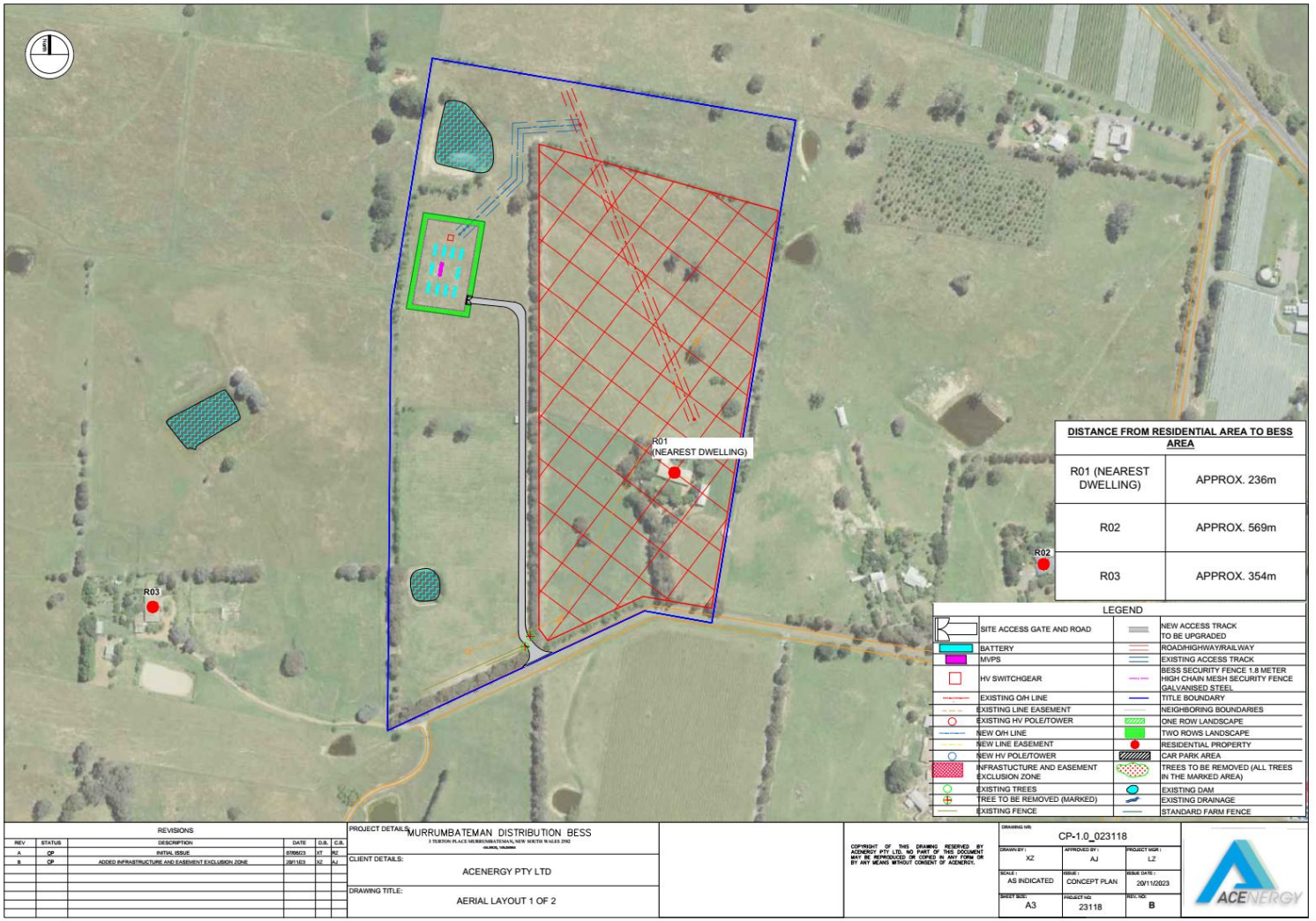
When addressing general construction noise and vibration as well as road traffic noise, the findings of the assessment concluded the following:

- Noise due to construction vehicle movements is predicted to be below noise level criteria nominated within the Road Noise Policy.
- Noise emissions due to some construction activities have been predicted to exceed NMLs at receptors. In these instances, WMG has provided suitable noise mitigation strategies to minimise the potential for adverse impacts on the relevant sensitive receptors.
- The project construction and operational phase will not include any vibration intense activities such as piling and ramming and hence, have not been considered further.



JORDAN GROWCOTT
WATSON MOSS GROWCOTT
ACOUSTICS PTY LTD

Appendix 1 – Aerial Site Plan Layout



Premise

ATTACHMENT 4

REVISED BUSHFIRE ASSESSMENT

REF: 6559BF

Date: 17/4/25

BUSH FIRE MANAGEMENT & EMERGENCY RESPONSE PLAN

BATTERY ENERGY STORAGE SYSTEM

LOT 23 DP 248413

3 TURTON PLACE

MURRUMBATEMAN

LGA: Yass Valley

Client: ACEnergy Pty Ltd

HARRIS ENVIRONMENTAL CONSULTING
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HARRIS ENVIRONMENTAL CONSULTING

Version Control

Date Created				
Version Number	Name	Issue Detail	Date Modified	Status
1.0	LJ & KH	DRAFT BFMERP	9/4/24	LJ & KH
1.0	LJ & KH	FINAL BFMERP	16/5/24	LJ & KH
1.1	LJ & KH	FINAL BFMERP	16/5/24	LJ & KH
1.2	LJ & KH	FINAL BFMERP	7/3/25	LJ & KH
1.3	CRH 7 LJ	Updated Plans	17/4/25	LJ & KH

ASSESSOR & QUALIFICATIONS

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DISCLAIMER

The recommendations provided in the summary of this report are a result of the analysis of the proposal in relation to the requirements of Planning for Bushfire Protection 2019. Utmost care has been taken in the preparation of this report; however, there is no guarantee of human error. The intention of this report is to address the submission requirements for Development Applications on bushfire prone land. There is no implied assurance or guarantee the summary conditions will be accepted in the final consent, and there is no way Harris Environmental Consulting is liable for any financial losses incurred should the recommendations in this report not be accepted in the final conditions of consent. This bushfire assessment provides a risk assessment of the bushfire hazard as outlined in the PBP 2019 and AS3959 2018. It does not provide protection against any damages or losses resulting from a bushfire event.

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FIGURES

TABLES

1 INTRODUCTION

ACEnergy Pty Ltd engaged Harris Environmental Consulting to prepare a Desktop Bush Fire Management and Emergency Response Plan (the plan) for the proposed Battery Energy Storage System (BESS) development at 3 Turton Place, Murrumbateman.

The subject site is classified Bush Fire Prone Land (BFPL) under the Yass Valley BFPL Map.

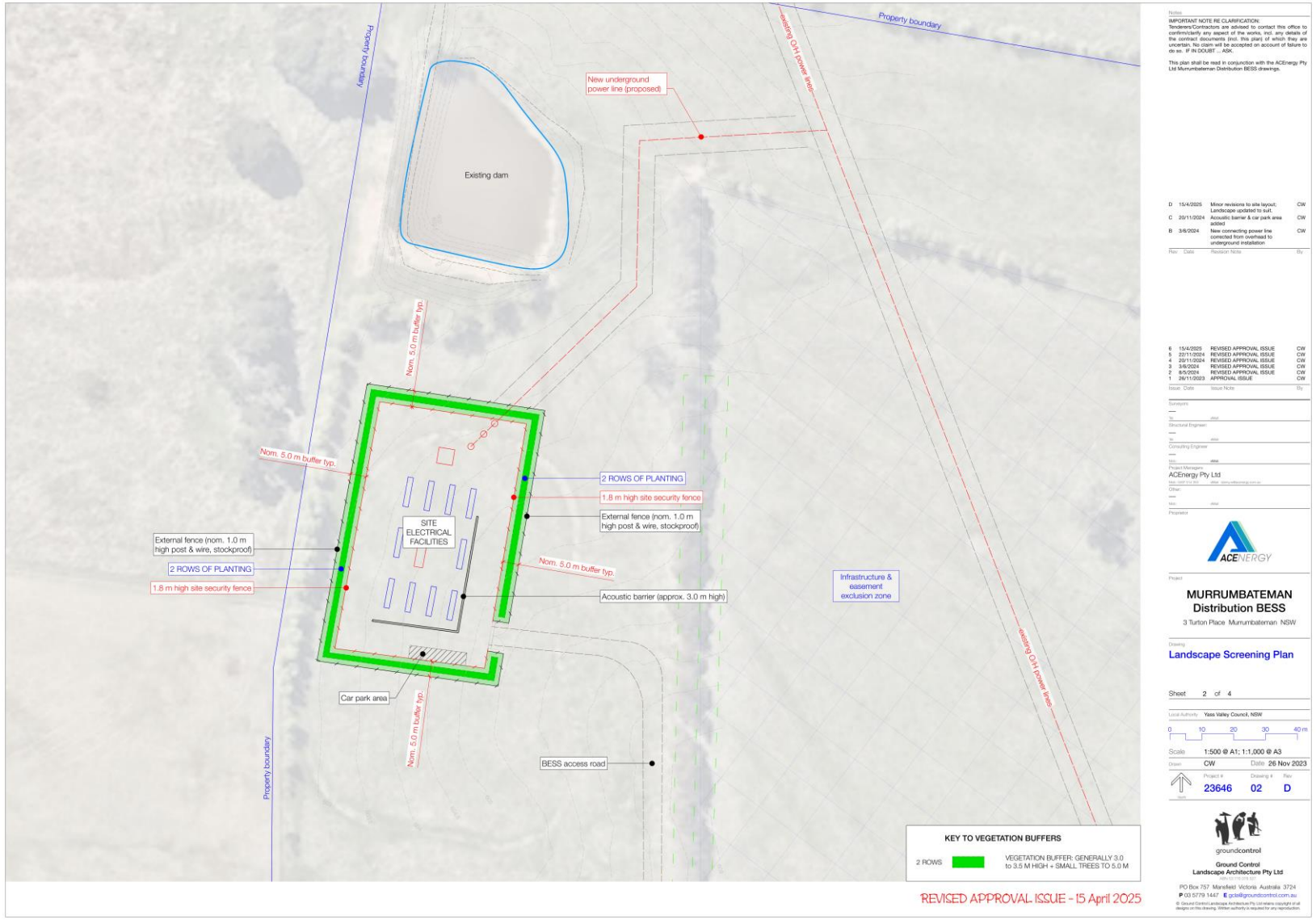
The plan has been prepared per the requirements of *Planning for Bush Fire Protection 2019* (PBP), the NSW Rural Fire Service (RFS) document: *A guide to developing a bush fire emergency management and evacuation plan,* and Australian Standard AS 3745:2010 *Planning for emergencies in facilities.*

The purpose of the plan is to evaluate the bushfire risk profile of the site and identify a package of bushfire management measures and emergency response actions that can be taken to protect human life and minimise impacts on assets from the threat of a bush fire.

2 FACILITY DETAILS

The proposed development will involve the construction and operation of a Battery Energy Storage System on the northwestern corner of the subject site. The proposed development includes 10 batteries, one MVPS and associated facilities within a 0.5 ha fenaced site with proposed internal property access from Turton Place on the south.

Figure 1 - Proposed Development



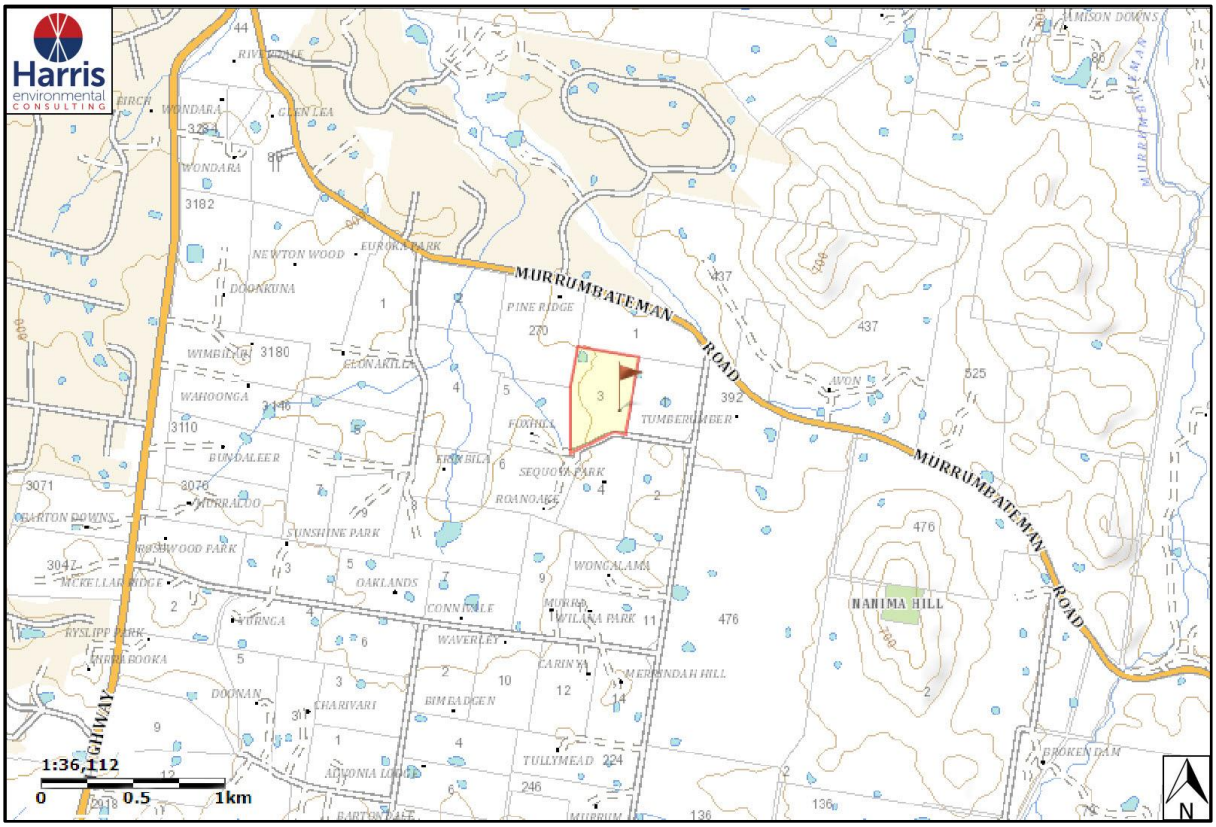
3 SITE DESCRIPTION

The site is located 7km east of the main township of Murrumbateman in the Southern Tablelands of NSW and 40 km north of Canberra (ACT).

The legal title of the property is Lot 23 in DP 248413, 3 Turton Place, Murrumbateman NSW 2582.

The site is located within the Yass Valley Local Government Area (LGA) and is zoned RU4 - Primary Production Small Lots under the *Yass Valley Local Environmental Plan 2013.*

Figure 2 - Site Location



4 LANDSCAPE BUSHFIRE RISK PROFILE

4.1 Southern Tablelands

The site is located in the Southern Tablelands of NSW. The Southern Tablelands Bush Fire Management Committee (BFMC) coordinates all bushfire risk management.

The BFMC area covers roughly 1,455,100ha of land from the lower Blue Mountains and Wyangla Dam in the north, Burrinjuck Dam in the south-west to the Shoalhaven River in the east and borders onto the north east of the Australian Capital Territory.

The BFMC area generally experiences temperate to cool climate with warm to hot summers and cool winters. The average annual rainfall across the region is 800-1000mm which occurs during winter and spring, with minimal rainfall in the summer months. The fire season typically commences in October and continues in late March/April.

The BFMC area has an average of 265 bushfires per year, 5 of which are considered major fires. Yass Valley has a history of major fires occurring in a cycle of 2.5 years.

The majority of bushfires in the BFMC area are from lightning strikes associated with spring and summer storm activity as well as burns escaping from legal and illegal burns and use of farm machinery.

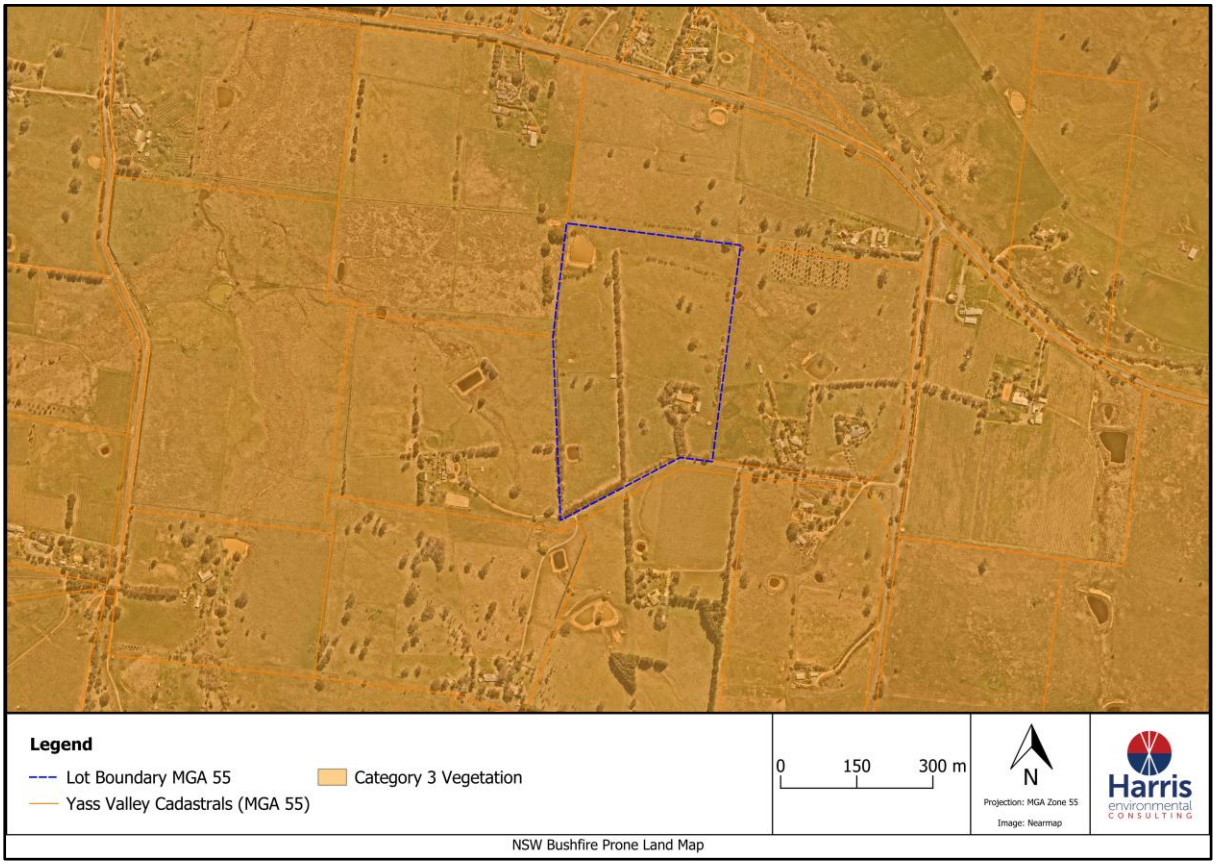
4.2 Bushfire Hazard Assessment

The site contains and is surrounded by rural residential land, vineyards and agricultural farming.

Yass Valley Council maps the BFPL within and surrounding the subject site as Category 3 bushfire-prone vegetation.

Vegetation Category 3 is considered to be medium bushfire-risk vegetation. It is higher in bushfire risk than Category 2 (and the excluded areas) but lower than Category 1. It is represented as dark orange on a BFPL map and consists of Grasslands, freshwater wetlands, semi-arid woodlands, alpine complexes, and arid shrublands.

Figure 3 – Bushfire Prone Land Map



4.2.1 Classified Vegetation

The majority of the land surrounding the development is not classified on the State Vegetation Type Map, with only minimal remnant trees mapped as 'Southern Tableland Grassy Woodland' (NSW DPIE, 2022). This vegetation has <5% tree cover and has been classified as Grassland in accordance with PBP 2019.

The proposed Landscaping (Appendix IV) is located wholly outside the 1.8 m high security fence.

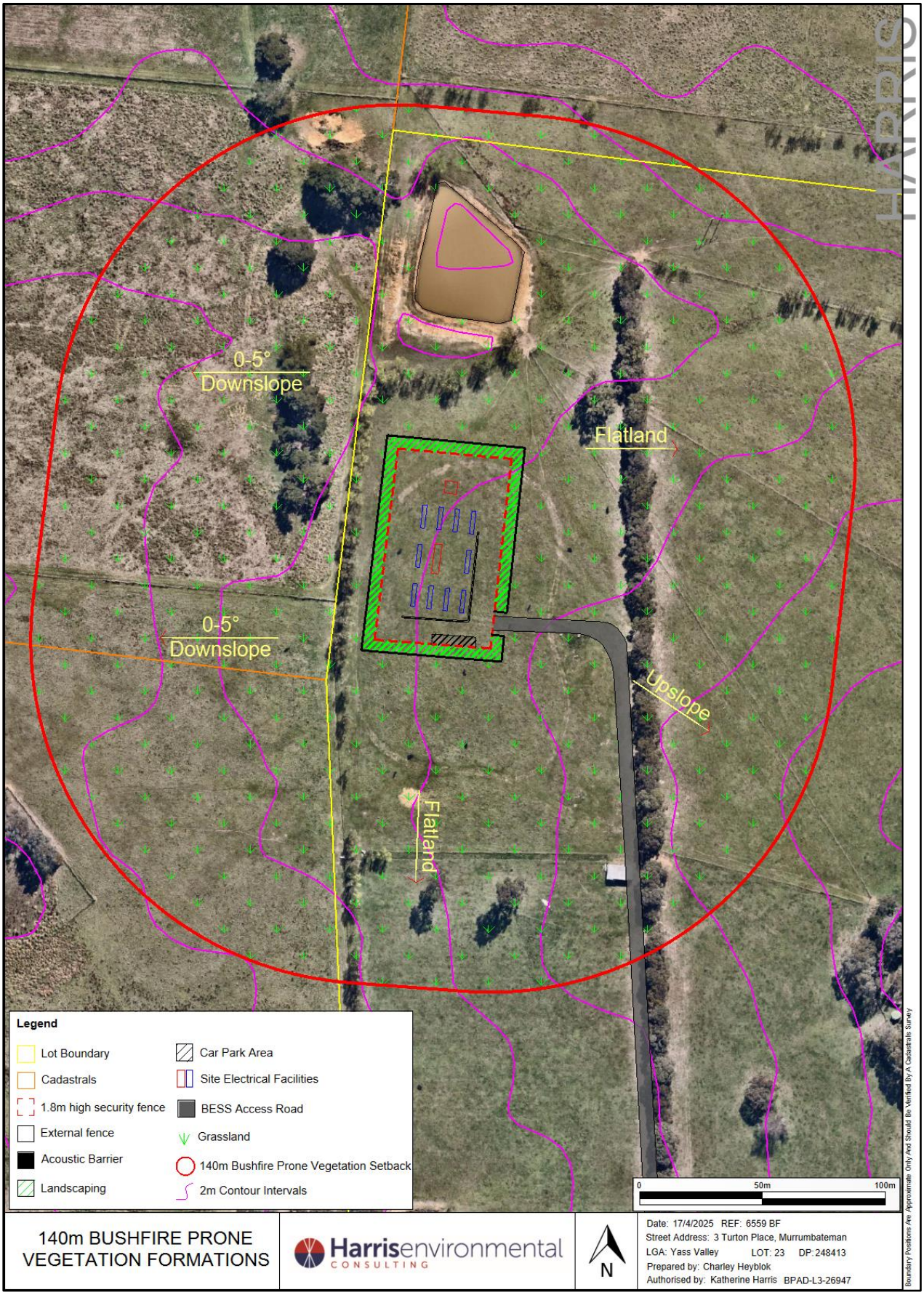
4.2.2 Effective Slope

Australian Standard AS3959-2018 *Construction of buildings in bushfire-prone areas* and PBP 2019 identify that the slope of the land under the classified vegetation is much more important than the slope between the proposed development and the edge of the classified vegetation.

The effective slopes influencing bushfire behaviour towards the proposed development were assessed using elevation data from Spatial Services NSW, April 2023.

The development area is located on a gentle slope that falls west. Slopes to the west are considered 0-5 degrees downslope, with land in all other directions considered flatland/upslope.

Figure 4 – Classified vegetation and effective slopes influencing bushfire behaviour



4.2.3 Potential Bush Fire Behaviour

Based on the desktop assessment of land use, classified vegetation and effective slopes within 140 metres of the subject site, the predominate risk to the proposed development is likely to be from grassland fires impacting the site or spreading from the site.

The bushfire risk posed by a grassland hazard differs from fires in other vegetation communities. Fires burning through a grassland hazard generally spread rapidly at higher intensities and have shorter residence time. Ember production is limited, smaller and fewer in number than those produced from forest fires but can still propagate spot fires ahead of the main fire front.

5 BUSHFIRE RISK ANALYSIS

The bushfire risk to people, property, and the environment has been assessed in relation to the likelihood and consequence per the Australian Standard AS ISO 310000 *Risk Management Guidelines*.

The plan identifies assets within the site, protection measures and management zones.

5.1 Asset Identification

Assets are defined as anything valued by the community, which includes agricultural land, forests, livestock, heritage buildings and places, infrastructure, the environment, commercial and industrial buildings and equipment that may be at risk from bushfires.

Assets within the site have been divided into four asset types.

5.1.1 Human Settlements:

- Residential areas, including urban bushland interface areas and rural properties, and
- Other human settlement areas, including commercial and industrial areas.

5.1.2 Economic:

- Built assets within the subject site, e.g. the battery energy storage systems, MVPS, compound, access roads, landscaping and all associated facilities
- Commercial operation of the facility.

5.1.3 Environmental:

- Threatened species, populations and ecological communities within the site; and
- Locally important species and ecological communities that are susceptible to fire.

5.2 Risk Register and Risk Management Matrix

Refer to Appendix I.

6 BUSHFIRE MANAGEMENT AND PROTECTION MEASURES

The Bushfire Management Plan has been prepared in accordance with the NSW Rural Fire Service *Model Bushfire Risk Management Plan*. The plan identifies a package of bushfire management and protection measures that can be taken to protect life and minimise impacts on assets from bushfires.

6.1 Asset Protection Zones

The intent of an Asset Protection Zone (APZ) is to minimise the risk of bushfire attacks and maintain reduced fuel loads to ensure radiant heat levels at buildings and assets are below critical limits. The APZ provides a safe operational environment for emergency service personnel undertaking operations.

Assets are defined as anything valued by the community, which includes agricultural land, forests, livestock, heritage buildings and places, infrastructure, the environment, commercial and industrial buildings and equipment that may be at risk from bushfires.

The APZ is located wholly in grassland, with no trees within the development footprint. This grass that should be kept mown (<100mm in height). A 11-14-metre-wide APZ around the electrical facilities provides a defendable space and safe operational access to all assets and infrastructure. This APZ is located within surrounding security fence.

The proposed Landscaping (Appendix IV) is located wholly outside the proposed APZ area.

6.2 Bushfire Management Zones

Bushfire Management Zones have been assessed in consideration of the Southern Tablelands BFRMP. Management zones are based on the overall and long term management of the site in consideration of bushfire impacting the site as well as protection of the surrounding landscape from a fire escaping the site.

The Precinct map for west of Murrumbateman is shown in Appendix II and shows no Strategic Fire Advantage Zone or Land Management Zones within the surrounding area. An APZ has been identified within the site based on the bushfire risk profile and risk analysis detailed in section 4.3. The APZ is illustrated in Figure 5 and detailed in Table 1.

Based on the layout of the facility this assessment also recommends a fuel free zone directly surrounding the MVPS, batteries and HV switchgear for the purposes of minimising the likelihood of fires within the site and reducing their potential severity or extent.

Figure 5 - Land Management Zones

Table 1: Bushfire management zones.

Fuel Free Zone	
Description	A fuel-free area under and surrounding critical assets.
Purpose	The primary purpose of a fuel-free area is to prevent the spread of fire and inhibit fire propagation from spot fires.
Location	Immediately adjacent critical assets at risk of bushfire. 1-5m
Tactics	• Gravel or concrete. • Herbicide application.
Management Intensity	Managed at a high intensity to minimise available fuel loads.
Asset Protection Zones(APZ):	
Description	A fuel-reduced area surrounding an asset that creates a buffer from the bushfire-prone vegetation and provides a defendable space for firefighting operations.
Physical Description	**Trees:** • tree canopy cover should be less than 15% at maturity; • trees at maturity should not touch or overhang the building; • lower limbs should be removed up to a height of 2m above the ground; tree canopies should be separated by 2 to 5m; and • preference should be given to smooth barked and evergreen trees. **Shrubs:** • shrubs create large discontinuities or gaps in the vegetation to slow down or break the progress of fire towards buildings should be provided; • shrubs should not be located under trees; • shrubs should not form more than 10% ground cover; and • clumps of shrubs should be separated from exposed windows and doors by a distance of at least twice the height of the vegetation. **Grass:** • grass should be kept mown (as a guide grass should be kept to no more than 100mm in height); and • leaves and vegetation debris should be removed.
Purpose	The primary purpose of an APZ is to protect human life (including residents, community members and firefighters), property and highly valued public assets (such as human settlement, economic, environmental and cultural items) from the direct impacts of bushfires.
Location	APZs are generally implemented within the development site and immediately adjacent assets at risk of bushfire to provide separation from bushfire-prone vegetation.
Tactics	• Slashing and mowing. • Herbicide application. • Grazing. • Implement frequent prescribed burning. • Carry out selective hand clearing.

	• Grassland within the APZ should be kept mown (as a guide, grass should be kept to no more than 100mm in height). • The APZ should be established before the commencement of works and maintained for the life of the development.
Management Intensity	Vegetation within the APZ is managed at a high intensity to minimise available fuel loads. As a minimum, APZs are to be treated as required to maintain the specifications of the APZ. APZs should be audited bi-annually

6.3 Construction Standards

To ensure the proposed development is afforded a suitable package of bushfire protection measures, all critical assets should be constructed from non-combustible materials designed to mitigate the risk of flame damage, ember attack and radiant heat. The APZ within the fenced site can achieve a BAL 40 setback, based on the remoteness of the development, the external services should be shielded or designed to withstand 40kWm2 of radiant heat (BAL 40). Where applicable, all critical assets should include ember protection.

Ember protection can be achieved by enclosing all openings or covering openings with a non-corrosive metal screen mesh with a maximum aperture of 2mm. This includes subfloor areas, open windows, vents, weep holes and eaves. External doors should be fitted with draft excluders.

6.4 Safe Operational Access

The subject site has direct access to Turton Place to the south. The site access gate is located on Turton Place. The access is approximately 390 m in length to the 8 m wide access gate.

Based on the length of the internal access road within the property it is recommended the access comply with the PBP- Property Access Table 7.4a. This includes:

- A minimum carriageway width of four metres;
- provide enough turning room for a fire tanker that requires an inner minimum turning radius of 6 m and outer minimum radius of 12 m;
- Curves a minimum inner radius of six metres;
- The minimum distance between inner and outer curves is six metres;
- The cross fall is not more than 10 degrees;
- Maximum grades for sealed roads do not exceed 15 degrees (28 per cent) and not more than 10 degrees (18 percent) for unsealed roads; and
- There is suitable access for a Category 1 fire appliance to within 4m of the static water supply.

6.5 Provision of Services

The proposed development will not be connected to reticulated water. A minimum of 20,000L of static water should be located within the development site to ensure adequate water is provided to protect assets during and after the passage of a bushfire.

Above-ground tanks must be manufactured of concrete or metal and raised tanks have protected stands. A suitable connection for firefighting purposes, such as a 65mm Storz outlet and a gate or ball valve, should be provided where required.

All above-ground electrical transmission lines should be managed under specifications issued by the managing authority.

6.6 Site Management

All land management must be undertaken according to license conditions and legislation, whether inside or outside the site.

Under the *Rural Fires Act 1997*, the RFS can direct landholders to undertake hazard reduction activities on their property.

6.7 Total Fire Bans

During the construction and operation phase of the facility, the safe work procedures and restrictions associated with a total fire ban, as outlined by the NSW RFS, should be followed. A total fire ban means no fires out in the open. A total fire ban helps limit the potential for fires to develop.

During a total fire ban, you cannot light, maintain or use a fire in the open or carry out any activity in the open that causes or is likely to cause a fire.

Call the local NSW RFS Fire Control Centre or local Council for further advice.

6.8 Fire Safety

Based on the nature of the development, there is potential for fires to initiate from the components within the site.

The proposed development includes hardware for the purposes of fire safety. Each battery container is built with fire suppression system and have multiple built-in fire protection devices that work collaboratively, including flammable gas, smoke and thermal sensors, pressure relief system and aerosol fire extinguishing system. Therefore, a container will automatically suppress an internal fire in the first instance.

The battery type is a lithium-Ion phosphate (LFB) which are considered to be one of the safest battery chemistries within the industry. LFP does not contain heavy metals. Battery cell and BESS containers provide double layers. LFP does not include any oil colling but has anti-leaking connectors within the self-contained design. The development includes a surrounding fence, gate and landscaped area for security purposes limiting trespassing.

7. EMERGENCY RESPONSE

7.1 Emergency Planning Committee

This section outlines standard requirements and protocols developed based on similar projects. Detailed protocol and measures are subject to reasonable changes and confirmed by the appointed EPC contractor.

The persons responsible for managing the site should form an Emergency Planning Committee (EPC). The EPC shall consist of at least two people.

The EPC is responsible for implementing and maintaining the emergency plan, emergency response procedures, and related training. The duties of the EPC include the following:

- Ensuring that resources are provided to enable the development and implementation of the emergency plan;
- Ensuring that the emergency plan is readily identifiable and available to the appropriate persons;
- Ensuring those with control of emergencies operate per the emergency plan, that this person/persons are current and readily available, and continue to operate at all times;
- Authorise and implement the emergency plan. The following shall apply to the implementation:
    - awareness of the emergency response procedures,
    - training,
    - testing emergency procedures, and
    - reviewing emergency procedures;
- Ensuring the emergency procedures remain viable and effective by testing and reviewing policies as required;
- Establishing strategies to ensure all onsite personnel are made aware of emergency response procedures;
- Ensuring a permanent record of events for emergencies is compiled and retained;
- Identifying opportunities for improvement in the emergency plan;
- Obtain professional advice on the level of indemnity provided to EPC members and be aware of the level of the indemnity supplied; and
- Shall meet before the inception of the Plan and as required to ensure the Plan is relevant and up to date.

7.2 Emergency Control Organisation

The Emergency Control Organisation (ECO) is responsible for organising and supervising the safe movement of onsite personnel in an emergency. During emergencies, instructions given by the ECO personnel shall take precedence over the normal management structure.

This Plan documents the pre-emergency, emergency and post-emergency duties and responsibilities during a bushfire emergency.

The following roles are recommended to the appropriate staff: Chief Warden, Deputy Chief Warden, Communications Officer, Building Wardens, Safety Officers, and First Aid Officers. A Chief Warden is required as a minimum.

Selection criteria for ECO personnel:

- Be capable of performing their duties;
- Have leadership qualities and the ability to command authority;
- Display practical decision-making skills;
- Demonstrate the capability to remain calm under pressure;
- Be available onsite to undertake their appointed duties
- Possess practical communication skills; and
- Be able to undertake relevant training.

7.3 Roles and Responsibilities

Construction Stage

Chief Warden	
Position:	
Contact Details:	
The Chief Fire Warden shall be identifiable by wearing white (white helmet, cap, hat or vest) with the words "Chief Fire Warden" prominently displayed.	

Deputy Warden	
Position:	
Contact Details:	
The Deputy Warden shall be identifiable by wearing white (white helmet, cap, hat or vest) with the words "Deputy Warden" prominently displayed.	

Operational & Maintenance Stage

For the Operational Stage, emergency personnel's roles and responsibilities and fire emergency protocol are to be in accordance with Appendix I.

Chief Warden/ HSE Manager	
Position:	
Contact Details:	
The Chief Fire Warden shall be identifiable and if applicable, by wearing white (white helmet, cap, hat or vest) with the words "Chief Fire Warden" prominently displayed.	

Deputy Warden/ O&M Manager	
Position:	
Contact Details:	
The Deputy Warden shall be identifiable and if applicable, by wearing white (white helmet, cap, hat or vest) with the words "Deputy Warden" prominently displayed.	

7.3.1 Pre-emergency Task

Chief Warden

- Maintain a current register of ECO members;
- Replace ECO members when a position becomes vacant;
- Conduct regular exercises;
- Ensure the emergency response procedures are kept up to date;
- Attend meetings of the EPC as appropriate;
- Attend training and emergency exercises as required by EPC; and
- Ensure personal ECO identification is available.

Deputy Warden

- Ensure personal proficiency in the operation of communication equipment;
- Maintained records and logbooks and make them available for emergency response;
- Ensure that ECO members are proficient in the use of the communication equipment;
- Ensure that emergency communication contact details are up to date;
- Attend training and emergency exercises as required by EPC;
- Confirm sufficient wardens for the area of responsibility;
- Coordinate the completion of Personal Emergency Evacuation Plans (PEEP) documentation;
- Report on the deficiencies of the emergency equipment;
- Ensure that wardens have communicated the emergency response procedures to all occupants within their nominated areas;
- Ensure that occupants are aware of the identity of their wardens;
- Coordinate safety practices by wardens throughout their area of responsibility;
- Ensure that all occupants are aware of the emergency response procedures; and
- Carry our safety practices (e.g. Clear access to emergency equipment).

7.3.2 Emergency Task

Refer to the Bushfire Emergency Response Plan for actions.

7.3.3 Post-Emergency Task

Chief Warden:

- When the emergency incident is rendered safe, or the Emergency Service returns control, notify the ECO members to have occupants return to the site, as appropriate;
- Organise a debrief with ECO members and, where applicable, with any attending Emergency Service; and
- Compile a report for the EPC and management.

Deputy Warden:

- Records events and actions during the emergency for debriefing;
- Clean and service used specialised equipment; and
- Replace specialised equipment when necessary.

7.4 Evacuation Considerations

To the north a Neighbourhood Safer Place have been identified if the site is occupied during a bushfire event and local emergency services have issued evacuation orders.

- North West (5.4 kms) – Open Space –- Murrumbateman Recreation Grounds– 19 East Street, Murrumbateman NSW.

No Neighbour Safer Places exist south towards the Australian Capital Territory, however this assessment has identified an area to the south to evacuate towards. It should be noted emergency services are likely to provide an area to the south if evacuation is to occur in this direction.

- South (29 kms) – Playing Fields –- Perce Douglas Memorial Playing Fields, Nicholls ACT 2913.

As illustrated in Figure 6, the entire road network associated with access and egress from the site traverses agricultural and rural land.

During an emergency, the anticipated times have been calculated for evacuation to the designated safer places north and south, as shown below in Table 2.

Table 2: Travel times rounded up to the nearest minute.

Average Speed Km/h	Travel time to Murrumbateman Recreation Grounds – 5.4 km North West	Travel time to Perce Douglas Memorial Playing Fields – 29 km South
50 km/h	7 minutes	35 minutes
40 km/h	9 minutes	44 minutes
30 km/h	11 minutes	58 minutes
25 km/h	13 minutes	1 hour 10 minutes
10 km/h	33 minutes	2 hour 54 minutes

7.4.1 Evacuation Centres

In a major bushfire event, evacuation centres will likely be established to meet the needs of those affected by the bushfires. Evacuation centres are generally existing facilities that can often open with little notice to provide immediate assistance. It is advised that the Site Manager monitors evacuation centres established in the area and follows the advice of the emergency service when directed to evacuate. The location of evacuation centres is likely to impact on-road use and expected travel times in the event of an evacuation.

Figure 6 - Evacuation routes to safer places: North

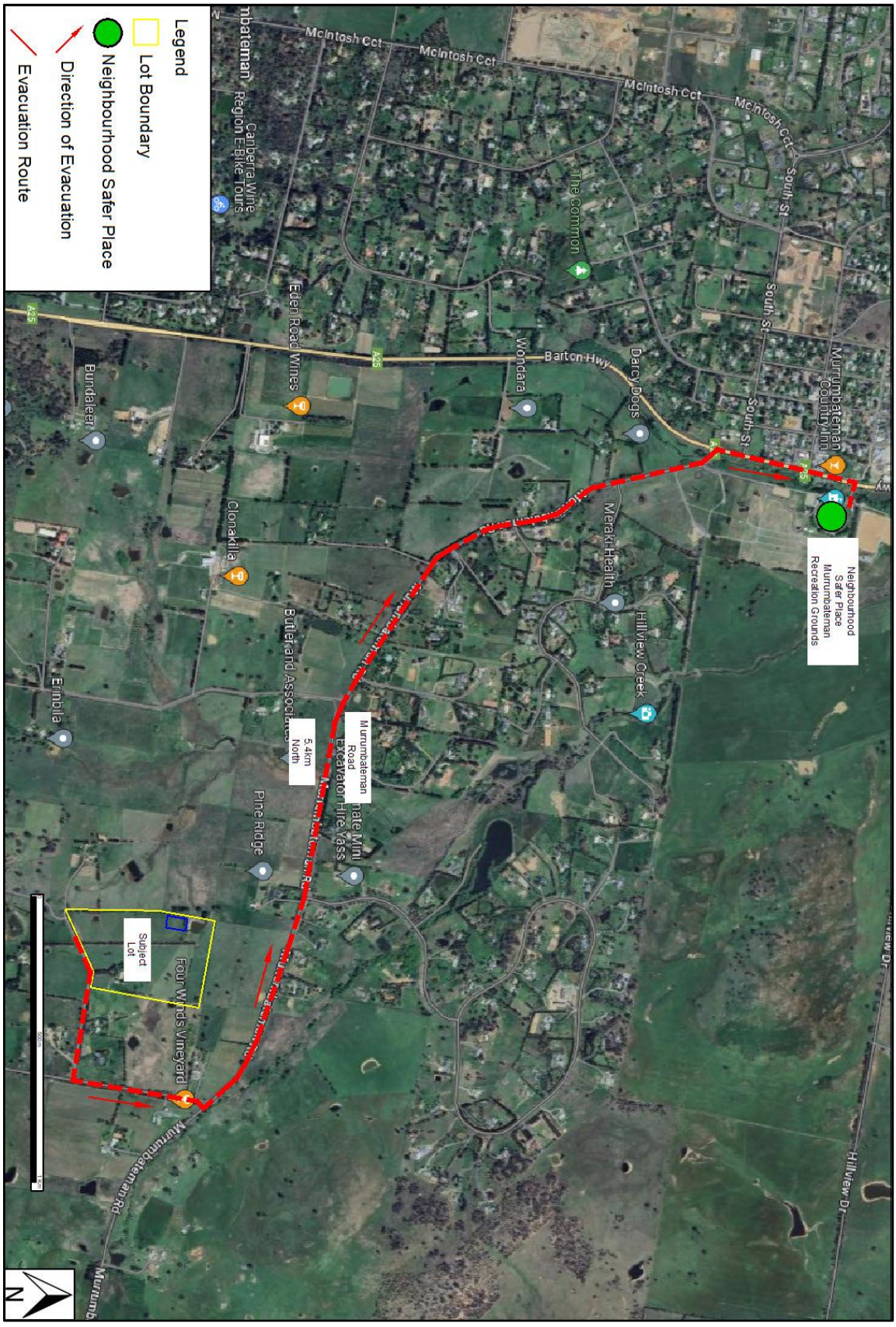
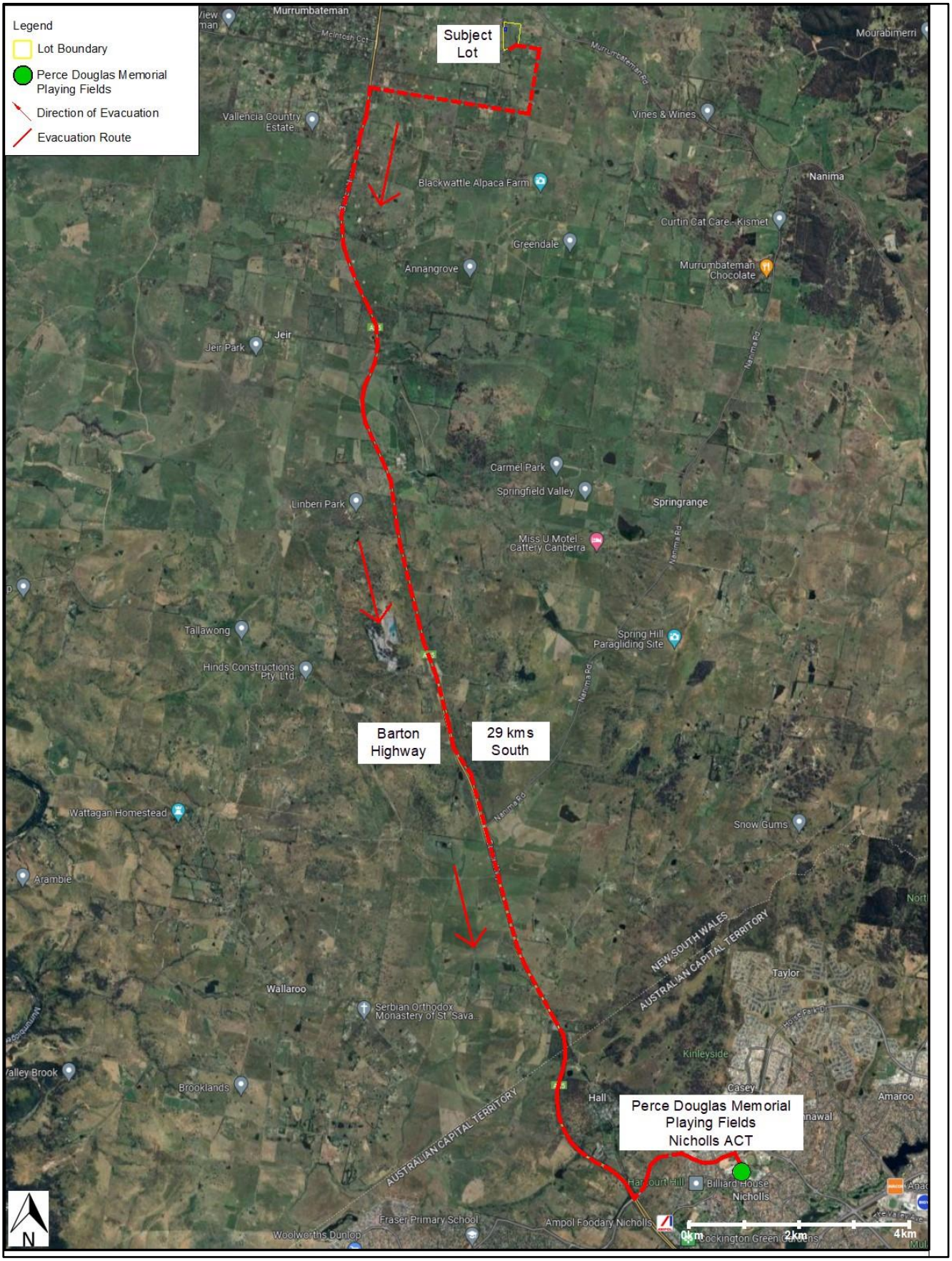


Figure 7 - Evacuation routes to ACT: North



7.5 Preparation

The Chief Warden is to prepare ahead of the start of the fire season and potential bushfire events by undertaking the following steps.

Site:

- Ensure the Plan is up to date;
- Ensure the system regularly checked and maintained by an authorised technician;
- Ensure any firefighting equipment is serviceable and available. e.g. Ladders, spades, shovels, mops, buckets, and hoses;
- Keep the important contact details such as the contractor installer, system manufacturer somewhere safe and easily accessible in case of an emergency. Labelling and signage to inform emergency responders in accordance with the Australian Standard AS/NZS 5139 Electrical installations - Safety of battery systems for use with power conversion equipment may also be required;
- Ensure areas around the assets are prepared and maintained;
- Keep the area where the system is installed clear of all materials (especially those that are combustible) and other equipment;
- Ensure all landscaping within the site is maintained to an APZ standard;
- Ensure onsite powerlines are maintained, liaise with relevant providers;
- Check and update external emergency contact numbers; and
- Monitoring risks from adjoining private and public land, maintaining communication with adjoining landowners and land managers for any changes in management or increased risks to the site.

Onsite personnel:

- Have all onsite personnel details easily identifiable to account for all persons on site;
- Have informative signage in key locations in the site (front gate) outlining the emergency management procedures and bushfire protection measures;
- Have a site layout plan that shows the designated assembly areas and evacuation details available for all onsite personnel; and
- Have emergency kits available: e.g. Whistle, portable battery radio, waterproof torch, spare batteries, first aid kit and manual, waterproof bag for valuables, emergency contact details, duct and masking tape, non-perishable food and water, and pocket knife.

Planning:

- Evacuation safety is dependent on several factors, such as fire danger rating, temperature, wind strength and direction. The time to evacuate may take more than expected during weekends or school holidays when traffic is heavy;
- When advised to evacuate, the early departure of all onsite personnel before emergency services arrive is recommended.
- Similarly, when advised to evacuate, early evacuation is recommended as it is not appropriate to move people through areas with heaving smoke or where a bushfire may be burning or is predicted to burn through;
- The Chief Warden is to check with emergency services and the Live Traffic NSW website: https://www.livetraffic.com/;

Maintenance and Training:

- Ensure up to date training for all onsite personnel. Safe work practices, including observance of standards, codes and regulations, provision of material data including safety data sheets and company policies and procedures, all have important bearing on fire safety and should be explicitly addressed;
- Ensure site is maintained including removal of trade wastes; regular maintenance of installed facilities and equipment; as well as clearance and checking of drains and collection pits.

7.6 Monitoring Bush Fire Threats

7.6.1 Information

For information on bushfires, call the **Bush Fire Information Line:**

- 1800 NSW RFS (**1800 679 737**).

The two systems used by the Rural Fire Service which provide triggers for evacuation are:

- **The Fire Danger Ratings**- used **before** a fire has started; and
- **The Bush Fire Alerts**- are used **once** a fire has started.

Both of these warning systems are described below.

7.6.2 Fire Danger Rating

Before a fire starts, monitor the **Fire Danger Ratings** daily at www.rfs.nsw.gov.au/fdr. The higher the fire danger rating, the more dangerous a fire is likely to be.

These ratings are based on predicted conditions such as the temperature, humidity, wind and dryness of the landscape. It indicates how a bushfire may act, what impacts could occur and the consequences of a bushfire in the identified conditions. The table below and the graph are taken from the RFS Bushfire Survival Plan and show how the fire danger gets higher, so does the potential loss of life and property.

FIRE DANGER RATING	WHAT YOU SHOULD DO
CATASTROPHIC	**For your survival, leave bush fire risk areas.** › These are the most dangerous conditions for a fire. › Your life may depend on the decisions you make, even before there is a fire. › Stay safe by going to a safer location early in the morning or the night before. › Homes cannot withstand fires in these conditions. › You may not be able to leave and help may not be available.
EXTREME	**Take action now to protect your life and property.** › These are dangerous fire conditions. › Check your bush fire plan and ensure that your property is fire ready. › If a fire starts, take immediate action. › If you and your property are not prepared to the highest level, go to a safer location well before the fire impacts. › Reconsider travel through bush fire risk areas.
HIGH	**Be ready to act.** › There's a heightened risk. Be alert for fires in your area. › Decide what you will do if a fire starts. › If a fire starts, your life and property may be at risk. The safest option is to avoid bush fire risk areas.
MODERATE	**Plan and prepare.** › Stay up to date and be ready to act if there is a fire.
NO RATING	› Fire danger ratings are used on days when you need to take action. On days of minimal risk, 'No Rating' will be issued.

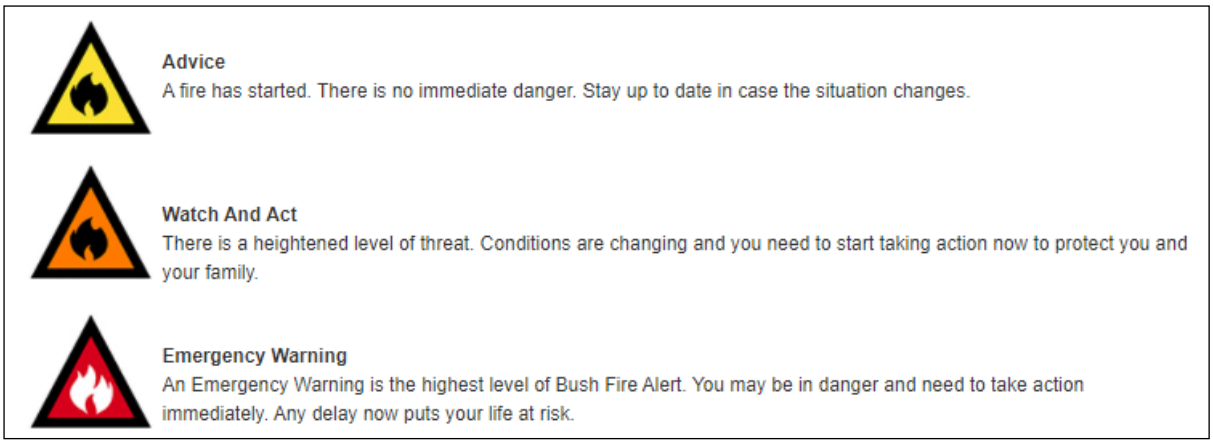
7.6.3 Fires Near Me

After a fire has started, the 'Fires Near Me' website and mobile application provide information and warnings about bushfires and other incidents attended by the NSW RFS.

Website: https://www.rfs.nsw.gov.au/fire-information/fires-near-me

Use the FIRES NEAR ME mobile application to help you stay up to date on bushfires in your area

The following alert levels are provided to give you an indication of the level of threat from a fire:



7.6.4 Radio Updates

In an emergency, ABC Radio can provide up-to-date information. The local stations for Griffith LGA include:

- ABC Radio – **666 AM** Canberra and Digital radio ;
- ABC Radio Central West – **549 AM** Cumnock
- ABC RN – **856 AM** Canberra and Digital radio; and
- ABC NEWS on the radio – **103.9 AM** Canberra and Digital radio ;

7.6.5 Road Closures

The unpredictable nature of bushfires may result in roads being closed without warning. Where emergency services have issued evacuation orders, leaving early is always the safest option. Information on road closures can be obtained from emergency services and found on the Live Traffic NSW website: https://www.livetraffic.com/

7.6.6 Early Evacuation

In a bushfire emergency, emergency services may issue evacuation orders. If off-site evacuation is required, Evacuation Centres will often be set up to accommodate those evacuating. The evacuation direction will depend highly on the existing fire conditions, and advice should be sought from emergency services concerning suitable evacuation routes to the designated Evacuation Centres.

7.7 Emergency

Refer to the Bushfire Emergency Response Plan for actions.

7.8 Post-Emergency Task

- The Chief Warden should seek advice from emergency services before returning to the site;
- A record of the emergency response and evacuation should be taken, and the Emergency Plan updated were applicable.

3 Turton Place, Murrumbateman

BUSHFIRE EMERGENCY AND EVACUATION PLAN

This plan has been designed to assist management in protecting life.
This plan outlines evacuation and site closure procedures to protect occupants from a bushfire threat.

The primary actions to follow are:

Evacuate and close on forecasted Extreme and Catastrophic Fire Danger Rating days

Facility	Battery Energy Storage System
Facility type	Commercial - Utilities
Location	Lot 23 in DP 248413, 3 Turton Place, Murrumbateman NSW 2582.
Estimated occupancy	During Construction: During Operation:
Travel arrangements from the site	Private vehicles.
Chief Warden	
Deputy Warden	

EMERGENCY CONTACTS

In an emergency, call

000

Organisation	Location	Contact
Murrumbateman Rural Fire Brigade	39 Rose St, Murrumbateman NSW	0419 899 979
Springfield NSWRFS	Patemans Ln, Murrumbateman NSW	0418 444 325
Fire and Rescue NSW	90 Meehan St, Yass NSW	02 6229 6711
NSW Police	47 Rossi St, Yass NSW & 31 Anthony Rolfe Ave, Gungahlin ACT	02 6226 9399 000
NSW Ambulance	Charnwood ACT	000
Yass Valley Council	209 Comur St, Yass NSW 2582	02 6226 1477

SITE CLOSURES AND EARLY EVACUATION PROCEDURES – This plan recommends non-occupation on extreme or catastrophic fire weather days and leaving early in all circumstances.

Early evacuation procedure: Non-operational on days of forecasted extreme or catastrophic fire weather

If the site is operational in a bushfire event, relocate all site occupants to the emergency assembly areas and follow the advice of local emergency services.

If evacuation orders are issued, evacuate to the local safer places, evacuation centres or emergency care facilities as directed.

Emergency Assembly Area: Property Access Gate – south onto Turton Place

Trigger to evacuate	Actions
An extreme or catastrophic fire danger rating is forecast for the next day. OR	• The Chief Warden should consult the NSW RFS, check the NSW RFS website, call 1800 NSW RFS, or use smartphone applications and local firefighting resources for fire situations and updates;

<table>
<tr>
<td rowspan="2">Fire 'Advice' Warning is likely to impact the site.

OR

Fire' Watch and Act' Warning is likely to impact the site.

OR

When directed to do so by NSW Police or the NSW Rural Fire Service (RFS)</td>
<td>The Chief Warden is to take control of the bushfire situation: Remain calm and explain to onsite personnel what is happening and the fire situation;
The Chief Warden is to advise the local emergency service that the site is being evacuated as directed by the emergency services (including how many people and where they are going).
Ensure the Wardens and Site Manager have mobiles and are contactable.
Make arrangements for private transportation for evacuation.</td>
</tr>
<tr>
<td>Off-site Evacuation
Arrange for onsite personnel to make their way to the designated Emergency Assembly Area;
Confirm all onsite personnel have been notified;
Make sure all onsite personnel have transportation for evacuation;
Arrange for suitable transportation to meet at the emergency assembly point for persons without transport, persons with compromised mobility and persons that require medical assistance;
Advise all onsite personnel with access to private transportation and do not require medical assistance to make their way to the designated Safer Place or Evacuation Centre as directed by the local emergency services.
Monitor the progress of the evacuation;
The Chief Warden is to advise the relevant emergency service that provided the evacuation orders when all persons have been evacuated;</td>
</tr>
</table>

	• Should the fire services arrive, the Chief Warden will hand control over to the officer in charge and provide an operational brief listing injured or vulnerable persons needing assistance. • Maintain situational awareness through radio, the NSW RFS website, 1800 NSW RFS, smartphone applications and local firefighting resources.

THIS PLAN DOES NOT SUPPORT SHELTERING ONSITE
Site closure on days of forecasted extreme or catastrophic fire weather and leaving early in all circumstances.

DAILY ACTIONS					
ACTIONS	**Bush Fire Danger Ratings**				
	NO RATINGS	**MODERATE**	**HIGH**	**EXTREME**	**CATASTROPHIC**
Chief Warden should Monitor the ACT ESA website and check the 'Fires Near Me' site or app.		By 1 pm	Minimum 1 pm and 3 pm	Monitor conditions every hour. The site should be closed and non-operational on forecasted extreme fire weather days. The site is closed.	Monitor conditions every hour. The site should be closed and non-operational on forecasted catastrophic fire weather days. The site is closed.
Fire is predicted to impact the site.	Monitor conditions every hour. Relocate all site occupants to the **Emergency Assembly Area.** Prepare for off-site evacuation. The site is closed.	Monitor conditions every hour. Relocate all site occupants to the **Emergency Assembly Area.** Prepare for off-site evacuation. The site is closed.	Monitor conditions every hour. Relocate all site occupants to the **Emergency Assembly Area.** Prepare for off-site evacuation. The site is closed.	Monitor conditions every hour. The site should be closed and non-operational on forecasted extreme fire weather days. The site is closed.	Monitor conditions every hour. The site should be closed and non-operational on forecasted catastrophic fire weather days. The site is closed.

The time to fire impact is less than the time required to evacuate.	Relocate all site occupants to the **Emergency Assembly Area.** Prepare for off-site evacuation. The site is closed.	Relocate all site occupants to the **Emergency Assembly Area.** Prepare for off-site evacuation. The site is closed.	Relocate all site occupants to the **Emergency Assembly Area.** Prepare for off-site evacuation. The site is closed.	The site should be closed and non-operational on forecasted extreme fire weather days.	The site should be closed and non-operational on forecasted catastrophic fire weather days.
After the bush fire event: The Chief Warden is to confirm with emergency services that the site is safe (utilities and buildings) and coordinate all clean-up, repair and maintenance as required to allow the site to return to normality. Where applicable, occupants affected by the event should be identified and provided with appropriate counselling and support.					

Figure 8 – Bush Management and Emergency Response Plan

Appendix I: Hazard Matrix and Risk Register

The bushfire risk to people, property (assets), and the environment has been assessed in relation to the likelihood and consequence per the Australian Standard AS ISO 310000 *Risk Management Guidelines*. Table 3 describes the likelihood and the consequence on a scale of 1 to 5, increasing with severity.

Table 3: Likelihood & Consequence Description

Likelihood		**Consequence**	
Almost Certain (5)	Expected to occur in most circumstances	Catastrophic (5)	Death or permanent injury, considerable economic and irreversible environmental damage
Likely (4)	Will probably occur in most circumstances.	Major (4)	Serious injury, hospital treatment, major economic and irreversible local environmental damage
Possible (3)	May occur occasionally	High (3)	Injury requiring medical treatment, long-term economic and environmental damage
Unlikely (2)	Could happen sometime	Medium (2)	Minor injury, first aid required, minor short-term economic and environmental damage
Rare (1)	May happen only in exceptional circumstances	Low (1)	No injuries, low financial loss, minor environmental impact

Likelihood	**Consequence**				
	Insignificant	**Minor**	**Moderate**	**Major**	**Catastrophic**
Almost Certain	High	High	Extreme	Extreme	Extreme
Likely	Medium	High	High	Extreme	Extreme
Possible	Low	Medium	High	Extreme	Extreme
Unlikely	Low	Low	Medium	High	Extreme
Rare	Low	Low	Medium	High	High

Risk Level	Risk Response
Extreme	**High priority - unacceptable risk – Immediate action required** Urgent site-specific mitigation and comprehensive management measures are required to reduce risk levels.
High	**High priority - unacceptable risk – Immediate action required** site-specific mitigation and comprehensive management measures are required to reduce risk levels.
Medium	**Medium priority - Potentially unacceptable risk** Site-specific mitigation and comprehensive management measures are required to reduce risk levels.
Low	**Low priority - Acceptable risk** Ongoing mitigation and management measures will ensure risk level remains low and risk is eliminated over time.

Risk Register – Construction and operation of the Murrumbateman Battery Energy Storage System					
Risk No#	**Description**	**Risk Rating**	**Treatment**	**Residual Risk Rating**	**Responsible**
1	Physical impact on persons or loss of life.	High	• Implementation of the bushfire management and protection measures detailed in section 6 & 7. • Daily actions outlined in the Bushfire Emergency And Evacuation Plan	Medium	Site management EPC Fire Wardens Site Occupants
2	Fire impacting the subject site and assets.	High	• Implementation of the bushfire management and protection measures detailed in section 6 & 7.	Medium	Site management EPC Fire Wardens
2	Fire propagation within the site and spreading from the site.	High	• Implementation of the bushfire management and protection measures detailed in section 6 & 7. • Follow advice from emergency services.	Medium	Site management EPC Fire Wardens

Appendix II: EPC Contractor

Table 1 outlines the roles and responsibilities of key personnel involved in a fire emergency during the operation of the BESS.

All personnel shall follow the corresponding Fire Emergency Protocols in **Table 2** below during or after a bushfire incident.

Table 1 – Roles and Responsibilities

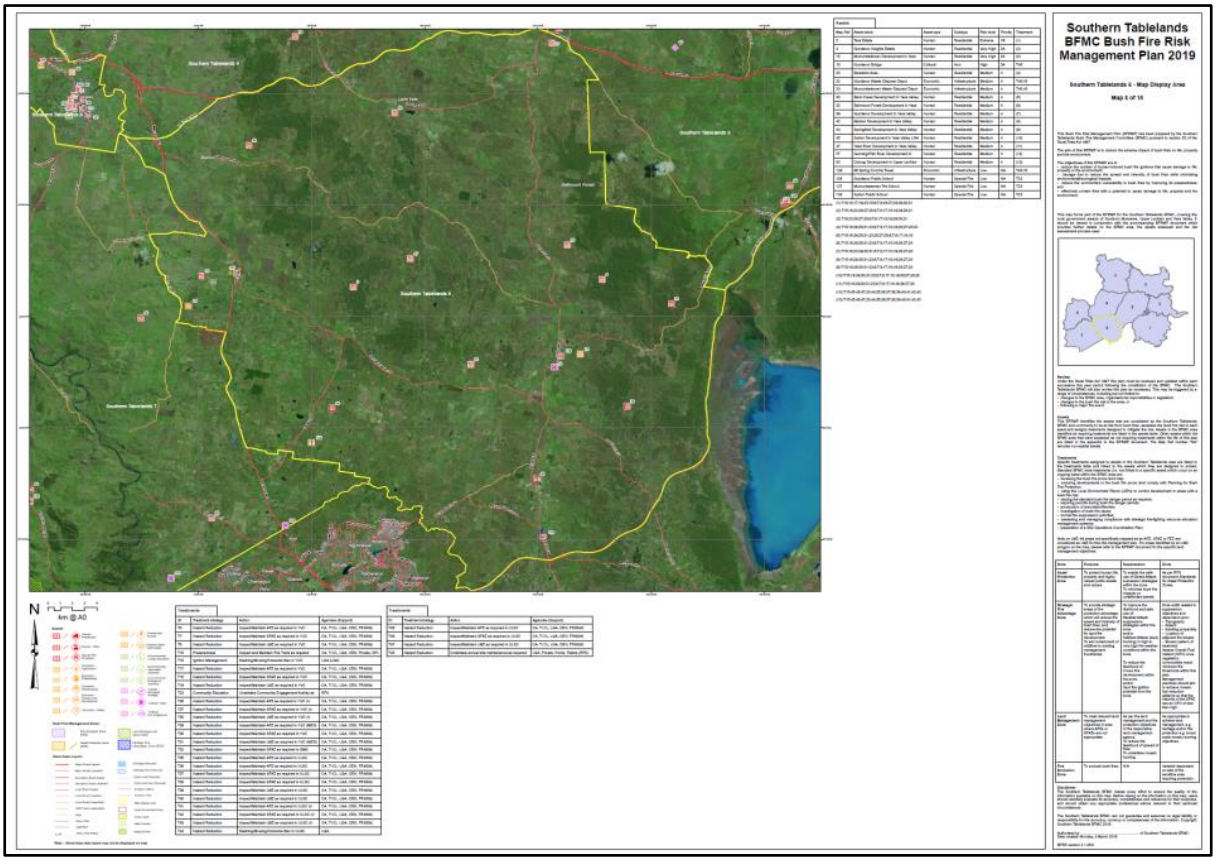
Role	Responsibility
O&M Manager (Office based)	• Respond to emergency calls • Respond to HSE Officer's request for any required assistance • Report incident to Asset Owner • Review and update relevant emergency procedures
HSE Officer (Site based)	• Respond to emergency calls • Ascertain the nature of the emergency • Initiate the corresponding emergency protocol • Arrange first responders to attend to the fire • Notify Emergency Services and First Responders • Notify the O&M Manager of any required assistance • Control and guide the emergency response process
Trained First Aiders (Site based)	• Treat injured individuals in coordination with the HSE Officer
First Responders	• Assist in the emergency response process and provide adequate resources to the HSE Officer
Employees (Site based)	• Raise the alarm • Notify HSE Officer • Follow the emergency procedure with instructions from O&M Manager and HSE Officer

Table 2 – Fire Emergency Protocol

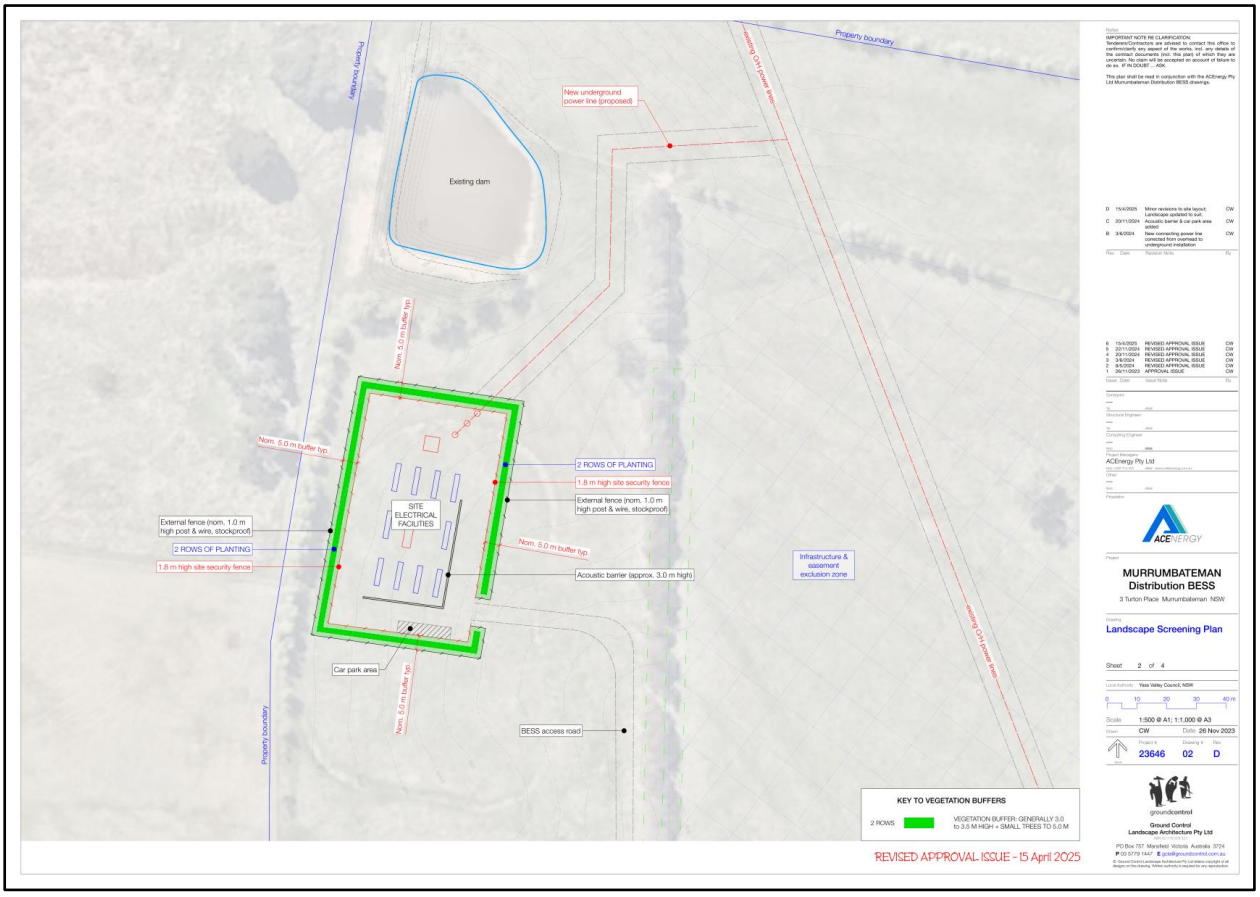
Fire	
Project # and Title	
O&M Manager	During the incident: ▪ Respond to HSE Officer's request for any required assistance ▪ Respond to emergency calls After the incident: ▪ Notify the Asset Owner of the incident. ▪ Submit incident report to Asset Owner. ▪ Review and update all applicable procedures.
HSE Officer	During the incident: ▪ Evaluate the event. ▪ Send first responders to work crew location/s. ▪ Arrange evacuation if required.

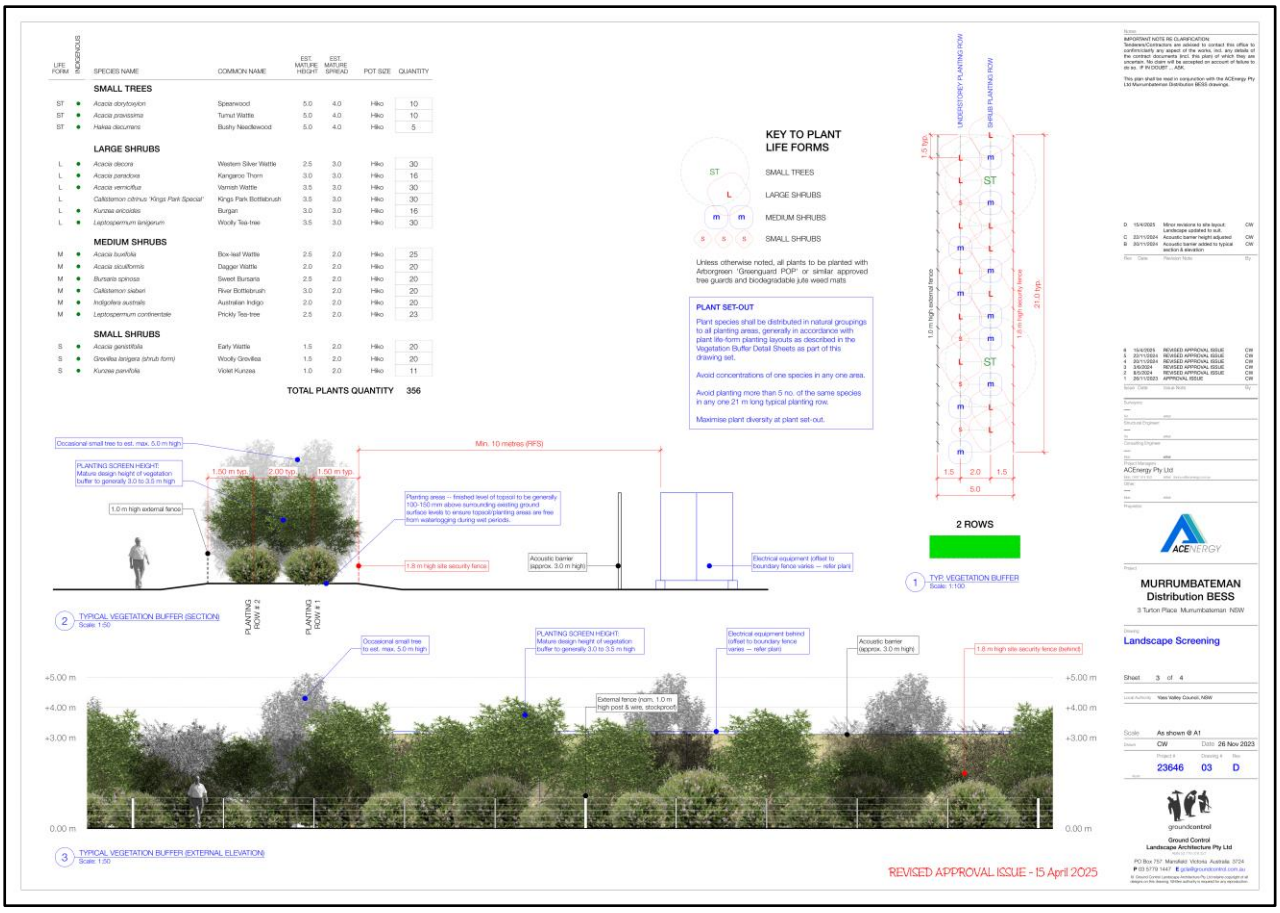
	▪ Notify the O&M Manager about the incident ▪ Notify the O&M Manager of any required assistance ▪ Keep the O&M Manager up to date on the incident. ▪ Dial 000 for emergency services, if required. ▪ Terminate incident. After the incident: ▪ Confirm it is safe to return to work. ▪ Complete debrief. ▪ Complete an incident report for O&M Manager. ▪ Provide counselling as required. ▪ Return to work if deemed safe to do so.
Employees	During the incident: ▪ Raise the alarm. ▪ Contact the HSE Officer. ▪ Provide details on the emergency. ▪ Follow the emergency procedure with instructions from O&M Manager and HSE Officer After the incident: ▪ Return to work after receiving confirmation from HSE Officer.
First Responders	During the incident: ▪ Attempt first attack extinguishing and containment, if safe to do so. ▪ Keep the HSE Officer up to date on the incident. ▪ Rescue any injured personnel, if safe to do so. ▪ Extinguish the fire, if possible and be safe to do so. After the incident: ▪ Return to work after receiving confirmation from HSE Officer.
Trained First Aiders	During the incident: ▪ Provide first aid, if required. After the incident: ▪ Return to work after receiving confirmation from HSE Officer.

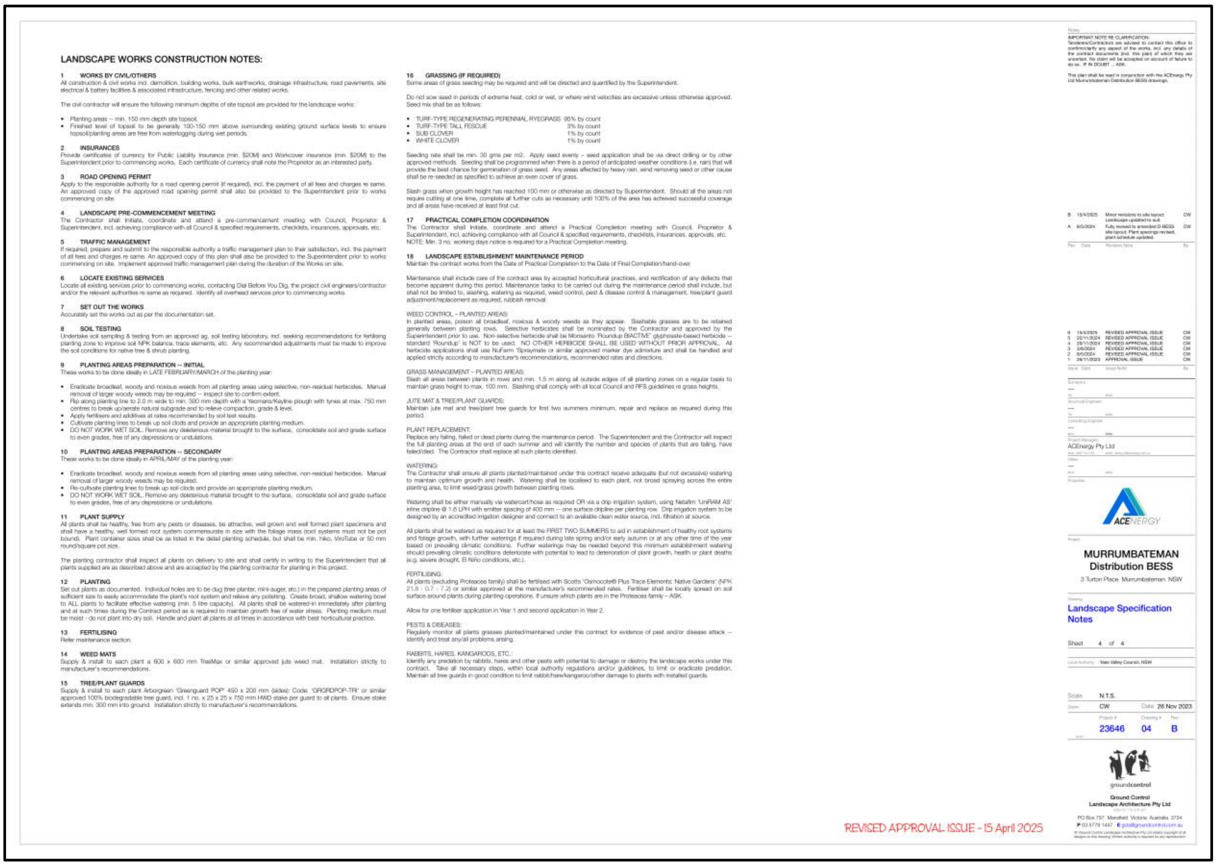
Appendix III: Southern Tablelands BFRMP Precinct Map



Appendix IV: Landscape Plan







LANDSCAPE WORKS CONSTRUCTION NOTES:

1 WORKS BY CIVIL/OTHERS
All construction & civil works incl. demolition, building works, bulk earthworks, drainage infrastructure, road pavements, site electrical & battery facilities & associated infrastructure, fencing and other related works.

The civil contractor will ensure the following minimum depths of site topsoil are provided for the landscape works:

- Planting areas -- min. 150 mm depth site topsoil.
- Finished level of topsoil to be generally 100-150 mm above surrounding existing ground surface levels to ensure topsoil/planting areas are free from waterlogging during wet periods.

2 INSURANCES
Provide certificates of currency for Public Liability Insurance (min. $20M) and Workcover insurance (min. $20M) to the Superintendent prior to commencing works. Each certificate of currency shall note the Proprietor as an interested party.

3 ROAD OPENING PERMIT
Apply to the responsible authority for a road opening permit (if required), incl. the payment of all fees and charges re same. An approved copy of the approved road opening permit shall also be provided to the Superintendent prior to works commencing on site.

4 LANDSCAPE PRE-COMMENCEMENT MEETING
The Contractor shall initiate, coordinate and attend a pre-commencement meeting with Council, Proprietor & Superintendent, incl. achieving compliance with all Council & specified requirements, checklists, insurances, approvals, etc.

5 TRAFFIC MANAGEMENT
If required, prepare and submit to the responsible authority a traffic management plan to their satisfaction, incl. the payment of all fees and charges re same. An approved copy of this plan shall also be provided to the Superintendent prior to works commencing on site. Implement approved traffic management plan during the duration of the Works on site.

6 LOCATE EXISTING SERVICES
Locate all existing services prior to commencing works, contacting Dial Before You Dig, the project civil engineers/contractor and/or the relevant authorities re same as required. Identify all overhead services prior to commencing works.

7 SET OUT THE WORKS
Accurately set the works out as per the documentation set.

8 SOIL TESTING
Undertake soil sampling & testing from an approved ag. soil testing laboratory, incl. seeking recommendations for fertilising planting zone to improve soil NPK balance, trace elements, etc. Any recommended adjustments must be made to improve the soil conditions for native tree & shrub planting.

9 PLANTING AREAS PREPARATION -- INITIAL
These works to be done ideally in LATE FEBRUARY/MARCH of the planting year:

- Eradicate broadleaf, woody and noxious weeds from all planting areas using selective, non-residual herbicides. Manual removal of larger woody weeds may be required -- inspect site to confirm extent.
- Rip along planting line to 2.0 m wide to min. 300 mm depth with a Yeomans/Keyline plough with tynes at max. 750 mm centres to break up/aerate natural subgrade and to relieve compaction, grade & level.
- Apply fertilisers and additives at rates recommended by soil test results.
- Cultivate planting lines to break up soil clods and provide an appropriate planting medium.
- DO NOT WORK WET SOIL. Remove any deleterious material brought to the surface, consolidate soil and grade surface to even grades, free of any depressions or undulations.

10 PLANTING AREAS PREPARATION -- SECONDARY
These works to be done ideally in APRIL/MAY of the planting year:

- Eradicate broadleaf, woody and noxious weeds from all planting areas using selective, non-residual herbicides. Manual removal of larger woody weeds may be required.
- Re-cultivate planting lines to break up soil clods and provide an appropriate planting medium.
- DO NOT WORK WET SOIL. Remove any deleterious material brought to the surface, consolidate soil and grade surface to even grades, free of any depressions or undulations.

11 PLANT SUPPLY
All plants shall be healthy, free from any pests or diseases, be attractive, well grown and well formed plant specimens and shall have a healthy, well formed root system commensurate in size with the foliage mass (root systems must not be pot bound). Plant container sizes shall be as listed in the detail planting schedule, but shall be min. hiko, VirоTube or 50 mm round/square pot size.

The planting contractor shall inspect all plants on delivery to site and shall certify in writing to the Superintendent that all plants supplied are as described above and are accepted by the planting contractor for planting in this project.

12 PLANTING
Set out plants as documented. Individual holes are to be dug (tree planter, mini-auger, etc.) in the prepared planting areas of sufficient size to easily accommodate the plant's root system and relieve any polishing. Create broad, shallow watering bowl to ALL plants to facilitate effective watering (min. 5 litre capacity). All plants shall be watered-in immediately after planting and at such times during the Contract period as is required to maintain growth free of water stress. Planting medium must be moist - do not plant into dry soil. Handle and plant all plants at all times in accordance with best horticultural practice.

13 FERTILISING
Refer maintenance section.

14 WEED MATS
Supply & install to each plant a 600 x 600 mm TreeMax or similar approved jute weed mat. Installation strictly to manufacturer's recommendations.

15 TREE/PLANT GUARDS
Supply & install to each plant Arborgreen 'Greenguard POP' 450 x 200 mm (sides): Code: 'GRGRDPOP-TRI' or similar approved 100% biodegradable tree guard, incl. 1 no. x 25 x 25 x 750 mm HWD stake per guard to all plants. Ensure stake extends min. 300 mm into ground. Installation strictly to manufacturer's recommendations.

16 GRASSING (IF REQUIRED)
Some areas of grass seeding may be required and will be directed and quantified by the Superintendent.

Do not sow seed in periods of extreme heat, cold or wet, or where wind velocities are excessive unless otherwise approved. Seed mix shall be as follows:

- TURF-TYPE REGENERATING PERENNIAL RYEGRASS 95% by count
- TURF-TYPE TALL FESCUE 3% by count
- SUB CLOVER 1% by count
- WHITE CLOVER 1% by count

Seeding rate shall be min. 30 gms per m2. Apply seed evenly – seed application shall be via direct drilling or by other approved methods. Seeding shall be programmed when there is a period of anticipated weather conditions (i.e. rain) that will provide the best chance for germination of grass seed. Any areas affected by heavy rain, wind removing seed or other cause shall be re-seeded as specified to achieve an even cover of grass.

Slash grass when growth height has reached 100 mm or otherwise as directed by Superintendent. Should all the areas not require cutting at one time, complete all further cuts as necessary until 100% of the area has achieved successful coverage and all areas have received at least first cut.

17 PRACTICAL COMPLETION COORDINATION
The Contractor shall initiate, coordinate and attend a Practical Completion meeting with Council, Proprietor & Superintendent, incl. achieving compliance with all Council & specified requirements, checklists, insurances, approvals, etc.
NOTE: Min. 3 no. working days notice is required for a Practical Completion meeting.

18 LANDSCAPE ESTABLISHMENT MAINTENANCE PERIOD
Maintain the contract works from the Date of Practical Completion to the Date of Final Completion/hand-over.

Maintenance shall include care of the contract area by accepted horticultural practices, and rectification of any defects that become apparent during this period. Maintenance tasks to be carried out during the maintenance period shall include, but shall not be limited to, slashing, watering as required, weed control, pest & disease control & management, tree/plant guard adjustment/replacement as required, rubbish removal.

WEED CONTROL – PLANTED AREAS:
In planted areas, poison all broadleaf, noxious & woody weeds as they appear. Slashable grasses are to be retained generally between planting rows. Selective herbicides shall be nominated by the Contractor and approved by the Superintendent prior to use. Non-selective herbicide shall be Monsanto 'Roundup BIACTIVE' glyphosate-based herbicide -- standard 'Roundup' is NOT to be used. NO OTHER HERBICIDE SHALL BE USED WITHOUT PRIOR APPROVAL. All herbicide applications shall use NuFarm 'Spraymate or similar approved marker dye admixture and shall be handled and applied strictly according to manufacturer's recommendations, recommended rates and directions.

GRASS MANAGEMENT – PLANTED AREAS:
Slash all areas between plants in rows and min. 1.5 m along all outside edges of all planting zones on a regular basis to maintain grass height to max. 100 mm. Slashing shall comply with all local Council and RFS guidelines re grass heights.

JUTE MAT & TREE/PLANT GUARDS:
Maintain jute mat and tree/plant tree guards for first two summers minimum, repair and replace as required during this period.

PLANT REPLACEMENT:
Replace any failing, failed or dead plants during the maintenance period. The Superintendent and the Contractor will inspect the full planting areas at the end of each summer and will identify the number and species of plants that are failing, have failed/died. The Contractor shall replace all such plants identified.

WATERING:
The Contractor shall ensure all plants planted/maintained under this contract receive adequate (but not excessive) watering to maintain optimum growth and health. Watering shall be localised to each plant, not broad spraying across the entire planting area, to limit weed/grass growth between planting rows.

Watering shall be either manually via watercart/hose as required OR via a drip irrigation system, using Netafim 'UniRAM AS' inline dripline @ 1.6 LPH with emitter spacing of 400 mm -- one surface dripline per planting row. Drip irrigation system to be designed by an accredited irrigation designer and connect to an available clean water source, incl. filtration at source.

All plants shall be watered as required for at least the FIRST TWO SUMMERS to aid in establishment of healthy root systems and foliage growth, with further waterings if required during late spring and/or early autumn or at any other time of the year based on prevailing climatic conditions. Further waterings may be needed beyond this minimum establishment watering should prevailing climatic conditions deteriorate with potential to lead to deterioration of plant growth, health or plant deaths (e.g. severe drought, El Niño conditions, etc.).

FERTILISING:
All plants (excluding Proteacea family) shall be fertilised with Scotts 'Osmocote® Plus Trace Elements: Native Gardens' (NPK 21.8 : 0.7 : 7.2) or similar approved at the manufacturer's recommended rates. Fertiliser shall be locally spread on soil surface around plants during planting operations. If unsure which plants are in the Proteacea family – ASK.

Allow for one fertiliser application in Year 1 and second application in Year 2.

PESTS & DISEASES:
Regularly monitor all plants grasses planted/maintained under this contract for evidence of pest and/or disease attack -- identify and treat any/all problems arising.

RABBITS, HARES, KANGAROOS, ETC.:
Identify any predation by rabbits, hares and other pests with potential to damage or destroy the landscape works under this contract. Take all necessary steps, within local authority regulations and/or guidelines, to limit or eradicate predation. Maintain all tree guards in good condition to limit rabbit/hare/kangaroo/other damage to plants with installed guards.

Notes:
IMPORTANT NOTE RE CLARIFICATION:
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This plan shall be read in conjunction with the ACEnergy Pty Ltd Murrumbateman Distribution BESS drawings.

Rev	Date	Revision Note	By
B	15/4/2025	Minor revisions to site layout; Landscape updated to suit.	CW
A	6/5/2024	Fully revised to amended D-BESS site layout. Plant spacings revised, plant schedule updated.	CW

Issue	Date	Issue Note	By
6	15/4/2025	REVISED APPROVAL ISSUE	CW
5	22/11/2024	REVISED APPROVAL ISSUE	CW
4	29/11/2024	REVISED APPROVAL ISSUE	CW
3	3/6/2024	REVISED APPROVAL ISSUE	CW
2	6/5/2024	REVISED APPROVAL ISSUE	CW
1	26/11/2023	APPROVAL ISSUE	CW

Project Manager: ACEnergy Pty Ltd

ACENERGY

MURRUMBATEMAN
Distribution BESS
3 Turton Place Murrumbateman NSW

Landscape Specification Notes

Sheet 4 of 4

Local Authority: Yass Valley Council, NSW

Scale: N.T.S.
Drawn: CW Date: 26 Nov 2023
Project #: 23646 Drawing #: 04 Rev: B

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REVISED APPROVAL ISSUE - 15 April 2025

8 REFERENCES

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Tozer MG, Turner K, Keith DA, Tindall D, Pennay C, Simpson C, MacKenzie B, Beukers P, Cox S (2010). *Native Vegetation of southeast NSW: a revised classification and map for the coast and eastern tablelands*. Cunninghania 11:359-406.

ATTACHMENT 5

STATEMENT FROM BUSHFIRE CONSULTANT

Ahmed A

From: Letara Judd <letara@hec.eco>
Sent: Friday, 7 March 2025 11:32 AM
To: Ahmed A
Cc: Katherine Harris; Harris Environmental
Subject: RE: Murrumbateman D-BESS Project
Attachments: BMP for proposed Battery Energy Storage System 3 Turton Place Murrumbateman 250307 v3.pdf

Follow Up Flag: Follow up
Flag Status: Flagged

Categories: Red category

Hi Ahmed,

Please find attached updated Bushfire Management Plan with Landscape Plan included.

This email confirms the proposed Landscape Plan and planting is consistent with the APZ requirements. The proposed planting is located outside the identified APZ. All recommendations remain unchanged.

Kind Regards

Letara Judd

Bushfire Consultant – BPAD L2

letara@hec.eco | (02) 4236 0954 | (02) 4862 1168

Harrisenvironmental CONSULTING

Wastewater | Bushfire | Stormwater

From: Ahmed A <Ahmed.A@acenergy.com.au>
Sent: Tuesday, 25 February 2025 12:42 PM

Premise

ATTACHMENT 6

REVISED LANDSCAPE PLAN

Aerial imagery © Nearmap

REVISED APPROVAL ISSUE - 15 April 2025

Notes

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This plan shall be read in conjunction with the ACEnergy Pty Ltd Murrumbateman Distribution BESS drawings.

Rev	Date	Revision Note	By
C	15/4/2025	Minor revisions to site layout; Landscape updated to suit.	CW
B	20/11/2024	Detail drawing reference rectangle removed	CW
A	8/5/2024	Fully revised to amended D-BESS site layout; Plant specings revised, plant schedule updated.	CW

Issue	Date	Issue Note	By
6	15/4/2025	REVISED APPROVAL ISSUE	CW
5	22/11/2024	REVISED APPROVAL ISSUE	CW
4	20/11/2024	REVISED APPROVAL ISSUE	CW
3	3/6/2024	REVISED APPROVAL ISSUE	CW
2	8/5/2024	REVISED APPROVAL ISSUE	CW
1	26/11/2023	APPROVAL ISSUE	CW

Surveyors
—
Tel: eMail:

Structural Engineer:
—
Tel: eMail:

Consulting Engineer
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Mob: eMail:

Project Managers
ACEnergy Pty Ltd
Mob: 0497 514 353 eMail: danny.w@acenergy.com.au

Other:
—
Mob: eMail:

Proprietor

ACENERGY

Project

MURRUMBATEMAN Distribution BESS

3 Turton Place Murrumbateman NSW

Drawing

Overview/Context Plan

Sheet 1 of 4

Local Authority: Yass Valley Council, NSW

0 100 150 200 m

Scale: 1:3,000 @ A1; 1:6,000 @ A3

Drawn: CW Date: 26 Nov 2023

North

Project #	Drawing #	Rev
23646	01	C

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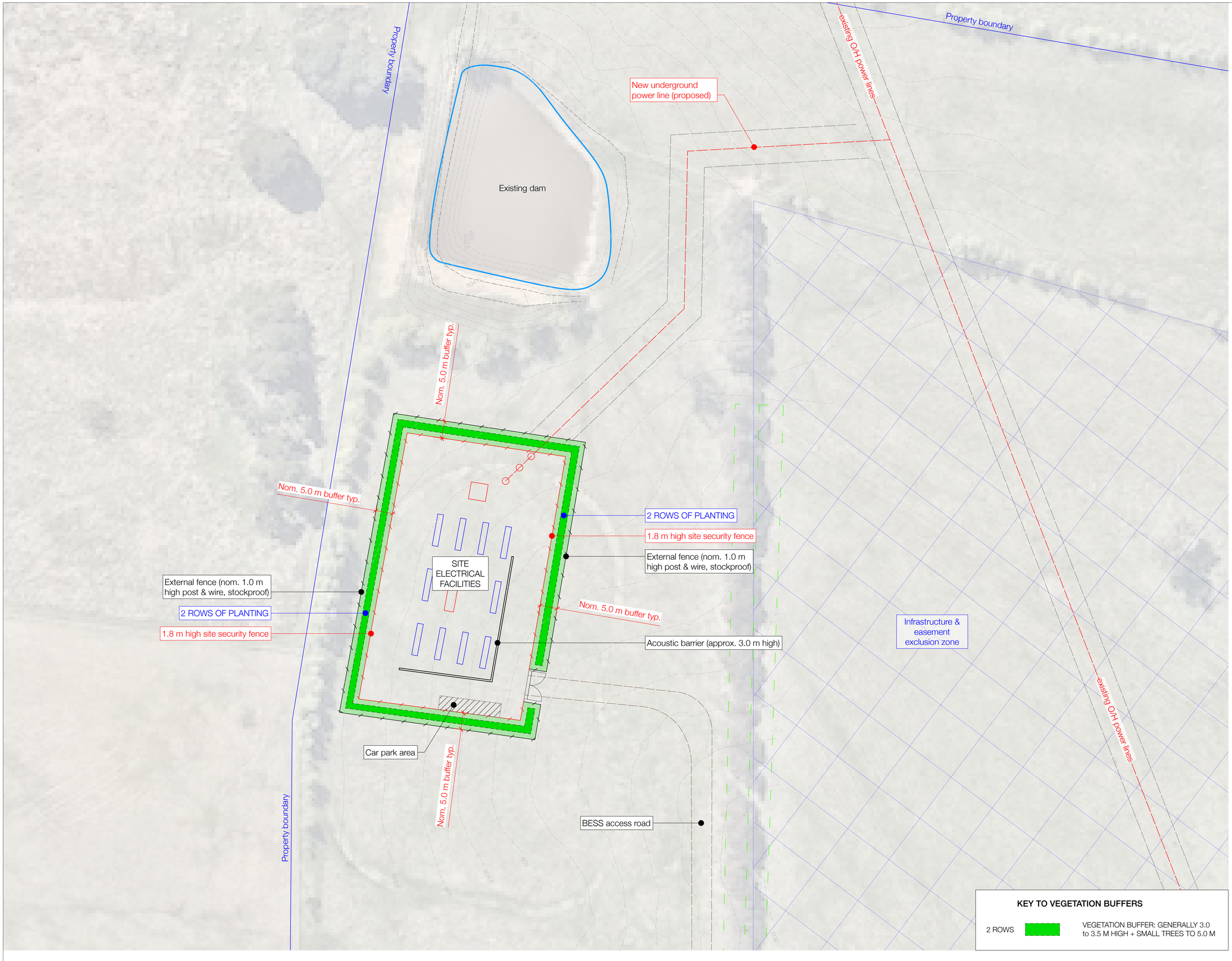

REVISED APPROVAL ISSUE - 15 April 2025

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Rev	Date	Revision Note	By
D	15/4/2025	Minor revisions to site layout; Landscape updated to suit.	CW
C	20/11/2024	Acoustic barrier & car park area added	CW
B	3/6/2024	New connecting power line corrected from overhead to underground installation	CW

Issue	Date	Issue Note	By
6	15/4/2025	REVISED APPROVAL ISSUE	CW
5	22/11/2024	REVISED APPROVAL ISSUE	CW
4	20/11/2024	REVISED APPROVAL ISSUE	CW
3	3/6/2024	REVISED APPROVAL ISSUE	CW
2	8/5/2024	REVISED APPROVAL ISSUE	CW
1	26/11/2023	APPROVAL ISSUE	CW

Surveyors
—
Tel: eMail:

Structural Engineer:
—
Tel: eMail:

Consulting Engineer
—
Mob: eMail:

Project Managers
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Mob: 0497 514 353 eMail: danny.w@acenergy.com.au

Other:
—
Mob: eMail:

Proprietor

ACENERGY

Project

MURRUMBATEMAN Distribution BESS

3 Turton Place Murrumbateman NSW

Drawing

Landscape Screening Plan

Sheet 2 of 4

Local Authority Yass Valley Council, NSW

0 10 20 30 40 m

Scale 1:500 @ A1; 1:1,000 @ A3

Drawn CW Date 26 Nov 2023

North

Project #	Drawing #	Rev
23646	02	D

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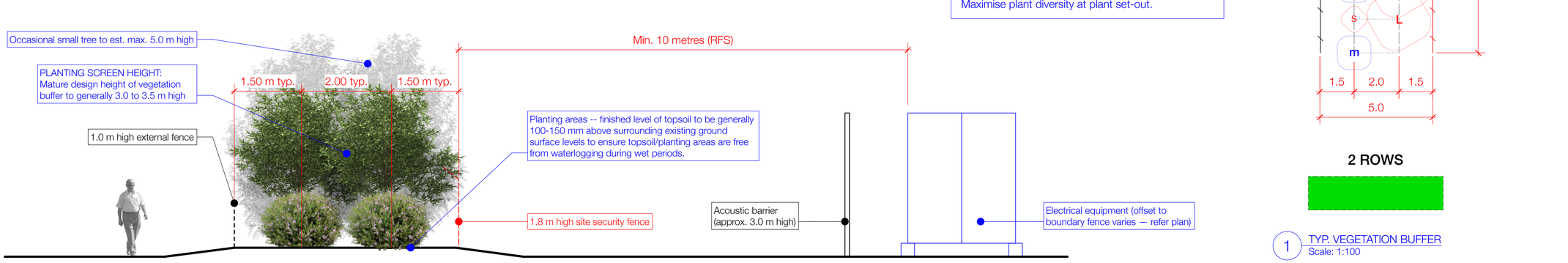
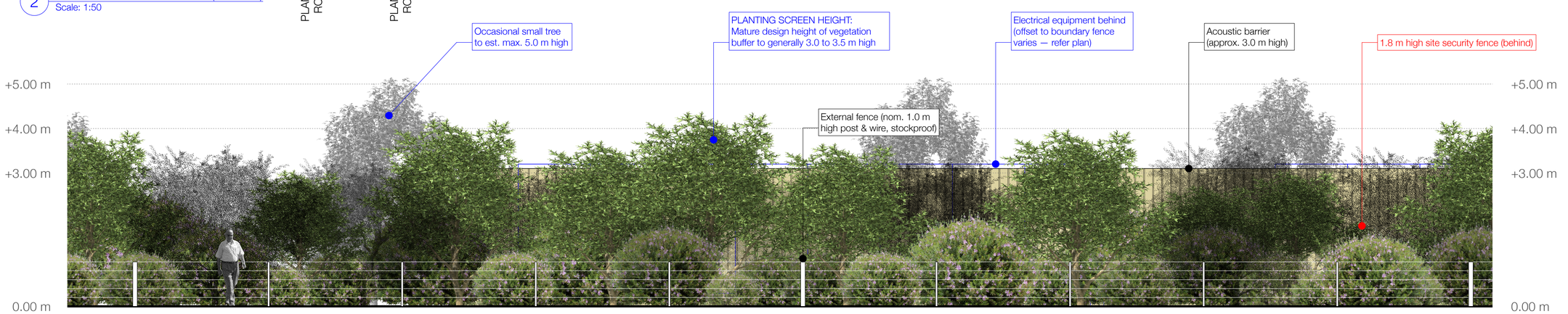
LIFE FORM	INDIGENOUS	SPECIES NAME	COMMON NAME	EST. MATURE HEIGHT	EST. MATURE SPREAD	POT SIZE	QUANTITY
		SMALL TREES					
ST	●	*Acacia dorytoxylon*	Spearwood	5.0	4.0	Hiko	10
ST	●	*Acacia pravissima*	Tumut Wattle	5.0	4.0	Hiko	10
ST	●	*Hakea decurrens*	Bushy Needlewood	5.0	4.0	Hiko	5
		LARGE SHRUBS					
L	●	*Acacia decora*	Western Silver Wattle	2.5	3.0	Hiko	30
L	●	*Acacia paradoxa*	Kangaroo Thorn	3.0	3.0	Hiko	16
L	●	*Acacia verniciflua*	Varnish Wattle	3.5	3.0	Hiko	30
L		*Callistemon citrinus 'Kings Park Special'*	Kings Park Bottlebrush	3.5	3.0	Hiko	30
L	●	*Kunzea ericoides*	Burgan	3.0	3.0	Hiko	16
L	●	*Leptospermum lanigerum*	Woolly Tea-tree	3.5	3.0	Hiko	30
		MEDIUM SHRUBS					
M	●	*Acacia buxifolia*	Box-leaf Wattle	2.5	2.0	Hiko	25
M	●	*Acacia siculiformis*	Dagger Wattle	2.0	2.0	Hiko	20
M	●	*Bursaria spinosa*	Sweet Bursaria	2.5	2.0	Hiko	20
M	●	*Callistemon sieberi*	River Bottlebrush	3.0	2.0	Hiko	20
M	●	*Indigofera australis*	Australian Indigo	2.0	2.0	Hiko	20
M	●	*Leptospermum continentale*	Prickly Tea-tree	2.5	2.0	Hiko	23
		SMALL SHRUBS					
S	●	*Acacia genistifolia*	Early Wattle	1.5	2.0	Hiko	20
S	●	*Grevillea lanigera (shrub form)*	Woolly Grevillea	1.5	2.0	Hiko	20
S	●	*Kunzea parvifolia*	Violet Kunzea	1.0	2.0	Hiko	11

TOTAL PLANTS QUANTITY 356

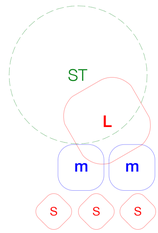


2 TYPICAL VEGETATION BUFFER (SECTION)
Scale: 1:50



3 TYPICAL VEGETATION BUFFER (EXTERNAL ELEVATION)
Scale: 1:50

KEY TO PLANT LIFE FORMS



SMALL TREES
LARGE SHRUBS
MEDIUM SHRUBS
SMALL SHRUBS

Unless otherwise noted, all plants to be planted with Arborgreen 'Greenguard POP' or similar approved tree guards and biodegradable jute weed mats

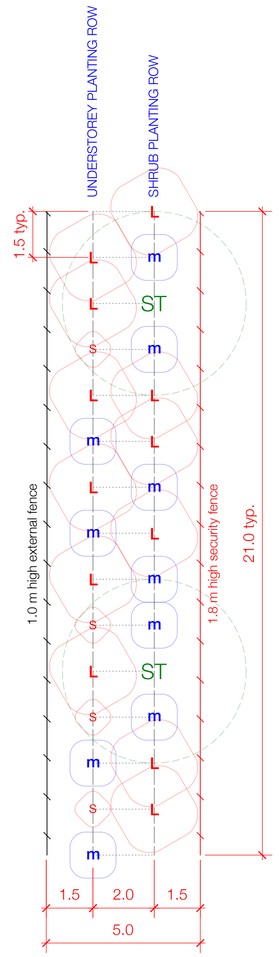
PLANT SET-OUT

Plant species shall be distributed in natural groupings to all planting areas, generally in accordance with plant life-form planting layouts as described in the Vegetation Buffer Detail Sheets as part of this drawing set.

Avoid concentrations of one species in any one area.

Avoid planting more than 5 no. of the same species in any one 21 m long typical planting row.

Maximise plant diversity at plant set-out.



2 ROWS

1 TYP. VEGETATION BUFFER
Scale: 1:100

REVISED APPROVAL ISSUE - 15 April 2025

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Rev	Date	Revision Note	By
D	15/4/2025	Minor revisions to site layout; Landscape updated to suit.	CW
C	22/11/2024	Acoustic barrier height adjusted	CW
B	20/11/2024	Acoustic barrier added to typical section & elevation	CW

Issue	Date	Issue Note	By
6	15/4/2025	REVISED APPROVAL ISSUE	CW
5	22/11/2024	REVISED APPROVAL ISSUE	CW
4	20/11/2024	REVISED APPROVAL ISSUE	CW
3	3/6/2024	REVISED APPROVAL ISSUE	CW
2	8/5/2024	REVISED APPROVAL ISSUE	CW
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Mob: eMail:

Project Managers
ACEnergy Pty Ltd
Mob: 0497 514 353 eMail: danny.w@acenergy.com.au

Other:
—
Mob: eMail:

Proprietor

Project

MURRUMBATEMAN Distribution BESS

3 Turton Place Murrumbateman NSW

Drawing

Landscape Screening

Sheet 3 of 4

Local Authority Yass Valley Council, NSW

Scale As shown @ A1

Drawn CW Date 26 Nov 2023

Project #	Drawing #	Rev
23646	03	D

North

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LANDSCAPE WORKS CONSTRUCTION NOTES:

1 WORKS BY CIVIL/OTHERS
All construction & civil works incl. demolition, building works, bulk earthworks, drainage infrastructure, road pavements, site electrical & battery facilities & associated infrastructure, fencing and other related works.

The civil contractor will ensure the following minimum depths of site topsoil are provided for the landscape works:

- Planting areas -- min. 150 mm depth site topsoil.
- Finished level of topsoil to be generally 100-150 mm above surrounding existing ground surface levels to ensure topsoil/planting areas are free from waterlogging during wet periods.

2 INSURANCES
Provide certificates of currency for Public Liability Insurance (min. $20M) and Workcover insurance (min. $20M) to the Superintendent prior to commencing works. Each certificate of currency shall note the Proprietor as an interested party.

3 ROAD OPENING PERMIT
Apply to the responsible authority for a road opening permit (if required), incl. the payment of all fees and charges re same. An approved copy of the approved road opening permit shall also be provided to the Superintendent prior to works commencing on site.

4 LANDSCAPE PRE-COMMENCEMENT MEETING
The Contractor shall Initiate, coordinate and attend a pre-commencement meeting with Council, Proprietor & Superintendent, incl. achieving compliance with all Council & specified requirements, checklists, insurances, approvals, etc.

5 TRAFFIC MANAGEMENT
If required, prepare and submit to the responsible authority a traffic management plan to their satisfaction, incl. the payment of all fees and charges re same. An approved copy of this plan shall also be provided to the Superintendent prior to works commencing on site. Implement approved traffic management plan during the duration of the Works on site.

6 LOCATE EXISTING SERVICES
Locate all existing services prior to commencing works, contacting Dial Before You Dig, the project civil engineers/contractor and/or the relevant authorities re same as required. Identify all overhead services prior to commencing works.

7 SET OUT THE WORKS
Accurately set the works out as per the documentation set.

8 SOIL TESTING
Undertake soil sampling & testing from an approved ag. soil testing laboratory, incl. seeking recommendations for fertilising planting zone to improve soil NPK balance, trace elements, etc. Any recommended adjustments must be made to improve the soil conditions for native tree & shrub planting.

9 PLANTING AREAS PREPARATION -- INITIAL
These works to be done ideally in LATE FEBRUARY/MARCH of the planting year:

- Eradicate broadleaf, woody and noxious weeds from all planting areas using selective, non-residual herbicides. Manual removal of larger woody weeds may be required -- inspect site to confirm extent.
- Rip along planting line to 2.0 m wide to min. 300 mm depth with a Yeomans/Keyline plough with tynes at max. 750 mm centres to break up/aerate natural subgrade and to relieve compaction, grade & level.
- Apply fertilisers and additives at rates recommended by soil test results.
- Cultivate planting lines to break up soil clods and provide an appropriate planting medium.
- DO NOT WORK WET SOIL. Remove any deleterious material brought to the surface, consolidate soil and grade surface to even grades, free of any depressions or undulations.

10 PLANTING AREAS PREPARATION -- SECONDARY
These works to be done ideally in APRIL/MAY of the planting year:

- Eradicate broadleaf, woody and noxious weeds from all planting areas using selective, non-residual herbicides. Manual removal of larger woody weeds may be required.
- Re-cultivate planting lines to break up soil clods and provide an appropriate planting medium.
- DO NOT WORK WET SOIL. Remove any deleterious material brought to the surface, consolidate soil and grade surface to even grades, free of any depressions or undulations.

11 PLANT SUPPLY
All plants shall be healthy, free from any pests or diseases, be attractive, well grown and well formed plant specimens and shall have a healthy, well formed root system commensurate in size with the foliage mass (root systems must not be pot bound). Plant container sizes shall be as listed in the detail planting schedule, but shall be min. hiko, ViroTube or 50 mm round/square pot size.

The planting contractor shall inspect all plants on delivery to site and shall certify in writing to the Superintendent that all plants supplied are as described above and are accepted by the planting contractor for planting in this project.

12 PLANTING
Set out plants as documented. Individual holes are to be dug (tree planter, mini-auger, etc.) in the prepared planting areas of sufficient size to easily accommodate the plant's root system and relieve any polishing. Create broad, shallow watering bowl to ALL plants to facilitate effective watering (min. 5 litre capacity). All plants shall be watered-in immediately after planting and at such times during the Contract period as is required to maintain growth free of water stress. Planting medium must be moist - do not plant into dry soil. Handle and plant all plants at all times in accordance with best horticultural practice.

13 FERTILISING
Refer maintenance section.

14 WEED MATS
Supply & install to each plant a 600 x 600 mm TreeMax or similar approved jute weed mat. Installation strictly to manufacturer's recommendations.

15 TREE/PLANT GUARDS
Supply & install to each plant Arborgreen 'Greenguard POP' 450 x 200 mm (sides): Code: 'GRGRDPOP-TRI' or similar approved 100% biodegradable tree guard, incl. 1 no. x 25 x 25 x 750 mm HWD stake per guard to all plants. Ensure stake extends min. 300 mm into ground. Installation strictly to manufacturer's recommendations.

16 GRASSING (IF REQUIRED)
Some areas of grass seeding may be required and will be directed and quantified by the Superintendent.

Do not sow seed in periods of extreme heat, cold or wet, or where wind velocities are excessive unless otherwise approved. Seed mix shall be as follows:

- TURF-TYPE REGENERATING PERENNIAL RYEGRASS 95% by count
- TURF-TYPE TALL FESCUE 3% by count
- SUB CLOVER 1% by count
- WHITE CLOVER 1% by count

Seeding rate shall be min. 30 gms per m2. Apply seed evenly – seed application shall be via direct drilling or by other approved methods. Seeding shall be programmed when there is a period of anticipated weather conditions (i.e. rain) that will provide the best chance for germination of grass seed. Any areas affected by heavy rain, wind removing seed or other cause shall be re-seeded as specified to achieve an even cover of grass.

Slash grass when growth height has reached 100 mm or otherwise as directed by Superintendent. Should all the areas not require cutting at one time, complete all further cuts as necessary until 100% of the area has achieved successful coverage and all areas have received at least first cut.

17 PRACTICAL COMPLETION COORDINATION
The Contractor shall Initiate, coordinate and attend a Practical Completion meeting with Council, Proprietor & Superintendent, incl. achieving compliance with all Council & specified requirements, checklists, insurances, approvals, etc.
NOTE: Min. 3 no. working days notice is required for a Practical Completion meeting.

18 LANDSCAPE ESTABLISHMENT MAINTENANCE PERIOD
Maintain the contract works from the Date of Practical Completion to the Date of Final Completion/hand-over.

Maintenance shall include care of the contract area by accepted horticultural practices, and rectification of any defects that become apparent during this period. Maintenance tasks to be carried out during the maintenance period shall include, but shall not be limited to, slashing, watering as required, weed control, pest & disease control & management, tree/plant guard adjustment/replacement as required, rubbish removal.

WEED CONTROL – PLANTED AREAS:
In planted areas, poison all broadleaf, noxious & woody weeds as they appear. Slashable grasses are to be retained generally between planting rows. Selective herbicides shall be nominated by the Contractor and approved by the Superintendent prior to use. Non-selective herbicide shall be Monsanto 'Roundup BIACTIVE' glyphosate-based herbicide -- standard 'Roundup' is NOT to be used. NO OTHER HERBICIDE SHALL BE USED WITHOUT PRIOR APPROVAL. All herbicide applications shall use NuFarm 'Spraymate or similar approved marker dye admixture and shall be handled and applied strictly according to manufacturer's recommendations, recommended rates and directions.

GRASS MANAGEMENT – PLANTED AREAS:
Slash all areas between plants in rows and min. 1.5 m along all outside edges of all planting zones on a regular basis to maintain grass height to max. 100 mm. Slashing shall comply with all local Council and RFS guidelines re grass heights.

JUTE MAT & TREE/PLANT GUARDS:
Maintain jute mat and tree/plant tree guards for first two summers minimum, repair and replace as required during this period.

PLANT REPLACEMENT:
Replace any failing, failed or dead plants during the maintenance period. The Superintendent and the Contractor will inspect the full planting areas at the end of each summer and will identify the number and species of plants that are failing, have failed/died. The Contractor shall replace all such plants identified.

WATERING:
The Contractor shall ensure all plants planted/maintained under this contract receive adequate (but not excessive) watering to maintain optimum growth and health. Watering shall be localised to each plant, not broad spraying across the entire planting area, to limit weed/grass growth between planting rows.

Watering shall be either manually via watercart/hose as required OR via a drip irrigation system, using Netafim 'UniRAM AS' inline dripline @ 1.6 LPH with emitter spacing of 400 mm -- one surface dripline per planting row. Drip irrigation system to be designed by an accredited irrigation designer and connect to an available clean water source, incl. filtration at source.

All plants shall be watered as required for at least the FIRST TWO SUMMERS to aid in establishment of healthy root systems and foliage growth, with further waterings if required during late spring and/or early autumn or at any other time of the year based on prevailing climatic conditions. Further waterings may be needed beyond this minimum establishment watering should prevailing climatic conditions deteriorate with potential to lead to deterioration of plant growth, health or plant deaths (e.g. severe drought, El Niño conditions, etc.).

FERTILISING:
All plants (excluding Proteacea family) shall be fertilised with Scotts 'Osmocote® Plus Trace Elements: Native Gardens' (NPK 21.8 : 0.7 : 7.2) or similar approved at the manufacturer's recommended rates. Fertiliser shall be locally spread on soil surface around plants during planting operations. If unsure which plants are in the Proteacea family – ASK.

Allow for one fertiliser application in Year 1 and second application in Year 2.

PESTS & DISEASES:
Regularly monitor all plants grasses planted/maintained under this contract for evidence of pest and/or disease attack -- identify and treat any/all problems arising.

RABBITS, HARES, KANGAROOS, ETC.:
Identify any predation by rabbits, hares and other pests with potential to damage or destroy the landscape works under this contract. Take all necessary steps, within local authority regulations and/or guidelines, to limit or eradicate predation. Maintain all tree guards in good condition to limit rabbit/hare/kangaroo/other damage to plants with installed guards.

REVISED APPROVAL ISSUE - 15 April 2025

Notes

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This plan shall be read in conjunction with the ACEnergy Pty Ltd Murrumbateman Distribution BESS drawings.

Rev	Date	Revision Note	By
B	15/4/2025	Minor revisions to site layout; Landscape updated to suit.	CW
A	8/5/2024	Fully revised to amended D-BESS site layout; Plant specings revised, plant schedule updated.	CW

Issue	Date	Issue Note	By
6	15/4/2025	REVISED APPROVAL ISSUE	CW
5	22/11/2024	REVISED APPROVAL ISSUE	CW
4	20/11/2024	REVISED APPROVAL ISSUE	CW
3	3/6/2024	REVISED APPROVAL ISSUE	CW
2	8/5/2024	REVISED APPROVAL ISSUE	CW
1	26/11/2023	APPROVAL ISSUE	CW

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Proprietor

ACENERGY

Project

MURRUMBATEMAN Distribution BESS

3 Turton Place Murrumbateman NSW

Drawing

Landscape Specification Notes

Sheet 4 of 4

Local Authority Yass Valley Council, NSW

Scale N.T.S.

Drawn CW Date 26 Nov 2023

Project #	Drawing #	Rev
23646	04	B

North

groundcontrol

Ground Control
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