

From: "Tye Smith" <tye@edpi.com.au>
Sent: Mon, 13 Jul 2026 12:46:23 +1000
To: "Development Assessment" <developmentassessment@townsville.qld.gov.au>
Cc: "Maris-Claire Salazar" <maris-claire.salazar@townsville.qld.gov.au>; "Jack Coward" <jack.coward@townsville.qld.gov.au>
Subject: RE: MCU26/0019 - Response to Information Request - 235-353 Mill Road YABULU
Attachments: MCU26-0019 - Response to Information Request.pdf, MCU26 0019 - Letter - Information Request.pdf, MCU26-0019 – Revised Drawings.zip, MCU26-0019 – Bushfire Hazard Assessment & Management Plan.pdf, MCU26-0019 – Noise Impact Assessment.pdf, MCU26-0019 – Traffic Impact Assessment.pdf

Dear Maris-Claire,

Please find attached the Response to Information Request for Development Application MCU26/0019 – Function Facility at 235–353 Mill Road, Yabulu.

The response includes the revised plans and supporting technical reports addressing each of Council's information request items, including the revised drawings, Bushfire Hazard Assessment and Management Plan, Noise Impact Assessment and Low Impact Traffic Impact Assessment.

Should you require any further information or clarification during your assessment, please do not hesitate to contact me.

Kind regards,

Tye Smith

Director & Development Manager | edpi.com.au



T: [0406 509 299](tel:0406509299)

E: tye@edpi.com.au

A: Townsville, QLD 4814



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From: Development Assessment <developmentassessment@townsville.qld.gov.au>
Sent: Tuesday, 31 March 2026 11:29 AM
To: Tye Smith <tye@edpi.com.au>

Cc: Maris-Claire Salazar <maris-claire.salazar@townsville.qld.gov.au>; Jack Coward <jack.coward@townsville.qld.gov.au>

Subject: MCU26/0019-Letter - Information Request - 235-353 Mill Road YABULU

Good morning,

Please find attached an electronic copy of the above mentioned.

If you have any questions please don't hesitate to contact the Assessing Officer, Maris-Claire Salazar on 4727 9412.

If you would like to follow the progress of your application online, please click on [Launch ePlanning](#) to access.

Kind regards,

**Planning & Development
TOWNSVILLE CITY COUNCIL**

Discover everything you need to undertake planning and development in Townsville, visit [Planning - Townsville City Council](#)

P 4417 5325 **E** developmentassessment@townsville.qld.gov.au

143 Walker Street, Townsville QLD 4810 | PO Box 1268, Townsville QLD 4810



OUR VISION - A globally connected community driven by lifestyle and nature **OUR PURPOSE** - Grow Townsville

WINNER QLD TRAINING AWARDS NQ REGION LARGE EMPLOYER OF THE YEAR 2022 & 2023

Townsville City Council acknowledges the Wulgurukaba of Gurambilbarra and Yunbenun, Bindal, Gugu Badhun and Nywaigi as the Traditional Owners of this land. We pay our respects to their cultures, their ancestors and their Elders, past, present, and all future generations.



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13 July 2026

Planning Officer
Townsville City Council
PO Box 1268
Townsville QLD 4810

Dear Maris-Claire,

**Re: Response to Information Request – Application MCU26/0019
Development Permit for Material Change of Use – Function Facility**

I refer to the Information Request issued by Council on 31 March 2026 in relation to the above-mentioned application and hereby provide the following responses:

Request Item 1 - Amended Site Plan

The applicant is requested to provide amended plans including:

- **Site plan**, including
 - Site boundaries
 - Existing and proposed buildings, structures, fences and infrastructure (including potable water and fire management water storage tanks, refuse storage and collection and onsite sewer) with dimensions
 - Footprint of use area, including fire breaks and vegetation buffers,
 - Dimensions of setbacks to boundaries,
 - Existing and proposed driveway, internal circulation, parking areas and bus drop off location capable of accommodating expected demand, (relocate the car parking area to the other side of the access road, away from vegetation supporting native fauna);
 - North point,
 - Title block (e.g., title, date, version, and reference number)
- **Elevations**, including
 - Existing and proposed buildings, and structures,
 - height from natural ground level
 - title block (e.g., title, date, version, and reference number).

Applicant response:

Amended plans have been prepared and are submitted in response to this request. Collectively, the enclosed drawings provide all information requested by Council, including the site layout, buildings, infrastructure, access arrangements and elevations.

Site Plan

The amended plans include:

- Site boundaries – Refer to Drawing GA001 Rev.0 – Site Access & Boundary. The venue footprint is consistent with the approved Vegetation Management Plan (DWG No. VMP 2603-5187 SRA). A boundary fence is proposed around the approved venue area to restrict public access to the remainder of

the property and assist in preventing the transfer of weed seed. The enclosed event area will be subject to ongoing weed management.

- Existing and proposed buildings, structures and infrastructure – The plans identify the location and dimensions of all proposed buildings, boundary fencing and associated infrastructure, including potable water storage, fire-fighting water tanks, refuse storage and collection areas, and the onsite wastewater treatment system. Refer to:
 - GA005 Rev.0 – Proposed buildings and water storage;
 - GA001 Rev.0 – Boundary fencing;
 - GA003 Rev.0 – Refuse storage and collection area;
 - GA006 Rev.0 – Onsite wastewater treatment system and setback distances.

Engineering design and sizing of the onsite wastewater treatment system was provided under separate cover in the previously submitted Wastewater Works Engineering Design Report.

- Footprint of the use area, fire breaks and vegetation buffers – The proposed development footprint is shown on Drawings GA001 Rev.0 and GA005 Rev.0. Fire breaks are detailed within the enclosed Bushfire Hazard Assessment and Management Plan, while vegetation buffers are identified on DWG No. VMP 2603-5187 SRA.
- Boundary setbacks – Building and infrastructure setback dimensions are provided on Drawing GA004 Rev.0.
- Access, internal circulation, parking and bus access – The amended plans identify the existing site access, internal circulation, accessible parking, emergency vehicle access and relocated parking area. In response to Council's request, the main parking area has been relocated to the opposite side of the access road, away from vegetation supporting native fauna. As confirmed in the enclosed Traffic Impact Assessment, the development has been designed to accommodate the anticipated vehicle demand associated with a maximum attendance of 100 persons, based on an estimated 27 light vehicles, two 12-seat buses and a catering vehicle. Overflow parking has also been provided adjacent to the site entrance should additional parking be required during larger events. Refer to: GA001 Rev.0 – Existing access road;
 - GA003 Rev.0 – Internal circulation, accessible parking and emergency parking;
 - GA002 Rev.0 – Car parking layout.
- North point and title block – All amended drawings include a north point together with the relevant title block, drawing title, revision number and reference details.

Elevations

Architectural drawings have also been amended to include the proposed building elevations, dimensions and heights. Refer to:

- DWG No. VMP 2603-5187 SRA
- A1001 Rev.0
- A2001 Rev.0
- A3001 Rev.0
- A4001 Rev.0

Each drawing includes the required title block, drawing reference, revision number and other identifying information.

Request Item 2 – Confirm the number of persons expected on site

The applicant is requested to confirm the maximum number of people expected on site for an event (including vendors, service providers and operators).

Applicant response:

The proposed Function Facility will accommodate a maximum of 100 persons (including guests, vendors, service providers and operators) at any one time. This maximum occupancy has been adopted to ensure consistency across the development application and supporting technical assessments, including the onsite wastewater design, parking provision, Noise Impact Assessment and Traffic Impact Assessment. All supporting documentation has been prepared on the basis of this maximum occupancy.

Request Item 3 – Provide a Bushfire Impact Assessment

The applicant is requested to provide a Bushfire impact assessment by a suitably qualified person.

Applicant response:

A Bushfire Hazard Assessment and Management Plan has been prepared by Ecosystems Management (Aust) Pty Ltd and is enclosed with this response. The assessment confirms the subject site is located within the Medium Bushfire Hazard Overlay and demonstrates that the proposed Function Facility is capable of complying with the Bushfire Hazard Overlay Code of the Townsville City Plan through the implementation of the recommended bushfire mitigation measures, including:

- provision of appropriate asset protection zones;
- ongoing vegetation and fuel management;
- maintenance of fire breaks;
- dedicated fire-fighting water supply;
- suitable emergency access and egress; and
- implementation of an ongoing Bushfire Management Plan.

The report concludes that the proposed development can achieve compliance with the Bushfire Hazard Overlay Code without increasing bushfire risk to people or property.

Request Item 4 – Provide a Noise Impact Assessment

The applicant is requested to a noise impact assessment, prepared by a suitably qualified person, outlining the expected noise output and proposed measures to ensure acoustic amenity of surrounding residences/land uses are protected.

Ensure the assessment provides the following initial information:

- Location map of noise sources of all receiving sensitive receptors;
- Operational hours and potential noise sources from surrounding rural activities;
- All potential significant noise and vibration generating activities associated with the activity;
- Noise from surrounding car parking and service vehicle activities;
- Noise from noise generating equipment (i.e. generators, compressors and other applicable equipment for the use);
- All assumptions of noise propagation and attenuation due to distance and barriers;
- Rating background level using one-tenth percentile method for continuous recording over a minimum of 48 hours period;

- Sleep disturbance criteria;
- Tonal or low frequency noise to include one third octave analysis; and
- Recommendation for mitigations measures and monitoring for the use.

Applicant response:

A Noise Impact Assessment prepared by Rodney Stevens Acoustics Pty Ltd is enclosed with this response. The assessment considers operational noise associated with patrons, amplified music, vehicle movements, mechanical plant and other ancillary activities associated with the proposed Function Facility.

The assessment concludes that the proposed development is capable of complying with the applicable acoustic criteria of the Townsville City Plan, Environmental Protection (Noise) Policy 2019 and Environmental Protection Act 1994, subject to the implementation of the recommendations contained within the report. The assessment has been undertaken on the basis of a maximum attendance of 100 persons, consistent with the proposed scale of the development.

Request Item 5 – Traffic Impact Assessment

The applicant is requested to provide RPEQ certification of the Low Traffic Impact Assessment.

Applicant response:

A Low Impact Traffic Impact Assessment prepared by Northern Consulting Engineers and certified by a Registered Professional Engineer of Queensland (RPEQ) is enclosed with this response.

The assessment confirms that the proposal satisfies the criteria for a Low Impact Traffic Assessment under the Townsville City Plan. It concludes that the proposed development will generate traffic volumes well within the applicable thresholds, the existing access arrangements are suitable, the proposed parking provision is sufficient to accommodate the anticipated demand, and the development will not adversely affect the operation or safety of the surrounding road network.

Should any further information or clarification be required, please do not hesitate to contact us.

Yours sincerely,



Tye Smith
Director & Development Manager
M (+61) 0406509299
tye@edpi.com.au | www.edpi.com.au

Encl. MCU26-0019 – Information Request
 MCU26-0019 – Revised Drawings
 MCU26-0019 – Bushfire Hazard Assessment & Management Plan (Ecosystems)
 MCU26-0019 – Noise Impact Assessment (Rodney Stevens Acoustics)
 MCU26-0019 – Traffic Impact Assessment (Northern Consulting Engineers)



Date>> 31 March 2026

PO BOX 1268, Townsville
Queensland 4810

13 48 10

T Holley & S Anderson
C/- EDPI Australia
34 Zoe Court
MOUNT LOUISA QLD 4814

enquiries@townsville.qld.gov.au
townsville.qld.gov.au

ABN: 44 741 992 072

Email >> tye@edpi.com.au

Dear Sir/Madam

Information Request

Planning Act 2016

As per our telephone conversation on 25 March 2026 be advised that, upon review of the below mentioned development application, further information is required to undertake a comprehensive assessment. In accordance with section 12 of Development Assessment Rules under the *Planning Act 2016* the following information is requested.

Application Details

Application no:	MCU26/0019
Assessment no:	14306235
Proposal:	Function Facility
Street address:	235-353 Mill Road YABULU QLD 4818
Real property description:	Lot 3 RP 743037

The information requested is set out below

Request Item 1 - Amended site plan

The applicant is requested to provide amended plans including:

- **Site plan**, including
 - Site boundaries
 - Existing and proposed buildings, structures, fences and infrastructure (including potable water and fire management water storage tanks, refuse storage and collection and onsite sewer) with dimensions
 - Footprint of use area, including fire breaks and vegetation buffers,
 - Dimensions of setbacks to boundaries,
 - Existing and proposed driveway, internal circulation, parking areas and bus drop off location capable of accommodating expected demand, (relocate the car parking area to the other side of the access road, away from vegetation supporting native fauna);
 - North point,
 - Title block (e.g., title, date, version, and reference number)
- **Elevations**, including
 - Existing and proposed buildings, and structures,

- height from natural ground level
- title block (e.g., title, date, version, and reference number).

Reason

To provide an acceptable plan set for assessment.

Advice

The applicant is advised that this area may require an extension to clearing area approvals from State to cater for the infrastructure required on site. The State government has a guideline of what is to include in appropriate plans ([DAFormsguide-Relevantplans.pdf](#))

Request Item 2 - Confirm the number of persons expected on site

The applicant is requested to confirm the maximum number of people expected on site for an event (including vendors, service providers and operators).

Reason

To assess the maximum impact of the proposed development on the site.

Advice

There is conflict between the car parking for 20 vehicles, the sewer system catering for 100 people and the proposal for 150 guests.

Request Item 3 - Provide a Bushfire Impact Assessment

The applicant is requested to provide a Bushfire impact assessment by a suitably qualified person

Reason

To demonstrate compliance with Bushfire hazard code of the Townsville City Plan.

Advice

SC6.8 Mitigating bushfire hazard planning scheme policy details how to prepare a Bushfire hazard assessment

Request Item 4 - Provide a Noise Impact Assessment

The applicant is requested to a noise impact assessment, prepared by a suitably qualified person, outlining the expected noise output and proposed measures to ensure acoustic amenity of surrounding residences/land uses are protected.

Ensure the assessment provides the following initial information:

- Location map of noise sources of all receiving sensitive receptors;
- Operational hours and potential noise sources from surrounding rural activities;
- All potential significant noise and vibration generating activities associated with the activity;
- Noise from surrounding car parking and service vehicle activities;
- Noise from noise generating equipment (i.e. generators, compressors and other applicable equipment for the use);
- All assumptions of noise propagation and attenuation due to distance and barriers;
- Rating background level using one-tenth percentile method for continuous recording over a minimum of 48 hours period;
- Sleep disturbance criteria;
- Tonal or low frequency noise to include one third octave analysis; and
- Recommendation for mitigations measures and monitoring for the use.

Reason

To ensure the development does not cause an environmental nuisance to nearby sensitive receptors in accordance with section 440 Part 3B 'Offences relating to noise standards' of the Environmental Protection Act 1994 and to control background creep of the Environmental Protection (Noise) Policy 2019.

Request Item 5 - Traffic Impact Assessment

The applicant is requested to provide RPEQ certification of the Low Traffic Impact Assessment.

Reason

To demonstrate compliance with Transport impact, access and parking code of the Townsville City Plan.

End of Information Request

Under the provisions of the Development Assessment Rules under the *Planning Act 2016*, you have three options available in response to this Information Request. You may give the assessment manager (in this instance Council):

- (a) all of the information requested; **or**
- (b) part of the information requested; **or**
- (c) a notice that none of the information will be provided.

For any response given in accordance with items (b) and (c) above, you may also advise Council that it must proceed with its assessment of the development application.

Please be aware that under the Development Assessment Rules under the *Planning Act 2016*, the applicant is to respond to any Information Request within **3 months** of the request. If you do not respond to the Information Request within this time period, or, within a further period agreed between the applicant and Council, it will be taken that you have decided not to provide a response. In the event of no response being received, Council will continue with the assessment of the application without the information requested.

Council prefers that all of the information requested be submitted as one package. If any additional matters arise as a result of the information submitted, or, as a result of public notification (where applicable), you will be advised accordingly.

Should any referral agency make an information request, you are reminded of your obligation to provide council with a copy of the information response provided to that referral agency.

You may wish to follow the progress of this application using PD Online on Council's website www.townsville.qld.gov.au

If you have any further queries in relation to the above, please do not hesitate to contact Maris-Claire Salazar on telephone 07 4727 9412, or email developmentassessment@townsville.qld.gov.au.

Yours faithfully

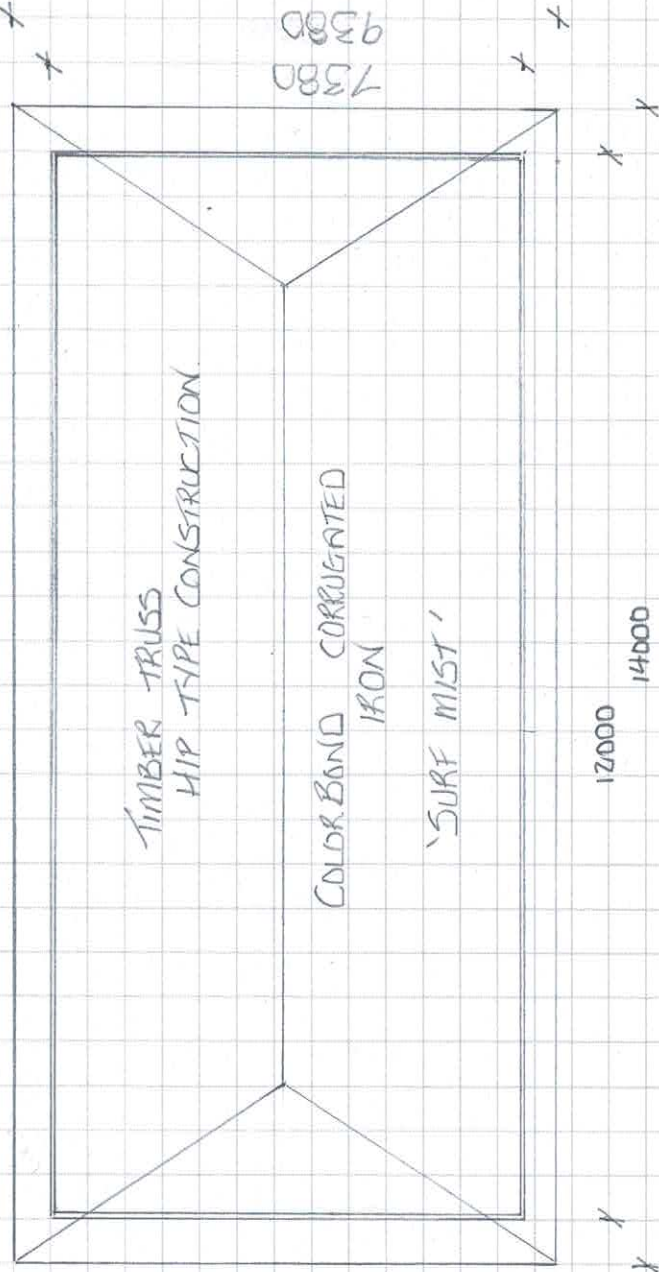


For Assessment Manager
Planning and Development

JUNE 2026

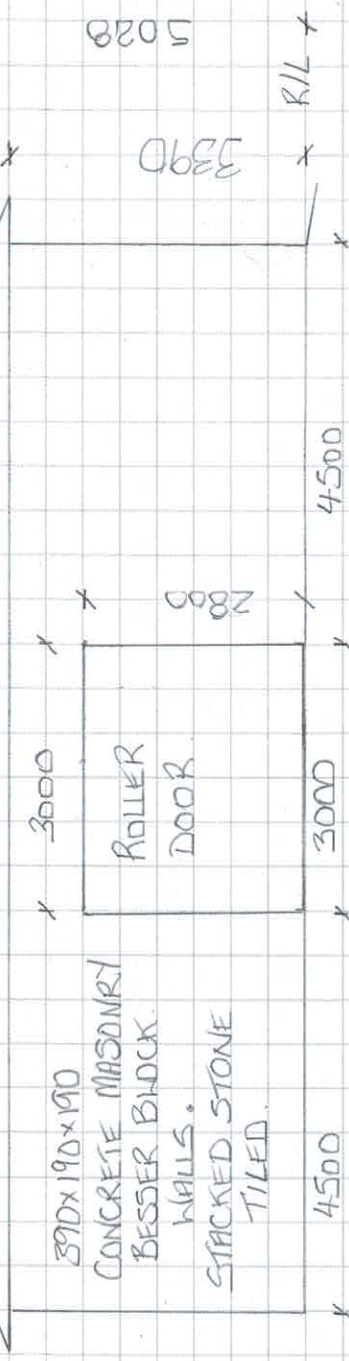
SERVICE SHED BUILDING

Roof View

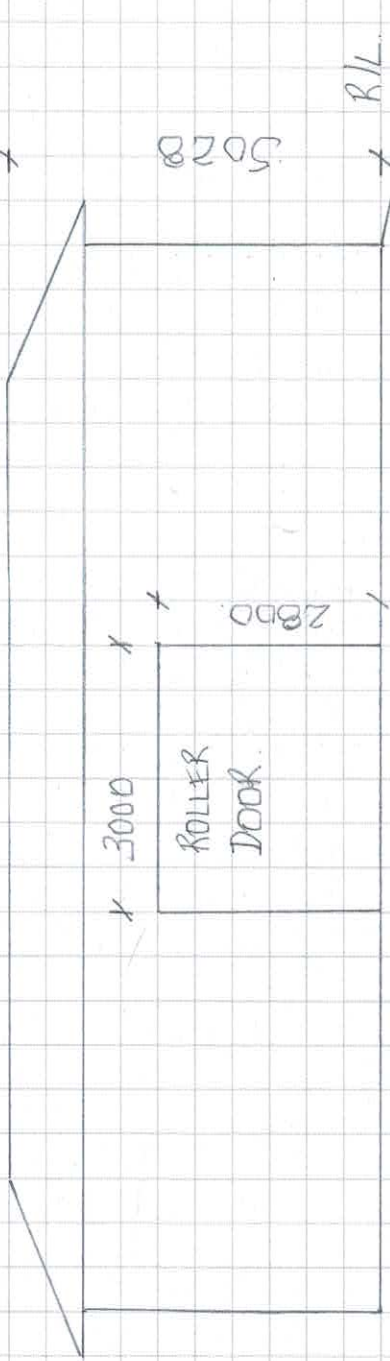


NORTH WALL

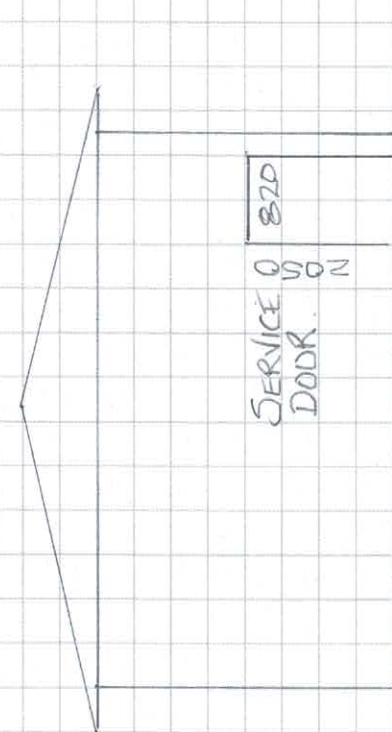
ROOF 20° PITCH.



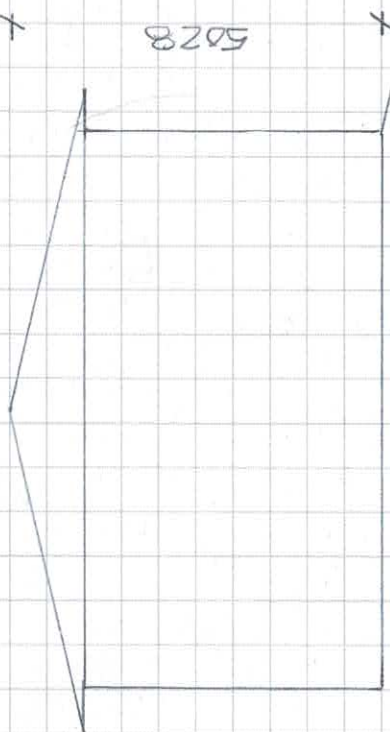
SOUTH WALL



EAST WALL



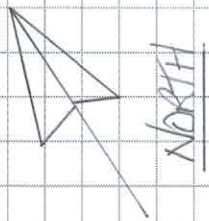
WEST WALL



NOTES
1. BUILDING INDICATED AS A1 ON VEGETATION MANAGEMENT PLAN MAP VMP 2603-51387 SRA. ALSO INDICATED AS 'SERVICE SHED' SHE PLAN.

DO NOT SCALE
USE MEASUREMENTS AS SHOWN.

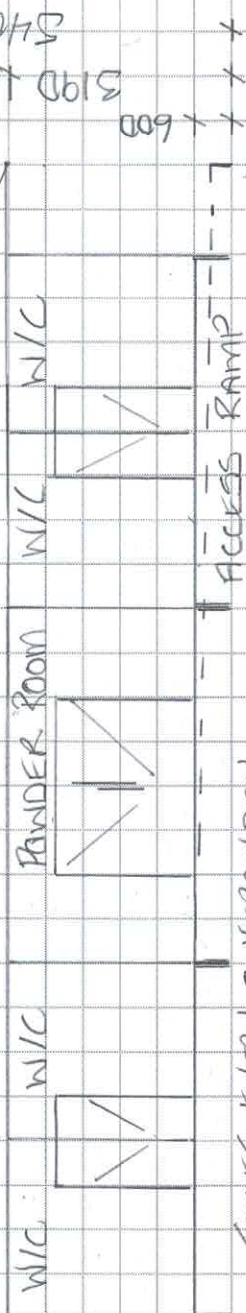
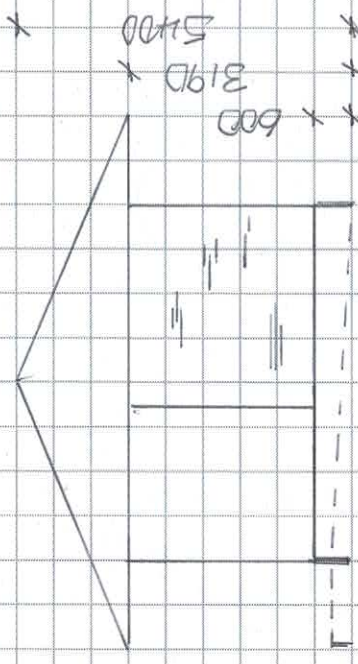
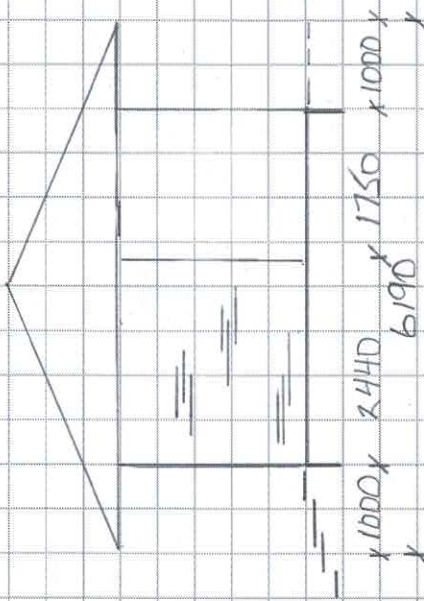
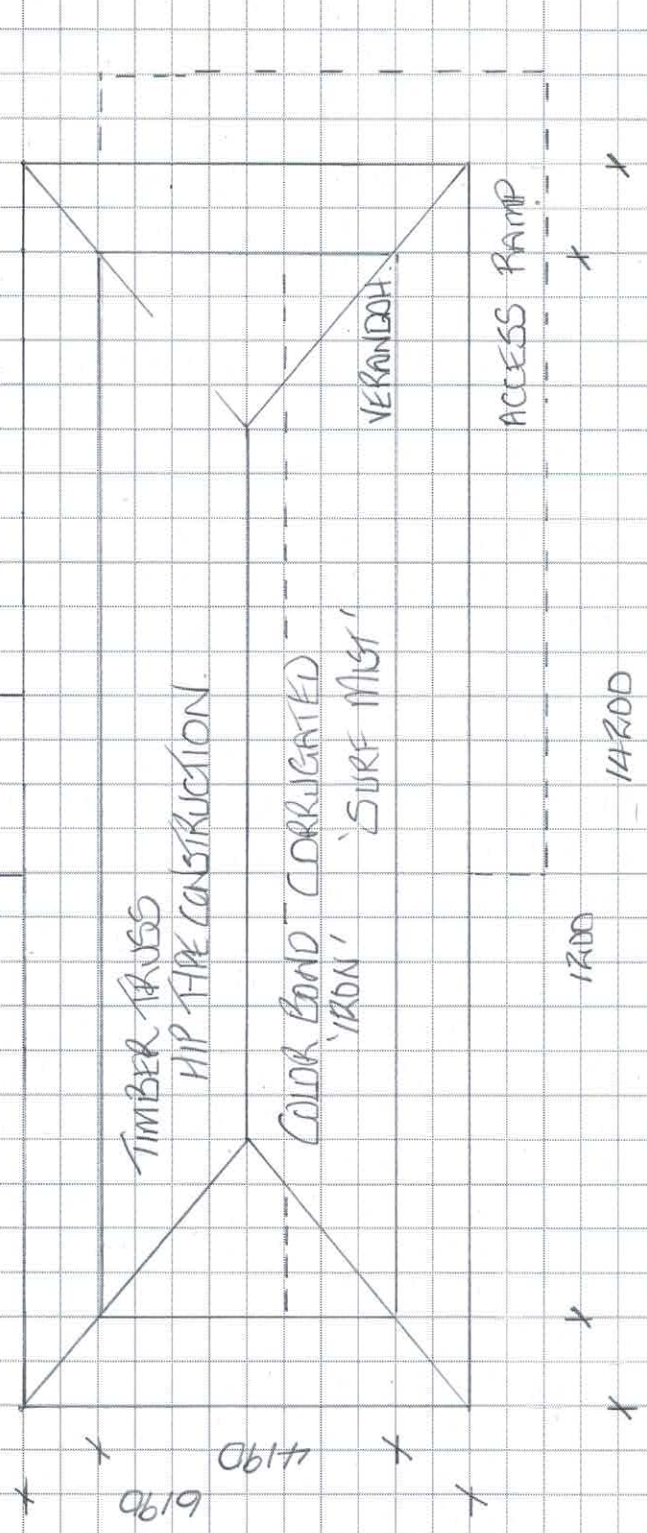
PROJECT : VENUE 'SERVICE SHED'
ADDRESS : LOT 3 RP743037
235-353 MILL ROAD, YABULL QLD 4818
DRAWING NO A1001 REV 0.



NORTH

TOILET / POWDER ROOM

TOP / ROOF VIEW



DO NOT SCALE
USE MEASUREMENTS AS SHOWN.

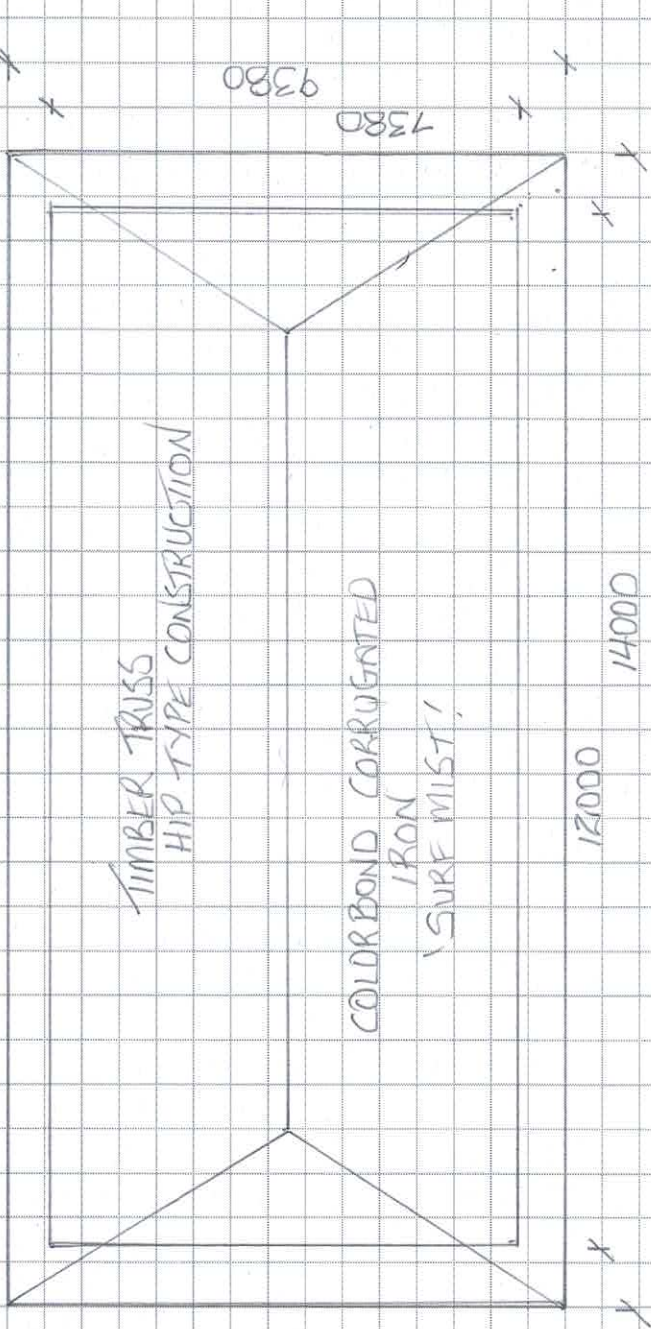
PROJECT : VENUE 'TOILET / POWDER ROOM'
ADDRESS : LOT 3 RP 743037
235-353 MILL ROAD, YABULL QLD 4818
DRAWING NO. A20001 REV.0

JUNE 2026

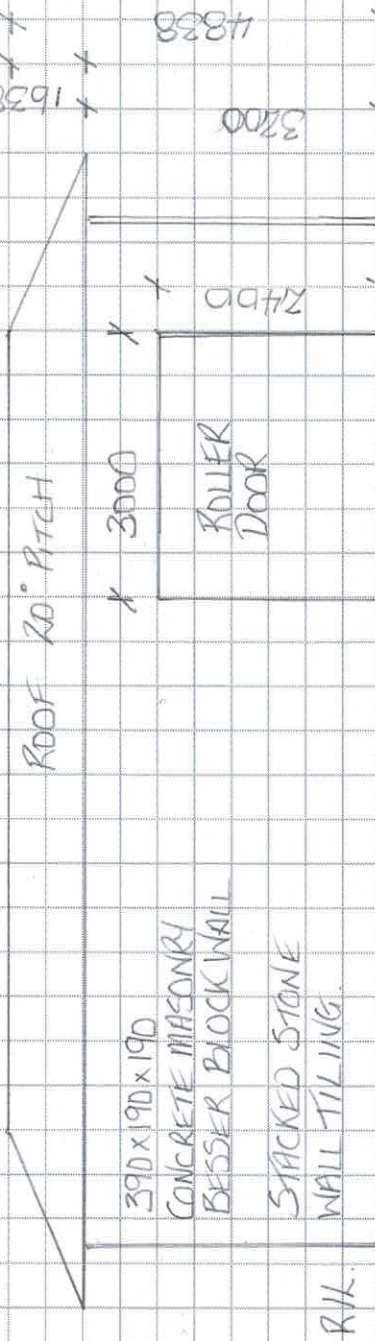
JUNE 2026

FOOD SERVICE BUILDING

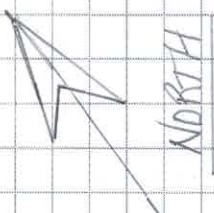
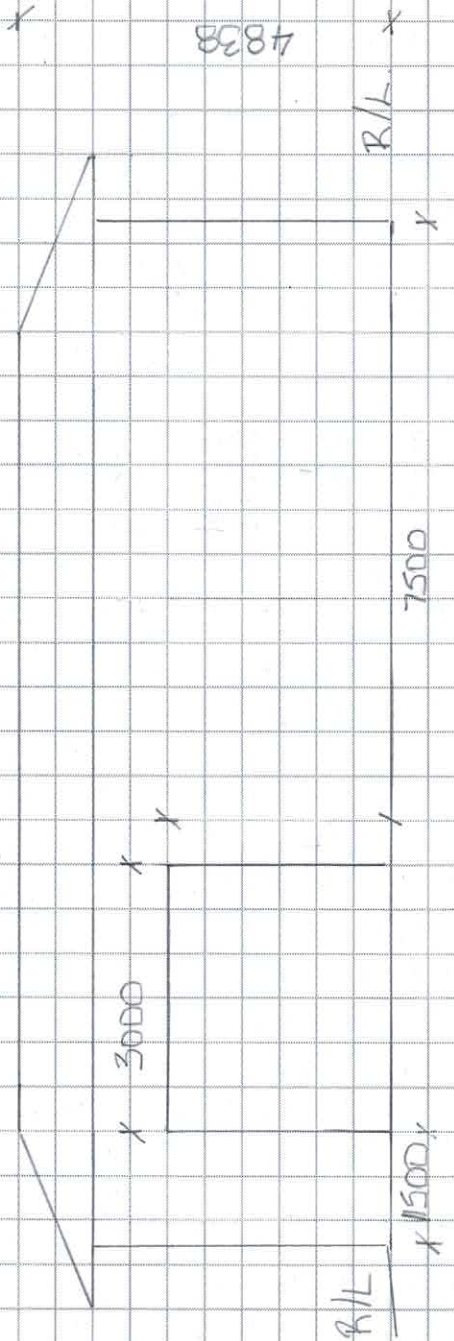
TOP / ROOF VIEW



WEST WALL

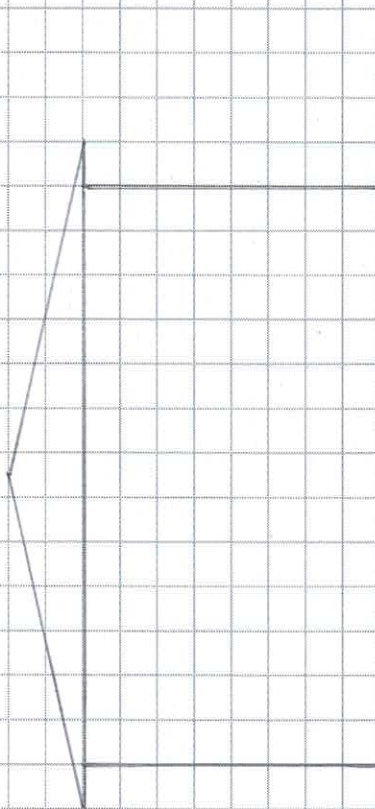


EAST WALL

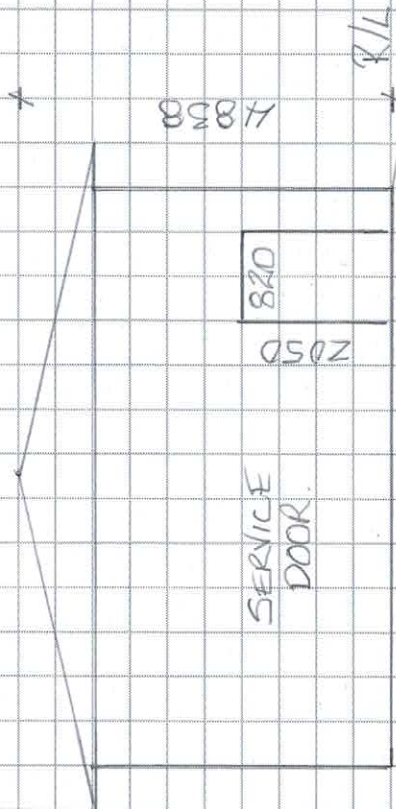


NORTH

SOUTH WALL



NORTH WALL



DO NOT SCALE

USE MEASUREMENTS AS SHOWN.

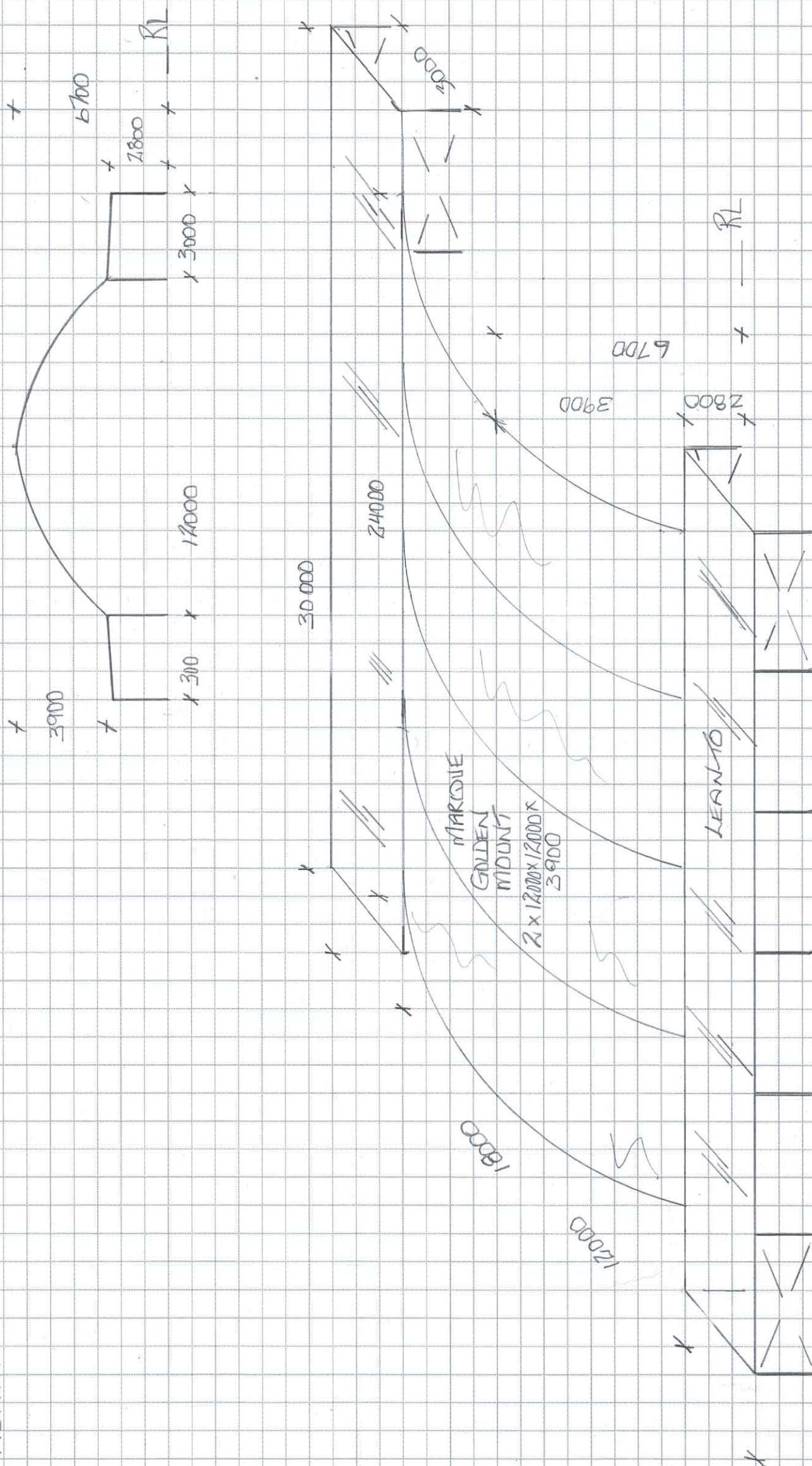
PROJECT: VENUE 'FOOD SERVICE BUILDING'

ADDRESS: LOT 3 RP743037

235-353 MILL ROAD, YABUL BLD 4818

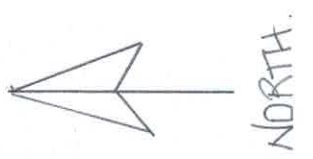
DRAWING NO. A3001 REV. D.

MARQUE - ENTERTAINMENT AREA



DO NOT SCALE
USE MEASUREMENTS SHOWN.

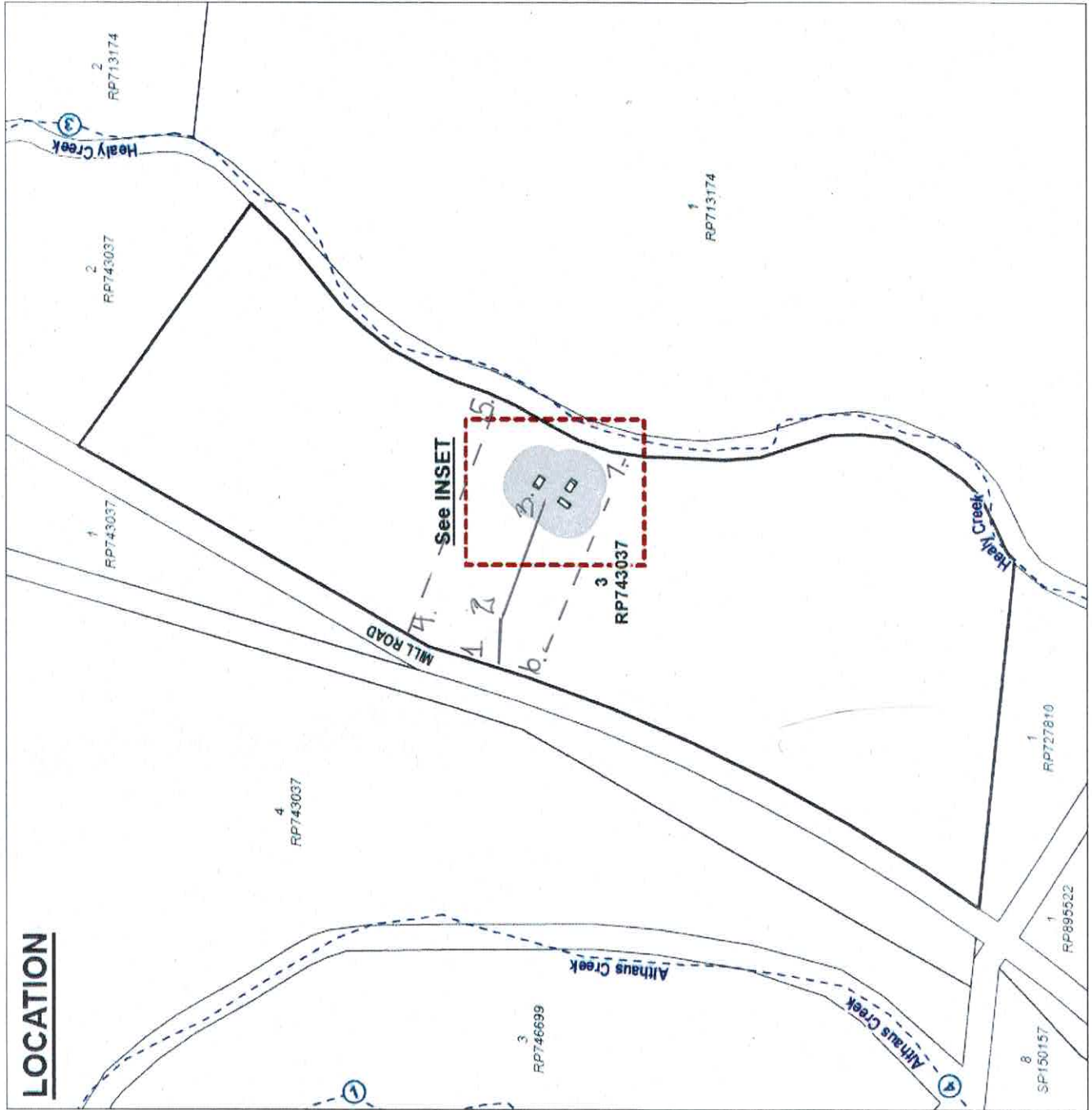
PROJECT: VENUE 'MARQUE - ENTERTAINMENT AREA'
ADDRESS: LOT 3 RP 743037
235-353 MILL ROAD, YABULU QLD 4814.
DRAWING NO HA-001 REV. 0



SITE ACCESS & BOUNDARY REFERENCE POINTS

- NOTES
- ACCESS BY EXISTING ROAD.
 - SITE BOUNDARY (FENCE LINE) SHALL BE ALSO USED AS FIRE BREAK. SEE FIRE HAZARD MANAGEMENT REPORT.
 - SITE BOUNDARY REQUIREMENTS TO INHIBIT ACCESS TO PROPERTY STOPPING TRANSFER OF WEED SEED.

REFERENCE POINTS		
SITE ACCESS		
1.	456556.00 mE	7873431.00 mN
2.	456632.32 mE	7873447.53 mN
3.	456766.15 mE	7873408.26 mN
SITE BOUNDARY (FENCE LINE)		
4.	456601.14 mE	7873566.45 mN
5.	456870.71 mE	7873437.51 mN
6.	456524.06 mE	7873344.81 mN



PROJECT : VENUE
ADDRESS : LDT3 RP743037
235-353 MILL ROAD. YABULU QLD 4818
DRAWING NO. GA001 REV.0

JUNE 2026

CAR PARK



NOTE

- CAR PARK 'EXISTING CLEARED AREA' IMPACTED BY SPARSE GUM TREES THAT WILL REMAIN
- EXTRA / OVERFLOW PARKING WILL BE AVAILABLE AT ENTRY POINT INSIDE PROPERTY ALONG NORTH EAST SIDE OF GATE.

CAR PARK

EXISTING CLEARED AREA

476 m²

ACCESS
ROAD

28000

17000

22000

TOILET / POWDER ROOM

SERVICE
SHED

CAR / MINI BUS
TURN CIRCLE

DO NOT SCALE (UNIT / 1000mm)
USE MEASUREMENTS AS SHOWN

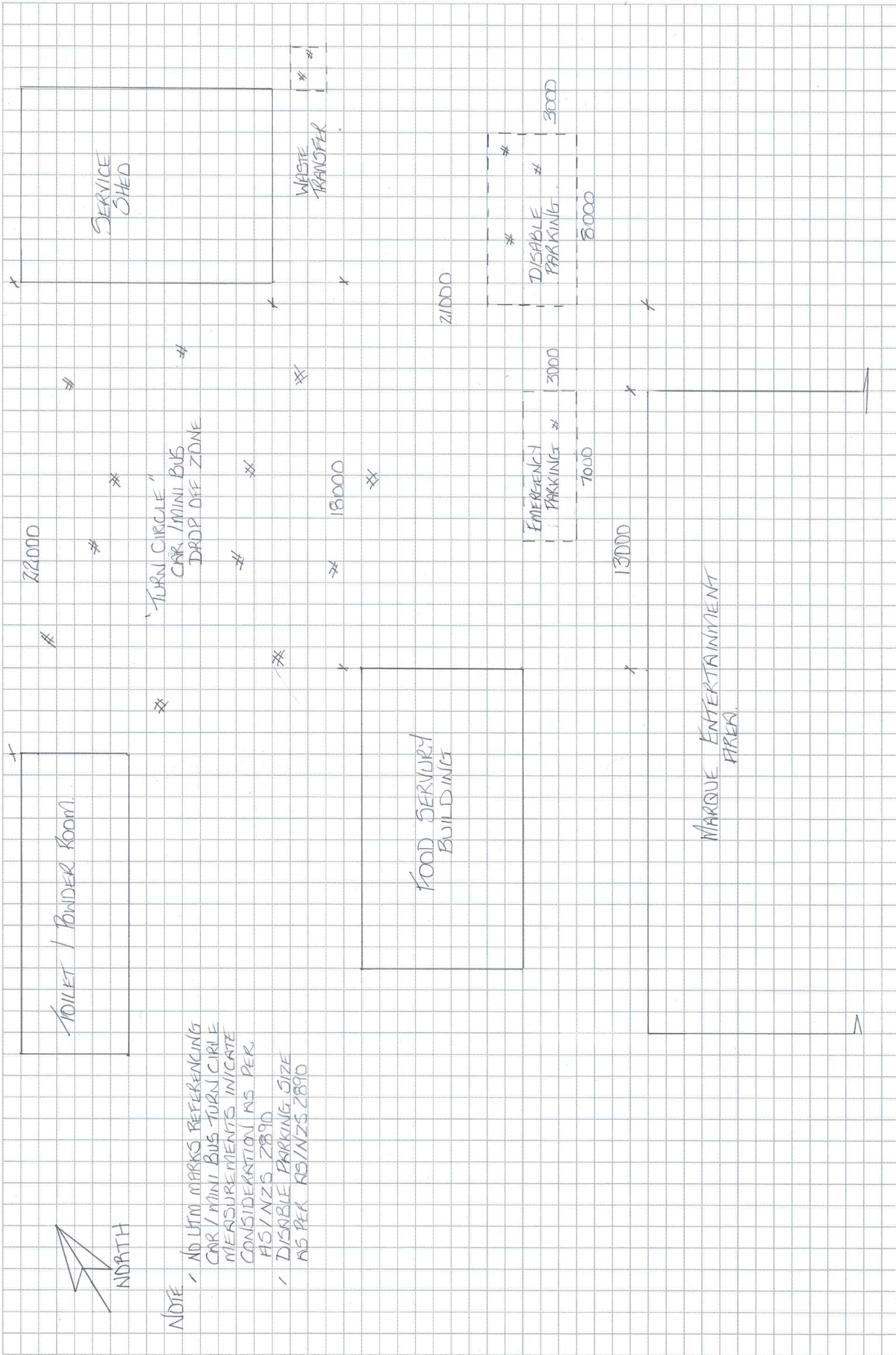
PROJECT: VENUE 'CARPARK'

ADDRESS: LOT 3 RP 743037

235-535 MILL ROAD, YABULL QLD 4818

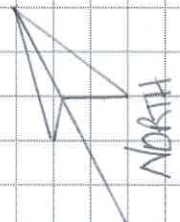
DRAWING NO. GA 002. REV.0

CAR / BUS TURN CIRCLE / DISABLE / EMERGENCY SERVICE PARKING



DO NOT SCALE (1 UNIT / 1000 mm)
USE MEASUREMENTS AS SHOWN.

PROJECT : VENUE
ADDRESS : LDT3 RP 743 037
235-535 MILL ROAD. YABULL QLD 4818
DRAWING NO GA 003. REV.0.



NORTH

550.000m
RP727810 BOUNDARY

205.000m
MILL ROAD BOUNDARY

500.000m
RP743037 BOUNDARY

BOUNDARY SET BACKS

TOILET / POWDER ROOM

SERVICE SHED

FOOD SERVICE BUILDING

BARBQUE ENTERTAINMENT AREA

45.000m

27.000m

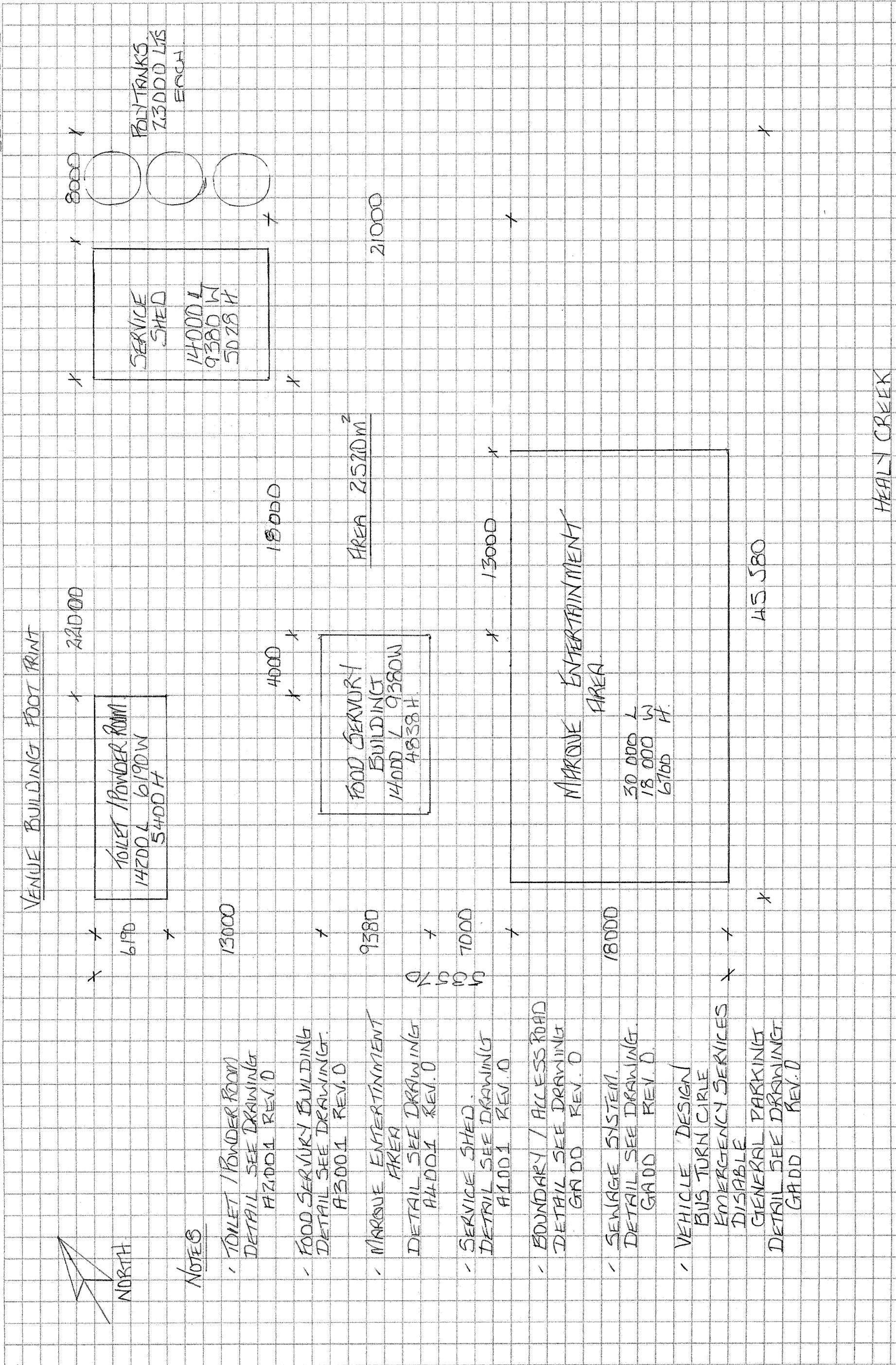
HEALY CREEK BOUNDARY

PROJECT: VENUE 'BOUNDARY SET BACK'

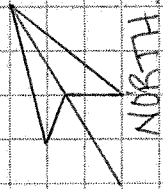
ADDRESS: LOT 3 RP 743037

235-353 MILL ROAD, VABULLO QLD 4818
DRAWING NO. GA004, REV.0.

JUNE 2026.



DO NOT SCALE (+/- 300mm 1UNIT / 1500mm)
USE MEASUREMENTS AS SHOWN.



SEWAGE SYSTEM SET BACK

NOTES

- SEE SEWAGE ENGINEERING REPORT FOR SYSTEM DESIGN / DETAIL
- ENGINEERING BASED ON 100 PERSONS
- PURPOSE OF THIS DRAWING TO INDICATE DISTANCE FROM BOUNDARY.
- ENGINEERING

TED CLARKE
EG CLARKE HOLDINGS PTY LTD
QBCC No. 62111

20.5M
MILL ROAD
BOUNDARY

4000L
SEPTIC TANK

550 m
RP 72.7810
BOUNDARY

15000
5000L BALANCE
TANK

500M
RP 74.3037
BOUNDARY

6190 TOILET / POWDER
ROOM

14000

14000
FOOD SERVICE
BUILDING
9380

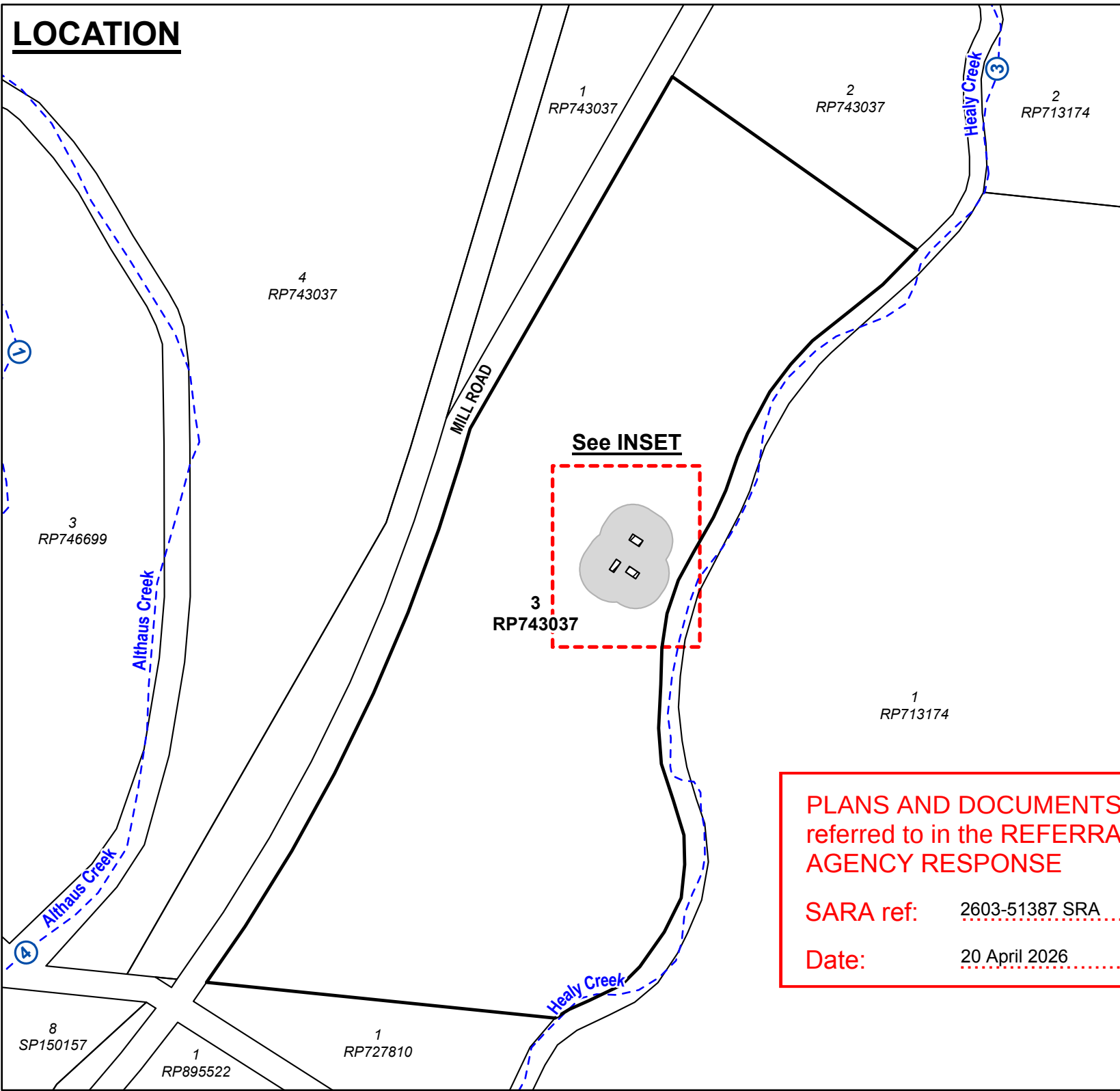
75M TO
HEALY CREEK
BOUNDARY

DO NOT SCALE (1 UNIT / 1000mm)
USE MEASUREMENTS AS SHOWN

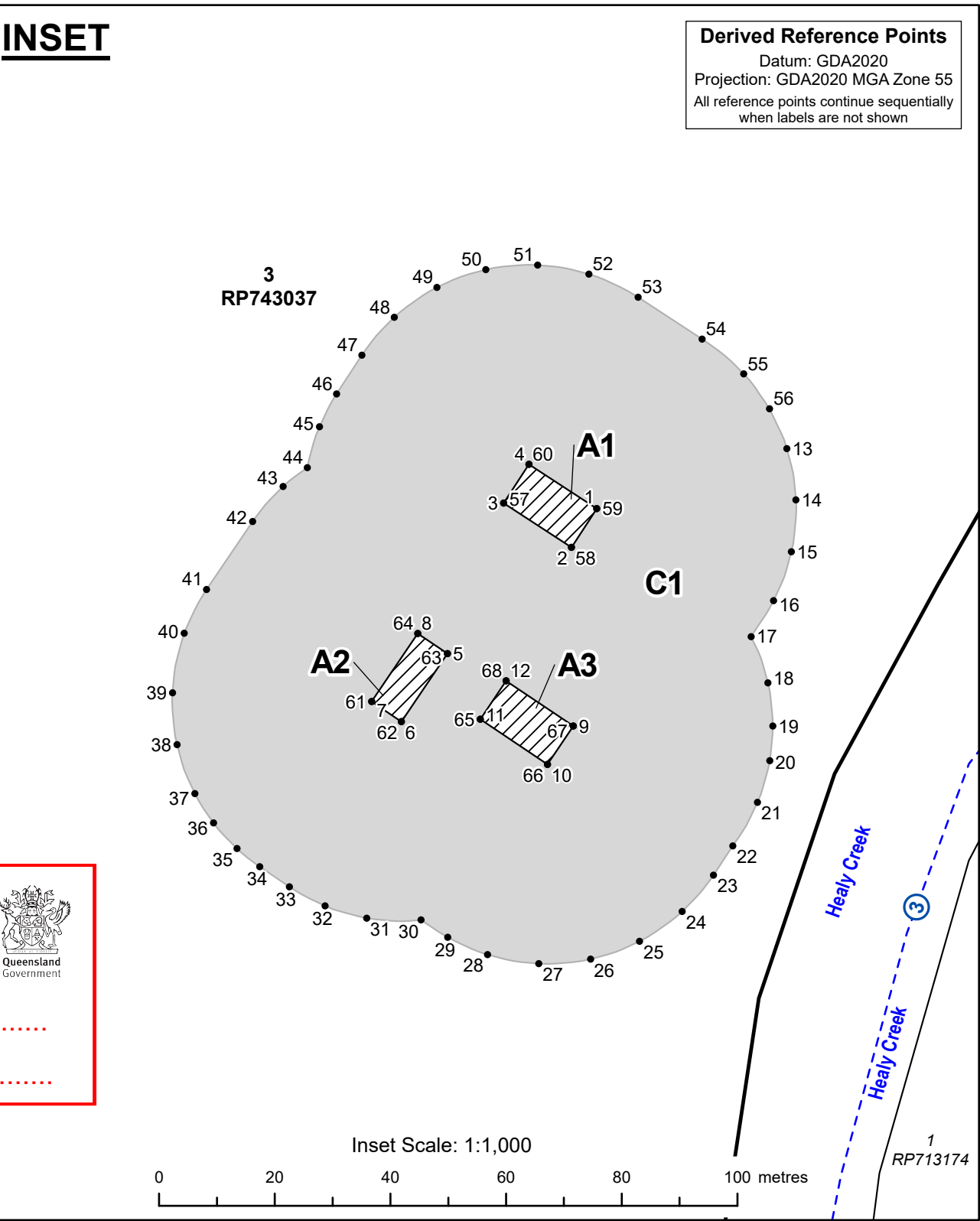
PROJECT : VENUE 'SEWAGE SYSTEM SET BACK'
ADDRESS : LOT 3 RP 743037
235- 535 MILL ROAD, YABULL QLD 4816
DRAWING NO. GA006 REV. 0

JUNE 2026

LOCATION



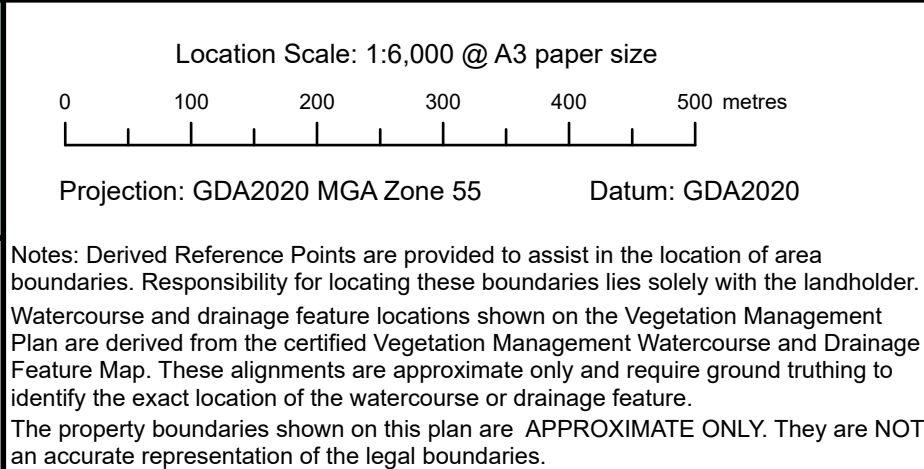
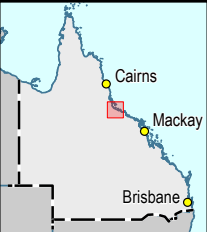
INSET



LEGEND

- 1 Derived Reference Points (see attachment)
- Subject Lot
- Area A - Clearing Permitted
- Area C - Firebreak/safety buffer (only certain infrastructure permitted)
- Watercourse and/or drainage feature (Stream order label)

Note: This is a colour map and must be reproduced in colour



Vegetation Management Plan

Plan of Area A (Parts A1 - A3) and Area C (Part C1) in Lot 3 on Plan RP743037

This plan must be read in conjunction with conditions attached to 2603-51387 SRA

Version: 1 eLVAS Case ID: 2026/000802



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VMP
2603-51387 SRA
Sheet 1 of 1

Attachment: 2603-51387 SRA

Derived Reference Points

Datum: GDA2020, Projection: MGA Zone 55

Notes: Derived Reference Points are provided to assist in the location of area boundaries.

Responsibility for locating these boundaries lies solely with the landholder and delegated contractor(s).

Coordinates start at a point indicated on the accompanying plan and continue sequentially when labels are not shown.

Part ID	Unique ID	Easting	Northing
A1	1	456790	7873407
A1	2	456786	7873400
A1	3	456774	7873408
A1	4	456779	7873415
A2	5	456765	7873382
A2	6	456757	7873370
A2	7	456752	7873374
A2	8	456760	7873386
A3	9	456786	7873370
A3	10	456782	7873363
A3	11	456770	7873371
A3	12	456775	7873377
C1	13	456823	7873418
C1	14	456825	7873409
C1	15	456824	7873400
C1	16	456821	7873391
C1	17	456817	7873385
C1	18	456820	7873377
C1	19	456821	7873370
C1	20	456820	7873364
C1	21	456818	7873356
C1	22	456814	7873349
C1	23	456811	7873344
C1	24	456805	7873338
C1	25	456798	7873332
C1	26	456789	7873329
C1	27	456780	7873329
C1	28	456772	7873330
C1	29	456765	7873333
C1	30	456760	7873336
C1	31	456751	7873336
C1	32	456744	7873339
C1	33	456737	7873342
C1	34	456732	7873345
C1	35	456728	7873348
C1	36	456724	7873353
C1	37	456721	7873358
C1	38	456718	7873366
C1	39	456717	7873375
C1	40	456719	7873386
C1	41	456723	7873393
C1	42	456731	7873405
C1	43	456736	7873411
C1	44	456740	7873414
C1	45	456743	7873421
C1	46	456746	7873427
C1	47	456750	7873434
C1	48	456755	7873440
C1	49	456763	7873445
C1	50	456771	7873448
C1	51	456780	7873449
C1	52	456789	7873448
C1	53	456798	7873444
C1	54	456809	7873436
C1	55	456816	7873430
C1	56	456820	7873424
C1	57	456774	7873408
C1	58	456786	7873400
C1	59	456790	7873407
C1	60	456779	7873415
C1	61	456752	7873374
C1	62	456757	7873370
C1	63	456765	7873382
C1	64	456760	7873386
C1	65	456770	7873371
C1	66	456782	7873363
C1	67	456786	7873370
C1	68	456775	7873377



BUSHFIRE HAZARD ASSESSMENT AND MANAGEMENT PLAN

235 – 353 MILL ROAD, YABULU
(3RP743037)

TECHNICAL REPORT 7-50-28

*Technological Solutions for Sustainable
Natural Resource Management*



Ecosystems Management (Aust) Pty Ltd
ACN: 168 049 885
38 Darling Road
Jensen
QLD 4818

STATEMENT OF QUALIFICATION

This Bushfire Hazard Assessment Report has been prepared by Marcia Griebenow. I have 20 years' experience in bushfire management and environmental management, practicing in Victoria, New South Wales and Queensland. I have a Bachelor of Environmental Science (Management) from Charles Sturt University, and the Postgraduate Diploma in Bushfire Protection from the University of Western Sydney.

I am suitably qualified and experienced to undertake Bushfire Hazard Assessment and prepare recommendations for bushfire management planning and construction requirements in bushfire prone areas.

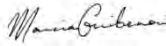


Marcia Griebenow BEnvSc GradDip (Bushfire Protection) MEIANZ

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1. INTRODUCTION

Ecosystems Management (Aust) Pty Ltd (EMA) has been engaged to undertake a Bushfire Hazard Assessment for Lot 3 on Plan RP743037 in Yabulu to support a material change of use application to enable use of the property as a private event venue.

According to the Townsville City Council Bushfire Hazard Mapping, the subject lot is identified as being within a Medium bushfire hazard area. Under the Townsville City Council planning scheme, land encumbered under the Bushfire Hazard mapping overlay must have a Bushfire Hazard Assessment conducted to ensure that the development does not increase the risk to life, property, community and the environment in accordance with the purpose of the Bushfire Hazard Overlay Code. Where sufficient hazard is identified, a Bushfire Management Plan is required to manage the identified risk.

This bushfire hazard assessment is prepared with regard to:

- 8.2.2 – *Bushfire Hazard Overlay Code* of the Townsville City Council Planning Scheme,
- State Planning Policy guidance material

2. PROPOSED DEVELOPMENT

The proposal is for the material change of use of the property for the development and operation of an event venue. The venue is designed to cater primarily to wedding events, with the proposed development providing a covered entertainment area, food servery and toilet block, with an associated service shed and carparking area.

3. DEVELOPMENT APPROVAL AND CONDITIONS

Development approval is sought under state planning legislation. The relevant planning scheme under state planning legislation is the Townsville City Council Planning Scheme (Townsville City Plan, 2014). This Bushfire Management Plan addresses the requirements 8.2.2 – Bushfire Hazard Overlay Code.

3.1. STATE PLANNING POLICY

The State Planning Policy (SPP) addresses development in relation to the risk from natural hazards, by establishing planning constraints based on a statewide risk assessment. Where local government planning schemes do not prepare a bushfire hazard overlay code specifically for their LGA, planning controls default to the statewide hazard mapping and the SPP requirements for development in bushfire prone areas.

The Queensland Government has produced a technical manual (**Bushfire Resilient Communities** (QFES, 2019)) to support the state planning policy, describing the methodology used for statewide hazard mapping and providing a guideline for preparing localized bushfire hazard area maps.

3.2. PLANNING SCHEME

The property is encumbered by the Bushfire Hazard Overlay (Planning scheme map OM02.0), and therefore requires assessment against the Bushfire Hazard Overlay Code. Figure 1 shows the subject property with reference to the Bushfire Hazard Overlay.

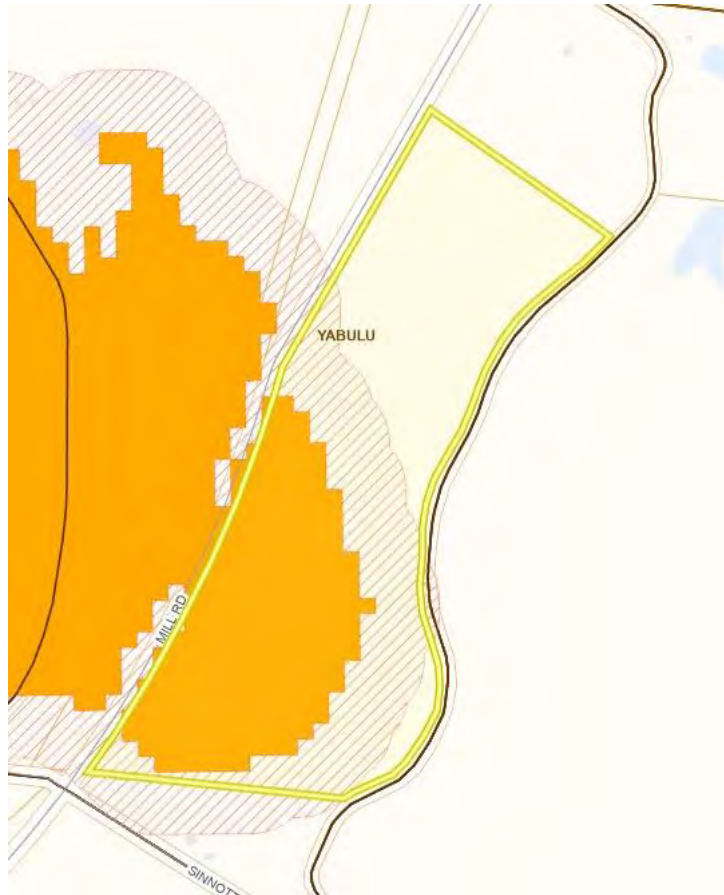


FIGURE 1 SUBJECT SITE WITH MEDIUM BUSHFIRE HAZARD (TCC, 2014)

3.3. AUSTRALIAN STANDARDS

The City Plan recommends consideration of AS3959-2009 (Construction of buildings in bushfire prone areas) (SAA, 2011) when evaluating the bushfire hazard for a development application. The standard has been reviewed with a major revision was released in 2018, and was subsequently amended in 2020. AS3959-2018 is further referred to in this bushfire hazard assessment. AS3959 defines levels of construction for dwellings, aimed at achieving construction resilience to the impacts of bushfire intensity and behaviour. AS3959 is called up by the National Construction Code (NCC, 2019), under the *Building Act 1975*, when constructing a dwelling in a *designated bushfire prone area*, and generally has little to do with evaluating the bushfire hazard associated with development approvals for reconfiguration of a lot or material change of use. State planning policy technical guidance material provides the necessary methodology for evaluation of bushfire hazard in the context of addressing risk associated with planning approvals, and subsequently, the methodology described in AS3959 will not be referenced further in this hazard assessment and management plan.

4. BUSHFIRE HAZARD ASSESSMENT

This section contains the information required to complete the Bushfire Hazard Assessment. Principal factors influencing fire behaviour are bushfire fuels, fire weather and topography (slope).

Fire will spread faster, with higher intensity, when travelling upslope. Conversely, rate of spread and potential intensity is lower when traveling downhill. High fuel loads (particularly fine fuels such as grass and small (< 6mm diameter) twigs and branches) will promote a faster rate of spread and higher intensity than a lower fuel volume; longer grass will promote higher intensity and rate of spread than shorter grasses.

4.1. SITE DESCRIPTION

4.1.1. LOCATION

The subject site is comprised of a single Lot totalling 37.39ha, located 24km west of Townsville City centre. The subject site is accessed from Mill Road, which connects closely to the Bruce Highway to the north as the main transport link for the area (see Site Location Map in Appendix A).

To the north and south the subject site is bordered directly by rural land parcels, featuring natural vegetation contiguous with that on the subject site, with minor areas of maintained vegetation encapsulating residential structures present on each site. The subject site is bounded to the east by the riverine corridor for Healy Creek. Beyond this to the east, the rural land parcel is significantly larger, with the majority of the parcel utilised for grazing, and being largely cleared to support this. The road reserve for Mill Road bounds the subject site to the west, featuring highly managed vegetation and a well maintained, unsealed road surface only adjacent to the subject site. Beyond the road reserve to the east are further rural land parcels, with primarily natural vegetation cover. The community of Bluewater is located 7.5km to the west. The high voltage powerline network has a number of connected easements in the Bluewater/ Yabulu/ Lynham area, with one such easement less than 1km to the west of the subject site.

The subject site in Yabulu is identified as being on the periphery of the Townsville City area, within a contiguous zone of rural land parcels utilised for a mix of commercial agriculture and recreational and hobby farming activities, within a flat plains area. The flat plains landscape extends to the north, east and south of the subject site, however, to the west the landscape rapidly transitions into the foothills sloping up to the Paluma Range.

4.1.2. PROPOSED DEVELOPMENT AND OPERATION

The proposal is for development of an events venue at the subject site designed to primarily cater to weddings. The proposed design featuring a covered entertainment area, food servery and toilet block, with an associated service shed and carparking area. The proposed development will be sited within an approved area of vegetation managed to provide a natural scenic aesthetic as shown in Figure 2 and Figure 3. Additional parking areas will be provided along the fire break 50m either side of the property entrance.

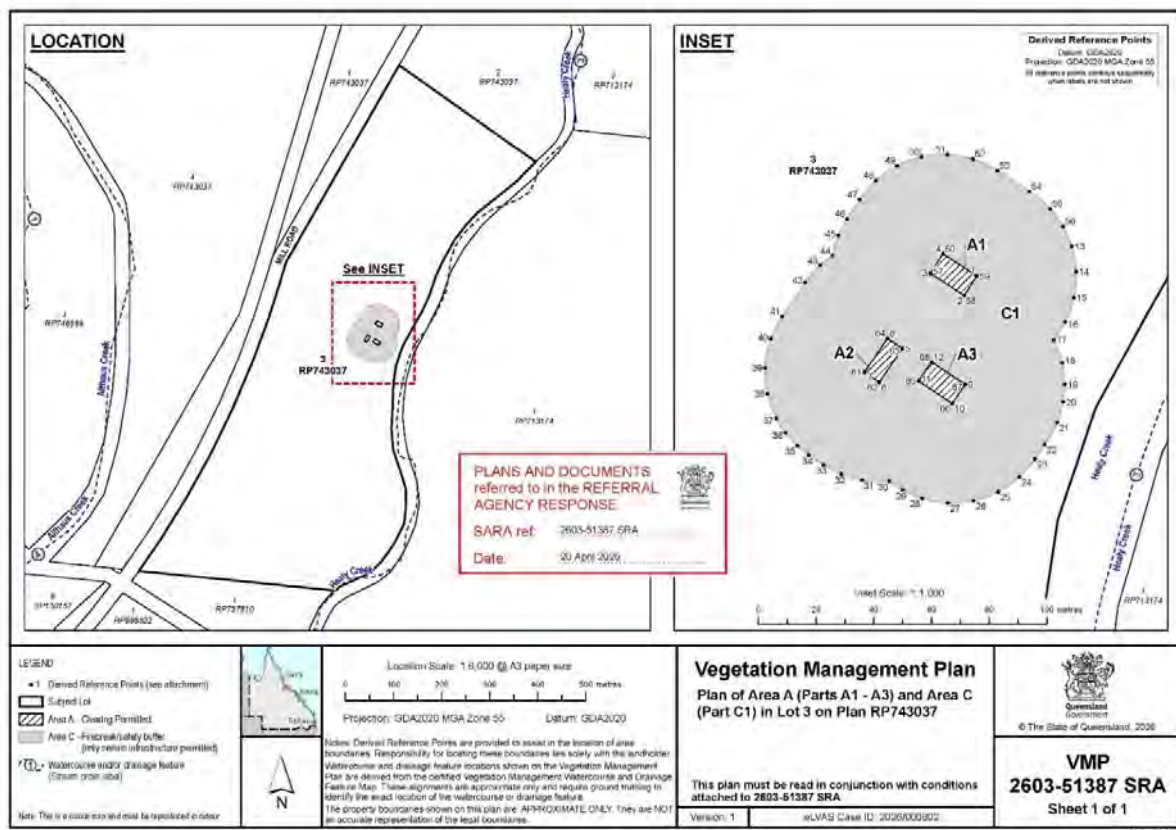


FIGURE 2 APPROVED VEGETATION MANAGEMENT PLAN DEFINING THE EVENT AREA EXTENT (SARA 2026)



FIGURE 3 INDICATIVE OPERATIONAL SITE PLAN (TREVOR HOLLEY, 2026)

4.2. TOPOGRAPHY AND HYDROLOGY

The subject site is located within a rural suburb of the Townsville area, situated separately to the west of the main urban agglomeration. The subject site and surrounding area to the north, east and south is characterised by the Townsville Plains regional land type, with flat land encompassing the site for an extended distance. To the west the landscape rapidly transitions into the foothills of the Paluma Range, with the closest area of significant foothill slope beginning 850m to the west of the subject site, and the Paluma Range itself beginning 2.6km to the west of the site.

The subject site itself and the assessment area for the proposed development is almost entirely flat, with areas of localised slope associated only with the banks of Healy Creek (see Topography and Hydrology Map in Appendix A).

Slope is consistent across the majority of the subject site and across the proposed events venue area, within a range of 1 to 2 degrees. The slope associated with the banks of Healy Creek features slope typically ranging from 10 to 25 degrees across a limited slope run of 15m.

Healy Creek runs along the entirety of the eastern boundary of the subject site, draining north to Althaus Creek as part of the Black drainage basin, before ultimately entering Halifax Bay.

To accurately reflect the influence of slope on bushfire behaviour across the landscape, a smoothed slope model (as specified in Leonard et al 2014) it utilised for bushfire hazard calculations. This may exclude very localised slope areas that may be shown in the Topography and Hydrology Map in Appendix A which would have no effect on bushfire hazard.

4.3. FIRE WEATHER

Fire weather refers to the suite of conditions that contribute to the propagation of bushfire. This includes temperature, humidity, rainfall, days since rain and wind. The nearest Bureau of Meteorology weather station is Townsville Aero (Station number 032040, located at Townsville Airport (BOM, 2026)).

The site is within the dry tropics region of northern Queensland. This area is characterised by wet summers and dry winters. The wet season may commence as early as November, and officially ends in April. The fire season is usually recognised as the period from June, until the commencement of the wet season (which may be variable).

4.3.1. TEMPERATURE

Mean maximum temperatures occur in December (31.6 °C), and mean minimum temperatures occur in July (13.8 °C) (Figure 4).

4.3.2. HUMIDITY AND RAINFALL

The climate can generally be classified as humid, with the minimum humidity occurring in June with a mean 3pm relative humidity of 51%, and with mean 3pm humidity reaching a maximum in February at 67% (Figure 5).

Rainfall is lowest during July, August and September, with 67% of the annual rainfall occurring in January, February and March (Figure 5). Significant drying of grasses and increased leaf drop can be observed throughout September and October, as soil moisture declines. Evaporation (Figure 6) increases towards the end of the dry season as daily temperatures and solar exposure increase. Low humidity and increased drying from wind exacerbates grass and fine fuel curing through the dry season.

4.3.3. WIND

The predominant winds throughout the year are from the north east and east (Figure 7). These winds are moist, rather than dry, and therefore have a lesser drying effect on fine fuels in the region. Occasionally dry winds come from the west and south west; however, these are less common and do not persist for more than a couple days at a time. Wind strength is highest towards the end of the dry season, increasing the rate at which fine fuels may dry (Figure 5).

Wind direction and strength is also a consideration for fire suppression in terms of bushfire behaviour. A bushfire will travel quicker in strong winds, and potentially demonstrate higher intensity due to the increase in air availability to the seat of the fire. Higher strength winds through September to November can increase fire danger across the Townsville region.

4.3.4. CONTINENTAL EFFECTS OF SEASONAL VARIATION

While climate averages provide an overview of the weather characteristics contributing to identified fire seasons, and annual trends that influence the general expected severity of a given season, nationwide weather patterns effect the extreme fire weather conditions experienced from time to time in different parts of the country.

While the conditions generally experienced in the region can be described as dry, with hot summers and cold winters, widespread national weather patterns such as prolonged drought or persistent rainfall deficits, particularly in the interior, can influence the weather in all regions, resulting in the occurrence of extreme conditions that can (and have) resulted in Severe and Extreme fire weather conditions (using the now superseded QFES fire danger rating system), such as those experienced in the summer of 2018 - 19 (Mills, 2019). Mills paper discusses current research into fire weather trends in south east and coastal Queensland, acknowledging a recent trend in increasing extreme conditions over the last 20 years. This intimates that bushfire management planning should be conservative to minimise underestimation of risk associated with development.

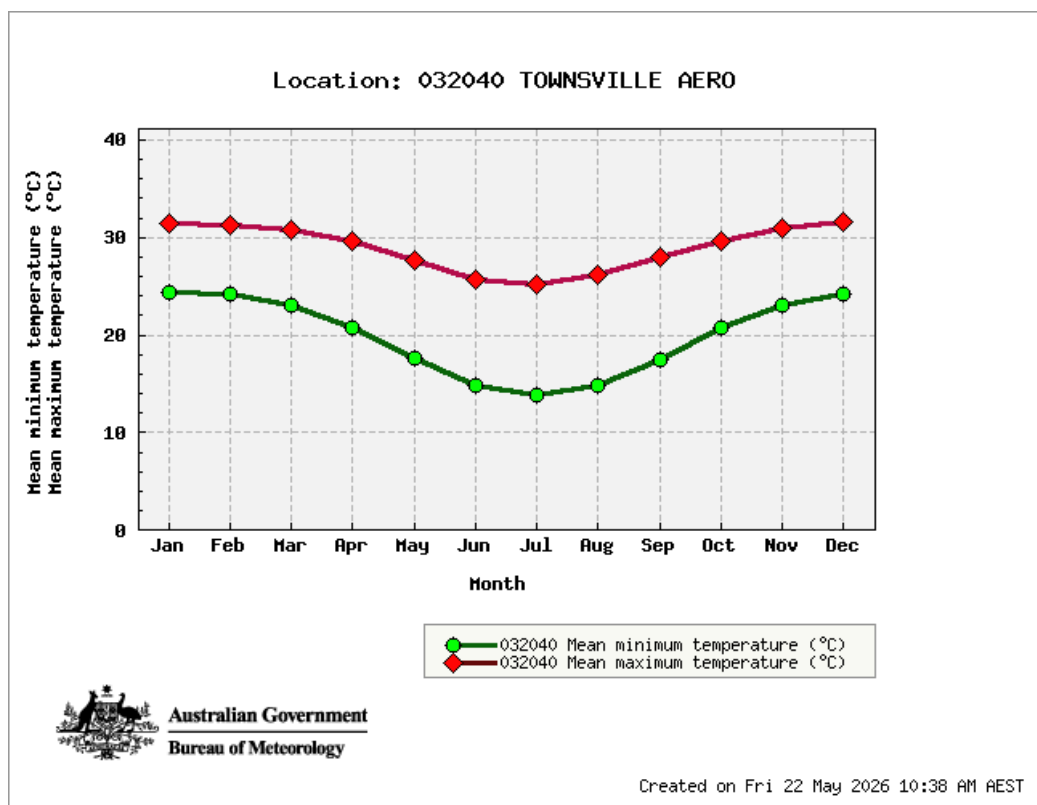


FIGURE 4 MEAN MAX AND MEAN MIN TEMPERATURES FOR TOWNSVILLE AERO (STATION 032040) (BOM, 2026)

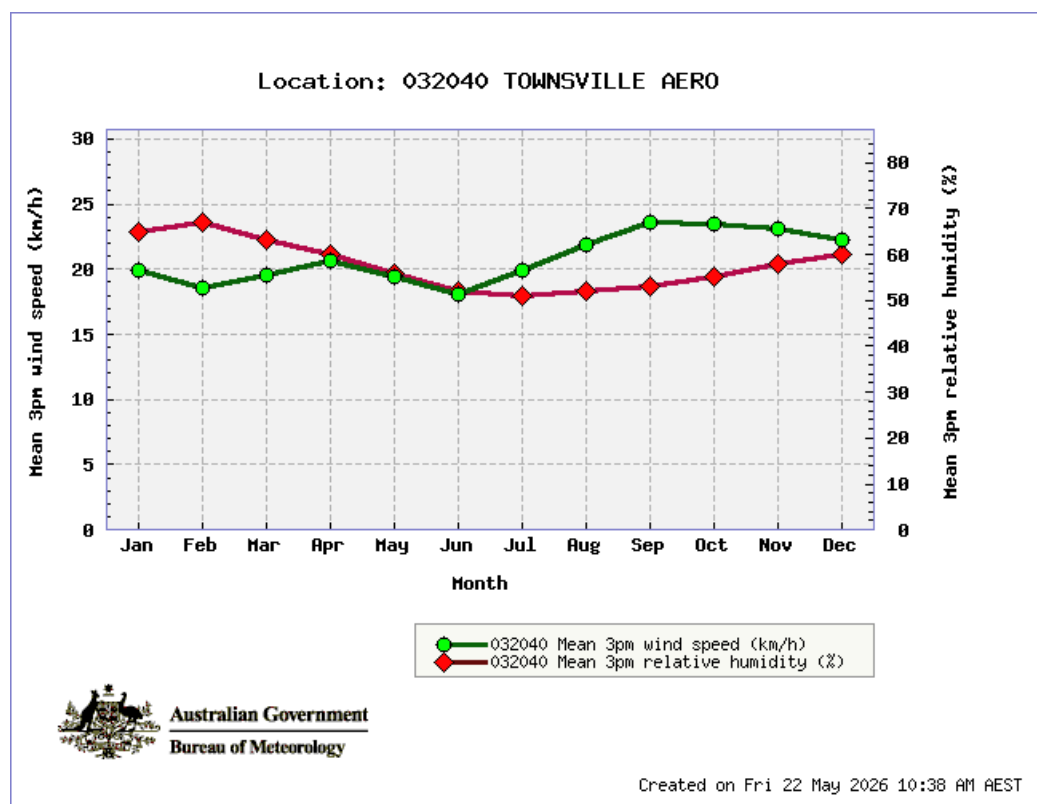


FIGURE 5 MEAN 3PM RH AND MEAN 3PM WIND SPEED (STATION 032040) (BOM, 2026)

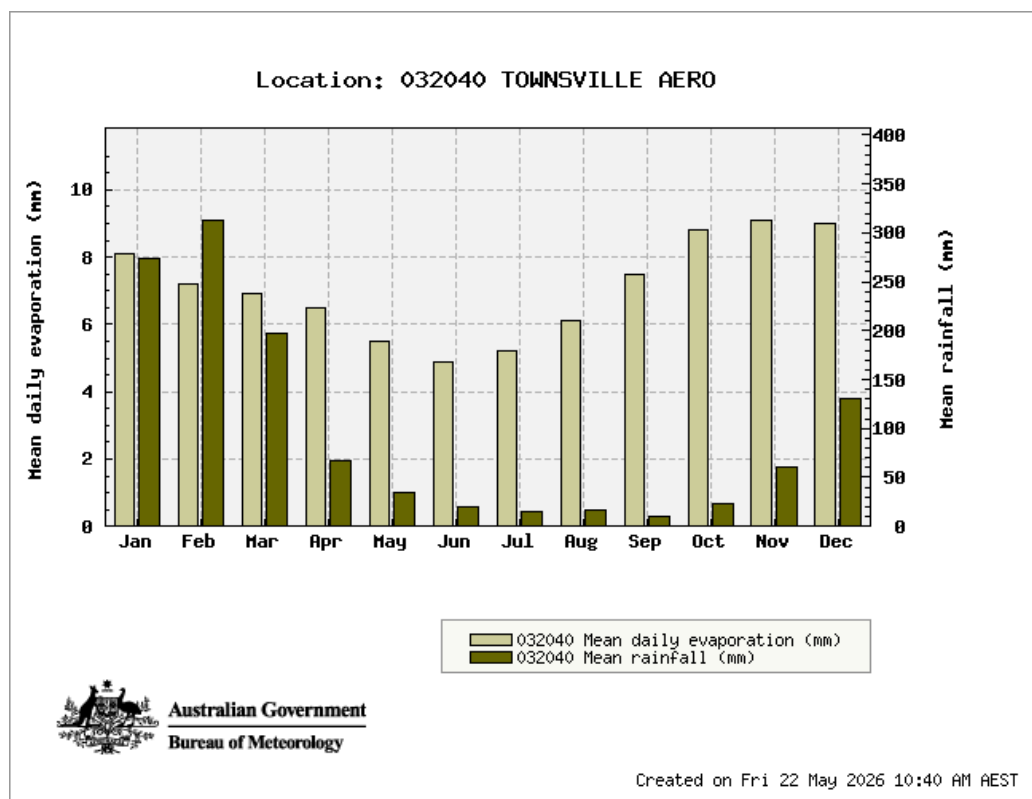


FIGURE 6 MEAN DAILY EVAPORATION (MM) AND MEAN MONTHLY RAINFALL (STATION 032040) (BOM, 2026)

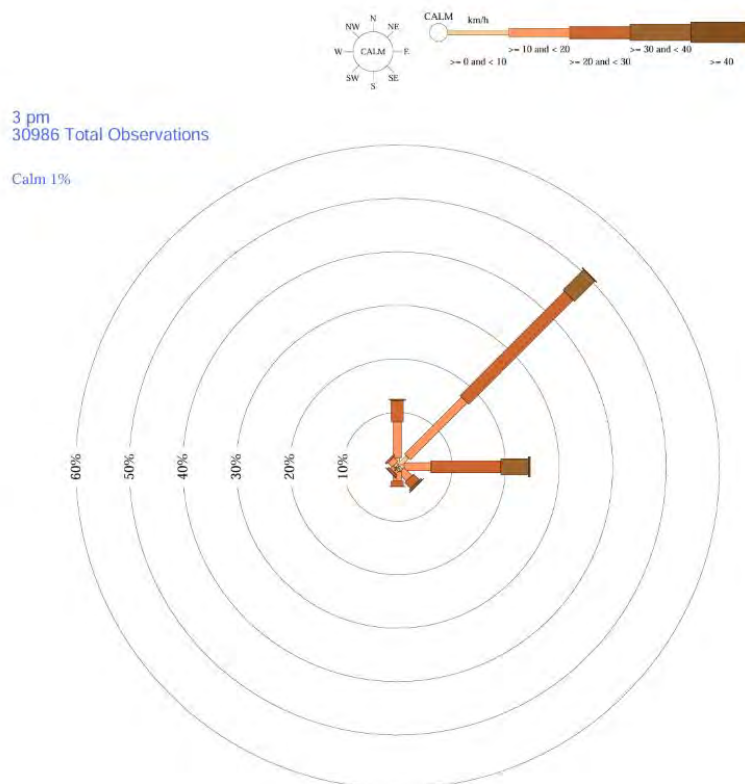


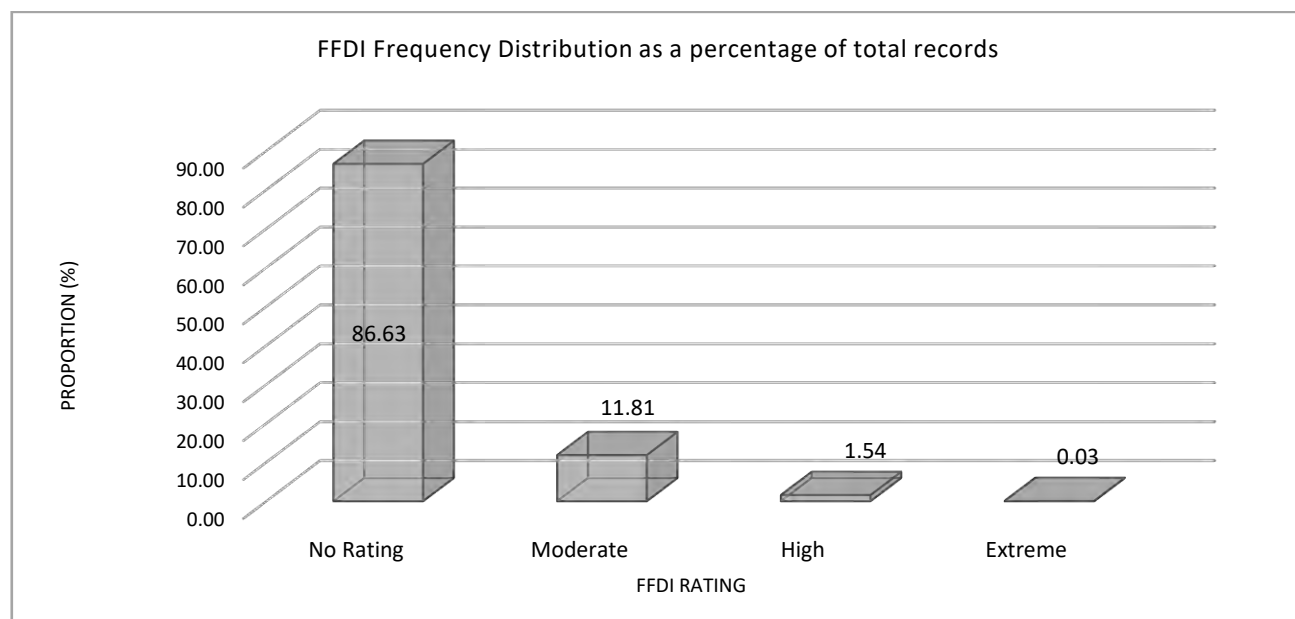
FIGURE 7 ROSE OF WIND DIRECTION VERSUS WIND SPEED IN KM/H (01 NOV 1940 TO 10 FEB 2026) (STATION 032040). (BOM, 2026)

4.3.5. FIRE DANGER INDEX

The Fire Danger Index (FDI) was developed to provide an indicator to fire managers of the probability of being able to contain and extinguish a fire once it started in a forest environment. FDI is calculated using inputs including recent rainfall, soil dryness, temperature, humidity and windspeed. The higher the FDI, the lower the probability of containment or extinguishment within 24 hours of the fire starting.

AS3959-2018 identifies an applicable FDI of 40 for Queensland, which falls into the classification of High fire danger under the Australian Fire Danger Rating System (AFDRS). Fire hazard modelling in Queensland by CSIRO (Leonard et al, 2014) has mapped FDI across the state. FDI varies across the Townsville LGA, from 48 in the north, to 59 in the south. An FDI of 53 applies to the subject site in Yabulu, which is Extreme on the AFDRS, therefore modelling is considered conservative, and consistent with recommendations from Mills (2019.)

It is noted that tropical climates exhibit different fire behaviour and fire weather characteristics to southern parts of Australia, with less frequent occurrences of extreme fire weather conditions. Subsequently, a review of historical fire weather data (Lucas, 2009) shows that while High (FDI 24 < 49) and Extreme (FDI 50 < 99) fire weather does occur in the Townsville area, these are infrequent and not prolonged occurrences (Graph 1 shows frequency distribution of FFDI over 43 years of records, according to the AFDRS). There are no records of fire weather reaching the classification of 'Catastrophic' or an FDI exceeding 100, which is experienced more frequently in southern parts of Australia and is correlated with the occurrence of significant bushfire events in the southern states. This observation is supported by research undertaken by Tropical Savannas CRC (2001), for various locations across northern Australia including Rockhampton (QLD) and Katherine (NT), which both have similar annual rainfall to Townsville.



GRAPH 1 FFDI FREQUENCY DISTRIBUTION

4.4. VEGETATION AND BUSHFIRE FUELS

Vegetation structure and arrangement are significant drivers of fire behaviour. Fuel hazard is described as the combined effect of fine surface fuels, elevated fuels and bark hazard in the ignition and propagation of fire. Traditional methods of fuel assessment require the individual assessment of all three fuel types to determine the Potential Fuel Load (PFL), described in tonnes per hectare (tph). This fuel weight can then be used to determine the potential fire intensity (PFI) in terms of kW/m.

The methodology endorsed by the Queensland Government is described in the technical reference guide **Bushfire Resilient Communities** (QFES, 2019). This methodology builds on the state wide bushfire hazard modelling method published by CSIRO in 2014 (Leonard et al. 2014). Leonard et al identified potential total bushfire fuel loads for Queensland Herbarium regional ecosystem vegetation classifications and aggregated these into Vegetation Hazard Classes (VHC) (which also includes the canopy fuel weight), and was subsequently refined with detailed vegetation bushfire fuel data in 2017 (Newnham et al. 2017).

Vegetation hazard class mapping considers horizontal connectivity of bushfire fuels; VHCs with a continuous fuel load generally supports continuous flame spread, whereas VHCs with discontinuous fuels may interrupt or retard the progress of a fire front. In terms of crown fire development, vegetation communities with little to no elevated fuels connecting surface fuels to bark and canopy fuels will limit the potential for crown fire development, whereas significant volumes of near surface fuels (grasses >1m high) and elevated fuels promote flame advancement into the canopy. Small patches of higher fuel load VHCs within a larger landscape of lower fuel load VHCs (up to 1ha), will locally increase fire intensity and rate of spread, however, will not significantly influence the overall bushfire hazard in the wider landscape.

Broad Vegetation Groups (BVG) and Vegetation Hazard Classes (VHC) within or adjacent to the subject site are listed in Table 1. The potential fireline intensity is calculated (using flat ground) to provide context to the influence of fuel load on potential intensity.

TABLE 1 BVG AND VHC ASSOCIATED WITH THE SUBJECT SITE

Broad Vegetation Group	BVG Description	Vegetation Hazard Class	Class Description	Total PFL (tph)	Potential Fireline Intensity (kW/m)
9e	Open forests, woodlands and open woodlands dominated by <i>Corymbia clarksoniana</i> (grey bloodwood) (or <i>C. novoguineensis</i> or <i>C. intermedia</i> (pink bloodwood) or <i>C. polycarpa</i> (long-fruited bloodwood)) frequently with <i>Erythrophleum chlorostachys</i> (red ironwood) or <i>Eucalyptus platyphylla</i> (poplar gum) predominantly on coastal sandplains and alluvia	9.2	Moist to dry eucalypt woodland on coastal lowlands and ranges	17.2	10,415
21a	<i>Melaleuca</i> spp. dry woodlands to open woodlands on sandplains or depositional plains - Open forests and woodlands dominated by <i>Melaleuca quinquenervia</i> (swamp paperbark) in seasonally inundated lowland coastal areas and swamps	21.1	<i>Melaleuca</i> dry open forest on sandplains or depositional plains	14.9	7816
	Very low vegetation cover to moderate tree cover	40.4	Low grass or tree cover in rural areas	5	880
Very high (potential intensity) 40,000+ kW/m High (potential intensity) 20,000 – 40,000 kW/m 3. Medium (potential intensity) 4,000 – 20,000 kW/m 4. Low Hazard < 4,000 kW/m					

*Potential Fireline Intensity is calculated using the methodology in *Bushfire Resilient Communities* (QFES, 2019)

4.4.1. BUSHFIRE FUEL HAZARD

A site evaluation of bushfire fuel hazard was undertaken across the subject site. This was conducted to validate the vegetation mapping and modelled PFL across the site. The results of field assessment are summarised in Table 2.

Vegetation hazard class mapping has been evaluated against aerial photography and considered in the context of the field assessment results. Generally, the vegetation within 100m of a site is considered for vegetation hazard assessment.

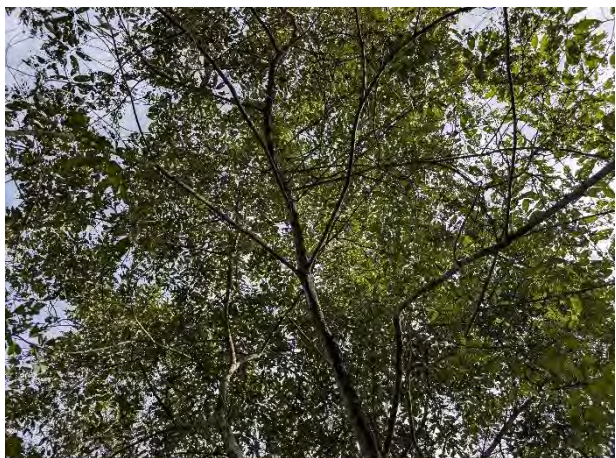
VHC mapping has been edited to more accurately reflect vegetation structure and extent in the landscape surrounding the subject area. It is noted that the available aerial photography was captured in November 2019, and following the inspection of the site and its surrounding area is regarded as accurately representing the current land use and condition of the area. Vegetation hazard class mapping is shown in the Vegetation Hazard Class map in Appendix A, depicting the post development landscape, as clearing and maintenance of vegetation present will occur across the subject site to enable development and ongoing use.

While there are small areas of varying vegetation cover dispersed across the landscape, many are limited to 1 hectare in size or lower, or are formed as narrow corridors less than 100m in width within another vegetation type. These small

patches and corridors do not materially influence the likely bushfire behaviour associated with the dominant vegetation type, and have therefore not been mapped individually in the vegetation hazard class mapping, but have been aggregated with the surrounding dominant vegetation type as appropriate.

Additionally, small patches of vegetation less than 1ha and narrow corridors of vegetation less than 75m in width surrounded by area of no or discontinuous bushfire fuels have been excluded in their entirety as per the methodology specified in *Leonard, J., Opie, K. (2017) Estimating the potential bushfire hazard of vegetation patches and corridors. CSIRO, Australia.*

TABLE 2 FUEL HAZARD ASSESSMENT SUMMARY

9.2 (17.2 tph)	Within the assessment area this only occurs in a small area to the south west of the proposed development, however, this vegetation hazard class extends across the south west of the subject site, and is present to the west beyond the Mill Road road reserve. This woodland is consistent with the vegetation hazard class, retaining an open woodland structure with a typical overstory of low density mature and immature eucalypts. <i>Eucalyptus creba</i> and <i>Corymbia dallachiana</i>, <i>Corymbia tessellaris</i> and <i>Eucalyptus platyphylla</i> are the most prevalent overstory species in the assessment area. The groundcover, however, is comprised predominantly of non-native species, with non-native common weed species being the dominant groundcover. The understory is typically representative, with some invasive shrubby species, such as <i>Ziziphus mauritiana</i> present.
 PLATE 1. VIEW SOUTH INTO WOODLAND VEGETATION, FEATURING MATURE TREES AND WEED DOMINATED GROUND COVER	 PLATE 2. VIEW EAST INTO WOODLAND VEGETATION, FEATURING REGROWTH AND WEED DOMINATED GROUND COVER
 PLATE 3. VIEW GROUND COVER WITHIN WOODLAND	 PLATE 4. VIEW OF CANOPY COVER WITHIN WOODLAND
Mapped VHC (PFL)	Observations / Discussion

20.1 (14.9 tph)	This vegetation type is the dominant natural vegetation type throughout the assessment area, and is contiguous across the majority of the subject site. This vegetation type further continues to the north and south of the subject site following the Healy Creek riverine corridor. This woodland is consistent with the vegetation hazard class, with <i>Melaleuca viridiflora</i> and <i>Melaleuca dealbata</i> being abundant throughout the assemblage. There is some transition with the adjacent 9.2 hazard class vegetation to the south west, with <i>Eucalyptus creba</i> and <i>Corymbia dallachiana</i>, <i>Corymbia tessellaris</i> and <i>Eucalyptus platyphylla</i> present within the canopy, with these species being widely distributed throughout the vegetation assemblages in the Townsville region. Groundcover is variable to the ongoing management of the subject site, with unmanaged areas comprised predominantly of non-native species, with non-native common weed species being the dominant groundcover. Ongoing management is, however, proving successful in reestablishing native grass groundcover, and this is expected to increase over time. For the purposes of assessing hazard these areas are regarded as being VHC 20.1 woodland.
 PLATE 5. VIEW NORTH OF THE PROPOSED DEVELOPMENT INTO ADJACENT WOODLAND VEGETATION WITH GRASS GROUNDCOVER	 PLATE 6. VIEW EAST INTO WOODLAND COMPRISING THE RIPARIAN BUFFER, WITH GROUNDCOVER DOMINATED BY WEED SPECIES
 PLATE 7. VIEW SOUTH ALONG THE SITE BOUNDARY SHOWING CONTIGUOUS EXTEND OF WOODLAND VEGETATION	 PLATE 8. VIEW OF REPRESENTATIVE GROUNDCOVER THROUGHOUT THE MAJORITY OF THE ASSESSMENT AREA
40.4 (5.0 tph)	The defined vegetation management area is representative of this vegetation hazard class, being comprised of highly managed vegetation with low bushfire fuel loads despite retained canopy trees. Within the wider landscape this is also identified for the rural agricultural land parcel to the east, and for managed vegetation within the Mill Road road reserve.



PLATE 9 VIEW EAST INTO THE PROPOSED DEVELOPMENT, WITH HIGHLY MANAGED VEGETATION



PLATE 10 VIEW SOUTH INTO THE PROPOSED DEVELOPMENT, WITH HIGHLY MANAGED VEGETATION



PLATE 11. VIEW VIEW WEST ALONG THE ACCESS TO THE PROPOSED DEVELOPMENT, WITH MANAGED VEGETATION ALONG ITS EXTENT



PLATE 12. VIEW NORTH ALONG MILL ROAD, WITH HIGHLY MANAGED VEGETATION

4.5. FIRE HISTORY AND IGNITION SOURCES

QPWS fire history mapping is available through the Queensland Spatial Catalogue. This data includes records from 1937 in the wider local area, and from 1930 across Qld, and shows that the subject site has not been subject to an uncontrolled fire or unplanned burn in this time. This dataset generally focuses on fires within the public land estate, or fires that originate within the public land estate, and therefore does not provide a definitive fire history record for this location, however due to the proximity to the Paluma Range National Park (to the west of the subject site) and Clemant State Forest (to the west of the subject site) there is potential that any widespread bushfire event has been recorded.

The QPWS fire history shows infrequent fire events occurring within a 5km radius of the subject site, associated with the Clemant State Forest to the south west of the subject site, with a total of 2 unplanned burns within the dataset timeframe in 2011 and 2018. Both events were 2.7km from the subject site at their closest point.

The Northern Australian Fire Information service (NAFI) conducts satellite image analysis for fire scars, developing a 24-year dataset showing fire history across northern Australia. This data is mapped on a 250m grid, consistent with the resolution of the satellite imagery use. The NAFI data shows the site has been subject to one burn event within the 24-year observation period during 2011. Bushfire events are seen to be overall contained to the west of Mill Road, typically associated with the Clemant State Forest area, with no fire events occurring to the east, north east or south east of the subject site.

Bushfire in the area is typically associated with either natural ignitions during the dry season, or with planned burns for bushfire fuel management. It is acknowledged that some significant fire events in the regional context have been

associated with negligent or malicious ignition. Other potential sources of ignition are likely to be associated with operational activities involving earthworks machinery, construction activities (including hot work) and vegetation management activities (slashing, etc.).

No other evidence of bushfire in relation to the subject site was identified.

4.6. BUSHFIRE HAZARD

Bushfire prone land is defined as land that could support a significant bushfire, or be subject to significant bushfire attack (Leonard et.al. 2014). Bushfire attack manifests as ember attack, radiant heat impact and/or direct flame attack.

The degree of severity of bushfire behaviour or bushfire attack is described in terms of Potential Fire-line Intensity. Potential Fire-line Intensity is calculated using inputs describing vegetation fuel loads (tonnes per hectare [tph]), slope (degrees) and FFDI as a descriptor of likely weather conditions thus:

$$FI = 0.62 W^2 FFDI \exp (0.069\theta) \quad (\text{Equation 1})$$

Where:

FI = Fireline Intensity (kW/m)

W = Potential Fuel Load (tph)

θ = Maximum Landscape Slope (degrees)

FFDI = Fire Weather Severity

The bushfire hazard class is derived by classifying the resultant Potential Fire Line Intensity output from the hazard modelling process (Table 3).

TABLE 3 BUSHFIRE HAZARD CLASSES CORRESPONDING TO POTENTIAL FIRE-LINE INTENSITY (FROM LEONARD ET.AL. 2014).

<i>Potential Bushfire Intensity Class</i>	<i>Potential Fire-line Intensity</i>
1. Very high (potential intensity)	40,000+kW/m
2. High (potential intensity)	20,000 – 40,000kW/m
3. Medium (potential intensity)	4,000 – 20,000kW/m
4. Low Hazard	< 4,000 kW/m

Bushfire hazard classification or threat level across the property and within the surrounding landscape (in terms of potential bushfire intensity) is Medium to High (see Modelled Bushfire Hazard map in Appendix A). The subject site is currently considered bushfire prone, but the proposed development will result in the developed areas (including the entirety of the subject site as per the final design) being regarded as Low Hazard. Adjacent land parcels do additionally feature areas of Medium and High bushfire hazard, which should be considered in development. During staged development, and following completion of the proposed development, areas of the site will be within the 100m potential impact buffer of an area mapped as bushfire prone (medium).

The median potential fireline intensity associated with the mapped Medium Bushfire Hazard vegetation associated with the site is 6464 kW/m, which is within the low range of values classified as Medium bushfire hazard (4000 kW/m to 20,000 kW/m).

4.6.1. ASSET PROTECTION ZONE CALCULATION

Bushfire Resilient Communities (QFES, 2019) identifies a minimum radiant heat flux level for new development of 29 kW/m² or less at the development footprint boundaries, where adjacent to medium, high or very high bushfire hazard.

The Asset Protection Zone calculator has been used to establish the potential radiant heat flux impact on site infrastructure for high and medium bushfire hazard vegetation hazard classes.

The maximum heat flux exposure (which defines the minimum asset protection zone distance) can be calculated using the *SPP-Bushfire-APZ-Width-Calculator.xlsm* produced by QFES. The QFES APZ calculator is issued with the following disclaimer by QFES:

DISCLAIMER: Fire-line intensity and radiant heat calculations where effective slope exceeds 20 degrees (downslope) or 15 degrees (upslope) may be unreliable. In these locations, specialist assessment is warranted.

Please note that this calculator has been modified to enable low intensity heat flux values to be identified, even when the associated vegetation type is typically identified as low risk and would otherwise be regarded as BAL-LOW.

These calculations identify the minimum acceptable asset protection zone for each identified vegetation class, they do not stipulate the BAL construction requirements of AS3959. Future dwellings developed within these new lots may be required to be independently assessed under AS3959 if within 100m of bushfire prone vegetation.

TABLE 4 ASSET PROTECTION ZONE CALCULATOR – VHC9.2

Bushfire Asset Protection Zone Width Calculator			
VARIABLE DESCRIPTION	VARIABLE	UNITS	VALUE
<i>Input Values</i>			
FIRE WEATHER SEVERITY	FDI		53.00
VEGETATION HAZARD CLASS	VHC	-	9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges
REMNANT STATUS	-	-	Remnant
SLOPE TYPE (UPSLOPE OR DOWNSLOPE)	ST	-	Downslope
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	eSlope	degrees	2.00
SLOPE BETWEEN SITE AND HAZARDOUS VEGETATION	θ	degrees	2.00
DISTANCE OF THE SITE FROM HAZARDOUS VEGETATION	d	m	15.00
<i>Output Values</i>			
SURFACE FUEL LOAD	-	t/ha	11.40
NEAR SURFACE FUEL LOAD	-	t/ha	3.50
BARK FUEL LOAD	-	t/ha	1.30
ELEVATED FUEL LOAD	-	t/ha	1.00
TOTAL OVERALL FUEL LOAD	W	t/ha	17.20
TOTAL SURFACE FUEL LOAD	w	t/ha	14.90
POTENTIAL FIRE LINE INTENSITY	I	kW/m	10358
RADIANT HEAT FLUX	q	kW/m ²	28.66
BUSHFIRE ATTACK LEVEL (AS 3959-2018)	BAL	-	BAL 29

TABLE 5 ASSET PROTECTION ZONE CALCULATOR – VHC21.1

Bushfire Asset Protection Zone Width Calculator			
VARIABLE DESCRIPTION	VARIABLE	UNITS	VALUE
<i>Input Values</i>			
FIRE WEATHER SEVERITY	FDI		58.00
VEGETATION HAZARD CLASS	VHC	-	21.1 Melaleuca dry open forest on sandplains or depositional plains
REMNANT STATUS	-	-	Remnant
SLOPE TYPE (UPSLOPE OR DOWNSLOPE)	ST	-	Downslope
EFFECTIVE SLOPE UNDER THE HAZARDOUS VEGETATION	eSlope	degrees	2.00
SLOPE BETWEEN SITE AND HAZARDOUS VEGETATION	θ	degrees	2.00
DISTANCE OF THE SITE FROM HAZARDOUS VEGETATION	d	m	12.00
<i>Output Values</i>			
SURFACE FUEL LOAD	-	t/ha	7.80
NEAR SURFACE FUEL LOAD	-	t/ha	3.70
BARK FUEL LOAD	-	t/ha	1.40
ELEVATED FUEL LOAD	-	t/ha	2.00
TOTAL OVERALL FUEL LOAD	W	t/ha	14.90
TOTAL SURFACE FUEL LOAD	w	t/ha	11.50
POTENTIAL FIRE LINE INTENSITY	I	kW/m	6464
RADIANT HEAT FLUX	q	kW/m ²	28.84
BUSHFIRE ATTACK LEVEL (AS 3959-2018)	BAL	-	BAL 29

4.6.2. BUSHFIRE SCENARIO

The site is located in an overall highly managed rural landscape, characterised by rural residential, grazing, agricultural, and recreational land uses. The historical record confirms the presence of bushfire in the immediate regional landscape to the west of the subject site, with bushfire typically within the Clemant State Forest, and occasionally encroaching into adjacent land parcels. The subject site has been subject to only one burn event in recent records, with the lack of physical evidence indicating that a severe burn did not occur.

The absence of impacts from large-scale bushfire events to the subject site or its immediate surrounding area is attributable to the development and increased maintenance of land within the periphery of the Townsville City area. Mill Road provides a de facto fire break between the subject site and vegetated areas contiguous with the Clemant State Forest.

The proposed development area is considered to be encompassed by medium bushfire hazard, with the proposed development area itself being low hazard, but located within the 100m potential impact buffer for medium bushfire prone vegetation.

The bushfire season is considered to peak in September and October, when mean daily evaporation increases and mean 3pm humidity is at its lowest for the year. Wind direction during these months is dominant from the north east, with a smaller proportion of strong winds from the north and from the east. This gives a consistent likelihood of bushfire front development directed generally to the south west.

The proposed development is located locally within an area of almost entirely flat land, with no areas of relevant slope in close proximity to the proposed development area. This will result in the uniform rate of spread of any bushfire front in relation to the prevailing wind, with limited acceleration or deceleration to the rate of spread in the final approach of any bushfire front.

From the historical context, bushfire is able to approach the subject site from the west and south west under certain conditions, with a fire front moving from the Clemant State Forest through contiguous natural vegetation. In approaching the subject site this bushfire front would be moving against the prevailing wind which would serve to retard the development of the flaming front and rate of spread. Further to this, Mill Road acts as a functional fire break to limit spread into the subject site. As such, any bushfire event proceeding in this manner will progress slowly and should afford significant warning and evacuation time if required. High voltage powerline easements provide opportunities for fire fighting agencies to undertake active protection measures such as back burn operations in the event of a landscape level bushfire approaching from the west.

Other potential scenarios for bushfire attack, are associated with a lower risk profile due to the subject site being encompassed by low hazard rural agricultural land to the north, east and south. The Healy Creek watercourse also provides an additional firebreak to the north and east along the site boundary.

In the context of likely ignition sources, accidental ignitions are most likely associated with roadways or rural activities that entail 'hot work', or use of ground engaging implements. In context of the site, the public road network does not provide access to any areas of high bushfire risk in proximity to the subject site, and there is only a narrow area where the road network comes into contact with medium bushfire risk vegetation to the north east of the subject site. As such, there is a reduced risk of potential ignition relevant to the subject site.

Overall, the subject site is in a favourable location with a low probability of the likely bushfire scenario occurring.

5. RISK ASSESSMENT

Risk Assessment requires identification of hazard, determination of likelihood, vulnerability and consequence. A matrix is used to derive risk, based on these factors. The process used in this risk assessment is documented in the **Queensland Emergency Risk Management Framework (QERMF) Risk Assessment Process Handbook** (QFES, 2018). The use of a risk matrix also facilitates the evaluation of management measures to demonstrate risk reduction.

The risk matrix implemented in the **QERMF** rates risk from Very Low (0) to Catastrophic (13). The risk assessment for proposed use rates at 4 (Low), prior to implementation of bushfire management measures, and risk is reduced to 3 (Very Low) and after evaluation of bushfire management measures.

Table 6 addresses the risk posed by bushfire, firstly in the absence of any mitigation measures, and then demonstrates the risk reduction based on proposed measures, which are detailed on the Bushfire Management Plan map.

HAZARD

Hazard is the identification of potential, regardless of any other factors.

The preliminary hazard assessment undertaken as part of this Bushfire Hazard Study for the condition of the site has identified **Low Hazard** for the proposed development area, and **Medium Hazard** for all adjacent areas within the 100m assessment area, with the significant contributing factor to this hazard being vegetation classification.

LIKELIHOOD

Likelihood is a description of the probability of an event occurring. It is commonly presented in terms of Annual Exceedance Probability (AEP), based on the number of events that have occurred over a period of time. In order to establish likelihood for identified at risk assets, fire history information is necessary. Fire history indicates one burn affecting the subject site or the immediate local area in the 24 year record period from 2000 to 2024. As such, an Annual Exceedance Probability (AEP) of 1% to <10% applies to the site, with the overall likelihood being **Unlikely**.

VULNERABILITY

Vulnerability is an assessment of the resilience of a community or asset to the identified hazard. It considers service interruption and reconstruction capacity and cost, options for evacuation, topographical features as barriers to addressing the hazard, occupant capacity for preparedness and response, and emergency services capacity.

- The proposed development does constitute essential infrastructure.

- The proposed development does not add any permanent population to the subject site, with the temporary population generated by the use of the site for events being limited in scale (approx. 100 persons), time of residence (single day or weekend use), and able to be excluded if site conditions are subject to hazard.
- The proposed development will be situated in a low hazard area within a flat, well-managed landscape, and is able to provide suitable setbacks to reduce any radiant heat flux to less than 29kW/m².
- The subject site has a single route of egress from the immediate area, but is in close proximity to the Bruce Highway as the main transport route for the area, then providing multiple routes of egress from the local landscape.
- The wider Townsville area has sufficient emergency facilities to cope with a significant bushfire event if it occurs, and firefighting services are able to mobilise in the area to prevent ingress of bushfire into residential areas.

In the absence of any measures, the property is considered to have **Very Low** vulnerability to the impacts of bushfire.

CONSEQUENCE

The consequence is a description and measure of the impact of a potential event on people, finance and economy, community, public administration and the environment. The degree of interruption of daily routines, loss of life or property, cost of recovery and resources required for this, and continuation of services (such as electricity and waste management), and damage to environmental values is evaluated on a scale of severity. Mitigation measures should be aimed at reducing this consequence.

In the event of a bushfire, it is likely that the threat will be known ahead of time, and able to be evacuated or actively defended if necessary. As such it is likely that only minor injuries may occur, if any. Bushfire would result in a short-term interruption to the commercial use of the site, with any disruption lasting less than one year for the reconstruction of any impacted buildings and the restoration of the amenity of the site. A bushfire event would not result in decreased community connectivity, but may result in emotional or psychological impacts due to damage and temporary disuse of the site. Bushfire impacts at this site would not affect public administration. Minor damage to environmental values may occur, but no ecosystems or species of significance are identified within the subject site.

The Consequence of bushfire impact at the site (in the absence of any mitigation measures) is considered to be **Minor**.

Mitigation measures are discussed in the next section, and the risk assessment is summarised in Table 6.

5.1. MITIGATION MEASURES

5.1.1. ASSET PROTECTION ZONE AND STRATEGIC FUEL MANAGEMENT

The principal measure is to create distance between the proposed development and bushfire prone vegetation to ensure that the radiant heat flux generated is 29kW/m² or lower. This is achieved by managing bushfire fuels (via mowing/slashing of ground level vegetation, and removal of fallen deadwood) in the immediate vicinity of the development, with the intent to reduce the bushfire hazard of the adjacent vegetated areas.

The minimum distance required for strategic bushfire fuel management required to achieve this for this site is:

- 15.0m for VHC 9.2 Eucalypt Woodland;
- 12.0m for VHC 21.1 Melaleuca dry open forest.

Irrigation of grassed areas within the APZ to establish and maintain a green belt will provide protection from ember attack and low intensity fire in surface fuels approaching from outside the property.

5.1.2. WATER SUPPLY

The subject site is to be supplied by bore water, with a water tank to be installed as part of the proposed development.

This static water supply must be serviced by a firefighting pump to ensure adequate volume and pressure for firefighting purposes, with couplings compatible for use by RFS.

If this water supply is to be utilised as part of the commercial supply, it must be ensured that there is a minimum of 10,000L retained in reserve at all times for firefighting purposes. This is typically achieved by siting separate outlets on

the static supply to ensure domestic or commercial use is unable to draw from the reserve volume. Water supply points must be accessible for Rural Fire Service vehicles.

5.1.3. ACCESS AND EGRESS

The proposed development is identified as establishing direct driveway access that is suitable for firefighting access and facilitating emergency egress.

It is recommended that the strategic fuel management zone encompasses this egress, to ensure safe evacuation from the site if required.

5.1.4. BUILDING MAINTENANCE AND LANDSCAPING

It is important that bushfire maintenance be conducted for all sites in bushfire prone landscapes. This includes appropriate placement of landscaping features, annual site maintenance including removal of any leafy debris accumulated on low pitched roofs and in gutters, and removal of any green waste generated from landscape maintenance of the operational area.

TABLE 6 RISK ASSESSMENT

	Risk Assessment Prior to Controls						Risk Assessment after Implementation of Measures				
Development	Hazard	Likelihood	Vulnerability	Consequence	Risk	Mitigation Measures	Hazard	Likelihood	Vulnerability	Consequence	Residual Risk
Events Venue	Medium	Unlikely	Low	Minor	Low (4)	- APZ and SFMZ areas maintained at 15m for VHC 9.2 eucalypt woodland, and 12.0m for VHC21.1 continuous grass and tree cover in rural areas. - The subject site is to be provided with a static water supply, equipped with firefighting pump and fittings. - New driveway to access the development directly, and be suitable for emergency egress and emergency vehicle access. - Access route to be encompassed by strategic fuel management zone. - All landscaping and planting to be undertaken with regard to low hazard planting choices.	Low	Unlikely	Very Low	Minor	Very Low (3)

6. BUSHFIRE HAZARD OVERLAY CODE

Townsville City Council Planning Scheme Overlay Code 8.2.2 defines the performance criteria for developments relating to bushfire hazard mitigation, and identifies acceptable outcomes. These performance criteria and acceptable outcomes are described in Table 7. Management actions are described to achieve the performance criteria.

TABLE 7 TOWNSVILLE CITYPLAN 2014 OVERLAY CODE 8.2.2 PERFORMANCE CRITERIA

Performance outcomes	Acceptable outcomes		Solution
PO1 Development maintains the safety of people and property.	No acceptable outcome is nominated.		The size and design of the proposed vegetation management area approved by SARA is sufficient to allow for a suitable setback from adjacent medium hazard bushfire prone vegetation. APZ calculations show that required setback distances can be achieved for all areas, ensuring that the radiant heat flux to all areas is 29kW/m² or lower. The bushfire history shows a single occurrence of bushfire within the subject site and areas adjacent, with the bushfire scenario indicating that a bushfire front is unlikely to impact the site. Any bushfire approaching as a result of the potential bushfire scenario has a low likelihood of reaching its full potential fireline intensity and rate of spread, and afford substantial warning and evacuation time as required. The proposed development does not propose any vulnerable use, and all new structures and access routes will be required to be constructed to the appropriate standard, including essential safety measures for the nature of the defined use.
PO2 Highly vulnerable development does not occur in high hazard areas unless there is an overriding need for the development in the public interest and no other site is suitable and reasonably available for the proposal.	AO2 The following uses are not located in a high bushfire hazard area: - child care centre; or - detention facility; or - educational establishment; or - emergency services; or - hospital; or - industry activities involving manufacture or storage of hazardous materials in bulk; or	- multiple dwelling; or - residential care facility; or - retirement facility; or - relocatable home park; or - rooming accommodation; or - shopping centre; or - short-term accommodation; or - telecommunications facility; or - tourist park; or - tourist attraction; or - transport depot; or - utility installation.	The proposed use does not constitute highly vulnerable development.

Performance outcomes	Acceptable outcomes	Solution
PO3 Development mitigates the risk of bushfire hazard through the siting and design of the development. Editor's note—In demonstrating compliance with this performance outcome, applicants should be aware that setbacks and buffers for fire management purposes are in addition to any buffers or setbacks required for ecological purposes and are located outside of areas of ecological significance to the greatest extent possible. Regard should also be given to AS3959-2009.	No acceptable outcome is nominated.	The size and design of the proposed vegetation management area approved by SARA is sufficient to allow for a suitable setback from adjacent medium hazard bushfire prone vegetation. APZ calculations show that required setback distances can be achieved for all areas, ensuring that the radiant heat flux to all areas is 29kW/m² or lower. The bushfire history shows a single occurrence of bushfire within the subject site and areas adjacent, with the bushfire scenario indicating that a bushfire front is unlikely to impact the site. Any bushfire approaching as a result of the potential bushfire scenario has a low likelihood of reaching its full potential fireline intensity and rate of spread, and afford substantial warning and evacuation time as required. The surrounding landscape of the subject site is beneficial in mitigating risk of bushfire due to the high degree of management resulting in discontinuous bushfire fuels, and the presence of maintained road corridors and HV easements resulting in de facto firebreaks separating the site from the nearest major bushfire risk in the landscape and providing anchor points for active bushfire response. The proposed development does not propose any vulnerable use, and all new structures and access routes will be required to be constructed to the appropriate standards, including essential safety measures for the nature of the defined use.
PO4 Development provides for an adequate and accessible water supply for firefighting purposes.	AO4.1.1 The development is connected to a reticulated water supply where within a water supply area. OR AO4.1.2 Where outside a water supply area a tank water supply is provided, at least one tank is within 100m of a class 1, 2, 3 or 4 building which has fire brigade fittings.	The development is to be provided with a static water supply located centrally within the proposed development. A 10,000L supply is to be dedicated for firefighting purposes, equipped with a firefighting pump and fire brigade fittings, and accessible for fire fighting vehicles.

Performance outcomes	Acceptable outcomes	Solution
PO5 Public safety and the environment are not adversely affected by the detrimental impacts of bushfire on hazardous materials manufactured or stored in bulk.	AO5 Development does not involve the manufacture or storage of hazardous materials within a high or medium bushfire hazard area as identified on overlay map OM-02.	The development does not involve the manufacture or storage of hazardous materials
PO6 Facilities with a role in emergency management and vulnerable community services are able to function effectively during and immediately after bushfire events.	No acceptable outcome is nominated.	The proposed development does not involve emergency management or vulnerable community services, nor is it involved in the support of these functions.
PO7 Additional lots are not created in bushfire hazard areas.	AO7 Development does not involve the creation of additional lots in areas mapped as high or medium hazard on overlay map OM-02.	N/A – the proposed development does not involve the creation of additional lots.
PO8 Development is designed to allow for efficient emergency access to buildings for fire-fighting appliances, including by avoiding long, narrow access arrangements. Editor's note—PO8 and PO9 will be relevant where development is located adjacent or near to hazard areas.	No acceptable outcome is nominated.	The property access will be upgraded to facilitate safe and efficient access and egress, including establishing a SFMZ along the access driveway. The access to the property is directly onto Mill Road, and is consistent with the nature of property access for rural properties.
PO9 Development provides a fire break which also facilitates adequate	AO9.1 Lot boundaries and development sites are separated from hazardous vegetation by a distance of 20m where adjacent to high hazard areas and 10m where adjacent to medium hazard.	N/A – the proposed development does not involve the creation of additional lots.

Performance outcomes	Acceptable outcomes	Solution
access for firefighting and emergency vehicles, and safe evacuation. Editor's note—PO8 and PO9 will be relevant where development is located adjacent or near to hazard areas.	AO9.2 The separation area mentioned in AO9.1 contains a fire access trail that: • has a minimum cleared and formed width of 6m; • has vehicular access at each end; • provides passing bays and turning areas for fire-fighting appliances; and are either located on public land, or within an access easement that is granted in favour of council and QFRS.	N/A – the proposed development does not involve the creation of additional lots.
	AO9.3 Roads and trails: have a maximum gradient of 12.5%; and do not involve a cul-de-sac. Editor's note—Applicants should also be aware that Part 9 of the planning scheme sets out additional requirements for the construction of roads and other operational works associated with reconfiguration.	N/A – the proposed development does not involve the creation of additional lots.

7. BUSHFIRE MANAGEMENT PLAN

A bushfire management plan (BMP) has been prepared, defining current mitigation measures, and to advise minimum recommended measures for future operational use. Operational bushfire management measures are shown in Appendix A – **Bushfire Management Measures**.

The **Queensland Disaster Management Guideline** (QFES, 2017) utilises and defines the Prevention, Preparedness, Response and Recovery (PPRR) approach to natural hazard risk identification, mitigation, response and recovery. The guideline is written to address disaster management from the State level to the Local Government level, and should be applied in general terms to maintain consistency with emergency response organisations and enable integration with local government bushfire management planning where relevant.

7.1. PREVENTION

Prevention is the prescription and implementation of measures to reduce the likelihood of an event occurring or reducing the severity of an event should it occur. In addressing prevention, the specific hazard must be identified to develop objective, measurable and achievable mitigation measures.

7.1.1. SITE DESIGN

Appropriate site design is principal in reducing the likelihood or severity of a bushfire event. This is achieved by strategic placement of roads and asset protection zones to provide adequate separation distances or defensible space for infrastructure subject to bushfire hazard. Defensible space requirements are relevant to the degree of hazard and explicit radiant heat impacts modelled on identified hazard.

7.1.2. FUEL MANAGEMENT MEASURES

FUEL MANAGEMENT ZONES

Fuel management zones are areas within the landscape that are managed to minimise or remove bushfire fuels, providing a defensible space, and linear separation from the main bushfire threat. Fire breaks may be located within Asset Protection Zones.

FIRE BREAK / FIRE TRAIL

A fire break is a strategically located linear fuel break intended to obstruct the path of a fire, provide an anchor point for back burning and active fire suppression. Fire breaks may be located close to assets (such as around a property boundary) or may be located in a strategic location in the landscape (such as at the foot of a slope) to inhibit the passage of a fire into difficult terrain or a higher risk area.

STRATEGIC FUEL MANAGEMENT ZONE

Strategic fuel management zones (SFMZ) are areas around an asset where fuels are managed by slashing, mowing or fuel reduction burning to minimise the total volume of fine fuels with two primary objectives:

- reducing the likelihood of a fire igniting and developing, and
- in the event a fire does develop, minimising potential rate of spread and intensity of a going fire.

Fire breaks may be classified as SFMZs, as they are frequently associated with fire management access trails that facilitate both maintenance activities and active fire suppression.

ASSET PROTECTION ZONE

Asset Protection Zones are areas closer to an asset, where landscaping and fuel management is quite intensive, and consists of tree maintenance, lawn maintenance, selective removal or placement of large plants (trees and shrubs) to minimise canopy connectivity. The objectives of the APZ are:

- Provide separation distance from the bushfire hazard
- Provide a defensible space where active fire suppression may be undertaken.
- An area from where backburning may be conducted

FUEL MANAGEMENT TECHNIQUES

There are numerous fuel management techniques that can be applied across a site to achieve fire prevention and preparedness objectives, described in detail in Table 8. These techniques can be applied to varying degrees, in specific ways or as general prescriptions dependent on the nature of the site and the hazard.

TABLE 8 FUEL MANAGEMENT TECHNIQUES

Action	Description
Slashing	Slashing is the maintenance of grasses to a height of 10cm or less. This can be achieved with a tractor drawn slasher or with brush cutters (whipper snipper) in areas with limited or difficult access.
Mowing / Whipper Snipping	Mowing is a more managed 'lawn' state, maintained at a height 5cm or less.
Raking or manual removal of fine fuels	Raking and removal of fine dead fuels <6mm in diameter.
Lopping / pruning	Removal of low hanging branches, thinning of canopy, selective removal of branches overhanging buildings or connecting the canopy with other trees.
Ploughing / Grading	Preparation of mineral earth fire breaks by ploughing / grading. Erosion management may be required either by surface sheeting with stable cover material (gravel) or hard landscaping permanent access features (walking trails).
Grazing	Grazing is an effective fuel reduction technique for large areas of grass fuels. The most effective application is to stock with a high number of beasts for a short period (days) to knock down the bulk of fine fuels.
Fuel Reduction Burning	Hazard reduction burning is a method of removing ground litter and fine fuels by fire. Hazard reduction burning of vegetation is often used by land management agencies for broad area bush fire control, or to provide a fuel reduced buffer around urban areas.

7.2. PREPAREDNESS

Preparedness is the implementation of operational management plans to achieve the prevention objectives. Annual maintenance prior to the commencement of the fire season, training, community awareness and where appropriate, mutual aid agreements between organisations and agencies with common interests in asset protection and community safety that may work together across tenure in the event of a disaster event.

7.2.1. FIRE BREAKS AND FUEL MANAGEMENT STRATEGY

The fuel management strategy is shown on the **Bushfire Management Measures** map in Appendix A.

TABLE 9 FIRE BREAKS

Fire Break	Specification
Boundary Fire Break	5m slashed or graded fire break within 10m of the boundary as permitted by local topography. - Maintain surface fuel less than 10cm through dry season. - Removal of dead trees and danger trees within tree length of boundary. Danger trees are trees with ground hollows likely to fall over if burnt.
Internal Fire Break	5m slashed or graded fire break along internal fence line. Gates to be installed as practical for site operational access.

TABLE 10 ASSET PROTECTION ZONES (APZ)

APZ	Specification
Operational Area APZ	- The designated vegetation management zone approved by SARA – minimum 12m from all structures. - Maintain surface fuel less than 10cm through dry season. - Remove fine fuels including leaf drop and fallen limbs throughout the fire season, through raking and manual removal, slashing/mulching/ mowing. - Irrigate lawn areas where practical and water supplies permit

TABLE 11 STRATEGIC FUEL MANAGEMENT ZONES (SFMZ)

SFMZ	Specification
Access SFMZ	• Within 12m of the edge of the Access Driveway. • Maintain surface fuel less than 30cm through dry season. • General vegetation maintenance and removal of dead/dry vegetation throughout the dry season to prevent buildup of fine fuels. • Removal of tree limbs to 2m above ground level for 3m either side of the Access Driveway

General landscape maintenance on a regular basis is essential to maintaining a property in a bushfire prone landscape. The property should be maintained to minimise tropical weed grasses (grader grass and guinea grass), and promote native grasses including kangaroo grass (*Themeda triandra*), cockatoo grass (*Alloteropsis semialata*) and black spear grass (*Heteropogon contortus*).

7.2.2. WATER SUPPLY, ACCESS AND EGRESS

WATER SUPPLY

Primary water supply for firefighting is provided via a water storage tank, shown on the **Bushfire Management Measures** map in Appendix A.

ACCESS – EMERGENCY SERVICES AND INCIDENT RESPONSE

Access to the site is via Mill Road. The existing driveway within the property facilitates emergency services access. The boundary fire break provides through access around the boundary of the site for suppression and fuel management activities.

ACCESS – EMERGENCY EGRESS

Emergency egress is via the access driveway exiting on to Mill Road. This provides rapid access to the Bruce Highway to the north.

7.2.3. AWARENESS, RESPONSE TRIGGER AND EVACUATION PLAN

Bushfire preparation includes identifying pre-conditions for response readiness and triggers for enactment of response measures. All commercial premises within a bushfire prone landscape should have a fire plan, identifying preparation and response measures to be undertaken at the property scale.

AWARENESS

Site operations must monitor the fire danger ratings as issued by the QFES. Readiness should increase with the FDR according to Table 12. Readiness includes making the necessary preparations regarding operational safety and implementation of site fire plans.

TABLE 12 AFDR AND READINESS

Australian Fire Danger Rating		Readiness level	Action
FDI	Messaging		
0-11	No rating	-	Nil Required
12-23	Moderate	Alert: Monitor public notifications and ensure preparations are complete	Ensure all mitigation measures are in place. Proceed with normal site operations
24-49	High		Ensure all mitigation measures are in place. Proceed with normal site operations, be prepared to enact fire plan if incident impacts property or immediate surrounds during hosted event.
50-99	Extreme	Lean Forward: Be prepared to enact fire plan in the event of an incident.	Proceed with normal site operations, be prepared to enact fire plan if incident impacts Yabulu, Bluewater, Black River or Lynham areas during hosted event.
100+	Catastrophic	Stand Up: Enact fire plan	Avoid hosted events in catastrophic fire danger conditions.

RESPONSE TRIGGER

The response trigger for implementation of fire plans may be the issuing of Catastrophic fire danger rating forecast, occurrence of a bushfire incident in the immediate area, or an incident within the property.

EVACUATION AND SHELTER IN PLACE

Evacuation should be considered as the primary response, and if evacuation is to occur, the decision to leave must be made early.

If advised to evacuate by the authorities, this should be considered the safest course of action.

The operator of the site should establish emergency procedures in regard to the specific use of the site as an Events Venue, including an evacuation plan. Materials available through Townsville City Council's Disaster Management Dashboard website will step the operator through this process.

7.3. RESPONSE

Bushfire response is generally considered the specific actions in response to an immediate bushfire threat, either from outside the site or within the site.

Where fire outside the site threatens the site, the objective is to prevent it from entering the property, where fire occurs within the site, the objective is to protect other site assets, and prevent the spread of the fire outside of the site.

7.3.1. IGNITION SOURCE ON SITE

It is considered that an ignition onsite will be triggered by a specific activity associated with maintenance, operation of the site or failure of site infrastructure.

Site management should be made aware of the ignition to provide an opportunity to suppress the fire before it becomes uncontrollable.

- Report the emergency to 000, and secure the site until emergency services arrive.
- Ensure all guests and non-essential personnel are able to take shelter at a predetermined muster point.
- Attempt direct attack methods if possible (direct water application or extinguisher) or contain with a mineral earth fire break if possible.

7.3.2. IGNITION SOURCE OFF SITE

Where a fire approaches the property from the surrounding landscape, it is considered that this will be a larger, more active fire, and defensive strategies are more appropriate (asset protection and personal safety).

- Report the emergency to 000.
- **Operational fire plan is to make safe and evacuate** – Evacuate all visiting guests utilising the events area if safe to do so.
- **Enact fire suppression systems where installed** - Enact active fire protection through use of sprinklers and hoses appropriate to the site owner's level of capability.

7.3.3. RURAL FIRE SERVICE

In regards to bushfire response, the volunteer Rural Fire Service is the primary response agency. For structural fires, the nearest QFR brigade is Woodlands Fire Station (this is a permanent brigade).

The site is located within the Black River and District rural fire service district - contact details for emergency reporting and direct brigade contact are listed below in Table 13.

TABLE 13 EMERGENCY AND FIRE STATION CONTACT DETAILS

To report a bushfire, or for any other emergency	000
General enquiries – Black River and District (Rural Fire Service)	0407 175 003
Public education, property bushfire management plans, planned burn permits etc.	
Woodlands Fire Station - QFR	07 4775 9200

7.4. RECOVERY

Disaster recovery can be complex and sometimes a lengthy process. It is described simply as the restoration of normal operations.

Recovery of the site from a bushfire event will depend on the level of impact on the landscape, equipment and infrastructure:

1. Ensure fire area is safe and extinguished (burn area blacked out)
2. Identify damage to assets or infrastructure
3. Reinstatement of essential services (water, electricity) as necessary
4. Secure hazards in work area or public access areas (removal of any hazards caused by bushfire (burnt trees at risk of falling over, etc.)
5. Reinstatement of bushfire hazard mitigation measures that were damaged or expended during the fire event
6. Safe access and egress from the site is re-established

8. CONCLUSIONS & RECOMMENDATIONS

8.1. BUSHFIRE HAZARD ASSESSMENT AND RISK ASSESSMENT

An assessment of the site and its surrounding environment has demonstrated a bushfire hazard across the proposed development area is Low following the proposed development, with areas of Medium bushfire hazard encompassing the development resulting in the entirety of the proposed development area being within the 100m potential impact buffer identified for the closest classified vegetation. The development site is nevertheless identified as being in a suitable and advantageous position in the landscape for minimising the risk and impacts of bushfire, and is able to achieve suitable separation distance from all classified vegetation to ensure a less than 29kW/m² heat flux impact to all aspects of the development.

The risk assessment identifies that the proposed use and the nature of the proposed development at the subject site carries a low degree of risk (based on current management and condition of the site), with risk reduced to very low where mitigation measures are undertaken. The application of fit for purpose mitigation measures effectively minimises the risk associated with bushfire at the site, through separation distance from native vegetation, and bushfire fuel minimisation within the operational site and adjacent to the access route.

Establishing the proposed development according to bushfire management measures, and engagement with local bushfire brigades will ensure the establishment of a safe and well prepared community.

8.2. BUSHFIRE HAZARD OVERLAY CODE

The proposal is demonstrated to comply with the Bushfire Hazard Overlay Code.

8.3. BUSHFIRE MANAGEMENT PLAN

A Bushfire Management Plan has been prepared for this site. Bushfire management measures are intended to be simple and achievable.

The bushfire management plan identifies fuel management measures appropriate to the nature of the landscape, occupancy and activities at the subject site, in the context of the pertinent bushfire scenario. Bushfire management measures primarily consist of maintaining existing fire breaks, property access, and establishing the asset protection zone and strategic fuel management zones as defined in the bushfire management plan. Responsible land management will achieve appropriate risk mitigation for the described use.

8.4. RECOMMENDATIONS

The following recommendations are made to support the development of the site, achieve bushfire hazard mitigation with minimal impact to future occupants of the development, and ensure the development meets the objectives of the Bushfire Hazard Overlay Code:

- The operator of the site should establish emergency procedures in regard to the specific use of the site as an Events Venue, including an evacuation plan. Materials available through Townsville City Council's Disaster Management Dashboard website will step the operator through this process.
- Undertake property protection measures to minimise bushfire risk annually, including clearing roofs and gutters of debris, disposing of dead and dried landscaping material regularly, and ensuring grass ground cover across the operational areas of the subject site is <10cm during the fire danger season.

8.4.1. BUSHFIRE MANAGEMENT PLAN

Implementation of the bushfire management as prepared and detailed in Section 7 will provide for safety of visitors to the site and assist in identifying the bushfire risk in advance of high hazard conditions.

8.4.2. LANDSCAPING – PLANT SELECTION

Plant selection for bushfire prone areas should avoid species containing high concentrations of flammable oils (eucalypt and palm species), and preference evergreen species less prone to annual dry season leaf drop. Consideration should be given to species which exhibit a habit or form that allows for separation from surrounding plants, either vertically or horizontally. For example, some conifer species grow branches from ground level, allowing flame contact from burning ground litter, and providing vertical connectivity. Preference should be given to species that have a clean trunk and clearly separated head of vegetation where there is risk of ignition from ground or surface vegetation (such as underneath or adjacent to elevated decks and floor structures).

General guidance for bushfire resilient building and landscaping is available online from the Queensland Reconstruction Authority:

https://www.qra.qld.gov.au/sites/default/files/2020-12/QRA_Bushfire_building_guideline.PDF

The Country Fire Authority publication 'Landscaping for Bushfire' provides a comprehensive guide for landscape planning and plant selection. It can be accessed online:

<https://www.cfa.vic.gov.au/plan-prepare/how-to-prepare-your-property/landscaping>

It is recommended that these documents be reviewed during the landscape planning for this site. While the CFA publication is produced by Victorian authorities and describes southern plant species, the plant form and type selection criteria can be applied to local and tropical plants with equal relevance. This assists in identifying the most appropriate amenity plantings and landscaping materials suited to development in a bushfire prone landscape.

RESOURCES

BOM, 2026. Webpage 'Climate statistics for Australian locations' Bureau of Meteorology, Canberra, ACT. Accessible online: <http://www.bom.gov.au/climate/>

CFA, ND. *Landscaping for Bushfire: Garden Design and Plant Selection*. Country Fire Authority, Victoria. Accessible online: <https://www.cfa.vic.gov.au/plan-prepare/how-to-prepare-your-property/landscaping>

Leonard, J., Opie, K., 2017, *Estimating the potential bushfire hazard of vegetation patches and corridors*, CSIRO Publishing, June 2017

Leonard, J., Opie, K., Newnham, G. and Blanchi, R. 2014. *A new methodology for State-wide mapping of bushfire prone areas in Queensland*. CSIRO Publishing, January 2014.

Newnham, G.K., Opie, G. and Leonard, J. 2017. *A methodology for State-wide mapping of annual fuel load and bushfire hazard in Queensland*. CSIRO Publishing, January 2017.

NSW RFS, 2019. *Planning for Bushfire Protection: A guide for Councils, Planners, Fire Authorities and Developers*. New South Wales Rural Fire Service. ISBN 0 9751033 2 6

SAL, 2018. *AS 3959-2018, Construction of buildings in bushfire-prone areas*. Standards Australia Limited, Sydney, NSW.

QFES, 2017. *The Prevention, preparedness, Response and Recovery Disaster Management Guideline*. Queensland Fire and Emergency Services, State of Queensland, 2017. URL: <https://www.disaster.qld.gov.au/dmg/Pages/DM-Guideline.aspx>

QFES, 2018. *Queensland Emergency Risk Management Framework (QERMF) Risk Assessment Process Handbook*. Queensland Fire and Emergency Services, State of Queensland, October 2019. URL: <https://www.disaster.qld.gov.au/dmg/st/Documents/H1102-QFES-Risk-Assessment-Process-Handbook.pdf>

QFES, 2019. *Bushfire Resilient Communities Technical Reference Guide for the State Planning Policy State Interest 'Natural Hazards, Risk and Resilience - Bushfire'*. Queensland Fire and Emergency Services, State of Queensland, October 2019 URL: https://www.ruralfire.qld.gov.au/Bushfire_Planning/Documents/Bushfire-Resilient-Communities.pdf

QFES, 2019b. *Fire Hydrant Guidelines*. Queensland Fire and Emergency Services. Brisbane.

TCC, 2014. *Townsville City Council Planning Scheme 2026*. Accessible online: <https://www.townsville.qld.gov.au/building-planning-and-projects/planning-and-building-approval/planning-guidelines-and-tools/city-plan-planning-scheme>

APPENDIX A – MAPS

BUSHFIRE HAZARD ASSESSMENT

235 - 353 Mill Road, Yabulu
(3RP743037)

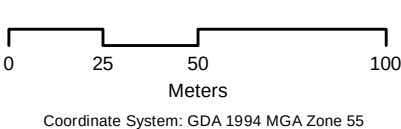
SITE LOCATION

Legend

- Property Boundaries
- 3RP743037
- Roads
- Watercourses
- Assessment Area
- Vegetation Management Plan Area

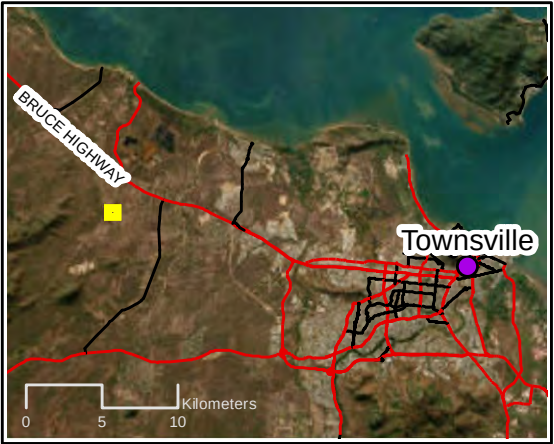
Proposed Site Infrastructure

- Entertainment Grassed Area
- Food Servery
- Service Shed
- Toilet Block
- Grassed Carparking/Access



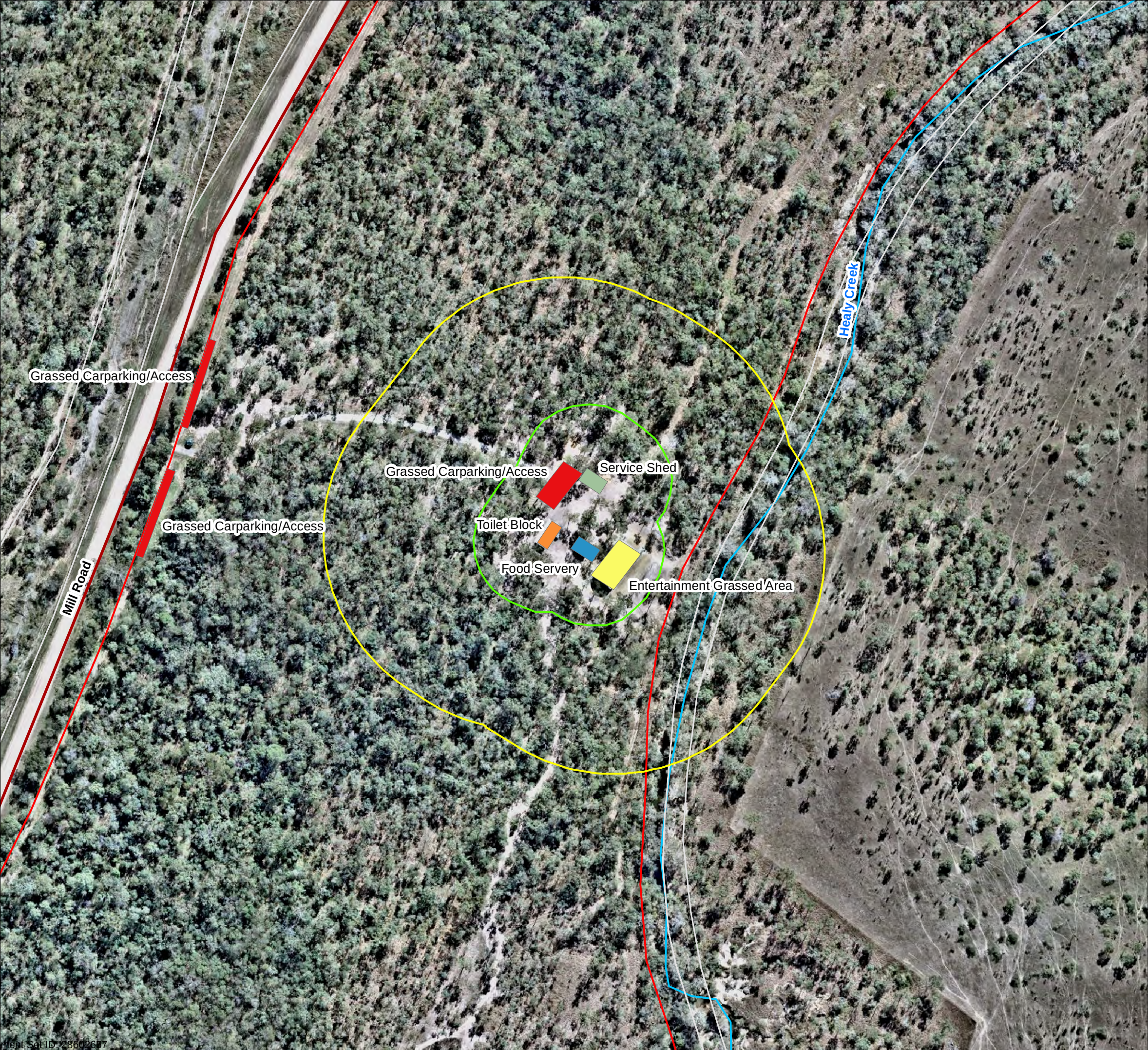
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BUSHFIRE HAZARD ASSESSMENT

235 - 353 Mill Road, Yabulu
(3RP743037)

TOPOGRAPHY AND HYDROLOGY

Legend

Property Boundaries

3RP743037

Contours (5m)

Watercourses

Assessment Area

Entertainment Grassed Area

Food Servery

Service Shed

Toilet Block

Grassed Carparking/Access

Slope (Degrees)

0 - 5

5 - 10

10 - 15

15 - 20

>20 degrees

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BUSHFIRE HAZARD ASSESSMENT

235 - 353 Mill Road, Yabulu
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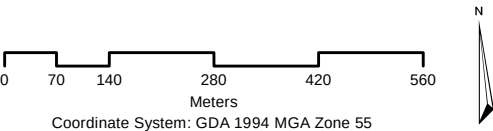
VEGETATION
AND BUSHFIRE FUELS

Legend

- Property Boundaries
- 3RP743037
- Proposed Development
- Assessment Area

Vegetation Hazard Classes

- 40.4 Low grass or tree cover in rural areas (5tph)
- 21.1 Melaleuca dry open forest on sandplains or depositional plains (14.9tph)
- 9.2 Moist to dry eucalypt woodland on coastal lowlands and ranges (17.2tph)
- 22.1 Melaleuca open forests on seasonally inundated lowland coastal swamps (28.4tph)



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BUSHFIRE HAZARD ASSESSMENT

235 - 353 Mill Road, Yabulu
(3RP743037)

FIRE HISTORY

Legend

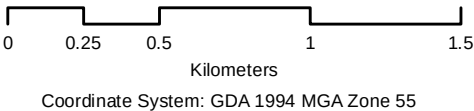
- Proposed Development
- Assessment Area
- Highway (Arterial Road)
- Local

Fire Frequency (2000 to 2024) (NAFI, 2025)			
1	4	7	10
2	5	8	
3	6	9	

Time Since Burnt (years) (2000 to 2024) (NAFI, 2025)			
24	14	8	3
20	13	7	2
16	11	5	1
15	10	4	

Fire History (QPWS 2026)

- Planned Burn
- Unplanned Burn



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Fire Frequency and Time since last burn from NAFI (2023)
Fire History (QPWS) © State of Queensland (Department of Environment and Science), 2023
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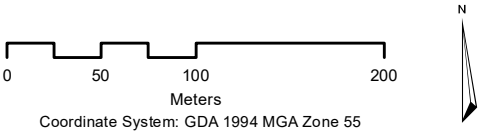
BUSHFIRE HAZARD ASSESSMENT

235 - 353 Mill Road, Yabulu
(3RP743037)

BUSHFIRE HAZARD MODEL

Legend

- Property Boundaries
- 3RP743037
- Proposed Development
- Assessment Area
- Bushfire Hazard Model**
 - Low Potential Bushfire Intensity (<4000kW/m)
 - Medium Potential Bushfire Intensity (4,000 – 20,000kW/m)
 - High Potential Bushfire Intensity (20,000 – 40,000kW/m)
 - Potential Impact Buffer (100m)



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BUSHFIRE HAZARD ASSESSMENT

235 - 353 Mill Road, Yabulu
(3RP743037)

BUSHFIRE MANAGEMENT MEASURES

Legend

- Property Boundaries
- 3RP743037
- Name

Entertainment Grassed Area

Food Servery

Service Shed

Toilet Block

Grassed Carparking/Access

Roads

Watercourse

MITIGATION MEASURES

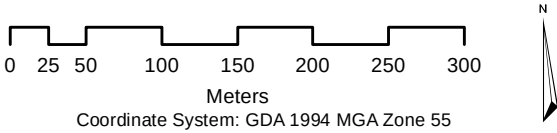
- Boundary Firebreak - 5m wide slashed or graded fire break
- Internal Fence and Firebreak - Indicative Location
- Access Driveway
- Property Access Point from Mill
- Water Tank - minimum 10,000L reserved for firefighting purposes

Asset Protection Zone

- Maintain surface fuel <10cm through dry season. Removal of dead and dry vegetation through dry season. Irrigate.

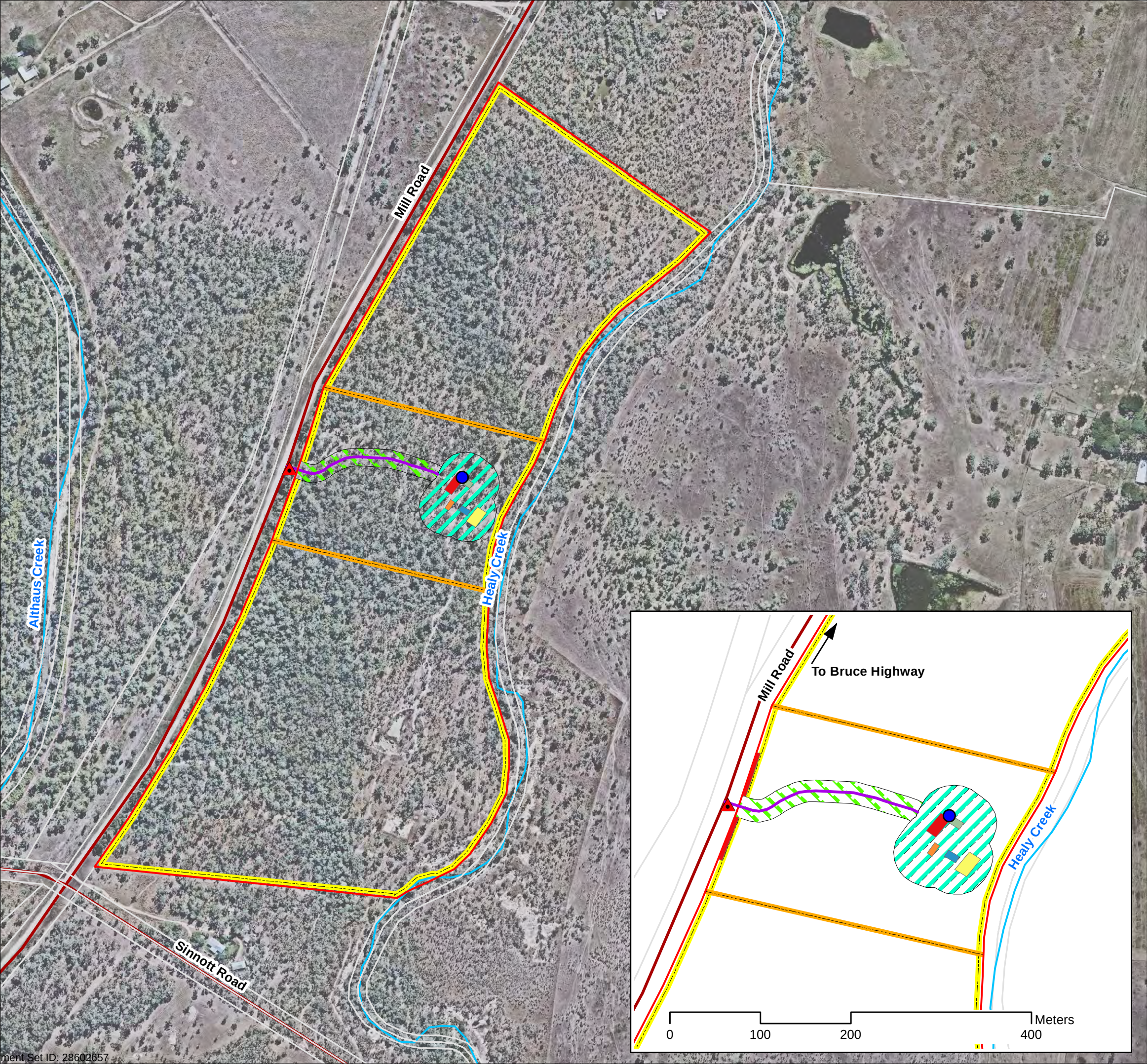
Strategic Fuel Management Zone

- Removal of dead and dry vegetation through dry season (12m each side of driveway).
- Remove tree branches <2m from the ground (3m each side of driveway).



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Roads from IQ_QLD_ROAD_BASELINES.shp@Queensland Government
Drainage from Vegetation_management_watercourse_and_drainage_feature_map_100k@Queensland Government
Airphoto from TimeSeries\AerialOrtho_AllUsers@Queensland Government





REPORT R240971R1

Revision 0

Noise Impact Assessment
Proposed Function Facility
235-353 Mill Road, Yabulu, QLD

PREPARED FOR:
Trevor Holley

2 July 2026

Noise Impact Assessment

Proposed Function Facility

235-353 Mill Road, Yabulu, QLD

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1 INTRODUCTION

Rodney Stevens Acoustics Pty Ltd (RSA) has been engaged by Trevor Holley to conduct a Noise Impact Assessment (NIA) for the Proposed Function Facility at 235-353 Mill Road, Yabulu, QLD, properly described as Lot 3 on RP743037.

This NIA has been prepared in support of a Material Change of Use (MCU) application for the development. The function facility is proposed to be located in the central eastern portion of the site. The nearest noise sensitive receiver is located on the adjacent site to the east, at 357 Mill Road, approximately 628 m from the proposed function area.

The proposed operation hours are from 12:00 pm to 21:30 pm Sunday to Thursday, and from 12:00 pm to 12:00 am Friday and Saturdays. The maximum number of patrons will be limited to 100.

This report summarises the results of an environmental noise survey conducted on site and assesses the potential noise impacts associated with the operation of the function facility under the conditions proposed by the applicant. The NIA forms part of the supporting documentation for the Development Application (DA) submission to Townsville City Council.

Specific acoustic terminology is used in this report, an explanation of common acoustic terms is provided in Appendix A.

2 INFORMATION SOURCES

This report has been prepared considering the following information:

- Town Planning Report for Development Application prepared by EDPI Australia, dated 3rd March 2026
- Traffic Impact Assessment prepared by Northern Consulting Engineers, dated 15th June 2026
- Australian Standard AS 1055:2018 *Acoustics - Description and Measurement of Environmental Noise*
- Queensland Government *Environmental Protection (Noise) Policy 2019*
- DETSI (2020) *Noise Measurement Manual*, ESR/2016/2195, Department of the Environment, Tourism, Science and Innovation, Queensland Government
- DETSI (2026) *EIS Information Guideline Noise and Vibration*, ESR/2020/5305, Department of the Environment, Tourism, Science and Innovation, Queensland Government
- Townsville City Plan (Version 2025/01)
- Environmental long-term noise measurements conducted by RSA (refer to Section 5)
- Meteorological data sourced from the Bureau of Meteorology — Townsville Aero, ID 032040

3 SITE LOCATION

The proposed function facility is to be located at 235-353 Mill Road, Yabulu, QLD, described as Lot 3 on RP743037. The 36.5 ha site and surrounding land are zoned rural under the Townsville City Plan (Version 2025/01).

Figure 3-1 Zoning Map - Townsville City Planning Scheme



The function facility is proposed within the central eastern portion of the site, approximately 200 m east of the western boundary. The site location, proposed function area, and nearest noise sensitive receivers are shown in Figure 3-2.

Distances to the nearest noise sensitive receivers were obtained from the TownsvilleMaps Mapping Service (see Figure 3-3) and are summarised below:

- **R1** - 357 Mill Road, at approximately 627 m south of the proposed venue
- **R2** - 223 Mill Road, at approximately 673 m north of the proposed venue
- **R3** - 226 Mill Road, at approximately 788 m west of the proposed venue
- **R4** - 104 Pope Road, at approximately 851 m east of the proposed venue

Figure 3-2 Site Location, Proposed Function Facility Area, and Surroundings Sites

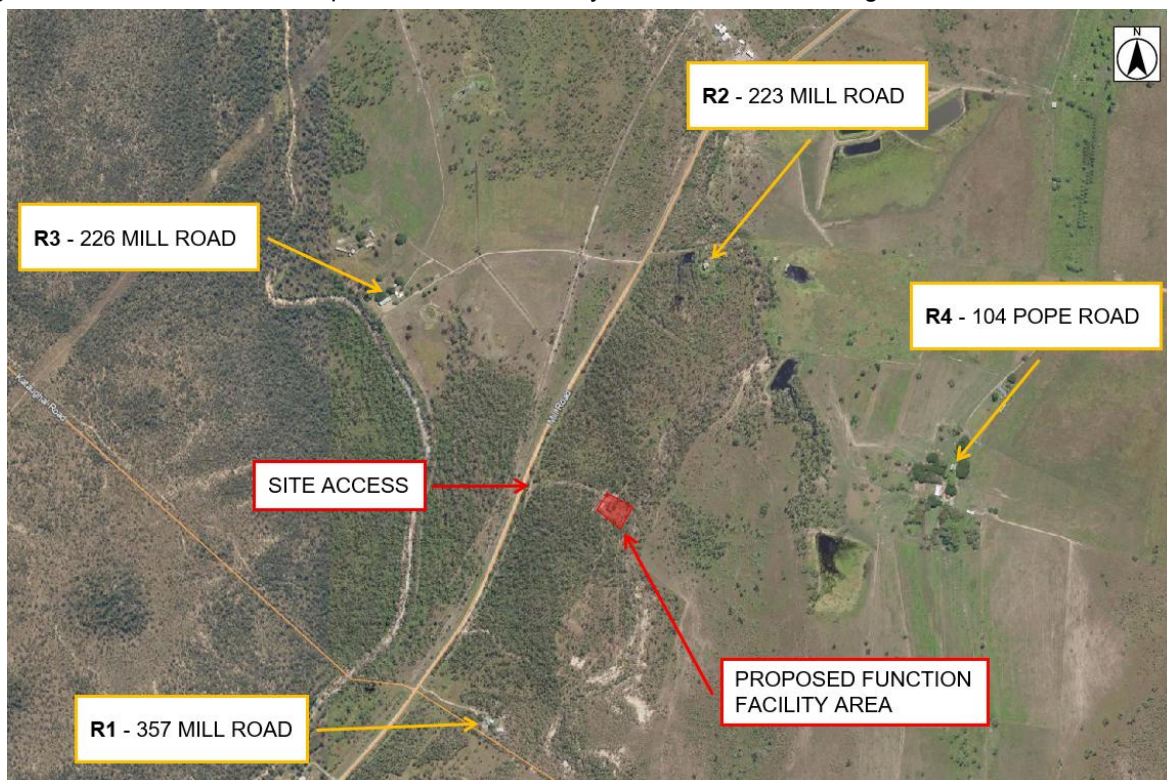
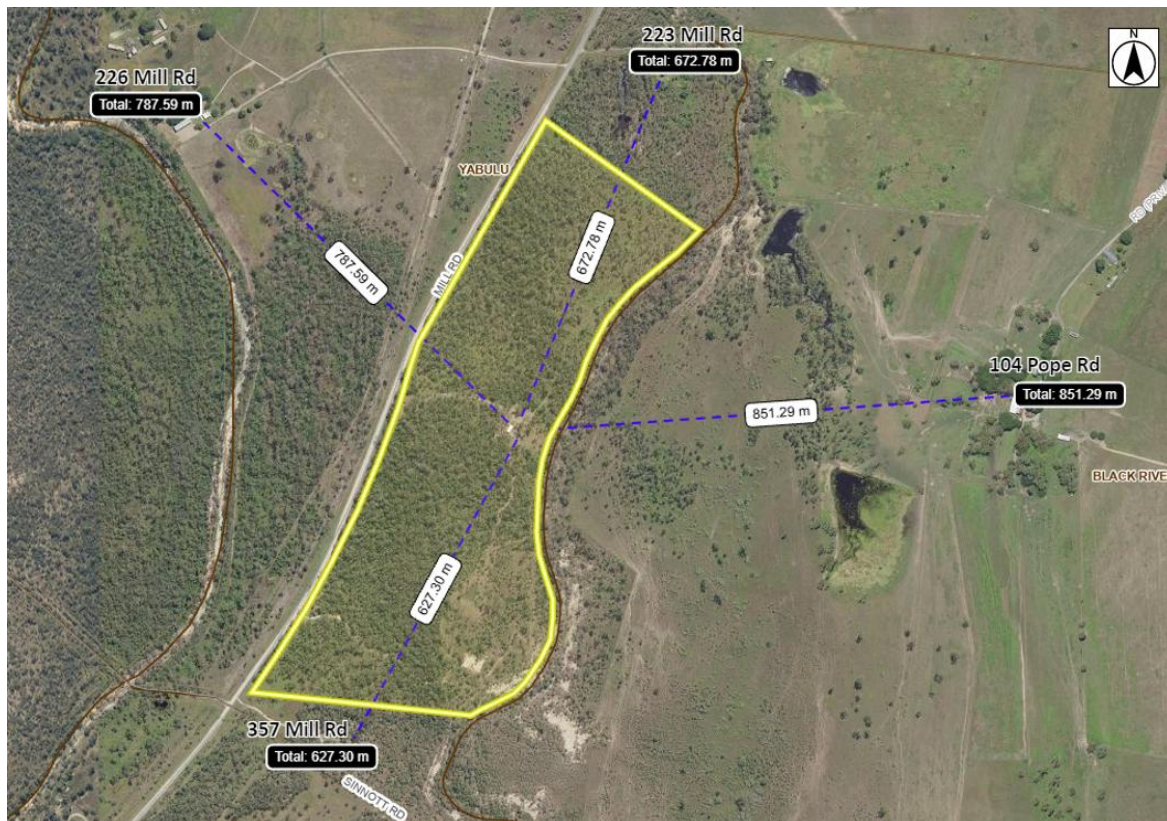


Figure 3-3 Approximate Distances from Function Facility Area to Nearest Noise Sensitive Receivers



4 PROPOSED DEVELOPMENT

The proposed development consists of the establishment of a function facility designed to host private events such as weddings, parties and other celebrations. Events are proposed to be held within a temporary marquee located in the designated entertainment area (see Figure 4-1). Amplified music and speeches are expected to occur during events, and depending on the nature of the function, live music performances may also be included.

The proposed operation hours are:

- 12:00 pm to 21:30 pm - Sunday to Thursday
- 12:00 pm to 12:00 am - Friday and Saturdays

The facility will be designed to accommodate a maximum 100 patrons and is expected to operate mainly between May and October, occasional events may occur outside this period.

Site access will be provided via the existing driveway from Mill Road (see Figure 3-2). Car parking spaces are proposed along the Mill Road frontage, with an accessible parking space and drop off area located adjacent to the function area.

An emergency power backup generator will be onsite inside a Besser Block Shed, and a compressor is expected to serve the proposed cold room. No air conditioning units or other mechanical plant are proposed.

The proposal includes the following amenity and service areas (see Figure 4-1 and Figure 4-2):

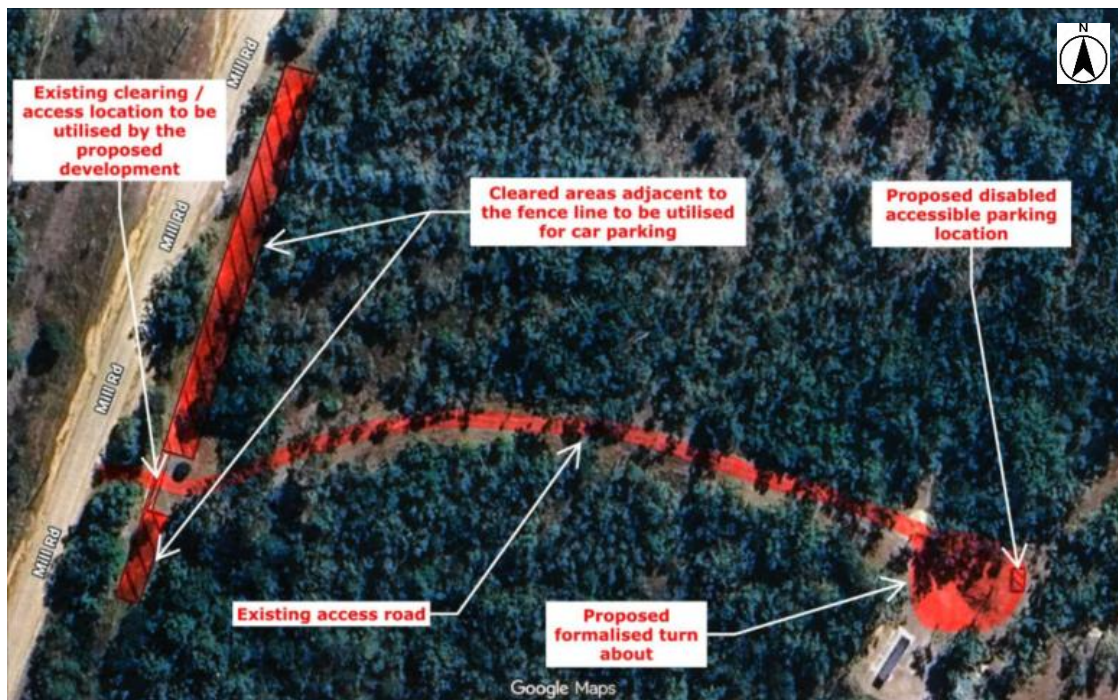
- Service Shed
- Kitchen
- Toilet Block
- Covered Entertainment Area (proposed as a temporary marquee structure)
- Car parking Area

Figure 4-1 Proposed Function Facility Layout



Source: EDPI Australia Town Planning Report for Development Application

Figure 4-2 Proposed Access and Parking Plan



Source: Northern Consulting Engineers Traffic Report

5 BASELINE NOISE SURVEY

5.1 Environmental Noise Measurements

To characterise the existing noise environment of the area, unattended noise monitoring was conducted between Wednesday 6th and Monday 11th May 2026 at the logging location shown in Figure 5-1.

Logger locations were selected with consideration to other noise sources which may influence readings, security issues for noise monitoring equipment and gaining permission for access from other landowners. It is noted that permission was not granted from the owners of the adjoining properties; therefore, noise loggers installed at the northern and southern ends of the subject site. The noise monitoring at these locations is representative of the ambient noise of the area.

Instrumentation comprised of two Rion NL-42EX environmental noise logger (serial numbers 1000322 and 184112). Both devices were fitted with microphone windshields. Calibration of the noise monitoring devices was checked prior to and following measurements. Drift in calibration did not exceed ± 0.5 dB(A). The equipment carried appropriate and current NATA (or manufacturer) calibration certificates (see Appendix C).

Noise measurements were conducted in accordance with Australian Standard AS 1055:2018 Acoustics - Description and Measurement of Environmental Noise and the Queensland Department of Environment and Science (DES) Noise Measurement Manual (2020).

Upon consultation with historical weather reports provided by the Bureau of Meteorology, no measured data was affected by adverse weather.

The logger determines L_{A1} , L_{A10} , L_{A90} and L_{Aeq} levels for each 15-minute period. L_{A1} , L_{A10} , L_{A90} are the levels exceeded for 1%, 10% and 90% of the sample time respectively (see Glossary for definitions in Appendix A). Detailed time-history graphs are provided in Appendix C.

The following assessment time periods are specified in the DES Noise measurement Manual:

- Day: 7 am to 6 pm
- Evening: 6 pm to 10 pm
- Night: 10 pm to 7 am

The monitored baseline noise levels are summarised in Table 5-1.

Table 5-1 Measured Baseline Noise Levels Corresponding to Defined DES Periods

Location	Acoustic Descriptor	Measured Noise Level – dB		
		Daytime 7 am - 6 pm	Evening 6 pm – 10 pm	Night-time 10:00 pm – 7 am
Noise Logger #1	L_{Aeq}	46	53	46
	L_{A90}	32	47	35

Noise Logger #2	L_{Aeq}	43	55	44
	L_{A90}	29	45	32

Notes:

- All values rounded to nearest 1 dB(A).
- L_{Aeq} : Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.
- L_{A90} : Noise level present for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

Fauna noise (i.e. cicadas, crickets, frogs, cane toads) was observed during evening (mostly) and nighttime periods. This influence was considered when determining the project noise criteria.

Figure 5-1 Noise Monitoring Locations

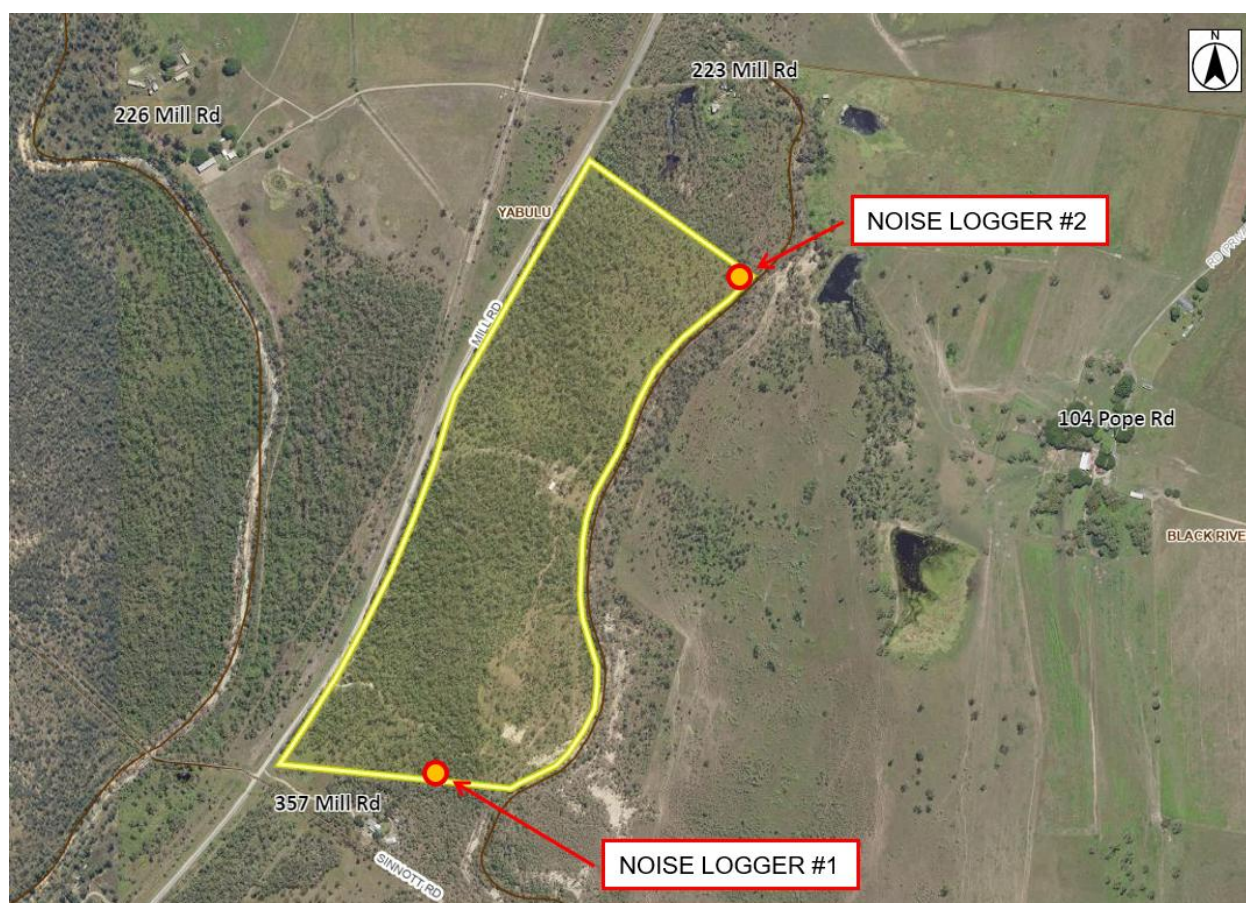


Figure 5-2 Noise Loggers



6 NOISE GUIDELINES AND CRITERIA

6.1 Townsville City Plan (Version 2025/01)

Performance Outcome P017 of the Townsville City Plan (Version 2025/01) requires that the development does not adversely impact on the character, amenity or scenic values of the locality, having regard to noise.

The City Plan does not provide specific noise limits for development within the rural zone. Accordingly, assessment of the proposed Function Facility is based on the criteria prescribed in the Environmental Protection (Noise) Policy 2019.

6.2 Department of Environmental Science (DES) - Environmental Protection (Noise) Policy 2019

The environmental values for the acoustic environment as specified in the Part 6 of the Environmental Protection (Noise) Policy 2019 include the following as relevant to sensitive receptors (dwellings):

“6 **Environmental values**

The environmental values to be enhanced or protected under this policy are—

- (a) *the qualities of the acoustic environment that are conducive to protecting the health and biodiversity of ecosystems; and*

- (b) *the qualities of the acoustic environment that are conducive to human health and wellbeing, including by ensuring a suitable acoustic environment for individuals to do any of the following—*
- (i) *sleep;*
 - (ii) *study or learn;*
 - (iii) *be involved in recreation, including relaxation and conversation;*
- (c) *the qualities of the acoustic environment that are conducive to protecting the amenity of the community. “*

The Environmental Protection (Noise) Policy 2019 specifies Acoustic Quality Objectives (AQO) in Schedule 1 that are stated to be prescribed for enhancing or protecting the environmental values at sensitive receptors. The relevant AQO for dwellings that, if reasonable in the circumstances, are applied for the protection of environmental values relating to health and wellbeing are presented in Table 6-1:

Table 6-1 Acoustic Quality Objectives - Environmental Protection (Noise) Policy 2019

Sensitive Receptor	Time of day L_{Aeq}	Acoustic quality objectives (measured at the receptor) dB(A)			Environmental value
		$L_{Aeq,adj,1hr}$	$L_{A10,adj,1hr}$	$L_{A1,adj,1hr}$	
Residence (for outdoors)	daytime and evening	50	55	65	health and wellbeing
Residence (for indoors)	daytime and evening	35	40	45	health and wellbeing
Residence (for indoors)	night-time	30	35	40	health and wellbeing, in relation to the ability to sleep

Note: Time periods are as per defined in the DES Noise measurement Manual, refer to Section 5.1.

RSA experience indicates that L_{Aeq} acoustic descriptor is most stringent and relevant descriptor for assessing noise from event venues. On this basis, this assessment focuses on $L_{Aeq,1hr}$ acoustic descriptor.

The AQO does not specify outdoor noise limits for dwellings during nighttime. In accordance with the DETSI (2026) *EIS Information Guideline – Noise and Vibration*, an outdoor to indoor noise attenuation of 7 dB is applied. Therefore, the applicable night-time outdoor criterion is:

- $30 + 7 = 37 L_{Aeq,adj,1hr}$ (dB)

6.3 Background Creep

Noise limits for background creep is not specified in the Environmental Protection (Noise) Policy 2019 (current policy), however states in Section 9 part 2(b) the following:

“background creep in an area or place is prevented or minimised”

To assess background creep the following criterion for “controlling background creep” provided in the superseded Noise Policy (2008) has been adopted.

(2) To the extent that it is reasonable to do so, noise from an activity must not be—

(a) for noise that is continuous noise measured by $L_{A90,T}$ — more than nil dB(A) greater than the existing acoustic environment measured by $L_{A90,T}$; or

(b) for noise that varies over time measured by $L_{Aeq,adj,T}$ — more than 5dB(A) greater than the existing acoustic environment measured by $L_{A90,T}$.

Noise emissions from patrons, amplified music, vehicle movements are considered time-varying noise, while noise emissions from mechanical plant are considered continuous noise. Accordingly, the applicable criterion is:

Based on the lowest measured L_{A90} values (Section 5), and applying adjustments for fauna noise where required, the background creep criteria (in bold) are summarised in Table 6-2.

Table 6-2 Background Creep Noise Criteria (To the extent that it is reasonable to do so)

Type of Noise	Acoustic Descriptor	Background Creep Criteria, L_{Aeq} (dB)		
		Daytime 7 am - 6 pm	Evening 6 pm – 10 pm	Nighttime 10:00 pm – 7 am
Time Varying Noise	L_{Aeq}	(29 + 5) 34	(45 + 5 - 6) ¹ 44 ²	(32 + 5 - 6) ¹ 31
Continuous Noise	L_{A90}	29	(45 + 0 - 6) ¹ 39 ²	(32 + 0 - 6) ¹ 26

Notes:

1. Adjustment applied due to continuous extraneous noise from insects or frogs, determined through post-processing data filtering.
2. Evening L_{A90} was inconclusive due to fauna noise; therefore, daytime criteria applied (consistent with AQO day and evening methodology).

6.4 Environmental Protection Act 1994

6.4.1 Regulated Devices

Section 440S states the following:

440S Regulated devices

(2) A person must not operate a regulated device in a way that makes an audible noise—

(a) on a business day or Saturday, before 7.00a.m. or after 7.00p.m.; or

(b) on any other day, before 8.00a.m. or after 7.00p.m.

Generators and compressors are considered regulated devices under the Act.

6.5 Low Frequency Emissions from Patrons and Amplified Music

Low-frequency noise emissions from licensed venues are regulated by the Office of Liquor and Gaming Regulation (OLGR) under the Liquor Act 1992. The OLGR ensures venues comply with site specific noise criteria, imposes operational conditions, and investigates community complaints related to amplified music, patron activity, and mechanical plant noise.

Noise standards for licenced venues are detailed in in Section 40 of the Liquor Act Regulation 2002, which requires an operational noise emissions assessment to demonstrate compliance with prescribed limits. These criteria are provided for information only.

Table 6-3 OLGR Assessment Criteria (for information only)

Source Type	Octave Band Centre Frequency (Hz), dB						dB
	63	125	250	500	1K	2K	
Before 10 pm	-	-	-	-	-	-	BG* + 10 dB(A)
After 10 pm	BG* + 8	BG* + 8	BG* + 8	BG* + 8	BG* + 8	BG* + 8	dB(C)

* BG = background noise level L_{A90} (dB)

In this assessment, a maximum of 85 dBC at 3 m from each speaker has been considered to account for low frequency emissions.

6.6 Summary of Applicable Noise Criteria

Based on the baseline noise survey and the noise criteria applicable to the site, the project specific noise limits at all identified noise sensitive receptors (see Section 3) are summarised in Table 6-4.

Table 6-4 Specific Project Noise Limits

Noise Sensitive Receptor	Time of the Day	L _{Aeq} , dB	L _{A90} , dB
Acoustic Quality Objectives (For Outdoors) – L _{Aeq,1hr}			
R1 - 357 Mill Road	Daytime (7 am - 6 pm)	50	-
R2 - 223 Mill Road	Evening (6 pm – 10 pm)	50	-
R3 - 226 Mill Road	Nighttime (10:00 pm – 7 am) – Sleep Disturbance	37	-
R4 - 104 Pope Road			
Background Creep – L _{Aeq,15min}	Time Varying Noise	Continuous Noise	
	Daytime (7 am - 6 pm)	34	29 L _{Aeq} (dB)

R1 - 357 Mill Road	Evening (6 pm – 10 pm)	34	29 L _{Aeq} (dB)
R2 - 223 Mill Road			
R3 - 226 Mill Road	Nighttime (10:00 pm – 7 am)	31	26 L _{Aeq} (dB)
R4 - 104 Pope Road			

Noise from mechanical plant must not be audible before 7:00am or after 7:00pm on a business day or Saturday, and before 8:00am or after 7:00pm on any other day.

A noise is considered inaudible when it is at least 10 dB below the background noise level (L_{A90}). Based on the measured background noise levels and the applied fauna noise corrections, mechanical plant is considered not audible when below 16 dB(A).

7 NOISE MODEL METHODOLOGY

A three-dimensional noise model was developed using SoundPLAN V9.0, applying the ISO 9613-2:1996 *Acoustics – Attenuation of sound during propagation outdoors* algorithm.

The ISO 9613, use a method to predict the equivalent continuous A-weighted sound pressure levels (L_{Aeq}). As outlined in Section 6.2, this assessment focuses on the more stringent L_{Aeq} acoustic descriptor, which aligns with the ISO standard methodology.

For reference, percentile descriptors associated with the Acoustic Quality Objectives (AQOs) may be approximated as:

- $L_{A10} = L_{Aeq} + 3$
- $L_{A01} = L_{Aeq} + 8$

The modelling parameters, assumptions, and source sound power levels detailed below were incorporated to predict noise emissions from all proposed activities.

Table 7-1 Noise Modelling Parameters and Assumptions

Modelling parameters and assumptions	
Noise propagation algorithm	ISO9613
Wind direction	Calm
Ground absorption coefficient (grass areas)	1.0 (ISO 9613-2)
Ground absorption coefficient (paved areas)	0.0 (ISO 9613-2)
Temperature - humidity	20°C - 80%
One story building	5 m height

Modelling parameters and assumptions

Patrons' height above ground level (area source)	1.7 m
Vehicle engine height	0.5 m (cars), 1.0 m (buses)
Speaker height (point source)	2.5 m (one speaker at each corner of the entertainment area, 4 in total)
Receiver height above ground level	1.5 m

The accounts for geometric spreading, ground absorption, shielding from terrain and structures, meteorological effects, and atmospheric absorption. Terrain contours were sourced from QTopo - online topographic maps, provided by the Queensland Government.

7.1 Modelled Scenarios

The following operational scenarios were modelled to represent worst-case conditions:

- Situation 1 – Four amplified music speakers (2.5 m height) and 100 patrons
- Situation 2 – Live music band and 100 patrons
- Situation 3 – Vehicles arriving (28 cars and 2x12 seater buses)
- Situation 4 – Vehicles leaving (28 cars and 2x12 seater buses)

7.2 Noise Sources

The following sections detail the noise generating activities associated with the proposed development that may impact nearby sensitive receptors.

7.2.1 Vehicle Movements

Vehicle movements associated with the Function Facility were based on the Traffic Impact Assessment prepared for the project. For events accommodating up to 100 patrons, the following worst-case operational assumptions were adopted:

- 2 x 12-seater buses (arrival and departure)
- 28 private vehicles, including 1 vehicle using the accessible parking space adjacent to the Entertainment Area
- Total of 60 vehicle movements (30 movements during arrival and 30 during departure)

Representative vehicle types were included in the model, including:

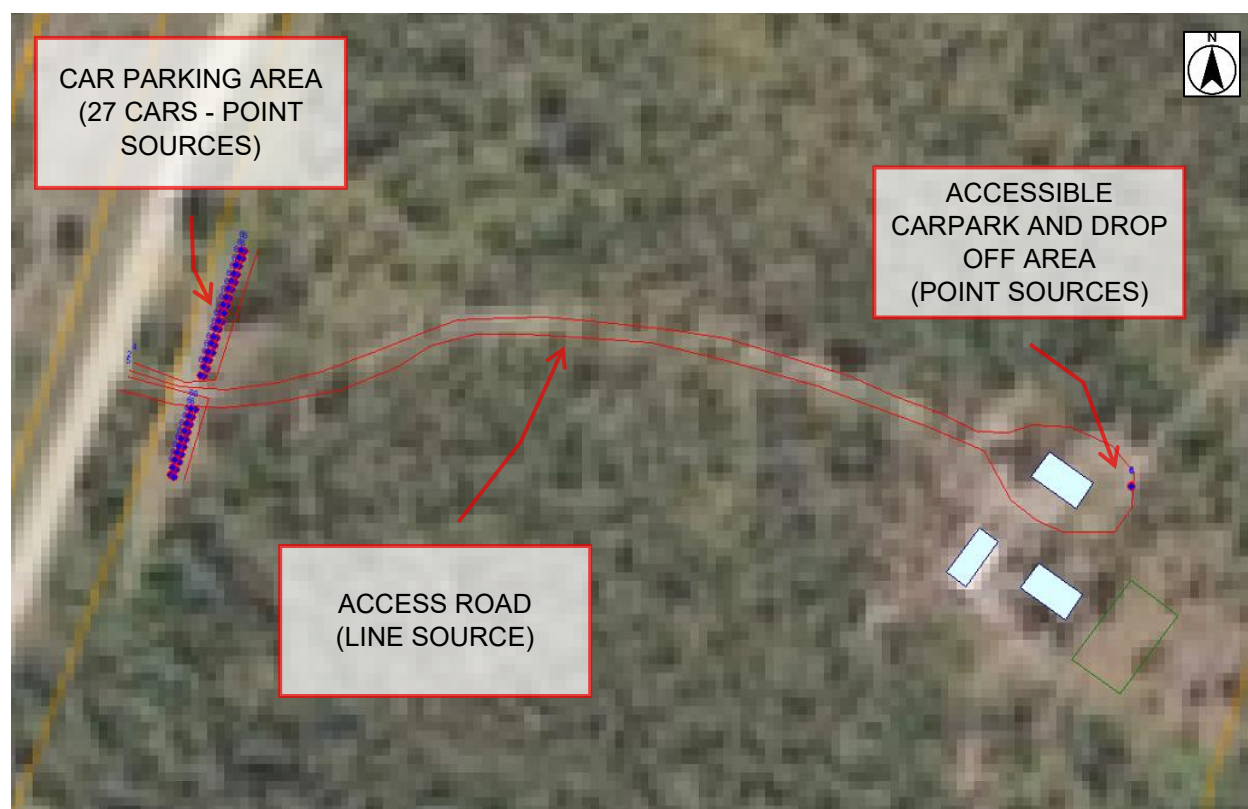
- Toyota Hiace 12 seater bus (Reported noise level of 85 dBA at 1050 mm from the exhaust). Noise data has been sourced from the Department of Infrastructure, Transport, Regional Development, Communications and the Arts.
- Private vehicle noise levels were based on RSA internal database (see Table 7-2)

Table 7-2 Car Pass by Sound Power Level Spectrum – RSA library

Source	Octave Band Centre Frequency (Hz), dB								dBA
	63	125	250	500	1k	2k	4k	8k	
Car	83	87	82	81	80	79	73	64	85

An excerpt from the noise model is presented in Figure 7-1.

Figure 7-1 Vehicle Sources - Noise Model Distribution



7.2.2 Patrons Noise

Noise from patrons has been predicted using the methodology described in Hayne et al. (2011), "Prediction of Noise from Small to Medium Sized Crowds". The A-weighted sound power level for a crowd of size N is calculated using:

$$L_{WAeq} = 15 \log (N) + 64\text{dB(A)}$$

This method is widely used in Queensland acoustic assessments and provides a conservative estimate of crowd noise for outdoor event environments.

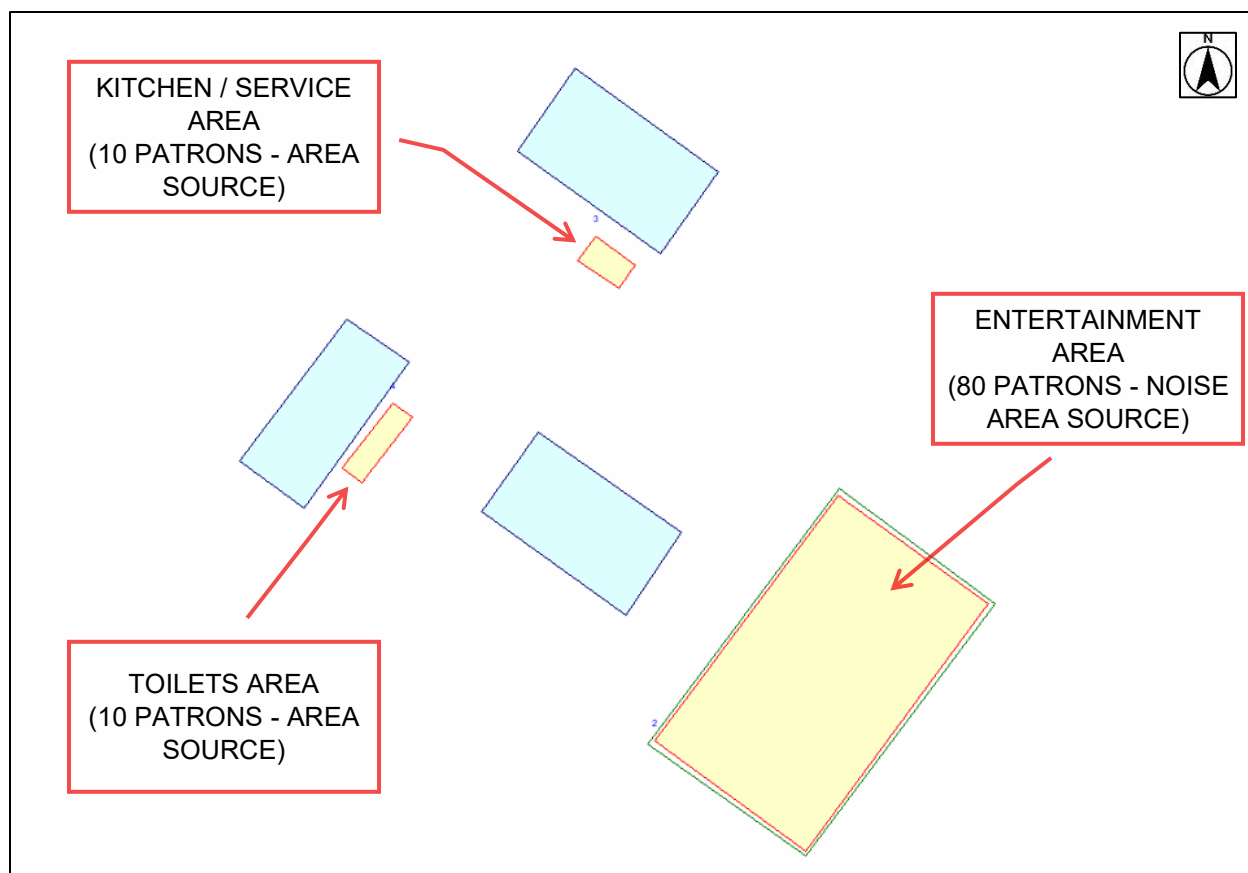
Based on this formula, the predicted overall A-weighted sound power levels for patron activity within each area of the Function Facility are summarised in Table 7-3.

Table 7-3 Patrons Sound Power Level

Area	Crowd Number	Predicted A-weighted sound power level, dB
Entertainment Area	80	93
Toilet Area	10	79
Kitchen/Service Area	10	79

An excerpt from the noise model is presented in Figure 7-2.

Figure 7-2 Patrons Noise Source Locations Within the Function Area – Noise Model Distribution



7.2.3 Music – Entertainment Noise

Amplified Music

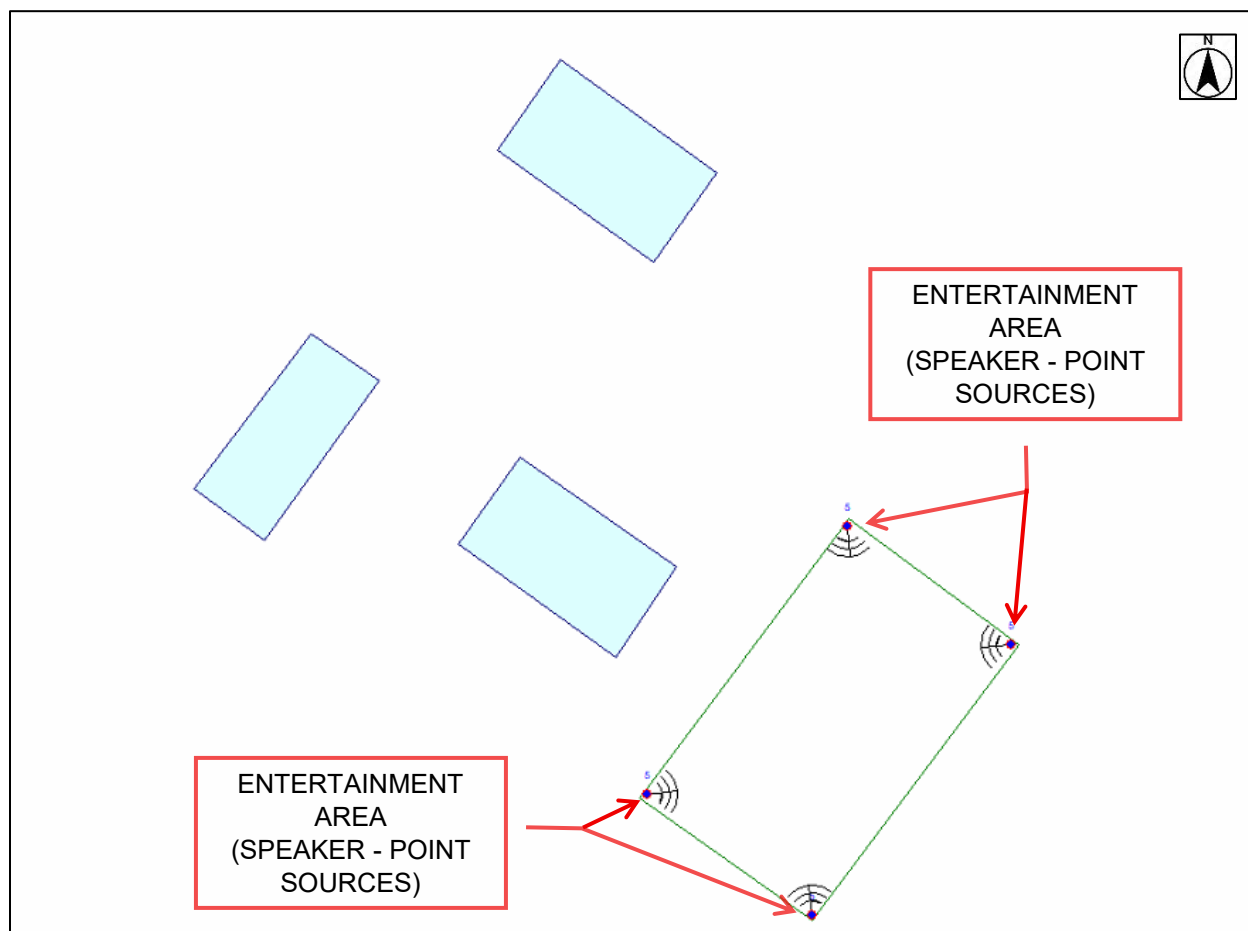
The sound system will be supplied by the function producer; no in-house sound system is proposed. A conservative amplified music scenario has been modelled, consisting of four speakers located at each corner of the designated Entertainment Area. Each speaker has been modelled at a sound power level of 102 dB(A) (81 dBA at 3 m from each speaker).

Table 7-4 Speaker Sound Power Level Spectrum – RSA library

Source	Octave Band Centre Frequency (Hz), dB								dBA
	63	125	250	500	1k	2k	4k	8k	
Speaker	95	98	93	104	91	85	85	79	102

An excerpt from the noise model is presented in Figure 7-3.

Figure 7-3 Speaker Locations in the Entertainment Area – Noise Model Distribution



Live Band

For events involving live music, the following assumptions have been adopted:

- All musical instruments are connected to the sound system
- A 5-piece band, comprising guitar, bass, drums, keyboard, and vocals

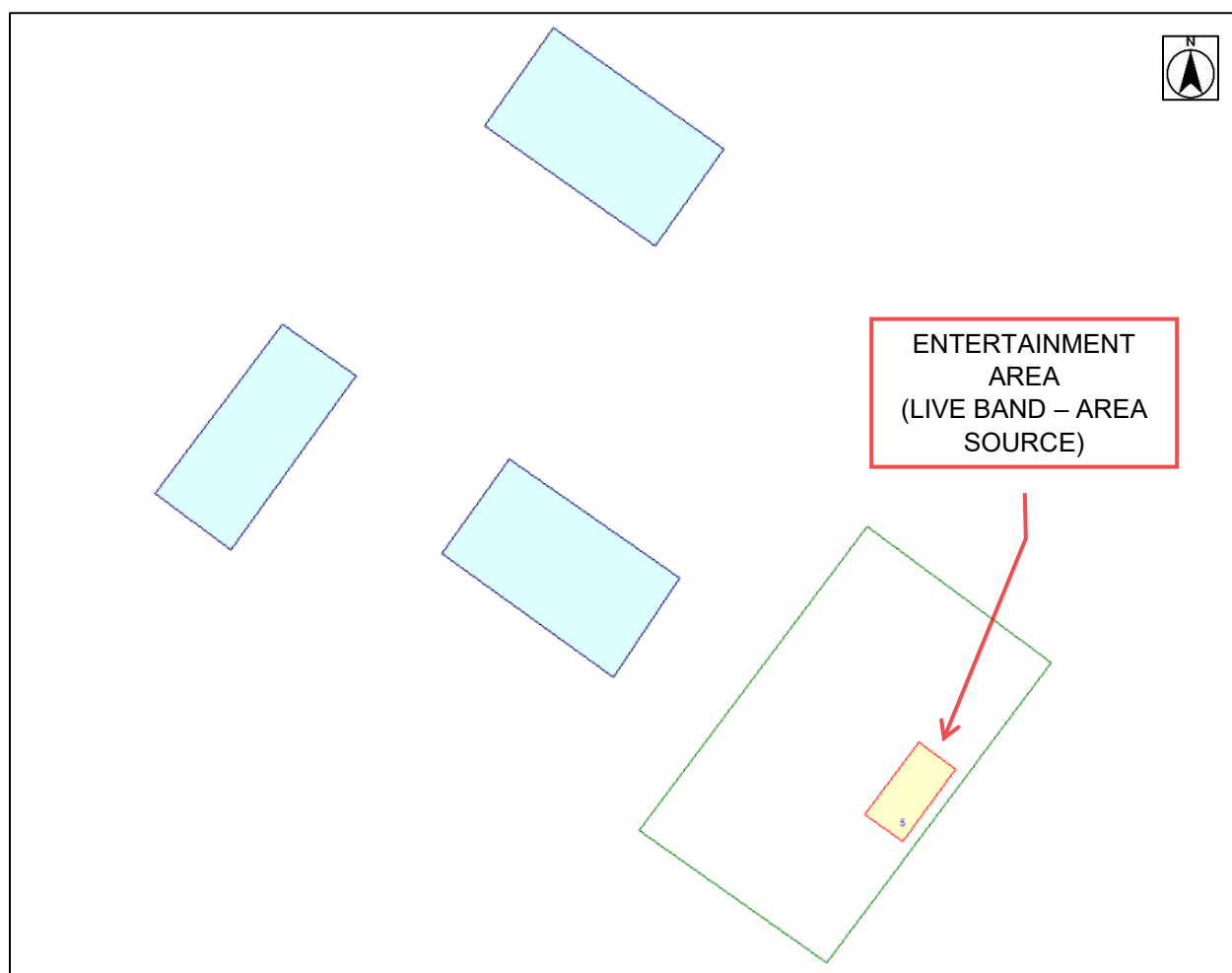
The sound power spectrum used for the live band is sourced from the RSA library, based on measurements undertaken at a comparable function venue. The spectral data is presented in Table 7-5.

Table 7-5 5 Piece Live Band Sound Power Level Spectrum – RSA library

Source	Octave Band Centre Frequency (Hz), dB								dBA
	63	125	250	500	1k	2k	4k	8k	
Live Band	101	104	99	106	97	91	91	85	105

An excerpt from the noise model is presented in Figure 7-4.

Figure 7-4 Live Band Location in the Entertainment Area – Noise Model Distribution



7.2.4 Mechanical Plant

Mechanical plant associated with the Function Facility includes an emergency power backup generator and a cool room compressor, both assumed to be located within the designated function facility area. As specific equipment models are not yet confirmed, predictions are based on typical venue equipment. A desktop noise propagation prediction has been conducted for the operation of the mechanical plant to determine compliance with the Environmental Protection Act 1994 noise criteria at the identified noise sensitive receivers.

Generator

The emergency power backup generator will be housed in a Besser Block Shed. with a minimum noise reduction of 20 dB assumed to be provided by the structure.

An 8kVA generator (Hyundai diesel engine, model GHD6400E-MS) has been assumed to operate under emergency conditions only. The overall sound power level and octave-band spectrum have been calculated using the generator methodology described in Engineering Noise Control (Bies & Hansen).

Table 7-6 Calculated generator Sound Power Level Spectrum

Source	Octave Band Centre Frequency (Hz), dB							
	63	125	250	500	1k	2k	4k	8k
8kVA Generator	77	78	78	78	76	74	71	66
								85

Cool Room Compressor

A small reciprocating compressor has been assumed, as this type is commonly used in commercial refrigeration. Based on data presented in Engineering Noise Control (Bies & Hansen), the following octave-band sound pressure levels at 1 m are adopted.

Table 7-7 Estimated Reciprocating Compressor Sound Power Level Spectrum

Source	Octave Band Centre Frequency (Hz), dB							
	63	125	250	500	1k	2k	4k	8k
Reciprocating Compressor (35-175 kW)	94	95	98	94	92	90	86	80
								98

The compressor must be located inside a ventilated enclosed space that provides a minimum noise reduction of 20 dB.

8 PREDICTED NOISE LEVELS AND PROJECT COMPLIANCE

Predicted noise levels have been calculated for all the proposed noise sources detailed above. Noise emissions at the nearest sensitive use receivers have been predicted, with compliance evaluated against the specific project noise limits detailed in Table 6-4.

Results reflect worst-case operating conditions, including amplified music, live performances, and peak vehicle movements. The modelling incorporates directional speaker placement, ground absorption, and atmospheric attenuation consistent with ISO 9613-2.

Predicted noise levels have been calculated at the nearest noise sensitive receivers identified in Section 3. Appendix G presents the predicted noise contours at 1.5 m height.

Table 8-1 Predicted Operational Noise Levels ($L_{Aeq,1hr}$) at the nearest receivers – AQO For Outdoors

Noise Sensitive Receiver	Period	Amplified Music + Patrons $L_{Aeq,1hr}$ (dB)	Live Band + Patrons $L_{Aeq,1hr}$ (dB)	Vehicle Arriving/Leaving $L_{Aeq,1hr}$ (dB)	Criteria $L_{Aeq,1hr}$ (dB)	Compliance
R1 - 357 Mill Road	Day / evening	31	31	0	50	Yes
R2 - 223 Mill Road		29	28	0		Yes
R3 - 226 Mill Road		26	26	0		Yes
R4 - 104 Pope Road		26	23	0		Yes
R1 - 357 Mill Road	Night	31		31	3	Yes
R2 - 223 Mill Road		29		28	0	Yes
R3 - 226 Mill Road		26		26	0	Yes
R4 - 104 Pope Road		26		25	0	Yes

The predicted $L_{Aeq,1hr}$ noise levels comply with the AQO criteria for both daytime/evening and night-time periods.

Table 8-2 Predicted Operational Noise Levels ($L_{Aeq,1hr}$) at the nearest receivers – Background Creep (Time Varying Noise)

Noise Sensitive Receiver	Period	Amplified Music + Patrons $L_{Aeq,15m}$ (dB)	Live Band + Patrons $L_{Aeq,15m}$ (dB)	Vehicle Movements $L_{Aeq,15m}$ (dB)	Criteria $L_{Aeq,15m}$ (dB)	Compliance
R1 - 357 Mill Road	Day / evening	31	31	2.7	34	Yes
R2 - 223 Mill Road		29	28	0		Yes
R3 - 226 Mill Road		26	26	0		Yes
R4 - 104 Pope Road		26	25	0		Yes
R1 - 357 Mill Road	Night	31	31	2.7	31	Yes
R2 - 223 Mill Road		29	28	0		Yes
R3 - 226 Mill Road		26	26	0		Yes
R4 - 104 Pope Road		26	25	0		Yes

The predicted noise levels comply with background creep (Time Varying Noise) criteria. Predicted noise levels for continuous noise sources (mechanical plant) are summarised in Table 8-3, and demonstrate that the mechanical plant can also comply with the Background Creep Continuous Noise criteria when installed within the assumed enclosures.

Table 8-3 Predicted Operational Noise Levels (L_{Aeq}) at the nearest receivers – Environmental Protection Act 1994 (Regulated Devices)

Noise Sensitive Receiver	Period	Mechanical Plant L_{Aeq} (dB)	Criteria $L_{Aeq,15m}$ (dB)	Compliance
R1 - 357 Mill Road	- between 7:00pm and 7:00am (business day or Saturday), or - between 7:00pm and 8:00am (on any other day)	16	16	Yes
R2 - 223 Mill Road		15		Yes
R3 - 226 Mill Road		14		Yes

R4 - 104 Pope
Road

13

Yes

Noise levels from mechanical plant are predicted to comply with the Environmental Protection Act 1994 criteria for regulated devices at all identified noise sensitive receivers.

It is noted that the generator must be located within the Besser Block Shed enclosure, and the compressor must be installed within a ventilated enclosed structure, consistent with the assumptions described in Section 7.2.4.

9 RECOMMENDATIONS

Based on the results of the noise impact assessment, the proposed Function Facility at 235–353 Mill Road, Yabulu is predicted to comply with all relevant noise criteria under worst case operating conditions. To ensure continued compliance and maintain amenity for nearby sensitive receptors, the following is recommended:

- Minimised the number of speakers and maintain inward facing orientation toward the centre of the Entertainment Area.
- Prior to each event, conduct a noise level measurement to ensure amplified music levels do not exceed 81 dB(A) at 3 m per speaker.
- Live band instruments should be connected to the calibrated PA system, ensuring consistent control of sound levels.
- Conduct pre-event briefings with vendors and organisers regarding noise limits, operational conditions and capacity restrictions.
- The site manager or designated responsible person should be present during all functions to oversee compliance with the operational noise conditions.
- Inform patrons to minimise noise when entering and leaving the premises. This includes, but is not limited to:
 - Vehicle stereos should be turned off or operating at low volume with windows closed
 - Prohibition of vehicle horn use
 - Responsible driving behaviour, avoiding excessive engine noise or revving
- The emergency power backup generator must be installed inside the Besser Block Shed enclosure, providing a minimum noise reduction of 20 dB (R_w 20).
- The generator should not exceed the sound power levels detailed in Table 7-6.
- The cool room compressor must be installed within a ventilated enclosed structure providing a minimum noise reduction of 20 dB (R_w 20).

- The cool room compressor should not exceed the sound power levels detailed in Table 7-7.
- Provide the nearest residential noise sensitive receivers with contact details for the venue manager or responsible person for queries, concerns, or complaints.
- Maintain a complaint register, including time, nature of complaint, and corrective actions taken.

10 CONCLUSION

A comprehensive noise impact assessment has been conducted for the proposed operation of the Function Facility at 235-353 Mill Road, Yabulu, QLD, in support of a Material Change of Use application.

An environmental noise survey was conducted to characterise existing background noise levels in the area, and a detailed noise model was developed to predict noise emissions from all proposed activities, including amplified music, live band performances, patron noise, and vehicle movements. Predicted noise levels were assessed against the Acoustic Quality Objectives (including sleep disturbance) and background creep criteria.

The results demonstrate that predicted noise levels comply with the applicable noise limits at the nearest sensitive receptors under worst case operating conditions, including night-time periods.

With the implementation of the recommended operational controls outlined in Section 9, the proposed development is expected to operate without causing adverse noise impacts to surrounding noise sensitive receivers.

Prepared by:



Alvaro Liberona
Senior Acoustic Engineer (MAAS)

Approved by:



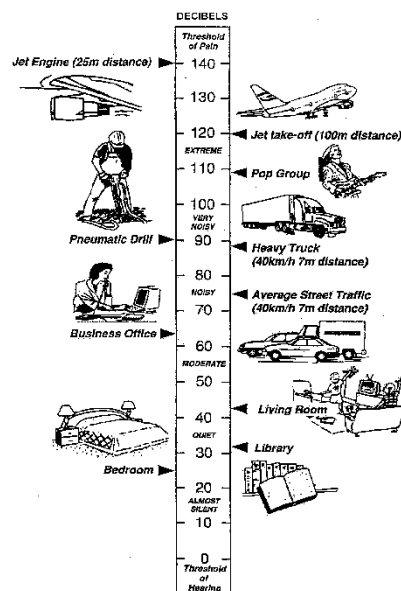
Desmond Raymond
Director

Appendix A – Acoustic Terminology

A-weighted sound pressure	The human ear is not equally sensitive to sound at different frequencies. People are more sensitive to sound in the range of 1 to 4 kHz (1000 – 4000 vibrations per second) and less sensitive to lower and higher frequency sound. During noise measurement an electronic ' <i>A-weighting</i> ' frequency filter is applied to the measured sound level <i>dB(A)</i> to account for these sensitivities. Other frequency weightings (B, C and D) are less commonly used. Sound measured without a filter is denoted as linear weighted <i>dB(linear)</i> .
Ambient noise	The total noise in a given situation, inclusive of all noise source contributions in the near and far field.
Community annoyance	Includes noise annoyance due to: character of the noise (e.g. sound pressure level, tonality, impulsiveness, low-frequency content) character of the environment (e.g. very quiet suburban, suburban, urban, near industry) miscellaneous circumstances (e.g. noise avoidance possibilities, cognitive noise, unpleasant associations) human activity being interrupted (e.g. sleep, communicating, reading, working, listening to radio/TV, recreation).
Compliance	The process of checking that source noise levels meet with the noise limits in a statutory context.
Cumulative noise level	The total level of noise from all sources.
Extraneous noise	Noise resulting from activities that are not typical to the area. Atypical activities may include construction, and traffic generated by holiday periods and by special events such as concerts or sporting events. Normal daily traffic is not considered to be extraneous.
Feasible and reasonable measures	Feasibility relates to engineering considerations and what is practical to build; reasonableness relates to the application of judgement in arriving at a decision, taking into account the following factors: Noise mitigation benefits (amount of noise reduction provided, number of people protected). Cost of mitigation (cost of mitigation versus benefit provided). Community views (aesthetic impacts and community wishes). Noise levels for affected land uses (existing and future levels, and changes in noise levels).
Impulsiveness	Impulsive noise is noise with a high peak of short duration or a sequence of these peaks. Impulsive noise is also considered annoying.
Low frequency	Noise containing major components in the low-frequency range (20 to 250 Hz) of the frequency spectrum.

Noise criteria	The general set of non-mandatory noise levels for protecting against intrusive noise (for example, background noise plus 5 dB) and loss of amenity (e.g. noise levels for various land use).
Noise level (goal)	A noise level that should be adopted for planning purposes as the highest acceptable noise level for the specific area, land use and time of day.
Noise limits	Enforceable noise levels that appear in conditions on consents and licences. The noise limits are based on achievable noise levels, which the proponent has predicted can be met during the environmental assessment. Exceedance of the noise limits can result in the requirement for either the development of noise management plans or legal action.
Performance-based goals	Goals specified in terms of the outcomes/performance to be achieved, but not in terms of the means of achieving them.
Rating Background Level (RBL)	The rating background level is the overall single figure background level representing each day, evening and night time period. The rating background level is the 10 th percentile min L _{A90} noise level measured over all day, evening and night time monitoring periods.
Receptor	The noise-sensitive land use at which noise from a development can be heard.
Sleep disturbance	Awakenings and disturbance of sleep stages.
Sound and decibels (dB)	Sound (or noise) is caused by minute changes in atmospheric pressure that are detected by the human ear. The ratio between the quietest noise audible and that which should cause permanent hearing damage is a million times the change in sound pressure. To simplify this range the sound pressures are logarithmically converted to decibels from a reference level of 2 x 10 ⁻⁵ Pa.

The picture below indicates typical noise levels from common noise sources.



dB is the abbreviation for decibel – a unit of sound measurement. It is equivalent to 10 times the logarithm (to base 10) of the ratio of a given sound pressure to a reference pressure.

Sound power Level (SWL)

The sound power level of a noise source is the sound energy emitted by the source. Notated as SWL, sound power levels are typically presented in $dB(A)$.

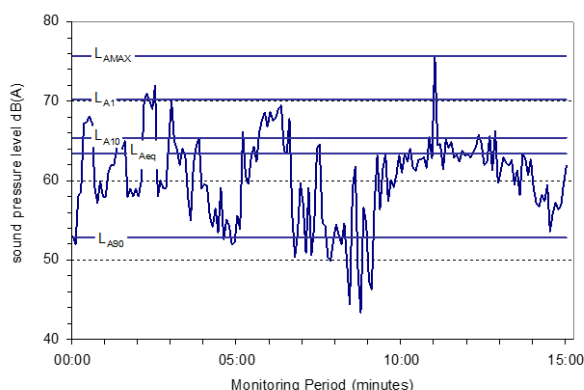
Sound Pressure Level (SPL)

The level of noise, usually expressed as SPL in $dB(A)$, as measured by a standard sound level meter with a pressure microphone. The sound pressure level in $dB(A)$ gives a close indication of the subjective loudness of the noise.

Statistic noise levels

Noise levels varying over time (e.g. community noise, traffic noise, construction noise) are described in terms of the statistical exceedance level.

A hypothetical example of A weighted noise levels over a 15 minute measurement period is indicated in the following figure:



Key descriptors:

L_{Amax} Maximum recorded noise level.

L_{A1} The noise level exceeded for 1% of the 15 minute interval.

L_{A10} Noise level present for 10% of the 15 minute interval. Commonly referred to the average maximum noise level.

L_{Aeq} Equivalent continuous (energy average) A-weighted sound pressure level. It is defined as the steady sound level that contains the same amount of acoustic energy as the corresponding time-varying sound.

L_{A90} Noise level exceeded for 90% of time (background level). The average minimum background sound level (in the absence of the source under consideration).

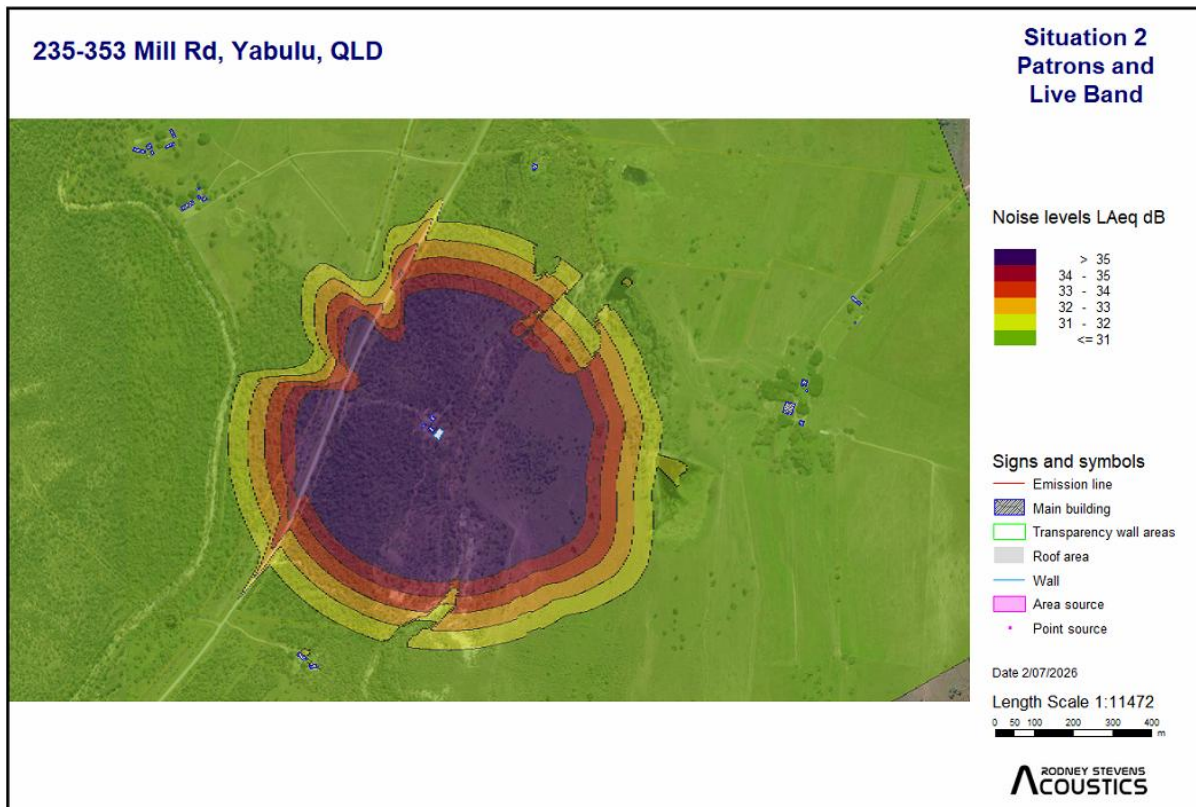
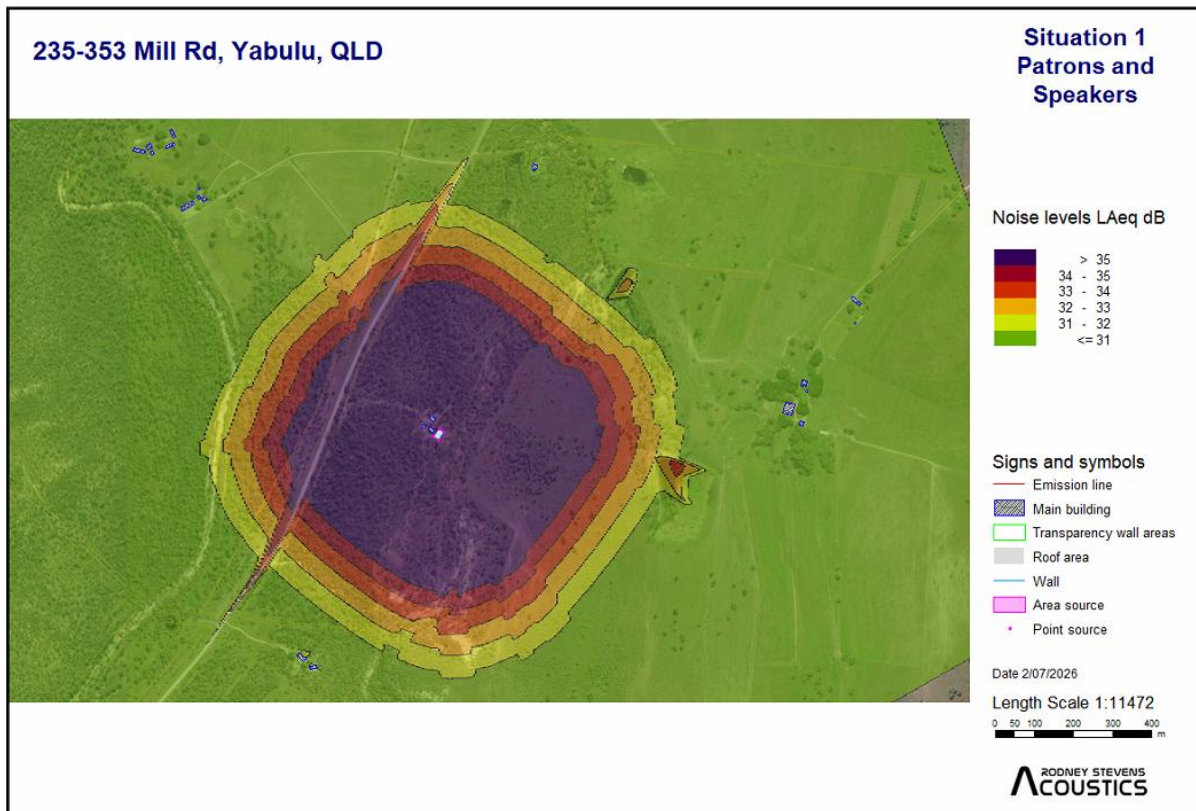
Threshold

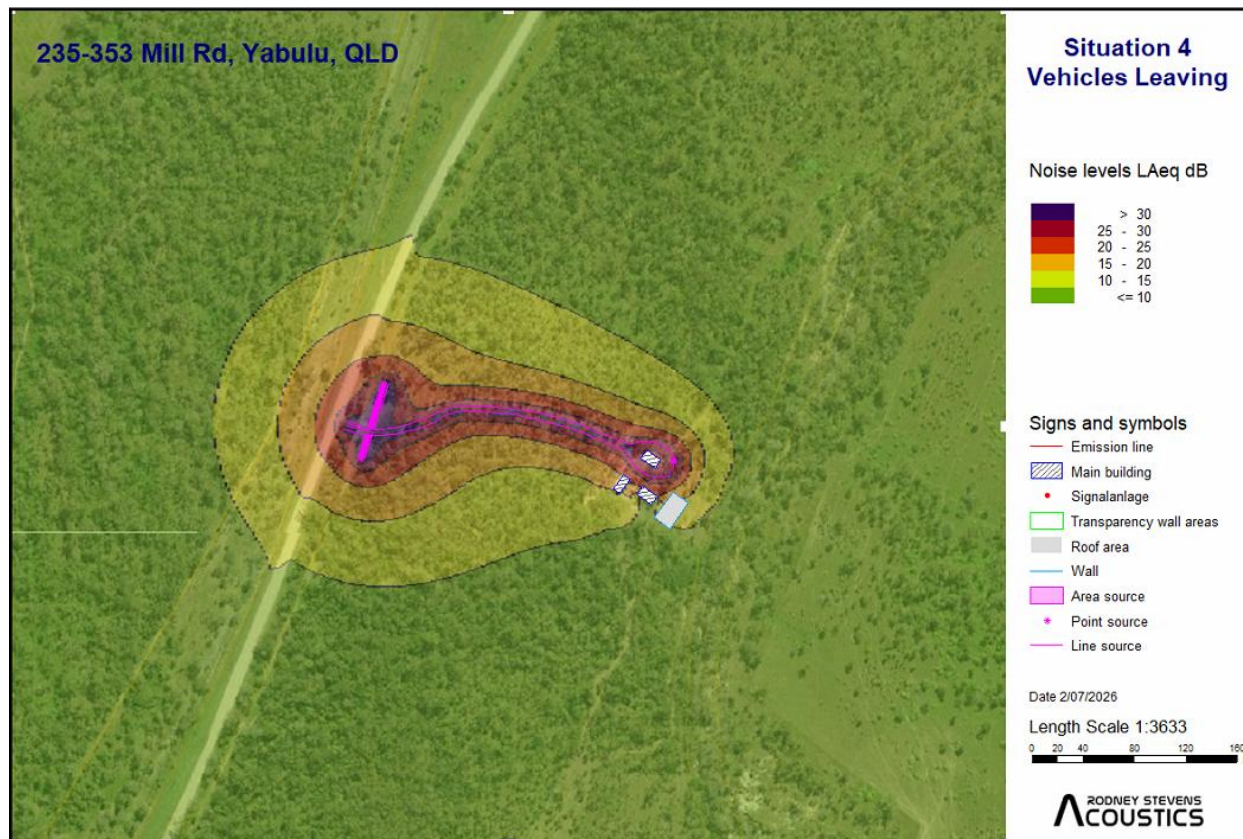
The lowest sound pressure level that produces a detectable response (in an instrument/person).

Tonality

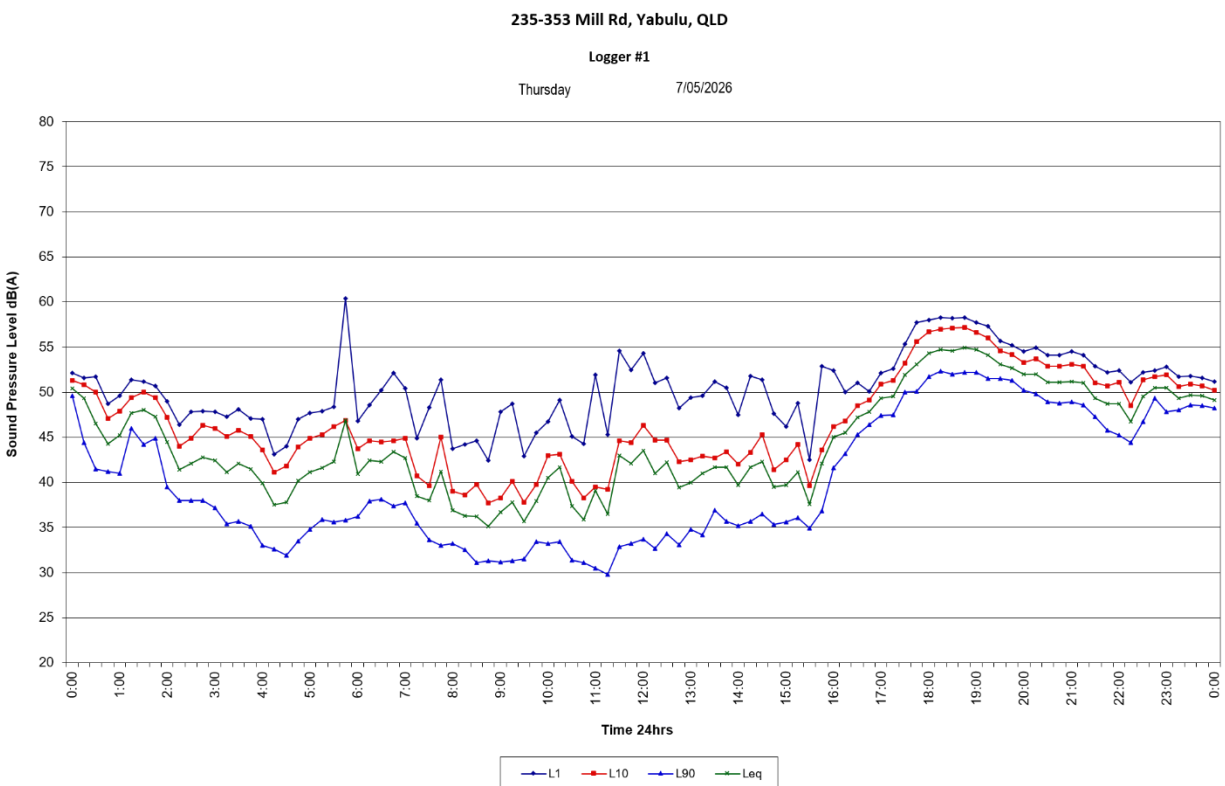
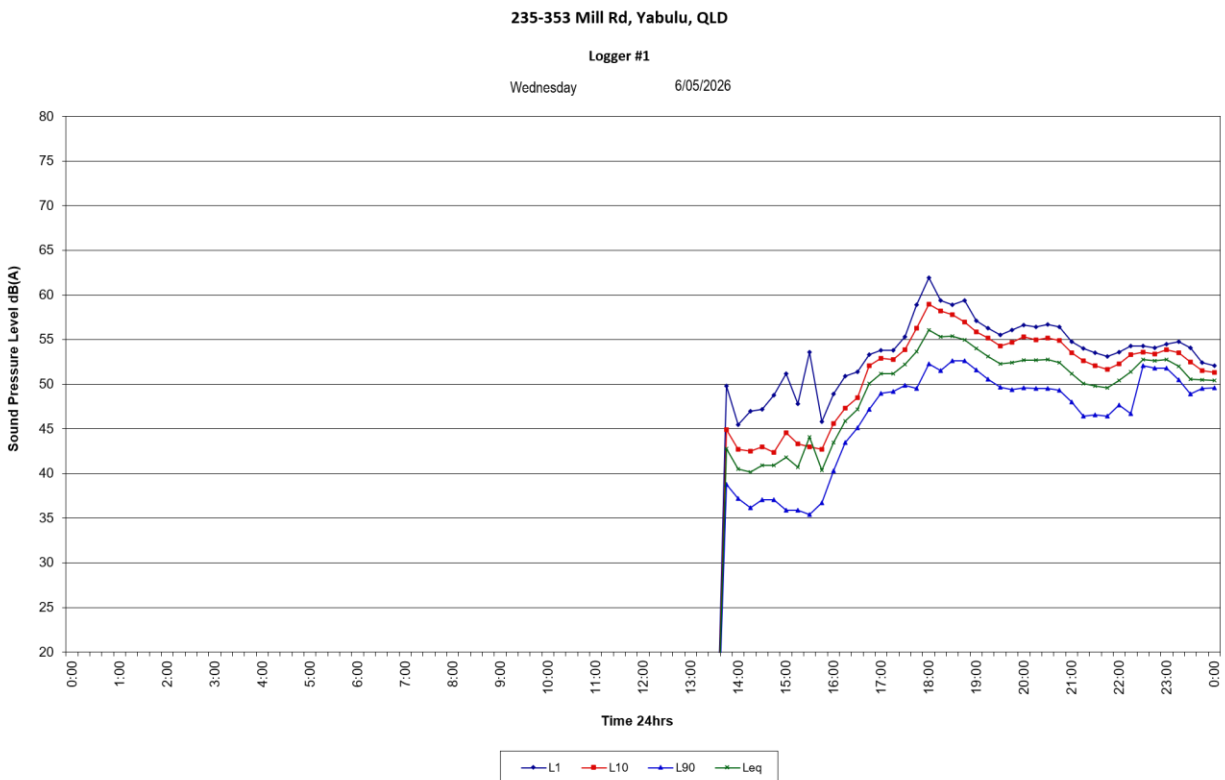
Tonal noise contains one or more prominent tones (and characterised by a distinct frequency components) and is considered more annoying. A 2 to 5 $dB(A)$ penalty is typically applied to noise sources with tonal characteristics

Appendix B – Predicted Noise Contours





Appendix C – Noise logger graphs

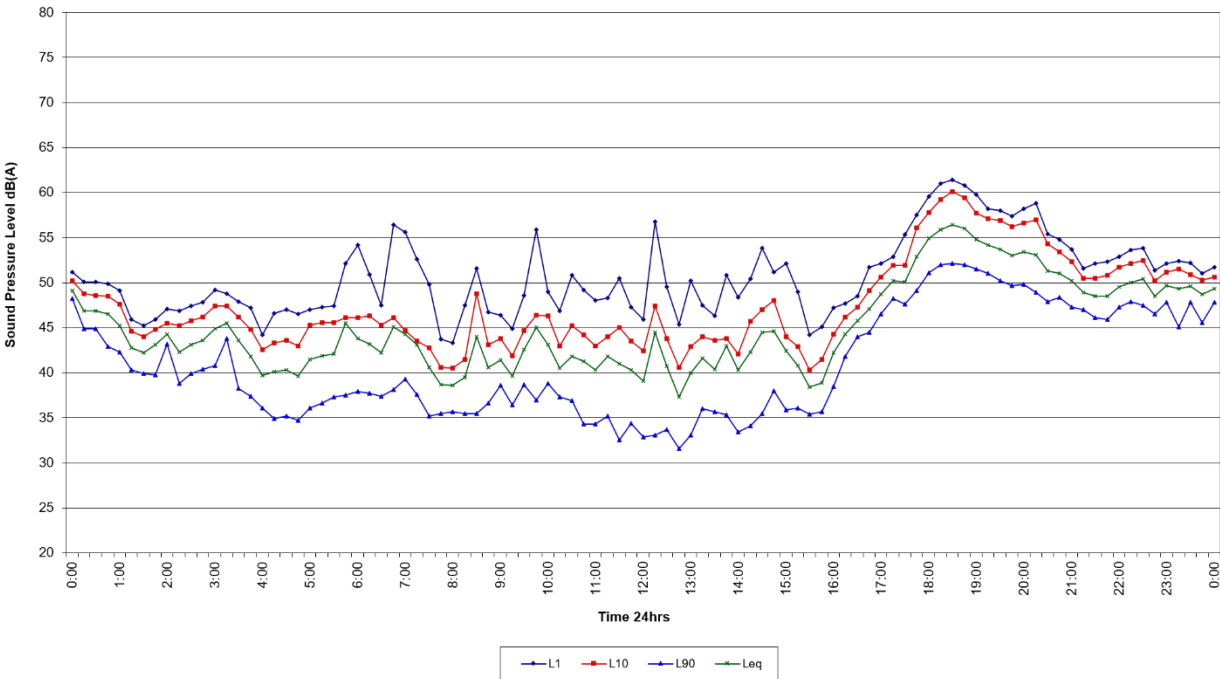


235-353 Mill Rd, Yabulu, QLD

Logger #1

Friday

8/05/2026

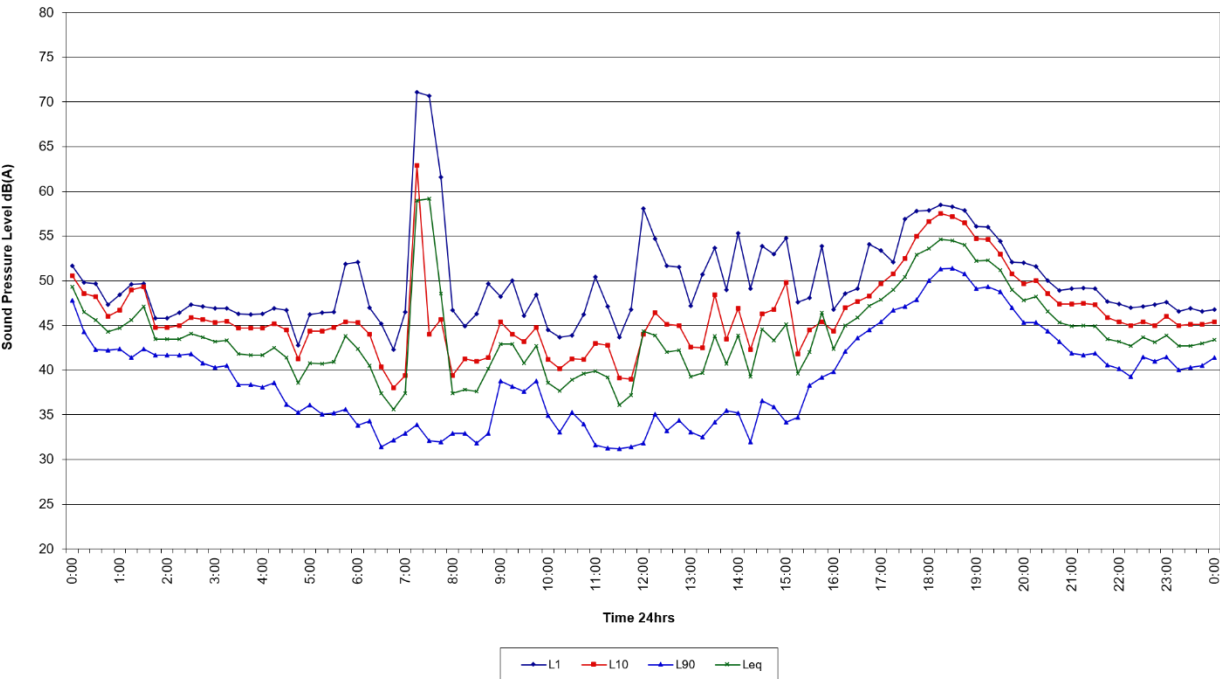


235-353 Mill Rd, Yabulu, QLD

Logger #1

Saturday

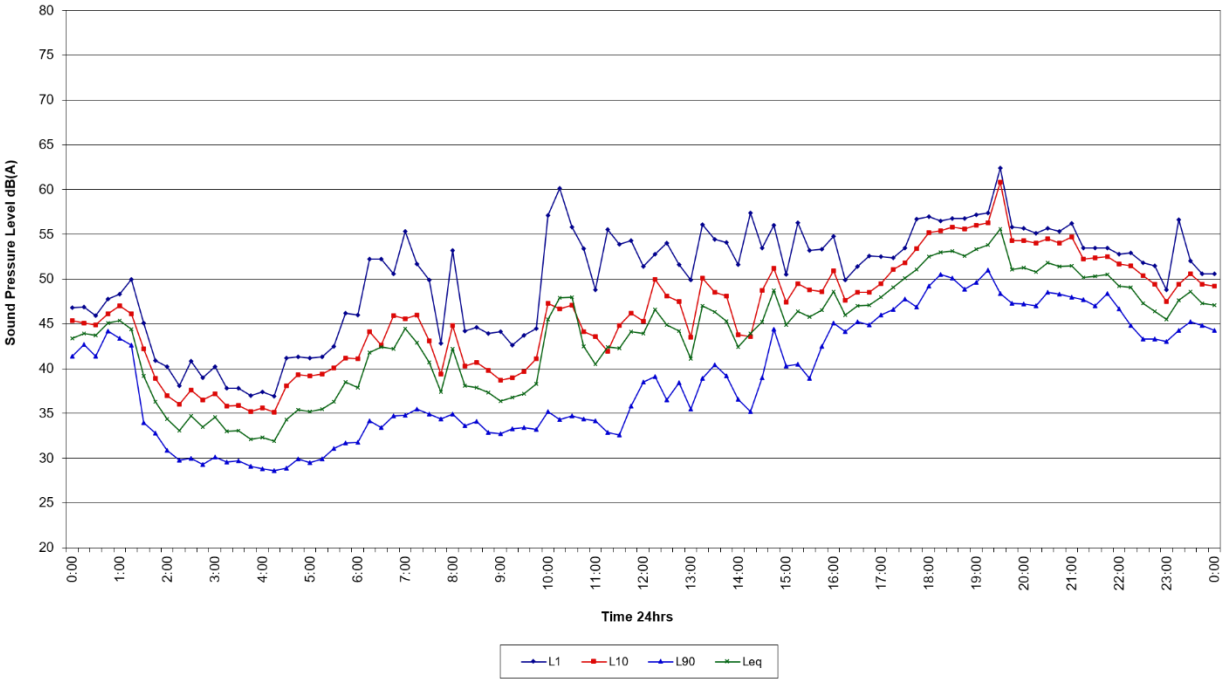
9/05/2026



235-353 Mill Rd, Yabulu, QLD

Logger #1

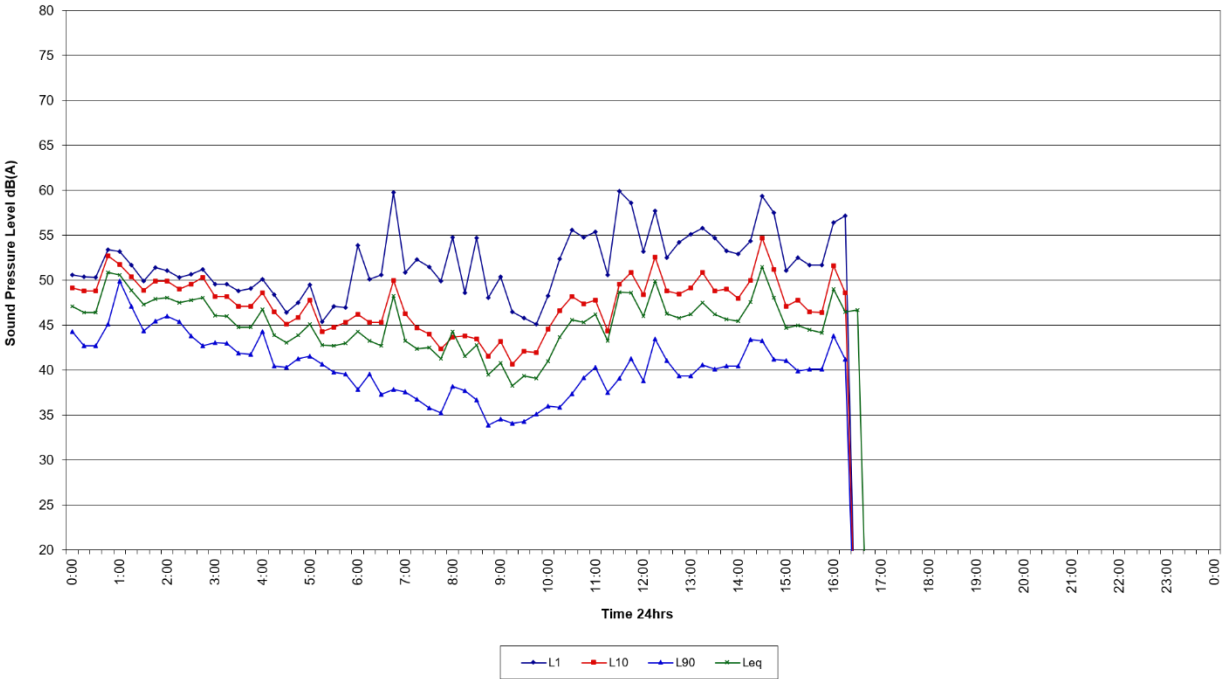
Sunday 10/05/2026



235-353 Mill Rd, Yabulu, QLD

Logger #1

Monday 11/05/2026

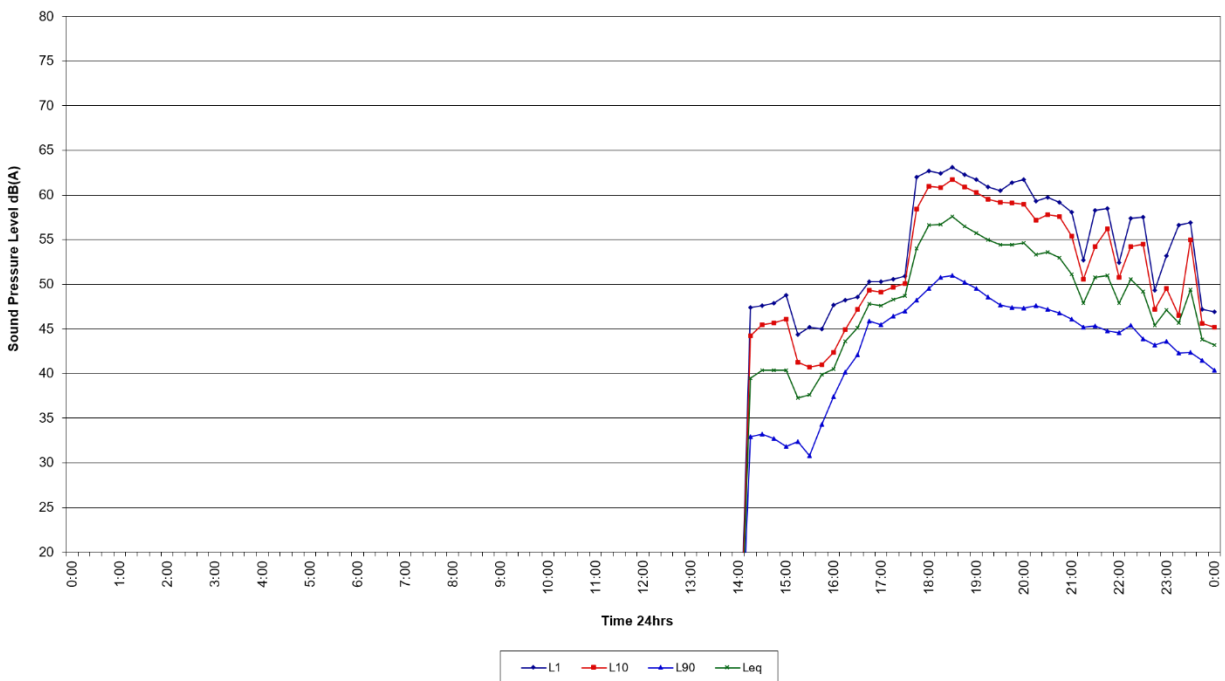


235-353 Mill Rd, Yabulu, QLD

Logger #2

Wednesday

6/05/2026

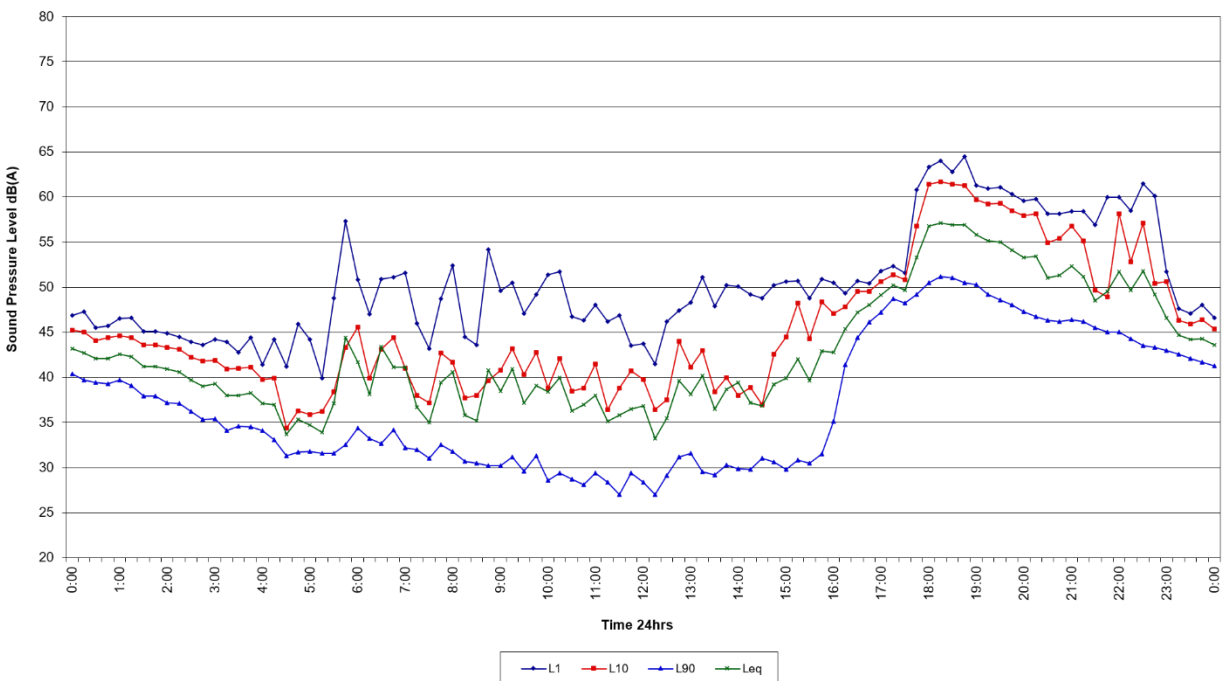


235-353 Mill Rd, Yabulu, QLD

Logger #2

Thursday

7/05/2026

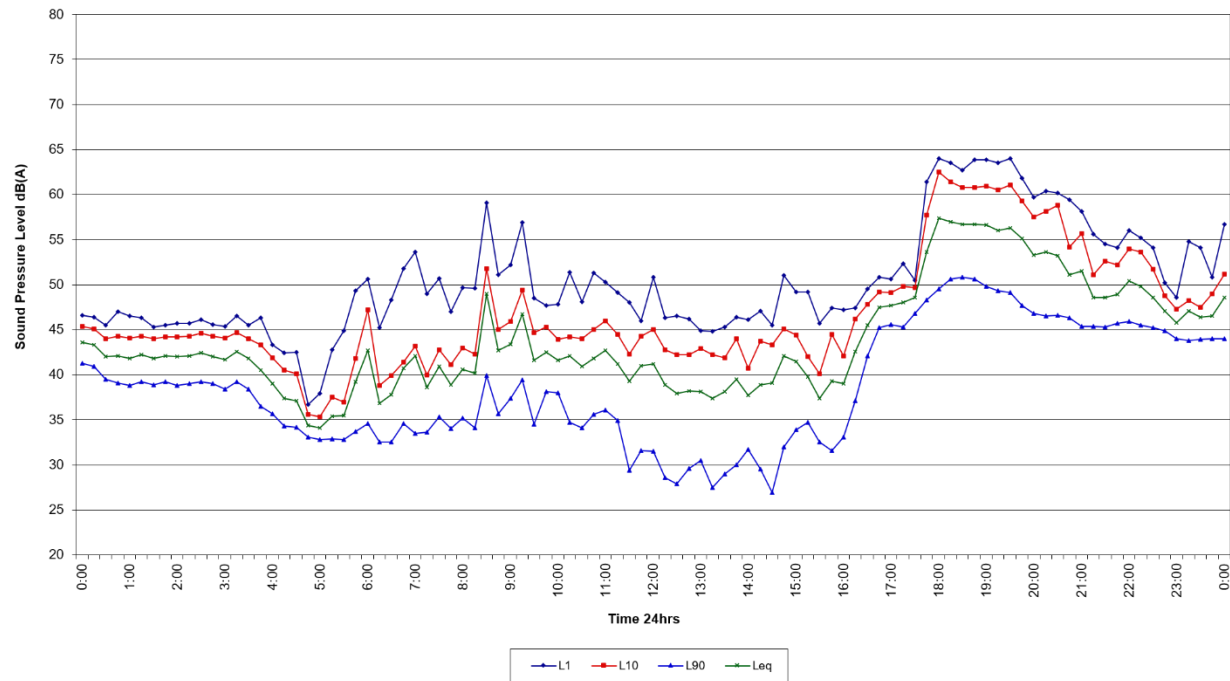


235-353 Mill Rd, Yabulu, QLD

Logger #2

Friday

8/05/2026

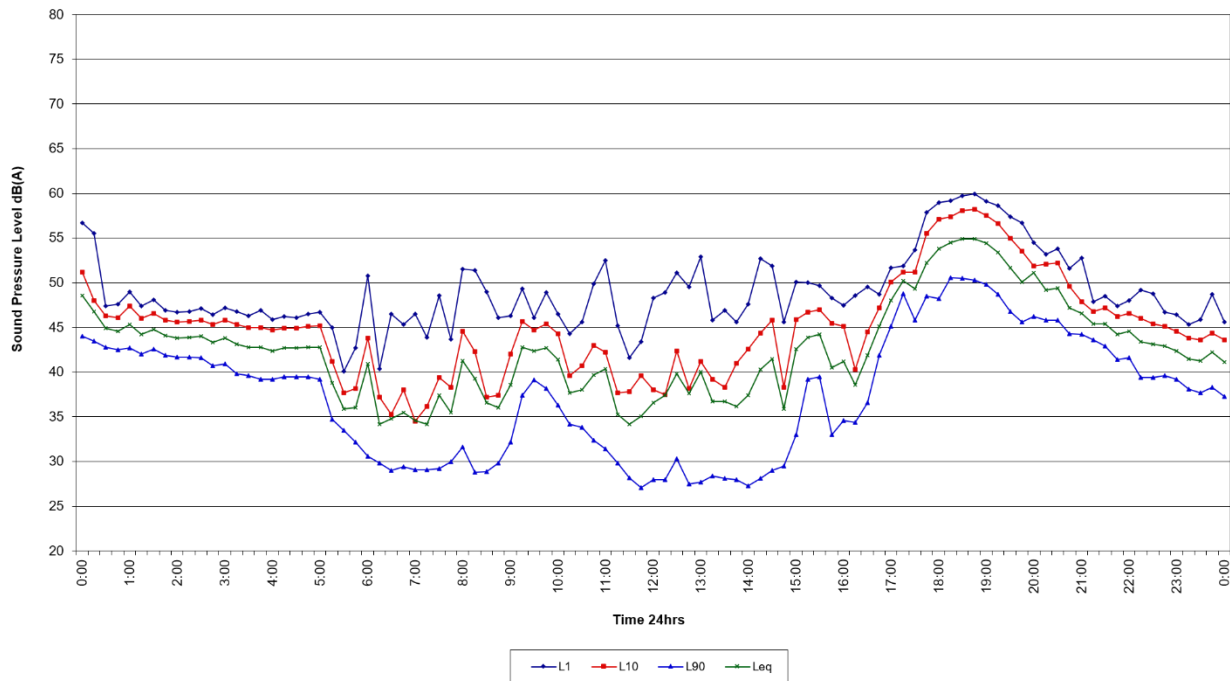


235-353 Mill Rd, Yabulu, QLD

Logger #2

Saturday

9/05/2026

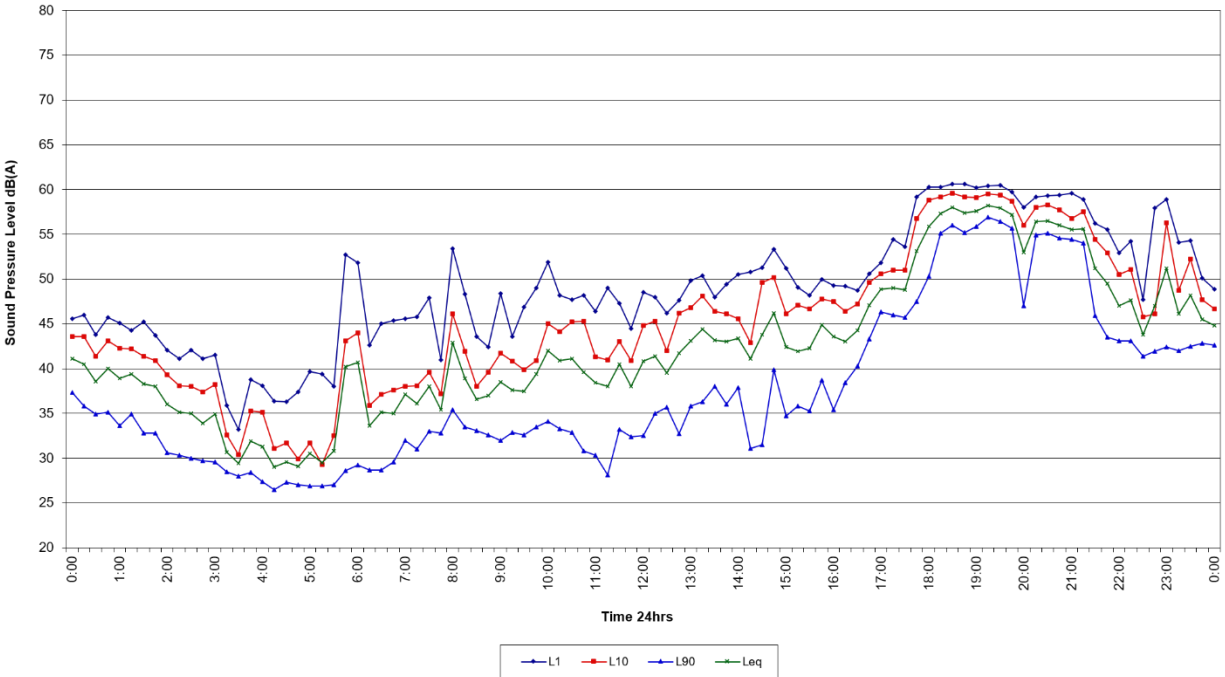


235-353 Mill Rd, Yabulu, QLD

Logger #2

Sunday

10/05/2026

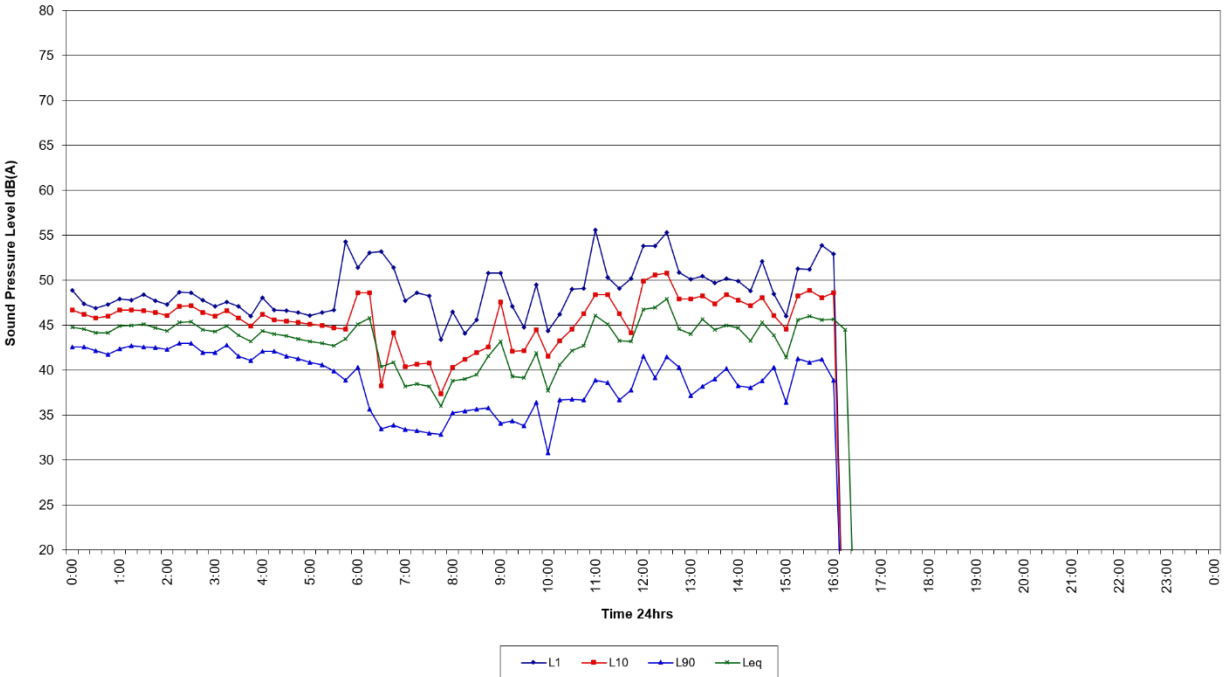


235-353 Mill Rd, Yabulu, QLD

Logger #2

Monday

11/05/2026



Appendix D – Calibration certificates



Sound Level Meter IEC 61672-3:2013 Calibration Certificate Calibration Number C25333-V1

Client Details Rodney Stevens Acoustics Pty Ltd PO Box 522 Wahroonga, NSW, 2076			
Equipment Tested :	<i>Manufacturer</i>	<i>Model</i>	<i>Serial</i>
Instrument :	Rion	NL-42EX	01000322
Microphone :	Rion	UC-52	201990
Pre-amplifier :	Rion	NH-24	25844
Firmware Version :	v2.0		
Pre-Test Atmospheric Conditions		Post-Test Atmospheric Conditions	
Ambient Temperature : 20.5 °C		Ambient Temperature : 20.8 °C	
Relative Humidity : 45.3 %		Relative Humidity : 44.9 %	
Barometric Pressure : 100.54 kPa		Barometric Pressure : 100.57 kPa	
Calibration Technician : Peter Elters		Secondary Check: Rhys Gravelle	
Calibration Date : 04-Jun-2025		Report Issue Date : 05-Jun-2025	
Approved Signatory :		Ken Williams	
Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	N/A
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Uncertainties of Measurement -			
Acoustic Tests	Environmental Conditions		
	Temperature		
	Relative Humidity		
	Barometric Pressure		
125Hz:	±0.13 dB	Temperature	±0.1 °C
1kHz:	±0.13 dB	Relative Humidity	±1.9 %
5kHz:	±0.14 dB	Barometric Pressure	±0.11 kPa
Electrical Tests	±0.13 dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.



This calibration certificate is to be read in conjunction with the calibration test report.

Acoustic Research Labs Pty Ltd is NATA Accredited Laboratory Number 14172.
Accredited for compliance with ISO/IEC 17025 - Calibration.

The results of the tests, calibrations and/or measurements included in this document are traceable to SI units.

NATA is a signatory to the ILAC Mutual Recognition Arrangement for the mutual recognition of the equivalence of testing, medical testing, calibration and inspection reports.

PAGE 1 OF 1



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Sound Level Meter IEC 61672-3:2013 Calibration Test Report

Calibration Number C24524

Client Details	Rodney Stevens Acoustics Pty Ltd PO Box 522 Wahroonga NSW, 2076
Equipment Tested/ Model Number :	NL-42EX
Instrument Serial Number :	00184112
Microphone Serial Number :	192152
Pre-amplifier Serial Number :	72897
Firmware Version :	v2.0
Pre-Test Atmospheric Conditions	Post-Test Atmospheric Conditions
Ambient Temperature : 20 °C	Ambient Temperature : 22.5 °C
Relative Humidity : 53.7 %	Relative Humidity : 49.6 %
Barometric Pressure : 101.64 kPa	Barometric Pressure : 101.61 kPa
Calibration Technician : Peter Elters	Secondary Check: Cooper Sallway
Calibration Date : 8 Jul 2024	Report Issue Date : 8 Jul 2024

Approved Signatory :

Ken Williams

Clause and Characteristic Tested	Result	Clause and Characteristic Tested	Result
12: Acoustical Sig. tests of a frequency weighting	Pass	17: Level linearity incl. the level range control	N/A
13: Electrical Sig. tests of frequency weightings	Pass	18: Toneburst response	Pass
14: Frequency and time weightings at 1 kHz	Pass	19: C Weighted Peak Sound Level	Pass
15: Long Term Stability	Pass	20: Overload Indication	Pass
16: Level linearity on the reference level range	Pass	21: High Level Stability	Pass

The sound level meter submitted for testing has successfully completed the class 2 periodic tests of IEC 61672-3:2013, for the environmental conditions under which the tests were performed.

However, no general statement or conclusion can be made about conformance of the sound level meter to the full requirements of IEC 61672-1:2013 because evidence was not publicly available, from an independent testing organisation responsible for pattern approvals, to demonstrate that the model of sound level meter fully conformed to the requirements in IEC 61672-1:2013 and because the periodic tests of IEC 61672-3:2013 cover only a limited subset of the specifications in IEC 61672-1:2013.

Uncertainties of Measurement -			
Acoustic Tests		Environmental Conditions	
125Hz:	±0.13 dB	Temperature	±0.1 °C
1kHz:	±0.13 dB	Relative Humidity	±1.9 %
8kHz:	±0.14 dB	Barometric Pressure	±0.11 kPa
Electrical Tests	±0.13 dB		

All uncertainties are derived at the 95% confidence level with a coverage factor of 2.



This report applies only to the item tested and shall only be reproduced in full, unless approved in writing by Acoustic Research Labs.

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PAGE 1 OF 16



TRAFFIC IMPACT ASSESSMENT (LOW IMPACT)

235-353 MILL ROAD, YABULU – LOW IMPACT TRAFFIC
IMPACT ASSESSMENT IN RESPONSE TO TCC
INFORMATION REQUEST – FUNCTION FACILITY

FOR
TREVOR HOLLEY C/ EDPI AUSTRALIA

JOB No: MJ2755
Doc Ref: MJ2755-TIA

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Fax: 07 4725 5850
Email: mail@nceng.com.au
50 Punari Street Currajong Qld 4812
Milton Messer & Associates Pty Ltd
ACN 100 817 356 ABN 34 100 817 356

DOCUMENT CONTROL

Rev	Author	Reviewed	Approved		Date	Issued To:	Purpose
A	Brendan Blair	Derek Saw	Derek Saw		15/06/2026	Client	Response to TCC IR

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APPENDIX A

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1.0 INTRODUCTION

1.1 Background

Northern Consulting Engineers (NCE) have been commissioned by Trevor Holley to undertake a Traffic Impact Assessment (TIA) in response to the TCC Information Request relating to the proposed material change of use (MCU) at 235-353 Mill Road, Yabulu.

1.2 Relevant information

The following traffic impact assessment refers to the supporting information outlined below:

- TCC Information Request – MCU26/0019 – Assessment Number: 14306235

1.3 Scope and study area

The proposed development is located within the Townsville City Council (TCC) local government area on a land parcel described as Lot 3 on RP743037. The site is situated approximately 2.5km from the Bruce Highway with the western boundary running parallel to Mill Road. The locality plan can be seen in **Figure 1-1**.

The purpose of the report is to provide a low impact traffic impact assessment in accordance with the TCC City Plan, including justification for the low impact classification.



Figure 1-1 Locality plan

1.4 TCC Information Request

The following information is to be addressed by the following report as per the TCC IR (MCU26/0019) – in particular the request item 5 – traffic impact assessment:

- Request Item 5 – Traffic Impact Assessment – The applicant is requested to provide RPEQ certification of the Low Traffic Impact Assessment.
 - Reason: To demonstrate compliance with the transport impact, access and parking code of the Townsville City Plan.

2.0 LOW IMPACT ASSESSMENT JUSTIFICATION

In accordance with the TCC City Plan SC6.4.5.2 Traffic Impact Assessments (TIA) the TIA Impact Level Assessment Criteria for Rural Areas is as follows:

- To classify as low impact the development must meet the following criteria:
 - New or additional trip generation in a peak hour of less than 30 trips directly accessing a street.
 - Refer to **Section 4.3.1** for confirmation of traffic generation numbers.
 - Less than 30 new or additional commercial vehicles per day.
 - Refer to **Section 4.3.1** for confirmation of traffic generation numbers.
 - If required relocation of any bus zone or taxi rank.
 - There are no bus zones or taxi ranks near the proposed development.
 - No change to existing transport network operation.
 - There are no proposed changes to the existing transport network operation due to the development.

NCE confirm that the proposed development will meet the above criteria, additionally it is noted that proposed use (function facility) will likely only generate sporadic off-peak traffic for the local roads.

3.0 PROPOSED DEVELOPMENT

3.1 Background

The proposed development consists of a MCU from rural residential to functional facility. The proposal intends to develop an entertainment venue to host weddings, parties and other events. The intent is the proposed development to utilise the existing site access and formalise access tracks. On-site car parking will be provided along the Mill Road frontage where a clearing already exists. The development will also consist of the construction of a new service shed, toilet block, kitchen and entertainment area with the maximum attendance for functions being 100 people. Disabled accessible parking will be provided along with a turn-about adjacent to the function area. The development is intended to be constructed over 3-years with the expected completion of works being 2029.

3.2 Development details

3.2.1 Site location

The development site is located approximately 2.5km south of the Bruce Highway along Mill Road as depicted in **Figure 1-1**. The existing site access and existing clearing / future function area is shown in the below **Figure 3-1** relative to adjacent roads and the lot highlighted in the locality plan.

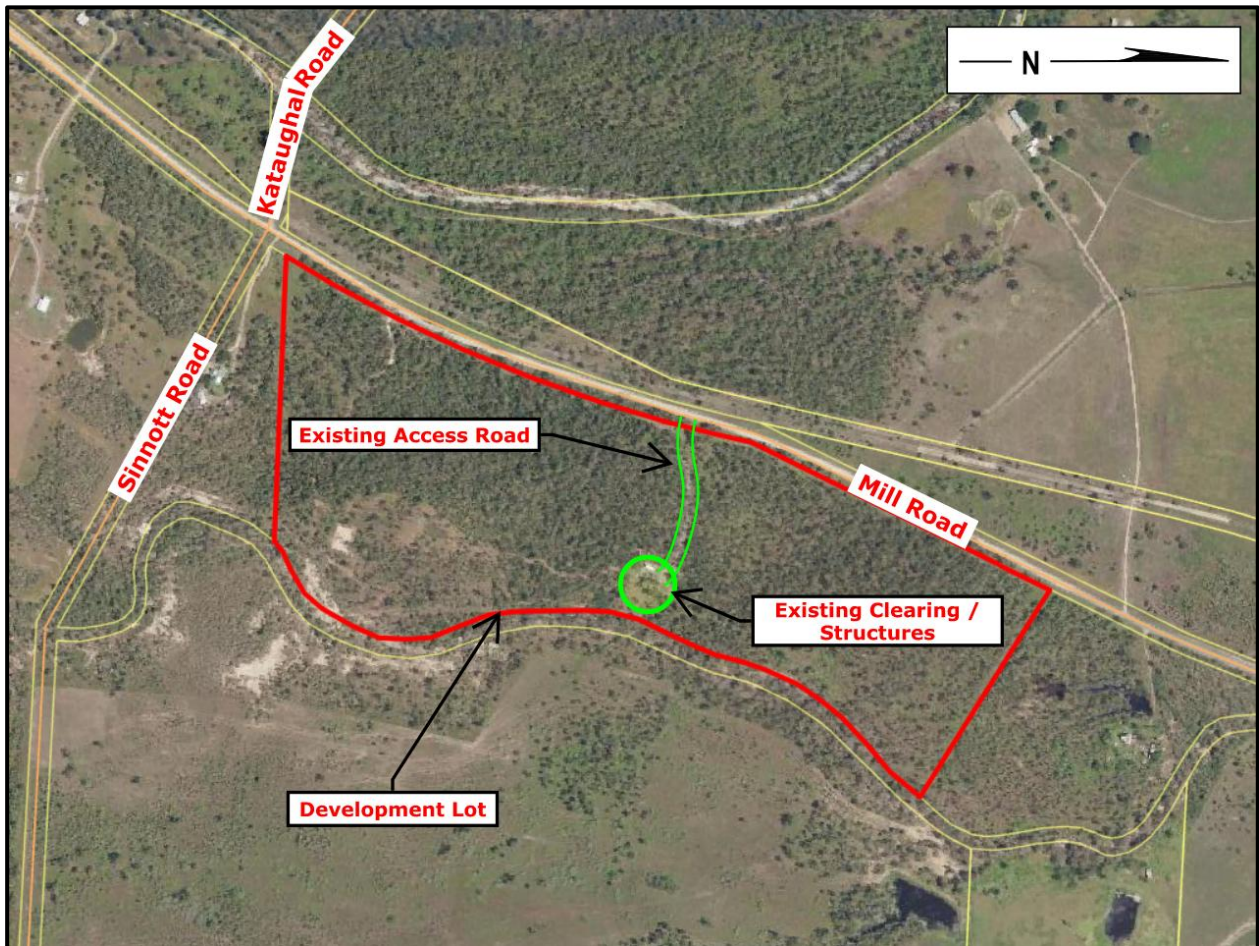


Figure 3-1 Existing access road and clearing (based on Qld Globe imagery)

3.2.2 Existing and proposed land-use

The proposed development lot is currently zoned as “Rural” as per the TownsvilleMAPS – Townsville City Plan online mapping tool. The development proposes to change the site use to “Function Facility” to allow for the use of the site to host events.

3.2.3 Development site plan

The client has provided the proposed site plan shown in **Figure 3-2**. The proposed site will be constructed with the existing clearing shown in **Figure 3-1**. The development is proposed to include:

- Toilet block: 48m²
- Kitchen: 72m²
- Storage / Service Shed: 72m²

- Entertainment Area – Undercover venue (temporary marquee): 288m²

The total gross floor area for the proposed development is 480m².



Figure 3-2 Proposed site plan

3.2.4 Proposed site access and parking

It is proposed that the existing site access and unsealed track to the site clearing will be utilised as the proposed site access with existing clear areas either side of the entrance proposed for use as on-site parking. The client has provided a parking and access plan which has been annotated by NCE, this markup is shown in **Figure 3-3**.

Parking requirements are provided within **Section 4.4**.

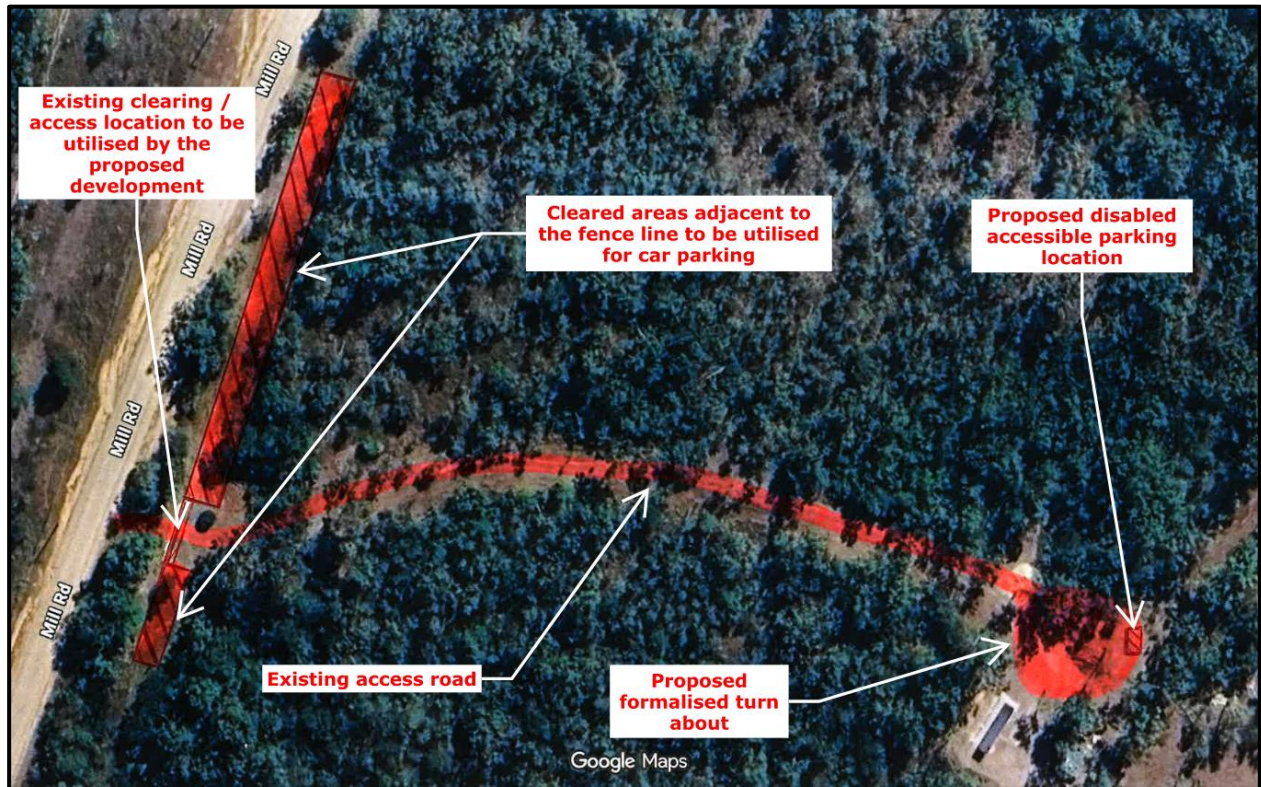


Figure 3-3 Proposed access and parking plan

4.0 TRAFFIC IMPACT ASSESSMENT (LOCAL AUTHORITY)

4.1 Existing road network

The key roads within the vicinity and likely to be utilised by the development are as follows:

- Mill Road – local road only – runs along the frontage of the site and will be utilised for direct access to the development. The development site is ~3km from the Mill Road / Pope Road intersection with the first ~2.4km being sealed and the remainder of Mill Road being an unsealed all-weather road.
- Pope Road – local road only – road connecting the site to the Bruce Highway to the north and Black River Road to the north-east. Access to and from the Bruce Highway is via an auxiliary left turn lane and channelised right turn lane. Access to and from Black River Road and Mill Road is via simple left simple right intersections.
- Black River Road – arterial road – connecting the Bruce Highway to Hervey Range Road. Will likely be utilised by limited development traffic arriving via Hervey Range Road.
- Bruce Highway – major highway – connecting Townsville to Cairns. Will likely be utilised by the majority of development traffic. Existing intersection configuration at Pope Road is likely to be more than sufficient for the proposed development.

4.2 Site access assessment

4.2.1 Access location and layout

As previously noted the site access is located along Mill Road approximately 3km from the intersection with Pope Road. At current no formalised driveway access is in place, however, the existing location is already used for access to the site.

The development will propose to formalise an unsealed driveway access location with appropriate geometry and cleared sight lines to allow for driveway access safety considerations. Local clearing of trees may be necessary to allow adequate visibility of the access and sight lines for exiting traffic.

4.2.2 Sight distances

Safe intersection sight distances (SISD) have been calculated for the proposed access location and compared to the road geometry and any sight line obstructions. The safe intersection sight distance has been calculated utilising a 90th percentile speed of 80km/hr and a reaction time of 2 seconds. The coefficient of deceleration has been taken from Austroads guidelines for unsealed roads. The required SISD calculated from these variables is a minimum of 212m. **Figure 4-1** shows the calculated sight distances based on Qld Globe imagery at the access location.

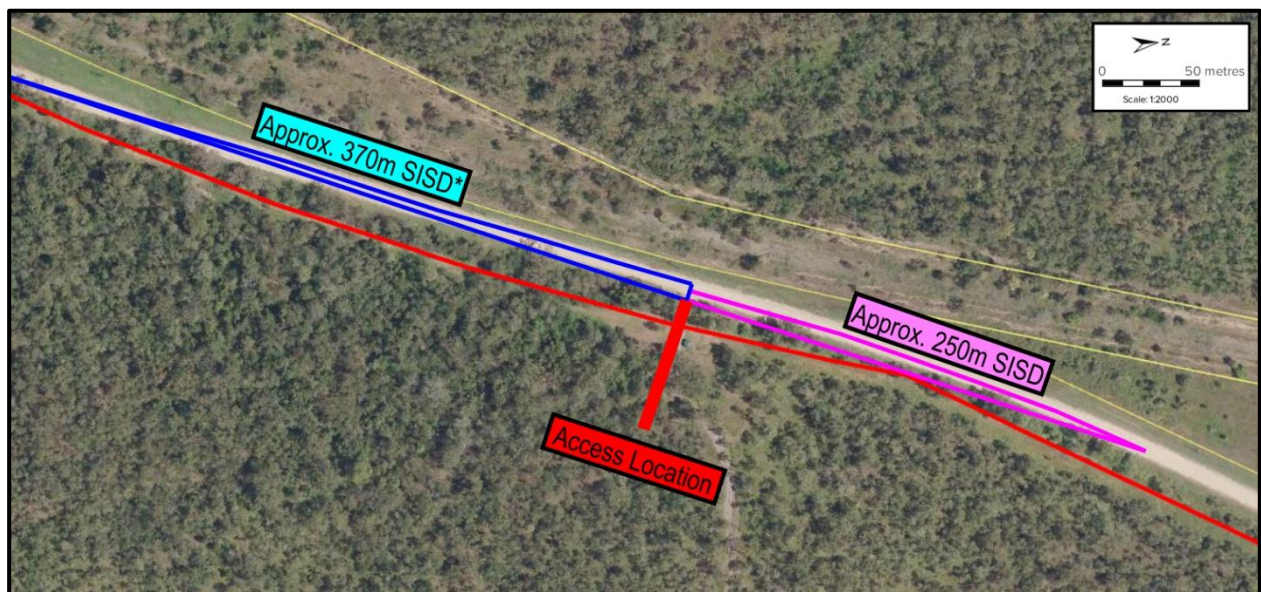


Figure 4-1 Safe intersection sight distances

*Depicted sight distance is limited by the scale of the figure, actual sight distance is equal to approximately 525m.

Sight distance calculations indicate that the proposed access location has more than sufficient stopping sight distance and will not cause any safety issues. Location of trees and other sight line obstructions to be confirmed prior to construction to ensure imagery is representative of site conditions.

4.3 Development Traffic

4.3.1 Development traffic generation

Development traffic generation is determined via a first principles assessment on the maximum number of guests for the development. NCE assume that guests would likely carpool or arrive together to events, particularly given the rural locality. Additionally, it is assumed that 12-seater busses will also be utilised to transport attendees. Therefore, NCE have assumed on average 3 guests would arrive per light vehicle with

two 12-seater busses also being utilised. An additional light vehicle is assumed for catering. The total generated traffic is 27 light vehicles and two busses.

4.3.2 Traffic generation impacts

Given the number of generated vehicles is below the low impact threshold and will likely not coincide with peak hours of local roads, NCE consider that the traffic will not generate any actionable impacts on the transport network operation.

4.4 **Parking**

Townsville City Council's City Plan SC6.10 Parking rates planning scheme policy provides parking rates for a number of land uses. The most applicable to this development being the "Function facility" land use, the provided parking rate for this land use is indicated as "Sufficient spaces to accommodate the amount of vehicle traffic likely to be generated by the particular use.". Based on the generated traffic numbers NCE recommend a minimum of 27 car parking spaces and additional parking or drop off / pick up facilities for buses / coaches, an additional disabled accessible space will be supplied adjacent to the facilities as part of the access turnabout.

5.0 **CONCLUSIONS AND RECOMMENDATIONS**

In summary, the low impact assessment has found the following key findings:

- There is sufficient safe intersection sight distance for the proposed development access,
- A formalised access will be provided for the site to account for sight distance requirements for exiting traffic and to reduce confusion of road users about the location and geometry of the access,
- Calculated traffic generation rates are within the limits for a low impact assessment within a rural area,
- Generated traffic will not cause actionable impact due to its magnitude and the likelihood of the traffic generation occurring in off-peak hours,
- Parking inclusive of disabled accessible facilities will be provided on-site for the generated traffic.

A signed Traffic Impact Assessment Certification can be found in the **Appendices**.

APPENDIX A

Certification Statement and Authorisation

Appendix B: Traffic impact assessment certification

Certification of Traffic Impact Assessment Report

Registered Professional Engineer Queensland

for

Project title:	Function Facility, 235-353 Mill Road, Yabulu. QLD 4818 Lot 3 on RP742037 Traffic Impact Assessment (MJ)
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As a professional engineer registered by the Board of Professional Engineers of Queensland pursuant to the *Professional Engineers Act 2002* as competent in my areas of nominated expertise, I understand and recognise:

- the significant role of engineering as a profession, and that
- the community has a legitimate expectation that my certification affixed to this engineering work can be trusted, and that
- I am responsible for ensuring its preparation has satisfied all necessary standards, conduct and contemporary practice.

As the responsible RPEQ, I certify:

- I am satisfied that all submitted components comprising this traffic impact assessment, listed in the following table, have been completed in accordance with the *Guide to Traffic Impact Assessment* published by the Queensland Department of Transport and Main Roads and using sound engineering principles, and
- where specialised areas of work have not been under my direct supervision, I have reviewed the outcomes of the work and consider the work and its outcomes as suitable for the purposes of this traffic impact assessment, and that
- the outcomes of this traffic impact assessment are a true reflection of results of assessment, and that
- I believe the strategies recommended for mitigating impacts by this traffic impact assessment, embrace contemporary practice initiatives and will deliver the desired outcomes.

Name:	Derek Saw	RPEQ No:	7363
RPEQ competencies:	Civil		
Signature:		Date:	12th June 2026
Postal address:	50 Punari Street, Currajong. 4812		
Email:	derek.saw@nceng.com.au		

Traffic impact assessment components to which this certification applies	✓
1. Introduction	
Background	✓
Scope and study area	✓
Pre-lodgement meeting notes	✓
2. Existing Conditions	
Land use and zoning	✓
Adjacent land uses / approvals	✓
Surrounding road network details	✓
Traffic volumes	✓
Intersection and network performance	
Road safety issues	✓
Site access	✓
Public transport (if applicable)	✓
Active transport (if applicable)	
Parking (if applicable)	✓
Pavement (if applicable)	
Transport infrastructure (if applicable)	✓
3. Proposed Development Details	
Development site plan	✓
Operational details (including year of opening of each stage and any relevant catchment / market analysis)	✓
Proposed access and parking	✓
4. Development Traffic	
Traffic generation (by development stage if relevant and considering light and heavy vehicle trips)	✓
Trip distribution	✓
Development traffic volumes on the network	✓
5. Impact Assessment and Mitigation	
With and without development traffic volumes	✓
Construction traffic impact assessment and mitigation (if applicable)	
Road safety impact assessment and mitigation	✓
Access and frontage impact assessment and mitigation	✓
Intersection delay impact assessment and mitigation	
Road link capacity assessment and mitigation	
Pavement impact assessment and mitigation	
Transport infrastructure impact assessment and mitigation	✓
Other impacts assessment relevant to the specific development type / location (if applicable)	✓

Traffic impact assessment components to which this certification applies	✓
<i>6. Conclusions and Recommendations</i>	
Summary of impacts and mitigation measures proposed	✓
Certification statement and authorisation	✓
<i>[change above and / or insert other component as needed]</i>	