

ATTACHMENT 7

Noise Impact Assessment

Prepared by:

MWA Environmental



NOISE IMPACT ASSESSMENT
PROPOSED SHOPPING CENTRE
81 SAVAGE STREET
COOKTOWN

Prepared for:
Kwikbridge Pty Ltd
c/- Property Projects Australia

Prepared by:
MWA Environmental

5 December 2023

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1.0 INTRODUCTION

1.1 STUDY BRIEF

MWA Environmental has been engaged to prepare a Noise Impact Assessment for a proposed shopping centre development at 81 Savage Street, Cooktown.

The assessment has considered the potential impact of noise emissions from the proposed development at surrounding noise sensitive receptors. The assessment is based on ambient noise monitoring conducted on site, noise measurements previously conducted on typical sources associated with the proposed use and detailed noise propagation modelling.

The report has been prepared in response to Item 11 of the Cook Shire Council Information Request (reference LM:Imc DA/4677:AD2023/0004947, dated 19 September 2023).

1.2 SITE DESCRIPTION

The subject site is located at 81 Savage Street, Cooktown and has a real property description of Lot 212 on C17915.

The site is zoned medium density residential. Surrounding land uses are described as follows:

To the North:	Vacant medium density residential land and the Cooktown Hardware with Charlotte Street beyond. The site building structure will shield noise emissions from the development towards residential land to the north.
To the East:	Harrigan Street with Low Density Residential zoned land beyond containing some existing residential dwellings and some vacant land.
To the South:	Savage Street with Medium Density Residential zoned land beyond containing some existing residential dwellings and some vacant land.
To the West:	Low Density Residential zoned land is located to the west. There is an existing residential dwelling located on the adjacent allotment to the west with other residential dwellings located beyond.

The location of the subject site and surrounding land uses are shown on **Figure 1**, with site and surrounding land use zoning shown on **Figure 2**.

1.3 PROPOSED DEVELOPMENT

The proposed development is for a supermarket and specialty shop (liquor store and laundry) development. The supermarket tenancy will have a GFA of 2,038m², the liquor store tenancy will have a GFA of 150m² and the laundry tenancy will have a GFA of 84m².

Site entry/egress is from driveways to Savage Street at the southwest corner of the site or to Harrigan Street at the eastern part of the site. A site exit is also proposed to Harrigan Street at the northeast corner of the site. 83 car parking spaces are proposed to the south of the site building which includes customer car parking, car and trailer parking and EV parking / charging stations. A drive through lane located to the east of the site building is also proposed for the liquor store.

The delivery vehicle loading/unloading area is located to the south of the site building on the western part of the site.

Major mechanical plant and equipment will be located on the south western part of the roof top on a screened dedicated plant deck and within a plant room for the supermarket at the mezzanine level.

The proposed trading hours for the various components of the development are as follows:

Supermarket trading hours:	7am to 8pm Monday to Friday 8am to 6pm Saturday 9am to 5pm Sunday
Supermarket balance hours:	After hours for bakers, night fill activities etc. to be conducted at internal areas only – no trading.
Liquor store:	10am to 8pm Monday to Friday 10am to 6pm Saturday 10am to 5pm Sunday
Laundry:	7am to 8pm Monday to Friday 8am to 6pm Saturday 9am to 5pm Sunday
Servicing and loading area:	7am to 6pm
Refuse collection:	7am to 6pm

The proposed development plans are included as **Attachment 1**.

2.0 EXISTING NOISE ENVIRONMENT

2.1 EXISTING NOISE LEVELS

To enable an assessment of the existing noise at the subject site and surrounding land uses, noise measurements have been undertaken using a noise datalogger placed adjacent the western site boundary over an eight day period from 30 October to 6 November 2023.

The noise datalogger location is shown on **Figure 3**. The datalogger recorded noise levels are included as graphical traces of noise level versus time in **Attachment 2**. The datalogger used was a Norsonic NOR-139 noise datalogger, pre-calibrated to 94 dB at 1kHz using a Bruel & Kjaer Sound Level Calibrator, Type 4231. At post-calibration the datalogger exhibited less than ± 0.5 dB deviation.

The results of the noise datalogger measurements are summarised in **Table 1** below. The weather conditions were generally fine with light to moderate winds. The recorded noise levels are presented as statistical components, which are described as:

- L_{max} : Maximum noise level recorded during the measurement period, referred to as the maximum sound pressure level.
- L_{10} : Noise level exceeded for 10 percent of the measurement period, referred to as the averaged maximum sound pressure level.
- L_{90} : Noise level exceeded for 90 percent of the measurement period. AS1055–2018¹ notes that the L_{90} is described as the background sound pressure level.
- L_{eq} : An “average” measurement, and as per AS1055–2018 defined as the value of the sound pressure level of a continuous steady sound state, that within a measurement period, has the same mean square sound pressure as a sound under consideration whose level varies with time.

¹ Australian Standard AS 1055-2018 Acoustics – Description and measurement of environmental noise, Part 1: General procedures

**Table 1: Ranges of Datalogger Recorded Statistical Noise Levels
30 October to 6 November 2023 – 15 Minute Averages**

PARAMETER	PERIOD	RECORDED NOISE LEVELS – dB(A)		
		MINIMUM	MAXIMUM	AVERAGE
L_{max}	Daytime (7am-6pm)	53.9	88.3	66.3
	Evening (6pm-10pm)	48.5	77.7	59.6
	Night-time (10pm-7am)	42.3	76.7	57.3
L₁₀	Daytime (7am-6pm)	42.3	55.8	48.8
	Evening (6pm-10pm)	38.1	55.6	47.8
	Night-time (10pm-7am)	35.1	56.1	44.3
L₉₀	Daytime (7am-6pm)	32.2	43.0	38.1
	Evening (6pm-10pm)	31.3	41.9	37.4
	Night-time (10pm-7am)	26.7	41.0	32.8
L_{eq}	Daytime (7am-6pm)	40.6	58.1	46.3
	Evening (6pm-10pm)	35.3	54.6	45.0
	Night-time (10pm-7am)	32.5	54.7	41.5

Key statistical noise level parameters included:

Rating Background Level 7am to 6pm	=	37 dB(A)
Rating Background Level 6pm to 10pm	=	37 dB(A)
Rating Background Level 10pm to 7am	=	30 dB(A)

3.0 NOISE CRITERIA

The Cook Shire Council planning scheme policies do not prescribe specific criteria for assessment of noise emissions from the development. It is therefore considered that noise assessment against the *Environmental Protection (Noise) Policy* would be an acceptable form of assessment.

3.1 ACOUSTIC QUALITY OBJECTIVES

The *Environmental Protection (Noise) Policy 2019* specifies Acoustic Quality Objectives for sensitive receptors to enhance or protect acoustic amenity. The applicable Acoustic Quality Objectives from Schedule 1 of the policy are presented in **Table 2**.

Table 2: Adopted Acoustic Quality Objectives

SENSITIVE RECEPTOR	PERIOD	ACOUSTIC QUALITY OBJECTIVES (MEASURED AT THE RECEPTOR) DB(A)			ENVIRONMENTAL VALUE
		(L _{Aeq,adj,1-hour})	(L _{A10,adj,1-hour})	(L _{A1,adj,1-hour})	
Dwelling (for outdoors)	7am to 10pm	50	55	65	Health and wellbeing
Dwelling (for indoors)	7am to 10pm	35	40	45	Health and wellbeing
	10pm to 7am	30	35	40	Health and wellbeing in relation to the ability to sleep

Previous experience with noise measurements conducted at shopping centres demonstrates that the most stringent of the Acoustic Quality Objective parameter for dwellings are the L_{Aeq} levels for each period of the day.

A typical 7 dB(A) reduction by the building envelope with windows open can be considered to derive the representative external noise criteria from the respective indoors noise limits². Thus, the adopted acoustic quality objective limit external to surrounding residential dwellings for the proposed operating period 7am to 8pm is $35 + 7 = 42$ **dB(A)** L_{Aeq,1hr}. Similarly, for plant and equipment that operates during all periods of the day, the adopted acoustic quality objective limit external to surrounding residential dwellings is $30 + 7 = 37$ **dB(A)** L_{Aeq,1hr}.

² AS3671 states approximate 10 dB(A) noise reduction through a façade with 10% open area. Thus approximately 7 dB(A) noise reduction through a façade with 20% open area. A large 1200x1800 sliding window relates to approximately 10% open area. A large 2100x2300 sliding glass door represents approximately 20% open area. Thus, 7dB(A) noise reduction is conservatively adopted based upon a large sliding glass door in the affected façade. Openings larger than 20% open area are unlikely to be necessary for ventilation during the late evening and night periods.

It is also considered relevant to consider noise criteria using the Controlling Background Creep noise provisions of Part 4, Section 10 of the *Environmental Protection (Noise) Policy 2008*.

3.2 CONTROLLING BACKGROUND CREEP

Part 4, Section 10 of the *Environmental Protection (Noise) Policy (2008)* provides 'controlling background creep' noise criteria for the assessment of amenity impacts for an activity involving noise. Whilst these specific provisions have been removed from the *Environmental Protection (Noise) Policy (2019)* these 'background plus excess' noise criteria schemes and prevention of unreasonable background creep are relevant considerations for the assessment of the intrusiveness of a noise source.

Considering the nature of mechanical plant noise emissions, the relevant 'controlling background creep' criteria are specified as 'continuous noise', while all other noise sources associated with the development, including carparking, vehicle movements and loading/servicing activities, are considered as 'noise that varies over time', as per the following:

10 Controlling Background Creep

(1) *This section states the management intent for an activity involving noise.*

Note—

See section 51 of the Environmental Protection Regulation 2008.

(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 $L_{A90,T}$;*

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

As such, the adopted noise criteria for the assessment of noise impacts from the proposed development are that:

- the noise from **mechanical plant** (continuous steady-state noise) measured as the $L_{A90,adj,T}$ does not exceed the otherwise prevailing $L_{A90,T}$; and
- the **overall noise** from the use measured as the $L_{Aeq,adj,T}$ including carparking, vehicle movements and loading/servicing activities (noise that varies over time) does not exceed the otherwise prevailing $L_{A90,T}$ by more than 5 dB(A).

The applicable criteria for the development are presented in **Table 3**, conservatively based upon the Rating Background Level statistical parameter measured by the noise datalogger during each period of the day. The acoustic quality objective noise limits have also been included in **Table 3**.

Table 3: Adopted Overall Development Noise Criteria At Surrounding Residential Receptors

Period	Rating Background Noise Level (L_{A90}) – dB(A)	Mechanical Plant Noise Criteria (L_{A90}) – dB(A)	Overall Noise Criteria (L_{Aeq}) – dB(A)
Daytime (7am to 6pm)	37	37	42
Evening (6pm to 10pm)	37	37	42
Day and Evening (7am to 10pm)	Acoustic Quality Objective	-	42
Night (10pm to 7am)	30	30	-
Night (10pm to 7am)	Acoustic Quality Objective	37	-

4.0 NOISE IMPACT ASSESSMENT

4.1 NEAREST NOISE SENSITIVE RECEPTORS

Assessment of potential noise impacts from the proposed development has been made at representative surrounding existing residential dwellings as shown on **Figure 4** and described below.

R1 (Northeast):	Residential dwelling at 8 Harrigan Street
R2 (East):	Residential dwelling at 29 Hope Street
R3 (Southeast):	Residential dwelling at 42 Hope Street
R4 (South):	Residential dwellings at 80-84 Savage Street
R5 (Southwest):	Residential dwelling at 71 Savage Street
R6 (West):	Residential dwelling at 75 Savage Street
R7 (Northwest):	Residential dwelling at 44 Charlotte Street

4.2 PLANT AND EQUIPMENT NOISE

External plant and equipment associated with the proposed supermarket and specialty shop uses will consist of air-conditioning units, refrigeration condensers and exhaust fans to be located in a dedicated plant deck on the roof top of the building and within a supermarket plant room on the mezzanine level.

The detailed specification of the mechanical plant has not been undertaken at this time but experience with other similar developments provides a basis for assessment of indicative equipment. Major external plant and equipment will be located on the roof top within a screened plant condenser deck. For this development application assessment, the plant condenser deck has been assessed with acoustic screening to a height of 1 metre above the tallest plant noise source to the full perimeter of the proposed condenser deck. The acoustic screening requirements should be reviewed at the detailed design stage once mechanical plant specifications and selections are available.

Experience dictates that appropriate noise controls are feasible to achieve the noise limits using modern plant, ensuring that surrounding sensitive land use amenity is not adversely impacted by the required mechanical plant and equipment.

The supermarket plant room will likely contain two refrigeration compressors units in addition to an AHU fan, such that a design noise level within the plant room is 93 dB(A) SWL. The plant room is to be constructed of blockwork or precast concrete panel and should be appropriately ventilated using acoustic louvres. The following plant room design should be considered during the detailed design stage:

- The plant room will require a wall and roof component that should achieve an Rw 40+.
- Wall and roof areas of the plant room shall be lined with perforated metal sheeting with insulation material internally.
- Vibration isolation of equipment shall be designed so that all items of equipment and associated connecting systems shall be isolated from the building.
- Acoustic louvres are to be provided for the open ventilation area facing away from adjacent sensitive land uses if possible.

Typical external noise source levels for likely external plant required for the development, such as air-conditioning units, refrigeration condensers and exhaust fans are as per **Table 4** as octave band source noise level (sound power level). The supermarket plant room has also been represented in the noise model as an industrial building source.

Table 4: Typical Roof Top Mechanical Plant Noise Source Levels – SWL

Plant	Sound Power Level - dB								SWL dBA
	Octave Band (Hz)								
	63	125	250	500	1	2	4	8	
	Hz	Hz	Hz	Hz	kHz	kHz	kHz	kHz	
Supermarket Condenser Unit	61	80	80	85	84	79	73	65	88
Dehumidifier Condenser Fan	86	81	83	85	82	79	76	72	87
Supply Fan 1	74	71	71	69	70	70	71	66	77
Supply Fan 2	67	65	59	60	53	47	43	41	60
Heat Pump	-	67	74	79	81	77	75	68	85
Large A/C Units (x2)	-	78	78	77	75	71	69	64	80
Liquor store Refrigeration Unit	-	65	72	77	78	75	73	66	83

The resultant noise levels from the above indicative mechanical plant noise sources and other development noise emissions at the nearest noise sensitive receptors are summarised in **Section 4.6**. Noise predictions from likely plant and equipment requirements only that operate during the night period are noted to comply with the most stringent 30 dB(A) plant and equipment night noise criterion at all surrounding existing residential dwellings.

More detailed assessment of acoustic treatments required for the major plant and equipment installations should be undertaken at the detailed design stage of the development. Experience with many other shopping centre developments in proximity to residential areas dictates that appropriate noise controls are both feasible and practical to ensure that plant and equipment can achieve the noise limits required. Plant selection and acoustic design will form an integral part of the detailed design process for the development.

4.3 SERVICING AND LOADING NOISE

The proposed development incorporates a loading area adjacent to the south-western corner of the proposed supermarket building. Access to the loading dock area is via the internal site driveways.

It has been advised that the servicing requirements for the development are likely to include up to 2 AV/HRV/MRV (refrigerated) and 1 refuse truck per day during the day period only (7am to 6pm). Review of the schedule for service vehicles and refuse collections at the existing store in Cooktown indicates that typically only one servicing/refuse event will occur within a single one hour period. As such, the SoundPLAN model was setup to consider noise emissions from one AV/HRV/MRV delivery or one Refuse collection per hour at the supermarket loading area during the day 7am to 6pm period, conservatively considered concurrently with peak passenger vehicle traffic and carparking.

It is considered that other occasional servicing may take place using SRV or Vans at the development with the noise of these activities not likely to have an impact on overall noise emission levels.

For the purpose of this assessment and to minimise noise influences to surrounding residential uses during the more sensitive evening and night periods, it is recommended that all servicing and refuse collections occur during the day period (7am to 6pm) only.

Measured noise levels for various loading and servicing activities have been recorded by MWA Environmental and others and are summarised as follows:

Table 5: Loading and Servicing Noise Sources Considered in Noise Prediction Model

Modelled Noise Source	Modelled Source Type	Sound Power Level $L_{eq,1hr}$ – dB(A)
Slow moving AV/HRV/MRV/Refuse truck accessing supermarket loading area	Line Source	56/m per trip
Unloading Activities / Refuse collection at supermarket loading area	Point Source	76 ³
Truck refrigeration unit at Supermarket loading area	Point Source	82 ⁴
Reversing Beeper at Supermarket loading area	Point Source	82 ⁵

The resultant noise levels from the above servicing and loading noise sources and other development noise emissions at the nearest noise sensitive receptors to the site are summarised in **Section 4.6**.

4.4 CARPARKING AND VEHICLE NOISE

Car parking for the development is provided to the south of the site building. The proposed development provides a total of 83 car parking bays which include 7 car and trailer spaces and 4 EV spaces. The project traffic engineers, Neon Consulting, have provided a peak traffic generation for the development of 253 total trips (in and out) per hour.

The advised peak hour trip rate has been applied to the daytime noise predictions model. For the purpose of representing varying activity rates during the evening period, trip rates and carparking were scaled from the day peak rate as being 50 percent of the day period peak. This varying activity rate for the evening period operation is based upon our experience in conducting noise assessments for other similar developments.

The source noise levels applied to vehicle movements along the access driveways and carparking activity at the parking areas were derived from the traffic generation rate, SoundPLAN library data and noise source levels recorded by MWA Environmental and others as presented in **Table 6**.

³ Based on measurements of typical supermarket loading and refuse collection activities. Includes noise from forklift operation.

⁴ Based on 30 minutes of truck refrigeration unit operation per hour.

⁵ Based on 1 minute of reversing beeper per hour.

Table 6: Summary of Vehicle and Carparking Noise Sources Considered in Noise Model

Modelled Noise Source	Modelled Source Type	Sound Power Level L_{eq} – dB(A)
Car movement to customer carparking	Line Source	79/m ⁶
Car movement to trailer / EV carparking	Line Source	71/m ⁷
Car movement to drive though	Line Source	66/m ⁸
Car parking at customer, trailer and EV parking areas ⁹	Area Source	63 dB(A), 1hr per carpark turnover event

The resultant noise level from the above vehicle movements and carparking noise sources and other development noise emissions at the nearest noise sensitive receptors to the site are summarised in **Section 4.6**.

4.5 NOISE CONTROL MEASURES

To achieve noise compliance at the nearest surrounding existing residential dwellings, the noise modelling included the following noise control measures:

- **Roof top mechanical plant decks to the acoustically screened.** Condenser decks require acoustic screening to full perimeter of the deck area.
- For the **supermarket plant room, the following acoustic design features** should be considered during detail design stage:
 - The plant room will require a wall and roof component that should achieve an R_w 40+.
 - Wall and roof areas of the plant room shall be lined with perforated metal sheeting with insulation material internally.
 - Vibration isolation of equipment shall be designed so that all items of equipment and associated connecting systems shall be isolated from the building.
 - Acoustic louvres are to be provided for the open ventilation area and located away from adjoining receptors (minimum R_w 25).
- **All servicing and refuse collection to occur during the day period (7am and 6pm) only; and,**

⁶ Based on peak hour traffic of 210 trips to the customer carparking at an average speed of 20 km/hr.

⁷ Based on peak hour traffic of 32 trips to the trailer / EV carparking at an average speed of 20 km/hr.

⁸ Based on peak hour traffic of 11 trips to the drive through at an average speed of 20 km/hr.

⁹ +3dB(A) adjustment for trolley use on carpark pavement added using SoundPLAN parking module.

- A **2.4 metre high acoustic barrier** be constructed along part of the western boundary of the subject site, specified above adjacent loading area / driveway level.

The extent of the recommended acoustic barrier is presented on **Figure 5**. The acoustic barrier construction materials are required to be gap-free and achieve a minimum surface area density of 12.5kg/m².

The SoundPLAN noise model has utilised the above recommendations to predict the cumulative noise levels as presented in **Section 4.6, Table 7** below.

4.6 PREDICTED OVERALL NOISE LEVELS

The predicted overall noise levels at the nearest noise sensitive uses during the day (7am to 6pm) and evening (6pm to 10pm) periods and also mechanical plant noise only during the night (10pm to 7am) period are summarised in **Table 7** for assessment against the relevant noise criteria.

Table 7: Predicted Noise Levels

Sensitive Receptors (Assessed receiver height)	Predicted Noise Level – dB(A)		
	L _{Aeq} Day 7am to 6pm	L _{Aeq} Evening 6pm to 10pm	L _{Aeq} Night 10pm to 7am (Mechanical Plant only)
R1 (+4.5m)	34	32	27
R2 (+4.5m)	42	38	30
R3 (+4.5m)	36	32	26
R4 (+1.5m)	38	35	24
R5 (+4.5m)	33	30	24
R6 (+1.5m)	39	34	30
R7 (+4.5m)	27	24	19
Noise Criteria	42 dB(A)	42 dB(A)	30 dB(A)

Noise contour maps of the model noise level predictions across the model domain are presented in **Attachment 3**.

The noise modelling demonstrates that the relevant noise criteria can be achieved at the nearest surrounding existing residential dwellings with the above operational and structural noise control measures implemented on site.

5.0 CONCLUSIONS

MWA Environmental has been engaged to prepare a Noise Impact Assessment for a proposed shopping centre development at 81 Savage Street, Cooktown.

The assessment has considered the potential impact of noise emissions from the proposed development at surrounding noise sensitive receptors. The assessment is based on ambient noise monitoring conducted on site, noise measurements previously conducted on typical sources associated with the proposed use and detailed noise propagation modelling.

The report has been prepared in response to Item 11 of the Cook Shire Council Information Request (reference LM:Imc DA/4677:AD2023/0004947, dated 19 September 2023).

Based on the noise assessment conducted, the following operational and structural noise control measures are recommended on site:

- **Roof top mechanical plant decks to be acoustically screened.** Condenser decks require acoustic screening to full perimeter of the deck area.
- For the **supermarket plant room, the following acoustic design features** should be considered during detail design stage:
 - The plant room will require a wall and roof component that should achieve an Rw 40+.
 - Wall and roof areas of the plant room shall be lined with perforated metal sheeting with insulation material internally.
 - Vibration isolation of equipment shall be designed so that all items of equipment and associated connecting systems shall be isolated from the building.
 - Acoustic louvres are to be provided for the open ventilation area and located away from adjoining receptors (minimum Rw 25).
- **All servicing and refuse collection to occur during the day period (7am and 6pm) only;** and,
- A **2.4 metre high acoustic barrier** be constructed along part of the western boundary of the subject site, specified above adjacent loading area / driveway level.


The extent of the recommended acoustic barrier is presented on **Figure 5**. The acoustic barrier construction materials are required to be gap-free and achieve a minimum surface area density of 12.5kg/m².

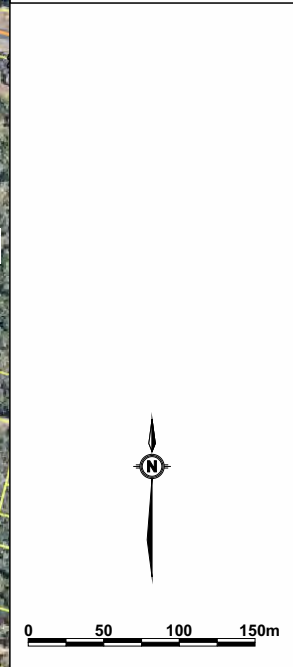
In summary the assessment undertaken demonstrates that the proposed development can operate during the proposed trading hours and in accordance with the relevant noise amenity standards with the implementation of the recommended noise control measures.

MWA Environmental
5 December 2023

FIGURES



LEGEND
 SITE LOCATION
 DRAWING REFERENCE
 © THE STATE OF QUEENSLAND
 (DEPARTMENT OF RESOURCES)
 QLDGLOBE.



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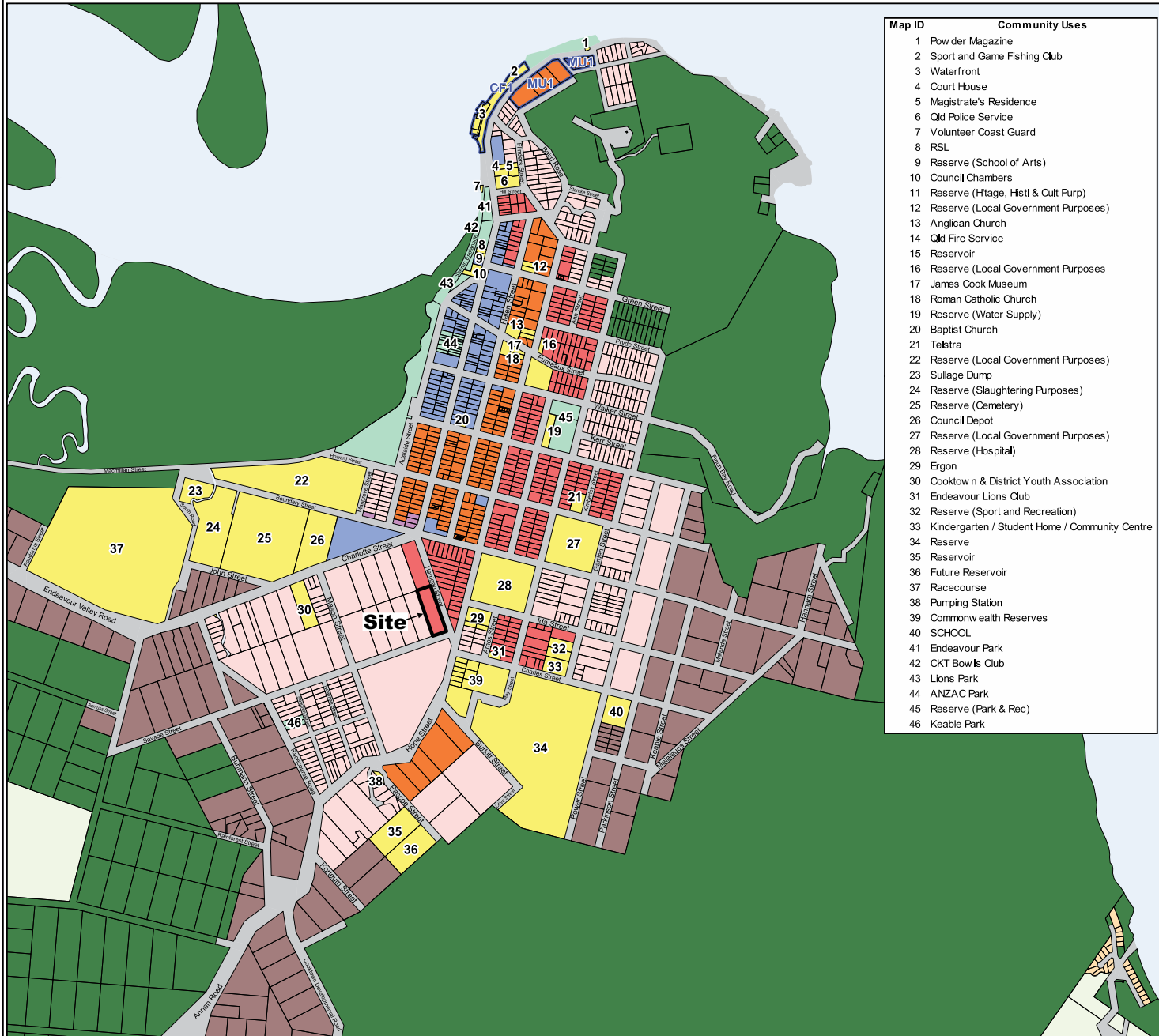
PROJECT
NOISE IMPACT ASSESSMENT
PROPOSED SHOPPING CENTRE DEVELOPMENT
81 SAVAGE STREET
COOKTOWN QLD

TITLE
SITE LOCATION
AND SURROUNDING
LAND USES

JOB	COOKTOWN	FIGURE 1
JOB NO.	23156	
DATE	05/12/23	DWG NUMBER
SCALE	1:5000 (A4)	23156-1
REV.		



Max Winders & Associates Pty Ltd is MWA Environmental
 Level 7, 241 Adelaide St, Brisbane, GPO BOX 3137, Brisbane Qld 4001
 P 07 3002 9500 E mail@mwaenviro.com.au
 www.mwaenviro.com.au
 ABN 94 010 833 084



- Map ID** **Community Uses**
- 1 Powder Magazine
 - 2 Sport and Game Fishing Club
 - 3 Waterfront
 - 4 Court House
 - 5 Magistrate's Residence
 - 6 Old Police Service
 - 7 Volunteer Coast Guard
 - 8 RSL
 - 9 Reserve (School of Arts)
 - 10 Council Chambers
 - 11 Reserve (Htgage, Histl & Cult Purp)
 - 12 Reserve (Local Government Purposes)
 - 13 Anglican Church
 - 14 Old Fire Service
 - 15 Reservoir
 - 16 Reserve (Local Government Purposes)
 - 17 James Cook Museum
 - 18 Roman Catholic Church
 - 19 Reserve (Water Supply)
 - 20 Baptist Church
 - 21 Telstra
 - 22 Reserve (Local Government Purposes)
 - 23 Sullage Dump
 - 24 Reserve (Slaughtering Purposes)
 - 25 Reserve (Cemetery)
 - 26 Council Depot
 - 27 Reserve (Local Government Purposes)
 - 28 Reserve (Hospital)
 - 29 Ergon
 - 30 Cooktown n & District Youth Association
 - 31 Endeavour Lions Club
 - 32 Reserve (Sport and Recreation)
 - 33 Kindergarten / Student Home / Community Centre
 - 34 Reserve
 - 35 Reservoir
 - 36 Future Reservoir
 - 37 Racecourse
 - 38 Pumping Station
 - 39 Commonwealth Reserves
 - 40 SCHOOL
 - 41 Endeavour Park
 - 42 CKT Bowls Club
 - 43 Lions Park
 - 44 ANZAC Park
 - 45 Reserve (Park & Rec)
 - 46 Keable Park



Cooktown

Zones

- Low Density Residential
- Medium Density Residential
- Centre
- Community Facilities
- Environmental Management and Conservation
- Industry
- Mixed Use
- Recreation and Open Space
- Rural Residential
- Rural
- Township

Zone Precinct

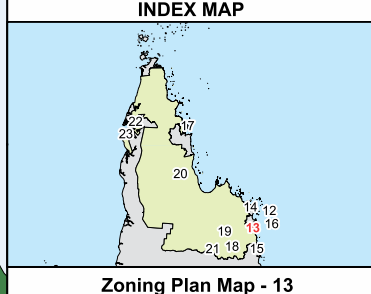
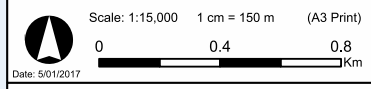
- CF1 - Cooktown Foreshore Commercial Precinct
- MU1 - Mixed Use Precinct

Local Government Boundary Cadastre Boundary
 Adjoining Local Governments Road
 Water

Disclaimer: While every care is taken to ensure the accuracy of this map, Cook Shire Council makes no representations or warranties about the accuracy, reliability, completeness or suitability for any particular purpose and disclaims all responsibility and all liability (including without limitation, liability in negligence) for all expenses, losses, damage (including direct or consequential damage) and costs which might incur as a result of the data being inaccurate or incomplete in any way and for any reason.
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PROJECT
**NOISE IMPACT ASSESSMENT
PROPOSED SHOPPING CENTRE DEVELOPMENT
81 SAVAGE STREET
COOKTOWN QLD**

TITLE
CSC ZONE MAP

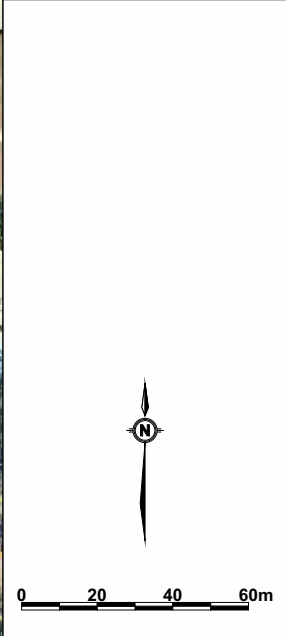
JOB	COOKTOWN	FIGURE 2
JOB NO.	23156	
DATE	05/12/23	DWG NUMBER
SCALE	1:25000 (A4)	23156-2
REV.		

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Level 7, 241 Adelaide St, Brisbane, GPO BOX 3137, Brisbane Qld 4001
P 07 3002 5500 E mail@mwaenviro.com.au
W www.mwaenviro.com.au
ABN 94 010 833 084



LEGEND
 SITE LOCATION
 NOISE DATALOGGER LOCATION

DRAWING REFERENCE
 © THE STATE OF QUEENSLAND
 (DEPARTMENT OF RESOURCES)
 QLDGLOBE.



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PROJECT
NOISE IMPACT ASSESSMENT
PROPOSED SHOPPING CENTRE DEVELOPMENT
81 SAVAGE STREET COOKTOWN QLD

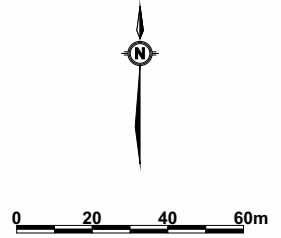
TITLE
NOISE MONITORING LOCATION

JOB	COOKTOWN	FIGURE 3
JOB NO.	23156	
DATE	05/12/23	DWG NUMBER
SCALE	1:2000 (A4)	23156-3
REV.		


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LEGEND
 SITE LOCATION
 SENSITIVE RECEPTOR LOCATIONS (R1-R7)
 DRAWING REFERENCE
 © THE STATE OF QUEENSLAND (DEPARTMENT OF RESOURCES) QLDGLOBE.



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PROJECT
NOISE IMPACT ASSESSMENT
PROPOSED SHOPPING CENTRE DEVELOPMENT
81 SAVAGE STREET COOKTOWN QLD

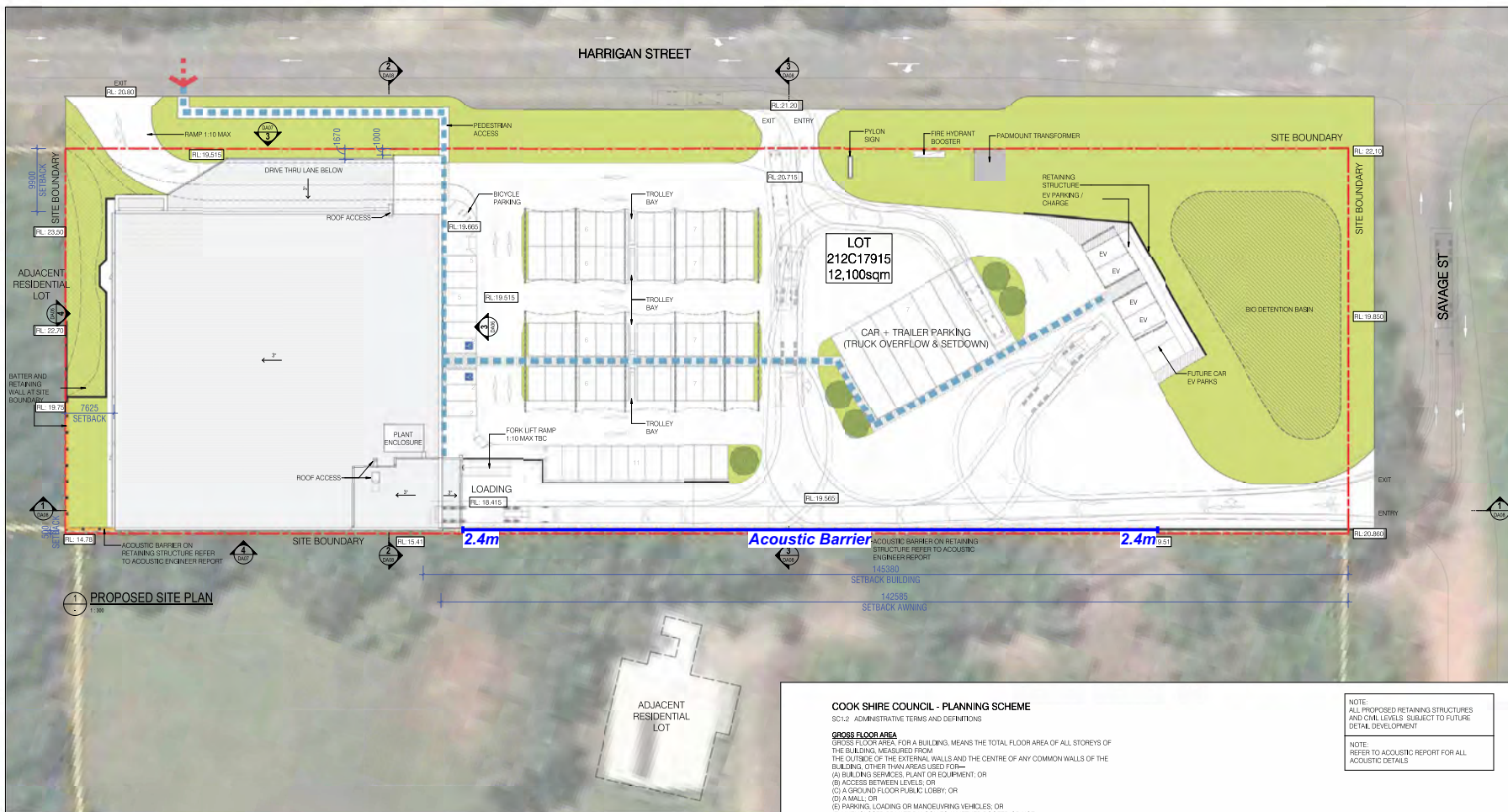
TITLE
SENSITIVE RECEPTOR LOCATIONS

JOB	COOKTOWN	FIGURE 4
JOB NO.	23156	
DATE	05/12/23	DWG NUMBER
SCALE	1:2000 (A4)	23156-4
REV.		



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LEGEND
 BARRIER HEIGHT ABOVE ADJACENT LOADING AREA / DRIVEWAY LEVEL
2.4m
 ACOUSTIC BARRIER



CLIENT
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PROJECT
**NOISE IMPACT ASSESSMENT
 PROPOSED SHOPPING CENTRE DEVELOPMENT
 81 SAVAGE STREET
 COOKTOWN QLD**

TITLE
ACOUSTIC BARRIER LOCATIONS

JOB	COOKTOWN	FIGURE 5
JOB NO.	23156	
DATE	05/12/23	DWG NUMBER
SCALE	1:1000 (A4)	23156-5
REV.		

LAND USE

- LANDSCAPE AREA REFER TO L/ARCH. FOR FURTHER DETAIL incl SPECIFIC SHADE TREES
- SPECIALITY (LAUNDRY SHOP)
- RETAIL (SUPERMARKET)
- LIQUOR
- PLANT / LOBBY

KEY

- PEDESTRIAN ROUTES
- PEDESTRIAN SITE ACCESS
- ACOUSTIC BARRIER
- RETAINING STRUCTURE

COVERAGE:

- SITE AREA = 21,198sqm
- SITCOVER/ROOFED AREA = 2,977sqm (25%)
- IMPERVIOUS AREA (ROOFED AREA + HARDSTAND) = 2,977 + 6,796sqm (80%)
- LANDSCAPE AREA = 2,713(22%)

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EXISTING INFORMATION:
 SUBJECT TO SITE CADASTRAL SURVEY. ALL INDICATED LEVELS, SITE BOUNDARY AND SERVICES BASED DRAWING X/01-05/20/20/27 PREPARED BY SNC. UNLST ALL RESPONSIBLE CARE HAS BEEN TAKEN OUR ARCHITECTS DO NOT TAKE RESPONSIBILITY FOR THE ACCURACY OF RECORDED SURVEY INFORMATION.

SWEEP PATHS:
 VEHICLE SWEEP PATHS SHOWN INDICATIVELY ONLY. SUBJECT TO TRAFFIC ENGINEER REVIEW AND APPROVAL.

COOK SHIRE COUNCIL - PLANNING SCHEME
 SC1.2 ADMINISTRATIVE TERMS AND DEFINITIONS

GROSS FLOOR AREA
 GROSS FLOOR AREA, FOR A BUILDING, MEANS THE TOTAL FLOOR AREA OF ALL STOREYS OF THE BUILDING, MEASURED FROM THE OUTSIDE OF THE EXTERNAL WALLS AND THE CENTRE OF ANY COMMON WALLS OF THE BUILDING, OTHER THAN AREAS USED FOR:-
 (A) BUILDING SERVICES, PLANT OR EQUIPMENT; OR
 (B) ACCESS BETWEEN LEVELS; OR
 (C) A GROUND FLOOR PUBLIC LOBBY; OR
 (D) A MALL; OR
 (E) PARKING, LOADING OR MANOEUVRING VEHICLES; OR
 (F) UNENCLOSED PRIVATE BALCONIES, WHETHER ROOFED OR NOT.

9.4.2 PARKING AND ACCESS CODE

SCHEDULE 1 - VEHICLE PARKING AND SERVICE VEHICLE REQUIREMENTS

USE	MINIMUM NUMBER OF CAR PARKING SPACES
SHOP	
(A) WHERE LESS THAN 200M ² GFA	(A) 1 SPACE PER 20M ² GFA
(B) OTHERWISE	(B) 1 SPACE PER 60M ² GFA

SCHEDULE 2 - VEHICLE PARKING AND SERVICE VEHICLE REQUIREMENTS

MINIMUM SERVICE PROVISIONS	WIDTH	LENGTH	VEHICLE CLEARANCE
SMALL RIGID VEHICLE	3.5m	7.0m	3.5m
HEAVY RIGID VEHICLE	3.5m	11.5m	4.5m

PARKING RATES
GFA SCHEDULE & REQUIRED PARKING

USE	SHOP (GFA)	RATE	REQUIRED	PROVIDED
SUPERMARKET (SCH. ONLINE COLLECT, OFFICE)	2038m ²	1/50M ²	40.7	
LAUNDRY	84m ²	1/200M ²	4.2	
LIQUOR STORE	150m ²	1/200M ²	7.5	
BICYCLE		TBC		6
TOTAL	2272m ²		53	93 INCLUDING: • 5 ACCESSIBLE PARKING • 7 TRAILER TRUCK PARKING • 85 BICYCLING

NOTE:
 ALL PROPOSED RETAINING STRUCTURES AND CIVIL LEVELS. SUBJECT TO FURTHER DETAIL DEVELOPMENT

NOTE:
 REFER TO ACOUSTIC REPORT FOR ALL ACOUSTIC DETAILS

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PROPOSED SITE PLAN
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Project: 2022-072
 Drawing no.: DA03
 Issue: 1
 Date: 05/12/23
 Checked: PCH
 Drawn: TPS
 Checked:



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ATTACHMENT 1

Proposed Development Plans

2022-072 COOKTOWN - CORNETTS SUPERMARKET

81 SAVAGE ST, COOKTOWN, QLD , 4895





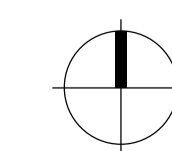
THE SITE IS STRATEGICALLY SITUATED AT THE ENTRY OF COOKTOWN ON THE FRINGE OF THE ESTABLISHED ACTIVITY CENTRE. THE PROPOSED DEVELOPMENT FEATURES A SUPERMARKET (IGA) THAT IS COMPLIMENTED BY A RANGE OF SPECIALTY SHOPS INCLUDING A LIQUOR STORE AND LAUNDROMAT. KEY FEATURES OF THE SITE INCLUDE CONVENIENT LOCATION AND ACCESSIBILITY.

TP4	01/12/23	MINOR UPDATE	MHa
TP3	25/08/23	MINOR UPDATE	MHa
TP2	21/08/23	DEVELOPMENT APPLICATION	MHa
TP1	11/08/23	PRELIMINARY TOWN PLANNING	MHa
D2	27/04/23	UPDATED	PCH
D1	24/04/23	PRELIMINARY	PCH
2	21/04/23	UPDATED	PCH
1	09/04/23	PRELIMINARY	PCH
no.	date	ISSUE / revision	by

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LOCALITY PLAN

PRELIMINARY ISSUE

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project	2022-072	drawing no.	DA01	issue	TP4
scale @ A1	1 : 2000	designed	MHa	checked	RRo

EXISTING INFORMATION:
 SUBJECT TO SITE CADASTRAL SURVEY. ALL INDICATED LEVELS, SITE BOUNDARY AND SERVICES BASED DRAWING XR-01-DESIGN-230727 PREPARED BY SKF. WHILST ALL REASONABLE CARE HAS BEEN TAKEN I2C ARCHITECTS DO NOT TAKE RESPONSIBILITY FOR THE ACCURACY OF RECEIVED SURVEY INFORMATION.



EXISTING SITE PLAN



STREET VIEW FROM LOCATION A

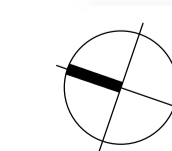
no.	date	ISSUE / revision	by
TP4	01/12/23	MINOR UPDATE	MHa
TP3	25/09/23	MINOR UPDATE	MHa
TP2	21/08/23	DEVELOPMENT APPLICATION	MHa
TP1	11/08/23	PRELIMINARY TOWN PLANNING	MHa
A	21/02/22	CONCEPT	

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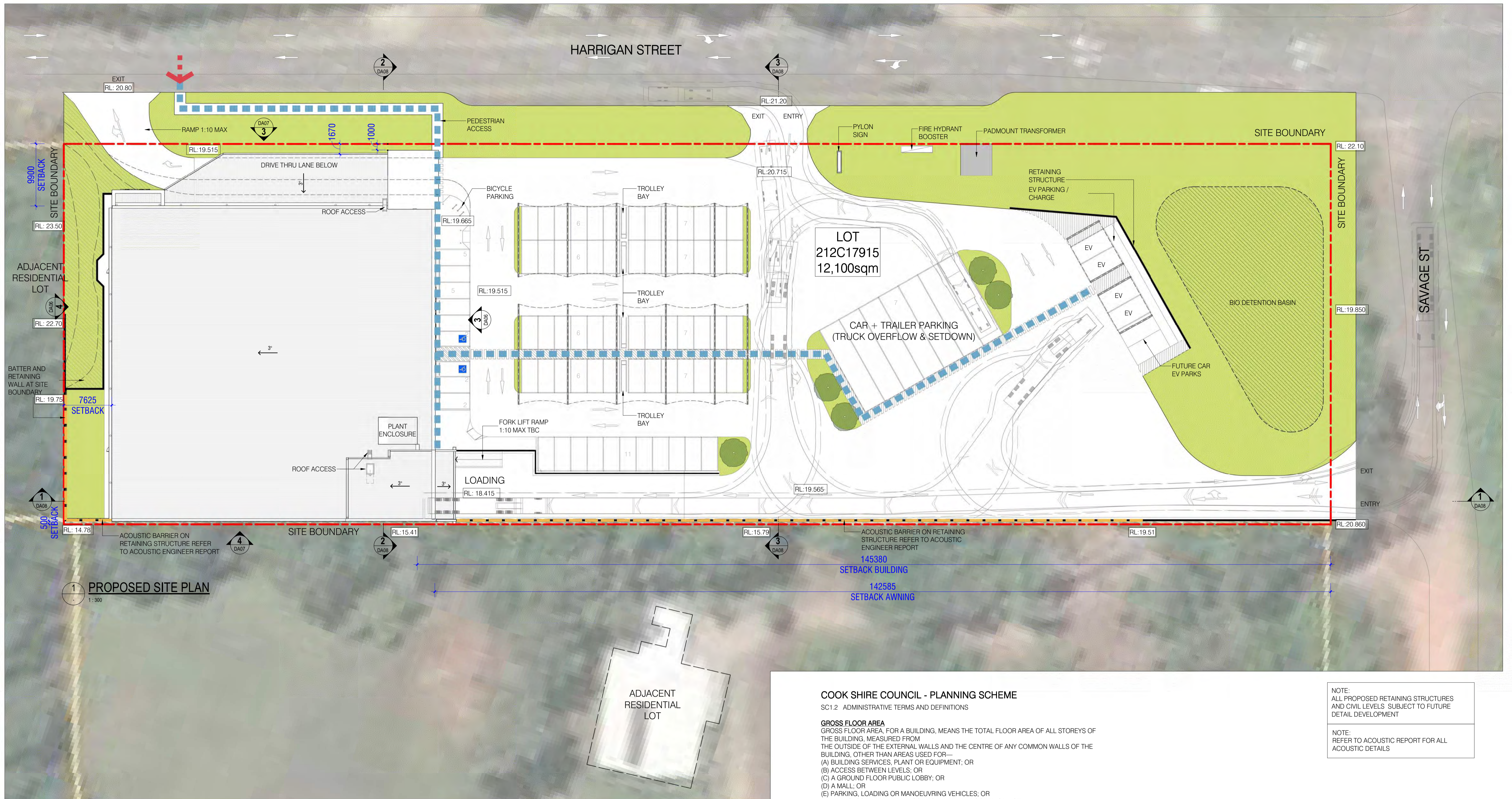


EXISTING SITE PLAN

DEVELOPMENT APPLICATION

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project	drawing no.	issue
2022-072	DA02	TP4
scale @ A1	designed	checked
AS	MHa	RRo
indicated		



- LAND USE**
- LANDSCAPE AREA REFER TO L/ARCH. FOR FURTHER DETAIL incl SPECIFIC SHADE TREES
 - SPECIALITY (LAUNDRY SHOP)
 - RETAIL(SUPERMARKET)
 - LIQUOR
 - PLANT / LOBBY

- KEY**
- PEDESTRIAN ROUTES
 - PEDESTRIAN SITE ACCESS
 - ACOUSTIC BARRIER
 - RETAINING STRUCTURE

COVERAGE:

- SITE AREA = 12,198sqm
- SITE COVER (ROOFED AREA) = 2,977sqm (25%)
- IMPERVIOUS AREA (ROOFED AREA + HARDSTAND) = 2,977+ 6,796sqm (80%)
- LANDSCAPE AREA = 2,713 (22%)

EXISTING INFORMATION:
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SWEEP PATHS:
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COOK SHIRE COUNCIL - PLANNING SCHEME
SC1.2 ADMINISTRATIVE TERMS AND DEFINITIONS

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(A) BUILDING SERVICES, PLANT OR EQUIPMENT; OR
(B) ACCESS BETWEEN LEVELS; OR
(C) A GROUND FLOOR PUBLIC LOBBY; OR
(D) A MALL; OR
(E) PARKING, LOADING OR MANOEUVRING VEHICLES; OR
(F) UNENCLOSED PRIVATE BALCONIES, WHETHER ROOFED OR NOT.

9.4.2 PARKING AND ACCESS CODE

SCHEDULE 1 - VEHICLE PARKING AND SERVICE VEHICLE REQUIREMENTS

USE	MINIMUM NUMBER OF CAR PARKING SPACES
SHOP	
(A) WHERE LESS THAN 200M ² GFA	(A) 1 SPACE PER 20M ² GFA
(B) OTHERWISE	(B) 1 SPACE PER 50M ² GFA

SCHEDULE 2 - VEHICLE PARKING AND SERVICE VEHICLE REQUIREMENTS

MINIMUM SERVICE PROVISIONS	WIDTH	LENGTH	VEHICLE CLEARANCE
SMALL RIGID VEHICLE	3.5m	7.0m	3.5m
HEAVY RIGID VEHICLE	3.5m	11.5m	4.5m

NOTE:
ALL PROPOSED RETAINING STRUCTURES AND CIVIL LEVELS SUBJECT TO FUTURE DETAIL DEVELOPMENT

NOTE:
REFER TO ACOUSTIC REPORT FOR ALL ACOUSTIC DETAILS

PARKING RATES

GFA SCHEDULE & REQUIRED PARKING

	SHOP (GFA)	RATE	REQUIRED	PROVIDED
SUPERMARKET (BOH, ONLINE COLLECT, OFFICE)	2038m ²	1/50m ²	40.7	
LAUNDRY	84m ²	1/20m ²	4.2	
LIQUOR STORE	150m ²	1/20m ²	7.5	
BICYCLE			TBC	6
TOTAL			53	83 INCLUDING: • 2 ACCESSIBLE PARKING • 7 TRAILER TRUCK PARKING • 4 EV PARKING

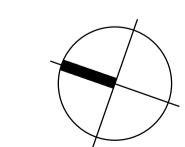
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TP5	01/12/23	MINOR UPDATE	Mha
TP4	23/11/23	SITE SURVEY UPDATE	Eva
TP3	25/08/23	MINOR UPDATE	Mha
TP2	21/08/23	DEVELOPMENT APPLICATION	Mha
TP1	11/08/23	PRELIMINARY TOWN PLANNING	Mha
D3	12/07/23	PRELIMINARY	PKI
D2	27/04/23	UPDATED	PCH
D1	24/04/23	PRELIMINARY	PCH

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PROPOSED SITE PLAN

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project	drawing no.	issue
2022-072	DA03	TP5
AS	designed	checked
indicated	PCH	Checker

- LAND USE**
- LANDSCAPE AREA REFER TO L/ARCH. FOR FURTHER DETAIL incl SPECIFIC SHADE TREES
 - SPECIALITY (LAUNDRY SHOP)
 - RETAIL (SUPERMARKET)
 - LIQUOR
 - PLANT / LOBBY (NOT incl IN GFA)

- KEY**
- PEDESTRIAN ROUTE
 - PEDESTRIAN SITE ACCESS
 - ACOUSTIC BARRIER
 - RETAINING STRUCTURE

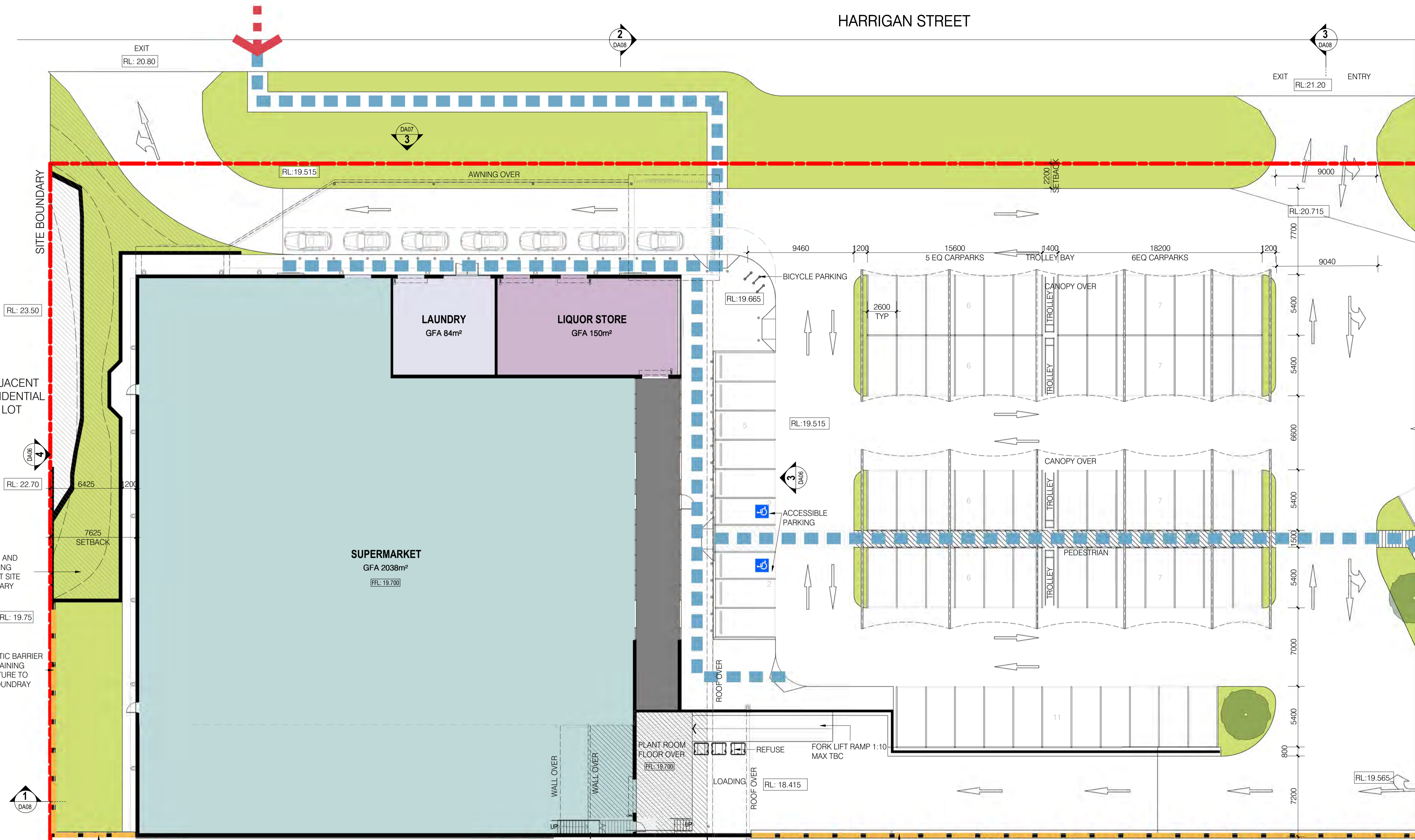
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SWEPT PATHS:
VEHICLE SWEPT PATHS SHOWN INDICATIVELY ONLY. SUBJECT TO TRAFFIC ENGINEER REVIEW AND APPROVAL

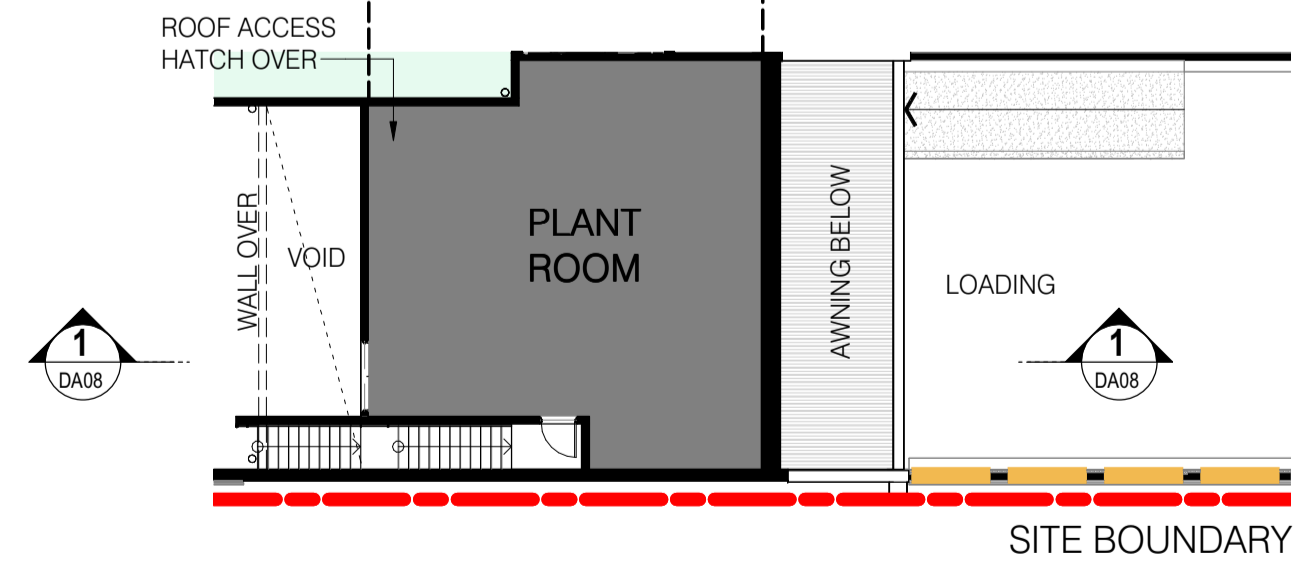
NOTE:
ALL PROPOSED RETAINING STRUCTURES AND CIVIL LEVELS. SUBJECT TO FUTURE DETAIL DEVELOPMENT

NOTE:
REFER TO ACOUSTIC REPORT FOR ALL ACOUSTIC DETAILS

REFER TO DA05 FOR SITE ZONE B



1 SITE ZONE A PLAN
1:200



3 MEZZANINE PLANT ROOM
1:200

PARKING RATES

GFA SCHEDULE & REQUIRED PARKING

	SHOP (GFA)	RATE	REQUIRED	PROVIDED
SUPERMARKET (BOH, ONLINE COLLECT, OFFICE)	2038m²	1/50m²	40.7	
LAUNDRY	84m²	1/20m²	4.2	
LIQUOR STORE	150m²	1/20m²	7.5	
BICYCLE			TBC	6
TOTAL	2272m²		53	83 INCLUDING: • 2 ACCESSIBLE PARKING • 7 TRAILER TRUCK PARKING • 4 EV PARKING

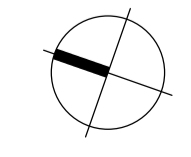
no.	date	ISSUE / revision	by
TP4	01/12/23	MINOR UPDATE	MHa
TP3	25/08/23	MINOR UPDATE	MHa
TP2	21/08/23	DEVELOPMENT APPLICATION	MHa
TP1	11/08/23	PRELIMINARY TOWN PLANNING	MHa
D3	12/07/23	PRELIMINARY	PKI
D2	27/04/23	UPDATED	PCH
D1	24/04/23	PRELIMINARY	PCH
3	24/04/23	UPDATED	PCH

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PROPOSED SITE ZONE A
DEVELOPMENT APPLICATION

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project	drawing no.	issue
2022-072	DA04	TP4
scale @ A1	designed JHa	checked PCh
indicated		



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 - SPECIALITY (LAUNDRY SHOP)
 - RETAIL (SUPERMARKET)
 - LIQUOR
 - PLANT / LOBBY (NOT incl IN GFA)

- KEY**
- PEDESTRIAN ROUTE
 - PEDESTRIAN SITE ACCESS
 - ACOUSTIC BARRIER
 - RETAINING STRUCTURE

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SWEPT PATHS:
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NOTE:
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NOTE:
 REFER TO ACOUSTIC REPORT FOR ALL ACOUSTIC DETAILS

REFER TO DA04 FOR SITE ZONE A

1 SITE ZONE B PLAN
 DA06 1:200

TP4	01/12/23	MINOR UPDATE	MHa
TP3	25/08/23	MINOR UPDATE	MHa
TP2	21/09/23	DEVELOPMENT APPLICATION	MHa
TP1	11/09/23	PRELIMINARY TOWN PLANNING	MHa
D2	27/04/23	UPDATED	PCH
D1	24/04/23	PRELIMINARY	PCH
1	24/04/23	UPDATED	PCH
no.	date	ISSUE / revision	by

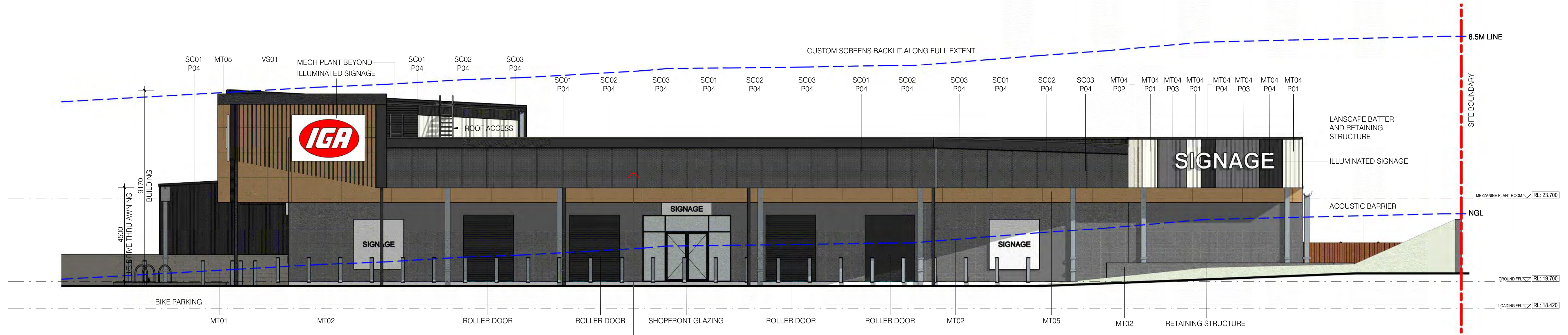
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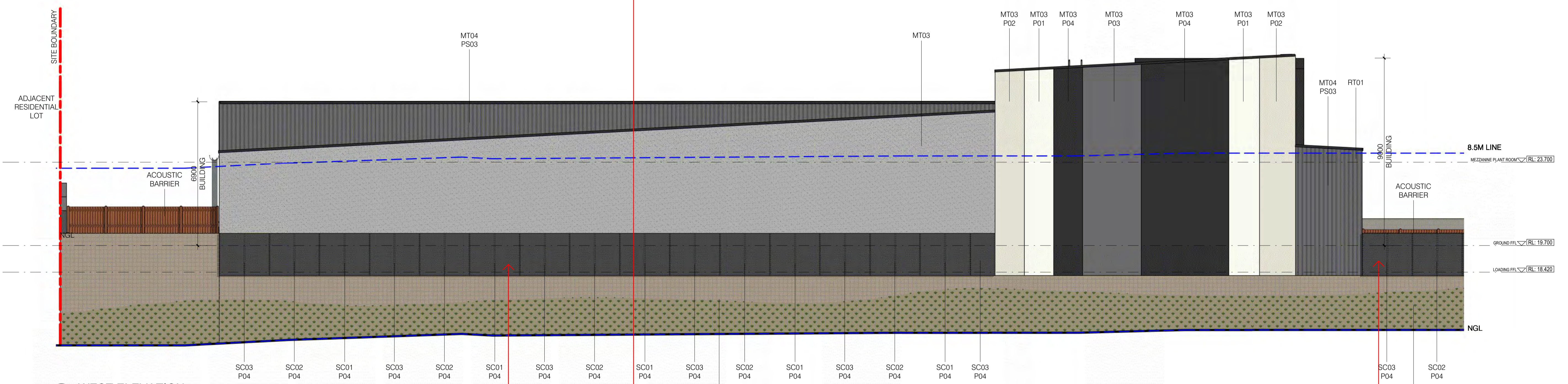
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PROPOSED SITE ZONE B
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project	2022-072	drawing no.	DA05	issue	TP4
scale	A1	designed	PCH	checked	Checker
indicated					



3 EAST ELEVATION
DA03 1:100



4 WEST ELEVATION
DA03 1:100

CUSTOM PERFORATED SCREEN PANELS

SC01
PERFORATED METAL
SCREEN TYPE 1

SC02
PERFORATED METAL
SCREEN TYPE 2

SC03
PERFORATED METAL
SCREEN TYPE 3

*ARTISTIC IMAGES SHOWN FOR ILLUSTRATIVE PURPOSES ONLY. FINAL IMAGES SUBJECT TO DESIGN AND APPROVAL.

MATERIAL PALLETTE

WT01
BLOCKWORK TYPE 1

MT02
BLOCKWORK TYPE 2

MT03
OFF FORM CONCRETE

MT04
PROFILED METAL
CLADDING

MT05
CFC CLADDING
TIMBER LOOK

MT06
GABIAN GREEN
WALL

RT01
ZINCALUME
ROOF & RAINWATER GOODS

VS01
ALUMINIUM BATTENS

COLOUR PALLETTE

P01
WHITE

P02
OFF WHITE

P03
MEDIUM GREY

P04
DARK GREY

TP5	01/12/23	MINOR UPDATE	MHa
TP4	23/11/23	SITE SURVEY UPDATE	Eva
TP3	25/09/23	MINOR UPDATE	MHa
TP2	21/09/23	DEVELOPMENT APPLICATION	MHa
TP1	11/09/23	PRELIMINARY TOWN PLANNING	MHa
D2	27/04/23	UPDATED	PCH
D1	24/04/23	PRELIMINARY	PCH
3	24/04/23	UPDATED	PCH
no. date	ISSUE / revision		by

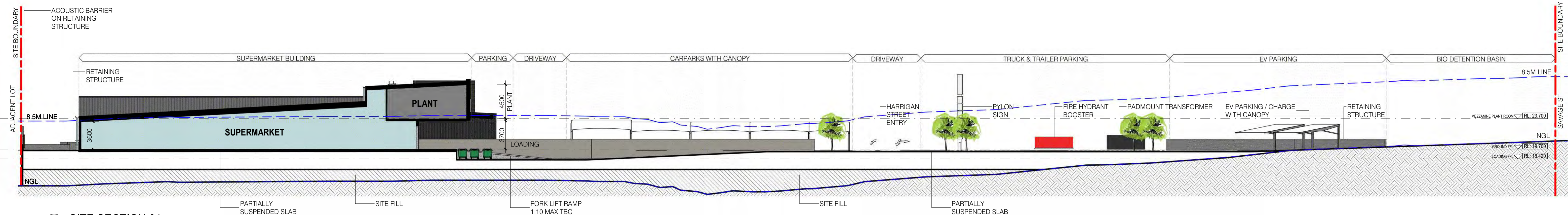
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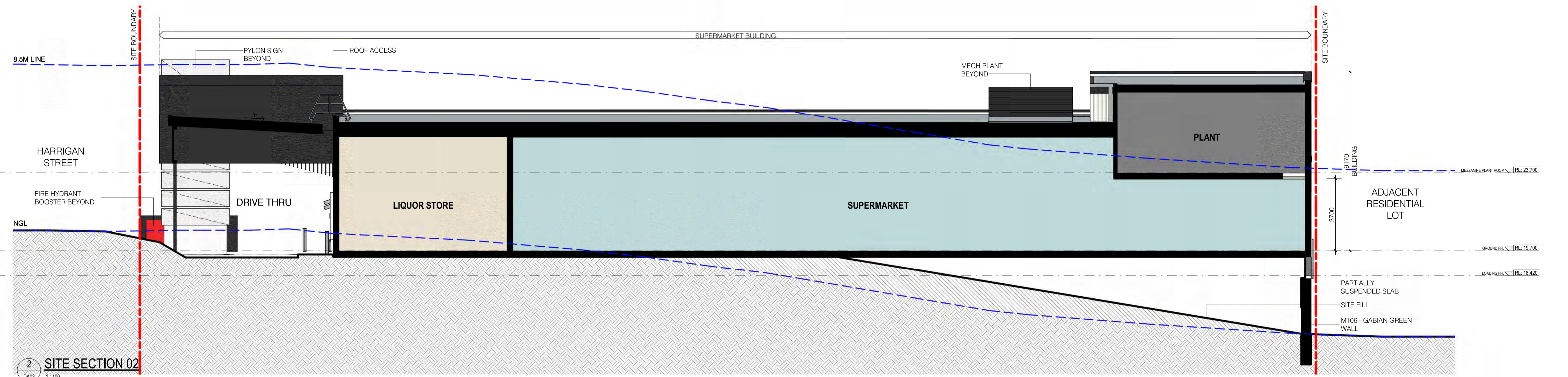
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PROPOSED ELEVATIONS
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project	2022-072	drawing no.	DA07	issue	TP5
scale @ A1	1 : 100	designed	MHa	checked	RRo



1 SITE SECTION 01
DA03 1:250



2 SITE SECTION 02
DA03 1:100



3 SITE SECTION 03
DA03 1:100

no.	date	ISSUE / revision	by
TP5	01/12/23	MINOR UPDATE	MHa
TP4	23/11/23	SITE SURVEY UPDATE	Eva
TP3	25/08/23	MINOR UPDATE	MHa
TP2	21/08/23	DEVELOPMENT APPLICATION	MHa
TP1	11/08/23	PRELIMINARY TOWN PLANNING	MHa

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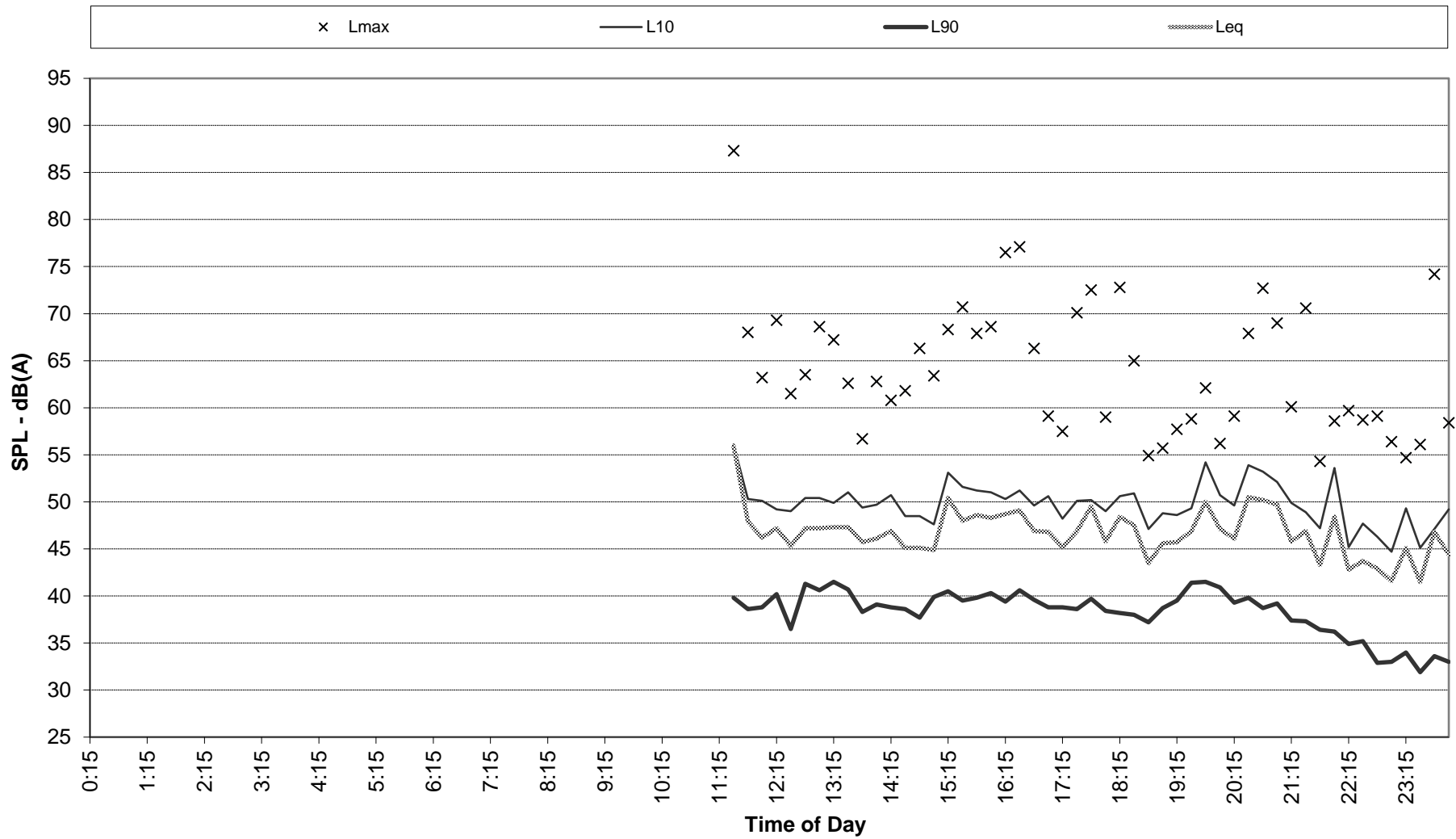
PROPOSED SECTIONS
DEVELOPMENT APPLICATION
All dimensions in millimetres U.N.O. Figures dimensions take precedence, do not scale. Drawings and contents are subject to copyright laws and protection. Do not reproduce in full, or part without approval. ©Copyright ISO 9001-2015

project	drawing no.	issue
2022-072	DA08	TP5
AS	TTI	checked
indicated		Checker

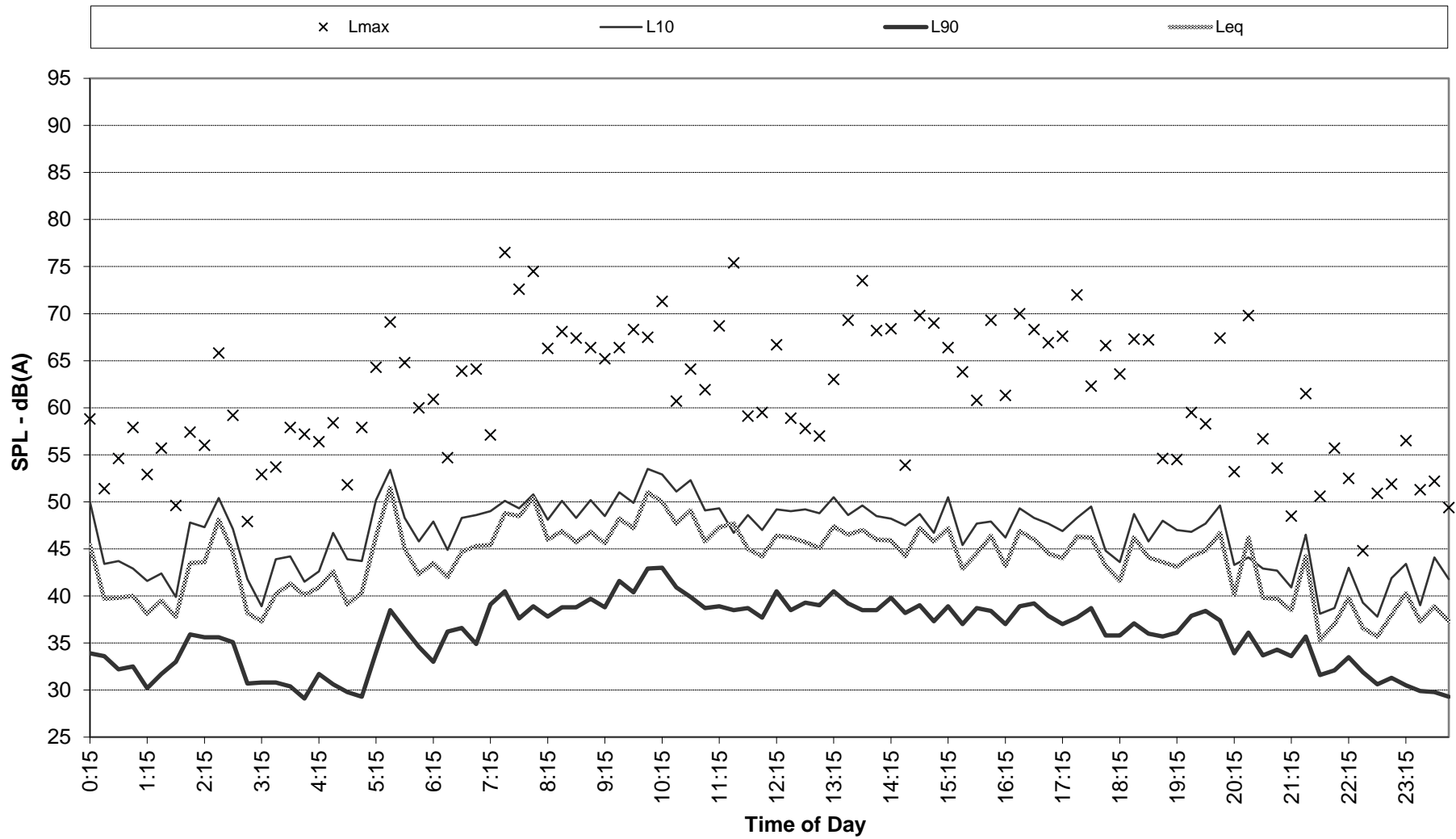
ATTACHMENT 2

Noise Datalogger Traces

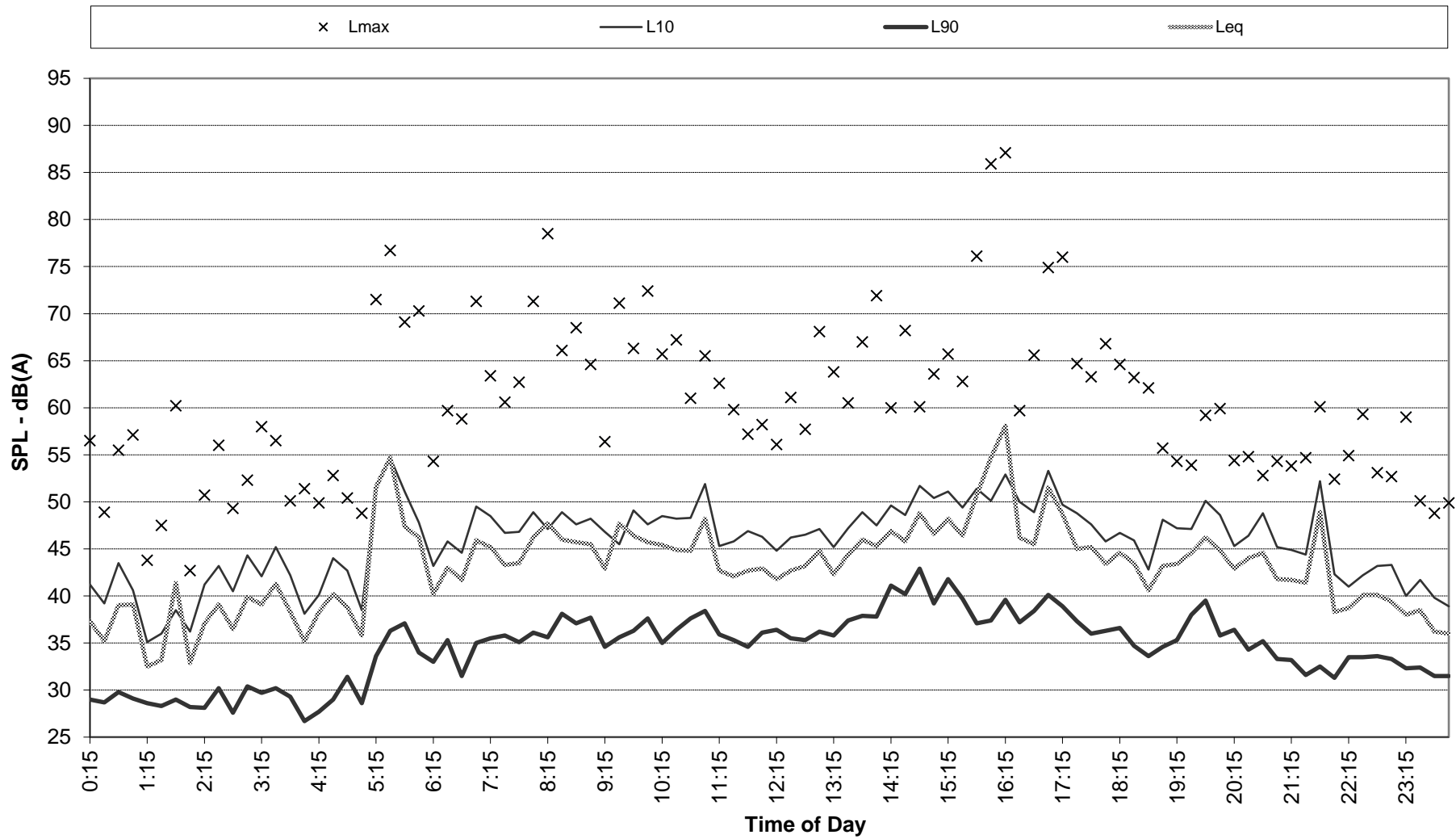
Recorded Statistical Noise Levels for Cooktown 23156 - - 30-Oct-2023 - Monday



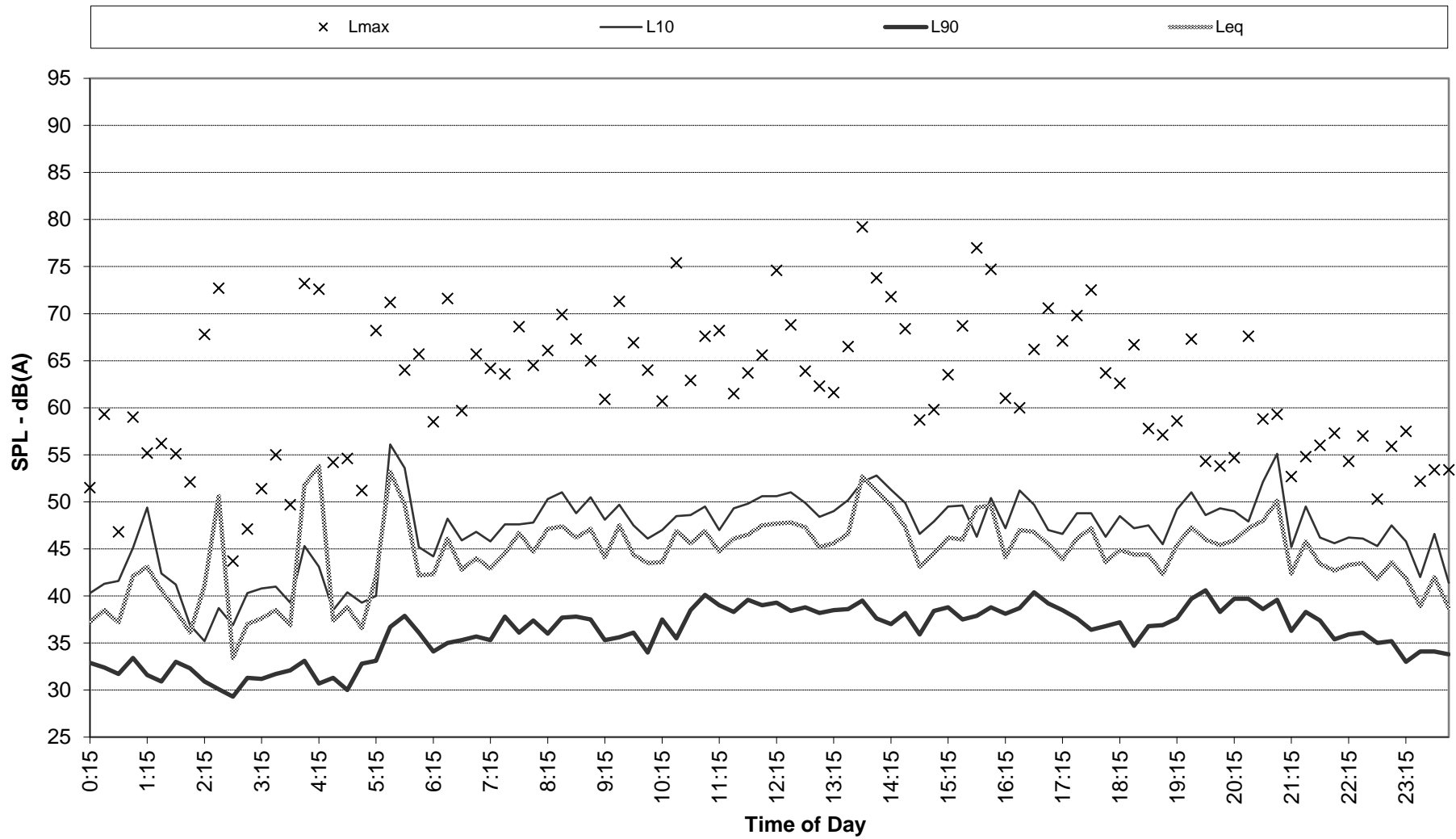
Recorded Statistical Noise Levels for Cooktown 23156 - - 31-Oct-2023 - Tuesday



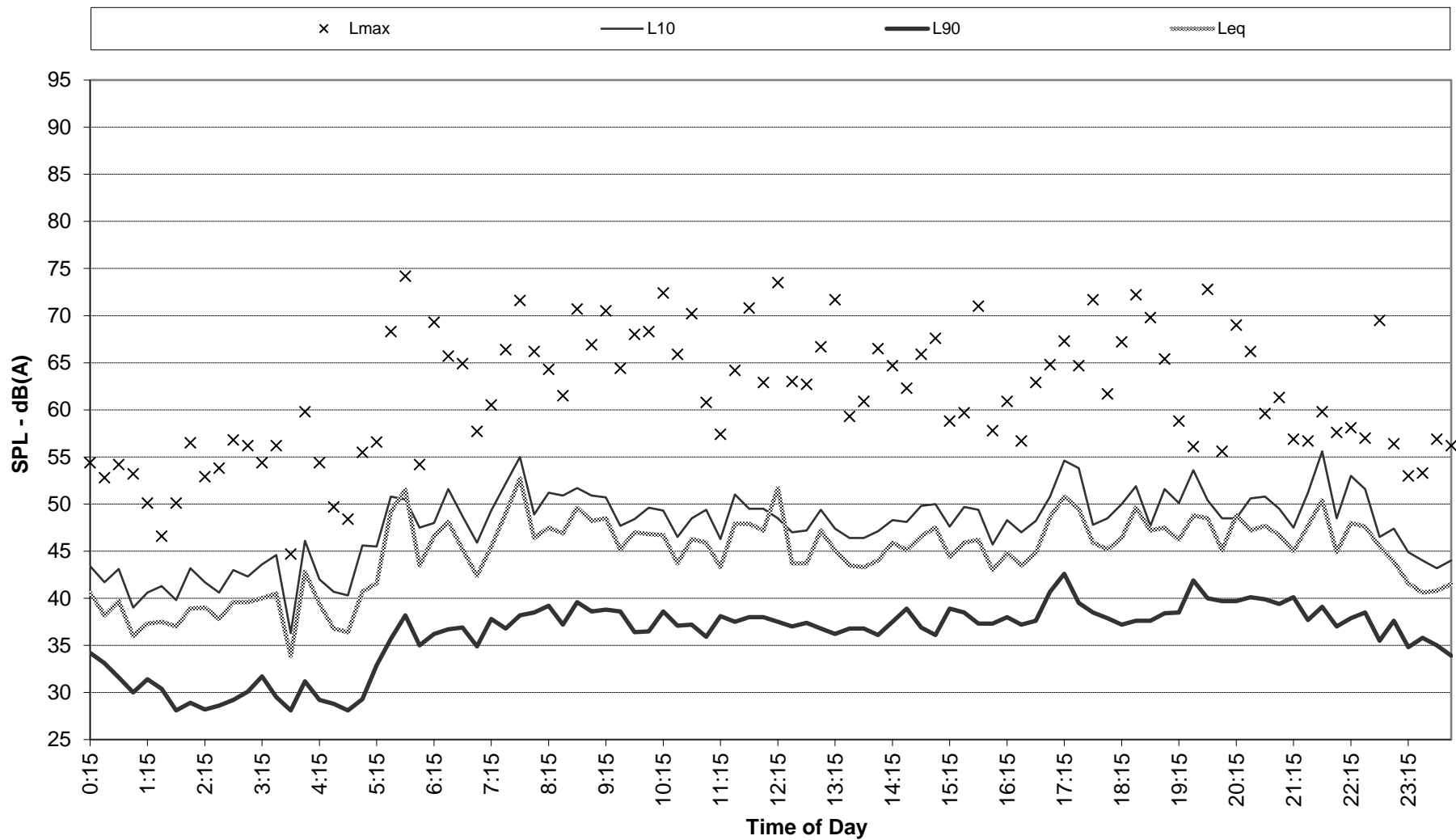
Recorded Statistical Noise Levels for Cooktown 23156 - - 01-Nov-2023 - Wednesday



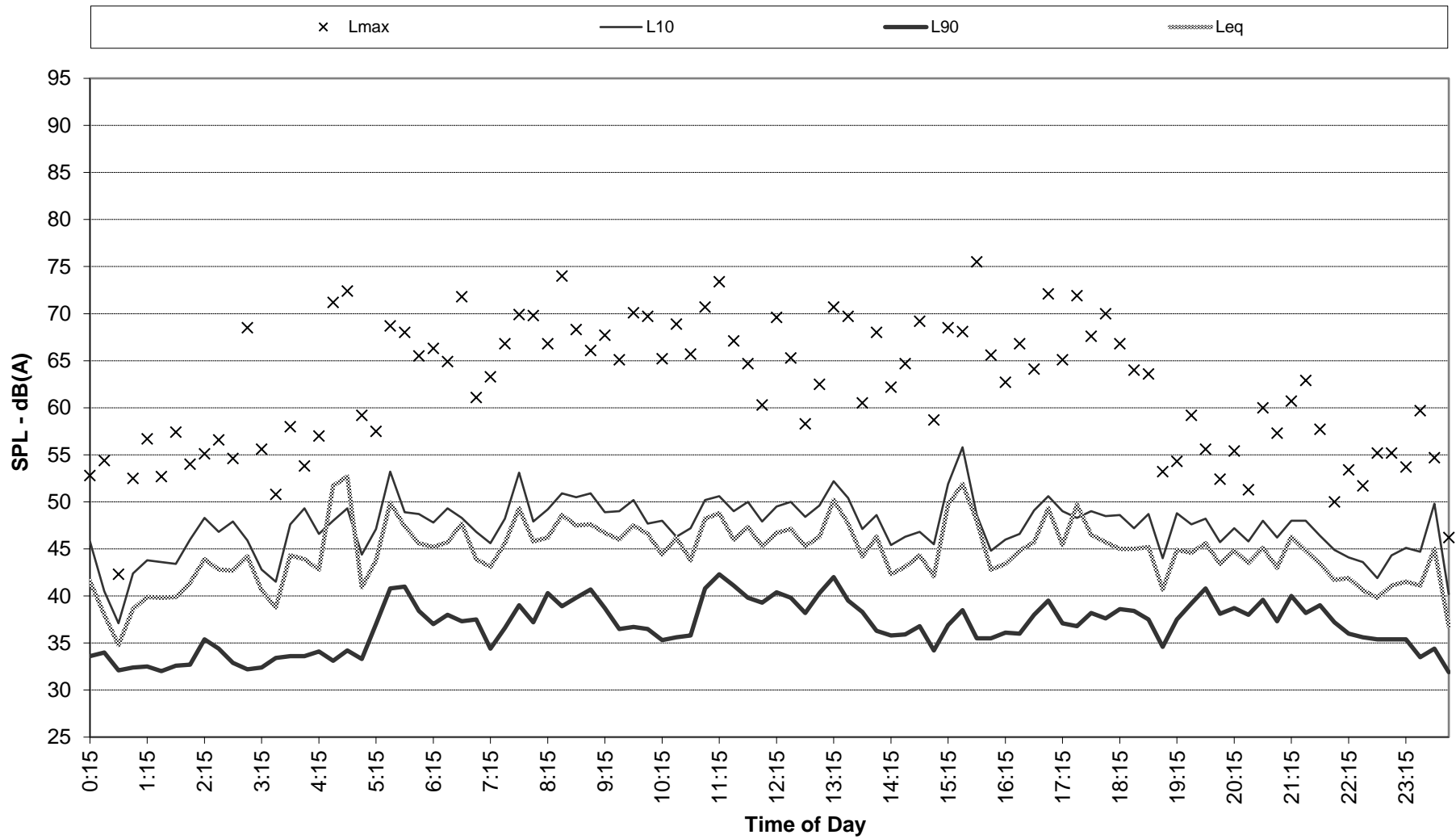
Recorded Statistical Noise Levels for Cooktown 23156 - - 02-Nov-2023 - Thursday



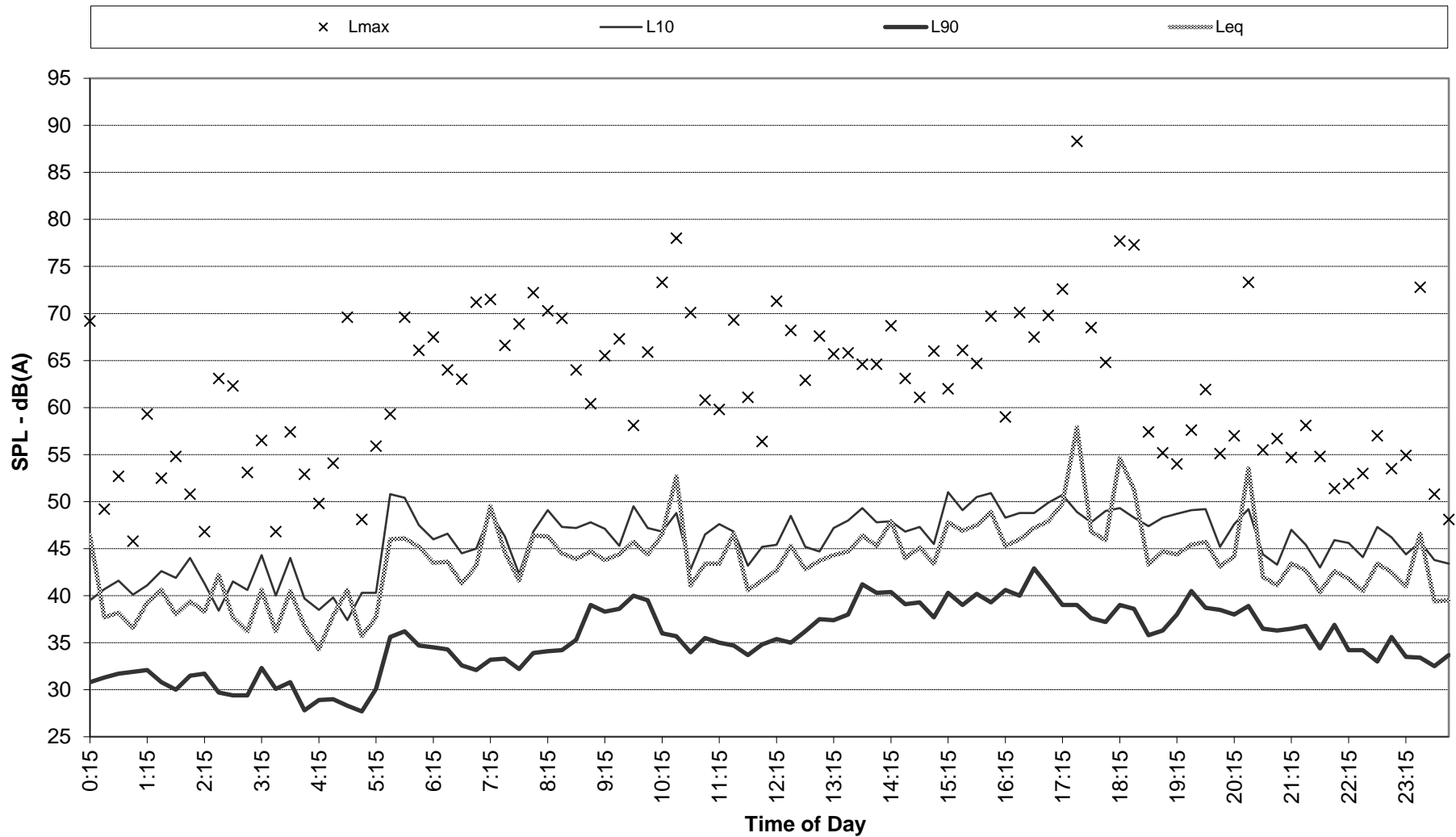
Recorded Statistical Noise Levels for Cooktown 23156 - - 03-Nov-2023 - Friday



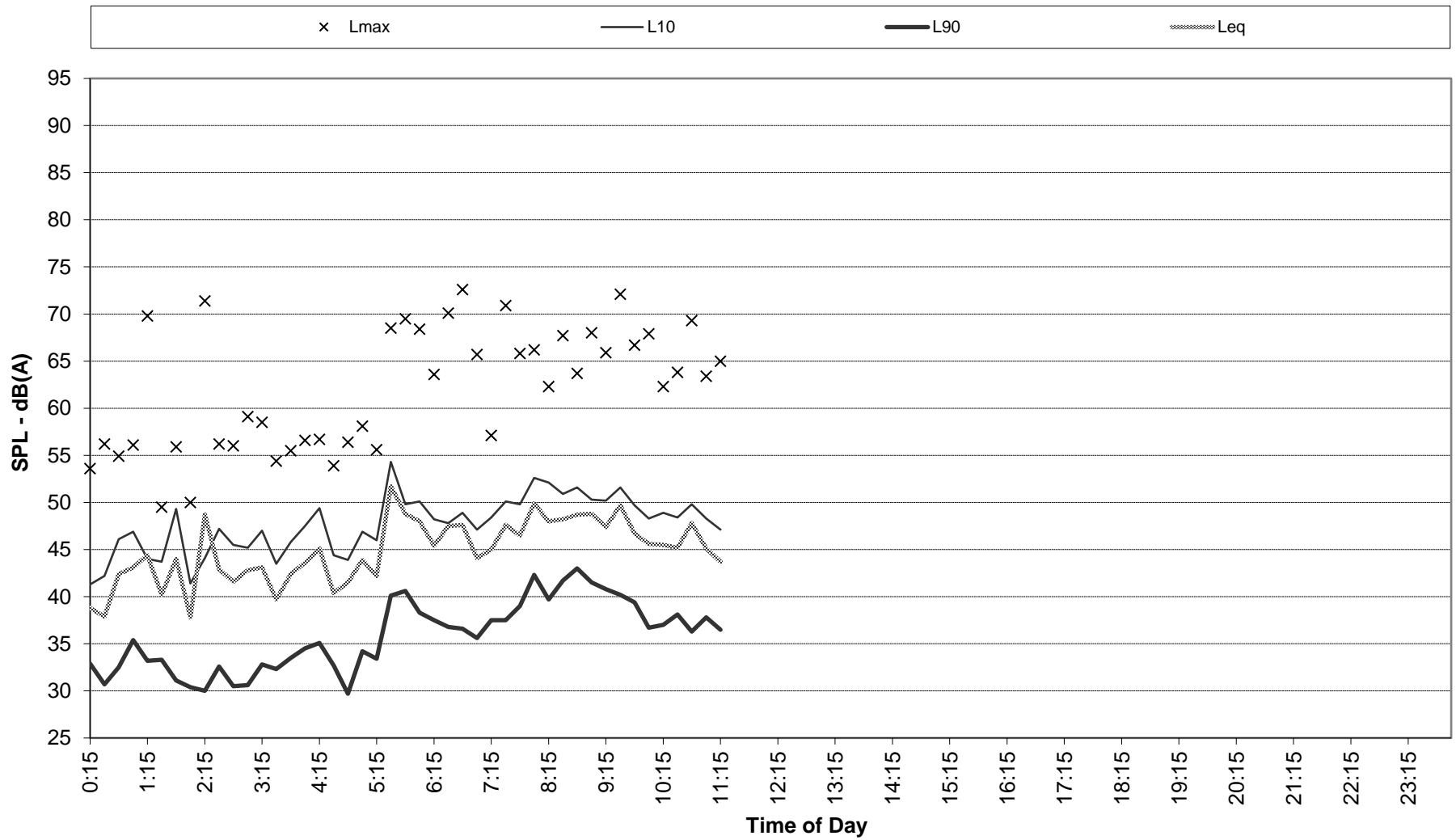
Recorded Statistical Noise Levels for Cooktown 23156 - - 04-Nov-2023 - Saturday



Recorded Statistical Noise Levels for Cooktown 23156 - - 05-Nov-2023 - Sunday

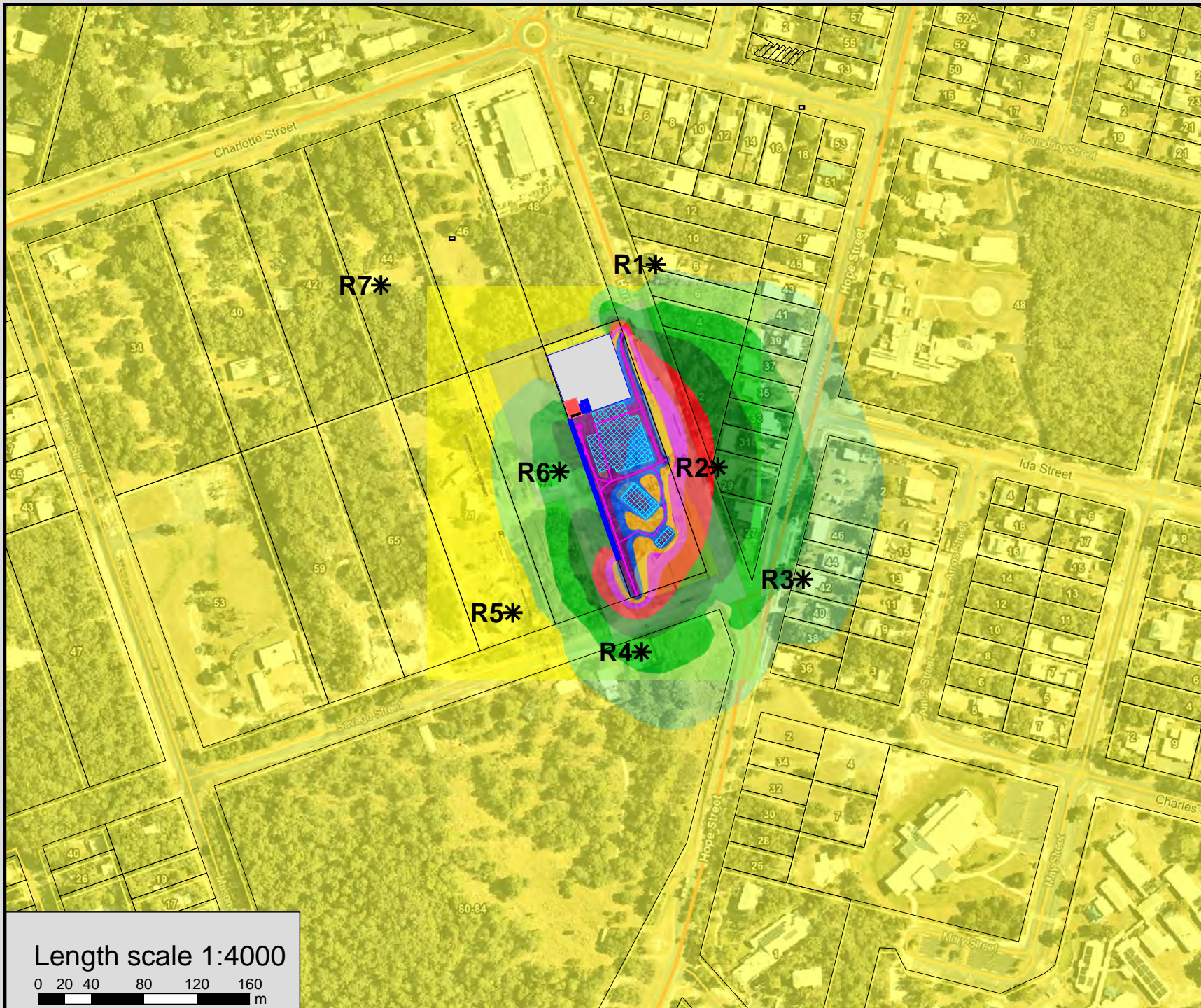


Recorded Statistical Noise Levels for Cooktown 23156 - - 06-Nov-2023 - Monday

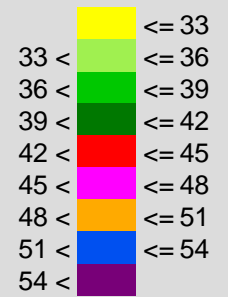


ATTACHMENT 3

SoundPLAN Model Results



Noise level
 $L_{Aeq,T}$
 in dB(A)



Legend

- * Point source
- Parking lot
- Industrial building; Room
- Roof as source
- Facade as source
- Transmissive area
- Line source
- Main building
- Acoustic Barrier
- * Point receiver

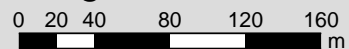
Cooktown 23156
Proposed Shopping Centre
81 Savage Street

Leq Noise Predictions
Day Period 7am to 6pm

December 2023

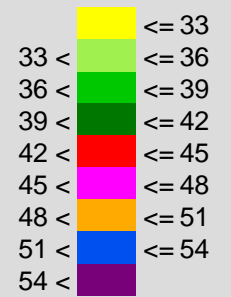


Length scale 1:4000





Noise level
 $L_{Aeq,T}$
 in dB(A)



Legend

- * Point source
- Parking lot
- Industrial building; Room
- Roof as source
- Facade as source
- Transmissive area
- Line source
- Main building
- Acoustic Barrier
- Point receiver

**Cooktown 23156
 Proposed Shopping Centre
 81 Savage Street**

**Leq Noise Predictions
 Evening Period 6pm to 8pm**

December 2023



Length scale 1:4000

