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DEVELOPMENT APPROVAL

Approval no: DEV2025/1636

Date: 21 November 2025



ROAD TRAFFIC NOISE ASSESSMENT

RESIDENTIAL SUBDIVISION

PROPOSED PRECINCT 8

YARRABILBA

Prepared for:
Stockland

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30 May 2025

DOCUMENT CONTROL SHEET

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Job Name: Yarrabilba

Job No: 25050

Original Date of Issue: 30 May 2025

DOCUMENT DETAILS

Title: Road Traffic Noise Assessment – Residential Subdivision – Proposed Precinct 8,
Yarrabilba

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Client: Stockland

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REVISION/CHECKING HISTORY

Version Number	Date	Issued By		Checked By	
1 DA Report	30.05.2025	ES		PAK	
2					
3					
4					
5					

DISTRIBUTION RECORD

Destination	Version Number								
	1	2	3	4	5	6	7	8	9
Client (electronic)	1								
RPS (electronic)	1								
File Copy	1								
MWA Enviro Library									

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1.0 INTRODUCTION

1.1 STUDY BRIEF

MWA Environmental has been engaged to prepare a Road Traffic Noise Impact Assessment for the proposed 'Precinct 8' development at Yarrabilba.

The report has assessed the potential road traffic noise impact and mitigation measures associated based on the lot reconfiguration plan and civil earthworks design for Precinct 8 for the following road segments;

- Local Sub Arterial (Yarrabilba Drive) and Major Collector corridor (Jimbillunga Drive); and
- State-controlled, Waterford Tamborine Road ("**WTR**").

Using standard traffic noise assessment methodology and planning horizon traffic forecasts, this assessment has been conducted using computer noise modelling of the road traffic volumes on the adjoining roads as part of Yarrabilba development, and considering the following:

- Preliminary design level contours for Precinct 8 by KN Group;
- Proposed reconfiguration of lot for Precinct 8 by RPS;
- Preliminary civil works levels for the ultimate Sub Arterial and Major Collector Road corridors provided by KN Group;
- Ultimate planning horizon traffic data for the Sub Arterial and Major Collector Road corridors as advised by SLR Consulting.
- Waterford Tamborine Road source based upon current and ultimate forecast traffic volumes as obtained from SLR Consulting;
- Corrections for Queensland conditions as per TMR Transport Noise Management Code of Practice
- The current SDAP State Code 1 v3.2 noise criteria for the residential subdivision development

The requirement for acoustic barriers and acoustic treatment of future dwellings within the proposed development has been assessed by MWA Environmental with regard to State Code 1: *Development in a state-controlled road environment* and the provisions of Queensland Development Code MP4.4 *Buildings in a Transport Noise Corridor*.

The State Planning Policy mapping for Waterford Tamborine Road indicates that a designated transport noise corridor associated with Waterford Tamborine Road affects the subject site. The transport noise corridor extends 100 metres from the centreline of Waterford Tamborine Road.

This assessment includes detailed computer noise modelling considering an ultimate design horizon for all roads.

1.2 SITE DESCRIPTION AND PROPOSED DEVELOPMENT

The proposed Precinct 8 development is located in the southwestern portion of the overall Yarrabilba development. The site location is shown on **Figure 1**.

The proposed development is for 846 residential allotments plus internal access roads, park / recreational areas and detention. The proposed development plan is shown on *Precinct 8 – ROL 1, Functional Plans* prepared by KN Group (refer **Attachment 1**).

The site topography, design earthworks levels including the proposed site layout and numbering, was provided by RPS and KN Group in digital CAD format:

- *Tin Prelim P08ROL1_250522_MGA2020.dwg*
- Functional Layout Earthworks Contour Plans 1 to 4. pdf
- X24-153 Prelim Base_P08ROL1_MGA2020.dwg

The civil earthworks drawing used in the noise model are provided in **Attachment 2**.

The Sub Arterial Road, Yarrabilba Drive is located along the eastern side of the Precinct 8 and Major Collector, Jimbillunga Drive is located centre to Precinct 8.

The western stage of Precinct 8 (Stage 810) is in proximity to Waterford Tamborine Road which is a State-controlled single lane in each direction undivided carriageway. The current road undulates roughly with the natural terrain. The current posted speed limit past the subject land is 100 km/h.

No direct access to Waterford Tamborine Road is proposed.

2.0 EXISTING NOISE LEVELS

Long-term noise measurements have been undertaken at the site using a noise datalogger placed at free-field location on the subject site in proximity to Waterford Tamborine Road over a continuous nine day period.

The datalogger was placed adjacent the western most proposed allotments of Stage 810 from 28 April to 6 May 2025. MWA Environmental understand that there were no roadworks or other disruptions to traffic flows on the Waterford Tamborine Road during this period.

Datalogger Location

- Stage 810, Precinct 8
- Norsonic Nor139 noise datalogger
- 38 metres from western property boundary to WTR
- Free-field location

The noise datalogger location is shown on **Figure 2**.

The sound level meter was pre-calibrated to 94 dB at 1 kHz using a Norsonic Sound Calibrator Nor1256. The meter displayed a deviation of less than ± 0.2 dB from this level at post-calibration.

The recorded noise levels are presented as statistical components, which are described as:

L₁₀: Noise level exceeded for 10 percent of the measurement period, referred to as the averaged maximum sound pressure level.

L₉₀: Noise level exceeded for 90 percent of the measurement period. AS1055–2018¹ notes that the L₉₀ is described as the background sound pressure level.

Table 1 below provides the average statistical noise levels recorded at the Datalogger Location for weekdays.

¹ Australian Standard AS 1055-2018 *Acoustics – Description and measurement of environmental noise*.

Table 1: Recorded Range of Statistical Noise Levels – dB(A)
Datalogger Location Weekdays
28 April to 6 May 2025 - 1 Hour Sampling Intervals

DAY	DATE	RECORDED AVERAGE NOISE LEVELS - dB(A)		
		L10(18 hour)	L90(18 hour)	L90(8 hour)
Tuesday	29 April 2025	58.7	41.6	29.3
Wednesday	30 April 2025	59.6	43.0	28.4
Thursday	1 May 2025	60.0	43.0	34.0
Friday	2 May 2025	60.3	43.6	30.1
Monday	5 May 2025	58.5	40.6	27.6
Tuesday	6 May 2025	-	-	28.9
WEEKDAY AVERAGE		59.4	42.3	29.7

The complete results are presented as a trace of noise level versus time for the statistical noise level descriptors L_{10} and L_{90} as **Attachment 3**.

3.0 ROAD TRAFFIC NOISE CRITERIA

3.1 STATE-CONTROLLED ROAD TRAFFIC ASSESSMENT PROVISION - WATERFORD TAMBORINE ROAD

The relevant traffic noise criteria for the development located near a DTMR State-controlled road are outlined in *State Code 1: Development in a state-controlled road environment, version 3.2, PO38*, as follows:

Involving the creation of 6 or more new residential lots adjacent to a state-controlled road or type 1 multi-modal corridor	
PO38 Reconfiguring a lot minimises free field noise intrusion from a state-controlled road .	AO38.1 Development provides noise barrier or earth mound which is designed, sited and constructed: 1. to achieve the maximum free field acoustic levels in reference table 2 (item 2.1); 2. in accordance with: a. Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013; b. Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019; c. Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020. OR AO38.2 Development achieves the maximum free field acoustic levels in reference table 2 (item 2.1) by alternative noise attenuation measures where it is not practical to provide a noise barrier or earth mound.

Table 2: Maximum free field acoustic levels

Applicable use	Acoustic levels
2.1: Private open space for residential lots	a. ≤ 57 dB(A) L_{10} (18 hour) free field (measured L_{90} (18 hour) free field between 6am and 12 midnight ≤ 45 dB(A))
2.2: Private open space for an accommodation activity (including lots created for a future accommodation activity)	OR b. ≤ 60 dB(A) L_{10} (18 hour) free field (measured L_{90} (18 hour) free field between 6am and 12 midnight > 45 dB(A))
2.3: Outdoor education areas and outdoor play areas in a childcare centre or educational establishment	≤ 63 dB(A) L_{10} (12 hour) free field (between 6am and 6pm)

The site noise monitoring conducted by MWA Environmental demonstrates that the L_{90} (18 hour) traffic noise level is below 45 dB(A) at the residential allotment setback to Waterford Tamborine Road. As such, as per Table 2 (Item 2.1) of State Code 1, the relevant road traffic noise criterion applicable is:

- **57 dB(A) L_{10} (18 hour) free-field at private open space for proposed residential lots as per AO38.1.**

3.2 LOCAL ROAD TRAFFIC ASSESSMENT PROVISION – YARRABILBA DRIVE AND JIMBILLUNGA DRIVE

The Logan Planning Scheme 2015 requirements for the assessment and mitigation of road traffic noise from Council-controlled roadways are limited to regulation of the acoustic treatment of houses within designated 'transport noise corridors' through the Queensland Development Code. There are no external traffic noise criteria in the current Logan Planning Scheme 2015 and there does not appear to be a specific requirement for assessment of road traffic noise for a reconfiguration of lot adjacent to a road that is not a designated 'transport noise corridor'.

Yarrabilba Drive and Jimbillunga Drive road corridors are not currently gazetted as a transport noise corridor but is likely to be at some stage in the future if and when traffic volumes exceed 5,000 vehicles per day. Until such time the road corridors are gazetted as a 'transport noise corridor', there is unlikely to be a requirement for acoustic treatment of houses in proximity to the road. There is the potential that houses may already be constructed on allotments adjacent to the road prior to a 'transport noise corridor' being gazetted and thus no acoustic treatment requirements would be applied.

This notwithstanding, this assessment has addressed the methodology and criteria of the State Code 1: Development in a state-controlled road environment (SDAP) version 3.2 and Queensland Development Code (QDC) MP4.4 – Buildings in a Transport Noise Corridor.

The assessment methodology is consistent with previous assessments undertaken for the overall Yarrabilba residential precincts located near major roads and as approved by Economic Development Queensland ('EDQ').

The assessment has considered what noise levels would be experienced at the backyard of the proposed allotments to comply with a **60 dB(A) L₁₀ 18 hour** noise limit typically applied by the more recent SDAP and the MP4.4 'noise categories' (which define standard of acoustic treatment required) that would be expected within a transport noise corridor if gazetted after completion.

3.3 QUEENSLAND DEVELOPMENT CODE – MP4.4 BUILDINGS IN A TRANSPORT NOISE CORRIDOR

Since implementation in August 2010, assessment of internal road traffic noise amenity (i.e. within habitable rooms) for relevant residential buildings (including the future dwellings) adjacent to state-controlled roads is regulated by the Queensland Development Code (QDC) MP4.4 *Buildings in a Transport Noise Corridor* ("QDC MP4.4").

It is noted that State Planning Policy mapping indicates that land within 100 metres of the current Waterford Tamborine Road centreline adjacent to the site has been designated within a transport noise corridor. This extends approximately 76 metres into the eastern site boundary. The extent of the gazetted transport noise corridor and the default noise categories are shown on **Figure 3**.

When building a dwelling within a gazetted transport noise corridor there is the option to either accept the default mapped QDC MP4.4 noise category or to undertake a 'site-specific assessment' to consider the shielding effect of intervening terrain, acoustic barrier structures, the dwelling structure etc. Traffic noise modelling may be applied to provide a 'site-specific assessment' of noise categories. The default mapped QDC MP4.4 noise categories for the eastern part of the subject land range 'Noise Category 0' to 'Noise Category 3' (refer **Figure 3**).

This report provides an assessment of which QDC MP4.4 noise categories are appropriate for proposed allotments within the transport noise corridor extent (i.e. within 100 metres of Waterford Tamborine Road) as well as within the anticipated transport noise corridor for Yarrabilba Drive and Jimbillunga Drive (within 100 metres) with consideration of the recommended acoustic barrier.

The criteria for determining the relevant noise category are presented in **Table 2** below.

Table 2: QDC MP4.4 Noise Categories

Noise Category	Level of transport noise ($L_{A10, 18hr}$) for State-controlled roads and designated local government roads
Category 4	≥ 73 dB(A)
Category 3	68 - 72 dB(A)
Category 2	63 – 67 dB(A)
Category 1	58 - 62 dB(A)
Category 0	≤ 57 dB(A)

4.0 ROAD TRAFFIC NOISE ASSESSMENT

4.1 STATE-CONTROLLED ROAD – WATERFORD TAMBORINE ROAD

4.1.1 Traffic Volume Data

Waterford Tamborine Road past the subject site has been constructed as a single lane each way undivided carriageway.

The design of the Waterford Tamborine Road was integrated into the SoundPLAN computer noise model based on topography data obtained from State of Queensland, Qld Spatial Web Service, LiDAR Contours 1 metre for the purposes of this assessment.

Plate 1 below presents the segments of road that are State-controlled based upon SPP mapping.



Traffic data for the existing and ultimate design horizon for Waterford Tamborine Road was obtained from SLR Consulting as per the following tables:

**Table 3: 2023 Traffic Data for Waterford Tamborine Road (SLR Counts)
(Immediately south of Waterford Tamborine Rd / Yarrabilba Dr /
Camp Cable Rd intersection)**

WATERFORD TAMBORINE ROAD (2023)		AADT				
		LV	HV	Total	LV%	HV%
14/11/2023 Intersection Count (immediately south of Yarrabilba Drive intersection) ²	Total	7,455	510	7,965	93.6%	6.4%
TMR 2023 Census (south of intersection) – Site 11429 ³	Total	4,790	611	5,401	88.7%	11.3%

The Year 2025 traffic volume was calculated by SLR Consulting based upon the 2023 SLR traffic count data and a nominal growth rate. The traffic counts undertaken by SLR Consulting was used in the noise model as it is more relevant and conservative to the site location than the TMR Census data.

The ultimate design horizon traffic volume was also provided the SLR based upon traffic modelling undertaken for Waterford Tamborine Road between Williamson Road and Greensward Road /Plunkett Road by Metis Consultants ⁴.

The adopted traffic volumes and heavy vehicle percentages for the existing (Year 2025) and design horizon for Waterford Tamborine Road are presented in **Table 4**.

In accordance with standard protocols, the 18 hour traffic volume between 6am and midnight was estimated as 94% of the daily traffic volume.

Table 4: Existing and Design Horizon Traffic Volumes

WATERFORD TAMBORINE ROAD (2023)		AADT				
		LV	HV	Total	LV%	HV%
Year 2025	Total	8,189	560	8,749	93.6%	6.4%
Ultimate Design Williamson Rd – Greensward Rd/Plunkett Rd	Total	24,863	537	25,400	97.9%	2.1%

² Estimated from peak hour volumes

³ DTMR Traffic Counter Site 11429 is located approximately 500m south of the Waterford Tamborine Road / Plunkett Road intersection

⁴ Metis Modelling 2018

The ultimate design horizon is applied considering that the Yarrabilba masterplan is 100 percent developed, which assumes that:

- Wentland Drive is extended southeast to connect with Plunkett Road.
- Yarrabilba Drive is extended south to connect with Plunkett Road.
- Hootman Drive connection between Wentland Drive and Plunkett Road.
- Jimbillunga Drive connection between Wentland Drive and Waterford-Tamborine Road.
- Mibinba Drive connection between Jimbillunga Drive and Waterford-Tamborine Road.
- Southern Infrastructure Corridor (SIC) (along northern boundary of Yarrabilba) is in place.
- McKenny Boulevard extended north to connect with SIC.

The posted speed limit is 80km/hr north of Williamson Road and 100km/hr south of Williamson Road i.e. past the site.

4.1.2 Traffic Noise Model

Road traffic noise levels from Waterford Tamborine Road have been predicted using the SoundPLAN 9.0 computer noise model applying the CoRTN methodology for traffic noise prediction. This method is accepted by regulatory bodies in Queensland.

Topographical data covering the subject site, Waterford Tamborine Road and surrounding areas obtained from Queensland, Qld Spatial Web Service for validation modelling purposes.

The design horizon road traffic noise modelling and acoustic barrier design presented in this report has been based upon:

- A CAD drawing provided by KN Group (Tin Prelim P08ROL1_250522_MGA2020.dwg) that provides the development earthworks design (refer **Attachment 2**).

Adjustment has been made for Australian roads as per the Department of Transport and Main Roads *Transport Noise Management Code of Practice*, as follows:

Free field Predictions: - 0.7 dB(A)
Façade Reflection Adjusted Predictions: - 1.7 dB(A)

A +1 dB(A) adjustment was applied to the existing Waterford Tamborine Road surface to account for the existing Bituminous Seal (BS) road surface ⁵.

For the design horizon modelling, no road surface correction has been applied to Waterford Tamborine Road, as the future road is anticipated to be dense graded asphalt surface, consistent with the projected traffic volumes for the ultimate design horizon and recent update of WTR north of Yarrabilba Drive intersection. While there is currently no planned upgrade for the section of Waterford Tamborine Road fronting the development site, it is expected that duplication of the road will occur as part of the ultimate design.

4.1.3 Model Validation

The first step in the predictive traffic noise process is to validate the model to the recorded noise levels, i.e. the aim being to predict within ± 2 dB of the recorded level, with selected parameters used in the future traffic noise modelling.

The existing average weekday levels of traffic noise exposure recorded at the noise datalogger location was measured to be 59.4 dB(A) as the free-field L_{10} (18 hour).

The SoundPLAN model was setup to represent Year 2025 traffic on Waterford Tamborine Road as relevant to the noise monitoring period (refer **Table 1**) and the noise datalogger location.

The Year 2025 validation model predicted free-field L_{10} (18 hour) noise levels of 59.7 dB(A) (60.4 dB(A) - 0.7 dB(A) correction) at the datalogger location. The validation model is slightly over predicting the measured L_{10} (18 hour) noise levels and is considered acceptable.

The model layout and logger location used in the SoundPLAN validation model and the result table are provided in **Attachment 4**.

4.1.4 Ultimate Design Horizon Modelling

The SoundPLAN model was setup to represent traffic noise from Waterford Tamborine Road under ultimate design traffic conditions.

The modelling has considered the proposed residential allotment levels as per the KN Group drawing *Precinct 8 – ROL 1, Functional Plans* refer drawings in **Attachment 1**.

⁵ 5-14 mm Bituminous Seal (BS), well sealed gap between aggregates and smooth surface

The SoundPLAN model was used to calculate design horizon traffic noise levels across the subject land for the following specific parameters as per the relevant State Code 1 noise criteria and to assess site-specific the QDC MP4.4 noise categories with the recommended acoustic barrier:

Private Open Space (for State Code 1 Criterion)

- L_{10} (18 hour) free-field for Ground Level (+1.5m) height

External Facades (for QDC MP4.4 Assessment)

- L_{10} (18 hour) façade reflection adjusted for Ground Level (+1.8m) height
- L_{10} (18 hour) façade reflection adjusted for Upper Level (+4.6m) height

Preliminary noise modelling determined that acoustic barriers are required to achieve compliance with the 57 dB(A) L_{10} (18 hour) (free-field) State Code 1 noise criterion for private open space at proposed residential allotments within Stage 810.

As such, traffic noise mitigation measures are required to achieve the relevant State Code 1 traffic noise criterion for private open space.

Through an iterative noise modelling process, MWA Environmental has determined that the following acoustic barriers are required for the development to comply with the 57 dB(A) L_{10} (18 hour) (free-field) for outdoor recreational areas:

Stage 810 - Acoustic Barrier

- **2.5 metre high acoustic barrier** located along part of the northern stage boundary.
It is noted that this section of the barrier may be removed in the future when the proposed Precinct 9 development to the north is undertaken, where acoustic attenuation measure may require the 4.5m barrier to be extended along the Waterford Tamborine Road interface.
- **4.5 metre high acoustic barrier** located along the western stage boundary.
- **2.5 to 3.5 metre high acoustic barrier** located along part of the southern stage boundary.

The location of the proposed acoustic barriers are shown on **Figure 4**.

The acoustic barrier heights are specified above the design earthworks level. The modelled acoustic barrier coordinates and top of barrier reduced levels (RLs) based on recommended acoustic barrier heights are graphically displayed on **Figure 4**.

The acoustic barriers should be constructed in accordance with the requirements of the Technical Specification - MRTS15 Noise Fences (Transport and Main Roads, 2019).

With the recommended acoustic barriers, the traffic noise modelling indicates that the relevant State Code 1 private open space noise criterion of 57 dB(A) L_{10} (18 hour) free-field criterion will be satisfied for outdoor recreation space on all proposed residential allotments in Stage 810.

It is noted that the 57 dB(A) L_{10} (18-hour) free-field noise extends up to 150 metres from the road carriageway, intruding into the stage 810. All other stages of Precinct 8 are located beyond this range, with a minimum distance of 250 metres from the carriageway and are therefore not affected by the private open space noise criterion.

The SoundPLAN model predictions are presented in **Attachment 5** as plots of the L_{10} (18 hour) traffic noise levels for outdoor recreational spaces with the recommended acoustic barriers over the development plan for the ground level (+1.5mAGL) receptor height.

4.1.5 Predicted QDC MP4.4 Noise Categories

Site-specific road traffic noise modelling was prepared to determine the 'site-specific' Queensland Development Code MP4.4 'noise categories' for the proposed development within the currently designated transport noise corridor under ultimate design horizon traffic conditions with the recommended acoustic barrier.

The SoundPLAN model predictions are presented in **Attachment 6** as plots of predicted L_{10} (18 hour) (including +2.5dB façade reflection) QDC MP4.4 Noise Categories with the recommended acoustic barrier for ground level (+1.8mAGL) and upper level (+4.6mAGL) receptor heights.

Site-specific assessment has determined that **QDC MP4.4 Noise Categories of 0 to 1 are applicable for single storey houses and the ground floor of two storey houses with the recommended acoustic barrier.**

QDC MP4.4 Noise Categories of 1 to 2 are applicable for the upper level of any highest houses within the currently designated transport noise corridor.

The assessment of the site-specific QDC MP4.4 noise categories based upon the noise modelling results are summarised in **Table 5** below.

Table 5: Assessed Ultimate Design Horizon QDC MP4.4 'Noise Categories' Stage 810 Proposed Allotments within the Transport Noise Corridor

QDC MP4.4 Noise Categories for Most Affected Dwelling Facade		
Lot #	Single storey house / ground floor	Upper floor of two storey house
8435	Category 1	Category 2
8439	Category 1	Category 1
8440	Category 1	Category 2
8441	Category 1	Category 2
8442	Category 1	Category 2
8443	Category 1	Category 1
8444	Category 1	Category 1

A copy of the Queensland Development Code (QDC) *MP4.4 – Buildings in a Transport Noise Corridor* is included in **Attachment 7** including indicative acceptable forms of construction.

4.2 LOCAL ROAD – YARRABILBA DRIVE AND JIMBILLUNGA DRIVE

In order to assess compliance with the SDAP noise criteria, ultimate design horizon traffic noise predictions have been predicted across the site. The ultimate design horizon is applied considering that the Yarrabilba masterplan is 100 percent developed, which assumes that:

- Wentland Drive is extended southeast to connect with Plunkett Road.
- Yarrabilba Drive is extended south to connect with Plunkett Road.
- Hootman Drive connection between Wentland Drive and Plunkett Road.
- Jimbillunga Drive connection between Wentland Drive and Waterford-Tamborine Road.
- Mibinba Drive connection between Jimbillunga Drive and Waterford-Tamborine Road.
- Southern Infrastructure Corridor (SIC) (along northern boundary of Yarrabilba) is in place.
- McKenny Boulevard extended north to connect with SIC.

The noise model has represented the design horizon of the development traffic on Yarrabilba Drive and Jimbillunga Drive adjacent to the proposed Precinct 8 based upon the design topographical contours of the road and of Precinct 8 allotments.

The SoundPLAN 9.0 model was setup to predict the external L_{10} (18 hour) traffic noise levels under ultimate design traffic flow conditions.

Adjustment of CoRTN predictions has been made for Australian roads as per the Department of Transport and Main Roads - Code of Practice guidance. Corrections of -0.7 dB for free-field predictions and -1.7 dB for façade adjusted predictions have been applied.

4.2.1 Traffic Volume Data

The design horizon traffic volumes (daily two way total) and speed limits provided by SLR are as presented in **Table 6** below and presented on **Plate 2**.

The 18 hour (6am to Midnight) traffic volume has been approximated as 94% of the daily volume. Heavy vehicle percentage is considered to be a conservative 3% for modelling purposes as advised by SLR.

Table 6: Design Traffic Volume Data

Planning Horizon	Road Section	Daily Vehicles Volume (AADT)	Speed (km/hr)
Ultimate Design	Jimbillunga Drive (West of Intersection PQ)	10,930	60
	Jimbillunga Drive (Intersection PQ to Intersection Q)	6,650	
	Jimbillunga Drive (East of Intersection Q)	8,373	
	Yarrabilba Drive (Intersection Q to Intersection Q1)	9,747	
	Yarrabilba Drive (South of Intersection Q1)	10,037	



4.2.2 Predicted Future Traffic Noise Levels – Residential Outdoor Areas

A SoundPLAN 9.0 model was setup to predict the external L_{10} (18 hour) traffic noise levels under ultimate design traffic flow conditions for Ground Level (+1.8m) and Upper Level (+4.6m) receptors **with acoustic barriers**. The recommended acoustic barriers were represented at height of **1.8 to 2.0 metres on top of the retaining wall or above pad level. Whichever is the higher point** as shown on **Figure 5a and 5b**.

The results of the traffic noise modelling for ground level receptors within Precinct 8 indicates that the adopted SDAP noise criterion of 60 dB(A) L_{10} (18 hour) for outdoor recreation space (backyards) will comply at the proposed allotments within Precinct 8.

The predicted road traffic noise contour maps which demonstrate areas in compliance of the 60 dB(A) L₁₀ (18 hour) for outdoor spaces are provided in **Attachment 8**.

4.2.3 Predicted Future Traffic Noise Levels – QDC MP4.4 Noise Categories

Under the *Building Act 1975*, the transport Chief Executive may designate land as being within a transport noise corridor and compliance with QDC MP4.4 is required if the land is within:

- 100 metres of a state-controlled road; or
- Up to 250 metres of a state-controlled road if the noise of traffic on the road is at least 58 dB(A).

Effectively, for the purposes of land use planning assessment and the design of future dwellings in accordance with the QDC, acoustic treatment may be required for dwellings located within 250 metres of the roadway if external L₁₀ (18 hour) noise levels exceed 58 dB(A). This notwithstanding, it is noted that this may occur some stage in the future under an ultimate design horizon or when the Southern Infrastructure Corridor is commissioned, however it is expected that up to and after Year 2034 the land within 100 metres of the Yarrabilba Drive and Jimbillunga Drive would at some time be designated as being within a transport noise corridor.

In the event that major roads were to be gazetted as a 100 metre transport noise corridor then, based upon our modelling for Precinct 8, single-storey dwellings adjoining the road corridor boundaries would be subject to QDC MP4.4 'Noise Category 0 to 1' acoustic treatment requirements.

For the upper level of any two-storey houses within Precinct 8 a maximum 'Noise Category 0 to 3' acoustic treatment requirement would apply.

Table 7 below presents the affected allotments within a 100 metre transport corridor and the applicable QDC MP4.4 noise categories for any future single or two storey dwellings on the allotments within Precinct 8.

Table 7: Recommended QDC MP4.4 'Noise Categories' for 'Precinct 8' Allotments

QDC MP4.4 Noise Categories PRECINCT 8		
Lot #	Single storey house / ground floor	Upper floor of two storey house
8001	Noise Category 1	Noise Category 3
8002	Noise Category 1	Noise Category 1
8003	Noise Category 0	Noise Category 1
8049	Noise Category 1	Noise Category 2
8050	Noise Category 1	Noise Category 1
8051	Noise Category 0	Noise Category 1
8085	Noise Category 1	Noise Category 3
8086	Noise Category 1	Noise Category 3
8087	Noise Category 1	Noise Category 3
8088	Noise Category 1	Noise Category 3
8089	Noise Category 1	Noise Category 2
8090	Noise Category 1	Noise Category 2
8122	Noise Category 0	Noise Category 1
8127	Noise Category 1	Noise Category 3
8128	Noise Category 1	Noise Category 3
8129	Noise Category 1	Noise Category 3
8130	Noise Category 1	Noise Category 3
8131	Noise Category 1	Noise Category 3
8132	Noise Category 1	Noise Category 3
8133	Noise Category 1	Noise Category 3
8134	Noise Category 1	Noise Category 3
8135	Noise Category 1	Noise Category 3
8136	Noise Category 1	Noise Category 3
8137	Noise Category 1	Noise Category 3
8138	Noise Category 1	Noise Category 3
8139	Noise Category 1	Noise Category 3
8140	Noise Category 1	Noise Category 3
8540	Noise Category 1	Noise Category 2
8541	Noise Category 1	Noise Category 2
8542	Noise Category 1	Noise Category 2
8543	Noise Category 1	Noise Category 2
8544	Noise Category 1	Noise Category 2
8545	Noise Category 1	Noise Category 2
8546	Noise Category 1	Noise Category 2
8547	Noise Category 1	Noise Category 2
8548	Noise Category 1	Noise Category 2
8549	Noise Category 1	Noise Category 2
8550	Noise Category 1	Noise Category 2
8590	Noise Category 1	Noise Category 2
8591	Noise Category 1	Noise Category 2
8592	Noise Category 1	Noise Category 2

*Noise Category 0 – No acoustic treatment is required

Table 7 – Continued

QDC MP4.4 Noise Categories PRECINCT 8		
Lot #	Single storey house / ground floor	Upper floor of two storey house
8593	Noise Category 1	Noise Category 2
8594	Noise Category 1	Noise Category 2
8595	Noise Category 1	Noise Category 2
8596	Noise Category 1	Noise Category 2
8597	Noise Category 1	Noise Category 2
8598	Noise Category 0	Noise Category 1
8623	Noise Category 1	Noise Category 3
8624	Noise Category 1	Noise Category 3
8625	Noise Category 1	Noise Category 2
8626	Noise Category 1	Noise Category 2
8627	Noise Category 1	Noise Category 2
8628	Noise Category 1	Noise Category 2
8629	Noise Category 1	Noise Category 2
8630	Noise Category 1	Noise Category 2
8631	Noise Category 1	Noise Category 2
8632	Noise Category 1	Noise Category 2
8652	Noise Category 1	Noise Category 3
8653	Noise Category 1	Noise Category 3
8654	Noise Category 1	Noise Category 3
8655	Noise Category 1	Noise Category 3
8656	Noise Category 1	Noise Category 3
8657	Noise Category 1	Noise Category 3
8658	Noise Category 1	Noise Category 2
8659	Noise Category 2	Noise Category 3
8660	Noise Category 1	Noise Category 1
8661	Noise Category 1	Noise Category 1
8662	Noise Category 1	Noise Category 1
8750	Noise Category 2	Noise Category 3
8751	Noise Category 1	Noise Category 2
8752	Noise Category 0	Noise Category 2
8753	Noise Category 0	Noise Category 2
8760	Noise Category 0	Noise Category 2
8761	Noise Category 1	Noise Category 2
8762	Noise Category 1	Noise Category 3
8763	Noise Category 1	Noise Category 3
8920	Noise Category 0	Noise Category 2
8921	Noise Category 0	Noise Category 2
8922	Noise Category 0	Noise Category 2
8923	Noise Category 0	Noise Category 2
8924	Noise Category 0	Noise Category 2
8925	Noise Category 0	Noise Category 3
8926	Noise Category 0	Noise Category 3
8927	Noise Category 0	Noise Category 3
8928	Noise Category 0	Noise Category 3
8929	Noise Category 0	Noise Category 3
8930	Noise Category 1	Noise Category 3
8961	Noise Category 0	Noise Category 1
8969	Noise Category 1	Noise Category 3

*Noise Category 0 – No acoustic treatment is required

Table 7 – Continued

QDC MP4.4 Noise Categories PRECINCT 8		
Lot #	Single storey house / ground floor	Upper floor of two storey house
8970	Noise Category 1	Noise Category 3
8971	Noise Category 1	Noise Category 3
8972	Noise Category 1	Noise Category 3
8973	Noise Category 1	Noise Category 3
8974	Noise Category 1	Noise Category 3
8975	Noise Category 1	Noise Category 3
8976	Noise Category 1	Noise Category 3
8977	Noise Category 1	Noise Category 3
8978	Noise Category 1	Noise Category 3
8979	Noise Category 1	Noise Category 3
8980	Noise Category 1	Noise Category 3

The SoundPLAN model predictions are presented as plots of predicted L_{10} (18 hour) traffic noise levels (including +2.5dB façade reflection) over the proposed residential subdivision for ground level (+1.8m) receptors (refer **Attachment 9**).

The SoundPLAN model predictions are also presented as plots of predicted L_{10} (18 hour) traffic noise levels (including +2.5dB façade reflection) over the proposed residential subdivision for upper level (+4.6m) receptors (refer **Attachment 9**).

5.0 CONCLUSION

MWA Environmental has been engaged to prepare a Road Traffic Noise Impact Assessment for the proposed 'Precinct 8' development at Yarrabilba.

The report has assessed the potential road traffic noise impact and mitigation measures associated based on the lot reconfiguration plan and civil earthworks design for Precinct 8 for the following road segments;

- Local Sub Arterial (Yarrabilba Drive) and Major Collector corridor (Jimbillunga Drive); and
- State-controlled, Waterford Tamborine Road.

The road traffic noise assessment evaluates the potential noise impact of Waterford Tamborine Road (state-controlled road) upon the proposed residential Stage 810 subdivision development as well as Yarrabilba Drive and Jimbillunga Drive (local arterial roads) adjacent to the proposed Precinct 8 allotments.

The requirement for acoustic barriers and acoustic treatment of future dwellings within the proposed development has been assessed by MWA Environmental with regard to State Code 1: *Development in a state-controlled road environment* and the provisions of Queensland Development Code MP4.4 *Buildings in a Transport Noise Corridor*.

The State Planning Policy mapping for Waterford Tamborine Road indicates that a designated transport noise corridor associated with Waterford Tamborine Road affects the subject site. The transport noise corridor extends 100 metres from the centreline of Waterford Tamborine Road.

5.1 Outcome of State-Controlled Road – Waterford Tamborine Road

It has been determined that acoustic barriers are required to achieve compliance with the relevant SDAP State Code 1 v3.2 criterion for private open space. The **recommended acoustic barrier heights are as follows and as shown on Figure 4.**

Stage 810 - Acoustic Barrier

- **2.5 metre high acoustic barrier** located along part of the northern stage boundary.

It is noted that this section of the barrier may be removed in the future when the proposed Precinct 9 development to the north is undertaken, where acoustic attenuation measure may require the 4.5m barrier to be extended along the Waterford Tamborine Road interface.

- **4.5 metre high acoustic barrier** located along the western stage boundary.
- **2.5 to 3.5 metre high acoustic barrier** located along part of the southern stage boundary.

The top of barrier reduced levels (RLs) as represented in the noise modelling are presented in **Figure 4**.

The acoustic barriers should be constructed in accordance with the requirements of the Technical Specification - MRTS15 Noise Fences (Transport and Main Roads, 2019) and achieve the minimum heights and top RLs specified in **Figure 4**.

With the recommended acoustic barriers, the traffic noise modelling indicates that the 57 dB(A) L₁₀ (18 hour) free-field traffic noise criterion can be satisfied for private open space on Stage 810 residential allotments.

The road traffic noise modelling has been applied to determine site-specific Queensland Development Code MP4.4 'noise categories' over the proposed residential allotments within the designated transport noise corridor with the acoustic barriers (refer **Section 4.1.5 and Attachment 6**).

5.2 Outcome of Local Roads – Yarrabilba Drive and Jillbillunga Drive

The report has assessed the potential road traffic noise impact and mitigation measures associated with the adjacent Yarrabilba Drive and Jimbillunga Drive road corridors within the Yarrabilba development area based on Precinct 8 lot reconfiguration plan and civil earthworks design.

The road corridor is not currently gazetted as a transport noise corridor but it is likely to be at some stage in the future if and when traffic volumes exceed 5,000 vehicles per day. Until such time as the road corridor is gazetted as a 'transport noise corridor' there is unlikely to be a requirement for acoustic treatment of houses in proximity to the road. There is the potential that houses may be constructed on allotments adjacent to the road prior to a 'transport noise corridor' being gazetted and thus no acoustic treatment requirements would be applied at the time of construction.

This notwithstanding, this assessment has addressed the methodology and criteria of the *State Code 1: Development in a state-controlled road environment (SDAP)* and Queensland Development Code (QDC) *MP4.4 – Buildings in a Transport Noise Corridor*.

The assessment has considered what noise levels would be experienced at the backyard of the proposed allotments to comply with a 60 dB(A) L₁₀ 18 hour noise limit, consistent with previous assessments undertaken for the overall Yarrabilba residential precincts located near major roads and as approved by Economic Development Queensland and the MP4.4 'noise categories' (which define standard

of acoustic treatment required) would be expected within a transport noise corridor if gazetted after completion.

The results of the traffic noise modelling for outdoor areas within Precinct 8 indicates that the adopted noise criterion of 60 dB(A) L₁₀ (18 hour) for outdoor recreation space (backyards) will achieve compliance at the proposed allotment within Precinct 8 with the inclusion of acoustic barriers at height of **1.8 to 2.0 metres on top of the retaining wall or above pad level, whichever is the higher point**, as shown on **Figure 5a and 5b**.

In the event that major roads were to be gazetted as a 100 metre transport noise corridor then, based upon our modelling for Precinct 8, single-storey dwellings adjoining the road corridor boundaries would be subject to QDC MP4.4 'Noise Category 0 to 1' acoustic treatment requirements. For the upper level of any two-storey houses within Precinct 8 a maximum 'Noise Category 0 to 3' acoustic treatment requirement would apply.

Table 7 and Attachment 9 of this report presents the affected allotments and the applicable QDC MP4.4 noise categories for any future single or double storey dwellings on the allotment within Precinct 8.

MWA Environmental
30 May 2025

Verified by:

D. Steinfeld
RPEQ - 24495

A handwritten signature in dark ink, appearing to be 'D. Steinfeld', with a stylized, cursive script.

FIGURES



LEGEND

PROPERTY BOUNDARY

SITE LOCATION
(PRECINCT 8 ROL1)

DRAWING REFERENCE

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(DEPARTMENT OF RESOURCES)
QLDGLOBE.

N

0

1.0

2.0km

CLIENT

STOCKLAND

PROJECT

TRAFFIC NOISE
IMPACT ASSESSMENT
PROPOSED PRECINCT 8
ROL1 DEVELOPMENT
YARRABILBA QLD

TITLE

SITE LOCATION

JOB	YARRABILBA	FIGURE 1
JOB NO.	25050	
DATE	28/05/25	
SCALE	1:70000 (A4)	
REV.		25050-1

mwa

ENVIRONMENTAL

Max Winders & Associates Pty Ltd t/as MWA Environmental
Level 7, 241 Adelaide St, Brisbane, QLD 4001
P 07 3002 5500 E mail@mwaenviro.com.au
W www.mwaenviro.com.au
ABN 94 010 833 084



LEGEND

PROPERTY BOUNDARY

NOISE DATALOGGER LOCATION

DRAWING REFERENCE

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N

0

20

40

60m

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PROJECT

TRAFFIC NOISE
IMPACT ASSESSMENT
PROPOSED PRECINCT 8
ROL1 DEVELOPMENT
YARRABILBA QLD

TITLE

NOISE MONITORING
LOCATION

JOB	YARRABILBA	FIGURE 2	
JOB NO.	25050		DWG NUMBER
DATE	28/05/25		25050-2
SCALE	1:2000 (A4)		
REV.			

mwa

ENVIRONMENTAL

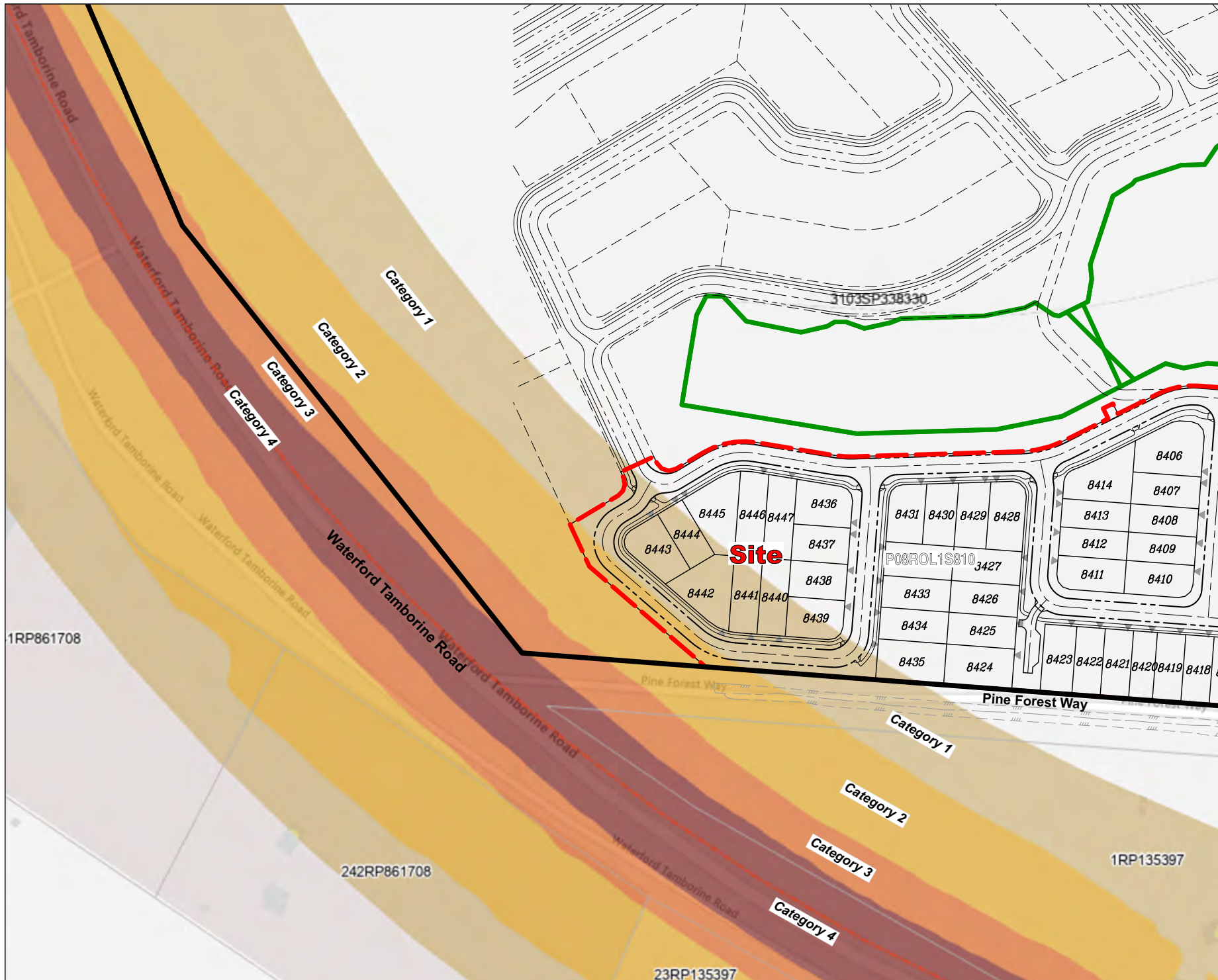
Max Winders & Associates Pty Ltd t/as MWA Environmental

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

PROPERTY BOUNDARY

SPP TRANSPORT NOISE CORRIDOR
State Controlled Road (Mandatory)

Category 1	58 dB(A) <= Noise Level < 63 dB(A)
Category 2	63 dB(A) <= Noise Level < 68 dB(A)
Category 3	68 dB(A) <= Noise Level < 73 dB(A)
Category 4	Noise Level >= 73 dB(A)

DRAWING REFERENCES

- © THE STATE OF QUEENSLAND, STATE PLANNING POLICY INTERACTIVE MAPPING SYSTEM, TRANSPORT NOISE CORRIDOR, STATE CONTROLLED ROAD (MANDATORY).
- KN GROUP, FUNCTIONAL LAYOUT STAGING PLAN SHEET 4, DWG 24-153-SK005.



0 1.0 2.0km

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PROJECT

**TRAFFIC NOISE
IMPACT ASSESSMENT**
PROPOSED PRECINCT 8
ROL1 DEVELOPMENT
YARRABILBA QLD

TITLE

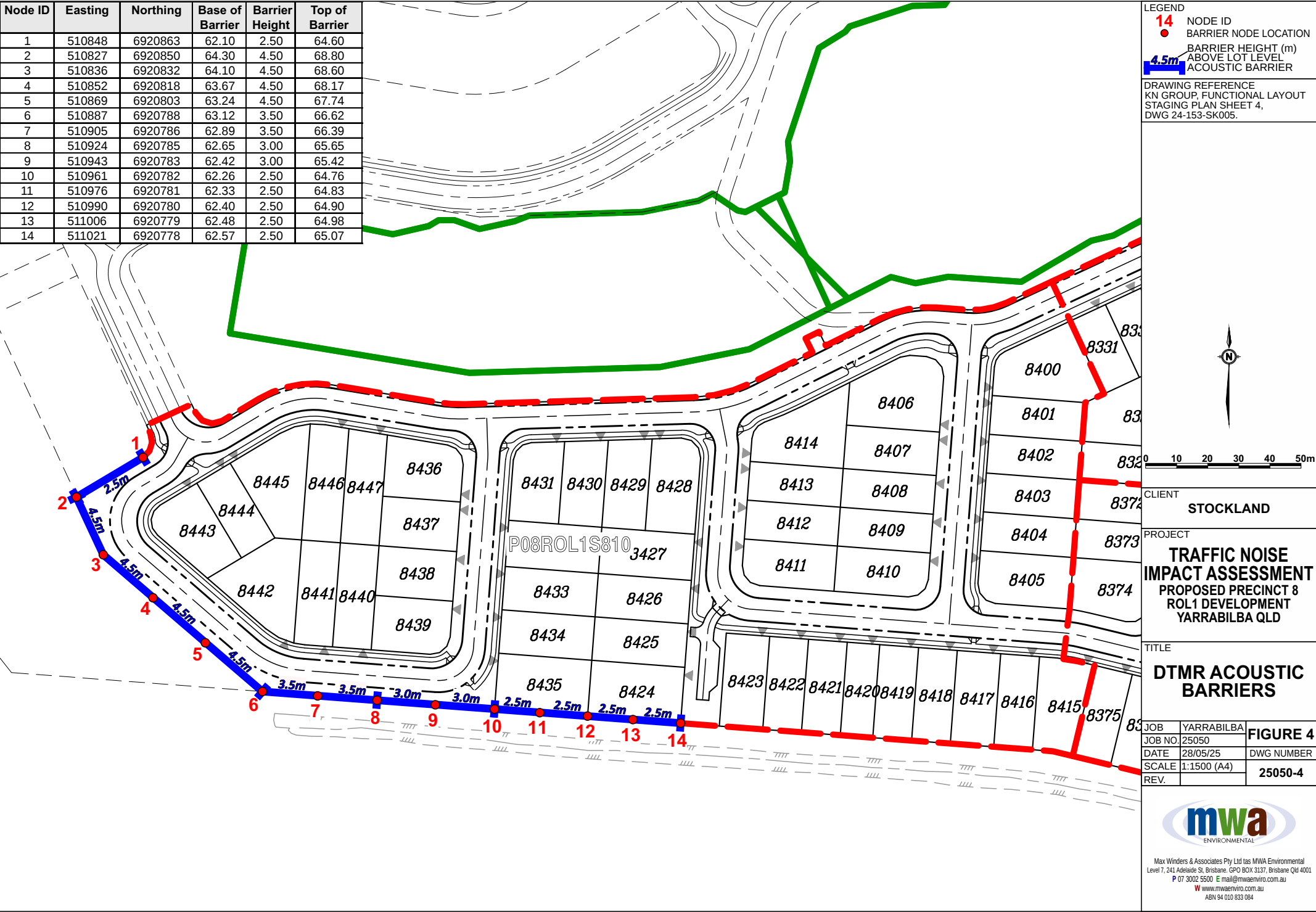
**SPP TRANSPORT
NOISE CORRIDOR**

JOB	YARRABILBA	FIGURE 3	
JOB NO.	25050		DWG NUMBER
DATE	28/05/25		25050-3
SCALE	1:2000 (A4)		
REV.			



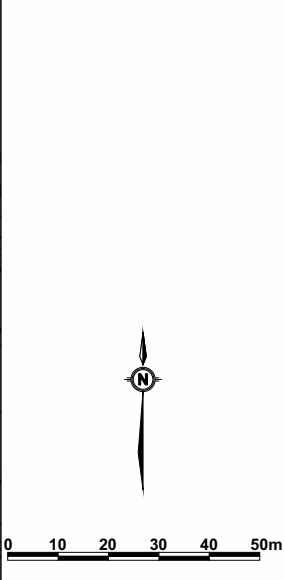
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Level 7, 241 Adelaide St, Brisbane, QLD 4001
P 07 3002 5500 E mail@mwaenviro.com.au
W www.mwaenviro.com.au
ABN 94 010 833 084

Node ID	Easting	Northing	Base of Barrier	Barrier Height	Top of Barrier
1	510848	6920863	62.10	2.50	64.60
2	510827	6920850	64.30	4.50	68.80
3	510836	6920832	64.10	4.50	68.60
4	510852	6920818	63.67	4.50	68.17
5	510869	6920803	63.24	4.50	67.74
6	510887	6920788	63.12	3.50	66.62
7	510905	6920786	62.89	3.50	66.39
8	510924	6920785	62.65	3.00	65.65
9	510943	6920783	62.42	3.00	65.42
10	510961	6920782	62.26	2.50	64.76
11	510976	6920781	62.33	2.50	64.83
12	510990	6920780	62.40	2.50	64.90
13	511006	6920779	62.48	2.50	64.98
14	511021	6920778	62.57	2.50	65.07



LEGEND
14 NODE ID
● BARRIER NODE LOCATION
4.5m BARRIER HEIGHT (m) ABOVE LOT LEVEL
4.5m ACOUSTIC BARRIER

DRAWING REFERENCE
KN GROUP, FUNCTIONAL LAYOUT
STAGING PLAN SHEET 4,
DWG 24-153-SK005.

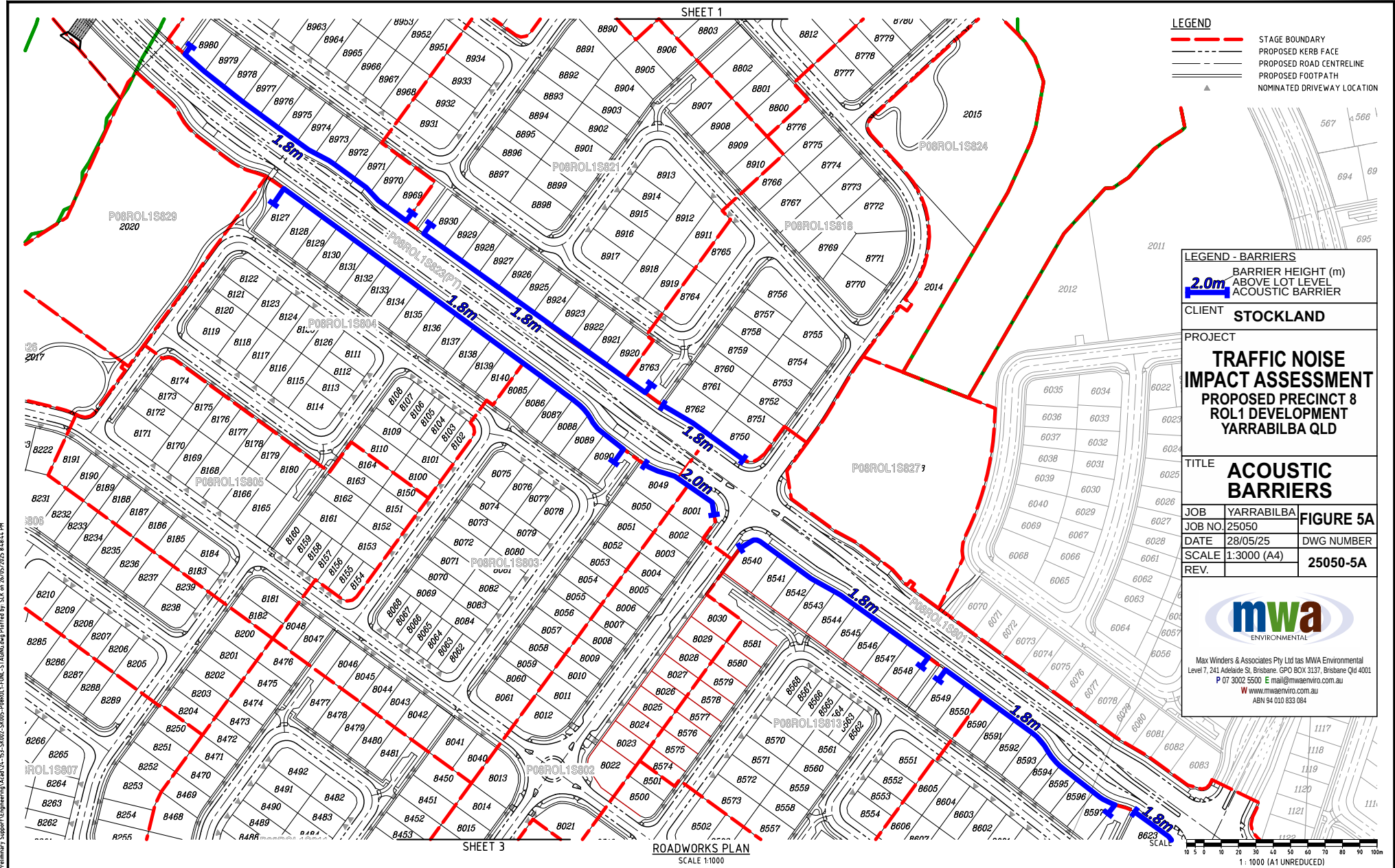


CLIENT
STOCKLAND

PROJECT
**TRAFFIC NOISE
IMPACT ASSESSMENT
PROPOSED PRECINCT 8
ROL1 DEVELOPMENT
YARRABILBA QLD**

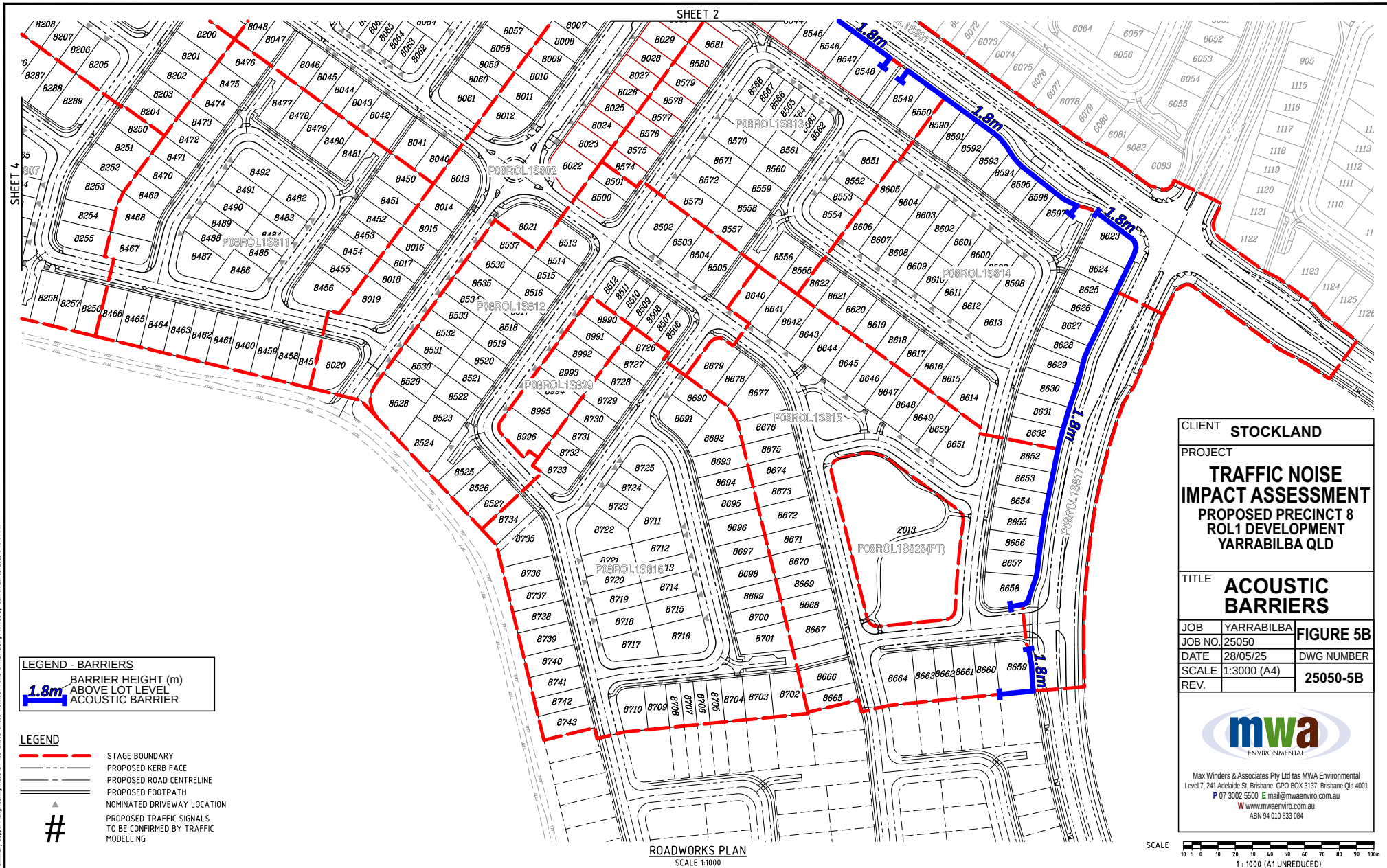
TITLE
**DTMR ACOUSTIC
BARRIERS**

JOB	YARRABILBA	FIGURE 4
JOB NO.	25050	
DATE	28/05/25	
SCALE	1:1500 (A4)	
REV.		25050-4



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		YARRABILBA		Stockland		NORTH				kn group		FUNCTIONAL LAYOUT STAGING PLAN SHEET 2	
		PRECINCT 6 - ROL3 PRELIMINARY PLANNING FUNCTIONAL DRAWINGS		Approved - RMEG 1285						L1, 62 Astor Terrace, Spring Hill, QLD 4000 www.knigroup.com.au 07 3017 1900		AS SHOWN	
												Sheet 03 of 34	
												A1	
												24-153-SK003	

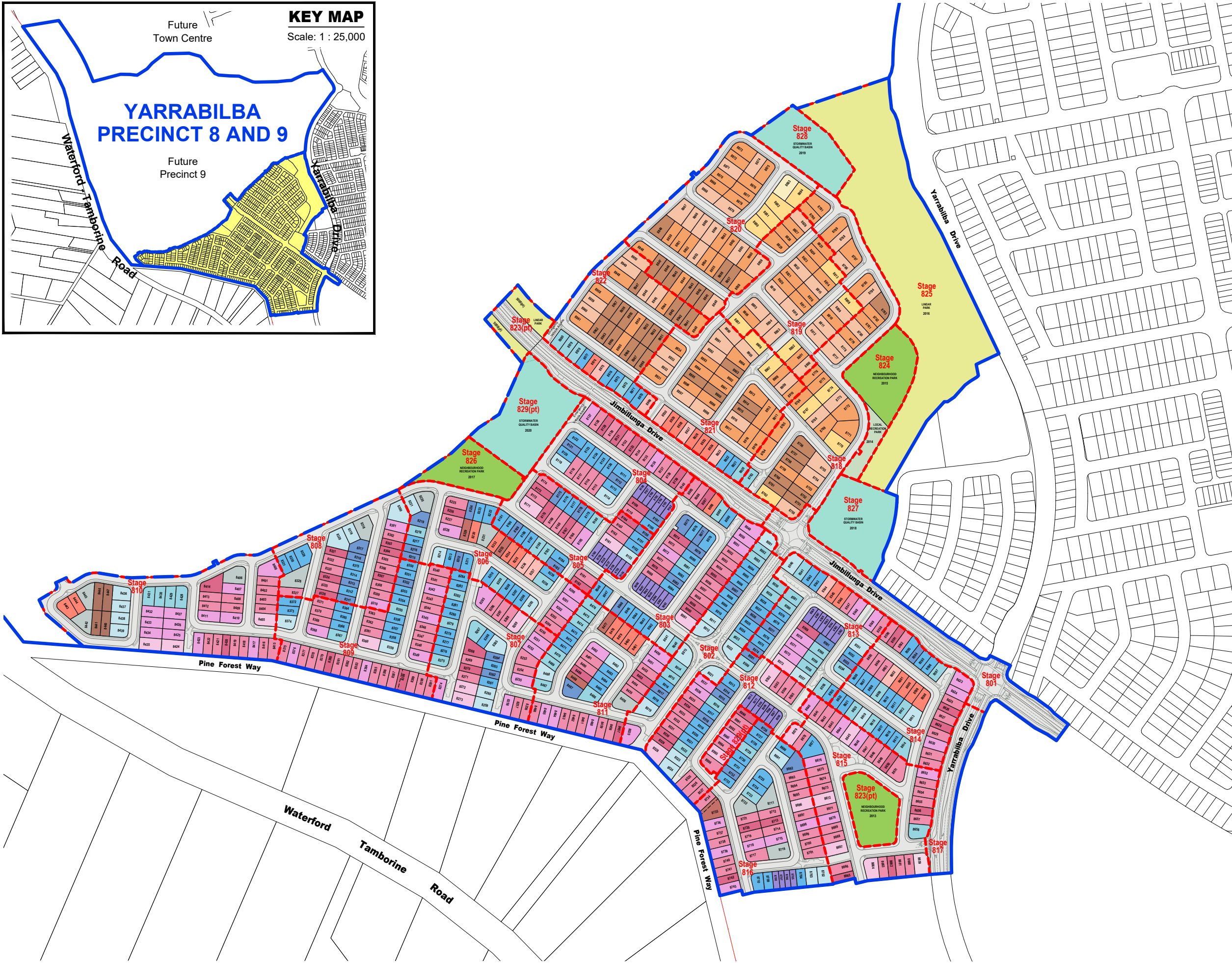
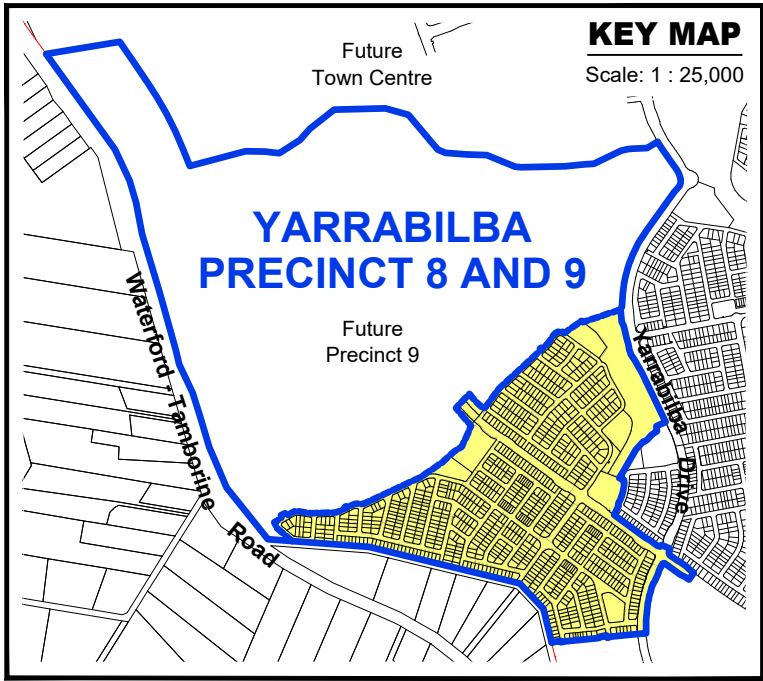


CLIENT		STOCKLAND	
PROJECT			
TRAFFIC NOISE IMPACT ASSESSMENT PROPOSED PRECINCT 8 ROL1 DEVELOPMENT YARRABILBA QLD			
TITLE		ACOUSTIC BARRIERS	
JOB	YARRABILBA	FIGURE 5B	
JOB NO.	25050		
DATE	28/05/25		
SCALE	1:3000 (A4)		
REV.			
		25050-5B	
 Max Winders & Associates Pty Ltd t/as MWA Environmental Level 7, 241 Adelaide St, Brisbane. GPO BOX 3137, Brisbane Qld 4001 P 07 3002 0200 E mail@mwaenviro.com.au W www.mwaenviro.com.au ABN 94 010 833 084			

[illegible]

ATTACHMENT 1

Development Plans



Note:
All Lot Numbers, Dimensions and Areas are approximate only, and are subject to survey and EDQ approval.

Dimensions have been rounded to the nearest 0.1 metres. Areas have been rounded down to the nearest 5m².

The boundaries shown on this plan should not be used for final detailed engineers design.

Source Information:
Site boundaries: RPS Survey
Adjoining information: DCDB

Legend

- Precinct Boundary
- - Application Boundary
- - Stage Boundary

Land Budget		
Land Use	Overall	
	Area	%
Residential Allotments	33.457 ha	53.1%
Trunk / Collector Roads	4.049 ha	6.4%
Local Roads	15.323 ha	24.3%
Neighbourhood Recreation Park	1.934 ha	3.1%
Local Recreation Park	0.210 ha	0.3%
Linear Park	5.016 ha	8.0%
Drainage Open Space	3.005 ha	4.8%
Total	62.994 ha	100.0%

Yield Breakdown			
Allotment Typology	Typical Area	Overall	
25m Deep Product			
25m x 7.5m Terrace	188m²	39	5%
25m x 10.5m	263m²	41	5%
25m x 12.5m	313m²	132	16%
25m x 14m	350m²	59	7%
25m x 16m	400m²	38	4%
Subtotal		309	37%
28m Deep Product			
28m x 10.5m	280m²	5	1%
28m x 12.5m	350m²	23	3%
28m x 14m	392m²	9	1%
Subtotal		37	4%
30m Deep Product			
30m x 10.5m	315m²	47	6%
30m x 12.5m	375m²	171	20%
30m x 14m	420m²	67	8%
30m x 16m	480m²	20	2%
30m x 18m	540m²	1	0%
Subtotal		306	36%
32m Deep Product			
32m x 12.5m	400m²	42	5%
32m x 14m	448m²	75	9%
32m x 16m	512m²	51	6%
32m x 18m	576m²	14	2%
32m x 20m	640m²	1	0%
Subtotal		183	22%
Multi-Family Strata Lots	550m²+	11	1%
Total Residential Allotments		846	100%
Density (calc. includes area of residential lots, local roads and rec. parks)		15.1 dw/ha	

PLAN REF: **AU13933 – 35**

Rev No: **A**
DATE: 30 May 2025
CLIENT: Stockland
DRAWN BY: MM / BM
CHECKED BY: BM



0 50 100 150 200 250 1 : 5,000 @ A3

YARRABILBA
PRECINCT 8 - APPLICATION 1
RECONFIGURATION OF A LOT - OVERALL



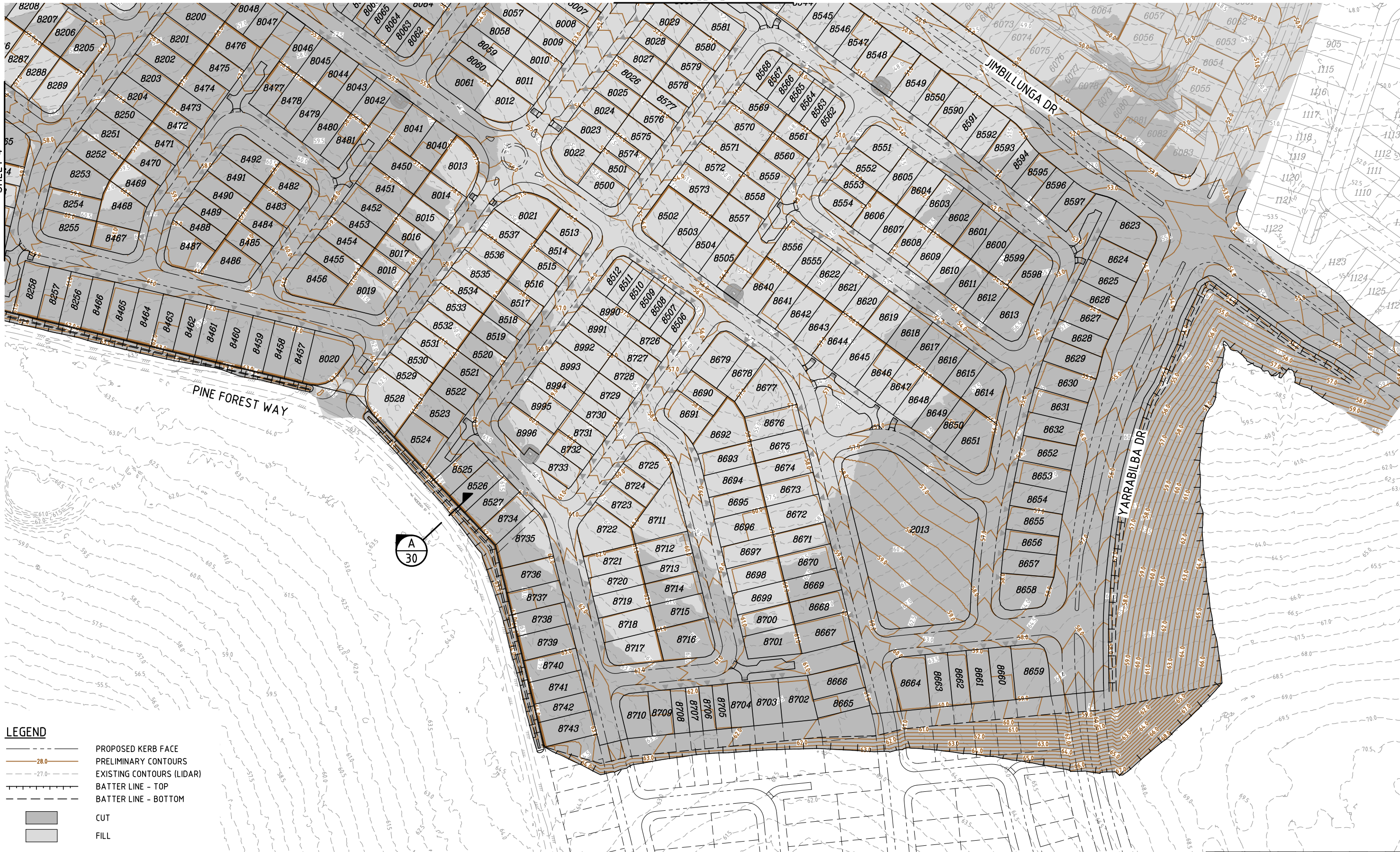
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Fortitude Valley QLD 4006
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W rpsgroup.com

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ATTACHMENT 2

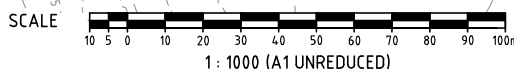
Preliminary Earthworks Design Drawing



LEGEND

- PROPOSED KERB FACE
- PRELIMINARY CONTOURS
- EXISTING CONTOURS (LIDAR)
- BATTER LINE - TOP
- BATTER LINE - BOTTOM
- CUT
- FILL
- COMBINED CONSTRAINT LINE

EARTHWORKS CONTOUR PLAN
SCALE 1:1000



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FOR
APPROVAL

REVISIONS					
No	Description	DR	DES	CHK	Date
A	FOR APPROVAL	SLK	JAS	RWM	30.05.25

Project

PRECINCT 8 - ROL1
PRELIMINARY PLANNING
FUNCTIONAL DRAWINGS

Client

Approved - RPEQ 12805

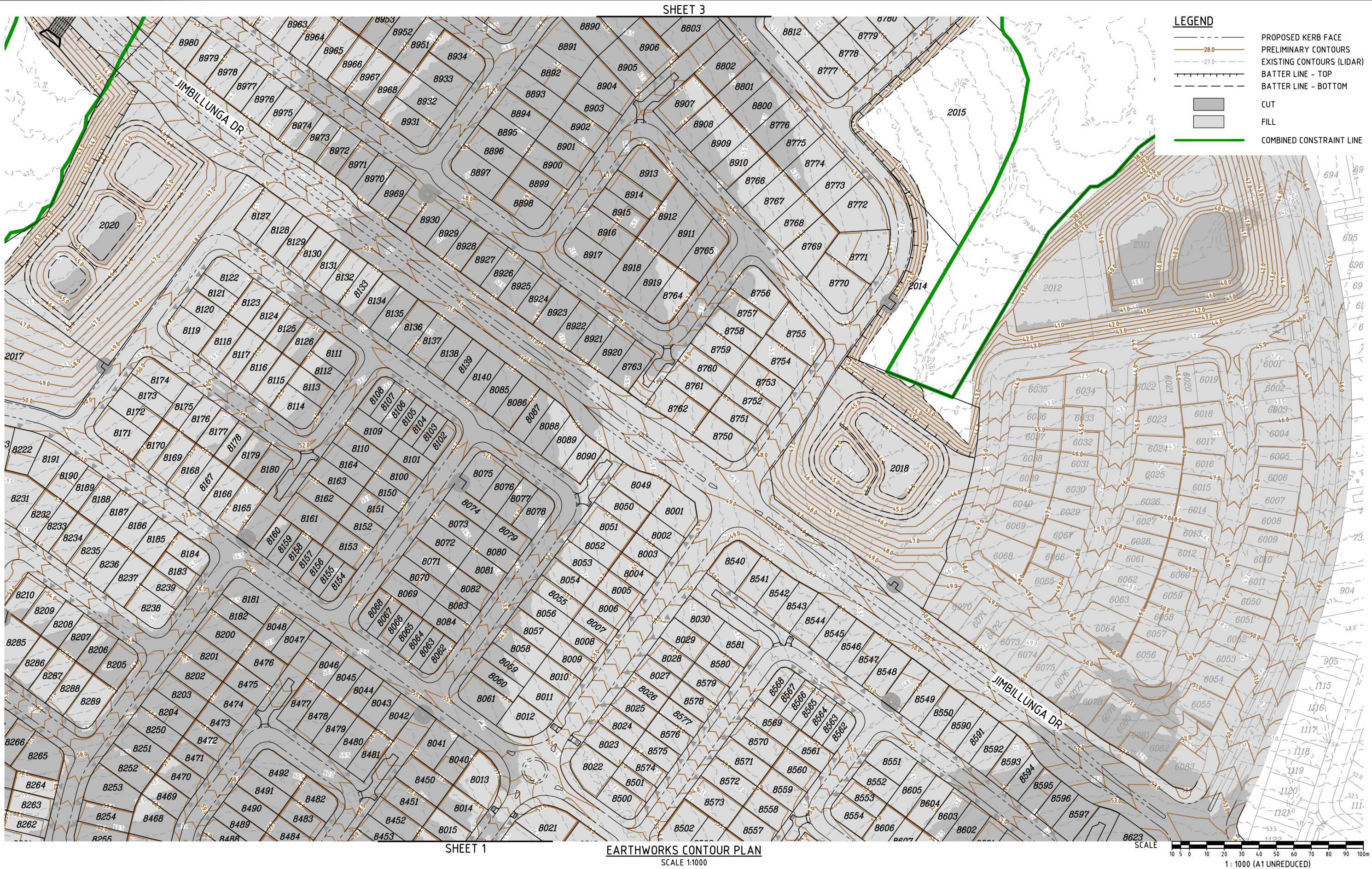
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Drawing Title			
FUNCTIONAL LAYOUT EARTHWORKS CONTOUR PLAN SHEET 1			
Scale	AS SHOWN	Sheet	27 of 34
A1	Drawing No 24-153-SK027	Revision	A

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REVISIONS					
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A	FOR APPROVAL	SLK	JAS	RWM	30.05.25

Project

YARRABILBA

PRECINCT 8 - ROL1
PRELIMINARY PLANNING
FUNCTIONAL DRAWINGS

Client

Stockland

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NORTH

Application No.

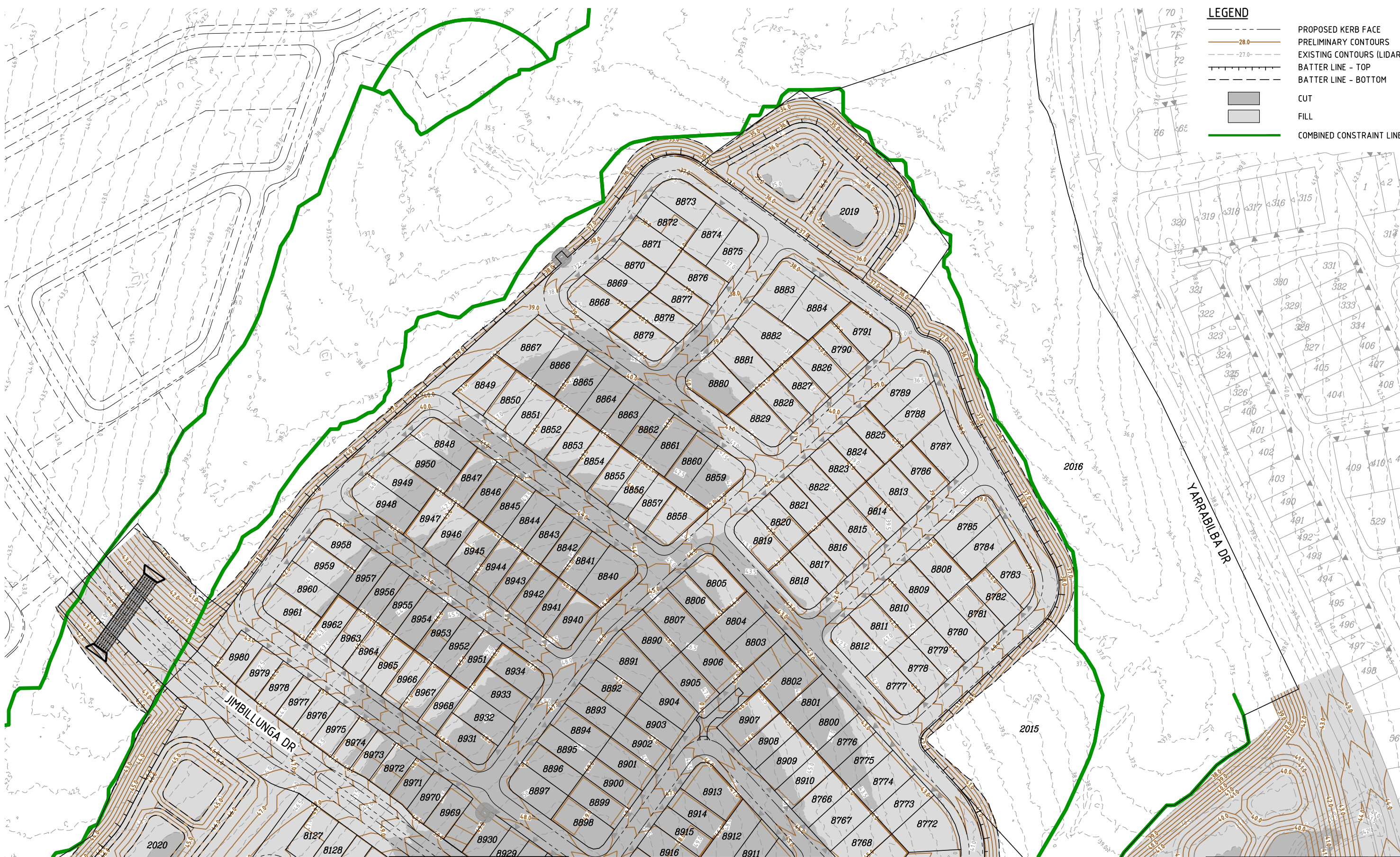
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Drawing Title

**FUNCTIONAL LAYOUT
EARTHWORKS CONTOUR PLAN
SHEET 2**

Scale	AS SHOWN	Sheet	28 of 34
A1	Drawing No 24-153-SK028	Revision	A



SHEET 2

EARTHWORKS CONTOUR PLAN
SCALE 1:1000

SCALE
10 5 0 10 20 30 40 50 60 70 80 90 100m
1: 1000 (A1 UNREDUCED)

FOR
APPROVAL

REVISIONS					
No	Description	DR	DES	CHK	Date
A	FOR APPROVAL	SLK	JAS	RWM	30.05.25

Project

 **YARRABILBA**

PRECINCT 8 - ROL1
PRELIMINARY PLANNING
FUNCTIONAL DRAWINGS

Client

 **Stockland**

Approved - RPEQ 12805

 NORTH

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Application No.

 **kn group**

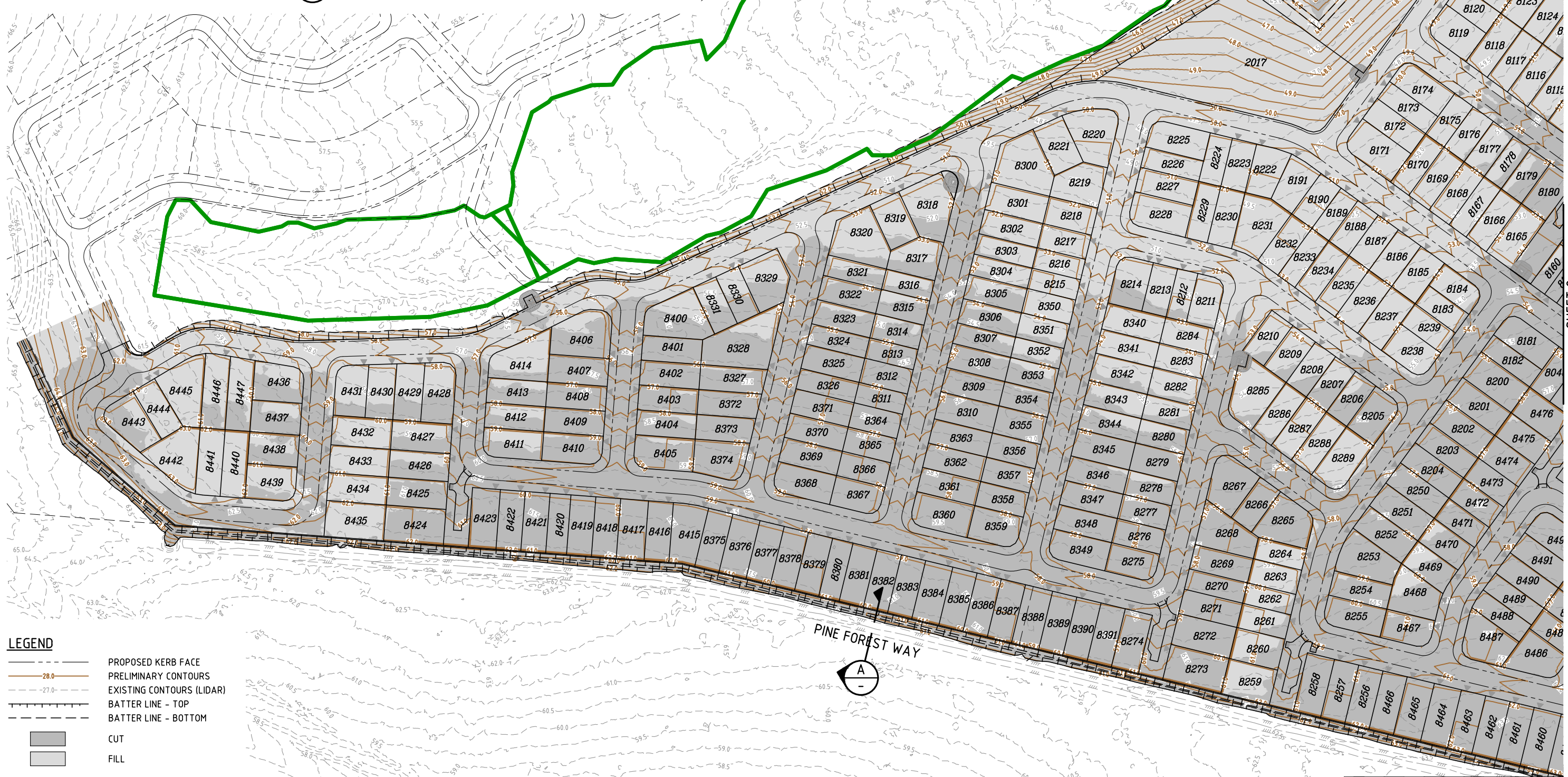
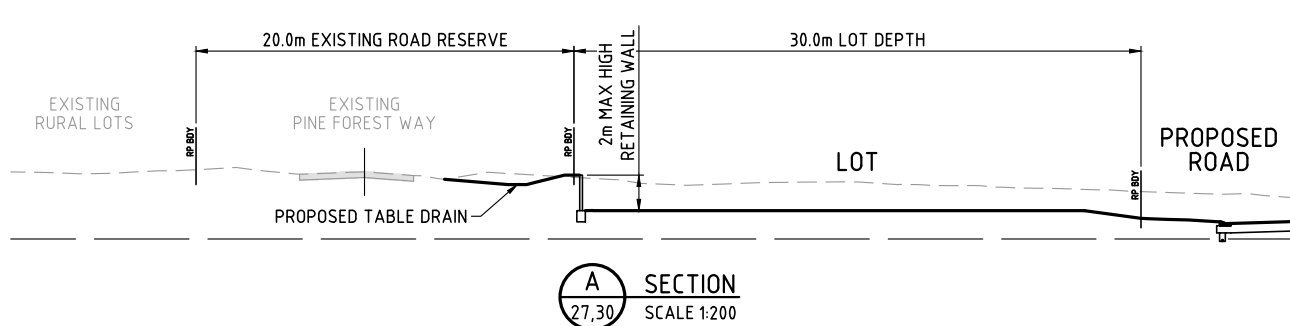
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Drawing Title

**FUNCTIONAL LAYOUT
EARTHWORKS CONTOUR PLAN
SHEET 3**

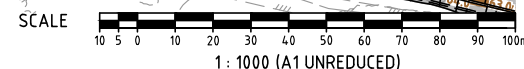
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- LEGEND**
- PROPOSED KERB FACE
 - PRELIMINARY CONTOURS
 - EXISTING CONTOURS (LIDAR)
 - BATTER LINE - TOP
 - BATTER LINE - BOTTOM
 - CUT
 - FILL
 - COMBINED CONSTRAINT LINE

EARTHWORKS CONTOUR PLAN
SCALE 1:1000



FOR APPROVAL

REVISIONS					
No	Description	DR	DES	CHK	Date
A	FOR APPROVAL	SLK	JAS	RWM	30.05.25

YARRABILBA
PRECINCT 8 - ROL1
PRELIMINARY PLANNING
FUNCTIONAL DRAWINGS

Stockland
Approved - RPEQ 12805

KN GROUP
DO NOT SCALE THIS
DRAWING
IF IN DOUBT - ASK!
Application No.

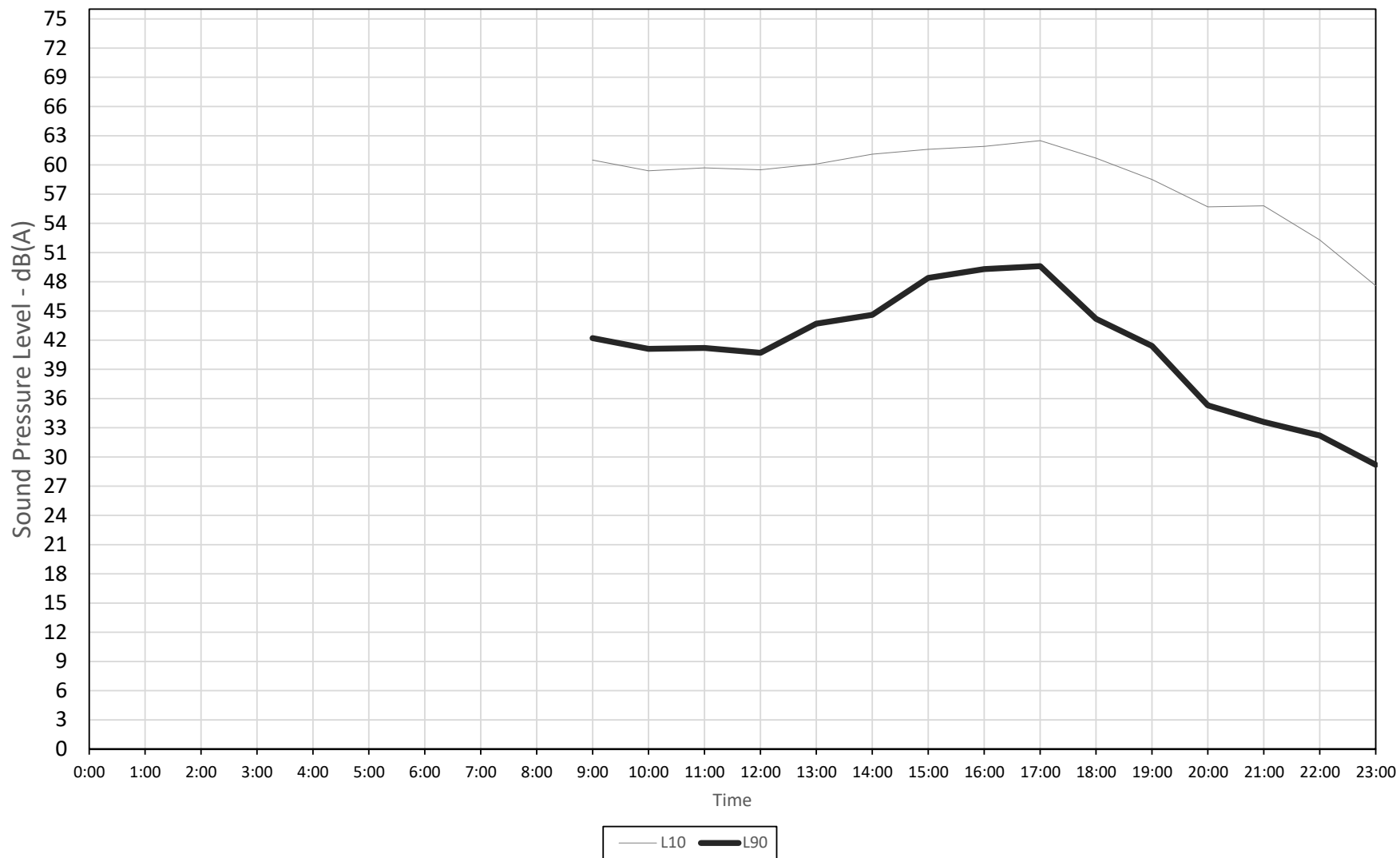
KN GROUP
L1, 62 Astor Terrace, Spring Hill, QLD 4000
www.kngroup.com.au | 07 3017 1900

**FUNCTIONAL LAYOUT
EARTHWORKS CONTOUR PLAN
SHEET 4**
Scale: AS SHOWN
Drawing No: 24-153-SK030
Sheet: 30 of 34
Revision: A

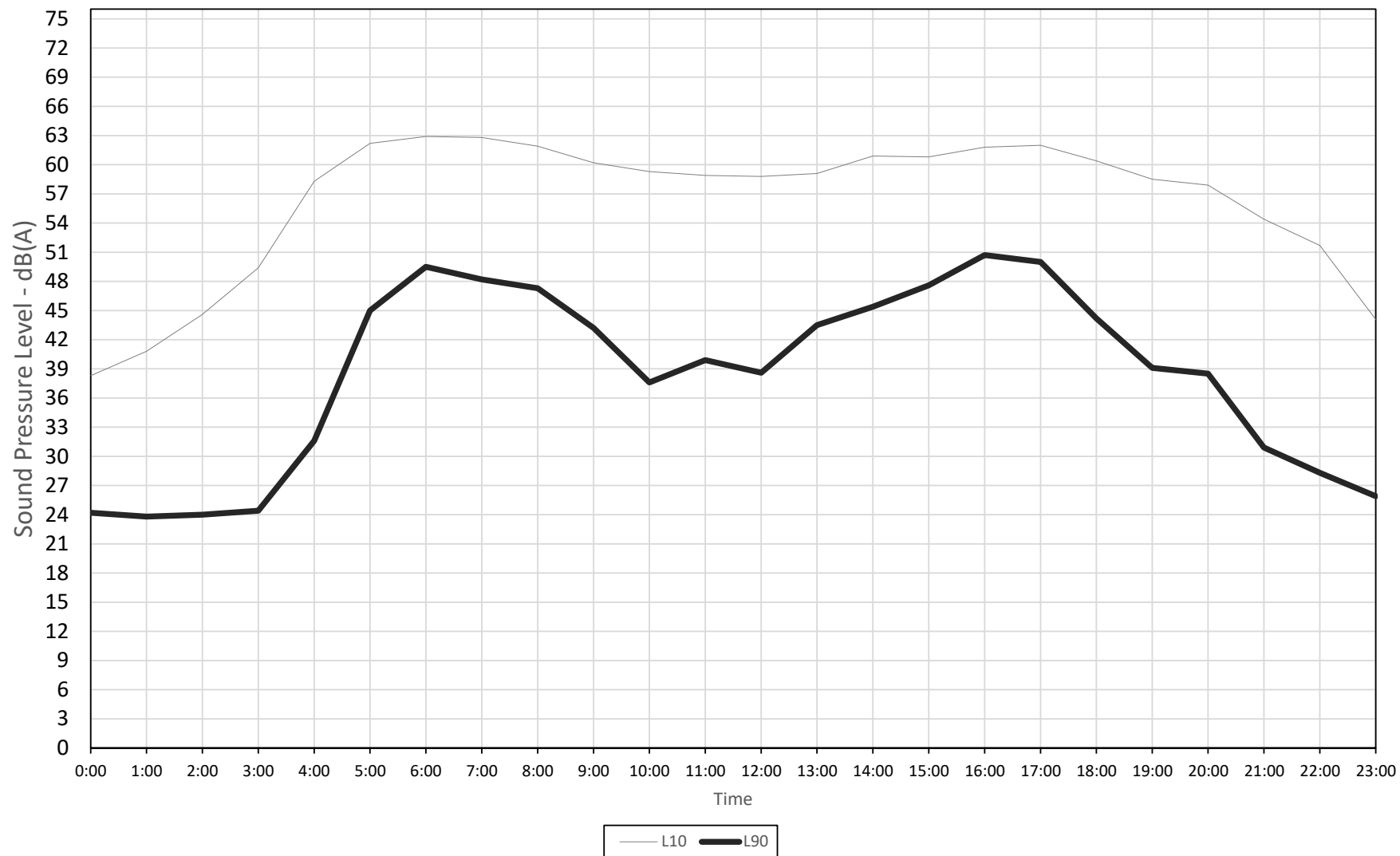
ATTACHMENT 3

Noise Datalogger Results

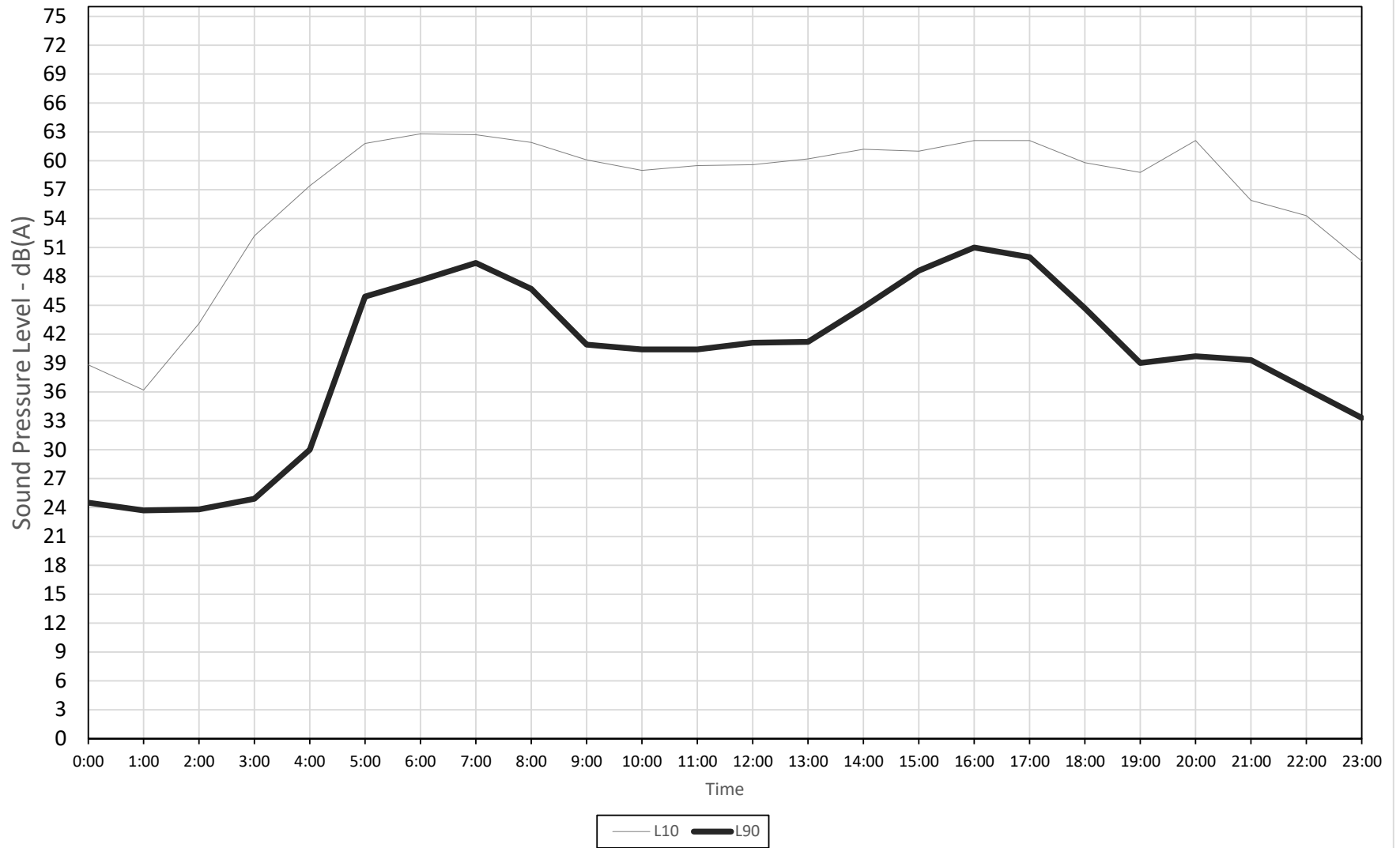
Recorded Statistical Noise Levels for Yarrabilba 25038 - Precinct 8 - 28-Apr-2025 - Monday



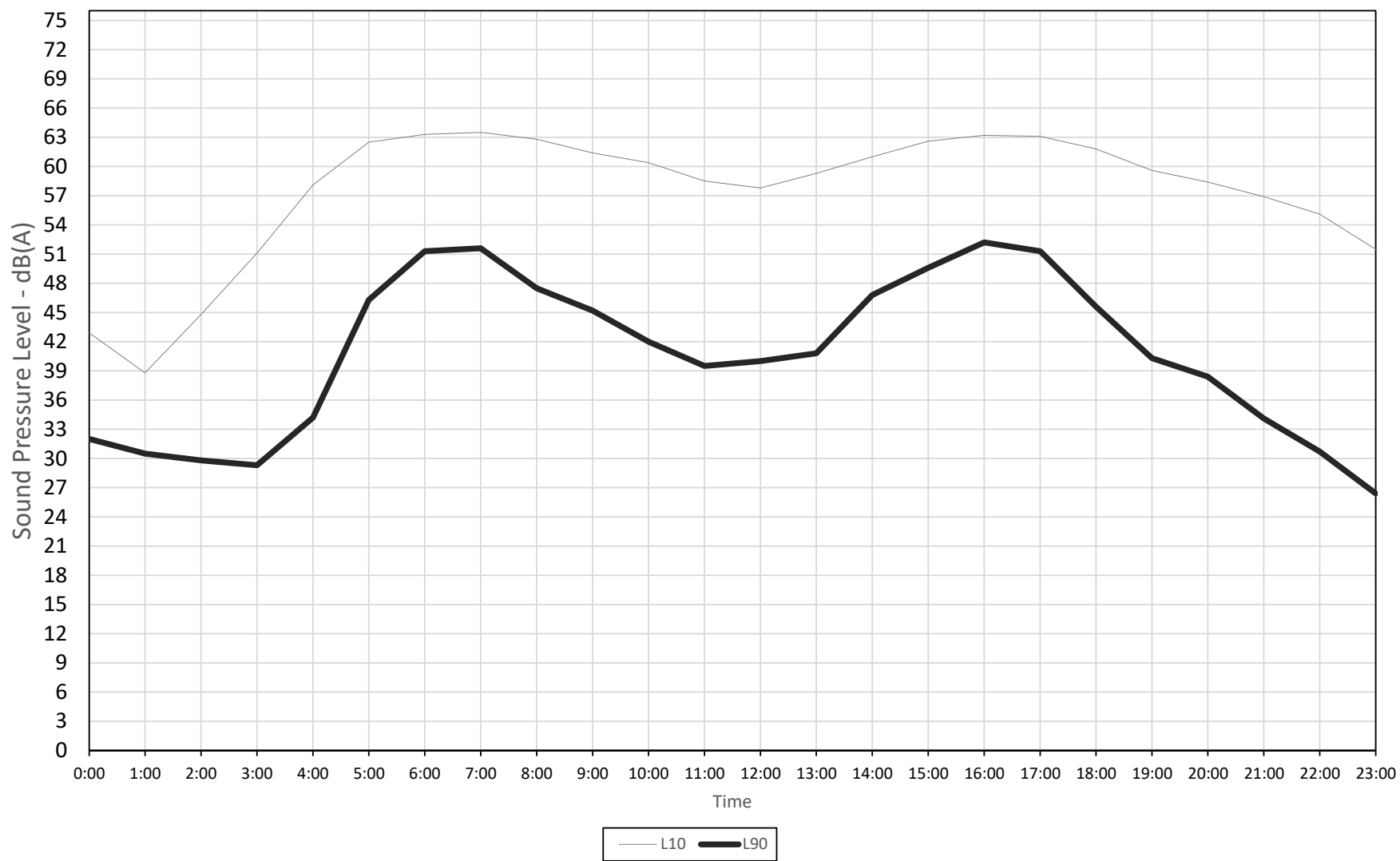
Recorded Statistical Noise Levels for Yarrabilba 25038 - Precinct 8 - 29-Apr-2025 - Tuesday



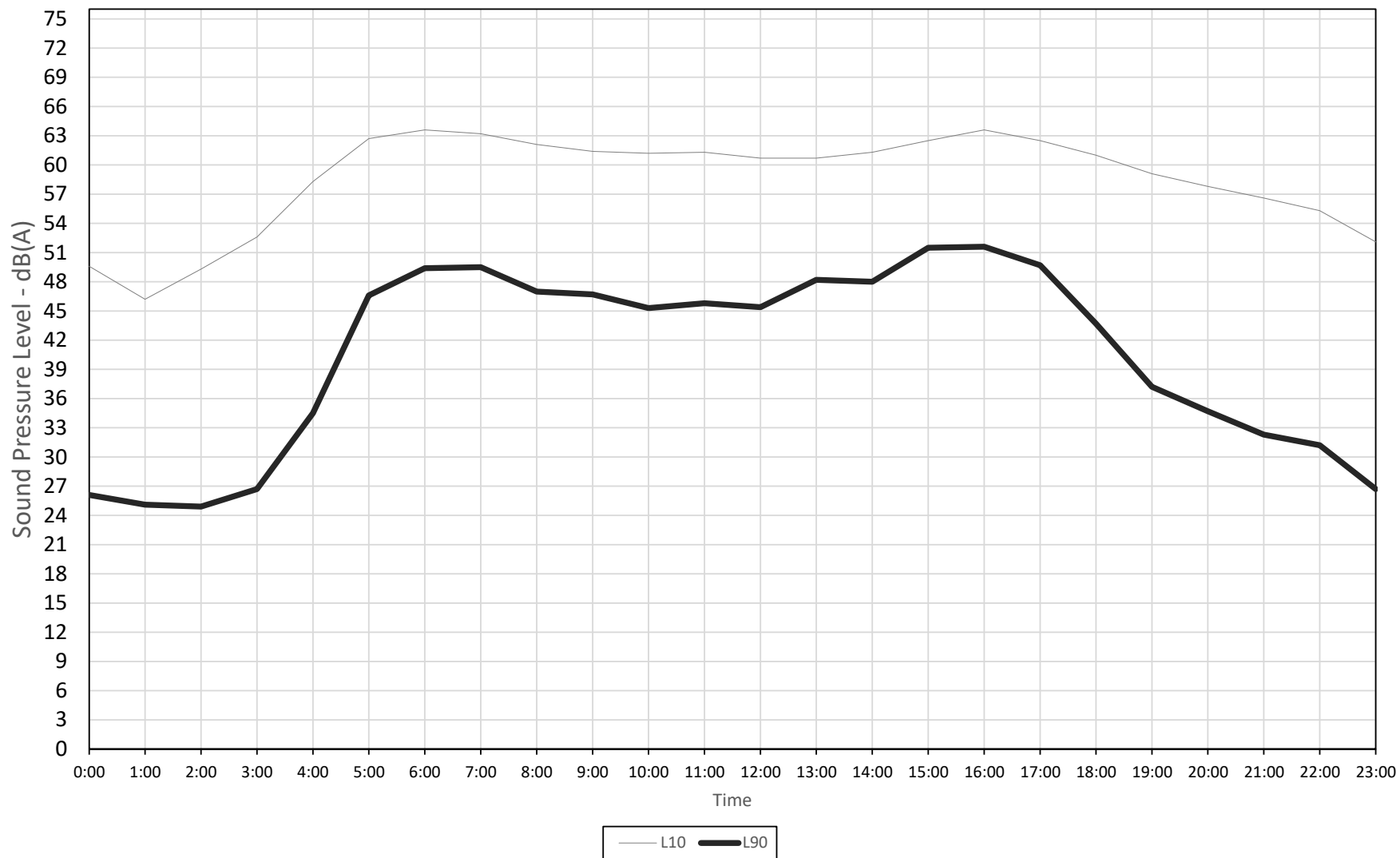
Recorded Statistical Noise Levels for Yarrabilba 25038 - Precinct 8 - 30-Apr-2025 - Wednesday



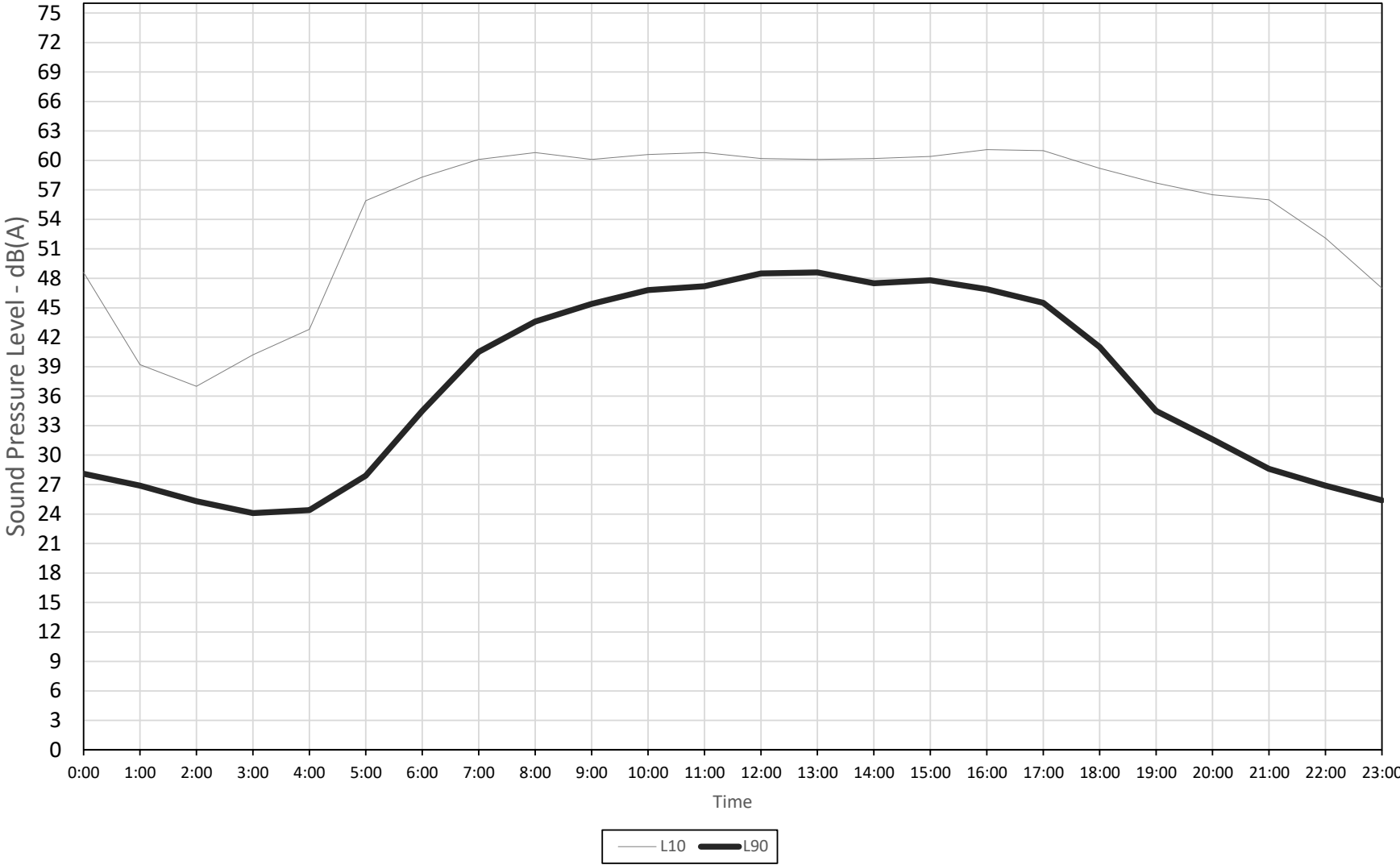
Recorded Statistical Noise Levels for Yarrabilba 25038 - Precinct 8 - 01-May-2025 - Thursday



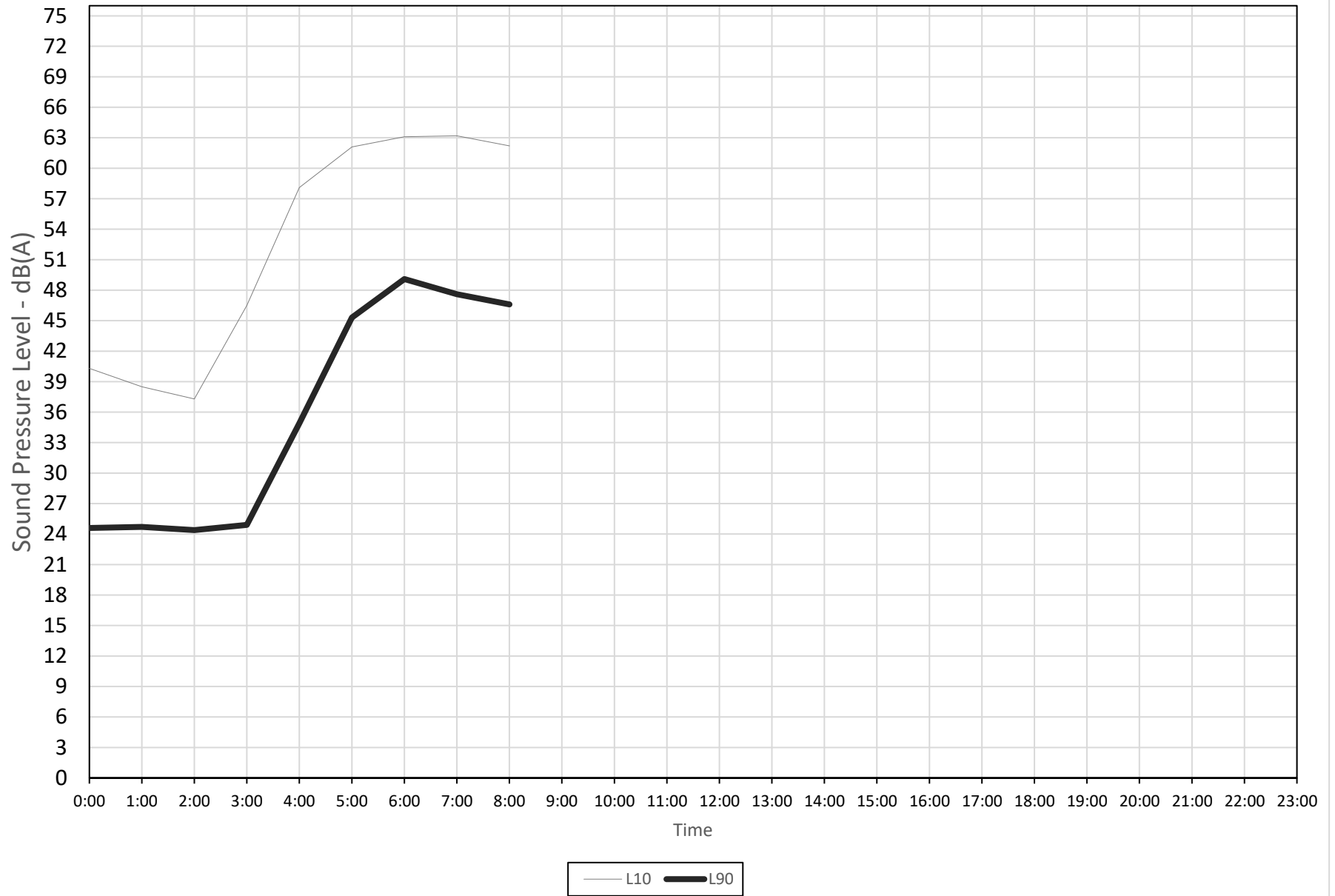
Recorded Statistical Noise Levels for Yarrabilba 25038 - Precinct 8 - 02-May-2025 - Friday



Recorded Statistical Noise Levels for Yarrabilba 25038 - Precinct 8 - 05-May-2025 - Monday



Recorded Statistical Noise Levels for Yarrabilba 25038 - Precinct 8 - 06-May-2025 - Tuesday



ATTACHMENT 4

SoundPLAN 9.0

Validation Result



Legend

- Cadastral
- * Logger
- Road

Yarrabilba 25050

Precinct 8
Development

Validation
Model Layout

May 2025

Length scale 1:1500

0 10 20 40 60 80 m



Yarrabilba 25050
Assessed receiver levels
Validation Model

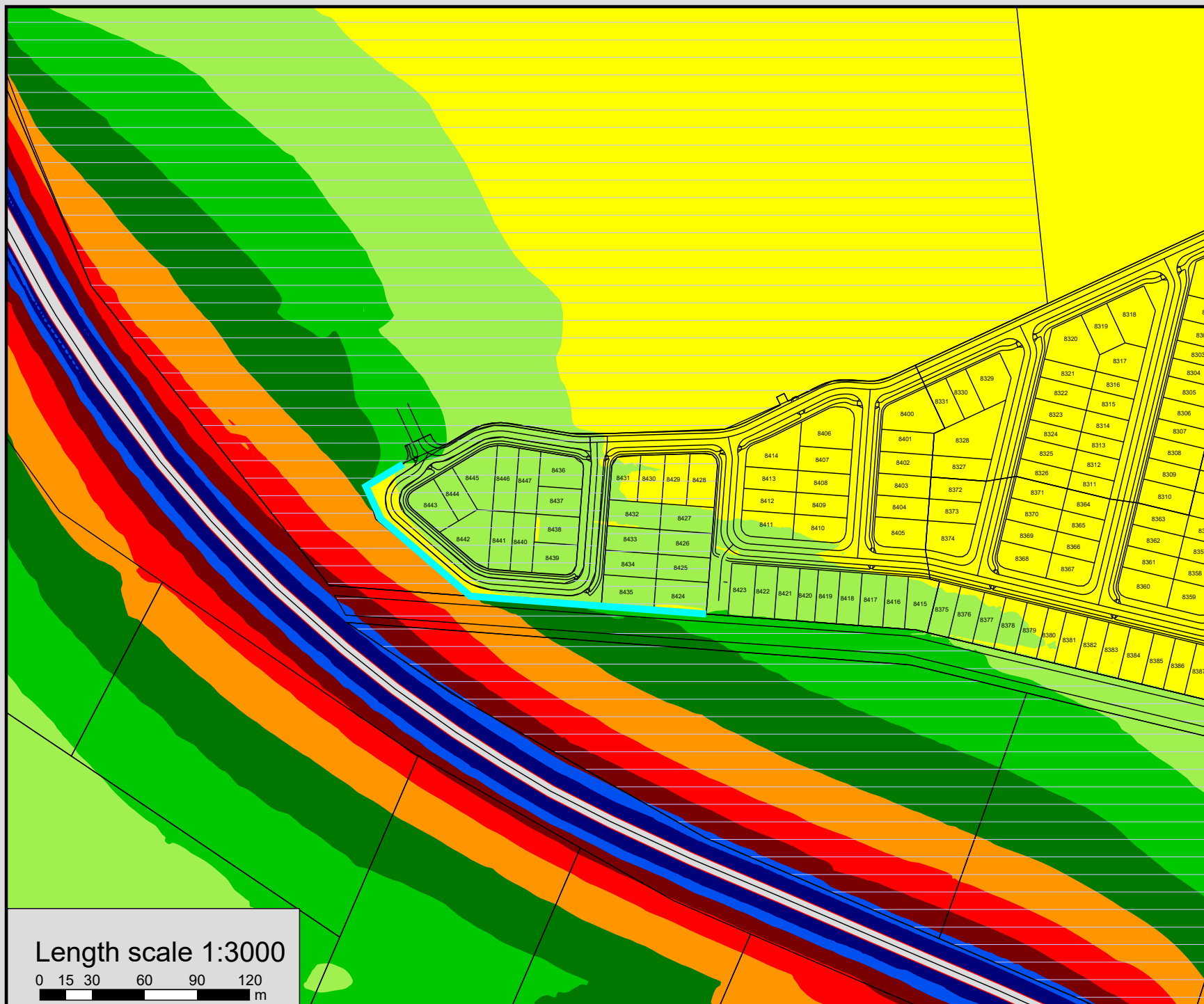
2

Receiver	L10(18h)	
	dB(A)	
Logger location - 59.4dB	60.4	

	MWA Environmental	1
--	-------------------	---

ATTACHMENT 5

SoundPLAN 9.0
State-controlled Road Assessment
Design Horizon Traffic Noise Levels



Noise level
L10(18hr)
free field
in dB(A)

	<= 54
54 <	<= 57
57 <	<= 60
60 <	<= 63
63 <	<= 66
66 <	<= 69
69 <	<= 72
72 <	<= 75

Legend

- Boundaries
- Noise Barrier
- Road
- Ground effects

**Yarrabilba 25050
Precinct 8**

**Ultimate Design
(AADT-25400)
Traffic Noise Impact**

**Outdoor Private Open
Space (+1.5m AGL)
With Noise Barrier
(see Figure 4)**

May 2025

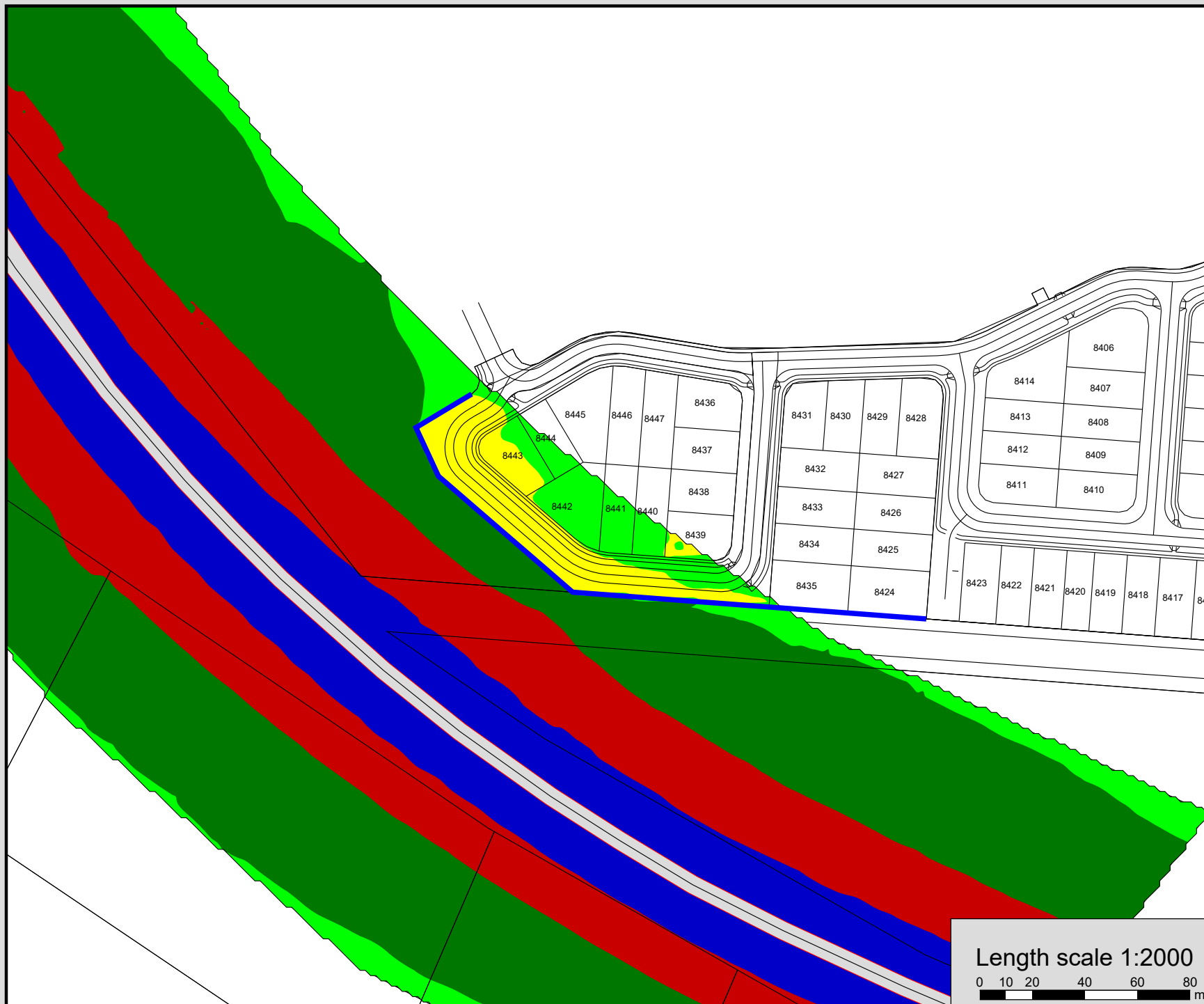
Length scale 1:3000

0 15 30 60 90 120
m



ATTACHMENT 6

SoundPLAN 9.0
State-controlled Road Assessment
Site-Specific Assessment of
QDC MP4.4 Noise Categories



Noise level
L10(18hr)
incl. facade reflection
in dB(A)

Noise Category 0
≤ 57.5
Noise Category 1
57.5 < ≤ 62.5
Noise Category 2
62.5 < ≤ 67.5
Noise Category 3
67.5 < ≤ 72.5
Noise Category 4
72.5 < ≤ 77.5

Legend

— Cadastral
— Road Surface
— Road
— Noise Barrier

Yarrabilba 25050

**Ultimate Design Traffic
Noise (AADT-25400)**

MP4.4 Noise Categories

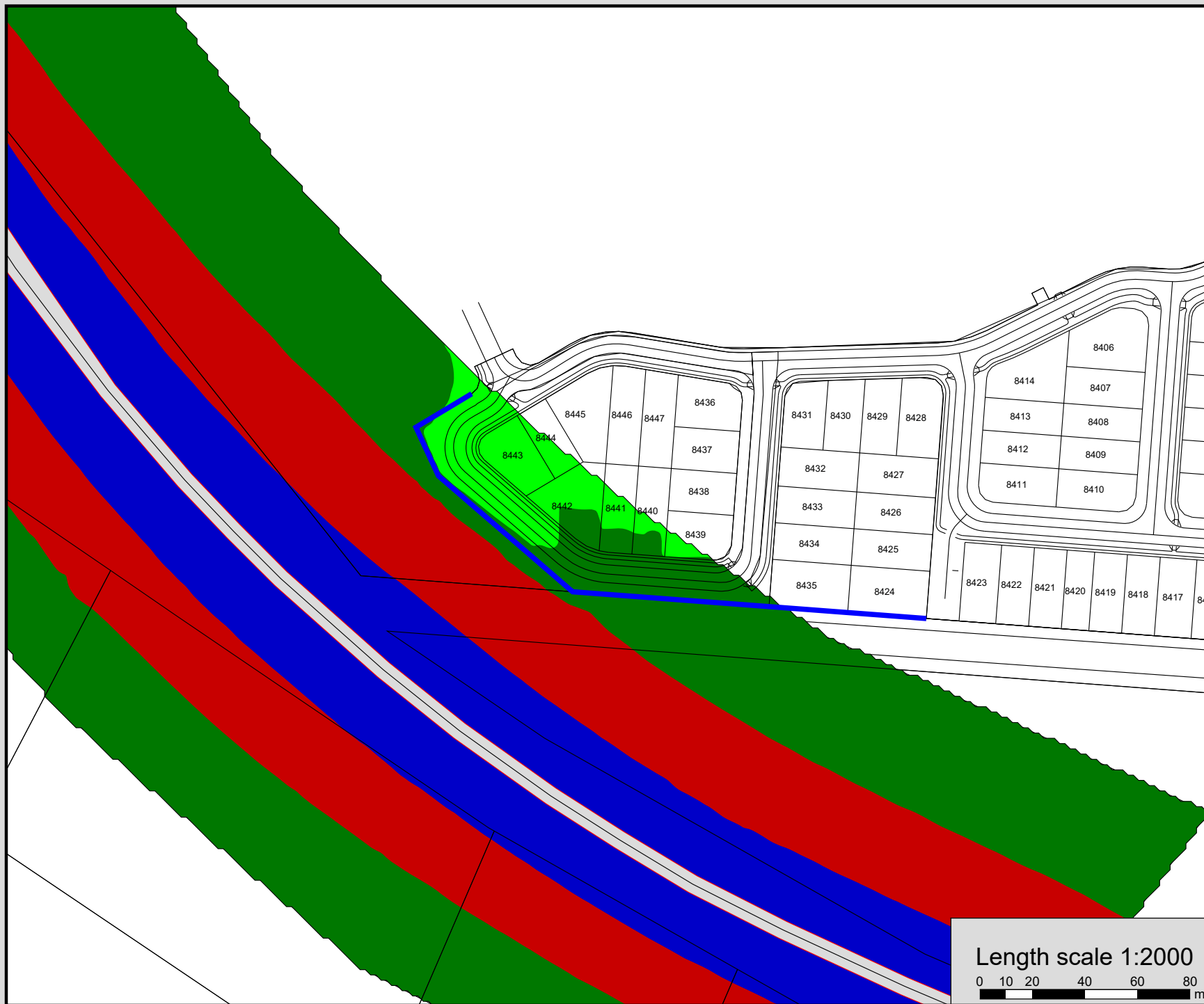
**Ground Level Facades
(+1.8m AGL)
With Barrier see (Figure 4)**

May 2025

Length scale 1:2000

0 10 20 40 60 80 m





Noise level
L10(18hr)
incl. facade reflection
in dB(A)

Noise Category 0
≤ 57.5
Noise Category 1
57.5 < ≤ 62.5
Noise Category 2
62.5 < ≤ 67.5
Noise Category 3
67.5 < ≤ 72.5
Noise Category 4
72.5 < ≤ 77.5

Legend

— Cadastral
— Road Surface
— Road
— Noise Barrier

Yarrabilba 25050

**Ultimate Design Traffic
Noise (AADT-25400)**

MP4.4 Noise Categories

**Upper Level Facades
(+4.6m AGL)
With Barrier (see Figure 4)**

May 2025

Length scale 1:2000

0 10 20 40 60 80 m



ATTACHMENT 7

QDC MP4.4
Schedule 1

Schedule 1

Noise category	Minimum transport noise reduction (dB (A)) required for habitable rooms	Component of building's external envelope	Minimum R_w required for each component
Category 4	40	Glazing	43
		External walls	52
		Roof	45
		Floors	51
		Entry doors	35
Category 3	35	Glazing	38 (where total area of glazing for a <i>habitable room</i> is greater than 1.8m ²)
			35 (where total area of glazing for a <i>habitable room</i> is less than or equal to 1.8m ²)
		External walls	47
		Roof	41
		Floors	45
		Entry doors	33

Noise category	Minimum transport noise reduction (dB (A)) required for habitable rooms	Component of building's external envelope	Minimum R_w required for each component
Category 2	30	Glazing	35 (where total area of glazing for a <i>habitable room</i> is greater than 1.8m ²)
			32 (where total area of glazing for a <i>habitable room</i> is less than or equal to 1.8m ²)
		External walls	41
		Roof	38
		Floors	45
		Entry doors	33
Category 1	25	Glazing	27 (where total area of glazing for a <i>habitable room</i> is greater than 1.8m ²)
			24 (where total area of glazing for a <i>habitable room</i> is less than or equal to 1.8m ²)
		External walls	35
		Roof	35
		Entry Doors	28
Category 0	No additional acoustic treatment required – standard building assessment provisions apply.		

Schedule 2

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
Glazing	43	Double glazing consisting of two panes of minimum 5mm thick glass with at least 100mm air gap and full perimeter <i>acoustically rated seals</i> .
	38	Minimum 14.38mm thick laminated glass, with full perimeter <i>acoustically rated seals</i> ; OR Double glazing consisting of one pane of minimum 5mm thick glass and one pane of minimum 6mm thick glass with at least 44mm air gap, and full perimeter <i>acoustically rated seals</i>
	35	Minimum 10.38mm thick laminated glass, with full perimeter <i>acoustically rated seals</i> .
	32	Minimum 6.38mm thick laminated glass with full perimeter <i>acoustically rated seals</i> .
	27	Minimum 4mm thick glass with full perimeter <i>acoustically rated seals</i>
	24	Minimum 4mm thick glass with standard weather seals

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
External walls	52	Two leaves of clay brick masonry, at least 270mm in total, with subfloor vents fitted with noise attenuators.
	47	Two leaves of clay brick masonry at least 110mm thick with: (i) cavity not less than 50mm between leaves; and (ii) 50mm thick mineral insulation or 50mm thick glass wool insulation with a density of 11kg/m³ or 50mm thick polyester insulation with a density of 20kg/m³ in the cavity. OR Two leaves of clay brick masonry at least 110mm thick with: (i) cavity not less than 50mm between leaves; and (ii) at least 13mm thick cement render on each face OR Single leaf of clay brick masonry at least 110mm thick with: (i) a row of at least 70mm x 35mm timber studs or 64mm steel studs at 600mm centres, spaced at least 20mm from the masonry wall; and (ii) Mineral insulation or glass wool insulation at least 50mm thick with a density of at least 11 kg/m³ positioned between studs; and (iii) One layer of plasterboard at least 13mm thick fixed to outside face of studs. OR Single leaf of minimum 150mm thick masonry of hollow, dense concrete blocks, with mortar joints laid to prevent moisture bridging.

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	41	Two leaves of clay brick masonry at least 110mm thick with cavity not less than 50mm between leaves OR Single leaf of clay brick masonry at least 110mm thick with: (i) a row of at least 70mm x 35mm timber studs or 64mm steel studs at 600mm centres, spaced at least 20mm from the masonry wall; and (ii) mineral insulation or glass wool insulation at least 50mm thick with a density of at least 11 kg/m³ positioned between studs; and (iii) One layer of plasterboard at least 10mm thick fixed to outside face of studs OR Single leaf of brick masonry at least 110mm thick with at least 13mm thick render on each face OR Concrete brickwork at least 110mm thick OR In-situ concrete at least 100mm thick OR Precast concrete at least 100mm thick and without joints.

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	35	Single leaf of clay brick masonry at least 110mm thick with: (i) a row of at least 70mm x 35mm timber studs or 64mm steel studs at 600mm centres, spaced at least 20mm from the masonry wall; and (ii) One layer of plasterboard at least 10mm thick fixed to outside face of studs OR Minimum 6mm thick fibre cement sheeting or weatherboards or plank cladding externally, minimum 90mm deep timber stud or 92mm metal stud, standard plasterboard at least 13mm thick internally.
Roof	45	Concrete or terracotta tile or sheet metal roof with sarking, <i>acoustically rated plasterboard</i> ceiling at least 13mm thick fixed to ceiling joists, cellulose fibre insulation at least 100mm thick with a density of at least 45kg/m³ in the cavity. OR Concrete or terracotta tile or sheet metal roof with sarking, 2 layers of <i>acoustically rated plasterboard</i> at least 16mm thick fixed to ceiling joists, glass wool insulation at least 50mm thick with a density of at least 11kg/m³ or polyester insulation at least 50mm thick with a density of at least 20kg/m³ in the cavity.
	41	Concrete or terracotta tile or metal sheet roof with sarking, plasterboard ceiling at least 10mm thick fixed to ceiling joists, glass wool insulation at least 50mm thick with a density of at least 11kg/m³ or polyester insulation at least 50mm thick with a density of at least 20kg/m³ in the cavity. OR Concrete suspended slab at least 100mm thick.
	38	Concrete or terracotta tile or metal sheet roof with sarking, plasterboard ceiling at least 10mm thick fixed to ceiling cavity, mineral insulation or glass wool insulation at least 50mm thick with a density of at least 11 kg/m³.

Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	35	Concrete or terracotta tile or metal sheet roof with sarking, plasterboard ceiling at least 10mm thick fixed to ceiling cavity.
Floors	51	Concrete slab at least 150mm thick.
	45	Concrete slab at least 100mm thick OR Tongued and grooved boards at least 19mm thick with: (i) timber joists not less than 175mm x 50mm; and (ii) mineral insulation or glass wool insulation at least 75mm thick with a density of at least 11kg/m ³ positioned between joists and laid on plasterboard at least 10mm thick fixed to underside of joists; and (iii) mineral insulation or glass wool insulation at least 25mm thick with a density of at least 11kg/m ³ laid over entire floor, including tops of joists before flooring is laid; and (iv) secured to battens at least 75mm x 50mm; and (v) the assembled flooring laid over the joists, but not fixed to them, with battens lying between the joists.
Entry Doors	35	Solid core timber not less than 45mm thick, fixed so as to overlap the frame or rebate of the frame by not less than 10mm, with full perimeter <i>acoustically rated seals</i> .
	33	Fixed so as to overlap the frame or rebate of the frame by not less than 10mm, fitted with full perimeter <i>acoustically rated seals</i> and constructed of - (i) solid core, wood, particleboard or blockboard not less than 45mm thick; and/or (ii) acoustically laminated glass not less than 10.38mm thick.

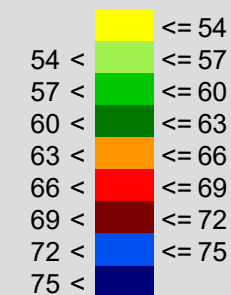
Component of building's external envelope	Minimum R_w	Acceptable forms of construction
	28	Fixed so as to overlap the frame or rebate of the frame, constructed of - (i) Wood, particleboard or blockboard not less than 33mm thick; or (ii) Compressed fibre reinforced sheeting not less than 9mm thick; or (iii) Other suitable material with a mass per unit area not less than 24.4kg/m²; or (iv) Solid core timber door not less than 35mm thick fitted with full perimeter <i>acoustically rated seals</i>.

ATTACHMENT 8

SoundPLAN 9.0
Local Road Assessment
Design Horizon Traffic Noise Levels



Noise level
L10(18hr)
in dB(A)



Legend

- Cadastral
- Noise Barrier
- Road

**Yarrabilba 25050
Precinct 8**

**Ultimate Traffic Noise
Model**

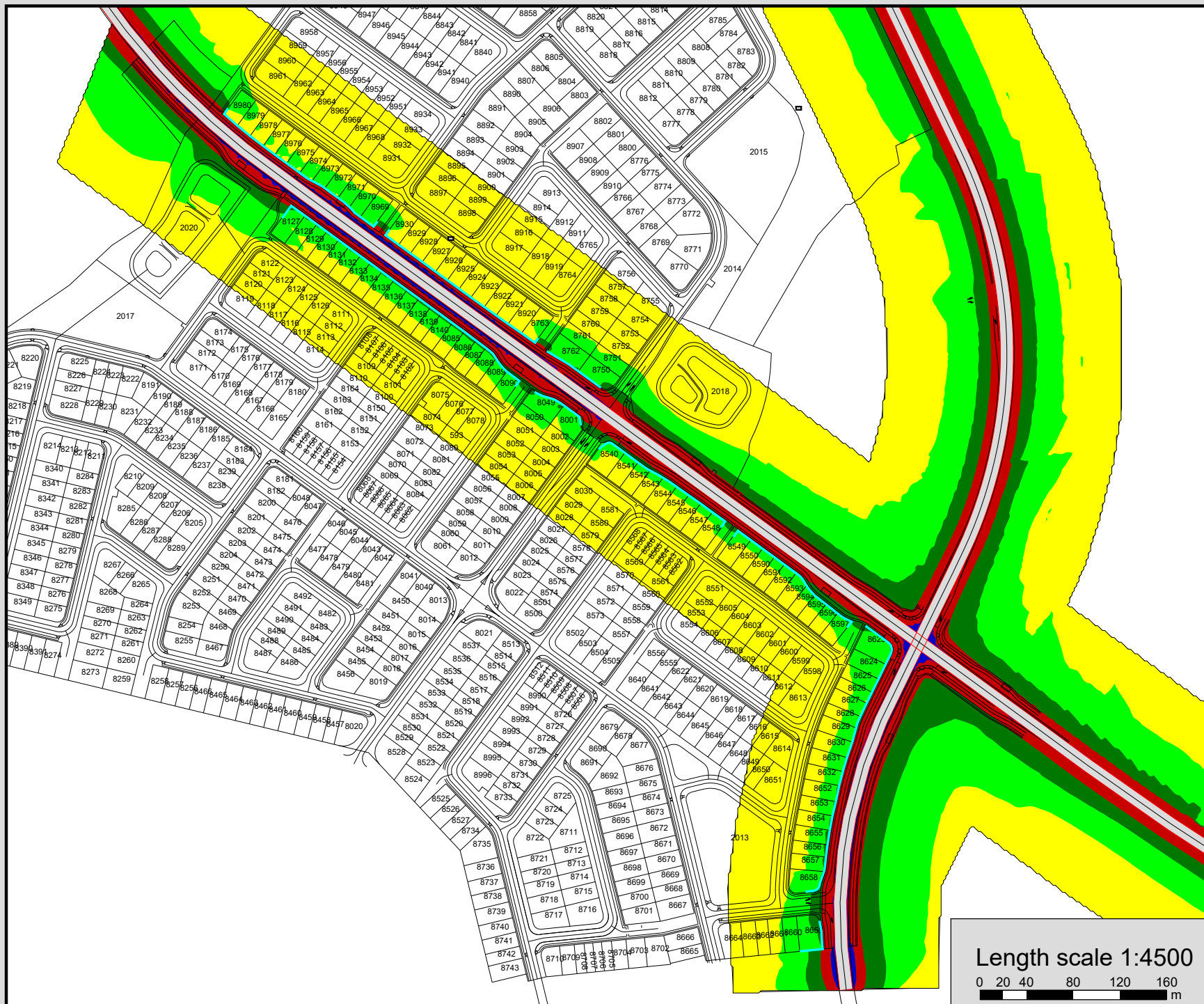
**Outdoor Recreational
Noise Impact With
Barriers**

May 2025



ATTACHMENT 9

SoundPLAN 9.0
Local Road Assessment
Site-Specific Assessment of
QDC MP4.4 Noise Categories



Noise level
L10(18hr)
incl. facade reflection
in dB(A)

- Noise Category 0
≤ 58.0
- Noise Category 1
58.0 < ≤ 63.0
- Noise Category 2
63.0 < ≤ 68.0
- Noise Category 3
68.0 < ≤ 73.0
- Noise Category 4
73.0 <

Legend

- Cadastral
- Road
- Noise Barrier

**Yarrabilba 25050
Precinct 8**

Ultimate Traffic Noise

MP4.4 Noise Categories

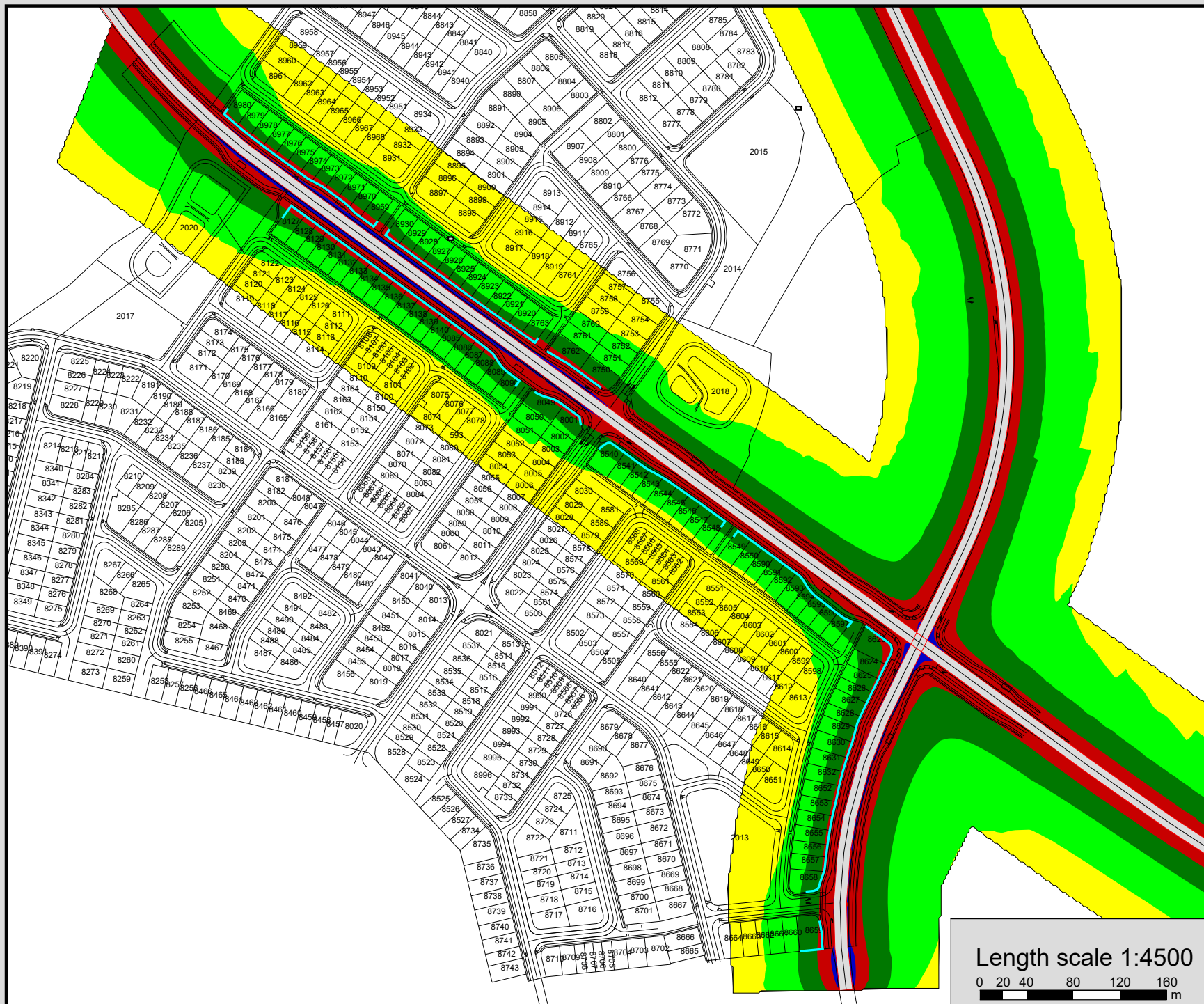
**Ground Level Facades
With Barriers**

May 2025

Length scale 1:4500

0 20 40 80 120 160
m





Noise level
L10(18hr)
incl. facade reflection
in dB(A)

Noise Category 0
≤ 58.0
Noise Category 1
58.0 < ≤ 63.0
Noise Category 2
63.0 < ≤ 68.0
Noise Category 3
68.0 < ≤ 73.0
Noise Category 4
73.0 <

Legend

— Cadastral
— Road
— Noise Barrier

**Yarrabilba 25050
Precinct 8**

Ultimate Traffic Noise

MP4.4 Noise Categories

**Upper Level Facades
With Barriers**

May 2025

Length scale 1:4500

0 20 40 80 120 160
m

