Flagstone Development, Context Area 3 (CA3) South

Road Traffic Noise Intrusion Assessment, Stages 8-14

Peet Flagstone City Pty Ltd

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Brisbane QLD 4000

Prepared by:

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Australia

SLR Project No.: 620.v10512.02002

Client Reference No.: NA

18 March 2024

Revision: 2.0

Revision Record

Revision	Date	Prepared By	Checked By	Authorised By
2.0	18 March 2024	Rodrigo Olavarria	Roger Hawkins	Rodrigo Olavarria
1.0	27 February 2024	Rodrigo Olavarria	Roger Hawkins	Rodrigo Olavarria

Basis of Report

This report has been prepared by SLR Consulting Australia (SLR) with all reasonable skill, care and diligence, and taking account of the timescale and resources allocated to it by agreement with Peet Flagstone City Pty Ltd (the Client). Information reported herein is based on the interpretation of data collected, which has been accepted in good faith as being accurate and valid.

This report is for the exclusive use of the Client. No warranties or guarantees are expressed or should be inferred by any third parties. This report may not be relied upon by other parties without written consent from SLR.

SLR disclaims any responsibility to the Client and others in respect of any matters outside the agreed scope of the work.

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1.0 Introduction

SLR Consulting Australia Pty Ltd (SLR) was commissioned by Peet Flagstone City Pty Ltd to conduct a road traffic noise intrusion assessment for the Flagstone Context Area 3 (CA3) South Subdivision (reproduced in **Appendix A**), referred hereto as 'The Project'.

This report addresses the road traffic noise intrusion onto Stage 8 to Stage 14.

North South Arterial Road (NSAR) is forecast to carry a large traffic volume in future; therefore, consideration for the reduction of road traffic noise is considered warranted.

The purpose of this assessment is to present a set of preliminary noise prediction results without mitigation, as well as to present the applicable Noise Categories (NC) as per the Queensland Development Code Mandatory Part 4.4 (QDC MP4.4) within each lot, for the residual noise after the implementation of 2.0m high noise barriers.

The following documents are relevant to this assessment:

- Department of Transport and Main Roads (TMR) Transport Management Code of Practice Volume 1: Road traffic noise (CoP Vol 1).
- UK Department of Transport Welsh Office Calculation of Road Traffic Noise 1988 (CoRTN).
- Previous PDA development conditions set out in the PDA Decision Notice (dated 10 Dec 2020) for Stages 2-5 located on the opposite side of NSAR, which was used to inform the noise assessment criteria applied in this report for CA3.

The road traffic noise predictions are based on the latest digital elevation model and traffic volumes available from the Project design on the date of issue of this report. The outcomes presented in this report are subject to change slightly as the project progresses; therefore, the objective of this report is to support the application for Reconfiguration Of Lot (ROL) by informing on the effectiveness of the implementation of noise barriers and the QDC MP4.4 Noise Categories applicable to the construction of the dwellings after the implementation of noise barriers.

This assessment excludes the following:

- Assessment of road traffic noise onto other residential stages within CA3 South, due to the noise being produced by local, internal roads carrying low traffic volumes.
- Road traffic noise intrusion and environmental noise emission from non-residential uses within CA3 South as it is understood that these will be subject to a separate Development application (DA).
- Railway noise intrusion, as this is of no significance at CA3 South.

2.0 Noise Assessment Criteria

Economic Development Queensland (EDQ) has approved the Priority Development Area (PDA) development application for Greater Flagstone Stages 2-5, subject to PDA development conditions set out in the PDA Decision Notice (dated 10 Dec 2020).

Stages 2-5 are located on the opposite side of NSAR and will introduce the same type of residential uses as CA3; therefore, this report assumes that the same assessment criteria are to be applied to CA3 for consistency, as it pertains the same PDA.

Condition 35 of the abovementioned Decision Notice is relevant to Acoustic Compliance and is reproduced below as per the EDQ PDA Decision Notice – Approval.

> ***Condition 35 – Compliance Assessment – Acoustic Treatment (Noise Barrier)***
>
> *a) Submit to EDQ Development Assessment DSDMIP for compliance assessment a Noise Mitigation Report, certified by a RPEQ, for all lots within 100m from Flagstonian Drive Extension, the future North South Arterial road and 200m from the railway corridor achieving a ≤ 35dBA for 1 hour max, over a 24 hour period for all habitable rooms.*
>
> *Where a ≤ 35dBA for 1 hour max, over a 24 hour period for all habitable rooms cannot be achieved, the Noise Mitigation Report is to provide the proposed noise mitigation measures generally in accordance with QDC MP4.4 – Buildings in a Noise Transport Corridor. If any noise barriers are proposed, the detailed design/construction plans certified by a RPEQ are to be provided including how passive surveillance of the streetscape can be maintained.*
>
> *b) For lots fronting Flagstonian Drive, the acoustic fence must be no higher than that specified in the approved plan of development.*

EDQ considered the application of QDC MP4.4 at residential lots to achieve the acoustic requirements of Condition 35. Whilst QDC MP4.4 does not provide internal noise limits or targets, the minimum building constructions in QDC MP4.4 would typically achieve an internal transport noise level of approximately 35 dBA within habitable rooms.

QDC MP4.4 applies to residential buildings that are constructed within designated Transport Noise Corridors. It is then assumed that, for the purpose of assessing transport noise, North-South Arterial Road and Trunk Connector Road are to be treated as a “Transport Noise Corridor”.

Under QDC MP4.4, when building in a Transport Noise Corridor, a residential building needs to achieve certain levels of noise reduction which can be achieved through incorporating appropriate building materials to the building envelope to achieve the required noise reduction in habitable rooms.

Reproduced from QDC MP4.4, the Noise Categories and associated minimum noise reduction requirements and minimum Sound Reduction Index (Rw) for external building elements are shown in **Table 1**. The Rw is a measure of the sound insulation properties of a specific building material element.

QDC MP4.4 provides acceptable forms of construction for the external elements of the building to assist in achieving a building design and construction which meets the required noise reduction for each Noise Category. The acceptable forms of construction in MP4.4 are reproduced in **Appendix C** of this report, noting that other forms of construction <u>are acceptable</u> where they achieve the required Rw rating.

Table 1 QDC MP4.4 Noise Categories and Minimum Noise Reduction for Road Transport Noise

Noise Category	Transport Noise Level, Facade Corrected	Minimum Transport Noise Reduction for Habitable Rooms	Building External Envelope Component	Minimum Rw Required for Each Component	
4	Road traffic noise ≥73 dBA $L_{A10(18hour)}$ Rail traffic noise ≥85 dBA SEM	40 dBA	Glazing	43	
			External Walls	52	
			Roof	45	
			Floors	51	
			Entry doors	35	
3	Road traffic noise 68 – 72 dBA $L_{A10(18hour)}$ Rail traffic noise 80 – 84 dBA SEM	35 dBA	Glazing	38	where total area of glazing for a habitable room is greater than 1.8 m^2
				35	where total area of glazing for a habitable room is less than or equal to than 1.8 m^2
			External walls	47	
			Roof	41	
			Floors	45	
			Entry doors	33	
2	Road traffic noise 63 – 67 dBA $L_{A10(18hour)}$ Rail traffic noise 75 – 79 dBA SEM	30 dBA	Glazing	35	where total area of glazing for a habitable room is greater than 1.8 m^2
				32	where total area of glazing for a habitable room is less than or equal to than 1.8 m^2
			External walls	41	
			Roof	38	
			Floors	45	
			Entry doors	33	
1	Road traffic noise 58 – 62 dBA $L_{A10(18hour)}$ Rail traffic noise 70 – 74 dBA SEM	25 dBA	Glazing	27	where total area of glazing for a habitable room is greater than 1.8 m^2
				24	where total area of glazing for a habitable room is less than or equal to than 1.8 m^2
			External walls	35	
			Roof	35	
			Entry doors	28	
0	Road traffic noise ≤57 dBA $L_{A10(18hour)}$ Rail traffic noise ≤69 dBA SEM	No additional acoustic treatment required – standard building assessment provisions apply.			

3.0 Noise Assessment Methodology

A three-dimensional noise model developed for the assessment of Stages 2-5 was updated to incorporate CA3 South. The model was developed within SoundPLAN v8.1 acoustic software to predict transportation noise intrusion.

The computer model was created as a representation of the future noise intrusion, which incorporates the following inputs:

- Calculation algorithms. SoundPLAN implementation of the following accepted standards and methodologies:
  - UK Department of Transport Welsh Office Calculation of Road Traffic Noise 1988 (CoRTN). CoRTN is widely accepted in Australia for the calculation of road traffic noise and its use is recommended in the CoP Vol 1.
- Terrain elevation. Digital Elevation Model (DEM) built from:
  - Earthworks model supplied by the Project civil consultant in files:
    - Flagstone CA3 design tin.dwg
    - Flagstone CA3 design strings.dwg
    - MGA94 super design ascon.dwg
  - 3D LiDAR file representing existing contours outside the study area.
    - Noise barriers. Where implemented, these have been digitised at the top of a retailing wall. The retailing wall alignment is contained as a drawing layer in Flagstone CA3 design strings.dwg
- Road traffic volumes. Provided by the traffic consultant for an ultimate (year 2066) road traffic forecast.
- Ground surface corrections – Areas of soft (absorptive) and hard (reflective) ground.
- Sensitive receptors – Locations where the transportation noise levels are to be assessed.

3.1 Road Traffic Noise Modelling

Road traffic noise was modelled following general guidance from the CoP Vol 1.

Road traffic volumes have been provided by the Project traffic consultant and are presented in **Table 2** and **Figure 1.** The traffic forecasts for the Year 2041 have been used, which are adopted as a 10-year after construction scenario.

The 18 hour traffic volume has further been estimated from the Annual Average Daily Traffic (AADT) traffic volume provided by the project consultant assuming 94% of traffic occurs between 6am-12am.

All road surfaces were assumed to be Dense Grades Asphalt (DGA). On this basis, a road surface correction factor of 0 dBA was applied for all road traffic noise predictions, in accordance with CoP Vol 1.

A further -0.7 dBA (free field) or -1.7 dBA (facade) correction was applied, where applicable, in accordance with the CoP Vol 1.

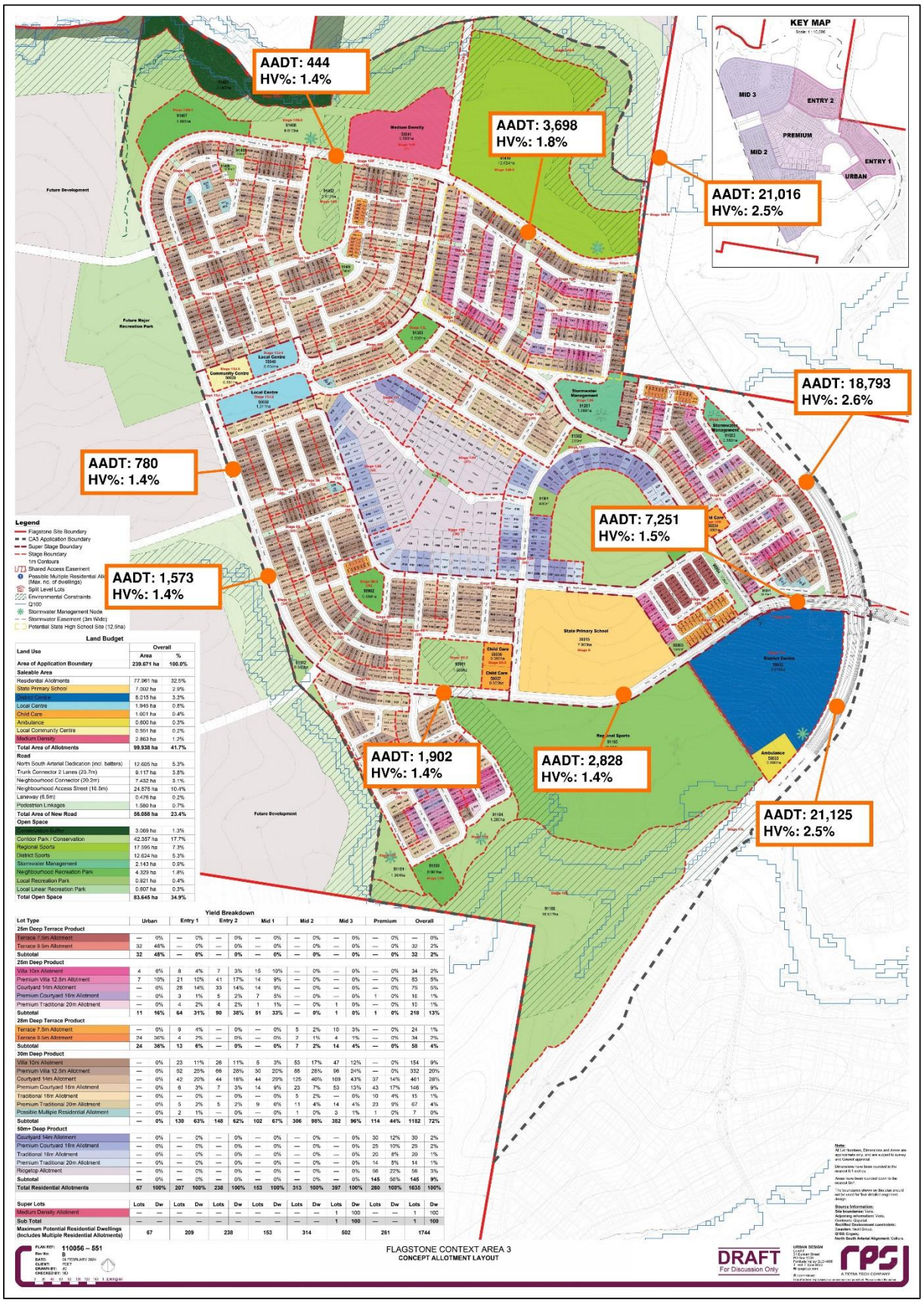
The QDC MP4.4 Noise Categories were determined from the noise contour maps calculated at 1.8 m and 4.6 m above ground level as per the DEM, for the ground floor and first floor of two storey dwellings assumed for the development, respectively. The highest Noise Category predicted onto the lot is reported.

Road traffic noise contours were generated from noise predictions using a grid spacing of 1.0 m.

Table 2 2041 Road Traffic Forecasts

Road	Segment	AADT	18hr traffic volume	% Heavy Vehicles	Posted Speed, Km/h
North-South Arterial Road	N of Trunk Collector	21016	19755	2.5	70
	N of Flagstonian Drive	18793	17665	2.6	70
	S of Flagstonian Drive	21125	19858	2.5	70
Trunk Connector	1	7251	6816	1.5	60
	2	2828	2658	1.4	60
	3	1902	1788	1.4	60
	4	1573	1479	1.4	60
	5	780	733	1.4	60
	6	444	417	1.4	60
	7	3698	3476	1.8	60

Figure 1 2041 Traffic volume estimates (Source: Project traffic consultant)



3.2 Road Traffic Noise Model Verification

It is acknowledged that, according to the CoP Vol 1, a road traffic noise model is deemed to be verified if the average difference between the measured and calculated values of the noise descriptors is no more than ±2.0 dBA.

A road traffic model verification for new roads to be built as part of the project is not possible at this stage as the roads are non-existing. However, past experience has shown that noise predictions using CoRTN typically result in conservative predictions of levels at receptors.

4.0 Noise Assessment Results

4.1 Road Traffic Noise

Table 3 presents the QDC MP4.4 Categories applicable to first row lots of CA3 South where a noise barrier is recommended in front of the lot**.** The results present the lot number, and the QDC MP4.4 Noise Category for Ground Floor and First Floor noise levels with and without noise mitigation, i.e. noise barriers.

The modelled ground elevation at the approximate centre of the lot, as well as the mid span elevation of the barrier and the approximate elevation of the road section immediately in front are also presented for information.

Noise contours are provided in **Figure 2** to **Figure 5** to depict the noise levels with and without the introduction of 2.0m high noise barriers. The contours show the predicted $L_{A10(18hour)}$ noise descriptor and the applicable QDC MP4.4 Categories.

A table presenting results for all "Noise Affected Lots" is provided in **Appendix C**. A lot is considered "Noise affected" in this report where the predicted QDC MP4.4 Noise Category is "1" or higher. Lots not listed are predicted to Noise Category "0" and do not require further noise treatment to the dwelling facades.

Table 3 Road Traffic Noise Predictions on Lots with a Noise Barrier

Lot	First row lot	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m			Elevation at Base of Barrier (mid span), m	Approximate Elevation of Road in Front of Lot, m	Lot in Cut /Fill
					Easting	Northing	Elevation			
			No Barrier	2.0m Barrier						
3442	Yes	GF	3	2	494070.45	6925822.04	67.9	67.9	66.1	Fill
3442	Yes	FF	3	3	494070.45	6925822.04	67.9			
3443	Yes	GF	3	2	494069.76	6925836.43	68.4	68.2	66.2	Fill
3443	Yes	FF	3	3	494069.76	6925836.43	68.4			
3444	Yes	GF	3	1	494067.02	6925850.12	68.5	68.3	66.2	Fill
3444	Yes	FF	3	3	494067.02	6925850.12	68.5			
3445	Yes	GF	3	1	494063.6	6925862.45	68.2	68.0	66.1	Fill
3445	Yes	FF	3	3	494063.6	6925862.45	68.2			
3446	Yes	GF	3	1	494061.54	6925874.09	67.9	67.8	66.0	Fill
3446	Yes	FF	3	3	494061.54	6925874.09	67.9			
3447	Yes	GF	3	1	494058.12	6925885.39	67.9	67.7	65.9	Fill
3447	Yes	FF	3	3	494058.12	6925885.39	67.9			
3448	Yes	GF	3	1	494054.7	6925898.4	67.8	67.6	65.8	Fill
3448	Yes	FF	3	3	494054.7	6925898.4	67.8			
3449	Yes	GF	3	1	494050.93	6925909.02	67.6	67.4	65.7	Fill
3449	Yes	FF	3	3	494050.93	6925909.02	67.6			
3450	Yes	GF	3	1	494048.19	6925918.61	67.5	67.4	65.5	Fill

Lot	First row lot	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m			Elevation at Base of Barrier (mid span), m	Approximate Elevation of Road in Front of Lot, m	Lot in Cut /Fill
					Easting	Northing	Elevation			
			No Barrier	2.0m Barrier						
3450	Yes	FF	3	3	494048.19	6925918.61	67.5			
3451	Yes	GF	3	1	494043.74	6925929.9	67.4	67.3	65.3	Fill
3451	Yes	FF	3	3	494043.74	6925929.9	67.4			
3452	Yes	GF	3	1	494039.29	6925941.55	67.3	67.1	65.1	Fill
3452	Yes	FF	3	3	494039.29	6925941.55	67.3			
3453	Yes	GF	3	1	494033.81	6925953.87	67.2	67.1	64.9	Fill
3453	Yes	FF	3	3	494033.81	6925953.87	67.2			
3454	Yes	GF	3	1	494024.22	6925973.73	67.0	66.8	64.5	Fill
3454	Yes	FF	3	3	494024.22	6925973.73	67.0			
3455	Yes	GF	3	1	494018.06	6925986.06	66.7	66.6	64.3	Fill
3455	Yes	FF	3	3	494018.06	6925986.06	66.7			
3456	Yes	GF	3	1	494012.24	6925996.33	66.5	66.4	64.1	Fill
3456	Yes	FF	3	3	494012.24	6925996.33	66.5			
3457	Yes	GF	3	1	494007.1	6926005.24	66.3	66.2	64.0	Fill
3457	Yes	FF	3	3	494007.1	6926005.24	66.3			
3458	Yes	GF	3	1	494000.59	6926015.17	66.1	66.0	63.8	Fill
3458	Yes	FF	3	3	494000.59	6926015.17	66.1			
3459	Yes	GF	3	1	493993.4	6926025.1	65.8	65.7	63.6	Fill
3459	Yes	FF	3	3	493993.4	6926025.1	65.8			
3460	Yes	GF	3	1	493984.69	6926033.53	65.6	65.5	63.4	Fill
3460	Yes	FF	3	3	493984.69	6926033.53	65.6			
3461	Yes	GF	3	1	493980.39	6926043.59	65.4	65.3	63.2	Fill
3461	Yes	FF	3	3	493980.39	6926043.59	65.4			
3462	Yes	GF	3	1	493972.86	6926052.83	65.2	65.1	63.0	Fill
3462	Yes	FF	3	3	493972.86	6926052.83	65.2			
3463	Yes	GF	3	1	493964.3	6926063.1	65.0	64.8	62.8	Fill
3463	Yes	FF	3	3	493964.3	6926063.1	65.0			
3464	Yes	GF	3	1	493955.05	6926074.75	64.7	64.6	62.6	Fill
3464	Yes	FF	3	3	493955.05	6926074.75	64.7			
3465	Yes	GF	3	1	493946.15	6926084.68	64.5	64.3	62.3	Fill
3465	Yes	FF	3	3	493946.15	6926084.68	64.5			
3466	Yes	GF	3	1	493937.59	6926094.26	64.2	64.1	62.1	Fill

Lot	First row lot	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m			Elevation at Base of Barrier (mid span), m	Approximate Elevation of Road in Front of Lot, m	Lot in Cut /Fill
			No Barrier	2.0m Barrier	Easting	Northing	Elevation			
3466	Yes	FF	3	3	493937.59	6926094.26	64.2			
3467	Yes	GF	3	1	493928.34	6926101.46	64.0	63.9	62.0	Fill
3467	Yes	FF	3	3	493928.34	6926101.46	64.0			
3468	Yes	GF	3	1	493921.15	6926107.96	63.9	63.7	61.8	Fill
3468	Yes	FF	3	3	493921.15	6926107.96	63.9			
3469	Yes	GF	3	1	493912.59	6926116.18	63.7	63.6	61.6	Fill
3469	Yes	FF	3	3	493912.59	6926116.18	63.7			
3470	Yes	GF	3	1	493904.03	6926124.4	63.5	63.4	61.5	Fill
3470	Yes	FF	3	3	493904.03	6926124.4	63.5			
3471	Yes	GF	3	1	493894.79	6926133.3	63.4	63.3	61.2	Fill
3471	Yes	FF	3	3	493894.79	6926133.3	63.4			
3472	Yes	GF	3	1	493886.91	6926140.83	63.3	63.2	61.1	Fill
3472	Yes	FF	3	3	493886.91	6926140.83	63.3			
3473	Yes	GF	3	1	493879.38	6926148.02	63.3	63.1	61.0	Fill
3473	Yes	FF	3	3	493879.38	6926148.02	63.3			
3474	Yes	GF	3	1	493871.16	6926155.9	63.2	63.1	60.8	Fill
3474	Yes	FF	3	3	493871.16	6926155.9	63.2			
3475	Yes	GF	3	1	493860.75	6926165.82	63.1	63.0	60.6	Fill
3475	Yes	FF	3	3	493860.75	6926165.82	63.1			
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3740	Yes	FF	0	0	493562.27	6926334.54	64.2			
3741	Yes	GF	0	0	493563.98	6926345.51	64.4	64.2	59.7	Fill
3741	Yes	FF	0	0	493563.98	6926345.51	64.4			
3742	Yes	GF	0	0	493565.68	6926355.51	64.7	64.5	60.1	Fill
3742	Yes	FF	1	1	493565.68	6926355.51	64.7			
3743	Yes	GF	0	0	493566.66	6926366.72	65.1	65.0	60.3	Fill
3743	Yes	FF	1	1	493566.66	6926366.72	65.1			
3744	Yes	GF	1	0	493568.36	6926378.91	65.5	65.4	60.7	Fill
3744	Yes	FF	1	1	493568.36	6926378.91	65.5			
3745	Yes	GF	1	0	493570.56	6926391.35	66.0	65.9	60.9	Fill
3745	Yes	FF	1	1	493570.56	6926391.35	66.0			
3746	Yes	GF	1	0	493572.27	6926403.05	66.5	66.3	61.2	Fill

Lot	First row lot	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m			Elevation at Base of Barrier (mid span), m	Approximate Elevation of Road in Front of Lot, m	Lot in Cut /Fill
			No Barrier	2.0m Barrier	Easting	Northing	Elevation			
3746	Yes	FF	1	1	493572.27	6926403.05	66.5			
3747	Yes	GF	1	0	493573.49	6926412.81	66.8	66.7	61.3	Fill
3747	Yes	FF	1	1	493573.49	6926412.81	66.8			
3748	Yes	GF	1	0	493575.44	6926423.78	67.2	67.0	61.6	Fill
3748	Yes	FF	1	1	493575.44	6926423.78	67.2			
3749	Yes	GF	1	0	493576.66	6926435.97	67.6	67.4	61.9	Fill
3749	Yes	FF	1	1	493576.66	6926435.97	67.6			
3750	Yes	GF	1	0	493578.61	6926448.65	68.1	68.0	62.2	Fill
3750	Yes	FF	1	1	493578.61	6926448.65	68.1			
3751	Yes	GF	1	0	493580.07	6926459.62	68.5	68.4	62.4	Fill
3751	Yes	FF	2	1	493580.07	6926459.62	68.5			
3752	Yes	GF	1	0	493581.53	6926469.62	68.9	68.7	62.7	Fill
3752	Yes	FF	2	2	493581.53	6926469.62	68.9			
3753	Yes	GF	1	0	493583.48	6926480.84	69.2	69.1	62.9	Fill
3753	Yes	FF	2	2	493583.48	6926480.84	69.2			
3754	Yes	GF	2	0	493584.95	6926493.52	69.7	69.5	63.0	Fill
3754	Yes	FF	2	2	493584.95	6926493.52	69.7			
3755	Yes	GF	2	0	493586.16	6926504.24	70.1	70.0	63.1	Fill
3755	Yes	FF	2	2	493586.16	6926504.24	70.1			
3756	Yes	GF	2	1	493587.38	6926514.24	70.4	70.3	63.1	Fill
3756	Yes	FF	2	2	493587.38	6926514.24	70.4			
3757	Yes	GF	2	1	493589.33	6926525.7	70.8	70.7	63.1	Fill
3757	Yes	FF	2	2	493589.33	6926525.7	70.8			
3758	Yes	GF	2	1	493591.04	6926537.65	70.2	70.1	63.1	Fill
3758	Yes	FF	2	2	493591.04	6926537.65	70.2			
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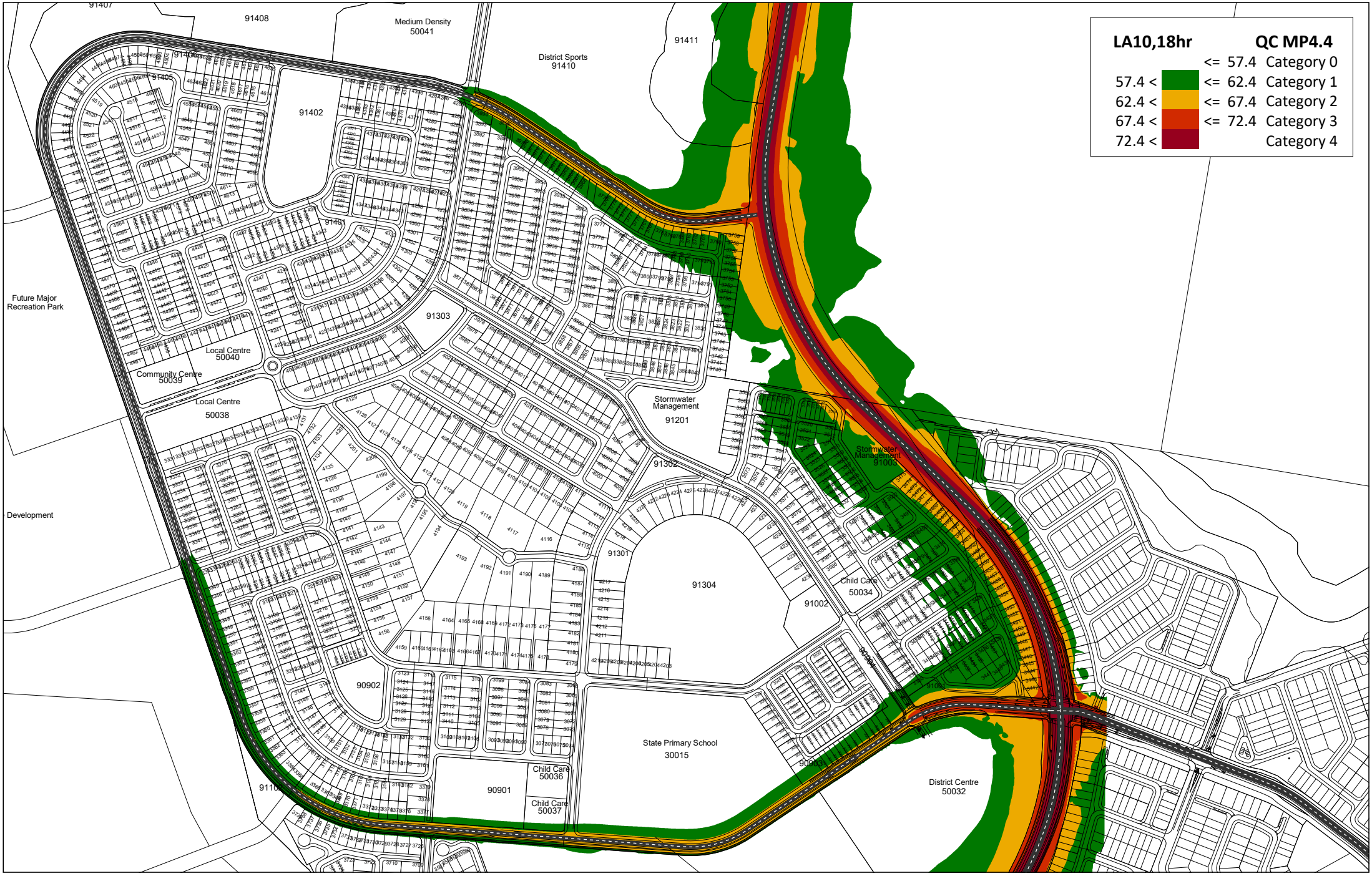
3759	Yes	FF	3	3						



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SCALE :5355

0 25 50 100 150 200 250 m

ORIENTATION

N

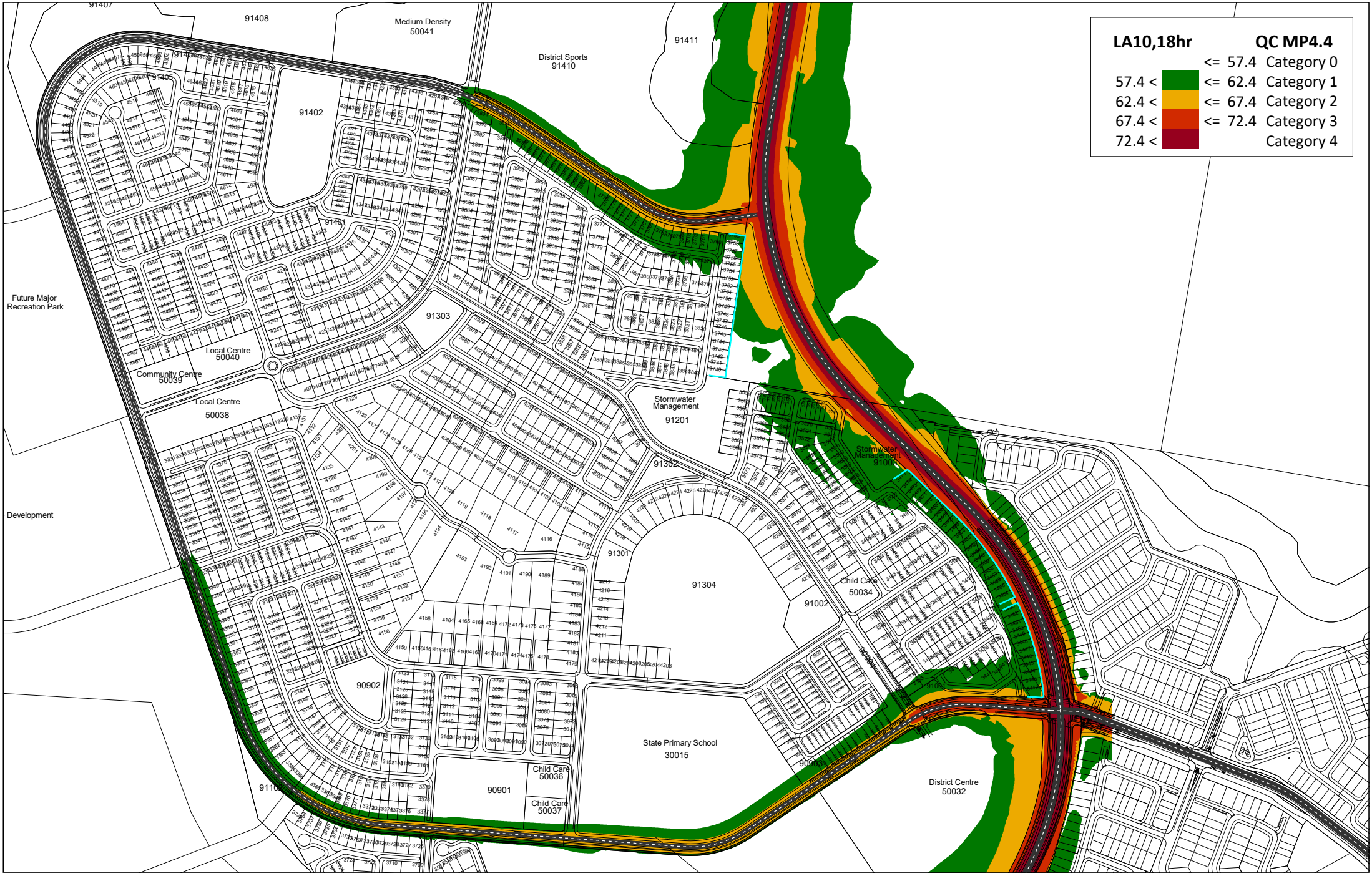
LEGEND

Roads

PROJECT	Flagstone City Development, Context Area 3 (CA3)
CLIENT	PEET Flagstone City Pty Ltd
DESCRIPTION	QDC MP4.4 Category, Ground Floor (No Mitigation) Road Traffic Noise Map at 1.8m Above the Ground

Date:	23/02/2024
Project No.:	620.10512
Report No.:	620.10512-R11-v1.0
Prediction Method:	CoRTN
Prepared By:	RO
Prediction Height:	1.8 m

Figure 2



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SCALE :5355

0 25 50 100 150 200 250 m

ORIENTATION

N

LEGEND

Roads

2.0m high Noise Barrier

PROJECT	Flagstone City Development, Context Area 3 (CA3)
CLIENT	PEET Flagstone City Pty Ltd
DESCRIPTION	QDC MP4.4, Ground Floor WIth 2.0m Noise Barrier Road Traffic Noise Map at 1.8m Above the Ground

Date:	18/03/2024
Project No.:	620.10512
Report No.:	620.10512-R11-v1.0
Prediction Method:	CoRTN
Prepared By:	RO
Prediction Height:	1.8 m

Figure 3

SLR
L16 / 175 EAGLE STREET
BRISBANE
QLD 4000
AUSTRALIA
T: 61 7 3858 4800
www.slrconsulting.com

SCALE :5355

0 25 50 100 150 200 250 m

ORIENTATION

N

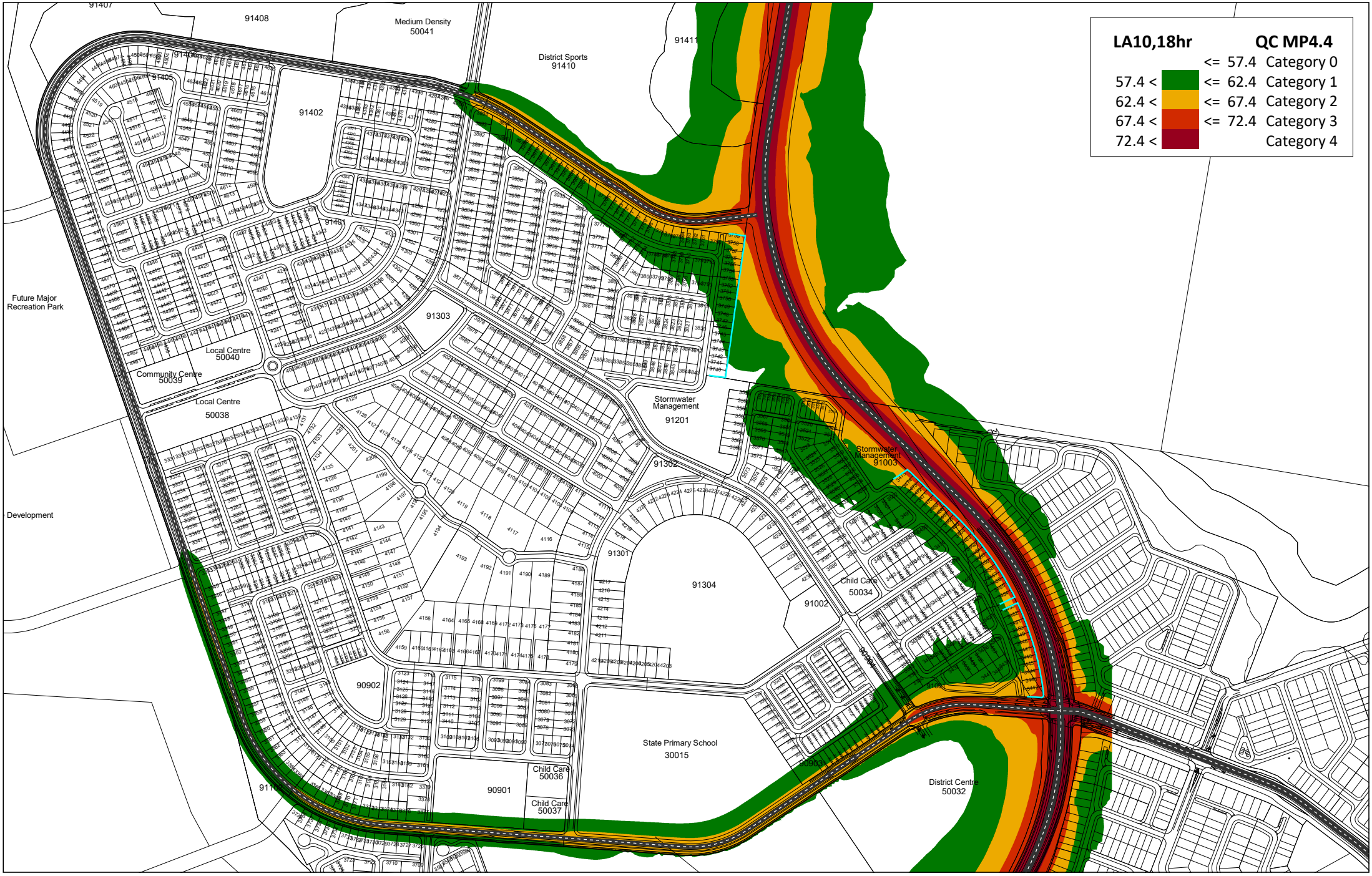
LEGEND

- Roads
- Point receiver
- Line
- Road
- Road axis

PROJECT	Flagstone City Development, Context Area 3 (CA3)
CLIENT	PEET Flagstone City Pty Ltd
DESCRIPTION	QDC MP4.4 Category, First Floor (No Mitigation) Road Traffic Noise Map at 4.6m Above the Ground

Date:	23/02/2024
Project No.:	620.10512
Report No.:	620.10512-R11-v1.0
Prediction Method:	CoRTN
Prepared By:	RO
Prediction Height:	1.8 m

Figure 4



L16 / 175 EAGLE STREET
BRISBANE
QLD 4000
AUSTRALIA
T: 61 7 3858 4800
www.slrconsulting.com

SCALE :5355

0 25 50 100 150 200 250 m

ORIENTATION

N

LEGEND

Roads

2.0m high Noise Barrier

PROJECT	Flagstone City Development, Context Area 3 (CA3)
CLIENT	PEET Flagstone City Pty Ltd
DESCRIPTION	QDC MP4.4, Ground Floor WIth 2.0m Noise Barrier Road Traffic Noise Map at 4.6m Above the Ground

Date:	18/03/2024
Project No.:	620.10512
Report No.:	620.10512-R11-v1.0
Prediction Method:	CoRTN
Prepared By:	RO
Prediction Height:	1.8 m

Figure 5

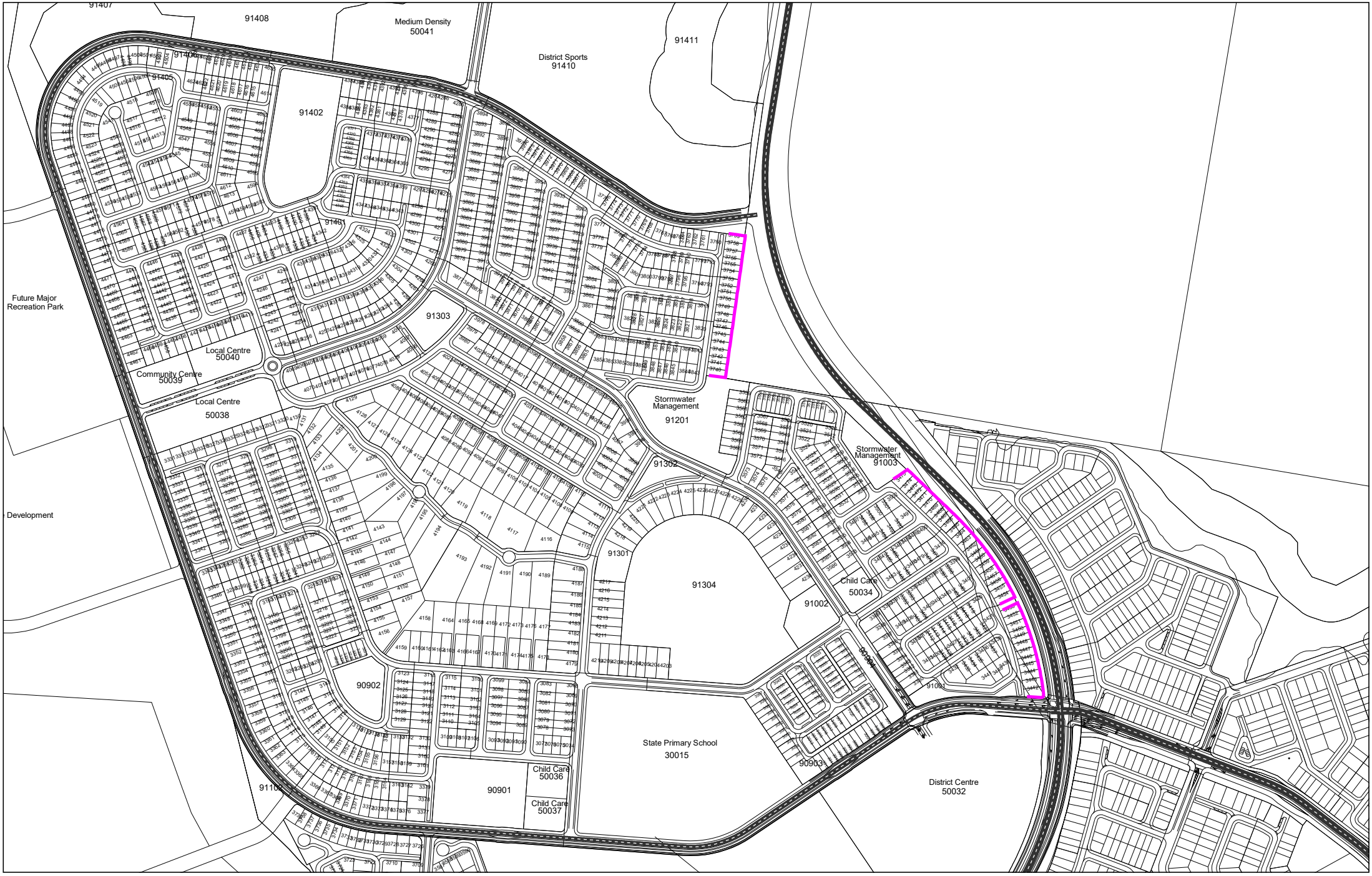
5.0 Recommendations

5.1 Noise Barriers

For the external noise levels to meet the predicted QDC MP4.4 noise categories detailed in **Section 4.0**, noise barriers are recommended to be built as follows:

- The location of the modelled 2.0 m high noise barriers is shown in **Figure 6**.
- The noise barriers must be built on top of any retailing walls. This applies regardless of whether the lot is in a cut or in fill (i.e. lot a at a lower elevation than the assessed road immediately adjoining, and vice versa).

  Table 3 shows the approximate ground elevation at the base of the barrier at mid span of the respective lot, the ground elevation at the approximate centre of the lot and the approximate elevation of the closest road lane.
- The barriers must be installed without gaps between concrete panels and posts, or between timber panels and posts.
- Small gaps between the bottom of the noise fences are permissible if required for drainage. However, these must be minimised.
- The noise barriers must have a minimum surface density of 12.5 kg/m² (excluding structural components).
- Overlapped timber barriers are suitable. Brisbane City Council drawings BSD-7021 and Moreton Bay Regional Council drawings SF-1520 are provided for reference (also reproduced in **Appendix D**). Note the noise barriers must be built to a minimum 2.0 m in height, as currently modelled.



L16 / 175 EAGLE STREET
BRISBANE
QLD 4000
AUSTRALIA
T: 61 7 3858 4800
www.slrconsulting.com

SCALE :5355

0 25 50 100 150 200 250 m

ORIENTATION

LEGEND

- Roads
- 2.0m noise barrier

PROJECT	Flagstone City Development, Context Area 3 (CA3)
CLIENT	PEET Flagstone City Pty Ltd
DESCRIPTION	Recommended Noise Barriers

Date: 15/03/2024
Project No.: 620.10512
Report No.: 620.10512-R11-v2.0
Prediction Method: CoRTN
Prepared By: RO
Prediction Height:1.8 m

Figure 6

5.2 QDC MP4.4 Noise Category requirements

QDC MP4.4 Categories applicable to the relevant lots pertaining the assessed CA3 South stages after the implementation of 2.0 m high noise barriers as specified in **Section 5.1** were presented in **Section 4.1** and **Appendix C** .

The applicable QDC MP4.4 categories on these lots after the implementation of the noise barriers are summarised as follows:

- Road traffic noise levels
  - Ground Floor – Noise Category 0 to Noise Category 2
  - First Floor – Noise Category 0 to Noise Category 3

The Rw rating applicable to the dwelling facade elements for each of the QDC MP4.4 Categories are presented in **Table 1**. Acceptable forms of construction are reproduced from Schedule 2 of QDC MP4.4 in **Appendix B**, noting that other forms of construction are acceptable where they meet the required Rw rating.

The noise attenuation provided by the dwelling facade will be largely controlled by the window elements; therefore, it is recommended that facade glazing systems (window + frame + seals) required to achieve a minimum Rw performance are supplied with an acoustic test report conducted in Australia by a qualified consultant who is a member of the Australian Acoustical Society (AAS), or an acoustic consultant who works for a member firm of the Association of Australasian Acoustical Consultants (AAAC). The acoustic test report should address the requirements in the following standards:

- AS 1191-2002 *Acoustics – Method for laboratory measurement of airborne sound transmission insulation of building elements*
- ISO 717-1:2013 *Acoustics – Rating of sound insulation in buildings and of building elements – Part 1: Airborne sound insulation*

It should be noted that, a QDC MP4.4 Noise Category lower than the values stated in this report should be acceptable at specific facades of the future dwellings depending on the layout of these within the lots, pending demonstration of the road traffic noise levels onto specific habitable spaces of the dwelling via a lot specific noise assessment based on architectural drawings, presented by the lot owner.

6.0 Conclusion

SLR Consulting Pty Ltd (SLR) have completed a road traffic noise assessment of the proposed Flagstone Context Area 3 (CA3) South Subdivision.

This report addresses the road traffic noise intrusion onto Stage 8 to Stage 14.

The assessment was conducted following guidance from the Queensland Department of Transport and Main Roads (DTMR) – Transport Noise Management: Code of Practice Volume 1 - Road Traffic Noise, dated November 2013 (CoP Vol 1).

A computational noise model was used to predict the noise levels from North South Arterial Road, which is to be built as part of the Flagstone development.

For the external noise levels to meet the predicted noise categories detailed in this report, noise barriers are recommended to be built as follows:

- 2.0 m high noise barriers at the locations shown in **Figure 6**.
- The noise barriers must be built on top of any retailing walls.
- This applies regardless of whether the lot is in a cut or in fill (i.e. lot a at a lower elevation than the assessed road immediately adjoining, and vice versa).

  Table 3 shows the approximate ground elevation at the base of the barrier at mid span of the respective lot, the ground elevation at the approximate centre of the lot and the approximate elevation of the closest road lane.
- The barriers must be installed without gaps between concrete panels and posts, or between timber panels and posts.
- Small gaps between the bottom of the noise fences are permissible if required for drainage. However, these must be minimised.
- The noise barriers must have a minimum surface density of 12.5 kg/m² (excluding structural components).
- Overlapped timber barriers are suitable. Brisbane City Council drawings BSD-7021 and Moreton Bay Regional Council drawings SF-1520 are provided for reference (also reproduced in **Appendix D**). Note the noise barriers must be built to a minimum 2.0 m in height.

The residual noise levels after the implementation of 2.0 m high noise barriers were assessed against noise criteria derived from the Queensland Development Code Mandatory Part 4.4 (QDC MP4.4).

QDC MP4.4 Categories applicable to all the lots pertaining to the assessed Context Area 3 South stages are presented in **Appendix A**. Lots not listed are not “Noise Affected”’; therefore, the dwelling facades require no further treatment to reduce traffic noise.

The Rw rating applicable to the dwelling facade elements are presented in **Table 1**. Acceptable forms of construction are reproduced from Schedule 2 of QDC MP4.4 in **Appendix C**, noting that other forms of construction are acceptable where they meet the required Rw rating.

The predicted QDC MP4.4 Noise Categories presented in this report represent the highest Noise Category for any part of the Lot (rather than on the building envelope). A lower Noise Category may be applicable depending on the position and layout of the building on the Lot. The constructed dwellings and other lot fences will also screen road noise. For these reasons, the Noise Categories are considered a conservative assessment of transport noise.

The building design and construction can apply materials other than those presented in MP4.4, where they achieve the minimum Rw value for the relevant building component and applicable Noise Category.

A lower Noise Category should be acceptable at specific facades of the future dwellings depending on the layout of these within the lots, pending demonstration of the road traffic noise levels onto specific habitable spaces within a dwelling via a lot-specific noise assessment based on architectural drawings, presented by the lot owner.

Appendix A CA3 South Concept Allotment Layout

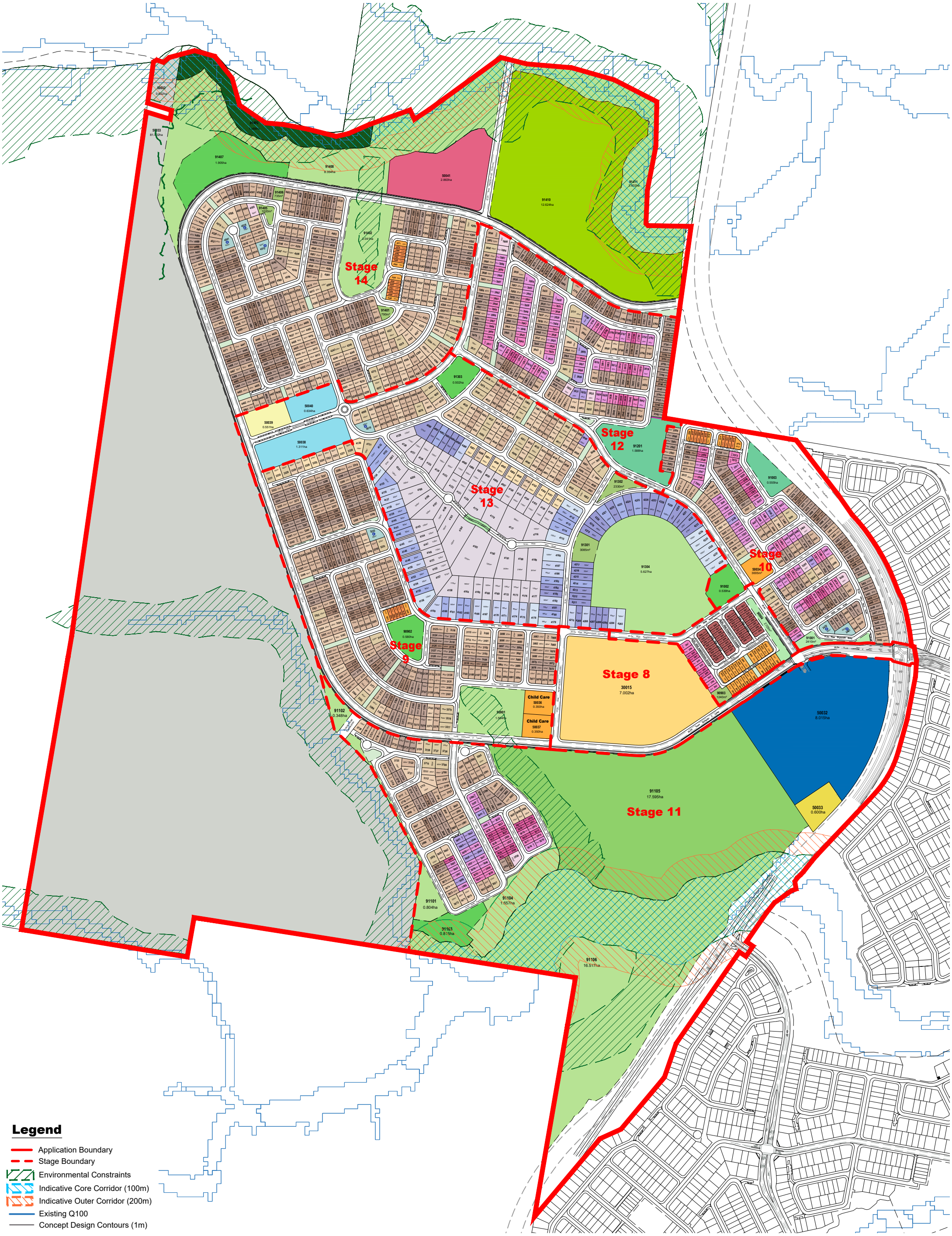
Flagstone Development, Context Area 3 (CA3) South

Road Traffic Noise Intrusion Assessment, Stages 8-14

Peet Flagstone City Pty Ltd

SLR Project No.: 620.v10512.02002

18 March 2024



Legend

- Application Boundary
- Stage Boundary
- Environmental Constraints
- Indicative Core Corridor (100m)
- Indicative Outer Corridor (200m)
- Existing Q100
- Concept Design Contours (1m)
- (1) Possible Multiple Residential Allotment (Max. no. of dwellings)

TO BE READ IN CONJUNCTION WITH 110056-640 STAGES 8-14 OVERALL STATISTICS

PLAN REF: 110056 – 639
Rev No: –
DATE: 13 MARCH 2024
CLIENT: PEET
DRAWN BY: JC / MM
CHECKED BY: MD

0 100 200 300 400 500 1 : 7,500 @ A3

FLAGSTONE CA3 SOUTH
STAGES 8 - 14
OVERALL PLAN OF SUBDIVISION

PEET

URBAN DESIGN
Level 8
31 Duncan Street
PO Box 1559
Fortitude Valley QLD 4006
T +61 7 3539 9500
W rpsgroup.com

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CA3 SOUTH - Stage 8 - 14 Yield Breakdown

Lot Type	Stage 8	Stage 9	Stage 10	Stage 11	Stage 12	Stage 13	Stage 14	Overall	
	Yield	Yield	Yield	Yield	Yield	Yield	Yield	Yield	%
25m Deep Terrace Product									
Terrace 9.5m Allotment	—	32	—	—	—	—	—	32	**2%**
Subtotal	**—**	**32**	**—**	**—**	**—**	**—**	**—**	**32**	**2%**
25m Deep Product									
Villa 10m Allotment	—	4	8	15	7	—	—	34	**2%**
Premium Villa 12.5m Allotment	—	7	21	15	41	—	—	84	**5%**
Courtyard 14m Allotment	—	—	28	16	33	—	—	77	**5%**
Premium Courtyard 16m Allotment	—	—	3	8	5	1	—	17	**1%**
Premium Traditional 20m Allotment	—	—	4	1	4	—	1	10	**1%**
Subtotal	**—**	**11**	**64**	**55**	**90**	**1**	**1**	**222**	**14%**
28m Deep Terrace Product									
Terrace 7.5m Allotment	—	5	9	—	—	—	10	24	**1%**
Terrace 9.5m Allotment	—	26	4	—	—	—	4	34	**2%**
Subtotal	**—**	**31**	**13**	**—**	**—**	**—**	**14**	**58**	**4%**
30m Deep Product									
Villa 10m Allotment	—	53	23	5	26	—	47	154	**9%**
Premium Villa 12.5m Allotment	—	89	52	29	66	—	94	330	**20%**
Courtyard 14m Allotment	—	123	42	40	43	37	170	455	**28%**
Premium Courtyard 16m Allotment	—	24	6	15	8	44	54	151	**9%**
Traditional 18m Allotment	—	4	—	—	—	11	—	15	**1%**
Premium Traditional 20m Allotment	—	11	5	9	5	22	14	66	**4%**
Possible Multiple Residential Allotment	—	1	2	—	—	1	3	7	**0%**
Subtotal	**—**	**305**	**130**	**98**	**148**	**115**	**382**	**1178**	**72%**
50m+ Deep Product									
Courtyard 14m Allotment	—	—	—	—	—	30	—	30	**2%**
Premium Courtyard 16m Allotment	—	—	—	—	—	25	—	25	**2%**
Traditional 18m Allotment	—	—	—	—	—	20	—	20	**1%**
Premium Traditional 20m Allotment	—	—	—	—	—	14	—	14	**1%**
Ridgetop Allotment	—	—	—	—	—	56	—	56	**3%**
Subtotal	**—**	**—**	**—**	**—**	**—**	**145**	**—**	**145**	**9%**
Total Residential Allotments	**—**	**379**	**207**	**153**	**238**	**261**	**397**	**1635**	**100%**
Residential Net Density	**—**	**14.7 dw/ha**	**15.3 dw/ha**	**13.6 dw/ha**	**14.8 dw/ha**	**8.9 dw/ha**	**11.9 dw/ha**	**13.6 dw/ha**	
Super Lots									
Local Centre	—	—	—	—	—	—	—	—	
District Centre	—	—	—	1	—	—	—	1	
Ambulance	—	—	—	1	—	—	—	1	
Child Care	—	2	1	—	—	—	—	3	
Community Centre	—	—	—	—	—	—	—	—	
State Primary School	1	—	—	—	—	—	—	1	
Medium Density Allotment	—	—	—	—	—	—	1	1	
Balance Allotment	—	—	—	—	—	—	2	2	
Subtotal	**1**	**2**	**1**	**2**	**—**	**—**	**3**	**9**	
Total Allotments	**1**	**381**	**208**	**155**	**238**	**261**	**400**	**1644**	
Maximum Potential Residential Dwellings (Includes Multiple Residential Allotments)	**—**	**380**	**209**	**153**	**238**	**262**	**402**	**1644**	
Maximum Potential Net Residential Density	**—**	**14.7 dw/ha**	**15.5 dw/ha**	**13.6 dw/ha**	**14.8 dw/ha**	**8.9 dw/ha**	**12.1 dw/ha**	**12.7 dw/ha**	

CA3 SOUTH - Stage 8 - 14 Land Budget

Land Use	Stage 8	Stage 9	Stage 10	Stage 11	Stage 12	Stage 13	Stage 14	Overall	
	Area	Area	Area	Area	Area	Area	Area	Area	%
	10.082 ha	28.083 ha	16.892 ha	66.313 ha	16.131 ha	37.552 ha	144.019 ha	319.072 ha	100.0%
Saleable Area									
Residential Allotments	—	14.631 ha	7.860 ha	6.287 ha	9.271 ha	23.013 ha	16.894 ha	77.956 ha	24.4%
Medium Density	—	—	—	—	—	—	2.863 ha	2.863 ha	0.9%
Local Centre	—	—	—	—	—	1.945 ha	—	1.945 ha	0.6%
District Centre	—	—	—	8.015 ha	—	—	—	8.015 ha	2.5%
Ambulance	—	—	—	0.600 ha	—	—	—	0.600 ha	0.2%
Child Care	—	0.700 ha	0.301 ha	—	—	—	—	1.001 ha	0.3%
Community Centre	—	—	—	—	—	0.551 ha	—	0.551 ha	0.2%
State Primary School	7.002 ha	—	—	—	—	—	—	7.002 ha	2.2%
Total Area of Allotments	**7.002 ha**	**15.331 ha**	**8.161 ha**	**14.902 ha**	**9.271 ha**	**25.509 ha**	**19.757 ha**	**99.933 ha**	31.3%
Road									
North South Arterial Dedication (incl. batters)	0.266 ha	—	3.079 ha	9.562 ha	—	—	0.132 ha	13.039 ha	4.1%
Trunk Connector 2 Lanes (23.7m)	2.102 ha	2.498 ha	—	0.144 ha	0.028 ha	0.327 ha	4.052 ha	9.151 ha	2.9%
Neighbourhood Connector (20.2m)	0.712 ha	1.771 ha	0.598 ha	0.689 ha	1.746 ha	1.016 ha	0.687 ha	7.219 ha	2.3%
Neighbourhood Access Street (16.5m)	—	5.257 ha	3.512 ha	3.116 ha	3.243 ha	3.813 ha	5.971 ha	24.912 ha	7.8%
Laneway (6.5m)	—	0.320 ha	0.075 ha	—	—	—	0.082 ha	0.477 ha	0.1%
Pedestrian Linkages	—	0.365 ha	0.132 ha	0.163 ha	0.256 ha	0.214 ha	0.535 ha	1.665 ha	0.5%
Total Area of New Road	**3.080 ha**	**10.211 ha**	**7.396 ha**	**13.674 ha**	**5.273 ha**	**5.370 ha**	**11.459 ha**	**56.463 ha**	17.7%
Open Space									
Conservation Buffer	—	—	—	—	—	—	1.988 ha	1.988 ha	0.6%
Corridor Park / Conservation	—	1.564 ha	—	19.327 ha	—	5.627 ha	13.997 ha	40.515 ha	12.7%
Stormwater Management	—	—	0.555 ha	—	1.588 ha	—	—	2.143 ha	0.7%
Regional Sports	—	—	—	17.595 ha	—	—	—	17.595 ha	5.5%
District Sports	—	—	—	—	—	—	12.624 ha	12.624 ha	4.0%
Neighbourhood Recreation Park	—	0.580 ha	0.539 ha	0.815 ha	—	—	1.905 ha	3.839 ha	1.2%
Local Recreation Park	—	0.124 ha	—	—	—	0.502 ha	0.255 ha	0.881 ha	0.3%
Local Linear Recreation Park	—	0.273 ha	0.241 ha	—	—	0.542 ha	—	1.056 ha	0.3%
Total Open Space	**—**	**2.541 ha**	**1.335 ha**	**37.737 ha**	**1.588 ha**	**6.671 ha**	**30.769 ha**	**80.641 ha**	25.3%
Balance Allotments									
Balance Allotment	—	—	—	—	—	—	82.034 ha	82.034 ha	25.7%
Total Balance Allotments	**—**	**—**	**—**	**—**	**—**	**—**	**82.034 ha**	**82.034 ha**	25.7%

PLAN REF: **110056 – 640**
Rev No: –
DATE: 13 MARCH 2024
CLIENT: PEET
DRAWN BY: JC / MM
CHECKED BY: MD

Not to Scale @ A3

FLAGSTONE CA3 SOUTH

STAGES 8 - 14
OVERALL PLAN OF SUBDIVISION STATISTICS

URBAN DESIGN
Level 8
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Fortitude Valley QLD 4006
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Appendix B Schedule 2 of QDC MP4.4

Flagstone Development, Context Area 3 (CA3) South

Road Traffic Noise Intrusion Assessment, Stages 8-14

Peet Flagstone City Pty Ltd

SLR Project No.: 620.v10512.02002

18 March 2024

Table B-1 Schedule 2 of QDC MP4.4

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 *acoustically rated seals*.
	38	Minimum 14.38mm thick laminated glass, with full perimeter *acoustically rated seals*; 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 *acoustically rated seals*
	35	Minimum 10.38mm thick laminated glass, with full perimeter *acoustically rated seals*.
	32	Minimum 6.38mm thick laminated glass with full perimeter *acoustically rated seals*.
	27	Minimum 4mm thick glass with full perimeter *acoustically rated seals*
	24	Minimum 4mm thick glass with standard weather seals
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 last 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.
	41	Two leaves of clay brick masonry at least 110mm thick with cavity not less than 50mm between leaves

Component of Building's External Envelope	Minimum R_w	Acceptable Forms of Construction
		or Single leaf of clay brick masonry at last 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/m^3 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.
	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, *acoustically rated plasterboard* ceiling at least 13mm thick fixed to ceiling joists, cellulose fibre insulation at least 100mm thick with a density of at least 45kg/m^3 in the cavity. or Concrete or terracotta tile or sheet metal roof with sarking, 2 layers of *acoustically rated plasterboard* at least 16mm thick fixed to ceiling joists, glass wool insulation at least 50mm thick with a density of at least 11kg/m^3 or polyester insulation at least 50mm thick with a density of at least 20kg/m^3 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/m^3 or polyester insulation at least 50mm thick with a density of at least 20kg/m^3 in the cavity. or Concrete suspended slab at least 100mm thick.

Component of Building's External Envelope	Minimum R_w	Acceptable Forms of Construction
	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/m^3.
	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.

Component of Building's External Envelope	Minimum R_w	Acceptable Forms of Construction
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 acoustically rated seals.
	33	Fixed so as to overlap the frame or rebate of the frame by not less than 10mm, fitted with full perimeter acoustically rated seals 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.
	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/m^2; or (iv) Solid core timber door not less than 35mm thick fitted with full perimeter *acoustically rated seals*.

Appendix C QDC MP4.4 Noise Predictions

Flagstone Development, Context Area 3 (CA3) South

Road Traffic Noise Intrusion Assessment, Stages 8-14

Peet Flagstone City Pty Ltd

SLR Project No.: 620.v10512.02002

18 March 2024

Table C-1 QDC MP4.4 Noise predictions

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3001	Yes	GF	2	2	493830.07	6925776.84	73.7
3001	Yes	FF	2	2	493830.07	6925776.84	73.7
3002	Yes	GF	2	2	493820.48	6925771.02	73.3
3002	Yes	FF	2	2	493820.48	6925771.02	73.3
3003	Yes	GF	2	2	493813.29	6925765.2	72.8
3003	Yes	FF	2	2	493813.29	6925765.2	72.8
3004	Yes	GF	2	2	493805.07	6925760.07	72.4
3004	Yes	FF	2	2	493805.07	6925760.07	72.4
3005	Yes	GF	2	2	493795.83	6925753.9	71.8
3005	Yes	FF	2	2	493795.83	6925753.9	71.8
3006	Yes	GF	2	2	493777	6925741.23	70.5
3006	Yes	FF	2	2	493777	6925741.23	70.5
3007	Yes	GF	2	2	493768.09	6925735.76	69.9
3007	Yes	FF	2	2	493768.09	6925735.76	69.9
3008	Yes	GF	2	2	493760.9	6925730.28	69.3
3008	Yes	FF	2	2	493760.9	6925730.28	69.3
3009	Yes	GF	2	2	493752.68	6925724.8	68.8
3009	Yes	FF	2	2	493752.68	6925724.8	68.8
3010	Yes	GF	2	2	493745.15	6925719.66	68.3
3010	Yes	FF	2	2	493745.15	6925719.66	68.3
3011	Yes	GF	2	2	493737.96	6925714.53	67.8
3011	Yes	FF	2	2	493737.96	6925714.53	67.8
3012	Yes	GF	2	2	493728.03	6925708.36	67.4
3012	Yes	FF	2	2	493728.03	6925708.36	67.4
3017	No	GF	0	0	493740.27	6925761.63	73.0
3017	No	FF	1	0	493740.27	6925761.63	73.0
3018	No	GF	0	0	493747.75	6925766.74	73.5
3018	No	FF	1	1	493747.75	6925766.74	73.5
3019	No	GF	0	0	493756.15	6925772.22	73.9
3019	No	FF	1	1	493756.15	6925772.22	73.9
3020	No	GF	0	0	493774.77	6925783.72	74.8
3020	No	FF	1	1	493774.77	6925783.72	74.8
3021	No	GF	0	0	493784.63	6925791.02	75.4

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3021	No	FF	1	1	493784.63	6925791.02	75.4
3022	No	GF	0	0	493792.48	6925796.68	75.8
3022	No	FF	1	1	493792.48	6925796.68	75.8
3023	No	GF	0	0	493799.6	6925801.79	76.2
3023	No	FF	1	1	493799.6	6925801.79	76.2
3024	No	GF	0	0	493809.45	6925807.63	76.6
3024	No	FF	1	1	493809.45	6925807.63	76.6
3057	Yes	GF	0	0	493685.92	6925714.3	69.4
3057	Yes	FF	0	0	493685.92	6925714.3	69.4
3331	Yes	GF	0	0	492677.5	6926196.99	96.3
3331	Yes	FF	0	0	492677.5	6926196.99	96.3
3332	Yes	GF	0	0	492695.65	6926164.46	94.9
3332	Yes	FF	0	0	492695.65	6926164.46	94.9
3333	Yes	GF	0	0	492700.1	6926152.48	94.1
3333	Yes	FF	0	0	492700.1	6926152.48	94.1
3334	Yes	GF	0	0	492703.52	6926140.49	93.1
3334	Yes	FF	0	0	492703.52	6926140.49	93.1
3335	Yes	GF	0	0	492708.32	6926128.51	92.1
3335	Yes	FF	0	0	492708.32	6926128.51	92.1
3336	Yes	GF	0	0	492712.77	6926115.49	90.9
3336	Yes	FF	0	0	492712.77	6926115.49	90.9
3337	Yes	GF	0	0	492716.88	6926104.88	90.0
3337	Yes	FF	0	0	492716.88	6926104.88	90.0
3338	Yes	GF	0	0	492719.62	6926094.95	89.1
3338	Yes	FF	0	0	492719.62	6926094.95	89.1
3339	Yes	GF	0	0	492722.7	6926084.68	88.2
3339	Yes	FF	0	0	492722.7	6926084.68	88.2
3340	Yes	GF	0	0	492727.15	6926072.69	87.1
3340	Yes	FF	0	0	492727.15	6926072.69	87.1
3341	Yes	GF	0	0	492731.94	6926060.71	86.0
3341	Yes	FF	0	0	492731.94	6926060.71	86.0
3342	Yes	GF	1	1	492736.05	6926046.67	84.9
3342	Yes	FF	1	1	492736.05	6926046.67	84.9
3343	Yes	GF	1	1	492742.9	6926002.84	83.0

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3343	Yes	FF	1	1	492742.9	6926002.84	83.0
3345	Yes	GF	1	1	492756.25	6925986.06	81.7
3345	Yes	FF	1	1	492756.25	6925986.06	81.7
3346	Yes	GF	1	1	492761.39	6925972.36	80.7
3346	Yes	FF	1	1	492761.39	6925972.36	80.7
3347	Yes	GF	1	1	492770.64	6925947.37	78.7
3347	Yes	FF	1	1	492770.64	6925947.37	78.7
3348	Yes	GF	1	1	492775.43	6925934.36	77.9
3348	Yes	FF	1	1	492775.43	6925934.36	77.9
3349	Yes	GF	1	1	492779.54	6925921.69	77.2
3349	Yes	FF	1	1	492779.54	6925921.69	77.2
3350	Yes	GF	1	1	492783.99	6925909.36	76.5
3350	Yes	FF	1	1	492783.99	6925909.36	76.5
3351	Yes	GF	1	1	492787.76	6925896.35	75.8
3351	Yes	FF	1	1	492787.76	6925896.35	75.8
3352	Yes	GF	1	1	492792.89	6925881.28	75.0
3352	Yes	FF	1	1	492792.89	6925881.28	75.0
3353	Yes	GF	1	1	492798.71	6925865.53	74.2
3353	Yes	FF	1	1	492798.71	6925865.53	74.2
3354	Yes	GF	1	1	492803.51	6925850.81	73.6
3354	Yes	FF	1	1	492803.51	6925850.81	73.6
3355	Yes	GF	1	1	492808.64	6925836.77	73.0
3355	Yes	FF	1	1	492808.64	6925836.77	73.0
3356	Yes	GF	1	1	492813.44	6925822.04	72.4
3356	Yes	FF	1	1	492813.44	6925822.04	72.4
3357	Yes	GF	1	1	492822.34	6925798.42	71.6
3357	Yes	FF	1	1	492822.34	6925798.42	71.6
3358	Yes	GF	1	1	492826.11	6925785.06	71.0
3358	Yes	FF	1	1	492826.11	6925785.06	71.0
3359	Yes	GF	1	1	492831.93	6925771.71	70.5
3359	Yes	FF	1	1	492831.93	6925771.71	70.5
3360	Yes	GF	1	1	492838.43	6925757.33	69.9
3360	Yes	FF	1	1	492838.43	6925757.33	69.9
3361	Yes	GF	1	1	492847.68	6925743.97	69.4

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3361	Yes	FF	1	1	492847.68	6925743.97	69.4
3362	Yes	GF	1	1	492855.9	6925732.33	69.1
3362	Yes	FF	1	1	492855.9	6925732.33	69.1
3363	Yes	GF	1	1	492865.48	6925720	68.9
3363	Yes	FF	1	1	492865.48	6925720	68.9
3364	Yes	GF	1	1	492877.47	6925708.36	68.9
3364	Yes	FF	1	1	492877.47	6925708.36	68.9
3365	Yes	GF	1	1	492890.14	6925693.64	68.8
3365	Yes	FF	1	1	492890.14	6925693.64	68.8
3366	Yes	GF	1	1	492915.13	6925674.8	68.8
3366	Yes	FF	1	1	492915.13	6925674.8	68.8
3367	Yes	GF	1	1	492931.57	6925665.22	68.8
3367	Yes	FF	1	1	492931.57	6925665.22	68.8
3368	Yes	GF	1	1	492946.29	6925658.03	68.8
3368	Yes	FF	1	1	492946.29	6925658.03	68.8
3369	Yes	GF	1	1	492959.31	6925651.86	68.8
3369	Yes	FF	1	1	492959.31	6925651.86	68.8
3370	Yes	GF	1	1	492971.29	6925647.07	68.8
3370	Yes	FF	1	1	492971.29	6925647.07	68.8
3371	Yes	GF	1	1	492983.62	6925643.65	68.8
3371	Yes	FF	1	1	492983.62	6925643.65	68.8
3372	Yes	GF	1	1	492998	6925640.22	68.7
3372	Yes	FF	1	1	492998	6925640.22	68.7
3373	Yes	GF	1	1	493013.07	6925638.17	68.6
3373	Yes	FF	1	1	493013.07	6925638.17	68.6
3374	Yes	GF	1	1	493027.45	6925635.77	68.4
3374	Yes	FF	1	1	493027.45	6925635.77	68.4
3375	Yes	GF	1	1	493042.17	6925634.74	68.1
3375	Yes	FF	1	1	493042.17	6925634.74	68.1
3376	Yes	GF	1	1	493057.58	6925633.72	67.6
3376	Yes	FF	1	1	493057.58	6925633.72	67.6
3377	Yes	GF	1	1	493077.78	6925625.84	67.0
3377	Yes	FF	1	1	493077.78	6925625.84	67.0
3380	Yes	GF	1	1	493876.51	6925829.22	76.7

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3380	Yes	FF	1	1	493876.51	6925829.22	76.7
3381	No	GF	1	1	493868.96	6925839.76	77.6
3381	No	FF	1	1	493868.96	6925839.76	77.6
3382	No	GF	0	0	493862.21	6925849.61	78.2
3382	No	FF	1	1	493862.21	6925849.61	78.2
3383	No	GF	0	0	493857.1	6925858.01	78.6
3383	No	FF	1	1	493857.1	6925858.01	78.6
3384	No	GF	0	0	493850.52	6925867.14	79.1
3384	No	FF	1	0	493850.52	6925867.14	79.1
3390	No	GF	0	0	493837.02	6925949.28	80.2
3390	No	FF	1	0	493837.02	6925949.28	80.2
3391	No	GF	0	0	493849.25	6925957.68	78.9
3391	No	FF	1	0	493849.25	6925957.68	78.9
3392	No	GF	0	0	493860.38	6925964.98	78.0
3392	No	FF	1	0	493860.38	6925964.98	78.0
3393	No	GF	0	0	493870.24	6925972.28	76.4
3393	No	FF	1	0	493870.24	6925972.28	76.4
3394	No	GF	0	0	493881.74	6925979.58	74.1
3394	No	FF	1	0	493881.74	6925979.58	74.1
3395	No	GF	0	0	493895.79	6925989.07	72.3
3395	No	FF	1	0	493895.79	6925989.07	72.3
3396	No	GF	0	0	493910.76	6925998.38	69.8
3396	No	FF	1	0	493910.76	6925998.38	69.8
3397	No	GF	0	0	493922.63	6926006.41	68.2
3397	No	FF	1	0	493922.63	6926006.41	68.2
3398	No	GF	0	0	493932.85	6926014.08	66.7
3398	No	FF	1	0	493932.85	6926014.08	66.7
3399	No	GF	0	0	493945.08	6926021.56	66.5
3399	No	FF	1	1	493945.08	6926021.56	66.5
3400	No	GF	0	0	493957.49	6926002.95	68.1
3400	No	FF	1	1	493957.49	6926002.95	68.1
3401	No	GF	0	0	493945.44	6925995.83	68.5
3401	No	FF	1	1	493945.44	6925995.83	68.5
3402	No	GF	0	0	493933.58	6925989.07	70.0

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3402	No	FF	1	0	493933.58	6925989.07	70.0
3403	No	GF	0	0	493922.26	6925980.49	71.4
3403	No	FF	1	0	493922.26	6925980.49	71.4
3404	No	GF	0	0	493907.84	6925970.27	73.3
3404	No	FF	1	0	493907.84	6925970.27	73.3
3405	No	GF	0	0	493894.7	6925960.41	75.3
3405	No	FF	1	0	493894.7	6925960.41	75.3
3406	No	GF	0	0	493883.02	6925953.66	76.5
3406	No	FF	1	0	493883.02	6925953.66	76.5
3407	No	GF	0	0	493872.43	6925947.09	77.4
3407	No	FF	1	0	493872.43	6925947.09	77.4
3408	No	GF	0	0	493862.75	6925939.06	78.2
3408	No	FF	1	0	493862.75	6925939.06	78.2
3410	No	GF	0	0	493881.19	6925893.06	78.3
3410	No	FF	1	0	493881.19	6925893.06	78.3
3411	No	GF	0	0	493892.51	6925900.91	77.7
3411	No	FF	1	0	493892.51	6925900.91	77.7
3412	No	GF	0	0	493901.63	6925907.3	77.2
3412	No	FF	1	1	493901.63	6925907.3	77.2
3413	No	GF	1	0	493910.21	6925912.77	76.7
3413	No	FF	1	1	493910.21	6925912.77	76.7
3414	No	GF	1	0	493919.71	6925918.8	75.4
3414	No	FF	1	0	493919.71	6925918.8	75.4
3415	No	GF	1	0	493928.29	6925925.37	74.4
3415	No	FF	1	0	493928.29	6925925.37	74.4
3416	No	GF	1	0	493937.41	6925930.48	73.4
3416	No	FF	1	0	493937.41	6925930.48	73.4
3417	No	GF	1	0	493946.72	6925936.5	72.0
3417	No	FF	1	0	493946.72	6925936.5	72.0
3418	No	GF	1	0	493957.13	6925943.62	70.6
3418	No	FF	1	0	493957.13	6925943.62	70.6
3419	No	GF	1	0	493967.53	6925950.92	69.2
3419	No	FF	1	0	493967.53	6925950.92	69.2
3420	No	GF	1	0	493981.04	6925959.32	68.8

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3420	No	FF	1	1	493981.04	6925959.32	68.8
3421	No	GF	1	0	493992.36	6925941.25	69.2
3421	No	FF	1	1	493992.36	6925941.25	69.2
3422	No	GF	1	0	493979.21	6925932.3	69.3
3422	No	FF	1	0	493979.21	6925932.3	69.3
3423	No	GF	1	0	493969.17	6925925	70.7
3423	No	FF	1	0	493969.17	6925925	70.7
3424	No	GF	1	0	493958.95	6925918.43	72.0
3424	No	FF	1	0	493958.95	6925918.43	72.0
3425	No	GF	1	0	493949.46	6925911.68	73.2
3425	No	FF	1	1	493949.46	6925911.68	73.2
3426	No	GF	1	0	493940.88	6925906.75	74.3
3426	No	FF	1	1	493940.88	6925906.75	74.3
3427	No	GF	1	0	493931.94	6925900.54	75.3
3427	No	FF	1	1	493931.94	6925900.54	75.3
3428	No	GF	1	0	493922.99	6925893.61	76.5
3428	No	FF	1	1	493922.99	6925893.61	76.5
3429	No	GF	1	0	493915.69	6925888.86	77.0
3429	No	FF	1	1	493915.69	6925888.86	77.0
3430	No	GF	1	0	493905.83	6925882.11	77.6
3430	No	FF	1	1	493905.83	6925882.11	77.6
3431	No	GF	1	0	493893.97	6925874.44	78.3
3431	No	FF	1	1	493893.97	6925874.44	78.3
3432	Yes	GF	1	1	493943.75	6925848.41	75.6
3432	Yes	FF	2	2	493943.75	6925848.41	75.6
3433	No	GF	1	1	493959.68	6925857.28	75.1
3433	No	FF	1	1	493959.68	6925857.28	75.1
3434	No	GF	1	1	493970.09	6925864.03	74.1
3434	No	FF	1	1	493970.09	6925864.03	74.1
3435	No	GF	1	1	493980.31	6925870.24	72.8
3435	No	FF	1	1	493980.31	6925870.24	72.8
3436	No	GF	1	1	493991.63	6925878.09	71.3
3436	No	FF	1	1	493991.63	6925878.09	71.3
3437	No	GF	1	0	494002.03	6925885.21	70.0

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3437	No	FF	1	1	494002.03	6925885.21	70.0
3438	No	GF	1	0	494013.71	6925893.79	69.5
3438	No	FF	1	1	494013.71	6925893.79	69.5
3439	Yes	GF	1	1	494019.43	6925865.53	70.4
3439	Yes	FF	2	1	494019.43	6925865.53	70.4
3440	Yes	GF	1	1	494006.76	6925855.26	71.6
3440	Yes	FF	2	1	494006.76	6925855.26	71.6
3441	Yes	GF	1	1	493987.58	6925845.67	72.6
3441	Yes	FF	2	2	493987.58	6925845.67	72.6
3442	Yes	GF	3	2	494070.45	6925822.04	67.9
3442	Yes	FF	3	3	494070.45	6925822.04	67.9
3443	Yes	GF	3	2	494069.76	6925836.43	68.4
3443	Yes	FF	3	3	494069.76	6925836.43	68.4
3444	Yes	GF	3	1	494067.02	6925850.12	68.5
3444	Yes	FF	3	3	494067.02	6925850.12	68.5
3445	Yes	GF	3	1	494063.6	6925862.45	68.2
3445	Yes	FF	3	3	494063.6	6925862.45	68.2
3446	Yes	GF	3	1	494061.54	6925874.09	67.9
3446	Yes	FF	3	3	494061.54	6925874.09	67.9
3447	Yes	GF	3	1	494058.12	6925885.39	67.9
3447	Yes	FF	3	3	494058.12	6925885.39	67.9
3448	Yes	GF	3	1	494054.7	6925898.4	67.8
3448	Yes	FF	3	3	494054.7	6925898.4	67.8
3449	Yes	GF	3	1	494050.93	6925909.02	67.6
3449	Yes	FF	3	3	494050.93	6925909.02	67.6
3450	Yes	GF	3	1	494048.19	6925918.61	67.5
3450	Yes	FF	3	3	494048.19	6925918.61	67.5
3451	Yes	GF	3	1	494043.74	6925929.9	67.4
3451	Yes	FF	3	3	494043.74	6925929.9	67.4
3452	Yes	GF	3	1	494039.29	6925941.55	67.3
3452	Yes	FF	3	3	494039.29	6925941.55	67.3
3453	Yes	GF	3	1	494033.81	6925953.87	67.2
3453	Yes	FF	3	3	494033.81	6925953.87	67.2
3454	Yes	GF	3	1	494024.22	6925973.73	67.0

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3454	Yes	FF	3	3	494024.22	6925973.73	67.0
3455	Yes	GF	3	1	494018.06	6925986.06	66.7
3455	Yes	FF	3	3	494018.06	6925986.06	66.7
3456	Yes	GF	3	1	494012.24	6925996.33	66.5
3456	Yes	FF	3	3	494012.24	6925996.33	66.5
3457	Yes	GF	3	1	494007.1	6926005.24	66.3
3457	Yes	FF	3	3	494007.1	6926005.24	66.3
3458	Yes	GF	3	1	494000.59	6926015.17	66.1
3458	Yes	FF	3	3	494000.59	6926015.17	66.1
3459	Yes	GF	3	1	493993.4	6926025.1	65.8
3459	Yes	FF	3	3	493993.4	6926025.1	65.8
3460	Yes	GF	3	1	493984.69	6926033.53	65.6
3460	Yes	FF	3	3	493984.69	6926033.53	65.6
3461	Yes	GF	3	1	493980.39	6926043.59	65.4
3461	Yes	FF	3	3	493980.39	6926043.59	65.4
3462	Yes	GF	3	1	493972.86	6926052.83	65.2
3462	Yes	FF	3	3	493972.86	6926052.83	65.2
3463	Yes	GF	3	1	493964.3	6926063.1	65.0
3463	Yes	FF	3	3	493964.3	6926063.1	65.0
3464	Yes	GF	3	1	493955.05	6926074.75	64.7
3464	Yes	FF	3	3	493955.05	6926074.75	64.7
3465	Yes	GF	3	1	493946.15	6926084.68	64.5
3465	Yes	FF	3	3	493946.15	6926084.68	64.5
3466	Yes	GF	3	1	493937.59	6926094.26	64.2
3466	Yes	FF	3	3	493937.59	6926094.26	64.2
3467	Yes	GF	3	1	493928.34	6926101.46	64.0
3467	Yes	FF	3	3	493928.34	6926101.46	64.0
3468	Yes	GF	3	1	493921.15	6926107.96	63.9
3468	Yes	FF	3	3	493921.15	6926107.96	63.9
3469	Yes	GF	3	1	493912.59	6926116.18	63.7
3469	Yes	FF	3	3	493912.59	6926116.18	63.7
3470	Yes	GF	3	1	493904.03	6926124.4	63.5
3470	Yes	FF	3	3	493904.03	6926124.4	63.5
3471	Yes	GF	3	1	493894.79	6926133.3	63.4

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3471	Yes	FF	3	3	493894.79	6926133.3	63.4
3472	Yes	GF	3	1	493886.91	6926140.83	63.3
3472	Yes	FF	3	3	493886.91	6926140.83	63.3
3473	Yes	GF	3	1	493879.38	6926148.02	63.3
3473	Yes	FF	3	3	493879.38	6926148.02	63.3
3474	Yes	GF	3	1	493871.16	6926155.9	63.2
3474	Yes	FF	3	3	493871.16	6926155.9	63.2
3475	Yes	GF	3	1	493860.75	6926165.82	63.1
3475	Yes	FF	3	3	493860.75	6926165.82	63.1
3476	No	GF	1	0	493913.32	6926058.62	66.3
3476	No	FF	1	1	493913.32	6926058.62	66.3
3477	No	GF	1	0	493901.09	6926051.14	66.9
3477	No	FF	1	1	493901.09	6926051.14	66.9
3478	No	GF	1	0	493890.5	6926044.2	67.6
3478	No	FF	1	0	493890.5	6926044.2	67.6
3479	No	GF	1	0	493879.55	6926036.53	69.2
3479	No	FF	1	0	493879.55	6926036.53	69.2
3480	No	GF	1	0	493867.5	6926029.23	70.9
3480	No	FF	1	0	493867.5	6926029.23	70.9
3481	No	GF	1	0	493856.18	6926021.75	72.7
3481	No	FF	1	0	493856.18	6926021.75	72.7
3482	No	GF	0	0	493846.51	6926014.81	74.6
3482	No	FF	1	0	493846.51	6926014.81	74.6
3483	No	GF	0	0	493835.56	6926007.14	76.1
3483	No	FF	1	0	493835.56	6926007.14	76.1
3484	No	GF	0	0	493822.41	6926025.03	73.7
3484	No	FF	1	0	493822.41	6926025.03	73.7
3485	No	GF	0	0	493833.55	6926033.43	72.1
3485	No	FF	1	0	493833.55	6926033.43	72.1
3486	No	GF	0	0	493843.95	6926040.37	70.1
3486	No	FF	1	0	493843.95	6926040.37	70.1
3487	No	GF	1	0	493855.27	6926047.67	68.8
3487	No	FF	1	0	493855.27	6926047.67	68.8
3488	No	GF	1	0	493866.95	6926055.52	67.6

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3488	No	FF	1	0	493866.95	6926055.52	67.6
3489	No	GF	1	0	493878.63	6926063.55	66.1
3489	No	FF	1	0	493878.63	6926063.55	66.1
3490	No	GF	1	0	493893.6	6926073.59	65.8
3490	No	FF	1	1	493893.6	6926073.59	65.8
3491	No	GF	1	1	493858.8	6926107.66	65.0
3491	No	FF	1	1	493858.8	6926107.66	65.0
3492	No	GF	1	1	493843.41	6926097.77	66.7
3492	No	FF	1	1	493843.41	6926097.77	66.7
3493	No	GF	1	0	493831.32	6926089.64	68.0
3493	No	FF	1	1	493831.32	6926089.64	68.0
3494	No	GF	1	0	493818.8	6926080.85	69.4
3494	No	FF	1	1	493818.8	6926080.85	69.4
3495	No	GF	1	0	493807.37	6926072.93	70.5
3495	No	FF	1	0	493807.37	6926072.93	70.5
3496	No	GF	0	0	493795.01	6926066.64	71.4
3496	No	FF	1	0	493795.01	6926066.64	71.4
3497	No	GF	0	0	493782.31	6926084.8	70.2
3497	No	FF	1	0	493782.31	6926084.8	70.2
3498	No	GF	0	0	493794.18	6926093.59	68.1
3498	No	FF	1	0	493794.18	6926093.59	68.1
3499	No	GF	1	0	493805.83	6926100.19	66.7
3499	No	FF	1	1	493805.83	6926100.19	66.7
3500	No	GF	1	0	493818.36	6926109.42	65.7
3500	No	FF	1	1	493818.36	6926109.42	65.7
3501	No	GF	1	1	493830.22	6926117.33	65.2
3501	No	FF	1	1	493830.22	6926117.33	65.2
3502	No	GF	1	1	493843.63	6926125.68	65.1
3502	No	FF	1	1	493843.63	6926125.68	65.1
3503	Yes	GF	1	1	493787.48	6926136.03	64.5
3503	Yes	FF	1	1	493787.48	6926136.03	64.5
3504	Yes	GF	1	1	493779.48	6926146.88	63.9
3504	Yes	FF	1	1	493779.48	6926146.88	63.9
3505	Yes	GF	1	1	493773.61	6926156.66	63.5

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3505	Yes	FF	1	1	493773.61	6926156.66	63.5
3506	Yes	GF	1	1	493767.92	6926165.01	63.4
3506	Yes	FF	1	1	493767.92	6926165.01	63.4
3507	Yes	GF	1	1	493762.05	6926174.44	63.2
3507	Yes	FF	1	1	493762.05	6926174.44	63.2
3508	Yes	GF	1	1	493756.01	6926183.68	63.3
3508	Yes	FF	1	1	493756.01	6926183.68	63.3
3509	Yes	GF	1	1	493748.54	6926193.11	63.4
3509	Yes	FF	1	1	493748.54	6926193.11	63.4
3510	Yes	GF	1	1	493742.32	6926203.24	63.5
3510	Yes	FF	1	1	493742.32	6926203.24	63.5
3511	Yes	GF	1	1	493733.07	6926214.98	63.5
3511	Yes	FF	1	1	493733.07	6926214.98	63.5
3512	Yes	GF	1	1	493730.76	6926230.27	63.9
3512	Yes	FF	1	1	493730.76	6926230.27	63.9
3513	Yes	GF	1	1	493732.89	6926243.79	63.8
3513	Yes	FF	2	2	493732.89	6926243.79	63.8
3514	Yes	GF	2	2	493742.38	6926270.06	63.8
3514	Yes	FF	2	2	493742.38	6926270.06	63.8
3515	Yes	GF	2	2	493731.51	6926272.15	63.7
3515	Yes	FF	2	2	493731.51	6926272.15	63.7
3516	Yes	GF	2	2	493723.98	6926272.98	63.9
3516	Yes	FF	2	2	493723.98	6926272.98	63.9
3517	Yes	GF	1	1	493717.08	6926274.45	63.9
3517	Yes	FF	2	2	493717.08	6926274.45	63.9
3518	Yes	GF	1	1	493709.35	6926275.28	64.2
3518	Yes	FF	2	2	493709.35	6926275.28	64.2
3519	Yes	GF	1	1	493701.19	6926277.17	64.6
3519	Yes	FF	2	2	493701.19	6926277.17	64.6
3520	No	GF	1	1	493708.93	6926248.1	65.2
3520	No	FF	1	1	493708.93	6926248.1	65.2
3521	No	GF	1	1	493706.88	6926236.52	66.2
3521	No	FF	1	1	493706.88	6926236.52	66.2
3522	No	GF	1	1	493703.89	6926224.76	66.7

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3522	No	FF	1	1	493703.89	6926224.76	66.7
3523	No	GF	1	1	493707.81	6926209.81	66.1
3523	No	FF	1	1	493707.81	6926209.81	66.1
3524	No	GF	1	1	493715.72	6926199.31	65.8
3524	No	FF	1	1	493715.72	6926199.31	65.8
3525	No	GF	1	1	493721.65	6926190.3	65.9
3525	No	FF	1	1	493721.65	6926190.3	65.9
3526	No	GF	1	1	493728.47	6926179.75	65.9
3526	No	FF	1	1	493728.47	6926179.75	65.9
3527	No	GF	1	1	493735.5	6926170.3	66.0
3527	No	FF	1	1	493735.5	6926170.3	66.0
3528	No	GF	1	1	493741.43	6926161.28	65.9
3528	No	FF	1	1	493741.43	6926161.28	65.9
3529	No	GF	1	1	493747.59	6926151.83	66.1
3529	No	FF	1	1	493747.59	6926151.83	66.1
3530	No	GF	1	0	493753.08	6926143.48	66.2
3530	No	FF	1	1	493753.08	6926143.48	66.2
3531	No	GF	1	0	493759.68	6926134.25	66.2
3531	No	FF	1	1	493759.68	6926134.25	66.2
3532	No	GF	1	0	493767.15	6926123.7	66.2
3532	No	FF	1	1	493767.15	6926123.7	66.2
3541	No	GF	0	0	493704.6	6926133.06	72.4
3541	No	FF	1	0	493704.6	6926133.06	72.4
3542	No	GF	0	0	493696	6926144	72.4
3542	No	FF	1	0	493696	6926144	72.4
3543	No	GF	0	0	493687	6926154.95	72.5
3543	No	FF	1	0	493687	6926154.95	72.5
3544	No	GF	0	0	493678.01	6926165.9	72.5
3544	No	FF	1	1	493678.01	6926165.9	72.5
3545	No	GF	0	0	493648.42	6926179.93	73.8
3545	No	FF	1	0	493648.42	6926179.93	73.8
3546	No	GF	0	0	493651.97	6926193.75	71.8
3546	No	FF	1	0	493651.97	6926193.75	71.8
3547	No	GF	0	0	493653.84	6926206.08	70.1

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3547	No	FF	1	1	493653.84	6926206.08	70.1
3548	No	GF	1	0	493656.08	6926219.9	69.3
3548	No	FF	1	1	493656.08	6926219.9	69.3
3549	No	GF	1	1	493658.32	6926233.16	68.2
3549	No	FF	1	1	493658.32	6926233.16	68.2
3550	No	GF	1	1	493660.75	6926243.81	67.5
3550	No	FF	1	1	493660.75	6926243.81	67.5
3551	No	GF	1	1	493662.62	6926255.2	66.4
3551	No	FF	1	1	493662.62	6926255.2	66.4
3552	Yes	GF	1	1	493676.31	6926282.18	65.6
3552	Yes	FF	1	1	493676.31	6926282.18	65.6
3553	Yes	GF	1	1	493668.16	6926283.44	65.5
3553	Yes	FF	1	1	493668.16	6926283.44	65.5
3554	Yes	GF	1	1	493661.26	6926284.48	65.6
3554	Yes	FF	1	1	493661.26	6926284.48	65.6
3555	Yes	GF	1	1	493652.9	6926285.74	65.6
3555	Yes	FF	1	1	493652.9	6926285.74	65.6
3556	Yes	GF	1	1	493646	6926286.99	65.4
3556	Yes	FF	1	1	493646	6926286.99	65.4
3557	Yes	GF	1	1	493638.68	6926288.46	65.3
3557	Yes	FF	1	1	493638.68	6926288.46	65.3
3558	Yes	GF	1	1	493630.74	6926289.29	65.2
3558	Yes	FF	1	1	493630.74	6926289.29	65.2
3559	Yes	GF	0	0	493594.54	6926299.28	62.7
3559	Yes	FF	1	1	493594.54	6926299.28	62.7
3560	No	GF	0	0	493592.77	6926285.45	64.2
3560	No	FF	1	1	493592.77	6926285.45	64.2
3561	No	GF	0	0	493591.09	6926274.25	65.8
3561	No	FF	1	1	493591.09	6926274.25	65.8
3562	No	GF	0	0	493588.47	6926261.73	68.1
3562	No	FF	1	1	493588.47	6926261.73	68.1
3563	No	GF	0	0	493586.6	6926248.85	69.7
3563	No	FF	1	0	493586.6	6926248.85	69.7
3567	No	GF	1	1	493638.71	6926259.68	67.2

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3567	No	FF	1	1	493638.71	6926259.68	67.2
3568	No	GF	1	1	493636.47	6926248.66	69.0
3568	No	FF	1	1	493636.47	6926248.66	69.0
3569	No	GF	1	1	493634.41	6926237.83	70.3
3569	No	FF	1	1	493634.41	6926237.83	70.3
3570	No	GF	1	1	493632.55	6926224.57	71.7
3570	No	FF	1	1	493632.55	6926224.57	71.7
3571	No	GF	0	0	493630.68	6926210.19	71.7
3571	No	FF	1	0	493630.68	6926210.19	71.7
3572	No	GF	0	0	493627.13	6926193.94	73.1
3572	No	FF	1	0	493627.13	6926193.94	73.1
3587	Yes	GF	0	0	493116.13	6925530.65	64.9
3587	Yes	FF	0	0	493116.13	6925530.65	64.9
3588	Yes	GF	0	0	493129.49	6925538.52	63.9
3588	Yes	FF	0	0	493129.49	6925538.52	63.9
3589	Yes	GF	0	0	493142.16	6925544.34	63.1
3589	Yes	FF	0	0	493142.16	6925544.34	63.1
3590	Yes	GF	0	0	493158.59	6925552.9	62.3
3590	Yes	FF	0	0	493158.59	6925552.9	62.3
3726	Yes	GF	1	1	493077.78	6925578.59	65.9
3726	Yes	FF	1	1	493077.78	6925578.59	65.9
3727	Yes	GF	1	1	493058.95	6925579.61	66.6
3727	Yes	FF	1	1	493058.95	6925579.61	66.6
3728	Yes	GF	1	1	493038.4	6925581.33	67.0
3728	Yes	FF	1	1	493038.4	6925581.33	67.0
3729	Yes	GF	1	1	493020.94	6925582.35	67.2
3729	Yes	FF	1	1	493020.94	6925582.35	67.2
3730	Yes	GF	1	1	493004.16	6925584.75	67.3
3730	Yes	FF	1	1	493004.16	6925584.75	67.3
3731	Yes	GF	1	1	492991.49	6925586.8	67.3
3731	Yes	FF	1	1	492991.49	6925586.8	67.3
3732	Yes	GF	1	1	492978.48	6925589.89	67.1
3732	Yes	FF	1	1	492978.48	6925589.89	67.1
3733	Yes	GF	1	1	492964.78	6925593.31	67.0

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3733	Yes	FF	1	1	492964.78	6925593.31	67.0
3734	Yes	GF	1	1	492951.43	6925597.08	66.9
3734	Yes	FF	1	1	492951.43	6925597.08	66.9
3735	Yes	GF	1	1	492938.42	6925602.21	66.7
3735	Yes	FF	1	1	492938.42	6925602.21	66.7
3736	Yes	GF	1	1	492925.75	6925608.72	66.9
3736	Yes	FF	1	1	492925.75	6925608.72	66.9
3737	Yes	GF	1	1	492913.08	6925613.85	67.1
3737	Yes	FF	1	1	492913.08	6925613.85	67.1
3738	Yes	GF	1	1	492899.38	6925620.36	67.1
3738	Yes	FF	1	1	492899.38	6925620.36	67.1
3739	Yes	GF	1	1	492886.71	6925627.55	67.0
3739	Yes	FF	1	1	492886.71	6925627.55	67.0
3740	Yes	GF	0	0	493562.27	6926334.54	64.2
3740	Yes	FF	0	0	493562.27	6926334.54	64.2
3741	Yes	GF	0	0	493563.98	6926345.51	64.4
3741	Yes	FF	0	0	493563.98	6926345.51	64.4
3742	Yes	GF	0	0	493565.68	6926355.51	64.7
3742	Yes	FF	1	1	493565.68	6926355.51	64.7
3743	Yes	GF	0	0	493566.66	6926366.72	65.1
3743	Yes	FF	1	1	493566.66	6926366.72	65.1
3744	Yes	GF	1	0	493568.36	6926378.91	65.5
3744	Yes	FF	1	1	493568.36	6926378.91	65.5
3745	Yes	GF	1	0	493570.56	6926391.35	66.0
3745	Yes	FF	1	1	493570.56	6926391.35	66.0
3746	Yes	GF	1	0	493572.27	6926403.05	66.5
3746	Yes	FF	1	1	493572.27	6926403.05	66.5
3747	Yes	GF	1	0	493573.49	6926412.81	66.8
3747	Yes	FF	1	1	493573.49	6926412.81	66.8
3748	Yes	GF	1	0	493575.44	6926423.78	67.2
3748	Yes	FF	1	1	493575.44	6926423.78	67.2
3749	Yes	GF	1	0	493576.66	6926435.97	67.6
3749	Yes	FF	1	1	493576.66	6926435.97	67.6
3750	Yes	GF	1	0	493578.61	6926448.65	68.1

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3750	Yes	FF	1	1	493578.61	6926448.65	68.1
3751	Yes	GF	1	0	493580.07	6926459.62	68.5
3751	Yes	FF	2	1	493580.07	6926459.62	68.5
3752	Yes	GF	1	0	493581.53	6926469.62	68.9
3752	Yes	FF	2	2	493581.53	6926469.62	68.9
3753	Yes	GF	1	0	493583.48	6926480.84	69.2
3753	Yes	FF	2	2	493583.48	6926480.84	69.2
3754	Yes	GF	2	0	493584.95	6926493.52	69.7
3754	Yes	FF	2	2	493584.95	6926493.52	69.7
3755	Yes	GF	2	0	493586.16	6926504.24	70.1
3755	Yes	FF	2	2	493586.16	6926504.24	70.1
3756	Yes	GF	2	1	493587.38	6926514.24	70.4
3756	Yes	FF	2	2	493587.38	6926514.24	70.4
3757	Yes	GF	2	1	493589.33	6926525.7	70.8
3757	Yes	FF	2	2	493589.33	6926525.7	70.8
3758	Yes	GF	2	1	493591.04	6926537.65	70.2
3758	Yes	FF	2	2	493591.04	6926537.65	70.2
3759	Yes	GF	2	1	493592.99	6926549.6	70.1
3759	Yes	FF	3	3	493592.99	6926549.6	70.1
3760	Yes	GF	2	2	493555.69	6926547.89	71.2
3760	Yes	FF	2	2	493555.69	6926547.89	71.2
3761	Yes	GF	2	2	493542.03	6926550.08	71.5
3761	Yes	FF	2	2	493542.03	6926550.08	71.5
3762	Yes	GF	2	2	493529.84	6926551.79	72.3
3762	Yes	FF	2	2	493529.84	6926551.79	72.3
3763	Yes	GF	2	2	493518.38	6926553.25	73.0
3763	Yes	FF	2	2	493518.38	6926553.25	73.0
3764	Yes	GF	2	2	493508.87	6926554.72	73.6
3764	Yes	FF	2	2	493508.87	6926554.72	73.6
3765	Yes	GF	2	2	493496.92	6926556.67	74.0
3765	Yes	FF	2	2	493496.92	6926556.67	74.0
3766	Yes	GF	2	2	493482.05	6926559.84	74.7
3766	Yes	FF	2	2	493482.05	6926559.84	74.7
3767	Yes	GF	2	2	493468.64	6926563.74	75.4

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3767	Yes	FF	2	2	493468.64	6926563.74	75.4
3768	Yes	GF	2	2	493457.18	6926568.13	76.0
3768	Yes	FF	2	2	493457.18	6926568.13	76.0
3769	Yes	GF	2	2	493447.67	6926573	76.3
3769	Yes	FF	2	2	493447.67	6926573	76.3
3770	Yes	GF	2	2	493437.67	6926579.34	76.6
3770	Yes	FF	2	2	493437.67	6926579.34	76.6
3771	Yes	GF	2	2	493425.97	6926586.17	77.1
3771	Yes	FF	2	2	493425.97	6926586.17	77.1
3772	Yes	GF	2	2	493416.7	6926592.27	77.4
3772	Yes	FF	2	2	493416.7	6926592.27	77.4
3773	Yes	GF	2	2	493408.66	6926598.12	77.6
3773	Yes	FF	2	2	493408.66	6926598.12	77.6
3774	Yes	GF	2	2	493399.39	6926604.46	77.8
3774	Yes	FF	2	2	493399.39	6926604.46	77.8
3775	Yes	GF	2	2	493388.66	6926612.02	78.0
3775	Yes	FF	2	2	493388.66	6926612.02	78.0
3776	Yes	GF	2	2	493376.47	6926621.53	77.9
3776	Yes	FF	2	2	493376.47	6926621.53	77.9
3777	No	GF	0	0	493375.14	6926565.75	80.8
3777	No	FF	1	1	493375.14	6926565.75	80.8
3780	No	GF	0	0	493396.63	6926551.05	79.9
3780	No	FF	1	1	493396.63	6926551.05	79.9
3781	No	GF	0	0	493410.19	6926540.87	79.5
3781	No	FF	1	1	493410.19	6926540.87	79.5
3782	No	GF	0	0	493420.94	6926533.53	79.2
3782	No	FF	1	1	493420.94	6926533.53	79.2
3783	No	GF	0	0	493430.55	6926526.18	79.0
3783	No	FF	1	1	493430.55	6926526.18	79.0
3784	No	GF	0	0	493441.85	6926518.83	78.5
3784	No	FF	1	1	493441.85	6926518.83	78.5
3785	No	GF	0	0	493454.29	6926514.31	77.8
3785	No	FF	1	1	493454.29	6926514.31	77.8
3786	No	GF	0	0	493467.29	6926512.61	76.9

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3786	No	FF	1	1	493467.29	6926512.61	76.9
3787	No	GF	1	1	493480.86	6926510.35	75.9
3787	No	FF	1	1	493480.86	6926510.35	75.9
3788	No	GF	1	1	493493.86	6926509.22	74.9
3788	No	FF	1	1	493493.86	6926509.22	74.9
3789	No	GF	1	1	493505.17	6926507.52	74.3
3789	No	FF	1	1	493505.17	6926507.52	74.3
3790	No	GF	1	1	493515.91	6926505.83	73.2
3790	No	FF	1	1	493515.91	6926505.83	73.2
3791	No	GF	1	1	493529.48	6926504.13	72.3
3791	No	FF	1	1	493529.48	6926504.13	72.3
3792	No	GF	1	1	493544.17	6926501.87	72.1
3792	No	FF	1	1	493544.17	6926501.87	72.1
3793	No	GF	0	0	493540.78	6926477.56	70.0
3793	No	FF	1	1	493540.78	6926477.56	70.0
3794	No	GF	0	0	493527.21	6926479.26	70.2
3794	No	FF	1	1	493527.21	6926479.26	70.2
3795	No	GF	0	0	493513.08	6926482.08	71.9
3795	No	FF	1	1	493513.08	6926482.08	71.9
3796	No	GF	0	0	493502.34	6926483.21	73.6
3796	No	FF	1	1	493502.34	6926483.21	73.6
3797	No	GF	0	0	493489.9	6926484.91	74.6
3797	No	FF	1	1	493489.9	6926484.91	74.6
3798	No	GF	0	0	493477.47	6926487.17	75.8
3798	No	FF	1	1	493477.47	6926487.17	75.8
3799	No	GF	0	0	493462.77	6926489.43	77.4
3799	No	FF	1	0	493462.77	6926489.43	77.4
3819	No	GF	0	0	493534.34	6926431.38	69.4
3819	No	FF	1	0	493534.34	6926431.38	69.4
3893	No	GF	1	1	493185.76	6926728.56	78.8
3893	No	FF	1	1	493185.76	6926728.56	78.8
3894	Yes	GF	2	1	493188.23	6926744.66	78.1
3894	Yes	FF	2	2	493188.23	6926744.66	78.1
3895	Yes	GF	2	1	493210.18	6926729.3	78.2

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
3895	Yes	FF	2	2	493210.18	6926729.3	78.2
3896	No	GF	0	0	493207.25	6926708.21	79.2
3896	No	FF	1	1	493207.25	6926708.21	79.2
3966	Yes	GF	2	1	493348.19	6926637.62	78.2
3966	Yes	FF	2	2	493348.19	6926637.62	78.2
3967	Yes	GF	2	1	493338.68	6926644.2	78.2
3967	Yes	FF	2	2	493338.68	6926644.2	78.2
3968	Yes	GF	2	1	493330.39	6926649.81	78.2
3968	Yes	FF	2	2	493330.39	6926649.81	78.2
3969	Yes	GF	2	1	493321.36	6926656.39	78.1
3969	Yes	FF	2	2	493321.36	6926656.39	78.1
3970	Yes	GF	2	1	493310.88	6926662.98	78.2
3970	Yes	FF	2	2	493310.88	6926662.98	78.2
3971	Yes	GF	2	1	493303.56	6926668.59	78.1
3971	Yes	FF	2	2	493303.56	6926668.59	78.1
3972	Yes	GF	2	1	493293.81	6926674.93	78.2
3972	Yes	FF	2	2	493293.81	6926674.93	78.2
3973	Yes	GF	2	1	493283.81	6926681.51	78.2
3973	Yes	FF	2	2	493283.81	6926681.51	78.2
3974	Yes	GF	2	1	493274.06	6926687.12	78.2
3974	Yes	FF	2	2	493274.06	6926687.12	78.2
3975	Yes	GF	2	1	493266.01	6926692.97	78.2
3975	Yes	FF	2	2	493266.01	6926692.97	78.2
3976	Yes	GF	2	1	493256.75	6926699.31	78.2
3976	Yes	FF	2	2	493256.75	6926699.31	78.2
3977	Yes	GF	2	1	493243.34	6926709.06	78.2
3977	Yes	FF	2	2	493243.34	6926709.06	78.2
4285	Yes	GF	0	0	493135.81	6926762.46	78.9
4285	Yes	FF	1	1	493135.81	6926762.46	78.9
4286	Yes	GF	0	0	493117.03	6926766.36	79.0
4286	Yes	FF	0	0	493117.03	6926766.36	79.0
4287	Yes	GF	0	0	493102.65	6926768.8	79.0
4287	Yes	FF	0	0	493102.65	6926768.8	79.0
4387	Yes	GF	0	0	492966.83	6926791.23	74.5

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
4387	Yes	FF	0	0	492966.83	6926791.23	74.5
4388	Yes	GF	0	0	492980.24	6926789.28	75.0
4388	Yes	FF	0	0	492980.24	6926789.28	75.0
4389	Yes	GF	0	0	492993.9	6926787.09	75.5
4389	Yes	FF	0	0	492993.9	6926787.09	75.5
4390	Yes	GF	0	0	493004.38	6926785.38	75.9
4390	Yes	FF	0	0	493004.38	6926785.38	75.9
4391	Yes	GF	0	0	493014.38	6926783.67	76.3
4391	Yes	FF	0	0	493014.38	6926783.67	76.3
4392	Yes	GF	0	0	493025.84	6926781.72	76.8
4392	Yes	FF	0	0	493025.84	6926781.72	76.8
4393	Yes	GF	0	0	493039.25	6926779.53	77.3
4393	Yes	FF	0	0	493039.25	6926779.53	77.3
4394	Yes	GF	0	0	493050.96	6926777.58	77.8
4394	Yes	FF	0	0	493050.96	6926777.58	77.8
4395	Yes	GF	0	0	493061.68	6926776.12	78.1
4395	Yes	FF	0	0	493061.68	6926776.12	78.1
4396	Yes	GF	0	0	493074.85	6926773.68	78.6
4396	Yes	FF	0	0	493074.85	6926773.68	78.6
4461	Yes	GF	0	0	492632.41	6926348.45	97.4
4461	Yes	FF	0	0	492632.41	6926348.45	97.4
4462	Yes	GF	0	0	492627.22	6926362.58	97.0
4462	Yes	FF	0	0	492627.22	6926362.58	97.0
4463	Yes	GF	0	0	492617.7	6926388.82	95.8
4463	Yes	FF	0	0	492617.7	6926388.82	95.8
4464	Yes	GF	0	0	492613.09	6926402.08	95.1
4464	Yes	FF	0	0	492613.09	6926402.08	95.1
4465	Yes	GF	0	0	492610.21	6926412.46	94.5
4465	Yes	FF	0	0	492610.21	6926412.46	94.5
4466	Yes	GF	0	0	492606.17	6926422.84	93.9
4466	Yes	FF	0	0	492606.17	6926422.84	93.9
4467	Yes	GF	0	0	492602.42	6926435.82	93.2
4467	Yes	FF	0	0	492602.42	6926435.82	93.2
4468	Yes	GF	0	0	492597.81	6926448.51	92.4

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
4468	Yes	FF	0	0	492597.81	6926448.51	92.4
4469	Yes	GF	0	0	492594.06	6926458.89	91.8
4469	Yes	FF	0	0	492594.06	6926458.89	91.8
4470	Yes	GF	0	0	492590.31	6926468.98	91.2
4470	Yes	FF	0	0	492590.31	6926468.98	91.2
4471	Yes	GF	0	0	492585.98	6926482.54	90.5
4471	Yes	FF	0	0	492585.98	6926482.54	90.5
4472	Yes	GF	0	0	492574.74	6926506.76	89.1
4472	Yes	FF	0	0	492574.74	6926506.76	89.1
4473	Yes	GF	0	0	492570.7	6926517.43	88.5
4473	Yes	FF	0	0	492570.7	6926517.43	88.5
4474	Yes	GF	0	0	492567.24	6926527.81	87.9
4474	Yes	FF	0	0	492567.24	6926527.81	87.9
4475	Yes	GF	0	0	492562.91	6926540.5	87.1
4475	Yes	FF	0	0	492562.91	6926540.5	87.1
4476	Yes	GF	0	0	492558.88	6926552.9	86.5
4476	Yes	FF	0	0	492558.88	6926552.9	86.5
4477	Yes	GF	0	0	492554.55	6926565.01	85.8
4477	Yes	FF	0	0	492554.55	6926565.01	85.8
4478	Yes	GF	0	0	492550.8	6926575.39	85.2
4478	Yes	FF	0	0	492550.8	6926575.39	85.2
4479	Yes	GF	0	0	492547.69	6926584.46	84.7
4479	Yes	FF	0	0	492547.69	6926584.46	84.7
4480	Yes	GF	0	0	492543.79	6926595.68	84.1
4480	Yes	FF	0	0	492543.79	6926595.68	84.1
4481	Yes	GF	0	0	492539.15	6926608.12	83.3
4481	Yes	FF	0	0	492539.15	6926608.12	83.3
4482	Yes	GF	0	0	492530.86	6926634.21	81.9
4482	Yes	FF	0	0	492530.86	6926634.21	81.9
4483	Yes	GF	0	0	492525.74	6926648.1	81.1
4483	Yes	FF	0	0	492525.74	6926648.1	81.1
4484	Yes	GF	0	0	492521.35	6926661.76	80.4
4484	Yes	FF	0	0	492521.35	6926661.76	80.4
4485	Yes	GF	0	0	492517.45	6926674.93	79.7

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
4485	Yes	FF	0	0	492517.45	6926674.93	79.7
4486	Yes	GF	0	0	492512.09	6926688.58	78.8
4486	Yes	FF	0	0	492512.09	6926688.58	78.8
4487	Yes	GF	0	0	492508.92	6926702.23	78.0
4487	Yes	FF	0	0	492508.92	6926702.23	78.0
4488	Yes	GF	0	0	492507.7	6926714.67	77.3
4488	Yes	FF	0	0	492507.7	6926714.67	77.3
4489	Yes	GF	0	0	492507.46	6926727.84	76.7
4489	Yes	FF	0	0	492507.46	6926727.84	76.7
4490	Yes	GF	0	0	492508.92	6926742.22	76.2
4490	Yes	FF	0	0	492508.92	6926742.22	76.2
4491	Yes	GF	0	0	492512.33	6926757.1	75.7
4491	Yes	FF	0	0	492512.33	6926757.1	75.7
4492	Yes	GF	0	0	492518.19	6926771.73	75.5
4492	Yes	FF	0	0	492518.19	6926771.73	75.5
4493	Yes	GF	0	0	492525.5	6926788.06	75.1
4493	Yes	FF	0	0	492525.5	6926788.06	75.1
4494	Yes	GF	0	0	492536.96	6926801.96	74.8
4494	Yes	FF	0	0	492536.96	6926801.96	74.8
4495	Yes	GF	0	0	492560.12	6926824.64	74.3
4495	Yes	FF	0	0	492560.12	6926824.64	74.3
4496	Yes	GF	0	0	492575	6926834.15	74.1
4496	Yes	FF	0	0	492575	6926834.15	74.1
4497	Yes	GF	0	0	492589.38	6926840.49	74.0
4497	Yes	FF	0	0	492589.38	6926840.49	74.0
4498	Yes	GF	0	0	492600.84	6926844.14	73.9
4498	Yes	FF	0	0	492600.84	6926844.14	73.9
4499	Yes	GF	0	0	492612.55	6926846.83	73.8
4499	Yes	FF	0	0	492612.55	6926846.83	73.8
4500	Yes	GF	0	0	492625.96	6926848.29	73.7
4500	Yes	FF	0	0	492625.96	6926848.29	73.7
4501	Yes	GF	0	0	492641.08	6926847.07	73.6
4501	Yes	FF	0	0	492641.08	6926847.07	73.6
4502	Yes	GF	0	0	492656.92	6926845.12	73.5

Lot	Front row	Floor	QDC MP4.4 Noise Category		Approximate Ground Elevation at Centre of Lot, m		
			No Mitigation	2.0m Barrier	Easting	Northing	Elevation
4502	Yes	FF	0	0	492656.92	6926845.12	73.5
4503	Yes	GF	0	0	492669.6	6926843.41	73.4
4503	Yes	FF	0	0	492669.6	6926843.41	73.4
4504	Yes	GF	0	0	492681.31	6926840.97	73.3
4504	Yes	FF	0	0	492681.31	6926840.97	73.3
4625	Yes	GF	0	0	492719.83	6926831.71	73.0
4625	Yes	FF	0	0	492719.83	6926831.71	73.0
4626	Yes	GF	0	0	492735.44	6926829.03	72.9
4626	Yes	FF	0	0	492735.44	6926829.03	72.9
4627	Yes	GF	0	0	492748.61	6926826.59	72.8
4627	Yes	FF	0	0	492748.61	6926826.59	72.8
4628	Yes	GF	0	0	492759.09	6926825.13	72.7
4628	Yes	FF	0	0	492759.09	6926825.13	72.7
4629	Yes	GF	0	0	492769.57	6926823.66	72.6
4629	Yes	FF	0	0	492769.57	6926823.66	72.6
4630	Yes	GF	0	0	492780.55	6926821.96	72.5
4630	Yes	FF	0	0	492780.55	6926821.96	72.5
4631	Yes	GF	0	0	492792.49	6926819.76	72.4
4631	Yes	FF	0	0	492792.49	6926819.76	72.4
4632	Yes	GF	0	0	492803.95	6926818.3	72.3
4632	Yes	FF	0	0	492803.95	6926818.3	72.3
4633	Yes	GF	0	0	492813.46	6926816.35	72.2
4633	Yes	FF	0	0	492813.46	6926816.35	72.2
4634	Yes	GF	0	0	492824.44	6926814.88	72.0
4634	Yes	FF	0	0	492824.44	6926814.88	72.0
4635	Yes	GF	0	0	492839.31	6926812.45	71.8
4635	Yes	FF	0	0			

Appendix D Reference Noise Barrier Designs

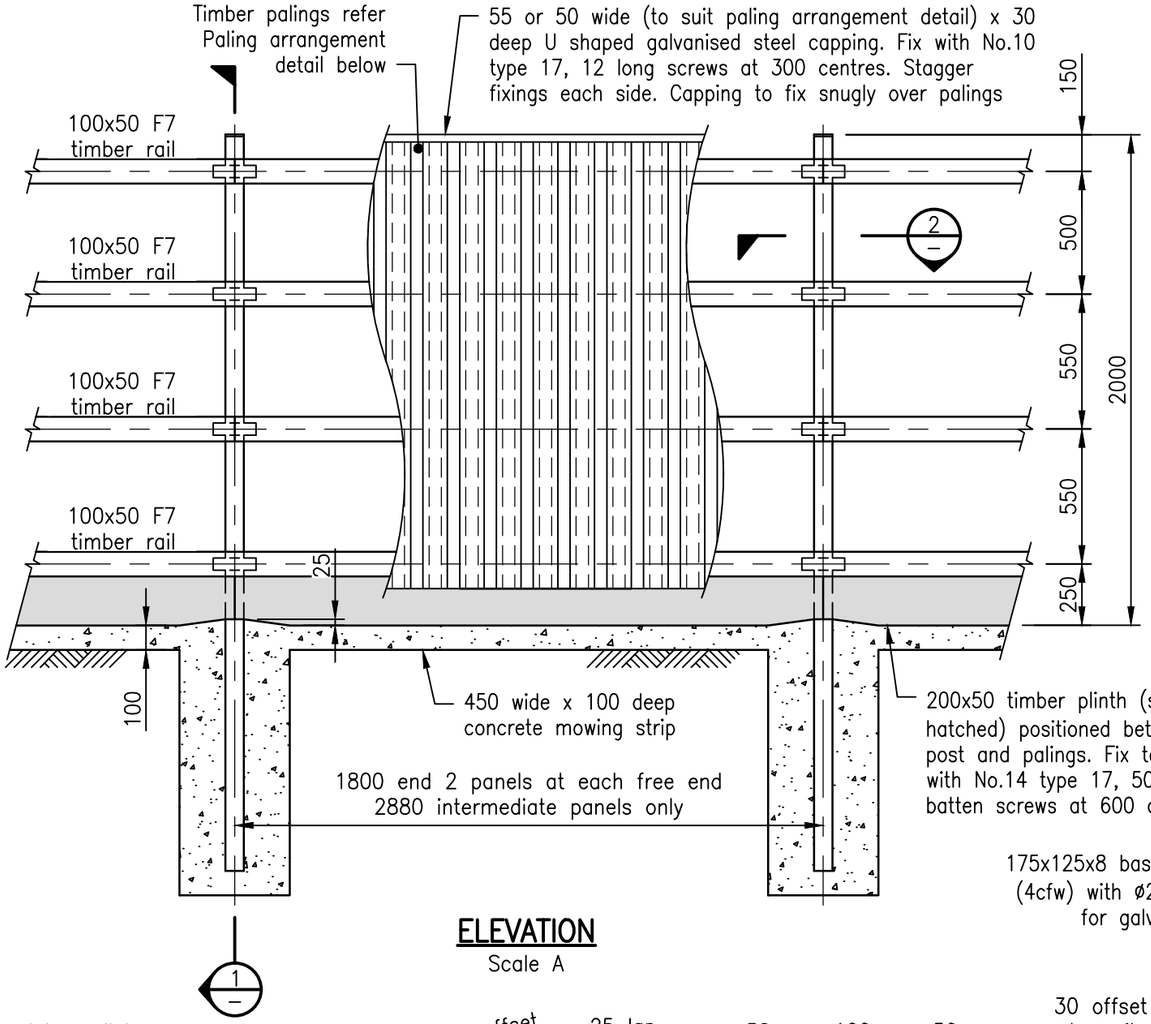
Flagstone Development, Context Area 3 (CA3) South

Road Traffic Noise Intrusion Assessment, Stages 8-14

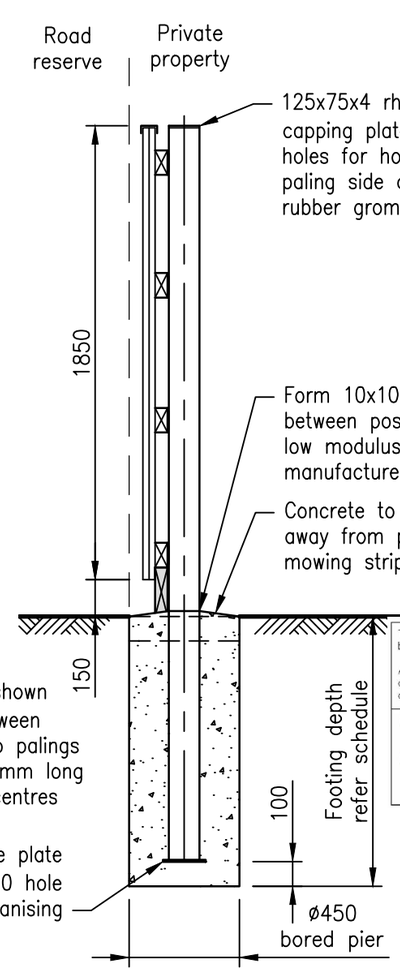
Peet Flagstone City Pty Ltd

SLR Project No.: 620.v10512.02002

18 March 2024



ELEVATION
Scale A



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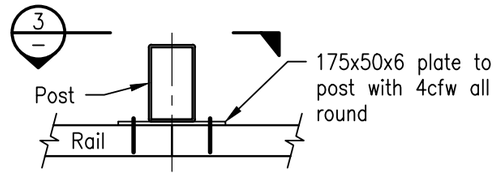
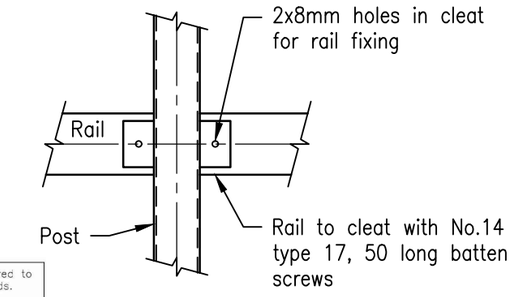
Scale A



SECTION
Scale B



SECTION
Scale B

THIS DRAWING IS FOR COUNCIL CONSTRUCTION WORKS WITHIN THE ROAD RESERVE ONLY

The structural work shown on this drawing is considered to be structurally sound, and suitable for the design loads.

All construction to be as per current Australian Standards and Building Codes, in accordance with MBRC requirements, and in a professional and tradesmanlike manner

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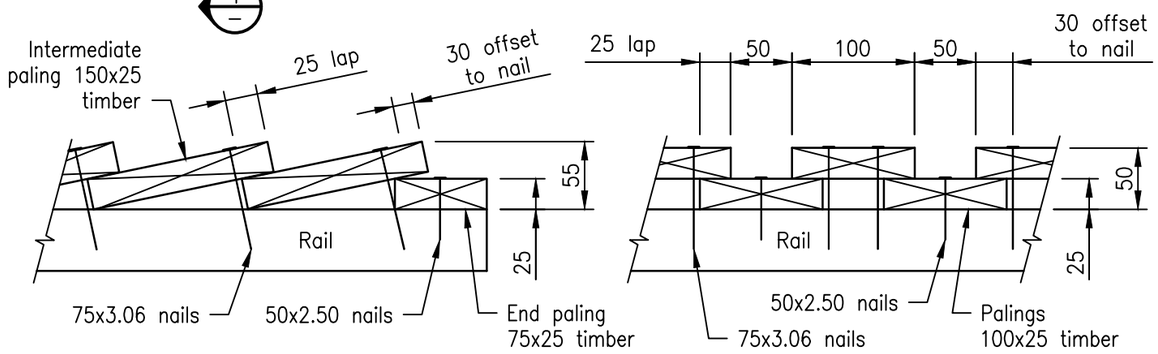
RPEQ 3333 Date : 13/09/2017

NOTES:

1. This drawing depicts a typical 2000 high acoustic barrier and does not necessarily represent a noise attenuation solution for all developments. Noise attenuation solution for each development is site specific and shall be addressed by a qualified acoustic engineer.
2. Maximum permissible stress design wind velocity is 33m/s (w33) which corresponds to a suburban environment with no exposure to open areas and not located in close proximity to hills, ridges or escarpments, as the natural surface 2m either side of the fence Is assumed flat for design of footing. If these conditions are not met an alternative certified engineering design must be submitted for approval.
3. For new subdivisions/developments, the entire fence shall be contained within the private property and maintained by the property owner.
4. All palings, rails and plinths shall be ACQ or CCA treated pine to H5 level in accordance with AS 1604. Rails min. F7 Stress Grade.
5. All fixings (apart from nails) shall be 'Zenith-Tufcote' or 'Buildex-Climacoat' or approved equivalent (unless noted otherwise).
6. All nails shall be ring shank type and hot dipped galvanised.
7. Stagger nail pattern along length of paling to avoid splitting and drive nails square to face of board.
8. Posts shall be hot-dip galvanised after fabrication.
9. Noise barrier fence shall be screened with vegetation.
10. Dimensions are in millimetres unless stated otherwise.



PALING ARRANGEMENT DETAILS
Scale C

FOOTING DEPTH SCHEDULE

SOIL TYPE	FOOTING DEPTH
Soft clay (Cu = 25kPa)	1600
Firm clay (Cu = 50kPa)	1300
Stiff clay (Cu = 100kPa)	1100
Medium dense non-cohesive soil medium	1200

REVISIONS		INIT	DATE
E			
D			
C	Approved by Structural Engineer	TC	7/17
B	Structural Design Note Changed	RH	12/16
A	Add note - For council construction works only, change landscape note	BW	08/16
X	ORIGINAL ISSUE	BW	07/16

SCALES
A 1:25
B 1:10
C 1:5

Drawn	BW	Date	07/16
Coordinator	PP	Date	07/16

AUTHORISED
SYD JERRAM
07/07/16
Manager Integrated Transport Planning & Design
RPEQ 6872

NOISE BARRIER FENCE
2.0m HIGH POST AND PALING

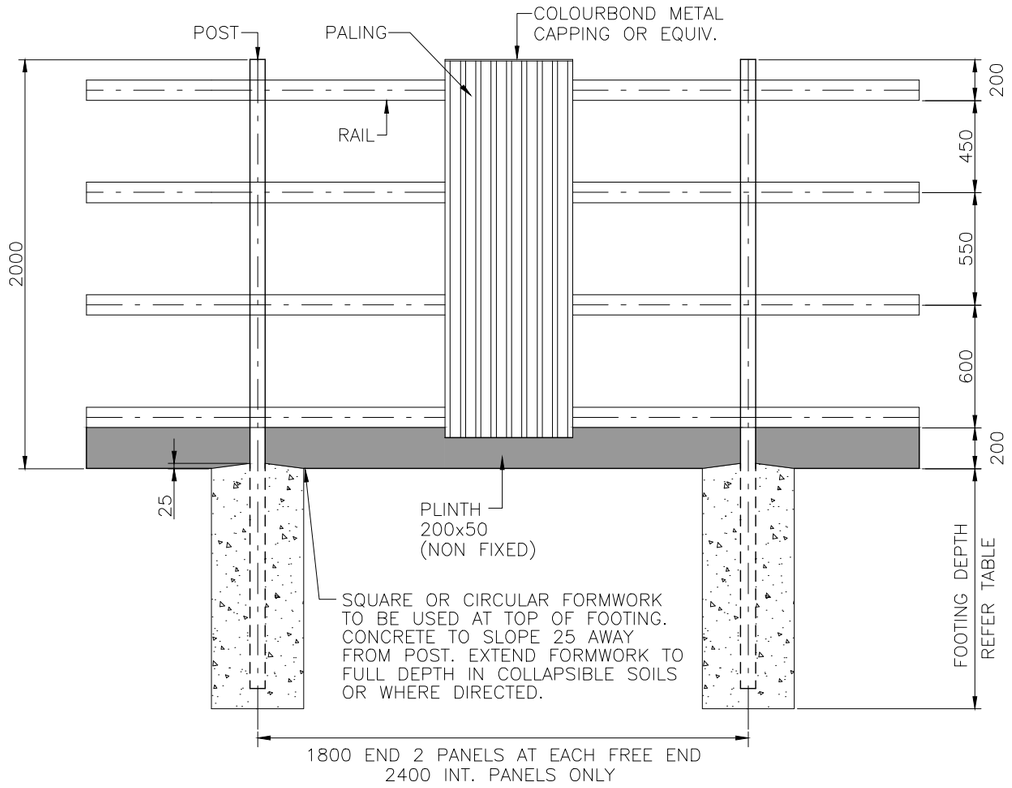
Moreton Bay Regional Council

DRG No. SF-1520

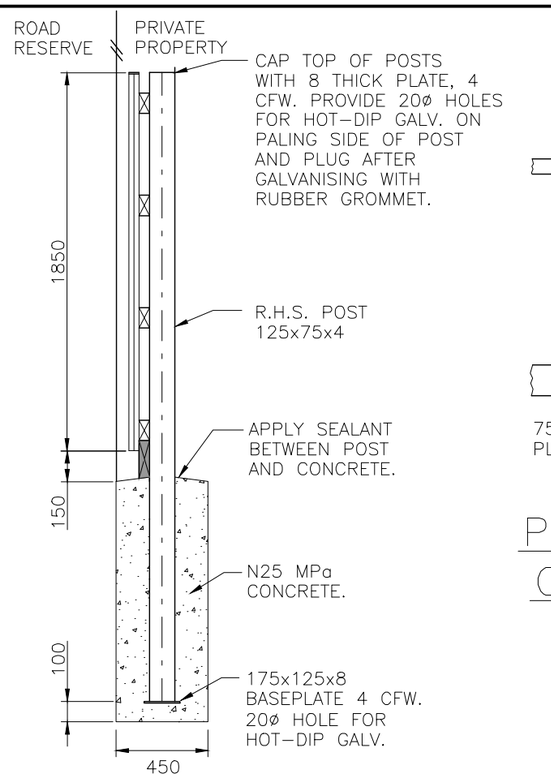
ORIGINAL SIZE A3

REVISION C

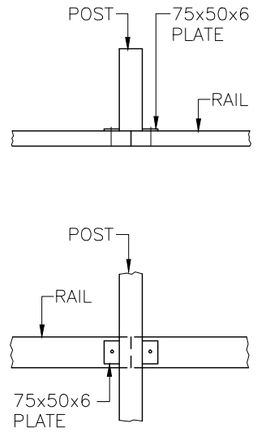
File name: I:\User_Group\Design_Services\Projects\MBRC Standard Drawings\AutoCAD Files\04 - Street Furniture Including Fences\SF-1520C - Noise Barrier Fence 2.0m high - Post and Paling.dwg Date: Sep 28, 2017 - 12:02pm



ELEVATION



SECTION

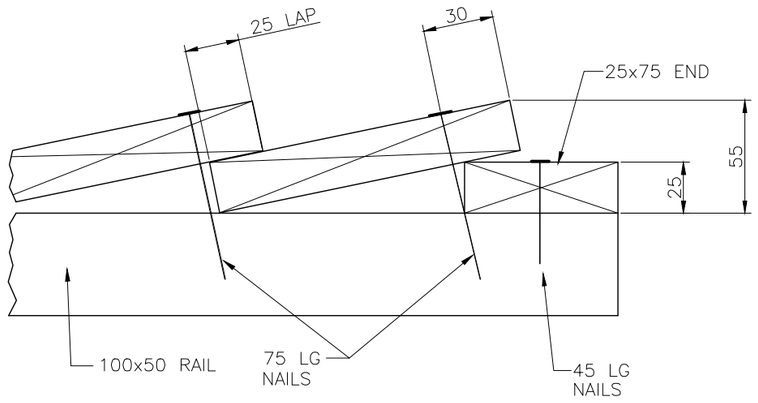


POST & RAIL CONNECTION

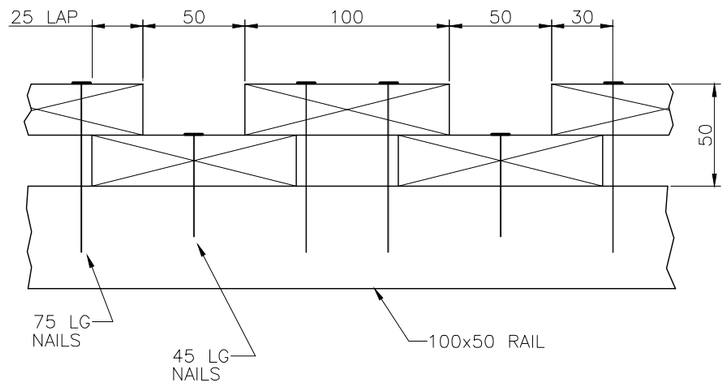
FOOTING DEPTH	
SOIL TYPE	FOOTING DEPTH
SOFT CLAY (Cu = 25 kPa)	1600
FIRM CLAY (Cu = 50 kPa)	1300
STIFF CLAY (Cu = 100 kPa)	1100
MEDIUM DENSE NON-COHESIVE SOIL	1200

NOTES:

1. THIS DRAWING DEPICTS A TYPICAL 2000 HIGH ACOUSTIC BARRIER AND DOES NOT NECESSARILY REPRESENT A NOISE ATTENUATION SOLUTION FOR ALL DEVELOPMENTS. NOISE ATTENUATION SOLUTION FOR EACH DEVELOPMENT IS SITE SPECIFIC AND SHALL BE ADDRESSED IN ACCORDANCE WITH THE "NOISE IMPACT ASSESSMENT PLANNING SCHEME POLICY" OF THE BRISBANE CITY PLAN.
2. MAXIMUM PERMISSIBLE STRESS DESIGN WIND VELOCITY IS 33m/s (W33) WHICH CORRESPONDS TO A SUBURBAN ENVIRONMENT WITH NO EXPOSURE TO OPEN AREAS AND NOT LOCATED IN CLOSE PROXIMITY TO HILLS, RIDGES OR ESCARPMENTS, AS THE NATURAL SURFACE 2m EITHER SIDE OF THE FENCE IS ASSUMED FLAT FOR DESIGN OF FOOTING. IF THESE CONDITIONS ARE NOT MET AN ALTERNATIVE CERTIFIED ENGINEERING DESIGN MUST BE SUBMITTED FOR APPROVAL.
3. FOR NEW SUBDIVISIONS/DEVELOPMENTS, THE ENTIRE FENCE SHALL BE CONTAINED WITHIN THE PRIVATE PROPERTY AND MAINTAINED BY THE PROPERTY OWNER.
4. ALL PALINGS, RAILS AND PLINTH SHALL BE C.C.A TREATED PINE TO H5 LEVEL IN ACCORDANCE WITH AS 1604.
5. ALL FIXINGS SHALL BE HOT-DIP GALVANISED OR EQUIVALENT.
6. CAPPING: COLOURBOND METAL, 30 DEEP WITH OVERFOLDED EDGES FIX WITH No.10 x 12 LONG GALV. TYPE 17 SCREWS AT 300 CRS AND STAGGERED EACH SIDE. CAPPING TO FIT SNUGLY OVER PALINGS.
7. PALINGS: F5 TREATED PINE. REFER PALING DETAILS FOR SIZES. NAILS SHALL BE 2.8ø HOT-DIP GALVANISED FLAT HEAD CLOUTS (OR SIMILAR GUN-DRIVEN NAILS). STAGGER NAIL PATTERN ALONG LENGTH OF PALING TO AVOID SPLITTING AND DRIVE NAILS SQUARE TO FACE OF BOARD. RING SHANK NAILS TO BE USED.
8. RAILS: 100 x 50 F5 TREATED PINE. FIX WITH No.14-10 x 50 GALVANISED HEX HD TYPE 17 SCREW.
9. POSTS: 125 x 75 x 4 R.H.S. HOT-DIP GALVANISED AFTER FABRICATION.
10. PLINTH: 200 x 50 F5 TREATED PINE (NON FIXED).
11. DIMENSIONS IN MILLIMETRES (UNO).



SYSTEM 1 (150x25)



SYSTEM 2 (100x25)

TREATED PINE PALING

ISSUE	AMENDMENT	DRAWN DATE	CHK'D DATE	APPR'D DATE
B	Drawing Title Amended	FEB'16	JUL '16	JUL '16
A	Drawing Converted from UMS Series April 2014	APR '14	APR '14	APR '14

DRAWING AUTHORISED FOR PUBLICATION
B.BALL SIGNATURE ON ORIGINAL
DATED 29/06/01 R.P.E.Q 3852
ASSET ENGINEERING MANAGER
STRATEGIC ASSET MANAGEMENT

DESIGN APPROVED
B.HANSEN SIGNATURE ON ORIGINAL
DATED 27/06/01
PRINCIPAL ASSET OFFICER
ROADS & DRAINAGE

DESIGN	Std Dwgs Group	DATE	APRIL '01
DRAWN	CITY DESIGN	DATE	APRIL '01
CHECKED	M. STEER	DATE	MAY '01
DRAWING FILENAME	BSD-7021 (B) Noise barrier fence 2.0m high - Post and paling.dwg		
ASSOCIATED PLANS	SUPERSEDES UMS-245		

BRISBANE CITY

BRISBANE CITY COUNCIL STANDARD DRAWING

NOISE BARRIER FENCE 2.0m HIGH POST AND PALING

SCALE: NOT TO SCALE
DWG No.: BSD-7021
ORIGINAL SIZE: A3
REVISION: B

Appendix E Glossary of Terms

Flagstone Development, Context Area 3 (CA3) South

Road Traffic Noise Intrusion Assessment, Stages 8-14

Peet Flagstone City Pty Ltd

SLR Project No.: 620.v10512.02002

18 March 2024

Sound Level (or Noise Level)

The terms sound and noise are almost interchangeable, except that in common usage noise is often used to refer to unwanted sound.

Sound (or noise) consists of minute fluctuations in atmospheric pressure capable of evoking the sense of hearing. The human ear (and those of other species) responds to changes in sound pressure over a very wide range. The loudest sound pressure to which the human ear responds is ten million times greater than the softest. The decibel (dB or dBL) scale reduces this ratio to a more manageable size by the use of logarithms.

A-weighted Sound Pressure Level

The overall level of a sound is usually expressed in terms of dBA, which is measured using a sound level meter with an 'A-weighting' filter. This is an electronic filter having a frequency response corresponding approximately to human hearing.

Change in Sound Pressure Levels

For human perception, a change of 1 dBA or 2 dBA in the level of a sound is considered to be indiscernible, while a 3 dBA to 5 dBA change corresponds to a small but noticeable change in loudness. A 10 dBA change corresponds to an approximate doubling or halving in loudness. As noted in Section 2.4 of the TMR CoP Vol 1, while the above noted changes in sound pressure level are *not precisely verifiable for road traffic noise, it is useful in understanding the significance of change in environmental noise exposure*.

Additional facts about road traffic noise as stated in Section 2.4 of the TMR CoP Vol 1:

- A 3 dBA change in noise level is equivalent to halving or doubling the traffic volumes.
- A 10 dBA change in noise level is equivalent to halving or doubling the subjective or perceived loudness or a tenfold increase or decrease in traffic volume.
- A 10 km/h increase in speed will increase the noise level by approximately 1 dBA.
- A 3.5% compound annual growth rate in traffic will increase the noise level by approximately 1.5 dBA over a 10-year horizon.
- An 8% compound annual growth rate in traffic will increase the noise level by approximately 3.0 dBA over a 10-year horizon.

Typical Sound Pressure Levels

The table below lists examples of typical sound pressure levels.

Table D-1 Examples of Perceived Sound Pressure Levels

Sound pressure level (dBA)	Typical Example
130	Threshold of pain
120	Metal hammering
110	Grinding on steel
100	Loud car horn at 3 metres (m)
90	Dog bark at 1 m
80	Cicadas at 1 m
70	Noise level directly adjacent to a busy main road
60	Ambient noise level in urban area close to main roads

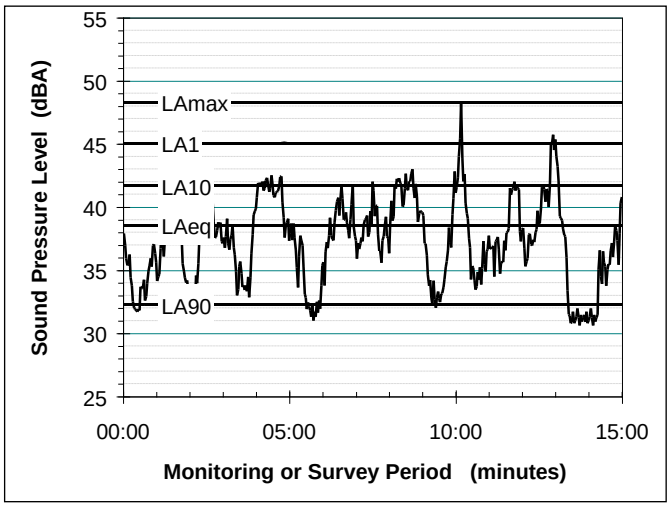
Sound pressure level (dBA)	Typical Example
50	Day time in a quiet suburban environment with background or distant road traffic noise
40	Night-time in a quiet suburban environment with background or distant road traffic noise Ambient noise level in rural to semi-rural environments with light breezes and some noise from insects, birds and distant traffic
30	Ambient noise level in a typical rural noise environment in the absence of insect noise and wind. Inside bedroom
20	Ambient noise level in remote rural environment away from main roads with no wind and no insect noise

Statistical Noise Levels

Sounds that vary in level over time, such as road traffic noise and most community noise, are commonly described in terms of the statistical exceedance levels (LAN), where LAN is the A-weighted sound pressure level exceeded for N% of a given measurement period. For example, the LA1 is the noise level exceeded for 1% of the time and LA10 the noise exceeded for 10% of the time.

Figure D-1 below presents a hypothetical 15-minute noise measurement, illustrating various common statistical indices of interest.

Figure D-1 Hypothetical 15-minute Noise Measurement



Of particular relevance to this study, are:

- L_{A10}: The A-weighted noise level exceeded for 10% during any given measurement period. This is commonly referred to as the average maximum noise level.

Additionally;

- $L_{A10(18hour)}$ Road Traffic Noise Level: the level exceeded for 10% of any measurement period; the usual period of measurement is 1 hour. The hourly L_{A10} level, therefore, is the traffic noise level exceeded for 6 minutes in the hour. The 18-hour L_{A10} level

($L_{A10(18hour)}$) is the arithmetic average of 18, hourly L_{A10} traffic noise levels measured in consecutive hours between 6:00 am and 12:00 midnight.

- $L_{A10(12hour)}$ Road Traffic Noise Level – is the arithmetic average of 12 hourly L_{A10} traffic noise levels measured in consecutive hours between 6:00 am and 6:00 pm.
- $L_{A1(1hour)}$ Road Traffic Noise Level – the level exceeded for n% of a 1-hour period.

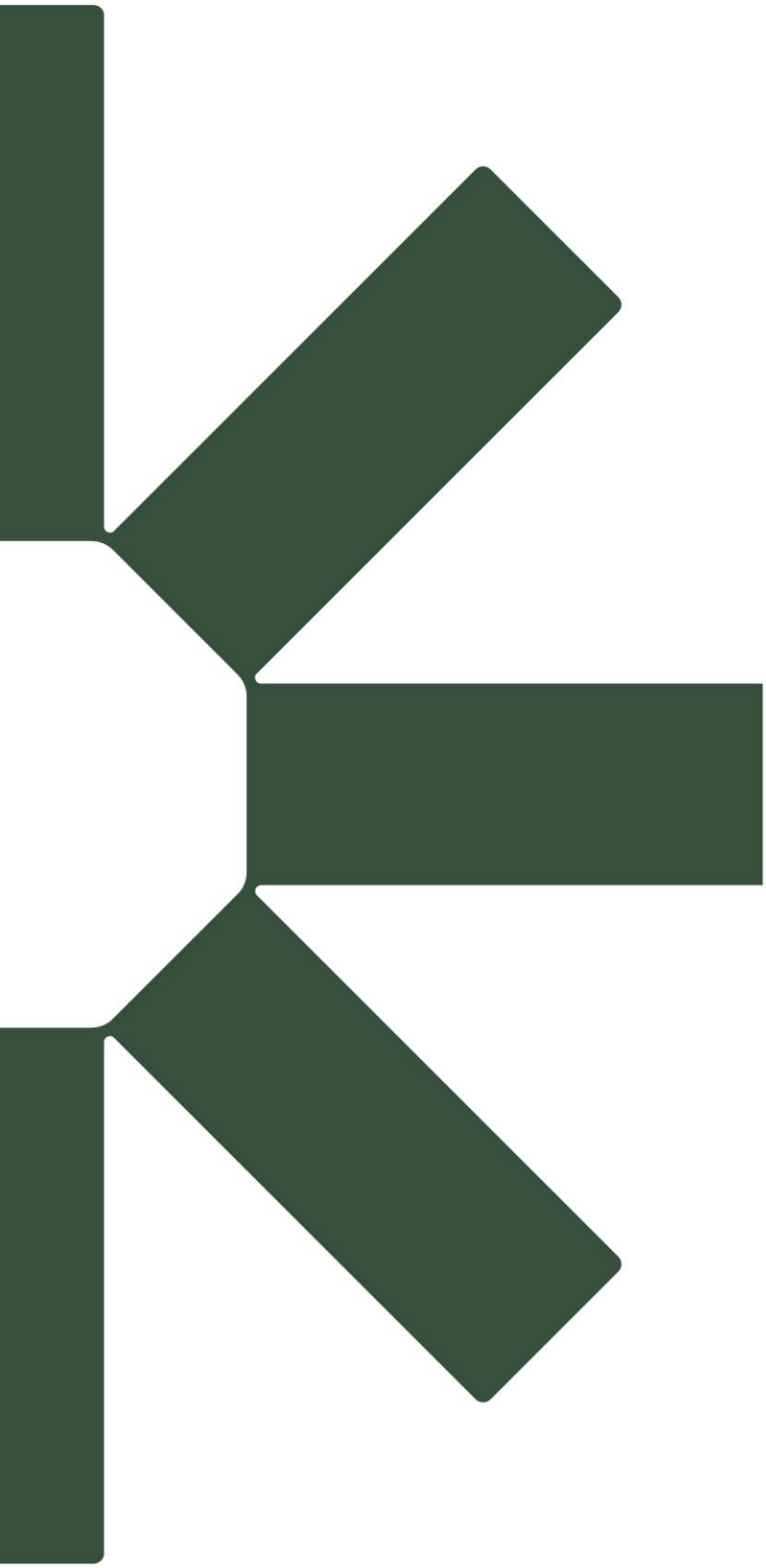
Noise Propagation

Provided the receptor is in the far-field of the noise source, noise levels will reduce as a receptor moves further away from the source. This is due to spreading of the noise source energy over distance. For a simple point source (for example, a motor) the theoretical reduction in noise levels is 6 dBA per doubling of distance. For a line source (for example, a busy road) the theoretical reduction is 3 dBA per doubling of distance. In reality however other factors affect noise propagation. These include ground absorption, air absorption, acoustic screening, and meteorological effects.

Facade Corrected versus Free field

A ‘facade corrected’ measurement/monitoring location is a location which is influenced by facade reflections. Measurements at facades are typically taken at a distance of 1 m away and the measured noise level generally regarded as being +2.5 dB higher than in the ‘free field’.

A ‘free field’ measurement/monitoring location is a location where the microphone is positioned sufficiently far from nearby surfaces for the measured data to not be influenced by reflected noise. This is typically regarded as a position 3.5 m or greater from a reflective surface.



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