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North Harbour Holdings Pty Ltd

North Harbour - Precinct 1

Traffic Noise Impact Assessment

PLANS AND DOCUMENTS
referred to in the PDA
DEVELOPMENT APPROVAL

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Executive Summary

Vipac has completed a traffic noise impact assessment for Precinct 1 of the North Harbour Development in Burpengary East, Queensland. Compliance with the Moreton Bay Planning Scheme Policy (Noise) is expected to be achieved with the implementation of a 2m noise barrier on the southern boundary of lots 3173-3236, and façade treatments in line with the predicted QDC MP4.4 noise categories. A gap in the barrier of approximately 43 metres is provided parallel to Lot 3223, between Lots 3215 and 3229, to allow for pedestrian access to the main road. As a result of this access gap, Lot 3223 cannot be continuously shielded by the shared boundary barrier and therefore requires its own acoustic barrier.

Details of the acoustic barrier can be found in Section 6 of this report. The QDC MP4.4 Noise Categories for ground and first floor for each proposed lot are listed in Appendix B.2.

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1 Introduction

Vipac Engineers & Scientists Ltd (Vipac) was commissioned by North Harbour to provide a traffic noise impact assessment for Precinct 1 of the North Harbour development in Burpengary East, Queensland.

This traffic noise assessment includes the following:

- Description of the development,
- Discussion of the applicable noise criteria,
- Prediction of future traffic noise levels for the lots in the proposed development,
- Assessment of predicted traffic noise levels against applicable noise criteria,
- Discussion of noise barrier requirements, and
- Recommendations and conclusion.

1.1 References

This report refers to the following documents:

- Queensland Department of Transport and Main Roads (DTMR) *Transport Noise Management Code of Practice, Volume 1 – Road Traffic Noise* (referred to as CoP).
- Queensland Department of Transport and Main Roads (DTMR) *Development Affected by Environmental Emissions from Transport Noise Policy*, Version 4.
- Moreton Bay Regional Council (MBRC) Planning Scheme Policy – Noise.
- Queensland Development Code MP 4.4 – Buildings in a Transport Noise Corridor.
- Bitzios Consulting *North Harbour Mixed Industry Business Area and Next Generation Neighbourhood Masterplan Transport and Traffic Impact Assessment* dated 25/09/2023 and sent to Vipac 23/01/2024.
- Early Release Area – Plan of Subdivision (drawing no. 240123-19 Rev B), by Place Design Group dated 17/10/2025

2 Description of the Development

The proposed Precinct 1 subdivision will consist of 250 residential lots and a further 10 lots to be created for open space and recreation. Figure 2-1 shows the site layout for the subdivision.

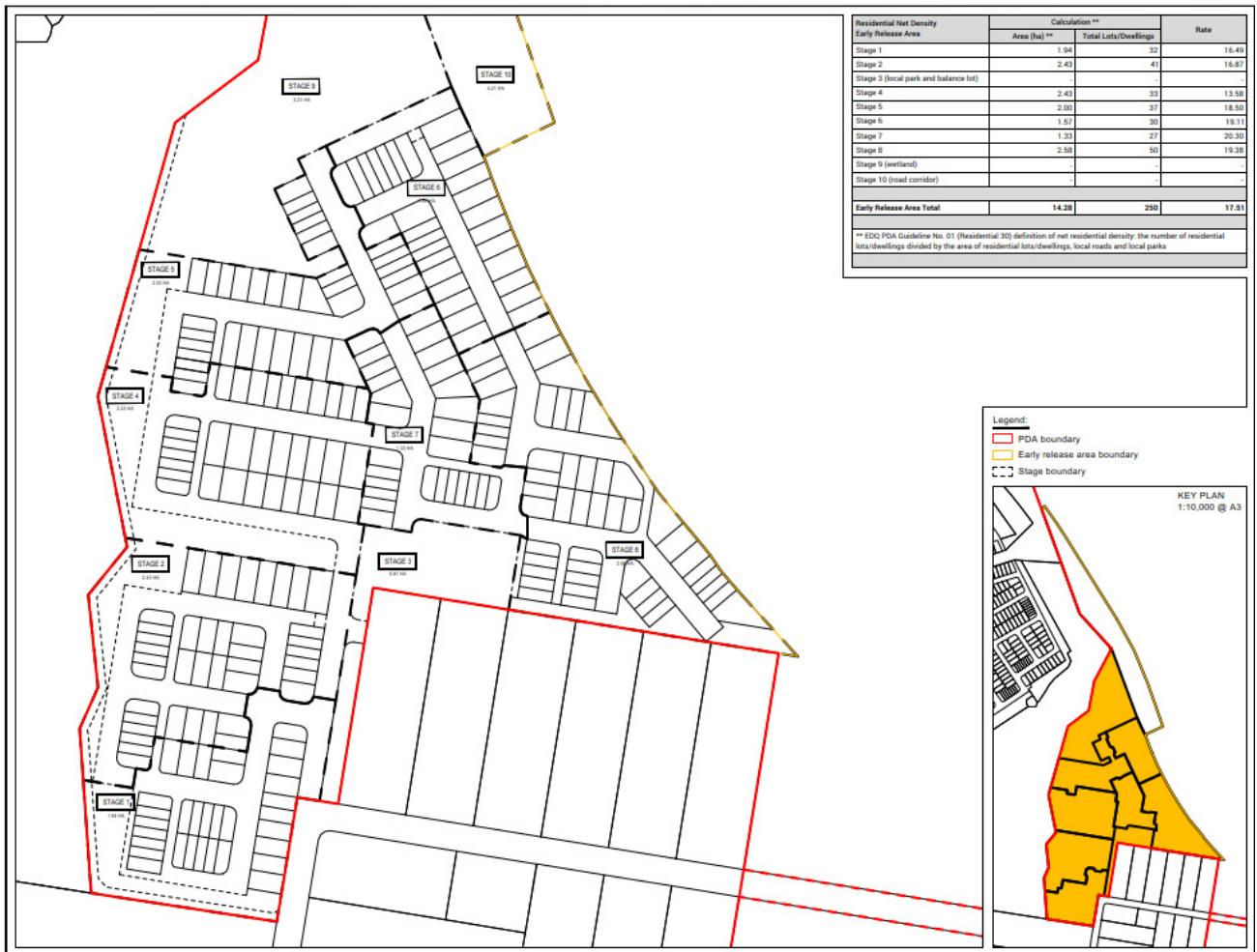


Figure 2-1: Layout for Precinct 1

3 Noise Criteria

3.1 Moreton Bay Regional Council Planning Scheme Policy

The 'MBRC Planning Scheme Policy – Noise' outlines the process for establishing acceptable acoustic amenity at locations impacted by road and railway induced noise. Section 8.1 of the Policy states that a transport noise impact assessment report is to be provided where development involves reconfiguring a lot in the general Residential zone where:

1. Proposed lots are located within:
 - a. 50m of a current or future designated sub arterial road; or
 - b. 100m of a current or future designated arterial road; or
 - c. 150m of a highway or railway; or
 - d. Extractive resource transport buffer.
2. Where otherwise requested by Council.

The assessment is to be in accordance with Queensland Development Code (QDC) MP4.4 and identify the applicable noise category for each lot for both ground and first floor levels.

In addition to the above assessment, residential developments are required to have Private Open Spaces (POS) that meet the external noise criteria as outlined in TMR's Policy for Development Affected by Environmental Emissions from Transport.

3.2 Queensland Development Code QDC MP4.4

The QDC MP4.4 document specifies external building construction requirements based on the external transport noise levels to achieve acceptable indoor noise levels. The road traffic noise level categories, as specified in Schedule 3 of QDC MP4.4, are provided in Table 3-1. The required acoustic ratings for building components for each noise category are also listed in Table 3-1.

Table 3-1: MP4.4 Road Traffic Noise Category Levels and Required Building Construction Acoustic Ratings

Free-field Noise Category	Level of Traffic Noise L_{A10} (18hr) (façade corrected)	Required Acoustic Ratings (R_w)			
		Glazing and Frames		External Walls	Ceiling and Roofs
		Room Façade Glazing Area $\geq 1.8m^2$	Room Façade Glazing $< 1.8m^2$		
Category 4	≥ 73 dB(A)	R_w 43	R_w 43	R_w 52	R_w 45
Category 3	68-72 dB(A)	R_w 38	R_w 35	R_w 47	R_w 41
Category 2	63-67 dB(A)	R_w 35	R_w 32	R_w 41	R_w 38
Category 1	58-62 dB(A)	R_w 27	R_w 24	R_w 35	R_w 35
Category 0	≤ 57 dB(A)	None	None	None	None

3.3 Private Open Space Criteria

Table 3 of TMR's policy for Development Affected by Environmental Emissions from Transport contains noise limits for POS's in new sensitive developments. These criteria are dependent on the existing ambient noise level and have been reproduced below:

Table 3-2: Private Open Space Criteria (Source: Development Affected by Environmental Emissions from Transport)

Development Type	Location within Development	Environmental Criteria
Accommodation Activities	Private and communal open space	≤ 57 dB(A) L_{10} (18hr) free field (measured L_{90} (18hr) free field between 6am and midnight ≤ 45 dB(A))
		≤ 60 dB(A) L_{10} (18hr) free field (measured L_{90} (18hr) free field between 6am and midnight > 45 dB(A))

4 Noise Monitoring

Unattended noise monitoring was attempted at the location shown in Figure 4-1, however resulted in an unsuccessful collection of data due to logger malfunction. The logger was installed on Tuesday the 2nd of December, with the logger malfunctioning at approximately 10:30pm that evening.



Figure 4-1: Attempted Noise Monitoring Location

In the absence of useable noise data to establish criteria for the development, Vipac have reverted to utilising existing noise monitoring data conducted in January 2024 for Stages 7-11 of the North Harbour Development (report ref: 70B-24-0438-TRP-77969-2 dated 1st October 2025).

The noise monitoring data captured for Stage 7-11 is representative of the ambient noise environment at Precinct 1.

4.1 Measured Ambient Noise Levels

Table 4-1 presents the measured background noise levels from the previous noise monitoring for Stages 7-11 and the resultant private open space criteria detailed in Section 3.3.

Table 4-1: Ambient Noise Level Results

Monitoring Period	Free Field L ₉₀ , 18 hour	Private Open Space Criteria
17/01/2024 to 21/01/2024, 6am to midnight	47 dB(A)	L ₁₀ (18 hour) free field ≤ 60 dB(A)

5 Road Traffic Noise Assessment

5.1 Modelling Methodology

Traffic noise calculations were carried out using SoundPLAN v8.2 noise modelling software. The data and assumptions used in traffic noise modelling are presented in Table 5-1.

Table 5-1: Data and Assumptions Used in Traffic Noise Modelling

Parameter	Data
Future Residence Receiver Heights	- Ground Floor: 1.8m above ground level as obtained from terrain data (façade corrected). - Outdoor Spaces for Passive Recreation: 1.5m above ground level as obtained from terrain data (free field) - First Floor: 4.6m above ground level as obtained from terrain data (assuming height of floors as 2.8m, façade corrected)
Terrain Data	Preliminary Design Contours drawing by Egis (ref: INT CONTS.dxf) received on 13/11/2025. Assumed elevation data of future road based on partial elevation data of future road*
Angle Increment	1°
Grid Spacing (noise contour maps)	2m Squares.
Lot Layout	Early Release Area – Plan of Subdivision (drawing no. 240123-19 Rev B), by Place Design Group dated 17/10/2025
Calculation Method	UK's Calculation of Road Traffic Noise (CoRTN)
Road Surface	- Assumed dense graded asphalt (DGA) was modelled for the road surface of the future road. As per Table 4.3.4.1 of the CoP, no correction is required for DGA. - A correction of -0.7 dB(A) has been applied for free field receptors, and a correction of -1.7dB(A) has been applied for façade corrected receptors for Queensland conditions (Department of Transport and Main Roads, Transport Noise Management Code of Practice 2013).
Existing Noise Barriers	N/A

*The earthworks data provided by KN Group included only partial elevation details for the future road north of the site. To enable a full impact assessment, Vipac has assumed a consistent elevation profile extending south and manually incorporated this into the noise model.

5.2 Traffic Volumes

Traffic volumes for the future road adjacent the subdivision are yet to be confirmed. At the direction of the client, Vipac have assumed traffic volumes for this stretch of the future road will be similar to the modelled AADT estimates adjacent North Harbour Stage 10 (provided by Bitzios Consulting). As the road is not yet constructed, verification of any existing traffic noise emissions is not applicable.

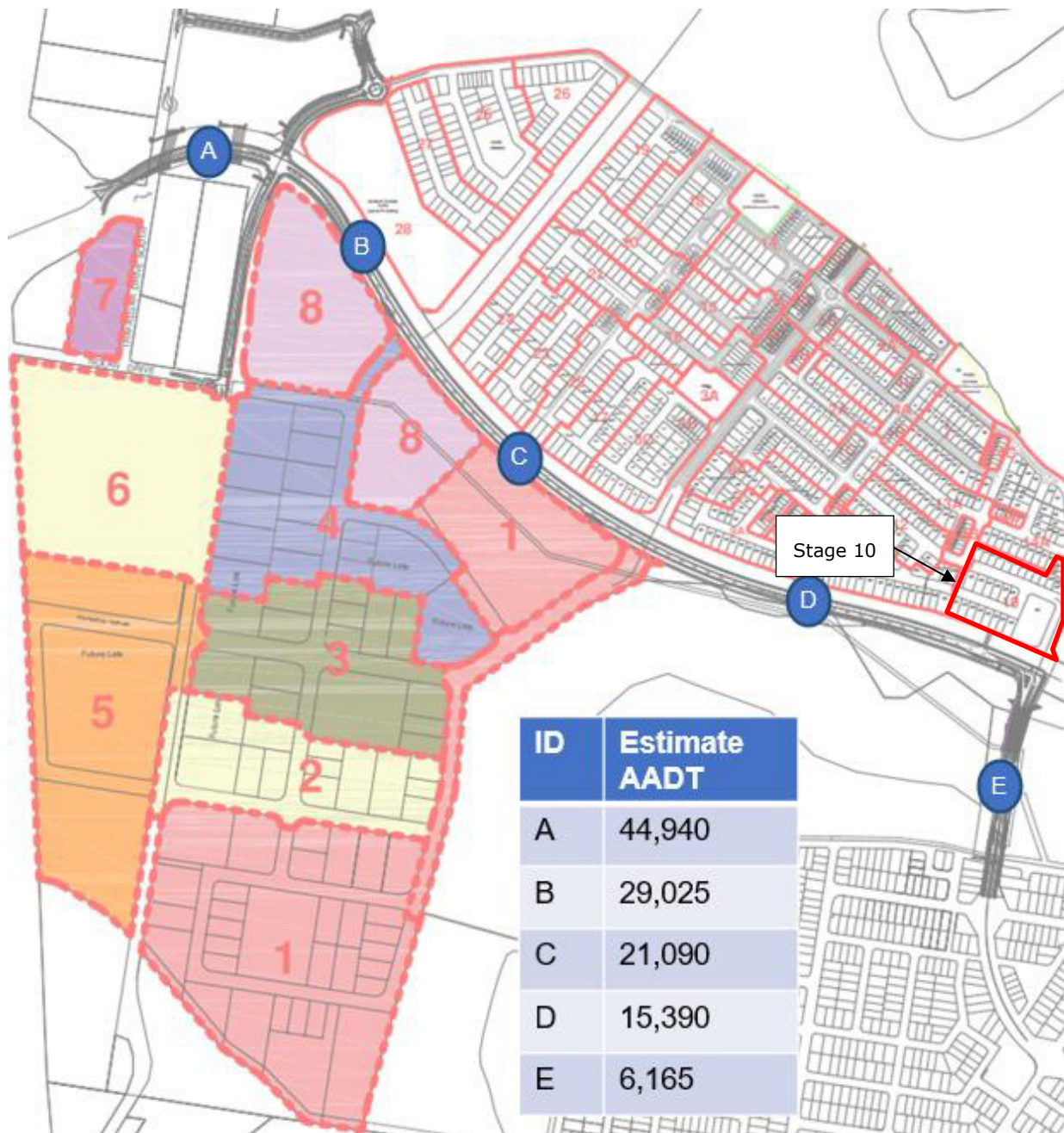


Figure 5-1: North Harbour Boulevard AADT (reproduced from Bitzio Consulting)

Table 5-2 presents the assumptions used for modelling the future road in the noise prediction model. AADT traffic volumes from Bitzios Consulting in Figure 5-1 are representative of the ultimate traffic volumes in 2041, therefore predictions have been conducted to the ultimate traffic volume to 2041. The 18 hour traffic volume from 6am to midnight to be used in the noise model are taken to be 95% of the AADT as per the CoRTN calculation method.

Table 5-2: Traffic Volumes

Future Road	AADT	18hr Traffic Volume	Speed*	Heavy Vehicles*
D	15,390	14,621	70 km/h	5%

*Speed and Heavy Vehicle Percentage have been assumed to be the same as previously modelled for North Harbour Stage 10 as per Vipac report ref: 70B-24-0428-TRP-77969-2.

5.3 Noise Modelling Against Private Open Space Criteria

This section contains noise modelling results for comparison against the POS Criteria. Predicted road traffic noise levels for all lots are tabulated in Appendix B.

5.3.1 Predicted Noise Levels without Mitigation

Figure 5-2 presents the predicted road traffic noise levels compared to the private open space criteria for the most exposed lots of Precinct 1. Lots not included in the grid noise map are expected to comply with the criteria as the future road is the only source of road traffic noise modelled in this assessment.



Figure 5-2: Private Open Space Criteria Grid Noise Map without Mitigation

Predicted traffic noise levels for several lots that are nearest to the future road are predicted to exceed the private open space criteria. Lots predicted to exceed the noise limit are shown in Table 5-3.

Table 5-3 Lots Predicted to Exceed the Private Open Space Limit

Noise Limit	Lots Exceeding Noise Limits	Location
$L_{A10,18hr}$ 60 dB(A) – Free-field	3162-3173 3209-3215 3222-3224 3229-3236	Private Open Space (1.5m above ground)

Refer to Section 6 for details of the recommendations for predicted compliance of the exceeding lots.

5.3.2 Predicted Noise Levels with Mitigation Measures

Figure 5-3 contains the predicted road traffic noise with a 2m acoustic barrier on the lot boundaries facing the future road. The barrier includes appropriate returns down the side boundaries of Lots 3173, 3229 and 3236. A gap in the barrier is provided to allow for pedestrian access to the main road. Details of the noise barrier and gap for pedestrian access are provided in Section 6.1.



Figure 5-3: Private Open Space Criteria Grid Noise Map with Mitigation

Predicted traffic noise levels at all lots are predicted to comply with the private open space criteria with the inclusion of the recommended acoustic barrier.

6 Recommendations

6.1 Acoustic Barrier

A noise barrier is recommended for all lots fronting the future road to achieve predicted compliance with the private open space criteria as modelled in Section 5.3. Details of the height and location of the proposed noise barrier can be found in Table 6-1:

Table 6-1: Details of Recommended Noise Barrier

Lot Numbers	Barrier Location	Height
3173–3215	- Along property boundary fronting future road, relative to either finished pad levels of each lot, or top of retaining walls (whichever is higher). - Includes a return up the northern boundary of lot 3173 for approximately 14m from the northern corner of the lot.	2m
3229–3236	- Along property boundary fronting future road, relative to either finished pad levels of each lot, or top of retaining walls (whichever is higher). - Includes a return up the northern boundary of lot 3229 for approximately 10m from the northern corner of the lot. - Includes a return up the southern boundary of Lot 3236 for approximately 12m from the southern corner of the lot.	2m
3223	Along the property boundary fronting the future road, relative to either finished pad levels of the lot.	2m

In addition to the location and height requirements in Table 6-1, the acoustic barrier should also be:

- 2m high (as per Table 6-1) relative to the modelled ground contour levels provided by Egis.
 - The top of barrier height is to be relative to the finished pad levels of each lot along the road. It is assumed the barrier will follow along the top of the retaining wall where it is present.
- Of solid construction and have no gaps or holes for the extent shown (inclusive of between the ground and bottom of barrier)
- Any gaps surrounding access gates for landscaping/maintenance are to be overlapped sufficiently so that there are no visible holes above, below or on the sides of the gate
- Constructed in accordance with:
 - Chapter 7 integrated noise barrier design of the Transport Noise Management Code of Practice: Volume 1 (Road Traffic Noise), Department of Transport and Main Roads, 2013
 - Technical Specification-MRTS15 Noise Fences, Transport and Main Roads, 2019
 - Technical Specification-MRTS04 General Earthworks, Transport and Main Roads, 2020
- The construction may consist of a barrier in combination with an earth mound to achieve the desired height if required.

6.2 Building Façade Requirements

Acoustic treatment is required for ground and first floor building facades facing the future road that are impacted by noise equivalent to QDC MP4.4 categories 1 to 2.

Details of the construction requirements for each category can be found in Section 3.2. The QDC MP4.4 noise categories for all lots, including an upper and lower level, are listed in Appendix B.2. A summary of lots affected by road traffic noise equivalent to category 1 or higher are listed in Table 6-2. Note that these noise categories have been calculated with the inclusion of an acoustic barrier as detailed Section 6.1.

Table 6-2: Summary of QDC MP4.4 Noise Categories

QDC MP4.4 Noise Category*	Floors Affected	Lots Affected
Category 2	First Floor	3162-3173, 3209-3211, 3214, 3215 3223, 3229-3236
Category 1	Ground Floor	3162- 3173, 3209-3211, 3213, 3214, 3215, 3222-3224, 3229-3236,
	First Floor	3148-3150, 3152-3161, 3201-3203, 3212, 3213, 3216, 3220-3222, 3224- 3228, 3237-3240
Category 0	All remaining floors / lots	

* Includes noise mitigation barrier as detailed in Section 6.1.

This table should be read in conjunction with the noise contour mapping in Appendix A.

7 Conclusion

Vipac has completed a traffic noise impact assessment for Precinct 1 of the North Harbour Development. Compliance with the Moreton Bay Planning Scheme Policy (Noise) is expected to be achieved with the implementation of the recommendations in Section 6 of this report.

These recommendations include a noise barrier for compliance with the private open space criteria and façade treatments in line with the predicted QDC MP4.4 noise categories listed in Appendix B.2.

Appendix A QDC MP4.4 Transport Noise Contour Map



Figure A-1: Ground Floor Noise Contour Map with QDC MP4.4 Categories (Façade Corrected)



Figure A-2: First Floor Noise Contour Map with QDC MP4.4 Categories (Façade Corrected)

Appendix B Predicted Traffic Noise Levels

B.1 Predicted Free Field Traffic Noise Levels for Private Open Space Criteria

Table B-1: Predicted Free-Field Traffic Noise Levels in Private Open Spaces (for all lots)

Lot No.	No Barrier	With Noise Barrier	
	L _{10(18h)} dB(A)	L _{10(18h)} dB(A)	Complies with L _{10(18h)} 60 dB(A) Criteria
397	47.3	47.3	✓
398	47.6	47.5	✓
399	47.9	47.8	✓
1001	42.5	41	✓
1002	46.2	43.8	✓
1003	49.5	49.4	✓
1004	47.4	45.1	✓
1005	46.4	45.6	✓
1006	51	50.8	✓
1008	44.8	44.8	✓
3001	45.4	45.2	✓
3002	45.3	45.1	✓
3003	45.1	44.9	✓
3004	44.7	44.6	✓
3005	44.5	44.4	✓
3006	44.4	44.2	✓
3007	44.2	44.1	✓
3008	44.1	43.9	✓
3009	44	43.8	✓
3010	43.8	43.6	✓
3011	43.4	43.3	✓
3012	43.3	43.1	✓
3013	43.1	43	✓
3014	43	42.9	✓
3015	42.8	42.7	✓
3016	42.8	42.8	✓
3017	43	42.9	✓
3018	43.1	43.1	✓
3019	43.3	43.2	✓
3020	43.5	43.4	✓
3021	42.2	42.2	✓
3022	42.3	42.3	✓
3023	42.4	42.4	✓
3024	42.4	42.4	✓
3025	42.5	42.5	✓
3026	42.6	42.6	✓
3027	42.6	42.6	✓
3028	43.1	43.1	✓
3029	43.3	43.3	✓
3030	43.6	43.5	✓
3031	43.8	43.8	✓

3032	44	44	✓
3033	44.2	44.1	✓
3034	44.4	44.3	✓
3035	44	43.9	✓
3036	43.7	43.7	✓
3037	43.5	43.5	✓
3038	42.7	42.7	✓
3039	42.9	42.8	✓
3040	43	43	✓
3041	43.2	43.2	✓
3042	43.2	43.2	✓
3043	43.3	43.3	✓
3044	43.5	43.5	✓
3045	43.7	43.8	✓
3046	43.8	43.9	✓
3047	44	44	✓
3048	44.1	44.1	✓
3049	44.3	44.3	✓
3050	44.1	44.1	✓
3051	44.4	44.3	✓
3052	44.6	44.6	✓
3053	44.7	44.7	✓
3054	45	45	✓
3055	45.2	45.1	✓
3056	45.3	45.3	✓
3057	45	45	✓
3058	44.8	44.8	✓
3059	44.5	44.6	✓
3060	45.4	45.4	✓
3061	45.6	45.6	✓
3062	45.9	45.9	✓
3063	46.1	46.2	✓
3064	46.4	46.4	✓
3065	46.6	46.6	✓
3066	47	47	✓
3067	47.4	47.3	✓
3068	46.8	46.6	✓
3069	46.6	46.4	✓
3070	46.4	46.3	✓
3071	46.2	46.1	✓
3072	46.1	45.9	✓
3073	45.9	45.7	✓
3074	48.5	48.4	✓
3075	48	48	✓
3076	47.7	47.7	✓
3077	47.3	47.3	✓
3078	47	47	✓

3079	46.6	46.6	✓
3080	46.3	46.3	✓
3081	45.9	45.9	✓
3082	46.4	46.4	✓
3083	46.7	46.7	✓
3084	47	47.1	✓
3085	47.4	47.4	✓
3086	47.7	47.7	✓
3087	48.1	48.1	✓
3088	48.5	48.4	✓
3089	48.9	48.9	✓
3090	45.3	45.3	✓
3091	45.4	45.4	✓
3092	45.5	45.5	✓
3093	45.6	45.6	✓
3094	45.7	45.8	✓
3095	45.8	45.9	✓
3096	45.9	45.9	✓
3100	48.1	48.1	✓
3101	48.4	48.3	✓
3102	48.6	48.6	✓
3103	49	48.9	✓
3104	49.3	49.2	✓
3105	49.6	49.5	✓
3106	49.9	49.8	✓
3107	50.3	50.1	✓
3108	49.8	49.6	✓
3109	49.4	49.3	✓
3110	48.9	48.9	✓
3111	48.6	48.6	✓
3112	48.3	48.3	✓
3113	48.1	48	✓
3114	46.4	46.4	✓
3115	46.6	46.6	✓
3116	46.8	46.8	✓
3117	47	47	✓
3118	47.2	47.2	✓
3119	47.4	47.4	✓
3120	47.6	47.6	✓
3121	48.4	48.3	✓
3122	48.7	48.5	✓
3123	48.9	48.7	✓
3124	49.2	49	✓
3125	49.5	49.3	✓
3126	49.8	49.5	✓
3127	50.2	49.8	✓
3128	50.3	50	✓

3129	51.1	50.7	✓
3130	51.1	50.7	✓
3131	51.1	50.7	✓
3132	51.7	51	✓
3133	51.7	51	✓
3134	51.7	51	✓
3135	51.8	51.1	✓
3136	51.8	51.1	✓
3137	51.8	51.3	✓
3138	53.9	53.1	✓
3139	53.9	52.9	✓
3140	53.9	52.9	✓
3141	53.9	52.8	✓
3142	54	52.7	✓
3143	54.1	52.7	✓
3144	53.5	52.8	✓
3145	54.2	53.3	✓
3146	54.6	53.6	✓
3147	55.1	54	✓
3148	55.7	54.4	✓
3149	56.2	54.9	✓
3150	57.1	55.5	✓
3151	53.9	53.2	✓
3152	56	54.3	✓
3153	56.1	54.2	✓
3154	56.2	54.1	✓
3155	56.1	54.3	✓
3156	56.1	54.2	✓
3157	56.2	54.4	✓
3158	56.3	54.6	✓
3159	56.3	54.7	✓
3160	56.2	54.3	✓
3161	56.2	54.2	✓
3162	61.7	57.7	✓
3163	61.7	57.7	✓
3164	61.7	57.7	✓
3165	61.7	57.7	✓
3166	61.6	57.6	✓
3167	61.6	57.6	✓
3168	61.5	57.6	✓
3169	61.5	57.6	✓
3170	61.4	57.5	✓
3171	61.2	57.5	✓
3172	61.1	57.5	✓
3173	60.9	57.3	✓
3174	51.4	50.8	✓
3175	51.3	50.8	✓

3176	51.3	50.9	✓
3177	51.3	50.8	✓
3178	51.3	50.9	✓
3179	50.7	50.4	✓
3180	50.1	49.9	✓
3181	49.8	49.7	✓
3182	49.6	49.4	✓
3183	49.4	49.3	✓
3184	49.3	49.2	✓
3185	49.2	49	✓
3186	50.9	50.5	✓
3187	51.2	50.7	✓
3188	51.6	50.9	✓
3189	51.9	51.2	✓
3190	52.2	51.4	✓
3191	52.6	51.6	✓
3192	53	51.9	✓
3193	52.3	51.5	✓
3194	52.8	51.8	✓
3195	53.5	52.2	✓
3196	54.1	52.6	✓
3197	54.1	52.6	✓
3198	54.1	52.6	✓
3199	54	52.6	✓
3200	54	52.7	✓
3201	56.1	54	✓
3202	56	54	✓
3203	55.9	53.9	✓
3204	55.4	53.5	✓
3205	54.9	53.1	✓
3206	54.5	52.9	✓
3207	54.1	52.7	✓
3208	53.7	52.4	✓
3209	61.7	57.7	✓
3210	61.6	57.6	✓
3211	61.6	57.4	✓
3212	58.2	55.6	✓
3213	59.6	56.7	✓
3214	60.9	58	✓
3215	63.1	58.8	✓
3216	56.2	54	✓
3217	55.4	53.7	✓
3218	54.7	53.2	✓
3219	54.1	52.8	✓
3220	57.1	54.7	✓
3221	58.2	55.7	✓
3222	59.5	56.9	✓

3223	61.5	58	✓
3224	59.6	56.3	✓
3225	58.4	55.7	✓
3226	57.3	55.1	✓
3227	56.3	54.4	✓
3228	55.5	53.8	✓
3229	62.1	57.5	✓
3230	62.3	57.3	✓
3231	62.2	57.1	✓
3232	62.2	57.5	✓
3233	62.2	57.7	✓
3234	62.1	58.1	✓
3235	62	58.5	✓
3236	61.9	59.7	✓
3237	56.4	54.7	✓
3238	56.3	54.5	✓
3239	56.2	54.4	✓
3240	56	54.3	✓
3241	52.9	52	✓
3242	53.3	52.3	✓
3243	53.8	52.7	✓
3244	54.2	52.9	✓
3245	54.7	53.3	✓
3246	53.2	52.1	✓
3247	52.7	51.8	✓
3248	52.4	51.5	✓
3249	52	51.3	✓

B.2 Building Receptor Traffic Noise Levels & QDC MP4.4 Categories

Table B-2: Façade Corrected Traffic Noise Levels and MP4.4 Categories (for all lots)

Lot No.	Floor	No Barrier	With Noise Barrier	
		L _{10(18h)} dB(A)	L _{10(18h)} dB(A)	QDC MP4.4 Transport Noise Category
397	GF	49.1	49.1	0
397	F 1	51.2	50.3	0
398	GF	49.4	49.4	0
398	F 1	51.5	50.5	0
399	GF	49.7	49.6	0
399	F 1	51.9	50.8	0
1001	GF	44	42.1	0
1001	F 1	43.7	43.6	0
1002	GF	46.4	45.2	0
1002	F 1	47	46.9	0
1003	GF	51.4	51.1	0
1003	F 1	53.9	52.3	0
1004	GF	48.6	46.7	0
1004	F 1	48.6	48.4	0
1005	GF	48.3	47.3	0
1005	F 1	49.3	49	0
1006	GF	52.7	52.5	0
1006	F 1	54.9	54.2	0
1008	GF	46.4	46.4	0
1008	F 1	49	48.2	0
3001	GF	47.2	46.9	0
3001	F 1	48.9	47.9	0
3002	GF	47.1	46.8	0
3002	F 1	48.7	47.8	0
3003	GF	46.9	46.5	0
3003	F 1	48.4	47.6	0
3004	GF	46.5	46.2	0
3004	F 1	48.1	47.3	0
3005	GF	46.3	46	0
3005	F 1	47.9	47.1	0
3006	GF	46.2	45.9	0
3006	F 1	47.8	46.9	0
3007	GF	46	45.7	0
3007	F 1	47.6	46.8	0
3008	GF	45.8	45.5	0
3008	F 1	47.4	46.6	0
3009	GF	45.7	45.4	0
3009	F 1	47.2	46.4	0
3010	GF	45.6	45.3	0
3010	F 1	47	46.2	0
3011	GF	45.1	44.9	0
3011	F 1	46.7	46	0

3012	GF	45	44.8	0
3012	F 1	46.6	45.9	0
3013	GF	44.9	44.7	0
3013	F 1	46.4	45.8	0
3014	GF	44.7	44.6	0
3014	F 1	46.3	45.7	0
3015	GF	44.6	44.4	0
3015	F 1	46.2	45.6	0
3016	GF	44.7	44.6	0
3016	F 1	46.4	45.9	0
3017	GF	44.8	44.7	0
3017	F 1	46.6	46	0
3018	GF	44.9	44.8	0
3018	F 1	46.7	46.1	0
3019	GF	45.1	44.9	0
3019	F 1	46.8	46.2	0
3020	GF	45.3	45.1	0
3020	F 1	47	46.3	0
3021	GF	44	43.9	0
3021	F 1	45.6	45.2	0
3022	GF	44.1	44	0
3022	F 1	45.8	45.3	0
3023	GF	44.2	44.1	0
3023	F 1	45.8	45.4	0
3024	GF	44.2	44.1	0
3024	F 1	45.9	45.5	0
3025	GF	44.3	44.2	0
3025	F 1	46	45.6	0
3026	GF	44.4	44.3	0
3026	F 1	46.1	45.6	0
3027	GF	44.5	44.4	0
3027	F 1	46.2	45.7	0
3028	GF	44.9	44.9	0
3028	F 1	46.8	46.3	0
3029	GF	45.1	45	0
3029	F 1	47	46.4	0
3030	GF	45.4	45.3	0
3030	F 1	47.2	46.6	0
3031	GF	45.7	45.5	0
3031	F 1	47.4	46.8	0
3032	GF	45.8	45.7	0
3032	F 1	47.6	46.9	0
3033	GF	46	45.8	0
3033	F 1	47.8	47.1	0
3034	GF	46.2	46	0
3034	F 1	48	47.3	0
3035	GF	45.8	45.7	0

3035	F 1	47.6	47	0
3036	GF	45.6	45.5	0
3036	F 1	47.4	46.8	0
3037	GF	45.4	45.3	0
3037	F 1	47.2	46.6	0
3038	GF	44.5	44.4	0
3038	F 1	46.3	45.9	0
3039	GF	44.7	44.6	0
3039	F 1	46.5	46	0
3040	GF	44.8	44.8	0
3040	F 1	46.6	46.1	0
3041	GF	45	44.9	0
3041	F 1	46.7	46.2	0
3042	GF	45	45	0
3042	F 1	46.8	46.3	0
3043	GF	45.1	45	0
3043	F 1	46.9	46.4	0
3044	GF	45.3	45.3	0
3044	F 1	47.2	46.7	0
3045	GF	45.6	45.5	0
3045	F 1	47.4	46.9	0
3046	GF	45.7	45.7	0
3046	F 1	47.5	47	0
3047	GF	45.8	45.8	0
3047	F 1	47.7	47.1	0
3048	GF	46	45.9	0
3048	F 1	47.8	47.2	0
3049	GF	46.1	46.1	0
3049	F 1	47.9	47.3	0
3050	GF	45.9	45.9	0
3050	F 1	47.8	47.2	0
3051	GF	46.2	46.1	0
3051	F 1	48	47.4	0
3052	GF	46.4	46.3	0
3052	F 1	48.3	47.6	0
3053	GF	46.6	46.4	0
3053	F 1	48.5	47.8	0
3054	GF	46.9	46.7	0
3054	F 1	48.7	48	0
3055	GF	47	46.9	0
3055	F 1	48.9	48.1	0
3056	GF	47.1	47	0
3056	F 1	49.1	48.3	0
3057	GF	46.9	46.8	0
3057	F 1	48.7	48	0
3058	GF	46.6	46.5	0
3058	F 1	48.5	47.8	0

3059	GF	46.4	46.3	0
3059	F 1	48.2	47.6	0
3060	GF	47.2	47.2	0
3060	F 1	49	48.2	0
3061	GF	47.4	47.4	0
3061	F 1	49.2	48.4	0
3062	GF	47.7	47.7	0
3062	F 1	49.5	48.7	0
3063	GF	48	47.9	0
3063	F 1	49.8	48.9	0
3064	GF	48.2	48.1	0
3064	F 1	50	49.1	0
3065	GF	48.4	48.3	0
3065	F 1	50.3	49.4	0
3066	GF	48.8	48.7	0
3066	F 1	50.6	49.6	0
3067	GF	49.2	49	0
3067	F 1	51	49.9	0
3068	GF	48.6	48.3	0
3068	F 1	50.3	49.3	0
3069	GF	48.4	48.1	0
3069	F 1	50.1	49.1	0
3070	GF	48.2	48	0
3070	F 1	50	49	0
3071	GF	48	47.7	0
3071	F 1	49.8	48.8	0
3072	GF	47.9	47.6	0
3072	F 1	49.6	48.7	0
3073	GF	47.7	47.4	0
3073	F 1	49.4	48.4	0
3074	GF	50.4	50.2	0
3074	F 1	52.5	51.3	0
3075	GF	49.9	49.8	0
3075	F 1	52	50.9	0
3076	GF	49.5	49.5	0
3076	F 1	51.7	50.6	0
3077	GF	49.2	49.1	0
3077	F 1	51.3	50.3	0
3078	GF	48.8	48.8	0
3078	F 1	51	50	0
3079	GF	48.5	48.4	0
3079	F 1	50.6	49.7	0
3080	GF	48.1	48.1	0
3080	F 1	50.3	49.4	0
3081	GF	47.8	47.8	0
3081	F 1	49.9	49.1	0
3082	GF	48.2	48.2	0

3082	F 1	50.4	49.5	0
3083	GF	48.6	48.6	0
3083	F 1	50.8	49.8	0
3084	GF	48.9	48.9	0
3084	F 1	51.1	50.2	0
3085	GF	49.2	49.2	0
3085	F 1	51.5	50.5	0
3086	GF	49.5	49.5	0
3086	F 1	51.9	50.8	0
3087	GF	49.9	49.9	0
3087	F 1	52.2	51	0
3088	GF	50.3	50.2	0
3088	F 1	52.6	51.4	0
3089	GF	50.8	50.7	0
3089	F 1	53.1	51.8	0
3090	GF	47.1	47.1	0
3090	F 1	49.2	48.5	0
3091	GF	47.3	47.3	0
3091	F 1	49.3	48.6	0
3092	GF	47.4	47.4	0
3092	F 1	49.5	48.7	0
3093	GF	47.4	47.5	0
3093	F 1	49.6	48.8	0
3094	GF	47.6	47.6	0
3094	F 1	49.7	48.9	0
3095	GF	47.7	47.7	0
3095	F 1	49.8	49.1	0
3096	GF	47.7	47.7	0
3096	F 1	49.9	49.1	0
3100	GF	50	49.9	0
3100	F 1	52.2	51	0
3101	GF	50.2	50.1	0
3101	F 1	52.4	51.3	0
3102	GF	50.5	50.4	0
3102	F 1	52.8	51.6	0
3103	GF	50.9	50.7	0
3103	F 1	53.1	51.9	0
3104	GF	51.2	51	0
3104	F 1	53.5	52.1	0
3105	GF	51.5	51.3	0
3105	F 1	53.8	52.4	0
3106	GF	51.8	51.5	0
3106	F 1	54.2	52.7	0
3107	GF	52.2	51.6	0
3107	F 1	54.4	52.7	0
3108	GF	51.7	51.2	0
3108	F 1	53.8	52.4	0

3109	GF	51.2	50.9	0
3109	F 1	53.3	52	0
3110	GF	50.8	50.6	0
3110	F 1	52.9	51.7	0
3111	GF	50.4	50.3	0
3111	F 1	52.5	51.3	0
3112	GF	50.2	50	0
3112	F 1	52.2	51.1	0
3113	GF	49.9	49.8	0
3113	F 1	51.8	50.8	0
3114	GF	48.2	48.2	0
3114	F 1	50.4	49.6	0
3115	GF	48.5	48.4	0
3115	F 1	50.6	49.8	0
3116	GF	48.7	48.6	0
3116	F 1	50.7	49.9	0
3117	GF	48.9	48.8	0
3117	F 1	50.9	50	0
3118	GF	49.1	49	0
3118	F 1	51	50.2	0
3119	GF	49.2	49.2	0
3119	F 1	51.2	50.3	0
3120	GF	49.4	49.3	0
3120	F 1	51.4	50.4	0
3121	GF	50.2	49.9	0
3121	F 1	51.9	50.9	0
3122	GF	50.5	50.1	0
3122	F 1	52.2	51.1	0
3123	GF	50.7	50.3	0
3123	F 1	52.5	51.3	0
3124	GF	51	50.6	0
3124	F 1	52.8	51.6	0
3125	GF	51.3	50.8	0
3125	F 1	53.2	51.9	0
3126	GF	51.7	51.1	0
3126	F 1	53.6	52.2	0
3127	GF	52	51.4	0
3127	F 1	54	52.6	0
3128	GF	52.2	51.6	0
3128	F 1	54.4	52.9	0
3129	GF	53	52.3	0
3129	F 1	55.3	53.7	0
3130	GF	53	52.4	0
3130	F 1	55.3	53.7	0
3131	GF	53	52.4	0
3131	F 1	55.3	53.7	0
3132	GF	53.5	52.6	0

3132	F 1	55.5	53.9	0
3133	GF	53.5	52.7	0
3133	F 1	55.5	54	0
3134	GF	53.6	52.7	0
3134	F 1	55.4	54	0
3135	GF	53.7	52.8	0
3135	F 1	55.6	54.1	0
3136	GF	53.6	52.8	0
3136	F 1	55.4	54.2	0
3137	GF	53.6	53	0
3137	F 1	55.4	54.3	0
3138	GF	55.8	54.8	0
3138	F 1	57.8	56.4	0
3139	GF	55.8	54.6	0
3139	F 1	57.8	56.3	0
3140	GF	55.8	54.6	0
3140	F 1	57.9	56.2	0
3141	GF	55.8	54.5	0
3141	F 1	57.9	56.2	0
3142	GF	55.9	54.4	0
3142	F 1	58	56.2	0
3143	GF	56	54.4	0
3143	F 1	58	56	0
3144	GF	55.4	54.5	0
3144	F 1	57.3	56.1	0
3145	GF	56.1	55	0
3145	F 1	58	56.7	0
3146	GF	56.5	55.3	0
3146	F 1	58.4	57.2	0
3147	GF	57	55.7	0
3147	F 1	59	57.7	0
3148	GF	57.6	56.2	0
3148	F 1	59.5	58.3	1
3149	GF	58.1	56.6	0
3149	F 1	60.1	58.9	1
3150	GF	58.9	57.3	0
3150	F 1	60.9	59.9	1
3151	GF	55.8	54.9	0
3151	F 1	57.9	56.5	0
3152	GF	57.9	56	0
3152	F 1	59.9	58.4	1
3153	GF	58	55.9	0
3153	F 1	60	58.3	1
3154	GF	58.1	55.9	0
3154	F 1	60.1	58.3	1
3155	GF	58	56	0
3155	F 1	60	58.4	1

3156	GF	58	55.9	0
3156	F 1	60	58.3	1
3157	GF	58.1	56.2	0
3157	F 1	60.1	58.6	1
3158	GF	58.2	56.3	0
3158	F 1	60.2	58.7	1
3159	GF	58.2	56.4	0
3159	F 1	60.2	58.8	1
3160	GF	58.1	56.1	0
3160	F 1	60.2	58.6	1
3161	GF	58.1	56	0
3161	F 1	60.1	58.5	1
3162	GF	63.6	59.8	1
3162	F 1	65.6	65.7	2
3163	GF	63.6	59.9	1
3163	F 1	65.7	65.7	2
3164	GF	63.6	59.9	1
3164	F 1	65.6	65.6	2
3165	GF	63.6	59.9	1
3165	F 1	65.6	65.6	2
3166	GF	63.5	59.8	1
3166	F 1	65.5	65.5	2
3167	GF	63.5	59.8	1
3167	F 1	65.5	65.5	2
3168	GF	63.4	59.7	1
3168	F 1	65.4	65.4	2
3169	GF	63.4	59.7	1
3169	F 1	65.4	65.4	2
3170	GF	63.3	59.6	1
3170	F 1	65.2	65.2	2
3171	GF	63.1	59.6	1
3171	F 1	65.1	65.1	2
3172	GF	63	59.7	1
3172	F 1	64.9	64.9	2
3173	GF	62.7	59.6	1
3173	F 1	64.7	64.7	2
3174	GF	53.3	52.4	0
3174	F 1	55.5	53.7	0
3175	GF	53.2	52.4	0
3175	F 1	55.4	53.6	0
3176	GF	53.3	52.4	0
3176	F 1	55.4	53.6	0
3177	GF	53.2	52.3	0
3177	F 1	55.4	53.6	0
3178	GF	53.3	52.4	0
3178	F 1	55.4	53.6	0
3179	GF	52.6	52	0

3179	F 1	54.9	53.2	0
3180	GF	52	51.5	0
3180	F 1	54.2	52.6	0
3181	GF	51.7	51.3	0
3181	F 1	53.9	52.4	0
3182	GF	51.5	51.1	0
3182	F 1	53.6	52.2	0
3183	GF	51.3	50.9	0
3183	F 1	53.5	52	0
3184	GF	51.2	50.8	0
3184	F 1	53.3	51.9	0
3185	GF	51	50.6	0
3185	F 1	53	51.7	0
3186	GF	52.8	52.1	0
3186	F 1	55	53.3	0
3187	GF	53.2	52.3	0
3187	F 1	55.4	53.6	0
3188	GF	53.5	52.5	0
3188	F 1	55.7	53.9	0
3189	GF	53.8	52.8	0
3189	F 1	56	54.1	0
3190	GF	54.2	53	0
3190	F 1	56.3	54.4	0
3191	GF	54.5	53.2	0
3191	F 1	56.6	54.7	0
3192	GF	54.9	53.5	0
3192	F 1	57	55	0
3193	GF	54.2	53.1	0
3193	F 1	56.4	54.5	0
3194	GF	54.7	53.3	0
3194	F 1	56.9	54.8	0
3195	GF	55.4	53.8	0
3195	F 1	57.6	55.4	0
3196	GF	56	54.2	0
3196	F 1	58	55.9	0
3197	GF	56	54.3	0
3197	F 1	58	56	0
3198	GF	56	54.3	0
3198	F 1	58	56	0
3199	GF	55.9	54.3	0
3199	F 1	58	56	0
3200	GF	55.9	54.3	0
3200	F 1	58	56	0
3201	GF	58	55.8	0
3201	F 1	60.2	58.3	1
3202	GF	57.9	55.7	0
3202	F 1	60.1	58.2	1

3203	GF	57.9	55.6	0
3203	F 1	60	58.1	1
3204	GF	57.3	55.2	0
3204	F 1	59.5	57.4	0
3205	GF	56.8	54.8	0
3205	F 1	59	56.8	0
3206	GF	56.4	54.5	0
3206	F 1	58.6	56.4	0
3207	GF	56	54.2	0
3207	F 1	58.2	56	0
3208	GF	55.6	53.9	0
3208	F 1	57.7	55.5	0
3209	GF	63.6	59.9	1
3209	F 1	65.6	65.6	2
3210	GF	63.5	59.7	1
3210	F 1	65.6	65.6	2
3211	GF	63.5	59.6	1
3211	F 1	65.6	65.6	2
3212	GF	60.2	57.4	0
3212	F 1	62.5	61	1
3213	GF	61.5	58.7	1
3213	F 1	63.7	62.7	1
3214	GF	62.9	60	1
3214	F 1	65	64.6	2
3215	GF	65	61.1	1
3215	F 1	66.9	66.9	2
3216	GF	58.1	55.7	0
3216	F 1	60.3	58.3	1
3217	GF	57.3	55.2	0
3217	F 1	59.6	57.5	0
3218	GF	56.6	54.7	0
3218	F 1	59	56.9	0
3219	GF	56	54.4	0
3219	F 1	58.3	56.4	0
3220	GF	59	56.6	0
3220	F 1	61.3	59.5	1
3221	GF	60.2	57.6	0
3221	F 1	62.4	61.1	1
3222	GF	61.4	58.9	1
3222	F 1	63.6	62.9	1
3223	GF	63.4	60.2	1
3223	F 1	65.4	65.3	2
3224	GF	61.5	58.3	1
3224	F 1	63.7	62.7	1
3225	GF	60.4	57.5	0
3225	F 1	62.6	61.3	1
3226	GF	59.3	56.7	0

3226	F 1	61.5	59.9	1
3227	GF	58.2	55.9	0
3227	F 1	60.5	58.7	1
3228	GF	57.4	55.3	0
3228	F 1	59.7	57.7	1
3229	GF	64	59.8	1
3229	F 1	65.9	65.9	2
3230	GF	64.1	59.6	1
3230	F 1	66	66	2
3231	GF	64.1	59.3	1
3231	F 1	66	66	2
3232	GF	64.1	59.3	1
3232	F 1	66	66	2
3233	GF	64.1	59.2	1
3233	F 1	66	66	2
3234	GF	64	59.1	1
3234	F 1	65.9	65.9	2
3235	GF	63.9	59.1	1
3235	F 1	65.9	65.9	2
3236	GF	63.8	59.2	1
3236	F 1	65.8	65.8	2
3237	GF	58.3	56.2	0
3237	F 1	60.5	58.6	1
3238	GF	58.1	56.1	0
3238	F 1	60.5	58.5	1
3239	GF	58	55.9	0
3239	F 1	60.4	58.4	1
3240	GF	57.9	55.8	0
3240	F 1	60.4	58.4	1
3241	GF	54.8	53.6	0
3241	F 1	57.2	55.3	0
3242	GF	55.3	53.9	0
3242	F 1	57.6	55.7	0
3243	GF	55.7	54.2	0
3243	F 1	58.1	56.1	0
3244	GF	56.2	54.5	0
3244	F 1	58.5	56.5	0
3245	GF	56.6	54.9	0
3245	F 1	59	56.9	0
3246	GF	55.1	53.7	0
3246	F 1	57.4	55.4	0
3247	GF	54.7	53.4	0
3247	F 1	57	55	0
3248	GF	54.2	53.1	0
3248	F 1	56.6	54.7	0
3249	GF	53.9	52.9	0
3249	F 1	56.2	54.3	0

3250	GF	53.5	52.6	0
3250	F 1	55.8	54	0