February 20, 2026

Homestead Land Holdings Limited
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Attention: Jack Mangan
Manager, Acquisitions & Corporate Development

Re: Noise Impact Study of the Proposed Residential Development
1316 Carling Avenue, Ottawa, ON
Pinchin File: 361094

Pinchin Ltd. (Pinchin) was retained by Homestead Land Holdings Limited (Client) to prepare a noise impact study report for its proposed residential development (Development) at 1316 Carling Avenue, Ottawa, ON. This report has been prepared to evaluate the noise impacts from external sources and road traffic on the Development and the Development on nearby noise sensitive receptors. The purpose of the study is to support re-zoning and/or site plan control applications for the proposed Development.

The proposed Development will include the construction of one residential building. The building will include three levels of underground parking, twenty levels of residential units, and one level of penthouse for mechanical equipment. Outdoor amenity spaces are located on the ground level and on the 10th floor.

Figure 1, Appendix B shows the locations of the proposed Development and nearby roads. Additional drawings showing the site plan, floor and elevation plans are included in Appendix C.

1.0 NOISE CRITERIA

In this study, noise criteria outlined in the City of Ottawa's Environmental Noise Control Guidelines (ENCG) [1] and the Ontario Ministry of Environment, Conservation and Parks (MECP) Publication NPC-300 [2] were adopted. The applicable noise criteria for this proposed redevelopment are described as follows:

1.1 Outdoor Noise Criteria

The daytime noise criterion for outdoor living areas (OLAs) is 55 dBA for road and rail noise sources. Where it is not technically, economically, or administratively feasible to meet the 55 dBA limit, up to 60 dBA is permissible with warning clauses. Where the daytime sound level is greater than 60 dBA, control measures are required to reduce the sound level to 60 dBA or less.

The proposed Development has made provisions for a variety of protected indoor amenities such as screening room, party and exercise rooms, etc. that are accessible to all future occupants/owners in the

proposed Development. In addition, there are balconies and terraces for the respective suites, and it should be noted that typically, balconies in residential condominium buildings are not considered OLAs unless both of the following conditions exist: they are at least 4 m in depth and there is no provision for protected amenities within the development. On the 5th floor, there are private balconies that exceed 4 m in depth.

1.2 External Building Façade Criteria

Where the sound levels at the exterior of the building facades exceed 55 dBA at living/dining room windows during daytime hours and 50 dBA at bedroom windows during nighttime periods, the unit must be provided with forced air heating with provision for central air conditioning. Where the sound levels exceed by more than 10 dB (i.e. 65 dBA at living/dining room windows and 60 dBA at bedroom windows), central air conditioning must be incorporated into the building design prior to occupancy. Upgraded window glazing construction may be required and warning clauses are applicable as well.

1.3 Noise Criteria for Stationary Sources

The applicable MECP noise criteria at a point of reception (POR) are dictated by MECP Publication NPC-300 [2] for Class 1 Areas. These guidelines state that the one-hour sound exposures (Leq, 1 hour) from stationary noise sources in Class 1 areas shall not exceed:

- the higher of 50 dBA or background noise between 0700h and 1900h;
- the higher of 50 dBA or background noise between 1900h and 2300h; and
- the higher of 45 dBA or background noise between 2300h and 0700h (excluding outdoor PORs).

The sound level limits for the testing of an emergency generator are 5 dBA higher the above limits.

For the purpose of this study, the ambient background sound levels at some internal receptors (INT_R01 to INT_R05) were determined using CadnaA-TNM. The calculations were based on the existing road traffic on Highway 417, Carling Avenue and Merivale Road. Details of background noise calculations and adjustment are included in Appendix D.

2.0 POINT OF RECEPTION DESCRIPTION

To evaluate the noise impact from road and external stationary sources on the Development, fourteen onsite noise sensitive receptors (INT_R01 to INT_R14) were selected from the Development's most affected locations. Receptors INT_R01 and INT_R02 represent the façade windows at the northwest corner of the building. Receptors INT_R03 to INT_R05 represent the façade windows at the northeast corner of the building. Receptor INT_R06 represents the façade windows on the east side of the building.

Receptor INT_R07 represents the façade windows at the southeast corner of the building. Receptor INT_R08 represents the façade windows on the west side of the building. Receptor INT_R09 represents the outdoor living area on the 10th floor. Receptors INT_R10 and INT_R11 represent the private balconies on the 5th floor. Receptors INT_R12 to INT_R14 represent the outdoor living area on the ground.

To evaluate the noise impact from the Development on surrounding noise sensitive land uses, four (4) receptors (ET_R1 to ET_R4) were selected. Receptor ET_R1 represents the south façade windows on the existing apartment building at 1316 Carling Avenue. Receptor ET_R3 represents a two-storey home located to the southwest of the Development. Receptor ET_R2 is an associated outdoor POR. Receptor ET_R4 represents a two-storey home located to the southeast of the Development.

The following table lists the selected receptor details:

Point of Reception ID	Point of Reception Location	Point of Reception Height, m
ET_R1	External - Apartment at 1316	55
ET_R2	External POR/OLA	1.5
ET_R3	External 2-Storey Home	4.5
ET_R4	External 2-Storey Home	4.5
INT_R01	West Facade - 20 m	20
INT_R02	North Facade - 56.5 m	56.5
INT_R03	North Facade - 56.5 m	56.5
INT_R04	North Facade - 20 m	20
INT_R05	North Facade - 4.5 m	4.5
INT_R06	East Facade Windows - 20 m	20
INT_R07	East Facade Windows - 10.5 m	10.5
INT_R08	West Facade - 56.5 m	56.5
INT_R09	OLA - 10th Floor	28.6

Point of Reception ID	Point of Reception Location	Point of Reception Height, m
INT_R10	OLA - 5th Floor	14.1
INT_R11	OLA - 5th Floor	14.1
INT_R12	OLA - Ground	1.5
INT_R13	OLA - Ground	1.5
INT_R14	OLA - Ground	1.5

Locations of the selected receptors are shown in Figure 2, Appendix B.

3.0 NOISE IMPACT ASSESSMENT

3.1 Noise Impact from Transportation Sources on the Development

A review of aerial photos showed that there are three roadways – Highway 417, Carling Avenue and Merivale Road. Highway 417 is located to the northwest of the Development, approximately 230 m away. Carling Avenue is a 6-lane divided arterial road located to the north of the Development. Merivale Road is a 4-lane undivided arterial road located to the southeast of the Development. The review of aerial photo showed that there are no CN/CP railway lines within 500 m of the Development.

The AADT volumes for the identified roads were calculated based on Table 1, Appendix B of the ENCG. Details of traffic data and vehicle breakdowns are provided in Table D1, Appendix D.

The sound levels at the proposed Development due to road traffic noise were calculated using the CadnaA implementation of the Traffic Noise Model (TNM). The TNM (Current Version 3.2) was published by the United States Federal Highway Administration in 2023. The combination of CadnaA-TNM enables the modelling of complex terrain and barrier configurations and the utilization of advanced traffic noise modelling algorithms. Another consideration for the selection of CadnaA-TNM in this study was that it enables the calculations of multiple roads and receptors at the same time. The TNM model is recognized by both the Ontario Ministry of Transportation (MTO) and MECP in their guides [3, 4].

To validate the accuracy of CadnaA-TNM calculations, Appendix D includes a sample comparison of the calculation results from CadnaA-TNM and STAMSON. The comparisons show that the difference in the calculated sound levels is 0.24 dBA.

It should be noted that, per NPC-300, in calculating the traffic noise impact, reflections from building facades were excluded in the calculations. This applies to the calculations of ambient background traffic noise at selected receptors as well.

The predicted road traffic noise impacts on the Development are provided in Table 1, Appendix A. Table 2, Appendix A, summarizes the predicted sound levels at selected units and outdoor living areas, as well as the applicable noise control requirements. The elevation plans show that there are rooftop barriers around the rooftop amenity spaces on the 5th and 10th floors. The heights of the barriers range from 1.2 m to 2.3 m. In addition, there is another barrier, approximately 4.1 m high, around the cooling tower on the penthouse floor. The barriers were included in the calculations.

Details of CadnaA-TNM calculation results are provided in Appendices A and D.

The predicted traffic noise impacts range from 50 dBA to 65 dBA at the selected onsite receptors. The predicted levels indicate that the units should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion. Warning clause Types A and C are required to be included in agreements of offers of purchase and sale, lease/rental agreements and condominium declarations. Details of the warning clauses are included in Appendix E.

It was confirmed by the Client that all units will be equipped with central air conditioning and HRV systems. As such, the construction will exceed the City's and MECP ventilation requirements.

Since the predicted traffic noise impacts do not exceed 65 dBA and 60 dBA during daytime and nighttime hours, respectively, no special construction requirements on building components (i.e. windows, doors and walls) are warranted. Constructions meeting the Ontario Building Code (OBC) would be sufficient to provide the required sound attenuation.

The proposed Development is located approximately 7 km to the north of the Ottawa International Airport. Annex 10 of the City's Official Plan shows that the Airport Vicinity Development Zone (AVDZ) extends up to the interchange of Highway 417 and Maitland Avenue to the northwest of the Airport. The distance from the proposed Development to the nearest AVDZ is approximately 2 km. Therefore, the aircraft noise impact was deemed acoustically insignificant, and the aircraft warning clause is not required.

3.2 Noise Impact from External Stationary Sources on the Development

A review of aerial photos of the area shows that there are eight commercial/residential buildings that are located within 100 m of the proposed Development. It should be noted that the high-rise apartment building at 1316 Carling Avenue is owned and operated by the Client.

To collect the equipment sound information, a site visit was conducted on Thursday September 18, 2025. At the Client's building (1316 Carling Avenue), significant sources were identified and, where possible, acoustic measurements were conducted to quantify the radiated sound select equipment.

The Client tried to request the permissions for access to the other nearby building owners/operators. However, permission was not granted. As such, Pinchin estimated the rooftop equipment sound information based on the review of aerial photos and observations during the site visit.

Based on the information collected during the site visit, the significant noise sources associated with the external buildings are provided in Table 3, Appendix A, and include the following:

External Sources:

- One (1) A/C unit (source AC1);
- One (1) make-up air unit (source MAU);
- One (1) exhaust (source EX1);
- One (1) building air intake (source IN1);
- Two (2) generators (sources GEN1 and GEN2); and
- Twenty-two (22) HVAC units (sources HVAC1 to HVAC22).

Equipment sound data were based on measurements collected during the site visit and Pinchin's past measurements on similar sized equipment. Table 3, Appendix A, lists the equipment sound information.

In modelling the noise impact from the rooftop equipment, all HVAC units were assumed operating for 60 minutes, 45 minutes and 30 minutes during daytime, evening and nighttime hours, respectively. The selected duty cycles are in line with operations of typical comfort heating equipment used at commercial and residential buildings.

The predicted noise impacts from stationary sources and emergency generator testing are summarized in Tables 4 and 5, Appendix A, respectively. Noise impact contour maps are presented in Figures 3 and 4,

As shown in Tables 4 and 5, Appendix A, the predicted stationary source noise impacts meet the MECP applicable sound level limits at selected onsite receptors. As such, noise control measures are not required.

3.3 Noise Impact from the Development on Nearby Sensitive Receptors

Based on the information provided by the Client, the significant noise sources associated with the proposed Development are included in Table 3, Appendix A, and may include the following:

- Two (2) garage exhaust fans (sources INT_EF1, 2);

- One (1) emergency generator (source INT_GEN);
- One (1) make-up air unit (source INT_MUA); and
- One (1) cooling tower (sources INT_CT_Air, INT_CT_Back, INT_CT_Motor, INT_CT_End, and INT_CT_Top).

Pinchin was advised by the Client that the proposed equipment would be materially similar to the equipment used at the Client's other development projects in Ottawa and Kingston, Ontario. Consequently, manufacturers' sound data for the generator, make-up unit, and the cooling tower at the other developments were provided by the Client and are included in Appendix F. The sound power level for the garage fans was calculated based on the published engineering method.

CadnaA was used to predict the noise impact from external sources on the Development. The modeling protocol was similar to the modelling of the external sources.

In modelling the noise impact from the proposed equipment, the following assumptions were made. The emergency generator was assumed testing for 30 minutes during daytime hours. The Client indicates that the cooling tower will be equipped with variable speed motor(s). Consequently, the cooling tower was modelled operating for 60 minutes during daytime hours, 45 minutes during evening hours, and 30 minutes during nighttime hours. The selected duty cycles are in line with operations of typical comfort heating equipment used at residential facilities. Both the make-up air unit and the garage fans were modelled operating continuously during daytime, evening, and nighttime hours.

The following table summarizes the modelled equipment operating schedule:

Equipment	Daytime Operation	Evening Operation	Nighttime Operation
Emergency Generator Testing (INT_GEN)	30 min/hr	No Operation	No Operation
Cooling Tower (INT_CT)	60 min/hr	45 min/hr	30 min/hr
Garage Exhaust Fans (INT_EF1, 2)	60 min/hr	60 min/hr	60 min/hr
Make-up Air Unit (INT_MUA)	60 min/hr	60 min/hr	60 min/hr

Tables 6 and 7 summarize the compliance status of the Development at each receptor location. Noise impact contour maps are presented in Figures 5 and 6, Appendix B.

As shown in Tables 6 and 7, Appendix A, the predicted Development source noise impacts meet the MECP applicable sound level limits at selected onsite receptors. As such, noise control measures are not required.

4.0 CONCLUSIONS

A detailed noise impact assessment of the proposed Development was completed by modelling the noise impacts from road traffic and external stationary sources on the Development. The assessment shows that the traffic noise impact on the Development meets the NPC-300 noise criteria, with the included control measure (rooftop parapet/glass panels) and proposed installation of central air conditioning systems. In addition, the following warning clause Types A and C are required. Appendix E also includes the warning clause from the City of Ottawa's Guide.

Warning Clause Type A – From MECP NPC-300

"Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

Warning Clause Type C – From MECP NPC-300

"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."

The predicted noise impacts from external stationary sources and emergency generators meet the NPC-300 noise criteria. Noise control measures are not required.

The predicted noise impacts from the Development on external sensitive receptors meet the NPC-300 noise criteria. Noise control measures are not required.

5.0 TERMS AND LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

6.0 CLOSURE

Should you have any questions or concerns regarding the contents of this study, please contact the undersigned.

Sincerely,

Pinchin Ltd.

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7.0 REFERENCES

1. City of Ottawa, Environmental Noise Control Guidelines: Introduction and Glossary, January 2016.
2. Ministry of the Environment Publication NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", August 2013.
3. Ministry of Transportation, Environmental Guide for Noise, 2022.
4. Ministry of the Environment, Conservation and Parks, Methods to Determine Sound Levels Due to Road and Rail Traffic (Draft), February 2020.

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Template: Master Noise Impact Study Letter, ERC, March 5, 2020

APPENDIX A

Tables

(9 Pages)

Table 1 - Road Traffic Noise Prediction Results

Point of Reception ID	Point of Reception Location	Point of Reception Height, m	Daytime Sound Level, dBA [1]	Nighttime Sound Level, dBA [2]
INT_R01	West Facade - 20 m	20	63	55
INT_R02	North Facade - 56.5 m	56.5	64	56
INT_R03	North Facade - 56.5 m	56.5	65	57
INT_R04	North Facade - 20 m	20	63	56
INT_R05	North Facade - 4.5 m	4.5	57	50
INT_R06	East Facade Windows - 20 m	20	63	56
INT_R07	East Facade Windows - 10.5 m	10.5	59	51
INT_R08	West Facade - 56.5 m	56.5	63	55
INT_R09	OLA - 10th Floor	28.6	51	-
INT_R10	OLA - 5th Floor	14.1	49	-
INT_R11	OLA - 5th Floor	14.1	51	-
INT_R12	OLA - Ground	1.5	54	-
INT_R13	OLA - Ground	1.5	57	-
INT_R14	OLA - Ground	1.5	53	-

Notes

1. The daytime period is from 7 am to 11 pm.

2. The nighttime period is from 11 pm to 7 am.

Table 2: Summary of Noise Control Measures

Point of Reception ID [1]	Façade/Location Description [2]	Predicted Unmitigated Sound Level at Most Affected Facades (Leq, dBA) [3]		Approximate Distance to Road, m [4]	Exterior Window STC Requirements [5]	Ventilation Requirements [6]	Wall Requirements [7]	Approximate Barrier Height [8]	Warning Clauses [9]
		Daytime (16 hr)	Nighttime (8 hr)						
INT_R01	West Facade - 20 m	63	55	250.0	OBC	Provision	OBC	n/a	Type C
INT_R02	North Facade - 56.5 m	64	56	250.0	OBC	Provision	OBC	n/a	Type C
INT_R03	North Facade - 56.5 m	65	57	250.0	OBC	Provision	OBC	n/a	Type C
INT_R04	North Facade - 20 m	63	56	250.0	OBC	Provision	OBC	n/a	Type C
INT_R05	North Facade - 4.5 m	57	50	250.0	OBC	n/a	OBC	n/a	n/a
INT_R06	East Facade Windows - 20 m	63	56	280.0	OBC	Provision	OBC	n/a	Type C
INT_R07	East Facade Windows - 10.5 m	59	51	300.0	OBC	n/a	OBC	n/a	n/a
INT_R08	West Facade - 56.5 m	63	55	280.0	OBC	Provision	OBC	n/a	Type C
INT_R09	OLA - 10th Floor	51	-	300.0	n/a	n/a	n/a	1.2	n/a
INT_R10	OLA - 5th Floor	49	-	300.0	n/a	n/a	n/a	1.2 - 2.3	n/a
INT_R11	OLA - 5th Floor	51	-	300.0	n/a	n/a	n/a	1.2 - 2.3	n/a
INT_R12	OLA - Ground	54	-	270.0	n/a	n/a	n/a	n/a	n/a
INT_R13	OLA - Ground	57	-	290.0	n/a	n/a	n/a	n/a	Type A
INT_R14	OLA - Ground	53	-	320.0	n/a	n/a	n/a	n/a	n/a

Notes:

[1] Where applicable, the PORs are referred to the room dimensions. See the floor plans in Appendix C.
[2] The north facade faces Carling Avenue.
[3] CadnaA-TNM predicted sound levels at the planes of windows or outdoor living areas in dBA.
[4] Approximate distances to Highway 417.
[5] OBC - the window should be designed to meet the Ontario Building Code requirements.
[6] Provision - the dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion.
[7] OBC - the wall should be designed and constructed to meet the Ontario Building Code requirements.
[8] Acoustic barrier along the perimeter of the 5th and 10th floor terrace spaces.
[9] For details on warning clauses, see Appendix E.

Table 3: External and Internal Noise Source Summary Table

Source ID [1]	Source Description	Lw(A) [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	Source of Data [6]
AC1	AC Unit	78	O	S	U	Mea
CT1	Cooling Tower	88	O	S	U	File
EX1	Exhaust	86	O	S	U	Mea
GEN1	Generator	96	O	S	E, S	Mea
GEN2	Generator	96	O	S	E, S	Same as GEN1
HVAC1	HVAC Unit	79	O	S	U	File
HVAC10	HVAC Unit	79	O	S	U	File
HVAC11	HVAC Unit	79	O	S	U	File
HVAC12	HVAC Unit	79	O	S	U	File
HVAC13	HVAC Unit	79	O	S	U	File
HVAC14	HVAC Unit	79	O	S	U	File
HVAC15	HVAC Unit	84	O	S	U	File
HVAC16	HVAC Unit	79	O	S	U	File
HVAC17	HVAC Unit	84	O	S	U	File
HVAC18	HVAC Unit	79	O	S	U	File
HVAC19	HVAC Unit	84	O	S	U	File
HVAC2	HVAC Unit	84	O	S	U	File
HVAC20	HVAC Unit	79	O	S	U	File
HVAC21	HVAC Unit	79	O	S	U	File
HVAC22	HVAC Unit	79	O	S	U	File
HVAC3	HVAC Unit	84	O	S	U	File
HVAC4	HVAC Unit	79	O	S	U	File
HVAC5	HVAC Unit	79	O	S	U	File
HVAC6	HVAC Unit	79	O	S	U	File
HVAC7	HVAC Unit	79	O	S	U	File
HVAC8	HVAC Unit	79	O	S	U	File
HVAC9	HVAC Unit	79	O	S	U	File

Table 3: External and Internal Noise Source Summary Table

Source ID [1]	Source Description	Lw(A) [2]	Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	Source of Data [6]
IN1	Building Air Intake	84	O	S	U	Mea
INT_CT_Air	Cooling Tower - Air Inlet	89	O	S	U	File
INT_CT_Back	Cooling Tower - Back	83	O	S	U	File
INT_CT_End	Cooling Tower - End	81	O	S	U	File
INT_CT_Motor	Cooling Tower - Connection	83	O	S	U	File
INT_CT_Top	Cooling Tower - Top	89	O	S	U	File
INT_EF1	Garage Exhaust	77	O	S	U	Cal
INT_EF2	Garage Exhaust	77	O	S	U	Cal
INT_GEN	Back-up Generator - Ground	96	O	S	U	File
INT_MAU	Make-up Air Unit	88	O	S	U	File
MAU	Make-up Air Unit	88	O	S	U	File

Notes:

[1] Wherever possible, the Source ID is identical with that used in the ESDM report.

[2] Sound Power Levels of continuous noise sources, in dBA, do not include sound characteristic adjustments per NPC-104.
Sound Power Levels of impulsive noise sources, in dBAI, are A-weighted incorporating an impulsive time weighting.

[3] Source Location:
O - located/installed outside the building, including on the roof
I - located/installed inside the building

[4] Sound Characteristic
S = Steady
Q = Quasi-Steady Impulsive

[5] Noise Control Measures
S = Silencer/Muffler/Louver
A = Acoustic lining, plenum
B = Barrier, berm, screening

[6] Mea - Measured
Cal - Engineering calculations File - Past measurements on similar equipment

Table 4: Acoustic Assessment Summary Table - From External Stationary Sources on the Development

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
INT_R01	West Facade - 20 m	Daytime	45	No	58	Yes
		Evening	43	No	57	Yes
		Nighttime	42	No	47	Yes
INT_R02	North Facade - 56.5 m	Daytime	50	No	59	Yes
		Evening	48	No	58	Yes
		Nighttime	47	No	49	Yes
INT_R03	North Facade - 56.5 m	Daytime	50	No	60	Yes
		Evening	49	No	59	Yes
		Nighttime	48	No	49	Yes
INT_R04	North Facade - 20 m	Daytime	48	No	58	Yes
		Evening	47	No	57	Yes
		Nighttime	45	No	48	Yes
INT_R05	North Facade - 4.5 m	Daytime	48	No	51	Yes
		Evening	47	No	50	Yes
		Nighttime	45	No	45	Yes
INT_R06	East Facade Windows - 20 m	Daytime	47	No	50	Yes
		Evening	46	No	50	Yes
		Nighttime	44	No	45	Yes
INT_R07	East Facade Windows - 10.5 m	Daytime	45	No	50	Yes
		Evening	44	No	50	Yes
		Nighttime	43	No	45	Yes
INT_R08	West Facade - 56.5 m	Daytime	45	No	50	Yes
		Evening	44	No	50	Yes
		Nighttime	42	No	45	Yes
INT_R09	OLA - 10th Floor	Daytime	35	No	50	Yes
		Evening	34	No	50	Yes
INT_R10	OLA - 5th Floor	Daytime	36	No	50	Yes
		Evening	34	No	50	Yes

INT_R11	OLA - 5th Floor	Daytime	37	No	50	Yes
		Evening	36	No	50	Yes
INT_R12	OLA - Ground	Daytime	41	No	50	Yes
		Evening	40	No	50	Yes
INT_R13	OLA - Ground	Daytime	38	No	50	Yes
		Evening	37	No	50	Yes
INT_R14	OLA - Ground	Daytime	40	No	50	Yes
		Evening	39	No	50	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] Background noise calculations (@INT_R01 to INT_R05) or NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

Table 5: Acoustic Assessment Summary Table - From External Emergency Generators on the Development

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
INT_R01	West Facade - 20 m	Daytime	35	No	63	Yes
INT_R02	North Facade - 56.5 m	Daytime	47	No	64	Yes
INT_R03	North Facade - 56.5 m	Daytime	48	No	65	Yes
INT_R04	North Facade - 20 m	Daytime	54	No	63	Yes
INT_R05	North Facade - 4.5 m	Daytime	56	No	56	Yes
INT_R06	East Facade Windows - 20 m	Daytime	51	No	55	Yes
INT_R07	East Facade Windows - 10.5 m	Daytime	47	No	55	Yes
INT_R08	West Facade - 56.5 m	Daytime	26	No	55	Yes
INT_R09	OLA - 10th Floor	Daytime	27	No	55	Yes
INT_R10	OLA - 5th Floor	Daytime	26	No	55	Yes
INT_R11	OLA - 5th Floor	Daytime	29	No	55	Yes
INT_R12	OLA - Ground	Daytime	30	No	55	Yes
INT_R13	OLA - Ground	Daytime	30	No	55	Yes
INT_R14	OLA - Ground	Daytime	29	No	55	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] Background noise calculations (@INT_R01 to INT_R05) or NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

Table 6: Acoustic Assessment Summary Table - From the Development Stationary Sources on External Sensitive Receptors

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
ET_R1	External - Apartment at 1316	Daytime	47	No	50	Yes
		Evening	46	No	50	Yes
		Nighttime	45	No	45	Yes
ET_R2	External POR/OLA	Daytime	35	No	50	Yes
		Evening	35	No	50	Yes
		Nighttime	34	No	45	Yes
ET_R3	External 2-Storey Home	Daytime	43	No	50	Yes
		Evening	43	No	50	Yes
		Nighttime	43	No	45	Yes
ET_R4	External 2-Storey Home	Daytime	32	No	50	Yes
		Evening	31	No	50	Yes
		Nighttime	31	No	45	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

Table 7: Acoustic Assessment Summary Table - From the Development Generator Testing on External Sensitive Receptors

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Verified by Acoustic Audit (Yes/No)	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
ET_R1	External - Apartment at 1316	Daytime	32	No	55	Yes
ET_R2	External POR/OLA	Daytime	28	No	55	Yes
ET_R3	External 2-Storey Home	Daytime	29	No	55	Yes
ET_R4	External 2-Storey Home	Daytime	31	No	55	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas, plus 5 dB for emergency equipment testing.

APPENDIX B

Figures

(6 Pages)

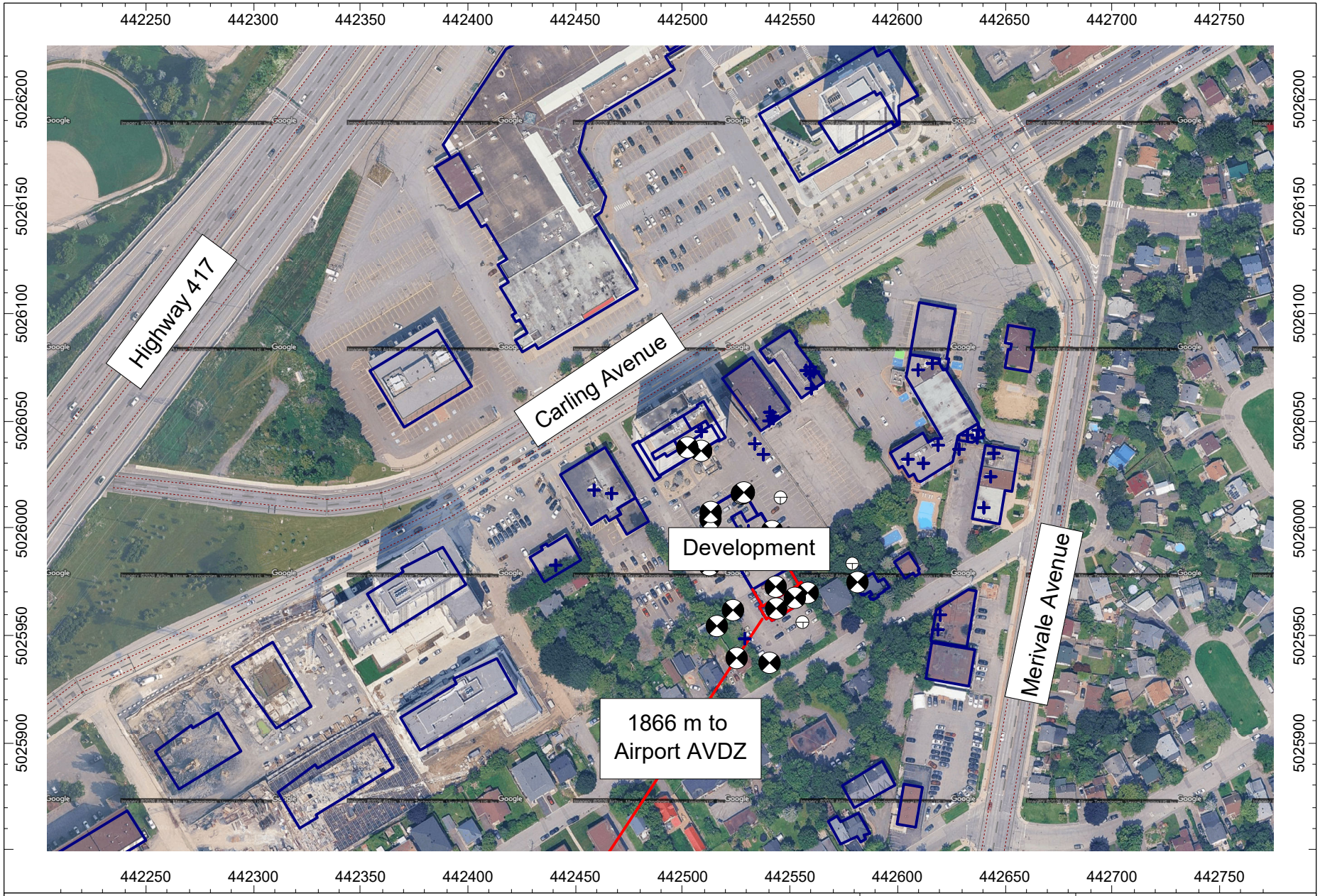

Figure 1 - Scaled Area Plan, Showing the Development and Nearby Roads

N

Drawn by: WNL	
Scale: 1:2,500	
Date: February 20, 2026	

Homestead Land Holdings Limited, 1316 Carling Avenue, Ottawa, Ontario

Pinchin Project: 361094

PINCHIN

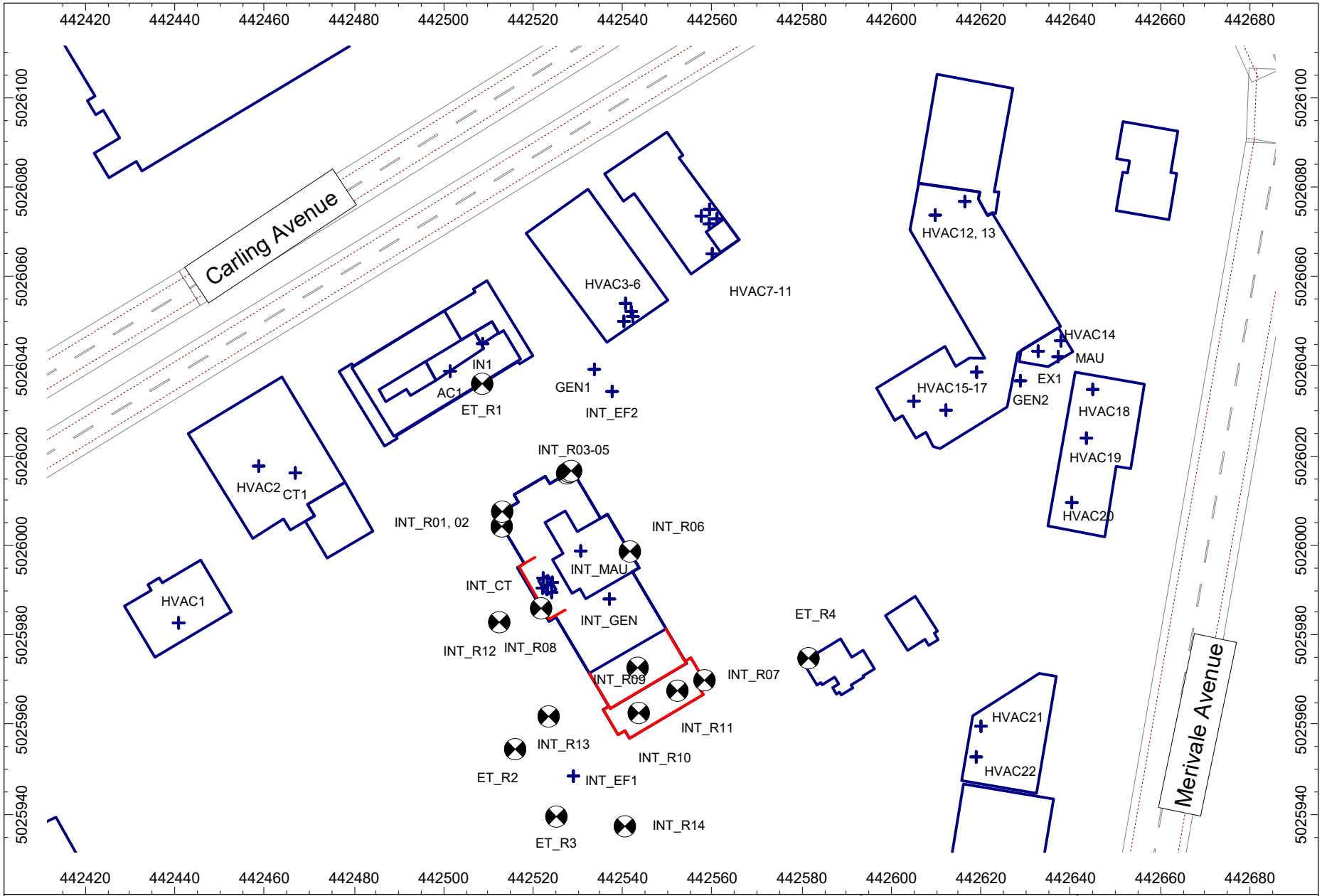

Figure 2 - Site Plan, Showing the Significant Sources and Receptors

N

Drawn by: WNL

Scale: 1:1,200

Date: February 20, 2026

Homestead Land Holdings Limited, 1316 Carling Avenue, Ottawa, Ontario

Pinchin Project: 361094

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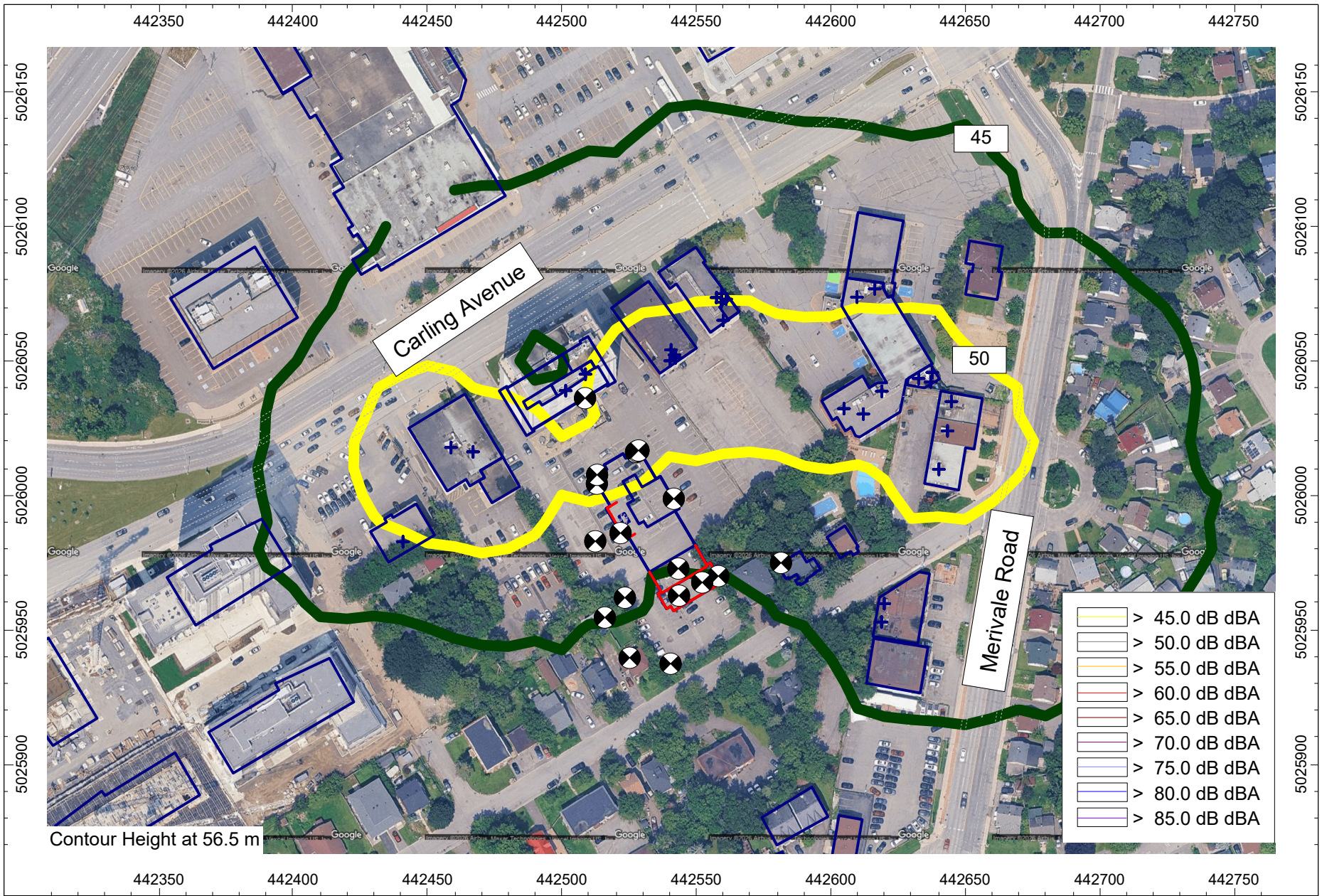

Figure 3 - Noise Impact Contour Map from External Stationary Sources on Development

N

Drawn by: WNL

Scale: 1:2,000

Date: February 20, 2026

Homestead Land Holdings Limited, 1316 Carling Avenue, Ottawa, Ontario

Pinchin Project: 361094

PINCHIN

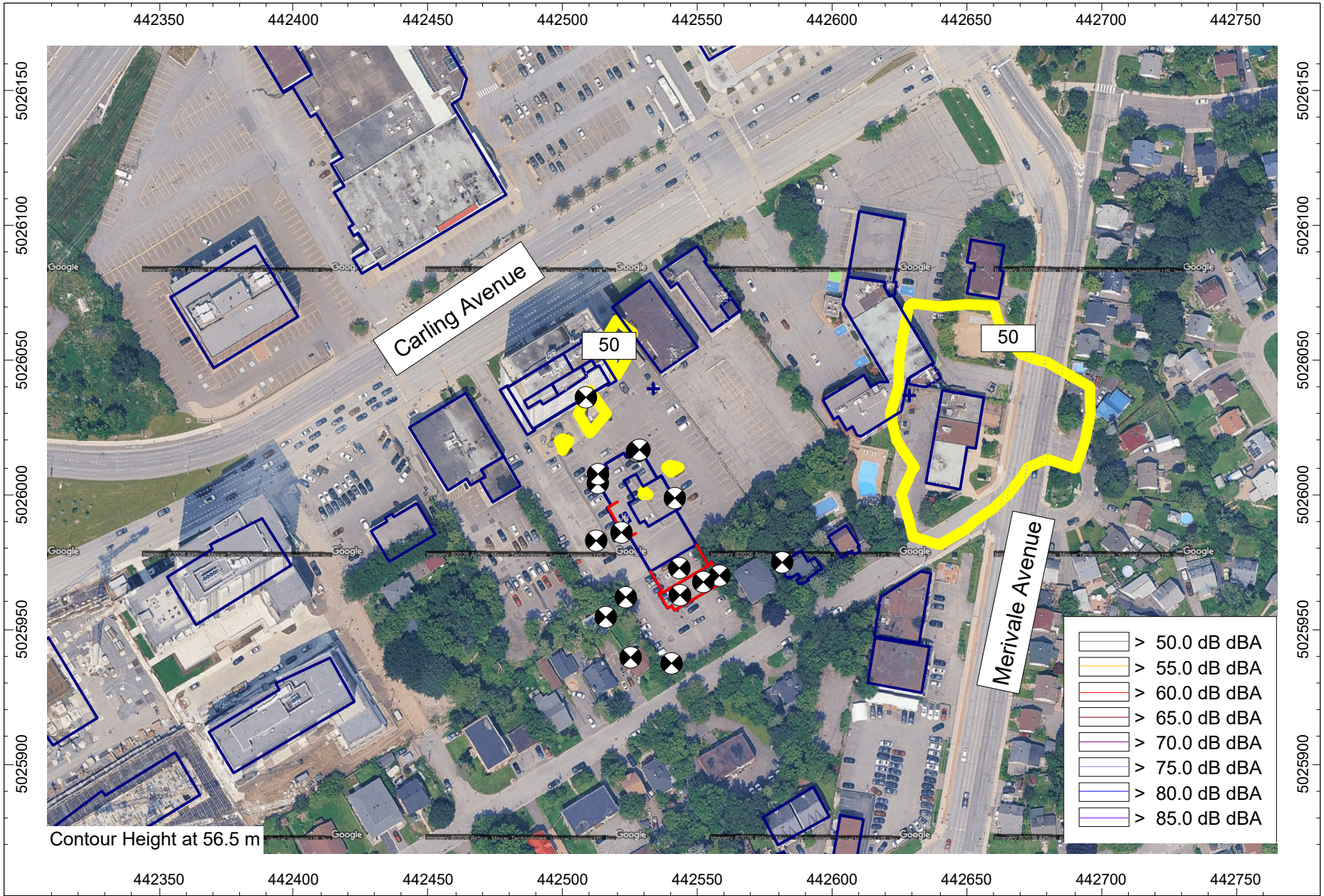

Figure 4 - Noise Impact Contour Map from External Generators on Development

N

Homestead Land Holdings Limited, 1316 Carling Avenue, Ottawa, Ontario

Pinchin Project: 361094

Drawn by: WNL

Scale: 1:2,000

Date: February 20, 2026

PINCHIN

Figure 5 - Noise Impact Contour Map from Development Stationary Sources on External Receptors

N

Drawn by: WNL

Scale: 1:2,000

Date: February 20, 2026

Homestead Land Holdings Limited, 1316 Carling Avenue, Ottawa, Ontario

Pinchin Project: 361094

PINCHIN

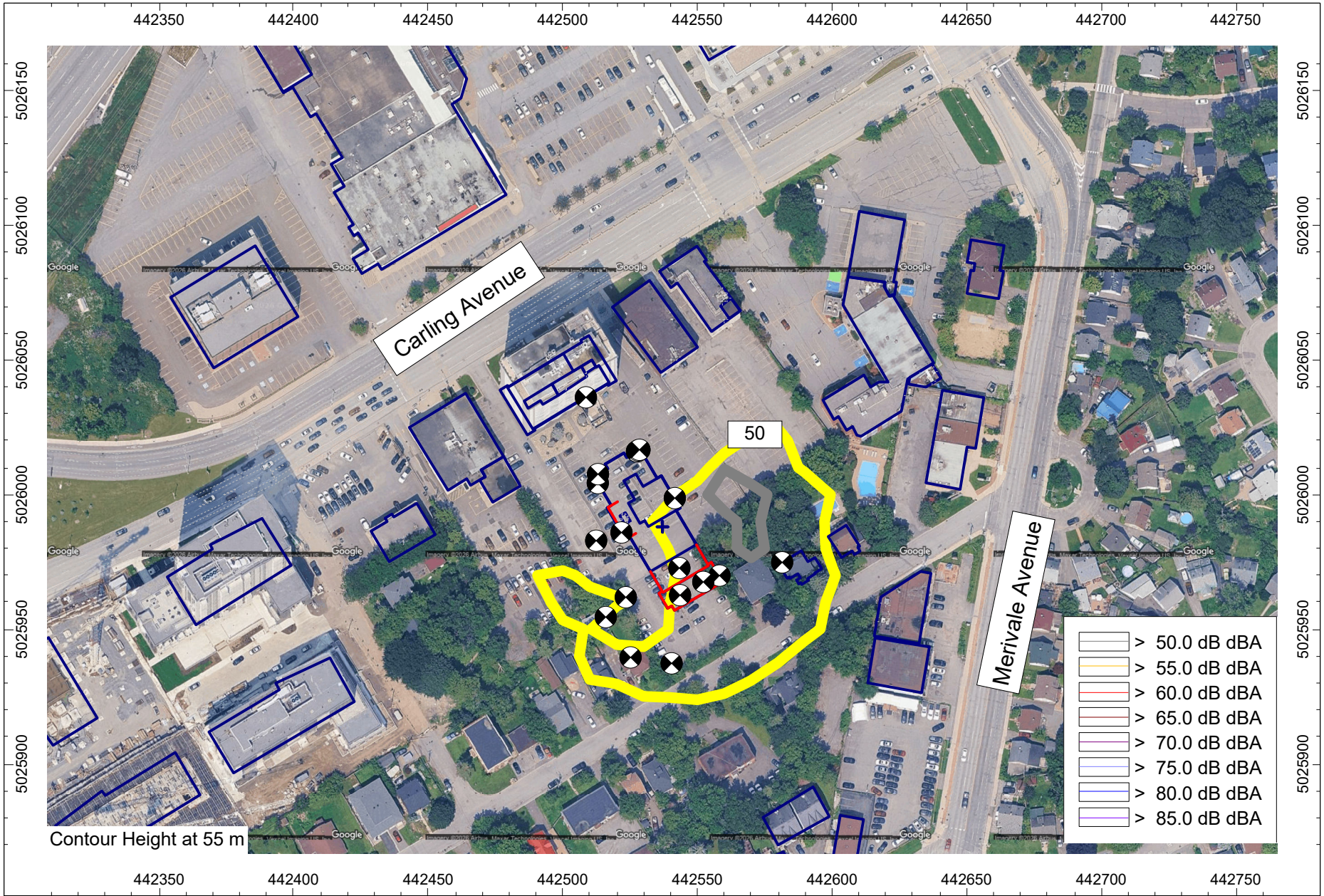

Figure 6 - Noise Impact Contour Map from Development Generator on External Receptors

N

Drawn by: WNL

Scale: 1:2,000

Date: February 20, 2026

Homestead Land Holdings Limited, 1316 Carling Avenue, Ottawa, Ontario

Pinchin Project: 361094

PINCHIN

APPENDIX C

Additional Drawings

(13 Pages)

3 SOUTH EAST PERSPECTIVE

2 NORTH WEST PERSPECTIVE

DO NOT SCALE DRAWINGS

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Revisions		
No.	Date	Description
2	16-10-2025	Issued For Zoning
3	21-01-2025	Re-Issued fro Zoning
4	11-02-2026	Re-Issued fro Zoning

HOMESTEAD

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Project
1316 CARLING AVE
APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
PERSPECTIVES

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
	08/30/25
Project No.	Revision
2513	4
Drawing No.	
A001	

UNIT MIX	
Area	Count
1 BEDROOM	
640 ft²	19
700 ft²	1
710 ft²	27
730 ft²	1
	48
1 BEDROOM + DEN	
800 ft²	10
890 ft²	1
	11
1 BEDROOM BF	
710 ft²	10
	10
2 BEDROOM	
830 ft²	5
950 ft²	18
980 ft²	8
990 ft²	1
1010 ft²	3
1030 ft²	5
1040 ft²	16
1060 ft²	16
1170 ft²	5
1180 ft²	3
1200 ft²	1
1220 ft²	4
1250 ft²	3
	88
2 BEDROOM +DEN	
990 ft²	5
1070 ft²	3
1080 ft²	1
1110 ft²	10
1120 ft²	1
1130 ft²	3
	23
2 BEDROOM BF	
950 ft²	19
960 ft²	2
	21
	201

UNIT MIX/ FLOOR	1 BDRM		1 BDRM +DEN		2 BDRM		2 BDRM +DEN		TOTAL		TOTAL
UNIT AREA	(59-68m²)		(74-83m²)		(77-116m²)		(92-105m²)				
		B.F.		B.F.		B.F.		B.F.		B.F.	
LEVEL 1	1	0	1	0	5	1	2	0	9	1	10
LEVEL 2 -4 (X3 floors)	3 X3=9	0	0	0	7 X3=21	1 X3=3	2 X3=6	0	12 X3=36	1 X3=3	13 X3=39
LEVEL 5 -9 (X5 floors)	3 X5=15	0	0	0	6 X5=30	1 X5=5	1 X5=5	0	10 X5=50	1 X5=5	11 X5=55
LEVEL 10	3	0	0	0	2	2	0	0	5	2	7
LEVEL 11 -20 (X10 floors)	2 X10=20	1 X10=10	1 X10=10	0	3 X10=30	1 X10=10	1 X10=10	0	7 X10=70	2 X10=20	9 X10=90
TOTAL	**48**	**10**	**11**	**0**	**88**	**21**	**23**	**0**	**170**	**31 (15%)**	**201**
TOTAL	**58**		**11**		**109**		**23**		**201**		**201**

LOT COVERAGE		
GROUND FLOOR AREA (Building footprint)	1,332.5 m²	
LANDSCAPE AREA	4,567.5 m² (including 825 m² PARKLAND + 76.75 m² Patios + 531 m² Hardscape + 208 m² Ramp enclosure + 1,453 m² Softscape + 1473.75 m² Asphalt)	
TOTAL DEVELOPED AREA	5,900 m²	
UNDEVELOPED (Existing building) AREA	2,752.8 m²	
TOTAL LOT AREA	8,652.8 m² (including 825 m² PARKLAND)	

BUILDING AREAS				
	GROSS FLOOR AREA	AMINETIES (INDOOR)	BALCONIES	TERRACES (OUTDOOR)
UNDERGROUND PARKING GARAGE L3 & L2	-	-	-	-
UNDERGROUND PARKING GARAGE L1	-	232.25 m² (Communal)	-	-
GROUND FLOOR AREA	924.5 m² (9,951.23 ft²)	-	76.75 m²	600 m² (6458.35 ft²) (Communal)
2ND - 4TH FLOOR AREA (X3 STOREYS)	(1,139 m² X3 =) 3,417 m² (12,260.1 X3 = 36,780.3 ft²)		(91.72m² X 3 =) 275.16 m²	-
5TH FLOOR AREA	867 m² (9,332.3 ft²)		34.23 m²	258 m²
6TH - 9TH FLOOR AREA (X4 STOREYS)	(867 m² X4 =) 3,468 m² (9,332.3 X4 = 37,329.2 ft²)		(76.88 m² X 4 =) 307.52 m²	-
10TH FLOOR AREA	711 m² (7,653.14 ft²)	175.05 m² (Communal)	36.48 m²	193.93 m² (2087.44 ft²) (Communal)
TYPICAL FLOOR AREA (11TH - 20TH) (X10 STOREYS)	(697.45 m² X10 =) 6,974.5 m² (7507.3 X10= 75,073 ft²)		57.12 m²	-
SUM GROSS AREA	16362 m² (176,119.17 ft²)	407.3 m²	780.52m²	1,051.93 m²
SUM AMENITIES (Indoor, Balconies and Terraces)		2,239.75 m² (Including 1,200.93 m² communal)		
NUMBER OF STOREYS (above grade)		20 storeys		

City of Ottawa Zoning By-Law 2008-250			
ZONING MECHANISM	REQUIRED /PERMITTED	PROPOSED	RELIEF REQ'D
AMENITIES			
Amenity Area for Residential Development (MIN.)	6 m² for every Residential Unit 6 x 201 = 1206 m²	2,238.5 m²	-
Amenity Area Provided as Commonal Space	MIN. 50 % X 1206 m² = 603 m²	1,200.93 m² (99.5%)	-

Parking Schedule		
Level	Type	Count
PARKING P3	Small Space 2400x4600	1
PARKING P3	Small Space 2400x5200	28
PARKING P3	Small Space 2600x4600	5
PARKING P3	Standard Space 2600x5200	86
PARKING P2	Small Space 2400x4600	1
PARKING P2	Small Space 2400x5200	28
PARKING P2	Small Space 2600x4600	5
PARKING P2	Standard Space 2600x5200	84
PARKING P1	BF Space Type A 3400x5200	2
PARKING P1	BF Space Type E 2750x6000	2
PARKING P1	Small Space 2400x4600	1
PARKING P1	Small Space 2400x5200	23
PARKING P1	Small Space 2600x4600	5
PARKING P1	Standard Space 2600x5200	83
GROUND FLOOR	BF Space Type A 3400x5200	3
GROUND FLOOR	BF Space Type B 2750x6000	3
GROUND FLOOR	Standard Space 2600x5200	17
		377

SMALL SPACES : 97
STANDARD SPACES : 270
B.F. SPACES : 10

REQUIRED: TABLE 101 R12 HIGH-RISE AREA XIY
0.5 RESIDENT / DWELLING + 0.1 VISITOR = 0.6
(No parking for first 12 units)
189 UNITS x 0.6 = 113 SPACES REQUIRED
(19 VISITOR + 94 RESIDENTIAL)

PROPOSED : 377 SPACES
169 SPACES TO REPLACE THE EXISTING SPACES
208 NEW SPACES FOR 201 UNITS = 1.03 PARKING RATE

BARRIER-FREE PARKING
OTTAWA BY-LAW 2017-301
TYPE A: 3400mm WIDE
TYPE B: 2400mm WIDE

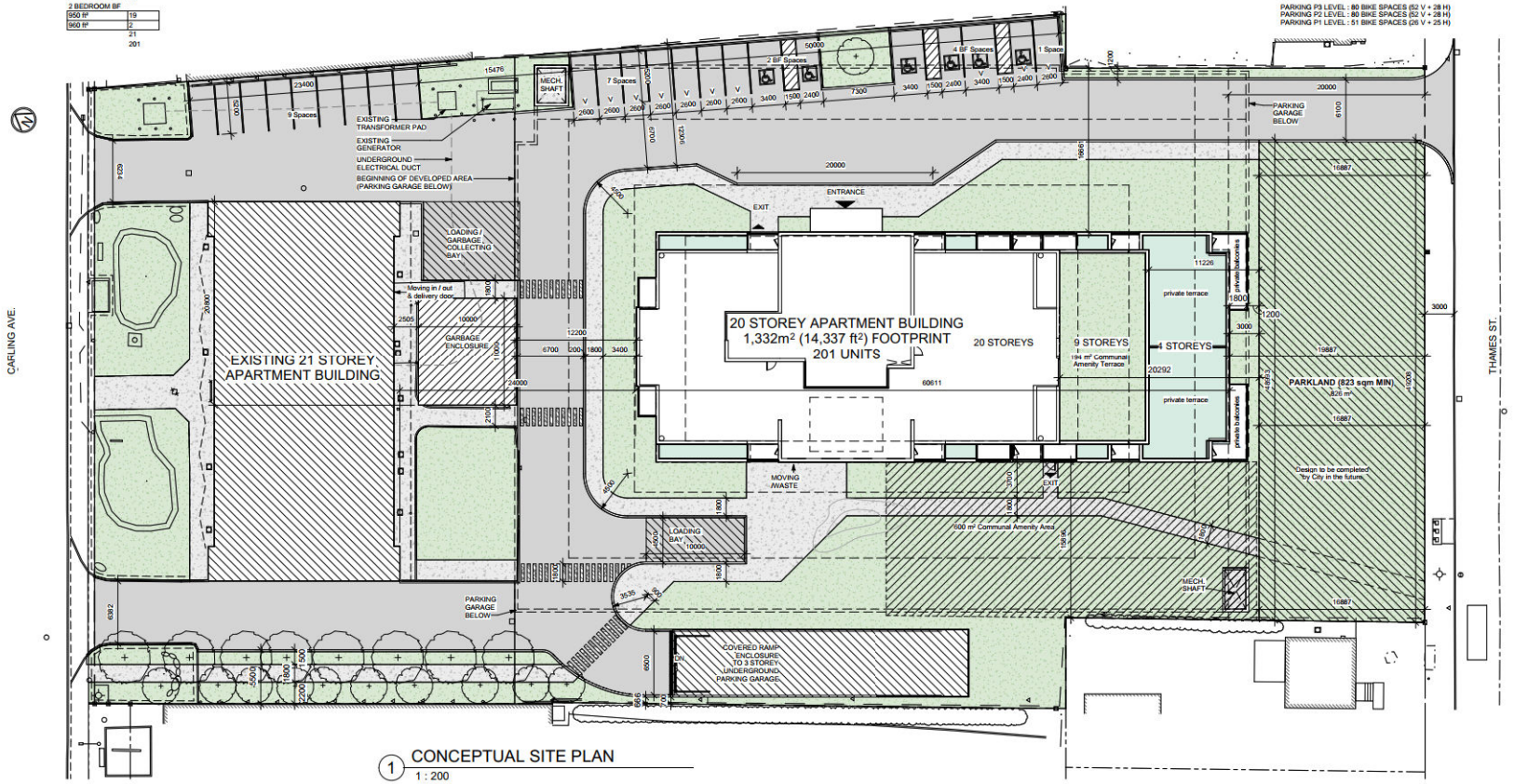
# SPACES	A	B	TOTAL
251-300	4	4	8
301+350	4	5	9
351-400	*5*	*5*	*10*

BICYCLE SPACES :

REQUIRED : 0.5 RESIDENT / DWELLING
201 UNITS x 0.5 = 101 SPACES REQUIRED

PROPOSED : 211 SPACES FOR 201 UNITS = 1.05 PARKING RATE
(130 Vertical spaces + 81 Horizontal spaces)

PARKING P3 LEVEL : 80 BIKE SPACES (52 V + 28 H)
PARKING P2 LEVEL : 80 BIKE SPACES (52 V + 28 H)
PARKING P1 LEVEL : 51 BIKE SPACES (26 V + 25 H)



1 CONCEPTUAL SITE PLAN
1 : 200

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Revisions		
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4	11-02-2026	Re-Issued fro Zoning

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Alexander Wilson Architect Inc
Admiralty Place
103-20 Gore Street
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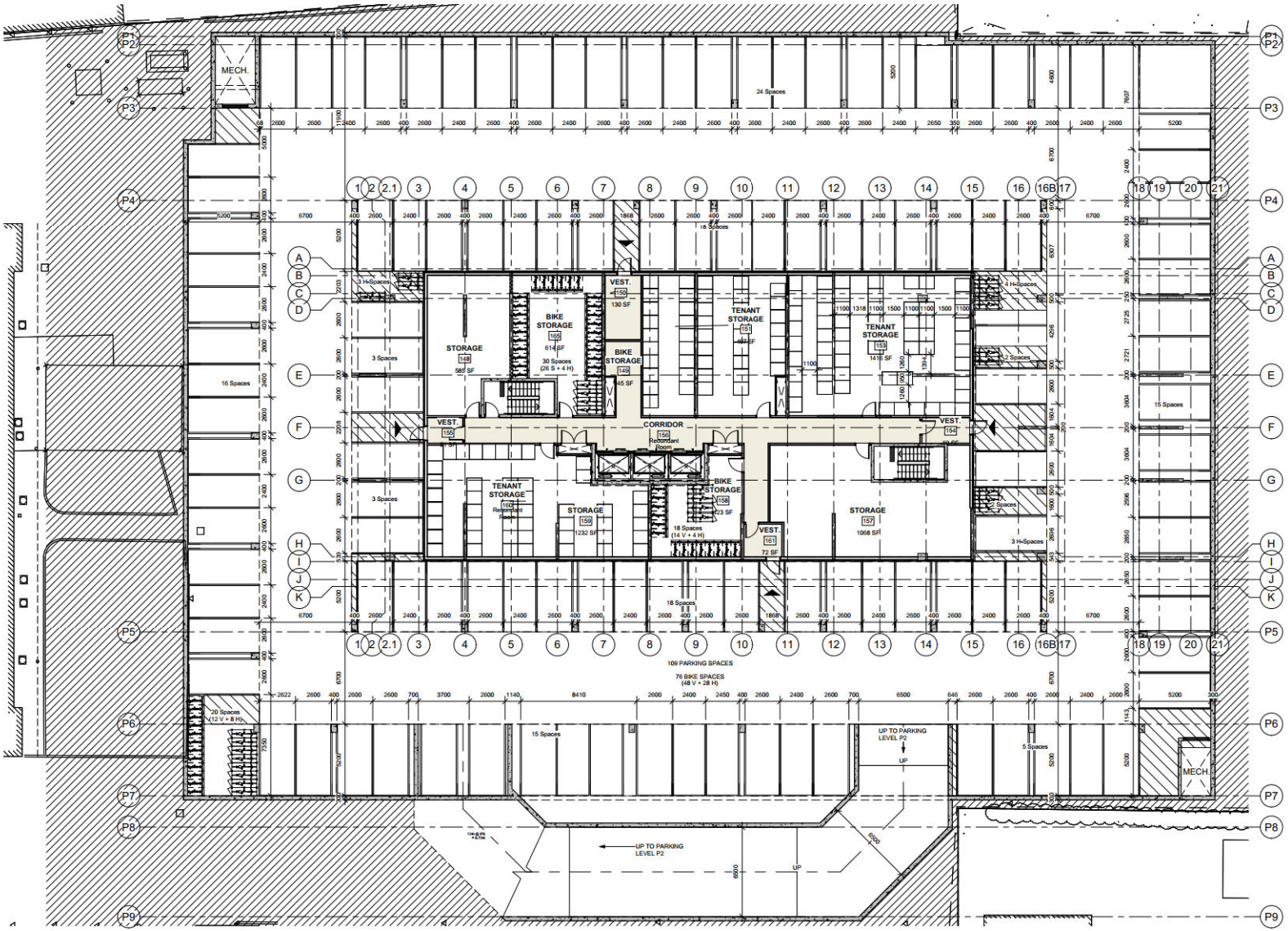
Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
SITE PLAN

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
1 : 200	05/19/25
Project No.	Revision
2513	4
Drawing No.	
A010	



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Parking Schedule

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PARKING P3	Small Space 2400x5200	28
PARKING P3	Small Space 2600x4600	5
PARKING P3	Standard Space 2600x5200	86
PARKING P2	Small Space 2400x4600	1
PARKING P2	Small Space 2400x5200	28
PARKING P2	Small Space 2600x4600	5
PARKING P2	Standard Space 2600x5200	84
PARKING P1	BF Space Type A 3400x5200	2
PARKING P1	BF Space Type B 2750x6000	2
PARKING P1	Small Space 2400x4600	1
PARKING P1	Small Space 2400x5200	23
PARKING P1	Small Space 2600x4600	5
PARKING P1	Standard Space 2600x5200	83
GROUND FLOOR	BF Space Type A 3400x5200	3
GROUND FLOOR	BF Space Type B 2750x6000	3
GROUND FLOOR	Standard Space 2600x5200	17
		377

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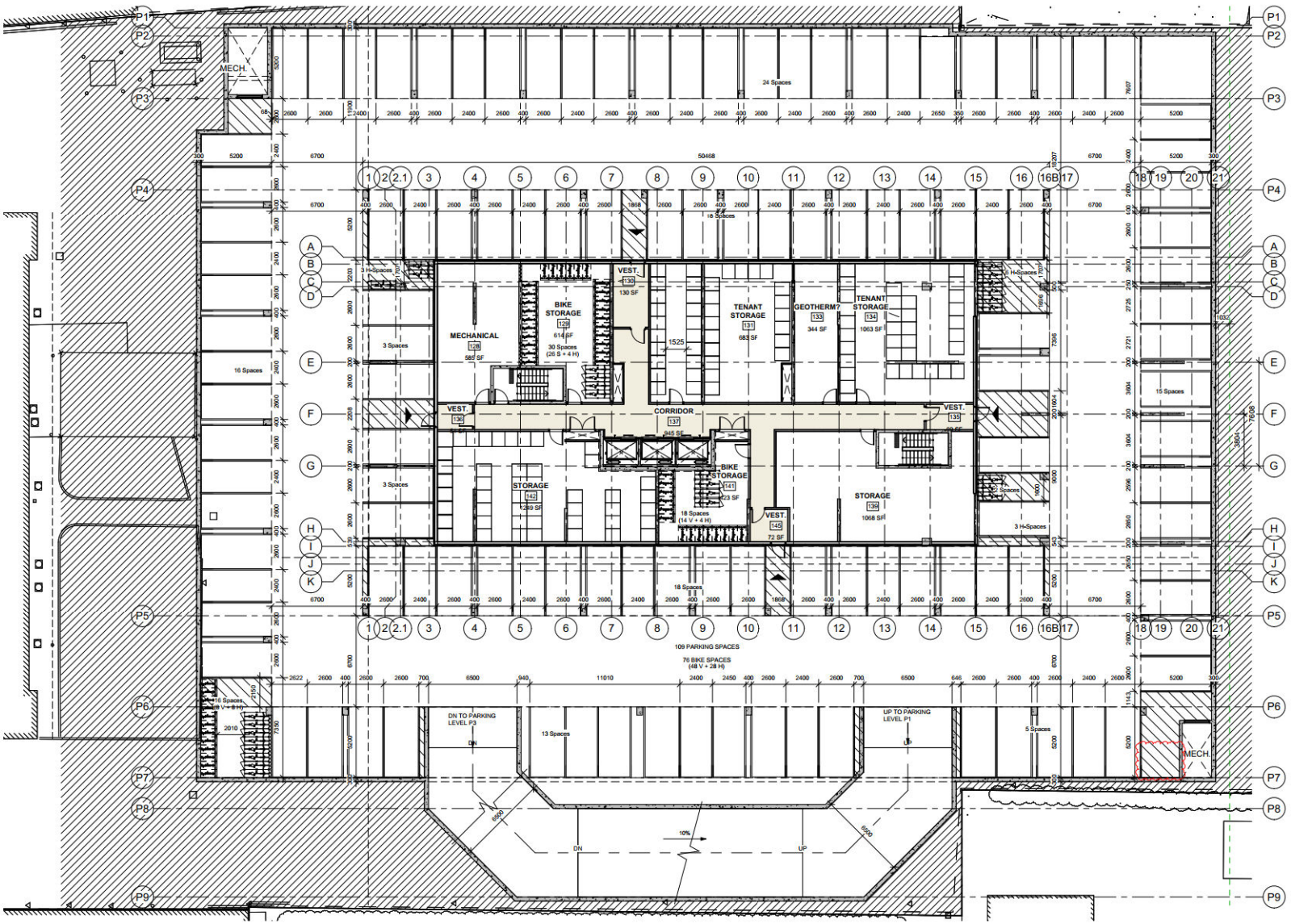
Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
PARKING LEVEL P3

Drawn By	Checked By
FANG A.Z.	-
Scale	Date
1: 125	06/ROS
Project No.	Revision
2513	4
Drawing No.	A100-3



1 PARKING LEVEL P2
1 : 125

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PARKING P1	BF Space Type B 2750x6000	2
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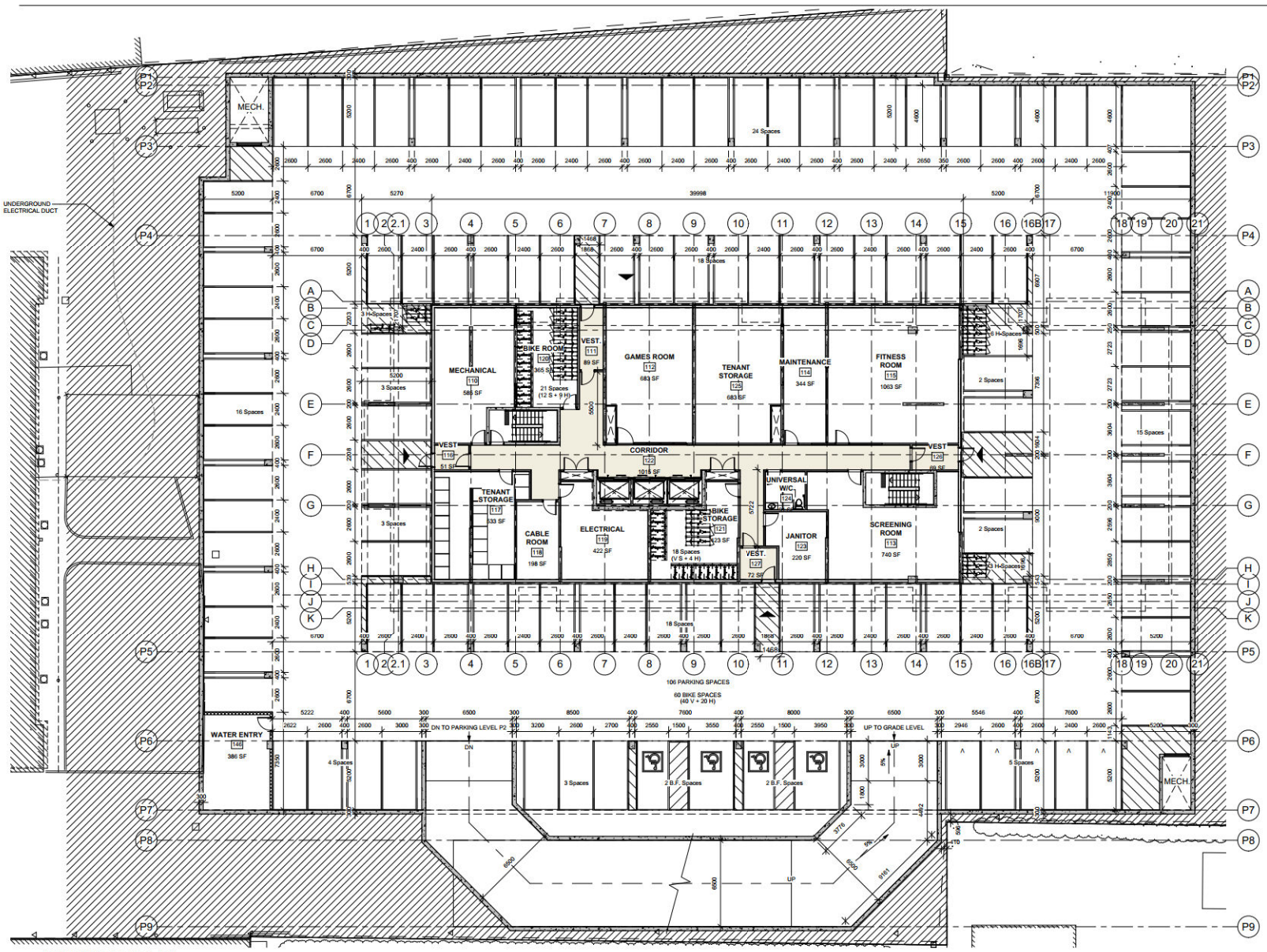
Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
PARKING LEVEL P2

Drawn By	Checked By
FANG A.Z.	-
Scale	Date
1 : 125	06/ROS
Project No.	Revision
2513	4
Drawing No.	A100.02



1 PARKING LEVEL P1
1 : 125

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Stamp

Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
PARKING LEVEL P1

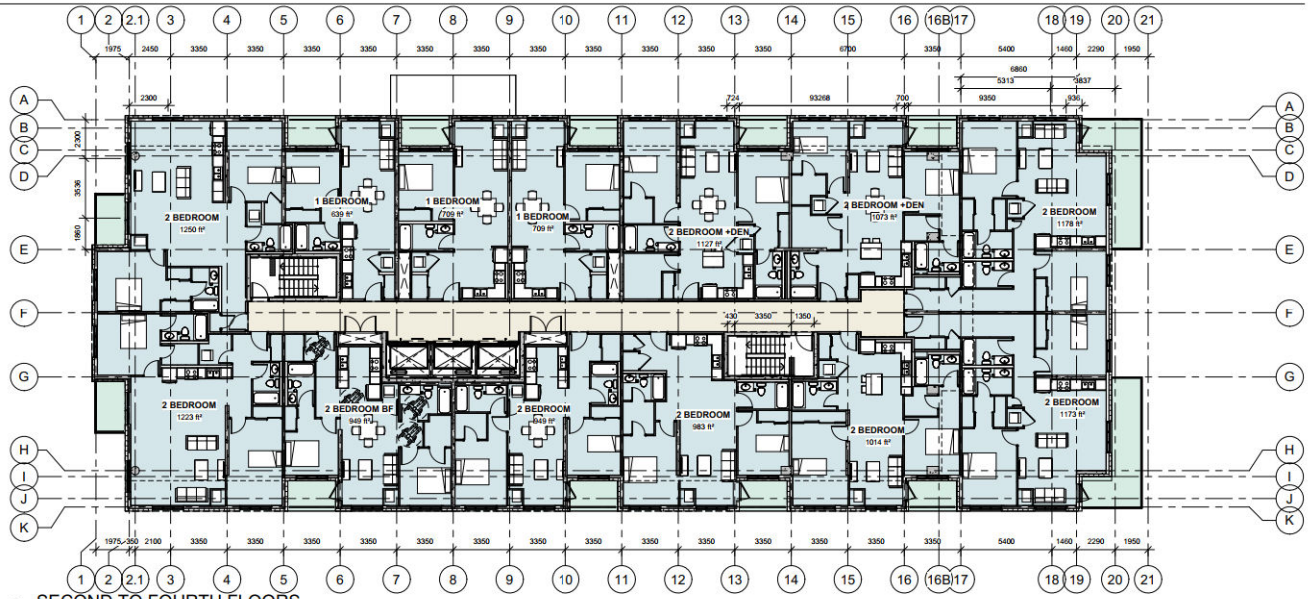
Drawn By	Checked By
FANG A.Z.	-
Scale	Date
1 : 125	05/19/25
Project No.	Revision
2513	4
Drawing No.	
A100. 1	

UNIT MIX	
Area	Count
1 BEDROOM	
640 ft²	19
700 ft²	1
710 ft²	27
730 ft²	1
	48
1 BEDROOM + DEN	
800 ft²	10
890 ft²	1
	11
1 BEDROOM BF	
710 ft²	10
	10
2 BEDROOM	
630 ft²	5
950 ft²	18
980 ft²	8
990 ft²	1
1010 ft²	3
1030 ft²	5
1040 ft²	16
1060 ft²	16
1170 ft²	5
1180 ft²	3
1200 ft²	1
1220 ft²	4
1250 ft²	3
	88
2 BEDROOM +DEN	
990 ft²	5
1070 ft²	3
1080 ft²	1
1110 ft²	10
1120 ft²	1
1130 ft²	3
	23
2 BEDROOM BF	
950 ft²	19
960 ft²	2
	21
	201

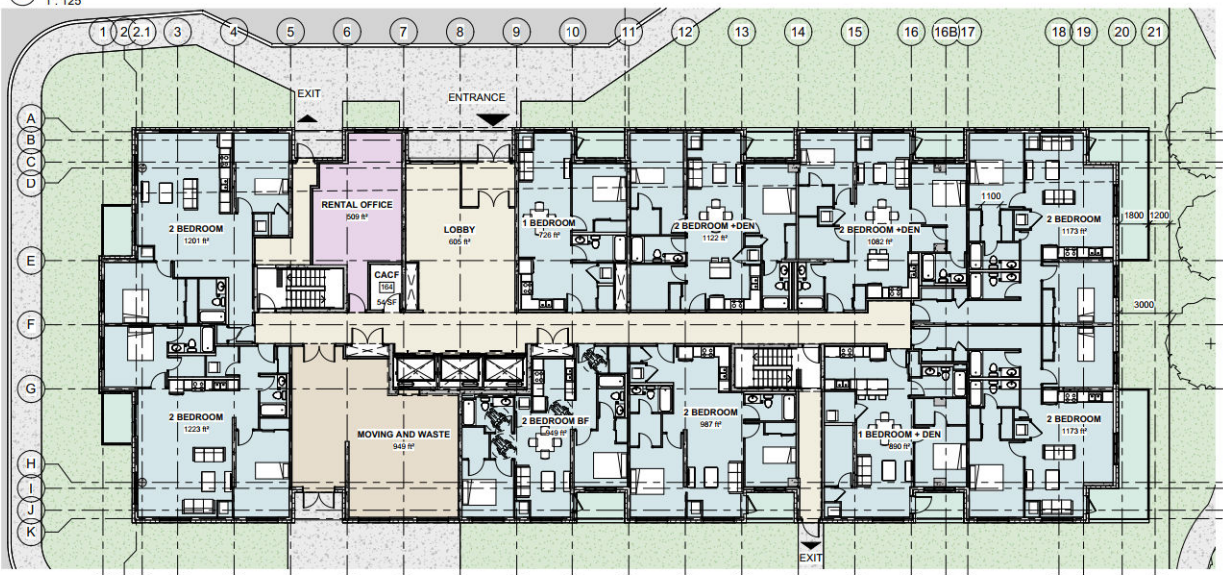
15% BARRIER-FREE REQUIRED (30 OF 201 UNITS)

UNITS BY FLOOR	
Comments	Count
GROUND FLOOR	
1 BEDROOM	1
1 BEDROOM + DEN	1
2 BEDROOM	5
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	10
SECOND FLOOR	
1 BEDROOM	3
2 BEDROOM	7
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	13
THIRD FLOOR	
1 BEDROOM	3
2 BEDROOM	7
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	13
FOURTH FLOOR	
1 BEDROOM	3
2 BEDROOM	7
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	13
FIFTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
SIXTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
SEVENTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
EIGHTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
NINTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
TENTH FLOOR	
1 BEDROOM	3
2 BEDROOM	2
2 BEDROOM BF	2
	7
ELEVENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9

UNITS BY FLOOR	
Comments	Count
TWELFTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
THIRTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
FOURTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
FIFTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
SIXTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
SEVENTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
EIGHTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
NINETEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
TWENTIETH	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
	201



2 SECOND TO FOURTH FLOORS
1 : 125



1 GROUND FLOOR PLAN
1 : 125

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Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

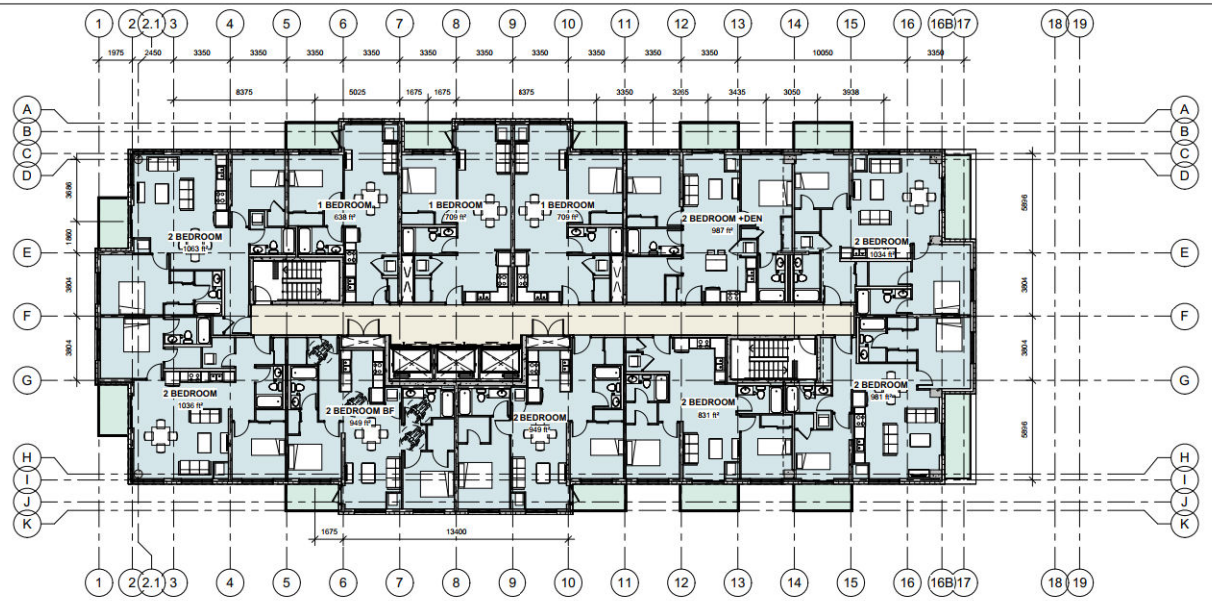
Drawing
GROUND TO FOURTH FLOORS

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
1 : 125	05/16/25
Project No.	Revision
2513	4
Drawing No.	
A103	

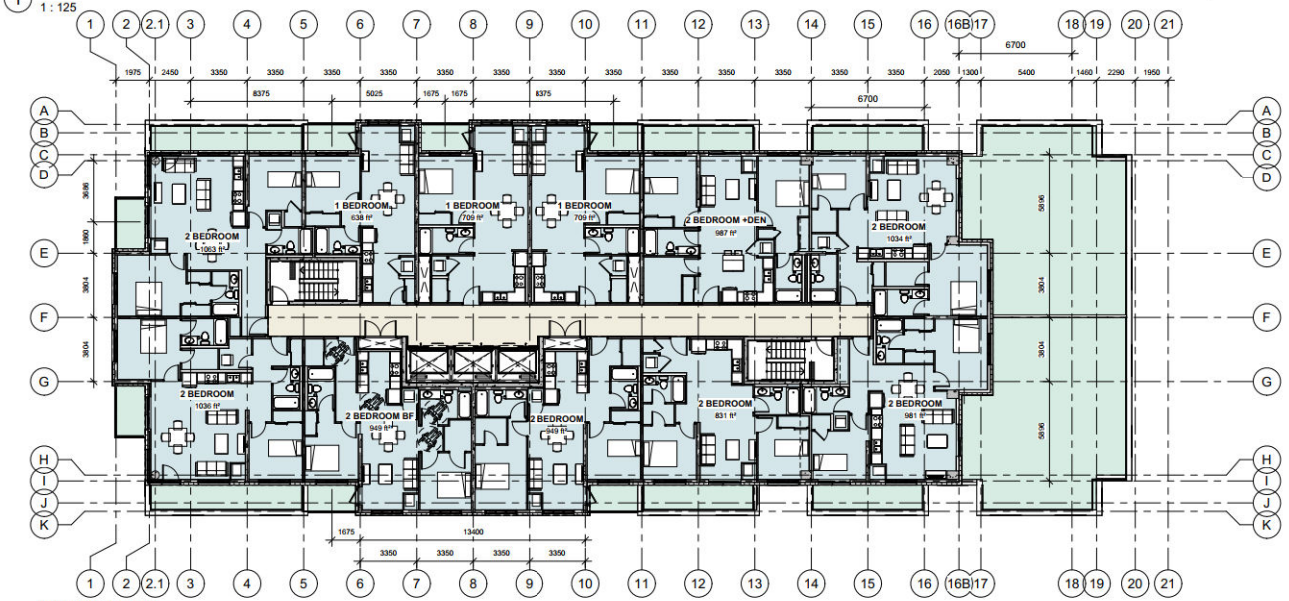
UNIT MIX	
Area	Count
1 BEDROOM	
640 ft²	19
700 ft²	1
710 ft²	27
730 ft²	1
	48
1 BEDROOM + DEN	
800 ft²	10
890 ft²	1
	11
1 BEDROOM BF	
710 ft²	10
	10
2 BEDROOM	
830 ft²	5
950 ft²	18
980 ft²	8
990 ft²	1
1010 ft²	3
1030 ft²	5
1040 ft²	16
1060 ft²	16
1170 ft²	5
1180 ft²	3
1200 ft²	1
1220 ft²	4
1250 ft²	3
	88
2 BEDROOM +DEN	
990 ft²	15
1070 ft²	3
1080 ft²	1
1110 ft²	10
1120 ft²	1
1130 ft²	3
	23
2 BEDROOM BF	
950 ft²	19
960 ft²	2
	21
	201

UNITS BY FLOOR	
Comments	Count
GROUND FLOOR	
1 BEDROOM	1
1 BEDROOM + DEN	1
2 BEDROOM	5
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	10
SECOND FLOOR	
1 BEDROOM	3
2 BEDROOM	7
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	13
THIRD FLOOR	
1 BEDROOM	3
2 BEDROOM	7
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	13
FOURTH FLOOR	
1 BEDROOM	3
2 BEDROOM	7
2 BEDROOM +DEN	2
2 BEDROOM BF	1
	13
FIFTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
SIXTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
SEVENTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
EIGHTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
NINTH FLOOR	
1 BEDROOM	3
2 BEDROOM	6
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	11
TENTH FLOOR	
1 BEDROOM	3
2 BEDROOM	2
2 BEDROOM BF	2
	7
ELEVENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9

UNITS BY FLOOR	
Comments	Count
TWELFTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
THIRTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
FOURTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
FIFTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
SIXTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
SEVENTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
EIGHTEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
NINETEENTH FLOOR	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
TWENTIETH	
1 BEDROOM	2
1 BEDROOM + DEN	1
1 BEDROOM BF	1
2 BEDROOM	3
2 BEDROOM +DEN	1
2 BEDROOM BF	1
	9
	201



1 SIXTH TO NINTH FLOORS
1 : 125



2 FIFTH FLOOR
1 : 125

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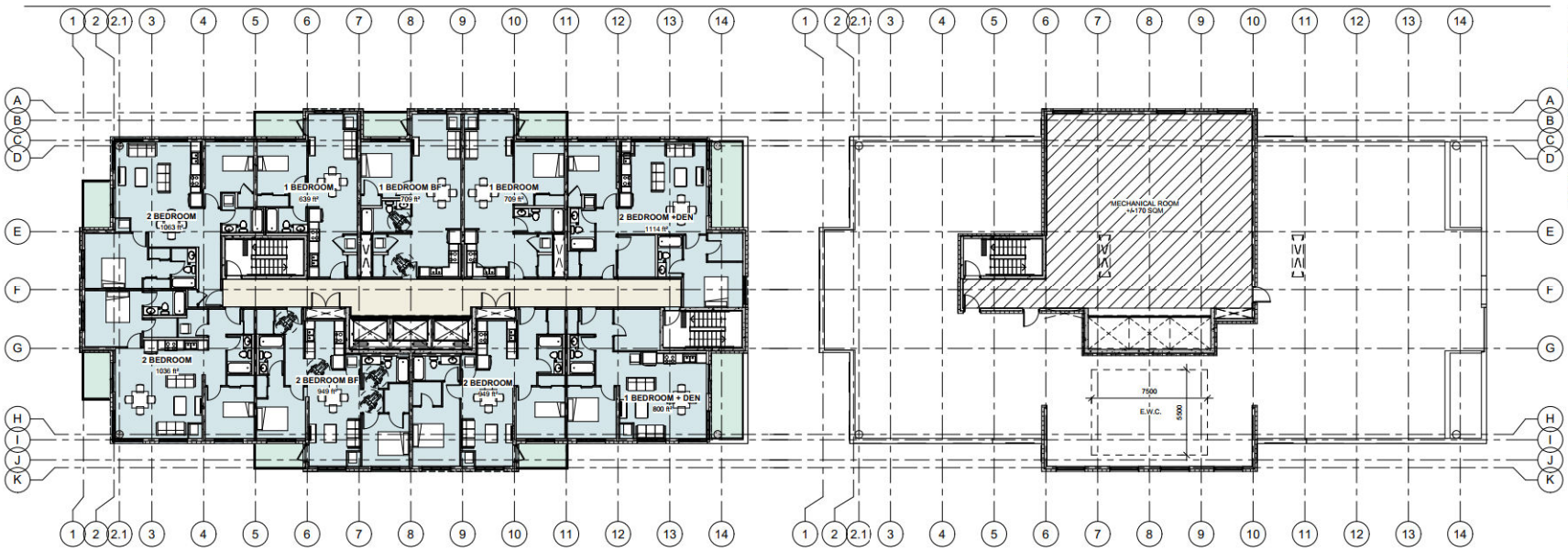
Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

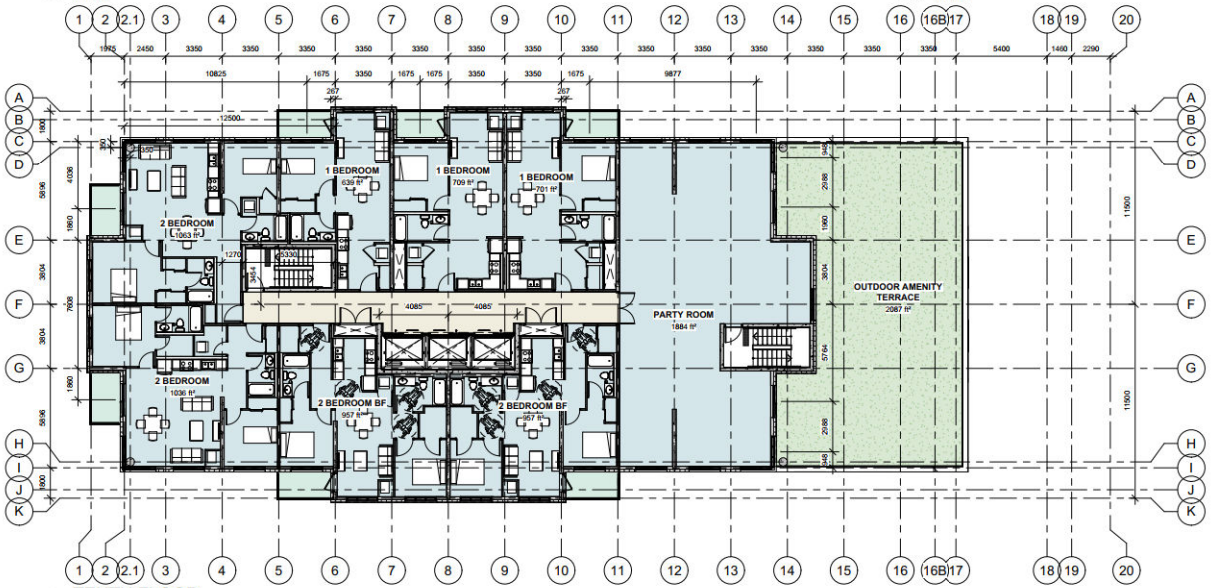
Drawing
FIFTH TO NINTH FLOORS

Drawn By	FAHD A.Z.
Checked By	-
Scale	1 : 125
Date	07/2025
Project No.	2513
Revision	4
Drawing No.	A104



3 ELEVENTH TO TWENTIETH FLOORS
1 : 125

2 MECHANICAL ROOF
1 : 125



1 TENTH FLOOR
1 : 125

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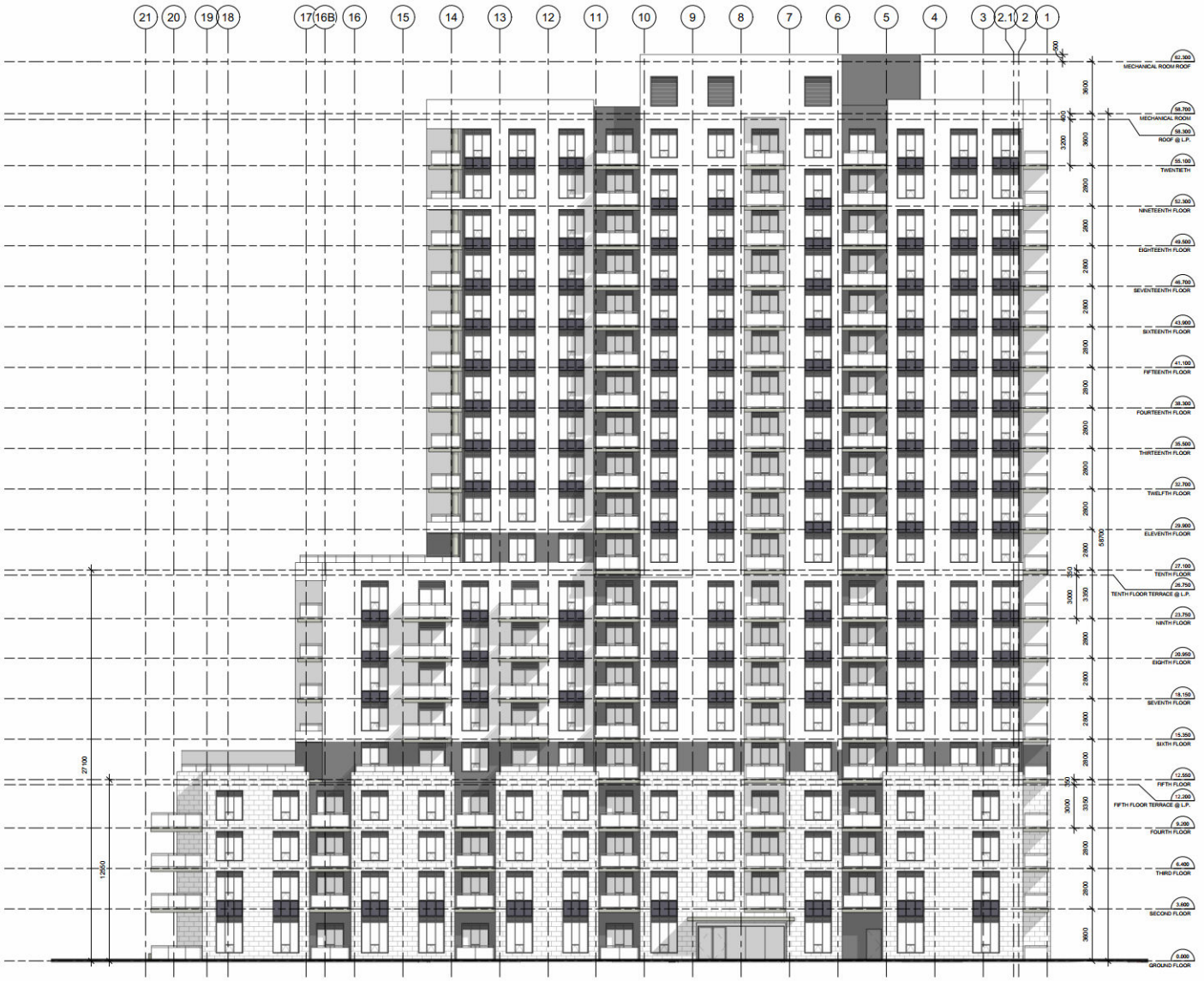
Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
TENTH FLOOR TO ROOF

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
1 : 125	08/26/25
Project No.	Revision
2513	4
Drawing No.	
A105	



1 EAST ELEVATION
1 : 125

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Project
1316 CARLING AVE
APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
EAST ELEVATION

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
1 : 125	08/28/25
Project No.	Revision
2513	4
Drawing No.	
A301	

1 WEST ELEVATION
1 : 125

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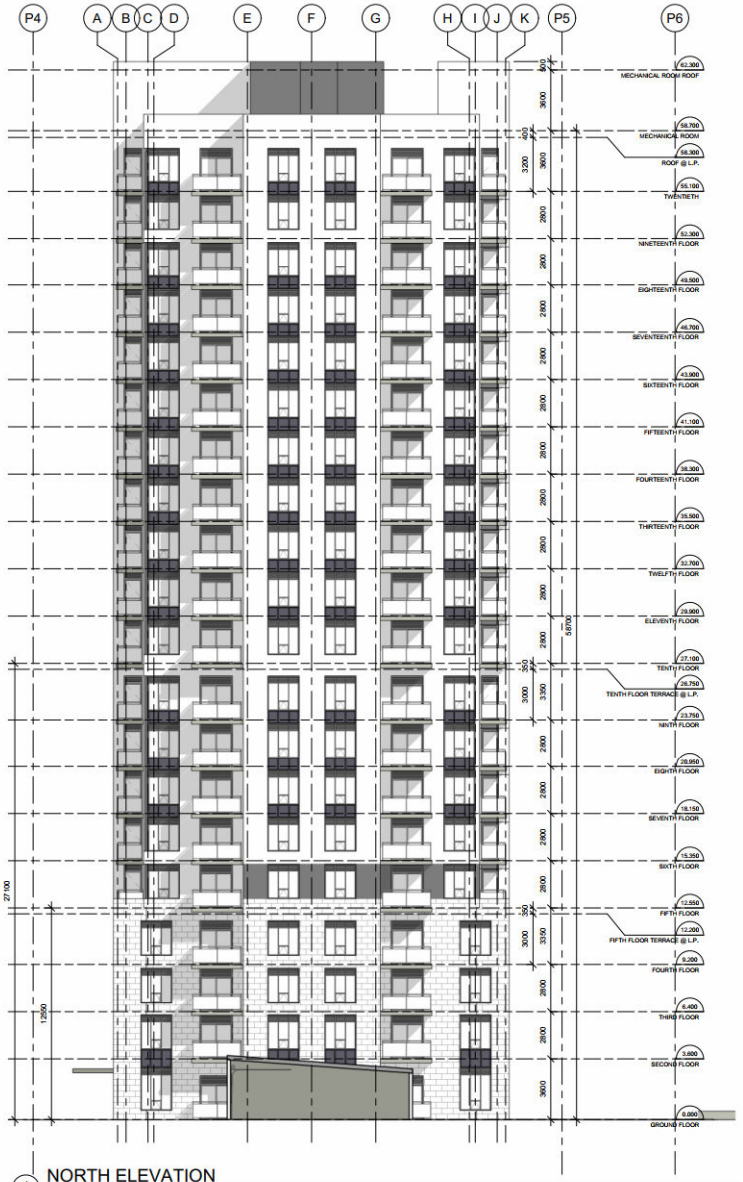
Project
1316 CARLING AVE APARTMENTS

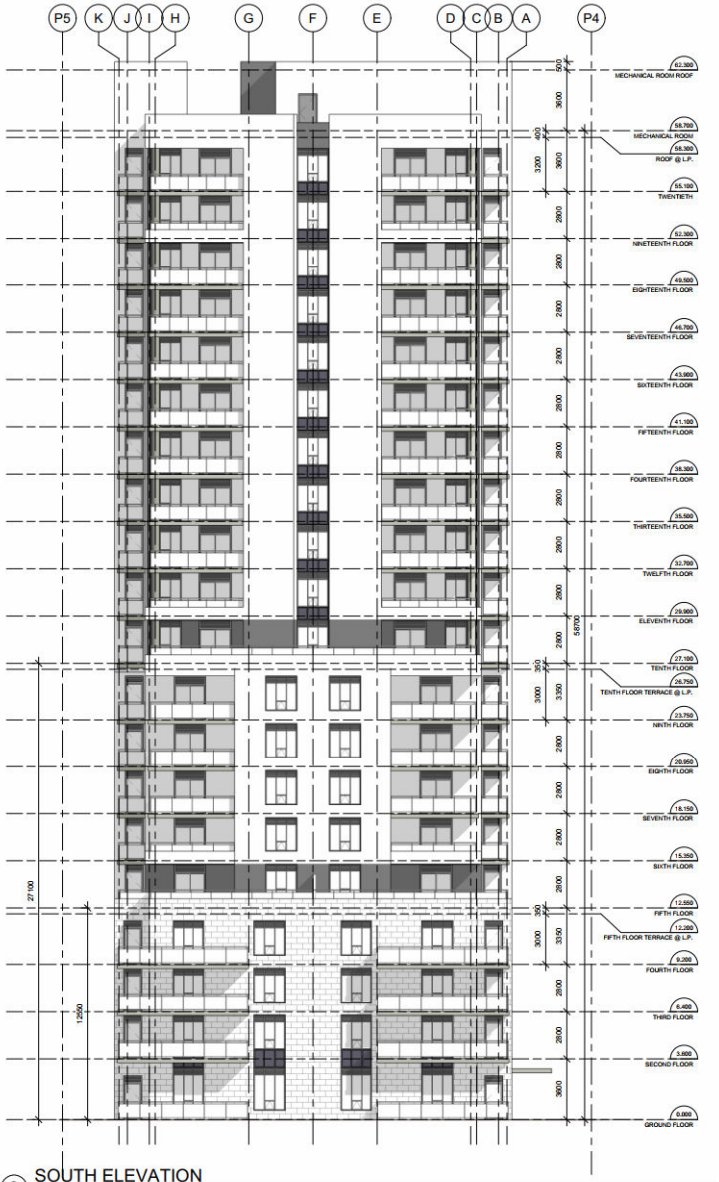
1316 CARLING AVE.,
OTTAWA, ON

Drawing
WEST ELEVATION

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
1 : 125	08/28/25
Project No.	Revision
2513	4
Drawing No.	
A302	



1 NORTH ELEVATION
1 : 125



2 SOUTH ELEVATION
1 : 125

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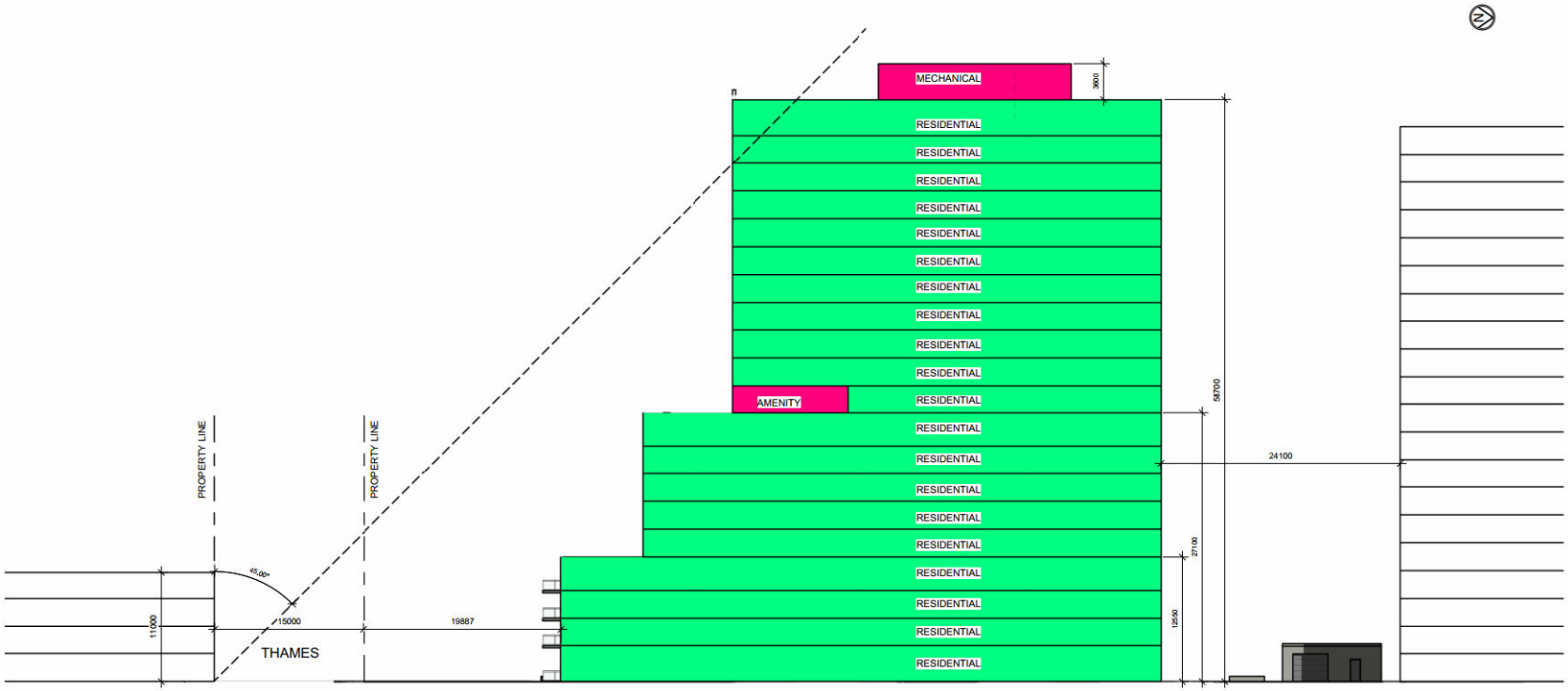
Stamp

Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
NORTH & SOUTH ELEVATIONS

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
1 : 125	09/28/25
Project No.	Revision
2513	4
Drawing No.	
A303	



1 TRANSITION (South - North)
1 : 200

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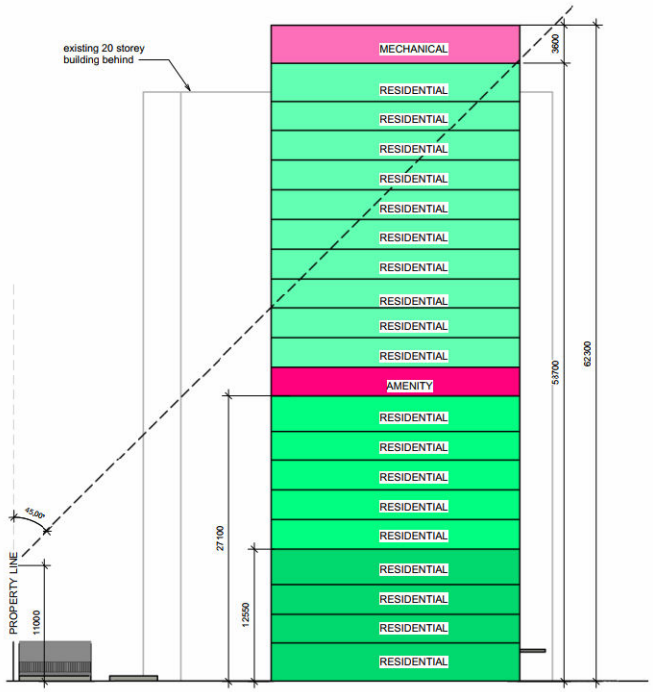
Project
1316 CARLING AVE APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
TRANSITION DIAGRAM (South - North)

Drawn By	Checked By
FANG A.Z.	-
Scale	Date
1 : 200	08/28/25
Project No.	Revision
2513	4
Drawing No.	
A310	



2 TRANSITION DIAGRAM (West - East)
1 : 200

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Project
1316 CARLING AVE
APARTMENTS

1316 CARLING AVE.,
OTTAWA, ON

Drawing
TRANSITION DIAGRAM
(West - East)

Drawn By	Checked By
FAHD A.Z.	-
Scale	Date
1 : 200	09/28/25
Project No.	Revision
2513	3
Drawing No.	
A311	

APPENDIX D

Traffic Data, CadnaA-TNM Sample Calculations and Adjustment

(22 Pages)

Table D1 - Summary of Traffic Data and Projections

	Highway 417 EB (5 Lanes)	Highway 417 WB (5 Lanes)	Carling Avenue (Arterial) - EB	Carling Avenue (Arterial) - WB	Merivale Road (Arterial)	Notes
AADT - Ultimate	91665	91665	25000	25000	30000	Table B1, City of Ottawa Environmental Noise Control Guidelines (ENCG)
Day Split	92%	92%	92%	92%	92%	92 / 8 %, City of Ottawa (ENCG)
Cars, 24 Hours	80665	80665	22000	22000	26400	88%, City of Ottawa (ENCG)
Medium Trucks, 24 Hours	6417	6417	1750	1750	2100	7%, City of Ottawa (ENCG)
Heavy Trucks, 24 Hours	4583	4583	1250	1250	1500	5%, City of Ottawa (ENCG)

Table D2 - Summary of ExistingTraffic Data and Projections, for Background Noise Calculations

	Highway 417 - WB/WB	Carling Avenue (Arterial)	Merivale Road (Arterial)	Notes
AADT - Existing Years	175600	15066	13216	City of Ottawa Open Data: 2021 / 2021 / 2024
Day Split	92%	92%	92%	92 / 8 %, City of Ottawa (ENCG)
Medium Trucks, 24 Hours	6125	334	293	7% of total trucks @ 6.0%, 3.8%, 3.8%, City of Ottawa (ENCG)
Heavy Trucks, 24 Hours	4375	239	209	5% of total trucks @ 6.0%, 3.8%, 3.8%, City of Ottawa (ENCG)

Table D3 - Ambient Background Sound Level Calculations and Adjustment

	CadnaA-TNM Calculations - Day/Evening [1]	**Adjusted Daytime Level, Minus 2 dB [2]**	**Adjusted Evening Level, Minus 3 dB [2]**	CadnaA-TNM Calculations - Nighttime [1]	**Adjusted Nighttime Level, Minus 5 dB [2]**
Receptors INT_R01	60	58	57	52	47
Receptors INT_R02	61	59	58	54	49
Receptors INT_R03	62	60	59	54	49
Receptors INT_R04	60	58	57	53	48
Receptors INT_R05	53	51	50	45	40

Notes:

1. The CadnaA-TNM calculations use the existing AADT traffic data obtained from MTO and City's Open Data for years 2021 and 2024.

The truck percentages were also obtained from the above data sources.

The AADT data were split between day/evening and nighttime at the ratio of 92/8 per the City's guide.

2. The adjustment was based on the assumption that the quietest hour noise level may be even lower than the calculated level.

Daytime Adjustment: minus 2 dB

Evening Adjustment: minus 3 dB

Nighttime Adjustment: minus 5 dB

For the nighttime calculations, 8% of total vehicles is included in the modelling. This is equivalent to an adjustment of 6-7 dB.

Hence, the total adjustment for the nighttime sound level is about -(11 to 12) dB, from the 24-hour calculations.

CadnaA-TNM Calculation Results on Ultimate Traffic Noise Impact - Summary

Name	Sel.	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
				Day	Evening	Night	Day	Evening	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
West Facade - 20 m			INT_R01	62.6	-75.3	55.0	0.0	0.0	0.0		x	Total	20.00	r	442513.01	5026004.26	20.00
North Facade - 56.5 m			INT_R02	63.6	-74.1	56.0	0.0	0.0	0.0		x	Total	56.50	r	442513.10	5026007.56	56.50
North Facade - 56.5 m			INT_R03	64.6	-73.6	57.1	0.0	0.0	0.0		x	Total	56.50	r	442527.56	5026016.09	56.50
North Facade - 20 m			INT_R04	63.3	-73.9	55.7	0.0	0.0	0.0		x	Total	20.00	r	442528.05	5026016.39	20.00
North Facade - 4.5 m			INT_R05	57.4	-76.5	49.8	0.0	0.0	0.0		x	Total	4.50	r	442528.47	5026016.63	4.50
East Facade Windows - 20 m			INT_R06	63.2	-73.7	55.6	0.0	0.0	0.0		x	Total	20.00	r	442541.60	5025998.66	20.00
East Facade Windows - 10.5 m			INT_R07	59.0	-75.3	51.4	0.0	0.0	0.0		x	Total	10.50	r	442558.25	5025969.90	10.50
West Facade - 56.5 m			INT_R08	62.9	-75.9	55.3	0.0	0.0	0.0		x	Total	56.50	r	442521.79	5025985.93	56.50
OLA - 10th Floor			INT_R09	50.6	-79.0	43.0	0.0	0.0	0.0		x	Total	1.50	g	442543.31	5025972.72	28.60
OLA - 5th Floor			INT_R10	49.1	-79.0	41.5	0.0	0.0	0.0		x	Total	1.50	g	442543.57	5025962.59	14.10
OLA - 5th Floor			INT_R11	50.6	-78.6	43.0	0.0	0.0	0.0		x	Total	1.50	g	442552.19	5025967.56	14.10
OLA - Ground			INT_R12	54.4	-77.4	46.8	0.0	0.0	0.0		x	Total	1.50	r	442512.42	5025982.86	1.50
OLA - Ground			INT_R13	56.9	-77.4	49.3	0.0	0.0	0.0		x	Total	1.50	r	442523.44	5025961.83	1.50
OLA - Ground			INT_R14	52.7	-77.2	45.1	0.0	0.0	0.0		x	Total	1.50	r	442540.44	5025937.27	1.50

Receiver
Name: West Facade - 20 m
ID: INT_R01
X: 442513.01 m
Y: 5026004.26 m
Z: 20.00 m

Road, TNM, Name: "Carling Ave. Eastbound", ID: "RD_CarlingEB"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
44	442620.43	5026144.87	0.10	0	D	A	59.9	-19.3	0.0	42.6	0.0	0.0	-2.0
165	442571.75	5026115.12	0.10	0	D	A	59.9	-19.4	0.0	36.9	0.0	0.0	3.6
420	442441.94	5026035.77	0.10	0	D	A	59.9	-15.3	0.0	16.9	0.0	0.0	27.7
422	442409.49	5026015.94	0.10	0	D	A	59.9	-17.8	0.0	-5.4	0.0	0.0	47.5
466	442617.56	5026149.56	0.10	0	D	A	59.9	-19.4	0.0	42.8	0.0	0.0	-2.3
535	442568.88	5026119.81	0.10	0	D	A	59.9	-19.6	0.0	36.7	0.0	0.0	3.6
732	442439.07	5026040.47	0.10	0	D	A	59.9	-15.8	0.0	12.6	0.0	0.0	31.5
736	442406.62	5026020.63	0.10	0	D	A	59.9	-18.1	0.0	-3.9	0.0	0.0	45.7
811	442620.43	5026144.87	1.52	0	D	A	57.1	-19.3	0.0	43.4	0.0	0.0	-5.6
905	442571.75	5026115.12	1.52	0	D	A	57.1	-19.4	0.0	38.6	0.0	0.0	-1.0
1043	442441.94	5026035.77	1.52	0	D	A	57.1	-15.3	0.0	17.0	0.0	0.0	24.8
1046	442409.49	5026015.94	1.52	0	D	A	57.1	-17.8	0.0	-5.1	0.0	0.0	44.4
1079	442617.56	5026149.56	1.52	0	D	A	57.1	-19.4	0.0	43.9	0.0	0.0	-6.1
1184	442568.88	5026119.81	1.52	0	D	A	57.1	-19.6	0.0	38.1	0.0	0.0	-0.6
1313	442439.07	5026040.47	1.52	0	D	A	57.1	-15.8	0.0	11.7	0.0	0.0	29.6
1315	442406.62	5026020.63	1.52	0	D	A	57.1	-18.1	0.0	-3.2	0.0	0.0	42.2
1369	442620.43	5026144.87	3.66	0	D	A	57.0	-19.3	0.0	41.8	0.0	0.0	-4.1
1408	442571.75	5026115.12	3.66	0	D	A	57.0	-19.4	0.0	38.6	0.0	0.0	-1.1
1501	442441.94	5026035.77	3.66	0	D	A	57.0	-15.3	0.0	13.1	0.0	0.0	28.6
1505	442409.49	5026015.94	3.66	0	D	A	57.0	-17.8	0.0	-5.1	0.0	0.0	44.3
1538	442617.56	5026149.56	3.66	0	D	A	57.0	-19.3	0.0	41.9	0.0	0.0	-4.3
1619	442568.88	5026119.81	3.66	0	D	A	57.0	-19.6	0.0	37.8	0.0	0.0	-0.4
1762	442439.07	5026040.47	3.66	0	D	A	57.0	-15.8	0.0	8.8	0.0	0.0	32.4
1764	442406.62	5026020.63	3.66	0	D	A	57.0	-18.0	0.0	-3.2	0.0	0.0	42.1
4106	442374.45	5025997.00	0.10	0	D	A	59.9	-20.0	0.0	-4.0	0.0	0.0	43.9
4117	442337.32	5025979.24	0.10	0	D	A	59.9	-22.2	0.0	43.9	0.0	0.0	-6.2
4121	442281.63	5025952.59	0.10	0	D	A	59.9	-21.6	0.0	48.4	0.0	0.0	-10.2
4124	442372.08	5026001.97	0.10	0	D	A	59.9	-20.1	0.0	-4.0	0.0	0.0	43.8
4136	442334.95	5025984.20	0.10	0	D	A	59.9	-22.2	0.0	42.4	0.0	0.0	-4.7
4143	442279.26	5025957.56	0.10	0	D	A	59.9	-21.6	0.0	46.9	0.0	0.0	-8.6
5395	442374.45	5025997.00	1.52	0	D	A	57.1	-20.0	0.0	-2.1	0.0	0.0	39.2
5404	442372.08	5026001.97	1.52	0	D	A	57.1	-20.1	0.0	-2.1	0.0	0.0	39.0
5409	442334.95	5025984.20	1.52	0	D	A	57.1	-22.2	0.0	45.5	0.0	0.0	-10.6
5412	442374.45	5025997.00	3.66	0	D	A	57.0	-20.0	0.0	-2.5	0.0	0.0	39.5
5422	442372.08	5026001.97	3.66	0	D	A	57.0	-20.1	0.0	-2.4	0.0	0.0	39.3
5716	442775.44	5026238.50	0.10	0	D	A	59.9	-24.4	0.0	40.5	0.0	0.0	-4.9
5722	442693.72	5026189.30	0.10	0	D	A	59.9	-21.7	0.0	46.9	0.0	0.0	-8.6
5726	442772.60	5026243.22	0.10	0	D	A	59.9	-24.4	0.0	40.4	0.0	0.0	-4.9
5727	442690.89	5026194.01	0.10	0	D	A	59.9	-21.7	0.0	46.8	0.0	0.0	-8.6
6010	442775.44	5026238.50	1.52	0	D	A	57.1	-24.4	0.0	41.5	0.0	0.0	-8.7
6020	442772.60	5026243.22	1.52	0	D	A	57.1	-24.4	0.0	41.4	0.0	0.0	-8.7
6050	442775.44	5026238.50	3.66	0	D	A	57.0	-24.3	0.0	38.6	0.0	0.0	-6.0
6055	442693.72	5026189.30	3.66	0	D	A	57.0	-21.6	0.0	45.1	0.0	0.0	-9.8
6059	442772.60	5026243.22	3.66	0	D	A	57.0	-24.3	0.0	38.6	0.0	0.0	-6.0
6062	442690.89	5026194.01	3.66	0	D	A	57.0	-21.6	0.0	44.8	0.0	0.0	-9.5
6293	442182.39	5025894.52	0.10	0	D	A	59.9	-24.1	0.0	34.0	0.0	0.0	1.8
6294	442179.05	5025898.89	0.10	0	D	A	59.9	-24.2	0.0	36.0	0.0	0.0	-0.3
6316	442182.39	5025894.52	1.52	0	D	A	57.1	-24.1	0.0	34.4	0.0	0.0	-1.4
6317	442179.05	5025898.89	1.52	0	D	A	57.1	-24.2	0.0	37.5	0.0	0.0	-4.6
6320	442182.39	5025894.52	3.66	0	D	A	57.0	-24.1	0.0	33.5	0.0	0.0	-0.7
6321	442179.05	5025898.89	3.66	0	D	A	57.0	-24.2	0.0	36.8	0.0	0.0	-4.0

Road, TNM, Name: "Highway 417 Eastbound", ID: "RD_417EB"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
738	442262.34	5026074.48	5.35	0	D	A	71.6	-20.9	0.0	0.5	0.0	0.0	50.2
739	442191.78	5025984.42	5.85	0	D	A	71.6	-22.7	0.0	0.6	0.0	0.0	48.3
740	442253.29	5026081.57	5.35	0	D	A	71.6	-21.3	0.0	-0.1	0.0	0.0	50.4
742	442182.73	5025991.51	5.85	0	D	A	71.6	-22.9	0.0	1.0	0.0	0.0	47.7
763	442372.44	5026219.66	4.35	0	D	A	71.6	-22.2	0.0	59.4	0.0	0.0	-9.9
766	442322.62	5026152.96	4.85	0	D	A	71.6	-21.6	0.0	44.7	0.0	0.0	5.3
786	442363.23	5026226.54	4.35	0	D	A	71.6	-22.5	0.0	59.3	0.0	0.0	-10.2
793	442313.40	5026159.84	4.85	0	D	A	71.6	-22.0	0.0	43.5	0.0	0.0	6.1
2128	442115.08	5025886.95	6.10	0	D	A	71.6	-24.2	0.0	40.5	0.0	0.0	6.9
2133	442032.28	5025782.10	6.10	0	D	A	71.6	-26.3	0.0	31.6	0.0	0.0	13.7
2134	442106.06	5025894.07	6.10	0	D	A	71.6	-24.3	0.0	42.8	0.0	0.0	4.5
2136	442023.25	5025789.23	6.10	0	D	A	71.6	-26.4	0.0	31.5	0.0	0.0	13.7
2138	442262.34	5026074.48	6.78	0	D	A	68.8	-20.9	0.0	-0.5	0.0	0.0	48.4
2139	442191.78	5025984.42	7.28	0	D	A	68.8	-22.7	0.0	-0.4	0.0	0.0	46.6
2140	442253.29	5026081.57	6.78	0	D	A	68.8	-21.3	0.0	-0.8	0.0	0.0	48.4
2142	442182.73	5025991.51	7.28	0	D	A	68.8	-22.9	0.0	-0.2	0.0	0.0	46.1
2230	442505.67	5026428.31	3.60	0	D	A	71.6	-22.8	0.0	54.7	0.0	0.0	-5.9
2289	442495.67	5026433.99	3.60	0	D	A	71.6	-22.9	0.0	54.7	0.0	0.0	-6.0
2326	442322.62	5026152.96	6.28	0	D	A	68.8	-21.6	0.0	45.0	0.0	0.0	2.2
2338	442313.40	5026159.84	6.28	0	D	A	68.8	-22.0	0.0	44.4	0.0	0.0	2.4
2666	442262.34	5026074.48	8.91	0	D	A	66.3	-20.9	0.0	-0.2	0.0	0.0	45.6
2667	442191.78	5025984.42	9.41	0	D	A	66.3	-22.7	0.0	-0.3	0.0	0.0	43.9
2668	442253.29	5026081.57	8.91	0	D	A	66.3	-21.3	0.0	-0.5	0.0	0.0	45.6
2671	442182.73	5025991.51	9.41	0	D	A	66.3	-22.9	0.0	0.2	0.0	0.0	43.2
2680	442115.08	5025886.95	7.53	0	D	A	68.8	-24.2	0.0	39.7	0.0	0.0	5.0
2687	442032.28	5025782.10	7.53	0	D	A	68.8	-26.3	0.0	33.2	0.0	0.0	9.3
2689	442106.06	5025894.07	7.53	0	D	A	68.8	-24.3	0.0	43.5	0.0	0.0	1.0
2694	442023.25	5025789.23	7.53	0	D	A	68.8	-26.4	0.0	33.0	0.0	0.0	9.4
3840	442505.67	5026428.31	5.03	0	D	A	68.8	-22.8	0.0	55.1	0.0	0.0	-9.0
3929	442495.67	5026433.99	5.03	0	D	A	68.8	-22.9	0.0	54.9	0.0	0.0	-9.0
3996	442322.62	5026152.96	8.41	0	D	A	66.3	-21.6	0.0	43.3	0.0	0.0	1.3
4009	442313.40	5026159.84	8.41	0	D	A	66.3	-22.0	0.0	43.0	0.0	0.0	1.2
4191	442412.50	5026276.22	4.10	0	D	A	71.6	-25.0	0.0	57.6	0.0	0.0	-11.0
4254	442402.87	5026282.50	4.10	0	D	A	71.6	-25.3	0.0	57.2	0.0	0.0	-10.9
4619	442115.08	5025886.95	9.66	0	D	A	66.3	-24.2	0.0	34.2	0.0	0.0	7.9
4625	442032.28	5025782.10	9.66	0	D	A	66.3	-26.3	0.0	33.9	0.0	0.0	6.1
4629	442106.06	5025894.07	9.66	0	D	A	66.3	-24.3	0.0	41.1	0.0	0.0	0.9
4634	442023.25	5025789.23	9.66	0	D	A	66.3	-26.4	0.0	33.6	0.0	0.0	6.3
4704	441930.31	5025652.68	6.10	0	D	A	71.6	-26.8	0.0	1.2	0.0	0.0	43.6
4705	441921.27	5025659.79	6.10	0	D	A	71.6	-26.9	0.0	1.2	0.0	0.0	43.6
5189	442505.67	5026428.31	7.16	0	D	A	66.3	-22.8	0.0	52.8	0.0	0.0	-9.3
5290	442495.67	5026433.99	7.16	0	D	A	66.3	-22.9	0.0	52.6	0.0	0.0	-9.2
5656	441930.31	5025652.68	7.53	0	D	A	68.8	-26.8	0.0	-0.4	0.0	0.0	42.4
5657	441921.27	5025659.79	7.53	0	D	A	68.8	-26.9	0.0	-0.4	0.0	0.0	42.3
5776	442568.08	5026538.68	3.10	0	D	A	71.6	-29.7	0.0	48.8	0.0	0.0	-6.9
5829	442558.05	5026544.29	3.10	0	D	A	71.6	-29.8	0.0	48.9	0.0	0.0	-7.1
6005	441930.31	5025652.68	9.66	0	D	A	66.3	-26.8	0.0	0.8	0.0	0.0	38.8
6006	441921.27	5025659.79	9.66	0	D	A	66.3	-26.9	0.0	0.7	0.0	0.0	38.8
6098	442568.08	5026538.68	4.53	0	D	A	68.8	-29.7	0.0	49.2	0.0	0.0	-10.1
6151	442558.05	5026544.29	4.53	0	D	A	68.8	-29.8	0.0	49.3	0.0	0.0	-10.3
6265	442568.08	5026538.68	6.66	0	D	A	66.3	-29.7	0.0	46.0	0.0	0.0	-9.4
6284	442558.05	5026544.29	6.66	0	D	A	66.3	-29.8	0.0	46.2	0.0	0.0	-9.6

Road, TNM, Name: "Highway 417 Westbound", ID: "RD_417WB"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1327	442356.29	5026233.08	4.35	0	D	A	71.6	-22.8	0.0	59.5	0.0	0.0	-10.7
1328	442306.31	5026166.12	4.85	0	D	A	71.6	-22.3	0.0	43.2	0.0	0.0	6.1
1345	442297.09	5026173.00	4.85	0	D	A	71.6	-22.7	0.0	42.6	0.0	0.0	6.2
2144	442159.04	5025977.64	6.60	0	D	A	71.6	-21.8	0.0	0.4	0.0	0.0	49.4
2145	442150.01	5025984.75	6.60	0	D	A	71.6	-22.0	0.0	0.9	0.0	0.0	48.7
2293	442246.15	5026088.11	6.10	0	D	A	71.6	-21.6	0.0	7.4	0.0	0.0	42.6
2297	442237.12	5026095.24	6.10	0	D	A	71.6	-21.9	0.0	5.0	0.0	0.0	44.7

Road, TNM, Name: "Highway 417 Westbound", ID: "RD_417WB"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2302	442066.16	5025858.15	6.10	0	D	A	71.6	-25.2	0.0	40.9	0.0	0.0	5.5
2307	441984.37	5025751.18	6.10	0	D	A	71.6	-27.2	0.0	30.3	0.0	0.0	14.1
2311	442057.03	5025865.13	6.10	0	D	A	71.6	-25.4	0.0	37.5	0.0	0.0	8.8
2317	441975.23	5025758.16	6.10	0	D	A	71.6	-27.3	0.0	29.9	0.0	0.0	14.4
2347	442306.31	5026166.12	6.28	0	D	A	68.8	-22.3	0.0	43.8	0.0	0.0	2.7
2365	442297.09	5026173.00	6.28	0	D	A	68.8	-22.7	0.0	43.9	0.0	0.0	2.3
3528	442523.28	5026494.73	3.60	0	D	A	71.6	-24.4	0.0	49.0	0.0	0.0	-1.8
3620	442513.23	5026500.31	3.60	0	D	A	71.6	-24.5	0.0	49.1	0.0	0.0	-2.0
3673	442450.33	5026370.48	4.10	0	D	A	71.6	-24.1	0.0	58.0	0.0	0.0	-10.6
3752	442440.65	5026376.69	4.10	0	D	A	71.6	-24.3	0.0	58.2	0.0	0.0	-10.9
3754	442159.04	5025977.64	8.03	0	D	A	68.8	-21.8	0.0	-0.4	0.0	0.0	47.4
3755	442150.01	5025984.75	8.03	0	D	A	68.8	-22.0	0.0	-0.1	0.0	0.0	46.9
3935	442246.15	5026088.11	7.53	0	D	A	68.8	-21.6	0.0	5.4	0.0	0.0	41.9
3938	442237.12	5026095.24	7.53	0	D	A	68.8	-21.9	0.0	2.5	0.0	0.0	44.4
3951	442066.16	5025858.15	7.53	0	D	A	68.8	-25.2	0.0	40.1	0.0	0.0	3.5
3954	441984.37	5025751.18	7.53	0	D	A	68.8	-27.2	0.0	31.6	0.0	0.0	10.0
3970	442057.03	5025865.13	7.53	0	D	A	68.8	-25.4	0.0	39.2	0.0	0.0	4.2
3979	441975.23	5025758.16	7.53	0	D	A	68.8	-27.3	0.0	31.1	0.0	0.0	10.4
4056	442401.00	5026295.47	4.10	0	D	A	71.6	-24.6	0.0	56.8	0.0	0.0	-9.8
4104	442391.50	5026301.95	4.10	0	D	A	71.6	-24.9	0.0	56.5	0.0	0.0	-9.8
4282	442306.31	5026166.12	8.41	0	D	A	66.3	-22.3	0.0	42.3	0.0	0.0	1.7
4308	442297.09	5026173.00	8.41	0	D	A	66.3	-22.7	0.0	41.5	0.0	0.0	2.1
4739	442523.28	5026494.73	5.03	0	D	A	68.8	-24.4	0.0	49.4	0.0	0.0	-4.9
4792	442513.23	5026500.31	5.03	0	D	A	68.8	-24.5	0.0	49.4	0.0	0.0	-5.0
5068	442159.04	5025977.64	10.16	0	D	A	66.3	-21.8	0.0	0.1	0.0	0.0	44.4
5069	442150.01	5025984.75	10.16	0	D	A	66.3	-22.0	0.0	0.5	0.0	0.0	43.8
5292	442246.15	5026088.11	9.66	0	D	A	66.3	-21.6	0.0	3.3	0.0	0.0	41.5
5296	442237.12	5026095.24	9.66	0	D	A	66.3	-21.9	0.0	2.4	0.0	0.0	42.1
5303	442066.16	5025858.15	9.66	0	D	A	66.3	-25.2	0.0	37.2	0.0	0.0	3.9
5309	441984.37	5025751.18	9.66	0	D	A	66.3	-27.2	0.0	30.7	0.0	0.0	8.5
5316	442057.03	5025865.13	9.66	0	D	A	66.3	-25.4	0.0	36.1	0.0	0.0	4.9
5318	441975.23	5025758.16	9.66	0	D	A	66.3	-27.3	0.0	28.9	0.0	0.0	10.2
5499	441900.22	5025643.01	6.10	0	D	A	71.6	-28.7	0.0	1.3	0.0	0.0	41.6
5501	441891.20	5025650.15	6.10	0	D	A	71.6	-28.8	0.0	13.2	0.0	0.0	29.6
5595	442523.28	5026494.73	7.16	0	D	A	66.3	-24.4	0.0	46.3	0.0	0.0	-4.3
5654	442513.23	5026500.31	7.16	0	D	A	66.3	-24.5	0.0	46.4	0.0	0.0	-4.6
5954	441900.22	5025643.01	7.53	0	D	A	68.8	-28.7	0.0	-0.1	0.0	0.0	40.2
5956	441891.20	5025650.15	7.53	0	D	A	68.8	-28.8	0.0	10.6	0.0	0.0	29.4
6243	441900.22	5025643.01	9.66	0	D	A	66.3	-28.7	0.0	0.8	0.0	0.0	36.8
6244	441891.20	5025650.15	9.66	0	D	A	66.3	-28.8	0.0	9.6	0.0	0.0	28.0

Road, TNM, Name: "Carling Ave. Westbound", ID: "RD_CarlingWB"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1823	442598.97	5026150.75	0.10	0	D	A	59.9	-20.7	0.0	30.9	0.0	0.0	8.3
1846	442554.92	5026123.41	0.10	0	D	A	59.9	-18.1	0.0	46.2	0.0	0.0	-4.3
2016	442596.07	5026155.42	0.10	0	D	A	59.9	-20.8	0.0	35.7	0.0	0.0	3.4
2030	442552.02	5026128.09	0.10	0	D	A	59.9	-18.3	0.0	45.8	0.0	0.0	-4.2
2409	442598.97	5026150.75	1.52	0	D	A	57.1	-20.6	0.0	32.0	0.0	0.0	4.5
2421	442554.92	5026123.41	1.52	0	D	A	57.1	-18.1	0.0	47.7	0.0	0.0	-8.6
2540	442596.07	5026155.42	1.52	0	D	A	57.1	-20.8	0.0	37.0	0.0	0.0	-0.7
2558	442552.02	5026128.09	1.52	0	D	A	57.1	-18.3	0.0	47.2	0.0	0.0	-8.4
3051	442598.97	5026150.75	3.66	0	D	A	57.0	-20.6	0.0	29.5	0.0	0.0	6.9
3062	442554.92	5026123.41	3.66	0	D	A	57.0	-18.0	0.0	47.3	0.0	0.0	-8.4
3225	442596.07	5026155.42	3.66	0	D	A	57.0	-20.7	0.0	34.6	0.0	0.0	1.6
3253	442552.02	5026128.09	3.66	0	D	A	57.0	-18.3	0.0	46.4	0.0	0.0	-7.7
4636	442430.45	5026046.39	0.10	0	D	A	59.9	-17.4	0.0	6.7	0.0	0.0	35.8
4639	442401.83	5026029.05	0.10	0	D	A	59.9	-19.1	0.0	-4.0	0.0	0.0	44.7
4641	442427.60	5026051.10	0.10	0	D	A	59.9	-17.8	0.0	3.7	0.0	0.0	38.5
4642	442398.98	5026033.75	0.10	0	D	A	59.9	-19.4	0.0	-4.0	0.0	0.0	44.5
5502	442430.45	5026046.39	1.52	0	D	A	57.1	-17.3	0.0	6.5	0.0	0.0	33.3
5504	442401.83	5026029.05	1.52	0	D	A	57.1	-19.1	0.0	-3.0	0.0	0.0	41.0
5505	442427.60	5026051.10	1.52	0	D	A	57.1	-17.8	0.0	-3.4	0.0	0.0	42.7

Road, TNM, Name: "Carling Ave. Westbound", ID: "RD_CarlingWB"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
5506	442398.98	5026033.75	1.52	0	D	A	57.1	-19.4	0.0	-2.8	0.0	0.0	40.5
5658	442430.45	5026046.39	3.66	0	D	A	57.0	-17.3	0.0	-2.3	0.0	0.0	41.9
5659	442401.83	5026029.05	3.66	0	D	A	57.0	-19.1	0.0	-2.7	0.0	0.0	40.6
5661	442427.60	5026051.10	3.66	0	D	A	57.0	-17.7	0.0	-2.0	0.0	0.0	41.2
5662	442398.98	5026033.75	3.66	0	D	A	57.0	-19.4	0.0	-2.8	0.0	0.0	40.4
5730	442722.47	5026224.87	0.10	0	D	A	59.9	-23.9	0.0	42.3	0.0	0.0	-6.3
5740	442654.79	5026184.55	0.10	0	D	A	59.9	-21.4	0.0	48.2	0.0	0.0	-9.7
5742	442719.65	5026229.60	0.10	0	D	A	59.9	-23.9	0.0	42.2	0.0	0.0	-6.3
5751	442651.98	5026189.27	0.10	0	D	A	59.9	-21.5	0.0	47.5	0.0	0.0	-9.0
5895	442284.40	5026013.44	0.10	0	D	A	59.9	-22.1	0.0	-3.8	0.0	0.0	41.5
5897	442285.00	5026018.91	0.10	0	D	A	59.9	-23.4	0.0	-3.7	0.0	0.0	40.2
6025	442722.47	5026224.87	1.52	0	D	A	57.1	-23.9	0.0	43.5	0.0	0.0	-10.2
6041	442719.65	5026229.60	1.52	0	D	A	57.1	-23.9	0.0	43.4	0.0	0.0	-10.2
6064	442722.47	5026224.87	3.66	0	D	A	57.0	-23.9	0.0	40.8	0.0	0.0	-7.7
6070	442654.79	5026184.55	3.66	0	D	A	57.0	-21.4	0.0	44.6	0.0	0.0	-9.0
6072	442719.65	5026229.60	3.66	0	D	A	57.0	-23.9	0.0	40.6	0.0	0.0	-7.6
6079	442651.98	5026189.27	3.66	0	D	A	57.0	-21.4	0.0	45.1	0.0	0.0	-9.5
6152	442374.01	5026015.66	0.10	0	D	A	59.9	-21.9	0.0	-5.5	0.0	0.0	43.6
6153	442372.21	5026020.86	0.10	0	D	A	59.9	-22.0	0.0	-4.0	0.0	0.0	42.0
6154	442284.40	5026013.44	1.52	0	D	A	57.1	-22.0	0.0	0.7	0.0	0.0	34.4
6155	442285.00	5026018.91	1.52	0	D	A	57.1	-23.2	0.0	0.9	0.0	0.0	33.1
6240	442284.40	5026013.44	3.66	0	D	A	57.0	-21.7	0.0	-0.6	0.0	0.0	35.8
6242	442285.00	5026018.91	3.66	0	D	A	57.0	-22.8	0.0	-0.1	0.0	0.0	34.3
6247	442347.56	5026009.50	0.10	0	D	A	59.9	-24.4	0.0	-3.1	0.0	0.0	38.6
6248	442346.90	5026014.96	0.10	0	D	A	59.9	-24.2	0.0	-3.9	0.0	0.0	39.7
6300	442374.01	5026015.66	1.52	0	D	A	57.1	-21.8	0.0	-4.9	0.0	0.0	40.1
6301	442372.21	5026020.86	1.52	0	D	A	57.1	-21.9	0.0	-2.0	0.0	0.0	37.2
6306	442374.01	5026015.66	3.66	0	D	A	57.0	-21.8	0.0	-4.6	0.0	0.0	39.8
6307	442372.21	5026020.86	3.66	0	D	A	57.0	-21.9	0.0	-2.3	0.0	0.0	37.4
6310	442786.22	5026263.44	0.10	0	D	A	59.9	-26.3	0.0	39.8	0.0	0.0	-6.2
6311	442783.34	5026268.12	0.10	0	D	A	59.9	-26.3	0.0	39.8	0.0	0.0	-6.2
6312	442347.56	5026009.50	1.52	0	D	A	57.1	-24.3	0.0	0.0	0.0	0.0	32.7
6313	442346.90	5026014.96	1.52	0	D	A	57.1	-24.1	0.0	-0.6	0.0	0.0	33.6
6318	442347.56	5026009.50	3.66	0	D	A	57.0	-24.1	0.0	-0.4	0.0	0.0	33.3
6319	442346.90	5026014.96	3.66	0	D	A	57.0	-23.9	0.0	-1.2	0.0	0.0	34.2
6330	442786.22	5026263.44	1.52	0	D	A	57.1	-26.3	0.0	40.7	0.0	0.0	-9.9
6331	442783.34	5026268.12	1.52	0	D	A	57.1	-26.3	0.0	40.7	0.0	0.0	-9.9
6332	442786.22	5026263.44	3.66	0	D	A	57.0	-26.3	0.0	37.9	0.0	0.0	-7.2
6333	442783.34	5026268.12	3.66	0	D	A	57.0	-26.3	0.0	37.9	0.0	0.0	-7.2

Road, TNM, Name: "Merivale Road", ID: "RD_Merivale"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2696	442611.39	5025689.87	0.10	0	D	A	59.1	-22.8	0.0	11.8	0.0	0.0	24.5
2730	442631.28	5025804.38	0.10	0	D	A	59.1	-19.7	0.0	48.7	0.0	0.0	-9.3
2814	442666.08	5026004.77	0.10	0	D	A	59.1	-19.3	0.0	50.0	0.0	0.0	-10.2
2845	442676.02	5026062.02	0.10	0	D	A	59.1	-20.3	0.0	46.2	0.0	0.0	-7.4
2850	442621.74	5025688.07	0.10	0	D	A	59.1	-22.9	0.0	11.2	0.0	0.0	25.0
2983	442676.42	5026002.97	0.10	0	D	A	59.1	-19.8	0.0	48.6	0.0	0.0	-9.3
3004	442686.36	5026060.23	0.10	0	D	A	59.1	-20.7	0.0	47.1	0.0	0.0	-8.8
4313	442611.39	5025689.87	3.66	0	D	A	57.1	-22.8	0.0	10.3	0.0	0.0	24.1
4460	442676.02	5026062.02	3.66	0	D	A	57.1	-20.3	0.0	46.5	0.0	0.0	-9.6
4461	442621.74	5025688.07	3.66	0	D	A	57.1	-22.9	0.0	9.7	0.0	0.0	24.6
4491	442641.62	5025802.58	3.66	0	D	A	57.1	-20.0	0.0	48.2	0.0	0.0	-11.0
4616	442686.36	5026060.23	3.66	0	D	A	57.1	-20.7	0.0	46.5	0.0	0.0	-10.1
4795	442611.39	5025689.87	1.52	0	D	A	56.0	-22.8	0.0	12.0	0.0	0.0	21.3
4899	442621.74	5025688.07	1.52	0	D	A	56.0	-22.9	0.0	11.8	0.0	0.0	21.3
6234	442652.37	5026154.12	0.10	0	D	A	59.1	-20.3	0.0	48.5	0.0	0.0	-9.8
6299	442573.28	5026323.09	0.10	0	D	A	59.1	-23.8	0.0	39.8	0.0	0.0	-4.5
6315	442573.28	5026323.09	3.66	0	D	A	57.1	-23.8	0.0	38.3	0.0	0.0	-4.9
6323	442573.28	5026323.09	1.52	0	D	A	56.0	-23.8	0.0	40.9	0.0	0.0	-8.7
6334	442531.76	5026374.17	0.10	0	D	A	59.1	-28.3	0.0	41.7	0.0	0.0	-10.9
6348	442531.76	5026374.17	3.66	0	D	A	57.1	-28.3	0.0	39.8	0.0	0.0	-11.0

CadnaA-TNM Calculation Results on Background Traffic Noise - Summary

Name	Sel.	M.	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
				Day	Evening	Night	Day	Evening	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
West Facade - 20 m			INT_R01	59.7	-77.2	52.1	0.0	0.0	0.0		x	Total	20.00	r	442513.01	5026004.26	20.00
North Facade - 56.5 m			INT_R02	61.4	-76.6	53.8	0.0	0.0	0.0		x	Total	56.50	r	442513.10	5026007.56	56.50
North Facade - 56.5 m			INT_R03	61.5	-75.0	53.9	0.0	0.0	0.0		x	Total	56.50	r	442527.56	5026016.09	56.50
North Facade - 20 m			INT_R04	60.4	-75.4	52.9	0.0	0.0	0.0		x	Total	20.00	r	442528.05	5026016.39	20.00
North Facade - 4.5 m			INT_R05	52.6	-77.0	45.0	0.0	0.0	0.0		x	Total	4.50	r	442528.47	5026016.63	4.50

Receiver
Name: West Facade - 20 m
ID: INT_R01
X: 442513.01 m
Y: 5026004.26 m
Z: 20.00 m

Road, TNM, Name: "Highway 417", ID: "RD_417"														
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
16	442226.98	5026090.28	6.35	0	D	A	73.8	-21.6	0.0	3.6	0.0	0.0	48.6
25	442307.06	5026192.31	4.85	0	D	A	73.8	-21.0	0.0	43.8	0.0	0.0	9.0
52	442341.68	5026236.42	4.20	1	D	A	73.8	-30.5	0.0	45.5	0.0	1.0	-3.2
55	442257.27	5026066.51	6.35	0	D	A	73.8	-20.5	0.0	-0.2	0.0	0.0	53.5
57	442317.33	5026143.03	5.22	0	D	A	73.8	-22.7	0.0	45.0	0.0	0.0	6.1
99	442368.95	5026208.81	4.26	1	D	A	73.8	-27.4	0.0	51.6	0.0	1.0	-6.2
123	442378.04	5026289.74	3.85	0	D	A	73.8	-22.5	0.0	61.2	0.0	0.0	-9.9
159	442441.65	5026384.96	3.35	0	D	A	73.8	-24.3	0.0	58.6	0.0	0.0	-9.1
191	442387.84	5026304.41	3.77	1	D	A	73.8	-22.1	0.0	54.4	0.0	1.0	-3.7
214	442410.05	5026268.35	3.85	0	D	A	73.8	-21.6	0.0	57.7	0.0	0.0	-5.5
279	442473.66	5026363.57	3.35	0	D	A	73.8	-23.7	0.0	58.8	0.0	0.0	-8.7
314	442410.08	5026268.40	3.85	1	D	A	73.8	-22.2	0.0	59.9	0.0	1.0	-9.3
318	442226.98	5026090.28	7.78	0	D	A	71.1	-21.6	0.0	2.0	0.0	0.0	47.6
323	442307.06	5026192.31	6.28	0	D	A	71.1	-21.0	0.0	44.0	0.0	0.0	6.2
370	442341.68	5026236.42	5.63	1	D	A	71.1	-30.5	0.0	46.2	0.0	1.0	-6.5
371	442257.27	5026066.51	7.78	0	D	A	71.1	-20.5	0.0	0.1	0.0	0.0	50.6
373	442317.33	5026143.03	6.65	0	D	A	71.1	-22.7	0.0	46.0	0.0	0.0	2.5
415	442368.95	5026208.81	5.68	1	D	A	71.1	-27.4	0.0	52.3	0.0	1.0	-9.6
522	442387.84	5026304.41	5.20	1	D	A	71.1	-22.1	0.0	55.4	0.0	1.0	-7.4
550	442410.05	5026268.35	5.28	0	D	A	71.1	-21.6	0.0	58.9	0.0	0.0	-9.3
852	442534.47	5026547.36	3.10	0	D	A	73.8	-23.5	0.0	41.3	0.0	0.0	9.0
928	442568.45	5026529.26	3.10	0	D	A	73.8	-23.2	0.0	49.0	0.0	0.0	1.6
931	442099.99	5025926.02	7.10	0	D	A	73.8	-24.6	0.0	43.4	0.0	0.0	5.8
936	442130.32	5025902.31	7.10	0	D	A	73.8	-24.1	0.0	44.9	0.0	0.0	4.8
943	442004.69	5025801.73	6.10	0	D	A	73.8	-25.1	0.0	22.3	0.0	0.0	26.4
951	442035.39	5025778.50	6.10	0	D	A	73.8	-24.8	0.0	33.0	0.0	0.0	16.0
1056	442534.47	5026547.36	4.53	0	D	A	71.1	-23.4	0.0	41.8	0.0	0.0	5.9
1131	442568.45	5026529.26	4.53	0	D	A	71.1	-23.2	0.0	49.2	0.0	0.0	-1.3
1136	442162.48	5026006.95	7.10	0	D	A	73.8	-25.0	0.0	0.8	0.0	0.0	48.0
1138	442193.17	5025983.71	7.10	0	D	A	73.8	-24.2	0.0	2.1	0.0	0.0	47.5
1141	442226.98	5026090.28	9.91	0	D	A	66.1	-21.6	0.0	1.0	0.0	0.0	43.5
1147	442307.06	5026192.31	8.41	0	D	A	66.1	-21.0	0.0	42.5	0.0	0.0	2.7
1212	442341.68	5026236.42	7.76	1	D	A	66.1	-30.5	0.0	44.2	0.0	1.0	-9.5
1217	442257.27	5026066.51	9.91	0	D	A	66.1	-20.5	0.0	0.6	0.0	0.0	45.1
1220	442317.33	5026143.03	8.79	0	D	A	66.1	-22.7	0.0	42.7	0.0	0.0	0.8
1277	442368.95	5026208.81	7.82	1	D	A	66.1	-27.4	0.0	48.6	0.0	1.0	-10.9
1455	442387.84	5026304.41	7.33	1	D	A	66.1	-22.1	0.0	52.8	0.0	1.0	-9.8
1685	442099.99	5025926.02	8.53	0	D	A	71.1	-24.6	0.0	43.9	0.0	0.0	2.6
1687	442130.32	5025902.31	8.53	0	D	A	71.1	-24.1	0.0	45.1	0.0	0.0	1.9
1917	442004.69	5025801.73	7.53	0	D	A	71.1	-25.1	0.0	22.5	0.0	0.0	23.5
1921	442035.39	5025778.50	7.53	0	D	A	71.1	-24.8	0.0	34.9	0.0	0.0	11.4
1923	442162.48	5026006.95	8.53	0	D	A	71.1	-25.0	0.0	-0.8	0.0	0.0	46.9
1924	442193.17	5025983.71	8.53	0	D	A	71.1	-24.2	0.0	-0.2	0.0	0.0	47.1
2105	441902.17	5025670.99	6.10	0	D	A	73.8	-28.3	0.0	13.5	0.0	0.0	32.0
2108	441931.93	5025646.57	6.10	0	D	A	73.8	-28.1	0.0	1.2	0.0	0.0	44.4
2469	442534.47	5026547.36	6.66	0	D	A	66.1	-23.4	0.0	38.5	0.0	0.0	4.2
2497	442568.45	5026529.26	6.66	0	D	A	66.1	-23.2	0.0	46.0	0.0	0.0	-3.1
2619	441902.17	5025670.99	7.53	0	D	A	71.1	-28.3	0.0	11.0	0.0	0.0	31.8
2621	441931.93	5025646.57	7.53	0	D	A	71.1	-28.1	0.0	-0.4	0.0	0.0	43.4
2984	442099.99	5025926.02	10.66	0	D	A	66.1	-24.6	0.0	41.8	0.0	0.0	-0.3
2988	442130.32	5025902.31	10.66	0	D	A	66.1	-24.1	0.0	44.0	0.0	0.0	-2.0
2991	442004.69	5025801.73	9.66	0	D	A	66.1	-25.1	0.0	21.9	0.0	0.0	19.1

Road, TNM, Name: "Highway 417", ID: "RD_417"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2992	442035.39	5025778.50	9.66	0	D	A	66.1	-24.8	0.0	33.9	0.0	0.0	7.4
2994	442162.48	5026006.95	10.66	0	D	A	66.1	-25.0	0.0	-0.4	0.0	0.0	41.5
2995	442193.17	5025983.71	10.66	0	D	A	66.1	-24.2	0.0	-0.6	0.0	0.0	42.6
3675	441902.17	5025670.99	9.66	0	D	A	66.1	-28.3	0.0	9.8	0.0	0.0	28.1
3676	441931.93	5025646.57	9.66	0	D	A	66.1	-28.1	0.0	0.8	0.0	0.0	37.2

Road, TNM, Name: "Carling Ave", ID: "RD_Carling"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1727	442554.74	5026134.39	0.10	0	D	A	56.2	-18.9	0.0	45.3	0.0	0.0	-8.1
1776	442619.39	5026171.63	0.10	0	D	A	56.2	-19.0	0.0	33.4	0.0	0.0	3.7
1897	442567.97	5026111.43	0.10	0	D	A	56.2	-17.9	0.0	37.7	0.0	0.0	0.6
1908	442611.07	5026136.25	0.10	0	D	A	56.2	-20.6	0.0	42.1	0.0	0.0	-6.5
1926	442396.56	5026032.32	0.10	0	D	A	56.2	-19.7	0.0	-4.0	0.0	0.0	40.4
1927	442423.01	5026050.67	0.10	0	D	A	56.2	-18.3	0.0	2.6	0.0	0.0	35.3
2003	442411.66	5026010.54	0.10	0	D	A	56.2	-18.3	0.0	-3.8	0.0	0.0	41.6
2007	442438.12	5026028.90	0.10	0	D	A	56.2	-16.2	0.0	18.2	0.0	0.0	21.8
2230	442619.39	5026171.63	1.52	0	D	A	53.7	-19.0	0.0	34.9	0.0	0.0	-0.2
2357	442567.97	5026111.43	1.52	0	D	A	53.7	-17.8	0.0	40.0	0.0	0.0	-4.2
2367	442611.07	5026136.25	1.52	0	D	A	53.7	-20.6	0.0	43.0	0.0	0.0	-9.9
2498	442396.56	5026032.32	1.52	0	D	A	53.7	-19.7	0.0	-2.8	0.0	0.0	36.8
2499	442423.01	5026050.67	1.52	0	D	A	53.7	-18.3	0.0	-3.3	0.0	0.0	38.7
2531	442411.66	5026010.54	1.52	0	D	A	53.7	-18.3	0.0	-3.3	0.0	0.0	38.7
2532	442438.12	5026028.90	1.52	0	D	A	53.7	-16.2	0.0	15.9	0.0	0.0	21.7
2633	442266.35	5025970.50	0.10	0	D	A	56.2	-21.7	0.0	44.9	0.0	0.0	-10.5
2634	442325.89	5025997.42	0.10	0	D	A	56.2	-22.3	0.0	-3.9	0.0	0.0	37.8
2638	442365.58	5026015.36	0.10	0	D	A	56.2	-20.2	0.0	-5.6	0.0	0.0	41.5
2645	442376.49	5025991.21	0.10	0	D	A	56.2	-19.8	0.0	-4.0	0.0	0.0	40.4
3002	442325.89	5025997.42	1.52	0	D	A	53.7	-22.3	0.0	-0.3	0.0	0.0	31.7
3004	442365.58	5026015.36	1.52	0	D	A	53.7	-20.2	0.0	-4.8	0.0	0.0	38.3
3010	442376.49	5025991.21	1.52	0	D	A	53.7	-19.7	0.0	-2.3	0.0	0.0	36.3
3075	442619.39	5026171.63	3.66	0	D	A	49.8	-19.0	0.0	31.2	0.0	0.0	-0.4
3192	442567.97	5026111.43	3.66	0	D	A	49.8	-17.8	0.0	40.4	0.0	0.0	-8.5
3216	442701.75	5026220.21	0.10	0	D	A	56.2	-22.6	0.0	43.8	0.0	0.0	-10.3
3222	442780.77	5026268.02	0.10	0	D	A	56.2	-25.0	0.0	40.0	0.0	0.0	-8.9
3234	442899.29	5026339.74	0.10	0	D	A	56.2	-24.6	0.0	36.0	0.0	0.0	-4.5
3245	442715.47	5026197.54	0.10	0	D	A	56.2	-22.5	0.0	44.6	0.0	0.0	-11.0
3261	442794.49	5026245.35	0.10	0	D	A	56.2	-25.0	0.0	36.9	0.0	0.0	-5.8
3273	442913.01	5026317.07	0.10	0	D	A	56.2	-24.7	0.0	39.5	0.0	0.0	-8.0
3579	442396.56	5026032.32	3.66	0	D	A	49.8	-19.7	0.0	-2.8	0.0	0.0	32.9
3581	442423.01	5026050.67	3.66	0	D	A	49.8	-18.2	0.0	-2.8	0.0	0.0	34.3
3620	442411.66	5026010.54	3.66	0	D	A	49.8	-18.3	0.0	-2.9	0.0	0.0	34.3
3621	442438.12	5026028.90	3.66	0	D	A	49.8	-16.1	0.0	14.2	0.0	0.0	19.4
3689	442899.29	5026339.74	1.52	0	D	A	53.7	-24.6	0.0	36.9	0.0	0.0	-7.8
3696	442794.49	5026245.35	1.52	0	D	A	53.7	-25.0	0.0	38.1	0.0	0.0	-9.4
3933	442325.89	5025997.42	3.66	0	D	A	49.8	-22.3	0.0	-1.2	0.0	0.0	28.7
3934	442365.58	5026015.36	3.66	0	D	A	49.8	-20.2	0.0	-4.8	0.0	0.0	34.3
3942	442376.49	5025991.21	3.66	0	D	A	49.8	-19.7	0.0	-2.6	0.0	0.0	32.7
3956	442899.29	5026339.74	3.66	0	D	A	49.8	-24.6	0.0	34.0	0.0	0.0	-8.8
3972	442794.49	5026245.35	3.66	0	D	A	49.8	-25.0	0.0	34.8	0.0	0.0	-10.0
4058	442191.61	5025927.68	0.10	0	D	A	56.2	-24.5	0.0	42.3	0.0	0.0	-10.6
4065	442207.08	5025906.17	0.10	0	D	A	56.2	-24.2	0.0	36.0	0.0	0.0	-4.0
4202	442207.08	5025906.17	1.52	0	D	A	53.7	-24.2	0.0	36.9	0.0	0.0	-7.4

Road, TNM, Name: "Merivale Road", ID: "RD_Merivale"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
2648	442611.39	5025689.87	0.10	0	D	A	53.6	-22.8	0.0	12.0	0.0	0.0	18.8
2693	442631.28	5025804.38	0.10	0	D	A	53.6	-19.7	0.0	33.3	0.0	0.0	0.5
2816	442621.74	5025688.07	0.10	0	D	A	53.6	-22.9	0.0	11.3	0.0	0.0	19.3
3276	442611.39	5025689.87	1.52	0	D	A	51.0	-22.8	0.0	12.0	0.0	0.0	16.2
3321	442631.28	5025804.38	1.52	0	D	A	51.0	-19.7	0.0	34.8	0.0	0.0	-3.5
3422	442621.74	5025688.07	1.52	0	D	A	51.0	-22.9	0.0	11.9	0.0	0.0	16.2

Road, TNM, Name: "Merivale Road", ID: "RD_Merivale"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
3709	442611.39	5025689.87	3.66	0	D	A	48.6	-22.8	0.0	10.3	0.0	0.0	15.5
3741	442631.28	5025804.38	3.66	0	D	A	48.6	-19.7	0.0	32.8	0.0	0.0	-3.9
3817	442621.74	5025688.07	3.66	0	D	A	48.6	-22.9	0.0	9.7	0.0	0.0	16.0
4198	442573.28	5026323.09	0.10	0	D	A	53.6	-23.8	0.0	39.9	0.0	0.0	-10.1

Sample CadnaA-TNM and STAMSON Calculation Results

```
STAMSON 5.0        NORMAL REPORT        Date:
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: qr6_e.te             Time Period: Day/Night 16/8 hours
Description: Sample STAMSON Calculations at Receptor U6_E Without
Barriers, and Comparison with CadnaA-TNM Calculations


Road data, segment # 1: QEW-South (day/night)
----------------------------------------------
Car traffic volume  : 32597/16296 veh/TimePeriod  *
Medium truck volume :  1438/719   veh/TimePeriod  *
Heavy truck volume  :  4314/2157  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  33700
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  27.00
    Medium Truck % of Total Volume     :   3.75
    Heavy Truck  % of Total Volume     :  11.25
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 1: QEW-South (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  37.50 / 37.50  m
Receiver height           :   5.50 / 5.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: QEW-North (day/night)
```

```
---------------------------------------------
Car traffic volume  : 32597/16296 veh/TimePeriod  *
Medium truck volume :  1438/719   veh/TimePeriod  *
Heavy truck volume  :  4314/2157  veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  33700
    Percentage of Annual Growth        :   2.00
    Number of Years of Growth          :  27.00
    Medium Truck % of Total Volume     :   3.75
    Heavy Truck  % of Total Volume     :  11.25
    Day (16 hrs) % of Total Volume     :  66.67

Data for Segment # 2: QEW-North (day/night)
---------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  52.00 / 52.00  m
Receiver height           :   5.50 / 5.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Results segment # 1: QEW-South (day)
-----------------------------------

Source height = 1.83 m

ROAD (0.00 + 73.08 + 0.00) = 73.08 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.53  80.40   0.00  -6.09  -1.23   0.00   0.00   0.00  73.08
-------------------------------------------------------------------------------
```

Segment Leq : 73.08 dBA

Results segment # 2: QEW-North (day)

Source height = 1.83 m

ROAD (0.00 + 70.91 + 0.00) = 70.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.53	80.40	0.00	-8.26	-1.23	0.00	0.00	0.00	70.91

Segment Leq : 70.91 dBA

Total Leq All Segments: 75.14 dBA

Results segment # 1: QEW-South (night)

Source height = 1.83 m

ROAD (0.00 + 73.08 + 0.00) = 73.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.53	80.40	0.00	-6.09	-1.23	0.00	0.00	0.00	73.08

Segment Leq : 73.08 dBA

Results segment # 2: QEW-North (night)

Source height = 1.83 m

ROAD (0.00 + 70.91 + 0.00) = 70.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq

```
-------------------------------------------------------------------------------
   -90     90    0.53  80.40   0.00  -8.26  -1.23   0.00   0.00   0.00  70.91
-------------------------------------------------------------------------------

Segment Leq : 70.91 dBA

Total Leq All Segments: 75.14 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 75.14
                           (NIGHT): 75.14
```

CadnaA – TNM Calculation Results:
TOTAL Leq FROM ALL SOURCES (DAY): 74.9
(NIGHT): 74.9

The difference is 0.24 dBA!

Name	ID	Level Lr			Limit. Value			Land Use			Height		Coordinates		
		Day	Evening	**Night**	Day	Evening	Night	Type	Auto	Noise Type			X	Y	Z
		(dBA)	(dBA)	**(dBA)**	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
Unit 6 East Facade	U6_E	**74.9**	-68.6	**74.9**	0.0	0.0	0.0		x	Total	5.50	r	652572.55	4776615.33	5.50

Receiver
Name: Unit 6 East Facade
ID: U6_E
X: 652572.55 m
Y: 4776615.33 m
Z: 5.50 m

Road, TNM, Name: "QEW Southbound", ID: "QEW_S"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
1	652603.25	4776632.08	0.10	0	D	A	68.7	-13.2	0.0	-3.5	0.0	0.0	59.0
2	652596.50	4776642.17	0.10	0	D	A	68.7	-13.4	0.0	-3.4	0.0	0.0	58.7
3	652589.74	4776652.25	0.10	0	D	A	68.7	-14.5	0.0	-3.0	0.0	0.0	57.3
4	652582.98	4776662.34	0.10	0	D	A	68.7	-15.9	0.0	-2.8	0.0	0.0	55.6
5	652602.49	4776633.21	0.10	1	D	A	68.7	-25.8	0.0	12.5	0.0	2.0	28.4
6	652609.48	4776636.25	0.10	0	D	A	68.7	-14.9	0.0	-4.5	0.0	0.0	58.4
7	652602.73	4776646.34	0.10	0	D	A	68.7	-15.0	0.0	-4.5	0.0	0.0	58.2
8	652592.59	4776661.47	0.10	0	D	A	68.7	-13.3	0.0	-4.4	0.0	0.0	59.8
9	652609.49	4776636.24	0.10	1	D	A	68.7	-26.9	0.0	10.7	0.0	2.0	29.1
10	652602.76	4776646.29	0.10	1	D	A	68.7	-27.4	0.0	10.8	0.0	2.0	28.5
27	652573.94	4776675.14	0.10	0	D	A	68.7	-15.7	0.0	-2.2	0.0	0.0	55.2
28	652562.45	4776690.90	0.10	0	D	A	68.7	-17.8	0.0	-1.2	0.0	0.0	52.1
29	652545.22	4776714.54	0.10	0	D	A	68.7	-17.3	0.0	0.3	0.0	0.0	51.1
30	652580.00	4776679.56	0.10	0	D	A	68.7	-16.4	0.0	-4.0	0.0	0.0	56.4
31	652568.51	4776695.32	0.10	0	D	A	68.7	-18.3	0.0	-3.5	0.0	0.0	54.0
32	652551.28	4776718.96	0.10	0	D	A	68.7	-17.6	0.0	-2.5	0.0	0.0	53.6
33	652621.10	4776604.23	0.10	0	D	A	68.7	-14.5	0.0	-2.8	0.0	0.0	57.0
34	652611.42	4776619.48	0.10	0	D	A	68.7	-12.4	0.0	-3.4	0.0	0.0	59.7
35	652621.10	4776604.23	0.10	1	D	A	68.7	-23.6	0.0	12.3	0.0	2.0	30.9
36	652611.42	4776619.48	0.10	1	D	A	68.7	-24.3	0.0	12.3	0.0	2.0	30.1
37	652627.44	4776608.24	0.10	0	D	A	68.7	-15.4	0.0	-4.3	0.0	0.0	57.7
38	652617.75	4776623.50	0.10	0	D	A	68.7	-13.8	0.0	-4.5	0.0	0.0	59.4
39	652631.42	4776601.96	0.10	1	D	A	68.7	-31.2	0.0	10.5	0.0	2.0	25.1
40	652626.15	4776610.26	0.10	1	D	A	68.7	-24.4	0.0	10.5	0.0	2.0	31.8
41	652617.33	4776624.18	0.10	1	D	A	68.7	-25.0	0.0	10.6	0.0	2.0	31.1
42	652603.25	4776632.08	3.66	0	D	A	66.4	-13.2	0.0	-0.9	0.0	0.0	54.1
43	652596.50	4776642.17	3.66	0	D	A	66.4	-13.4	0.0	-1.2	0.0	0.0	54.2
44	652589.74	4776652.25	3.66	0	D	A	66.4	-14.5	0.0	-1.2	0.0	0.0	53.1
45	652582.98	4776662.34	3.66	0	D	A	66.4	-15.9	0.0	-1.1	0.0	0.0	51.6
46	652609.48	4776636.25	3.66	0	D	A	66.4	-14.9	0.0	-1.0	0.0	0.0	52.5
47	652602.73	4776646.34	3.66	0	D	A	66.4	-15.0	0.0	-0.8	0.0	0.0	52.2
48	652592.59	4776661.47	3.66	0	D	A	66.4	-13.3	0.0	-1.1	0.0	0.0	54.2
67	652573.94	4776675.14	3.66	0	D	A	66.4	-15.7	0.0	-0.5	0.0	0.0	51.2
68	652562.45	4776690.90	3.66	0	D	A	66.4	-17.8	0.0	-0.3	0.0	0.0	48.9
69	652545.22	4776714.54	3.66	0	D	A	66.4	-17.3	0.0	-0.4	0.0	0.0	49.5
70	652580.00	4776679.56	3.66	0	D	A	66.4	-16.4	0.0	-0.5	0.0	0.0	50.5
71	652568.51	4776695.32	3.66	0	D	A	66.4	-18.3	0.0	-0.3	0.0	0.0	48.4
72	652551.28	4776718.96	3.66	0	D	A	66.4	-17.6	0.0	0.1	0.0	0.0	48.8
73	652645.08	4776565.39	0.10	0	D	A	68.7	-18.1	0.0	-0.2	0.0	0.0	50.8
74	652632.30	4776586.23	0.10	0	D	A	68.7	-15.6	0.0	-1.6	0.0	0.0	54.7
75	652636.71	4776579.04	0.10	1	D	A	68.7	-19.4	0.0	12.1	0.0	2.0	35.2
76	652626.66	4776595.43	0.10	1	D	A	68.7	-31.2	0.0	12.2	0.0	2.0	23.3
77	652651.48	4776569.32	0.10	0	D	A	68.7	-18.4	0.0	-2.9	0.0	0.0	53.2
78	652638.70	4776590.15	0.10	0	D	A	68.7	-16.2	0.0	-3.8	0.0	0.0	56.4
79	652641.43	4776585.69	0.10	1	D	A	68.7	-20.1	0.0	10.9	0.0	2.0	35.8
80	652621.10	4776604.23	3.66	0	D	A	66.4	-14.5	0.0	-1.2	0.0	0.0	53.1
81	652611.42	4776619.48	3.66	0	D	A	66.4	-12.4	0.0	-1.5	0.0	0.0	55.5
82	652627.44	4776608.24	3.66	0	D	A	66.4	-15.4	0.0	-0.6	0.0	0.0	51.6
83	652617.75	4776623.50	3.66	0	D	A	66.4	-13.8	0.0	-0.8	0.0	0.0	53.4
84	652631.42	4776601.96	3.66	1	D	A	66.4	-31.2	0.0	9.1	0.0	2.0	24.2
85	652603.25	4776632.08	1.52	0	D	A	64.6	-13.2	0.0	-1.6	0.0	0.0	52.9
86	652596.50	4776642.17	1.52	0	D	A	64.6	-13.4	0.0	-1.5	0.0	0.0	52.6

Road, TNM, Name: "QEW Southbound", ID: "QEW_S"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
87	652589.74	4776652.25	1.52	0	D	A	64.6	-14.5	0.0	-1.2	0.0	0.0	51.3
88	652582.98	4776662.34	1.52	0	D	A	64.6	-15.9	0.0	-0.6	0.0	0.0	49.2
89	652602.49	4776633.21	1.52	1	D	A	64.6	-25.8	0.0	11.0	0.0	2.0	25.8
90	652609.48	4776636.25	1.52	0	D	A	64.6	-14.9	0.0	-1.5	0.0	0.0	51.2
91	652602.73	4776646.34	1.52	0	D	A	64.6	-15.0	0.0	-1.3	0.0	0.0	50.9
92	652592.59	4776661.47	1.52	0	D	A	64.6	-13.3	0.0	-0.4	0.0	0.0	51.6
93	652609.49	4776636.24	1.52	1	D	A	64.6	-26.9	0.0	11.6	0.0	2.0	24.1
114	652573.94	4776675.14	1.52	0	D	A	64.6	-15.7	0.0	0.3	0.0	0.0	48.6
115	652562.45	4776690.90	1.52	0	D	A	64.6	-17.8	0.0	0.9	0.0	0.0	45.9
116	652545.22	4776714.54	1.52	0	D	A	64.6	-17.3	0.0	1.2	0.0	0.0	46.1
117	652580.00	4776679.56	1.52	0	D	A	64.6	-16.4	0.0	1.0	0.0	0.0	47.2
118	652568.51	4776695.32	1.52	0	D	A	64.6	-18.3	0.0	1.5	0.0	0.0	44.8
119	652551.28	4776718.96	1.52	0	D	A	64.6	-17.6	0.0	1.7	0.0	0.0	45.2
124	652621.10	4776604.23	1.52	0	D	A	64.6	-14.5	0.0	-0.4	0.0	0.0	50.5
125	652611.42	4776619.48	1.52	0	D	A	64.6	-12.4	0.0	-1.3	0.0	0.0	53.4
126	652621.10	4776604.23	1.52	1	D	A	64.6	-23.6	0.0	11.7	0.0	2.0	27.3
127	652611.42	4776619.48	1.52	1	D	A	64.6	-24.3	0.0	11.3	0.0	2.0	26.9
128	652627.44	4776608.24	1.52	0	D	A	64.6	-15.4	0.0	0.2	0.0	0.0	49.0
129	652617.75	4776623.50	1.52	0	D	A	64.6	-13.8	0.0	-1.0	0.0	0.0	51.7
130	652631.42	4776601.96	1.52	1	D	A	64.6	-31.2	0.0	12.3	0.0	2.0	19.1
131	652626.15	4776610.26	1.52	1	D	A	64.6	-24.4	0.0	12.2	0.0	2.0	26.0
132	652617.33	4776624.18	1.52	1	D	A	64.6	-25.0	0.0	11.9	0.0	2.0	25.6
133	652645.08	4776565.39	3.66	0	D	A	66.4	-18.1	0.0	-0.2	0.0	0.0	48.6
134	652632.30	4776586.23	3.66	0	D	A	66.4	-15.6	0.0	-0.7	0.0	0.0	51.4
135	652636.71	4776579.04	3.66	1	D	A	66.4	-19.4	0.0	9.6	0.0	2.0	35.3
136	652626.66	4776595.43	3.66	1	D	A	66.4	-31.2	0.0	9.1	0.0	2.0	24.2
137	652651.48	4776569.32	3.66	0	D	A	66.4	-18.4	0.0	0.3	0.0	0.0	47.7
138	652638.70	4776590.15	3.66	0	D	A	66.4	-16.2	0.0	-0.2	0.0	0.0	50.4
139	652641.43	4776585.69	3.66	1	D	A	66.4	-20.1	0.0	9.1	0.0	2.0	35.3
140	652516.48	4776753.26	0.10	0	D	A	68.7	-18.8	0.0	2.6	0.0	0.0	47.3
141	652481.94	4776799.27	0.10	0	D	A	68.7	-21.7	0.0	5.0	0.0	0.0	42.1
142	652522.48	4776757.77	0.10	0	D	A	68.7	-19.0	0.0	-0.7	0.0	0.0	50.4
143	652487.94	4776803.77	0.10	0	D	A	68.7	-21.8	0.0	1.3	0.0	0.0	45.7
157	652645.08	4776565.39	1.52	0	D	A	64.6	-18.1	0.0	0.9	0.0	0.0	45.6
158	652632.30	4776586.23	1.52	0	D	A	64.6	-15.6	0.0	0.5	0.0	0.0	48.4
159	652636.71	4776579.04	1.52	1	D	A	64.6	-19.4	0.0	12.7	0.0	2.0	30.5
160	652626.66	4776595.43	1.52	1	D	A	64.6	-31.2	0.0	12.0	0.0	2.0	19.4
161	652651.48	4776569.32	1.52	0	D	A	64.6	-18.4	0.0	1.6	0.0	0.0	44.5
162	652638.70	4776590.15	1.52	0	D	A	64.6	-16.2	0.0	1.2	0.0	0.0	47.2
163	652641.43	4776585.69	1.52	1	D	A	64.6	-20.1	0.0	12.1	0.0	2.0	30.5
166	652516.48	4776753.26	3.66	0	D	A	66.4	-18.8	0.0	-0.4	0.0	0.0	48.0
167	652481.94	4776799.27	3.66	0	D	A	66.4	-21.7	0.0	-0.5	0.0	0.0	45.2
168	652522.48	4776757.77	3.66	0	D	A	66.4	-19.0	0.0	0.5	0.0	0.0	47.0
169	652487.94	4776803.77	3.66	0	D	A	66.4	-21.8	0.0	0.7	0.0	0.0	44.0
176	652660.51	4776539.16	0.10	0	D	A	68.7	-18.7	0.0	1.5	0.0	0.0	48.5
177	652667.02	4776542.88	0.10	0	D	A	68.7	-18.9	0.0	-1.7	0.0	0.0	51.5
184	652516.48	4776753.26	1.52	0	D	A	64.6	-18.8	0.0	1.7	0.0	0.0	44.1
185	652481.94	4776799.27	1.52	0	D	A	64.6	-21.7	0.0	2.7	0.0	0.0	40.1
186	652522.48	4776757.77	1.52	0	D	A	64.6	-19.0	0.0	2.0	0.0	0.0	43.7
187	652487.94	4776803.77	1.52	0	D	A	64.6	-21.8	0.0	2.5	0.0	0.0	40.3
190	652680.97	4776502.24	0.10	0	D	A	68.7	-20.1	0.0	4.2	0.0	0.0	44.4
191	652687.57	4776505.80	0.10	0	D	A	68.7	-20.3	0.0	0.3	0.0	0.0	48.2
194	652660.51	4776539.16	3.66	0	D	A	66.4	-18.7	0.0	-0.2	0.0	0.0	47.9
195	652667.02	4776542.88	3.66	0	D	A	66.4	-18.9	0.0	0.4	0.0	0.0	47.1
198	652706.40	4776453.02	0.10	0	D	A	68.7	-21.8	0.0	16.2	0.0	0.0	30.7
199	652692.77	4776480.36	0.10	0	D	A	68.7	-35.2	0.0	5.1	0.0	0.0	28.4
200	652719.31	4776443.93	0.10	0	D	A	68.7	-25.2	0.0	13.7	0.0	0.0	29.8
201	652705.68	4776471.27	0.10	0	D	A	68.7	-24.2	0.0	2.1	0.0	0.0	42.4
213	652680.97	4776502.24	3.66	0	D	A	66.4	-20.1	0.0	-0.6	0.0	0.0	46.9
214	652687.57	4776505.80	3.66	0	D	A	66.4	-20.3	0.0	0.3	0.0	0.0	45.9
215	652660.51	4776539.16	1.52	0	D	A	64.6	-18.7	0.0	1.1	0.0	0.0	44.7
216	652667.02	4776542.88	1.52	0	D	A	64.6	-18.9	0.0	1.8	0.0	0.0	43.9
217	652459.61	4776828.68	0.10	0	D	A	68.7	-28.6	0.0	6.2	0.0	0.0	34.0

Road, TNM, Name: "QEW Southbound", ID: "QEW_S"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
218	652448.55	4776842.72	0.10	0	D	A	68.7	-28.6	0.0	29.6	0.0	0.0	10.6
219	652432.90	4776862.57	0.10	0	D	A	68.7	-27.2	0.0	33.6	0.0	0.0	7.9
220	652452.35	4776850.01	0.10	0	D	A	68.7	-23.8	0.0	3.1	0.0	0.0	41.8
221	652431.60	4776876.34	0.10	0	D	A	68.7	-33.5	0.0	25.9	0.0	0.0	9.3
228	652706.40	4776453.02	3.66	0	D	A	66.4	-21.8	0.0	13.3	0.0	0.0	31.3
229	652692.77	4776480.36	3.66	0	D	A	66.4	-35.2	0.0	-0.7	0.0	0.0	31.9
230	652719.31	4776443.93	3.66	0	D	A	66.4	-25.2	0.0	13.1	0.0	0.0	28.1
231	652705.68	4776471.27	3.66	0	D	A	66.4	-24.2	0.0	0.2	0.0	0.0	42.0
232	652680.97	4776502.24	1.52	0	D	A	64.6	-20.1	0.0	1.5	0.0	0.0	42.9
233	652687.57	4776505.80	1.52	0	D	A	64.6	-20.3	0.0	2.1	0.0	0.0	42.2
237	652731.63	4776400.53	0.10	0	D	A	68.7	-24.0	0.0	16.5	0.0	0.0	28.2
238	652738.44	4776403.68	0.10	0	D	A	68.7	-24.1	0.0	14.2	0.0	0.0	30.5
239	652706.40	4776453.02	1.52	0	D	A	64.6	-21.8	0.0	16.7	0.0	0.0	26.0
240	652692.77	4776480.36	1.52	0	D	A	64.6	-35.2	0.0	2.1	0.0	0.0	27.3
241	652719.31	4776443.93	1.52	0	D	A	64.6	-25.2	0.0	15.4	0.0	0.0	24.0
242	652705.68	4776471.27	1.52	0	D	A	64.6	-24.2	0.0	2.6	0.0	0.0	37.8
243	652459.61	4776828.68	3.66	0	D	A	66.4	-28.6	0.0	-0.3	0.0	0.0	38.1
244	652448.55	4776842.72	3.66	0	D	A	66.4	-28.6	0.0	27.3	0.0	0.0	10.6
245	652432.90	4776862.57	3.66	0	D	A	66.4	-27.2	0.0	30.7	0.0	0.0	8.5
246	652452.35	4776850.01	3.66	0	D	A	66.4	-23.8	0.0	0.9	0.0	0.0	41.7
247	652431.60	4776876.34	3.66	0	D	A	66.4	-33.5	0.0	23.7	0.0	0.0	9.2
248	652406.44	4776893.90	0.10	0	D	A	68.7	-26.2	0.0	34.8	0.0	0.0	7.7
249	652385.22	4776917.98	0.10	0	D	A	68.7	-33.0	0.0	25.8	0.0	0.0	9.9
250	652425.43	4776883.68	0.10	0	D	A	68.7	-32.6	0.0	28.4	0.0	0.0	7.8
251	652404.21	4776907.77	0.10	0	D	A	68.7	-26.4	0.0	32.5	0.0	0.0	9.8
255	652731.63	4776400.53	3.66	0	D	A	66.4	-24.0	0.0	13.6	0.0	0.0	28.8
256	652738.44	4776403.68	3.66	0	D	A	66.4	-24.1	0.0	13.2	0.0	0.0	29.1
262	652371.93	4776933.54	0.10	0	D	A	68.7	-30.2	0.0	25.8	0.0	0.0	12.7
263	652353.61	4776955.29	0.10	0	D	A	68.7	-30.6	0.0	20.1	0.0	0.0	18.0
264	652340.89	4776970.40	0.10	0	D	A	68.7	-35.5	0.0	20.1	0.0	0.0	13.1
265	652375.33	4776941.14	0.10	0	D	A	68.7	-29.3	0.0	33.4	0.0	0.0	6.0
266	652353.69	4776966.84	0.10	0	D	A	68.7	-30.4	0.0	24.3	0.0	0.0	14.0
267	652459.61	4776828.68	1.52	0	D	A	64.6	-28.6	0.0	3.6	0.0	0.0	32.4
268	652448.55	4776842.72	1.52	0	D	A	64.6	-28.6	0.0	30.0	0.0	0.0	6.0
269	652432.90	4776862.57	1.52	0	D	A	64.6	-27.2	0.0	31.7	0.0	0.0	5.6
270	652452.35	4776850.01	1.52	0	D	A	64.6	-23.8	0.0	3.4	0.0	0.0	37.4
271	652431.60	4776876.34	1.52	0	D	A	64.6	-33.5	0.0	26.1	0.0	0.0	5.0
272	652406.44	4776893.90	3.66	0	D	A	66.4	-26.2	0.0	30.3	0.0	0.0	9.8
273	652385.22	4776917.98	3.66	0	D	A	66.4	-33.0	0.0	21.6	0.0	0.0	11.8
274	652425.43	4776883.68	3.66	0	D	A	66.4	-32.6	0.0	26.8	0.0	0.0	7.0
275	652404.21	4776907.77	3.66	0	D	A	66.4	-26.4	0.0	31.7	0.0	0.0	8.3
276	652731.63	4776400.53	1.52	0	D	A	64.6	-24.0	0.0	16.8	0.0	0.0	23.8
277	652738.44	4776403.68	1.52	0	D	A	64.6	-24.1	0.0	15.6	0.0	0.0	24.9
287	652371.93	4776933.54	3.66	0	D	A	66.4	-30.2	0.0	21.7	0.0	0.0	14.5
288	652353.61	4776955.29	3.66	0	D	A	66.4	-30.6	0.0	16.3	0.0	0.0	19.5
289	652340.89	4776970.40	3.66	0	D	A	66.4	-35.5	0.0	16.4	0.0	0.0	14.4
290	652375.33	4776941.14	3.66	0	D	A	66.4	-29.3	0.0	30.3	0.0	0.0	6.8
291	652353.69	4776966.84	3.66	0	D	A	66.4	-30.4	0.0	21.5	0.0	0.0	14.5
292	652406.44	4776893.90	1.52	0	D	A	64.6	-26.2	0.0	35.0	0.0	0.0	3.3
293	652385.22	4776917.98	1.52	0	D	A	64.6	-33.0	0.0	26.1	0.0	0.0	5.4
294	652425.43	4776883.68	1.52	0	D	A	64.6	-32.6	0.0	28.5	0.0	0.0	3.5
295	652404.21	4776907.77	1.52	0	D	A	64.6	-26.4	0.0	32.7	0.0	0.0	5.5
301	652371.93	4776933.54	1.52	0	D	A	64.6	-30.2	0.0	26.1	0.0	0.0	8.3
302	652353.61	4776955.29	1.52	0	D	A	64.6	-30.6	0.0	19.9	0.0	0.0	14.1
303	652340.89	4776970.40	1.52	0	D	A	64.6	-35.5	0.0	19.9	0.0	0.0	9.2
304	652375.33	4776941.14	1.52	0	D	A	64.6	-29.3	0.0	33.7	0.0	0.0	1.5
305	652353.69	4776966.84	1.52	0	D	A	64.6	-30.4	0.0	25.0	0.0	0.0	9.2
310	652746.69	4776367.35	0.10	0	D	A	68.7	-30.9	0.0	17.1	0.0	0.0	20.8
311	652753.60	4776370.26	0.10	0	D	A	68.7	-30.9	0.0	14.2	0.0	0.0	23.6
316	652746.69	4776367.35	3.66	0	D	A	66.4	-30.9	0.0	14.1	0.0	0.0	21.5
317	652753.60	4776370.26	3.66	0	D	A	66.4	-30.9	0.0	13.4	0.0	0.0	22.1
318	652746.69	4776367.35	1.52	0	D	A	64.6	-30.9	0.0	17.2	0.0	0.0	16.5
319	652753.60	4776370.26	1.52	0	D	A	64.6	-30.9	0.0	15.6	0.0	0.0	18.1

Road, TNM, Name: "QEW Northbound", ID: "QEW_N"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
11	652627.46	4776620.34	0.10	0	D	A	68.7	-14.7	0.0	-4.6	0.0	0.0	58.7
12	652615.60	4776638.05	0.10	0	D	A	68.7	-13.7	0.0	-4.7	0.0	0.0	59.7
13	652603.74	4776655.76	0.10	0	D	A	68.7	-14.1	0.0	-4.6	0.0	0.0	59.3
14	652591.89	4776673.47	0.10	0	D	A	68.7	-15.6	0.0	-4.5	0.0	0.0	57.7
15	652629.24	4776617.67	0.10	1	D	A	68.7	-25.3	0.0	9.7	0.0	2.0	31.8
16	652620.95	4776630.06	0.10	1	D	A	68.7	-25.8	0.0	9.6	0.0	2.0	31.3
17	652612.66	4776642.44	0.10	1	D	A	68.7	-26.4	0.0	9.7	0.0	2.0	30.7
18	652604.37	4776654.82	0.10	1	D	A	68.7	-26.9	0.0	9.9	0.0	2.0	30.0
19	652633.69	4776624.51	0.10	0	D	A	68.7	-15.7	0.0	-4.7	0.0	0.0	57.7
20	652621.83	4776642.22	0.10	0	D	A	68.7	-14.9	0.0	-4.7	0.0	0.0	58.5
21	652609.98	4776659.93	0.10	0	D	A	68.7	-15.2	0.0	-4.7	0.0	0.0	58.2
22	652598.12	4776677.65	0.10	0	D	A	68.7	-16.4	0.0	-4.6	0.0	0.0	56.9
23	652638.05	4776617.99	0.10	1	D	A	68.7	-29.7	0.0	9.2	0.0	2.0	27.8
24	652632.08	4776626.91	0.10	1	D	A	68.7	-25.6	0.0	9.1	0.0	2.0	32.1
25	652623.28	4776640.07	0.10	1	D	A	68.7	-26.1	0.0	8.9	0.0	2.0	31.7
26	652614.47	4776653.22	0.10	1	D	A	68.7	-26.6	0.0	8.9	0.0	2.0	31.2
49	652627.46	4776620.34	3.66	0	D	A	66.4	-14.7	0.0	-0.6	0.0	0.0	52.3
50	652615.60	4776638.05	3.66	0	D	A	66.4	-13.7	0.0	-1.5	0.0	0.0	54.2
51	652603.74	4776655.76	3.66	0	D	A	66.4	-14.1	0.0	-1.1	0.0	0.0	53.5
52	652591.89	4776673.47	3.66	0	D	A	66.4	-15.6	0.0	-0.8	0.0	0.0	51.7
53	652633.69	4776624.51	3.66	0	D	A	66.4	-15.7	0.0	-1.3	0.0	0.0	52.0
54	652621.83	4776642.22	3.66	0	D	A	66.4	-14.9	0.0	-1.1	0.0	0.0	52.6
55	652609.98	4776659.93	3.66	0	D	A	66.4	-15.2	0.0	-1.6	0.0	0.0	52.8
56	652598.12	4776677.65	3.66	0	D	A	66.4	-16.4	0.0	-0.7	0.0	0.0	50.7
57	652638.05	4776617.99	3.66	1	D	A	66.4	-29.7	0.0	9.1	0.0	2.0	25.6
58	652661.88	4776564.32	0.10	0	D	A	68.7	-17.6	0.0	-3.5	0.0	0.0	54.6
59	652647.59	4776587.97	0.10	0	D	A	68.7	-18.5	0.0	-4.2	0.0	0.0	54.4
60	652638.06	4776603.74	0.10	0	D	A	68.7	-16.9	0.0	-4.5	0.0	0.0	56.3
61	652649.14	4776585.40	0.10	1	D	A	68.7	-22.6	0.0	10.6	0.0	2.0	33.5
62	652638.65	4776602.77	0.10	1	D	A	68.7	-23.3	0.0	9.9	0.0	2.0	33.5
63	652633.35	4776611.54	0.10	1	D	A	68.7	-43.7	0.0	9.7	0.0	2.0	13.3
64	652668.30	4776568.20	0.10	0	D	A	68.7	-18.0	0.0	-4.0	0.0	0.0	54.7
65	652649.24	4776599.74	0.10	0	D	A	68.7	-15.3	0.0	-4.5	0.0	0.0	57.9
66	652649.32	4776599.60	0.10	1	D	A	68.7	-20.8	0.0	9.7	0.0	2.0	36.3
94	652627.46	4776620.34	1.52	0	D	A	64.6	-14.7	0.0	-0.2	0.0	0.0	50.1
95	652615.60	4776638.05	1.52	0	D	A	64.6	-13.7	0.0	-1.0	0.0	0.0	52.0
96	652603.74	4776655.76	1.52	0	D	A	64.6	-14.1	0.0	-0.7	0.0	0.0	51.2
97	652591.89	4776673.47	1.52	0	D	A	64.6	-15.6	0.0	0.4	0.0	0.0	48.6
98	652629.24	4776617.67	1.52	1	D	A	64.6	-25.3	0.0	12.4	0.0	2.0	24.9
99	652620.95	4776630.06	1.52	1	D	A	64.6	-25.8	0.0	12.1	0.0	2.0	24.6
100	652633.69	4776624.51	1.52	0	D	A	64.6	-15.7	0.0	0.1	0.0	0.0	48.8
101	652621.83	4776642.22	1.52	0	D	A	64.6	-14.9	0.0	-0.4	0.0	0.0	50.1
102	652609.98	4776659.93	1.52	0	D	A	64.6	-15.2	0.0	-0.2	0.0	0.0	49.6
103	652598.12	4776677.65	1.52	0	D	A	64.6	-16.4	0.0	0.4	0.0	0.0	47.8
104	652638.05	4776617.99	1.52	1	D	A	64.6	-29.7	0.0	12.5	0.0	2.0	20.4
105	652632.08	4776626.91	1.52	1	D	A	64.6	-25.6	0.0	12.3	0.0	2.0	24.7
106	652661.88	4776564.32	3.66	0	D	A	66.4	-17.6	0.0	0.1	0.0	0.0	48.7
107	652647.59	4776587.97	3.66	0	D	A	66.4	-18.5	0.0	-0.3	0.0	0.0	48.2
108	652638.06	4776603.74	3.66	0	D	A	66.4	-16.9	0.0	-0.5	0.0	0.0	49.9
109	652649.14	4776585.40	3.66	1	D	A	66.4	-22.6	0.0	9.1	0.0	2.0	32.7
110	652638.65	4776602.77	3.66	1	D	A	66.4	-23.3	0.0	9.0	0.0	2.0	32.0
111	652668.30	4776568.20	3.66	0	D	A	66.4	-18.0	0.0	0.0	0.0	0.0	48.4
112	652649.24	4776599.74	3.66	0	D	A	66.4	-15.3	0.0	-0.8	0.0	0.0	52.0
113	652649.32	4776599.60	3.66	1	D	A	66.4	-20.8	0.0	8.8	0.0	2.0	34.8
120	652578.78	4776692.16	0.10	0	D	A	68.7	-16.9	0.0	-4.3	0.0	0.0	56.1
121	652564.23	4776712.07	0.10	0	D	A	68.7	-18.9	0.0	-3.7	0.0	0.0	53.6
122	652584.83	4776696.58	0.10	0	D	A	68.7	-17.5	0.0	-4.4	0.0	0.0	55.7
123	652570.29	4776716.49	0.10	0	D	A	68.7	-19.3	0.0	-4.1	0.0	0.0	53.5
144	652661.88	4776564.32	1.52	0	D	A	64.6	-17.6	0.0	1.5	0.0	0.0	45.5
145	652647.59	4776587.97	1.52	0	D	A	64.6	-18.5	0.0	1.1	0.0	0.0	44.9
146	652638.06	4776603.74	1.52	0	D	A	64.6	-16.9	0.0	0.7	0.0	0.0	47.0
147	652649.14	4776585.40	1.52	1	D	A	64.6	-22.6	0.0	12.0	0.0	2.0	27.9
148	652638.65	4776602.77	1.52	1	D	A	64.6	-23.3	0.0	12.5	0.0	2.0	26.8

Road, TNM, Name: "QEW Northbound", ID: "QEW_N"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
149	652633.35	4776611.54	1.52	1	D	A	64.6	-43.7	0.0	12.5	0.0	2.0	6.4
150	652668.30	4776568.20	1.52	0	D	A	64.6	-18.0	0.0	0.9	0.0	0.0	45.8
151	652649.24	4776599.74	1.52	0	D	A	64.6	-15.3	0.0	0.6	0.0	0.0	48.7
152	652649.32	4776599.60	1.52	1	D	A	64.6	-20.8	0.0	12.5	0.0	2.0	29.3
153	652578.78	4776692.16	3.66	0	D	A	66.4	-16.9	0.0	-0.4	0.0	0.0	49.9
154	652564.23	4776712.07	3.66	0	D	A	66.4	-18.9	0.0	-0.0	0.0	0.0	47.5
155	652584.83	4776696.58	3.66	0	D	A	66.4	-17.5	0.0	-0.4	0.0	0.0	49.3
156	652570.29	4776716.49	3.66	0	D	A	66.4	-19.3	0.0	-0.3	0.0	0.0	47.4
164	652689.03	4776516.58	0.10	0	D	A	68.7	-18.0	0.0	-1.7	0.0	0.0	52.5
165	652695.60	4776520.20	0.10	0	D	A	68.7	-18.1	0.0	-2.7	0.0	0.0	53.3
170	652509.08	4776785.69	0.10	0	D	A	68.7	-18.8	0.0	-1.1	0.0	0.0	51.0
171	652515.08	4776790.20	0.10	0	D	A	68.7	-18.9	0.0	-2.1	0.0	0.0	52.0
172	652578.78	4776692.16	1.52	0	D	A	64.6	-16.9	0.0	1.1	0.0	0.0	46.6
173	652564.23	4776712.07	1.52	0	D	A	64.6	-18.9	0.0	1.4	0.0	0.0	44.3
174	652584.83	4776696.58	1.52	0	D	A	64.6	-17.5	0.0	0.7	0.0	0.0	46.4
175	652570.29	4776716.49	1.52	0	D	A	64.6	-19.3	0.0	0.8	0.0	0.0	44.5
178	652545.92	4776736.72	0.10	0	D	A	68.7	-19.3	0.0	-2.9	0.0	0.0	52.4
179	652551.91	4776741.22	0.10	0	D	A	68.7	-19.5	0.0	-3.5	0.0	0.0	52.7
180	652447.08	4776868.20	0.10	0	D	A	68.7	-21.1	0.0	1.5	0.0	0.0	46.1
181	652402.10	4776928.12	0.10	0	D	A	68.7	-29.5	0.0	26.9	0.0	0.0	12.3
182	652466.83	4776854.40	0.10	0	D	A	68.7	-22.7	0.0	-0.3	0.0	0.0	46.4
183	652421.84	4776914.32	0.10	0	D	A	68.7	-24.8	0.0	1.1	0.0	0.0	42.8
188	652689.03	4776516.58	3.66	0	D	A	66.4	-18.0	0.0	0.7	0.0	0.0	47.7
189	652695.60	4776520.20	3.66	0	D	A	66.4	-18.1	0.0	0.8	0.0	0.0	47.5
192	652509.08	4776785.69	3.66	0	D	A	66.4	-18.8	0.0	1.0	0.0	0.0	46.7
193	652515.08	4776790.20	3.66	0	D	A	66.4	-18.9	0.0	1.1	0.0	0.0	46.4
196	652689.03	4776516.58	1.52	0	D	A	64.6	-18.0	0.0	1.6	0.0	0.0	45.0
197	652695.60	4776520.20	1.52	0	D	A	64.6	-18.1	0.0	0.9	0.0	0.0	45.5
202	652545.92	4776736.72	3.66	0	D	A	66.4	-19.3	0.0	0.4	0.0	0.0	46.7
203	652551.91	4776741.22	3.66	0	D	A	66.4	-19.5	0.0	0.2	0.0	0.0	46.7
204	652447.08	4776868.20	3.66	0	D	A	66.4	-21.1	0.0	1.6	0.0	0.0	43.7
205	652402.10	4776928.12	3.66	0	D	A	66.4	-29.5	0.0	27.2	0.0	0.0	9.7
206	652466.83	4776854.40	3.66	0	D	A	66.4	-22.7	0.0	1.6	0.0	0.0	42.1
207	652421.84	4776914.32	3.66	0	D	A	66.4	-24.8	0.0	2.0	0.0	0.0	39.6
208	652731.97	4776434.05	0.10	0	D	A	68.7	-31.2	0.0	12.4	0.0	0.0	25.1
209	652718.30	4776461.35	0.10	0	D	A	68.7	-22.5	0.0	0.7	0.0	0.0	45.6
210	652727.04	4776460.66	0.10	0	D	A	68.7	-22.0	0.0	-0.6	0.0	0.0	47.4
211	652509.08	4776785.69	1.52	0	D	A	64.6	-18.8	0.0	1.6	0.0	0.0	44.2
212	652515.08	4776790.20	1.52	0	D	A	64.6	-18.9	0.0	0.8	0.0	0.0	44.9
222	652545.92	4776736.72	1.52	0	D	A	64.6	-19.3	0.0	1.5	0.0	0.0	43.8
223	652551.91	4776741.22	1.52	0	D	A	64.6	-19.5	0.0	0.8	0.0	0.0	44.2
224	652447.08	4776868.20	1.52	0	D	A	64.6	-21.1	0.0	2.5	0.0	0.0	40.9
225	652402.10	4776928.12	1.52	0	D	A	64.6	-29.5	0.0	27.5	0.0	0.0	7.6
226	652466.83	4776854.40	1.52	0	D	A	64.6	-22.7	0.0	1.2	0.0	0.0	40.7
227	652421.84	4776914.32	1.52	0	D	A	64.6	-24.8	0.0	1.8	0.0	0.0	37.9
234	652731.97	4776434.05	3.66	0	D	A	66.4	-31.2	0.0	12.9	0.0	0.0	22.3
235	652718.30	4776461.35	3.66	0	D	A	66.4	-22.5	0.0	0.9	0.0	0.0	43.0
236	652727.04	4776460.66	3.66	0	D	A	66.4	-22.0	0.0	1.3	0.0	0.0	43.1
252	652731.97	4776434.05	1.52	0	D	A	64.6	-31.2	0.0	13.8	0.0	0.0	19.6
253	652718.30	4776461.35	1.52	0	D	A	64.6	-22.5	0.0	2.3	0.0	0.0	39.9
254	652727.04	4776460.66	1.52	0	D	A	64.6	-22.0	0.0	1.5	0.0	0.0	41.1
257	652741.12	4776414.75	0.10	0	D	A	68.7	-26.2	0.0	12.7	0.0	0.0	29.8
258	652751.53	4776410.19	0.10	0	D	A	68.7	-29.6	0.0	12.0	0.0	0.0	27.2
259	652744.37	4776425.53	0.10	0	D	A	68.7	-29.0	0.0	0.5	0.0	0.0	39.2
260	652756.55	4776380.39	0.10	0	D	A	68.7	-26.4	0.0	13.0	0.0	0.0	29.3
261	652763.42	4776383.38	0.10	0	D	A	68.7	-26.5	0.0	12.2	0.0	0.0	30.1
278	652741.12	4776414.75	3.66	0	D	A	66.4	-26.2	0.0	13.1	0.0	0.0	27.1
279	652751.53	4776410.19	3.66	0	D	A	66.4	-29.6	0.0	12.8	0.0	0.0	24.0
280	652744.37	4776425.53	3.66	0	D	A	66.4	-29.0	0.0	1.5	0.0	0.0	35.9
281	652756.55	4776380.39	3.66	0	D	A	66.4	-26.4	0.0	13.2	0.0	0.0	26.8
282	652763.42	4776383.38	3.66	0	D	A	66.4	-26.5	0.0	13.0	0.0	0.0	26.9
283	652392.89	4776940.37	0.10	0	D	A	68.7	-42.6	0.0	28.8	0.0	0.0	-2.7
284	652379.88	4776957.37	0.10	0	D	A	68.7	-28.9	0.0	29.4	0.0	0.0	10.5

Road, TNM, Name: "QEW Northbound", ID: "QEW_N"													
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	Ad	Aair	Agr	Afol	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
285	652393.58	4776951.81	0.10	0	D	A	68.7	-32.0	0.0	1.8	0.0	0.0	35.0
286	652380.57	4776968.81	0.10	0	D	A	68.7	-31.4	0.0	26.1	0.0	0.0	11.2
296	652741.12	4776414.75	1.52	0	D	A	64.6	-26.2	0.0	14.0	0.0	0.0	24.4
297	652751.53	4776410.19	1.52	0	D	A	64.6	-29.6	0.0	12.7	0.0	0.0	22.3
298	652744.37	4776425.53	1.52	0	D	A	64.6	-29.0	0.0	1.9	0.0	0.0	33.7
299	652756.55	4776380.39	1.52	0	D	A	64.6	-26.4	0.0	14.2	0.0	0.0	24.0
300	652763.42	4776383.38	1.52	0	D	A	64.6	-26.5	0.0	13.0	0.0	0.0	25.1
306	652392.89	4776940.37	3.66	0	D	A	66.4	-42.6	0.0	27.2	0.0	0.0	-3.4
307	652379.88	4776957.37	3.66	0	D	A	66.4	-28.9	0.0	30.2	0.0	0.0	7.3
308	652393.58	4776951.81	3.66	0	D	A	66.4	-32.0	0.0	2.3	0.0	0.0	32.1
309	652380.57	4776968.81	3.66	0	D	A	66.4	-31.4	0.0	25.3	0.0	0.0	9.7
312	652392.89	4776940.37	1.52	0	D	A	64.6	-42.6	0.0	27.7	0.0	0.0	-5.8
313	652379.88	4776957.37	1.52	0	D	A	64.6	-28.9	0.0	28.2	0.0	0.0	7.5
314	652393.58	4776951.81	1.52	0	D	A	64.6	-32.0	0.0	2.2	0.0	0.0	30.4
315	652380.57	4776968.81	1.52	0	D	A	64.6	-31.4	0.0	25.0	0.0	0.0	8.1
320	652765.45	4776360.09	0.10	0	D	A	68.7	-40.0	0.0	13.1	0.0	0.0	15.6
321	652772.09	4776363.58	0.10	0	D	A	68.7	-40.1	0.0	12.3	0.0	0.0	16.4
322	652765.45	4776360.09	3.66	0	D	A	66.4	-40.0	0.0	13.1	0.0	0.0	13.3
323	652772.09	4776363.58	3.66	0	D	A	66.4	-40.1	0.0	13.1	0.0	0.0	13.3
324	652765.45	4776360.09	1.52	0	D	A	64.6	-40.0	0.0	14.2	0.0	0.0	10.4
325	652772.09	4776363.58	1.52	0	D	A	64.6	-40.1	0.0	13.1	0.0	0.0	11.4

APPENDIX E

Warning Clauses

(1 Page)

Warning Clause Type A – From MECP NPC-300

“Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment.”

Warning Clause Type C – From MECP NPC-300

“This dwelling unit has been designed with the provision for adding central air conditioning at the occupant’s discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment.”

Warning Clause from ENCG:

Purchasers/tenants are advised that sound levels due to increasing road/rail/Light Rail/transitway traffic will interfere with outdoor activities as the sound levels exceed the sound level limits of the City and the Ministry of the Environment.

To help address the need for sound attenuation this development includes:

- multi-pane glass;
- double brick veneer;
- high sound transmission class walls.

To ensure that provincial sound level limits are not exceeded it is important to maintain these sound attenuation features.

This dwelling unit has been supplied with a central air conditioning system and other measures which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the City and the Ministry of the Environment.

APPENDIX F

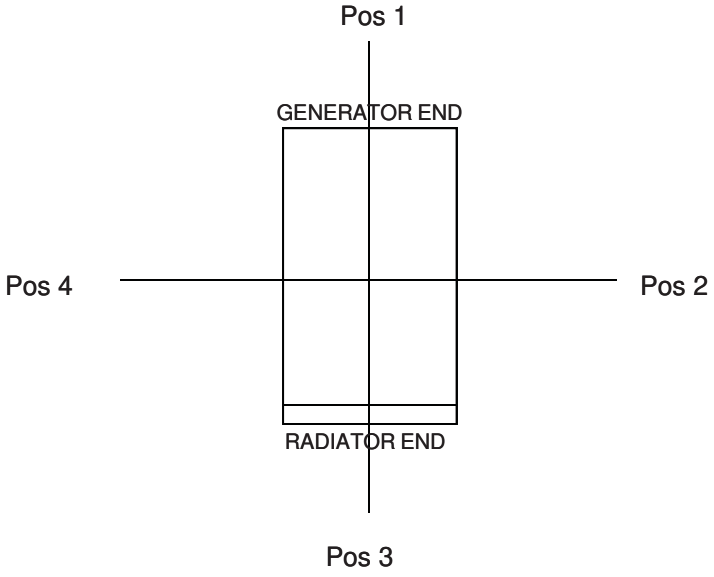
Manufacturer Sound Data and Calculations

(Development Stationary Sources)

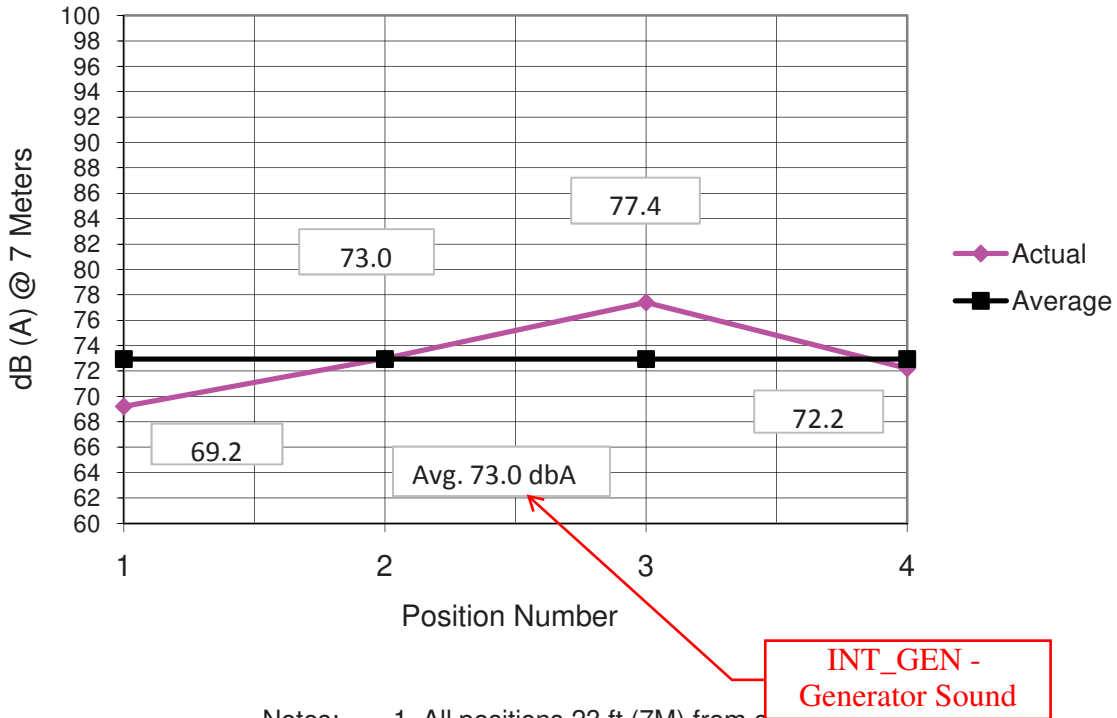
(5 Pages)

GENERAC POWER SYSTEMS INC.
Estimated Sound Performance

SG175 - 13.3L Hino
Level 2A Sound Attenuated Enclosure



Measured Sound Levels - 60 Hz



Notes:
1. All positions 23 ft (7M) from center of generator.
2. Generator operating at full load.
3. Tests are conducted on a 100 foot diameter asphalt surface.

EngA ENGINEERED AIR

SUPPLY AIR FAN PERFORMANCE

JOB NAME: Barrett Court Condo # 2 JOB NO: (N-3796)

CUSTOMER: Veeda Inc

ENGINEER: Jain & Associates

EngA MODEL: LM15/C/O QTY: 1 TAG: MUA-1

AIRFLOW 15220 CFM E.S.P. 1.5 in.w.c. FAN MANUFACTURER LAU INDUSTRIES

FANSIZE 25/25 FC DIDW QTY. 1

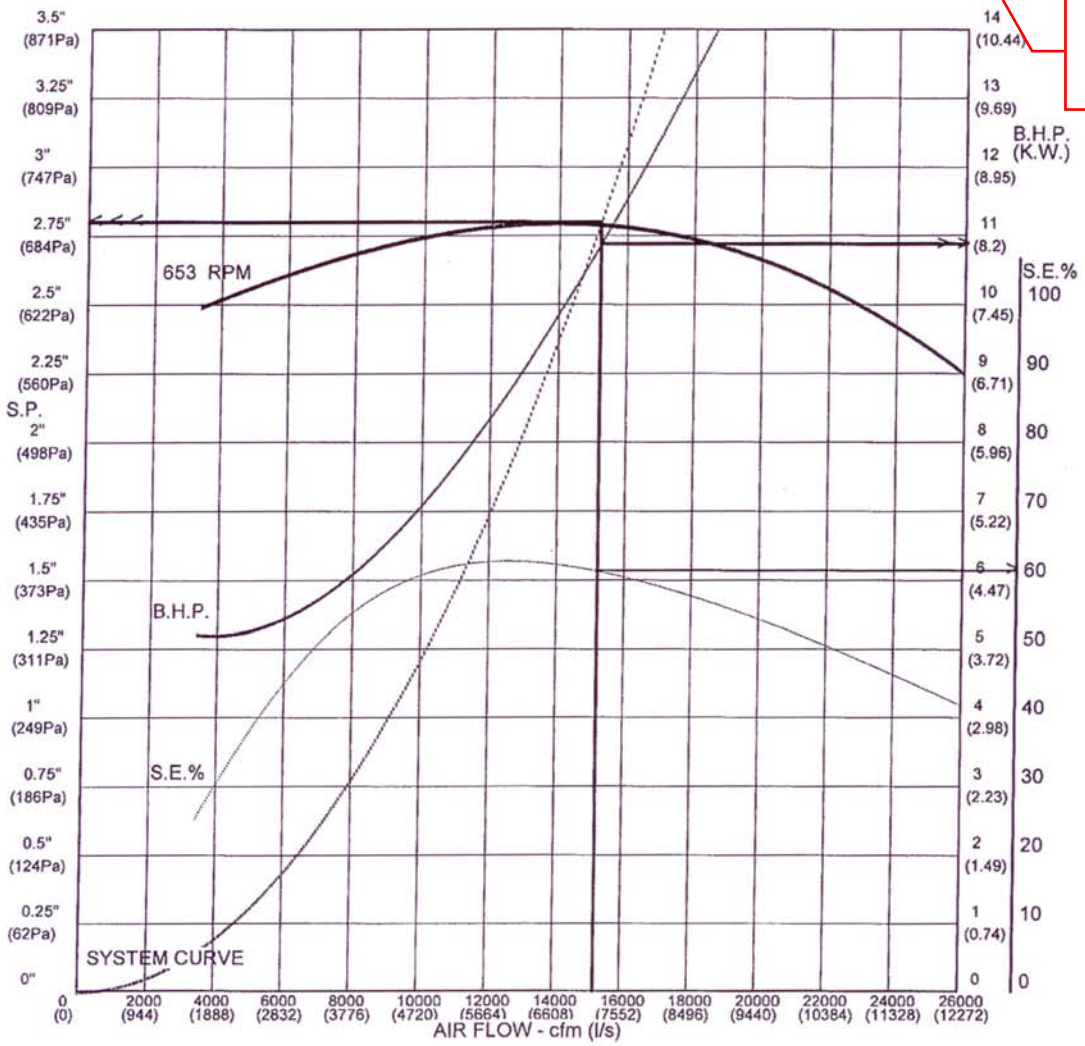
TSP 2.8 in.w.c. RPM 653 REQ'D POWER 10.88 BHP

MOTOR SIZE 15 HP ODP (1750) INLET VANES NO

SOUND POWER DATA

Hz	63	125	250	500	1000	2000	4000	8000
db:	92	89	86	86	81	80	75	69

INT_MAU



Baltimore Aircoil Company, Inc.

Closed Circuit Cooling Tower Selection Program

Version: 7.5.3 NA
Product data correct as of: March 03, 2017

Project Name:
Selection Name:
Project State/Province: Maryland
Project Country: United States
Date: May 05, 2017

Model Information

Product Line: VF1
Model: VF1-096-31Q
Number of Units: 1
Coil Type: Standard Coil
Coil Finning: None
Intake Option: None
Internal Option: None
Discharge Option: PCD w/ Tapered Discharge Hood
External Static Pressure: 0.00 in. of H2O

Fan Type: Standard Fan
Fan Motor: (1) 50.00 = 50.00 HP/Unit
Total Standard Fan Power: Full Speed, 50.00 BHP/Unit
Total Pump Motor Power: (1) 3.00 = 3.00 HP/Unit

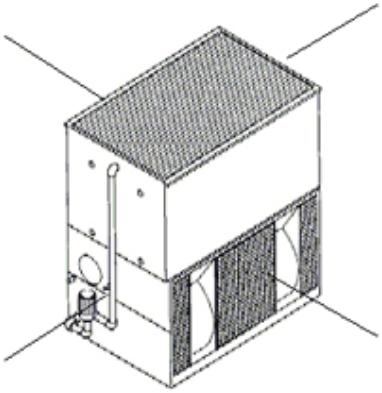
Octave band and A-weighted sound pressure levels (Lp) are expressed in decibels (dB) reference 0.0002 microbar. Sound power levels (Lw) are expressed in decibels (dB) reference one picowatt. Octave band 1 has a center frequency of 63 Hertz.

Top Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	78	62
2	78	63
3	77	61
4	78	62
5	77	61
6	74	58
7	70	54
8	68	51
A-wgtd	**81**	**65**

Back Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	73	60
2	71	60
3	69	55
4	66	55
5	67	53
6	65	49
7	59	44
8	59	39
A-wgtd	**72**	**58**



End Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	77	65
2	71	61
3	68	56
4	68	56
5	68	54
6	63	50
7	59	46
8	55	41
A-wgtd	**72**	**59**

Connection End Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	77	65
2	72	61
3	71	56
4	69	56
5	69	54
6	66	50
7	62	46
8	58	41
A-wgtd	**73**	**59**

Air Inlet Lp
Sound Pressure (dB)

Octave Band	Distance 5 ft.	Distance 50 ft.
1	79	66
2	75	65
3	76	63
4	76	62
5	76	60
6	74	57
7	72	54
8	67	49
A-wgtd	**81**	**65**

Sound Power (dB)

Octave Band	Center Frequency (Hertz)	Lw
1	63	96
2	125	94
3	250	91
4	500	91
5	1000	90
6	2000	87
7	4000	83
8	8000	79

INT_CT (with Calculations)

Note: The use of frequency inverters (variable frequency drives) can increase sound levels.

Cooling Tower PWL Calculations - INT_CT

	31.5	63	125	250	500	1000	2000	4000	8000	dBA	Note
Air Inlet Measured SPL, dB		79	75	76	76	76	74	72	67		Provided by Manufacturer
Surface Area, m2		7.0	7.0	7.0	7.0	7.0	7.0	7.0	7.0		Based on AutoCAD Drawing
CT_Air - Sound Power Level, dB		**87**	**83**	**84**	**84**	**84**	**82**	**80**	**75**	**89**	
Back Side Measured SPL, dB		73	71	69	66	67	65	59	59		Provided by Manufacturer
Surface Area, m2		14.7	14.7	14.7	14.7	14.7	14.7	14.7	14.7		Based on AutoCAD Drawing
CT_Back - Sound Power Level, dB		**85**	**83**	**81**	**78**	**79**	**77**	**71**	**71**	**83**	
End Side Measured SPL, dB		77	71	68	68	68	63	59	55		Provided by Manufacturer
Surface Area, m2		9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		Based on AutoCAD Drawing
CT_End - Sound Power Level, dB		**87**	**81**	**78**	**78**	**78**	**73**	**69**	**65**	**81**	
Motor Side Measured SPL, dB		77	72	71	69	69	66	62	58		Provided by Manufacturer
Surface Area, m2		9.5	9.5	9.5	9.5	9.5	9.5	9.5	9.5		Based on AutoCAD Drawing
CT_Motor - Sound Power Level, dB		**87**	**82**	**81**	**79**	**79**	**76**	**72**	**68**	**83**	
Top Side Measured SPL, dB		78	78	77	78	77	74	70	68		Provided by Manufacturer
Surface Area, m2		6.3	6.3	6.3	6.3	6.3	6.3	6.3	6.3		Based on AutoCAD Drawing
CT_Top - Sound Power Level, dB		**86**	**86**	**85**	**86**	**85**	**82**	**78**	**76**	**89**	

Exhaust Sound Power Level Calculations

1. Garage Exhaust Fans - INT_EF1 and EF2

Fan Type Centrifugal

Flow Rate, m3/s 8.9

Static Pressure, in.wc. 0.50

	63	125	250	500	1000	2000	4000	8000	LwA	Notes
Specific Sound Power Level	35	35	34	32	31	26	18	10		Noise Control for Buildings, Table 7-13
Flow and Pressure Corrections	37	37	37	37	37	37	37	37		
Blade Passage Correction	0	0	3	0	0	0	0	0		BP Inc = 3 at 250Hz
Efficiency Correction	5	5	5	5	5	5	5	5		80% efficiency assumed
Fan Outlet PWL	**77**	**77**	**79**	**74**	**73**	**68**	**60**	**52**	**77.1**	