

**TRANSPORTATION NOISE
ASSESSMENT**

500 Famille-Côté Avenue
Ottawa, Ontario

Report: 25-152 Transportation Noise



February 4, 2026

PREPARED FOR

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EXECUTIVE SUMMARY

This report describes a transportation noise assessment undertaken to satisfy the requirements for a Site Plan Control application (SPA) for Phase 1 and 2 of a proposed development located at 500 Famille Côté Avenue in Ottawa, Ontario. The major sources of traffic noise on the development are Jeanne d'Arc Boulevard and Champlain Street, both 2 lane major collectors. Since Highway 174 is more than 250 metres (m) from the study site, it does not need to be considered for transportation noise. Furthermore, as the site is not within 75 (m) of any above or below-grade rail lines or transit systems, a ground vibrations study will not be required.

The assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP) NPC-300, Ministry of Transportation Ontario (MTO), and City of Ottawa Environmental Noise Control Guidelines (ENCG) guidelines; (ii) future vehicular traffic volumes corresponding to roadway classification, roadway traffic volumes obtained from the City of Ottawa, and passenger rail information obtained from Via Canada; and (iii) architectural drawings provided by Project1 Studio in August 2025.

The results of the current analysis indicate that POW noise levels will range between 51 and 66 dBA during the daytime period (07:00-23:00) and between 44 and 58 dBA during the nighttime period (23:00-07:00). The highest noise level (66 dBA) occurs at the top of the west façade of Tower A, which has the most exposure to Jeanne d'Arc and partial exposure to Champlain Street. The north façade of Tower A and the shared podium will require its windows to have an upgraded STC rating of at least 30. The remaining exterior building components will be sufficient so long as they that comply with the Ontario Building Code (OBC 2024).

The results of the calculations also indicate that most sections of the building will require forced air heating and the provision for the installation of central air conditioning. The exception to this is the north side of Tower A, which will outright require central air conditioning. However, it is anticipated that all units will be provided with central air conditioning, or a similar ventilation system, which will allow occupants to keep windows closed and maintain a comfortable living environment. As such, a Type D Warning Clause will also be required on all Lease, Purchase and Sale Agreements for all buildings, as summarized in Section 6.



The surroundings comprise of mainly low-rise residential buildings. To the southeast is a newly constructed 5 storey long term care facility. However, the mechanical equipment on the building is located more than 100 m from the proposed development, as such there are no significant sources of stationary noise influencing the site.

The proposed HVAC equipment associated with the development will be designed to comply with NPC-300 / ENCG sound level limits, through judicious selections of the equipment and locating it away from sensitive uses. Where necessary silencers and noise barriers can be incorporated into the design. A review of the mechanical equipment by this office or a qualified acoustic consultant is recommended once the equipment has been selected.

Addendum: The current study was completed based on architectural drawings prepared by NEUF architect(e)s in September 2025. Updated drawings were distributed to the consultant team in January 2026, which include minor changes to the proposed development. At grade, the central fountain has been replaced with a terrace, and the parking ramp and drive aisle has been relocated from the northwest corner of the South Tower to the southwest corner of the North Tower. Additionally, the wraparound canopy along the west façade of the podium to the north has decreased in depth from 2.5 metres (m) to 2 m. Furthermore, a 2.5-m-deep canopy extending from the south elevation of the North Tower is now located above the common amenity terrace at Level 5, complementing the canopy along the north elevation of the South Tower. The noted changes are not expected to influence the predicted noise conditions within and surrounding the proposed development, and the conclusions in the present study remain applicable to the January 2026 massing.

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1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Batimo Developpement Inc. to undertake a transportation noise assessment, to satisfy the requirements for a Site Plan Control application (SPA) for Phase 1 and 2 of the proposed development located at 500 Famille Côté Avenue in Ottawa, Ontario. The major sources of traffic noise on the development are Jeanne d’Arc Boulevard and Champlain Street, both 2 lane major collectors. This report summarizes the methodology, results, and recommendations related to the assessment of exterior noise levels generated by local transportation traffic.

This assessment is based on theoretical noise calculation methods conforming to the Ministry of the Environment, Conservation and Parks (MECP) NPC-3001, Ministry of Transportation Ontario (MTO)², and City of Ottawa Environmental Noise Control Guidelines (ENCG)³ guidelines. Noise calculations were based on architectural drawings provided by NEUF Architect(e)s, dated September 2025, with future traffic volumes corresponding to roadway classification and recent satellite imagery.

2. TERMS OF REFERENCE

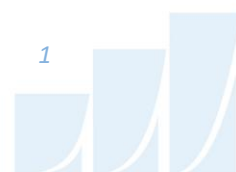
The proposed development is a two phased 2 tower residential dwelling located at 500 Famille Côté Avenue in Ottawa, Ontario. The major sources of traffic noise on the development are Jeanne d’Arc Boulevard and Champlain Street, both 2 lane major collectors. According to the City of Ottawa Official Plan (OP), when performing a noise study within 250 m Ottawa Highway 174, said roadway must be included⁴. Since Ottawa Highway 174 is approximately 390 m away from the study site, it is not required in the study. Furthermore, as the site is not within 75 metres (m) of any above or below-grade rail lines, a ground vibrations study will not be required.

¹ Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013

² Ministry of Transportation Ontario, “*Environmental Guide for Noise*”, August 2021

³ City of Ottawa Environmental Noise Control Guidelines, January 2016

⁴ City of Ottawa OP 10.2.1 3) b)



Phase 1 of the proposed development comprises a 14-storey residential tower (Tower B) with a four-storey podium featuring common areas. Below-grade are three parking levels including 249 parking spots. Phase 2 comprises a 12-storey tower that shares the Phase 1 four-storey podium, with the 14-storey tower to the west, and the 12-storey tower (Tower A) to the east. Phase 2 also expands the three parking levels and features 87 additional parking spots. At grade is a lobby, residential units, and surface parking space.

The near-field surroundings, defined as an area within 200-m of the subject site, is mostly comprised of single family and multi-unit suburban housing. There is also a mixed-use development directly southeast of the proposed development.

3. OBJECTIVES

The principal objectives of this study are to (i) calculate the future noise levels on the study building produced by local transportation sources, and (ii) explore potential noise mitigation where required.

4. METHODOLOGY

4.1 Background

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Measurement of noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which better represents how the noise is perceived by the human ear. With this scale, a doubling of power results in a 3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

4.2 Roadway Traffic Noise

4.2.1 Criteria for Roadway Traffic Noise

For surface roadway traffic noise, the equivalent sound energy level, L_{eq} , provides a measure of the time-varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time-varying noise level over a period of time. For roadways, the L_{eq} is commonly calculated on the basis of a 16-hour (L_{eq16}) daytime (07:00-23:00) / 8-hour (L_{eq8}) nighttime (23:00-07:00) split to assess its impact on residential buildings. NPC-300 specifies that the recommended indoor noise limit for various spaces in the development are listed in Table 1.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD)⁵

Type of Space	Time Period	L_{eq} (dBA)	
		Road	Rail
General offices, reception areas, retail stores, etc.	07:00 – 23:00	50	45
Living/dining/den areas of residences, hospitals, schools, nursing/retirement homes, day-care centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, etc.	07:00 – 23:00	45	40
Sleeping quarters of hotels/motels	23:00 – 07:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	07:00 - 23:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40	35

⁵ MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Table C-9

Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window is capable of providing a minimum 20 dBA noise reduction⁶. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment⁷. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the building should consider the need for having windows and doors closed, which triggers the need for forced air heating with provision for central air conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, air conditioning will be required and building components will require higher levels of sound attenuation⁸.

The sound level criterion for outdoor living areas is 55 dBA, which applies during the daytime (07:00 to 23:00). When noise levels exceed 55 dBA, mitigation should be provided to reduce noise levels where technically and administratively feasible to acceptable levels at or below the criterion. In this study, the podium roofs in this development were considered as outdoor amenity areas, and as such, defined as an OLA.

4.2.2 Roadway Traffic Volumes

The ENCG dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, traffic volumes are based on the roadway classifications outlined in the City of Ottawa's Official Plan (OP) and Transportation Master Plan⁹ which provide additional details on future roadway expansions. Average Annual Daily Traffic (AADT) volumes are then based on data in Table B1 of the ENCG for each roadway classification. Volumes for the LRT are based on Gradient Wind's previous experience. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

⁶ Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125

⁷ MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8

⁸ MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

⁹ City of Ottawa Transportation Master Plan, November 2013

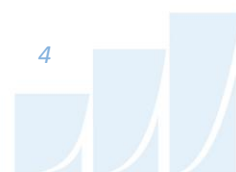


TABLE 2: TRANSPORTATION TRAFFIC DATA

Segment	Roadway Traffic Classification	Speed Limit (km/h)	Traffic Volumes
Champlain Street	2-Lane Major Collector	40	12,000
Jeanne-d’Arc Boulevard	2-Lane Major Collector	50	12,000

4.2.3 Theoretical Roadway Traffic Noise Predictions

Noise predictions were performed with the aid of the MECP computerized noise assessment program, STAMSON 5.04, for road analysis. Appendix A includes the STAMSON 5.04 input and output data. Roadway traffic noise calculations were performed by treating each roadway segment as separate line sources of noise. In addition to the traffic volumes summarized in Table 2, theoretical noise predictions were based on the following parameters:

- Truck traffic on all roadways was taken to comprise 5% heavy trucks and 7% medium trucks, as per ENCG requirements for noise level predictions.
- The day/night split for all streets was taken to be 92%/8%, respectively.
- Ground surfaces were taken to be reflective due to the presence of hard (paved) ground.
- Topography was assumed to be a flat/gentle slope surrounding the study building.
- Noise receptors were strategically placed at 10 locations around the study area (see Figure 2).
- Receptor distances and exposure angles are illustrated in Figures B1-B4.

4.3 Indoor Noise Calculations

The difference between outdoor and indoor noise levels is the noise attenuation provided by the building envelope. According to common industry practice, complete walls and individual wall elements are rated according to the Sound Transmission Class (STC). The STC ratings of common residential walls built in conformance with the Ontario Building Code (2024) typically exceed STC 35, depending on exterior cladding, thickness and interior finish details. For example, brick veneer walls can achieve STC 50 or more. Standard commercially sided exterior metal stud walls have around STC 45. Standard good quality double-glazed non-operable windows can have STC ratings ranging from 25 to 40, depending on the window manufacturer, pane thickness and inter-pane spacing. As previously mentioned, the windows are the known weak point in a partition.

As per Section 4.2.1, when daytime noise levels from road sources at the plane of the window exceed 65 dBA, calculations must be performed to evaluate the sound transmission quality of the building components to ensure acceptable indoor noise levels are achieved. The calculation procedure¹⁰ considers:

- Window type and total area as a percentage of total room floor area
- Exterior wall type and total area as a percentage of the total room floor area
- Acoustic absorption characteristics of the room
- Outdoor noise source type and approach geometry
- Indoor sound level criteria, which varies according to the intended use of a space

Based on published research¹¹, exterior walls possess specific sound attenuation characteristics that are used as a basis for calculating the required STC ratings of windows in the same partition. Due to the limited information available at the time of the study, detailed floor layouts have not been finalized; therefore, detailed STC calculations could not be performed at this time. As a guideline, the anticipated STC requirements for windows have been estimated based on the overall noise reduction required for each intended use of space (STC = Outdoor Noise Level – Targeted Indoor Noise Levels + Safety Factor).

¹⁰ Building Practice Note: Controlling Sound Transmission into Buildings by J.D. Quirt, National Research Council of Canada, September 1985

¹¹ CMHC, Road & Rail Noise: Effects on Housing

5. RESULTS

5.1 Roadway Traffic Noise Levels

The results of the roadway traffic noise calculations are summarized in Table 3 below. Table 3 presents the receptor sound levels as calculated in STAMSON.

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES

Receptor Number	Receptor Height Above Grade (m)	Receptor Location	Roadway Noise Level (dBA)	
			Day	Night
R1	10.9	POW – Level 4 – Tower A North Façade	64	56
R2	33.75	POW – Level 12 – Tower A North Façade	66	58
R3	10.9	POW – Level 4 – Tower A East Façade	59	52
R4	33.75	POW – Level 12 – Tower A East Façade	62	54
R5	10.9	POW – Level 4 – Podium between Towers East Façade	57	49
R6	10.9	POW – Level 4 – Tower B East Façade	55	47
R7	39.5	POW – Level 14 – Tower B East Façade	59	50
R8	10.9	POW – Level 4 – Tower B West Façade	51	44
R9	39.5	POW – Level 14 – Tower B West Façade	56	48
R10	10.9	POW – Level 4 – Tower A West Façade	58	51
R11	13.9	OLA – Level 5 – Northwest of Tower A	55	N/A*
R12	13.9	OLA – Level 5 – Between Towers A and B, East	53	N/A*

*Noise levels during the nighttime are not considered for OLAs

The results of the current analysis indicate that POW noise levels will range between 51 and 66 dBA during the daytime period (07:00-23:00) and between 44 and 58 dBA during the nighttime period (23:00-07:00). The highest noise level (66 dBA) occurs at the top of the west façade of Tower A, which has the most exposure to Jeanne d’Arc and partial exposure to Champlain Street.

The noise levels predicted due to roadway traffic mostly do not exceed the criterion of 65 dBA (listed in Section 4.2 for building components). Exterior building components that comply with the Ontario Building Code (OBC 2024) requirements will be sufficient for the majority of the development. The exception to this is receptor 2, which very slightly pushes above 65 dBA (66 dBA). Thus, the north façade of Tower A and the shared podium requires exterior windows with an STC rating of at least 30 (see Figure 3).

The results of the calculations also indicate that most sections of the building will require forced air heating and the provision for the installation of central air conditioning. The exception to this is the north side of Tower A, which will outright require central air conditioning. However, it is anticipated that all units will be provided with central air conditioning, or a similar ventilation system, which will allow occupants to keep windows closed and maintain a comfortable living environment. As such, a Type D Warning Clause will also be required on all Lease, Purchase and Sale Agreements for all buildings

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that POW noise levels will range between 51 and 66 dBA during the daytime period (07:00-23:00) and between 44 and 58 dBA during the nighttime period (23:00-07:00). The highest noise level (66 dBA) occurs at the top of the west façade of Tower A, which has the most exposure to Jeanne d'Arc and partial exposure to Champlain Street. The north façade of Tower A and the shared podium will require its windows to have an upgraded STC rating of at least 30. The remaining exterior building components will be sufficient so long as they that comply with the Ontario Building Code (OBC 2024).

The results of the calculations also indicate that most sections of the building will require forced air heating and the provision for the installation of central air conditioning. The exception to this is the north side of Tower A, which will outright require central air conditioning. However, it is anticipated that all units will be provided with central air conditioning, or a similar ventilation system, which will allow occupants to keep windows closed and maintain a comfortable living environment. As such, a Type D Warning Clause will also be required on all Lease, Purchase and Sale Agreements for all buildings, as summarized on the next page:

Type D:

"This dwelling unit has been supplied with a central air conditioning system 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 Municipality and the Ministry of the Environment."

With regards to on-site stationary noise impacts, Gradient Wind conducted a survey of the site using aerial imagery and no significant off-site sources of stationary noise were identified.

The buildings will be designed to comply with the NPC-300 sound level limits for stationary noise impacts on the surroundings and itself. This will be accomplished through judicious selection of the Heating Ventilation and Air Conditioning equipment and locating it away from sensitive areas. Where necessary noise screens, silencers and other forms of mitigation can be incorporated into the design. Once the mechanical equipment is selected it is recommended to be reviewed by a qualified acoustic consultant.

This concludes our transportation noise and vibration assessment and report. If you have any questions or wish to discuss our findings, please advise us. In the interim, we thank you for the opportunity to be of service.

Sincerely,

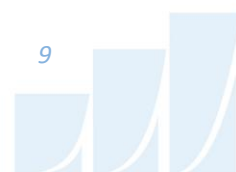
Gradient Wind Engineering Inc.

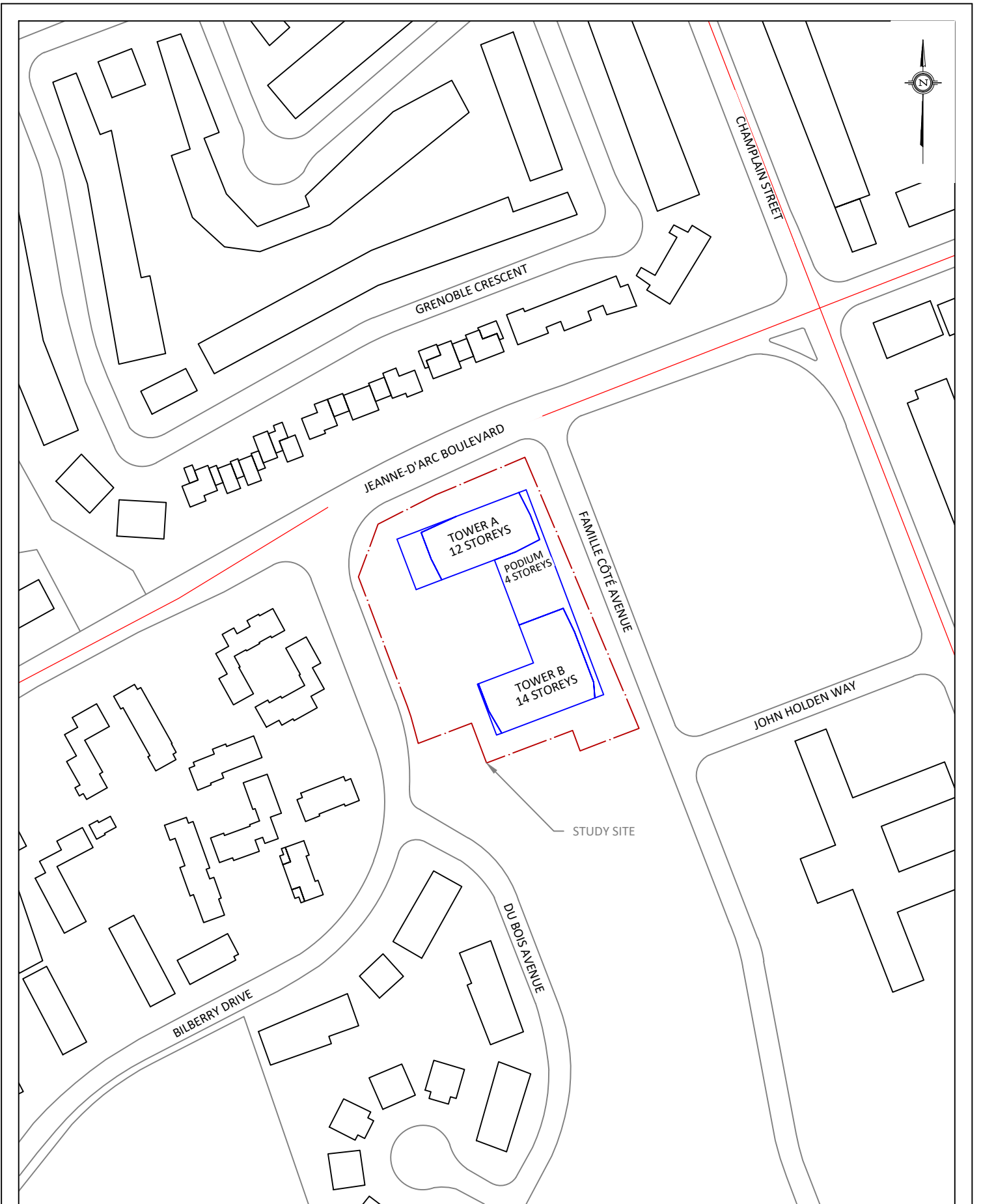


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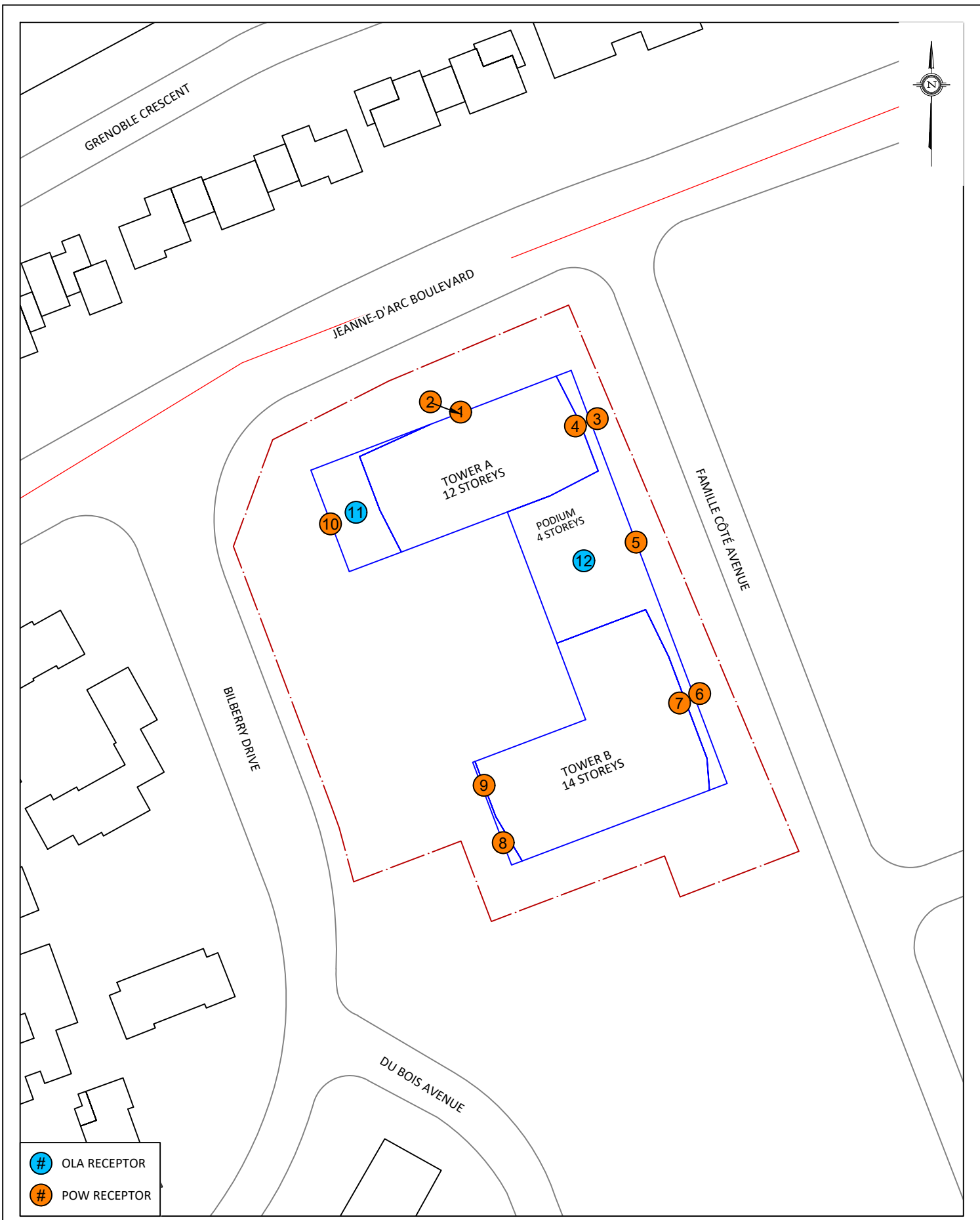
Gradient Wind File 25-152- Transportation Noise





PROJECT	FAMILLE CÔTÉ AVENUE, OTTAWA TRANSPORTATION NOISE ASSESSMENT	
SCALE	1:2000 (APPROX.)	DRAWING NO. 25-152-1
DATE	AUGUST 28, 2025	DRAWN BY T.K.

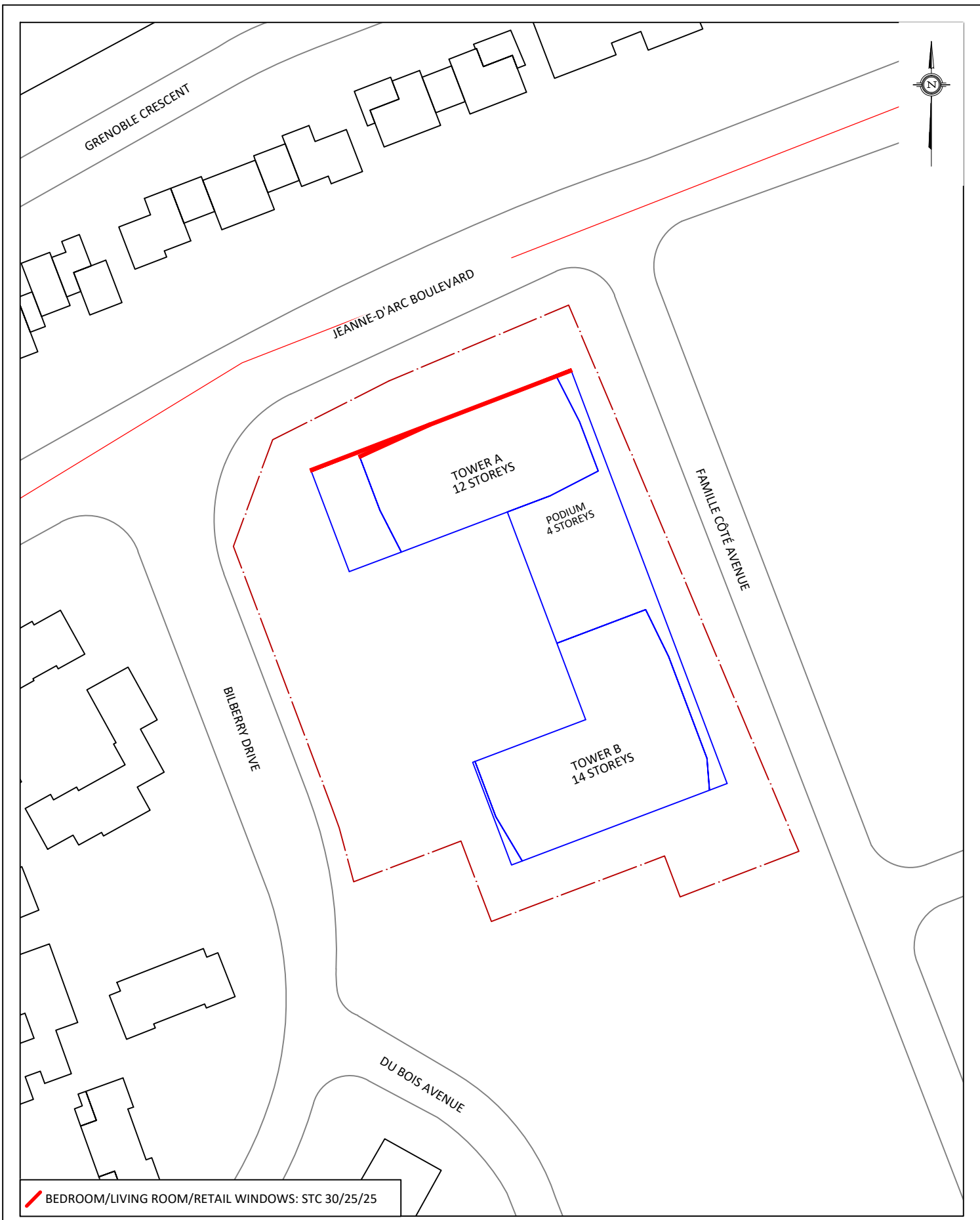
DESCRIPTION	FIGURE 1: PROPERTY LINE AND SURROUNDING CONTEXT
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- # OLA RECEPTOR
- # POW RECEPTOR

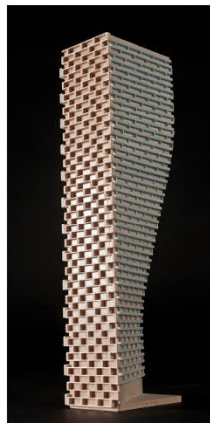
GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT	FAMILLE CÔTÉ AVENUE, OTTAWA TRANSPORTATION NOISE ASSESSMENT		DESCRIPTION
	SCALE	1:1000 (APPROX.)	DRAWING NO.	25-152-2
	DATE	AUGUST 28, 2025	DRAWN BY	M.P.

FIGURE 2:
RECEPTOR LOCATIONS



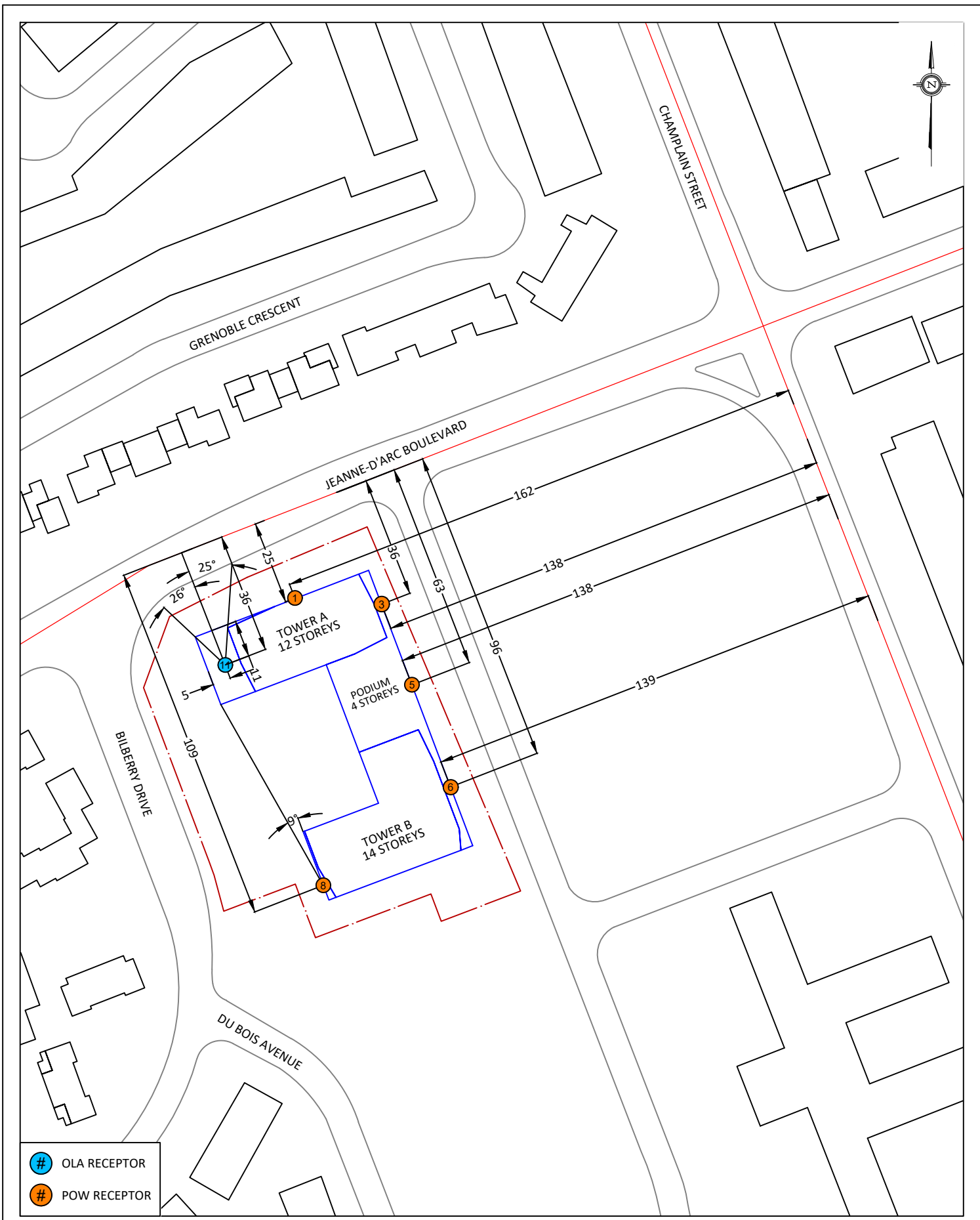
 BEDROOM/LIVING ROOM/RETAIL WINDOWS: STC 30/25/25

GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT	FAMILLE CÔTÉ AVENUE, OTTAWA TRANSPORTATION NOISE ASSESSMENT		DESCRIPTION	FIGURE 3: STC RECOMMENDATIONS
	SCALE	1:1000 (APPROX.)	DRAWING NO.	25-152-3	
	DATE	SEPTEMBER 15, 2025	DRAWN BY	M.P.	



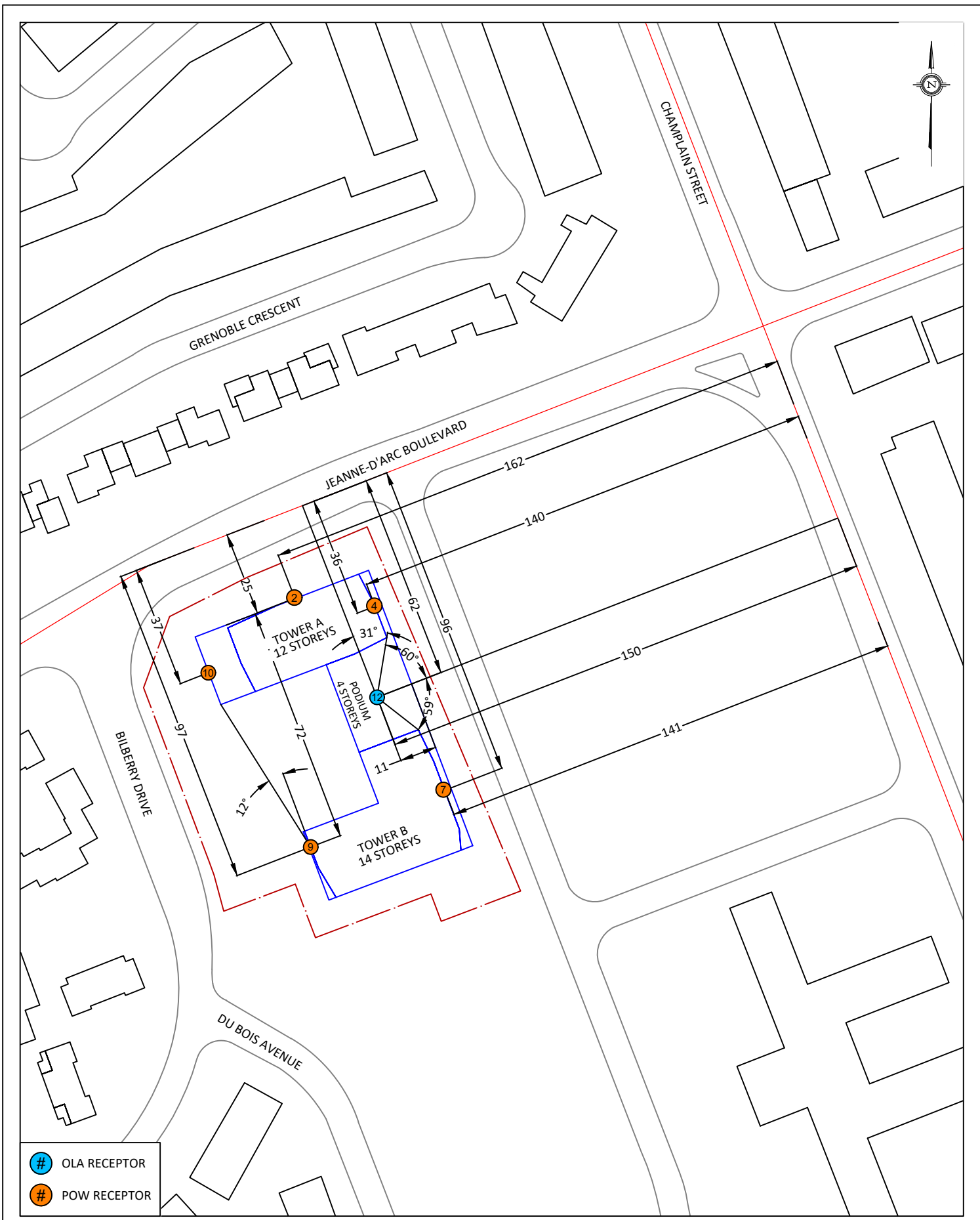
APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA



- # OLA RECEPTOR
- # POW RECEPTOR

GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT	FAMILLE CÔTÉ AVENUE, OTTAWA TRANSPORTATION NOISE ASSESSMENT		DESCRIPTION FIGURE A1: STAMSON PARAMETERS: R1,3,5,6,8,11	
	SCALE	2:3000 (APPROX.)	DRAWING NO.		25-152-A1
	DATE	SEPTEMBER 3, 2025	DRAWN BY		M.P.



- # OLA RECEPTOR
- # POW RECEPTOR

GRADIENTWIND ENGINEERS & SCIENTISTS 127 WALGREEN ROAD, OTTAWA, ON 613 836 0934 • GRADIENTWIND.COM	PROJECT	FAMILLE CÔTÉ AVENUE, OTTAWA TRANSPORTATION NOISE ASSESSMENT		DESCRIPTION	FIGURE A2: STAMSON PARAMETERS: R2,4,7,9,10,12
	SCALE	2:3000 (APPROX.)	DRAWING NO.	25-152-A2	
	DATE	SEPTEMBER 3, 2025	DRAWN BY	M.P.	

GRADIENTWIND

ENGINEERS & SCIENTISTS

STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 15:38:11**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (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 : 25.00 / 25.00 m
Receiver height : 10.90 / 10.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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Data for Segment # 2: Champlain (day/night)

```

-----
Angle1  Angle2      : -90.00 deg   0.00 deg
Wood depth      :      0      (No woods.)
No of house rows :      0 / 0
Surface         :      1      (Absorptive ground surface)
Receiver source distance : 162.00 / 162.00 m
Receiver height  :  10.90 / 10.90 m
Topography      :      1      (Flat/gentle slope; no barrier)
Reference angle  :      0.00
  
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 63.52 + 0.00) = 63.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	67.51	0.00	-3.06	-0.94	0.00	0.00	0.00	63.52

Segment Leq : 63.52 dBA

Results segment # 2: Champlain (day)

Source height = 1.50 m

ROAD (0.00 + 47.53 + 0.00) = 47.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.38	65.72	0.00	-14.24	-3.95	0.00	0.00	0.00	47.53

Segment Leq : 47.53 dBA

Total Leq All Segments: 63.63dBA

Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 55.92 + 0.00) = 55.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	59.91	0.00	-3.06	-0.94	0.00	0.00	0.00	55.92

Segment Leq : 55.92 dBA

Results segment # 2: Champlain (night)

Source height = 1.50 m

ROAD (0.00 + 39.93 + 0.00) = 39.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.38	58.12	0.00	-14.24	-3.95	0.00	0.00	0.00	39.93

Segment Leq : 39.93 dBA

Total Leq All Segments: 56.03 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 63.63
(NIGHT) : 56.03

STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 15:40:56**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (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 : 25.00 / 25.00 m
Receiver height : 33.75 / 33.75 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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Data for Segment # 2: Champlain (day/night)

```
-----
Angle1  Angle2      : -90.00 deg   0.00 deg
Wood depth      :      0      (No woods.)
No of house rows :      0 / 0
Surface         :      1      (Absorptive ground surface)
Receiver source distance : 162.00 / 162.00 m
Receiver height :  33.75 / 33.75 m
Topography     :      1      (Flat/gentle slope; no barrier)
Reference angle :      0.00
-----
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 65.29 + 0.00) = 65.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	67.51	0.00	-2.22	0.00	0.00	0.00	0.00	65.29

Segment Leq : 65.29 dBA

Results segment # 2: Champlain (day)

Source height = 1.50 m

ROAD (0.00 + 52.37 + 0.00) = 52.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	65.72	0.00	-10.33	-3.01	0.00	0.00	0.00	52.37

Segment Leq : 52.37 dBA

Total Leq All Segments: 65.51 dBA

Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 57.69 + 0.00) = 57.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	59.91	0.00	-2.22	0.00	0.00	0.00	0.00	57.69

Segment Leq : 57.69 dBA



Results segment # 2: Champlain (night)

Source height = 1.50 m

ROAD (0.00 + 44.77 + 0.00) = 44.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.00	58.12	0.00	-10.33	-3.01	0.00	0.00	0.00	44.77

Segment Leq : 44.77 dBA

Total Leq All Segments: 57.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.51
(NIGHT): 57.91

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STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 16:03:13**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 10.90 / 10.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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Data for Segment # 2: Champlain (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 : 138.00 / 138.00 m
Receiver height  :  10.90 / 10.90 m
Topography      :      1      (Flat/gentle slope; no barrier)
Reference angle  :      0.00
-----
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 58.32 + 0.00) = 58.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.38	67.51	0.00	-5.24	-3.95	0.00	0.00	0.00	58.32

Segment Leq : 58.32 dBA

Results segment # 2: Champlain (day)

Source height = 1.50 m

ROAD (0.00 + 51.50 + 0.00) = 51.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	65.72	0.00	-13.28	-0.94	0.00	0.00	0.00	51.50

Segment Leq : 51.50 dBA

Total Leq All Segments: 59.14 dBA

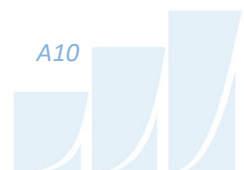
Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 50.72 + 0.00) = 50.72 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.38	59.91	0.00	-5.24	-3.95	0.00	0.00	0.00	50.72

Segment Leq : 50.72 dBA



Results segment # 2: Champlain (night)

Source height = 1.50 m

ROAD (0.00 + 43.90 + 0.00) = 43.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	58.12	0.00	-13.28	-0.94	0.00	0.00	0.00	43.90

Segment Leq : 43.90 dBA

Total Leq All Segments: 51.54 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 59.14
(NIGHT) : 51.54

STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 16:04:53**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 33.75 / 33.75 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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Data for Segment # 2: Champlain (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 : 140.00 / 140.00 m
Receiver height : 33.75 / 33.75 m
Topography     :      1      (Flat/gentle slope; no barrier)
Reference angle :      0.00
  
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 60.70 + 0.00) = 60.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.51	0.00	-3.80	-3.01	0.00	0.00	0.00	60.70

Segment Leq : 60.70 dBA

Results segment # 2: Champlain (day)

Source height = 1.50 m

ROAD (0.00 + 56.02 + 0.00) = 56.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	65.72	0.00	-9.70	0.00	0.00	0.00	0.00	56.02

Segment Leq : 56.02 dBA

Total Leq All Segments: 61.97 dBA

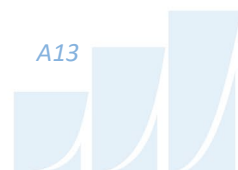
Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 53.10 + 0.00) = 53.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	59.91	0.00	-3.80	-3.01	0.00	0.00	0.00	53.10

Segment Leq : 53.10 dBA



Results segment # 2: Champlain (night)

Source height = 1.50 m

ROAD (0.00 + 48.42 + 0.00) = 48.42 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.12	0.00	-9.70	0.00	0.00	0.00	0.00	48.42

Segment Leq : 48.42 dBA

Total Leq All Segments: 54.37 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.97
(NIGHT): 54.37

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STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 16:06:06**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (day/night)

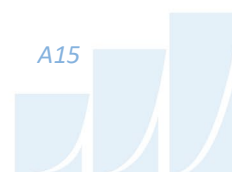
Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 63.00 / 63.00 m
Receiver height : 10.90 / 10.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00



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Data for Segment # 2: Champlain (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 : 138.00 / 138.00 m
Receiver height  :  10.90 / 10.90 m
Topography      :      1      (Flat/gentle slope; no barrier)
Reference angle  :      0.00
  
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 54.97 + 0.00) = 54.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.38	67.51	0.00	-8.59	-3.95	0.00	0.00	0.00	54.97

Segment Leq : 54.97 dBA

Results segment # 2: Champlain (day)

Source height = 1.50 m

ROAD (0.00 + 51.50 + 0.00) = 51.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	65.72	0.00	-13.28	-0.94	0.00	0.00	0.00	51.50

Segment Leq : 51.50 dBA

Total Leq All Segments: 56.58 dBA

Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 47.38 + 0.00) = 47.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.38	59.91	0.00	-8.59	-3.95	0.00	0.00	0.00	47.38

Segment Leq : 47.38 dBA



Results segment # 2: Champlain (night)

Source height = 1.50 m

ROAD (0.00 + 43.90 + 0.00) = 43.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	58.12	0.00	-13.28	-0.94	0.00	0.00	0.00	43.90

Segment Leq : 43.90 dBA

Total Leq All Segments: 48.99 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 56.58
(NIGHT) : 48.99

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STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 16:06:51**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 96.00 / 96.00 m
Receiver height : 10.90 / 10.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00



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Data for Segment # 2: Champlain (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 : 139.00 / 139.00 m
Receiver height  :  10.90 / 10.90 m
Topography      :      1      (Flat/gentle slope; no barrier)
Reference angle  :      0.00
  
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 52.45 + 0.00) = 52.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.38	67.51	0.00	-11.11	-3.95	0.00	0.00	0.00	52.45

Segment Leq : 52.45 dBA

Results segment # 2: Champlain (day)

Source height = 1.50 m

ROAD (0.00 + 51.46 + 0.00) = 51.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	65.72	0.00	-13.33	-0.94	0.00	0.00	0.00	51.46

Segment Leq : 51.46 dBA

Total Leq All Segments: 54.99 dBA

Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 44.85 + 0.00) = 44.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.38	59.91	0.00	-11.11	-3.95	0.00	0.00	0.00	44.85

Segment Leq : 44.85 dBA

Results segment # 2: Champlain (night)

Source height = 1.50 m

ROAD (0.00 + 43.86 + 0.00) = 43.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.38	58.12	0.00	-13.33	-0.94	0.00	0.00	0.00	43.86

Segment Leq : 43.86 dBA

Total Leq All Segments: 47.39 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 54.99
(NIGHT) : 47.39

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STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 16:07:42**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 96.00 / 96.00 m
Receiver height : 39.50 / 10.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00



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Data for Segment # 2: Champlain (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 : 141.00 / 141.00 m
Receiver height : 39.50 / 39.50 m
Topography      :      1      (Flat/gentle slope; no barrier)
Reference angle :      0.00
-----
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 56.44 + 0.00) = 56.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.00	67.51	0.00	-8.06	-3.01	0.00	0.00	0.00	56.44

Segment Leq : 56.44 dBA

Results segment # 2: Champlain (day)

Source height = 1.50 m

ROAD (0.00 + 55.99 + 0.00) = 55.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	65.72	0.00	-9.73	0.00	0.00	0.00	0.00	55.99

Segment Leq : 55.99 dBA

Total Leq All Segments: 59.23dBA

Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 44.85 + 0.00) = 44.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.38	59.91	0.00	-11.11	-3.95	0.00	0.00	0.00	44.85

Segment Leq : 44.85 dBA



Results segment # 2: Champlain (night)

Source height = 1.50 m

ROAD (0.00 + 48.39 + 0.00) = 48.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	58.12	0.00	-9.73	0.00	0.00	0.00	0.00	48.39

Segment Leq : 48.39 dBA

Total Leq All Segments: 49.98 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 59.23
(NIGHT) : 49.98

GRADIENTWIND

ENGINEERS & SCIENTISTS

STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 16:09:44**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 50 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): 12000
Percentage of Annual Growth       : 0.00
Number of Years of Growth         : 0.00
Medium Truck % of Total Volume    : 7.00
Heavy Truck % of Total Volume     : 5.00
Day (16 hrs) % of Total Volume    : 92.00
```

Data for Segment # 1: Jeanne D'Arc (day/night)

```
-----
Angle1  Angle2      : -90.00 deg  -9.00 deg
Wood depth      : 0          (No woods.)
No of house rows : 0 / 0
Surface         : 1          (Absorptive ground surface)
Receiver source distance : 109.00 / 109.00 m
Receiver height  : 10.90 / 10.90 m
Topography      : 1          (Flat/gentle slope; no barrier)
Reference angle  : 0.00
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 51.12 + 0.00) = 51.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-9	0.38	67.51	0.00	-11.87	-4.52	0.00	0.00	0.00	51.12

Segment Leq : 51.12 dBA

Total Leq All Segments: 51.12 dBA



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Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 43.52 + 0.00) = 43.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-9	0.38	59.91	0.00	-11.87	-4.52	0.00	0.00	0.00	43.52

Segment Leq : 43.52 dBA

Total Leq All Segments: 43.52 dBA

TOTAL Leq FROM ALL SOURCES (DAY) : 51.12
(NIGHT) : 43.52

GRADIENTWIND

ENGINEERS & SCIENTISTS

STAMSON 5.0 **NORMAL REPORT** **Date: 03-09-2025 16:10:43**
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9.te **Time Period: Day/Night 16/8 hours**
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume  : 552/48    veh/TimePeriod  *
Posted speed limit  : 50 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): 12000
Percentage of Annual Growth       : 0.00
Number of Years of Growth         : 0.00
Medium Truck % of Total Volume    : 7.00
Heavy Truck % of Total Volume     : 5.00
Day (16 hrs) % of Total Volume    : 92.00
```

Data for Segment # 1: Jeanne D'Arc (day/night)

```
-----
Angle1  Angle2      : -90.00 deg  -12.00 deg
Wood depth      : 0          (No woods.)
No of house rows : 0 / 0
Surface         : 1          (Absorptive ground surface)
Receiver source distance : 97.00 / 97.00 m
Receiver height  : 39.50 / 39.50 m
Topography      : 1          (Flat/gentle slope; no barrier)
Reference angle  : 0.00
```

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 55.77 + 0.00) = 55.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-12	0.00	67.51	0.00	-8.11	-3.63	0.00	0.00	0.00	55.77

Segment Leq : 55.77 dBA

Total Leq All Segments: 55.77 dBA



GRADIENTWIND

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Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 48.17 + 0.00) = 48.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-12	0.00	59.91	0.00	-8.11	-3.63	0.00	0.00	0.00	48.17

Segment Leq : 48.17 dBA

Total Leq All Segments: 48.17 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.77
(NIGHT): 48.17

GRADIENTWIND

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STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 16:26:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r10.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Jeanne D'Arc (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne D'Arc (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 10.90 / 10.90 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Jeanne D'Arc (day)

Source height = 1.50 m

ROAD (0.00 + 58.16 + 0.00) = 58.16 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-90 0 0.38 67.51 0.00 -5.40 -3.95 0.00 0.00 0.00 58.16

Segment Leq : 58.16 dBA

Total Leq All Segments: 58.16 dBA

Results segment # 1: Jeanne D'Arc (night)

Source height = 1.50 m

ROAD (0.00 + 50.56 + 0.00) = 50.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.38	59.91	0.00	-5.40	-3.95	0.00	0.00	0.00	50.56

Segment Leq : 50.56 dBA

Total Leq All Segments: 50.56 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.16
(NIGHT): 50.56

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STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 16:48:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r11.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Jeanne 1 (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Jeanne 1 (day/night)

Angle1 Angle2 : -90.00 deg -26.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 13.90 / 13.90 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -26.00 deg
Barrier height : 12.40 m
Barrier receiver distance : 5.00 / 5.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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Road data, segment # 2: Jeanne 2 (day/night)

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume  : 773/67    veh/TimePeriod  *
Heavy truck volume   : 552/48    veh/TimePeriod  *
Posted speed limit   : 50 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

Data for Segment # 2: Jeanne 2 (day/night)

```
-----
Angle1  Angle2      : -26.00 deg  25.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 1          (Absorptive ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height     : 13.90 / 13.90 m
Topography          : 2          (Flat/gentle slope; with barrier)
Barrier angle1      : -26.00 deg  Angle2 : 25.00 deg
Barrier height       : 12.40 m
Barrier receiver distance : 11.00 / 11.00 m
Source elevation    : 0.00 m
Receiver elevation  : 0.00 m
Barrier elevation    : 0.00 m
Reference angle     : 0.00
```

Results segment # 1: Jeanne 1 (day)

Source height = 1.50 m

Barrier height for grazing incidence

```
-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.50 !      13.90 !      12.18 !      12.18
```

ROAD (0.00 + 54.09 + 0.00) = 54.09 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
   -90   -26   0.00  67.51   0.00  -3.80  -4.49   0.00   0.00  -5.13  54.09
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
```

Segment Leq : 54.09 dBA



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Results segment # 2: Jeanne 2 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	13.90	10.11	10.11

ROAD (0.00 + 45.82 + 0.00) = 45.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-26	25	0.00	67.51	0.00	-3.80	-5.48	0.00	0.00	-12.42	45.82

Segment Leq : 45.82 dBA

Total Leq All Segments: 54.69 dBA

Results segment # 1: Jeanne 1 (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	13.90	12.18	12.18

ROAD (0.00 + 46.49 + 0.00) = 46.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-26	0.00	59.91	0.00	-3.80	-4.49	0.00	0.00	-5.13	46.49

Segment Leq : 46.49 dBA



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Results segment # 2: Jeanne 2 (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	13.90	10.11	10.11

ROAD (0.00 + 38.22 + 0.00) = 38.22 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-26	25	0.00	59.91	0.00	-3.80	-5.48	0.00	0.00	-12.42	38.22

Segment Leq : 38.22 dBA

Total Leq All Segments: 47.09 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 54.69
(NIGHT): 47.09



GRADIENTWIND

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STAMSON 5.0 NORMAL REPORT Date: 03-09-2025 16:35:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r12.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: Champlain (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Champlain (day/night)

Angle1 Angle2 : -60.00 deg 59.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 36.00 / 36.00 m
Receiver height : 13.90 / 13.90 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -60.00 deg Angle2 : 59.00 deg
Barrier height : 12.40 m
Barrier receiver distance : 11.00 / 11.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

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Road data, segment # 2: Jean d'Arc (day/night)

```
-----
Car traffic volume   : 9715/845   veh/TimePeriod  *
Medium truck volume  : 773/67    veh/TimePeriod  *
Heavy truck volume   : 552/48    veh/TimePeriod  *
Posted speed limit   : 50 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

Data for Segment # 2: Jean d'Arc (day/night)

```
-----
Angle1  Angle2      : 31.00 deg  90.00 deg
Wood depth          : 0          (No woods.)
No of house rows    : 0 / 0
Surface             : 2          (Reflective ground surface)
Receiver source distance : 62.00 / 62.00 m
Receiver height     : 13.90 / 13.90 m
Topography          : 2          (Flat/gentle slope; with barrier)
Barrier angle1      : 31.00 deg  Angle2 : 90.00 deg
Barrier height      : 12.40 m
Barrier receiver distance : 11.00 / 11.00 m
Source elevation    : 0.00 m
Receiver elevation  : 0.00 m
Barrier elevation    : 0.00 m
Reference angle     : 0.00
```

Results segment # 1: Champlain (day)

Source height = 1.50 m

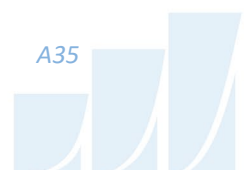
Barrier height for grazing incidence

```
-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.50 !      13.90 !      10.11 !      10.11
```

ROAD (0.00 + 48.41 + 0.00) = 48.41 dBA

```
-----
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
   -60    59   0.00  65.72   0.00  -3.80  -1.80   0.00   0.00 -11.71  48.41
-----
```

Segment Leq : 48.41 dBA



Results segment # 2: Jean d'Arc (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	13.90	11.70	11.70

ROAD (0.00 + 50.91 + 0.00) = 50.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
31	90	0.00	67.51	0.00	-6.16	-4.84	0.00	0.00	-5.59	50.91

Segment Leq : 50.91 dBA

Total Leq All Segments: 52.85 dBA

Results segment # 1: Champlain (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	13.90	10.11	10.11

ROAD (0.00 + 40.81 + 0.00) = 40.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	59	0.00	58.12	0.00	-3.80	-1.80	0.00	0.00	-11.71	40.81

Segment Leq : 40.81 dBA

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Results segment # 2: Jean d'Arc (night)

 Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.50	!	13.90	!
		11.70	!
			11.70

ROAD (0.00 + 43.31 + 0.00) = 43.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
31	90	0.00	59.91	0.00	-6.16	-4.84	0.00	0.00	-5.59	43.31

 Segment Leq : 43.31 dBA

Total Leq All Segments: 45.25 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.85
 (NIGHT): 45.25

