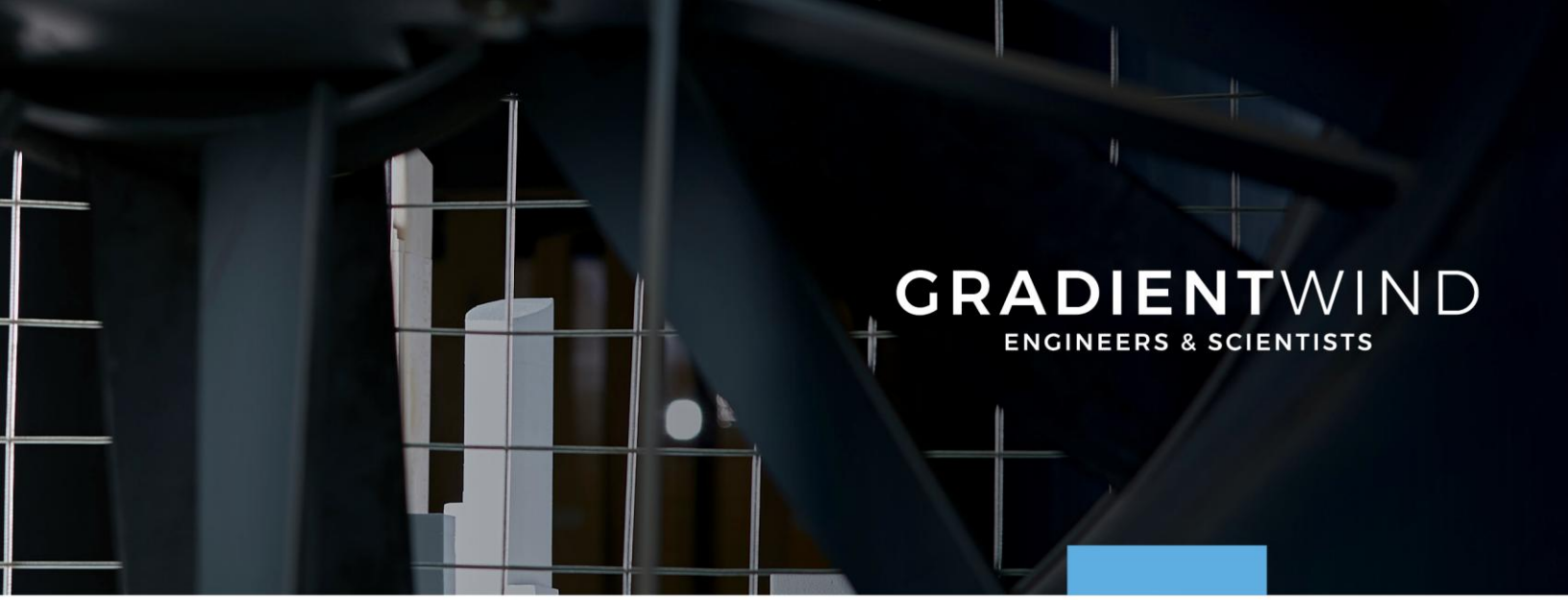

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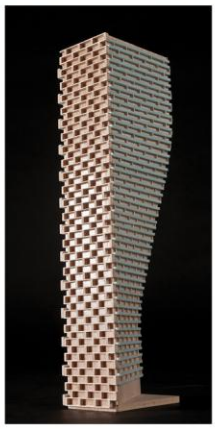
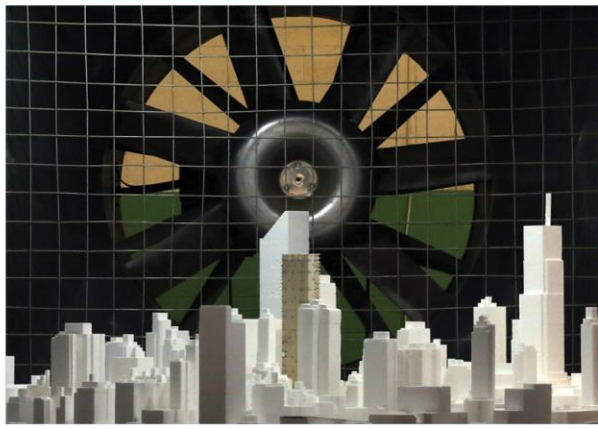
TRANSPORTATION NOISE ASSESSMENT

128 Lakeshore Road East
Mississauga, Ontario

Report: 21-350-Transportation Noise





October 21, 2025

PREPARED FOR

128 Lakeshore Developments Inc.
2676 Bayview Avenue
North York, ON
M2L 1B9

PREPARED BY

Doryan Saavedra, B.Eng., Junior Acoustic Scientist
Joshua Foster, P.Eng., Lead Engineer

EXECUTIVE SUMMARY

This report describes a transportation noise assessment undertaken to satisfy the requirements of a Zoning By-law Amendment (ZBA) application submission for a proposed mixed-use development located at 128 Lakeshore Road East in Mississauga, Ontario. The proposed eight-story development comprises a lobby, commercial and office space, and surface parking spots located at-grade. A basement level is located below grade comprising maintenance and storage rooms. Levels 2-8 comprise residential units. A floorplate setback on Level 2 of the southeast side of the building accommodates private terraces. The building is topped by a mechanical penthouse which features an indoor and outdoor amenity at the same level. The primary sources of roadway traffic noise include Lakeshore Road East, Hurontario Street, Ann Street, and St. Lawrence Drive. Figure 1 illustrates a complete site plan with surrounding context.

The assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP) NPC-300 guidelines; (ii) future vehicular traffic volumes corresponding to data obtained from the City of Mississauga; and (iii) architectural drawings provided by Arcadis in July 2025.

The results of the current analysis indicate that noise levels will range between 48 and 61 dBA during the daytime period (07:00-23:00) and between 42 and 55 dBA during the nighttime period (23:00-07:00). The highest noise level (61 dBA) occurs at the southeast façade, which is nearest and most exposed to Lakeshore Road East.

The results indicate that noise levels fall between 55 dBA and 65 dBA during the daytime period. As such, the development will required forced air heating systems with provisions for central air conditioning, as a minimum requirement. If air conditioning is installed it will allow occupants to keep windows closed and maintain a comfortable living environment. Given the nature of the development, air conditioning is expected to be provided, therefore a type D Warning Clause will be required in all Lease, Purchase and Sale Agreements, as summarized in Section 6. Standard building components will be sufficient to reduce indoor noise levels at or below the NPC-300 criterion for noise sensitive spaces. As Noise levels on the rooftop outdoor amenity fall below 55 dBA, noise mitigation is not required.

A review of satellite imagery confirmed there are no significant sources of stationary noise surrounding the site. The dominant source of noise impacting the development is from transportation noise sources.

The development's own mechanical equipment has the potential to generate noise off-site at surrounding noise sensitive (residential) developments and on the development itself. Any potential impacts can be minimized by judicious selection of mechanical equipment and its location. It is preferable to locate large pieces of equipment, such as cooling towers and make up air units, on the roof of the towers or in mechanical penthouses. Once the mechanical design of the building has developed sufficiently, it should be reviewed by a qualified acoustical engineer to ensure compliance with NPC-300 sound level limits.

TABLE OF CONTENTS

1. INTRODUCTION

Gradient Wind Engineering Inc. (Gradient Wind) was retained by 128 Lakeshore Developments Inc. to undertake a transportation noise assessment to satisfy the requirements of a Zoning By-law Amendment (ZBA) application submission for a proposed mixed-use development located at 128 Lakeshore Road East in Mississauga, Ontario. 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)[1] NPC-300 guidelines. Noise calculations were based on architectural drawings provided by Arcadis in July 2025, with future traffic volumes corresponding to roadway traffic counts obtained from the City of Mississauga.

2. TERMS OF REFERENCE

The focus of this roadway traffic noise feasibility assessment is a proposed mixed-use development located at 128 Lakeshore Road East in Mississauga, Ontario. The study site is situated at the east corner of a parcel of land bounded by Helene Street North to the southwest, High Street East to the northwest, Ann Street to the northeast, and Lakeshore Road East to the southeast.

The proposed eight-story development comprises a lobby, commercial and office space, and surface parking spots located at-grade. A basement level is located below grade comprising maintenance and storage rooms. Levels 2-8 comprise residential units. A floorplate setback on Level 2 of the southeast side of the building accommodates private terraces. The building is topped by a mechanical penthouse which features an indoor and outdoor amenity at the same level.

The site is surrounded by low-rise and medium-rise mixed-use buildings in all directions, with Nola Condos (15-storeys) directly northwest of the site, Harbourview (20-storeys) to the northeast across Ann Street, and Northshore (22-storeys) further to the northeast on Hurontario Street. The primary sources of roadway traffic noise are Lakeshore Road East, Hurontario Street, Ann Street, and St. Lawrence Drive. The

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

GO Railway corridor is located to the north beyond 300m from the subject site property line with several low-rise and medium-rise buildings situated in between. As such, the railway corridor was not identified as a significant source of transportation noise as noise levels from roadway vehicles are expected to dominate. Figure 1 illustrates a complete site plan with surrounding context.

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 particular 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 range (that is relevant to this study) is 50, 45 and 40 dBA for retail space, living rooms, and sleeping quarters, respectively, as listed in Table 1.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD) [2]

Type of Space	Time Period	L_{eq} (dBA)
General offices, reception areas, retail stores, etc.	07:00 – 23:00	50
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
Sleeping quarters of hotels/motels	23:00 – 07:00	45
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40

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 reduction[3]. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment[4]. 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 attenuation[5].

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. Furthermore, balconies/terraces serving the residential units extending less than 4 metres from the façade do not require consideration as an OLA, as per NPC-300.

[2] MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Table C-9
[3] Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125
[4] MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8
[5] MOECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

4.2.2 Roadway Traffic Volumes

NPC-300 dictates that noise calculations should consider future sound levels based on a roadway's mature state of development. Traffic volumes have been considered for the mature state of development based on roadway classifications and traffic counts obtained from the City of Mississauga. A 1% growth rate was used to project the existing AADT count into 2037, 10 years after building completion if a two-year construction schedule is assumed. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway Class	Speed Limit (km/h)	Existing AADT Count	Year of Count	Projected 2037 AADT Count
Lakeshore Road East	4-Lane Arterial (Undivided)	40	16,520	2025	**18,615**
Hurontario Street	4-Lane Arterial (Undivided)	50	11,850	2019	**14,174**
Ann Street	2-Lane Minor Collector	40	760	2025	**856**
St. Lawrence Drive	2-Lane Minor Collector	40	2,050	2019	**2,452**

4.2.3 Theoretical Roadway Traffic Noise Predictions

The impact of transportation noise sources on the development was determined by computer modelling. Transportation noise source modelling is based on the software program *CadnaA* which utilizes the United States Federal Highway Administration's Traffic Noise Model (TNM) to represent the roadway line sources. The TNM model is also being accepted in the updated Environmental Guide for Noise of Ontario, 2021 by the Ministry of Transportation (MTO)[6]. This computer program can represent three-dimensional surfaces and three orders of reflections of sound waves over a suitable spectrum for human hearing. A

[6] Ministry of Transportation Ontario, "*Environmental Guide for Noise*", August 2021, pg. 16

set of comparative calculations were performed in the current Ontario traffic noise prediction model STAMSON for comparisons to CadnaA simulation results. The STAMSON model is, however, older and requires each receptor to be calculated separately. STAMSON also does not accurately account for building reflections and multiple screening elements, and curved road geometry. A total of 8 receptor locations were identified around the site, as illustrated in Figure 2.

Roadway noise calculations were performed by treating each segment as separate line sources of noise, and by using existing and proposed building locations as noise barriers. 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 a mix of medium and heavy trucks, with their percentages obtained from data provided by the City of Mississauga.
- The day/night split for all roads was taken to be 90% / 10%, respectively.
- Default 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 8 locations around the study area (see Figure 2).

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 procedure[7] 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 research[8], 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).

5. RESULTS

5.1 Roadway Traffic Noise Levels

The results of the roadway traffic noise calculations are summarized in Table 3 below. The results of the current analysis indicate that noise levels will range between 48 and 61 dBA during the daytime period (07:00-23:00) and between 42 and 55 dBA during the nighttime period (23:00-07:00). The highest noise level (61 dBA) occurs at the southeast façade, which is nearest and most exposed to Lakeshore Road East. Figures 3 and 4 illustrate daytime and nighttime noise contours of the site 24 m above grade. The CadnaA model used to obtain the results may be provided upon request.

[7] Building Practice Note: Controlling Sound Transmission into Buildings by J.D. Quirt, National Research Council of Canada, September 1985
[8] CMHC, Road & Rail Noise: Effects on Housing

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES

Receptor Number / Type	Receptor Height Above Grade (m)	Receptor Location	Roadway Noise Level (dBA)	
			Day	Night
R1 / POW	1.5	Level 1 - Southeast Facade	61	55
R2 / POW	24	Level 8 - Southeast Facade	49	42
R3 / POW	24	Level 8 - Northeast Facade	57	51
R4 / POW	24	Level 8 - Northwest Facade	49	43
R5 / POW	24	Level 8 - Southwest Facade	56	50
R6 / OLA	27.5	Level 9/MPH - Southeast Outdoor Amenity	48	N/A*
R7 / OLA	27.5	Level 9/MPH - Northeast Outdoor Amenity	50	N/A*
R8 / OLA	27.5	Level 9/MPH - Northwest Outdoor Amenity	48	N/A*

*Noise levels during the nighttime are not considered for OLAs

Table 4 shows a comparison in results between CadnaA and STAMSON. Noise levels calculated in STAMSON were found to have a good correlation with CadnaA and variability between the two programs was within an acceptable level of ±0-3 dBA. STAMSON input and output data are provided in Appendix A and Figures A1 to A3.

TABLE 4: RESULTS OF STAMSON/CADNAA CORRELATION

Receptor ID	Receptor Height (m)	Receptor Location	STAMSON 5.04 Noise Level (dBA)		CadnaA Noise Level (dBA)	
			Day	Night	Day	Night
R1 / POW	1.5	Level 1 - Southeast Facade	63	57	61	55
R3 / POW	24	Level 8 - Northeast Facade	60	54	57	51
R7 / OLA	27.5	Level 9/MPH - Northeast Outdoor Amenity	53	47	50	43

5.2 Noise Control Measures

The noise levels predicted due to roadway traffic does not exceed the criteria listed in Section 4.2 for building components. As such, upgraded building components will not be required for this development.

Standard building components that conform with the Ontario Building Code (OBC 2024) requirements will be sufficient to ensure that indoor noise levels meet the NPC-300 criteria.

As noise levels fall between 55 dBA and 65 dBA during the daytime period, the development will required forced air heating systems with provisions for central air conditioning, as a minimum requirement. If air conditioning is installed it will allow occupants to keep windows closed and maintain a comfortable living environment. Given the nature of the development, air conditioning is expected to be provided, therefore a type D Warning Clause will be required in all Lease, Purchase and Sale Agreements, as summarized in Section 6. As Noise levels on the rooftop outdoor amenity fall below 55 dBA, noise mitigation is not required.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that noise levels will range between 48 and 61 dBA during the daytime period (07:00-23:00) and between 42 and 55 dBA during the nighttime period (23:00-07:00). The highest noise level (61 dBA) occurs at the southeast façade, which is nearest and most exposed to Lakeshore Road East.

The results indicate that noise levels fall between 55 dBA and 65 dBA during the daytime period. As such, the development will required forced air heating systems with provisions for central air conditioning, as a minimum requirement. If air conditioning is installed it will allow occupants to keep windows closed and maintain a comfortable living environment. Given the nature of the development, air conditioning is expected to be provided, therefore a type D Warning Clause will be required in all Lease, Purchase and Sale Agreements, as summarized below. Furthermore, Standard building components will be sufficient to reduce indoor noise levels at or below the NPC-300 criterion for noise sensitive spaces. As Noise levels on the rooftop outdoor amenity fall below 55 dBA, noise mitigation is not required.

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."*

A review of satellite imagery confirmed there are no significant sources of stationary noise surrounding the site. The dominant source of noise impacting the development is from transportation noise sources.

The development's own mechanical equipment has the potential to generate noise off-site at surrounding noise sensitive (residential) developments and on the development itself. Any potential impacts can be minimized by judicious selection of mechanical equipment and its location. It is preferable to locate large pieces of equipment, such as cooling towers and make up air units, on the roof of the towers or in mechanical penthouses. Once the mechanical design of the building has developed sufficiently, it should be reviewed by a qualified acoustical engineer to ensure compliance with NPC-300 sound level limits.

This concludes our transportation noise 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.

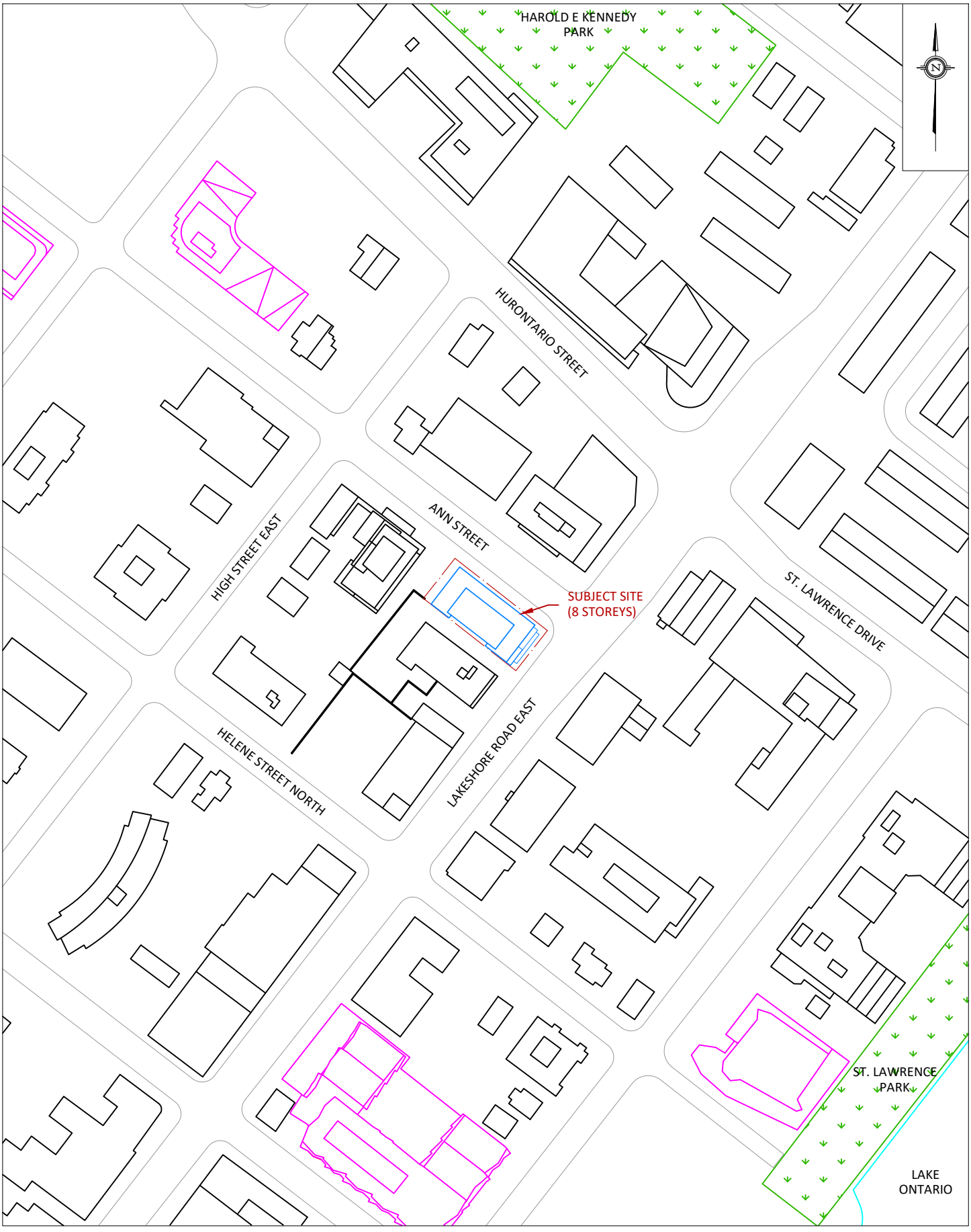
Sincerely,

Gradient Wind Engineering Inc.

Doryan Saavedra, B.Eng.
Junior Acoustic Scientist

Joshua Foster, P.Eng.
Lead Engineer

Gradient Wind File 21-350 – Transportation Noise



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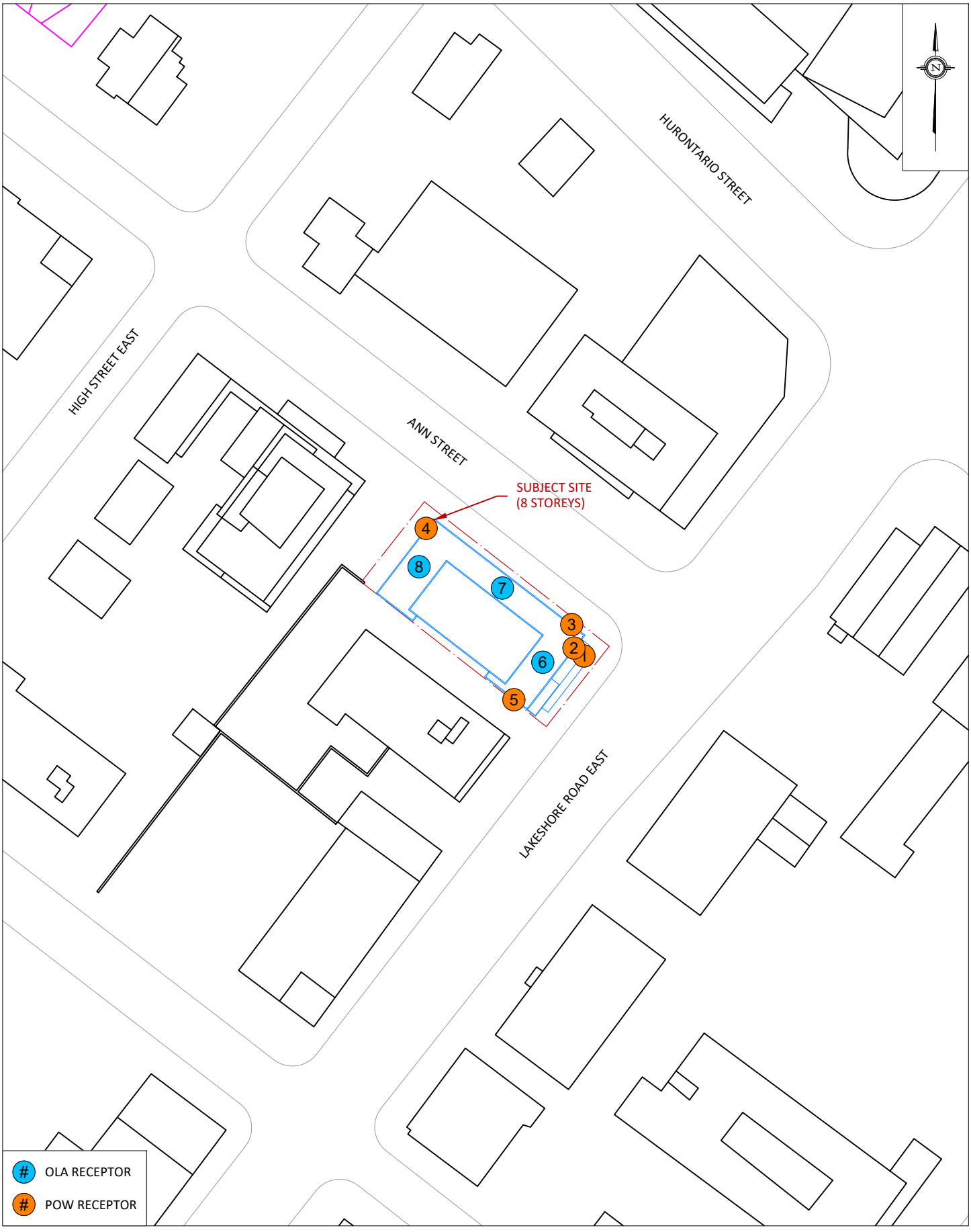
PROJECT	128 LAKESHORE ROAD EAST, MISSISSAUGA TRANSPORTATION NOISE STUDY
SCALE	1:2000 (APPROX.)
DRAWING NO.	21-350-ANV-1
DATE	JULY 29, 2025
DRAWN BY	N.M.P.

DESCRIPTION

FIGURE 1:
SITE PLAN AND SURROUNDING CONTEXT



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SCALE	1:1000 (APPROX.)
DRAWING NO.	21-350-ANV-2
DATE	JULY 29, 2025
DRAWN BY	N.M.P.

DESCRIPTION

FIGURE 2:
RECEPTOR LOCATIONS

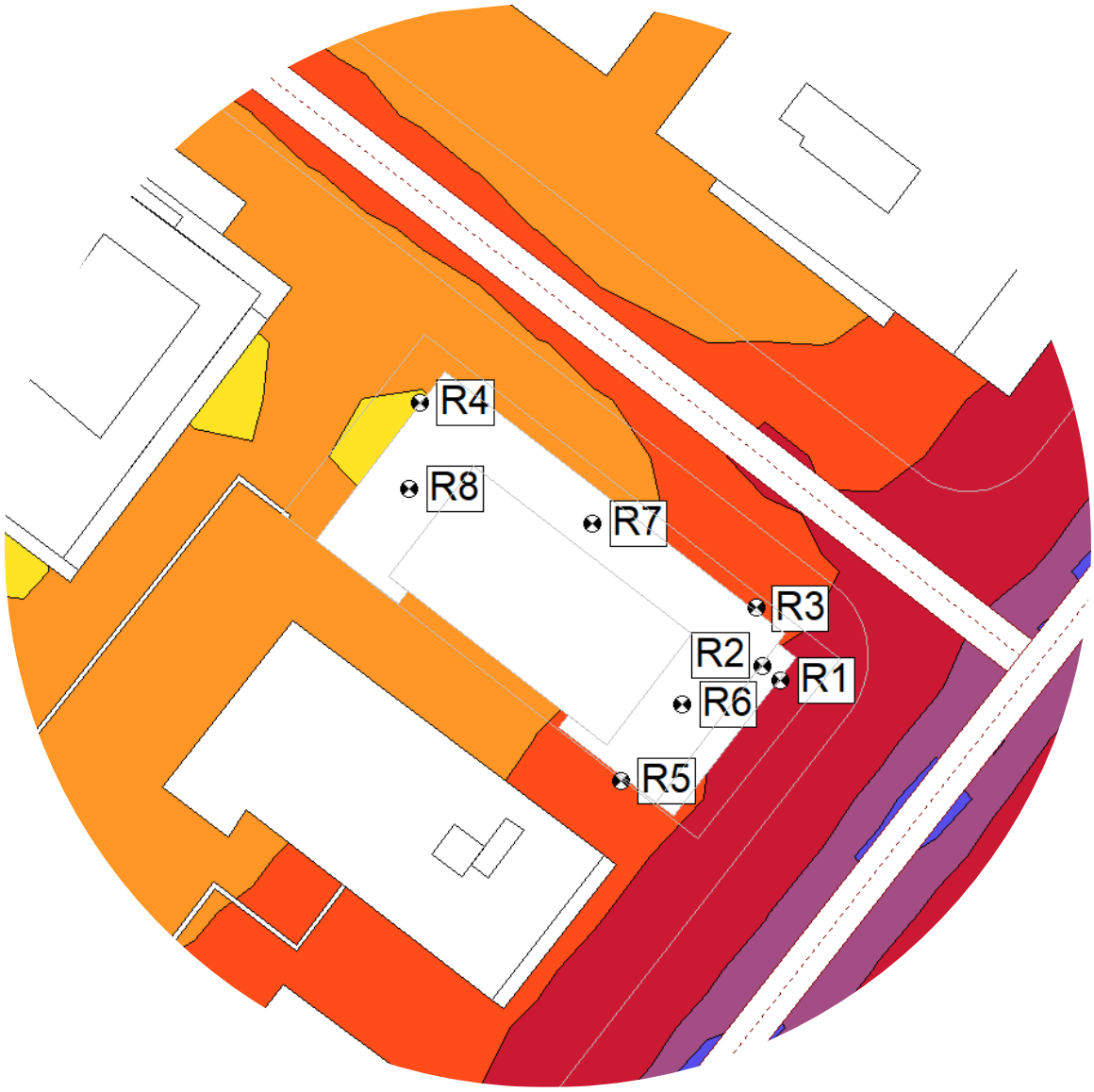

FIGURE 3: DAYTIME TRAFFIC NOISE CONTOURS (24 M ABOVE GRADE)

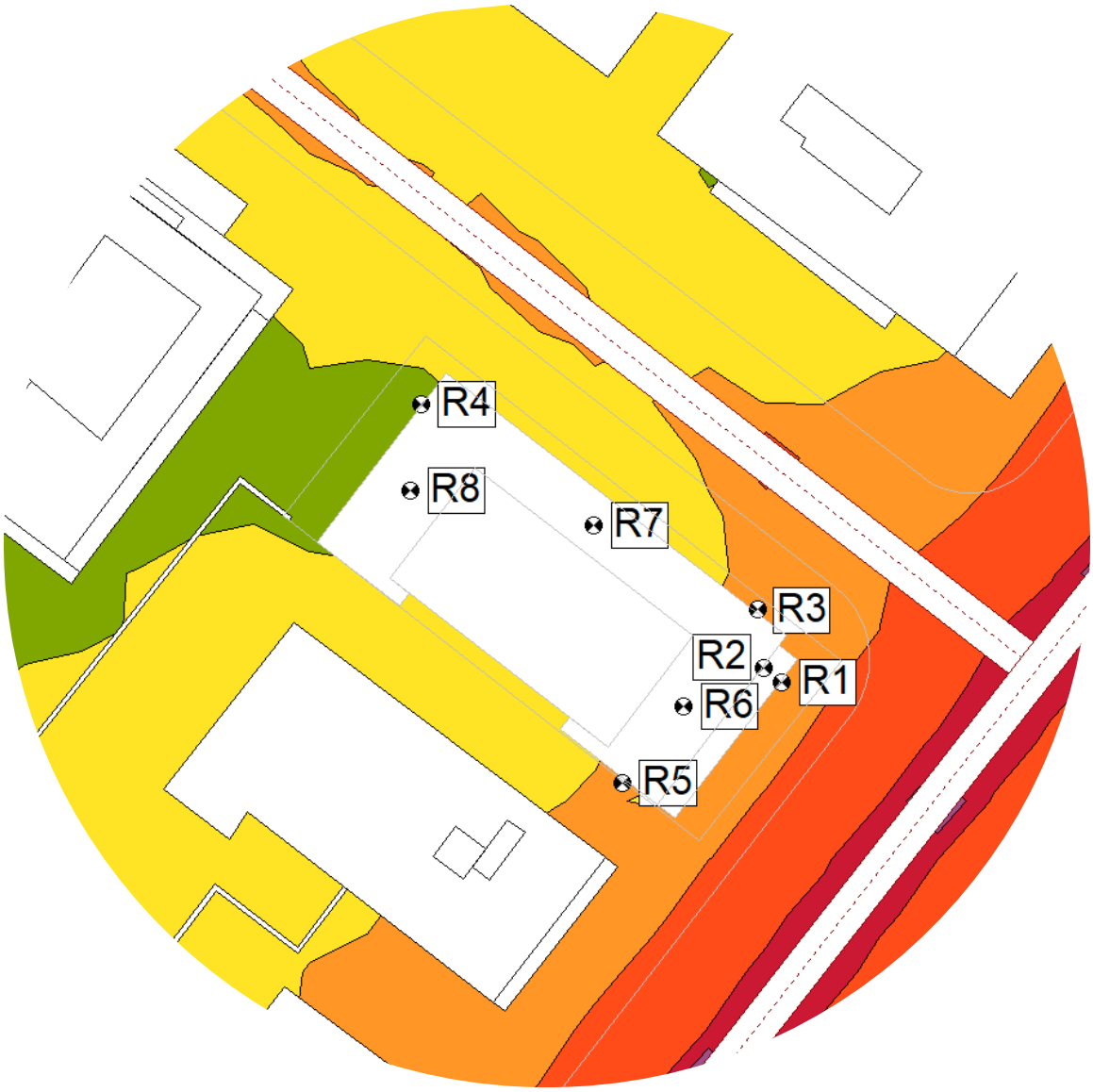

FIGURE 4: NIGHTTIME TRAFFIC NOISE CONTOURS (24 M ABOVE GRADE)

APPENDIX A

STAMSON 5.04 – SAMPLE NOISE CALCULATIONS

127 WALGREEN ROAD, OTTAWA, ON, CANADA K0A 1L0 | 613 836 0934
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```
STAMSON 5.0        NORMAL REPORT        Date: 11-08-2025 14:17:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te                Time Period: Day/Night 16/8 hours
Description: POW - Level 1 Southeast Facade


Road data, segment # 1: Ann (day/night)
----------------------------------------
Car traffic volume  :  2853/317   veh/TimePeriod  *
Medium truck volume :    23/3     veh/TimePeriod  *
Heavy truck volume  :    14/2     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):   2850
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   0.80
    Heavy Truck  % of Total Volume     :   0.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Ann (day/night)
-------------------------------------
Angle1   Angle2           :   0.00 deg   49.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 2: Lakeshore (day/night)
----------------------------------------------
Car traffic volume  : 16050/1783  veh/TimePeriod  *
Medium truck volume :   419/47    veh/TimePeriod  *
Heavy truck volume  :   285/32    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):  16520
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   2.50
    Heavy Truck  % of Total Volume     :   1.70
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  16.00 / 16.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Hurontario (day/night)
----------------------------------------------
Car traffic volume  : 11966/1330  veh/TimePeriod  *
Medium truck volume :   459/51    veh/TimePeriod  *
Heavy truck volume  :   332/37    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):  11850
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   3.60
    Heavy Truck  % of Total Volume     :   2.60
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 3: Hurontario (day/night)
--------------------------------------------
Angle1   Angle2           : -10.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 4: St Lawrence (day/night)
-----------------------------------------------
Car traffic volume  :  2872/319   veh/TimePeriod  *
Medium truck volume :    53/6     veh/TimePeriod  *
Heavy truck volume  :    36/4     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):   2750
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   1.80
    Heavy Truck  % of Total Volume     :   1.20
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 4: St Lawrence (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   57.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  20.00 deg   Angle2 : 57.00 deg
Barrier height            :   9.00 m
Barrier receiver distance :  31.00 / 31.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Results segment # 1: Ann (day)
------------------------------

Source height = 0.83 m

ROAD (0.00 + 48.13 + 0.00) = 48.13 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     49   0.00  53.78   0.00   0.00  -5.65   0.00   0.00   0.00  48.13
-------------------------------------------------------------------------------

Segment Leq : 48.13 dBA

Results segment # 2: Lakeshore (day)
------------------------------------

Source height = 1.14 m

ROAD (0.00 + 63.77 + 0.00) = 63.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  64.05   0.00  -0.28   0.00   0.00   0.00   0.00  63.77
-------------------------------------------------------------------------------

Segment Leq : 63.77 dBA

Results segment # 3: Hurontario (day)
-------------------------------------

Source height = 1.27 m

ROAD (0.00 + 45.94 + 0.00) = 45.94 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -10      0   0.00  66.02   0.00  -7.53 -12.55   0.00   0.00   0.00  45.94
-------------------------------------------------------------------------------

Segment Leq : 45.94 dBA
```

```
Results segment # 4: St Lawrence (day)
--------------------------------------

Source height = 1.05 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.05 !        1.50 !        1.34 !         1.34

ROAD (38.57 + 23.17 + 0.00) = 38.69 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     20   0.00  55.64   0.00  -7.53  -9.54   0.00   0.00   0.00  38.57
-------------------------------------------------------------------------------
    20     57   0.00  55.64   0.00  -7.53  -6.87   0.00   0.00 -18.07  23.17
-------------------------------------------------------------------------------

Segment Leq : 38.69 dBA

Total Leq All Segments: 63.97 dBA

Results segment # 1: Ann (night)
--------------------------------

Source height = 0.89 m

ROAD (0.00 + 41.98 + 0.00) = 41.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     49   0.00  47.63   0.00   0.00  -5.65   0.00   0.00   0.00  41.98
-------------------------------------------------------------------------------

Segment Leq : 41.98 dBA

Results segment # 2: Lakeshore (night)
--------------------------------------

Source height = 1.14 m

ROAD (0.00 + 57.27 + 0.00) = 57.27 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  57.55   0.00  -0.28   0.00   0.00   0.00   0.00  57.27
-------------------------------------------------------------------------------

Segment Leq : 57.27 dBA
```

```
Results segment # 3: Hurontario (night)
---------------------------------------

Source height = 1.27 m

ROAD (0.00 + 39.41 + 0.00) = 39.41 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -10      0   0.00  59.50   0.00  -7.53 -12.55   0.00   0.00   0.00  39.41
-------------------------------------------------------------------------------

Segment Leq : 39.41 dBA

Results segment # 4: St Lawrence (night)
---------------------------------------

Source height = 1.05 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.05 !        1.50 !        1.34 !         1.34

ROAD (32.05 + 16.64 + 0.00) = 32.17 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     20   0.00  49.12   0.00  -7.53  -9.54   0.00   0.00   0.00  32.05
-------------------------------------------------------------------------------
    20     57   0.00  49.12   0.00  -7.53  -6.87   0.00   0.00 -18.07  16.64
-------------------------------------------------------------------------------

Segment Leq : 32.17 dBA

Total Leq All Segments: 57.48 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.97
                           (NIGHT): 57.48
```

```
STAMSON 5.0        NORMAL REPORT        Date: 11-08-2025 16:16:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3.te                Time Period: Day/Night 16/8 hours
Description: POW - Level 8 Northwest Facade


Road data, segment # 1: Ann (day/night)
----------------------------------------
Car traffic volume  :  2853/317   veh/TimePeriod  *
Medium truck volume :    23/3     veh/TimePeriod  *
Heavy truck volume  :    14/2     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):   2850
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   0.80
    Heavy Truck  % of Total Volume     :   0.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Ann (day/night)
-------------------------------------
Angle1   Angle2           : -90.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  24.00 / 24.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 2: Lakeshore (day/night)
----------------------------------------------
Car traffic volume  : 16050/1783  veh/TimePeriod  *
Medium truck volume :   419/47    veh/TimePeriod  *
Heavy truck volume  :   285/32    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):  16520
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   2.50
    Heavy Truck  % of Total Volume     :   1.70
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  22.00 / 22.00  m
Receiver height           :  24.00 / 24.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 3: Hurontario (day/night)
----------------------------------------------
Car traffic volume  : 11966/1330  veh/TimePeriod  *
Medium truck volume :   459/51    veh/TimePeriod  *
Heavy truck volume  :   332/37    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):  11850
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   3.60
    Heavy Truck  % of Total Volume     :   2.60
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 3: Hurontario (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  83.00 / 83.00  m
Receiver height           :  24.00 / 24.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : -11.00 deg
Barrier height            :  56.00 m
Barrier receiver distance :  28.00 / 28.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Road data, segment # 4: St Lawrence (day/night)
-----------------------------------------------
Car traffic volume  :  2872/319   veh/TimePeriod  *
Medium truck volume :    53/6     veh/TimePeriod  *
Heavy truck volume  :    36/4     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):   2750
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   1.80
    Heavy Truck  % of Total Volume     :   1.20
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 4: St Lawrence (day/night)
---------------------------------------------
Angle1   Angle2           :   0.00 deg   59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  83.00 / 83.00  m
Receiver height           :  24.00 / 24.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  38.00 deg   Angle2 : 59.00 deg
Barrier height            :  17.00 m
Barrier receiver distance :  67.00 / 67.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Results segment # 1: Ann (day)
------------------------------

Source height = 0.83 m

ROAD (0.00 + 53.07 + 0.00) = 53.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     63   0.00  53.78   0.00   0.00  -0.71   0.00   0.00   0.00  53.07
-------------------------------------------------------------------------------

Segment Leq : 53.07 dBA

Results segment # 2: Lakeshore (day)
------------------------------------

Source height = 1.14 m

ROAD (0.00 + 59.38 + 0.00) = 59.38 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  64.05   0.00  -1.66  -3.01   0.00   0.00   0.00  59.38
-------------------------------------------------------------------------------

Segment Leq : 59.38 dBA

Results segment # 3: Hurontario (day)
-------------------------------------

Source height = 1.27 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.27 !       24.00 !       16.33 !        16.33

ROAD (50.81 + 32.94 + 46.46) = 52.22 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -60   0.00  66.02   0.00  -7.43  -7.78   0.00   0.00   0.00  50.81
-------------------------------------------------------------------------------
   -60    -11   0.00  66.02   0.00  -7.43  -5.65   0.00   0.00 -20.00  32.94
-------------------------------------------------------------------------------
   -11      0   0.00  66.02   0.00  -7.43 -12.14   0.00   0.00   0.00  46.46
-------------------------------------------------------------------------------

Segment Leq : 52.22 dBA
```

```
Results segment # 4: St Lawrence (day)
---------------------------------------

Source height = 1.05 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.05 !       24.00 !        5.47 !         5.47

ROAD (41.46 + 18.88 + 0.00) = 41.48 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     38   0.00  55.64   0.00  -7.43  -6.75   0.00   0.00   0.00  41.46
-------------------------------------------------------------------------------
    38     59   0.00  55.64   0.00  -7.43  -9.33   0.00   0.00 -20.00  18.88
-------------------------------------------------------------------------------

Segment Leq : 41.48 dBA

Total Leq All Segments: 60.97 dBA

Results segment # 1: Ann (night)
--------------------------------

Source height = 0.89 m

ROAD (0.00 + 46.92 + 0.00) = 46.92 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     63   0.00  47.63   0.00   0.00  -0.71   0.00   0.00   0.00  46.92
-------------------------------------------------------------------------------

Segment Leq : 46.92 dBA

Results segment # 2: Lakeshore (night)
--------------------------------------

Source height = 1.14 m

ROAD (0.00 + 52.87 + 0.00) = 52.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  57.55   0.00  -1.66  -3.01   0.00   0.00   0.00  52.87
-------------------------------------------------------------------------------

Segment Leq : 52.87 dBA
```

```
Results segment # 3: Hurontario (night)
---------------------------------------

Source height = 1.27 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.27 !       24.00 !       16.33 !        16.33

ROAD (44.29 + 26.42 + 39.93) = 45.70 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -60   0.00  59.50   0.00  -7.43  -7.78   0.00   0.00   0.00  44.29
-------------------------------------------------------------------------------
   -60    -11   0.00  59.50   0.00  -7.43  -5.65   0.00   0.00 -20.00  26.42
-------------------------------------------------------------------------------
   -11      0   0.00  59.50   0.00  -7.43 -12.14   0.00   0.00   0.00  39.93
-------------------------------------------------------------------------------

Segment Leq : 45.70 dBA

Results segment # 4: St Lawrence (night)
----------------------------------------

Source height = 1.05 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.05 !       24.00 !        5.47 !         5.47

ROAD (34.94 + 12.36 + 0.00) = 34.96 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     38   0.00  49.12   0.00  -7.43  -6.75   0.00   0.00   0.00  34.94
-------------------------------------------------------------------------------
    38     59   0.00  49.12   0.00  -7.43  -9.33   0.00   0.00 -20.00  12.36
-------------------------------------------------------------------------------

Segment Leq : 34.96 dBA

Total Leq All Segments: 54.52 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.97
                           (NIGHT): 54.52
```

```
STAMSON 5.0        NORMAL REPORT        Date: 11-08-2025 16:17:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7.te                Time Period: Day/Night 16/8 hours
Description: OLA - Level 9 Northeast


Road data, segment # 1: Ann (day/night)
----------------------------------------
Car traffic volume  :  2853/317   veh/TimePeriod  *
Medium truck volume :    23/3     veh/TimePeriod  *
Heavy truck volume  :    14/2     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):   2850
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   0.80
    Heavy Truck  % of Total Volume     :   0.50
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 1: Ann (day/night)
-------------------------------------
Angle1   Angle2           : -90.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  27.50 / 27.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 70.00 deg
Barrier height            :  26.00 m
Barrier receiver distance :   2.00 / 2.00   m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Road data, segment # 2: Lakeshore (day/night)
------------------------------------------------
Car traffic volume  : 16050/1783  veh/TimePeriod  *
Medium truck volume :   419/47    veh/TimePeriod  *
Heavy truck volume  :   285/32    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):  16520
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  12.00
    Medium Truck % of Total Volume     :   2.50
    Heavy Truck  % of Total Volume     :   1.70
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 2: Lakeshore (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   11.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  37.00 / 37.00  m
Receiver height           :  27.50 / 27.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -90.00 deg   Angle2 : 11.00 deg
Barrier height            :  26.00 m
Barrier receiver distance :  18.00 / 18.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Road data, segment # 3: Hurontario (day/night)
----------------------------------------------
Car traffic volume  : 11966/1330  veh/TimePeriod  *
Medium truck volume :   459/51    veh/TimePeriod  *
Heavy truck volume  :   332/37    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):  11850
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   3.60
    Heavy Truck  % of Total Volume     :   2.60
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 3: Hurontario (day/night)
--------------------------------------------
Angle1   Angle2           : -90.00 deg   13.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  88.00 / 88.00  m
Receiver height           :  27.50 / 27.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -40.00 deg   Angle2 : 13.00 deg
Barrier height            :  56.00 m
Barrier receiver distance :  31.00 / 31.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

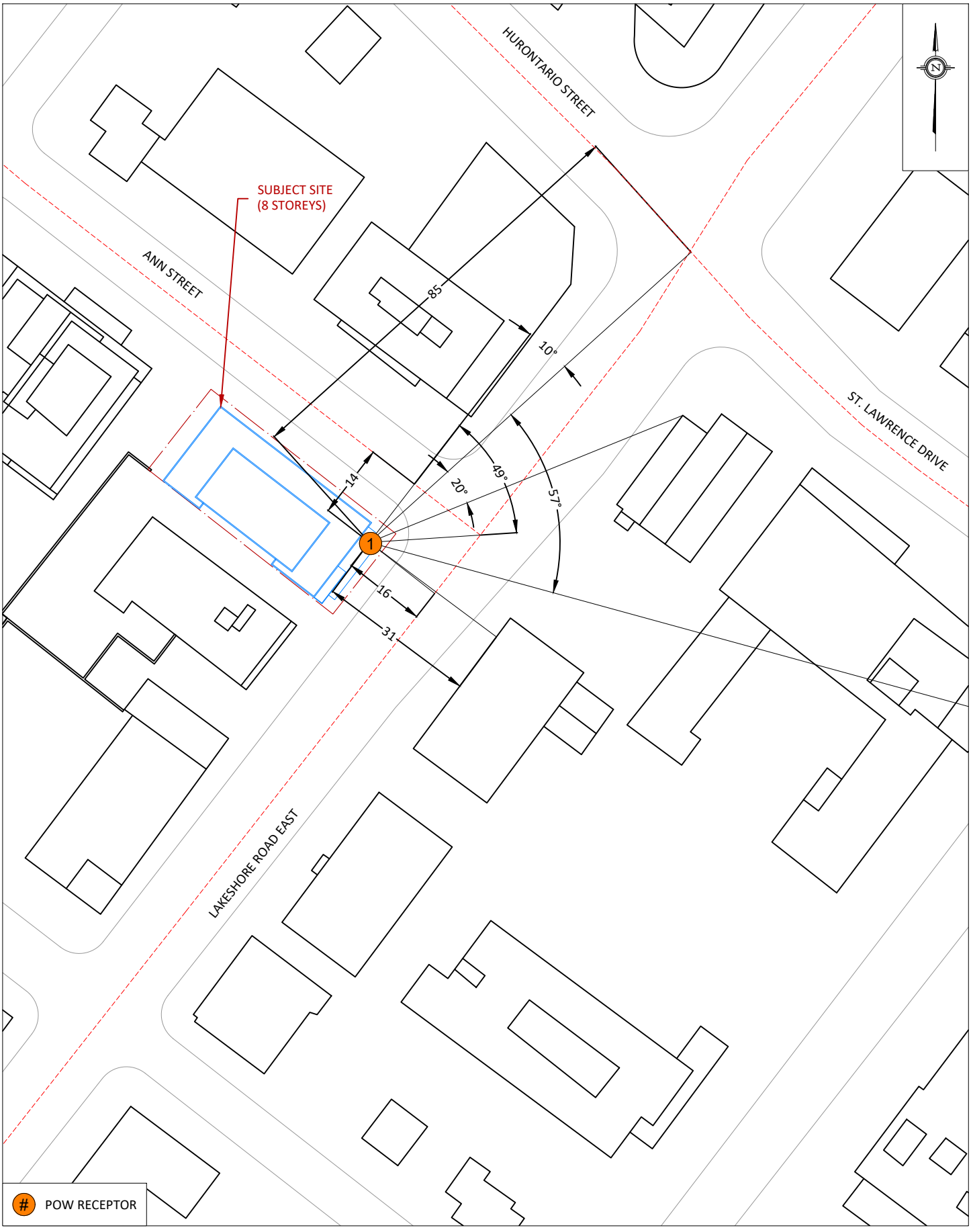
```
Road data, segment # 4: St Lawrence (day/night)
-----------------------------------------------
Car traffic volume  :  2872/319   veh/TimePeriod  *
Medium truck volume :    53/6     veh/TimePeriod  *
Heavy truck volume  :    36/4     veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     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):   2750
    Percentage of Annual Growth        :   1.00
    Number of Years of Growth          :  18.00
    Medium Truck % of Total Volume     :   1.80
    Heavy Truck  % of Total Volume     :   1.20
    Day (16 hrs) % of Total Volume     :  90.00

Data for Segment # 4: St Lawrence (day/night)
---------------------------------------------
Angle1   Angle2           :  13.00 deg   59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  88.00 / 88.00  m
Receiver height           :  27.50 / 27.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  43.00 deg   Angle2 : 59.00 deg
Barrier height            :  17.00 m
Barrier receiver distance :  83.00 / 83.00  m
Source elevation          :   0.00 m
Receiver elevation        :   0.00 m
Barrier elevation         :   0.00 m
Reference angle           :   0.00
```

```
Results segment # 1: Ann (day)
------------------------------

Source height = 0.83 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.83 !       27.50 !       23.94 !        23.94

ROAD (0.00 + 43.57 + 0.00) = 43.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     70   0.00  53.78   0.00   0.00  -0.51   0.00   0.00  -9.70  43.57
-------------------------------------------------------------------------------

Segment Leq : 43.57 dBA

Results segment # 2: Lakeshore (day)
------------------------------------

Source height = 1.14 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.14 !       27.50 !       14.68 !        14.68

ROAD (0.00 + 39.98 + 0.00) = 39.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     11   0.00  64.05   0.00  -3.92  -2.51   0.00   0.00 -17.64  39.98
-------------------------------------------------------------------------------

Segment Leq : 39.98 dBA
```

```
Results segment # 3: Hurontario (day)
-------------------------------------

Source height = 1.27 m

Barrier height for grazing incidence
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.27 !       27.50 !       18.26 !        18.26

ROAD (52.78 + 33.03 + 0.00) = 52.82 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -40   0.00  66.02   0.00  -7.68  -5.56   0.00   0.00   0.00  52.78
-------------------------------------------------------------------------------
   -40     13   0.00  66.02   0.00  -7.68  -5.31   0.00   0.00 -20.00  33.03
-------------------------------------------------------------------------------

Segment Leq : 52.82 dBA

Results segment # 4: St Lawrence (day)
--------------------------------------

Source height = 1.05 m

Barrier height for grazing incidence
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.05 !       27.50 !        2.55 !         2.55

ROAD (40.18 + 17.45 + 0.00) = 40.20 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    13     43   0.00  55.64   0.00  -7.68  -7.78   0.00   0.00   0.00  40.18
-------------------------------------------------------------------------------
    43     59   0.00  55.64   0.00  -7.68 -10.51   0.00   0.00 -20.00  17.45
-------------------------------------------------------------------------------

Segment Leq : 40.20 dBA

Total Leq All Segments: 53.70 dBA
```

```
Results segment # 1: Ann (night)
---------------------------------

Source height = 0.89 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       0.89 !       27.50 !       23.95 !        23.95

ROAD (0.00 + 37.43 + 0.00) = 37.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     70   0.00  47.63   0.00   0.00  -0.51   0.00   0.00  -9.68  37.43
-------------------------------------------------------------------------------

Segment Leq : 37.43 dBA

Results segment # 2: Lakeshore (night)
--------------------------------------

Source height = 1.14 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.14 !       27.50 !       14.68 !        14.68

ROAD (0.00 + 33.47 + 0.00) = 33.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     11   0.00  57.55   0.00  -3.92  -2.51   0.00   0.00 -17.64  33.47
-------------------------------------------------------------------------------

Segment Leq : 33.47 dBA
```

```
Results segment # 3: Hurontario (night)
---------------------------------------

Source height = 1.27 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.27 !       27.50 !       18.26 !        18.26

ROAD (46.25 + 26.51 + 0.00) = 46.30 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90    -40   0.00  59.50   0.00  -7.68  -5.56   0.00   0.00   0.00  46.25
-------------------------------------------------------------------------------
   -40     13   0.00  59.50   0.00  -7.68  -5.31   0.00   0.00 -20.00  26.51
-------------------------------------------------------------------------------

Segment Leq : 46.30 dBA

Results segment # 4: St Lawrence (night)
----------------------------------------

Source height = 1.05 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.05 !       27.50 !        2.55 !         2.55

ROAD (33.66 + 10.93 + 0.00) = 33.68 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    13     43   0.00  49.12   0.00  -7.68  -7.78   0.00   0.00   0.00  33.66
-------------------------------------------------------------------------------
    43     59   0.00  49.12   0.00  -7.68 -10.51   0.00   0.00 -20.00  10.93
-------------------------------------------------------------------------------

Segment Leq : 33.68 dBA

Total Leq All Segments: 47.22 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.70
                           (NIGHT): 47.22
```



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DESCRIPTION

FIGURE A1:
STAMSON INPUT PARAMETERS
RECEPTOR 1

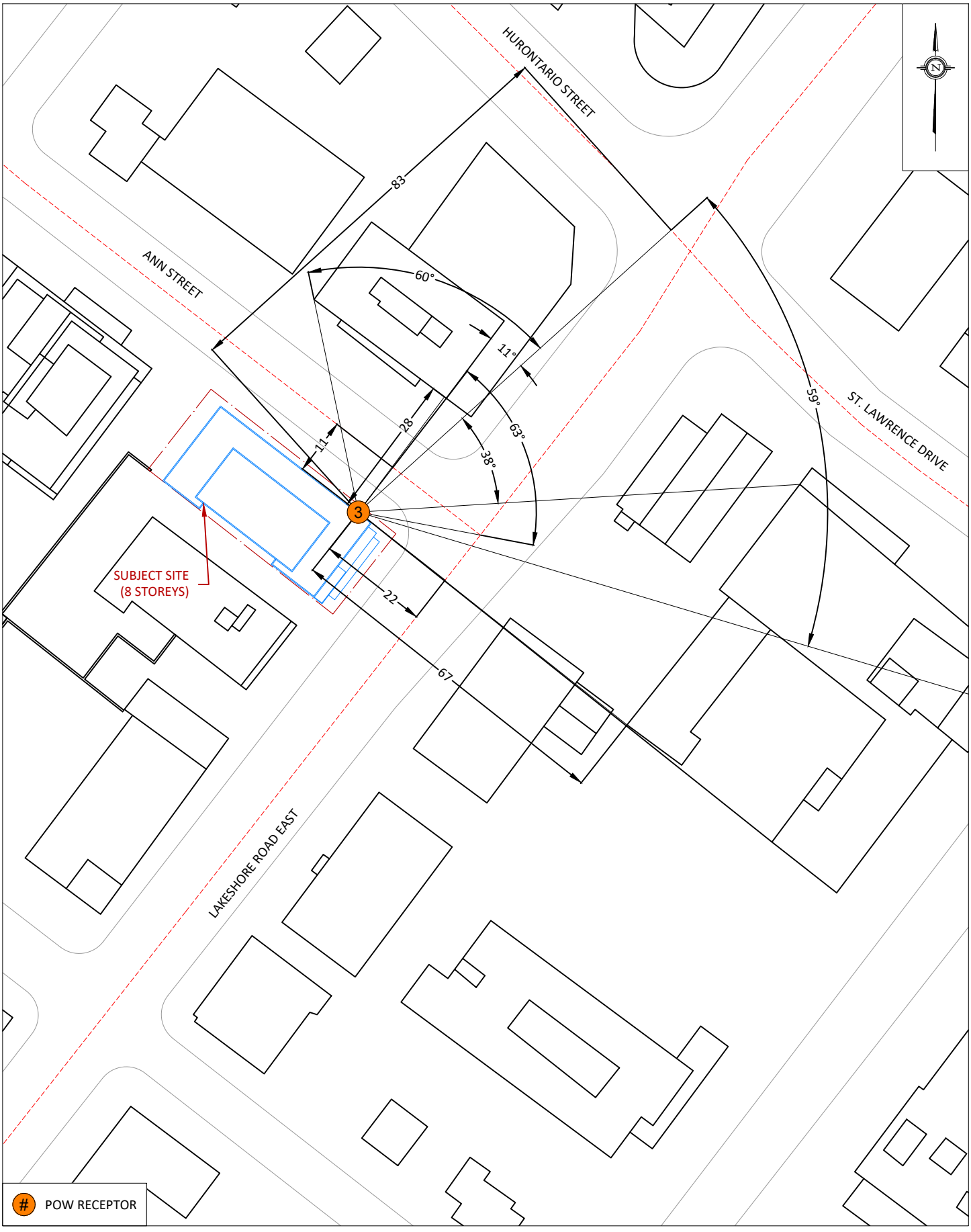

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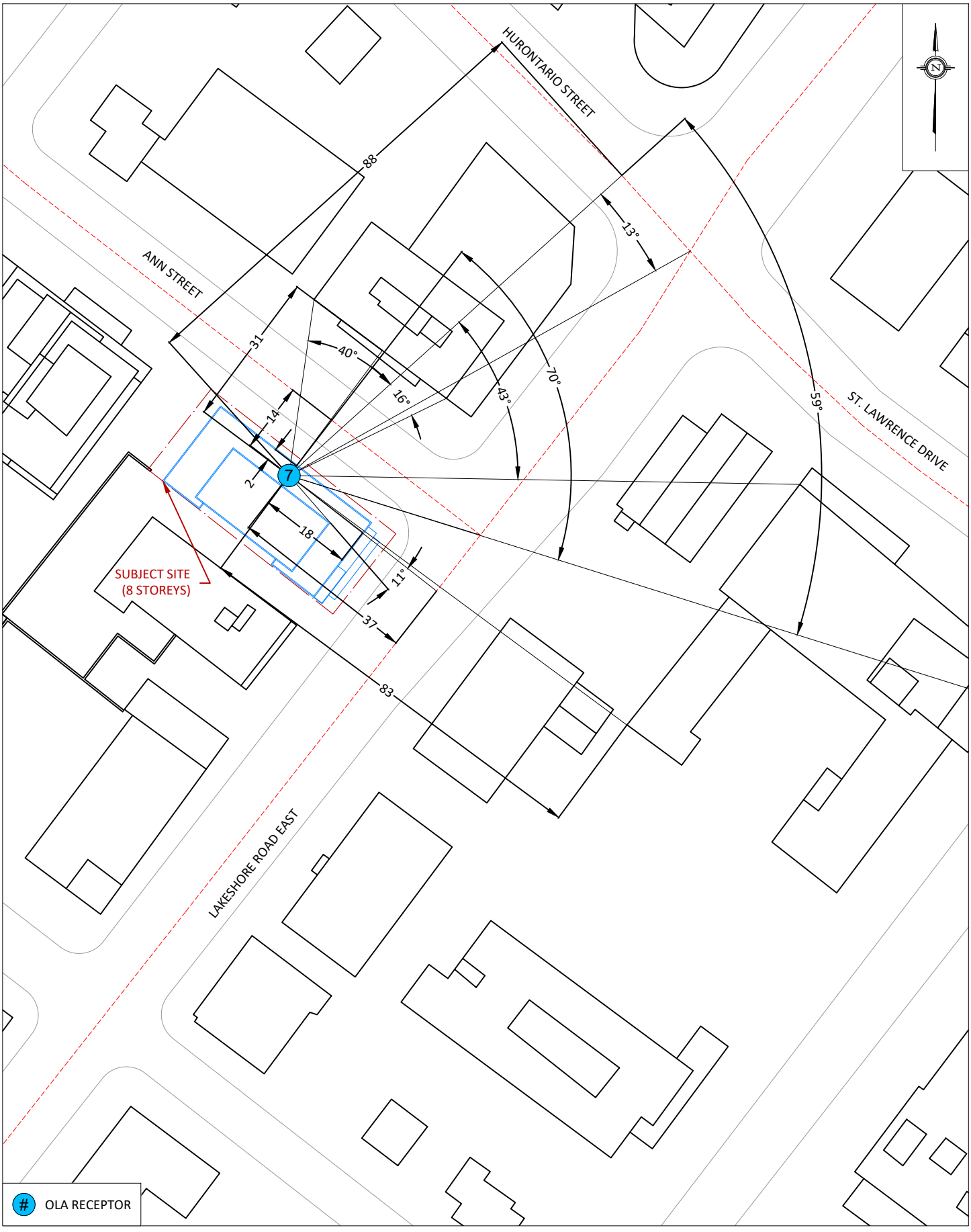
FIGURE A2:
STAMSON INPUT PARAMETERS
RECEPTOR 3



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DESCRIPTION

FIGURE A3:
STAMSON INPUT PARAMETERS
RECEPTOR 7