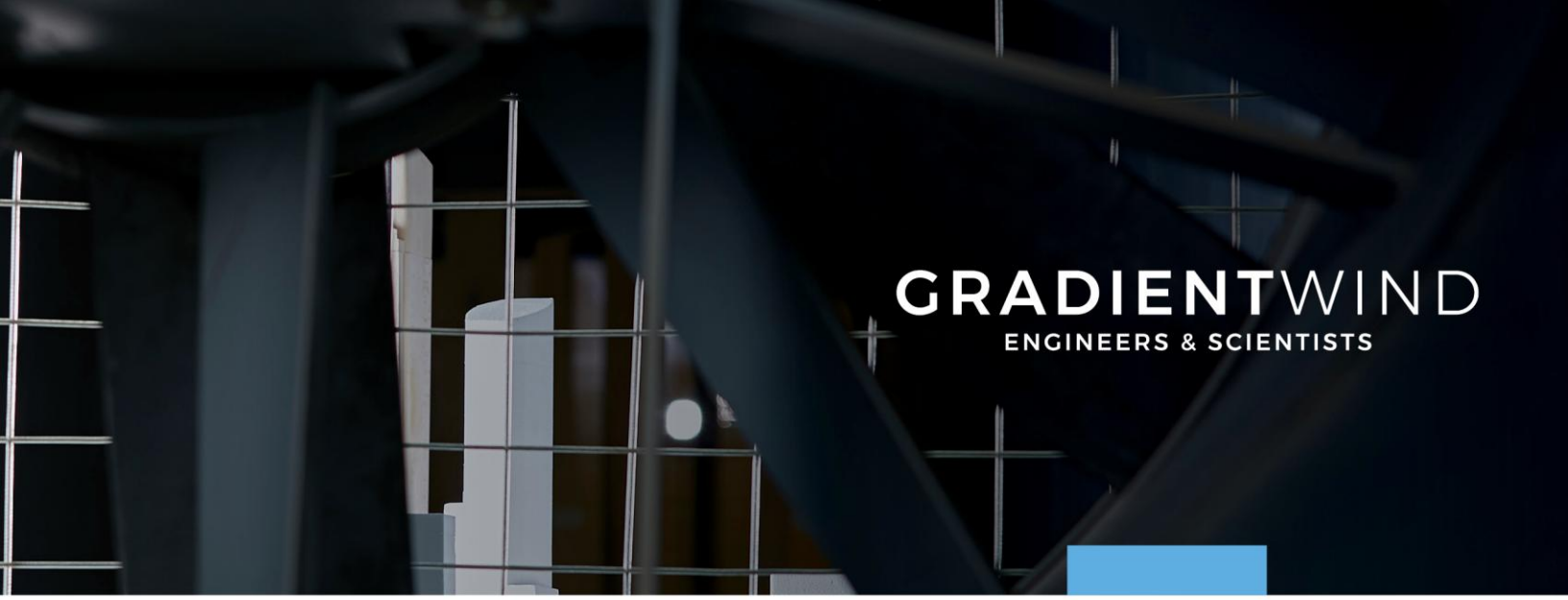
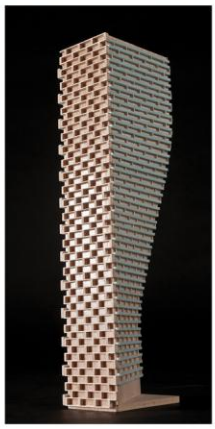


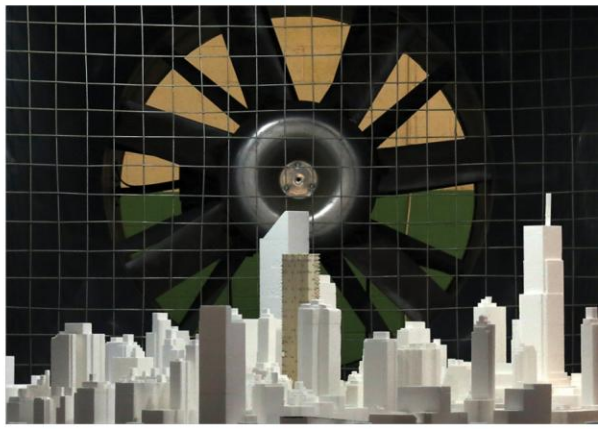
GRADIENTWIND
ENGINEERS & SCIENTISTS

TRANSPORTATION NOISE ASSESSMENT

251 Linseed Road
Ottawa, Ontario

REPORT: GWE25-050 – Transportation Noise





November 7, 2025

PREPARED FOR

Mattamy Homes
50 Hines Road, Suite 100
Ottawa, ON
K2K 2M5

PREPARED BY

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

EXECUTIVE SUMMARY

This report describes a transportation noise assessment performed in support of a Site Plan Control application (SPA) for the proposed residential development located 251 Linseed Road in Ottawa, Ontario. The proposed development consists of three blocks of stacked back-to-back townhouses (Building A, B, & D), and one apartment building (Building C). Building A is located in the northwest corner of the site and will house 12 dwellings units. Building B is located in the northeast corner of the site and houses 18 dwellings units. Building C is located in the southeast corner of the site and houses 25 dwellings units. In the southeast corner of the site is Building D which houses 18 dwellings units. The center of the site has surface parking and a drive aisle with access to Linseed Road between buildings C and B. The major sources of roadway noise affecting the development are March Road and Linseed Road. Figure 1 illustrates the site plan and surrounding context.

The assessment is based on (i) theoretical noise prediction methods that conform to the Ministry of the Environment, Conservation and Parks (MECP) and City of Ottawa requirements; (ii) noise level criteria as specified by the City of Ottawa's Environmental Noise Control Guidelines (ENCG); (iii) future vehicular traffic volumes based on the City of Ottawa's Official Plan roadway classifications; and (iv) a Site Plan drawing prepared by Urbantypology provided in October 2025.

The results of the current analysis indicate that noise levels will range between 59 and 72 dBA during the daytime period (07:00-23:00) and between 52 and 64 dBA during the nighttime period (23:00-07:00). The highest noise level (72 dBA) occurs at the south facades of Building C and D, which is nearest and most exposed to March Road.

Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, which occurs on the east, south, and west sides of Buildings C and D. The results of the analysis also indicate these buildings will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. Type D Warning Clauses will also be required for these blocks, as summarized in Section 6.

For Buildings A & B, standard building components conforming with the Ontario Building Code (OBC 2024) requirements will be sufficient to attenuate indoor noise levels to acceptable levels. These blocks will

require forced air heating systems with provision for central air conditioning and a Type C Warning Clause, as summarized in Section 6. Table 5 illustrates the required noise control measures for the development, which are illustrated in Figures 3. Noise contours across the site are illustrated in Figures 4 and 5 for the daytime and nighttime periods respectively.

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.

TABLE OF CONTENTS

1. INTRODUCTION

Gradient Wind Engineering Inc. (GWE) was retained by Mattamy Homes Limited to undertake a transportation noise assessment for a proposed residential subdivision located at 251 Linseed Road in Ottawa, Ontario. This report summarizes the methodology, results and recommendations related to a transportation noise assessment and was prepared in consideration of the client's site plan control application. Gradient Wind's scope of work involved assessing exterior noise levels throughout the site generated by local roadway traffic. The report also provides recommendations for noise mitigation. The assessment was performed on the basis of theoretical noise calculation methods conforming to the City of Ottawa[1] and Ministry of the Environment, Conservation and Parks[2] guidelines. Noise calculations were based on a Site Plan drawing prepared by Urbantypology provided in October 2025, with future traffic volumes corresponding to the City of Ottawa's Official Plan (OP) roadway classifications.

2. TERMS OF REFERENCE

Located at the intersection of March Road and Linseed Road, the proposed development consists of three blocks of stacked back-to-back townhouses (Building A, B, & D), and one apartment building (Building C). Building A is located in the northwest corner of the site and will house 12 dwellings units. Building B is located in the northeast corner of the site and houses 18 dwellings units. Building C is located in the southeast corner of the site and houses 25 dwellings units. In the southeast corner of the site is Building D which houses 18 dwellings units. The center of the site has surface parking and a drive aisle with access to Linseed Road between buildings C and B.

Three are no outdoor living areas associated with the development. Balconies of less then 4 m in depth are not considered as OLA as per the city noise guidelines. A landscaped buffer is marked as an amenity area on the site plan; however, it is not intended as a place to be used for the quite enjoyment of the outdoors.

The major sources of roadway noise affecting the development are March Road and Linseed Road. Figure 1 illustrates the site plan and surrounding context.

[1] City of Ottawa Environmental Noise Control Guidelines, January 2016
[2] Ontario Ministry of the Environment and Climate Change – Publication NPC-300

3. OBJECTIVES

The principal objectives of this study are to (i) calculate the future noise levels on the study buildings produced by local roadway traffic, (ii) ensure that interior and exterior noise levels do not exceed the allowable limits specified by the City of Ottawa's Environmental Noise Control Guidelines as outlined in Section 4.2 of this report, and (iii) 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. The City of Ottawa's Environmental Noise Control Guidelines (ENCG) specifies that the recommended indoor noise limit range (that is relevant to this study) is 45 and 40 dBA for living rooms and sleeping quarters respectively for roadway as listed in Table 1.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD) [3]

Type of Space	Time Period	Leq (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[4]. A closed window due to a ventilation requirement will bring noise levels down to achieve an acceptable indoor environment[5]. 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[6].

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 but are less then 60 dBA mitigation should be considered, to reduce noise levels where technically and administratively feasible to acceptable levels at or below the criterion. When noise levels exceed 60 dBA noise mitigation is required.

[3] Adapted from ENCG 2016 – Tables 2.2b and 2.2c
[4] Burberry, P.B. (2014). Mitchell's Environment and Services. Routledge, Page 125
[5] MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.8
[6] MECP, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

4.2.2 Theoretical Roadway Noise Predictions

Noise predictions were determined by computer modelling using two programs. To provide a general sense of noise across the site, the employed software program was *CadnaA (TNM calculation)*, which incorporates the United States Federal Highway Administration's (FHWA) Transportation 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, 2022 by the Ministry of Transportation (MTO) [7], and by the Ministry of Environment Conservation and Parks (MECP) Draft NPC-306[8]. This computer program is capable of representing three-dimensional surface and first reflections of sound waves over a suitable spectrum for human hearing. A receptor grid with 5 × 5 m spacing was placed across the study site, along with a number of discrete receptors at key sensitive areas. A set of comparative calculations were performed in the current Ontario traffic noise prediction model STAMSON for comparisons to TNM 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 11 receptor locations were identified around the site, as illustrated in Figures 2. Appendix A includes the STAMSON 5.04 input and output data.

Roadway noise calculations were performed by treating each road segment as separate line sources of noise. In addition to the traffic volumes summarized in Table 2 below, 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 was taken to be 92% / 8% respectively for all streets
- Reflective surfaces were assumed between the source and receivers due to the presence of hard (paved) ground
- The study site was treated as having flat or gently sloping topography

[7] Ministry of Transportation Ontario, "*Environmental Guide for Noise*", February 2022, pg. 16
[8] Ministry of Environment Conservation and Parks, Methods to Determine Sound Levels Due to Road and Rail Traffic, Publication NPC-30, February 12, 2020

- For select sources where appropriate, receptors considered the proposed and/or existing buildings as a barrier partially or fully obstructing exposure to the source as illustrated by receptor distances and exposure angles in Figure A1.

4.2.1 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 Plan[9] 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. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway Traffic Data	Speed Limit (km/h)	Traffic Volumes
March Road	4-UAU (Urban Arterial)	80	**30,000**
Linseed Road	2-UCU (Urban Collector)	40	**8,000**

[9] City of Ottawa Transportation Master Plan, November 2013

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, when daytime noise levels (from road and rail 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. The calculation procedure[10] 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[11], 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, which was prepared for site plan approval, detailed floor layouts and building elevations 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 AND DISCUSSION

5.1 Roadway Traffic Noise Levels

The results of the transportation noise calculations are summarized in Table 3 below. The results of the current analysis indicate that noise levels will range between 59 and 72 dBA during the daytime period (07:00-23:00) and between 52 and 64 dBA during the nighttime period (23:00-07:00). The highest noise level (72 dBA) occurs at the south facades of Building C and D, which is nearest and most exposed to March Road.

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES

Receptor Number	Receptor Height Above Grade/Roof (m)	Receptor Location	Roadway Noise Level (dBA)	
			Day	Night
R1	4.5	POW – Building D - West Façade	69	61
R2	4.5	POW – Building D - South Façade	72	64
R3	4.5	POW – Building D - East Façade	68	61
R4	4.5	POW – Building C - West Façade	71	63
R5	4.5	POW – Building C - South Façade	72	64
R6	4.5	POW – Building C - East Façade	71	64
R7	4.5	POW – Building C - North Façade	68	60
R8	4.5	POW – Building A - South Façade	64	56
R9	4.5	POW – Building B - South Façade	65	58
R10	4.5	POW – Building B - East Façade	65	58
R11	4.5	POW – Building B - North Façade	59	52

Table 4 shows a comparison in results between TNM 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 parameters are shown in Appendix A.

TABLE 4: RESULTS OF STAMSON/CADNAA CORRELATION

Receptor ID	Receptor Height (m)	Receptor Location	STAMSON 5.04 Noise Level (dBA)		TNM Noise Level (dBA)	
			Day	Night	Day	Night
R2	4.5	POW – Building D - South Façade	73	65	72	64
R6	4.5	POW – Building C - East Façade	71	63	71	64

*Noise levels during the nighttime are not considered for OLAs

5.2 Noise Control Measures

The noise levels predicted due to roadway traffic exceed the criteria listed in Section 4.2 for building components. As discussed in Section 4.3, 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). As per city of Ottawa requirements, detailed STC calculations will be required to be completed prior to building permit application for each unit type. The STC requirements for the windows are summarized below for various units within the development (see Figure 3):

- **Bedroom Windows**

(i) Bedroom windows facing north, east and west in Building C & D will require a minimum STC of 34

(ii) All other bedroom windows are to satisfy Ontario Building Code (OBC 2012) requirements

- **Living Room Windows**

(i) Living room windows facing north, east and west in Building C & D will require a minimum STC of 34

(ii) All other living room windows are to satisfy Ontario Building Code (OBC 2012) requirements

- **Exterior Walls**

(i) Exterior wall components on the north, east, south and west façades will require a minimum STC of 45, which will be achieved with brick cladding or an acoustical equivalent according to NRC test data[12]

The STC requirements apply to windows, doors, spandrel panels and curtainwall elements. Exterior wall components on these façades are recommended to have a minimum STC of 45, where a window/wall system is used. A review of window supplier literature indicates that the specified STC ratings can be achieved by a variety of window systems having a combination of glass thickness and inter-pane spacing. We have specified an example window configuration, however several manufacturers and various combinations of window components, such as those proposed, will offer the necessary sound attenuation rating. It is the responsibility of the manufacturer to ensure that the specified window achieves the required STC. This can only be assured by using window configurations that have been certified by laboratory testing. The requirements for STC ratings assume that the remaining components of the building are constructed and installed according to the minimum standards of the Ontario Building Code. The specified STC requirements also apply to swinging and/or sliding patio doors.

Results of the calculations also indicate that the development will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. In addition to ventilation requirements, Warning Clauses will also be required in all Lease, Purchase and Sale Agreements, as summarized in Section 6.

[12] J.S. Bradley and J.A. Birta. Laboratory Measurements of the Sound Insulation of Building Façade Elements, National Research Council October 2000.

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that noise levels will range between 59 and 72 dBA during the daytime period (07:00-23:00) and between 52 and 64 dBA during the nighttime period (23:00-07:00). The highest noise level (72 dBA) occurs at the south facades of Building C and D, which is nearest and most exposed to March Road. Noise contours across the site are shown in Figures 4 and 5 for daytime and nighttime periods.

Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, which occurs on the east, south, and west facades of Buildings C and D. The results of the analysis also indicate that these blocks will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. The following Type D Warning Clause[13] will also be required to be placed on all Lease, Purchase and Sale Agreements, as summarized below:

> ***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, Conservation and Parks."*

At Buildings A and B noise levels are less then 65 dBA daytime and 60 dBA night-time, therefore windows and walls in conformance with the Ontario Building Coded (OBC 2024) standards will be sufficient to attenuate indoor sound levels. These blocks will require forced air heating systems with provisions for adding air conditioning by the owner. If air conditioning is installed it will allow windows to remain closed, thus providing a quiet and comfortable indoor environment. The following Type C Warning Clause[14] will also be required to be placed on all Lease, Purchase and Sale Agreements, as summarized below:

[13] City of Ottawa Environmental Noise Control Guidelines, January 2016
[14] City of Ottawa Environmental Noise Control Guidelines, January 2016

Type C

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

The noise control measures for the development are summarized in Table 5 below and illustrated on Figures 3.

TABLE 5: NOISE CONTROL REQUIREMENTS POW

Location	Façade	Min. Window STC (Bedroom/Living Room)	Exterior Wall STC	Warning Clauses	Ventilation
Building A	North, South, East, and West	OBC	OBC	Type C	FAH
Building B	North, South, East, and West	OBC	OBC	Type C	FAH
Building C	North, South, East, and West	34	45	Type D	A/C
Building D	North, South, East, and West	34	45	Type D	A/C

Note: FAH = Forced Air Heating with provisions for air conditioning,
A/C = Air Conditioning provided

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.

This concludes our traffic 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.

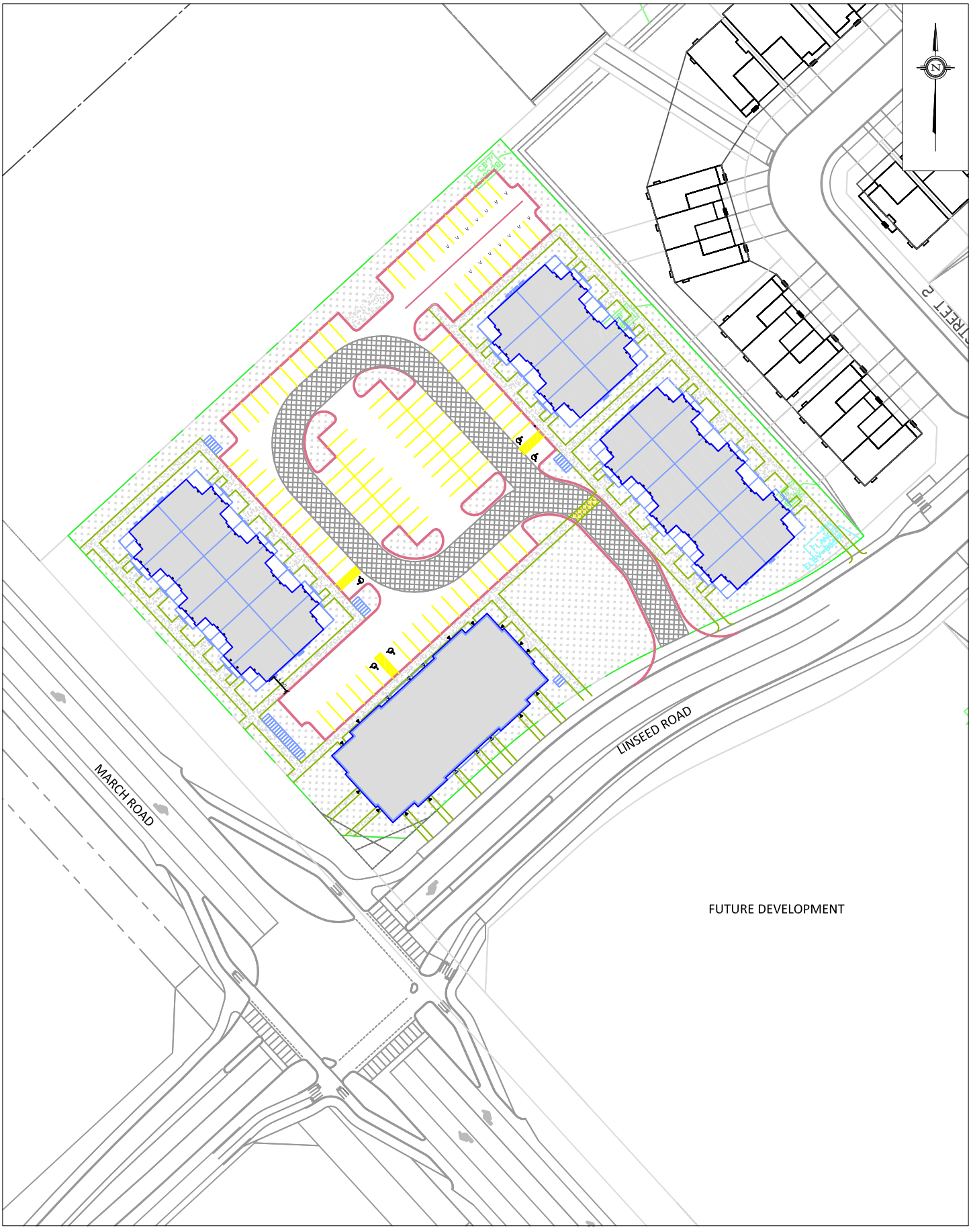
Sincerely,

Gradient Wind Engineering Inc.

Doryan Saavedra, B.Eng.
Junior Acoustic Scientist

Joshua Foster, P.Eng.
Lead Engineer

GWE25-050 – Transportation Noise



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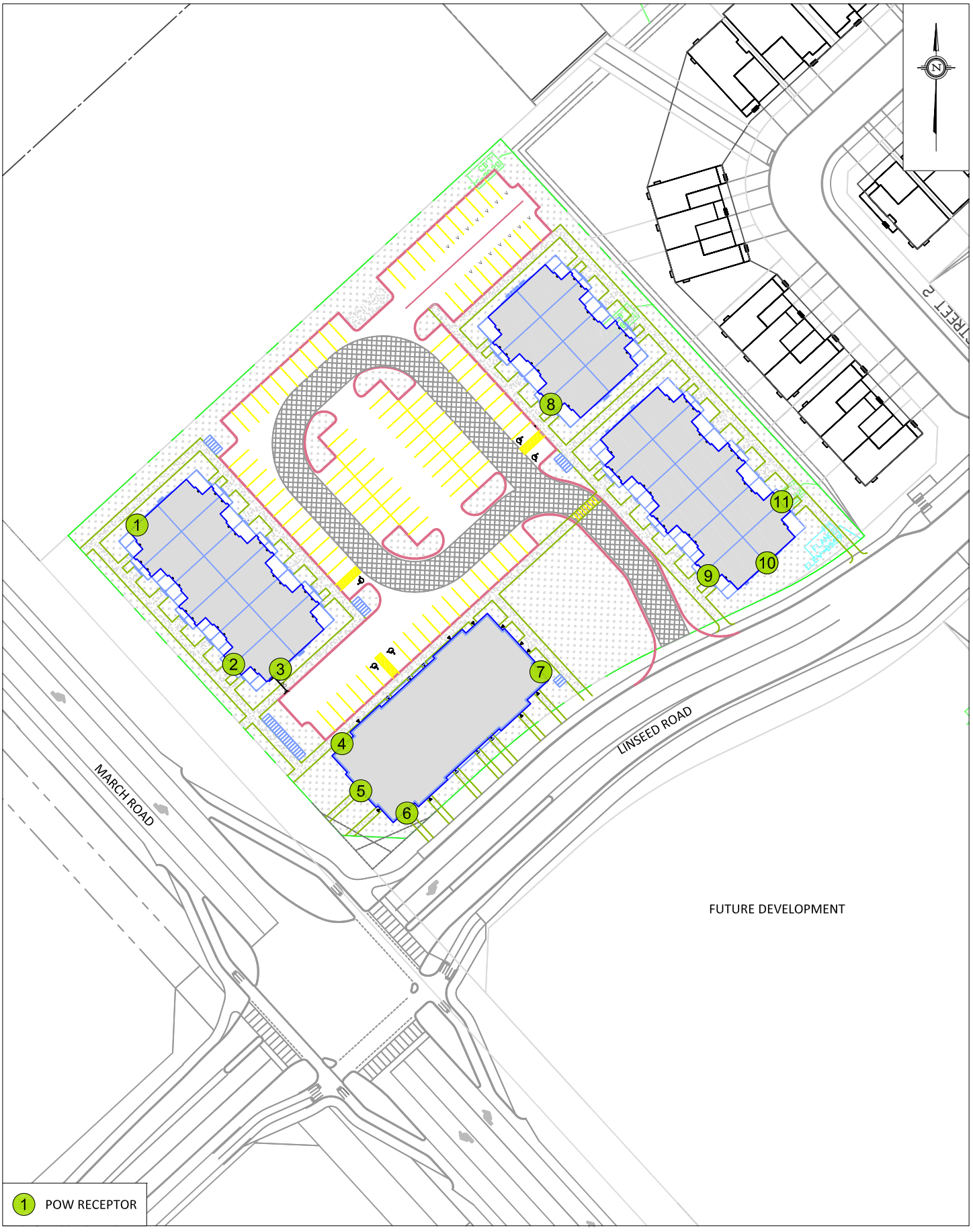
PROJECT	251 LINSEED ROAD, OTTAWA TRANSPORTATION NOISE ASSESSMENT		DESCRIPTION
SCALE	1:1000 (APPROX.)	DRAWING NO.	GW25-050-1
DATE	NOVEMBER 6, 2025	DRAWN BY	J.F.

FIGURE 1:
SITE PLAN AND SURROUNDING CONTEXT



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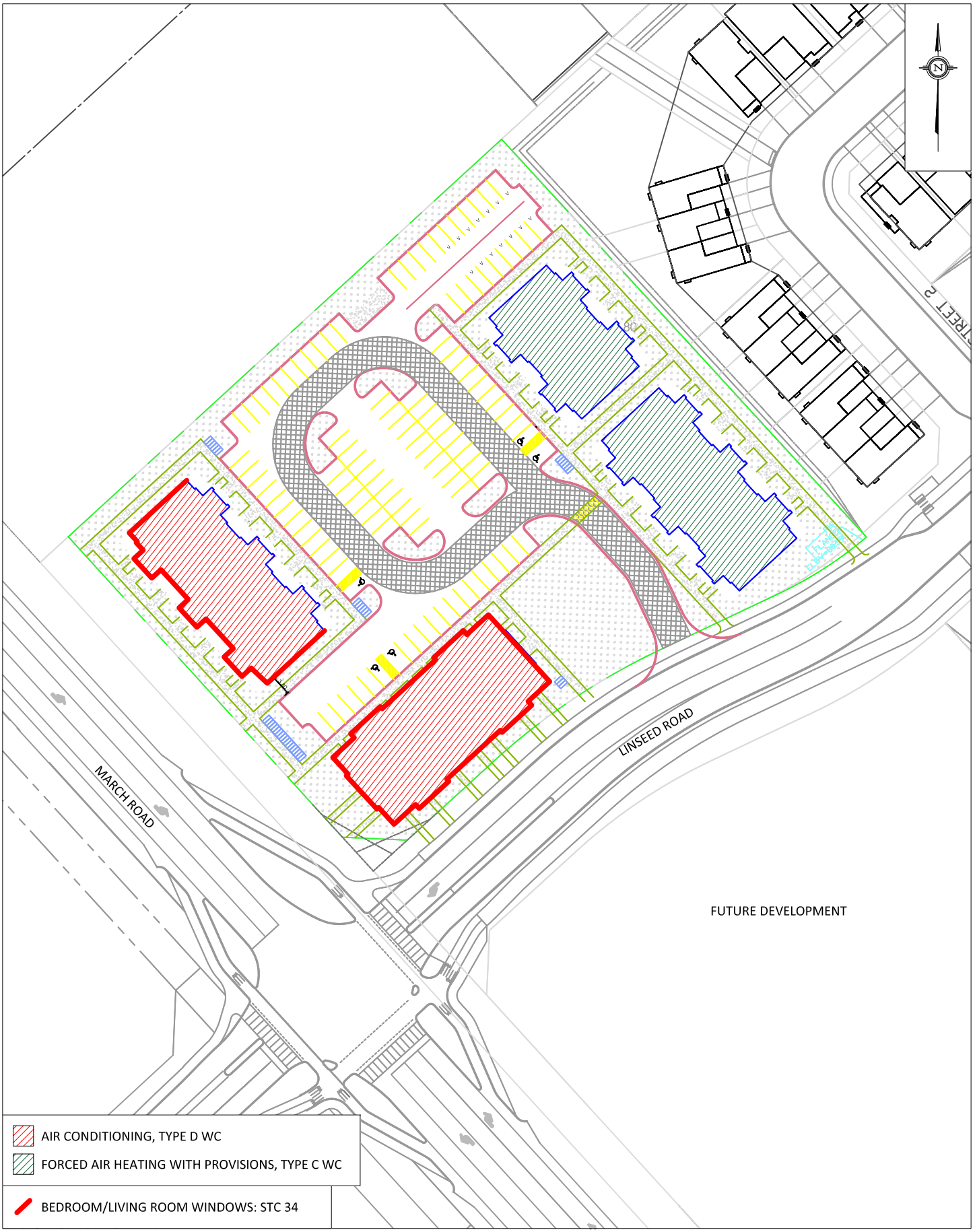
PROJECT	251 LINSEED ROAD, OTTAWA TRANSPORTATION NOISE ASSESSMENT
SCALE	1:1000 (APPROX.)
DRAWING NO.	GW25-050-2
DATE	NOVEMBER 6, 2025
DRAWN BY	J.F.

DESCRIPTION

FIGURE 2:
RECEPTOR LOCATIONS



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PROJECT	251 LINSEED ROAD, OTTAWA TRANSPORTATION NOISE ASSESSMENT		DESCRIPTION
SCALE	1:1000 (APPROX.)	DRAWING NO.	GW25-050-1
DATE	NOVEMBER 6, 2025	DRAWN BY	J.F.

FIGURE 3:
NOISE CONTROL MEASURES

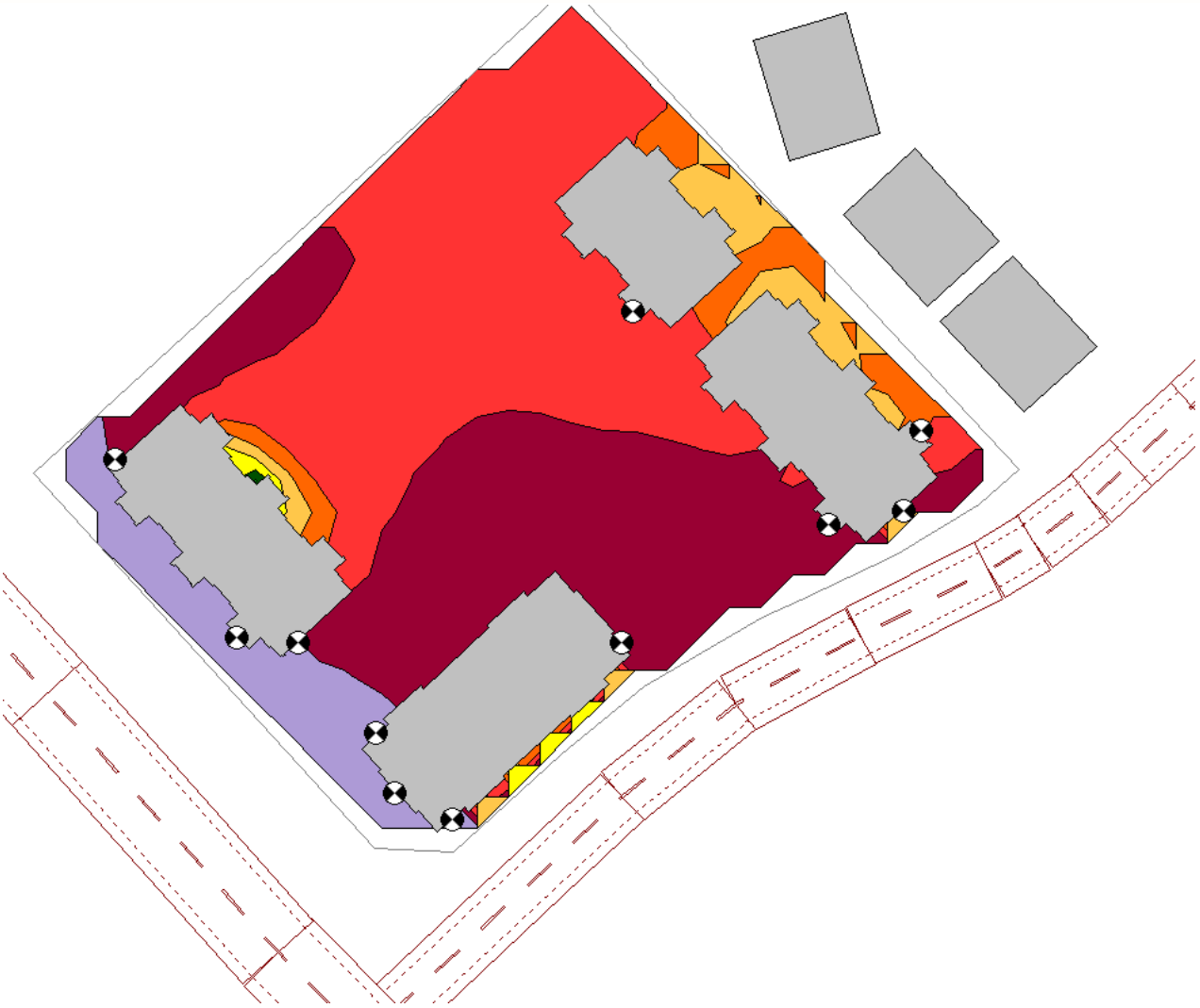
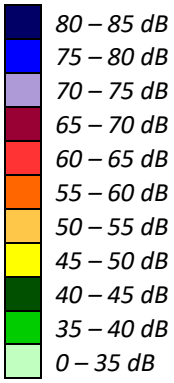
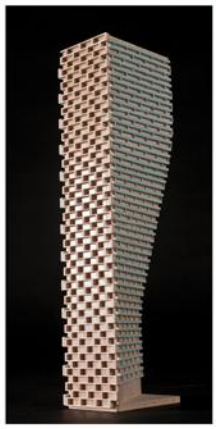


FIGURE 4: DAYTIME NOISE CONTORUS AT 1.5 M AGL

FIGURE 5: NIGHTTIME NOISE CONTORUS AT 1.5 M AGL





APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA

127 WALGREEN ROAD, OTTAWA, ON, CANADA K0A 1L0 | 613 836 0934
GRADIENTWIND.COM

STAMSON 5.0 NORMAL REPORT Date: 05-11-2025 21:54:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Time Period: Day/Night 16/8 hours
Description: POW R2

```
Road data, segment # 1: March Rd (day/night)
----------------------------------------------
Car traffic volume  : 24288/2112  veh/TimePeriod  *
Medium truck volume :  1932/168   veh/TimePeriod  *
Heavy truck volume  :  1380/120   veh/TimePeriod  *
Posted speed limit  :    80 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):  30000
    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: March Rd (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  :  28.00 / 28.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Results segment # 1: March Rd (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 72.79 + 0.00) = 72.79 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  75.50   0.00  -2.71   0.00   0.00   0.00   0.00  72.79
-------------------------------------------------------------------------------

Segment Leq : 72.79 dBA

Total Leq All Segments: 72.79 dBA


Results segment # 1: March Rd (night)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 65.19 + 0.00) = 65.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  67.90   0.00  -2.71   0.00   0.00   0.00   0.00  65.19
-------------------------------------------------------------------------------

Segment Leq : 65.19 dBA

Total Leq All Segments: 65.19 dBA




TOTAL Leq FROM ALL SOURCES (DAY): 72.79
                           (NIGHT): 65.19
```

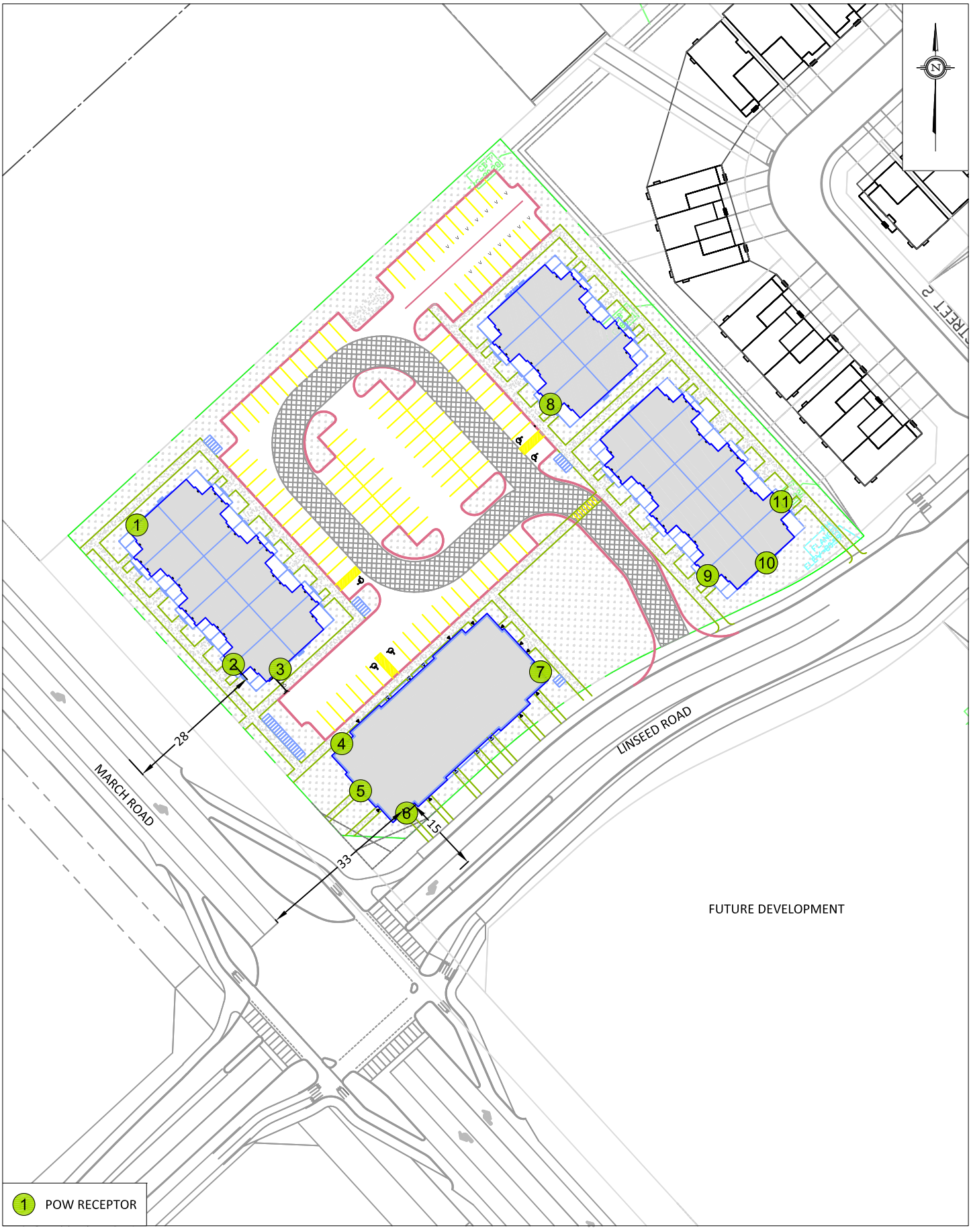
STAMSON 5.0 NORMAL REPORT Date: 06-11-2025 14:10:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: R6.te Time Period: Day/Night 16/8 hours
Description: POW R6

```
Road data, segment # 1: March (day/night)
-----------------------------------------
Car traffic volume  : 24288/2112  veh/TimePeriod  *
Medium truck volume :  1932/168   veh/TimePeriod  *
Heavy truck volume  :  1380/120   veh/TimePeriod  *
Posted speed limit  :    80 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):  30000
    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: March (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  :  28.00 / 28.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 2: Linseed (day/night)
-------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    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: Linseed (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  :  15.00 / 15.00  m
Receiver height           :   4.50 / 4.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Results segment # 1: March (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 69.78 + 0.00) = 69.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  75.50   0.00  -2.71  -3.01   0.00   0.00   0.00  69.78
-------------------------------------------------------------------------------

Segment Leq : 69.78 dBA
```

```
Results segment # 2: Linseed (day)
----------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.96 + 0.00) = 63.96 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  63.96   0.00   0.00   0.00   0.00   0.00   0.00  63.96
-------------------------------------------------------------------------------

Segment Leq : 63.96 dBA

Total Leq All Segments: 70.79 dBA


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

Source height = 1.50 m

ROAD (0.00 + 62.18 + 0.00) = 62.18 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.00  67.90   0.00  -2.71  -3.01   0.00   0.00   0.00  62.18
-------------------------------------------------------------------------------

Segment Leq : 62.18 dBA


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

Source height = 1.50 m

ROAD (0.00 + 56.36 + 0.00) = 56.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.00  56.36   0.00   0.00   0.00   0.00   0.00   0.00  56.36
-------------------------------------------------------------------------------

Segment Leq : 56.36 dBA

Total Leq All Segments: 63.19 dBA




TOTAL Leq FROM ALL SOURCES (DAY): 70.79
                           (NIGHT): 63.19
```



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PROJECT	251 LINSEED ROAD, OTTAWA TRANSPORTATION NOISE ASSESSMENT
SCALE	1:1000 (APPROX.)
DRAWING NO.	GW25-050-A1
DATE	NOVEMBER 6, 2025
DRAWN BY	J.F.

DESCRIPTION

FIGURE A1:
SOURCE TO RECEIVER DISTANCES