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ENVIRONMENTAL NOISE AND VIBRATION ASSESSMENT

PROPOSED 5 RESIDENTIAL LOTS
107 RIDGE ROAD
PART OF LOT 20
TOWN OF AURORA

PREPARED FOR:

2693642 ONTARIO INC.

February 2025
Y2504

EXECUTIVE SUMMARY

The proposed residential development is located approximately 270m west of Yonge Street and more than 1km north of Bloomington Road in the Town of Aurora.

The February 2025 Revised Environmental Noise Assessment is based on the latest Site Plan dated November 2024 prepared by Battaglia Architect Inc. and is issued to present the assessment of the proposed development and recommend any noise abatement features necessary to achieve sound levels acceptable to the Town of Aurora, the Region of York and the Ministry of Environment, Conservation and Parks (MECP).

The transportation noise source having the potential to affect the living environment within the proposed development area is Yonge Street. The updated ultimate traffic volumes on these noise sources are used as input to the Stamson's 5.04 to generate the resultant sound levels. Copy of the correspondence regarding the updated traffic data is included in Appendix 1 in this report.

The stationary noise sources having the potential to affect the proposed residential development is the existing Water tank facility to the east.

Please note that the are no vibration sources of concern near the proposed development.

Recommended noise abatement measures are described in Sections 5.1, 5.2, 5.3 and 5.4 and summarized in Table 5 of this report and on the attached Figure 2. These measures include:

1. Ventilation requirements are not required for any residential units within the proposed residential development.

2. Standard windows and exterior wall constructions meeting the OBC requirements are sufficient in order to meet the indoor sound levels.

3. All applicable warning clauses shall be listed in the Town of Aurora Development Agreement and also be inserted in the Agreements of Purchase and Sale or Lease and registered on title.

TABLE OF CONTENTS

1.0 INTRODUCTION

PURPOSE

A residential development has been proposed by 2693642 Ontario Inc. in the Town of Aurora. This report is an analysis of future sound levels within the proposed development and describes the types and locations of noise mitigation measures which will be required based on the latest Site Plan dated November 2024.

SITE DESCRIPTION AND LOCATION

The proposed development consists of five residential lots located approximately 270m west of Yonge Street and at more than 1km north of Bloomington Road in the Town of Aurora.

The surrounding land uses are existing and proposed residential developments to the north, south and west and golf course to the east of Yonge Street

The location of the proposed development is further indicated by the Key Plan below.

FIGURE 1

2.0 SOUND LEVEL CRITERIA

TRANSPORTATION:

The sound level descriptors (L_{eq} in dBA) are for 16 hours (daytime) and 8 hours (night-time) based on MECP Guideline NPC-300.

Outdoor Activity Areas (7 a.m. – 11 p.m.) – 16 Hr. Leq. = 55 dBA

As per the Town of Aurora's noise criteria, the outdoor sound levels at the backyards (outdoor activity areas) of residential areas and the common outdoor amenity areas will need to meet the sound level limit of 55dBA or less.

Living and Dining Area and Bedroom (7 a.m.–11 p.m.) = 45 dBA Roads, 40 dBA Railways
Living and Dining Area (11 p.m.–7 a.m.) = 45 dBA Roads, 40 dBA Railways
Bedrooms (11 p.m. – 7 a.m.) = 40 dBA Roads, 35 dBA Railways

Appropriate building components such as walls, doors and windows are chosen with reference to the following. If daytime sound levels at the external dwelling walls are 65 dBA or less (roadways), and 60 dBA or less (railways), then the indoor sound level criteria described above will be achieved using standard (Ontario Building Code) construction methods and building components. If night-time sound levels are 60 dBA or less (roadways) and 55 dBA or less (railways), standard construction methods and building components can be utilized. If the external sound levels exceed the above criteria, then components having extra sound insulation properties may be required. Ventilation requirements are determined with reference to the following. If night-time sound levels at the bedroom window of a dwelling unit are in the range of 50 to 60 dBA, the ventilation system must be designed to allow the optional installation of central air conditioning at the owner's discretion. If night-time sound levels are greater than 60 dBA, central air conditioning must be installed. If daytime sound levels at the living room/dining room windows are in the range of 55 to 65 dBA, the ventilation system must be designed to allow optional installation of central air conditioning. For daytime sound levels greater than 65 dBA, central air conditioning must be installed.

STATIONARY SOURCES

As per the MECP guidelines (Publication NPC-300), this area is considered to be a Class 1 classification area. The noise produced by a stationary source at the plane of window for noise sensitive spaces is the energy equivalent sound level (L_{EQ}), 50 dBA during daytime and evening time (0700-2300) or 45 dBA during night-time (2300-0700). For outdoor receptors, the energy equivalent sound level (L_{EQ}) is 50 dBA during daytime (0700-1900) or 50 dBA during evening-time (1900-2300).

However, due to the continuous high traffic volume on Yonge Street, the lowest hourly Leq value has been taken to be 5dBA higher than the Class 1 sound level limits to represent the background sound level for the predictable worst case noise impact. Therefore, the sound level limit for this development has been considered to be 55dBA during the daytime/evening hours and 50dBA during the night-time.

3.0 NOISE SOURCES

ROAD TRAFFIC

As indicated on the attached Figure 2, the proposed residential development will be located approximately 270m west of Yonge Street and more than 1km north of Bloomington Road in the Town of Aurora. Noise generated by Yonge Street has the potential to affect future development. All other roads within or near this site are considered acoustically insignificant due to low traffic volumes and distance separation.

The updated traffic for Yonge Street was obtained from the Region of York dated September 2024. The traffic data for Yonge Street is summarized in Table 1 below:

TABLE 1: YONGE STREET TRAFFIC DATA	
Ultimate Annual Average Daily Traffic *	40,000
Percent Trucks	5%
Percent Medium and Heavy trucks	2%/3%
Speed (km/hr)	60
Number of Lanes	6
Day/Night Traffic split	91/9
Road Gradient	Up to 5%

* The ultimate traffic data provided by the Region of York.

EXISTING STATIONARY NOISE SOURCES

An existing Water Tank/reservoir facility is located at approximately 55m east of the proposed residential development.

The noise sources of concern are a generator within an enclosure. The noise impact of the existing generator has been assessed and discussed in Section 4.2 of this noise report.

The are no vibration sources of concern near the proposed development.

4.0 NOISE ASSESSMENT

4.1 ROAD TRAFFIC NOISE ASSESSMENT

Figure 2 is based on the latest Site Plan dated November 2024 showing various noise analysis locations and noise mitigation measures within the proposed development. Sound levels were calculated using the Ministry of Environment's Stamson 5.04 computer based noise prediction model.

The noise criteria are listed in Appendix 3. Table 2 lists the unattenuated sound levels at various locations.

TABLE 2: UNATTENUATED SOUND LEVELS

LOCATIONS		DISTANCE TO CENTRELINE OF ROAD (m)	DAYTIME 16 Hr. Leq dBA	NIGHT-TIME 8 Hr. Leq dBA
Lot 1	Side Wall	312.0[1]	52.10	44.50
	Rear Yard	314.0[1]	45.54	-
Lot 3	Side Wall	280.0[1]	53.21	46.17
	Rear Yard	282.0[1]	48.84	-
Lot 5	Front Wall	270.0[1]	53.45	46.41
	Rear Yard	284.0[1]	46.54	-

[1] Yonge Street

4.2 STATIONARY NOISE SOURCES ASSESSMENT

The stationary noise source of concern is the Water Tank/Reservoir facility to the east at approximately 55m as shown on the attached Figure 3 with a standby emergency generator on site.

The sound power level for the generator has been taken to be 100dBA as the generator is within an enclosure.

There is also a utility building on site with possible mechanical equipment such as fans and condensers with potential noise impact. The sound power levels for the condensers/fans have been taken to be 92dBA.

The sound levels were calculated using the CadnaA Version 2021 computer program using the International Standard ISO 9613-2.

TABLE 3 - STATIONARY SOURCES SOUND LEVELS - UNMITIGATED

RECEPTOR	SOUND LEVEL RESULTS (dBA)		EXCEEDANCE (dBA)	
	DAYTIME/ EVENING (0700 -2300)	NIGHT-TIME (2300 -0700)	DAY/EVENING LIMIT 50dBA	NIGHT-TIME LIMIT 45dBA
R1 (Lot 5, 2nd Floor Wall)	41.0	42.5	No	No
R1ola (Lot 5, Rear Yard)	18.8	20.3	No	No
R2 (Lot 3, 2nd Floor Wall)	41.1	42.6	No	No
R3 (Lot 1, 2nd Floor Wall)	24.8	25.9	No	No

Therefore, the predicted sound level results indicate that total sound level from the Water Tank facility is expected to meet the applicable criteria during the daytime and night-time hours at the proposed buildings and the outdoor amenity areas.

Therefore, noise mitigation measures are not recommended.

5.0 RECOMMENDED NOISE MITIGATION MEASURES

5.1 OUTDOOR MEASURES

Based on the noise analysis in Table 2, the sound levels at the outdoor amenity areas of all lots are expected to be below 55dBA in absence of mitigative measures. The Town of Aurora's policy is that daytime outdoor sound levels are to be 55dBA or less.

Therefore, outdoor noise mitigation measures are not required due to road traffic noise sources.

5.2 VENTILATION REQUIREMENTS

Ventilation requirements were determined using the sound levels at the building facades listed in Table 2 due to road traffic noise sources.

Based on the information in Table 2, there are no ventilation requirements for the proposed residential lots as the daytime sound levels are expected to be below 55 dBA and the night-time sound level are expected to be below 50dBA due to road traffic noise sources.

5.3 BUILDING COMPONENTS

Building components within the proposed development were analyzed using the STC (Sound Transmission Class) method recommended by the M.E.C.P.

DAYTIME SOUND LEVELS

For the worst-case location during daytime, (Lot 5) a daytime sound level of 53 dBA was calculated due to road traffic. To ensure acceptable daytime indoor sound levels, the building components must provide an STC rating of 19 for windows, STC 18 for exterior wall construction.

NIGHT-TIME SOUND LEVELS

For the worst-case location during night-time, (Lot 5) night-time sound level of 46 dBA was calculated. To ensure acceptable nighttime indoor sound levels of 40dBA from road noise sources, the building components must provide an STC rating of 13 for windows, STC 16 for exterior wall construction.

BUILDING COMPONENT REQUIREMENTS

The minimum standard window and exterior wall construction of the Ontario Building Code (OBC) meets STC 30 and STC 38, respectively. Therefore, standard windows and exterior wall constructions meeting the OBC requirements are sufficient in order to meet the indoor sound levels.

5.4 WARNING CLAUSES

We recommend the following warning clause to be incorporated into the Development Agreement, which will be registered on title and included in all offers of purchase and sale or lease of suites noted below.

- Lots 3, 4 and 5

  Warning Clause Type E:

  "Occupants are advised that due to the proximity of the Water Tank/reservoir facility, noise activities from Water Tank/reservoir facility may at times be audible"

6.0 SUMMARY OF NOISE MITIGATION MEASURES

The summary of noise abatement measures are listed in the following Table 4 identifying ventilation requirements, building components and warning clauses.

TABLE 4: SUMMARY OF NOISE MITIGATION MEASURES

LOCATIONS/UNITS	VENTILATION REQUIREMENTS	BUILDING COMPONENTS	SOUND BARRIERS	WARNING CLAUSES
Lots 3, 4 and 5	No Requirement	Windows: OBC* Walls: OBC	No	Type E
Lots 1 and 2	No Requirement			

* Ontario Building Code standard construction

7.0 RECOMMENDATIONS AND CONCLUSION

RECOMMENDATIONS

1. Ventilation requirements are not required for any residential units within the proposed residential development.

2. Standard windows and exterior wall constructions meeting the OBC requirements are sufficient in order to meet the indoor sound levels.

3. All applicable warning clauses shall be listed in the Town of Aurora Development Agreement and also be inserted in the Agreements of Purchase and Sale or Lease and registered on title.

CONCLUSION

This report has determined that sound levels acceptable to the Ministry of Environment, Conservation and Parks, Town of Aurora and the Region of York are expected to be achieved using the abatement measures in this report and as shown on the attached Figure 2.

Respectfully submitted,

YCA ENGINEERING Limited

Hava Jouharchi, P.Eng.
Senior Project Engineer

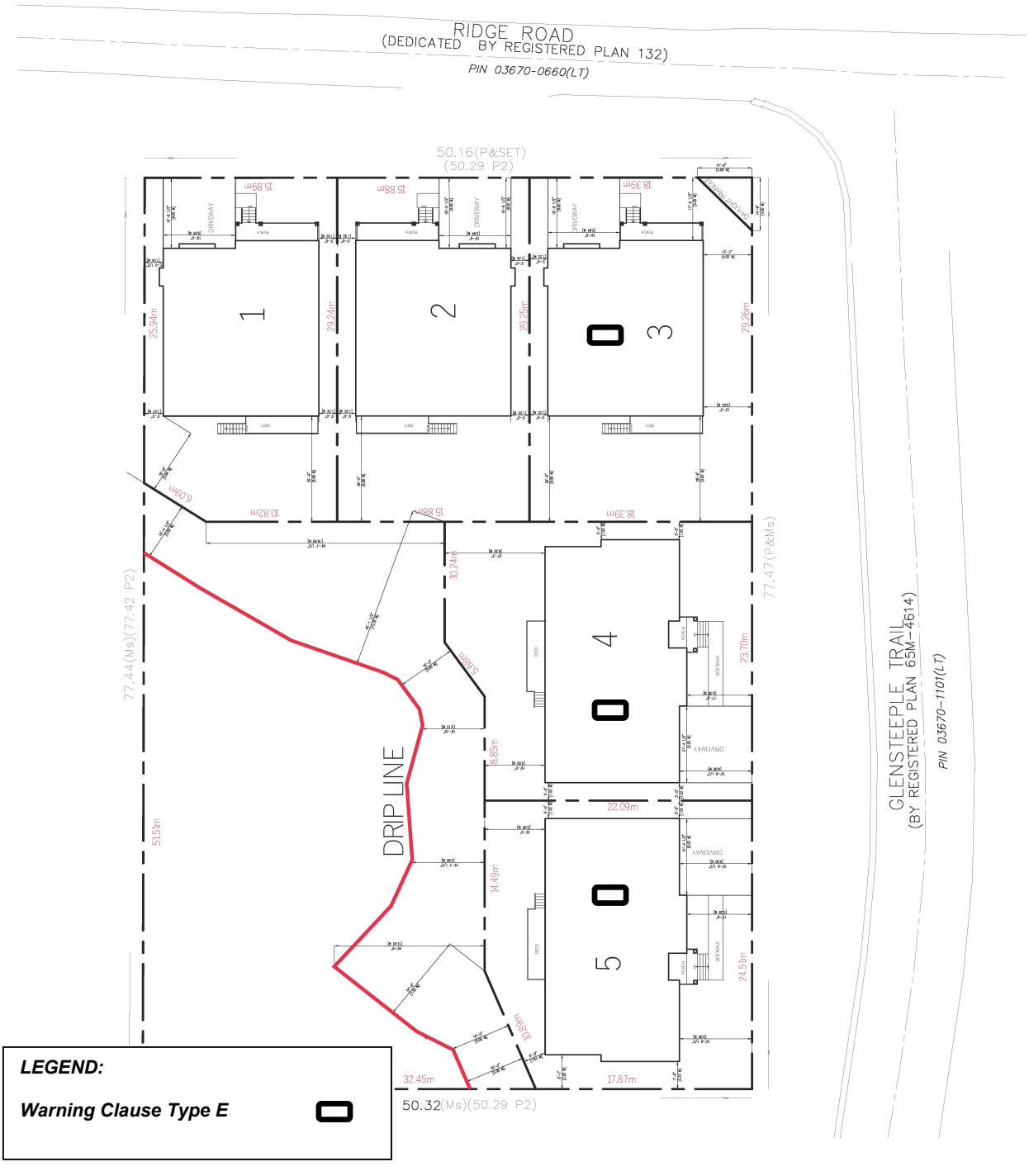

FIGURE 2
107 RIDGE ROAD – SITE PLAN
NOISE MITIGATION MEASURES

FIGURE 3
107 RIDGE ROAD – SITE PLAN
DISTANCE FROM THE STATIONARY NOISE SOURCES

APPENDIX 1

TRAFFIC DATA

York Region

Public Works
Transportation Infrastructure Asset Management

September 27, 2024

Hava Jouharchi
YCA Engineering Ltd.
9580 Yonge Street, Suite 9557
Richmond Hill, ON L4C 1V6

Re: Request for Traffic Data
File No. T09, Forecasts - Aurora

As requested, the traffic data for your study are summarized below.

	Yonge Street
Section No.	01-20
Location	North of Bloomington Road
Existing AADT	28,700 (2023)
Ultimate AADT	40,000
No. of Lanes	4 (future 6*)
Posted Speed	60 km/h
Trucks (Med/Heavy)	2% / 3%
Grade	Up to 5%
Day/Night Split	91/9
Planned ROW	Up to 45 m

Note:
*The additional lanes will be dedicated transit lanes for the purpose of Rapid Transit Corridor.

I trust that this will be satisfactory for your study. The invoice will be sent to you separately.

Sincerely,

Wenli Gao

Wenli Gao
Transportation Planning, Forecasting

WG/wg

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APPENDIX 2

STAMSON 5.04
SOUND LEVEL CALCULATIONS

```
STAMSON 5.0        SUMMARY REPORT        Date: 03-02-2025 12:57:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT
Filename: 1sw.te               Time Period: Day/Night 16/8 hours
Description: Lot 1, Side Wall

Road data, segment # 1: Yonge St (day/night)
----------------------------------------------
Car traffic volume  : 31464/2736  veh/TimePeriod  *
Medium truck volume :   662/58    veh/TimePeriod  *
Heavy truck volume  :   994/86    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     5 %
Road pavement       :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
    24 hr Traffic Volume (AADT or SADT):  40000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  91.00
Data for Segment # 1: Yonge St (day/night)
----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 312.00 / 312.00 m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Result summary (day)
--------------------
                     !  source  !   Road   !  Total
                     !  height  !   Leq    !   Leq
                     !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St          !     1.32 !    52.10 !    52.10
--------------------+---------+---------+---------
                       Total                  52.10 dBA

Result summary (night)
----------------------
                     !  source  !   Road   !  Total
                     !  height  !   Leq    !   Leq
                     !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St          !     1.31 !    44.50 !    44.50
--------------------+---------+---------+---------
                       Total                  44.50 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 52.10
                           (NIGHT): 44.50
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 03-02-2025 12:55:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 1ry.te               Time Period: Day/Night 16/8 hours
Description: Lot 1, Rear Yard

Road data, segment # 1: Yonge St (day/night)
----------------------------------------------
Car traffic volume  : 31464/2736  veh/TimePeriod  *
Medium truck volume :   662/58    veh/TimePeriod  *
Heavy truck volume  :   994/86    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     5 %
Road pavement       :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
    24 hr Traffic Volume (AADT or SADT):  40000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  91.00
Data for Segment # 1: Yonge St (day/night)
----------------------------------------------
Angle1   Angle2           : -20.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 314.00 / 314.00 m
Receiver height           :   1.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Result summary (day)
--------------------
                     !  source  !   Road   !  Total
                     !  height  !   Leq    !   Leq
                     !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St          !     1.32 !    45.54 !    45.54
--------------------+---------+---------+---------
                       Total                  45.54 dBA
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 03-02-2025 12:57:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT
Filename: 3sw.te               Time Period: Day/Night 16/8 hours
Description: Lot 3, Side Wall

Road data, segment # 1: Yonge St (day/night)
----------------------------------------------
Car traffic volume  : 31464/2736  veh/TimePeriod  *
Medium truck volume :   662/58    veh/TimePeriod  *
Heavy truck volume  :   994/86    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     5 %
Road pavement       :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
    24 hr Traffic Volume (AADT or SADT):  40000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  91.00
Data for Segment # 1: Yonge St (day/night)
----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 280.00 / 280.00 m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St         !     1.32 !    53.21 !    53.21
--------------------+---------+---------+---------
                      Total                  53.21 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St         !     1.31 !    46.17 !    46.17
--------------------+---------+---------+---------
                      Total                  46.17 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 53.21
                           (NIGHT): 46.17
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 03-02-2025 12:55:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT
Filename: 3ry.te               Time Period: Day/Night 16/8 hours
Description: Lot 3, Rear Yard

Road data, segment # 1: Yonge St (day/night)
----------------------------------------------
Car traffic volume  : 31464/2736  veh/TimePeriod  *
Medium truck volume :   662/58    veh/TimePeriod  *
Heavy truck volume  :   994/86    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     5 %
Road pavement       :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
    24 hr Traffic Volume (AADT or SADT):  40000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  91.00
Data for Segment # 1: Yonge St (day/night)
----------------------------------------------
Angle1   Angle2           : -20.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 280.00 / 280.00 m
Receiver height           :   1.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St         !     1.32 !    48.84 !    48.84
--------------------+---------+---------+---------
                      Total                  48.84 dBA
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 03-02-2025 12:58:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT
Filename: 5fw.te               Time Period: Day/Night 16/8 hours
Description: Lot 5, Front Wall

Road data, segment # 1: Yonge St (day/night)
----------------------------------------
Car traffic volume  : 31464/2736  veh/TimePeriod  *
Medium truck volume :   662/58    veh/TimePeriod  *
Heavy truck volume  :   994/86    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     5 %
Road pavement       :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
    24 hr Traffic Volume (AADT or SADT):  40000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  91.00
Data for Segment # 1: Yonge St (day/night)
----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 270.00 / 270.00 m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St         !     1.32 !    53.45 !    53.45
--------------------+---------+---------+---------
                      Total                  53.45 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St         !     1.31 !    46.41 !    46.41
--------------------+---------+---------+---------
                      Total                  46.41 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 53.45
                           (NIGHT): 46.41
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 03-02-2025 12:56:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT
Filename: 5ry.te               Time Period: Day/Night 16/8 hours
Description: Lot 5, Rear Yard

Road data, segment # 1: Yonge St (day/night)
----------------------------------------------
Car traffic volume  : 31464/2736  veh/TimePeriod  *
Medium truck volume :   662/58    veh/TimePeriod  *
Heavy truck volume  :   994/86    veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     5 %
Road pavement       :     1 (Typical asphalt or concrete)
* Refers to calculated road volumes based on the following input:
    24 hr Traffic Volume (AADT or SADT):  40000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   2.00
    Heavy Truck  % of Total Volume     :   3.00
    Day (16 hrs) % of Total Volume     :  91.00
Data for Segment # 1: Yonge St (day/night)
----------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 284.00 / 270.00 m
Receiver height           :   1.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+---------+---------+---------
 1.Yonge St         !     1.32 !    46.54 !    46.54
--------------------+---------+---------+---------
                      Total                  46.54 dBA
```

Project No.: Y2504
Project Name: 107 Ridge Road
Date: February 2025

Receiver Table

Name	ID	Level Lr		Limit. Value		Height		Coordinates		
		Day	Night	Day	Night			X	Y	Z
		(dBA)	(dBA)	(dBA)	(dBA)	(m)		(m)	(m)	(m)
R1	R1	41.0	42.5	50.0	45.0	7.50	r	199.44	654.09	7.50
R1ola	R1ola	18.8	20.3	50.0	45.0	1.50	r	185.92	649.70	1.50
R2	R3	41.1	42.6	50.0	45.0	7.50	r	184.98	708.18	7.50
R3	R4	24.8	25.9	50.0	45.0	7.50	r	150.50	700.82	7.50

Source Table

Name	Result. PWL			Lw / Li		Operating Time			Freq.	Height		Coordinates		
	Day	Evening	Night	Type	Value	Day	Special	Night				X	Y	Z
	(dBA)	(dBA)	(dBA)			(min)	(min)	(min)	(Hz)	(m)		(m)	(m)	(m)
Gen	100.2	100.2	100.2	Lw	Gen	60.00	60.00	60.00		3.00	r	270.26	698.79	3.00
CD1	92.1	92.1	92.1	Lw	CD	60.00	60.00	30.00		1.50	r	260.86	715.40	1.50
CD2	92.1	92.1	92.1	Lw	CD	60.00	60.00	60.00		2.00	r	261.95	719.46	2.00

Result Table

Receiver		Limiting Value		Lr w/o Noise Control		dL req.		Lr w/ Noise Control		Exceeding	
Name	ID	Day	Night	Day	Night	Day	Night	Day	Night	Day	Night
		dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)	dB(A)
R1	R1	50	45	41.0	42.5	-	-	0.0	0.0	-	-
R1ola	R1ola	50	45	18.8	20.3	-	-	0.0	0.0	-	-
R2	R3	50	45	41.1	42.6	-	-	0.0	0.0	-	-
R3	R4	50	45	24.8	25.9	-	-	0.0	0.0	-	-

APPENDIX 3

SOUND LEVEL CRITERIA

MINISTRY OF THE ENVIRONMENT CONSERVATION AND PARKS

ENVIRONMENTAL NOISE GUIDELINE
Stationary and Transportation Sources - Approval and Planning
Publication NPC-300

August 2013

Day-time Outdoor Sound Level Limit

Table C-1 gives the equivalent sound level (L_{eq}) limit for designated Outdoor Living Areas. The limit applies to the entire day-time period from 07:00 to 23:00.

TABLE C-1
Sound Level Limit for Outdoor Living Areas
Road and Rail

Time Period	*L_{eq}(16) (dBA)*
16 hr, 07:00 - 23:00	*55*

Indoor Sound Level Limit

Table C-2 gives the equivalent sound level (L_{eq}) limits and the applicable time periods for the indicated types of indoor space. The specified sound level criteria are minimum requirements and apply to the indicated indoor spaces with the windows and doors closed.

TABLE C- 2
Indoor Sound Level Limits (Road and Rail)

Type of Space	*Time Period*	*L_{eq} (Time Period) (dBA)*	
		Road	*Rail*
Living/dining, den areas of residences, nursing/retirement homes, hospitals, schools, day-care centers, etc.	*07:00-23:00*	*45*	*40*
Living/dining areas of residences, nursing/retirement homes, hospitals, etc. (except schools or daycare centres)	*23:00 - 07:00*	*45*	*40*
Sleeping quarters	*07:00-23:00*	*45*	*40*
Sleeping quarters	*23:00 - 07:00*	*40*	*35*

SUPPLEMENTARY NOISE LIMITS

Indoor limits for transportation sources applicable to noise sensitive land uses are specified in Table C-2 and Table C-9.

TABLE C-9
Indoor Sound Level Limits (Road and Rail)

Type of Space	*Time Period*	*L_{eq} (Time Period) (dBA)*	
		Road	*Rail*
General offices, reception areas, retail stores, etc.	*16 hours between 07:00-23:00*	*50*	*45*
Living/dining areas of residences, hospitals, schools, nursing/retirement, homes day-care centers, theatres, place of worship, libraries, individual or semi-private offices, conference rooms, reading rooms etc.	*16 hours between 07:00-23:00*	*45*	*40*
Sleeping quarters of hotels/motels	*8 hours between 23:00 - 07:00*	*45*	*40*
Sleeping quarters of residences, hospitals, nursing/retirement homes etc	*8 hours between 23:00 - 07:00*	*40*	*35*

SUMMARY OF MINIMUM NOISE CONTROL AND VENTILATION REQUIREMENTS FOR ROAD AND RAIL NOISE

TABLE 1
COMBINATION OF ROAD AND RAIL NOISE, DAY-TIME (0700 - 2300)
OUTDOOR, VENTILATION AND WARNING CLAUSE REQUIREMENTS

ASSESSMENT LOCATION	*L_{eq} (16 hr) (dBA)*	*VENTILATION REQUIREMENTS*	*OUTDOOR CONTROL MEASURES*	*WARNING CLAUSE*
OUTDOOR LIVING AREA (OLA)	*Less than or equal to 55 dBA*	*N/A*	*None required*	*Not required*
	Greater than 55 dBA to less than or equal to 60 dBA	*N/A*	*Control measures (barriers) not required but should be considered*	*Required if resultant L_{eq} exceeds 55 dBA Type A*
	Greater than 60 dBA	*N/A*	*Control measures (barriers) required to reduce the L_{eq} below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible*	*Required if resultant L_{eq} exceeds 55 dBA Type B*
PLANE OF LIVING ROOM WINDOW	*Greater than 50 dBA to less than or equal to 55 dBA*	*None required*	*N/A*	*Not required*
	Greater than 55 dBA to less than or equal to 65 dBA	*Forced air heating with provision for central air conditioning*	*N/A*	*Required Type C*
	Greater than 65 dBA	*Central air conditioning*	*N/A*	*Required Type D*

TABLE 2
COMBINATION OF ROAD AND RAIL NOISE, NIGHT-TIME (2300 - 0700)
VENTILATION AND WARNING CLAUSE REQUIREMENTS

ASSESSMENT LOCATION	*L_{eq}(8hr) (dBA)*	*VENTILATION REQUIREMENTS*	*WARNING CLAUSE*
PLANE OF BEDROOM WINDOW	*Greater than 50 dBA to less or equal to 60 dBA*	*Forced air heating with provision for central air conditioning*	*Required Type C*
	Greater than 60 dBA	*Central air conditioning*	*Required Type D*

TABLE 3
ROAD AND RAIL NOISE, DAY-TIME (0700 - 2300)
BUILDING COMPONENT REQUIREMENTS

ASSESSMENT LOCATION		*L_{eq} (16 hr)*	*BUILDING COMPONENT REQUIREMENTS*
PLANE OF LIVING ROOM WINDOW	*ROAD*	*Less than or equal to 65 dBA*	*Building compliant with the Ontario Building Code*
		Greater than 65 dBA	*Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria*
	RAIL	*Less than or equal to 60 dBA*	*Building compliant with the Ontario Building Code*
		Greater than 60 dBA	*Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria*

TABLE 4
ROAD AND RAIL NOISE, NIGHT-TIME (2300-0700)
BUILDING COMPONENT REQUIREMENTS

ASSESSMENT LOCATION		*L_{eq} (8 hr)*	*BUILDING COMPONENT REQUIREMENTS*
PLANE OF BEDROOM WINDOW	*ROAD*	*Less than or equal to 60 dBA*	*Building compliant with the Ontario Building Code*
		Greater than 65 dBA	*Building components (walls, windows, etc.) must bed designed to achieve indoor sound level criteria*
	RAIL	*Less than or equal to 60 dBA*	*Building compliant with the Ontario Building Code*
		Greater than 60 dBA	*Building components (walls, windows, etc.) must be designed to achieve indoor sound level criteria*

TABLE 5
FACADE REQUIREMENT FOR RAIL NOISE ONLY - 24 HOURS

ASSESSMENT LOCATION	*DISTANCE TO RAILWAY (m)*	*L_{eq} (24 hr) (dBA)*	*NOISE CONTROL REQUIREMENT*
PLANE OF BEDROOM WINDOW	*Less than 100 m*	*Less than or equal to 60 dBA*	*No additional requirement*
		Greater than 60 dBA	*Brick veneer or acoustically equivalent*
	Greater than 100 m	*Less than or equal to 60 dBA*	*No additional requirement*
		Greater than 60 dBA	*No additional requirement*

TABLE B- 1
Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq dBA)
Outdoor Points of Reception

Time of Day	*Class 1 Area*	*Class 2 Area*	*Class 3 Area*	*Class 4 Area*
07:00-19:00	*50*	*50*	*45*	*55*
19:00 -23:00	*50*	*45*	*40*	*55*

TABLE B- 2
Exclusion Limit Values of One-Hour Equivalent Sound Level (Leq dBA)
Plane of Window of Noise Sensitive Spaces

Time of Day	*Class 1 Area*	*Class 2 Area*	*Class 3 Area*	*Class 4 Area*
07:00-19:00	*50*	*50*	*45*	*60*
19:00 -23:00	*50*	*50*	*40*	*60*
23:00-07:00	*45*	*45*	*40*	*55*