

## **Environmental Noise Assessment 1485 Williamsport Dr & 3480 Havenwood Dr Mississauga, Ontario**

Novus Reference No. 17-0260

Version No. 1.1 (Final)

June 7, 2018

### **NOVUS PROJECT TEAM:**

Senior Specialist:

Marcus Li, P.Eng.



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## 1.0 INTRODUCTION

Novus Environmental Inc. (Novus) was retained by Starlight Group Property Holdings Inc. to conduct an Environmental Noise Study for the proposed residential development located in Mississauga, Ontario. This report assesses the potential impacts of the environment on the proposed development, including Transportation and Stationary noise sources.

### 1.1 Nature of the Subject Lands

The proposed development is located at 1485 Williamsport Drive and 3480 Havenwood Drive, just northeast of the Dixie Road and Bloor Street intersection in Mississauga, Ontario. The site is currently occupied by parking lots and two (2) existing residential buildings (A and B). Buildings A and B are both 9-storeys in height.

The proposed development consists of two (2) eight (8) storey residential buildings (Building C and D) and a shared lobby connecting the buildings. Amenity space for the development is included on the rooftop of the shared lobby between Buildings C and D, at grade adjacent to Building C, at grade adjacent to Building D, and private terraces for both buildings. Two (2) levels of underground parking are also included with the development.

The topography of the site is considered to be generally flat, with a gentle drop in elevation towards the south.

A copies of the current development drawings are included in **Appendix A**.

### 1.2 Nature of the Surroundings

The development site is primarily surrounded by other residential lands to the east, south and west, including a combination of mid-rise buildings, townhouses and single family homes. To the north are institutional properties, with additional residential lands located beyond these buildings. Commercial properties are located along Dixie Road.

A context plan is shown in **Figure 1**.

## **PART 1: IMPACTS OF THE ENVIRONMENT ON THE DEVELOPMENT**

In assessing potential impacts of the environment on the proposed development, the focus of this report is to assess the potential for:

- 1) Roadway noise impacts on the development;
- 2) Aircraft noise impacts on the development;
- 3) Railway noise impacts on the development; and
- 4) Stationary noise impacts from the surrounding industries on the development.

As the proposed development is located outside of the Pearson NEF25 noise contours, an assessment of aircraft noise is not required. A copy of the Pearson NEF noise contours is included in **Appendix B**, with the location of the development shown.

In addition, the closest railway line is located approximately 2 km from the development. Therefore, an assessment of railway noise and vibration is also not required.

## **2.0 TRANSPORTATION NOISE IMPACTS**

### **2.1 Transportation Noise Sources**

Transportation sources of interest with the potential to produce noise at the proposed development are:

- Dixie Road west of the proposed development;
- Bloor Street south of the proposed development; and
- Havenwood Drive east of the proposed development.

The level of noise from these sources has been predicted, and this information has been used to identify façade, ventilation, and warning clause requirements.

### **2.2 Surface Transportation Noise Criteria**

#### **2.2.1 Ministry of the Environment Publication NPC-300**

##### ***Noise Sensitive Developments***

Ministry of the Environment and Climate Change (MOECC) Publication NPC-300 provides sound level criteria for noise sensitive developments. The applicable portions of NPC-300 are Part C – Land Use Planning and the associated definitions outlined in Part A – Background.

**Table 1** to **Table 3** below summarize applicable surface transportation criteria limits.

### Location Specific Criteria

**Table 1** summarizes criteria in terms of energy equivalent sound exposure ( $L_{eq}$ ) levels for specific noise-sensitive locations. Both outdoor and indoor locations are identified, with the focus of outdoor areas being amenity spaces. Indoor criteria vary with sensitivity of the space. As a result, sleep areas have more stringent criteria than Living / Dining room space.

**Table 1: NPC-300 Sound Level Criteria for Road and Rail Noise**

Type of Space	Time Period	Energy Equivalent Sound Exposure Level $L_{eq}$ <sup>[5]</sup> (dBA)		Assessment Location
		Road	Rail <sup>[1]</sup>	
Outdoor Amenity Area	Daytime (0700-2300h)	55	55	Outdoors <sup>[2]</sup>
Living / Dining Room <sup>[3]</sup>	Daytime (0700-2300h)	45	40	Indoors <sup>[4]</sup>
	Nighttime (2300-0700h)	45	40	Indoors <sup>[4]</sup>
Sleeping Quarters	Daytime (0700-2300h)	45	40	Indoors <sup>[4]</sup>
	Nighttime (2300-0700h)	40	35	Indoors <sup>[4]</sup>

Notes: [1] Whistle noise is excluded for OLA noise assessments, and included for Living / Dining Room and Sleeping Quarter assessments.  
 [2] Road and Rail noise impacts are to be combined for assessment of OLA impacts.  
 [3] Residence area Dens, Hospitals, Nursing Homes, Schools, Daycares are also included. During the nighttime period, Schools and Daycares are excluded.  
 [4] An assessment of indoor noise levels is required only if the criteria in **Table 3** are exceeded.  
 [5]  $L_{eq}$  – the energy equivalent sound exposure level, integrated over the time period shown.

**Table 2: MOE Publication NPC-300 Outdoor Living Area Mitigation Requirements**

Time Period	Equivalent Sound Level in Outdoor Living Area (dBA)	Mitigation Requirements and Warning Clauses
Daytime (0700-2300h)	≤ 55	• None
	55 to 60 incl.	• Noise barrier <b>OR</b> • Warning Clause A
	> 60	• Noise barrier to reduce noise to 55 dBA <b>OR</b>
		• Noise barrier to reduce noise to 60 dBA and Warning Clause B

### ***Ventilation and Warning Clauses***

The requirements for ventilation, where windows potentially would have to remain closed as a means of noise control, apply where the sound exposure levels are summarized in **Table 3** exceed the guideline limits in **Table 1** for indoors spaces. Despite the implementation of ventilation measures where required, some occupants may choose not to use the ventilation means provided, and as such, warning clauses advising future occupants of the potential excess over the guideline limits are required.

Warning clauses also apply to the OLA where an excess of up to 5 dBA over the 55 dBA OLA limit is often acceptable to many, particularly in the context of an urban environment. Warning clauses are discussed further, below in **Table 3**.

### ***Building Shell Requirements***

**Table 4** provides  $L_{eq}$  thresholds which if exceeded, require the building shell and components (i.e., wall, windows) to be designed and selected accordingly to ensure that the **Table 3** and **Table 4** indoor sound criteria are met.

**Table 3: NPC-300 Ventilation and Warning Clause Requirements**

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - $L_{eq}$ (dBA)		Ventilation and Warning Clause Requirements <sup>[2]</sup>
		Road	Rail <sup>[1]</sup>	
Outdoor Amenity Area	Daytime (0700-2300h)	56 to 60 incl.		Type A Warning Clause
		$\leq 55$		None
Plane of Window	Daytime (0700-2300h)	56 to 65 incl.		Forced Air Heating with provision to add air conditioning + Type C Warning Clause
		> 65		Central Air Conditioning + Type D Warning Clause
	Nighttime (2300-0700h)	51 to 60 incl.		Forced Air Heating with provision to add air conditioning + Type C Warning Clause
		> 60		Central Air Conditioning + Type D Warning Clause

Notes: [1] Whistle noise is excluded.

[2] Road and Rail noise is combined for determining Ventilation and Warning Clause requirements.

**Table 4: NPC-300 Building Component Requirements**

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - $L_{eq}$ (dBA)		Component Requirements
		Road	Rail <sup>[1]</sup>	
Plane of Window	Daytime (0700-2300h)	> 65	> 60	Designed/ Selected to Meet Indoor Requirements <sup>[2]</sup>
	Nighttime (2300-0700h)	> 60	> 55	

Notes: [1] Including whistle noise.  
[2] Building component requirements are assessed separately for Road and Railway, and combined for a resultant sound isolation parameter.

In summary, roadway noise impacts are to be predicted at the plane-of-window for the proposed development. Providing the plane-of-window sound levels exceed the daytime and nighttime sound levels indicated in **Table 3**, the determination of the building façade components is required for meeting the indoor sound level criteria outlined in **Table 1**.

In addition, the ventilation requirements and warning clauses are determined, as outlined in **Table 3**, based on the plane-of-window noise levels.

## 2.3 Traffic Data and Future Projections

### 2.3.1 Roadway Traffic Data

Ultimate road traffic data for Bloor Street was obtained from the City of Mississauga. Road traffic volumes for Dixie Road was obtained from the Region of Peel’s “General Guidelines for the Preparation of Acoustical Reports in The Region of Peel – November 2012” document for a six (6) lane arterial road. Based on discussions with the City of Mississauga, ultimate traffic volumes were not available for and Havenwood Drive. In the absence of data, the Region of Peel 2 lane arterial road traffic volumes were applied as a conservative assessment of roadway impacts.

**Table 5** summarizes road traffic volumes used in the analysis. Copies of the traffic data used are included in **Appendix C**.

**Table 5: Summary of Road Traffic Data**

Roadway Link	Ultimate Volume (AADT)	Day / Night Volume Split		Commercial Traffic Breakdown <sup>[2]</sup>		Vehicle Speed (km/h)
		Daytime	Nighttime	% Med	% Heavy	
Dixie Road	48,100	90	10	2.3%	2%	60
Bloor Street	24,493	90	10	1.7%	1.4%	50
Havenwood Drive	16,200	90	10	1.1%	0.9%	50

Notes: [1] Truck Percentages for Bloor Street were provided by the City of Mississauga. Dixie Road and Havenwood Drive truck percentages were taken from Novus historical data for Non-industrial Arterial roads and non-industrial collector roads, respectively..

## 2.4 Projected Sound Levels

Future road traffic sound levels at the proposed development were predicted using Cadna/A, a commercially available noise propagation modelling software. Roadways were modelled as line sources of sound, with sound emission rates calculated using the ORNAMENT algorithms, the road traffic noise model of the MOECC. These predictions were validated and are equivalent to those made using the MOECC's ORNAMENT or STAMSON v5.04 road traffic noise models.

Sound levels were predicted along the facades of the proposed development using the “building evaluation” feature of Cadna/A. This feature allows for noise levels to be predicted across the entire façade of a structure.

As the ground separating the development from the roadways is primarily asphalt, reflective ground was applied to the noise modelling.

No change in topography was included in the noise modelling, as a conservative assessment of impacts, relative to screening effects.

The northbound traffic along Havenwood Drive follows an uphill grade of 3.2%. The uphill gradient adjustment from ORNAMENT was applied to this segment of the northbound traffic noise modelling. As northbound traffic for Dixie Road was found to have a grade of less than 2%, no adjustment was applied to this roadway segment.

### 2.4.1 Façade Sound Levels

Predicted sound levels at each building of the proposed development are shown in **Figure 2** and **Figure 3** for the daytime and night-time periods, respectively. As shown in **Figure 2**, daytime noise impacts are below 65 dBA for Buildings C and D. The night-time noise impacts are below 60 dBA for Buildings C and D as well, as shown in **Figure 3**. Therefore, an assessment of indoor noise levels is not required.

**Table 6** tabulates the worst-case impacts for every building of the proposed development.

**Table 6: Summary of Worst-case Roadway Transportation Sound Levels**

Building	Period	Roadway Sound Level (dBA)	Building Component Criteria (dBA)	In-Room Assessment Required? (Yes/No)
C	Day	56	65	No
	Night	50	60	No
D	Day	55	65	No
	Night	49	60	No

### 2.4.1 Outdoor Living Areas

Noise impacts were assessed for the OLAs for the development, as shown in **Figure 4**.

**Table 7: Summary of Transportation OLA Sound Levels**

OLA ID	Transportation Impacts L <sub>eq</sub> Day (dBA)	Applicable Guideline Limit L <sub>eq</sub> Day (dBA)	Meets Criteria? (Yes/No)
Roof_OLA	52	60	Yes
Ground_OLA	51	60	Yes

As noise impacts do not exceed 60 dBA, an assessment of noise mitigation is not required for this OLA.

The MOECC requires OLAs which are 4 meters in depth or greater, to be assessed for roadway noise impacts. Based on a review of the current development floor plans, the private balconies and other amenity space areas are less than the MOECC minimum depth threshold of 4 meters for inclusion. Therefore, the private terraces and other amenity spaces are not considered to be OLAs for the purposes of the guidelines, and have not been assessed.

## 2.5 Façade Recommendations

The predicted sound levels on the worst-case façade are below 65 dBA during the daytime and 60 dBA during the night-time. Therefore an assessment of indoor noise is not required and Ontario Building Code (OBC) glazing (STC-29) will be sufficient to meet indoor sound level criteria.

### 2.5.1 Ventilation and Warning Clause Requirements

The requirements regarding warning clauses are summarized in **Table 3**. **Table 4** provides Leq thresholds which if exceeded, require the building shell and components (i.e., wall, windows) to be designed and selected accordingly to ensure that the **Table 3** and **Table 4** indoor sound criteria are met.

Where required, the Warning Clauses are required to be included in agreements registered on Title and included in the agreements of purchase and sale or lease and rental agreements.

Based on the predicted façade noise levels, warning clauses are not required for Building D. Forced air heating with provision to add central air conditioning and a **Type C** Warning clause will be required for the units on the end units of Building C only (ie. facing Havenwood Drive and Dixie Road).

#### Type C Warning Clause

“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 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 and Climate Change”

As the OLA noise impacts are predicted to be below 55 dBA, no warning clauses are required for the development.

## 3.0 STATIONARY NOISE IMPACTS

A site visit was completed on March 22, 2018 by Novus personnel to review the surrounding stationary noise sources.

The development is primarily surrounded by residential properties, with commercial land uses located along Dixie Road. There were no industries identified within a 1000 m radius of the development.

The surrounding area is dominated by roadway noise from Dixie Road, Bloor Street, and Havenwood Drive, with no significant stationary noise audible at the development. Therefore, an assessment of surrounding stationary noise impacts was not completed.

## **PART 2: IMPACTS OF THE DEVELOPMENT ON THE SURROUNDING AREA**

### **4.0 IMPACTS OF THE DEVELOPMENT MECHANICAL SYSTEMS ON SURROUNDING PROPERTIES**

In terms of the noise environment of the area, it is expected that the project will have a negligible effect on the neighbouring properties. The traffic related to the proposed development will be small in relation to the traffic volumes within the area, and is not of concern with respect to noise impact.

Other possible sources of noise associated with the development with potentially adverse impacts on the surrounding neighbourhood are emergency generators and mechanical roof-top equipment of Buildings C and D. This equipment is required to meet MOECC Publication NPC-300 requirements at the closest off-site noise sensitive receptors.

Given that the systems will be designed to ensure that the applicable noise guideline are met at on-site receptors, off-site impacts are not anticipated.

Regardless, potential impacts should be assessed as part of the final building design. The criteria can be met at all surrounding and on-site receptors by the appropriate selection of mechanical equipment, by locating equipment with sufficient setback from noise sensitive locations, and by incorporating control measures (e.g., silencers) into the design.

It is recommended the mechanical systems be reviewed by an Acoustical Consultant prior to final selection of equipment.

## **PART 3: IMPACTS OF THE DEVELOPMENT ON ITSELF**

### **5.0 OUTDOOR NOISE IMPACTS FROM DEVELOPMENT MECHANICAL SYSTEMS**

The building mechanical systems for Buildings C and D have not been designed at this time. Although no adverse impacts are expected, such equipment has the potential to result in noise impacts on residential spaces within the development. This equipment is required to meet MOECC Publication NPC-300 requirements at the facades of the noise sensitive spaces within the development. Therefore, the potential impacts should be assessed as part of the final building design.

The criteria is expected to be met at all on-site receptors with the appropriate selection of mechanical equipment, by locating equipment to minimize noise impacts within the development, and by incorporating control measures (e.g., silencers) into the design.

It is recommended the mechanical systems be reviewed by an Acoustical Consultant prior to final selection of equipment.

## 6.0 CONCLUSIONS AND RECOMMENDATIONS

The potential for noise impacts on the proposed development have been assessed. Based on the results of the study, the following conclusions have been reached:

### 6.1 Transportation Noise

- An assessment of transportation noise impacts from Dixie Road, Bloor Street, and Havenwood Drive has been completed.
- Based on transportation façade sound levels, upgraded glazing is not required to meet the MOECC Publication NPC-300 Indoor Sound Level Criteria (refer **Section 2.5**).
- Forced Air Heating with the Provisions for Air Conditioning are required for the west and east façade units of Building C, as outlined in **Section 2.5.1**.
- The following Warning Clauses must be included in agreements registered on Title and included in the agreements of purchase and sale or lease and rental agreements for Building C units on the east and west façade, as outlined in **Section 2.5.1**, as follows:

#### Type C Warning Clause

“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 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 and Climate Change.

### 6.2 Stationary Noise

- The development is primarily surrounded by residential and commercial uses, with no significant industries located within 1000 metre radius.
- During a site visit by Novus personnel, no significant stationary noise sources were identified. Therefore, a stationary noise assessment was not considered necessary and has not been completed.

### 6.3 Overall Assessment

- Impacts of the environment on the proposed development can be adequately controlled with the ventilation and warning clause requirements detailed in **Part 1** of this report.
- Impacts of the proposed development are expected to meet the applicable guideline limits, and can be adequately controlled by following the design guidance outlined **Part 2** of this report.
- Impacts of the proposed development on itself can be adequately controlled by following the design guidance outlined in **Part 3** of this report.
- As the mechanical systems for the proposed development have not been designed at the time of this assessment, the acoustical requirements above should be confirmed by an Acoustical Consultant as part of the final building design.

## 7.0 REFERENCES

Region of Peel, *General Guidelines for the Preparation of Acoustical Reports in The region of Peel*, 2012.

Ontario Ministry of the Environment and Climate Change, 1989, Ontario Road Noise Analysis Method for Environment and Transportation (ORNAMENT).

Ontario Ministry of the Environment and Climate Change, Publication NPC-300: *Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning*, 2013.

Ontario Ministry of the Environment (MOECC), 1996, STAMSON v5.03: Road, Rail and Rapid Transit Noise Prediction Model.

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## Figures

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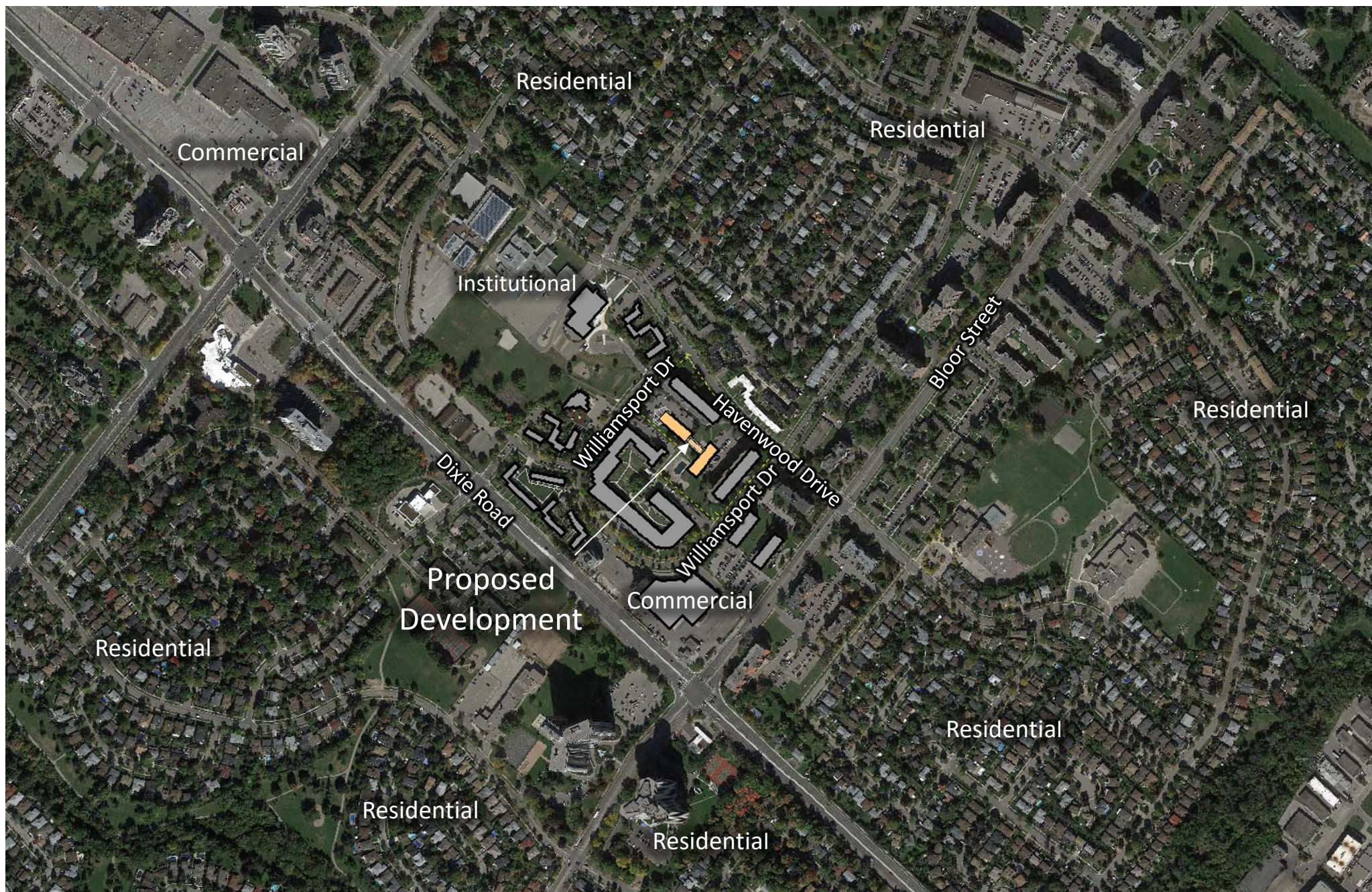
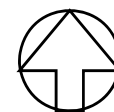


Figure No. 1  
**Context Plan**

1485 Williamsport Drive & 3480 Havenwood Drive  
Mississauga, ON



True  
North

Scale: 1: 7,500  
Date: 18/05/25  
File No.: 17-0260  
Drawn By: MTL

**novus**  
ENVIRONMENTAL

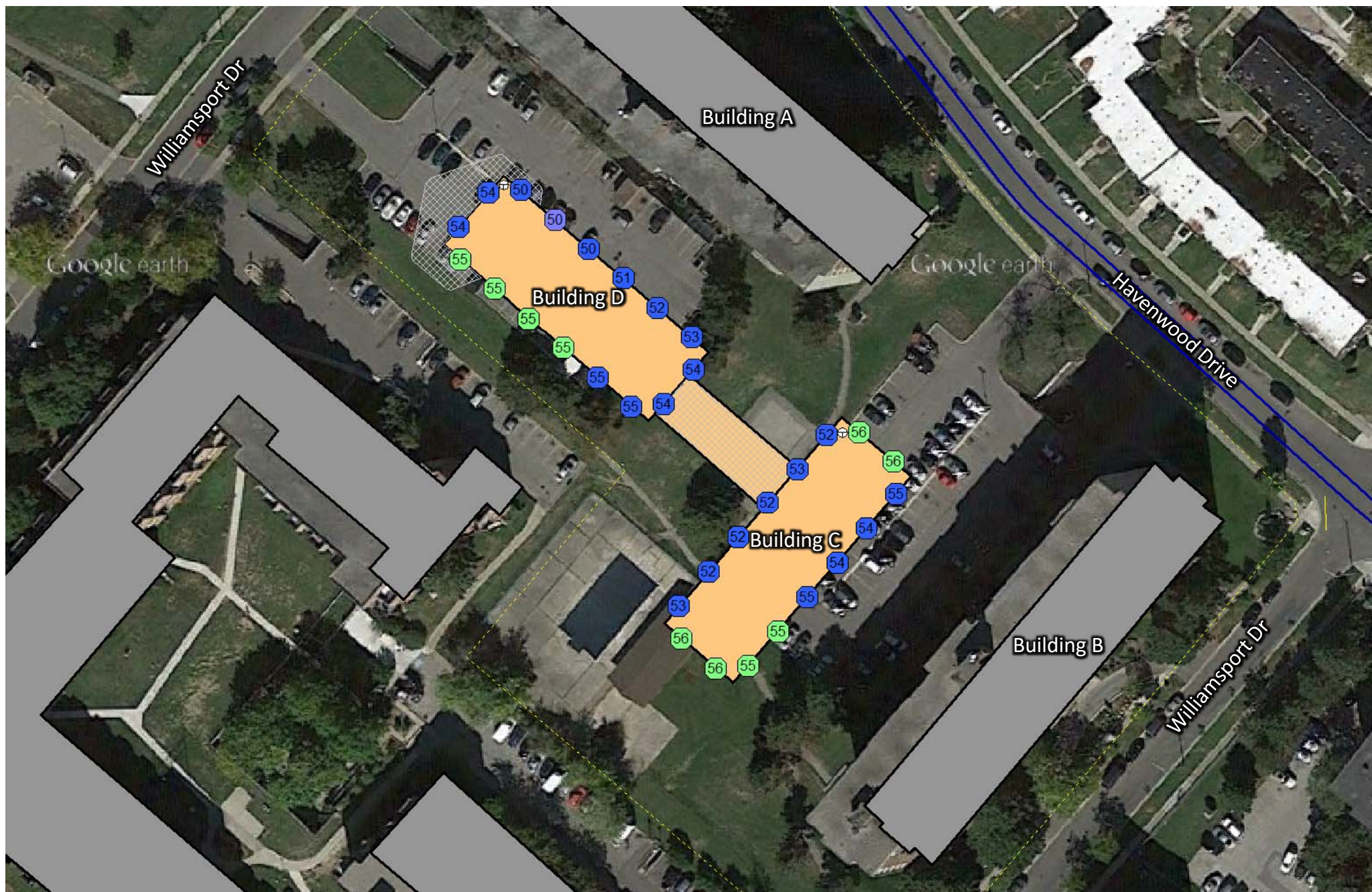


Figure No. 2  
**Modelled Road Noise Impacts – Daytime**

1485 Williamsport Drive & 3480 Havenwood Drive  
 Mississauga, ON



True  
 North

Scale: 1: 1,000  
 Date: 18/05/25  
 File No.: 17-0260  
 Drawn By: MTL

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Figure No. 3  
**Modelled Road Noise Impacts – Night-time**

1485 Williamsport Drive & 3480 Havenwood Drive  
 Mississauga, ON



True  
 North

Scale: 1: 1,000  
 Date: 18/05/25  
 File No.: 17-0260  
 Drawn By: MTL

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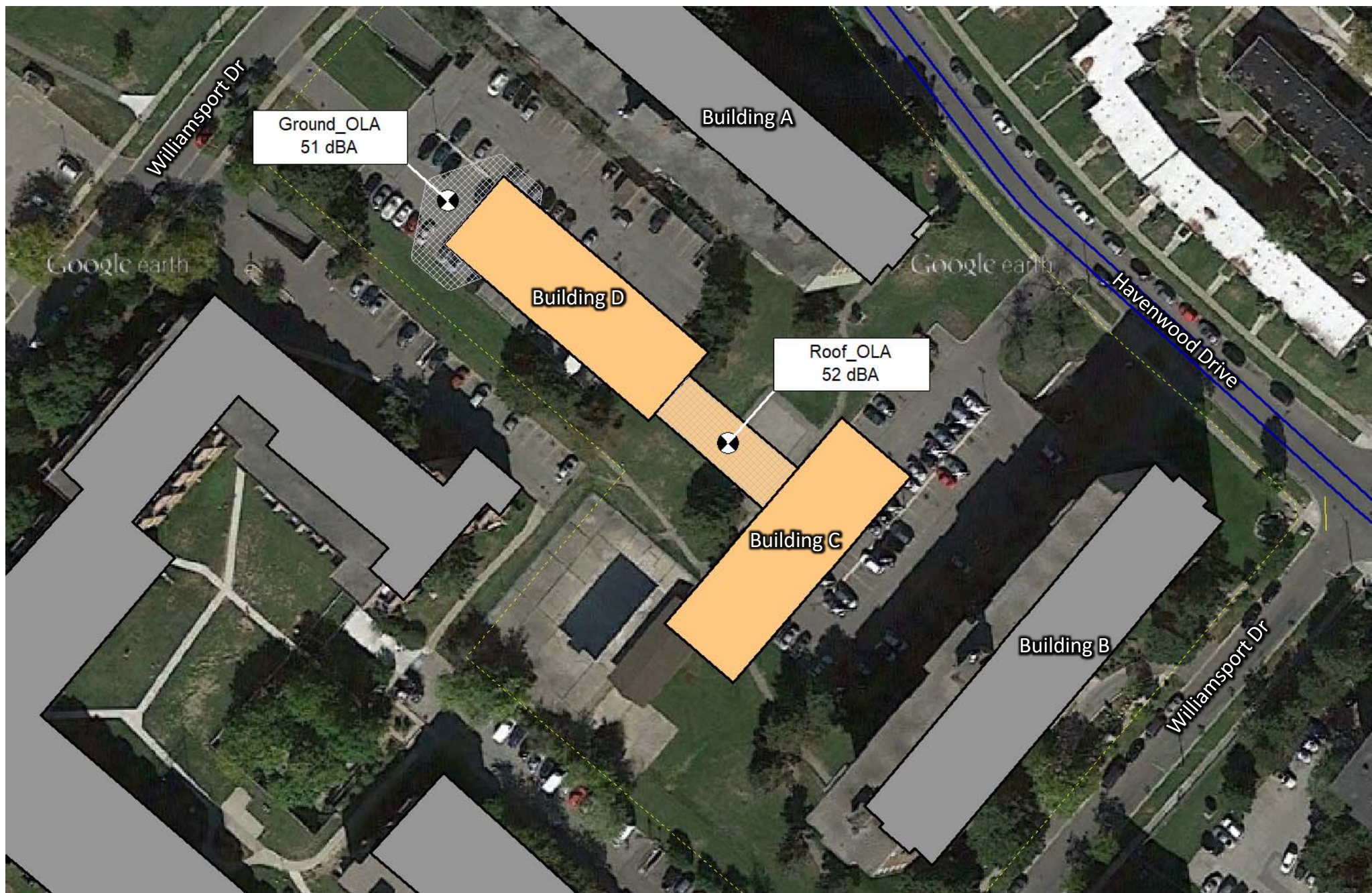


Figure No. 4  
**Modelled Road Noise Impacts – OLA**

1485 Williamsport Drive & 3480 Havenwood Drive  
 Mississauga, ON



True  
 North

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 File No.: 17-0260  
 Drawn By: MTL

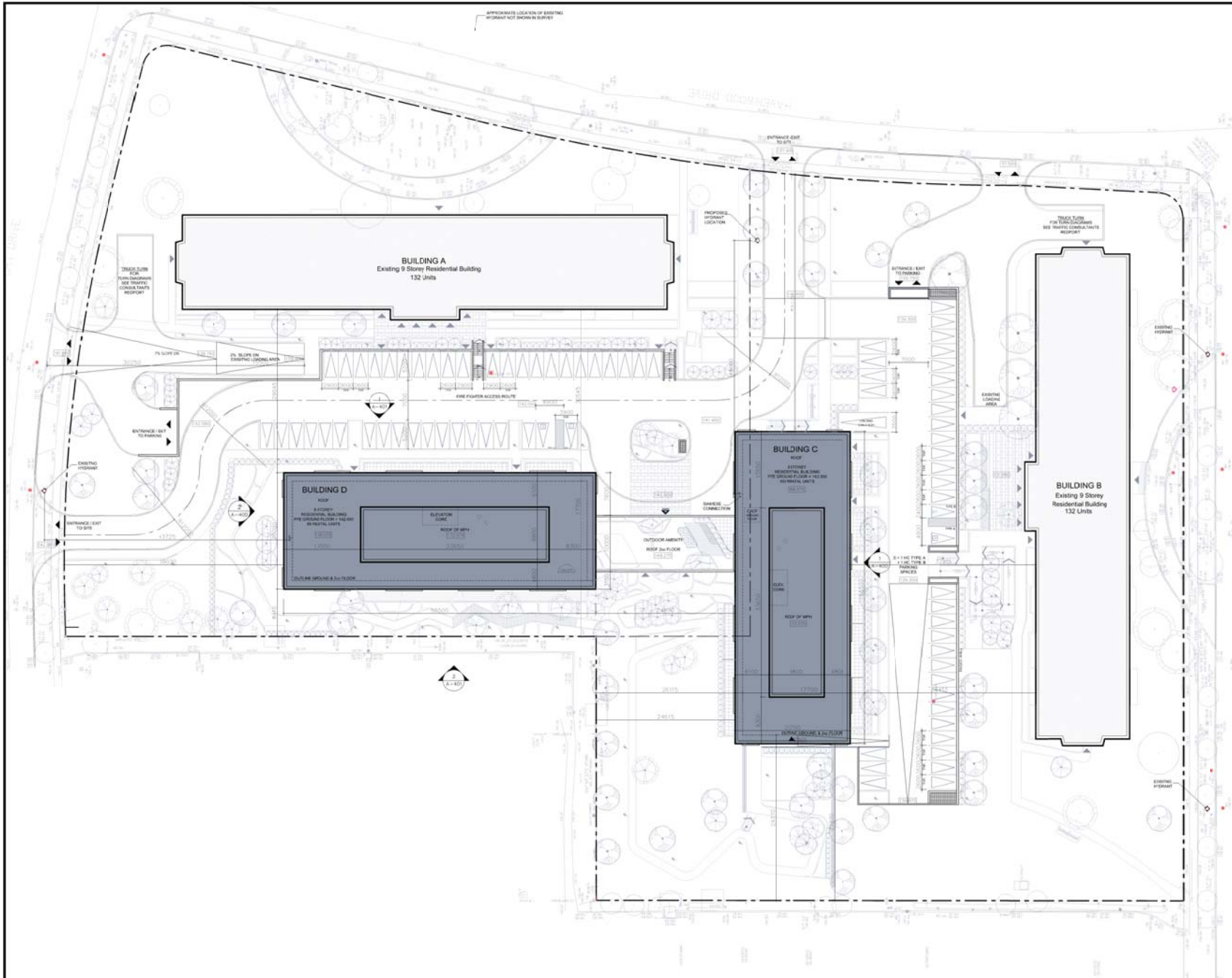
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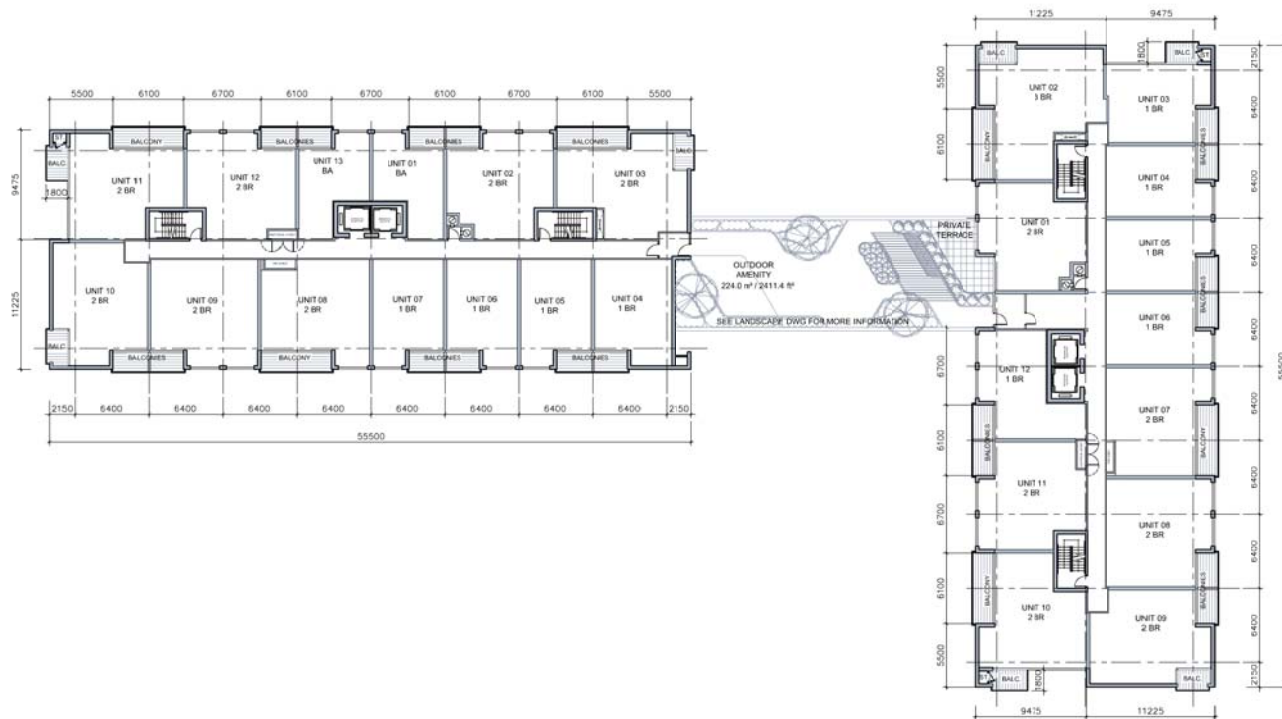
## **Appendix A**

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REVISION		DATE	DESCRIPTION
1	DATE	2019	ISSUED FOR ZONING BY-LAW REVIEW
GENERAL NOTES:			
1. THESE DRAWINGS ARE PREPARED BASED ON A PLAN OF TOPOGRAPHIC SURVEY OF BLOCK G REGISTERED PLAN 733, CITY OF MISSISSAUGA, AS PREPARED BY SCHAEFER OZOLYON BENNETT LTD ONTARIO LAND SURVEYORS, DATED MAY 18, 2014.			
BENCHMARK 688, CITY OF MISSISSAUGA = PUBLISHED ELEVATION OF 143.902 METRES			
2. DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND REPORTS			
• REFER TO TRAFFIC CONSULTANT'S DOCUMENTATION FOR TRAFFIC DIAGRAMS, TURNING RADI, TRAFFIC REPORT AND SITE ACCESS INFORMATION.			
• REFER TO LANDSCAPE ARCHITECT'S DRAWINGS FOR LANDSCAPE INFORMATION, GRADING AND OUTDOOR AMENITY SPACES.			
• REFER TO SITE SERVING/CIVIL ENGINEER'S DRAWINGS AND REPORTS FOR SITE SERVING AND UTILITY INFORMATION.			
• ALL LOADING AND UNLOADING MUST BE ACCOMMODATED ON SITE WITHIN THE LIMITS OF THE DESIGNATED LOADING SPACES.			
• ALL DRIVEWAYS AND PASSAGE WAYS TO THE BUILDING SPACES ARE TO BE CONSTRUCTED TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, INCLUDING ALLOWANCES FOR THE CITY OF MISSISSAUGA BULK LIFT VEHICLES.			
• NEW PROPOSED BUILDINGS TO BE FULLY SPRINKLERED.			
• EXISTING GARAGE STRUCTURE PARTIALLY TO REMAIN. AREA TO BE UPDATED TO CURRENT CBC 2012			
• ALL DRIVE ASILES TO COMPLY WITH CITY/BY-LAW STANDARDS			
COMBINED SITE AREA: 22,204.80m <sup>2</sup> 239,010.2ft <sup>2</sup> FFE GROUND FLOOR 142,550			
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DESIGNED BY	DATE	REVISED BY	DATE
	MARCH 2019		1-2019
PROJECT TITLE CONSTRUCTION OF TWO 8 STOREY RESIDENTIAL RENTAL BUILDINGS, 2 AND 1 LEVEL OF BELOW GRADE PARKING			
SHEET TITLE 3480 HAVENWOOD & 1485 WILLIAMSPORT MISSISSAUGA, ONTARIO ROOF/SITE PLAN			
PROJECT NO.	108887	ISSUED BY	A-002



NO.	DATE	REVISION
01	JUNE 18, 2018	ISSUED FOR ZONING BY-LAW REVIEW

- GENERAL NOTES:**
- THESE DRAWINGS ARE PREPARED BASED ON A PLAN OF TOPOGRAPHIC SURVEY OF BLOCK G REGISTERED PLAN 733, CITY OF MISSISSAUGA, AS PREPARED BY SCHAEFER OZALOVY BENNETT LTD ONTARIO LAND SURVEYORS, DATED MAY 18, 2016.
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    - EXISTING GARAGE STRUCTURE PARTIALLY TO REMAIN, AREA TO BE UPDATED TO CURRENT OBC 2012
    - ALL DRIVE ISLES TO COMPLY WITH CITY/BY-LAW STANDARDS

**B GROUP**  
 19 Floor 05 St. Clair Avenue West  
 Toronto, ON M6H 2Y7, Canada  
 tel 416 598 1930 fax 416 598 0644  
 bgroup.com

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DESIGNED BY	DRAWN BY	CHECKED BY	APPROVED BY

**PROJECT TITLE:**  
 CONSTRUCTION OF TWO 8 STOREY RESIDENTIAL RENTAL BUILDINGS, 2 AND 1 LEVEL OF BELOW GRADE PARKING

**SHEET TITLE:**  
 3480 HAVENWOOD & 1485 WILLIAMSFOOT  
 MISSISSAUGA, ONTARIO  
 3RD FLOOR PLAN



PROJECT NO.	SHEET NO.
108887	A-105



ISSUE	
NO	DATE
01	JUNE 2018
20180614-0000000000	

**GENERAL NOTES:**

- THESE DRAWINGS ARE PREPARED BASED ON A PLAN OF TOPOGRAPHIC SURVEY OF BLOCK G REGISTERED PLAN 733, CITY OF MISSISSAUGA, AS PREPARED BY SCHAEFER DEALDOV BENNETT LTD ONTARIO LAND SURVEYORS, DATED MAY 18, 2016.
- BENCHMARK 688, CITY OF MISSISSAUGA - PUBLISHED ELEVATION OF 143.902 METRES
- DRAWINGS ARE TO BE READ IN CONJUNCTION WITH ALL OTHER CONSULTANTS' DRAWINGS AND REPORTS:
  - REFER TO TRAFFIC CONSULTANTS' DOCUMENTATION FOR TRAFFIC DIAGRAMS, TURNING RADI, TRAFFIC REPORT AND SITE ACCESS INFORMATION.
  - REFER TO LANDSCAPE ARCHITECTS' DRAWINGS FOR LANDSCAPE INFORMATION, GRADING AND OUTDOOR AMENITY SPACES.
  - REFER TO SITE SERVICING/CIVIL ENGINEERS' DRAWINGS AND REPORTS FOR SITE SERVICING AND UTILITY INFORMATION.
  - ALL LOADING AND UNLOADING MUST BE ACCOMMODATED ON SITE WITHIN THE LIMITS OF THE DESIGNATED LOADING SPACES.
  - ALL DRIVEWAYS AND PASSAGEWAYS TO THE LOADING SPACES ARE TO BE CONSTRUCTED TO THE REQUIREMENTS OF THE ONTARIO BUILDING CODE, INCLUDING ALLOWANCES FOR THE CITY OF MISSISSAUGA BULK LIFT VEHICLES.
  - NEW PROPOSED BUILDINGS TO BE FULLY SPRINKLERED.
  - EXISTING GARAGE STRUCTURE PARTIALLY TO REMAIN, AREA TO BE UPDATED TO CURRENT OBC 2012
  - ALL DRIVE AISLES TO COMPLY WITH CITY/BY-LAW STANDARDS

**ISI GROUP**  
7th Floor-55 St. Clair Avenue West  
Toronto ON M4V 2T7, Canada  
tel 416 596 1930 fax 416 596 0644  
isi-group.com

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DESIGNED BY	DRAWN BY	CHECKED BY	DATE	SCALE	PROJECT TITLE
			MARCH 2018	AS SHOWN 1:200	CONSTRUCTION OF TWO 8 STOREY RESIDENTIAL RENTAL BUILDINGS, 2 AND 1 LEVEL OF BELOW GRADE PARKING

**SHEET TITLE**  
3480 HAVENWOOD & 1485 WILLIAMSPORT  
MISSISSAUGA, ONTARIO  
NORTH AND SOUTH ELEVATIONS

PROJECT NO.	SHEET NO.	SHEET TITLE
108887		A-400

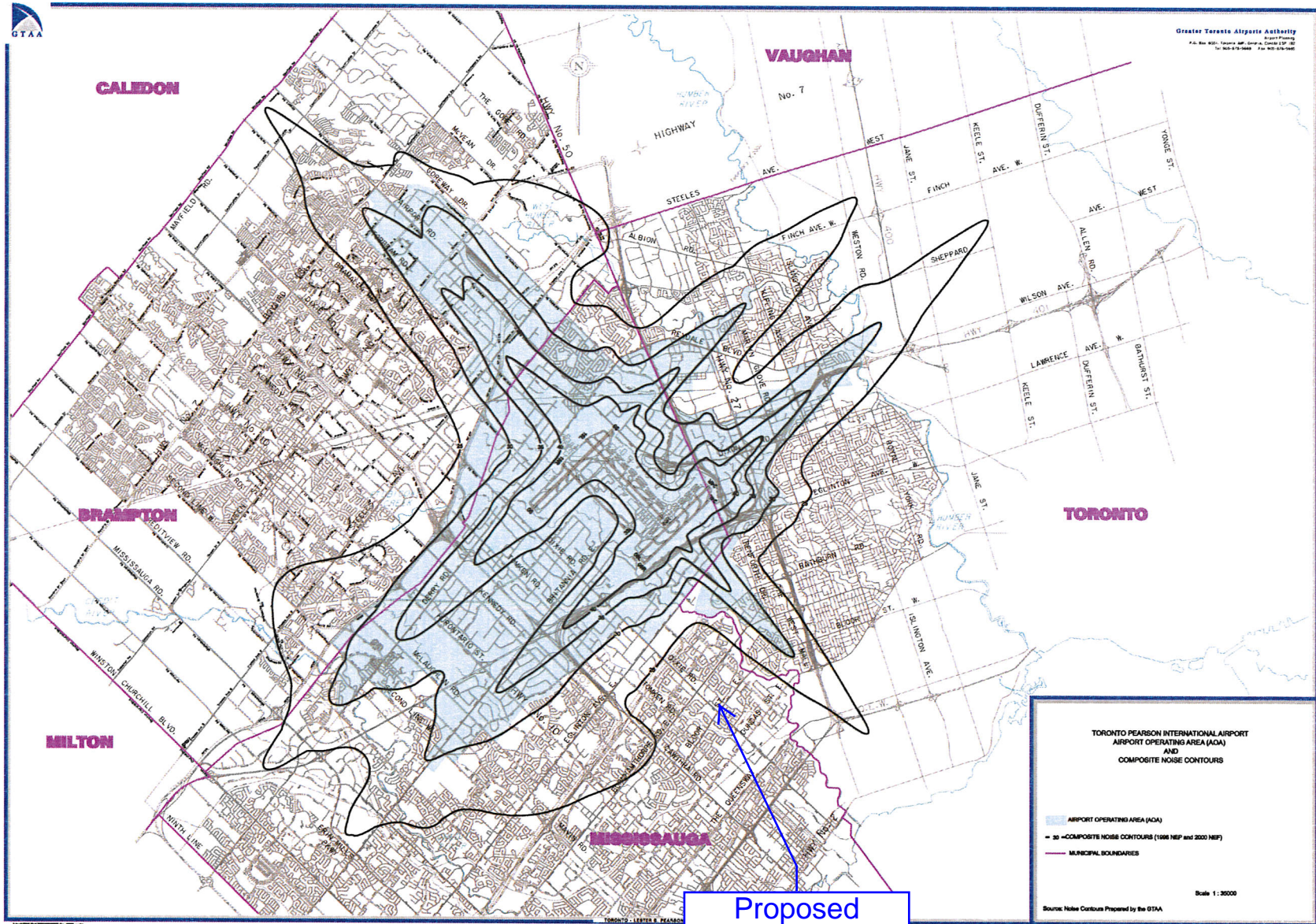


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## Appendix B

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for 2-sided printing purposes



#### Noise Exposure Forecast

Transport Canada has developed a Noise Exposure Forecast (NEF) model to calculate long-term noise exposure on forecasted flights, and the assessed level of noise annoyance in those areas. Contour lines are drawn on a map connecting points of equal noise impact representing 20, 30, 35 and 40 NEF. It is important to remember that the NEF contour does not measure decibel levels for individual flights, but is a cumulative noise value of overall forecasted flights, and noise annoyance.

#### Airport Operating Area

The GTAA has established the Toronto Pearson Airport Operating Area (AOA), which uses well-defined natural and manmade boundaries to approximate the 30 NEF contour on the ground. Surrounding municipalities have included this operating area in their Official Plans and have approved associated policies that limit incompatible land uses within these areas.

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## **Appendix C**

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Date: MARCH 9, 2018

## NOISE REPORT FOR PROPOSED DEVELOPMENT

### REQUESTED BY:

Name: Jafar Al-Khalaf

Company: Novus Environmental Inc



### PREPARED BY:

Name: Jacqueline Hunter

Tel#: 905-615-3200 x3016

### Location:

Bloor Street between Dixie Road and Etobicoke Creek

### Look Up ID#:

## ON SITE TRAFFIC DATA

Specific	Street Names				
	Bloor Street				
AADT:	24,493				
# of Lanes:	4 lanes				
% Trucks:	3% trucks				
Medium/Heavy Trucks Ratio:	55/45				
Day/Night Traffic Split:	90/10				
Posted Speed Limit:	50 km/h				
Gradient of Road:	<2%				
Ultimate R O W:	30m				

### Comments:

Ultimate Traffic Only

## ORNAMENT - Sound Power Emissions & Source Heights

Ontario Road Noise Analysis Method for Environment and Transportation

Road Segment ID	Roadway Name	Link Description	Speed (kph)	Period (h)	Auto	Med	Heavy	Road Gradient (%)	Cadna/A Ground Absorption G	PWL (dBA)	Source Height, s (m)
Dixie_avg_D	Dixie Road	Daytime Impacts	60	16	41458	980	851	0	0.00	87.2	1.2
Dixie_avg_N	Dixie Road	Night-Time Impacts	60	8	4606	109	95	0	0.00	80.7	1.2
Bloor_avg_D	Bloor St	Daytime Impacts	50	16	21382	364	298	0	0.00	81.7	1.1
Bloor_avg_N	Bloor St	Night-Time Impacts	50	8	2376	40	33	0	0.00	75.2	1.1
Havenwood_avg_D_up	Havenwood Dr (uphill)	Daytime Impacts	50	16	7144	80	66	3.2	0.00	76.7	1.0
Havenwood_avg_N_up	Havenwood Dr (uphill)	Night-Time Impacts	50	8	794	9	7	3.2	0.00	70.2	1.0
Havenwood_avg_D	Havenwood Dr	Daytime Impacts	50	16	7144	80	66	0	0.00	76.1	1.0
Havenwood_avg_N	Havenwood Dr	Night-Time Impacts	50	8	794	9	7	0	0.00	69.5	1.0