

# Environmental Noise & Vibration Assessment

**181 Burton Ave Residential Development,  
Barrie, ON**

**Monolite Holdings Inc.**

Prepared by:

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## 1.0 Introduction

SLR Consulting (Canada) Ltd., was retained by Monolite Holdings Inc. to conduct an Environmental Noise & Vibration Assessment for their proposed residential development, located at 181 Burton Street in Barrie, Ontario.

This report was completed as an update to the Environmental Noise Assessment, dated December 12, 2022, to account for the revised development design, current GO Train volume forecasts, and revised Layover Yard noise modelling based on Metrolinx correspondence.

### 1.1 Focus of Report

This report examines the potential for:

- Impacts of the environment on the proposed development;
- Impacts of the proposed development on the environment; and
- Impacts of the proposed development on itself.

Impacts of the environment on the development are due to transportation (roadway and railway) and stationary noise from the GO train layover yard and commercial buildings (car washes).

The development is not anticipated to include any significant mechanical equipment, such as emergency generator, parking garage fans, and/or cooling equipment (e.g. cooling towers). Therefore, an assessment of development mechanical equipment on the surroundings and itself are not considered necessary and was not completed.

### 1.2 Nature of the Subject Lands

The subject property, 181 Burton Ave (the “development”), is currently a vacant lot.

The proposed development consists of a single 4-storey residential building with at-grade parking. The west and east facades of the development is considered to be blank facades, with the exception of the stairway windows. Individual unit private balconies are located along the north and south facades of the development. The development also includes a rooftop common amenity space.

A copy of the development drawings are included in **Appendix A**.

### 1.3 Nature of the Surroundings

The surrounding lands include a combination of commercial and residential buildings. Adjacent to the development are several commercial buildings, including a self-serve carwash to the west on the north side of the Burton Avenue, and a roll-over car wash on the south-side. Residential neighbourhoods are located in all directions surrounding the development, intermixed with the commercial buildings. The GO Barrie Layover Yard is located approximately 115 m from the development building, beyond the residential homes to the north. Approximately 450 m to the west, is the Allandale GO station.

Surrounding roadways include Burton Avenue and Lakeshore Drive. To the north is the GO Transit Newmarket Subdivision and the Barrie-Collingwood Railway (BCRY) Meaford Subdivision.

The topography of the area is considered to be generally flat, with minor elevation changes in the immediate surrounding area and a gradual increase in elevation south of Burton Avenue.

A context plan can be found in **Figure 1**.

## 2.0 Transportation Noise Assessment

### 2.1 Transportation Noise Sources

The transportation sources that have the potential to produce substantial noise levels at the development are:

- Roadway noise from Burton Avenue and Lakeshore Road;
- GO train noise from the GO Transit Newmarket Subdivision; and
- Freight train noise from the BCRY Meaford Subdivision

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

### 2.2 Transportation Noise Criteria

#### Noise Sensitive Developments

The Ontario Ministry of the Environment, Conservation and Parks (MECP) Publication NPC-300 Environmental Noise Guideline provides sound level criteria for noise sensitive developments. NPC-300 has been adopted by the City of Toronto. The applicable portions of NPC-300 are Part C – Land Use Planning and the associated definitions outlined in Part A – Background. **Tables 1 to 5** below summarizes the applicable surface transportation (road and rail) criteria limits.

#### Location Specific Criteria

There are two main locations considered: applicable noise sensitive outdoor areas and indoor living areas. **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 rooms.

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

| Type of Space                                                                                                                                                                                                                                                                                                                                                                                                                                                                             | Time Period            | Equivalent Sound Exposure Level<br>- $L_{eq}$ (dBA) |                     | Assessment<br>Location  |
|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------|-----------------------------------------------------|---------------------|-------------------------|
|                                                                                                                                                                                                                                                                                                                                                                                                                                                                                           |                        | Road                                                | Rail <sup>[1]</sup> |                         |
| Outdoor Living Area (OLA)                                                                                                                                                                                                                                                                                                                                                                                                                                                                 | 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>  |
| <b>Notes:</b> [1] Whistle noise is excluded for OLA noise assessments, and included for Living / Dining Rooms and Sleeping Quarters.<br>[2] Road and rail sound levels are to be combined for assessment of OLA impacts.<br>[3] Residence area Dens, Hospitals, Nursing Homes, Schools, Daycares are also included. During the nighttime period, Schools and Daycares are excluded.<br>[4] An assessment of indoor sound levels is required only if the criteria in Table 4 are exceeded. |                        |                                                     |                     |                         |

Transportation noise in outdoor living areas determines noise barrier requirements, if applicable. Transportation noise in indoor living areas determines façade sound isolation and HVAC system requirements.

### Outdoor Living Areas or OLAs Requirements

NPC-300 guideline defines OLAs as areas that are intended and designed for the quiet enjoyment of the outdoor environment, and readily accessible from the building. OLAs may include:

- backyards, front yards, gardens, terraces or patios;
- balconies and elevated outdoor amenity spaces with a minimum depth of 4 m; or
- common outdoor amenity spaces associated with multi-unit buildings.

Only those meeting the above criteria are required to be assessed and mitigation measures defined as applicable. **Table 2** summarizes the noise mitigation requirements for the applicable OLAs.

**Table 2: MECP Publication NPC-300 Outdoor Living Area Mitigation Requirements & Warning Clause Requirements**

| Time Period                                                   | Energy Equivalent Sound Exposure Level - $L_{eq}$ (dBA) <sup>[1]</sup> | Ventilation Requirements                                                                                                                                                      |
|---------------------------------------------------------------|------------------------------------------------------------------------|-------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|
| Daytime<br>(0700-2300h)                                       | $\leq 55$                                                              | <ul style="list-style-type: none"> <li>• None</li> </ul>                                                                                                                      |
|                                                               | 56 to 60 incl.                                                         | <ul style="list-style-type: none"> <li>• Noise barrier <b>OR</b> Type A Warning Clause</li> </ul>                                                                             |
|                                                               | $> 60$                                                                 | <ul style="list-style-type: none"> <li>• Noise barrier to reduce noise to 55 dBA <b>OR</b></li> <li>• Noise barrier to reduce noise to 60 dBA and Warning Clause B</li> </ul> |
| <b>Notes:</b> [1] Rail whistle noise is excluded for the OLA. |                                                                        |                                                                                                                                                                               |

For the assessment of outdoor sound levels, the surface transportation noise impact is determined by combining road and rail traffic sound levels. Whistle noise due to railway trains is not included in the determination of outdoor sound levels.

### Plane of Window and Ventilation Requirements

**Table 3** summarizes requirements for ventilation where windows potentially would have to remain closed as a means of noise control. Despite implementation of ventilation measures where required, if sound exposure levels exceed the guideline limits in **Table 1**, warning clauses advising future occupants of the potential excesses are required. Rail authorities also have separate warning clauses to be included in these applications.

### Building Shell Requirements

**Table 4** provides sound level 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 1** indoor sound criteria are met.

**Table 3: MECP Publication NPC-300 Ventilation & Warning Clause Requirements**

| Assessment Location                                                                                                                            | Time Period             | Façade Energy Equivalent Sound Exposure Level - $L_{eq}$ (dBA) |                     | Ventilation and Warning Claus Requirements <sup>[2]</sup>                     |
|------------------------------------------------------------------------------------------------------------------------------------------------|-------------------------|----------------------------------------------------------------|---------------------|-------------------------------------------------------------------------------|
|                                                                                                                                                |                         | Road                                                           | Rail <sup>[1]</sup> |                                                                               |
| Plane of Window                                                                                                                                | Daytime (0700-2300h)    | ≤ 55                                                           |                     | None                                                                          |
|                                                                                                                                                |                         | 56 to 65 incl.                                                 |                     | Forced Air Heating /provision to add air conditioning + Type C Warning Clause |
|                                                                                                                                                |                         | > 65                                                           |                     | Central Air Conditioning + Type D Warning Clause                              |
|                                                                                                                                                | Nightttime (2300-0700h) | 51 to 60 incl.                                                 |                     | Forced Air Heating/ provision to add air conditioning + Type C Warning Clause |
|                                                                                                                                                |                         | > 60                                                           |                     | Central Air Conditioning + Type D Warning Clause                              |
| <b>Notes:</b> [1] Excluding whistle noise.<br>[2] Road and rail noise is combined for determining Ventilation and Warning Clause requirements. |                         |                                                                |                     |                                                                               |

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

| Assessment Location                                                                                                                                                                                                                                              | Time Period            | Façade 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                |                                                               |
| <b>Notes:</b> <div>[1] Including whistle noise.<br/>[2] Building component requirements are assessed separately for Road and Railway noise. The resultant sound isolation parameter is required to be combined to determine an overall acoustic parameter.</div> |                        |                                                                 |                     |                                                               |

## 2.3 Transportation Data

### 2.3.1 Roadway Traffic Data and Future Projections

Existing road traffic data for Burton Avenue and Lakeshore Drive was obtained from the City of Barrie, in the form of current Annual Average Daily Traffic (AADT) volumes, growth rate and heavy truck percentages. The commercial vehicles were split into medium trucks and heavy trucks based on SLR historical data for urban roadways.

The 2041 future traffic levels were determined based on the provided 3% annual growth rate. **Table 5** summarizes the road traffic data used in the analysis. A copy of the traffic count data is included in **Appendix B**.

**Table 5: Summary of Road Traffic Data Used in the Transportation Noise Analysis**

| Roadway Link   | Forecasted No. of Vehicles (AADT) | % Day/ Night Volume Split |           | Commercial Traffic Breakdown <sup>[1]</sup> |                | Maximum Speed (km/h) |
|----------------|-----------------------------------|---------------------------|-----------|---------------------------------------------|----------------|----------------------|
|                |                                   | Daytime                   | Nighttime | % Medium Trucks                             | % Heavy Trucks |                      |
| Burton Avenue  | 17,353                            | 90                        | 10        | 1.6                                         | 1.4            | 50                   |
| Lakeshore Road | 31,563                            | 90                        | 10        | 1.6                                         | 1.4            | 50                   |

**Notes:** [1] Commercial traffic breakdowns were assumed based on in-house data.

### 2.3.2 Rail Traffic Data and Future Projections

Freight rail traffic data was obtained for the BCRY, through the City of Barrie, as existing counts. Future GO train traffic was obtained directly from Metrolinx.

A default 2.5% per annum growth rate was applied to the current BCRY daily freight train volumes to project the 2037 future-year forecast. As GO Train traffic is provided as a future volume, additional growth was not applied to the Metrolinx data.

The rail traffic data used in the assessment is summarized in **Table 6**. Copies of the rail traffic data for modelling are provided in **Appendix B**.

**Table 6: Summary of Rail Traffic Data Used in the Transportation Noise Analysis**

| Train Type                           | Forecasted No. Of Trains |           | Maximum No. of Locomotives per Train (Power) | Maximum No. of Cars per Train (Consist) | Maximum Design Speed (km/h) |
|--------------------------------------|--------------------------|-----------|----------------------------------------------|-----------------------------------------|-----------------------------|
|                                      | Daytime                  | Nighttime |                                              |                                         |                             |
| Freight                              | 1                        | 0         | 1                                            | 8                                       | 16                          |
| Metrolinx/GO Diesel <sup>[2]</sup>   | 0                        | 0         | 1                                            | 12                                      | 48                          |
|                                      | 0                        | 0         | 2                                            | 12                                      | 48                          |
| Metrolinx/GO Electric <sup>[2]</sup> | 96                       | 36        | 1                                            | 12                                      | 48                          |
|                                      | 0                        | 0         | 2                                            | 12                                      | 48                          |

**Notes:** [1] Freight, Way Freight and VIA Passenger rail traffic volumes were forecasted for a 10-yr horizon based on a 2.5% per annum growth rate provided by CN.  
[2] Metrolinx/GO Transit rail traffic data was provided as forecasted data.

## 2.4 Noise Modelling Methodology

### 2.4.1 Roadway Modelling

Future transportation sound levels at the proposed development were predicted using Cadna/A, a commercially available sound propagation modelling software. Roadways were modelled as line sources of sound, with sound emission rates calculated respectively using ORNAMENT algorithms, the road traffic noise model of the MECP. These predictions were validated and are equivalent to those made using the MECP's ORNAMENT or STAMSON v5.04 road traffic noise models. A STAMSON validation file and output is included for reference in **Appendix C**.

## 2.4.2 Railway Modelling

Future rail traffic sound levels at the proposed development were predicted using the U.S. FTA/FRA rail traffic noise modelling algorithms included in the Cadna/A. The FRA reference sound levels were used for Freight diesel locomotives, with FTA reference sound levels applied for GO Train diesel locomotives. FTA reference sound levels were applied for all rail cars.

Based on information provided, BCRY trains sound horns at all railway crossings within the area. FTA reference sound levels were applied for Freight Horn noise. As a worst-case assessment of horn noise for the future single train/day, east bound trains were assessed at Essa Road and Burton Avenue/Young Street crossings.

GO Trains were observed to sound warning bells at the Minet's Point Road railway crossing. As the FTA/FRA reference sound levels are for warning horns and are not representative of the typical bells associated with the GO trains, an adjustment was applied. A -14 dBA adjustment was applied, based on the historical SLR sound data for a GO Train bell (approx. 96 dBA at 15 m).

The rail tracks are jointed rail throughout the study area, based on information provided by the City of Barrie, in which the FTA jointed track adjustment was applied in the modelling.

## 2.4.3 General

Sound levels were predicted along the façades of the proposed development using the "building evaluation" feature of Cadna/A. This feature allows for sound levels to be predicted across the entire façade of a structure. Facades without windows and/or noise sensitive spaces, were excluded from the analysis.

Ground absorption was assessed as reflective surfaces south of the development. As the lands to the north are primarily grassy lands, absorptive ground was applied to both the roadway and railway noise modelling.

The topography is considered to be generally flat between the development and transportation sources (roadways and railway), therefore detailed topography was not included in the noise modelling.

## 2.5 Façade Components

### 2.5.1 Façade Predicted Sound Levels

The worst-case predicted façade sound levels have been summarized for various floors of the development in **Table 7**. The overall combined road and rail sound levels are shown in **Figure 2 and 3** for without and with Whistles, respectively.

As the results in **Table 7** exceed the criteria outlined in **Table 4** for road and/or rail, an assessment of upgraded glazing construction is required for the North and South façades of the development.



**Table 7: Summary of Worst-Case Transportation Façade Sound Levels**

| Façade                                                                                                                                                                                                                                                        | Daytime (dBA) <sup>[1]</sup> |      |       |         |             |               | Nighttime (dBA) <sup>[1]</sup> |      |       |         |             |               |
|---------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|------------------------------|------|-------|---------|-------------|---------------|--------------------------------|------|-------|---------|-------------|---------------|
|                                                                                                                                                                                                                                                               | Road                         | Rail |       |         | Combined    |               | Road                           | Rail |       |         | Combined    |               |
|                                                                                                                                                                                                                                                               |                              | Loco | Wheel | Whistle | w/o Whistle | Incl. Whistle |                                | Loco | Wheel | Whistle | w/o Whistle | Incl. Whistle |
| North                                                                                                                                                                                                                                                         | 56                           | 60   | 54    | 45      | 59          | 63            | 50                             | 59   | 52    | 34      | 56          | 60            |
| East <sup>[2]</sup>                                                                                                                                                                                                                                           | -                            | -    | -     | -       | -           | -             | -                              | -    | -     | -       | -           | -             |
| South                                                                                                                                                                                                                                                         | 66                           | 51   | 45    | 50      | 67          | 67            | 60                             | 50   | 43    | 47      | 61          | 61            |
| West <sup>[2]</sup>                                                                                                                                                                                                                                           | -                            | -    | -     | -       | -           | -             | -                              | -    | -     | -       | -           | -             |
| Notes: “-” not applicable, where glazing is not included at this location<br>[1] Unless otherwise noted, day values are 16-hr Leq and night values are 8-hr Leq.<br>[2] East and West façade windows include only non-noise sensitive spaces (eg. stairwells) |                              |      |       |         |             |               |                                |      |       |         |             |               |

## 2.5.2 Façade Design Requirements

Indoor sound levels and required facade Sound Transmission Class (STC) were estimated using the procedures outlined in National Research Council Building Practice Note BPN-56.

Development floor plans (**Appendix A**) and window/patio door dimensions (provided by the architect) were applied in the detailed glazing analysis. Based on the analysis completed, upgraded glazing is required, as summarized in the following table.

**Table 8: Maximum Façade Composite STC Requirements**

| Unit                                                                                    | Space                         | Floor  | Façade (N,E,S,W) | Required Sound Transmission Class (STC) |                      |
|-----------------------------------------------------------------------------------------|-------------------------------|--------|------------------|-----------------------------------------|----------------------|
|                                                                                         |                               |        |                  | Wall                                    | Windows / Patio Door |
| 104, 204, 304, and 404                                                                  | Corner Bedroom <sup>[1]</sup> | 1 to 4 | NW               | 40                                      | 30                   |
| 104, 105, 204, 205, 304, 305, 404, 405                                                  | Bedroom with Sliding Door     | 1 to 4 | N                | 40                                      | 32                   |
| 106, 206, 306, 406                                                                      | Corner Bedroom <sup>[1]</sup> | 1 to 4 | NE               | 40                                      | 30                   |
| Notes: [1] No windows are located on the east or west walls for noise sensitive spaces. |                               |        |                  |                                         |                      |

Construction meeting the minimum Ontario Building Code (OBC) is considered sufficient for the remaining windows/patio doors of the development.

For glazing elements, the combined glazing and frame assembly must be designed to ensure the overall sound isolation performance for the entire window unit meets the sound isolation requirements. Windows/doors must be acoustically sealed where the frame meets the window/door sill. It is recommended window/door manufacturers test data be reviewed to confirm acoustical performance is met.

## 2.6 Outdoor Living Areas

Outdoor Living Areas for the development include the rooftop terrace and private balconies for each unit.

A solid rooftop parapet, with a height of 1.5 m, was applied in the noise modelling.

As the development includes a common amenity space for all occupants, the private terraces are not considered to be the only outdoor amenity space available. Therefore, an assessment of private terraces was excluded based on the definitions outlined in NPC-300.

The predicted OLA transportation noise impacts are shown in **Figure 4** and summarized in the following table.

**Table 9: Summary of Transportation Noise Impacts – OLAs**

| ID                                                                                                      | Location                       | Predicted Railway Sound Level <sup>[1]</sup><br>(L <sub>eq</sub> Day, dBA) |
|---------------------------------------------------------------------------------------------------------|--------------------------------|----------------------------------------------------------------------------|
| OLA                                                                                                     | Rooftop Common Amenity Terrace | 60                                                                         |
| <b>Notes:</b> [1] Sound levels up to 60 dBA are allowed with the use of a <b>Type A</b> Warning Clause. |                                |                                                                            |

As predicted sound levels are between 55 dBA and 60 dBA, physical noise mitigation measures are not required, providing a warning clause is included for the development.

## 2.7 Ventilation Design and Warning Clause Requirements

The requirements regarding warning clauses are summarized in **Table 3**. Where required, the warning clauses should be included in agreements registered on Title for the residential units and included in all agreements of purchase and sale or lease, and all rental agreements.

Based on the predicted façade noise levels shown in **Table 7**, mandatory central air conditioning and a **Type D** warning clause are required for all South facade units. A **Type C** warning clause and provision for future installation of air conditioning are required for all North façade units. A summary of the required warning clauses is included in **Appendix D**.

As all residential units are understood to include AC, the above conditions are considered to be met.

In addition to the above warning clauses from the MECP, a Metrolinx warning clause is also required for all units, as outlined in **Appendix D**.

## 3.0 Stationary Noise Assessment

A review has been conducted for the potential impacts on the development from “stationary” industrial/commercial noise sources.

A screening level review has been completed for the potential impacts on the development from existing “stationary” noise sources. SLR completed a site visit on July 8, 2022 to the development lands and surrounding area. The identified facilities with the potential to impact the development include the GO Barrie Layover Yard, a self-serve car-wash, and a gas station with a roll-over car wash. The locations of the above facilities are shown relative to the development site in **Figure 1**.

The following outlines the assessment of the layover yard and the Car Wash facilities.

### 3.1 Significant Stationary Noise Sources

#### 3.1.1 GO Barrie Layover Yard

The general operations within the GO Layover Yard were observed by SLR personnel during the July 2022 site visit. Idling was observed to occur between the hours of 4 am and 8:30 am, with up to two (2) trains idling within a given hour.

Adjacent trains (side-by-side) were not observed to idle within the same hour during the July 2022 site visit. Instead, trains located at the ends of the layover yard were observed to idle if two (2) trains were started within the same hour.

Based on Metrolinx Memo sent to the City of Barrie, Re: *Metrolinx responses re: 181 Burton Avenue Addendum Noise Study*, dated Feb 22, 2023, Metrolinx has identified that the Layover operations are in compliance with the applicable guideline limits at existing homes. This assessment was completed based on idling GO Train compliance at the existing residential homes located adjacent to the layover yard, along Cumberland Street.

Idling of two (2) trains within 1 hour of the day was included in this assessment. Train locations were modelled based on observed start-up sequence and worst-case impacts for the development. This included one (1) train on the closest track approximately mid-span of the yard and one (1) train located at the far east end of the yard. The modelled locomotive was placed, based on the locomotive pad observed in the available aerial photography.

The idling locomotives were modelled as point sources in CadnaA. As the rear section of the locomotive was observed to have the highest noise levels, modelling was completed based on noise originating from this portion of the locomotive.

GO Train idling was measured during the July 8, 2022 site visit by SLR personnel with a Larson Davis 824 Sound Level Meter, and applied in the noise modelling of the layover yard.

Noise source locations are shown in **Figure 5**. A summary of the sound power levels and modelling inputs are included in **Appendix E**.

#### 3.1.2 Self-Serve Car Wash

The self-serve car wash was identified to have seven (7) car wash bays, five (5) self-serve vacuums and two (2) “wash&vacuums” (interior shampoo and vacuum modes) by SLR personnel during the July 8, 2022 site visit. The significant noise from the car wash operation includes the high-pressure spray wash within the bays and the self-serve vacuums. Noise from the wash mode of the wash&vacuum was observed to include only a foaming wash head, which is insignificant for noise.

The car wash noise assessment was completed based on the prohibitions for a commercial car wash outlined in the *Barrie By-Law 2006-140 - As Amended - By-law to Prohibit and Regulate Noise* (Barrie Noise By-law 2006-140). The Prohibition by Time and Place (Schedule 1) restricts the audibility of a commercial car wash between the hours of 11 pm and 7 am the next day (9 am on Sundays) within residentially zoned areas. As residentially zoned areas are located on the adjacent lands to the north, and on the lands to the south on the opposite side of Burton Avenue, car wash noise was assessed for the periods between 7 am and 11 pm only. A copy of the by-law is included in **Appendix F**, including a zoning map excerpt.

For this assessment, all seven (7) bays were assumed to be in use continuously between 7 am and 11 pm (daytime and evening periods), including all vacuums.

SLR historical sound level data was applied for the high-pressure wash. Noise impacts were assessed based on approximately 1/3 of the wash time spent with the high-pressure wash, either for initial dirt removal or rinse. Washing with a brush is considered to be insignificant for noise.

Measured sound levels for the vacuum and “wash&vacuum” system were applied in the noise modelling. Vacuum and wash&vacuum noise was modelled based on a 45 min per hour of vacuum use per unit, where the remainder of time would be switch-out of cars in line to use the vacuums. This assumes only the vacuum option is used for the “wash&vacuum”, where the foaming wash head features makes no audible noise.

Based on site observations by SLR personnel, the vacuum and “wash&vacuum” were found to be not tonal within the area surrounding the car wash facility. Therefore, no penalties were applied in the modelling.

Noise source locations are shown in **Figure 5**. A summary of the sound power levels and modelling inputs are included in **Appendix E**.

### **3.1.3 Gas Station and Roll-Over Car Wash**

A new gas station & car wash are in operation and located on the south side of Burton Avenue, west of the development. The car wash was identified to be a touchless roll-over car wash, in which one (1) car is cleaned at a time. During cleaning, the entry and exit doors were observed to remain closed. The significant noise includes the undercarriage spray at entry, dryer fan noise upon exiting, and a queue of idling cars. Noise from the pressure wash cycle with closed doors is considered to be insignificant and was not included in the assessment.

A full cycle to wash one (1) car was observed to be approximately 5 min in duration, allowing for twelve (12) cars to be washed in an hour.

As per the self-serve car wash, the car wash was assessed with limited operations between 7 am and 11 pm, as per the Barrie Noise By-law 2006-140 prohibition for commercial car washes.

For this assessment, the car wash was assumed to be in continuous operation from 7 am and 11 pm (daytime and evening periods), washing 12 cars/hour. In addition, an HVAC unit was included in the assessment of the gas station/convenience store.

The car wash exit fan and undercarriage spray noise was measured during the July 8, 2022 site visit by SLR personnel. The durations of these sources were observed to be shorter than usual, likely applied to limit noise at the existing residential areas surrounding the car wash. An approximate duration of 5 sec was observed for the undercarriage spray for a single car entering the car-wash. The dryer fan exit cycle is approximately 50 seconds per car, and observed to be non-tonal in the plane of the car wash exit.

In the absence of aerial photography for the gas station building rooftop, a single HVAC was assumed to be installed. Historical sound level data for an HVAC unit was applied for the store rooftop unit, in which a 50% duty cycle was applied during the night-time period.

Noise source locations are shown in **Figure 5**. A summary of the sound power levels and modelling inputs are included in **Appendix E**.

## 3.2 Stationary Source Noise Criteria

MECP noise guidelines for stationary source noise impacting residential, and certain institutional and commercial developments, are given in MECP publication NPC-300. The applicable portions of NPC-300 are Part C – Land Use Planning and the associated definitions outlined in Part A – Background.

### 3.2.1 GO Layover Yard

NPC-300 outlines specific criteria for layover sites that are utilized for dedicated overnight storage and idling of commuter trains.

The sound level limit for noise from a layover site in any hour, expressed in terms 1-hr equivalent sound level  $L_{eq}$  (1 h), is the higher of either 55 dBA or the background sound level. This criteria is applicable for both daytime and night-time periods, and is applied to OLAs and plane-of-window receptor locations.

As the ambient sound levels along the north side of the development (facing the layover yard) are not anticipated to have increased ambient sound levels, the default 55 dBA sound level limits were applied for the development during all hours of the day in the assessment.

### 3.2.2 Surrounding Commercial Facilities

The acoustic environment surrounding the proposed development includes roadway noise during all periods of the day, based on observations by SLR personnel. Therefore, the proposed development is considered to be located in a Class 1 area.

The sound level limit for steady sound sources are expressed as a 1-hr equivalent sound level (1-hr  $L_{eq}$ ), and is the higher of the NPC-300 exclusionary limits and the existing background sound level. The NPC-300 stationary source noise requirements in a Class 1 Area are summarized in **Table 10** for steady sound sources. The applicable noise limits at a point of reception are the higher of the existing ambient sound level due to road and rail traffic, if applicable, or the exclusion limits set out in the guideline.

**Table 10: Exclusion Limits for Non-Impulsive Sound ( $L_{eq}$  (1-hr), dBA)**

| Time of Day                                                                                                   | Class 1 Area Exclusion Limit               |                             |
|---------------------------------------------------------------------------------------------------------------|--------------------------------------------|-----------------------------|
|                                                                                                               | Plane of Windows of Noise Sensitive Spaces | Outdoor Points of Reception |
| 7am to 7 pm                                                                                                   | 50                                         | 50                          |
| 7 pm to 11 pm                                                                                                 | 50                                         | 50                          |
| 11 pm to 7 am                                                                                                 | 45                                         | n/a                         |
| <b>Notes:</b> n/a Not Applicable. Outdoor points of reception are not considered during the overnight period. |                                            |                             |

As an assessment and/or measurement of the surrounding roadway/railway noise was not completed, the exclusionary limits were applied in the assessment. This is considered to be conservative, as roadway noise levels are expected to exceed the guideline limits during various periods of the day along the south side of the development (facing Burton Avenue).

### 3.3 Stationary Noise Modelling

An environmental noise assessment was conducted to investigate the potential for impacts on the proposed development. Stationary source impact modelling was performed using Cadna/A, a computerized implementation of the ISO 9613-2 noise propagation algorithms. As described in ISO 9613-2, the equations take into account:

- Source to receiver geometry;
- Distance attenuation;
- Atmospheric absorption;
- Reflections off the ground and ground absorption -  $G=1.0$  (absorptive) as default global parameter, specific absorptive areas such as grass fields defined as  $G=0.0$  (reflective);
- Reflections off vertical walls (Order of Reflection of 1);
- Screening effects of buildings, terrain, and applicable screens; and
- Downwind propagation.

Sound levels were predicted along the façades of the proposed development using the “building evaluation” feature of Cadna/A. This feature allows for sound levels to be predicted across the entire façade of a structure. As the west façade does not include windows for noise-sensitive rooms, an assessment along this portion of the development was not completed.

### 3.4 Facade Sound Levels

#### 3.4.1 Layover Yard

A summary of the predicted noise impacts from the GO Layover Yard on each façade are shown in Figure 6 and summarized in the following table.

**Table 11: Summary of Predicted Stationary Source Sound Levels – Layover Yard**

| Facade                                                                                                                                                                                                                                                       | Steady-State Sound Levels<br>$L_{eq}$ (1-hr), (dBA) <sup>[1]</sup> |                       | Applicable Guideline Limit<br>$L_{eq}$ (1-hr), (dBA) <sup>[2]</sup> |                       | Meets<br>Guideline<br>Limits? |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------|-----------------------|---------------------------------------------------------------------|-----------------------|-------------------------------|
|                                                                                                                                                                                                                                                              | Day-Evening<br>(07:00-23:00)                                       | Night<br>(23:00-7:00) | Day-Evening<br>(07:00-23:00)                                        | Night<br>(23:00-7:00) |                               |
| North                                                                                                                                                                                                                                                        | 53                                                                 | 53                    | 55                                                                  | 55                    | Yes                           |
| East <sup>[3]</sup>                                                                                                                                                                                                                                          | -                                                                  | -                     | -                                                                   | -                     | -                             |
| South                                                                                                                                                                                                                                                        | 40                                                                 | 40                    | 55                                                                  | 55                    | Yes                           |
| West <sup>[3]</sup>                                                                                                                                                                                                                                          | -                                                                  | -                     | -                                                                   | -                     | -                             |
| <b>Notes:</b> [1] Sound level represents the maximum level on the façade.<br>[2] The NPC-300 guideline limits for layover yards were applied in the assessment.<br>[3] East and West façade windows include only non-noise sensitive spaces (eg. stairwells) |                                                                    |                       |                                                                     |                       |                               |

As shown above, the sound levels at the proposed development are predicted to meet the applicable Layover Yard guideline limits. No additional noise controls are required to address the layover yard noise for the development.

### 3.4.2 Commercial Facilities

Sound levels from the surrounding commercial facilities were predicted on each façade as shown in **Figure 7** and summarized in the following table.

**Table 12: Summary of Predicted Stationary Source Sound Levels – Commercial Facilities**

| Façade                                                                                                                                                                         | Steady-State Sound Levels<br>$L_{eq}$ (1-hr), (dBA) |                       | Applicable Guideline Limit<br>$L_{eq}$ (1-hr), (dBA) <sup>[1]</sup> |                       | Meets<br>Guideline<br>Limits? |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|-----------------------------------------------------|-----------------------|---------------------------------------------------------------------|-----------------------|-------------------------------|
|                                                                                                                                                                                | Day-Evening<br>(07:00-23:00)                        | Night<br>(23:00-7:00) | Day-Evening<br>(07:00-23:00)                                        | Night<br>(23:00-7:00) |                               |
| North                                                                                                                                                                          | 50                                                  | 22                    | 50                                                                  | 45                    | Yes                           |
| East <sup>[2]</sup>                                                                                                                                                            | -                                                   | -                     | -                                                                   | -                     | -                             |
| South                                                                                                                                                                          | 50                                                  | 37                    | 50                                                                  | 45                    | Yes                           |
| West <sup>[2]</sup>                                                                                                                                                            | -                                                   | -                     | -                                                                   | -                     | -                             |
| <b>Notes:</b> [1] The exclusionary Class 1 limits were applied in the assessment.<br>[2] East and West façade windows include only non-noise sensitive spaces (eg. stairwells) |                                                     |                       |                                                                     |                       |                               |

The predicted sound levels at the proposed development are predicted to meet the applicable guideline limits for the surrounding commercial operations. No additional noise control measures are required for the stationary noise sources in the surrounding area.

## 3.5 Outdoor Amenity Areas

### 3.5.1 Layover Yard

Noise impacts within the rooftop common amenity space are predicted to be 47 dBA from the layover yard, as shown in **Figure 8**, which is below the applicable 55 dBA guideline limit. Therefore, no additional noise controls are required to address the GO Layover Yard.

### 3.5.2 Commercial Facilities

Commercial Noise impacts within the rooftop common amenity space are predicted to be 44 dBA as shown in **Figure 9**, which is below the 50 dBA guideline limit. Therefore, no additional noise controls are required for the surrounding stationary noise sources to address noise within the rooftop amenity area.

## 3.6 Ventilation Design and Warning Clause Requirements

As the GO Layover Yard and car wash noise are expected to be audible at the development, and MECP **Type E** warning clause is recommended for all units, as outlined in **Appendix D**.

## 4.0 Vibration Assessment

A review of the surrounding area was completed on July 8, 2022 by SLR personnel. Based on our review, no significant industrial vibration sources, such as automotive parts heavy metal stamping, were identified within the surrounding area. In addition, the GO Transit Newmarket Subdivision and the BCRY Meaford Subdivision are located approximately 100 m from the development building. Based on the above, industrial and rail vibration are not a concern for the development and a detailed assessment was not completed.

## 5.0 Conclusions and Recommendations

The potential for noise impacts on the proposed 181 Burton Avenue development have been assessed.

As the development does not include significant stationary noise sources such as an emergency generator, underground parking exhaust fans/vents or a cooling tower, an assessment of impacts of the development on itself and on the surrounding area is not considered necessary and was not completed.

Based on the results of this assessment, our conclusions and recommendations are summarized herein regarding impacts from the surroundings.

### 5.1 Transportation Noise

- An assessment of transportation noise impacts has been completed and outlined in **Section 2.0** of this report.
- Based on transportation façade sound levels upgraded glazing is required for the north façade bedrooms, as outlined in **Section 2.5.1**.
- Noise impacts within the rooftop common outdoor amenity area, outlined in **Section 2.6**, are predicted to meet the NPC-300 guideline limits with the 1.5 m solid parapet.
- Mandatory central air conditioning and a **Type D** warning clause are required for all South façade units. A **Type C** warning clause and provision for future installation of air conditioning are required for all North and east façade units. As all units are understood to include AC, these requirements are considered to be met.
- A Metrolinx warning clause is required for all units.
- As required by NPC-300, the noise warning clauses should be included in documents registered on Title for the residential units and also included in Agreements of Purchase and Sale or Lease. Required warning clauses are summarized in **Appendix D**.

### 5.2 Stationary Noise

- “Stationary” noise from the surrounding industries have been assessed, as outlined in **Section 3.0** of this report.
- Stationary noise levels from the GO Barrie Layover Yard are predicted to meet the NPC-300 Layover Yard guideline limits, as outlined in **Sections 3.4.1 and 3.5.1** for facades and outdoor amenity areas, respectively.



- Commercial building stationary noise impacts are predicted to meet the NPC-300 Class 1 area limits without additional noise control measures, as outlined in **Sections 3.4.2 and 3.5.2** for facades and outdoor amenity areas, respectively. Additional noise mitigation measures are not required for the surrounding commercial buildings.
- A **Type E** noise warning clause is recommended for all units, as outlined in **Appendix D**.

### 5.3 Vibration

- Industrial vibration is not a concern for the development, as no significant vibration sources were identified in the area.
- Rail vibration is not a concern for the development, given the separation distance between the development building and the rail line.

### 5.4 Overall Assessment

- Impacts of the environment on the proposed development can be adequately controlled with upgrades to the façade construction, ventilation requirements, warning clauses, without additional noise controls for surrounding stationary noise, and without mitigation measures for vibration sources, as detailed in this report.

Sincerely,

SLR Consulting (Canada) Ltd.



Marcus Li, P.Eng.

Principal – Acoustics Engineer

Distribution:           1 electronic copy – Monolite Holdings Inc.  
                              1 electronic copy – SLR Consulting (Canada) Ltd.

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## 7.0 References

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# Figures

## **Environmental Noise & Vibration Assessment**

**181 Burton Ave Residential Development, Barrie, ON**

**Monolite Holdings Inc.**

SLR Project No. 241.30599.00000

March 3, 2023



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for 2-sided printing purposes





**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

CONTEXT PLAN

True North



Scale: 1:7,500

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

METRES

Figure No.

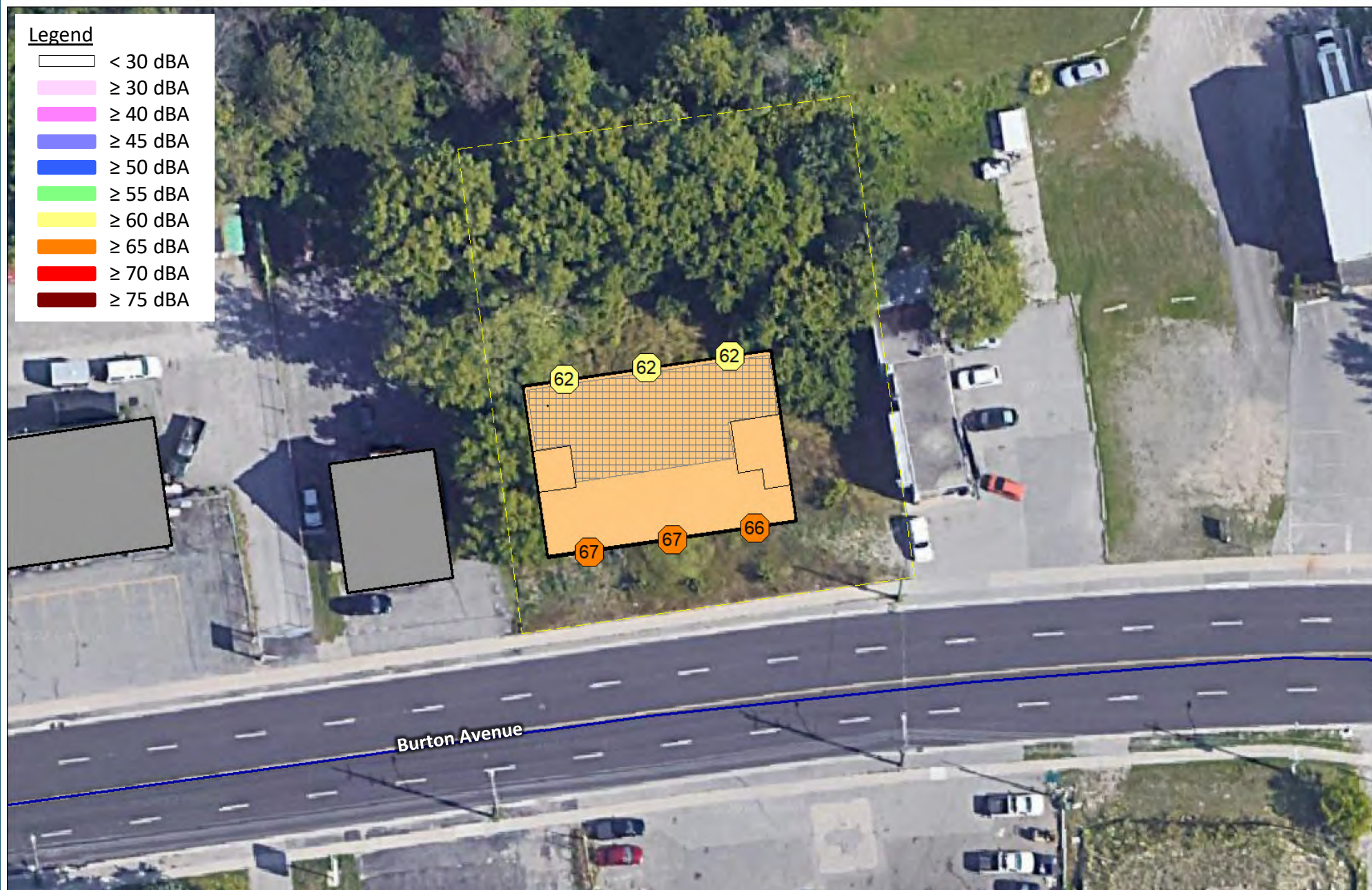
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**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED FAÇADE SOUND LEVELS – ROAD+RAIL  
DAYTIME

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

Figure No.

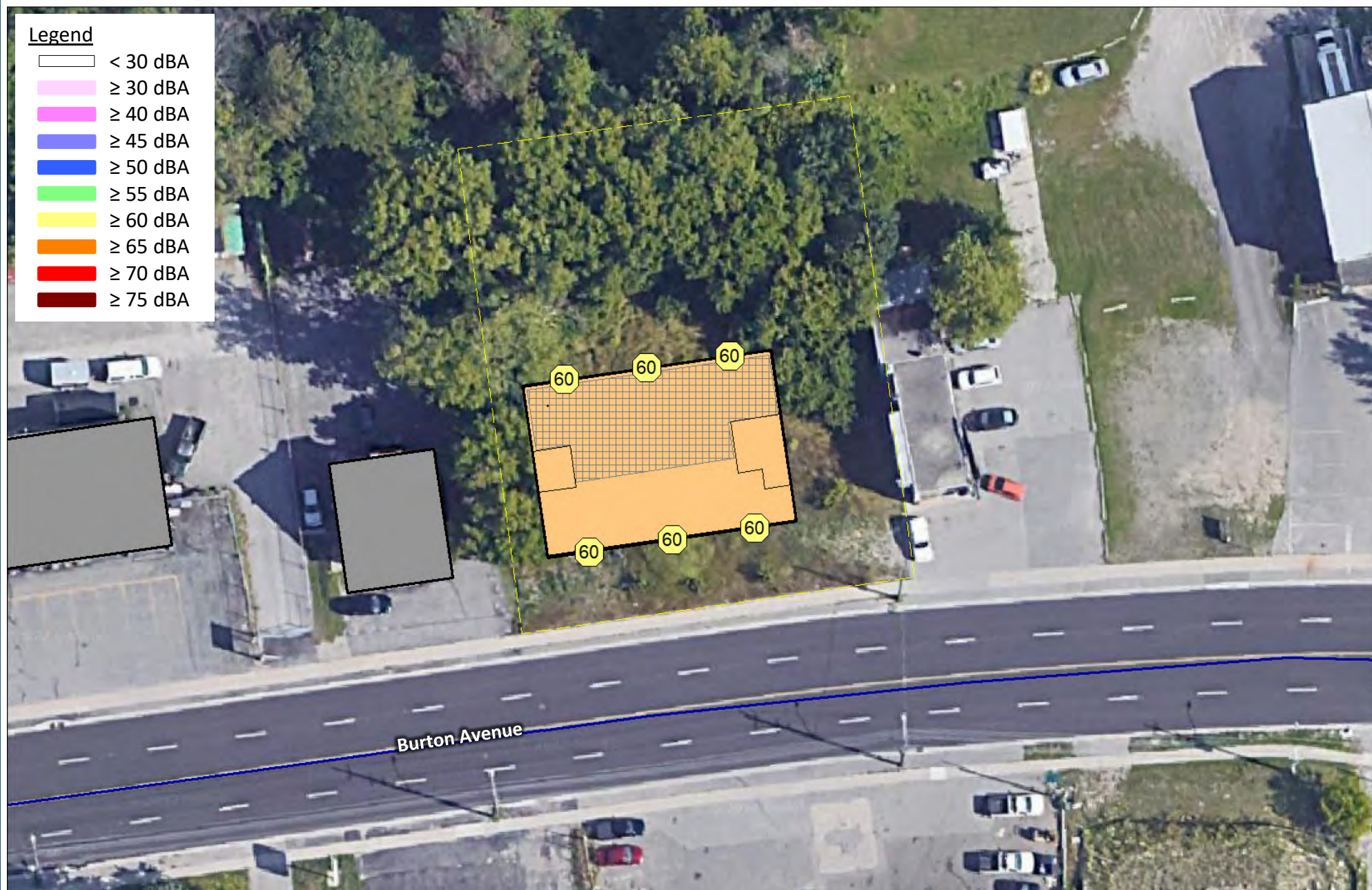
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**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED FAÇADE SOUND LEVELS – ROAD+RAIL  
NIGHTTIME

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

Figure No.

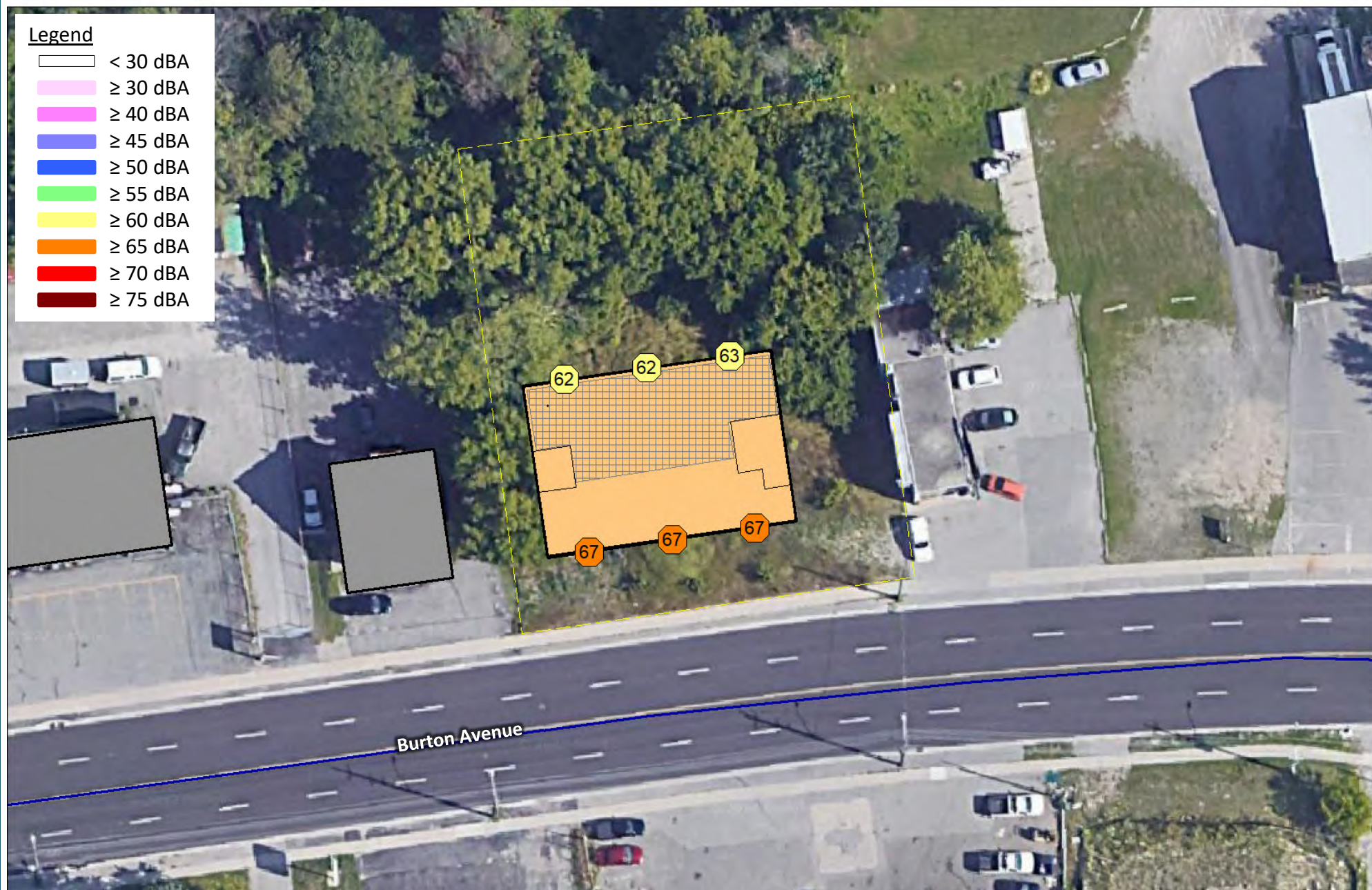
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MONOLITE HOLDINGS INC.

181 BURTON AVENUE

PREDICTED FAÇADE SOUND LEVELS – ROAD+RAIL+WHISTLE  
DAYTIME

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

Figure No.

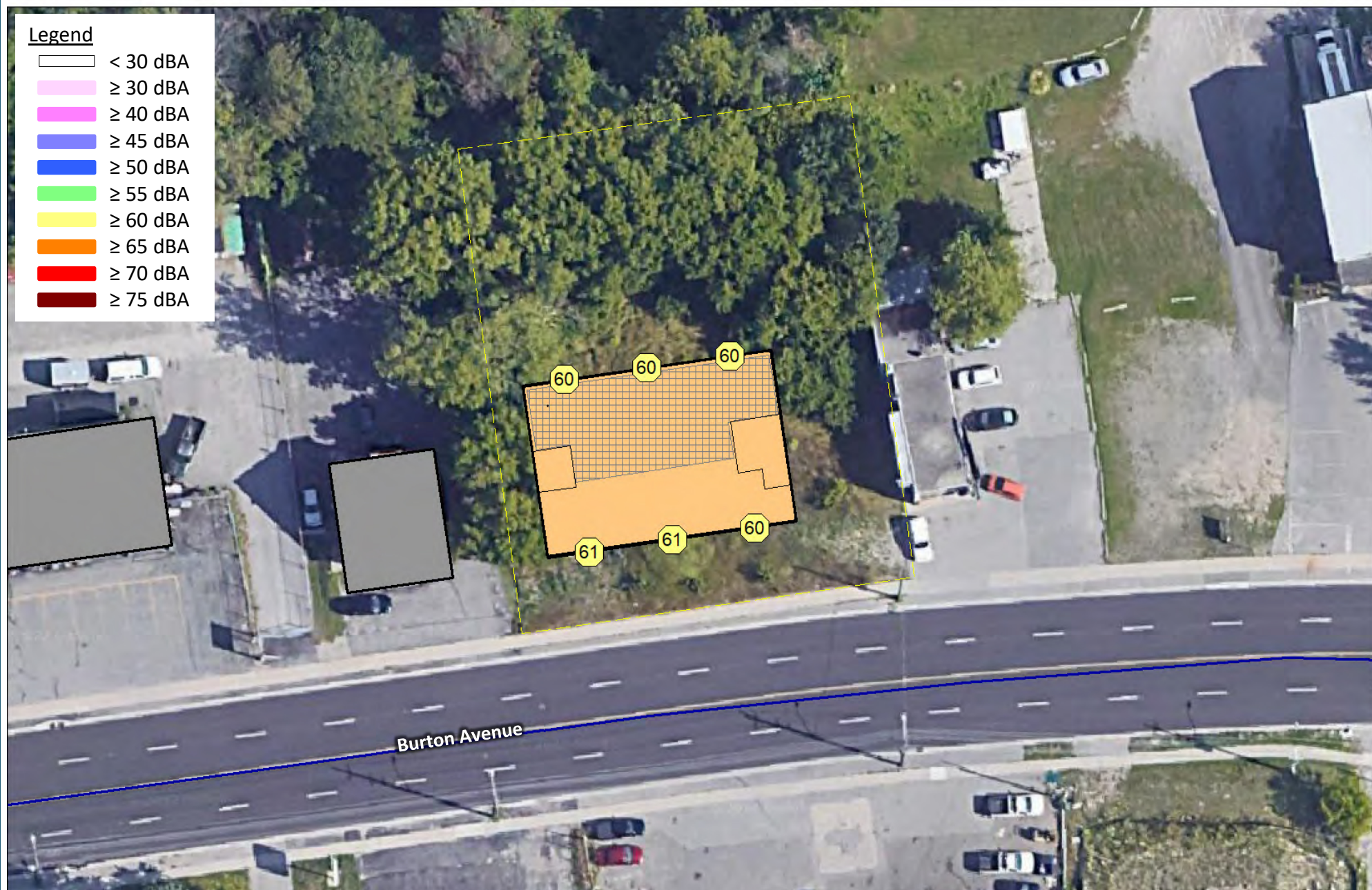
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|  | ≥ 75 dBA |



**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED FAÇADE SOUND LEVELS – ROAD+RAIL+WHISTLE  
NIGHTTIME

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

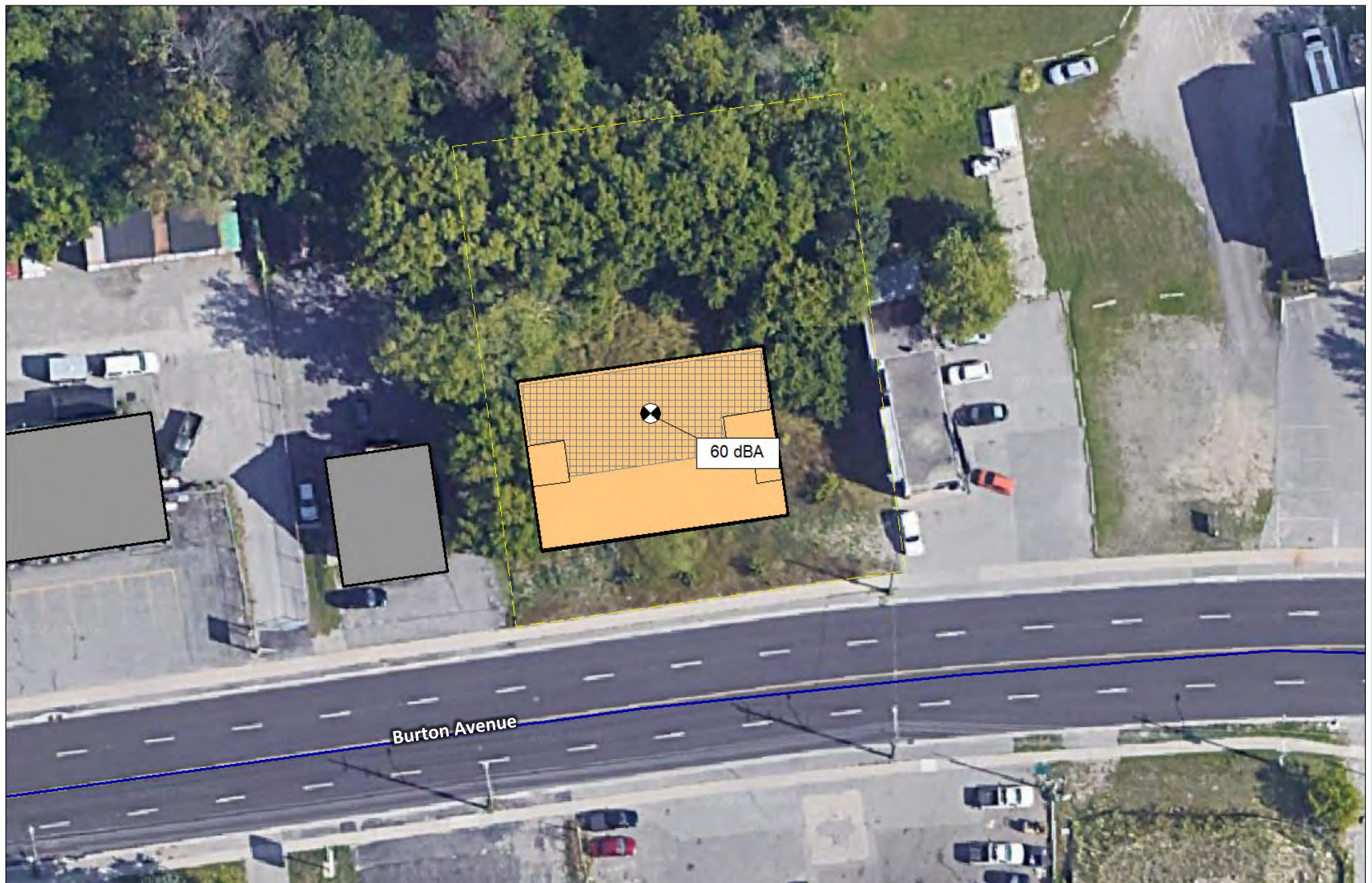
Project No. 241.30599.00000

Figure No.

**3b**







**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED OUTDOOR AMENITY AREA SOUND LEVELS – ROAD+RAIL

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

Figure No.

**4**





## Legend

- + Noise Source (point)
- Acoustic Barrier

GO Barrie Extension  
Acoustic Barrier  
(refer App E)

GO Barrie Layover Yard  
• 2 x idling locomotives

Self-Serve Car Wash  
• 7 x car wash bays  
• 5 x vacuums  
• 2x "wash\*&vacuum"

Gas Station & Car Wash  
• Roll-Over Car Wash  
• 4 x idling cars in queue  
• 1 x Rooftop HVAC

Lakeshore Road

GO Newmarket Subdivision

Burton Avenue

Yonge Street

BCRY Meaford Subdivision

**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

SURROUNDING STATIONARY SOURCE LOCATIONS

True North



Scale: 1:5,000

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

METRES

Figure No.

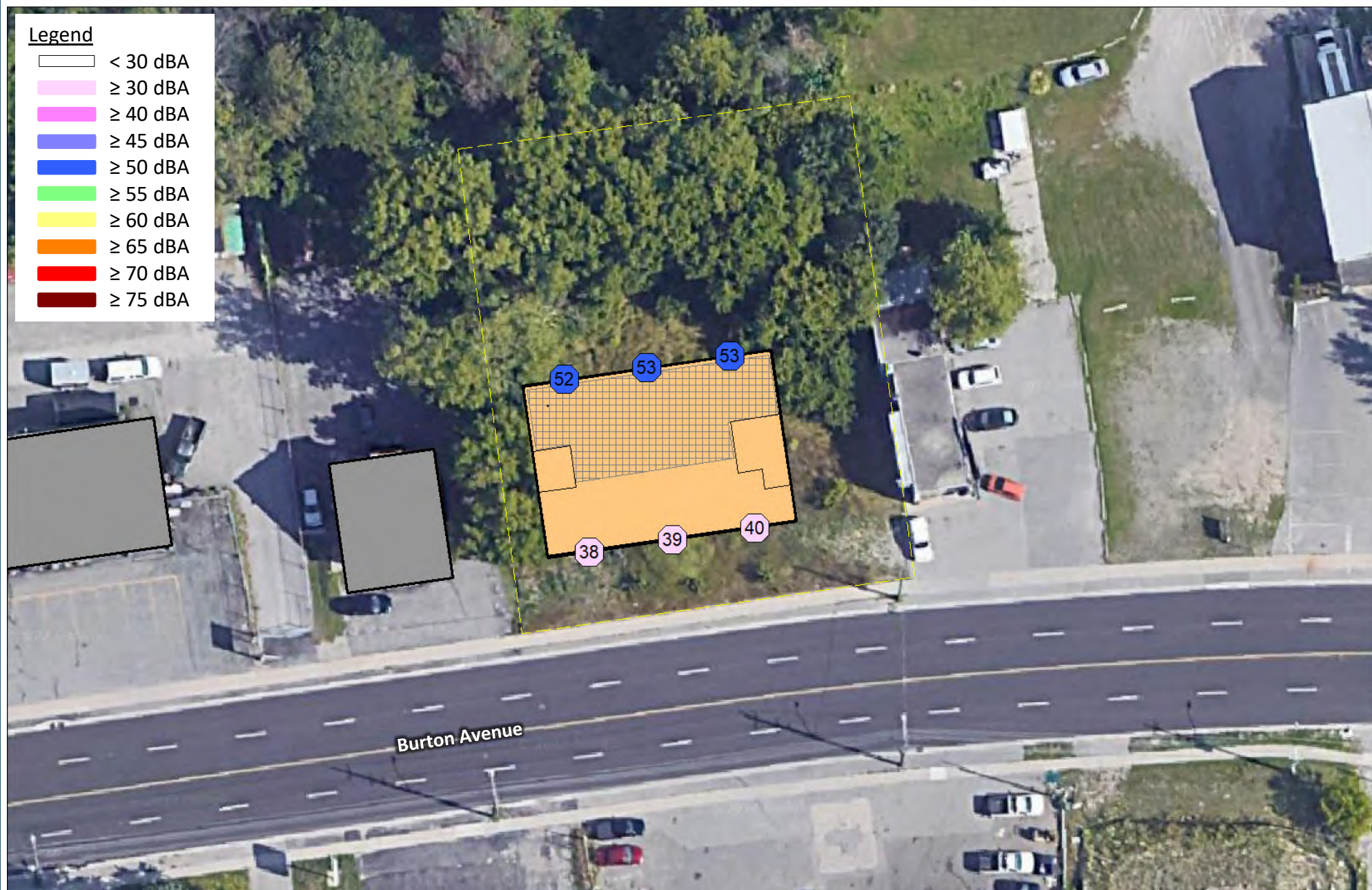
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|  | ≥ 70 dBA |
|  | ≥ 75 dBA |



**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED FAÇADE SOUND LEVELS – LAYOVER YARD  
DAYTIME/EVENING/NIGHTTIME

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

Figure No.

Project No. 241.30599.00000

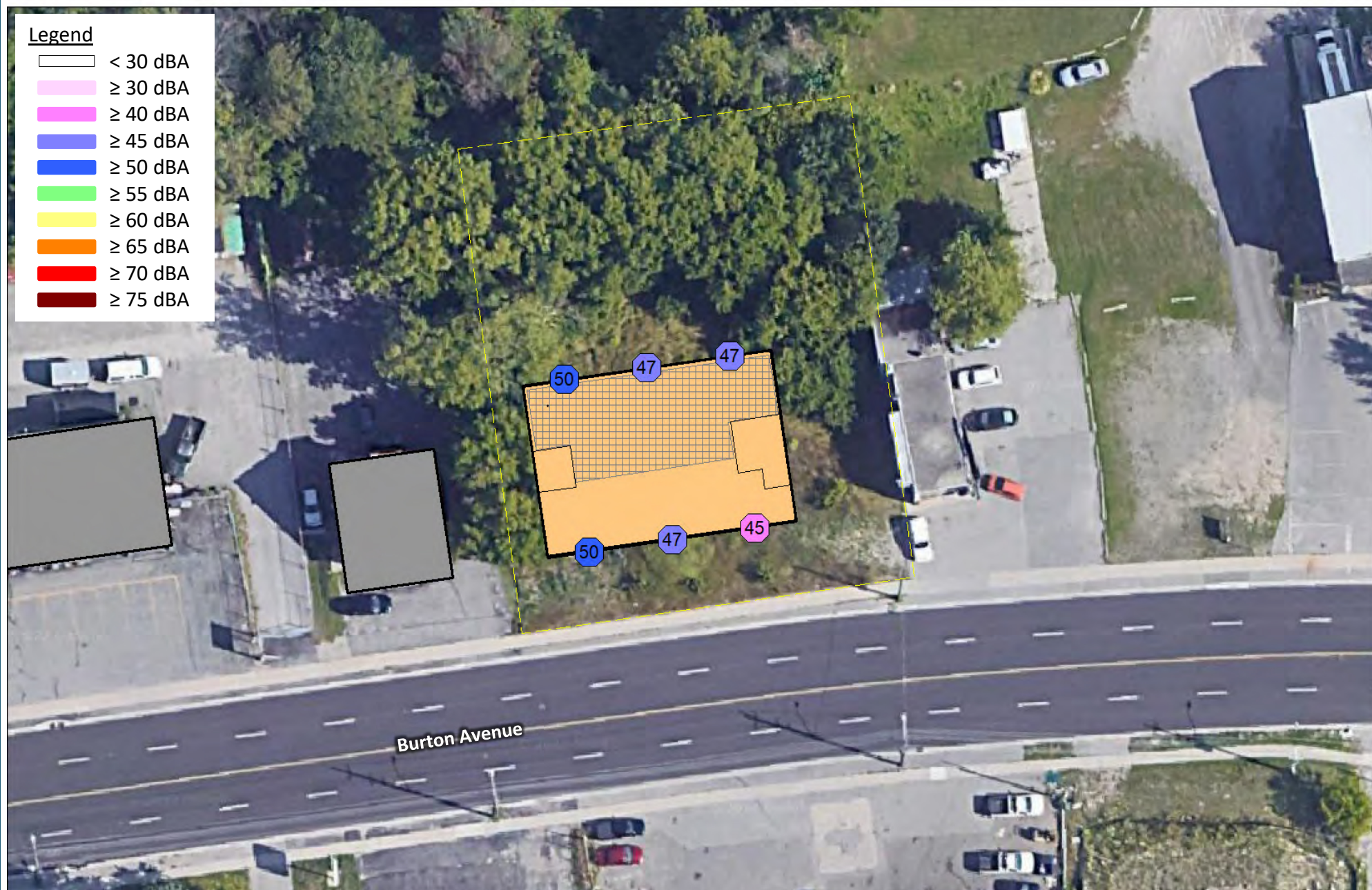
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|  | ≥ 75 dBA |



**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED FAÇADE SOUND LEVELS – COMMERCIAL FACILITIES  
DAYTIME/EVENING

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

Figure No.

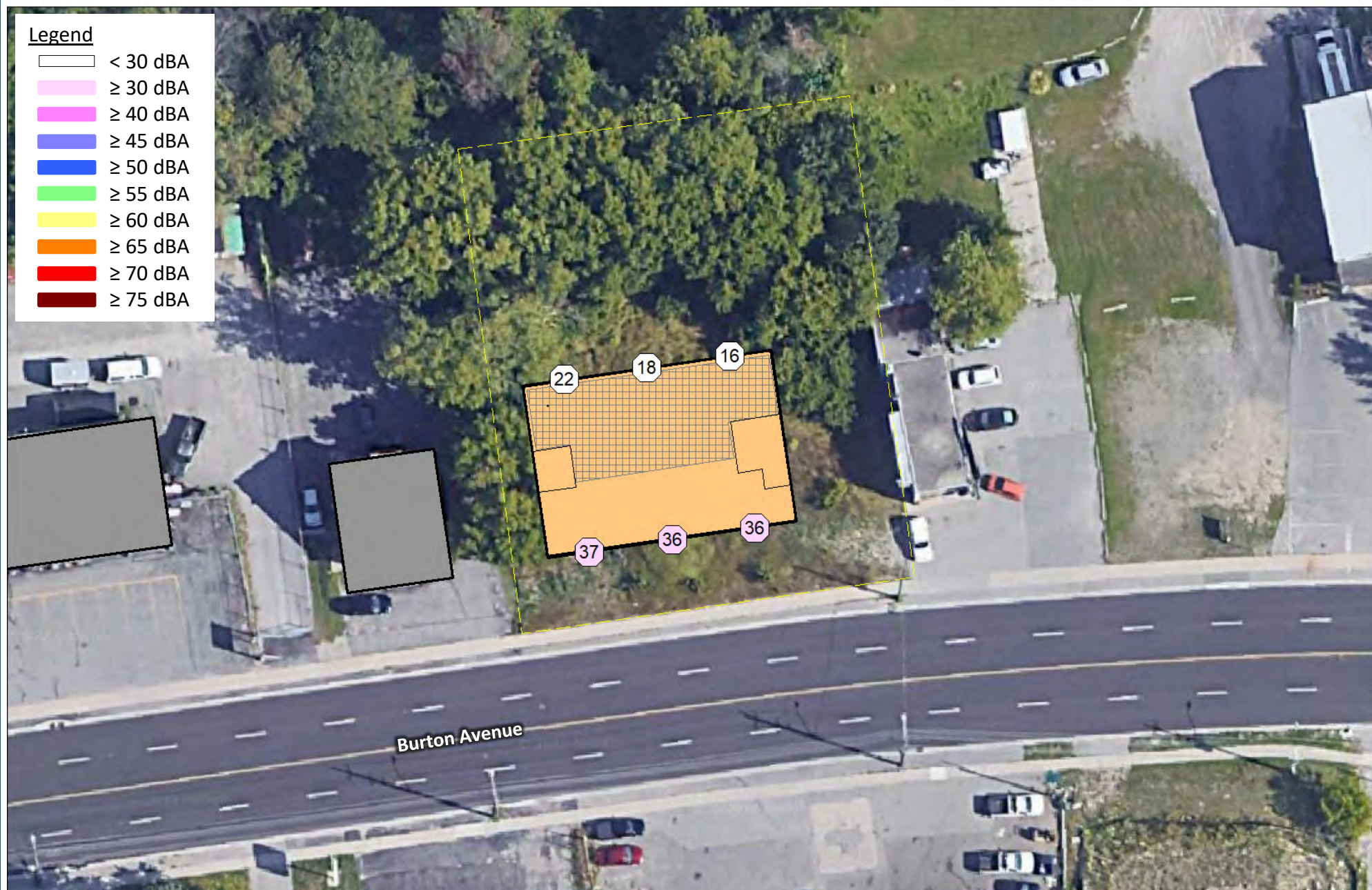
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|  | ≥ 75 dBA |



**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED FAÇADE SOUND LEVELS – COMMERCIAL FACILITIES  
NIGHT-TIME

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

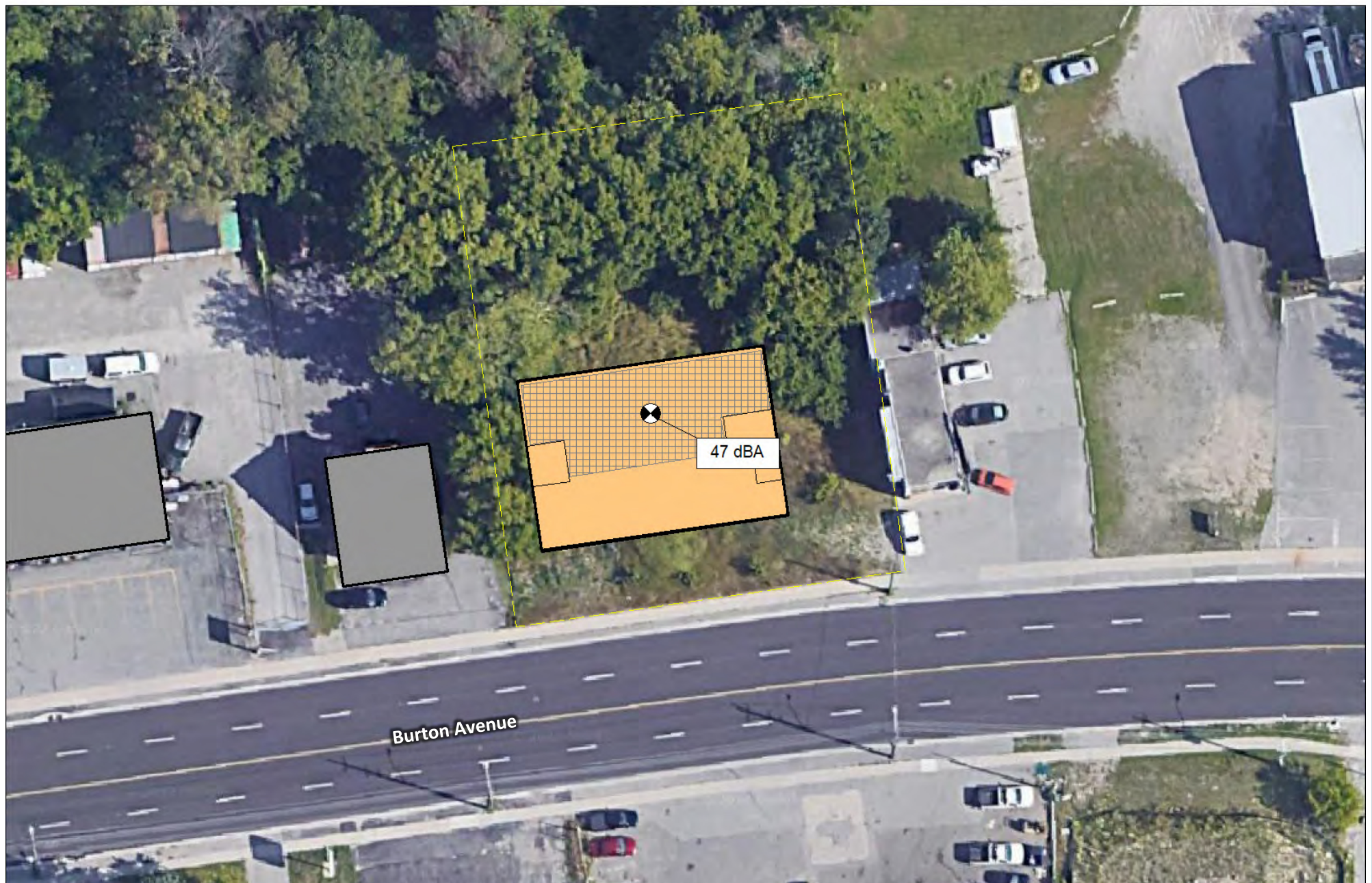
Project No. 241.30599.00000

Figure No.

**7b**







**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED OUTDOOR AMENITY AREA SOUND LEVELS – LAYOVER YARD

True North



Scale: 1:500

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

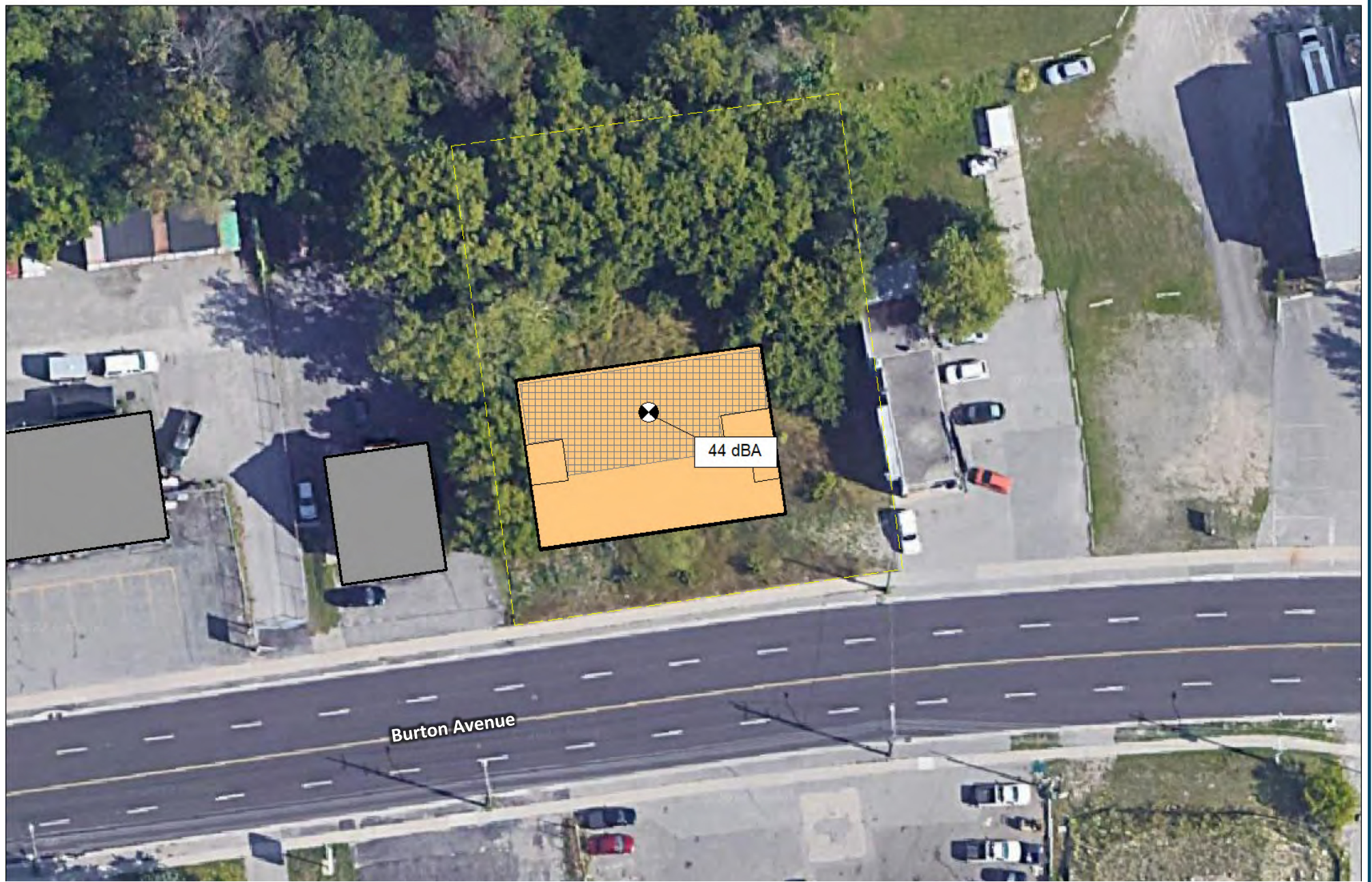
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Figure No.

**8**







**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

PREDICTED OUTDOOR AMENITY AREA SOUND LEVELS – COMMERCIAL FACILITIES

True North



Scale:

1:500

METRES

Date: Mar. 3, 2023

Rev 1.0

Project No. 241.30599.00000

Figure No.

**9**



# Appendix A Development Drawings

## Environmental Noise & Vibration Assessment

181 Burton Ave Residential Development, Barrie, ON

Monolite Holdings Inc.

SLR Project No. 241.30599.00000

March 3, 2023





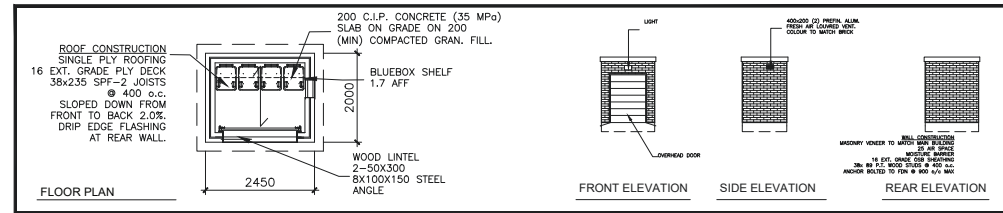
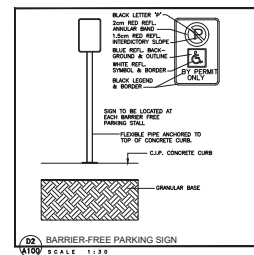
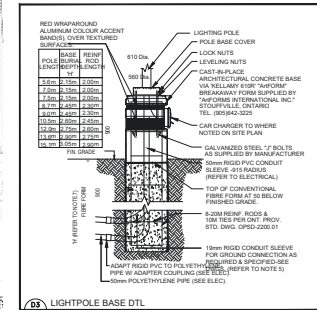
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for 2-sided printing purposes

SITE PLAN  
SCALE= 1:100



KEY PLAN  
NTS

| MUZ                       |                                                                             |                                                                             |
|---------------------------|-----------------------------------------------------------------------------|-----------------------------------------------------------------------------|
|                           | REQUIRED BY BY-LAW<br>(REZONING - MUZ)                                      | PROPOSED                                                                    |
| LOT AREA (min.)           | - m <sup>2</sup>                                                            | 1,998.94 m <sup>2</sup>                                                     |
| LESS WIDENING             | 181.7 m <sup>2</sup>                                                        | 1817.24 m <sup>2</sup>                                                      |
| LOT FRONTAGE (min.)       | - m                                                                         | 40.58 m                                                                     |
| FRONT YARD (min.)         | 3m                                                                          | 3.00 m                                                                      |
| WEST INTERIOR SIDE YARD   | 3.0 m                                                                       | 3.0 m                                                                       |
| EAST EXTERIOR SIDE YARD   | 3.0 m                                                                       | 11.1 m                                                                      |
| REAR YARD (min.)          | 7m                                                                          | 24.5 m                                                                      |
| NUMBER OF UNITS           | -                                                                           | 2.6                                                                         |
| GROUND FLOOR AREA         | -                                                                           | 448 m <sup>2</sup>                                                          |
| GROSS FLOOR AREA          | -                                                                           | 1792 m <sup>2</sup>                                                         |
| COMMERCIAL AREA           | 0%                                                                          | 0 m <sup>2</sup>                                                            |
| DWELLING UNIT AREA (min.) | 35m <sup>2</sup> + 10m <sup>2</sup> /bedroom                                | One Bedroom: 43.6m <sup>2</sup><br>Two Bedroom: 84.3m <sup>2</sup>          |
| LOT COVERAGE (max.)       | -                                                                           | 22.4%                                                                       |
| LANDSCAPING (min.)        | 25%                                                                         | 35% (737m <sup>2</sup> )                                                    |
| G.F.A. (max.)             | -                                                                           | 2340 m <sup>2</sup> - 18%                                                   |
| AMENITY AREA (min.)       | 12m <sup>2</sup> /Unit (288m <sup>2</sup> )                                 | One (1) Unit = 288 m <sup>2</sup><br>= 288 m <sup>2</sup>                   |
| BUILDING HEIGHT (min.)    | 7.5-25.5 m                                                                  | 16.3 m                                                                      |
| FIRST FLOOR HEIGHT        | 4.5m                                                                        | 2.7m *                                                                      |
| PARKING (min.)            | 1 space/unit + 24 spaces                                                    | 22 spaces *                                                                 |
| DRIVE AISLE WIDTH (min.)  | 6.4 m                                                                       | 6.4m                                                                        |
| BARRIER FREE (min.)       | 1 Type A @ 3.4m x 5.5m<br>Each B.F. space shall contain a 1.5m access aisle | 1 Type A @ 3.4m x 5.5m<br>Each B.F. space shall contain a 1.5m access aisle |
| LANDSCAPED BUFFER STRIP   | 3 m landscaped buffer side and rear lot line                                | 3 m landscaped buffer side and rear lot line                                |
| PARKING AREA COVERAGE     | 35%                                                                         | 40.75% *                                                                    |
| DENSITY (SP/HA)           | -                                                                           | 120 units/hectare                                                           |
| VARIANCE REQUIRED = *     |                                                                             |                                                                             |



**D1**  
**A100** 1:75





ISM Architects Inc.  
 107 Toronto Street  
 Markham, ON L3R 9V1  
 T: 705.209.2342  
 E: info@ismarchitects.ca

|   |                     |          |
|---|---------------------|----------|
| 1 | LEGEND              | DATE     |
| 2 | CURTAIN DRAWER      | 10/12/11 |
| 3 | PLUMBING            | 10/12/11 |
| 4 | MECHANICAL CONTRACT | 10/12/11 |
| 5 | 2ND EXAMINATION     | 10/12/11 |
| 6 | 3RD EXAMINATION     | 10/12/11 |
| 7 | REDUCED UNITS       | 10/12/11 |
| 8 | ADDED BALCONIES     | 10/12/11 |



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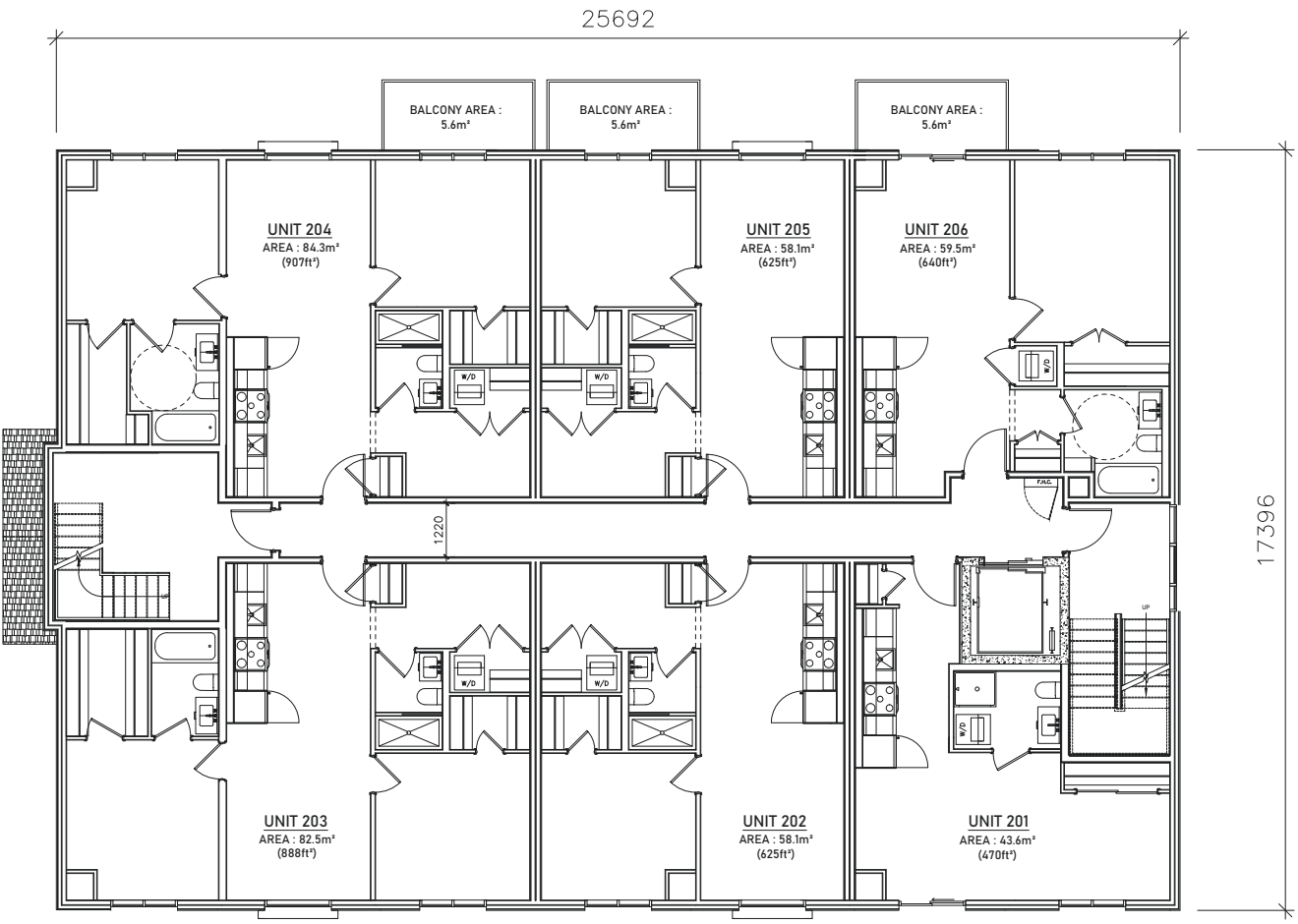
CLIENT  
 MARIA ROZENTS  
 242 EGLINTON AVENUE E. UNIT 101  
 TORONTO, ONTARIO M4G 1C4  
 416-704-0424  
 maria@ismarchitects.ca

PROJECT  
 181 BURTON  
 RESIDENTIAL  
 FOUR STORY 20 UNIT  
 APARTMENT BUILDING

PROJECT INFORMATION  
 PROJECT No. 0800  
 DRAWN BY J.R.P.  
 CHECKED BY J.R.P.  
 DATE 10/12/11  
 SCALE AS NOTED

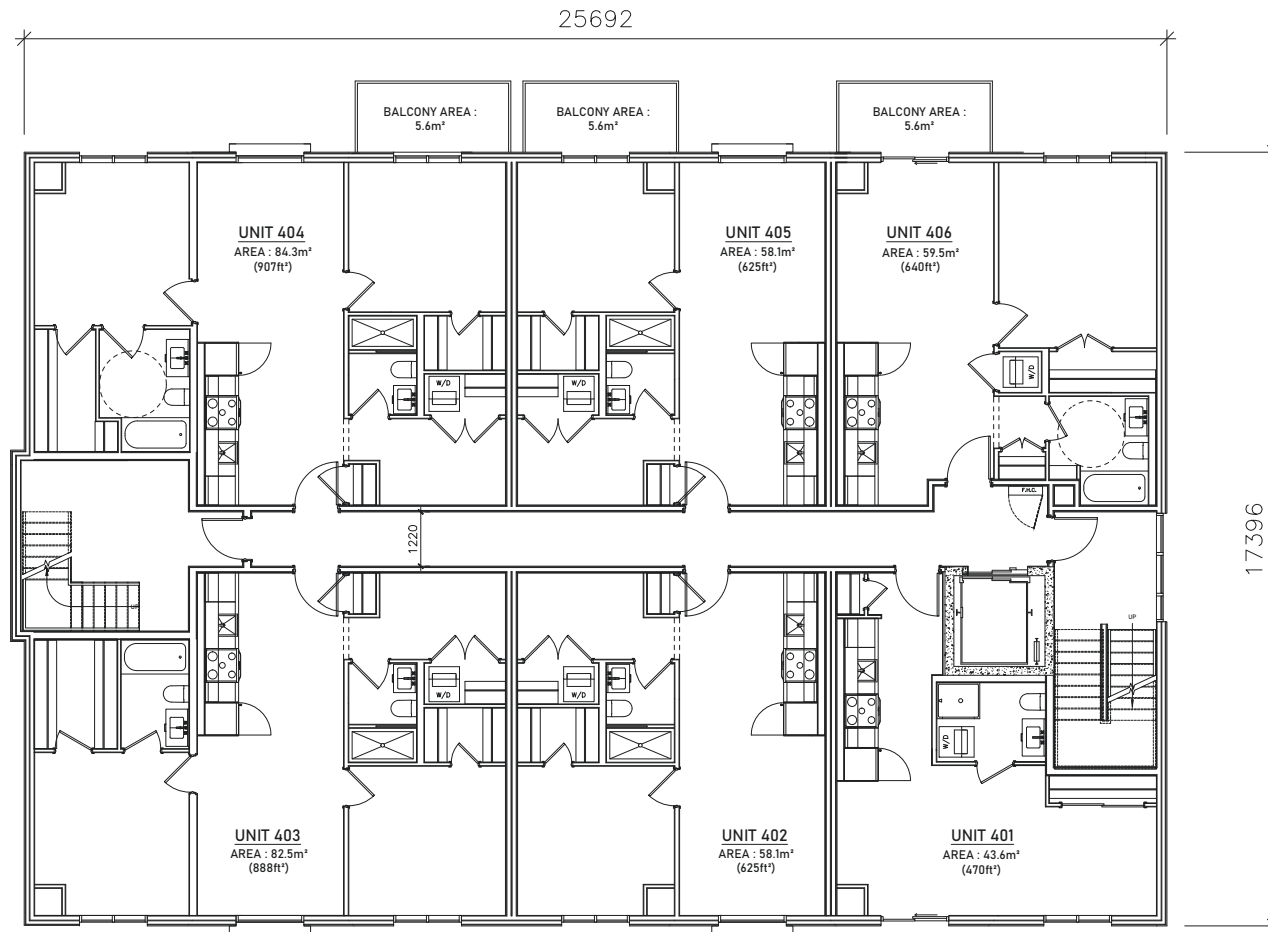
DRAWING  
 SECOND FLOOR PLAN

DRAWING NO.  
 A201



SECOND FLOOR PLAN  
 SCALE= 1:50





FOURTH FLOOR PLAN  
SCALE= 1:100

ISM Architects Inc.

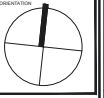
|    |                      |         |
|----|----------------------|---------|
| 1  | LEGEND               | 1/20/20 |
| 2  | CURTAIN DRAWER       | 1/20/20 |
| 3  | PLUMBING             | 1/20/20 |
| 4  | STAIRS AND CORRIDORS | 1/20/20 |
| 5  | STAIRS AND CORRIDORS | 1/20/20 |
| 6  | STAIRS AND CORRIDORS | 1/20/20 |
| 7  | STAIRS AND CORRIDORS | 1/20/20 |
| 8  | STAIRS AND CORRIDORS | 1/20/20 |
| 9  | STAIRS AND CORRIDORS | 1/20/20 |
| 10 | STAIRS AND CORRIDORS | 1/20/20 |
| 11 | STAIRS AND CORRIDORS | 1/20/20 |
| 12 | STAIRS AND CORRIDORS | 1/20/20 |
| 13 | STAIRS AND CORRIDORS | 1/20/20 |
| 14 | STAIRS AND CORRIDORS | 1/20/20 |
| 15 | STAIRS AND CORRIDORS | 1/20/20 |
| 16 | STAIRS AND CORRIDORS | 1/20/20 |
| 17 | STAIRS AND CORRIDORS | 1/20/20 |
| 18 | STAIRS AND CORRIDORS | 1/20/20 |
| 19 | STAIRS AND CORRIDORS | 1/20/20 |
| 20 | STAIRS AND CORRIDORS | 1/20/20 |



1. The Engineer shall be responsible for the design and construction of the building and shall ensure that the building is designed and constructed in accordance with the applicable building codes and standards.

2. The Engineer shall be responsible for the design and construction of the building and shall ensure that the building is designed and constructed in accordance with the applicable building codes and standards.

3. The Engineer shall be responsible for the design and construction of the building and shall ensure that the building is designed and constructed in accordance with the applicable building codes and standards.



CLIENT  
MARIA ROZENTS  
345 SUGAR MAPLE LN.  
RICHMOND HILL  
ON L4C 4C3  
416-710-0424  
mrozents@gmail.com

PROJECT  
181 BURTON  
RESIDENTIAL  
FOUR STORY 30 UNIT  
APARTMENT BUILDING

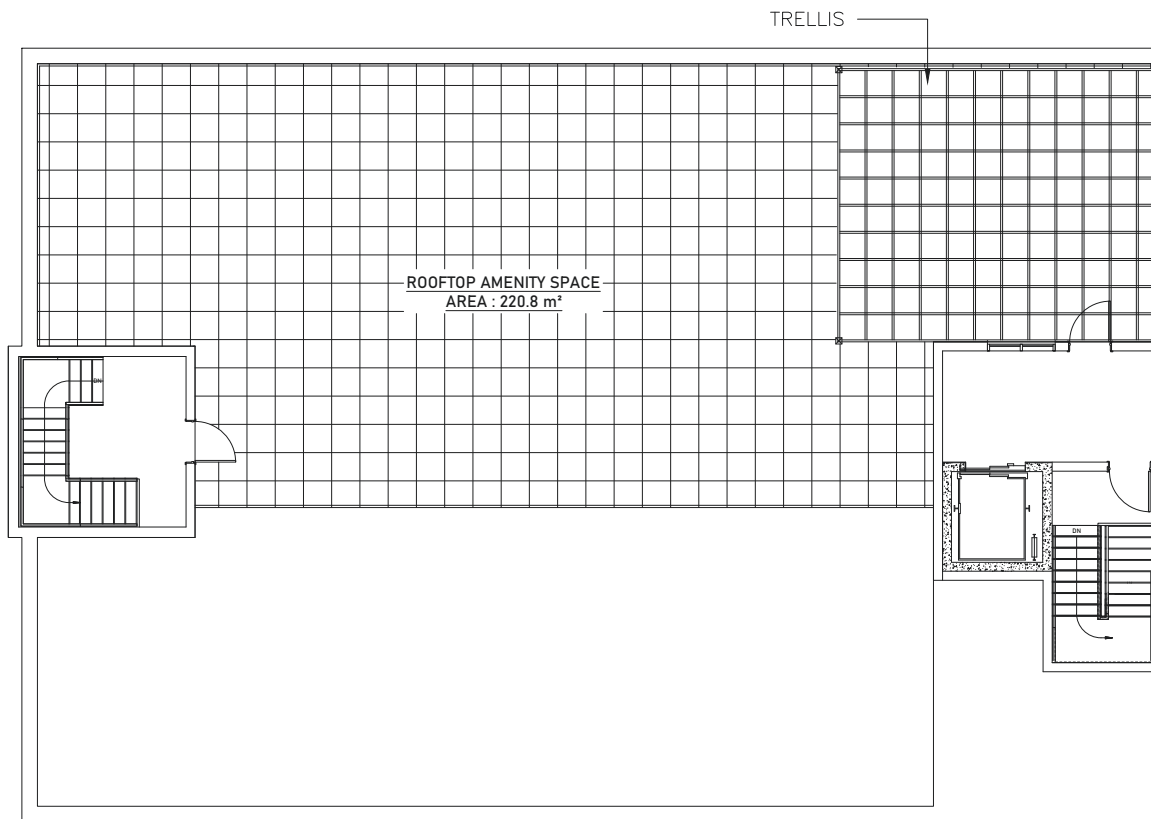
PROJECT INFORMATION  
PROJECT No.  
DRAWN BY  
CHECKED BY  
DATE  
SCALE

FOURTH FLOOR PLAN

FOURTH FLOOR PLAN

A203





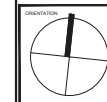
ROOF PLAN  
SCALE= 1:100

ISM Architects Inc.  
107 Terrace Road  
Burlington, ON L7R 1V1  
T: 705.239.2342  
E: info@ismarchitects.ca

|    |                       |            |
|----|-----------------------|------------|
| 1  | DESIGN RECORD         | DATE       |
| 2  | CURTAIN DESIGN        | 2020-12-15 |
| 3  | PROJ. SPEC.           | 2020-12-15 |
| 4  | STRUCTURAL CONSULTANT | 2021-01-15 |
| 5  | 2ND EXAMINATION       | 2021-01-15 |
| 6  | 2ND EXAMINATION       | 2021-01-15 |
| 7  | 2ND EXAMINATION       | 2021-01-15 |
| 8  | 2ND EXAMINATION       | 2021-01-15 |
| 9  | 2ND EXAMINATION       | 2021-01-15 |
| 10 | 2ND EXAMINATION       | 2021-01-15 |
| 11 | 2ND EXAMINATION       | 2021-01-15 |
| 12 | 2ND EXAMINATION       | 2021-01-15 |
| 13 | 2ND EXAMINATION       | 2021-01-15 |
| 14 | 2ND EXAMINATION       | 2021-01-15 |
| 15 | 2ND EXAMINATION       | 2021-01-15 |
| 16 | 2ND EXAMINATION       | 2021-01-15 |
| 17 | 2ND EXAMINATION       | 2021-01-15 |
| 18 | 2ND EXAMINATION       | 2021-01-15 |
| 19 | 2ND EXAMINATION       | 2021-01-15 |
| 20 | 2ND EXAMINATION       | 2021-01-15 |



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416-710-0424  
mrozentis@gmail.com

PROJECT  
181 BURTON  
RESIDENTIAL  
FOUR STORY 20 UNIT  
APARTMENT BUILDING

PROJECT INFORMATION  
PROJECT No. 0000  
DRAWN BY JAP  
CHECKED BY JAP  
DATE 10/17/2020  
SCALE AS NOTED

DRAWING  
ROOF PLAN

DRAWING NO.  
A204

# **Appendix B   Traffic Data and Calculations**

## **Environmental Noise & Vibration Assessment**

**181 Burton Ave Residential Development, Barrie, ON**

**Monolite Holdings Inc.**

SLR Project No. 241.30599.00000

March 3, 2023



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for 2-sided printing purposes



## Marcus Li

---

**From:** Justin MacDonald <Justin.MacDonald@barrie.ca>  
**Sent:** June 21, 2022 9:49 AM  
**To:** Marcus Li  
**Subject:** RE: 181 Burton Ave - Noise Study Traffic Data Request

Good morning Marcus,

As per your request:

Lakeshore Drive

Current ADT: 18,000 vpd  
Growth Rate: 3% per annum  
Percentage Heavy: 3%  
Speed Limit: 50 km/h

Burton Drive

Current ADT: 10,000 vpd  
Growth Rate: 2% per annum  
Percentage Heavy: 6%  
Speed Limit: 50 km/h

Justin MacDonald, C.E.T., PTP  
Project Delivery – Transportation Planning, Development Services  
The City of Barrie  
Mobile 705-734-8020  
Please consider the environment before printing this email.

---

**From:** Marcus Li <mli@slrconsulting.com>  
**Sent:** Monday, June 20, 2022 5:32 PM  
**To:** Justin MacDonald <Justin.MacDonald@barrie.ca>  
**Subject:** 181 Burton Ave - Noise Study Traffic Data Request

Hello Justin,

We're working on a Noise Study for a proposed development located at 181 Burton Avenue in Barrie ON. Attached is an image of the location.

For our assessment, we expect Burton Avenue and Lakeshore Drive have the potential to impact this development. Could you please provide the following information:

- Future Traffic Volumes (10+ year projection) or existing volumes + annual growth rate;
- Vehicle break-down (car and truck percentages); and
- Posted speed limit.

If you need any additional information, please just let me know.

Regards,

## Marcus Li

---

**From:** Rail Data Requests <RailDataRequests@metrolinx.com>  
**Sent:** February 24, 2023 11:36 AM  
**To:** Marcus Li  
**Subject:** RE: 181 Burton Avenue, Barrie

Hi Marcus,

Further to your request dated February 23, 2023, the subject lands (181 Burton Avenue development in Barrie) are located within 300 metres of the Metrolinx Newmarket Subdivision (which carries Barrie GO rail service).

It's anticipated that GO rail service on this Subdivision will be comprised of electric trains. The GO rail fleet combination on this Subdivision will consist of up to 2 locomotives and 12 passenger cars. The typical GO rail weekday train volume forecast near the subject lands, including both revenue and equipment trips is in the order of 132 trains. The planned detailed trip breakdown is listed below:

|                 | 1 Diesel Locomotive | 2 Diesel Locomotives | 1 Electric Locomotive | 2 Electric Locomotives |                   | 1 Diesel Locomotive | 2 Diesel Locomotives | 1 Electric Locomotive | 2 Electric Locomotives |
|-----------------|---------------------|----------------------|-----------------------|------------------------|-------------------|---------------------|----------------------|-----------------------|------------------------|
| Day (0700-2300) | 0                   | 0                    | 96                    | 0                      | Night (2300-0700) | 0                   | 0                    | 36                    | 0                      |

The current track design speed near the subject lands is 30 mph (48 km/h).

There are no *anti-whistling by-laws* in affect near the subject lands.

With respect to future electrified rail service, Metrolinx is committed to finding the most sustainable solution for electrifying the GO rail network and we are currently working towards the next phase.

Options have been studied as part of the Transit Project Assessment Process (TPAP) for the GO Expansion program, currently in the procurement phase. The successful proponent team will be responsible for selecting and delivering the right trains and infrastructure to unlock the benefits of GO Expansion. The contract is in a multi-year procurement process and teams have submitted their bids to Infrastructure Ontario and Metrolinx for evaluation and contract award. GO Expansion construction will get underway in late 2023.

However, we can advise that train noise is dominated by the powertrain at lower speeds and by the wheel- track interaction at higher speeds. Hence, the noise level and spectrum of electric trains is expected to be very similar at higher speeds, if not identical, to those of equivalent diesel trains.

Given the above considerations, it would be prudent at this time, for the purposes of acoustical analyses for development in proximity to Metrolinx corridors, to assume that the acoustical characteristics of electrified and diesel trains are equivalent. In light of the aforementioned information, acoustical models should employ diesel train parameters as the basis for analyses. We anticipate that additional information regarding specific operational parameters for electrified trains will become available in the future once the proponent team is selected.

Operational information is subject to change and may be influenced by, among other factors, service planning priorities, operational considerations, funding availability and passenger demand.

It should be noted that this information only pertains to Metrolinx rail service. It would be prudent to contact other rail operators in the area directly for rail traffic information pertaining to non-Metrolinx rail service.

I trust this information is useful. Should you have any questions or concerns, please do not hesitate to contact me.

Regards,  
Tara

**Tara Kamal Ahmadi**

Junior Analyst  
Third Party Projects Review, Capital Projects Group  
Metrolinx | 20 Bay Street | Suite 600 | Toronto | Ontario | M5J 2W3

## Marcus Li

---

**From:** Lesley O'May-Dodge <Lesley.O'May-Dodge@barrie.ca>  
**Sent:** June 29, 2022 4:01 PM  
**To:** Marcus Li  
**Cc:** Michael Munshaw; Service Barrie  
**Subject:** FW: RE: 181 Burton Avenue - BCRY Railway Noise Study Traffic Data  
**Attachments:** image749274.png; image629564.png; image548800.png; image837655.png

You don't often get email from lesley.o'may-dodge@barrie.ca. [Learn why this is important](#)

Hi Marcus,

Your inquiry through service Barrie for the BCRY information was passed onto our group. Below I have answered the questions best of our knowledge, we have reached out to our rail operator to provide us with the missing information and as soon as we receive that we will pass it along. If you have any questions in the meantime please let myself or Michael Munshaw know.

For our study, we are interested in the following:

- Future Traffic Volumes (10+ year projection) or existing volumes + anticipated growth rate; **at this time we don't have any projections on future growth. Currently the train run 2 days per week during daytime hours**
- Train consists (no. of locomotives and rail cars); **1 locomotive and up to 8 cars**
- Train speeds for the area; **10mph it is a class 1 track**
- Railway track type (continuous welded or jointed); and
- If whistles are used at the crossings **Whistle is blown at all BCRY rail crossings**
- Day (7am to 11 pm) and Night (11 pm to 7 am) traffic volumes **Daytime hours, runs Mondays (Tuesdays if Monday is a holiday) and Thursdays between the hours of 8am and 3pm. No night trains at this time.**

Thank you,

**Lesley O'May-Dodge, C.E.T.**  
Policy and Standards Technologist  
Pronouns: she/her  
Corporate Asset Management  
Ext. 4598



Please consider the environment before printing this email.

---

**From:** Michael Munshaw <Michael.Munshaw@barrie.ca>  
**Sent:** Thursday, June 23, 2022 2:00 PM  
**To:** Lesley O'May-Dodge <Lesley.O'May-Dodge@barrie.ca>  
**Subject:** FW: RE: 181 Burton Avenue - BCRY Railway Noise Study Traffic Data

Lesley

I think we have the majority of the requested info from CANDO but if you want we can engage with CANDO for details. Let me know what you think.

**Michael Munshaw**  
Supervisor of Engineering Standards  
Corporate Asset Management  
Office: 705-739-4220 x4723

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# ORNAMENT - Sound Power Emissions & Source Heights

Ontario Road Noise Analysis Method for Environment and Transportation

| Road Segment ID | Roadway Name           | Period            | Speed (kph) | Period (h) | Auto  | Med | Heavy | Road Gradient (%) | Cadna/A Ground Absorption G | PWL (dBA) | Source Height, s (m) |
|-----------------|------------------------|-------------------|-------------|------------|-------|-----|-------|-------------------|-----------------------------|-----------|----------------------|
| LD_1dir_avg_D   | Lakeshore Dr, EB or WB | Daytime Impacts   | 50          | 16         | 13777 | 228 | 198   | 0                 | 0.00                        | 79.8      | 1.1                  |
| LD_1dir_avg_N   | Lakeshore Dr, EB or WB | Nighttime Impacts | 50          | 8          | 1531  | 25  | 22    | 0                 | 0.00                        | 73.3      | 1.1                  |
| BA_avg_D        | Burton Ave             | Daytime Impacts   | 50          | 16         | 14835 | 506 | 440   | 0                 | 0.00                        | 82.1      | 1.3                  |
| BA_avg_N        | Burton Ave             | Nighttime Impacts | 50          | 8          | 1648  | 56  | 49    | 0                 | 0.00                        | 75.6      | 1.3                  |

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# **Appendix C   STAMSON Validation File**

## **Environmental Noise & Vibration Assessment**

**181 Burton Ave Residential Development, Barrie, ON**

**Monolite Holdings Inc.**

SLR Project No. 241.30599.00000

March 3, 2023



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**MONOLITE HOLDINGS INC.**

181 BURTON AVENUE

COMPARISON OF CADNAA AND STAMSON

True North



Scale: 1:2,000

Date: Aug. 15, 2022

Rev 1.0

Project No. 241.30599.00000

METRES

Figure No.

**C.1**





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Filename: fac.te                      Time Period: 16 hours  
Description: East Facade, 1st Floor

Road data, segment # 1: Burton

-----  
Car traffic volume : 14835 veh/TimePeriod  
Medium truck volume : 506 veh/TimePeriod  
Heavy truck volume : 440 veh/TimePeriod  
Posted speed limit : 50 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Burton

-----  
Angle1    Angle2                      : -90.00 deg    0.00 deg  
Wood depth                            : 0              (No woods.)  
No of house rows                      : 0  
Surface                                : 2              (Reflective ground surface)  
Receiver source distance : 27.10 m  
Receiver height                        : 1.50 m  
Topography                            : 1              (Flat/gentle slope; no barrier)  
Reference angle                        : 0.00

Road data, segment # 2: Lkshr\_EB

-----  
Car traffic volume : 13777 veh/TimePeriod  
Medium truck volume : 228 veh/TimePeriod  
Heavy truck volume : 198 veh/TimePeriod  
Posted speed limit : 50 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: Lkshr\_EB

-----  
Angle1    Angle2                      : -15.00 deg    90.00 deg  
Wood depth                            : 0              (No woods.)  
No of house rows                      : 0  
Surface                                : 1              (Absorptive ground surface)  
Receiver source distance : 154.00 m  
Receiver height                        : 1.50 m  
Topography                            : 0              (Define your own alpha.)  
Barrier angle1                        : -15.00 deg    Angle2 : 90.00 deg  
Barrier height                        : 0.00 m  
Barrier receiver distance : 10.00 m  
Source elevation                       : 0.00 m  
Receiver elevation                     : 0.00 m  
Barrier elevation                      : 0.00 m  
Alpha                                  : 0.41  
Reference angle                        : 0.00

Road data, segment # 3: Lkshr\_WB

-----  
Car traffic volume : 13777 veh/TimePeriod  
Medium truck volume : 228 veh/TimePeriod  
Heavy truck volume : 198 veh/TimePeriod  
Posted speed limit : 50 km/h  
Road gradient : 0 %  
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 3: Lkshr\_WB

-----  
Angle1 Angle2 : -15.00 deg 90.00 deg  
Wood depth : 0 (No woods.)  
No of house rows : 0  
Surface : 1 (Absorptive ground surface)  
Receiver source distance : 171.00 m  
Receiver height : 1.50 m  
Topography : 0 (Define your own alpha.)  
Barrier angle1 : -15.00 deg Angle2 : 90.00 deg  
Barrier height : 0.00 m  
Barrier receiver distance : 10.00 m  
Source elevation : 0.00 m  
Receiver elevation : 0.00 m  
Barrier elevation : 0.00 m  
Alpha : 0.41  
Reference angle : 0.00

Results segment # 1: Burton

-----  
Source height = 1.29 m

ROAD (0.00 + 61.45 + 0.00) = 61.45 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq  
-----  
-90 0 0.00 67.03 0.00 -2.57 -3.01 0.00 0.00 0.00 61.45  
-----

Segment Leq : 61.45 dBA

Results segment # 2: Lkshr\_EB

-----  
Source height = 1.09 m

ROAD (0.00 + 47.31 + 0.00) = 47.31 dBA  
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq  
-----  
-15 90 0.41 64.76 0.00 -14.26 -3.19 0.00 0.00 0.00 47.31  
-----

Segment Leq : 47.31 dBA



Results segment # 3: Lkshr\_WB

-----  
Source height = 1.09 m

ROAD (0.00 + 46.67 + 0.00) = 46.67 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj  | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| -15    | 90     | 0.41  | 64.76  | 0.00  | -14.90 | -3.19 | 0.00  | 0.00  | 0.00  | 46.67  |

-----

Segment Leq : 46.67 dBA

Total Leq All Segments: 61.75 dBA

TOTAL Leq FROM ALL SOURCES: 61.75

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# **Appendix D   Warning Clause and Ventilation Summary**

## **Environmental Noise & Vibration Assessment**

**181 Burton Ave Residential Development, Barrie, ON**

**Monolite Holdings Inc.**

SLR Project No. 241.30599.00000

March 3, 2023



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## Warning Clauses

The following Warning Clauses are recommended for inclusion in agreements registered on Title for the residential units, and included in all agreements of purchase and sale or lease, and all rental agreements. A summary of the Warning Clause and Ventilation Requirements is included in **Table D.1** below.

### MECP Type A

"Purchasers/tenants are advised that sound levels due to increasing road traffic (rail traffic) (air traffic) may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

### MECP Type C

"Purchasers are advised that the dwelling unit has been or will be fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. 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 Municipality's and the Ministry of the Environment, Conservation noise criteria."

### MECP 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."

### MECP Type E

"Purchasers/tenants are advised that due to the proximity of the adjacent GO Train Layover Yard and car washes, noise from the Layover Yard and car washes may at times be audible."

### Metrolinx:

"Warning: Metrolinx and its assigns and successors in interest has or have a right-of-way within 300 metres from the land the subject hereof. There may be alterations to or expansions of the rail facilities on such right-of-way in the future including the possibility that Metrolinx or any railway entering into an agreement with Metrolinx to use the right-of-way or their assigns or successors as aforesaid may expand their operations, which expansion may affect the living environment of the residents in the vicinity, notwithstanding the inclusion of any noise and vibration attenuating measures in the design of the development and individual dwelling(s). Metrolinx will not be responsible for any complaints or claims arising from use of such facilities and/or operations on, over or under the aforesaid right-of-way."

**Table D.1:      Summary of Ventilation and Warning Clause Requirements**

| <b>Facade</b> | <b>Air Conditioning Requirement <sup>[1]</sup></b> | <b>Warning Clause</b>             |
|---------------|----------------------------------------------------|-----------------------------------|
| North         | Forced Air                                         | Type A, Type C, Type E, Metrolinx |
| East          | -                                                  | -                                 |
| South         | AC                                                 | Type A, Type D, Type E, Metrolinx |
| West          | -                                                  | -                                 |

Notes:      [1] AC = Air conditioning required, Forced Air = forced air heating with a provision for installation of air conditioning

# Appendix E Stationary Source Data

## Environmental Noise & Vibration Assessment

181 Burton Ave Residential Development, Barrie, ON

Monolite Holdings Inc.

SLR Project No. 241.30599.00000

March 3, 2023



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**POINT SOURCES**

| Name                                                               | ID                    | Result. PWL  |                  |                | Operating Time |                  |                | Height<br>(m)            |
|--------------------------------------------------------------------|-----------------------|--------------|------------------|----------------|----------------|------------------|----------------|--------------------------|
|                                                                    |                       | Day<br>(dBA) | Evening<br>(dBA) | Night<br>(dBA) | Day<br>(min)   | Special<br>(min) | Night<br>(min) |                          |
| Idling GO Train                                                    | Layover_GOIdle        | 110          | 110              | 110            | 20             | 20               | 20             | 4.0 m Relative to Ground |
| Idling GO Train                                                    | Layover_GOIdle        | 110          | 110              | 110            | 20             | 20               | 20             | 4.0 m Relative to Ground |
| CoinOp Car Wash Vacuum                                             | CarWash_vacuum        | 97           | 97               | 97             | 45             | 45               | 0              | 1.5 m Relative to Ground |
| CoinOp Car Wash Vacuum                                             | CarWash_vacuum        | 97           | 97               | 97             | 45             | 45               | 0              | 1.5 m Relative to Ground |
| CoinOp Car Wash Vacuum                                             | CarWash_vacuum        | 97           | 97               | 97             | 45             | 45               | 0              | 1.5 m Relative to Ground |
| CoinOp Car Wash Vacuum                                             | CarWash_vacuum        | 97           | 97               | 97             | 45             | 45               | 0              | 1.5 m Relative to Ground |
| CoinOp Car Wash Vacuum                                             | CarWash_vacuum        | 97           | 97               | 97             | 45             | 45               | 0              | 1.5 m Relative to Ground |
| CoinOp Car Wash Wash&Vacuum                                        | CarWash_washvacuum    | 100          | 100              | 100            | 45             | 45               | 0              | 1.5 m Relative to Ground |
| CoinOp Car Wash Wash&Vacuum                                        | CarWash_washvacuum    | 100          | 100              | 100            | 45             | 45               | 0              | 1.5 m Relative to Ground |
| CoinOp Car Wash - Spray                                            | CarWash_spray         | 89           | 89               | 89             | 20             | 20               | 0              | 2.0 m Relative to Ground |
| CoinOp Car Wash - Spray                                            | CarWash_spray         | 89           | 89               | 89             | 20             | 20               | 0              | 2.0 m Relative to Ground |
| CoinOp Car Wash - Spray                                            | CarWash_spray         | 89           | 89               | 89             | 20             | 20               | 0              | 2.0 m Relative to Ground |
| CoinOp Car Wash - Spray                                            | CarWash_spray         | 89           | 89               | 89             | 20             | 20               | 0              | 2.0 m Relative to Ground |
| CoinOp Car Wash - Spray                                            | CarWash_spray         | 89           | 89               | 89             | 20             | 20               | 0              | 2.0 m Relative to Ground |
| CoinOp Car Wash - Spray                                            | CarWash_spray         | 89           | 89               | 89             | 20             | 20               | 0              | 2.0 m Relative to Ground |
| CoinOp Car Wash - Spray                                            | CarWash_spray         | 89           | 89               | 89             | 20             | 20               | 0              | 2.0 m Relative to Ground |
| Petro Canada - HVAC                                                | PetroCan_HVAC         | 86           | 86               | 86             | 60             | 60               | 30             | 1.3 m Above Roof         |
| Petro Canada - Car Wash Exit (50 sec per car, 12 cars/hr)          | PetroCan_CarWashExit  | 108          | 108              | 108            | 10             | 10               | 0              | 2.0 m Relative to Ground |
| Petro Canada - Car Wash Entrance Spray (5 sec per car, 12 cars/hr) | PetroCan_CarWashSpray | 95           | 95               | 95             | 1              | 1                | 0              | 2.0 m Relative to Ground |
| Petro Canada - Car Wash queued car                                 | PetroCan_Idle         | 76           | 76               | 76             | 60             | 60               | 0              | 1.0 m Relative to Ground |
| Petro Canada - Car Wash queued car                                 | PetroCan_Idle         | 76           | 76               | 76             | 60             | 60               | 0              | 1.0 m Relative to Ground |
| Petro Canada - Car Wash queued car                                 | PetroCan_Idle         | 76           | 76               | 76             | 60             | 60               | 0              | 1.0 m Relative to Ground |
| Petro Canada - Car Wash queued car                                 | PetroCan_Idle         | 76           | 76               | 76             | 60             | 60               | 0              | 1.0 m Relative to Ground |

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# **Appendix F Excerpt from By-Law 2006-140- As Amended**

## **Environmental Noise & Vibration Assessment**

**181 Burton Ave Residential Development, Barrie, ON**

**Monolite Holdings Inc.**

SLR Project No. 241.30599.00000

March 3, 2023



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## **By-law 2006-140 – As Amended**

This By-law printed under and by  
the authority of the Council of the  
City of Barrie

**A By-law of The Corporation of the City of Barrie to prohibit and regulate noise and to repeal By-law 76-140 and all amendments thereto.**

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| Particulars of Noise                                                                                                                                                                                                                 | Prohibited Period by Time and Place                                                         |                                                                                                  |
|--------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------|
|                                                                                                                                                                                                                                      | Quiet Zone                                                                                  | Residential Area                                                                                 |
| The operation of any construction equipment in connection with construction, unless otherwise exempt under the provisions of this by-law                                                                                             | 5:00 p.m. of one day to 7:00 a.m. of the next day<br>All day Sundays and Statutory Holidays | 7:00 p.m. of one day to 7:00 a.m. of the next day, and<br>All day Sundays and Statutory Holidays |
| The operation of any construction equipment without effective muffling devices in good working order and in constant operation                                                                                                       | At any time                                                                                 | At any time                                                                                      |
| The detonation of fireworks or explosive devices.                                                                                                                                                                                    | At any time                                                                                 | 11:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                           |
| The operation of a combustion engine which, is, or is used in, or is intended for use in, a toy or a model or replica of a larger device, which model or replica has no function other than amusement and which is not a conveyance. | At any time                                                                                 | 7:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                            |
| The operation of any motorized conveyance other than on a highway or other place intended for its operation.                                                                                                                         | At any time                                                                                 | 7:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                            |
| The venting, release or pressure relief of air, steam or other gaseous material, product or compound from any autoclave, boiler, pressure vessel, pipe, valve, machine, device or system.                                            | At any time                                                                                 | 11:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                           |
| Persistent barking, calling or whining or other similar persistent noise making by any domestic pet.                                                                                                                                 | At any time                                                                                 | At any time                                                                                      |
| The operation of any powered or non-powered tool for domestic purposes other than snow removal.                                                                                                                                      | 5:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                       | 11:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                           |
| The operation of solid waste bulk lift or refuse compacting equipment                                                                                                                                                                | 5:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                       | 11:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                           |
| The operation of commercial car wash.                                                                                                                                                                                                | 5:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                       | 11:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                           |
| Yelling, shouting, hooting, whistling or singing or similar sounds                                                                                                                                                                   | At any time                                                                                 | 11:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                           |
| The operation of a sound emitting pest control device                                                                                                                                                                                | At any time                                                                                 | 11:00 p.m. of one day to 7:00 a.m. of the next day (9:00 a.m. Sundays)                           |
| Racing of any motorized conveyance other than in a racing event regulated by law                                                                                                                                                     | At any time                                                                                 | At any time                                                                                      |
| The operation of a motor vehicle in such a way that the tires squeal                                                                                                                                                                 | At any time                                                                                 | At any time                                                                                      |
| The operation of any combustion engine without an effective exhaust muffling device in good working order and in constant operation                                                                                                  | At any time                                                                                 | At any time                                                                                      |



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