



3996 Innes Road

Environmental Noise Assessment Orleans, ON

SLR Project No: 241.30290.00000

November 2021



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ENVIRONMENTAL NOISE ASSESSMENT
3996 Innes Road
Orleans, Ontario
SLR Project No: 241.30290.00000

Submitted by:
SLR Consulting (Canada) Ltd.
100 Stone Road West, Suite 201
Guelph, Ontario, N1G 5L3

Prepared for:
2809354 Ontario Inc.
3047 Courtyard Crescent,
Ottawa, ON K1T 3R7

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This document has been prepared by SLR Canada. The material and data in this report were prepared under the supervision and direction of the undersigned.

Prepared by:



Neil Vyas
Acoustic Consultant

Reviewed by:



Aaron Haniff, P.Eng.
Acoustics Specialist

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1. INTRODUCTION

SLR Consulting (SLR) was retained by 2809354 Ontario Inc. to conduct an environmental noise assessment for the proposed development at 3996 Innes Road in Orleans, Ontario. The Environmental Noise Assessment is used to support the Zoning Bylaw Amendment (ZBA) and Site Plan Application (SPA) for the proposed development and supports the planning requirements for the City of Ottawa.

1.1 FOCUS OF REPORT

In keeping with the City of Ottawa and the Ontario Ministry of the Environment, Conservation and Parks requirements, this report examines the potential for:

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

1.2 NATURE OF THE SUBJECT LANDS

The proposed development is located at 3996 and 3998 Innes Road, to the south of Innes Road. The site is currently occupied by a single-storey semi-detached residential home, which will be demolished as part of the proposed development.

The proposed development will consist of a single 5-story mixed use building containing 20 units and a ground floor medical facility with basement garage and additional parking at grade. A private outdoor living area is proposed on Level 5 of the building.

A copy of the site plan and floor plans are included in **Appendix A**.

1.3 NATURE OF THE SURROUNDINGS

Immediately surrounding the site are low-rise commercial developments and their parking lots to the east, west and south of the site. Few more low-rise commercial developments are located to the north-east of the site across Innes Road and low-rise residential homes are located to the north of the site. Beyond the immediate surroundings there are low-rise commercial buildings to the east, west and south of the site and mostly low-rise residential buildings to the north of the site.

The topography of the immediate surrounding area is considered to be essentially flat with no significant variations.

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

PART 1: IMPACTS OF THE ENVIRONMENT ON THE DEVELOPMENT

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

- Roadway noise impacts on the development;
- Stationary noise impacts from the surrounding commercial and industries lands; and
- Stationary noise impacts from the proposed development mechanical equipment on the proposed development itself and surrounding sensitive receptors

There are no railway lines within 1000 m from the proposed development, therefore, there are no concerns related to railway noise or vibration, and further assessments of these sources are not required.

There are no existing significant industrial vibration sources within 75 m of the Project, such as large stamping presses or forges. Under applicable MECP guidelines, a detailed vibration assessment is not required.

There are no airports in the immediate vicinity of the proposed development, and an assessment of aircraft noise impacts is not required.

2. TRANSPORTATION NOISE IMPACTS

2.1 TRANSPORTATION NOISE SOURCES

Transportation sources of interest with the potential to produce noise at the proposed development are roadway noise from Innes Road and Mer-Bleue Road.

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

2.2 SURFACE TRANSPORTATION NOISE CRITERIA

2.2.1 MINISTRY OF ENVIRONMENT PUBLICATION NPC-300

Noise Sensitive Developments

Ministry of the Environment, Conservation and Parks (MECP) Publication NPC-300 provides sound level criteria for noise sensitive developments. The applicable portions of NPC-300 are Part C – Land Use Planning and the associated definitions outlined in Part A – Background. **Tables 1 to 4** below summarizes the applicable surface transportation (road and rail) criteria limits.

Location Specific Criteria

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

Outdoor Amenity Areas

Table 2 summarizes the noise mitigation requirements for communal outdoor amenity areas (“Outdoor Living Areas” or “OLAs”).

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 levels.

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

Type of Space	Time Period	Equivalent Sound Exposure Level - L_{eq} (dBA)		Assessment Location
		Road	Rail ^[1]	
Outdoor Living Area (OLA)	Daytime (0700-2300h)	55	55	Outdoors ^[2]
Living / Dining Room	Daytime (0700-2300h)	45	40	Indoors ^[4]
	Night-time (2300-0700h)	45	40	Indoors ^[4]
Sleeping Quarters	Daytime (0700-2300h)	45	40	Indoors ^[4]
	Night-time (2300-0700h)	40	35	Indoors ^[4]

Notes: [1] Whistle noise is excluded for OLA noise assessments, and included for Living / Dining Room and Sleeping Quarter assessments.
 [2] Road and Rail noise impacts are to be combined for assessment of OLA impacts.
 [3] An assessment of indoor noise levels is required only if the criteria in **Table 4** are exceeded.

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

Time Period	Equivalent Sound Level in Outdoor Living Area (dBA)	Ventilation Requirements
Daytime (0700-2300h)	≤ 55	<ul style="list-style-type: none"> None
	55 to 60 incl.	<ul style="list-style-type: none"> Noise barrier OR Warning Clause A
	> 60	<ul style="list-style-type: none"> Noise barrier to reduce noise to 55 dBA OR Noise barrier to reduce noise to 60 dBA and Warning Clause B

Ventilation and Warning Clauses

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 **Tables 1**, warning clauses advising future occupants of the potential excesses are required. Warning clauses also apply to OLAs.

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 3 and 4** indoor sound criteria are met.

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

Assessment Location	Time Period	Energy Equivalent Sound Exposure Level - L_{eq} (dBA)		Ventilation and Warning Clause Requirements ^[2]
		Road	Rail ^[1]	
Outdoor Living Area	Daytime (0700-2300h)	56 to 60 incl.		Type A Warning Clause
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
	Night-time (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		

Notes: [1] Rail whistle noise is excluded.

[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	Energy Equivalent Sound Exposure Level - L_{eq} (dBA)		Component Requirements
		Road	Rail ^[1]	
Plane of Window	Daytime (0700-2300h)	> 65	> 60	Designed/ Selected to Meet Indoor Requirements ^[2]
	Night-time (2300-0700h)	> 60	> 55	

Notes: [1] Including whistle noise.

[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.

2.3 TRAFFIC DATA

2.3.1 ROADWAY TRAFFIC DATA

Road traffic data for Innes Road and Mer-Bleue Road were obtained from The City of Ottawa's Environmental Noise Control Guideline [ENCG]. The ENCG document provides the mature state (Ultimate) traffic volumes, day/night traffic split and commercial truck breakdown % of various roadway types.

Relevant sections of the ENCG document and calculations can be found in **Appendix B**. The following table summarizes the road traffic volumes used in the analysis.

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

Roadway Link	2031 Traffic Volumes (AADT)	% Day/ Night Volume Split		Commercial Traffic Breakdown		Vehicle Speed (km/h)
		Daytime	Night-time	% Medium Trucks	% Heavy Trucks	
Innes Road (4 Lane UAD)	35000 ^[1]	92	8	7	5	60
Mer-Bleue Road (4 Lane UAD)	35000 ^[1]	92	8	7	5	60

Notes: [1] Based on traffic data obtained from the City of Ottawa ENCG, Road types assumed to be 4-lane urban arterial divided.

2.4 PROJECTED SOUND LEVELS

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

The ground in the study area corresponds mostly to asphalt. A reflective ground type has been assigned in the modelling.

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

2.4.1 FAÇADE SOUND LEVELS

Predicted worst-case façade sound levels are presented in **Table 6**. The transportation façade sound levels of the development, showing the ranges of predicted daytime and night-time sound levels are shown in **Figure 2** and **Figure 3**.

Table 6: Summary of Transportation Façade Sound Levels

Levels	Façade ^[1]	Roadway Sound Levels ^[2]	
		L _{eq} Day (dBA)	L _{eq} Night (dBA)
Levels 1-4	North	73	65
	East	69	62
	South	60	52
	West	70	62
Level 5	North	72	64
	East	69	61
	South	61	53
	West	68	61

Notes: [1] Façade locations are shown in **Figure 2** and **Figure 3**.

[2] The sound levels presented are for the worst-case exposed façade, in which totals may not correspond to the same location.

The façade roadway sound levels are predicted to be above 65 dBA and 60 dBA during the daytime and nighttime periods at the northern, eastern and western facades respectively. Therefore, an assessment of building components is required for the development.

2.4.2 OUTDOOR LIVING AREAS

A private Outdoor Living Area (OLA) is also located on Level 5 of the development in the southern part of the building. The at grade outdoor amenity areas are considered to be publicly accessible spaces. Since these spaces are publicly accessible, they have not been included as amenity spaces in this assessment.

The predicted noise impacts from the surrounding roadways are shown in **Figure 4** and summarized in the following table:

Table 7: Summary of Transportation Noise Impacts - OLA

ID	Location	Transportation Impacts L _{eq} Day (dBA)
OLA Level 5	Level 5 – Suite 502 Balcony	60 ^[1]

Notes: [1] Sound levels up to 60 dBA are allowed with the use of a **Type A** Warning Clause.

Sound level at the Level 5 OLA is predicted to be at or below 60 dBA.

2.5 FAÇADE ASSESSMENT

Based on the roadway levels shown in **Table 6**, façade sound levels were predicted to exceed the above criteria at multiple locations throughout the development. Therefore, an assessment of glazing requirements is necessary for meeting the indoor sound level requirements outlined in **Table 1**.

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

2.5.1 GLAZING CALCULATION INPUTS

The glazing and floor areas were approximately calculated based on the floor plans provided. Non-glazing portion of the walls was assumed to have a rating of STC 43 for all locations.

2.5.2 GLAZING REQUIREMENTS

The acoustical requirements are provided below in **Table 8**, which is the STC rating taking into consideration roadway noise and the assumptions listed in the previous section. Ontario Building Code (OBC) construction is considered to be sufficient for all living rooms and bedrooms in the proposed development. Any configuration meeting the minimum structural and safety requirements of the Ontario Building Code, which generally produces a minimum STC for glazed elements of STC 29. It should be noted that corner units are likely to require an increase of 3 STC points, as the space has noise contributions from two (2) exposed sides. Detailed Façade Calculations are included in **Appendix D**.

Table 8: Façade Sound Transmission Class (STC) Requirements

Levels	Façade	Non-Glazing Component	Glazing Requirements	
			Living Room	Bedroom
Levels 2-4	North	43	OBC	30
	East	43	OBC	OBC
	West	43	OBC	OBC
	South	43	OBC	OBC
Level 5	North	43	30	-
	East	43	OBC	OBC
	West	43	OBC	OBC
	South	43	OBC	OBC

Notes: OBC = Ontario Building Code, meeting a rating of STC 29.

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. It is recommended window manufacturers test data be reviewed to confirm acoustical performance is met. As the design progresses, final acoustical requirements should be reviewed. It is recommended that window manufacturers test data be reviewed to confirm the acoustical performance is met.

2.6 VENTILATION AND WARNING CLAUSE REQUIREMENTS

2.6.1 RESIDENTIAL UNITS

The requirements regarding warning clauses are summarized in **Table 2**. 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. Warning Clauses are summarized in **Appendix E**.

Based on the predicted façade noise levels, forced air heating with provisions for future installation of central air conditioning, and an MECP **Type C** warning clause, is recommended for all affected units with façade sound levels from road traffic that are between 56 and 65 dBA during the daytime, or between 51 and 60 dBA during night-time hours. Central air conditioning, and an MECP **Type D** warning clause, is recommended for all affected units with façade sound levels from road and rail traffic that exceed 65 dBA during the daytime, or exceed 60 dBA during night-time hours. The most conservative warning clause is for Warning Clause **Type D** for all units of the proposed development.

2.6.2 OUTDOOR LIVING AREAS

As the outdoor amenity area level is predicted to be between 55 dBA and 60 dBA, an MECP **Type A** Warning Clause is recommended for Level 5 - Suite 502 OLA.

The **Type A** warning clause is included in **Appendix E**.

3. STATIONARY SOURCE NOISE IMPACTS

A site visit was complete by SLR personnel on September 15, 2021, with observations made during all periods of the day. The site was found to be primarily surrounded by commercial buildings to the east, west and south and residential lands to the north. A context plan is shown in in **Figure 1**.

Significant ambient roadway noise from Innes Road and Mer-Bleue Road dominate within the area. As the surrounding area is primarily commercial/retail lands, the inclusion of stationary noise sources was determined based on the MECP Guideline D-6 Potential Influence Areas. Commercial/retail lands are considered to be Class 1 Industries, in which a 70 m influence area was applied for the inclusion of stationary noise sources. The 70 m influence area from the property line is shown in **Figure 5**.

3.1 STATIONARY NOISE MODELLING

Based on the information obtained from the local industries and from our site visit, the significant sources of noise in the area of the project have been identified. Modelled noise sources include:

- Commercial buildings in the immediate surrounding rooftop HVAC units;
- KFC/Taco Bell rooftop HVAC units;
- Kingdom Hall of Jehovah's Witnesses HVAC units;
- Touchless Car Wash
 - Car vacuum cleaner;
 - Car wash dryer;
 - Cars idling and queuing; and
- Petrol station HVAC units.

Noise impacts from stationary sources were modelled using Cadna/A, a software implementation of the internationally recognized ISO-9613-2 environmental noise propagation algorithms. Cadna/A / ISO-9613 is the preferred noise model of the MECP. The ISO 9613 equations account for:

- Source to receiver geometry;
- Distance attenuation;
- Atmospheric absorption;
- Reflections off of the ground and ground absorption;
- Reflections off of vertical walls; and
- Screening effects of buildings, terrain, and purpose-built noise barriers (noise walls, berms, etc.).

The following additional parameters were used in the modelling, which are consistent with providing a conservative (worst-case assessment of noise levels):

- Temperature: 10°C;
- Relative Humidity: 70%;
- Ground Absorption G: G=0.0 (reflective) as default global parameter;
- Reflection: An order of reflection of 1 was used (accounts for noise reflecting from walls);
- Wall Absorption Coefficients: Set to 0.37 (37 % of energy is absorbed, 63% reflected); and
- Terrain: Relatively flat near the Project site.

Generic SLR historical sound level data was applied in the stationary noise modelling. A summary of the sound levels used in the analysis and equipment operating conditions is included in **Appendix F**. All stationary sources modelled are shown in **Figure 5**.

3.2 STATIONARY NOISE CRITERIA

3.2.1 MECP NPC-300 GUIDELINES FOR STATIONARY NOISE SOURCES

MECP noise guidelines for stationary source noise impacting residential 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.

The acoustic environment surrounding the proposed development is dominated by the roadway noise. 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 (L_{eq} (1 hr) values, in dBA) 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 9 steady sound sources.

Table 9: NPC-300 Class 1 Continuous Sound Noise Requirements

Receiver Category	Time Period	Exclusionary Sound Level Limits, L_{eq} (1 hr), dBA ^[1]
Outdoor	0700 – 1900h	50
	1900 – 2300h	50
	2300 – 0700h	-
Plane of Window ^[2]	0700 – 1900h	50
	1900 – 2300h	50
	2300 – 0700h	45

Notes: [1] or minimum hourly L_{eq} of background noise, whichever is higher.

[2] Applicable for “Noise Sensitive Spaces”, as defined in NPC-300

Since the ambient sound levels were anticipated to exceed the NPC-300 exclusionary limits, sound exposures from roadway noise were assessed and the corresponding applicable guideline limits were determined.

Table 10 summarizes 2019 road traffic volumes applied in the ambient noise modelling.

Table 10: Summary of Road Traffic Data Used in the Ambient Noise Analysis

Roadway Link	Traffic Volumes (AADT)	% Day/ Night Volume Split ^[1]		Commercial Traffic Breakdown ^[1]		Vehicle Speed (km/h)
		Daytime	Night-time	% Medium Trucks	% Heavy Trucks	
Innes Road (4 Lane UAD)	30382 ^[1]	92	8	7	5	60
Mer-Bleue Road (4 Lane UAD)	19773 ^[1]	92	8	7	5	60

Notes: [1] Based on traffic data obtained from the City of Ottawa Transportation Intersection Volumes 2019 dataset published on <http://open.ottawa.ca>.

As with the Transportation assessment, ambient roadway noise was modelled as line sources of sound using the Cadna/A computer model. The minimum hourly L_{eq} for the ambient sound levels were found to exceed the NPC-300 default guideline limits during all periods of the day.

As a conservative assessment of stationary impacts, the daytime/evening operations were considered to be the same and were assessed against the stricter evening criteria.

Surrounding facility noise impacts were assessed against the higher of the modelled ambient noise levels and the exclusionary limits in **Table 9**.

3.2.2 PREDICTED FAÇADE LEVELS

The “building evaluation” feature of the Cadna/A was used to assess noise impacts on the residential portions of the towers, podium and townhouse blocks. This feature allows for noise levels to be predicted across the entire façade of a structure.

A summary of the predicted noise impacts on each façade are shown in **Table 11**, and **Figures 6** and **7** for daytime/evening and night-time periods, respectively. The difference between the existing ambient sound levels and the surrounding stationary noise impacts are shown in **Figures 8** and **9** for daytime/evening and night-time periods, respectively.

The stationary noise impacts were found to be at or below established limit for all facades, during all periods of the day. Therefore, the applicable guideline limits are met on all facades of the proposed development.

Table 11: Summary of Stationary Façade Sound Levels

Building Level	Façade ^[1]	Stationary Sound Levels ^[2]		Ambient Levels	
		L _{eq} Day /Eve (dBA)	L _{eq} Night (dBA)	L _{eq} Day /Eve (dBA)	L _{eq} Night (dBA)
Levels 1-4	North	45	39	≤ 71	≤ 61
	East	51	44	≤ 68	≤ 58
	South	50	43	≤ 58	≤ 48
	West	51	44	≤ 69	≤ 59
Level 5	North	45	39	≤ 70	≤ 60
	East	51	43	≤ 68	≤ 57
	South	50	43	≤ 58	≤ 48
	West	51	43	≤ 67	≤ 57

Notes: [1] Façade locations are identified on **Figures 6** and **7**.

[2] Sound levels shown represent the worst-case impact along the identified facade.

3.2.3 PREDICTED OLA LEVELS

The predicted worst-case noise impacts from the stationary sources are shown in **Figure 10**. The Level 5 OLA levels are predicted to be below the ambient background levels for outdoor amenity spaces. Therefore, noise mitigation is not required.

PART 2: IMPACTS OF THE DEVELOPMENT ON ITSELF

At the time of this assessment, the proposed development's mechanical systems have not been sufficiently designed.

If common mechanical systems will be implemented as part of the proposed development, the impacts from all equipment should comply with the MECP Publication NPC-300 guideline limits. The mechanical equipment is to be included with proposed development, the potential impacts should be assessed as part of the final building design. The criteria can be met at all surrounding and on-site receptors by the appropriate selection of mechanical equipment, by locating equipment with sufficient setback from noise sensitive locations, and by incorporating control measures (e.g., silencers) into the design. This can be confirmed at either the site plan approval or building permit approval stages.

If individual air conditioning systems are to be implemented for each residential unit for the proposed site, the sound levels from each unit should meet MECP Publication NPC-216.

PART 3: IMPACTS OF THE DEVELOPMENT ON THE SURROUNDING AREA

The building mechanical systems have not been designed at this time.

If common mechanical systems will be implemented as part of the proposed development, such equipment has the potential to result in noise impacts on residential spaces within the development. This equipment is required to meet MECP Publication NPC 300 requirements at the facades of the noise sensitive spaces within the development. Therefore, the potential impacts should be assessed as part of the final building design. The criteria are expected to be met at all on-site receptors with the appropriate selection of mechanical equipment, by locating equipment to minimize noise impacts within the development, and by incorporating control measures (e.g., silencers) into the design.

If individual air conditioning systems are to be implemented for each residential unit for the proposed site, there will be very little chance of offsite impacts as compliance is required to be met onsite.

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

4. CONCLUSION AND RECOMMENDATIONS

The potential for noise impacts on and from the proposed development have been assessed. Impacts of the environment on the development, the development on itself, and the development on the surrounding area have been considered. Based on the results of our studies, the following conclusions have been reached:

4.1 TRANSPORTATION NOISE

- An assessment of transportation noise impacts from surrounding roadways has been completed.
- Based on transportation façade sound levels upgraded glazing may not be required within the development, as outlined in **Section 2.5.2**.
- Noise impacts within the Level 5 outdoor amenity area are predicted to be within acceptable levels, as outlined in **Section 2.4.2**.
- As required by MECP Publication NPC-300, **Type A** and **Type D** Warning Clauses (outlined in **Section 2.6**) should be included in agreements registered on Title for the residential units, and included in agreements of purchase and sale. Warning Clauses are summarized in **Appendix E**.

4.2 STATIONARY NOISE

- “Stationary” noise from the surrounding commercial facilities were assessed on the proposed development, as outlined in **Section 3**.
- Stationary noise impacts from the surrounding commercial noise are predicted to meet NPC-300 Class 1 guideline limits on all façades, and the outdoor living area without noise control measures.

4.3 OVERALL ASSESSMENT

- Impacts of the environment on the proposed development can be adequately controlled with proper glazing and the inclusion of ventilation and warning clause requirements.

5. REFERENCES

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STATEMENT OF LIMITATIONS

This report has been prepared and the work referred to in this report has been undertaken by SLR Consulting (Canada) Ltd. (SLR) for 2809354 Ontario Inc., hereafter referred to as the “Client”. It is intended for the sole and exclusive use of the Client. The report has been prepared in accordance with the Scope of Work and agreement between SLR and the Client. Other than by the Client and as set out herein, copying or distribution of this report or use of or reliance on the information contained herein, in whole or in part, is not permitted unless payment for the work has been made in full and express written permission has been obtained from SLR.

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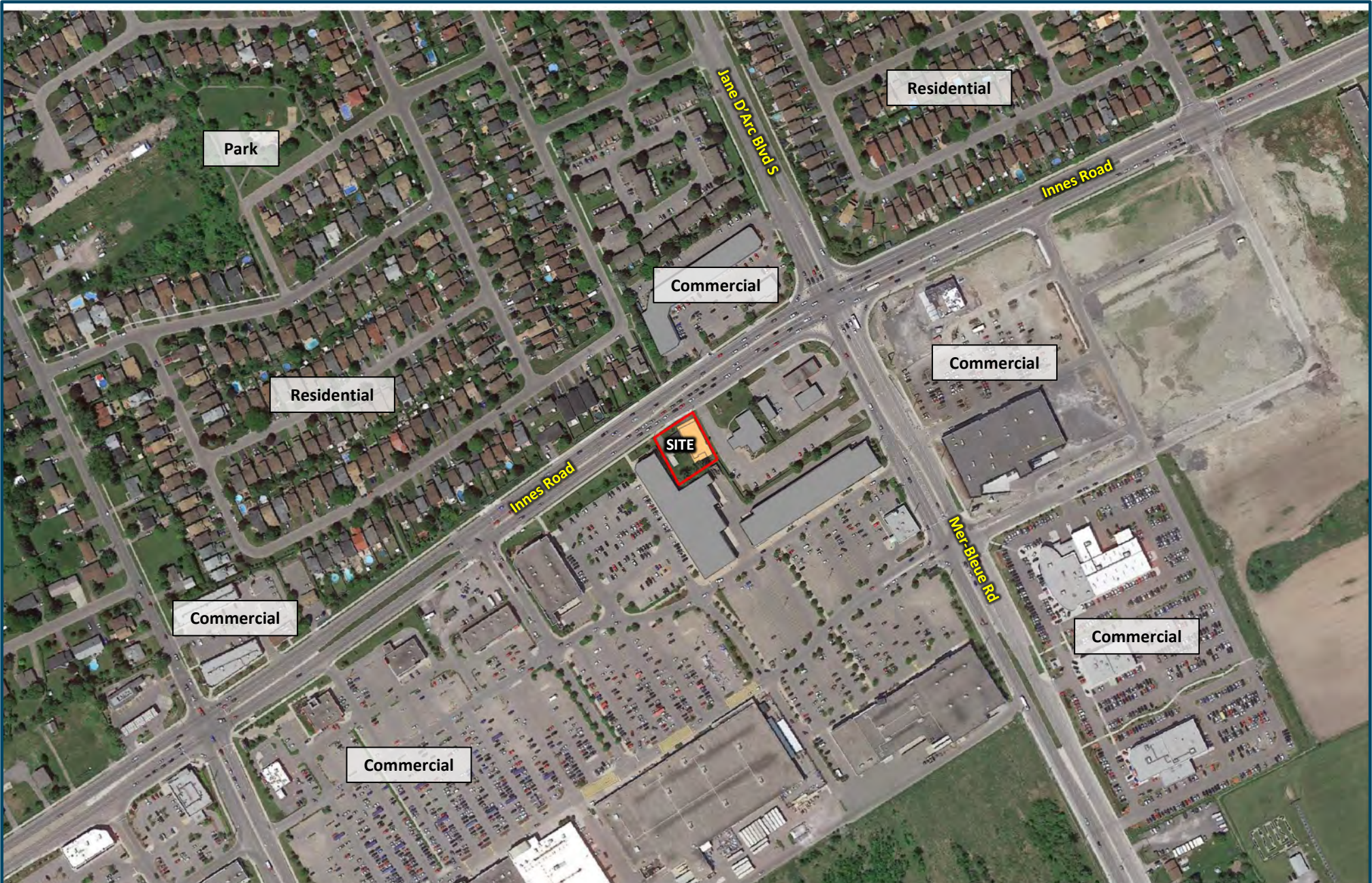
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Figures

Environmental Noise Assessment
3996 Innes Road
SLR Project No.: 241.30290.00000

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Park

Residential

Commercial

Residential

Commercial

SITE

Commercial

Commercial

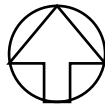
Commercial

2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

CONTEXT PLAN

True North



Scale: 1:4,000

Date: Nov 2, 2021

Project No. 241.30290.00000

METRES

Rev 1.0

Figure No.

1



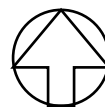


2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

FAÇADE SOUND LEVELS – DAYTIME ROAD IMPACTS

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

Project No. 241.30290.00000

METRES

Figure No.

2



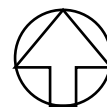


2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

FAÇADE SOUND LEVELS – NIGHT-TIME ROAD IMPACTS

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

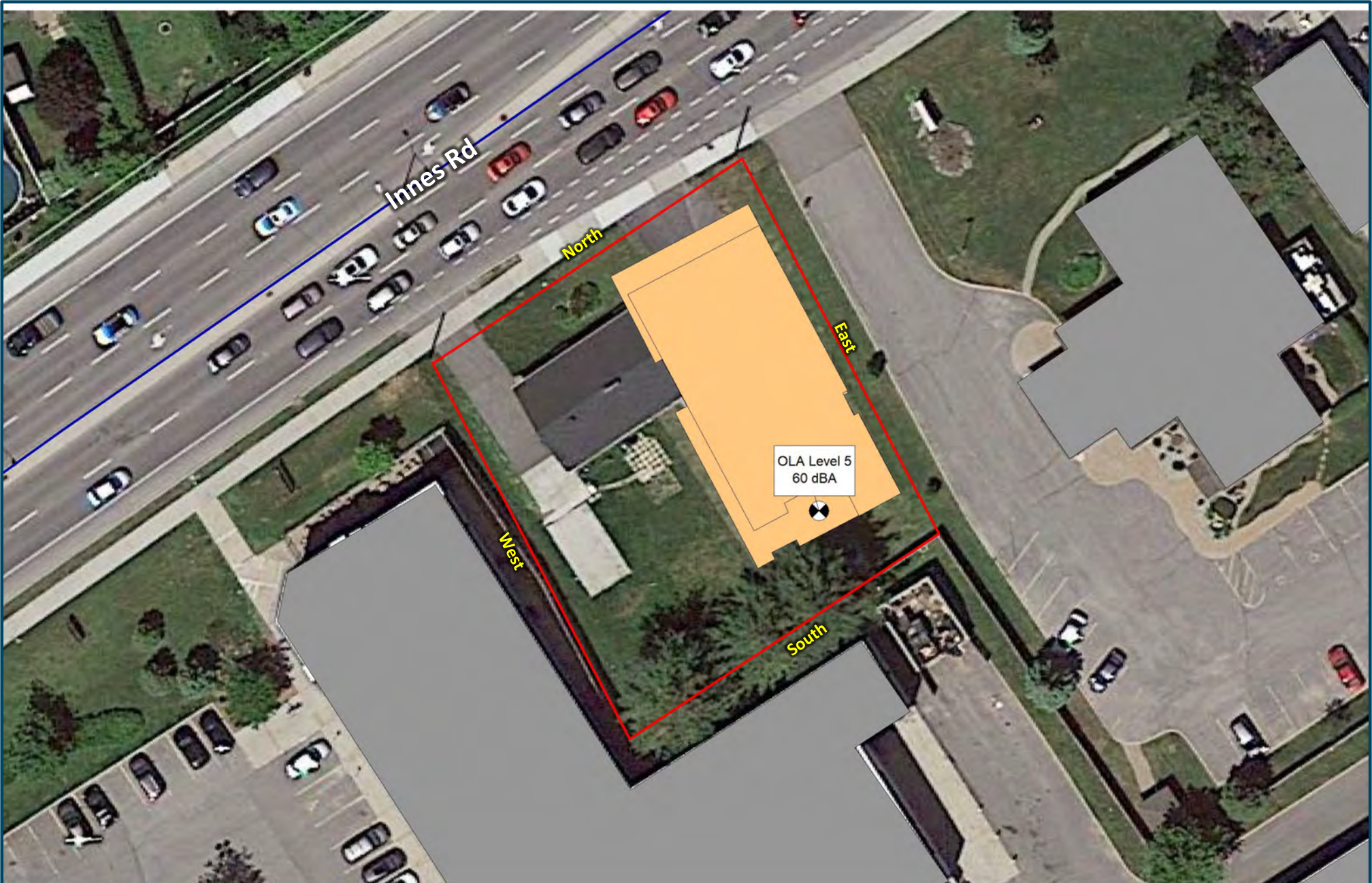
Project No. 241.30290.00000

METRES

Figure No.

3





2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

OUTDOOR LIVING AREA SOUND LEVELS - ROADWAY

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

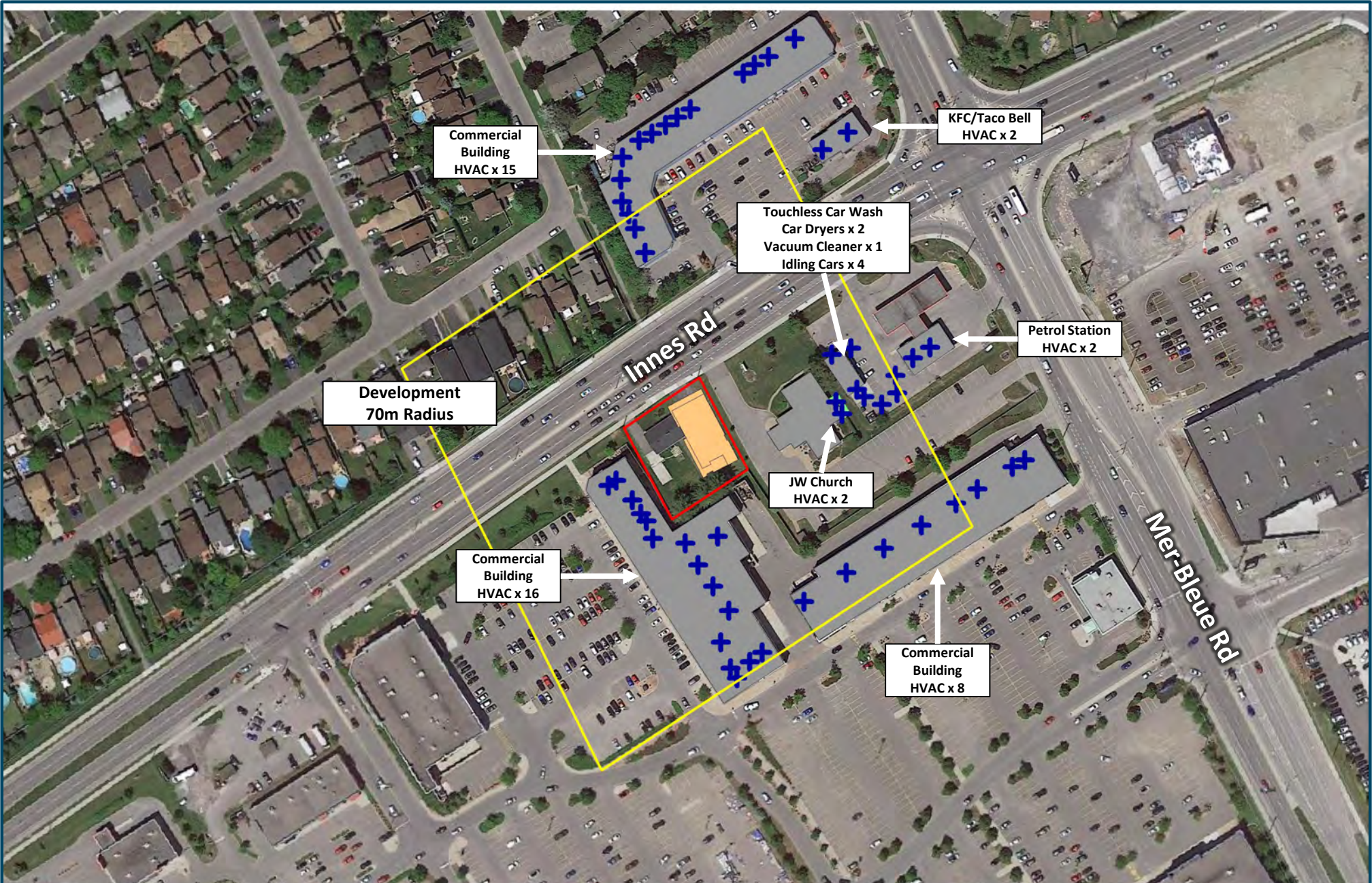
Project No. 241.30290.00000

METRES

Figure No.

4





2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

SURROUNDING STATIONARY SOURCE LOCATIONS

True North



Scale: 1:2050

Date: Nov 2, 2021

Rev 1.0

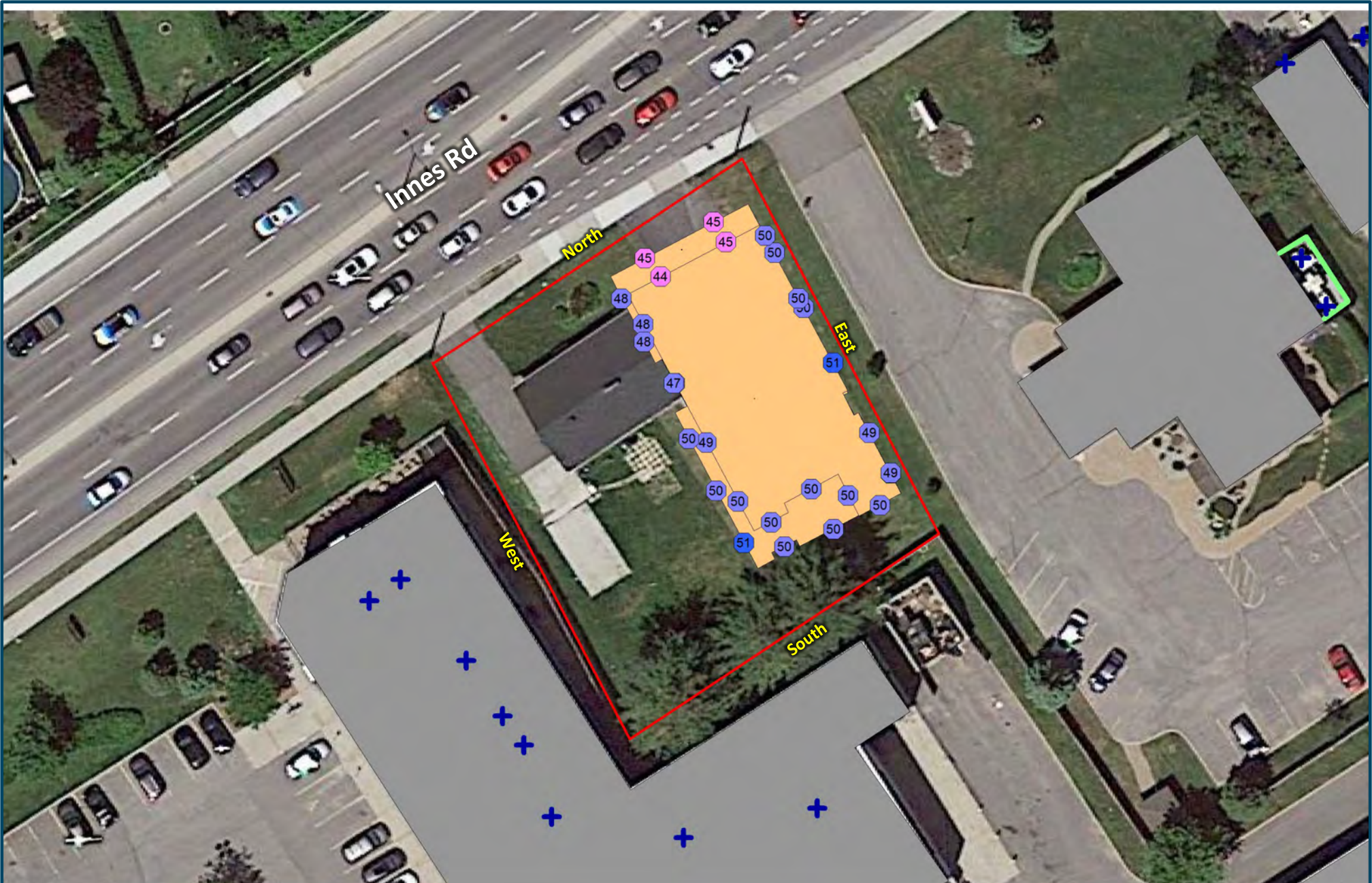
Project No. 241.30290.00000

METRES

Figure No.

5



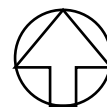


2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

MODELLED STATIONARY NOISE IMPACTS – DAYTIME/EVENING

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

Project No. 241.30290.00000

METRES

Figure No.

6





2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

MODELLED STATIONARY NOISE IMPACTS – NIGHT-TIME

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

Project No. 241.30290.00000

METRES

Figure No.

7





2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

MODELLED EXCESS OF THE GUIDELINE LIMITS STATIONARY NOISE – DAYTIME/EVENING

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

Project No. 241.30290.00000

METRES

Figure No.

8





2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

MODELLED EXCESS OF THE GUIDELINE LIMITS STATIONARY NOISE – NIGHT-TIME

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

Project No. 241.30290.00000

METRES

Figure No.

9



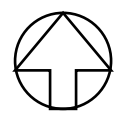


2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

OUTDOOR LIVING AREA SOUND LEVELS – SURROUNDING STATIONARY

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

Project No. 241.30290.00000

METRES

Figure No.
10



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 **Appendix A**
Development Drawings

Environmental Noise Assessment
3996 Innes Road
SLR Project No.: 241.30290.00000

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BUILDING CODE ANALYSIS

- 5 STOREYS MIXED USE BUILDING WITH BASEMENT FACING 1 STREET
- PARTS 3 OF OBC 2017, USE: GROUP "E", "D", "C" & F3
- CLASSIFICATION:
 - 3.2.2.43. Group C, up to 4 Storeys, Sprinklered
 - 3.2.2.51. Group D, up to 4 Storeys, Sprinklered
 - 3.2.2.57. Group E, up to 4 Storeys, Sprinklered
 - 3.2.2.74. Group F, Division 3, up to 4 Storeys
- NONCOMBUSTIBLE CONSTRUCTION.
- OCCUPANCY:
 - BASEMENT - CAR PARK
 - 1ST FLOOR - PHARMACY AND MEDICAL FACILITY.
 - UPPER FLOORS - RESIDENTIAL.
- BUILDING AREA: 556.5m² / 4 913.7 sq.ft.
- GROSS FLOOR AREA:
 - BASEMENT 586.9 m², 1ST FLOOR 456.5 m², TYPICAL FLOORS 2066.4 m², (516.6 m² * 4 FLOORS), FIFTH FLOOR 400 m².
 - TOTAL GROSS FLOOR AREA 3 509.8 m² / 37 779.2 sq.ft.
- FIRST FLOOR FIRE SEPARATION: 2HR FIRE-RESISTANCE REQUIRED CW VERTICAL STRUCTURAL COMPONENTS.
- SECOND FLOOR FIRE SEPARATION: 2HR FIRE-RESISTANCE RATING REQUIRED BETWEEN GROUPE "E" AND GROUPE "C" CW VERTICAL STRUCTURAL COMPONENTS.
- FIRE SEPARATION RATING FOR TYPICAL FLOORS: 1HR F.R.R. REQUIRED CW VERTICAL STRUCTURAL COMPONENTS.
- 3HR F.R.R. 50 STC REQUIRED BETWEEN PUBLIC CORRIDOR AND THE RESIDENTIAL UNITS.
- 1HR FIRE-RESISTANCE AND 55 STC REQUIRED BETWEEN ELEVATOR AND THE RESIDENTIAL UNITS.
- FIRE RESISTANCE FOR ROOF: NOT REQUIRED FOR NONCOMBUSTIBLE CONST.
- PLUMBING EQUIPMENTS:
 - 1 WASHROOM MIN. PER RESIDENTIAL UNIT REQUIRED AND ONE PUBLIC HANDICAP
 - 2 WASHROOM PROPOSED FOR FIRST FLOOR RETAIL AND MEDICAL FACILITY THAT INCLUDE 1 FOR HANDICAPS.
 - 2 STANDARD WASHROOM ARE PROPOSED FOR EMPLOYEES ONLY.
 - BARRIER FREE PATH OF TRAVEL PROVIDED FOR ALL FLOORS ACCORDING TO SECTION 3.8.

BASEMENT GROSS FLOOR AREA : 586.9 M2
 COMMERCIAL GROSS FLOOR AREA : 456.5M2
 (CLINIC NET AREA: 200 M2) (PHARMACY NET AREA : 169.2 M2)
 RESIDENTIAL GROSS FLOOR AREA : 2 066.4 M2

GROSS FLOOR AREA OF RESIDENTIAL SUITES

SUITE 201, 301, 401	SUITE 203, 303, 403	SUITE 205, 305, 405	SUITE 501
76.3M2	77.6M2	69.0M2	187.1M2
SUITE 202, 302, 402	SUITE 204, 304, 404	SUITE 206, 306, 406	SUITE 502
76.3M2	64.15M2	80.7M2	173.5M2

AREA (C) OF SCHEDULE A1 ZONING BY-LAW NO. 2008-250

PARKING TYPE	RATE	UNIT	PARKING REQUIRED
DWELLING UNITS IN MIXED-USE BUILDING (TABLE 101-R19)	1 Stall / dwelling unit	20 units	20 Stalls
VISITOR PARKING (TABLE 102)	0.2 Stalls / dwelling unit	20 units	4 Stalls
MEDICAL FACILITY (table 101-N51)	4 Stalls / 100m ² of GFA	200 m ²	8 Stalls
RETAIL USE (PHARMACY)	3.4 Stalls / 100m ²	175 m ²	6 Stalls
10% REDUCTION AS PER SEC. 101.6 (C)	-10%	20 units	-2 Stalls
SHARED PARKING REDUCTION WEDNESDAY AFTERNOON (TABLE 105)	-25% of visitor parking	-15% of retail store	-2 Stalls

34 PARKING STALLS PROVIDED IN THE BASE BUILDING INCLUDE 2 ACCESSIBLE

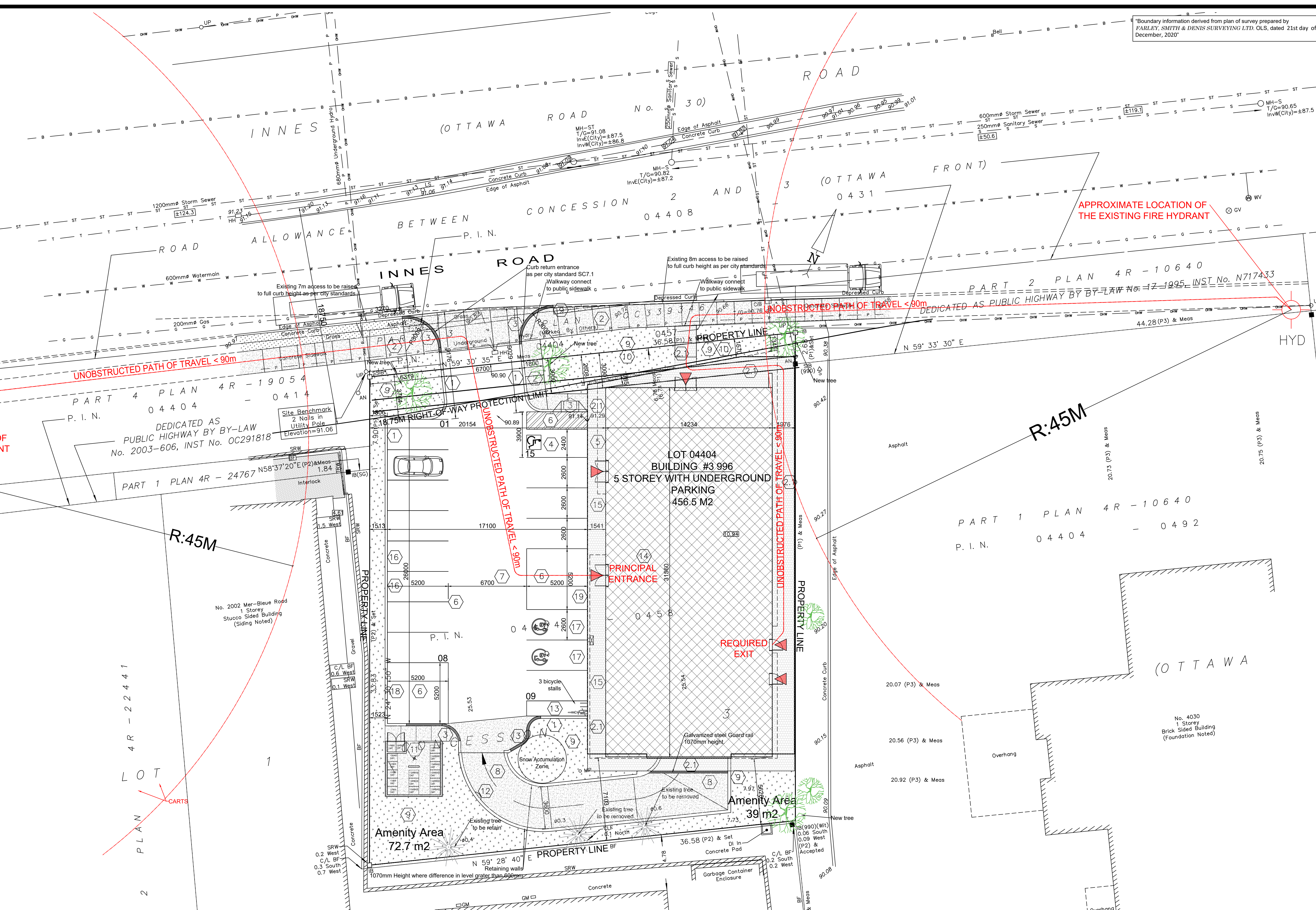
ZONING MECHANISMS : AM ZONE

DESCRIPTION	REQUIREMENTS	PROVIDED
MINIMUM LOT AREA	NO MINIMUM	1 524.64m ²
MINIMUM LOT WIDTH	NO MINIMUM	
FRONT YARD AND CORNER SIDE YARD	NO MINIMUM	1st FLOOR: 3m Others Floors : 1.3m
MINIMUM INTERIOR SIDE YARD	NO MINIMUM	1.975m
MINIMUM REAR YARD	NO MINIMUM	5.6m
MAXIMUM BUILDING HEIGHT	25M	18.6m
MAXIMUM FLOOR SPACE INDEX	2 or 3.5	
MINIMUM WIDTH OF LANDSCAPED AREA AROUND A PARKING LOT ABUTTING A STREET	3m	3m
MINIMUM WIDTH OF LANDSCAPED AREA AROUND A PARKING LOT NOT ABUTTING A STREET	1.5m	1.5m

BYCICLE PARKING SPACE TABLE

PARKING TYPE	RATE	UNIT	PARKING REQUIRED
MEDICAL FACILITY	1 per 100m ² of GFA	200 m ²	1 Space
RETAIL STORE (PHARMACY)	1 per 250m ² of GFA	175 m ²	1 Space
DWELLING UNITS IN A MIXED-USE BUILDING (TABLE 101-R19)	0.5 / dwelling unit	20 units	10 Space
TOTAL			12 Spaces

- LEGEND**
- ① CONCRETE CURB.
 - ② CONCRETE WALKWAY.
 - ③ INTERLOCK SIDEWALK.
 - ④ DEPRESSED SIDEWALK.
 - ⑤ PARKING SPACE FOR DISABLED.
 - ⑥ MUNICIPAL SIGN FOR DISABLED PARKING.
 - ⑦ PAINT MARKS.
 - ⑧ ASPHALT.
 - ⑨ CONCRETE SLAB / OR RAMP.
 - ⑩ GRASS.
 - ⑩ LANDSCAPED AREA.
 - ⑪ 2m HEIGHT TRASH ENCLOSURE FOR CARTS.
 - ⑫ WALL MOUNTED TRAFFIC MIRROR.
 - ⑬ 3 OUTDOOR BICYCLE STALLS.
 - ⑭ 9 INDOOR BICYCLE STALLS.
 - ⑮ WALL MOUNTED LIGHTING ON BUILDING.
 - ⑯ VISITOR PARKING SIGN.
 - ⑰ ELECTRICAL CHARGING STATION.
 - ⑱ GARBAGE TRUCK LOADING AREA.
 - ⑲ DELIVERY TRUCK LOADING/UNLOADING.



ISSUED FOR			REVISION		
No	DATE	DESCRIPTION	No	DATE	DESCRIPTION
	2021.10.05	UDRP SUBMISSION		2021.10.15	FIRE PROTECTION

PRELIMINARY

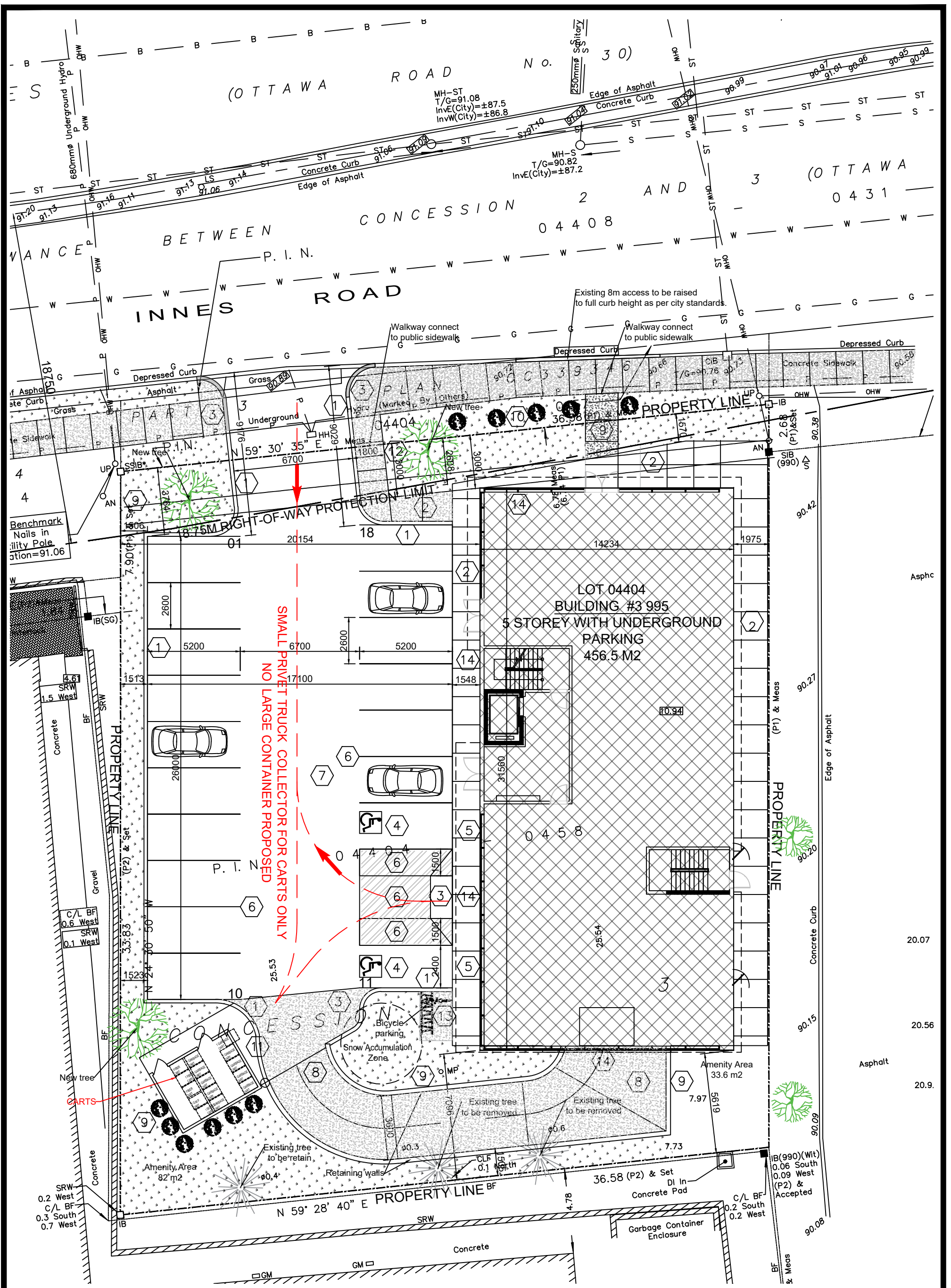
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Pierre Tabet architecte Inc.
 167 Rue De Roquebrune Gatineau, Qc, J8T 7Y6
 Tel.: 819-568 3994 / 613-797 5375 Télécopieur : 819-246 4312
 E-mail : ptabetarchitecte@outlook.com

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Project		ORLEANS MEDICAL AND RESIDENTIAL FACILITY 3996 INNES RD, OTTAWA ON.	
Title	PROPOSED SITE PLAN	Scale:	Scale: 1:150
Date:	2021/10/15	Sheet:	
Revision:	0	Drawn /:	P.T.
		Drawing No.	A-100

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Pierre J. Tabet architect

167 De ROQUEBRUNE Gatineau, Qc, J8T 7Y6
 Tel. : 819-568 3994/613-797 5375 Fax : 819-246 4312
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Project **ORLEANS MEDICAL AND RESIDENTIAL FACILITY**
 3996 INNES RD, OTTAWA ON.

Title **SITE PLAN**
 Accessory Building for Carts

Scale: 1:200

Date: 2021/06/02

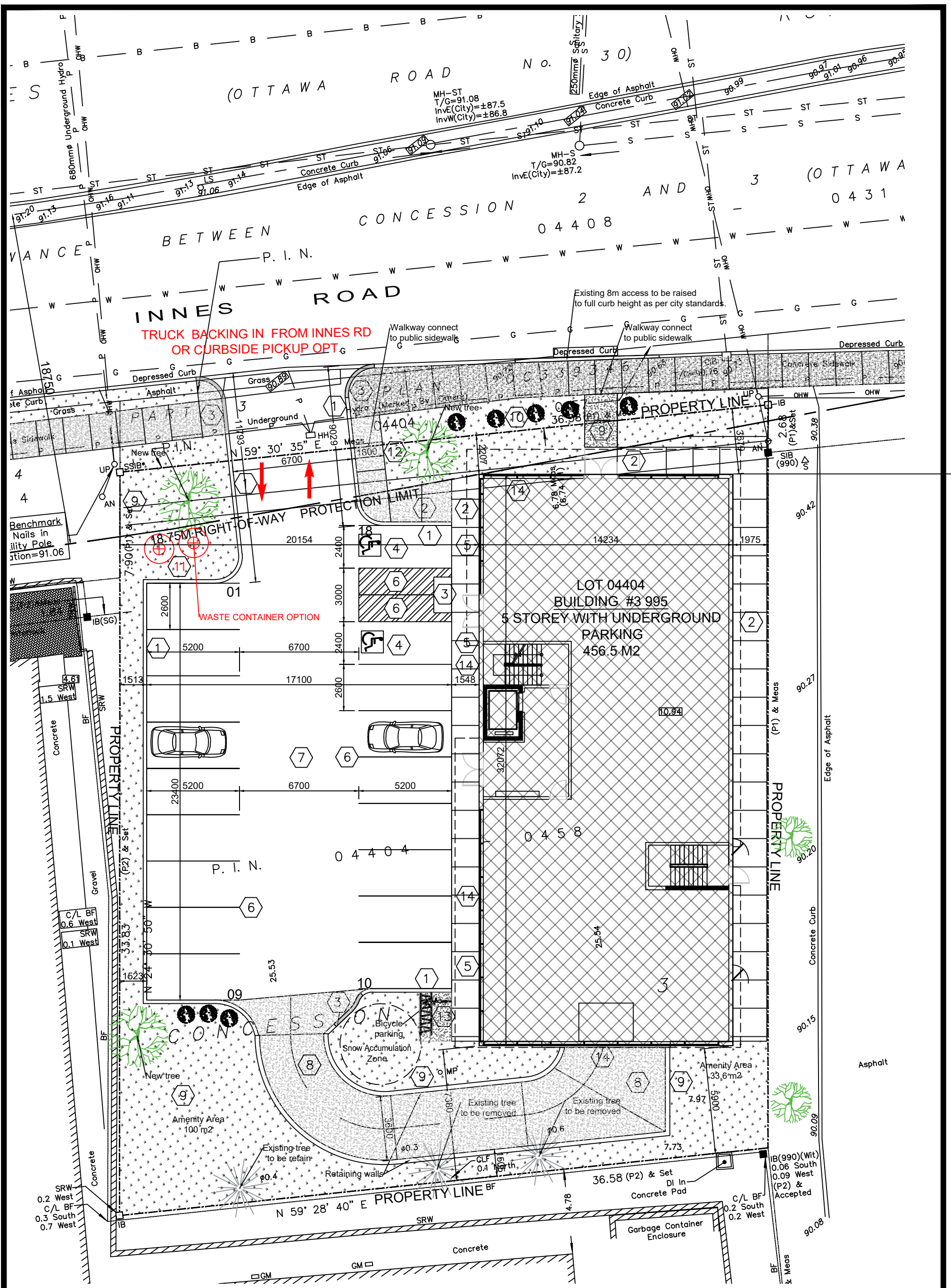
Drawn /A.A.

No. Drawing

Revision: 1

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A-101



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 Tel. : 819-568 3994/613-797 5375 Fax : 819-246 4312
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Project **ORLEANS MEDICAL AND RESIDENTIAL FACILITY**
3996 INNES RD, OTTAWA ON.

Title **SITE PLAN**
Totem Option

Scale: 1:200

Date: 2021/06/1

Drawn /:A.A.

No. Drawing

Revision: 1

Verify /: P.Tabet

A-102

BUILDING CODE ANALYSIS

- 4 STOREYS MIXED USE BUILDING WITH BASEMENT FACING 1 STREET
- 1ST FLOOR: MERCANTILE AND BUSINESS, CAR STORAGE IN BASEMENT AND RESIDENTIAL IN UPPER FLOORS.
- BUILDING AREA : 552.2m² / 5943.8 sq.ft. / GROSS FLOOR AREA : 2 367.44 m² / 25 482.48 sq.ft.
- PARTS 3 OF OBC 2012. USE: GROUP "E", "D", "C" AND F3
- CLASSIFICATION:
 - 3.2.2.43. Group C, up to 4 Storeys, Sprinklered
 - 3.2.2.51. Group D, up to 4 Storeys, Sprinklered
 - 3.2.2.57. Group E, up to 4 Storeys, Sprinklered
 - 3.2.2.74. Group F, Division 3, up to 4 Storeys
- COMBUSTIBLE CONSTRUCTION OR NONCOMBUSTIBLE.
- FIRST FLOOR FIRE SEPARATION: 2HR FIRE-RESISTANCE REQUIRED CW VERTICAL STRUCTURAL COMPONENTS.
- SECOND FLOOR FIRE SEPARATION: 2H FIRE-RESISTANCE RATING REQUIRED BETWEEN GROPE "E" AND GROUP "C" CW VERTICAL STRUCTURAL COMPONENTS.
- 3RD, 4TH FLOORS FIRE SEPARATION: 1 HR F.R.R. REQUIRED CW VERTICAL STRUCTURAL COMPONENTS.
- 3/4 HR F.R.R. 50 STC REQUIRED BETWEEN PUBLIC CORRIDOR AND THE RESIDENTIAL UNITS. 1 HR FIRE-RESISTANCE AND 55 STC REQUIRED BETWEEN ELEVATOR AND THE RESIDENTIAL UNITS.
- FIRE RESISTANCE FOR ROOF: NOT REQUIRED FOR NONCOMBUSTIBLE CONST.
- PLUMBING EQUIPMENTS:
 - 1 WASHROOM MIN. PER RESIDENTIAL UNIT REQUIRED AND ONE PUBLIC HANDICAP WASHROOM PROPOSED FOR FIRST FLOOR RETAIL AND PROFESSIONAL SERVICES USE. 3 MORE REGULAR WASHROOM ARE PROVIDED.
- BARRIER FREE PATH OF TRAVEL REQUIRED ACCORDING TO SECTION 3.8.

BASEMENT GROSS FLOOR AREA : 586.9 M2
 COMMERCIAL GROSS FLOOR AREA : 449.2M2
 (CLINIC NET AREA: 200 M2) (PHARMACY NET AREA : 169.2 M2)
 RESIDENTIAL GROSS FLOOR AREA : 2 475.3 M2

GROSS FLOOR AREA OF RESIDENTIAL SUITES			
SUITE 201, 301, 401	SUITE 203, 303, 403	SUITE 205, 305,405	SUITE 501
76.3M2	77.6M2	69.0M2	187.1M2
SUITE 202, 302,402	SUITE 204, 304,404	SUITE 206. 306,406	SUITE 502
76.3M2	64.15M2	80.7M2	173.5M2

- COLLECTION CONTAINER FOR LOW-RISE MULTI-UNIT RESIDENTIAL BUILDING:**
- GARBAGE: 0.231 CUBIC YARD PER UNIT**
 0.231 x 20 units = 4.62 yd³
 1 x 4-yard container (H:48" W84" L 54")
- RECYCLING: 0.018 CUBIC YARDS PER UNIT FOR FEL GLASS-METAL-PLASTIC (GMP) CONTAINER**
 0.018 x 20 units = 0.36 yd³ = 1 cart of 360L (W26.38" D 33.62" H46.5")
- 0.062 CUBIC YARD PER UNIT FOR FEL FIBRE CONTAINERS.**
 0.062 x 20 units = 1.24 yd³ = 3 cart of 360L (W26.38" D 33.62" H46.5")
- ORGANICS: 47L GREEN BIN FOR EACH DWELLING**
 240L GREEN CONTAINER PER 50 UNITS = 1 X 240L cart (W24" D 27" H41.5")
 10 sq.m. AREA FOR BULK ITEMS

PARKING SPACES TABLE			
DESCRIPTION	REQUIREMENTS	GROSS FLOOR AREA	NUMBER OF PARKING SPACES
MEDICAL CLINIC	4 SPACES /100M2	200 m2	8
RETAIL USE (PHARMACY)	3.4 PER 100M2	169.2 m2	6
RESIDENTIAL UNITS	1.2 SPACES / DWELLING	20 UNITS	24
VISITOR PARKING	0.2 SPACE / DEWLLING	20 UNITS	4
10% REDUCTION -SEC. 101 (6) (C)		OF 20 UNITS	-2
SHARED PARKING REDUCTION		OF 14 UNITS	-3
TOTAL			37

NOTE: 37 PARKING SPACES PROVIDED IN THE BASE BUILDING INCLUDE 2 ACCESSIBLE.

ZONING MECHANISMS : AM ZONE		
DESCRIPTION	REQUIREMENTS	PROVIDED
MINIMUM LOT AREA	NO MINIMUM	1524.64m2
MINIMUM LOT WIDTH	NO MINIMUM	
FRONT YARD AND CORNER SIDE YARD	NO MINIMUM	1st. FLOOR: 3m Others Floors : 2.3m
MINIMUM INTERIOR SIDE YARD	NO MINIMUM	1.975m
MINIMUM REAR YARD	NO MINIMUM	5.9m
MAXIMUM BUILDING HEIGHT	25M	14.8m
MAXIMUM FLOOR SPACE INDEX	2 or 3.5 <small>IF 80% PARKING BELOW GRADE</small>	
MINIMUM WIDTH OF LANDSCAPED AREA AROUND A PARKING LOT ABUTTING A STREET	3m	3m
MINIMUM WIDTH OF LANDSCAPED AREA AROUND A PARKING LOT NOT ABUTTING A STREET	1.5m	1.5m

BYCILCLE PARKING SPACE TABLE			
DESCRIPTION	REQUIREMENTS	GROSS FLOOR AREA	NUMBER OF PARKING SPACES
MEDICAL CLINIC	1 PER 1000M2	175 m2	1
RETAIL USE (PHARMACY)	1 PER 250M2	175 m2	1
RESIDENTIAL UNITS INCLUDE VISITOR PARKING	0.5 PER UNIT	20 UNITS	10
ALL OTHER CASES	1 PER 1500M2	0 m2	0
TOTAL			12

LÉGENDE	
① CONCRETE CURB	⑨ GRASS.
② WALKWAY	⑩ LANDSCAPED AREA.
③ DEPRESSED SIDEWALK.	⑪ TRASH ENCLOSURE: Semi-underground waste container bee bin (2x 5000 Liters)
④ PARKING SPACE FOR DISABLED.	⑫ SIGN ON POST.
⑤ MUNICIPAL SIGN FOR DISABLED PARKING.	⑬ GROUND: BYCILCLE PARKING 6 units
⑥ PAINT MARKS	⑭ BASEMENT: BYCILCLE PARKING 6 units
⑦ ASPHALT.	⑮ WALL MOUNTED LIGHTING ON BUILDING
⑧ CONCRETE SLAB	

(By-law 2016-249)

(aa) Despite clause 107(1)(a), in the case of an apartment dwelling, low-rise, stacked dwelling, or an apartment mid-rise, or apartment high-rise, the maximum permitted width for a double traffic lane that leads to: (i) Less than 20 parking spaces: 3.6m (ii) 20 or more parking spaces: 6.7m (By-law 2014-289)

- 20-UNIT**
- Garbage: 1 x 4 yard bin or 10 CARTS OF 360L
- Fiber: 3x 360L carts
- Glass metal plastic: 1 x 360L cart
- Organics: 1 x 240L cart



FRONT YARD LOCATION OPTION

L'installation facile peut se faire sans les pattes d'ancrage qui sont en option voir guide d'installation Totem®.

Dimensions en pouces	A	B	C	D	E	Ouverture	Hauteur du couvercle
5000 Litres	100 1/2	35 1/2	85 1/2	107 1/2	65 1/2	23 5/8	12 1/2
3000 Litres	100 1/2	35 1/2	51 1/2	107 1/2	65 1/2	17 5/16	12 1/2
1300 Litres	100 1/2	35 1/2	37 1/2	107 1/2	65 1/2	11 13/16	12 1/2

EarthBin® REAR YARD LOCATION OPTION
 Specification for EarthBin Organics & EarthBinEvent™

Model:	EB260
Capacity/Volume:	4.0 cu. yd. (3000 litres)
Capacity/Weight:	2600 lbs (1200 kg)
Width (A):	80 in. (203 cm)
Length (B):	70 in. (178 cm)
Overall Height (C):	56.3 in. (143 cm)
Load Height (D):	49.4 in. (126 cm)
Waste Feed Opening:	19 x 24 in. (48 x 61 cm)
Organics Feed Opening:	19 x 24 in. (48 x 61 cm)
Cardboard Feed Opening:	6 x 24 in. (15 x 61 cm)
Recyclables Feed Opening:	12 in. (30 cm) Diameter
Weight (Empty):	650 lbs (295 kg)
Configuration:	• Rectangular above-ground container
Feed Doors:	• Two (2) lockable per container (front & rear) • Feed door struts
Locks:	• Two (2) automatic Gravity Latches on main Service Door
Materials:	• Rigid rotomolded premium virgin polyethylene bin

Pierre J. Tabet architect

167 De ROQUEBRUNE Gatineau, Qc, J8T 7Y6
 Tel. : 819-568 3994/613-797 5375 Fax : 819-246 4312
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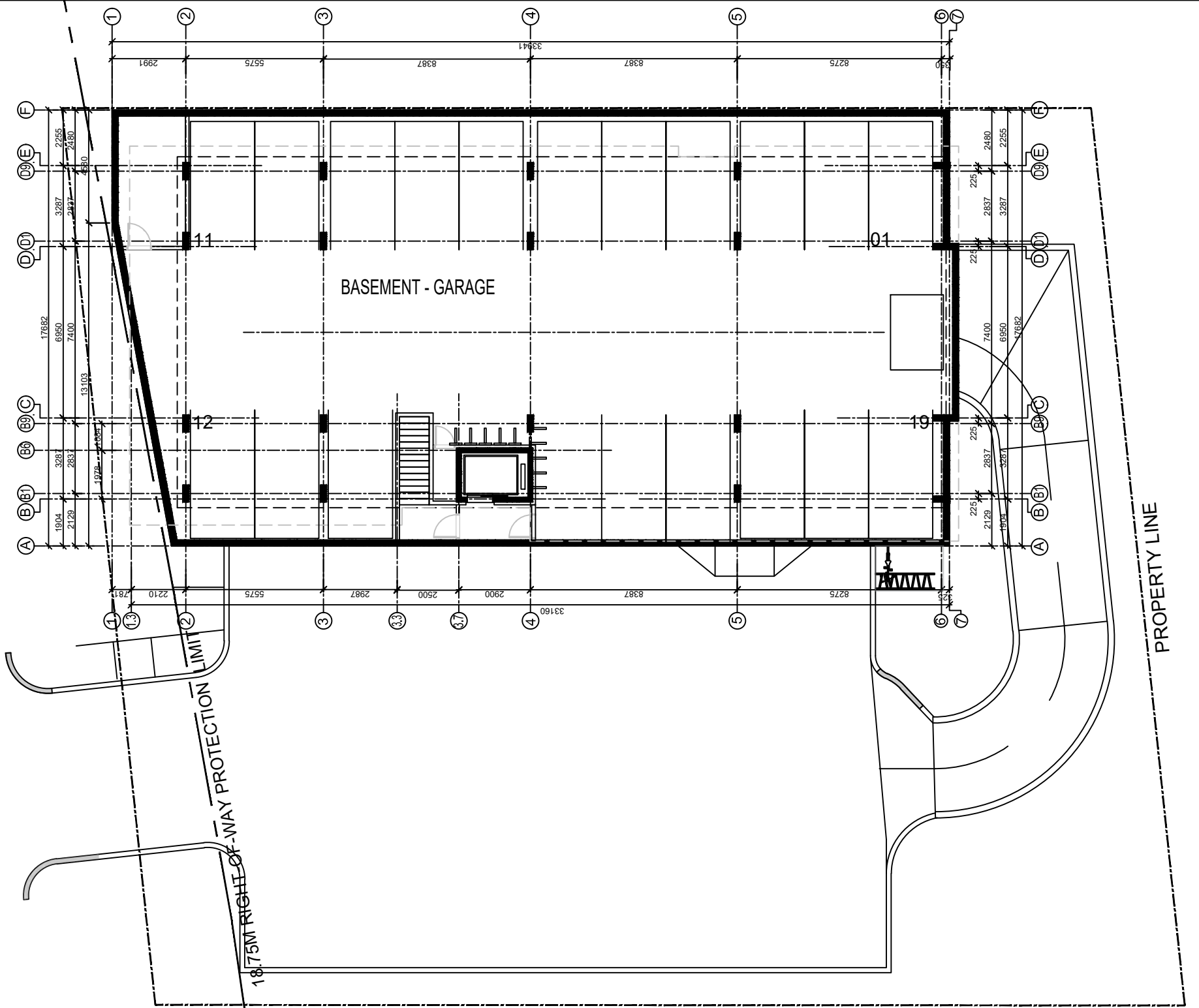
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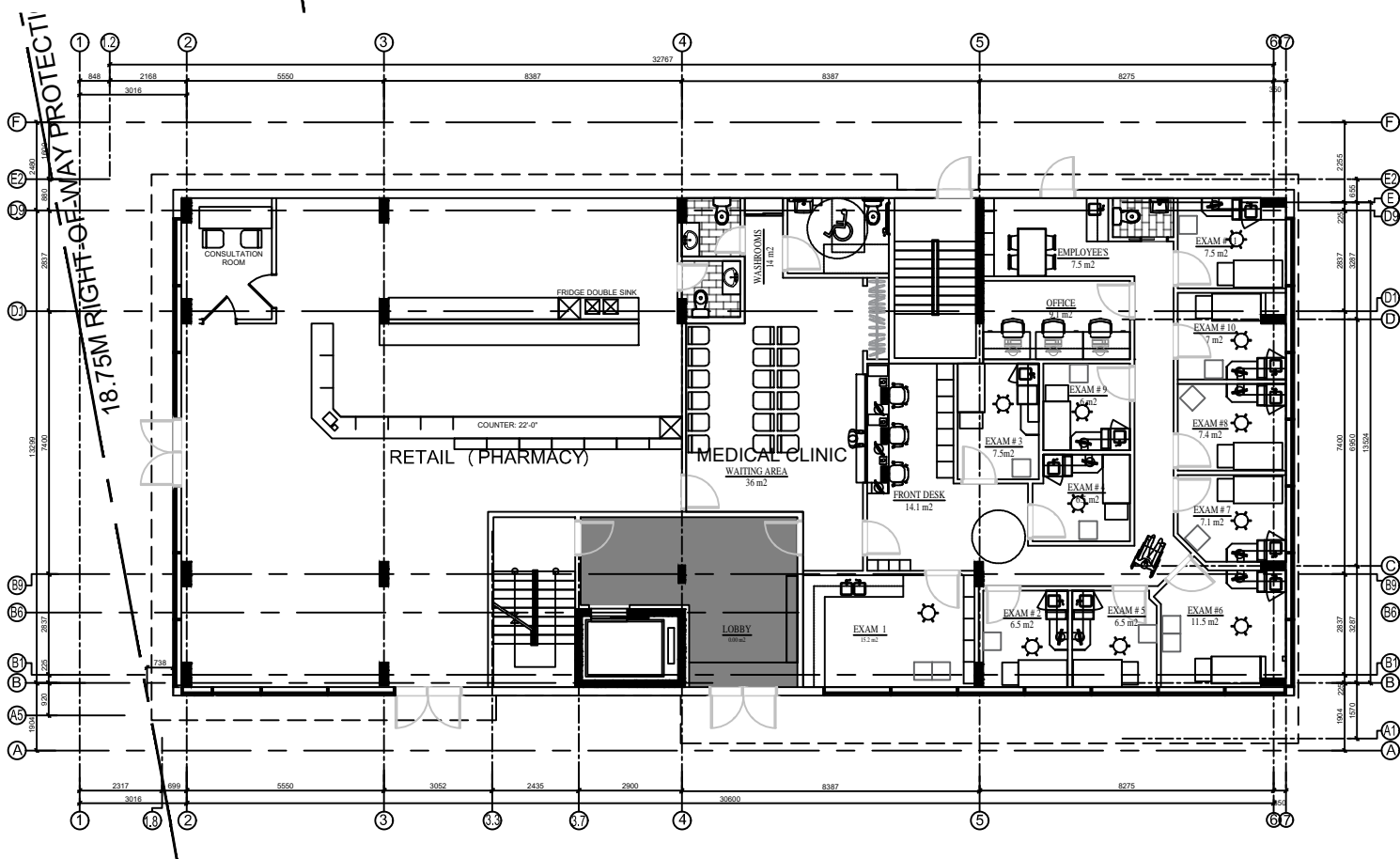


Project **ORLEANS MEDICAL AND RESIDENTIAL FACILITY**
 3996 INNES RD, OTTAWA ON.

Title		Scale: N/A
CODE AND ZONING ANALYSIS		
Date: 2021/06/02	Drawn /:A.A.	No. Drawing A-102
Revision: 1	Verify /: P.Tabet	



BASEMENT FLOOR PLAN



1ST FLOOR PLAN

Pierre J. Tabet architect

167 De ROQUEBRUNE Gatineau, Qc, J8T 7Y6
 Tel. : 819-568 3994/613-797 5375 Fax : 819-246 4312
 courriel : pierre.tabet@hotmail.com

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Stamps



Project **ORLEANS MEDICAL AND RESIDENTIAL FACILITY**
3996 INNES RD, OTTAWA ON.

Title **BASEMENT AND 1ST FLOOR**

Scale: 1:200

Date: 2021/06/02

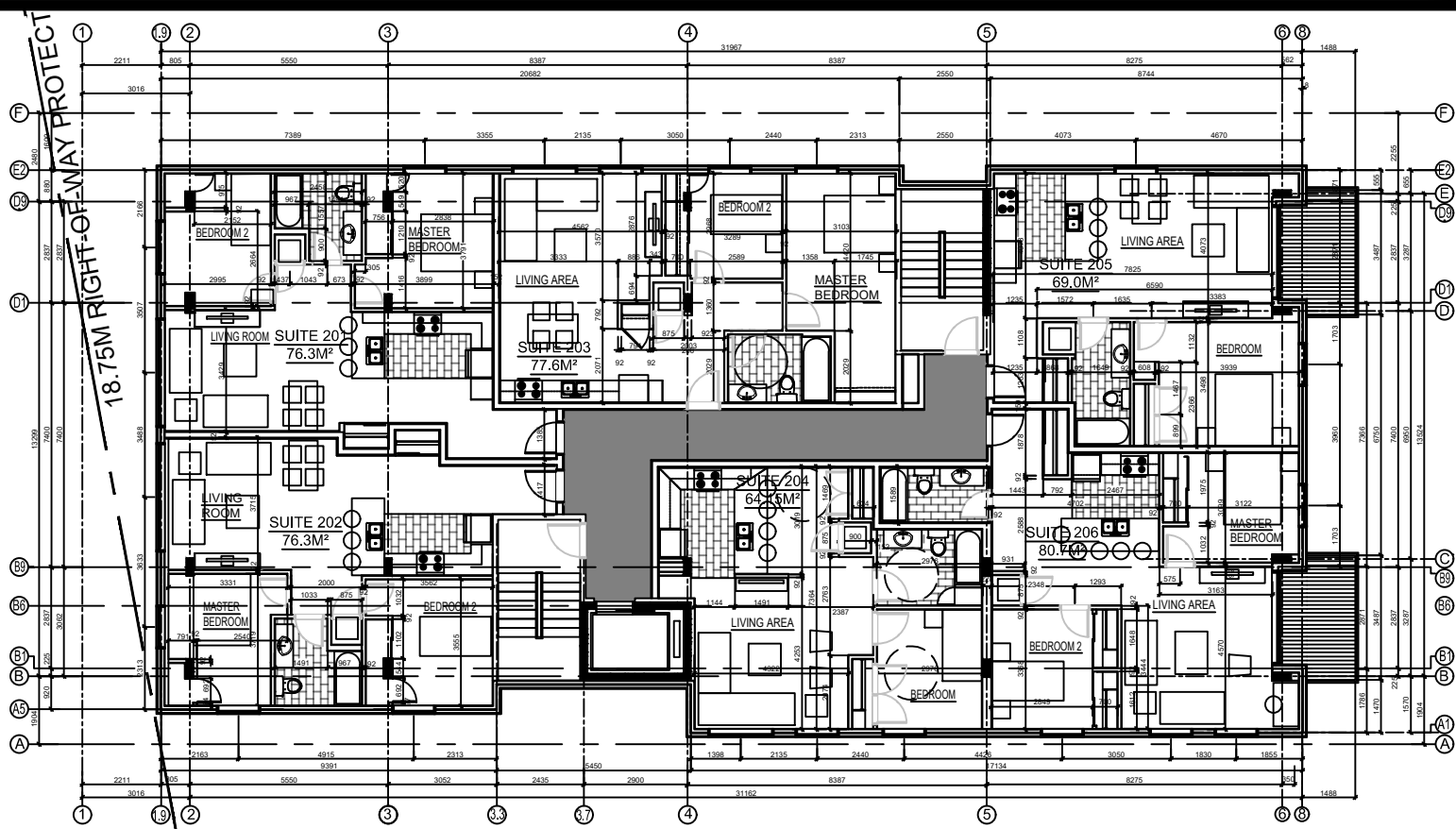
Drawn /:A.A.

No. Drawing

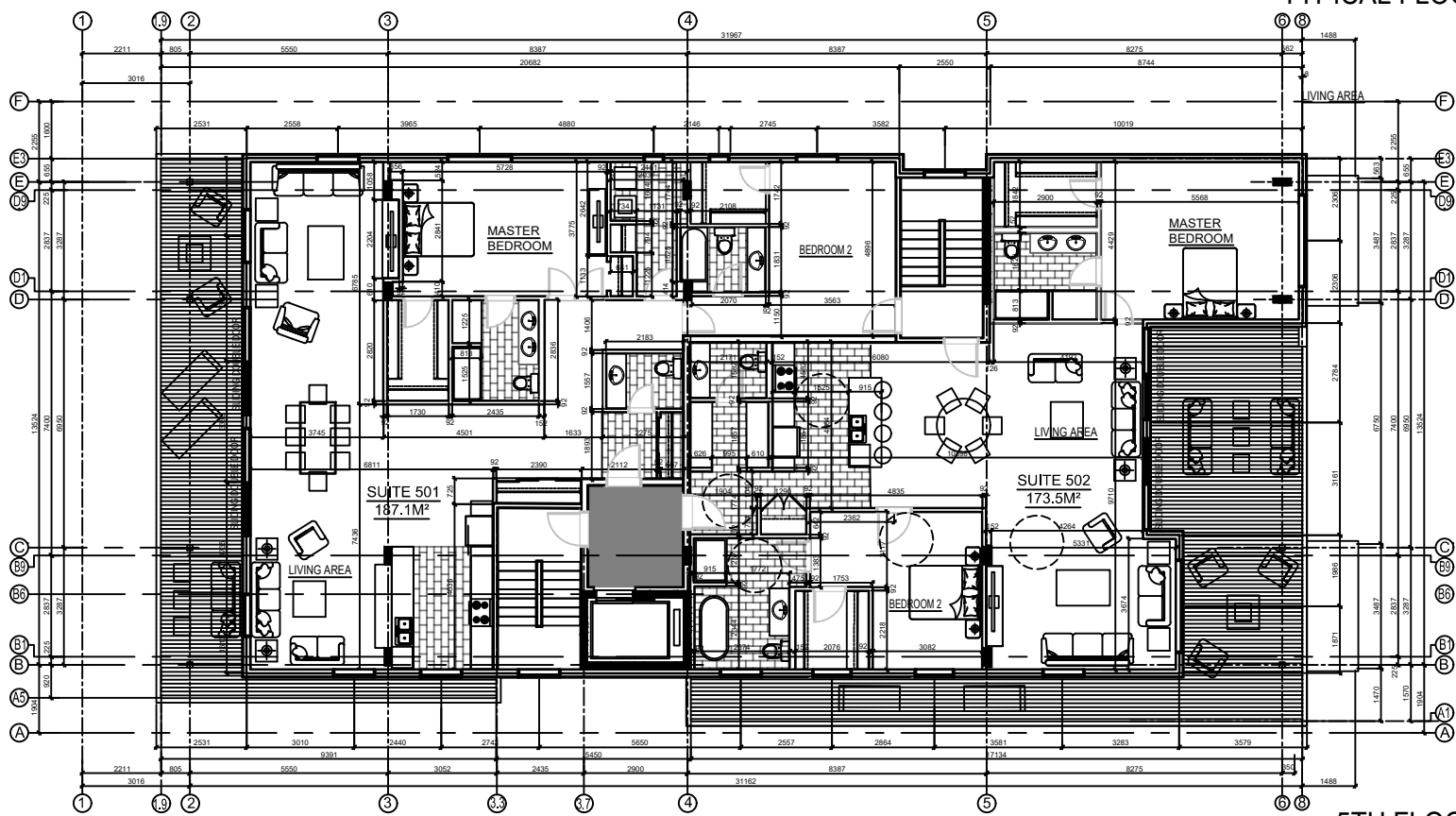
Revision: 1

Verify /: P.Tabet

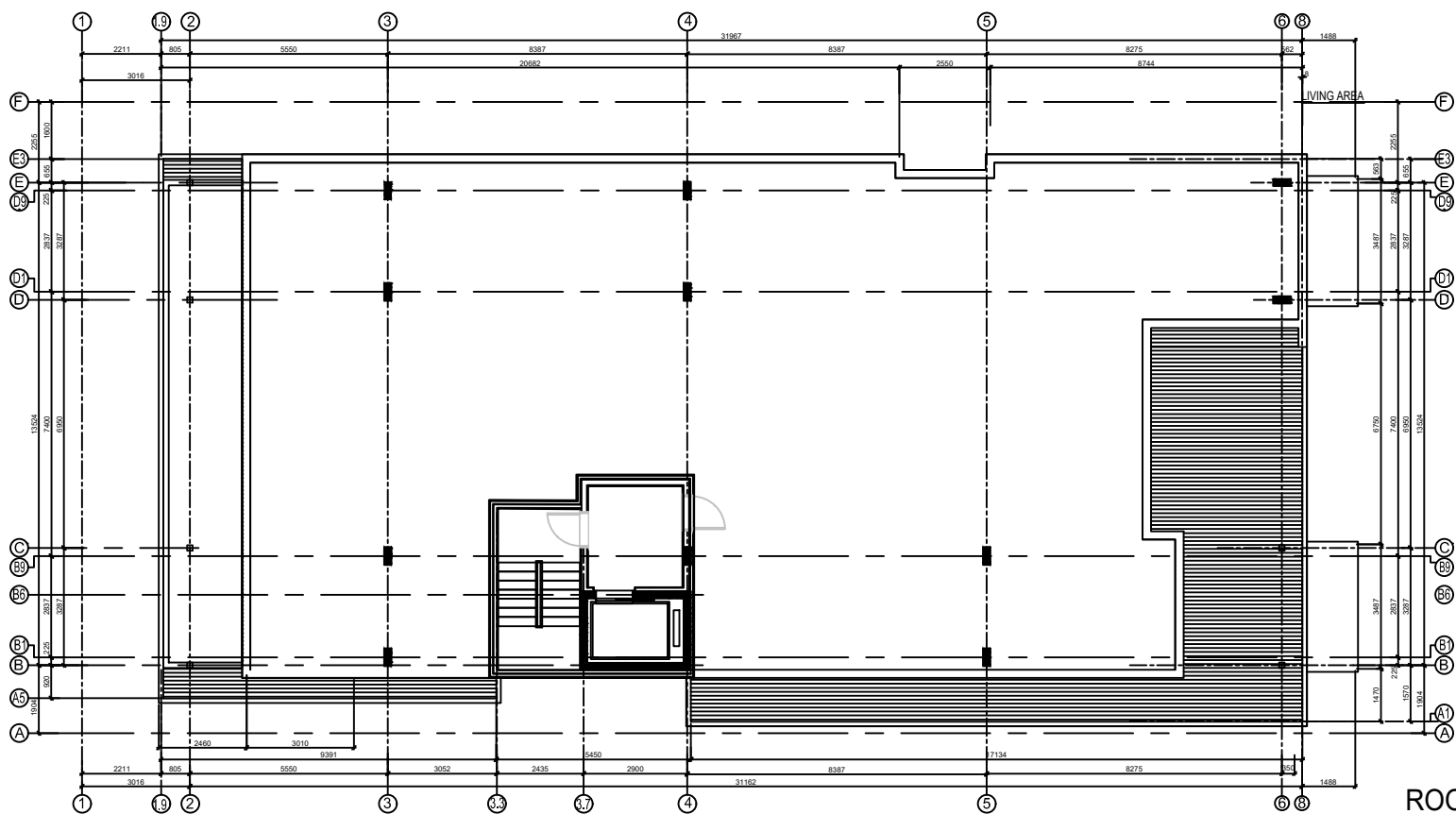
A-300



TYPICAL FLOOR PLAN



5TH FLOOR PLAN



ROOF PLAN

Pierre J. Tabet architect

167 De ROQUEBRUNE Gatineau, Qc, J8T 7Y6
 Tel. : 819-568 3994/613-797 5375 Fax : 819-246 4312
 courriel : pierre.tabet@hotmail.com

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Stamps



Project **ORLEANS MEDICAL AND RESIDENTIAL FACILITY**
 3996 INNES RD, OTTAWA ON.

Title **TYPICAL FLOOR, 5TH FLOOR**
ROOF PLAN

Scale: 1:200

Date: 2021/06/02

Drawn /:A.A.

No. Drawing

Revision: 1

Verify /: P.Tabet

A-320

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 **Appendix B**
Traffic Data and Calculations

Environmental Noise Assessment
3996 Innes Road
SLR Project No.: 241.30290.00000

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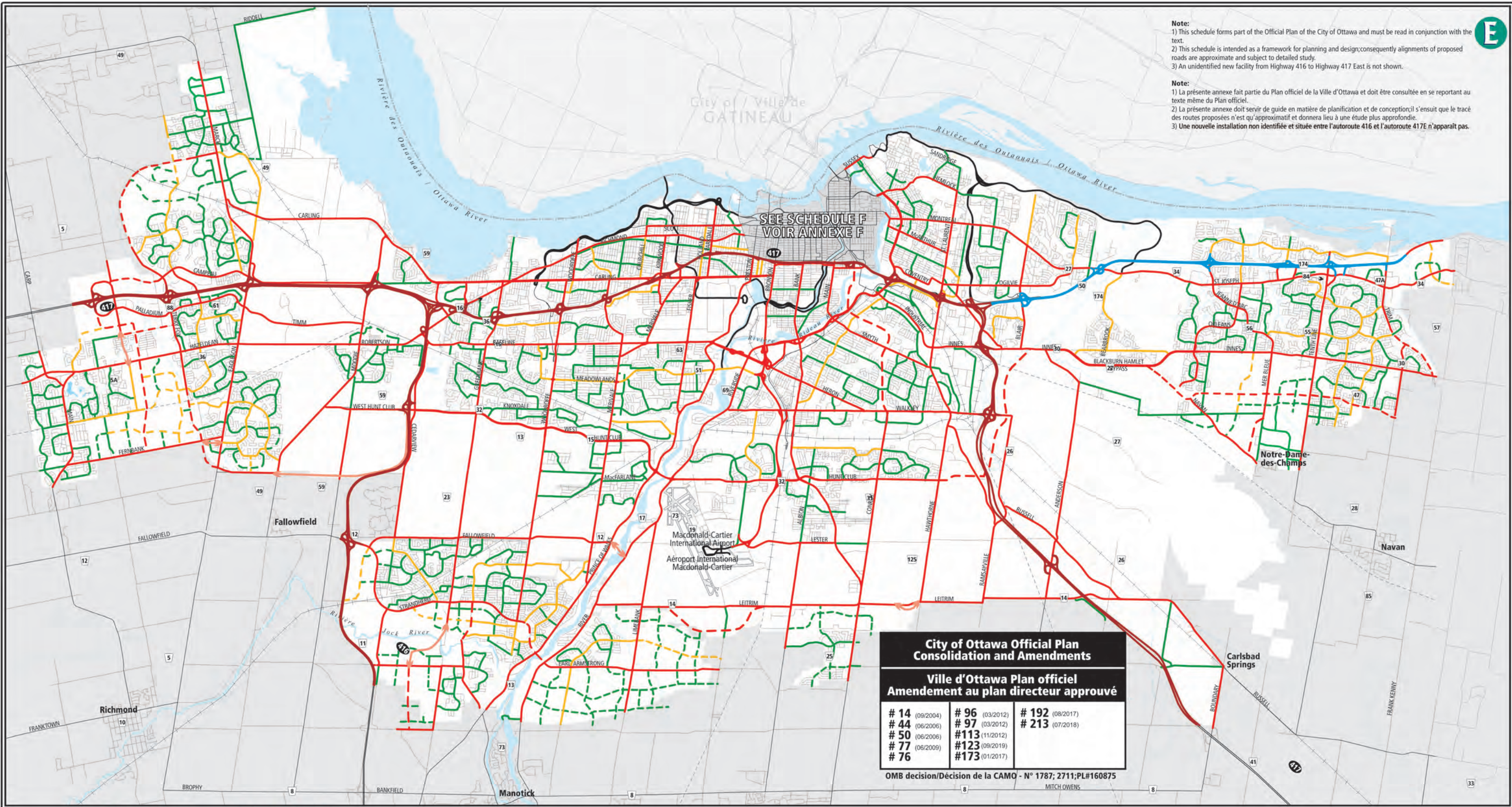
ORNAMENT - Sound Power Emissions & Source Heights

Ontario Road Noise Analysis Method for Environment and Transportation

Road Segment ID	Roadway Name	Link Description	Speed (kph)	Period (h)	Total Traffic Volumes	Auto %	Med %	Hvy %	Auto	Med	Heavy	Road Gradient (%)	PWL (dBA)	Source Height, s (m)	Reference Leq (dBA)
Innes Road (4 Lane UAD)	Innes Road	Daytime Impacts	60	16	32200	88.0%	7.0%	5.0%	28336	2254	1610	0	88.7	1.5	73.7
		Nighttime Impacts	60	8	2800	88.0%	7.0%	5.0%	2464	196	140	0	81.1	1.5	66.1
Mer Bleue Road (4 Lane UAD)	Mer Bleue Road	Daytime Impacts	60	16	32200	88.0%	7.0%	5.0%	28336	2254	1610	0	88.7	1.5	73.7
		Nighttime Impacts	60	8	2800	88.0%	7.0%	5.0%	2464	196	140	0	81.1	1.5	66.1

Note:
 1) This schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text.
 2) This schedule is intended as a framework for planning and design; consequently alignments of proposed roads are approximate and subject to detailed study.
 3) An unidentified new facility from Highway 416 to Highway 417 East is not shown.

Note:
 1) La présente annexe fait partie du Plan officiel de la Ville d'Ottawa et doit être consultée en se reportant au texte même du Plan officiel.
 2) La présente annexe doit servir de guide en matière de planification et de conception; il s'ensuit que le tracé des routes proposées n'est qu'approximatif et donnera lieu à une étude plus approfondie.
 3) Une nouvelle installation non identifiée et située entre l'autoroute 416 et l'autoroute 417E n'apparaît pas.



SEE SCHEDULE F
 VOIR ANNEXE F

City of Ottawa Official Plan Consolidation and Amendments
Ville d'Ottawa Plan officiel Amendement au plan directeur approuvé

# 14 (09/2004)	# 96 (03/2012)	# 192 (08/2017)
# 44 (06/2006)	# 97 (03/2012)	# 213 (07/2018)
# 50 (06/2006)	# 113 (11/2012)	
# 77 (06/2009)	# 123 (09/2019)	
# 76	# 173 (01/2017)	

OMB decision/Décision de la CAMO - N° 1787; 2711; PL#160875

**Official Plan - Schedule E
 Urban Road Network**
**Plan officiel - Annexe E
 Routes Arterial - Urbain**

Prepared by: Planning, Infrastructure and Economic Development Department

Préparé par : Services de la planification, de l'infrastructure et du développement économique

- | | | | | |
|--|---|--|----------------------------|---|
| Provincial Highway
Route provinciale | City Freeway
Autoroute de ville | Federally Owned Road
Chemin de propriété fédéral | Arterials
Artère | Major Collectors
Grande collectrice |
| Existing ——— | Existing ——— | Existing ——— | Existing ——— | Existing ——— |
| Proposed - - - - | Proposed - - - - | Proposed - - - - | Proposed - - - - | Proposed - - - - |
| (Alignment defined) | (Alignment defined) | (Alignment defined) | (Alignment Defined) | (Alignment Defined) |
| | | | Conceptual ———> | Conceptuelle ———> |
| | | | (Alignment Undefined) | (Alignement à déterminer) |

Ottawa

Scale / Echelle
 2km 1 0 1 2 3 4km

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Appendix B: Table of Traffic and Road Parameters To Be Used For Sound Level Predictions

Table B1 Traffic And Road Parameters To Be Used For Sound Level Predictions

Row Width (m)	Implied Roadway Class	AADT Vehicles/Day	Posted Speed Km/Hr	Day/Night Split %	Medium Trucks %	Heavy Trucks % ¹
NA ²	Freeway, Queensway, Highway	18,333 per lane	100	92/8	7	5
37.5-44.5	6-Lane Urban Arterial-Divided (6 UAD)	50,000	50-80	92/8	7	5
34-37.5	4-Lane Urban Arterial-Divided (4-UAD)	35,000	50-80	92/8	7	5
23-34	4-Lane Urban Arterial-Undivided (4-UAU)	30,000	50-80	92/8	7	5
23-34	4-Lane Major Collector (4-UMCU)	24,000	40-60	92/8	7	5
30-35.5	2-Lane Rural Arterial (2-RAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Urban Arterial (2-UAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Major Collector (2-UMCU)	12,000	40-60	92/8	7	5
30-35.5	2-Lane Outer Rural Arterial (near the extremities of the City) (2-RAU)	10,000	50-80	92/8	7	5
20-30	2-Lane Urban Collector (2-UCU)	8,000	40-50	92/8	7	5

¹ The MOE Vehicle Classification definitions should be used to estimate automobiles, medium trucks and heavy trucks.

² The number of lanes is determined by the future mature state of the roadway.

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 **Appendix C**

STAMSON Output Files

Environmental Noise Assessment

3996 Innes Road

SLR Project No.: 241.30290.00000

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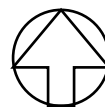


2809354 ONTARIO INC.

3996 INNES ROAD, ORLEANS

COMPARISON OF CADNAA AND STAMSON

True North



Scale: 1:500

Date: Nov 2, 2021

Rev 1.0

Project No. 241.30290.00000

METRES

Figure No.

C.1



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Filename: innes1.te Time Period: 16 hours
Description:

Road data, segment # 1: Innes Rd

Car traffic volume : 28336 veh/TimePeriod
Medium truck volume : 2254 veh/TimePeriod
Heavy truck volume : 1610 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Innes Rd

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 18.25 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Innes Rd

Source height = 1.50 m

ROAD (0.00 + 72.82 + 0.00) = 72.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	73.68	0.00	-0.85	0.00	0.00	0.00	0.00	72.82

Segment Leq : 72.82 dBA

Total Leq All Segments: 72.82 dBA

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 **Appendix D**

BPN-56 Façade Calculations

Environmental Noise Assessment

3996 Innes Road

SLR Project No.: 241.30290.00000

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BPN 56 Calculation Procedure - Required Glazing STC Rating (Fixed Veneer)

ROADWAY

Receptor ID	Source Description	Sound Levels				Room / Façade Inputs					Source Inputs			Veneer - Component 1		Glazing - Component 2	
		Façade Sound Level: (dBA)	Free - field Correction: (dBA)	Required Indoor Sound Level: (dBA)	Required Noise Reduction: (dBA)	Glazing as % of Wall Area	Exposed Wall Height (m)	Exposed Wall Length (m)	Room Depth (m)	Room Absorption:	Incident Sound Angle: (deg)	Angle Correction Factor:	Spectrum type:	Assumed Veneer STC (STC)	Component Category:	Component Category:	Require Glazing STC (STC)

DAYTIME

L1-4_N_MBR	Level 1-4 - North Façade - Master Bedroom	73	3	45	31	16%	3.0	3.7	2.9	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	30
L1-4_W_MBR	Level 1-4 - West Façade - Master Bedroom	70	3	45	28	21%	3.0	2.9	3.7	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	26
L1-4_N_LR	Level 1-4 - North Façade - Living Room	73	3	45	31	68%	3.0	3.0	11.0	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	28
L1-4_N_BR2	Level 1-4 - North Façade - Bedroom 2	73	3	45	31	16%	3.0	3.7	3.0	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	30
L1-4_W_BR	Level 1-4 - West Façade - Bedroom	69	3	45	27	17%	3.0	3.6	3.6	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	23
L14_W_LR	Level 1-4 - West Façade - Living Room	69	3	45	27	34%	3.0	4.3	7.4	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	23
L1-4_E_MBR	Level 1-4 - East Façade - Master Bedroom	69	3	45	27	21%	3.0	2.8	3.8	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	24
L1-4_E_LR	Level 1-4 - East Façade - Living Room	69	3	45	27	32%	3.0	4.6	6.4	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	24
L5_N_LR	Level 5 - North Façade - Living Room	72	3	45	30	70%	3.0	14.2	6.8	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	30
L5_W_LR	Level 5 - West Façade - Living Room	69	3	45	27	17%	3.0	6.8	14.2	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	18
L5_E_LR	Level 5 - East Façade - Living Room	69	3	45	27	16%	3.0	3.7	14.2	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	17
L5_E_MBR	Level 5 - East Façade - Master Bedroom	69	3	45	27	16%	3.0	5.7	3.8	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	23

NIGHT-TIME

L1-4_N_MBR	Level 1-4 - North Façade - Master Bedroom	65	3	40	28	16%	3.0	3.7	2.9	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	26
L1-4_W_MBR	Level 1-4 - West Façade - Master Bedroom	63	3	40	26	21%	3.0	2.9	3.7	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	23
L1-4_N_LR	Level 1-4 - North Façade - Living Room	65	3	45	23	68%	3.0	3.0	11.0	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	20
L1-4_N_BR2	Level 1-4 - North Façade - Bedroom 2	65	3	40	28	16%	3.0	3.7	3.0	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	26
L1-4_W_BR	Level 1-4 - West Façade - Bedroom	62	3	40	25	17%	3.0	3.6	3.6	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	21
L14_W_LR	Level 1-4 - West Façade - Living Room	62	3	45	20	34%	3.0	4.3	7.4	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	16
L1-4_E_MBR	Level 1-4 - East Façade - Master Bedroom	62	3	40	25	21%	3.0	2.8	3.8	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	22
L1-4_E_LR	Level 1-4 - East Façade - Living Room	62	3	45	20	32%	3.0	4.6	6.4	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	17
L5_N_LR	Level 5 - North Façade - Living Room	64	3	45	22	70%	3.0	14.2	6.8	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	22
L5_W_LR	Level 5 - West Façade - Living Room	60	3	45	18	17%	3.0	6.8	14.2	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	9
L5_E_LR	Level 5 - East Façade - Living Room	61	3	45	19	16%	3.0	3.7	14.2	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	9
L5_E_MBR	Level 5 - East Façade - Master Bedroom	61	3	40	24	16%	3.0	5.7	3.8	Intermediate	0 - 90	0	D. mixed road traffic, distant aircraft	43	D. sealed thick window, or exterior wall, or	C. sealed thin window, or openable thick window	20

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 **Appendix E**

Required Warning Clauses

Environmental Noise Assessment
3996 Innes Road
SLR Project No.: 241.30290.00000

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SUMMARY OF MITIGATION MEASURES AND WARNING CLAUSES

Warning Clauses

Warning Clauses may be used individually or in combination. The following 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:

Transportation Sources (Road)

MECP Type A Warning Clause – Level 5 – Unit 502 OLA

“Purchasers/tenants are advised that sound levels due to increasing road 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 D Warning Clause – All units

“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.”

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Appendix F

Stationary Source Sound Level Data

Environmental Noise Assessment
3996 Innes Road
SLR Project No.: 241.30290.00000

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Modelling Information Summary

Source Description	Maximum Sound Power Levels (1/1 Octave Band Levels)									Modelled Sound Power Level (dBA)	Notes
	32	63	125	250	500	1000	2000	4000	8000		
North-East Commercial Building											
Rooftop 5 Ton HVAC	70	73	74	74	73	71	67	63	57	76	- Based on historical SLR data. - 60 min of operation applied during daytime/evening and 10 min during nighttime
KFC/Taco Bell											
Rooftop 10 Ton HVAC	75	78	79	79	78	76	73	68	63	81	- Based on historical SLR data. - 60 min of operation applied during daytime/evening and 15 min during nighttime
Rooftop 15 Ton HVAC	87	90	91	91	90	88	84	80	74	93	- Based on historical SLR data. - 60 min of operation applied during daytime/evening and 15 min during nighttime
Petrol Station											
Rooftop 5 Ton HVAC	70	73	74	74	73	71	67	63	57	76	- Based on historical SLR data. - 60 min of operation applied during daytime/evening and 30 min during nighttime
Touchless Car Wash											
Car Wash Dryer Entrance	92	97	92	89	95	89	90	84	77	96	- Based on historical SLR data.
Car Wash Dryer Exit	102	107	102	99	105	99	100	94	87	106	- Based on historical SLR data.
Car Wash Vacuum	80	84	81	90	78	81	85	87	84	92	- Based on historical SLR data.
Drive-Thru Idling Car Queue	--	85	80	75	72	70	69	65	55	76	- Based on average idling vehicle sound level. - 60 min of operation applied during daytime.
Kingdom Hall of Jehova's Witnesses											
5 Ton HVAC	70	73	74	74	73	71	67	63	57	76	- Based on historical SLR data. - 60 min of operation applied during daytime/evening and 15 min during nighttime
Immediate Surrounding Commercial Building											
Rooftop 5 Ton HVAC	70	73	74	74	73	71	67	63	57	76	- Based on historical SLR data. - 60 min of operation applied during daytime/evening and 10 min during nighttime

Source Description	Maximum Sound Power Levels (1/1 Octave Band Levels)									Modelled Sound Power Level (dBA)	Notes
	32	63	125	250	500	1000	2000	4000	8000		
Rooftop 10 Ton HVAC	75	78	79	79	78	76	73	68	63	81	- Based on historical SLR data. - 60 min of operation applied during daytime/evening and 10 min during nighttime