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# Environmental Noise Control Study

Proposed Multi-Storey Buildings
890 Byron Avenue and
455, 463 and 483 Sherbourne Road
Ottawa, Ontario

Prepared For

Concorde Properties

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September 10, 2020

Report: PG5365-1

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# 1.0 Introduction

Paterson Group (Paterson) was commissioned by Concorde Properties to conduct an environmental noise control study for the proposed multi-storey buildings to be located at 890 Byron Avenue and 455, 463 and 483 Sherbourne Road, in the City of Ottawa.

The objectives of the current study are to:

- ❑ Determine the primary noise sources impacting the site and compare the projected sound levels to guidelines set out by the Ministry of Environment and Climate Change (MOECC) and the City of Ottawa.
- ❑ Review the projected noise levels and offer recommendations regarding warning classes, construction materials or alternative sound barriers.

The following report has been prepared specifically and solely for the aforementioned project which is described herein. It contains our findings and includes acoustical recommendations pertaining to the design and construction of the subject development as they are understood at the time of writing this report.

This study has been conducted according to City of Ottawa document - Engineering Noise Control Guidelines (ENCG), dated January 2016, and the Ontario Ministry of the Environment Guideline NPC-300.

# 2.0 Background

It is understood that the proposed development will consist of four 3-storey buildings. Final details are not known at the time of issuance of this report. No outdoor living areas were identified on the building plans.

# 3.0 Methodology and Noise Assessment Criteria

The City of Ottawa outlines three (3) sources of environmental noise that must be analyzed separately:

- Surface Transportation Noise
- Stationary Noise
  - new noise-sensitive development applications (noise receptors) in proximity to existing or approved stationary sources of noise, and
  - new stationary sources of noise (noise generating) in proximity to existing or approved noise-sensitive developments.
- Aircraft noise

## Surface Transportation Noise

The City of Ottawa's Official Plan, in addition to the ENCG dictate that the influence area must contain any of following conditions to classify as a surface transportation noise source for a subject site:

- Within 100 m of the right-of-way of an existing or proposed arterial, collector or major collector road; a light rail transit corridor; bus rapid transit, or transit priority corridor.
- Within 250 m of the right-of-way for an existing or proposed highway or secondary rail line.
- Within 300 m from the right of way of a proposed or existing rail corridor or a secondary main railway line.
- Within 500 m of an existing 400 series provincial highway, freeway or principle main railway line.

The NPC-300 outlines the limitations of the stationary and environmental noise levels in relation to the location of the receptors. These can be found in the following tables:

**Table 1 - Sound Level Limits for Outdoor Living Areas**

| Time Period | Required $L_{eq(16)}$ (dBA) |
|---|---|
| 16-hour, 7:00-23:00 | 55 |

- Standards taken from Table 2.2a; Sound Level Limit for Outdoor Living Areas - Road and Rail

**Table 2 - Sound Level Limits for Indoor Living Area**

| Type of Space | Time Period | Required $L_{eq}$ (dBA) | |
|---|---|---|---|
| | | Road | Rail |
| Living/Dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc | 7:00-23:00 | 45 | 40 |
| Theaters, place of worship, libraries, individual or semi-private offices, conference rooms, reading rooms | 23:00-7:00 | 45 | 40 |
| Sleeping quarters | 7:00-23:00 | 45 | 40 |
| | 23:00-7:00 | 40 | 35 |

❑ Standards taken from Table 2.2b; Sound Level Limit for Indoor Living Areas - Road and Rail

It is noted in the ENCG that the limits outlined in Table 2 are for the sound levels on the interior of the glass pane. The ENCG further goes on to state that the limit for the exterior of the pane of glass will be 55 dBA.

If the sound level limits are exceeded at the window panes for the indoor living areas, the following Warning Clauses may be referenced:

**Table 3 - Warning Clauses for Sound Level Exceedances**

| Warning Clause | Description |
|---|---|
| Warning Clause 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." |
| Warning Clause Type B | "Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic (rail traffic) (air traffic) may on occasions 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." |
| Warning Clause Type C | "This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment." |
| Warning Clause 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." |
| ❑ Clauses taken from section C8 Warning Clauses; Environmental Noise Guidelines - NPC-300 | |

## Stationary Noise

Stationary noise sources include sources or facilities that are fixed or mobile and can cause a combination of sound and vibration levels emitted beyond the property line. These sources may include commercial air conditioner units, generators and fans. Facilities that may contribute to stationary noise include car washes, snow disposal sites, transit stations and manufacturing facilities.

A stationary noise analysis was not completed for this analysis.

## Aircraft/Airport Noise

The subject site is not located within the Airport Vicinity Development Zone. Therefore the proposed development will not require an aircraft/airport noise analysis. No warning clauses regarding aircraft or airport noise will be required.

# 4.0 Analysis

## 4.1 Surface Transportation Noise

The proposed development is bordered to the north by Byron Avenue and to the east, west and south by existing residential and commercial buildings. Richmond Road, Byron Avenue, Redwood Avenue, Sherbourne Road, Honeywell Avenue and Keenan Avenue are located within the 100 m buffer zone. It was also noted that the Ottawa Light Rail Transit is located within 300 m of the subject site.

Based on the City of Ottawa Official Plan, Schedule E, Richmond Road is classified as a 2-lane urban arterial (2-UAU), Byron Avenue is classified as a 2-lane urban collector (2-UCU) and Sherbourne Road is classified as a 2-lane major collector (2-UMCU). All other roads within the 100 m radius are not classified as either arterial, collector or major collector roads and therefore are not included in this study.

The Ottawa Light Rail Transit was noted to be located between Richmond Road and Byron Avenue, with the Cleary transit stop adjacent to the subject site. However, upon review of the rail line at this location, it was determined that the rail line was located below ground (i.e. a subway). Therefore, this light rail was not included in this study as it is anticipated that any noise created by the rail line will be absorbed within the tunnel system.

All noise sources for 890 Byron Avenue are presented in Drawing PG5365-7A to 7D-Site Geometry, located in Appendix 2. All noise sources for 455 Sherbourne Road are presented in Drawing PG5365-10A to 10D - Site Geometry, located in Appendix 3. All noise sources for 463 Sherbourne Road are presented in Drawing PG5464-13A to 13D - Site Geometry, located in Appendix 4. All noise sources for 483 Sherbourne Road are presented in Drawing PG5365-13A to 13D - Site Geometry, located in Appendix 5.

It is understood that the proposed development will consist of four 3-storey residential buildings with no outdoor living areas. It should be noted that each building was analyzed separately, not taking into consideration of any noise damping effects of the remaining proposed buildings. Reception points were selected on every elevation at first floor and third floor.

The noise levels from road traffic are provided by the City of Ottawa, taking into consideration the right-of-way width and the implied roadway class. It is understood that these values represent the maximum allowable capacity of the proposed roadways. The parameters to be used for sound level predictions can be found below.

**Table 4 - Traffic and Road Parameters**

| Road | Implied Roadway | AADT (Veh/day) | Posted Speed (km/h) | Day/Night Split % | Medium Truck % | Heavy Truck % |
|---|---|---|---|---|---|---|
| Richmond Road | 2-UAU | 15,000 | 80 | 92/8 | 7 | 5 |
| Byron Avenue | 2-UCU | 8,000 | 50 | 92/8 | 7 | 5 |
| Sherbourne Road | 2-UMCU | 12,000 | 40 | 92/8 | 7 | 5 |

❑ Data obtained from the City of Ottawa document ENCG

Two (2) levels of reception points were selected for this analysis. The following elevations were selected from the heights provided on the building elevation plans for this development.

**Table 5 - Elevation of Reception Points**

| Floor Number | Elevation at Centre of Window (m) | Floor Use | Daytime/Nighttime Analysis |
|---|---|---|---|
| First Floor | 1.5 | Living and sleeping quarters | daytime/nighttime |
| Third Floor | 7.5 | Living and sleeping quarters | daytime/nighttime |

For this analysis, a reception point was taken at the centre of the predetermined floors. Reception points are noted on Drawing PG5365-3 - Receptor Location Plan in Appendix 1.

All horizontal distances have been measured from the reception point to the edge of the right-of-way. The roadways were analyzed where they intersected the 100 m buffer zone, which is reflected in the local angles, presented on site geometry plans located in Appendices 2 through 6.

Tables 10 through 14 - Summary of Reception Points and Geometry in Appendices 2 through 5 provide a summary of the points of reception and their geometry with respect to the noise sources. The analysis is completed so that no effects of sound reflection off of the building facade are considered, as stipulated by the ENCG. It should be noted that the reception points REC 14-1 and REC 14-3, located on the eastern wall of 483 Sherbourne Road, are protected from the noise source of Sherbourne Road by the proposed building. As this was the only noise source within 100 m of the reception point, no analysis was completed for these points.

The subject site is relatively flat and at grade with the neighbouring roads within the 100 m radius.

The analysis was completed using STAMSON version 5.04, a computer program which uses the road and rail traffic noise prediction methods using ORNAMENT (Ontario Road Noise Analysis Method for Environment and Transportation) and STEAM (Sound from Trains Environment Analysis Method), publications from the Ontario Ministry of Environment and Energy.

# 5.0 Results

## 5.1 Surface Transportation Noise

The primary descriptors are the 16-hour daytime and the 8-hour night time equivalent sound levels, $L_{eq(16)}$ and the $L_{eq(8)}$ for City roads.

The proposed traffic noise levels were analyzed at all reception points. The results of the STAMSON software are presented in Appendix 2, and the summary of the results are detailed in Table 6 below.

**Table 6 - Proposed Noise Levels - 890 Byron Avenue**

| Reception Point | Description | Daytime at Facade $L_{EQ(16)}$ (dBA) | Nighttime at Facade $L_{EQ(16)}$ (dBA) | Outdoor Living Area $L_{EQ(16)}$ (dBA) |
|---|---|---|---|---|
| REC 1-1 | Western elevation, first floor | 65.01 | 57.41 | -- |
| REC 1-3 | Western elevation, third floor | 65.28 | 57.69 | -- |
| REC 2-1 | Northern elevation, first floor | 56.05 | 48.46 | -- |
| REC 2-3 | Northern elevation, third floor | 57.06 | 49.47 | -- |
| REC 3-1 | Eastern elevation, first floor | 46.93 | 39.33 | -- |
| REC 3-3 | Eastern elevation, third floor | 48.43 | 40.83 | -- |
| REC 4-1 | Southern elevation, first floor | 60.73 | 53.13 | -- |
| REC 4-3 | Southern elevation, third floor | 61.67 | 54.07 | -- |

**Table 7 - Proposed Noise Levels - 455 Sherbourne Road**

| Reception Point | Description | Daytime at Facade $L_{EQ(16)}$ (dBA) | Nighttime at Facade $L_{EQ(16)}$ (dBA) | Outdoor Living Area $L_{EQ(16)}$ (dBA) |
|---|---|---|---|---|
| REC 5-1 | Western elevation, first floor | 60.64 | 53.05 | -- |
| REC 5-3 | Western elevation, third floor | 61.64 | 54.04 | -- |
| REC 6-1 | Northern elevation, first floor | 53.56 | 45.97 | -- |
| REC 6-3 | Northern elevation, third floor | 54.92 | 47.33 | -- |
| REC 7-1 | Eastern elevation, first floor | 57.21 | 49.61 | -- |
| REC 7-3 | Eastern elevation, third floor | 57.82 | 50.23 | -- |
| REC 8-1 | Southern elevation, first floor | 62.51 | 54.91 | -- |
| REC 8-3 | Southern elevation, third floor | 63.11 | 55.51 | -- |

**Table 8 - Proposed Noise Levels - 463 Sherbourne Road**

| Reception Point | Description | Daytime at Facade $L_{EQ(16)}$ (dBA) | Nighttime at Facade $L_{EQ(16)}$ (dBA) | Outdoor Living Area $L_{EQ(16)}$ (dBA) |
|---|---|---|---|---|
| REC 9-1 | Western elevation, first floor | 57.39 | 49.79 | -- |
| REC 9-3 | Western elevation, third floor | 58.04 | 50.44 | -- |
| REC 10-1 | Northern elevation, first floor | 44.49 | 36.89 | -- |
| REC 10-3 | Northern elevation, third floor | 45.91 | 38.32 | -- |
| REC 11-1 | Eastern elevation, first floor | 57.14 | 49.54 | -- |
| REC 11-3 | Eastern elevation, third floor | 57.74 | 50.14 | -- |
| REC 12-1 | Southern elevation, first floor | 64.03 | 56.43 | -- |
| REC 12-3 | Southern elevation, third floor | 64.27 | 56.68 | -- |

**Table 9 - Proposed Noise Levels - 483 Sherbourne Road**

| Reception Point | Description | Daytime at Facade $L_{EQ(16)}$ (dBA) | Nighttime at Facade $L_{EQ(16)}$ (dBA) | Outdoor Living Area $L_{EQ(16)}$ (dBA) |
|---|---|---|---|---|
| REC 13-1 | Western elevation, first floor | 57.25 | 49.65 | -- |
| REC 13-3 | Western elevation, third floor | 57.86 | 50.26 | -- |
| REC 14-1 | Northern elevation, first floor | No Noise Sources | | -- |
| REC 14-3 | Northern elevation, third floor | | | -- |
| REC 15-1 | Eastern elevation, first floor | 56.80 | 49.20 | -- |
| REC 15-3 | Eastern elevation, third floor | 57.36 | 49.76 | -- |
| REC 16-1 | Southern elevation, first floor | 63.97 | 56.37 | -- |
| REC 16-3 | Southern elevation, third floor | 64.20 | 56.60 | -- |

# 6.0 Discussion and Recommendations

## 6.1 Outdoor Living Areas

No outdoor living areas were identified for the proposed development.

## 6.2 Indoor Living Areas and Ventilation

*890 Byron Avenue*

The results of the STAMSON modeling indicates that the daytime $L_{eq(16)}$ ranges between 65.28 dBA and 46.93 dBA. The ENCG states that the limits for the exterior of the pane of glass is 55 dBA. This value was exceeded at this building. Therefore, this building is to be designed with the installation of a central air conditioning unit and warning clause Type D, as outlined in Table 3, which is also required for this building.

This building does exceed the 65 dBA threshold for noise. Therefore, an analysis of the building materials will be required.

**Proposed Construction Specifications**

It is understood that typical window and wall details are proposed for the residential building. The effectiveness of the noise insulation can be expressed as the Acoustical Insulation Factor (AIF), calculated as follows:

$$AIF = L_{eq(16)(Exterior)} - L_{eq(16)(Interior)} + 10\log_{10}(N) + 2dBA$$

Where:

$L_{eq(16)(Exterior)}$ = Calculated value at the window pane
$L_{eq(16)(Interior)}$ = 45 dBA
N = number of components in the room

A conservative approach is to assume that there are 2 components per room. Therefore, the AIF would need to be at least 25 dBA.

A conversion from AIF to a Standard Transmission Class (STC) rating will require the knowledge of room dimensions in addition to the wall and window dimensions. However, a conservative approach would be to increase the AIF factor by 3. **Therefore, provided the building materials of either the windows and/or exterior walls have an STC rating of 28 or higher, this would be a sufficient noise attenuation device.**

A review of industry standards for construction materials indicates that, as long as the exterior cladding consists of brick or concrete panels, and that all windows consist of double pane glass, these materials have an STC rating of greater than 28 and are considered acceptable.

*455 Sherbourne Road*

The results of the STAMSON modeling indicates that the daytime $L_{eq(16)}$ ranges between 63.11 dBA and 53.56 dBA. The ENCG states that the limits for the exterior of the pane of glass is 55 dBA. This value was exceeded at this building. Therefore, this building is to be designed with the installation of a central air conditioning unit. Additionally, warning clause Type D, as outlined in Table 3, is also required for this building.

This building does not exceed the 65 dBA threshold for noise. Therefore, no analysis of the building materials will be required.

*463 Sherbourne Road*

The results of the STAMSON modeling indicates that the daytime $L_{eq(16)}$ ranges between 64.27 dBA and 44.49 dBA. The ENCG states that the limits for the exterior of the pane of glass is 55 dBA. This value was exceeded at this building. Therefore, this building is to be designed with the installation of a central air conditioning unit. Additionally, warning clause Type D, as outlined in Table 3, is also required for this building.

This building does not exceed the 65 dBA threshold for noise. Therefore, no analysis of the building materials will be required.

*483 Sherbourne Road*

The results of the STAMSON modeling indicates that the daytime $L_{eq(16)}$ ranges between 64.20 dBA and 56.80 dBA. The ENCG states that the limits for the exterior of the pane of glass is 55 dBA. This value was exceeded at this building. Therefore, this building is to be designed with the installation of a central air conditioning unit. Additionally, warning clause Type D, as outlined in Table 3, is also required for this building.

This building does not exceed the 65 dBA threshold for noise. Therefore, no analysis of the building materials will be required.

# 7.0 Conclusion

The subject site is located at 890 Byron Avenue and 455, 463 and 483 Sherbourne Road. It is understood that the proposed development will consist of four 3-storey residential buildings. Outdoor living areas were not identified and therefore are not included in this report. The noise analysis identified three noise sources: Richmond Road, Byron Avenue and Sherbourne Road (surface transportation noise). City of Ottawa owned light rail was noted within the 300 m radius, but was determined to be completely below ground and therefore will not contribute to the noise levels at this development.

Pane of glass reception points were selected on every elevation on all buildings. These results indicate that the noise levels will be below 65 dBA with the exception of the northern elevation at 890 Byron. Further analysis concluded that provided that the exterior cladding will consist of brick and/or concrete panels in combination with double paned glass windows, the building materials proposed are considered an acceptable noise mitigation measure for the proposed noise levels.

However, all units at each address must be installed with a central air condition unit.

The following warning clause is to be included on all Offers of Purchase and Sale and/or lease agreements:

> "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."

# 8.0 Statement of Limitations

The recommendations made in this report are in accordance with our present understanding of the project. Our recommendations should be reviewed when the project drawings and specifications are complete.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than Concorde Properties or their agent(s) is not authorized without review by this firm for the applicability of our recommendations to the altered use of the report.

**Paterson Group Inc.**

Scott S. Dennis, P.Eng.

September 10, 2020

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**Report Distribution:**

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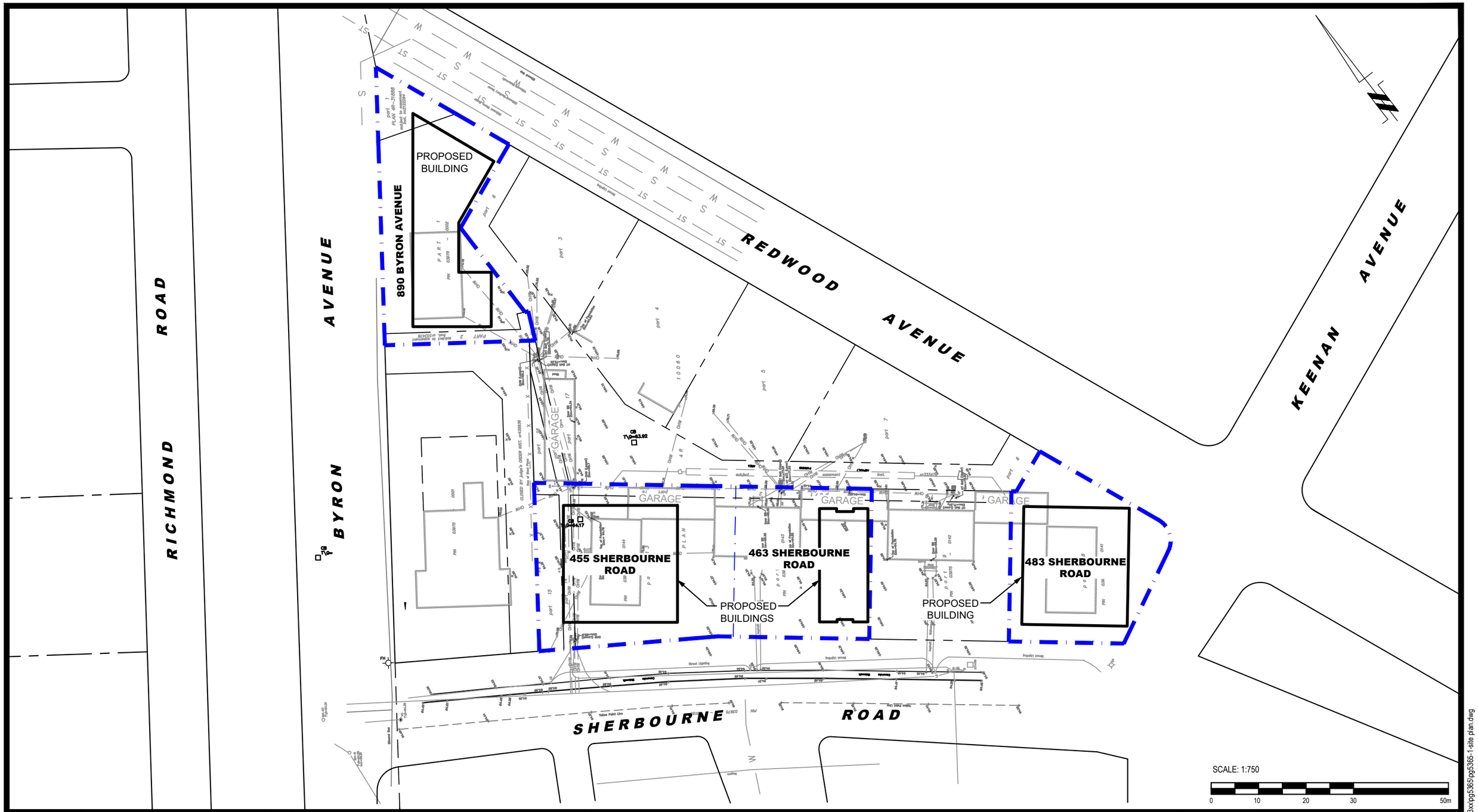
# APPENDIX 1

**DRAWING PG5365-1 - SITE PLAN**

**DRAWING PG5365-3 - RECEPTOR LOCATION PLAN**

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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE, 455, 463 AND 483 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE PLAN

| | |
|---|---|
| Scale: 1:750 | Date: 06/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-1 |
| Approved by: DJG | Revision No.: |

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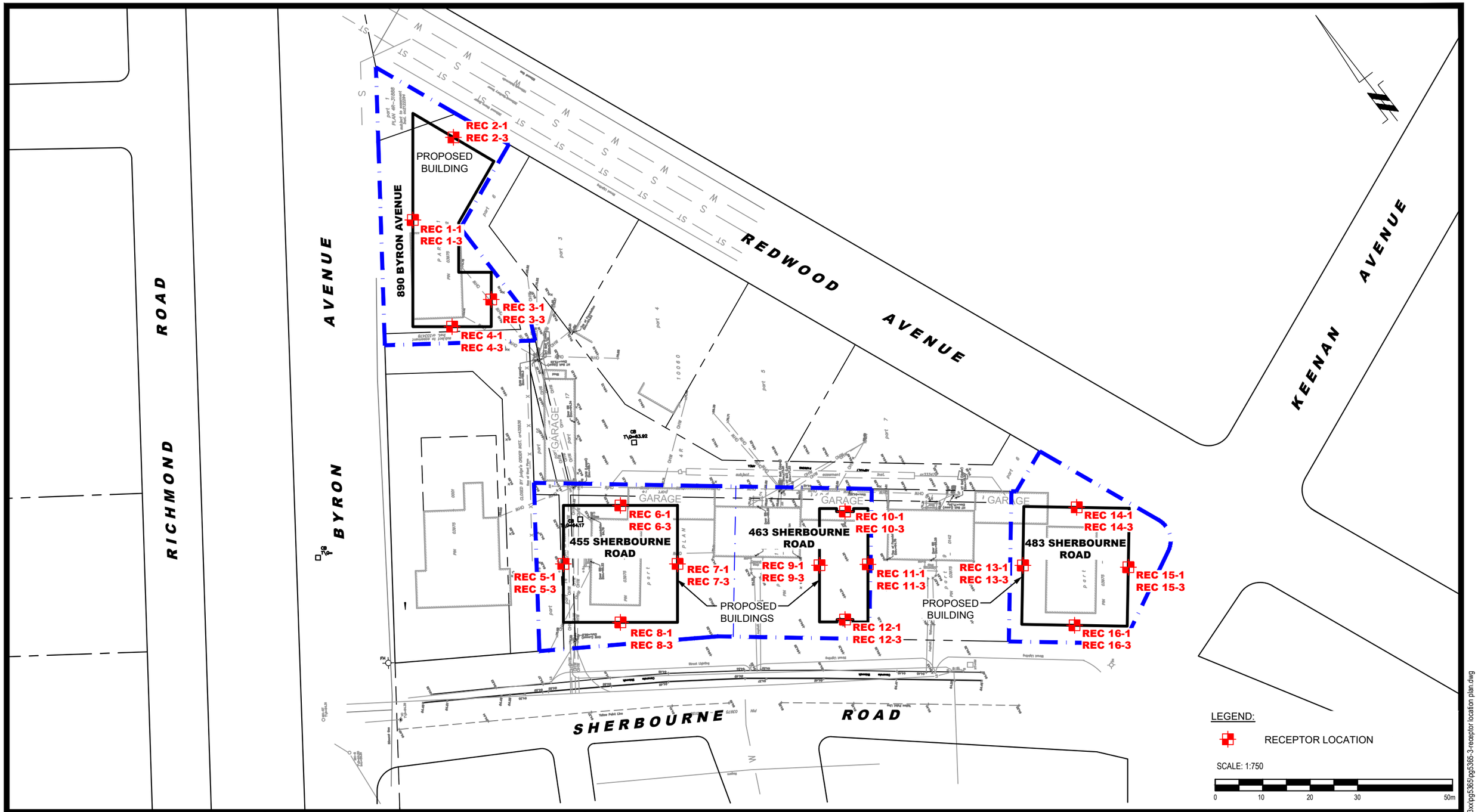


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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE, 455, 463 AND 483 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# RECEPTOR LOCATION PLAN

| | |
|---|---|
| Scale: 1:750 | Date: 06/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-3 |
| Approved by: DJG | Revision No.: |

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# APPENDIX 2

**TABLE 10 - SUMMARY OF RECEPTION POINTS AND GEOMETRY**

**DRAWING PG5365-5 - SITE PLAN**

**DRAWING PG5365-6 - RECEPTOR LOCATION PLAN**

**DRAWING PG5365-7 - SITE GEOMETRY**

**DRAWING PG5365-7A - SITE GEOMETRY (REC 1-1 and REC 1-3)**

**DRAWING PG5365-7B - SITE GEOMETRY (REC 2-1 and REC 2-3)**

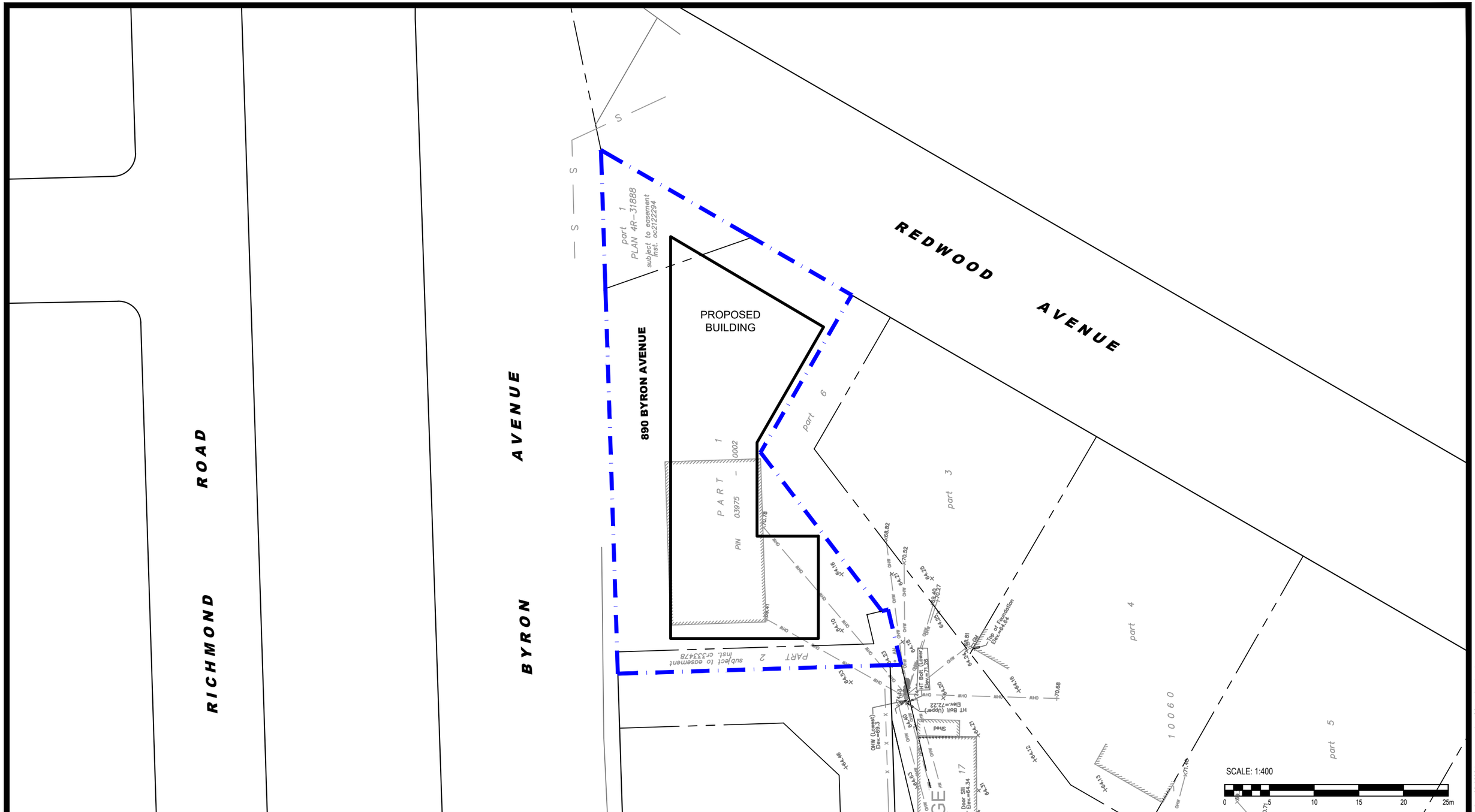
**DRAWING PG5365-7C - SITE GEOMETRY (REC 3-1 and REC 3-3)**

**DRAWING PG5365-7D - SITE GEOMETRY (REC 4-1 and REC 4-3)**

**Table 10 - Summary of Reception Points and Geometry**
**890 Byron Avenue**

| Point of Reception | Location | Leq Day (dBA) | Byron Avenue | | | | | | Richmond Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 1-1 | Western elevation, 1st floor | 65.01 | 20 | 1.5 | 20.06 | -85, 83 | n/a | n/a | 50 | 1.5 | 50.02 | -70, 65 | n/a | n/a |
| REC 1-3 | Western elevation, 3rd floor | 65.28 | 20 | 7.5 | 21.36 | -85, 83 | n/a | n/a | 50 | 7.5 | 50.56 | -70, 65 | n/a | n/a |
| REC 2-1 | Northern elevation, 1st floor | 56.05 | 25 | 1.5 | 25.04 | 31, 79 | n/a | n/a | 55 | 1.5 | 55.02 | 45, 59 | n/a | n/a |
| REC 2-3 | Northern elevation, 3rd floor | 57.06 | 25 | 7.5 | 26.1 | 31, 79 | n/a | n/a | 55 | 7.5 | 55.51 | 45, 59 | n/a | n/a |
| REC 3-1 | Eastern elevation, 1st floor | 46.93 | n/a | n/ | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 3-3 | Eastern elevation, 3rd floor | 48.43 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 4-1 | Southern elevation, 1st floor | 60.73 | 25 | 1.5 | -79, 0 | 0, 70 | n/a | n/a | 55 | 1.5 | 55.02 | -58, 0 | n/a | n/a |
| REC 4-3 | Southern elevation, 3rd floor | 61.67 | 25 | 7.5 | -79, 0 | 0, 70 | n/a | n/a | 55 | 7.5 | 55.51 | -58, 0 | n/a | n/a |

| Point of Reception | Location | Leq Day (dBA) | Sherbourne Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 1-1 | Western elevation, 1st floor | 65.01 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 1-3 | Western elevation, 3rd floor | 65.28 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 2-1 | Northern elevation, 1st floor | 56.05 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 2-3 | Northern elevation, 3rd floor | 57.06 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 3-1 | Eastern elevation, 1st floor | 46.93 | 90 | 1.5 | 90.01 | -51, 0 | n/a | n/a |
| REC 3-3 | Eastern elevation, 3rd floor | 48.43 | 90 | 7.5 | 90.31 | -51, 0 | n/a | n/a |
| REC 4-1 | Southern elevation, 1st floor | 60.73 | 85 | 1.5 | 85.01 | -56, 15 | n/a | n/a |
| REC 4-3 | Southern elevation, 3rd floor | 61.67 | 85 | 7.5 | 85.33 | -56, 15 | n/a | n/a |





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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE

OTTAWA, ONTARIO

Title:

# SITE PLAN

| | |
|---|---|
| Scale: 1:400 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-5 |
| Approved by: DJG | Revision No.: |

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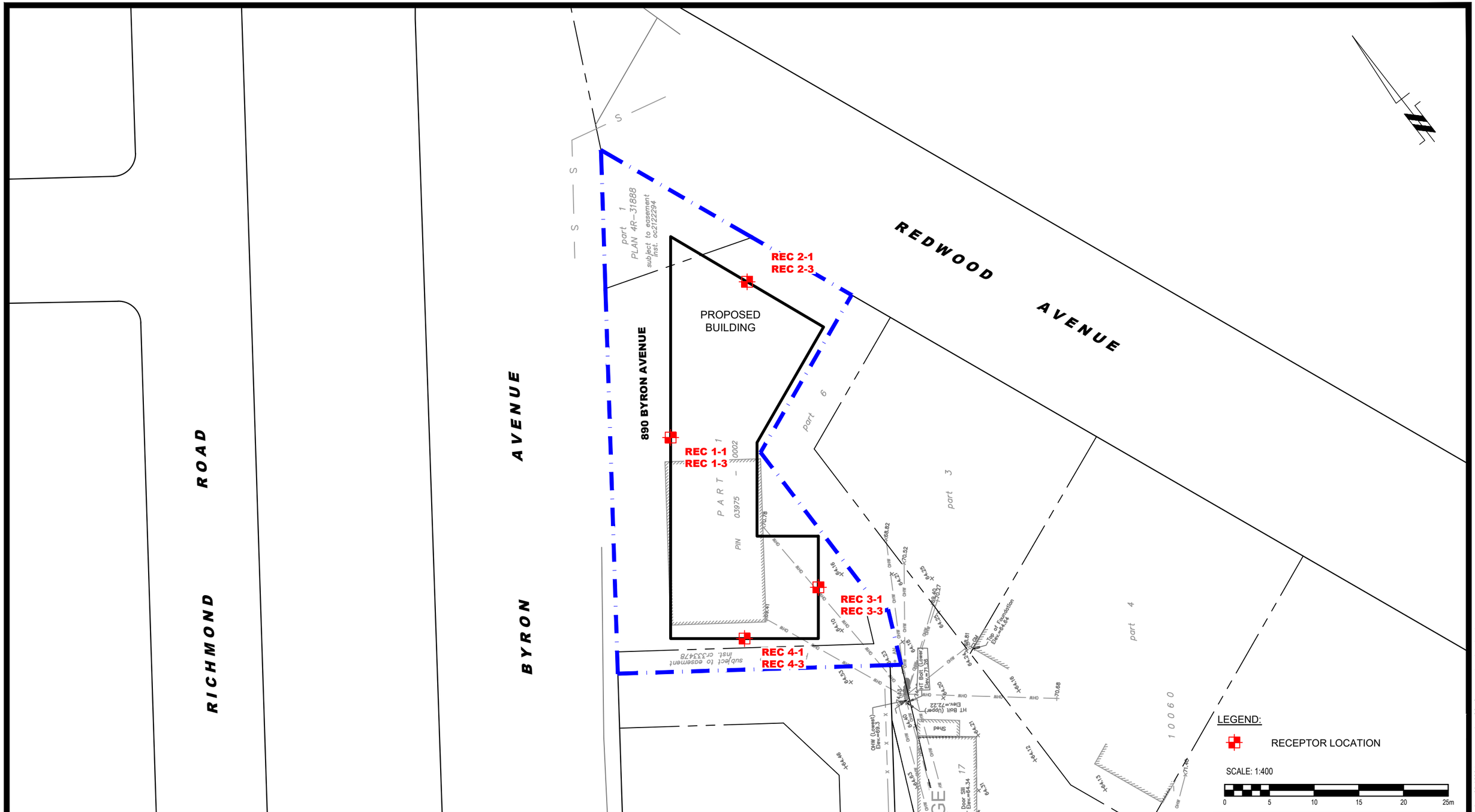



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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE

OTTAWA, ONTARIO

Title:

# RECEPTOR LOCATION PLAN

| | |
|---|---|
| Scale: 1:400 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-6 |
| Approved by: DJG | Revision No.: |

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300 m RADIUS FROM
SUBJECT SITE

100 m RADIUS FROM
SUBJECT SITE

RICHMOND ROAD
2-LANE URBAN ARTERIAL (2-UAU)
AADT: 15,000
SPEED: 80 KM/HR
APPROX. ELEVATION= 64 m

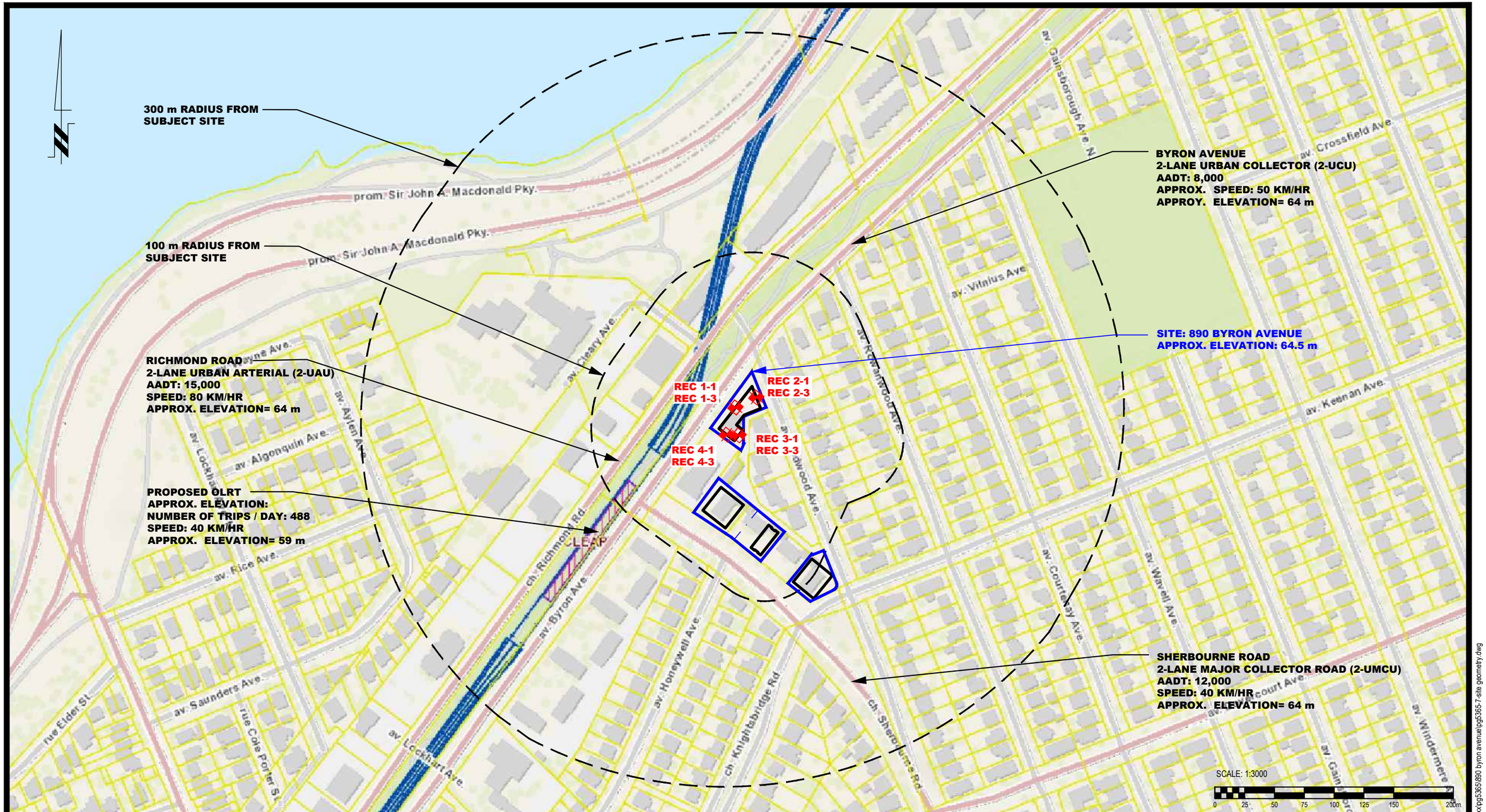
PROPOSED OLRT
APPROX. ELEVATION:
NUMBER OF TRIPS / DAY: 488
SPEED: 40 KM/HR
APPROX. ELEVATION= 59 m

BYRON AVENUE
2-LANE URBAN COLLECTOR (2-UCU)
AADT: 8,000
APPROX. SPEED: 50 KM/HR
APPROY. ELEVATION= 64 m

SITE: 890 BYRON AVENUE
APPROX. ELEVATION: 64.5 m

SHERBOURNE ROAD
2-LANE MAJOR COLLECTOR ROAD (2-UMCU)
AADT: 12,000
SPEED: 40 KM/HR
APPROX. ELEVATION= 64 m

REC 1-1
REC 1-3
REC 2-1
REC 2-3
REC 3-1
REC 3-3
REC 4-1
REC 4-3





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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-7 |
| Approved by: DJG | Revision No.: |

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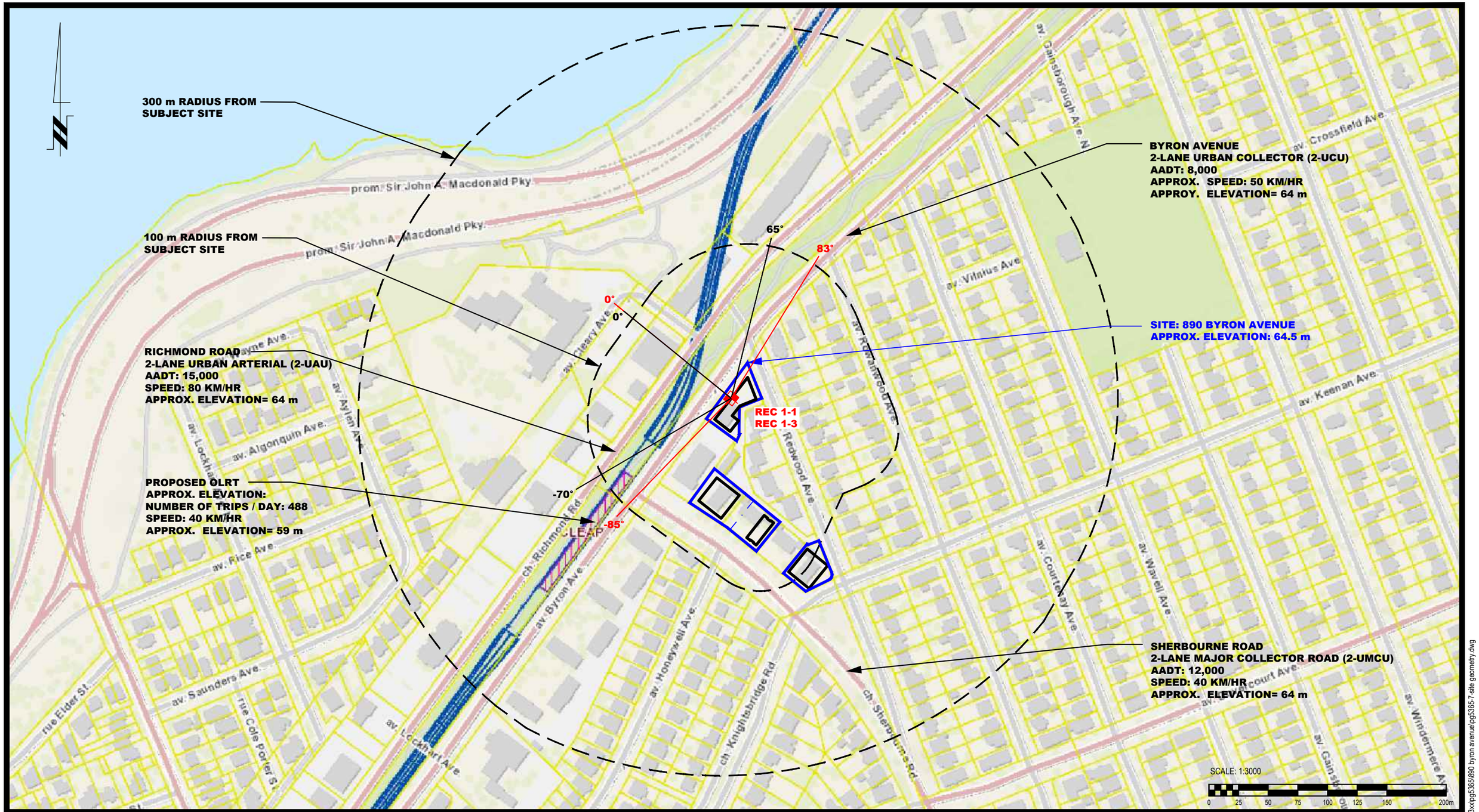


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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 1-1 AND REC 1-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-7A |
| Approved by: DJG | Revision No.: |

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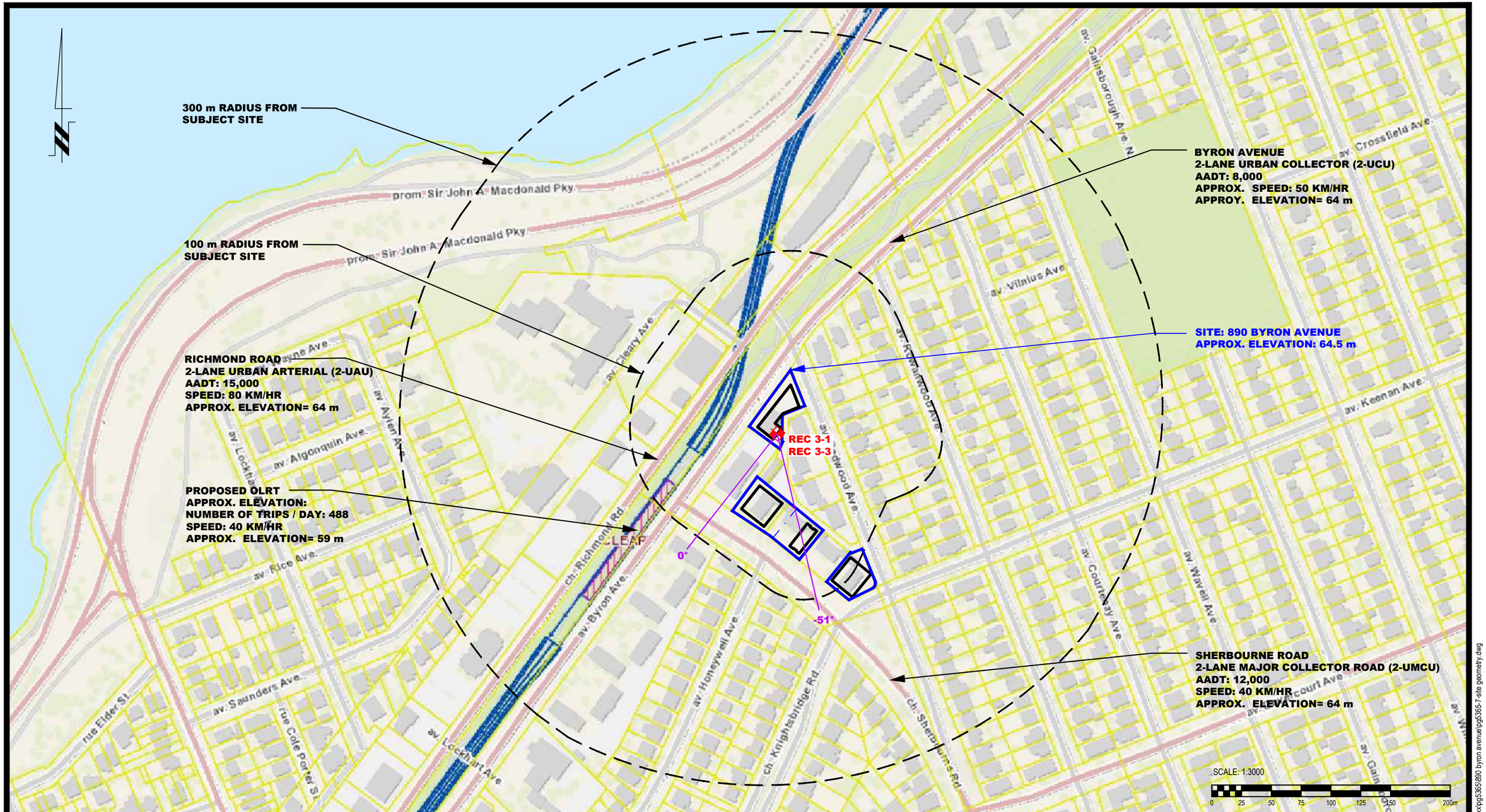



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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 3-1 AND REC 3-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-7C |
| Approved by: DJG | Revision No.: |

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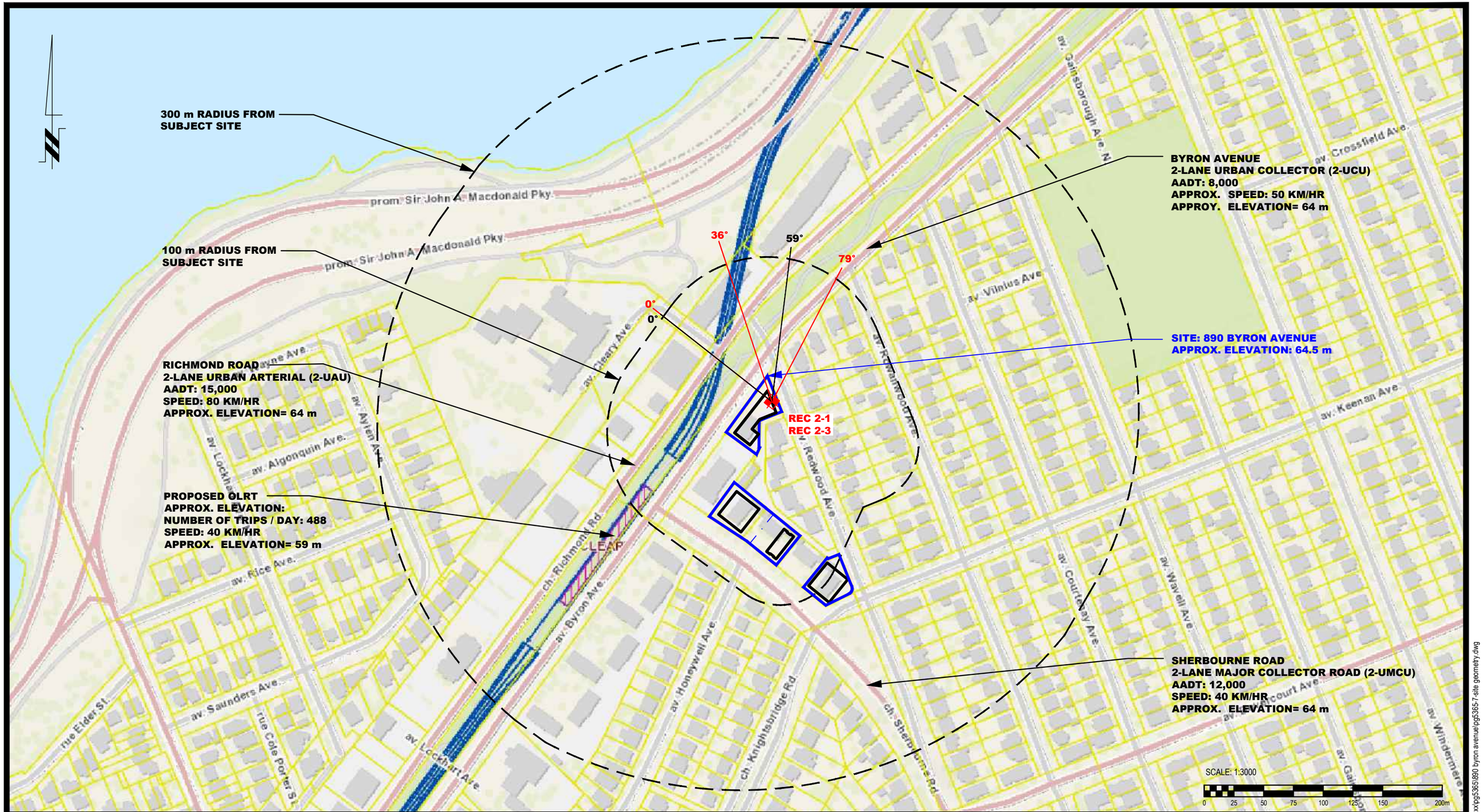


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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 2-1 AND REC 2-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-7B |
| Approved by: DJG | Revision No.: |

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300 m RADIUS FROM SUBJECT SITE

100 m RADIUS FROM SUBJECT SITE

RICHMOND ROAD
2-LANE URBAN ARTERIAL (2-UAU)
AADT: 15,000
SPEED: 80 KM/HR
APPROX. ELEVATION= 64 m

PROPOSED OLRT
APPROX. ELEVATION:
NUMBER OF TRIPS / DAY: 488
SPEED: 40 KM/HR
APPROX. ELEVATION= 59 m

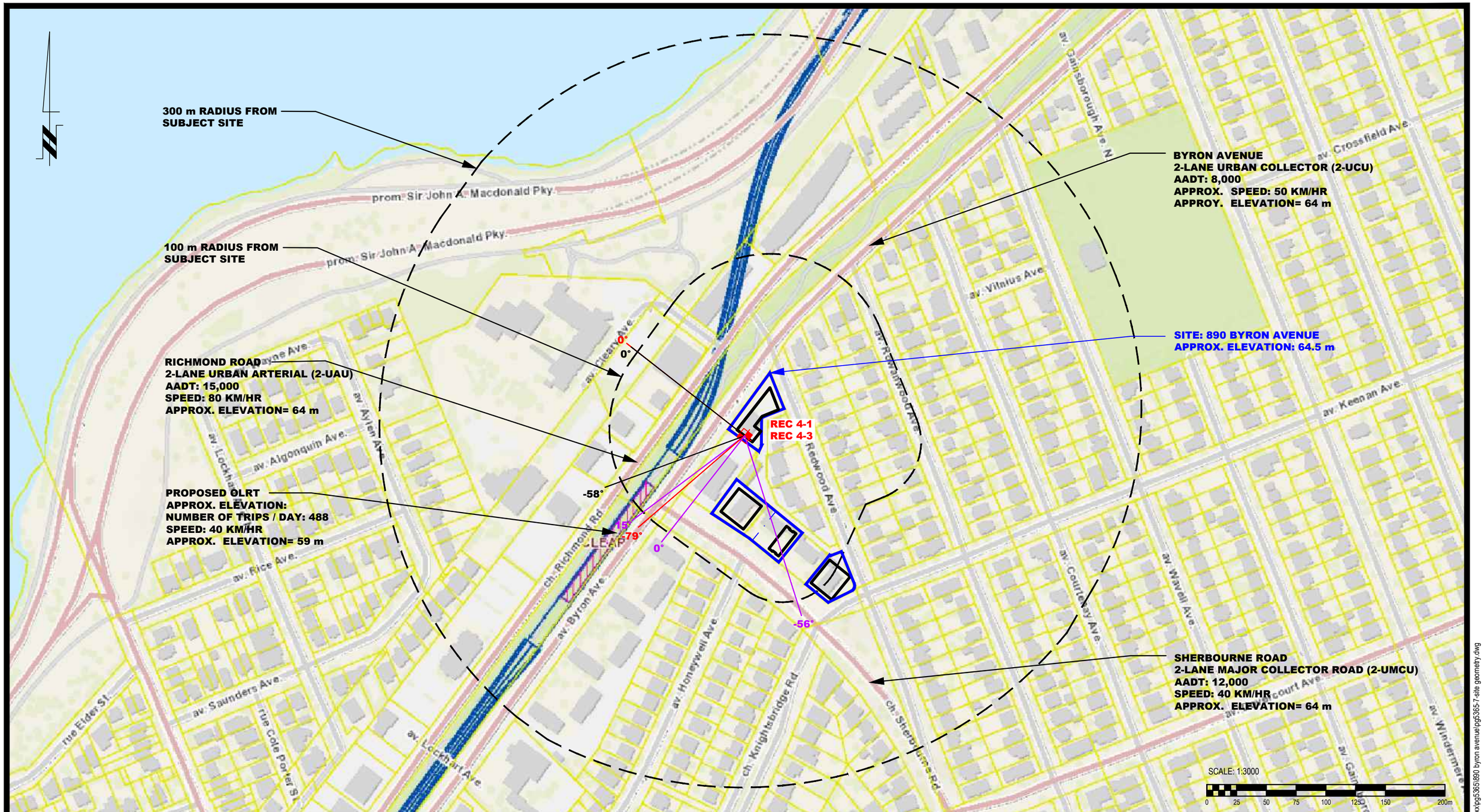
BYRON AVENUE
2-LANE URBAN COLLECTOR (2-UCU)
AADT: 8,000
APPROX. SPEED: 50 KM/HR
APPROY. ELEVATION= 64 m

SITE: 890 BYRON AVENUE
APPROX. ELEVATION: 64.5 m

SHERBOURNE ROAD
2-LANE MAJOR COLLECTOR ROAD (2-UMCU)
AADT: 12,000
SPEED: 40 KM/HR
APPROX. ELEVATION= 64 m

REC 4-1
REC 4-3

0°
-58°
15°
-79°
0°
-56°

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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
890 BYRON AVENUE

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 4-1 AND REC 4-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-7D |
| Approved by: DJG | Revision No.: |

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# APPENDIX 3

**TABLE 11 - SUMMARY OF RECEPTION POINTS AND GEOMETRY**

**DRAWING PG5365-8 - SITE PLAN**

**DRAWING PG5365 - 9 - RECEPTOR LOCATION PLAN**

**DRAWING PG5365-10 - SITE GEOMETRY**

**DRAWING PG5365-10A - SITE GEOMETRY (REC 5-1 and REC 5-3)**

**DRAWING PG5365-10B - SITE GEOMETRY (REC 6-1 and REC 6-3)**

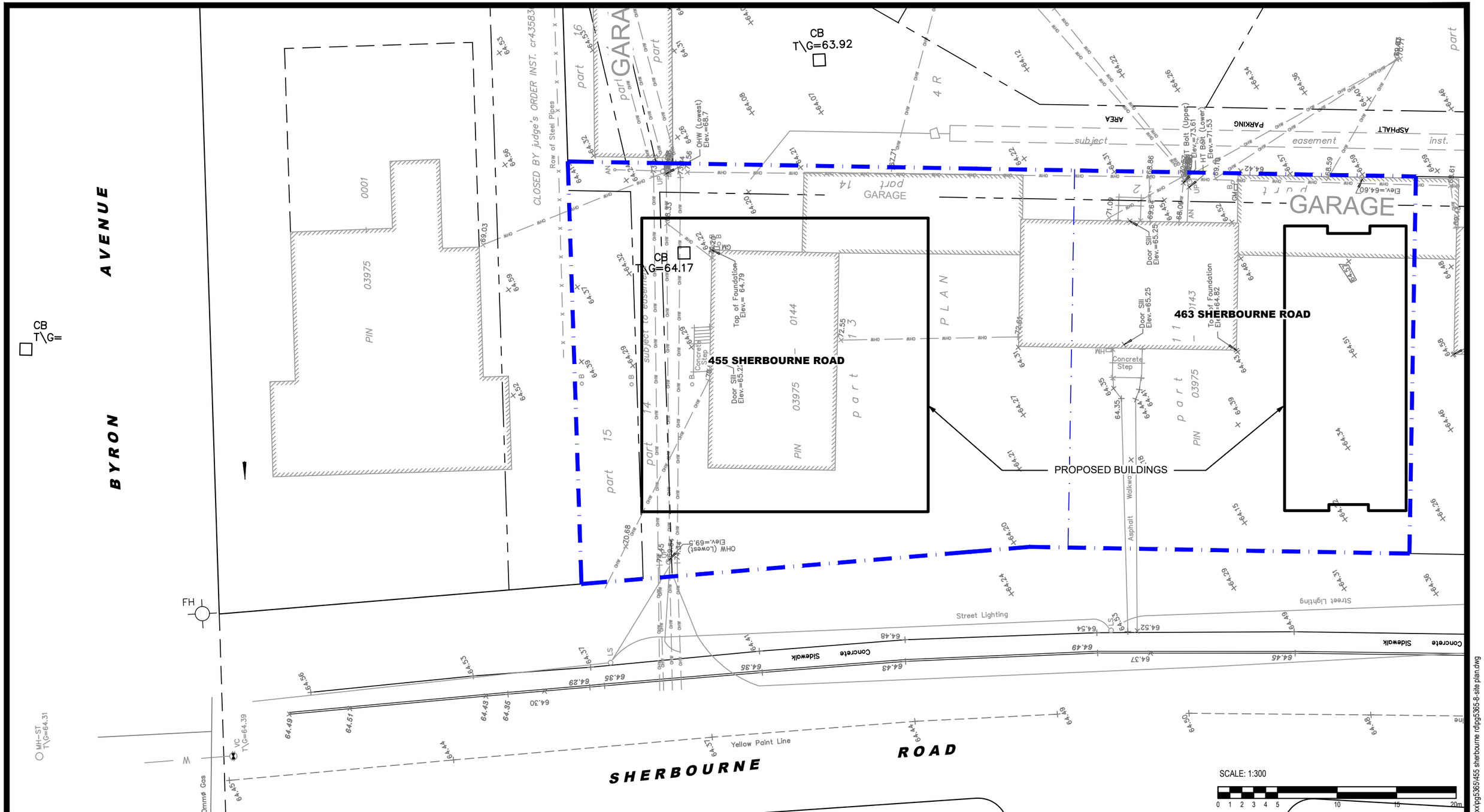
**DRAWING PG5365-10C - SITE GEOMETRY (REC 7-1 and REC 7-3)**

**DRAWING PG5365-10D - SITE GEOMETRY (REC 8-1 and REC 8-3)**

**Table 11 - Summary of Reception Points and Geometry**
**455 Sherbourne Road**

| Point of Reception | Location | Leq Day (dBA) | Byron Avenue | | | | | | Richmond Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 5-1 | Western elevation, 1st floor | 60.64 | 45 | 1.5 | 45.02 | -70, 63 | 1 | 20 | 75 | 1.5 | 75.01 | -45, 45 | 1 | 20 |
| REC 5-3 | Western elevation, 3rd floor | 61.64 | 45 | 7.5 | 45.62 | -70, 63 | 1 | 20 | 75 | 7.5 | 75.37 | -45, 45 | 1 | 20 |
| REC 6-1 | Northern elevation, 1st floor | 53.56 | 60 | 1.5 | 60.02 | 0, 57 | 1 | 20 | 90 | 1.5 | 90.01 | 0, 36 | 1 | 20 |
| REC 6-3 | Northern elevation, 3rd floor | 54.92 | 60 | 7.5 | 60.47 | 0, 57 | 1 | 20 | 90 | 7.5 | 90.31 | 0, 36 | 1 | 20 |
| REC 7-1 | Eastern elevation, 1st floor | 57.21 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 7-3 | Eastern elevation, 3rd floor | 57.82 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 8-1 | Southern elevation, 1st floor | 62.51 | 60 | 1.5 | 60.02 | -61, 0 | n/a | n/a | 90 | 1.5 | 90.01 | -38, 0 | n/a | n/a |
| REC 8-3 | Southern elevation, 3rd floor | 63.11 | 60 | 7.5 | 60.47 | -61, 0 | n/a | n/a | 90 | 7.5 | 90.31 | -38, 0 | n/a | n/a |
| | | | | | | | | | | | | | | |

| Point of Reception | Location | Leq Day (dBA) | Sherbourne Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 9-1 | Western elevation, 1st floor | 60.64 | 25 | 1.5 | 25.04 | 0, 47 | n/a | n/a |
| REC 9-3 | Western elevation, 3rd floor | 61.64 | 25 | 7.5 | 26.1 | 0, 47 | n/a | n/a |
| REC 10-1 | Northern elevation, 1st floor | 53.56 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 10-3 | Northern elevation, 3rd floor | 54.92 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 11-1 | Eastern elevation, 1st floor | 57.21 | 25 | 1.5 | 25.04 | -72, 0 | n/a | n/a |
| REC 11-3 | Eastern elevation, 3rd floor | 57.82 | 25 | 7.5 | 26.1 | -72, 0 | n/a | n/a |
| REC 12-1 | Southern elevation, 1st floor | 62.51 | 20 | 1.5 | 20.06 | -77, 63 | n/a | n/a |
| REC 12-3 | Southern elevation, 3rd floor | 63.11 | 20 | 7.5 | 21.36 | -77, 63 | n/a | n/a |
| | | | | | | | | |





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CONCORDE DEVELOPMENTS

**NOISE ATTENUATION STUDY**
**455 SHERBOURNE ROAD**

OTTAWA, ONTARIO

Title:

# SITE PLAN

| | |
|---|---|
| Scale: 1:300 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-8 |
| Approved by: DJG | Revision No.: |

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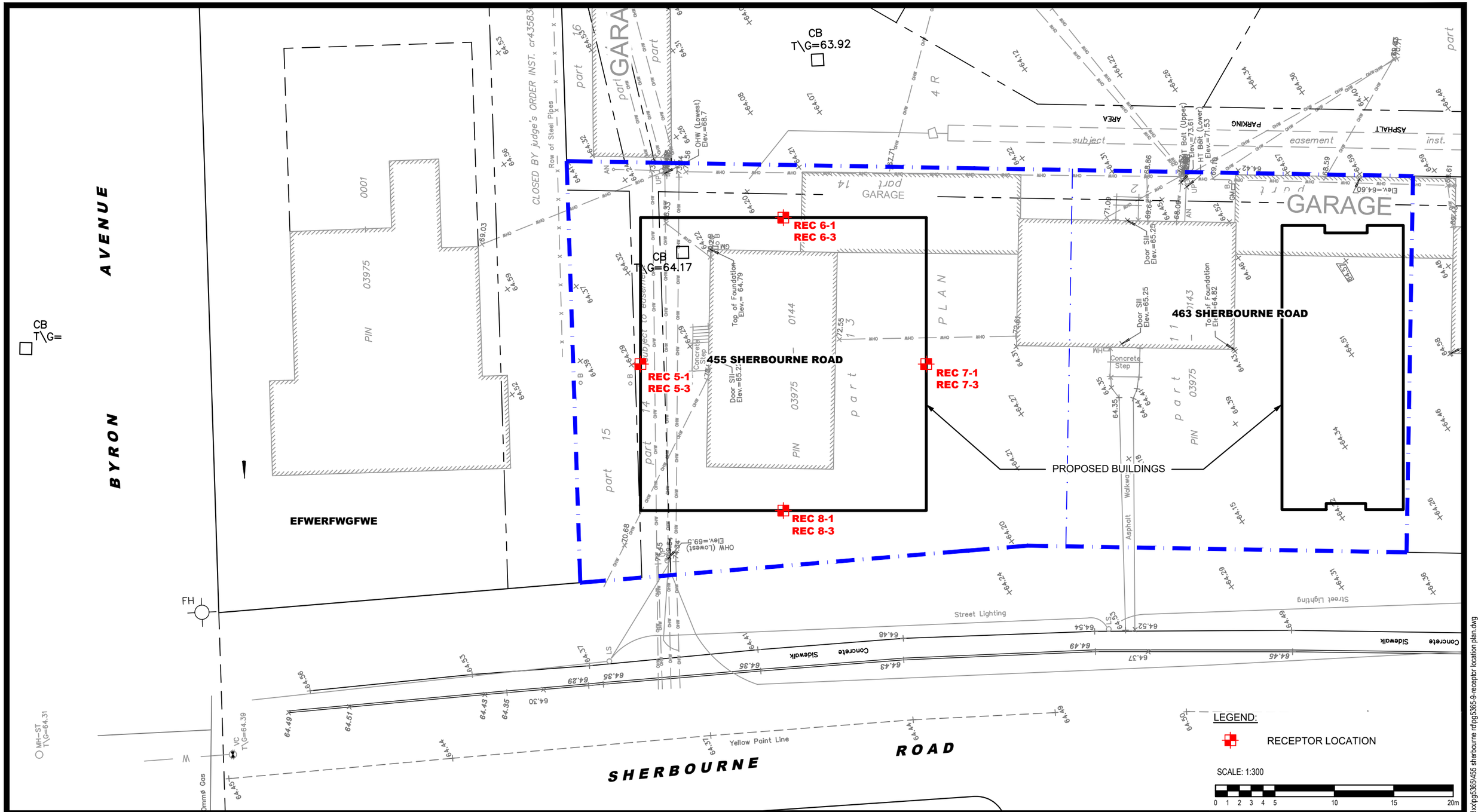



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|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
455 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# RECEPTOR LOCATION PLAN

| | |
|---|---|
| Scale: 1:300 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-9 |
| Approved by: DJG | Revision No.: |

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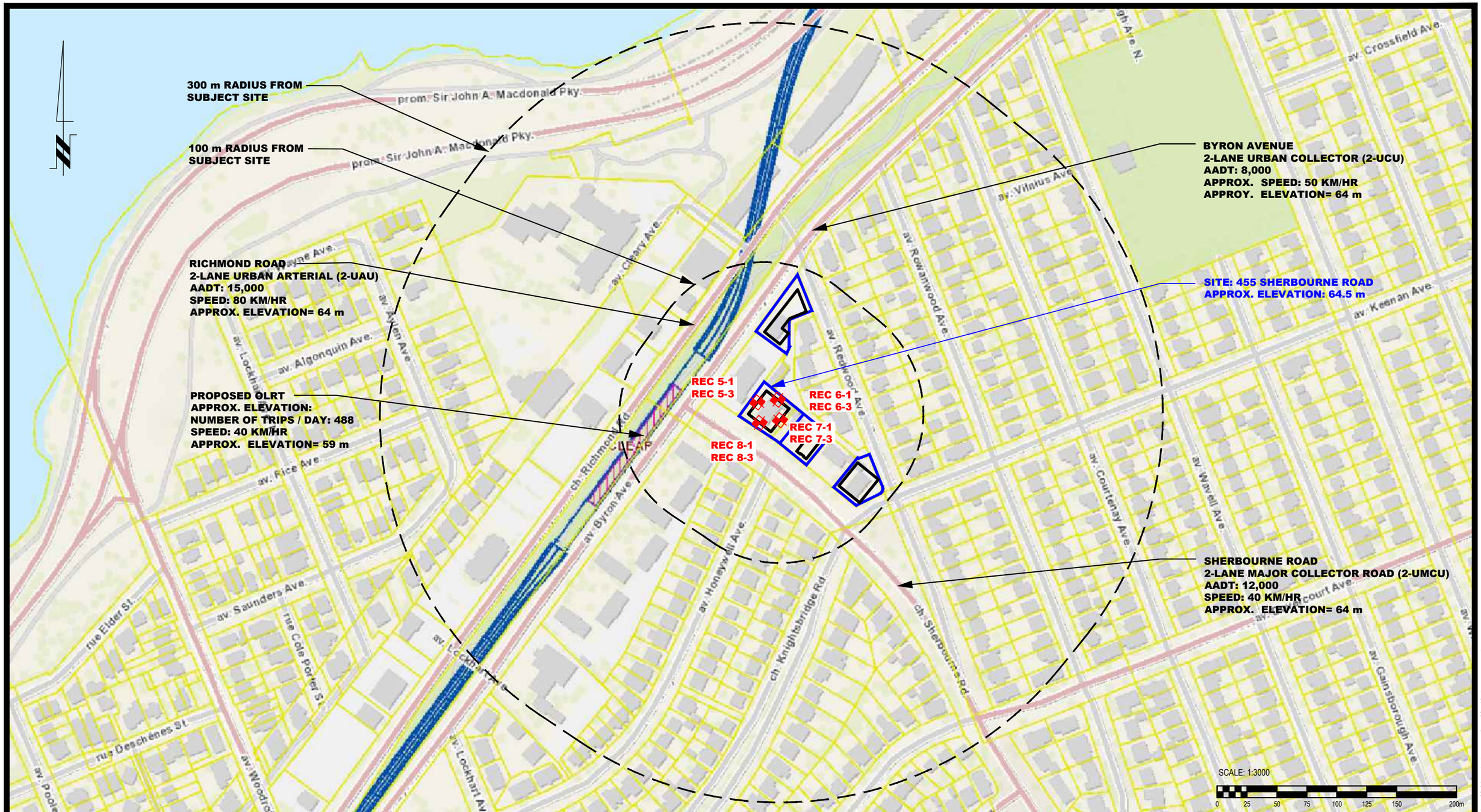


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| NO. | REVISIONS | DATE | INITIAL |
|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
455 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-10 |
| Approved by: DJG | Revision No.: |

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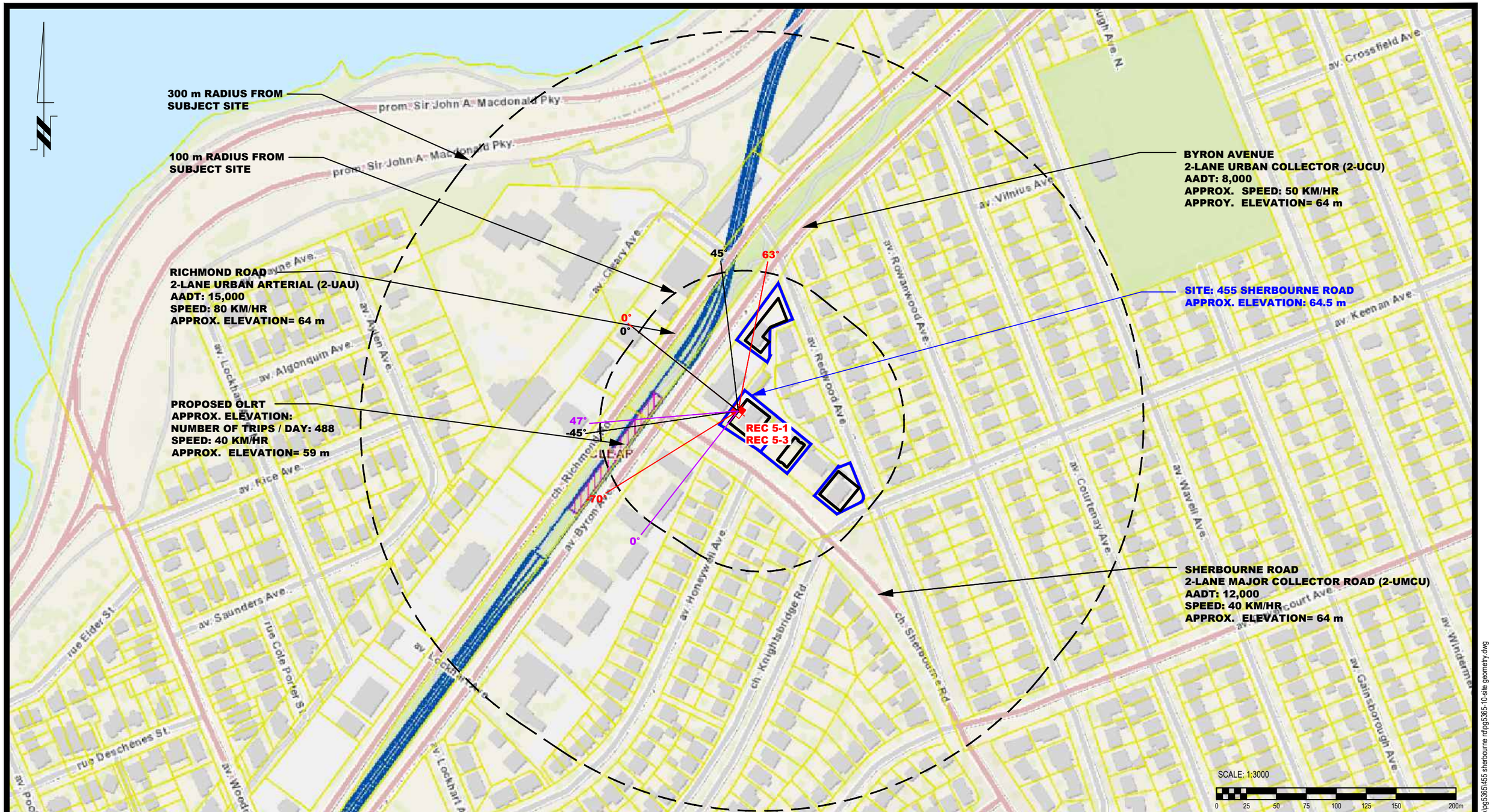


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|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
455 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 5-1 AND REC 5-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-10A |
| Approved by: DJG | Revision No.: |

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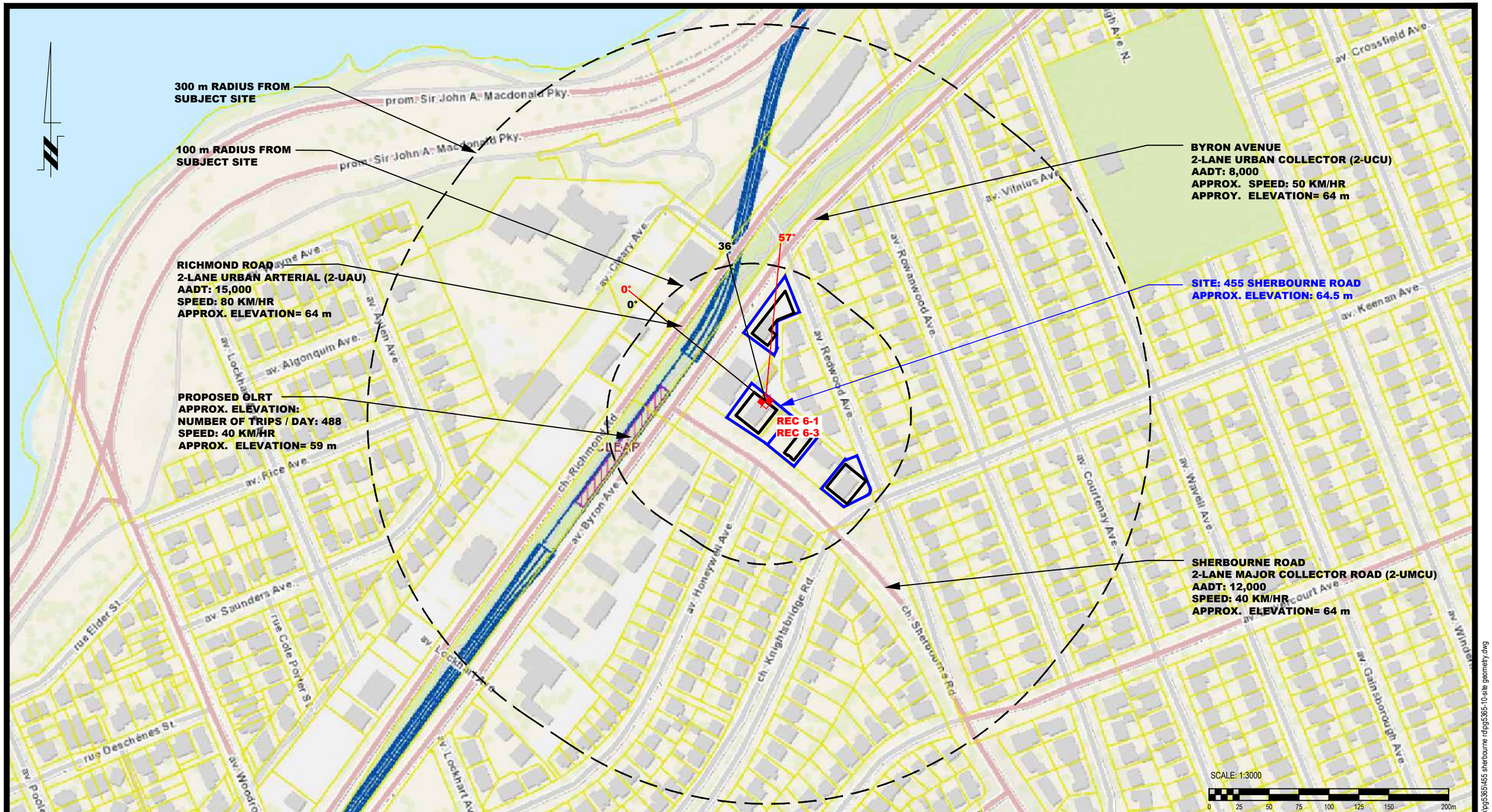


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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
455 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 6-1 AND REC 6-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-10B |
| Approved by: DJG | Revision No.: |

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300 m RADIUS FROM SUBJECT SITE

100 m RADIUS FROM SUBJECT SITE

RICHMOND ROAD
2-LANE URBAN ARTERIAL (2-UAU)
AADT: 15,000
SPEED: 80 KM/HR
APPROX. ELEVATION= 64 m

PROPOSED OLRT
APPROX. ELEVATION:
NUMBER OF TRIPS / DAY: 488
SPEED: 40 KM/HR
APPROX. ELEVATION= 59 m

BYRON AVENUE
2-LANE URBAN COLLECTOR (2-UCU)
AADT: 8,000
APPROX. SPEED: 50 KM/HR
APPROY. ELEVATION= 64 m

SITE: 455 SHERBOURNE ROAD
APPROX. ELEVATION: 64.5 m

REC 7-1
REC 7-3

0°

-72°

SHERBOURNE ROAD
2-LANE MAJOR COLLECTOR ROAD (2-UMCU)
AADT: 12,000
SPEED: 40 KM/HR
APPROX. ELEVATION= 64 m

SCALE: 1:3000

0 25 50 75 100 125 150 200m


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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
455 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 7-1 AND REC 7-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-10C |
| Approved by: DJG | Revision No.: |

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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
455 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 8-1 AND REC 8-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-10D |
| Approved by: DJG | Revision No.: |

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# APPENDIX 4

**TABLE 12 - SUMMARY OF RECEPTION POINTS AND GEOMETRY**

**DRAWING PG5365-11 - SITE PLAN**

**DRAWING PG5365-12 - RECEPTOR LOCATION PLAN**

**DRAWING PG5365-13 - SITE GEOMETRY**

**DRAWING PG5365-13A - SITE GEOMETRY (REC 9-1 and REC 9-3)**

**DRAWING PG5365-13B - SITE GEOMETRY (REC 10-1 and REC 10-3)**

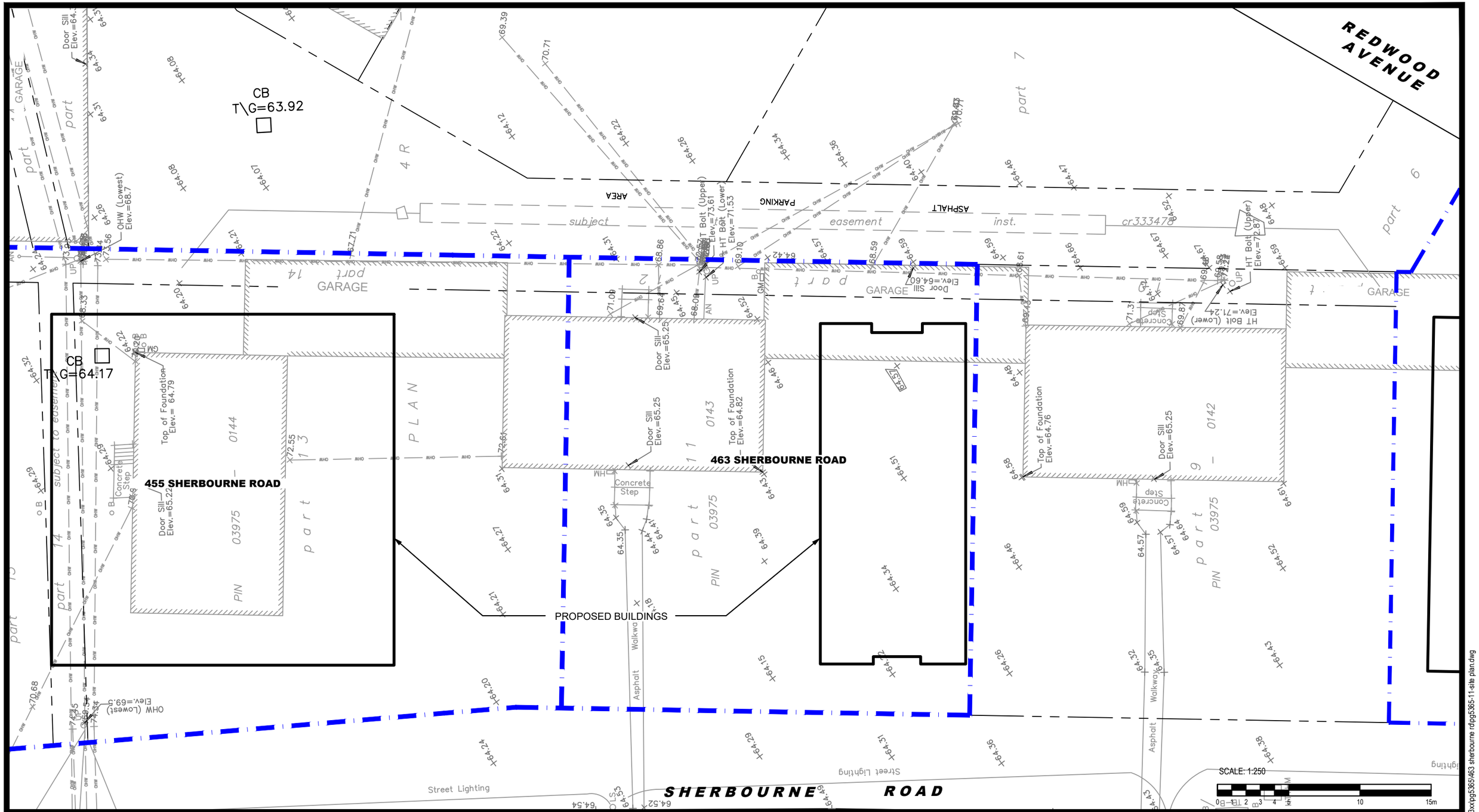
**DRAWING PG5365-13C - SITE GEOMETRY (REC 11-1 and REC 11-3)**

**DRAWING PG5365-13D - SITE GEOMETRY (REC 12-1 and REC 12-3)**

**Table 12 - Summary of Reception Points and Geometry**
**463 Sherbourne Road**

| Point of Reception | Location | Leq Day (dBA) | Byron Avenue | | | | | | Richmond Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 9-1 | Western elevation, 1st floor | 57.39 | 95 | 1.5 | 95.01 | -40, 33 | 2 | 40 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 9-3 | Western elevation, 3rd floor | 58.04 | 95 | 7.5 | 95.3 | -40, 33 | 2 | 40 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 10-1 | Northern elevation, 1st floor | 44.49 | 90 | 1.5 | 90.01 | 0, 27 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 10-3 | Northern elevation, 3rd floor | 45.91 | 90 | 7.5 | 90.31 | 0, 27 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 11-1 | Eastern elevation, 1st floor | 57.14 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 11-3 | Eastern elevation, 3rd floor | 57.74 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 12-1 | Southern elevation, 1st floor | 64.03 | 95 | 1.5 | 95.01 | -37, 0 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 12-3 | Southern elevation, 3rd floor | 64.27 | 95 | 7.5 | 95.3 | -37, 0 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

| Point of Reception | Location | Leq Day (dBA) | Sherbourne Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 9-1 | Western elevation, 1st floor | 57.39 | 25 | 1.5 | 25.04 | 0, 70 | n/a | n/a |
| REC 9-3 | Western elevation, 3rd floor | 58.04 | 25 | 7.5 | 26.1 | 0, 70 | n/a | n/a |
| REC 10-1 | Northern elevation, 1st floor | 44.49 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 10-3 | Northern elevation, 3rd floor | 45.91 | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 11-1 | Eastern elevation, 1st floor | 57.14 | 25 | 1.5 | 25.04 | -70, 0 | n/a | n/a |
| REC 11-3 | Eastern elevation, 3rd floor | 57.74 | 25 | 7.5 | 26.1 | -70, 0 | n/a | n/a |
| REC 12-1 | Southern elevation, 1st floor | 64.03 | 15 | 1.5 | 15.07 | -75, 73 | n/a | n/a |
| REC 12-3 | Southern elevation, 3rd floor | 64.27 | 15 | 7.5 | 16.77 | -75, 73 | n/a | n/a |





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| NO. | REVISIONS | DATE | INITIAL |
|---|---|---|---|
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CONCORDE DEVELOPMENTS

# NOISE ATTENUATION STUDY
# 463 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE PLAN

| | |
|---|---|
| Scale: 1:250 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-11 |
| Approved by: DJG | Revision No.: |

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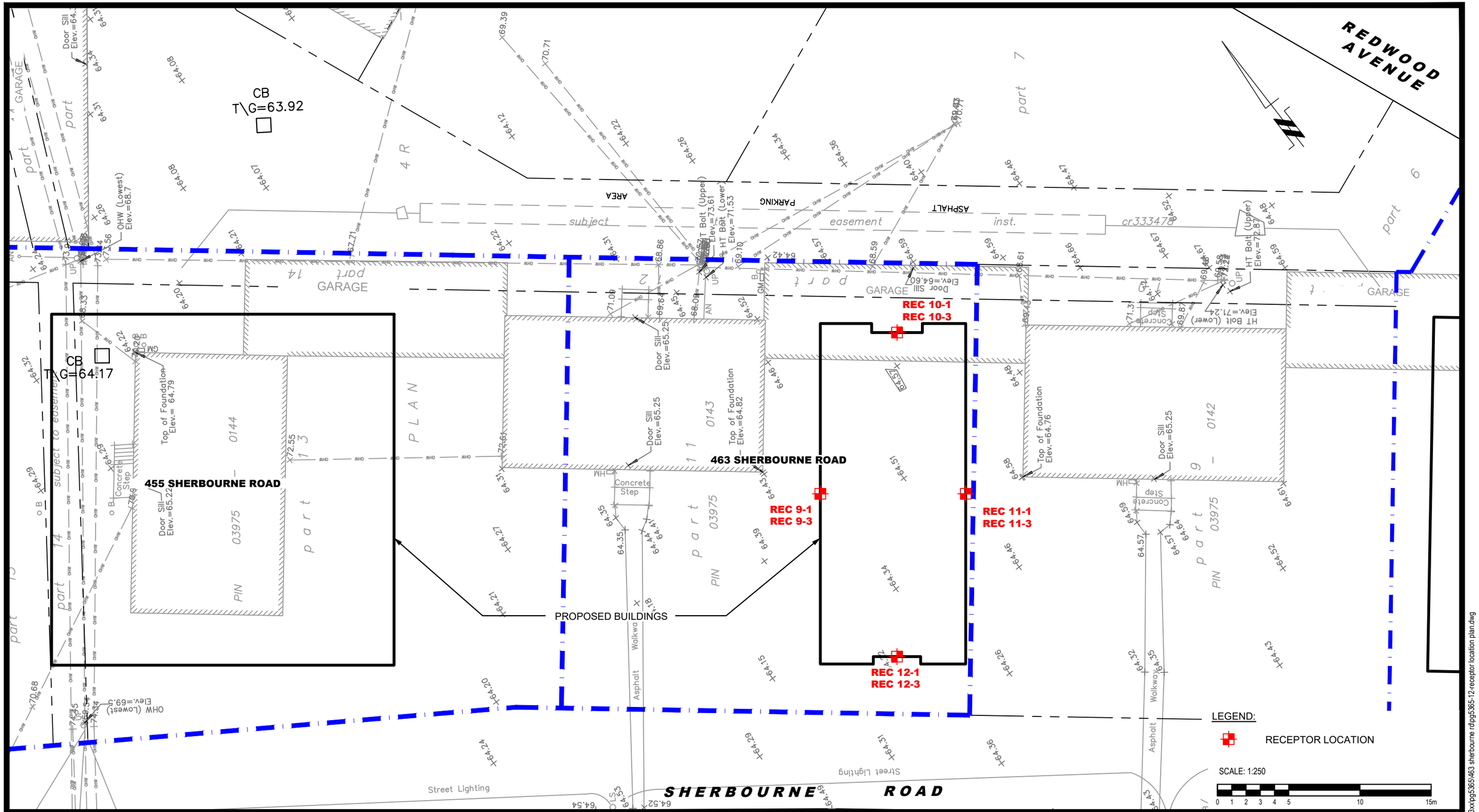



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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
463 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# RECEPTOR LOCATION PLAN

| | |
|---|---|
| Scale: 1:250 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-12 |
| Approved by: DJG | Revision No.: |

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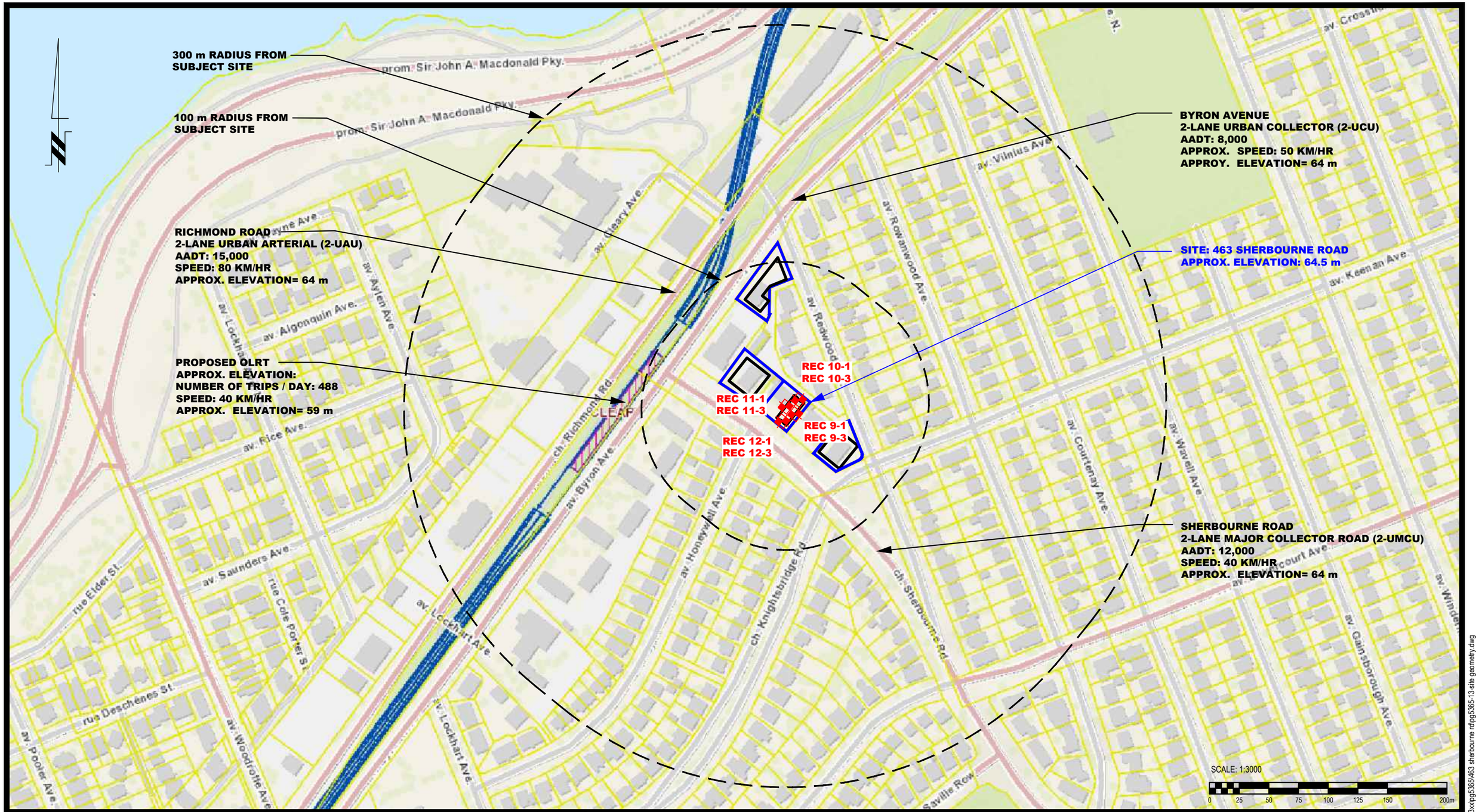


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|---|---|---|---|
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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
463 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-13 |
| Approved by: DJG | Revision No.: |

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300 m RADIUS FROM SUBJECT SITE

100 m RADIUS FROM SUBJECT SITE

RICHMOND ROAD
2-LANE URBAN ARTERIAL (2-UAU)
AADT: 15,000
SPEED: 80 KM/HR
APPROX. ELEVATION= 64 m

PROPOSED OLRT
APPROX. ELEVATION:
NUMBER OF TRIPS / DAY: 488
SPEED: 40 KM/HR
APPROX. ELEVATION= 59 m

BYRON AVENUE
2-LANE URBAN COLLECTOR (2-UCU)
AADT: 8,000
APPROX. SPEED: 50 KM/HR
APPROY. ELEVATION= 64 m

SITE: 463 SHERBOURNE ROAD
APPROX. ELEVATION: 64.5 m

SHERBOURNE ROAD
2-LANE MAJOR COLLECTOR ROAD (2-UMCU)
AADT: 12,000
SPEED: 40 KM/HR
APPROX. ELEVATION= 64 m

REC 9-1
REC 9-3

33°
0°
67°
-42°
0°

SCALE: 1:3000

0 25 50 75 100 125 150 200m

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| | | | |

CONCORDE DEVELOPMENTS
NOISE ATTENUATION STUDY
463 SHERBOURNE ROAD
OTTAWA, ONTARIO

Title:
# SITE GEOMETRY - REC 9-1 AND REC 9-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-13A |
| Approved by: DJG | Revision No.: |

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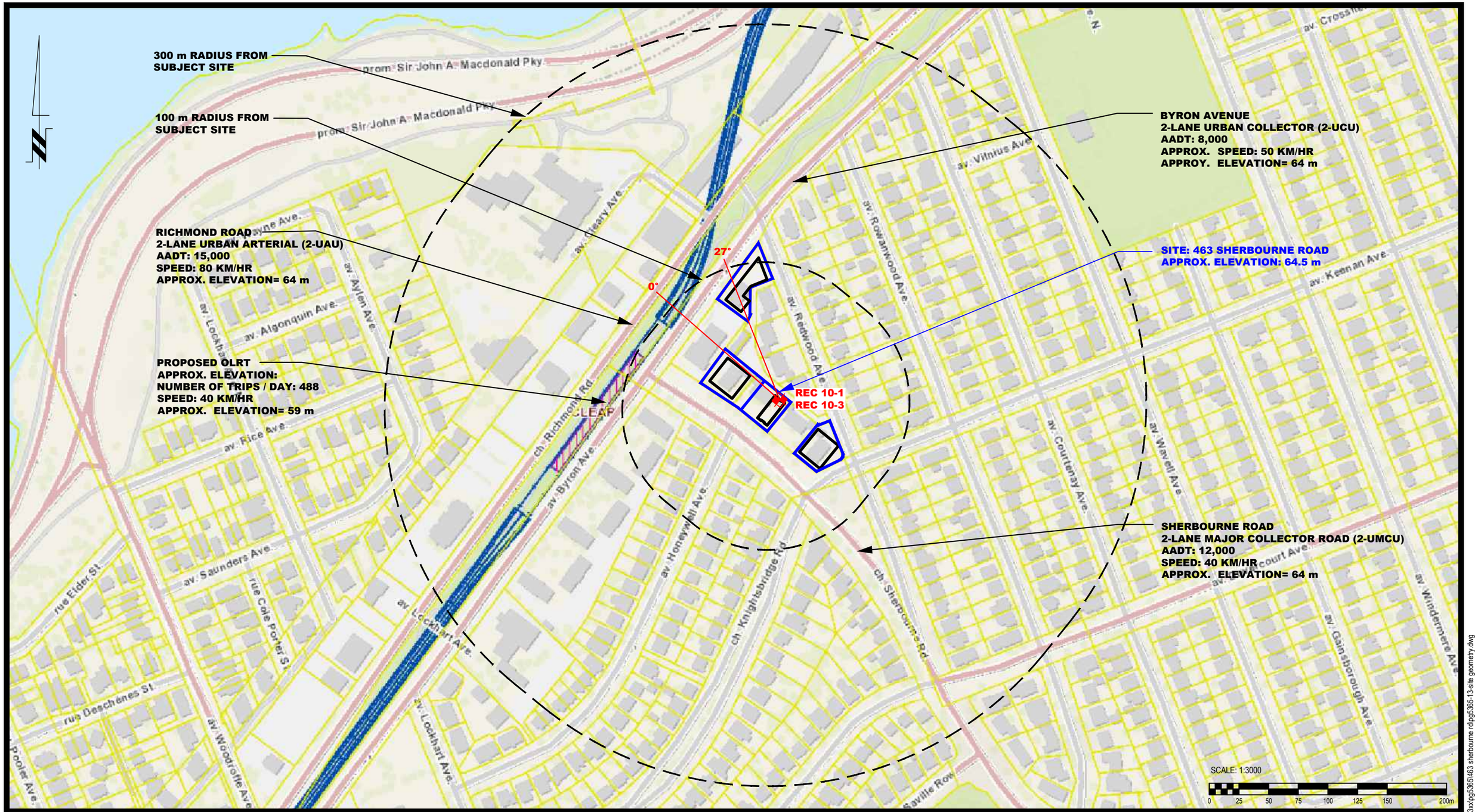


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|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS
NOISE ATTENUATION STUDY
463 SHERBOURNE ROAD
OTTAWA, ONTARIO

Title:
# SITE GEOMETRY - REC 10-1 AND REC 10-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-13B |
| Approved by: DJG | Revision No.: |

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300 m RADIUS FROM SUBJECT SITE

100 m RADIUS FROM SUBJECT SITE

RICHMOND ROAD
2-LANE URBAN ARTERIAL (2-UAU)
AADT: 15,000
SPEED: 80 KM/HR
APPROX. ELEVATION= 64 m

PROPOSED OLRT
APPROX. ELEVATION:
NUMBER OF TRIPS / DAY: 488
SPEED: 40 KM/HR
APPROX. ELEVATION= 59 m

BYRON AVENUE
2-LANE URBAN COLLECTOR (2-UCU)
AADT: 8,000
APPROX. SPEED: 50 KM/HR
APPROY. ELEVATION= 64 m

SITE: 463 SHERBOURNE ROAD
APPROX. ELEVATION: 64.5 m

REC 11-1
REC 11-3

0°

-67°

SHERBOURNE ROAD
2-LANE MAJOR COLLECTOR ROAD (2-UMCU)
AADT: 12,000
SPEED: 40 KM/HR
APPROX. ELEVATION= 64 m

SCALE: 1:3000

0 25 50 75 100 125 150 200m


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CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
463 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 11-1 AND REC 11-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-13C |
| Approved by: DJG | Revision No.: |

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300 m RADIUS FROM SUBJECT SITE

100 m RADIUS FROM SUBJECT SITE

RICHMOND ROAD
2-LANE URBAN ARTERIAL (2-UAU)
AADT: 15,000
SPEED: 80 KM/HR
APPROX. ELEVATION= 64 m

PROPOSED OLRT
APPROX. ELEVATION:
NUMBER OF TRIPS / DAY: 488
SPEED: 40 KM/HR
APPROX. ELEVATION= 59 m

BYRON AVENUE
2-LANE URBAN COLLECTOR (2-UCU)
AADT: 8,000
APPROX. SPEED: 50 KM/HR
APPROY. ELEVATION= 64 m

SITE: 463 SHERBOURNE ROAD
APPROX. ELEVATION: 64.5 m

SHERBOURNE ROAD
2-LANE MAJOR COLLECTOR ROAD (2-UMCU)
AADT: 12,000
SPEED: 40 KM/HR
APPROX. ELEVATION= 64 m

REC 12-1
REC 12-3

0°
73°
37°
0°
-75°

SCALE: 1:3000
0 25 50 75 100 125 150 200m

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|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
463 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 12-1 AND REC 12-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-13D |
| Approved by: DJG | Revision No.: |

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# APPENDIX 5

**TABLE 13 - SUMMARY OF RECEPTION POINTS AND GEOMETRY**

**DRAWING PG5365-14 - SITE PLAN**

**DRAWING PG5365-15 - RECEPTOR LOCATION PLAN**

**DRAWING PG5365-16 - SITE GEOMETRY**

**DRAWING PG5365-16A - SITE GEOMETRY (REC 13-1 and REC 13-3)**

**DRAWING PG5365-16B - SITE GEOMETRY (REC 14-1 and REC 14-3)**

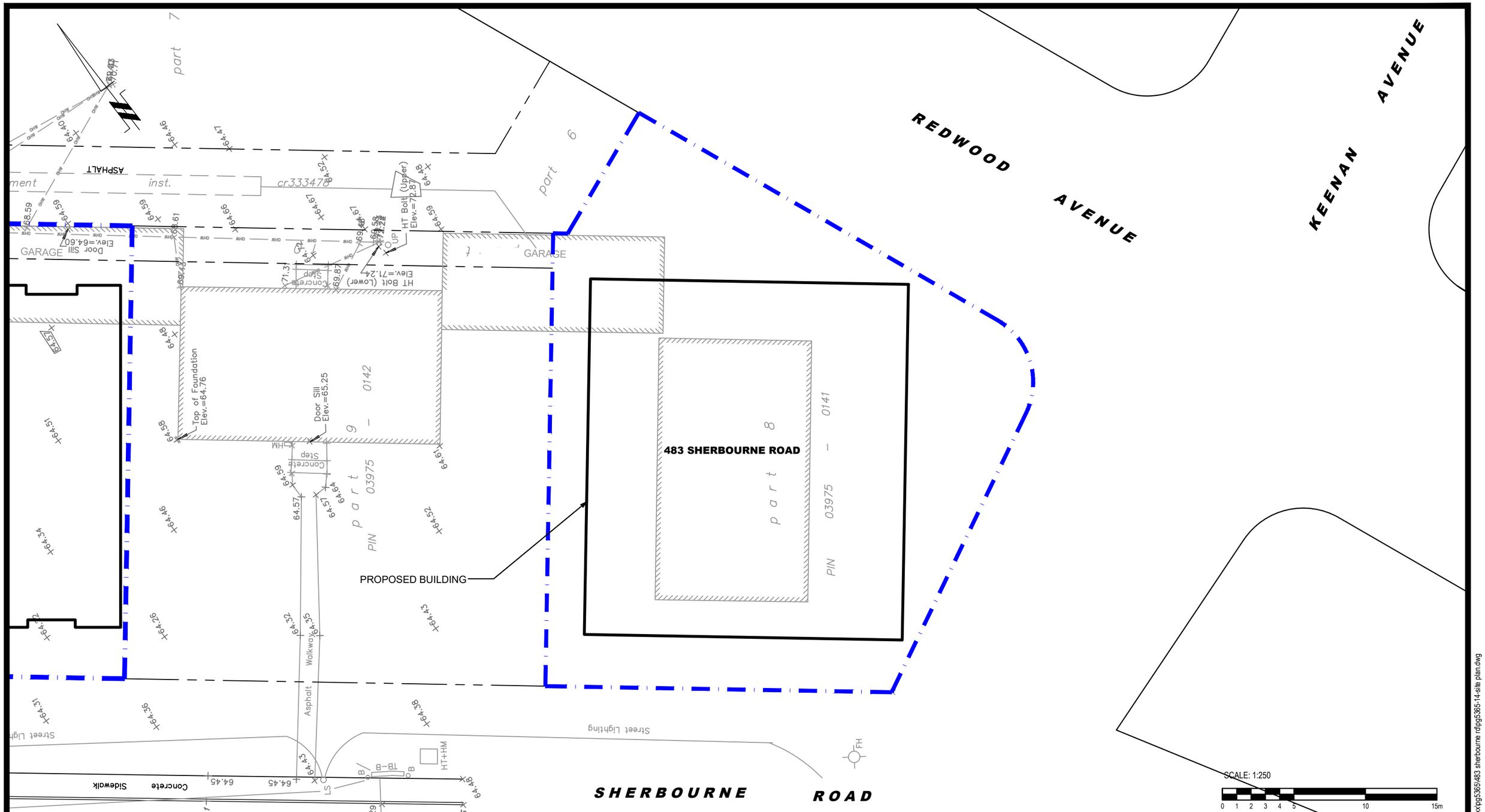
**DRAWING PG5365-16C - SITE GEOMETRY (REC 15-1 and REC 15-3)**

**DRAWING PG5365-16D - SITE GEOMETRY (REC 16-1 and REC 16-3)**

**Table 13 - Summary of Reception Points and Geometry**
**483 Sherbourne Road**

| Point of Reception | Location | Leq Day (dBA) | Byron Avenue | | | | | | Richmond Road | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 13-1 | Western elevation, 1st floor | 57.25 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 13-3 | Western elevation, 3rd floor | 57.86 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 14-1 | Northern elevation, 1st floor | -- | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 14-3 | Northern elevation, 3rd floor | -- | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 15-1 | Eastern elevation, 1st floor | 56.8 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 15-3 | Eastern elevation, 3rd floor | 57.36 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 16-1 | Southern elevation, 1st floor | 63.97 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 16-3 | Southern elevation, 3rd floor | 64.2 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| | | | | | | | | | | | | | | |

| Point of Reception | Location | Leq Day (dBA) | Sherbourne Road | | | | | |
|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | No. of Rows of Houses | Density (%) |
| REC 13-1 | Western elevation, 1st floor | 57.25 | 25 | 1.5 | 25.04 | 0, 73 | n/a | n/a |
| REC 13-3 | Western elevation, 3rd floor | 57.86 | 25 | 7.5 | 26.1 | 0, 73 | n/a | n/a |
| REC 14-1 | Northern elevation, 1st floor | -- | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 14-3 | Northern elevation, 3rd floor | -- | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 15-1 | Eastern elevation, 1st floor | 56.8 | 25 | 1.5 | 25.04 | -62, 0 | n/a | n/a |
| REC 15-3 | Eastern elevation, 3rd floor | 57.36 | 25 | 7.5 | 26.1 | -62, 0 | n/a | n/a |
| REC 16-1 | Southern elevation, 1st floor | 63.97 | 15 | 1.5 | 15.07 | -69, 80 | n/a | n/a |
| REC 16-3 | Southern elevation, 3rd floor | 64.2 | 15 | 7.5 | 16.77 | -68, 80 | n/a | n/a |
| | | | | | | | | |





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CONCORDE DEVELOPMENTS

# NOISE ATTENUATION STUDY
# 483 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE PLAN

| | |
|---|---|
| Scale: 1:250 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-14 |
| Approved by: DJG | Revision No.: |

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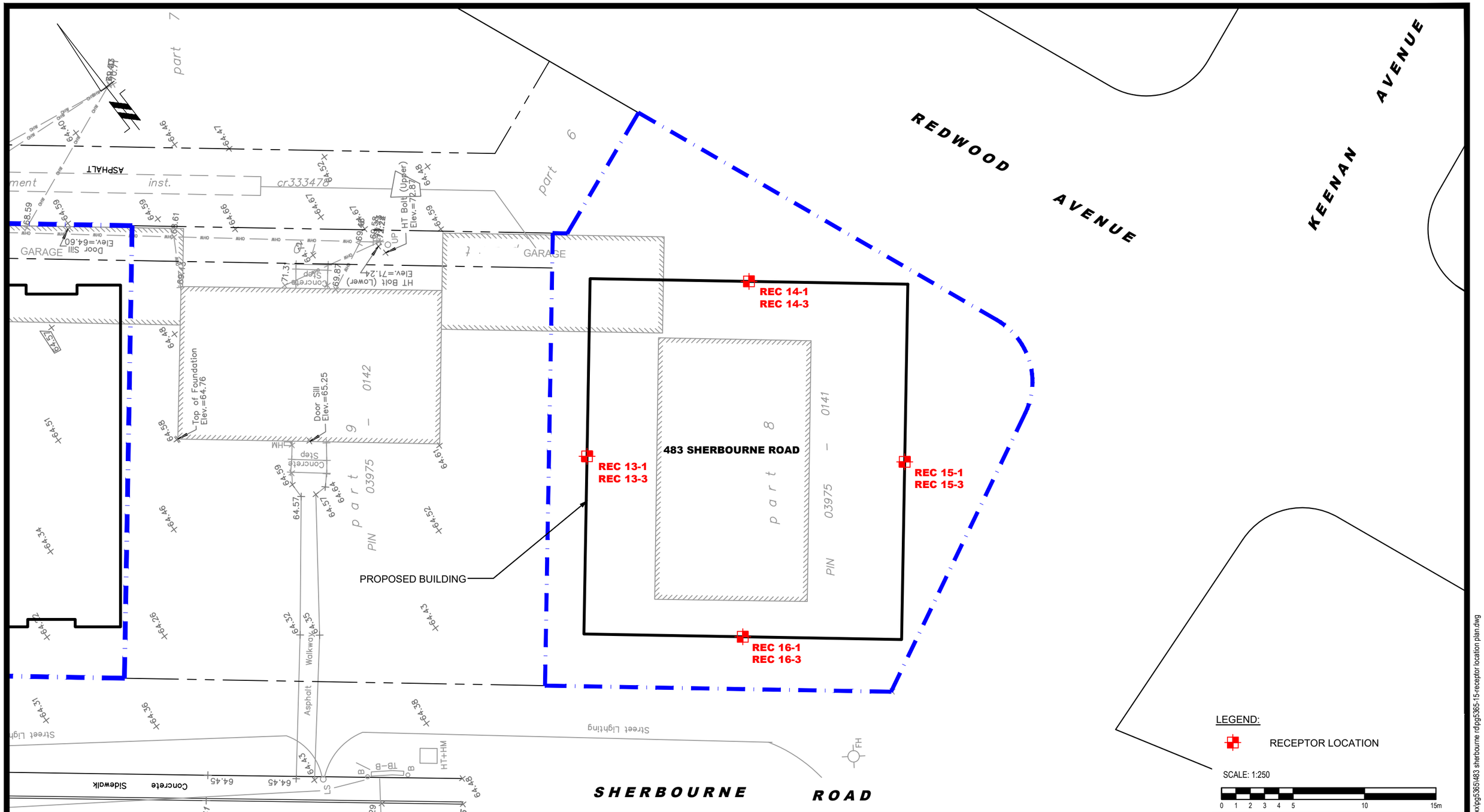



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| NO. | REVISIONS | DATE | INITIAL |
|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
483 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# RECEPTOR LOCATION PLAN

| | |
|---|---|
| Scale: 1:250 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-15 |
| Approved by: DJG | Revision No.: |

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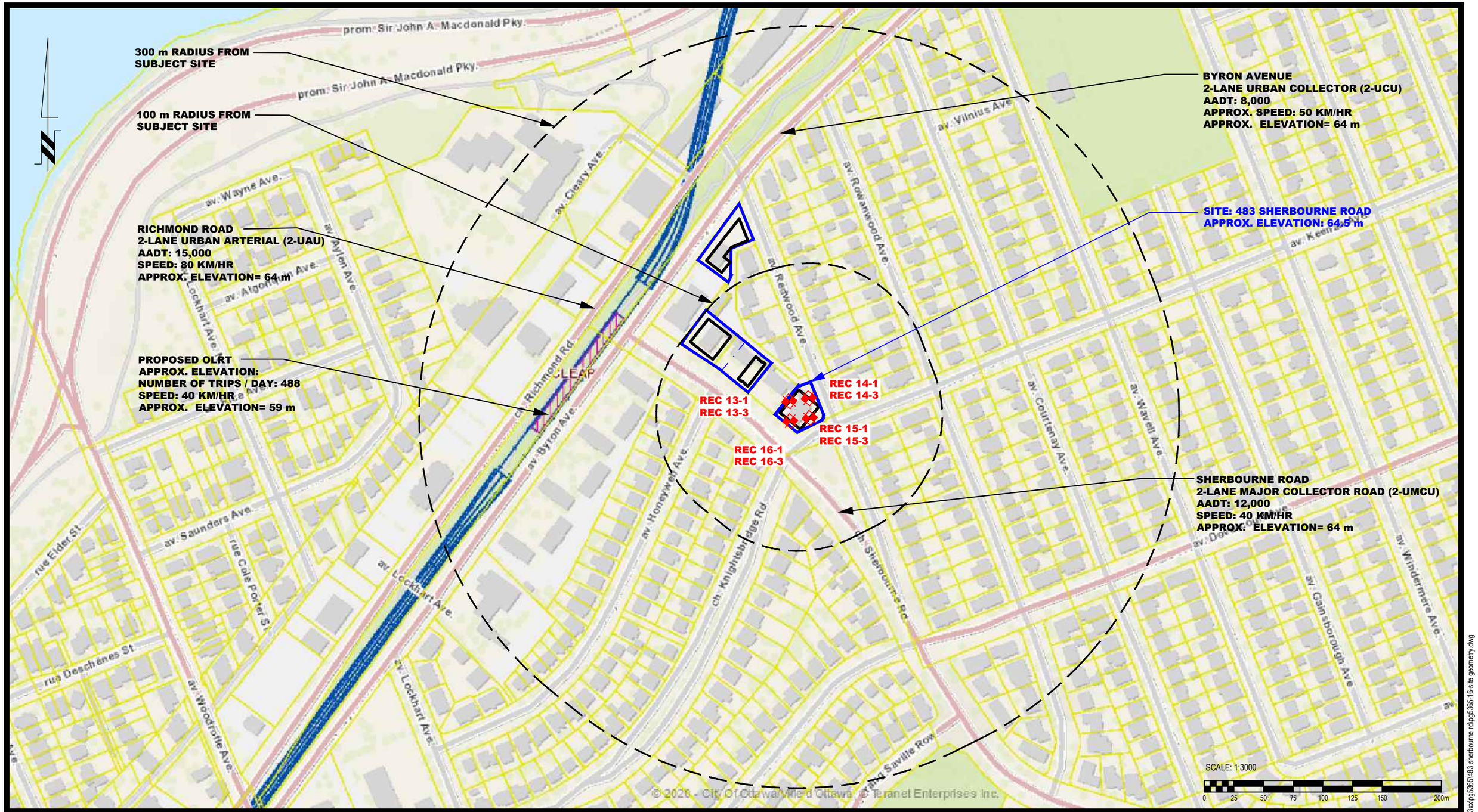


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|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
483 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-16 |
| Approved by: DJG | Revision No.: |

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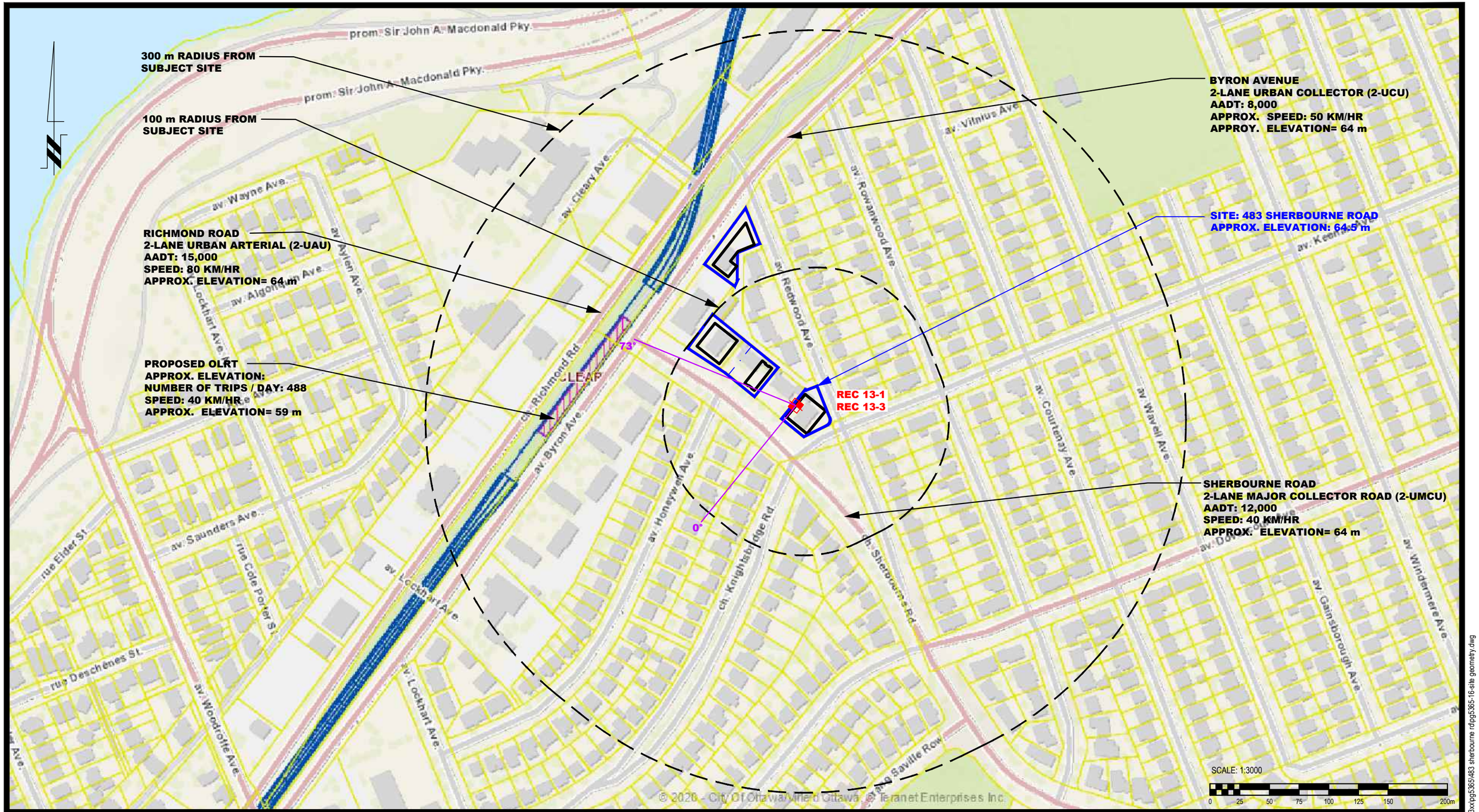



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|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
483 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 13-1 AND REC 13-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-16A |
| Approved by: DJG | Revision No.: |

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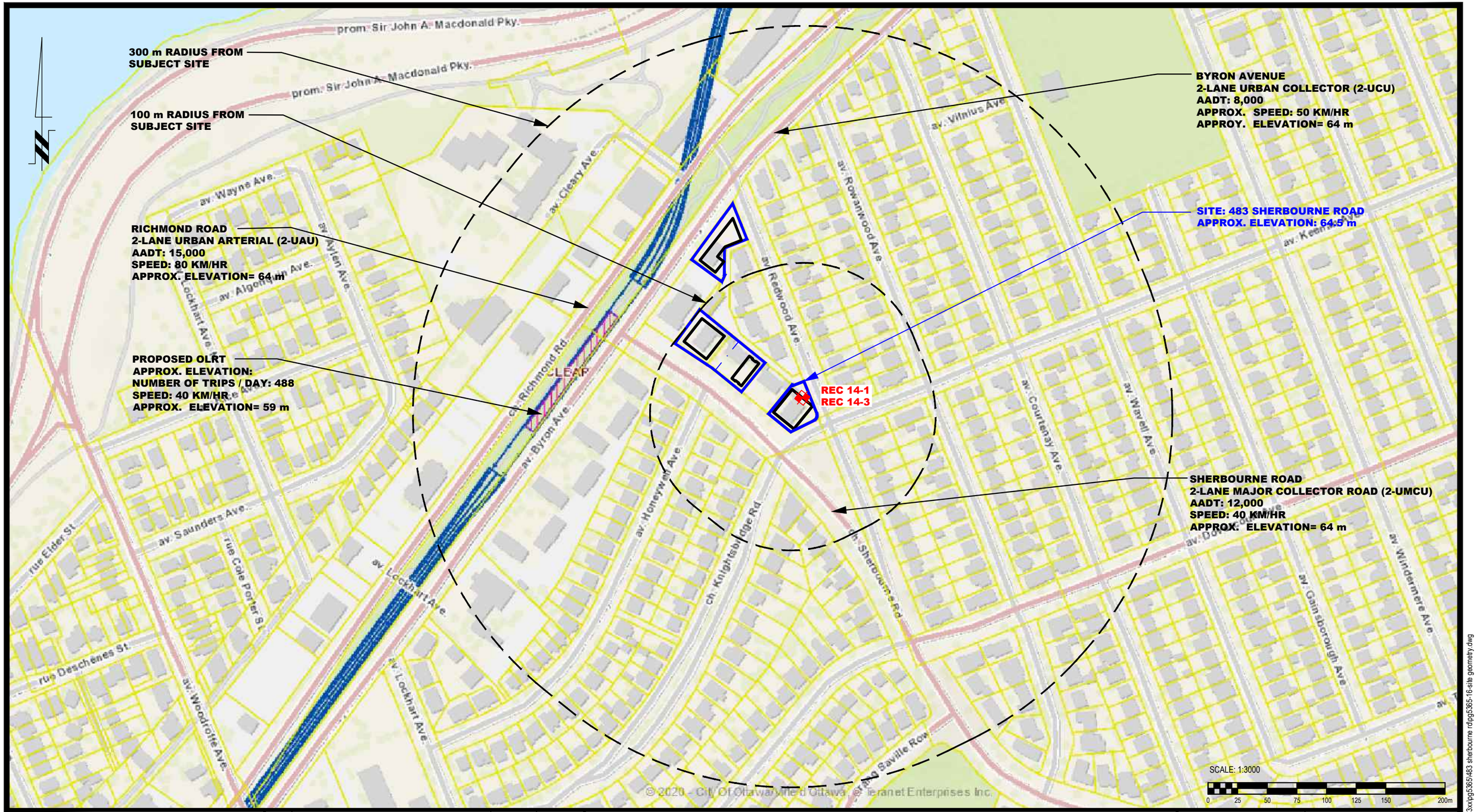


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CONCORDE DEVELOPMENTS
NOISE ATTENUATION STUDY
483 SHERBOURNE ROAD
OTTAWA, ONTARIO

Title:
# SITE GEOMETRY - REC 14-1 AND REC 14-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-16B |
| Approved by: DJG | Revision No.: |

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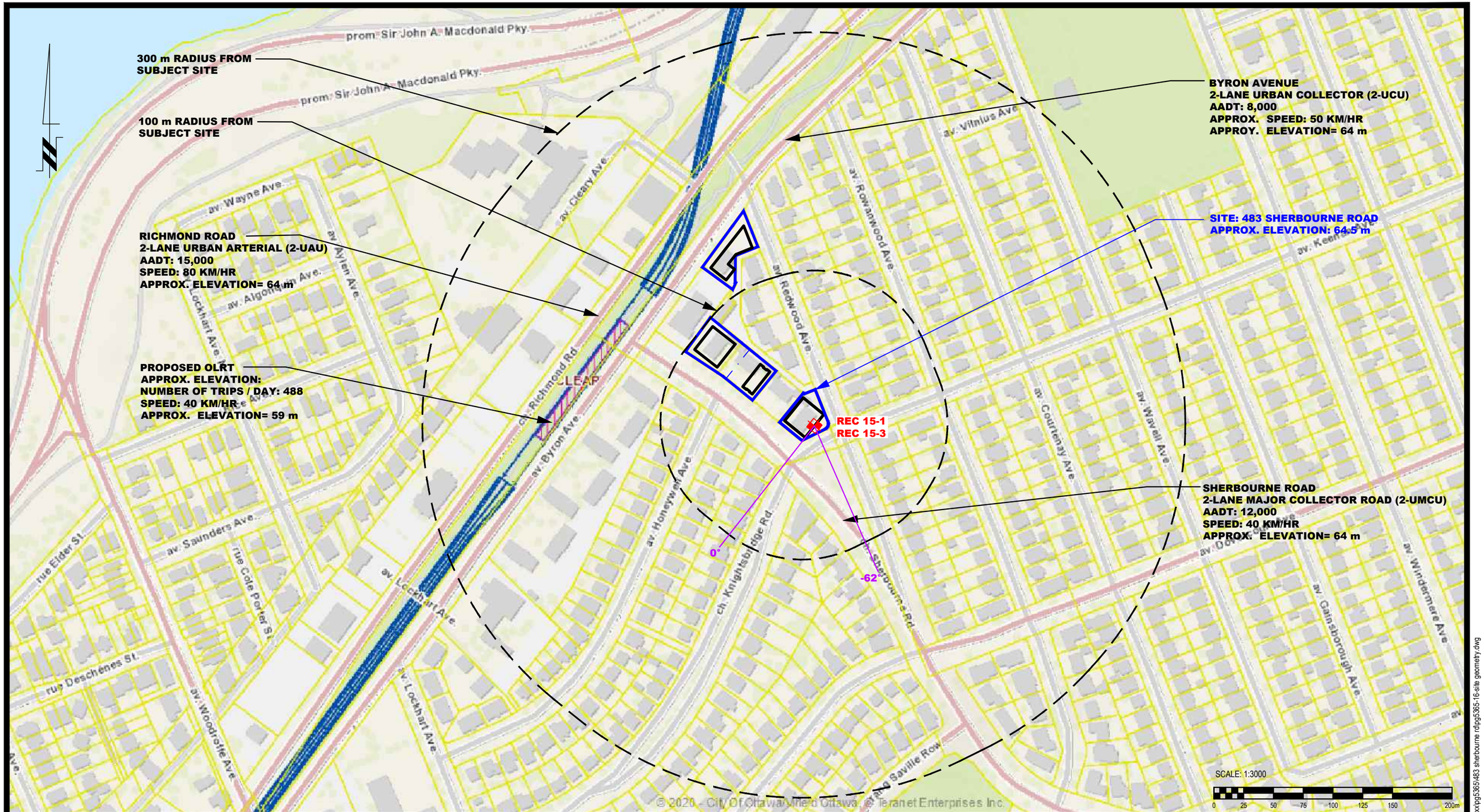


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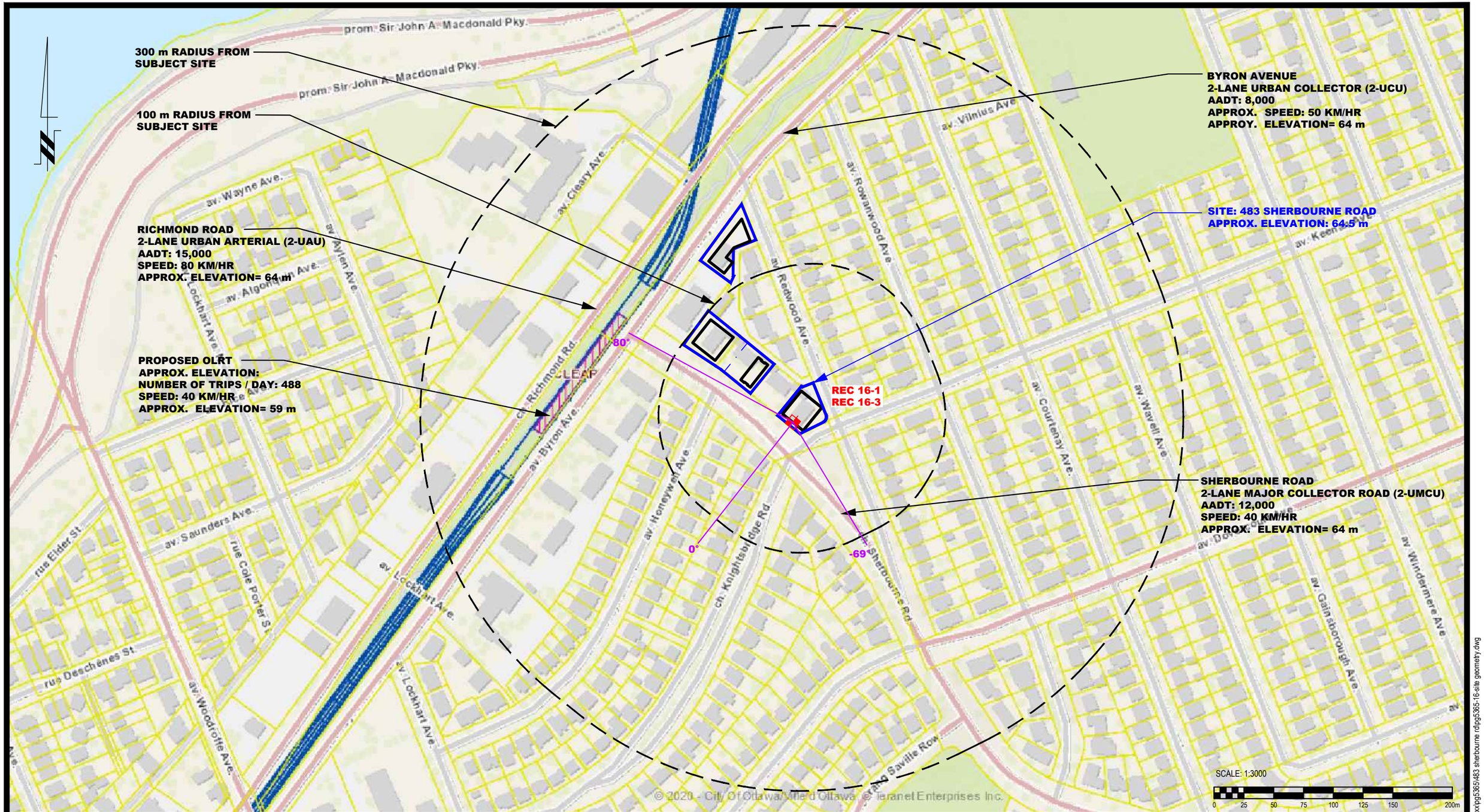
|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS
NOISE ATTENUATION STUDY
483 SHERBOURNE ROAD
OTTAWA, ONTARIO

Title:
# SITE GEOMETRY - REC 15-1 AND REC 15-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-16C |
| Approved by: DJG | Revision No.: |

p:\autocad drawings\geotechnical\pg53xx\pg5365\483 sherbourne rd\pg5365-16-site geometry.dwg

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| NO. | REVISIONS | DATE | INITIAL |
|---|---|---|---|
| | | | |

CONCORDE DEVELOPMENTS

NOISE ATTENUATION STUDY
483 SHERBOURNE ROAD

OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 16-1 AND REC 16-3

| | |
|---|---|
| Scale: 1:3000 | Date: 09/2020 |
| Drawn by: YA | Report No.: PG5365-1 |
| Checked by: SB | Dwg. No.: PG5365-16D |
| Approved by: DJG | Revision No.: |

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# APPENDIX 6

## STAMSON RESULTS

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:37:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec11.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 1-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -85.00 deg   83.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -70.00 deg   65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.16 + 0.00) = 62.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -85     83   0.66  65.75   0.00  -2.07  -1.51   0.00   0.00   0.00  62.16
-------------------------------------------------------------------------------

Segment Leq : 62.16 dBA

🡅
Results segment # 2: Richmond (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 61.83 + 0.00) = 61.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70     65   0.66  72.49   0.00  -8.68  -1.98   0.00   0.00   0.00  61.83
-------------------------------------------------------------------------------

Segment Leq : 61.83 dBA

Total Leq All Segments: 65.01 dBA

🡅
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 54.57 + 0.00) = 54.57 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -85 | 83 | 0.66 | 58.16 | 0.00 | -2.07 | -1.51 | 0.00 | 0.00 | 0.00 | 54.57 |

Segment Leq : 54.57 dBA

🡅

Results segment # 2: Richmond (night)

---

Source height = 1.50 m

ROAD (0.00 + 54.23 + 0.00) = 54.23 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -70 | 65 | 0.66 | 64.89 | 0.00 | -8.68 | -1.98 | 0.00 | 0.00 | 0.00 | 54.23 |

Segment Leq : 54.23 dBA

Total Leq All Segments: 57.41 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 65.01
(NIGHT): 57.41

🡅

🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:33:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC13.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 1-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -85.00 deg   83.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -70.00 deg   65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.67 + 0.00) = 62.67 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -85     83   0.48  65.75   0.00  -1.85  -1.23   0.00   0.00   0.00  62.67
-------------------------------------------------------------------------------

Segment Leq : 62.67 dBA

🡅
Results segment # 2: Richmond (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 61.83 + 0.00) = 61.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70     65   0.66  72.49   0.00  -8.68  -1.98   0.00   0.00   0.00  61.83
-------------------------------------------------------------------------------

Segment Leq : 61.83 dBA

Total Leq All Segments: 65.28 dBA

🡅
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 55.08 + 0.00) = 55.08 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -85 | 83 | 0.48 | 58.16 | 0.00 | -1.85 | -1.23 | 0.00 | 0.00 | 0.00 | 55.08 |

Segment Leq : 55.08 dBA

🡅

Results segment # 2: Richmond (night)

---

Source height = 1.50 m

ROAD (0.00 + 54.23 + 0.00) = 54.23 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -70 | 65 | 0.66 | 64.89 | 0.00 | -8.68 | -1.98 | 0.00 | 0.00 | 0.00 | 54.23 |

Segment Leq : 54.23 dBA

Total Leq All Segments: 57.69 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 65.28
(NIGHT): 57.69

🡅

🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:39:52
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC21.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 2-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :  31.00 deg   79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           :  45.00 deg   59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.58 + 0.00) = 54.58 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    31     79   0.66  65.75   0.00  -3.68  -7.48   0.00   0.00   0.00  54.58
-------------------------------------------------------------------------------

Segment Leq : 54.58 dBA

↑
Results segment # 2: Richmond (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.63 + 0.00) = 50.63 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    45     59   0.66  72.49   0.00  -9.37 -12.49   0.00   0.00   0.00  50.63
-------------------------------------------------------------------------------

Segment Leq : 50.63 dBA

Total Leq All Segments: 56.05 dBA

↑
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 46.99 + 0.00) = 46.99 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 79 | 0.66 | 58.16 | 0.00 | -3.68 | -7.48 | 0.00 | 0.00 | 0.00 | 46.99 |

Segment Leq : 46.99 dBA

🡅

Results segment # 2: Richmond (night)

---

Source height = 1.50 m

ROAD (0.00 + 43.03 + 0.00) = 43.03 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 59 | 0.66 | 64.89 | 0.00 | -9.37 | -12.49 | 0.00 | 0.00 | 0.00 | 43.03 |

Segment Leq : 43.03 dBA

Total Leq All Segments: 48.46 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 56.05
(NIGHT): 48.46

🡅

🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:40:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC23.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 2-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :  31.00 deg   79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           :  45.00 deg   59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.43 + 0.00) = 55.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    31     79   0.48  65.75   0.00  -3.28  -7.04   0.00   0.00   0.00  55.43
-------------------------------------------------------------------------------

Segment Leq : 55.43 dBA

↑
Results segment # 2: Richmond (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.02 + 0.00) = 52.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    45     59   0.48  72.49   0.00  -8.35 -12.11   0.00   0.00   0.00  52.02
-------------------------------------------------------------------------------

Segment Leq : 52.02 dBA

Total Leq All Segments: 57.06 dBA

↑
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 47.84 + 0.00) = 47.84 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 31 | 79 | 0.48 | 58.16 | 0.00 | -3.28 | -7.04 | 0.00 | 0.00 | 0.00 | 47.84 |

Segment Leq : 47.84 dBA

🡅

Results segment # 2: Richmond (night)

---

Source height = 1.50 m

ROAD (0.00 + 44.43 + 0.00) = 44.43 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 45 | 59 | 0.48 | 64.89 | 0.00 | -8.35 | -12.11 | 0.00 | 0.00 | 0.00 | 44.43 |

Segment Leq : 44.43 dBA

Total Leq All Segments: 49.47 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 57.06
(NIGHT): 49.47

🡅

🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:41:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC31.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 3-1


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -51.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 46.93 + 0.00) = 46.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -51      0   0.66  65.72   0.00 -12.92  -5.87   0.00   0.00   0.00  46.93
--------------------------------------------------------------------------

Segment Leq : 46.93 dBA
```

Total Leq All Segments: 46.93 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 39.33 + 0.00) = 39.33 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -51 | 0 | 0.66 | 58.12 | 0.00 | -12.92 | -5.87 | 0.00 | 0.00 | 0.00 | 39.33 |

Segment Leq : 39.33 dBA

Total Leq All Segments: 39.33 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 46.93
(NIGHT): 39.33

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:42:31
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC33.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 3-3


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -51.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 48.43 + 0.00) = 48.43 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -51      0   0.48  65.72   0.00 -11.52  -5.77   0.00   0.00   0.00  48.43
--------------------------------------------------------------------------

Segment Leq : 48.43 dBA
```

Total Leq All Segments: 48.43 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 40.83 + 0.00) = 40.83 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -51 | 0 | 0.48 | 58.12 | 0.00 | -11.52 | -5.77 | 0.00 | 0.00 | 0.00 | 40.83 |

Segment Leq : 40.83 dBA

Total Leq All Segments: 40.83 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 48.43
(NIGHT): 40.83

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:48:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC41.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 4-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :   0.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -58.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Road data, segment # 3: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Sherbourne (day/night)
------------------------------------------
Angle1   Angle2           : -56.00 deg   15.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 57.18 + 0.00) = 57.18 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 70 | 0.66 | 65.75 | 0.00 | -3.68 | -4.89 | 0.00 | 0.00 | 0.00 | 57.18 |

Segment Leq : 57.18 dBA

🡅

Results segment # 2: Richmond (day)

---

Source height = 1.50 m

ROAD (0.00 + 57.68 + 0.00) = 57.68 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -58 | 0 | 0.66 | 72.49 | 0.00 | -9.37 | -5.44 | 0.00 | 0.00 | 0.00 | 57.68 |

Segment Leq : 57.68 dBA

🡅

Results segment # 3: Sherbourne (day)

---

Source height = 1.50 m

ROAD (0.00 + 48.79 + 0.00) = 48.79 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -56 | 15 | 0.66 | 65.72 | 0.00 | -12.51 | -4.43 | 0.00 | 0.00 | 0.00 | 48.79 |

Segment Leq : 48.79 dBA

Total Leq All Segments: 60.73 dBA

🡅

Results segment # 1: Byron (night)

---

Source height = 1.50 m

ROAD (0.00 + 49.58 + 0.00) = 49.58 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 70 | 0.66 | 58.16 | 0.00 | -3.68 | -4.89 | 0.00 | 0.00 | 0.00 | 49.58 |

---

Segment Leq : 49.58 dBA

🡅
Results segment # 2: Richmond (night)
---

Source height = 1.50 m

ROAD (0.00 + 50.08 + 0.00) = 50.08 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -58 | 0 | 0.66 | 64.89 | 0.00 | -9.37 | -5.44 | 0.00 | 0.00 | 0.00 | 50.08 |

Segment Leq : 50.08 dBA

🡅
Results segment # 3: Sherbourne (night)
---

Source height = 1.50 m

ROAD (0.00 + 41.19 + 0.00) = 41.19 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -56 | 15 | 0.66 | 58.12 | 0.00 | -12.51 | -4.43 | 0.00 | 0.00 | 0.00 | 41.19 |

Segment Leq : 41.19 dBA

Total Leq All Segments: 53.13 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 60.73
(NIGHT): 53.13

🡅
🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:49:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC43.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 4-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :   0.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -58.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Road data, segment # 3: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Sherbourne (day/night)
------------------------------------------
Angle1   Angle2           : -56.00 deg   15.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 57.78 + 0.00) = 57.78 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 70 | 0.48 | 65.75 | 0.00 | -3.28 | -4.69 | 0.00 | 0.00 | 0.00 | 57.78 |

Segment Leq : 57.78 dBA

🡅

Results segment # 2: Richmond (day)

---

Source height = 1.50 m

ROAD (0.00 + 58.83 + 0.00) = 58.83 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -58 | 0 | 0.48 | 72.49 | 0.00 | -8.35 | -5.30 | 0.00 | 0.00 | 0.00 | 58.83 |

Segment Leq : 58.83 dBA

🡅

Results segment # 3: Sherbourne (day)

---

Source height = 1.50 m

ROAD (0.00 + 50.24 + 0.00) = 50.24 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -56 | 15 | 0.48 | 65.72 | 0.00 | -11.15 | -4.32 | 0.00 | 0.00 | 0.00 | 50.24 |

Segment Leq : 50.24 dBA

Total Leq All Segments: 61.67 dBA

🡅

Results segment # 1: Byron (night)

---

Source height = 1.50 m

ROAD (0.00 + 50.18 + 0.00) = 50.18 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 70 | 0.48 | 58.16 | 0.00 | -3.28 | -4.69 | 0.00 | 0.00 | 0.00 | 50.18 |

---

Segment Leq : 50.18 dBA

🡅
Results segment # 2: Richmond (night)
---

Source height = 1.50 m

ROAD (0.00 + 51.23 + 0.00) = 51.23 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -58 | 0 | 0.48 | 64.89 | 0.00 | -8.35 | -5.30 | 0.00 | 0.00 | 0.00 | 51.23 |

Segment Leq : 51.23 dBA

🡅
Results segment # 3: Sherbourne (night)
---

Source height = 1.50 m

ROAD (0.00 + 42.64 + 0.00) = 42.64 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -56 | 15 | 0.48 | 58.12 | 0.00 | -11.15 | -4.32 | 0.00 | 0.00 | 0.00 | 42.64 |

Segment Leq : 42.64 dBA

Total Leq All Segments: 54.07 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 61.67
(NIGHT): 54.07

🡅
🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:53:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC51.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 5-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -70.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  45.00 / 45.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -45.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  75.00 / 75.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↑

```
Road data, segment # 3: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Sherbourne (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   47.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↑

```
Results segment # 1: Byron (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 54.90 + 0.00) = 54.90 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -70 | 63 | 0.66 | 65.75 | 0.00 | -7.92 | -2.02 | 0.00 | -0.90 | 0.00 | 54.90 |

Segment Leq : 54.90 dBA

🡅
Results segment # 2: Richmond (day)
---

Source height = 1.50 m

ROAD (0.00 + 56.67 + 0.00) = 56.67 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -45 | 45 | 0.66 | 72.49 | 0.00 | -11.60 | -3.32 | 0.00 | -0.90 | 0.00 | 56.67 |

Segment Leq : 56.67 dBA

🡅
Results segment # 3: Sherbourne (day)
---

Source height = 1.50 m

ROAD (0.00 + 55.87 + 0.00) = 55.87 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 47 | 0.66 | 65.72 | 0.00 | -3.68 | -6.17 | 0.00 | 0.00 | 0.00 | 55.87 |

Segment Leq : 55.87 dBA

Total Leq All Segments: 60.64 dBA

🡅
Results segment # 1: Byron (night)
---

Source height = 1.50 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 |
|---|---|---|---|---|---|---|---|---|---|---|

```
-------------------------------------------------------------------------------
   -70     63   0.66  58.16   0.00  -7.92  -2.02   0.00  -0.90   0.00  47.31
-------------------------------------------------------------------------------

Segment Leq : 47.31 dBA

↑
Results segment # 2: Richmond (night)
--------------------------------------

Source height = 1.50 m

ROAD (0.00 + 49.07 + 0.00) = 49.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -45     45   0.66  64.89   0.00 -11.60  -3.32   0.00  -0.90   0.00  49.07
-------------------------------------------------------------------------------

Segment Leq : 49.07 dBA

↑
Results segment # 3: Sherbourne (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 48.27 + 0.00) = 48.27 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     47   0.66  58.12   0.00  -3.68  -6.17   0.00   0.00   0.00  48.27
-------------------------------------------------------------------------------

Segment Leq : 48.27 dBA

Total Leq All Segments: 53.05 dBA

↑



TOTAL Leq FROM ALL SOURCES (DAY): 60.64
                          (NIGHT): 53.05
↑
↑
```

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:53:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC53.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 5-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -70.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  45.00 / 45.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -45.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  75.00 / 75.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↑

```
Road data, segment # 3: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Sherbourne (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   47.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↑

```
Results segment # 1: Byron (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 55.94 + 0.00) = 55.94 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -70 | 63 | 0.48 | 65.75 | 0.00 | -7.06 | -1.84 | 0.00 | -0.90 | 0.00 | 55.94 |

Segment Leq : 55.94 dBA

🡅

Results segment # 2: Richmond (day)

---

Source height = 1.50 m

ROAD (0.00 + 58.01 + 0.00) = 58.01 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -45 | 45 | 0.48 | 72.49 | 0.00 | -10.35 | -3.23 | 0.00 | -0.90 | 0.00 | 58.01 |

Segment Leq : 58.01 dBA

🡅

Results segment # 3: Sherbourne (day)

---

Source height = 1.50 m

ROAD (0.00 + 56.36 + 0.00) = 56.36 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 47 | 0.48 | 65.72 | 0.00 | -3.28 | -6.08 | 0.00 | 0.00 | 0.00 | 56.36 |

Segment Leq : 56.36 dBA

Total Leq All Segments: 61.64 dBA

🡅

Results segment # 1: Byron (night)

---

Source height = 1.50 m

ROAD (0.00 + 48.35 + 0.00) = 48.35 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|

```
-------------------------------------------------------------------------------
   -70     63   0.48  58.16   0.00  -7.06  -1.84   0.00  -0.90   0.00  48.35
-------------------------------------------------------------------------------

Segment Leq : 48.35 dBA

↑
Results segment # 2: Richmond (night)
--------------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.41 + 0.00) = 50.41 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -45     45   0.48  64.89   0.00 -10.35  -3.23   0.00  -0.90   0.00  50.41
-------------------------------------------------------------------------------

Segment Leq : 50.41 dBA

↑
Results segment # 3: Sherbourne (night)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 48.76 + 0.00) = 48.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     47   0.48  58.12   0.00  -3.28  -6.08   0.00   0.00   0.00  48.76
-------------------------------------------------------------------------------

Segment Leq : 48.76 dBA

Total Leq All Segments: 54.04 dBA

↑



TOTAL Leq FROM ALL SOURCES (DAY): 61.64
                          (NIGHT): 54.04
↑
↑
```

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:56:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC61.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 6-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :   0.00 deg   57.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   36.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 49.36 + 0.00) = 49.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
     0     57   0.66  65.75   0.00  -9.99  -5.50   0.00  -0.90   0.00  49.36
--------------------------------------------------------------------------

Segment Leq : 49.36 dBA

↑
Results segment # 2: Richmond (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.49 + 0.00) = 51.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
     0     36   0.66  72.49   0.00 -12.92  -7.18   0.00  -0.90   0.00  51.49
--------------------------------------------------------------------------

Segment Leq : 51.49 dBA

Total Leq All Segments: 53.56 dBA

↑
Results segment # 1: Byron (night)
```

---

Source height = 1.50 m

ROAD (0.00 + 41.77 + 0.00) = 41.77 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 57 | 0.66 | 58.16 | 0.00 | -9.99 | -5.50 | 0.00 | -0.90 | 0.00 | 41.77 |

Segment Leq : 41.77 dBA

↑

Results segment # 2: Richmond (night)

---

Source height = 1.50 m

ROAD (0.00 + 43.89 + 0.00) = 43.89 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 36 | 0.66 | 64.89 | 0.00 | -12.92 | -7.18 | 0.00 | -0.90 | 0.00 | 43.89 |

Segment Leq : 43.89 dBA

Total Leq All Segments: 45.97 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 53.56
(NIGHT): 45.97

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:56:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC63.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 6-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :   0.00 deg   57.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   36.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.57 + 0.00) = 50.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
     0     57   0.48  65.75   0.00  -8.91  -5.37   0.00  -0.90   0.00  50.57
--------------------------------------------------------------------------

Segment Leq : 50.57 dBA

🡅
Results segment # 2: Richmond (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.94 + 0.00) = 52.94 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
     0     36   0.48  72.49   0.00 -11.52  -7.13   0.00  -0.90   0.00  52.94
--------------------------------------------------------------------------

Segment Leq : 52.94 dBA

Total Leq All Segments: 54.92 dBA

🡅
Results segment # 1: Byron (night)
```

---

Source height = 1.50 m

ROAD (0.00 + 42.98 + 0.00) = 42.98 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 57 | 0.48 | 58.16 | 0.00 | -8.91 | -5.37 | 0.00 | -0.90 | 0.00 | 42.98 |

Segment Leq : 42.98 dBA

↑

Results segment # 2: Richmond (night)

---

Source height = 1.50 m

ROAD (0.00 + 45.34 + 0.00) = 45.34 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 36 | 0.48 | 64.89 | 0.00 | -11.52 | -7.13 | 0.00 | -0.90 | 0.00 | 45.34 |

Segment Leq : 45.34 dBA

Total Leq All Segments: 47.33 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 54.92
(NIGHT): 47.33

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:58:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC71.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 7-1


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -72.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.21 + 0.00) = 57.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -72      0   0.66  65.72   0.00  -3.68  -4.82   0.00   0.00   0.00  57.21
--------------------------------------------------------------------------

Segment Leq : 57.21 dBA
```

Total Leq All Segments: 57.21 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 49.61 + 0.00) = 49.61 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -72 | 0 | 0.66 | 58.12 | 0.00 | -3.68 | -4.82 | 0.00 | 0.00 | 0.00 | 49.61 |

Segment Leq : 49.61 dBA

Total Leq All Segments: 49.61 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.21
(NIGHT): 49.61

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 13:58:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC73.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 7-3


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -72.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.82 + 0.00) = 57.82 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -72      0   0.48  65.72   0.00  -3.28  -4.61   0.00   0.00   0.00  57.82
--------------------------------------------------------------------------

Segment Leq : 57.82 dBA
```

Total Leq All Segments: 57.82 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 50.23 + 0.00) = 50.23 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -72 | 0 | 0.48 | 58.12 | 0.00 | -3.28 | -4.61 | 0.00 | 0.00 | 0.00 | 50.23 |

Segment Leq : 50.23 dBA

Total Leq All Segments: 50.23 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.82
(NIGHT): 50.23

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:01:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC81.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 8-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -61.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -38.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Road data, segment # 3: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Sherbourne (day/night)
------------------------------------------
Angle1   Angle2           : -77.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 50.47 + 0.00) = 50.47 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -61 | 0 | 0.66 | 65.75 | 0.00 | -9.99 | -5.28 | 0.00 | 0.00 | 0.00 | 50.47 |

Segment Leq : 50.47 dBA

🡅

Results segment # 2: Richmond (day)

---

Source height = 1.50 m

ROAD (0.00 + 52.60 + 0.00) = 52.60 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -38 | 0 | 0.66 | 72.49 | 0.00 | -12.92 | -6.97 | 0.00 | 0.00 | 0.00 | 52.60 |

Segment Leq : 52.60 dBA

🡅

Results segment # 3: Sherbourne (day)

---

Source height = 1.50 m

ROAD (0.00 + 61.73 + 0.00) = 61.73 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -77 | 63 | 0.66 | 65.72 | 0.00 | -2.07 | -1.91 | 0.00 | 0.00 | 0.00 | 61.73 |

Segment Leq : 61.73 dBA

Total Leq All Segments: 62.51 dBA

🡅

Results segment # 1: Byron (night)

---

Source height = 1.50 m

ROAD (0.00 + 42.88 + 0.00) = 42.88 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -61 | 0 | 0.66 | 58.16 | 0.00 | -9.99 | -5.28 | 0.00 | 0.00 | 0.00 | 42.88 |

---

Segment Leq : 42.88 dBA

🡅
Results segment # 2: Richmond (night)
---

Source height = 1.50 m

ROAD (0.00 + 45.00 + 0.00) = 45.00 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -38 | 0 | 0.66 | 64.89 | 0.00 | -12.92 | -6.97 | 0.00 | 0.00 | 0.00 | 45.00 |

Segment Leq : 45.00 dBA

🡅
Results segment # 3: Sherbourne (night)
---

Source height = 1.50 m

ROAD (0.00 + 54.13 + 0.00) = 54.13 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -77 | 63 | 0.66 | 58.12 | 0.00 | -2.07 | -1.91 | 0.00 | 0.00 | 0.00 | 54.13 |

Segment Leq : 54.13 dBA

Total Leq All Segments: 54.91 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 62.51
(NIGHT): 54.91

🡅
🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:09:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec83.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 8-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -61.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Road data, segment # 2: Richmond (day/night)
--------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    80 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Richmond (day/night)
------------------------------------------
Angle1   Angle2           : -38.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Road data, segment # 3: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: Sherbourne (day/night)
------------------------------------------
Angle1   Angle2           : -77.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------
```

```
Source height = 1.50 m

ROAD (0.00 + 51.71 + 0.00) = 51.71 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -61      0   0.48  65.75   0.00  -8.91  -5.13   0.00   0.00   0.00  51.71
--------------------------------------------------------------------------------

Segment Leq : 51.71 dBA

🡅
Results segment # 2: Richmond (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.06 + 0.00) = 54.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -38      0   0.48  72.49   0.00 -11.52  -6.91   0.00   0.00   0.00  54.06
--------------------------------------------------------------------------------

Segment Leq : 54.06 dBA

🡅
Results segment # 3: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.16 + 0.00) = 62.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -77     63   0.48  65.72   0.00  -1.85  -1.70   0.00   0.00   0.00  62.16
--------------------------------------------------------------------------------

Segment Leq : 62.16 dBA

Total Leq All Segments: 63.11 dBA

🡅
Results segment # 1: Byron (night)
----------------------------------

Source height = 1.50 m

ROAD (0.00 + 44.12 + 0.00) = 44.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -61      0   0.48  58.16   0.00  -8.91  -5.13   0.00   0.00   0.00  44.12
```

```
-------------------------------------------------------------------------------

Segment Leq : 44.12 dBA

↑
Results segment # 2: Richmond (night)
--------------------------------------

Source height = 1.50 m

ROAD (0.00 + 46.46 + 0.00) = 46.46 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -38      0   0.48  64.89   0.00 -11.52  -6.91   0.00   0.00   0.00  46.46
-------------------------------------------------------------------------------

Segment Leq : 46.46 dBA

↑
Results segment # 3: Sherbourne (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.56 + 0.00) = 54.56 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -77     63   0.48  58.12   0.00  -1.85  -1.70   0.00   0.00   0.00  54.56
-------------------------------------------------------------------------------

Segment Leq : 54.56 dBA

Total Leq All Segments: 55.51 dBA

↑



TOTAL Leq FROM ALL SOURCES (DAY): 63.11
                          (NIGHT): 55.51
↑
↑
```

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:09:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec91.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 9-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -40.00 deg   33.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  95.00 / 95.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           :   0.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 44.82 + 0.00) = 44.82 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -40     33   0.66  65.75   0.00 -13.31  -4.12   0.00  -3.50   0.00  44.82
--------------------------------------------------------------------------

Segment Leq : 44.82 dBA

🡅
Results segment # 2: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.14 + 0.00) = 57.14 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
     0     70   0.66  65.72   0.00  -3.68  -4.89   0.00   0.00   0.00  57.14
--------------------------------------------------------------------------

Segment Leq : 57.14 dBA

Total Leq All Segments: 57.39 dBA

🡅
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 37.23 + 0.00) = 37.23 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -40 | 33 | 0.66 | 58.16 | 0.00 | -13.31 | -4.12 | 0.00 | -3.50 | 0.00 | 37.23 |

Segment Leq : 37.23 dBA

↑

Results segment # 2: Sherbourne (night)

---

Source height = 1.50 m

ROAD (0.00 + 49.54 + 0.00) = 49.54 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 70 | 0.66 | 58.12 | 0.00 | -3.68 | -4.89 | 0.00 | 0.00 | 0.00 | 49.54 |

Segment Leq : 49.54 dBA

Total Leq All Segments: 49.79 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.39
(NIGHT): 49.79

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:08:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC93.te             Time Period: Day/Night 16/8 hours
Description: Reception Point 9-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -40.00 deg   33.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  95.00 / 95.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           :   0.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 46.32 + 0.00) = 46.32 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -40     33   0.48  65.75   0.00 -11.87  -4.07   0.00  -3.50   0.00  46.32
--------------------------------------------------------------------------

Segment Leq : 46.32 dBA

🡅
Results segment # 2: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.74 + 0.00) = 57.74 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
     0     70   0.48  65.72   0.00  -3.28  -4.69   0.00   0.00   0.00  57.74
--------------------------------------------------------------------------

Segment Leq : 57.74 dBA

Total Leq All Segments: 58.04 dBA

🡅
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 38.72 + 0.00) = 38.72 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -40 | 33 | 0.48 | 58.16 | 0.00 | -11.87 | -4.07 | 0.00 | -3.50 | 0.00 | 38.72 |

Segment Leq : 38.72 dBA

↑

Results segment # 2: Sherbourne (night)

---

Source height = 1.50 m

ROAD (0.00 + 50.14 + 0.00) = 50.14 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 70 | 0.48 | 58.12 | 0.00 | -3.28 | -4.69 | 0.00 | 0.00 | 0.00 | 50.14 |

Segment Leq : 50.14 dBA

Total Leq All Segments: 50.44 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 58.04
(NIGHT): 50.44

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:11:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC101.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 10-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :   0.00 deg   27.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 44.49 + 0.00) = 44.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     27   0.66  65.75   0.00 -12.92  -8.35   0.00   0.00   0.00  44.49
-------------------------------------------------------------------------------

Segment Leq : 44.49 dBA
```

Total Leq All Segments: 44.49 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 36.89 + 0.00) = 36.89 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 27 | 0.66 | 58.16 | 0.00 | -12.92 | -8.35 | 0.00 | 0.00 | 0.00 | 36.89 |

Segment Leq : 36.89 dBA

Total Leq All Segments: 36.89 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 44.49
(NIGHT): 36.89

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:12:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC103.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 10-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           :   0.00 deg   27.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 45.91 + 0.00) = 45.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     27   0.48  65.75   0.00 -11.52  -8.32   0.00   0.00   0.00  45.91
-------------------------------------------------------------------------------

Segment Leq : 45.91 dBA
```

Total Leq All Segments: 45.91 dBA

↑
Results segment # 1: Byron (night)
---

Source height = 1.50 m

ROAD (0.00 + 38.32 + 0.00) = 38.32 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 27 | 0.48 | 58.16 | 0.00 | -11.52 | -8.32 | 0.00 | 0.00 | 0.00 | 38.32 |

Segment Leq : 38.32 dBA

Total Leq All Segments: 38.32 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 45.91
(NIGHT): 38.32
↑
↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:13:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC111.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 11-1


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -70.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.14 + 0.00) = 57.14 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -70      0   0.66  65.72   0.00  -3.68  -4.89   0.00   0.00   0.00  57.14
--------------------------------------------------------------------------

Segment Leq : 57.14 dBA
```

Total Leq All Segments: 57.14 dBA

↑
Results segment # 1: Sherbourne (night)
---

Source height = 1.50 m

ROAD (0.00 + 49.54 + 0.00) = 49.54 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -70 | 0 | 0.66 | 58.12 | 0.00 | -3.68 | -4.89 | 0.00 | 0.00 | 0.00 | 49.54 |

Segment Leq : 49.54 dBA

Total Leq All Segments: 49.54 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.14
(NIGHT): 49.54
↑
↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:14:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC113.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 11-3


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -70.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.74 + 0.00) = 57.74 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -70      0   0.48  65.72   0.00  -3.28  -4.69   0.00   0.00   0.00  57.74
--------------------------------------------------------------------------

Segment Leq : 57.74 dBA
```

Total Leq All Segments: 57.74 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 50.14 + 0.00) = 50.14 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -70 | 0 | 0.48 | 58.12 | 0.00 | -3.28 | -4.69 | 0.00 | 0.00 | 0.00 | 50.14 |

Segment Leq : 50.14 dBA

Total Leq All Segments: 50.14 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.74
(NIGHT): 50.14

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:16:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC121.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 12-1


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -37.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  95.00 / 95.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Road data, segment # 2: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -75.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 45.37 + 0.00) = 45.37 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -37      0   0.66  65.75   0.00 -13.31  -7.07   0.00   0.00   0.00  45.37
--------------------------------------------------------------------------------

Segment Leq : 45.37 dBA

🡅
Results segment # 2: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.97 + 0.00) = 63.97 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -75     73   0.66  65.72   0.00   0.00  -1.75   0.00   0.00   0.00  63.97
--------------------------------------------------------------------------------

Segment Leq : 63.97 dBA

Total Leq All Segments: 64.03 dBA

🡅
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 37.78 + 0.00) = 37.78 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -37 | 0 | 0.66 | 58.16 | 0.00 | -13.31 | -7.07 | 0.00 | 0.00 | 0.00 | 37.78 |

Segment Leq : 37.78 dBA

🡅

Results segment # 2: Sherbourne (night)

---

Source height = 1.50 m

ROAD (0.00 + 56.37 + 0.00) = 56.37 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -75 | 73 | 0.66 | 58.12 | 0.00 | 0.00 | -1.75 | 0.00 | 0.00 | 0.00 | 56.37 |

Segment Leq : 56.37 dBA

Total Leq All Segments: 56.43 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 64.03
(NIGHT): 56.43

🡅

🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:17:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC123.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 12-3


Road data, segment # 1: Byron (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Byron (day/night)
---------------------------------------
Angle1   Angle2           : -37.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  95.00 / 95.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Road data, segment # 2: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 2: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -75.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🡅
Results segment # 1: Byron (day)
--------------------------------

Source height = 1.50 m

ROAD (0.00 + 46.86 + 0.00) = 46.86 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -37      0   0.48  65.75   0.00 -11.87  -7.02   0.00   0.00   0.00  46.86
-------------------------------------------------------------------------------

Segment Leq : 46.86 dBA

🡅
Results segment # 2: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 64.19 + 0.00) = 64.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -75     73   0.48  65.72   0.00   0.00  -1.52   0.00   0.00   0.00  64.19
-------------------------------------------------------------------------------

Segment Leq : 64.19 dBA

Total Leq All Segments: 64.27 dBA

🡅
Results segment # 1: Byron (night)
----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 39.27 + 0.00) = 39.27 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -37 | 0 | 0.48 | 58.16 | 0.00 | -11.87 | -7.02 | 0.00 | 0.00 | 0.00 | 39.27 |

Segment Leq : 39.27 dBA

🡅

Results segment # 2: Sherbourne (night)

---

Source height = 1.50 m

ROAD (0.00 + 56.60 + 0.00) = 56.60 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -75 | 73 | 0.48 | 58.12 | 0.00 | 0.00 | -1.52 | 0.00 | 0.00 | 0.00 | 56.60 |

Segment Leq : 56.60 dBA

Total Leq All Segments: 56.68 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 64.27
(NIGHT): 56.68

🡅

🡅

STAMSON 5.0 NORMAL REPORT Date: 09-09-2020 14:20:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC131.te Time Period: Day/Night 16/8 hours
Description: Reception Point 13-1

Road data, segment # 1: Sherbourne (day/night)
---
Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Sherbourne (day/night)
---
Angle1 Angle2 : 0.00 deg 73.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

🡅
Results segment # 1: Sherbourne (day)
---

Source height = 1.50 m

ROAD (0.00 + 57.25 + 0.00) = 57.25 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 73 | 0.66 | 65.72 | 0.00 | -3.68 | -4.79 | 0.00 | 0.00 | 0.00 | 57.25 |

Segment Leq : 57.25 dBA

Total Leq All Segments: 57.25 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 49.65 + 0.00) = 49.65 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 73 | 0.66 | 58.12 | 0.00 | -3.68 | -4.79 | 0.00 | 0.00 | 0.00 | 49.65 |

Segment Leq : 49.65 dBA

Total Leq All Segments: 49.65 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.25
(NIGHT): 49.65

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 14:21:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC133.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 13-3


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           :   0.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.86 + 0.00) = 57.86 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
     0     73   0.48  65.72   0.00  -3.28  -4.57   0.00   0.00   0.00  57.86
--------------------------------------------------------------------------

Segment Leq : 57.86 dBA
```

Total Leq All Segments: 57.86 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 50.26 + 0.00) = 50.26 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 73 | 0.48 | 58.12 | 0.00 | -3.28 | -4.57 | 0.00 | 0.00 | 0.00 | 50.26 |

Segment Leq : 50.26 dBA

Total Leq All Segments: 50.26 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.86
(NIGHT): 50.26

↑

↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 15:00:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC151.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 15-1


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -62.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.80 + 0.00) = 56.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -62      0   0.66  65.72   0.00  -3.68  -5.23   0.00   0.00   0.00  56.80
--------------------------------------------------------------------------

Segment Leq : 56.80 dBA
```

Total Leq All Segments: 56.80 dBA

↑
Results segment # 1: Sherbourne (night)
---

Source height = 1.50 m

ROAD (0.00 + 49.20 + 0.00) = 49.20 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -62 | 0 | 0.66 | 58.12 | 0.00 | -3.68 | -5.23 | 0.00 | 0.00 | 0.00 | 49.20 |

Segment Leq : 49.20 dBA

Total Leq All Segments: 49.20 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 56.80
(NIGHT): 49.20
↑
↑

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 15:01:27
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC153.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 15-3


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -62.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   7.50 / 7.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.36 + 0.00) = 57.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -62      0   0.48  65.72   0.00  -3.28  -5.08   0.00   0.00   0.00  57.36
--------------------------------------------------------------------------

Segment Leq : 57.36 dBA
```

Total Leq All Segments: 57.36 dBA

🡅
Results segment # 1: Sherbourne (night)
---

Source height = 1.50 m

ROAD (0.00 + 49.76 + 0.00) = 49.76 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -62 | 0 | 0.48 | 58.12 | 0.00 | -3.28 | -5.08 | 0.00 | 0.00 | 0.00 | 49.76 |

Segment Leq : 49.76 dBA

Total Leq All Segments: 49.76 dBA

🡅

TOTAL Leq FROM ALL SOURCES (DAY): 57.36
(NIGHT): 49.76
🡅
🡅

```
STAMSON 5.0        NORMAL REPORT        Date: 09-09-2020 15:02:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC161.te            Time Period: Day/Night 16/8 hours
Description: Reception Point 16-1


Road data, segment # 1: Sherbourne (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

    24 hr Traffic Volume (AADT or SADT):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: Sherbourne (day/night)
--------------------------------------------
Angle1   Angle2           : -69.00 deg   80.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↑
Results segment # 1: Sherbourne (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.97 + 0.00) = 63.97 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------
   -69     80   0.66  65.72   0.00   0.00  -1.75   0.00   0.00   0.00  63.97
--------------------------------------------------------------------------

Segment Leq : 63.97 dBA
```

Total Leq All Segments: 63.97 dBA

↑
Results segment # 1: Sherbourne (night)
---

Source height = 1.50 m

ROAD (0.00 + 56.37 + 0.00) = 56.37 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -69 | 80 | 0.66 | 58.12 | 0.00 | 0.00 | -1.75 | 0.00 | 0.00 | 0.00 | 56.37 |

Segment Leq : 56.37 dBA

Total Leq All Segments: 56.37 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 63.97
(NIGHT): 56.37
↑
↑

STAMSON 5.0 NORMAL REPORT Date: 09-09-2020 15:03:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: REC163.te Time Period: Day/Night 16/8 hours
Description: Reception Point 16-3

Road data, segment # 1: Sherbourne (day/night)
---
Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

* Refers to calculated road volumes based on the following input:

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Sherbourne (day/night)
---
Angle1 Angle2 : -69.00 deg 80.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

🡅
Results segment # 1: Sherbourne (day)
---

Source height = 1.50 m

ROAD (0.00 + 64.20 + 0.00) = 64.20 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -69 | 80 | 0.48 | 65.72 | 0.00 | 0.00 | -1.52 | 0.00 | 0.00 | 0.00 | 64.20 |

Segment Leq : 64.20 dBA

Total Leq All Segments: 64.20 dBA

↑

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

Source height = 1.50 m

ROAD (0.00 + 56.60 + 0.00) = 56.60 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -69 | 80 | 0.48 | 58.12 | 0.00 | 0.00 | -1.52 | 0.00 | 0.00 | 0.00 | 56.60 |

Segment Leq : 56.60 dBA

Total Leq All Segments: 56.60 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 64.20
(NIGHT): 56.60

↑

↑

# APPENDIX 7

## INDUSTRY STANDARDS FOR BUILDING MATERIALS

## Noise / Acoustics

- Noise separation becomes an important design issue when the building is located next to a source such as an airport or busy highway. Typical concrete elements are sufficiently massive to form effective elements in a sound insulation design.
- The sound transmission of a wall is largely determined by the performance of the windows and doors, and by the air tightness of the assembly. Windows and doors can be designed for improved sound insulation, but only if they are kept closed.
- An air barrier system will have a positive effect on the sound insulation of the assembly.
- A 100-mm (4-inch) thick concrete wall panel has an STC (sound transmission class) of 50, which is the minimum STC required between dwelling units by the National Welding Code (NBC).
- Adding insulation and gypsum board raises the STC further, such that a precast concrete assembly can easily be designed to exceed this value.

## Durability

- Concrete resists weathering, and prefabrication provides an opportunity for precast panels to be designed for long term durability.

Durability issues to be considered include:

- freeze/thaw resistance of the concrete
- weathering of the finish
- corrosion of the reinforcing steel
- joint sealant performance
- glass etching from water runoff
- access for maintenance

## Sound Transmission Loss of Exterior Walls

| *Exterior finish* | *Cavity Insulation* | *Resilient channel* | *STC* |
|---|---|---|---|
| **Wood siding (1)** | None | No | **37** |
| | 3-1/2" PINK™ FIBERGLAS® Batt Insulation | No | **39** |
| | None | Yes | **43** |
| | 3-1/2" PINK™ FIBERGLAS® Batt Insulation | Yes | **47** |
| **Stucco (2)** | 3-1/2" PINK™ FIBERGLAS® Batt Insulation | No | **46** |
| | None | Yes | **49** |
| | 3-1/2" PINK™ FIBERGLAS® Batt Insulation | Yes | **57** |
| **Brick veneer (3)** | 3-1/2" PINK™ FIBERGLAS® Batt Insulation | No | **56** |
| | None | Yes | **54** |
| | 3-1/2" PINK™ FIBERGLAS® Batt Insulation | Yes | **58** |
| **Concrete block** | None | No | **45** |

***Wall construction details***

| | | |
|---|---|---|
| **Wood siding (1)** | Framing | 2"x4" wood studs, (16" o.c.) |
| | Sheathing | 1/2" wood fiberboard insulation nailed to studs |
| | Siding | 5/8"x10" redwood nailed through sheathing into studs |
| | Interior | 1/2" gypsum board screwed to studs or to metal resilient channels which were attached to the studs |
| **Stucco (2)** | Framing | 2"x4" woods studs, (16" o.c.) |
| | Sheathing | None |
| | Stucco | No. 15 felt building and 1" wire mesh nailed to studs. Stucco Applied in 3 coats to 7/8" total thickness. Dry weight of Stucco 7.9 lb/sq ft |
| | Interior | 1/2" gypsum board screwed to studs or resilient channel |
| **Brick veneer (3)** | Framing | 2"x4" wood studs, (16" o.c.) |
| | Sheathing | 3/4" wood fiberboard insulation |
| | Brick | standard face brick 3-1/2" wide, spaced 1/2" out from sheathing with metal ties nailed through sheathing into studs. Dry weight of brick and mortar 41 lb/sq ft . |
| | Interior | 1/2" gypsum board screwed to studs or resilient channel |

Taken from the U.S. Department of Commerce National Bureau of Standards Building Science Series 77.
* Information received in imperial units only

## Insulating Glass (Table 2)

| Glass Makeup | | | Frequency in Hertz (Hz) | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 650 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | STC |
| | | | Sound Transmission Loss (dB) | | | | | | | | | | | | | | | | | | |
| Glass Ply | Air Space | Glass Ply | | | | | | | | | | | | | | | | | | | |
| 1/8" 3 mm | 1/4" 6 mm | 1/8" 3 mm | 26 | 21 | 23 | 23 | 26 | 21 | 19 | 24 | 27 | 30 | 33 | 36 | 40 | 44 | 46 | 39 | 34 | 45 | 28 |
| 1/8" 3 mm | 3/8" 9 mm | 1/8" 3 mm | 26 | 23 | 23 | 20 | 23 | 19 | 23 | 27 | 29 | 32 | 35 | 39 | 44 | 47 | 48 | 41 | 36 | 43 | 31 |
| 1/4" 6 mm | 1/2" 13 mm | 1/4" 6 mm | 27 | 24 | 29 | 22 | 22 | 25 | 30 | 33 | 35 | 38 | 40 | 42 | 42 | 37 | 37 | 43 | 46 | 49 | 35 |
| 1/4" 6 mm | 1/2" 13 mm | 5/16" 8 mm | 28 | 29 | 33 | 29 | 29 | 32 | 36 | 37 | 40 | 43 | 42 | 43 | 42 | 37 | 40 | 44 | 48 | 53 | 40 |
| 1/4" 6 mm | 1/2" 13 mm | 3/8" 10 mm | 28 | 26 | 32 | 29 | 29 | 31 | 35 | 37 | 38 | 39 | 41 | 43 | 41 | 40 | 41 | 44 | 47 | 49 | 39 |
| 5/16" 8 mm | 1/2" 13 mm | 5/16" 8 mm | 26 | 24 | 25 | 31 | 24 | 32 | 32 | 35 | 37 | 39 | 39 | 38 | 36 | 38 | 42 | 44 | 46 | 49 | 37 |
| 1/4" 6 mm | 3/4" 19 mm | 1/4" 6 mm | 27 | 23 | 28 | 21 | 27 | 29 | 34 | 35 | 37 | 41 | 43 | 45 | 44 | 39 | 39 | 46 | 49 | 52 | 38 |
| 1/4" 6 mm | 1" 25 mm | 1/4" 6 mm | 22 | 19 | 27 | 23 | 31 | 30 | 35 | 35 | 36 | 39 | 41 | 42 | 41 | 36 | 37 | 46 | 51 | 56 | 37 |

## Laminated Insulating Glass (Table 3)

| Glass Makeup | | | | | Frequency in Hertz (Hz) | | | | | | | | | | | | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | | | 100 | 125 | 160 | 200 | 250 | 315 | 400 | 500 | 650 | 800 | 1000 | 1250 | 1600 | 2000 | 2500 | 3150 | 4000 | 5000 | STC |
| | | | | | Sound Transmission Loss (dB) | | | | | | | | | | | | | | | | | | |
| Glass Ply | Air Space | Glass Ply | PVB* | Glass Ply | | | | | | | | | | | | | | | | | | | |
| 3/16" 5 mm | 3/8" 9 mm | 1/8" 3 mm | .030" .76 mm | 1/8" 3 mm | 27 | 27 | 26 | 24 | 22 | 28 | 32 | 35 | 38 | 38 | 39 | 40 | 42 | 43 | 41 | 45 | 52 | 57 | 37 |
| 3/16" 5 mm | 1/2" 13 mm | 1/8" 3 mm | .030" .76 mm | 1/8" 3 mm | 26 | 23 | 25 | 23 | 27 | 31 | 34 | 36 | 38 | 39 | 41 | 43 | 45 | 46 | 43 | 49 | 55 | 55 | 39 |
| 1/4" 6 mm | 1/2" 13 mm | 1/8" 3 mm | .030" .76 mm | 1/8" 3 mm | 28 | 20 | 29 | 24 | 26 | 30 | 34 | 36 | 39 | 42 | 43 | 44 | 44 | 41 | 40 | 47 | 52 | 56 | 39 |
| 1/4" 6 mm | 1/2" 13 mm | 1/4" 6 mm | .030" .76 mm | 1/8" 3 mm | 28 | 17 | 28 | 29 | 33 | 34 | 38 | 40 | 40 | 41 | 41 | 41 | 41 | 40 | 43 | 49 | 54 | 58 | 40 |
| 1/4" 6 mm | 1/2" 13 mm | 3/16" 5 mm | .060" 1.52 mm | 3/16" 5 mm | 30 | 29 | 31 | 28 | 31 | 34 | 37 | 39 | 41 | 42 | 44 | 46 | 45 | 44 | 47 | 52 | 55 | 60 | 42 |
| 1/4" 6 mm | 1/2" 13 mm | 1/4" 6 mm | .030" .76 mm | 1/4" 6 mm | 31 | 29 | 32 | 30 | 32 | 35 | 38 | 40 | 40 | 42 | 44 | 46 | 47 | 46 | 47 | 52 | 56 | 61 | 43 |
| 5/16" 8 mm | 5/8" 16 mm | 3/16" 5 mm | .060" 1.52 mm | 3/16" 5 mm | 28 | 28 | 34 | 36 | 33 | 40 | 41 | 42 | 43 | 43 | 42 | 40 | 40 | 43 | 49 | 53 | 57 | 61 | 43 |
| 1/4" 6 mm | 3/4" 19 mm | 3/16" 5 mm | .060" 1.52 mm | 3/16" 5 mm | 28 | 26 | 32 | 30 | 35 | 37 | 40 | 41 | 43 | 44 | 45 | 47 | 47 | 44 | 47 | 53 | 57 | 60 | 44 |
| 1/4" 6 mm | 3/4" 19 mm | 1/4" 6 mm | .060" 1.52 mm | 1/4" 6 mm | 28 | 29 | 36 | 32 | 34 | 39 | 41 | 41 | 41 | 43 | 44 | 45 | 45 | 46 | 47 | 52 | 56 | 61 | 44 |
| 3/8" 10 mm | 3/4" 19 mm | 1/4" 6 mm | .060" 1.52 mm | 1/4" 6 mm | 25 | 31 | 38 | 33 | 37 | 39 | 42 | 43 | 43 | 42 | 40 | 40 | 41 | 56 | 50 | 55 | 58 | 61 | 43 |

Data based on testing ~36" x 84" glass to ASTM E413-87 in an acoustical wall. Glass size and glazing system will affect STC rating.
*PVB (polyvinyl butyral) interlayer