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# Environmental Noise Control Study

Proposed Development
1050 Canadian Shield Avenue
Ottawa, Ontario

Prepared For

Canadian Rental Development Services

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June 15, 2021

Report: PG5782-1

## Table of Contents Page

## Appendices

# 1.0 Introduction

Paterson Group (Paterson) was commissioned by Canadian Rental Development Services to conduct an environmental noise control study for the proposed residential building to be located at 1050 Canadian Shield Avenue, 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 project will consist of a three (3) to six (6) storey residential building with one (1) basement level at the south side of the building. Associated at-grade walkways, parking areas and landscaped areas are anticipated. Terraces are anticipated at the balconies of the building. An at-grade courtyard and at-grade common terraces are also anticipated at the centre of the site area, surrounded by the three (3) to six (6) storey residential building in all directions effectively shielding the interior courtyard from the exterior noise sources.

# 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 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 may include car washes, snow disposal sites, transit stations and manufacturing facilities.

The subject site is not in proximity to existing or approved stationary sources of noise. Therefore, a stationary noise analysis will not be required.

## Aircraft/Airport Noise

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

# 4.0 Analysis

### Surface Transportation Noise

The subject building is bordered to the north by Campeau Drive followed by residential dwellings, to the east by an institutional building followed by Maritime Way, to the west by Great Lakes Avenue followed by commercial buildings, and to the south by Canadian Shield Avenue followed by commercial buildings. Campeau Drive, Great Lakes Avenue, and Canadian Shield Avenue are identified within the 100 m radius of the proposed building.

Based on the City of Ottawa Official Plan, Schedule F, Campeau Drive is considered a 2 lane urban arterial road (2-UAU). Other roads within the 100 m radius of the development are not classified as either arterial, collector or major collector roads and therefore are not included in this study. Additionally, the 3 lane Highway 417 westbound and the 3 lane Highway 417 eastbound are within the 500 m radius from the proposed building.

All noise sources are presented in Drawing PG5782-3 - Site Geometry located in Appendix 1.

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 % |
|---|---|---|---|---|---|---|
| Highway 417 Westbound | 3- Queensway | 54999 | 100 | 92/8 | 7 | 5 |
| Highway 417 Eastbound | 3- Queensway | 54999 | 100 | 92/8 | 7 | 5 |
| Campeau Drive | 2-UAU | 15000 | 60 | 92/8 | 7 | 5 |

❑ Data obtained from the City of Ottawa document ENCG or calculated from OC Transpo online schedules

A total seven (7) levels of reception points were selected for the analysis at the building units and the balcony terraces. The following elevations were selected from the heights provided on the survey plan for the subject building.

**Table 5 - Elevation of Reception Points**

| Floor Number | Elevation at Centre of Window (m) | Floor Use | Daytime/Nighttime Analysis |
|---|---|---|---|
| Ground Floor | 1.5 | Living Area/Bedroom | daytime/nighttime |
| Third Floor | 7.5 | Living Area/Bedroom | daytime/nighttime |
| Sixth Floor | 16.5 | Living Area/Bedroom | daytime/nighttime |
| Balcony - 3rd Floor Terrace | 10.5 | -- | Outdoor Living Area |
| Balcony - 4th Floor Terrace | 13.5 | -- | Outdoor Living Area |
| Balcony - 5th Floor Terrace | 16.5 | -- | Outdoor Living Area |
| Balcony - 6th Floor Terrace | 19.5 | -- | Outdoor Living Area |

For this analysis, reception points were taken at the centre of each floor, at the ground floor and top floor. The top floor is anticipated to be the 3rd floor at the north side and the 6th floor at the south side of the building. Two receptor points were taken at the east and west elevations, and one receptor point was taken at the north and south elevations of the proposed building.

Outdoor living areas, such as balcony terraces, are anticipated at the proposed building. A total of seven (7) receptor points were selected in the centre of the 3rd floor, 4th floor, 5th floor and 6th floor terraces, at heights ranging from 10.5 m to 19.5 m. It should be noted that only terraces with widths greater than 4.0 m were analyzed as per City of Ottawa standards.

An at-grade common courtyard and at-grade terraces are also anticipated at the centre of the building area. Due to the surrounding exterior walls of the proposed building, there is no direct line of sight to surface transportation noise sources. Therefore any noise levels due to the surface transportation surrounding the subject site will be minimal. Reception points are detailed on Drawing PG5782-2 - Receptor Locations presented in Appendix 1.

All horizontal distances have been measured from the reception point to the edge of the right-of-way. The highway was analyzed where it intersected the 500 m buffer zone, the roadways were analyzed where they intersected the 100 m buffer zone, which is reflected in the local angles described in Paterson Drawings PG5782-3A to 3M - Site Geometry in Appendix 1.

Table 7 - Summary of Reception Points and Geometry, located in Appendix 1, provides 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.

The subject site is gently sloping downward to south and at grade with the neighbouring roads within 500 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

## Surface Transportation

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 can be located in Appendix 2, and the summary of the results can be noted in Table 6 below.

**Table 6 - Proposed Noise Levels**

| Reception Point | Description | OLA (dBA) | Daytime at Facade $L_{EQ(16)}$ (dBA) | Nighttime at Facade $L_{eq(8)}$ (dBA) |
|---|---|---|---|---|
| REC 1-1 | Eastern Elevation, 1st Floor | -- | 57.07 | 49.47 |
| REC 1-3 | Eastern Elevation, 3rd Floor | -- | 59.19 | 51.59 |
| REC 2-1 | Eastern Elevation, 1st Floor | -- | 54.20 | 46.60 |
| REC 2-6 | Eastern Elevation, 6th Floor | -- | 59.95 | 52.36 |
| REC 3-1 | Southern Elevation, 1st Floor | -- | 53.98 | 46.38 |
| REC 3-6 | Southern Elevation, 6th Floor | -- | 60.53 | 52.94 |
| REC 4-1 | Western Elevation, 1st Floor | -- | 53.07 | 45.47 |
| REC 4-6 | Western Elevation, 6th Floor | -- | 58.90 | 51.30 |
| REC 5-1 | Western Elevation, 1st Floor | -- | 55.92 | 48.32 |
| REC 5-3 | Western Elevation, 3rd Floor | -- | 58.29 | 50.69 |
| REC 6-1 | Northern Elevation, 1st Floor | -- | 58.41 | 50.82 |
| REC 6-3 | Northern Elevation, 3rd Floor | -- | 60.44 | 52.84 |
| REC 7 | Balcony Terrace - 4th Common Terrace | 60.48 | -- | -- |
| REC 8 | Balcony Terrace - 3rd Terrace (North) | 58.91 | -- | -- |
| REC 9 | Balcony Terrace - 6th Terrace (West) | 60.79 | -- | -- |
| REC 10 | Balcony Terrace - 5th Terrace (West) | 57.21 | -- | -- |
| REC 11 | Balcony Terrace - 4th Terrace (West) | 60.30 | -- | -- |
| REC 12 | Balcony Terrace - 5th Terrace (East) | 60.97 | -- | -- |

**Table 6 - Proposed Noise Levels**

| Reception Point | Description | OLA (dBA) | Daytime at Facade $L_{EQ(16)}$ (dBA) | Nighttime at Facade $L_{eq(8)}$ (dBA) |
|---|---|---|---|---|
| REC 13 | Balcony Terrace - 4th Terrace (East) | 60.35 | -- | -- |

# 6.0 Discussion and Recommendations

## 6.1 Outdoor Living Areas

Terraces are anticipated at the balconies of the proposed building. One (1) receptor point was selected at 3rd floor terrace (REC 8), three (3) receptor points were selected at 4th floor terrace (REC 7, REC 11 and REC 13), two (2) receptor points were selected at 5th floor terrace (REC 10 and REC 12), and one (1) receptor point was selected at 6th floor terrace (REC 9) for analysis. The initial assessment of the terraces were done excluding all building effects. The results of this analysis resulted in noise levels exceeding 65 dBA.

An additional analysis was then completed utilizing the orientation of buildings to provide sheltered zones. The proposed project has been designed to utilize exterior walls as a method of limiting the noise caused by the Highway 417. This analysis is the method that is included in this report. This method is one of the primary mitigation measures noted for new development in proximity to surface transportation noise, outlined in Table 2.3a within the ENCG,.

The proposed $L_{eq(16)}$ at the balcony terraces will range from 57.21 dBA to 60.97 dBA, which exceeds the 55 dBA threshold value specified by the ENCG. However, noting that primary mitigation measures, as outlined in Table 2.3a, was utilized, these exceedances are considered acceptable provided that a Warning Clause Type A is noted on all deeds of sale.

## 6.2 Indoor Living Areas and Ventilation

The results of the STAMSON modeling indicates that the daytime $L_{eq(16)}$ ranges between 53.07 dBA and 60.53 dBA. The ENCG states that the limits for the exterior of the pane of glass is 55 dBA. This value was exceeded at eastern, southern, western and northern elevations. Therefore, units on the eastern, southern, western and northern elevations should be designed with the provision for a central air conditioning unit. Additionally, warning clause Type D, as outlined in Table 3, is also recommended for all units on the eastern, southern, western and northern elevations of the building. It is also noted that the modeling indicates that the $L_{eq(16)}$ is below 65 dBA, and therefore standard building materials are acceptable to provide adequate soundproofing.

# 7.0 Summary of Findings

The subject site is located at 1050 Canadian Shield Avenue, in the City of Ottawa. It is understood that the proposed development will consist of a 3 to 6-storey residential building. The associated analysis identified three surface transportation noise sources: Highway 417 West, Highway 417 East, and Campeau Drive

Balcony terraces, at-grade terraces and an at-grade common courtyard are anticipated at the building. At-grade common courtyard and at-grade terraces were not analyzed because it was surrounded by exterior walls. The anticipated noise levels at these areas are anticipated to be minimal due to their locations in the building layout. Balcony terraces with widths greater than 4.0 m were selected for analysis.

The proposed $L_{eq(16)}$ at the balcony terraces will range from 57.21 dBA to 60.97 dBA, which exceeds the 55 dBA threshold value specified by the ENCG. However, noting that primary mitigation measures, as outlined in Table 2.3a, was utilized to reduce the noise levels, these exceedances are considered acceptable provided that a Warning Clause Type A is noted on all deeds of sale. Additionally, it was noted that the at-grade terraces and at-grade common courtyard is provided to tenants that require a quieter outdoor living area.

Several reception points were selected for the analysis, consisting of pane of glass reception points on both the first and top level. The top floor is anticipated to be 3$^{rd}$ floor at the north side and 6$^{th}$ floor at the south side of the building. The eastern, southern, western and northern elevations of the proposed building exceeded the 55 dBA guideline specified by the ENCG. Therefore, a warning clause Type D will be required for this dwelling in addition to the installation of a central air conditioning unit.

The following warning clauses are 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."
>
> "Purchasers/tenants are advised that sound levels due to increasing road traffic may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

# 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 Canadian Rental Development Services or his 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.**


Stephanie A. Boisvenue, P.Eng.

Scott S. Dennis, P.Eng.

**Report Distribution:**

- ❑ Canadian Rental Development Services (3 copies)
- ❑ Paterson Group (1 copy)

# APPENDIX 1

**TABLE 7 - SUMMARY OF RECEPTION POINTS AND GEOMETRY**

**DRAWING PG5782-1 - SITE PLAN**

**DRAWING PG5782-2 - RECEPTOR LOCATION PLAN**

**DRAWING PG5782-3 - SITE GEOMETRY**

**DRAWING PG5782-3A - SITE GEOMETRY (REC 1-1 and REC 1-3)**

**DRAWING PG5782-3B - SITE GEOMETRY (REC 2-1 and REC 2-6)**

**DRAWING PG5782-3C - SITE GEOMETRY (REC 3-1 and REC 3-6)**

**DRAWING PG5782-3D - SITE GEOMETRY (REC 4-1 and REC 4-6)**

**DRAWING PG5782-3E - SITE GEOMETRY (REC 5-1 and REC 5-3)**

**DRAWING PG5782-3F - SITE GEOMETRY (REC 6-1 and REC 6-3)**

**DRAWING PG5782-3G - SITE GEOMETRY (REC 7)**

**DRAWING PG5782-3H - SITE GEOMETRY (REC 8)**

**DRAWING PG5782-3I - SITE GEOMETRY (REC 9)**

**DRAWING PG5782-3J - SITE GEOMETRY (REC 10)**

**DRAWING PG5782-3K - SITE GEOMETRY (REC 11)**

**DRAWING PG5782-3L - SITE GEOMETRY (REC 12)**

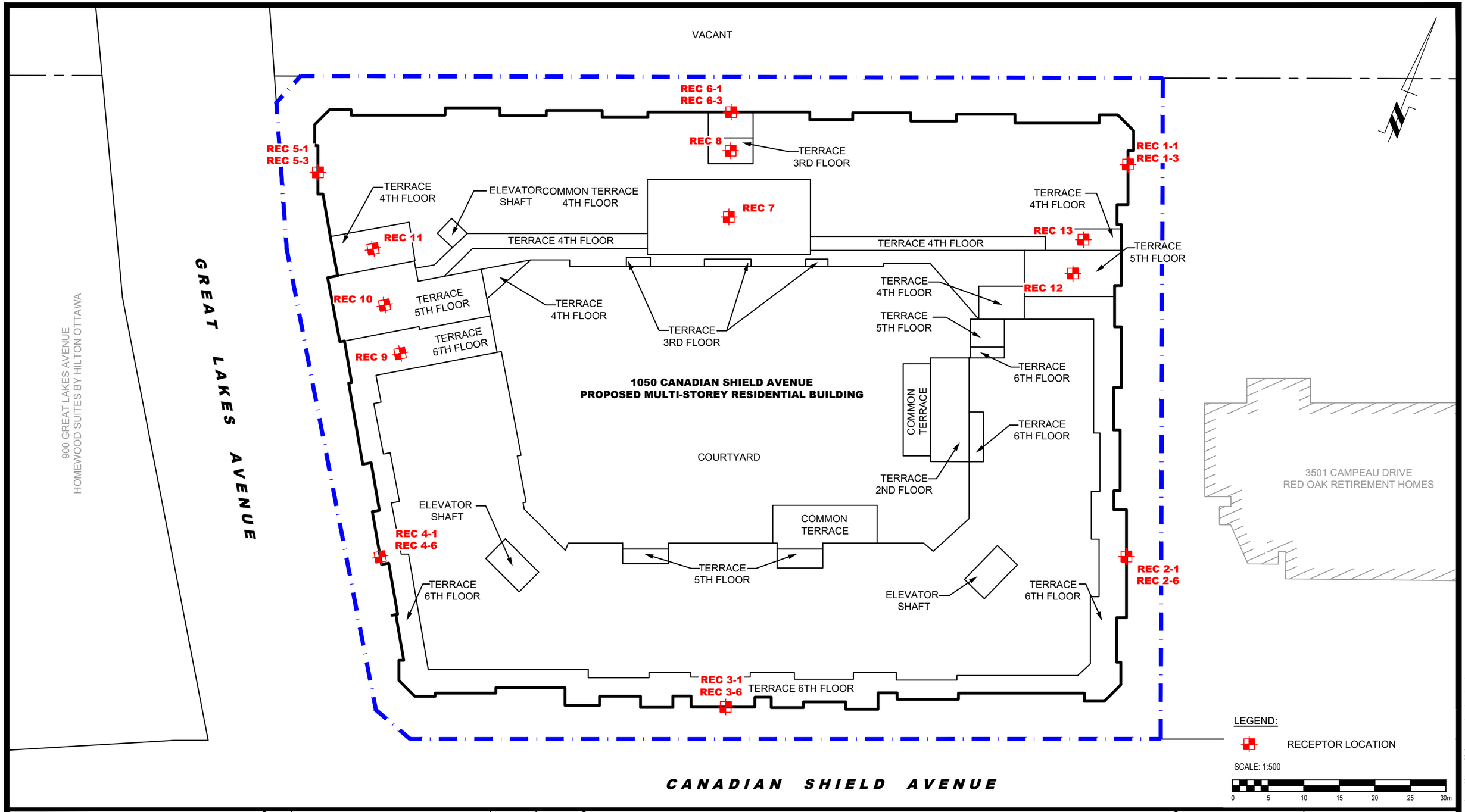
**DRAWING PG5782-3M - SITE GEOMETRY (REC 13)**

**Table 7 - Summary of Reception Points and Geometry**
**1050 Canadian Shield Avenue**

| Point of Reception | Location | Leq Day (dBA) | Campeau Drive | | | | | | | | Highway 417 Eastbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | Number of Rows of Houses | Density (%) | Barrier Height (m) | Barrier Distance (m) | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | Number of Rows of Houses | Density (%) | Barrier Height (m) | Barrier Distance (m) |
| REC 1-1 | Eastern Elevation, 1st Floor | 57.07 | 50 | 1.5 | 50 | 0, 71 | n/a | n/a | n/a | n/a | 410 | 1.5 | 410 | -59, 0 | 3 | 60 | n/a | n/a |
| REC 1-3 | Eastern Elevation, 3rd Floor | 59.19 | 50 | 10.5 | 51.1 | 0, 71 | n/a | n/a | n/a | n/a | 410 | 10.5 | 410.1 | -59, 0 | 3 | 60 | n/a | n/a |
| REC 2-1 | Eastern Elevation, 1st Floor | 54.20 | 100 | 1.5 | 100 | 0, 50 | n/a | n/a | n/a | n/a | 380 | 1.5 | 380 | -64, 0 | 2 | 40 | n/a | n/a |
| REC 2-6 | Eastern Elevation, 6th Floor | 59.95 | 100 | 16.5 | 101.4 | 0, 50 | n/a | n/a | n/a | n/a | 380 | 16.5 | 380.4 | -64, 0 | 2 | 40 | n/a | n/a |
| REC 3-1 | Southern Elevation, 1st Floor | 53.98 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 380 | 1.5 | 380 | -68, 28 | 2 | 40 | n/a | n/a |
| REC 3-6 | Southern Elevation, 6th Floor | 60.53 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 380 | 16.5 | 380.4 | -68, 28 | 2 | 40 | n/a | n/a |
| REC 4-1 | Western Elevation, 1st Floor | 53.07 | 110 | 1.5 | 110 | -43, 0 | n/a | n/a | n/a | n/a | 475 | 1.5 | 475 | 0, 32 | 1 | 20 | n/a | n/a |
| REC 4-6 | Western Elevation, 6th Floor | 58.90 | 110 | 16.5 | 111.2 | -43, 0 | n/a | n/a | n/a | n/a | 475 | 16.5 | 475.3 | 0, 32 | 1 | 20 | n/a | n/a |
| REC 5-1 | Western Elevation, 1st Floor | 55.92 | 60 | 1.5 | 60 | -72, 0 | n/a | n/a | n/a | n/a | 495 | 1.5 | 495 | 0, 18 | 1 | 20 | n/a | n/a |
| REC 5-3 | Western Elevation, 3rd Floor | 58.29 | 60 | 10.5 | 60.9 | -72, 0 | n/a | n/a | n/a | n/a | 495 | 10.5 | 495.1 | 0, 18 | 1 | 20 | n/a | n/a |
| REC 6-1 | Northern Elevation, 1st Floor | 58.41 | 60 | 1.5 | 60 | -81, 79 | 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 6-3 | Northern Elevation, 3rd Floor | 60.44 | 60 | 10.5 | 60.9 | -81, 79 | 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 | Terrace - 4th Common Terrace | 60.48 | 65 | 13.5 | 66.4 | -76, 74 | n/a | n/a | 12 | 7 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 8 | Terrace - 3rd Terrace (North) | 58.91 | 50 | 10.5 | 51.09 | -78, 77 | n/a | n/a | 9 | 10 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 9 | Terrace - 6th Terrace (West) | 63.71 | 75 | 19.5 | 77.49 | -57, 79 | n/a | n/a | 18 | 3 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 10 | Terrace - 5th Terrace (West) | 57.21 | 70 | 16.5 | 71.92 | -59, 81 | n/a | n/a | 15 | 7 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 11 | Terrace - 4th Terrace (West) | 60.30 | 65 | 13.5 | 66.39 | -61, 83 | n/a | n/a | 12 | 3 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 12 | Terrace - 5th Terrace (East) | 60.97 | 65 | 16.5 | 67.06 | -77, 65 | n/a | n/a | 15 | 5 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 13 | Terrace - 4th Terrace (East) | 60.35 | 65 | 13.5 | 66.4 | -78, 67 | n/a | n/a | 12 | 3 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

**Table 7 - Summary of Reception Points and Geometry**
**1050 Canadian Shield Avenue**

| Point of Reception | Location | Leq Day (dBA) | Highway 417 Westbound | | | | | | | |
|---|---|---|---|---|---|---|---|---|---|---|
| | | | Horizontal (m) | Vertical (m) | Total (m) | Local Angle (degree) | Number of Rows of Houses | Density (%) | Barrier Height (m) | Barrier Distance (m) |
| REC 1-1 | Eastern Elevation, 1st Floor | 57.07 | 380 | 1.5 | 380 | -64, 0 | 3 | 60 | n/a | n/a |
| REC 1-3 | Eastern Elevation, 3rd Floor | 59.19 | 380 | 10.5 | 380.2 | -64, 0 | 3 | 60 | n/a | n/a |
| REC 2-1 | Eastern Elevation, 1st Floor | 54.20 | 345 | 1.5 | 345 | -70, 0 | 2 | 40 | n/a | n/a |
| REC 2-6 | Eastern Elevation, 6th Floor | 59.95 | 345 | 16.5 | 345.4 | -70, 0 | 2 | 40 | n/a | n/a |
| REC 3-1 | Southern Elevation, 1st Floor | 53.98 | 330 | 1.5 | 330 | -73, 34 | 2 | 40 | n/a | n/a |
| REC 3-6 | Southern Elevation, 6th Floor | 60.53 | 330 | 16.5 | 330.4 | -73, 34 | 2 | 40 | n/a | n/a |
| REC 4-1 | Western Elevation, 1st Floor | 53.07 | 410 | 1.5 | 410 | 0, 39 | 1 | 20 | n/a | n/a |
| REC 4-6 | Western Elevation, 6th Floor | 58.90 | 410 | 16.5 | 410.3 | 0, 39 | 1 | 20 | n/a | n/a |
| REC 5-1 | Western Elevation, 1st Floor | 55.92 | 480 | 1.5 | 480 | 0, 24 | 1 | 20 | n/a | n/a |
| REC 5-3 | Western Elevation, 3rd Floor | 58.29 | 480 | 10.5 | 480.1 | 0, 24 | 1 | 20 | n/a | n/a |
| REC 6-1 | Northern Elevation, 1st Floor | 58.41 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 6-3 | Northern Elevation, 3rd Floor | 60.44 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 7 | Terrace - 4th Common Terrace | 60.48 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 8 | Terrace - 3rd Terrace (North) | 58.91 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 9 | Terrace - 6th Terrace (West) | 63.71 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 10 | Terrace - 5th Terrace (West) | 57.21 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 11 | Terrace - 4th Terrace (West) | 60.30 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 12 | Terrace - 5th Terrace (East) | 60.97 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 13 | Terrace - 4th Terrace (East) | 60.35 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |

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NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY RESIDENTIAL BUILDING
1050 CANADIAN SHIELD AVENUE
OTTAWA, ONTARIO

Title:
# RECEPTOR LOCATION PLAN

| | |
|---|---|
| Scale: 1:500 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-2 |
| Approved by: DJG | Revision No.: |

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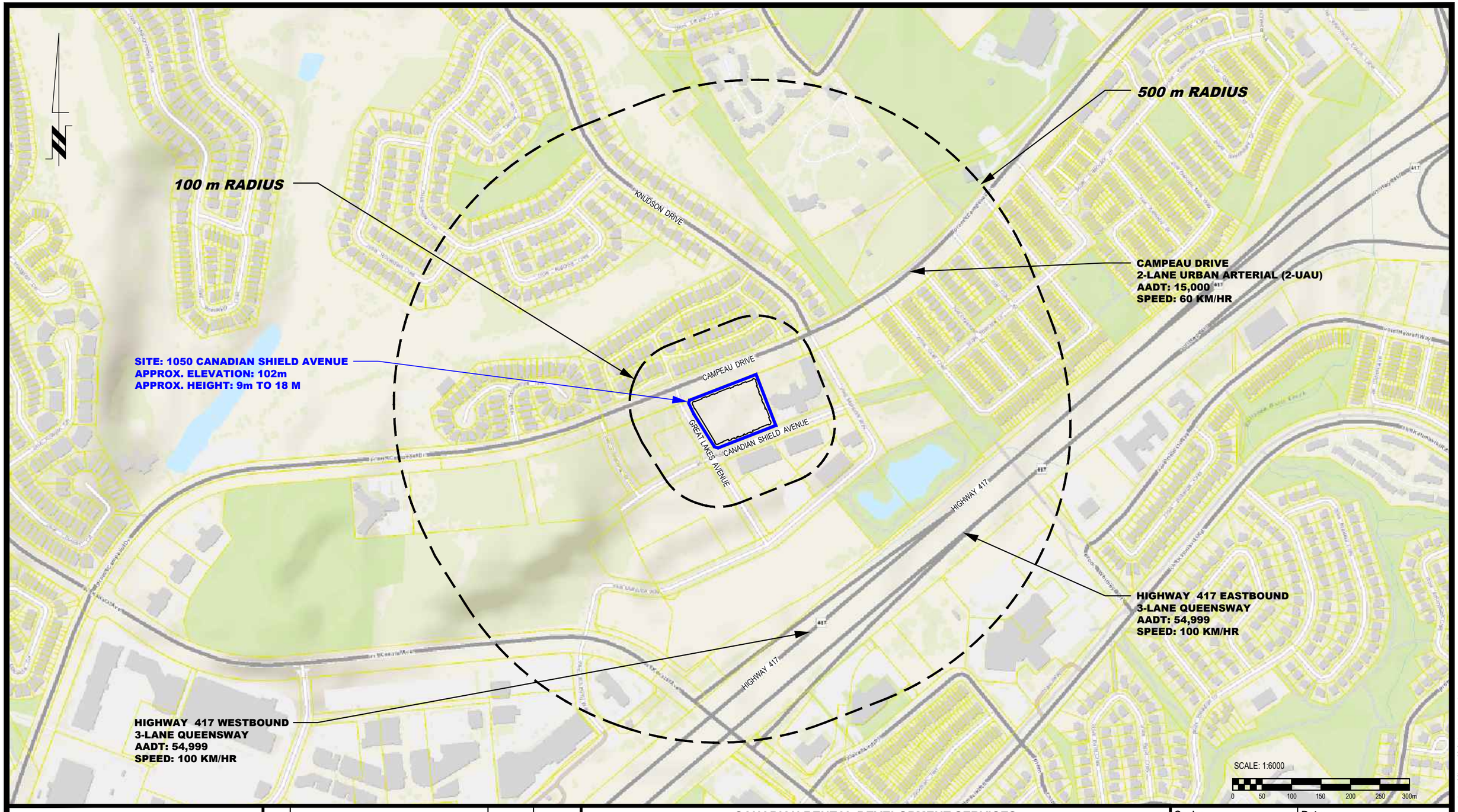



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OTTAWA, ONTARIO

Title:

# SITE GEOMETRY

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3 |
| Approved by: DJG | Revision No.: |

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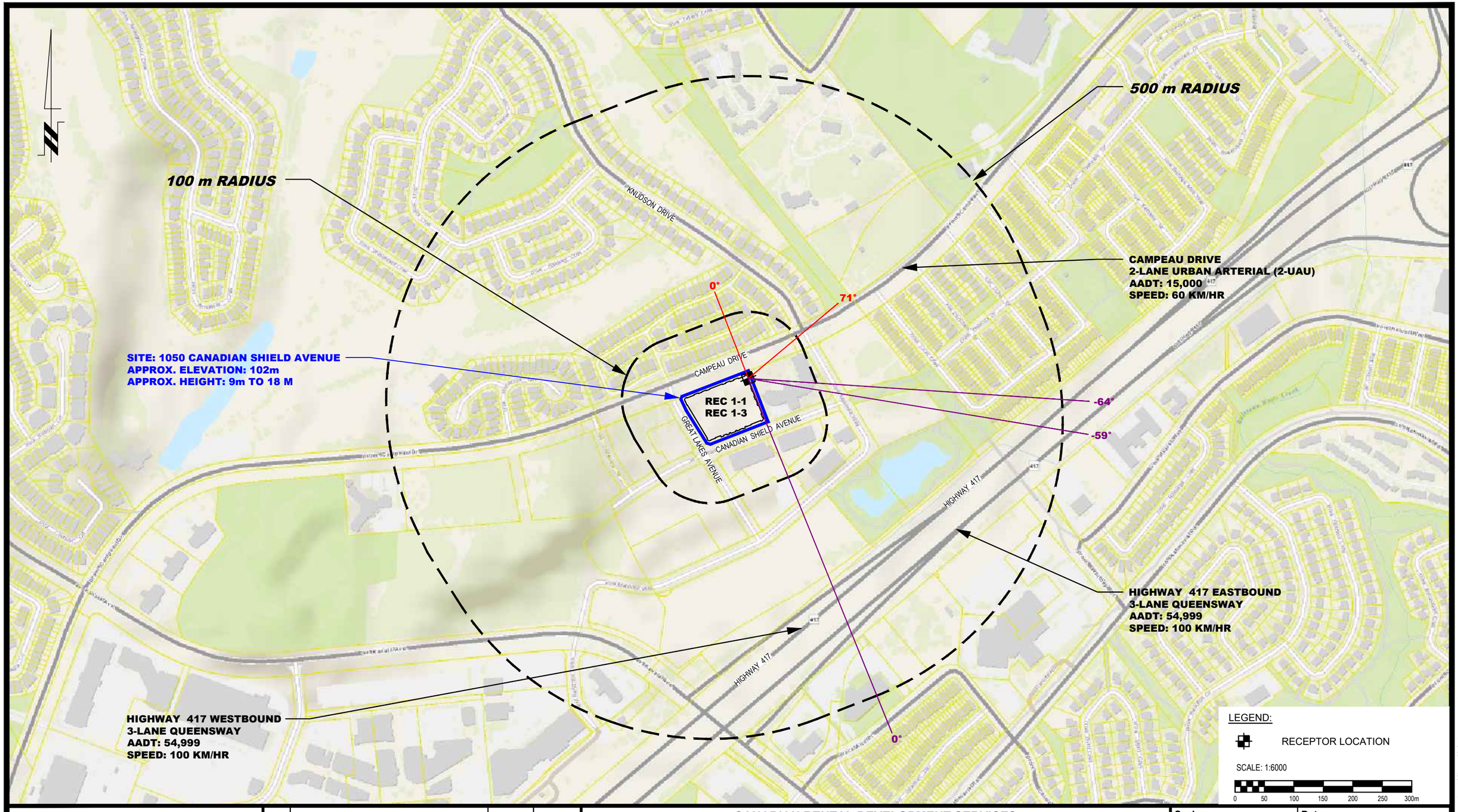



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Title:

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

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3A |
| Approved by: DJG | Revision No.: |

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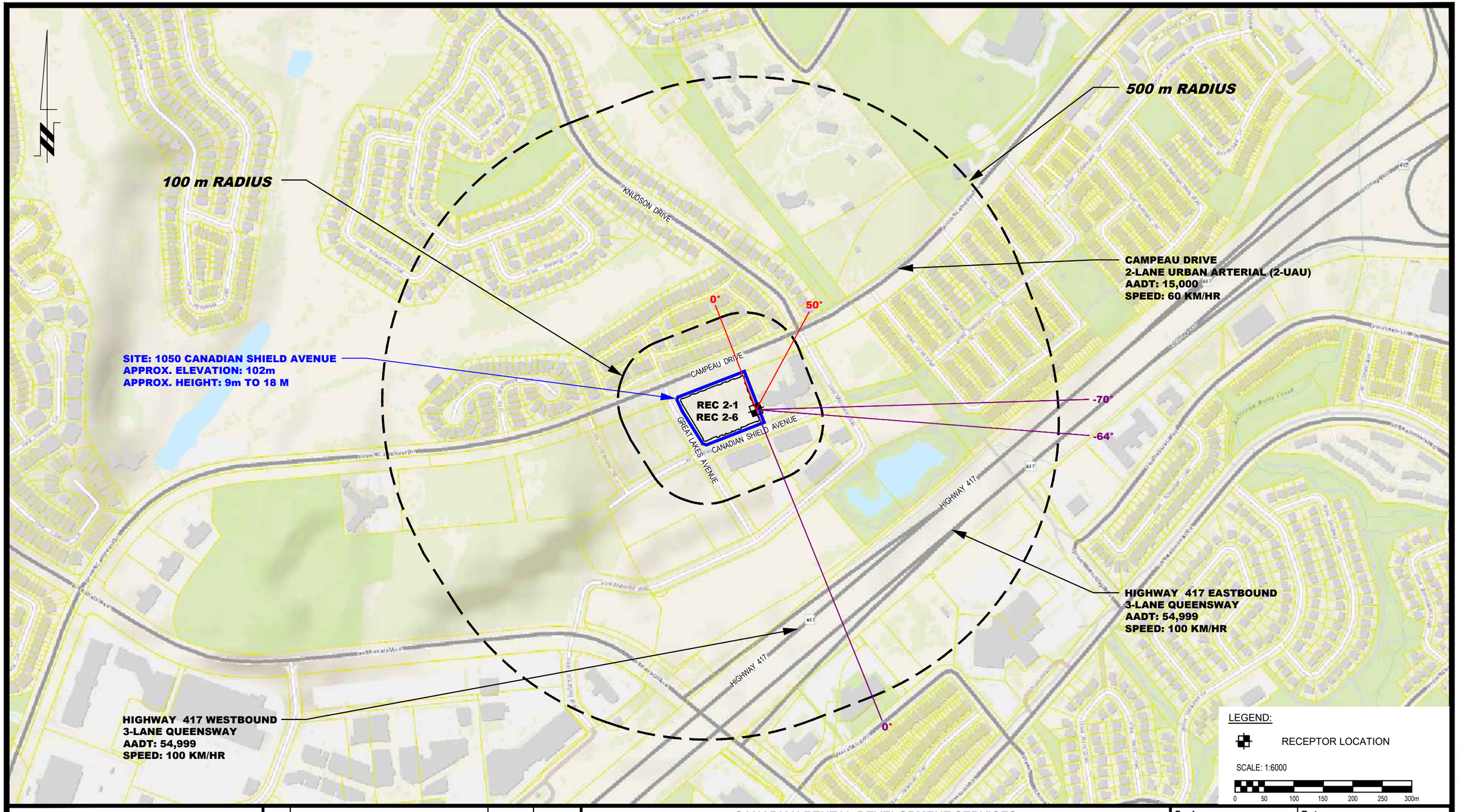



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OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 2-1 AND REC 2-6

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3B |
| Approved by: DJG | Revision No.: |

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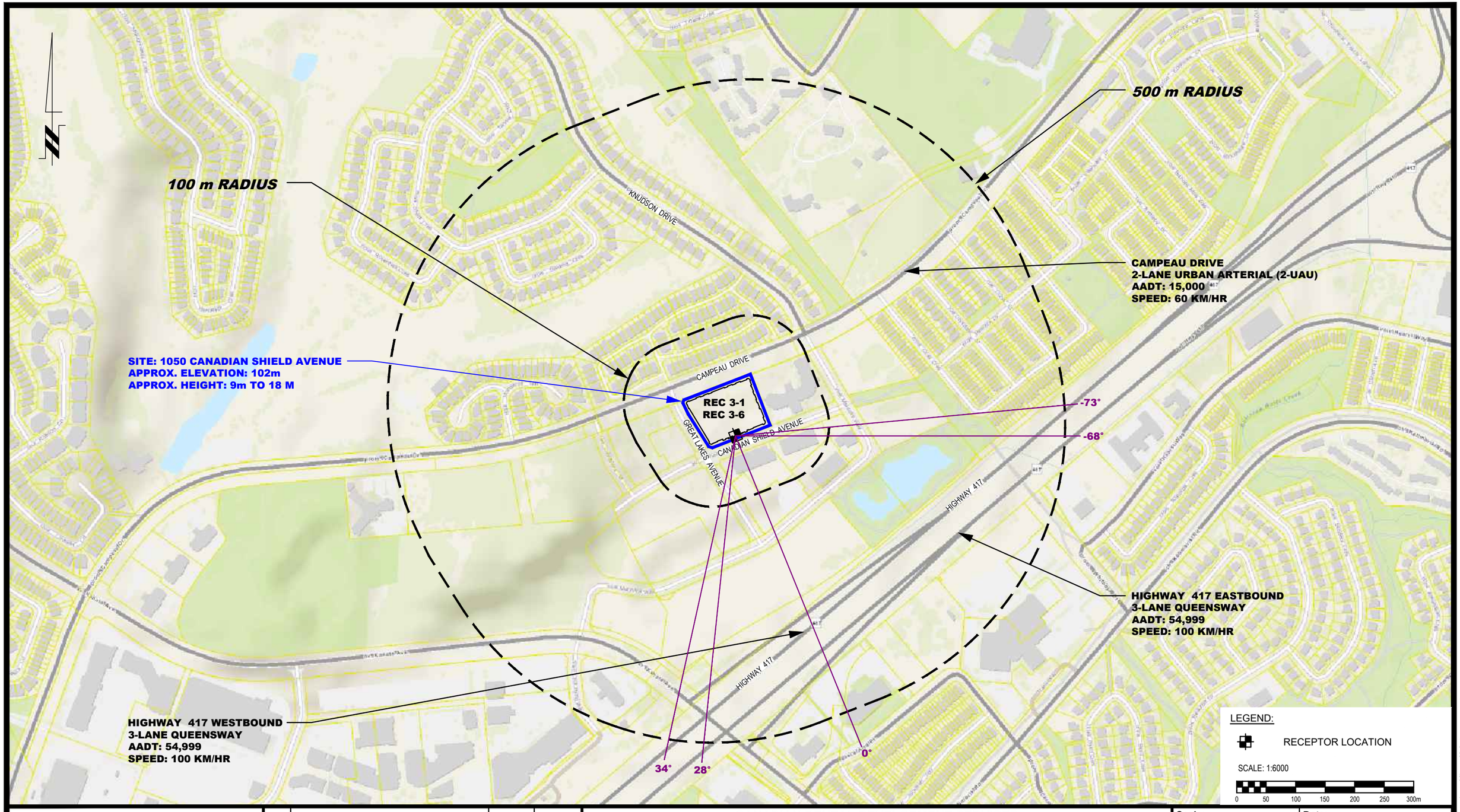



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Title:

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

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3C |
| Approved by: DJG | Revision No.: |

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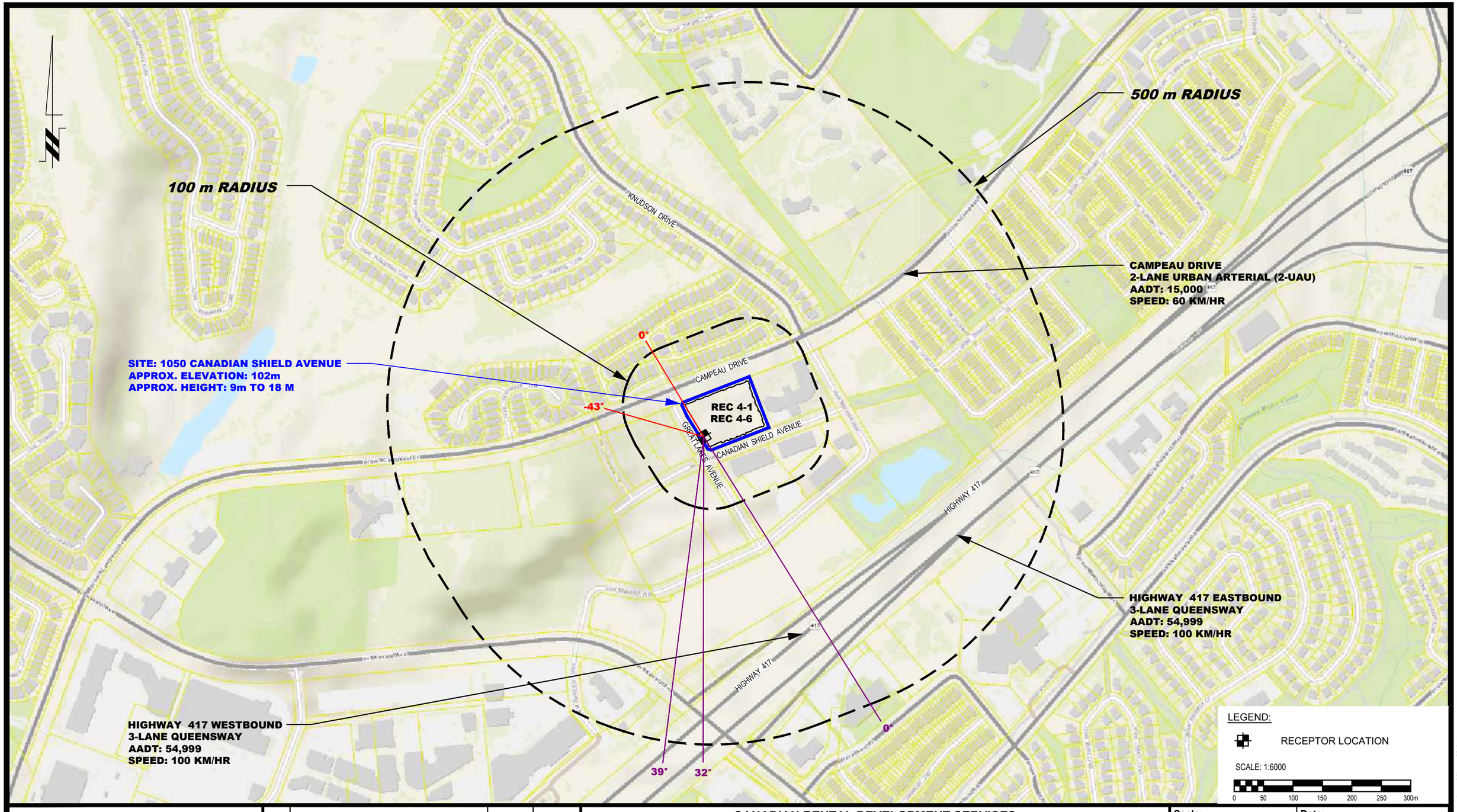



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OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 4-1 AND REC 4-6

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3D |
| Approved by: DJG | Revision No.: |

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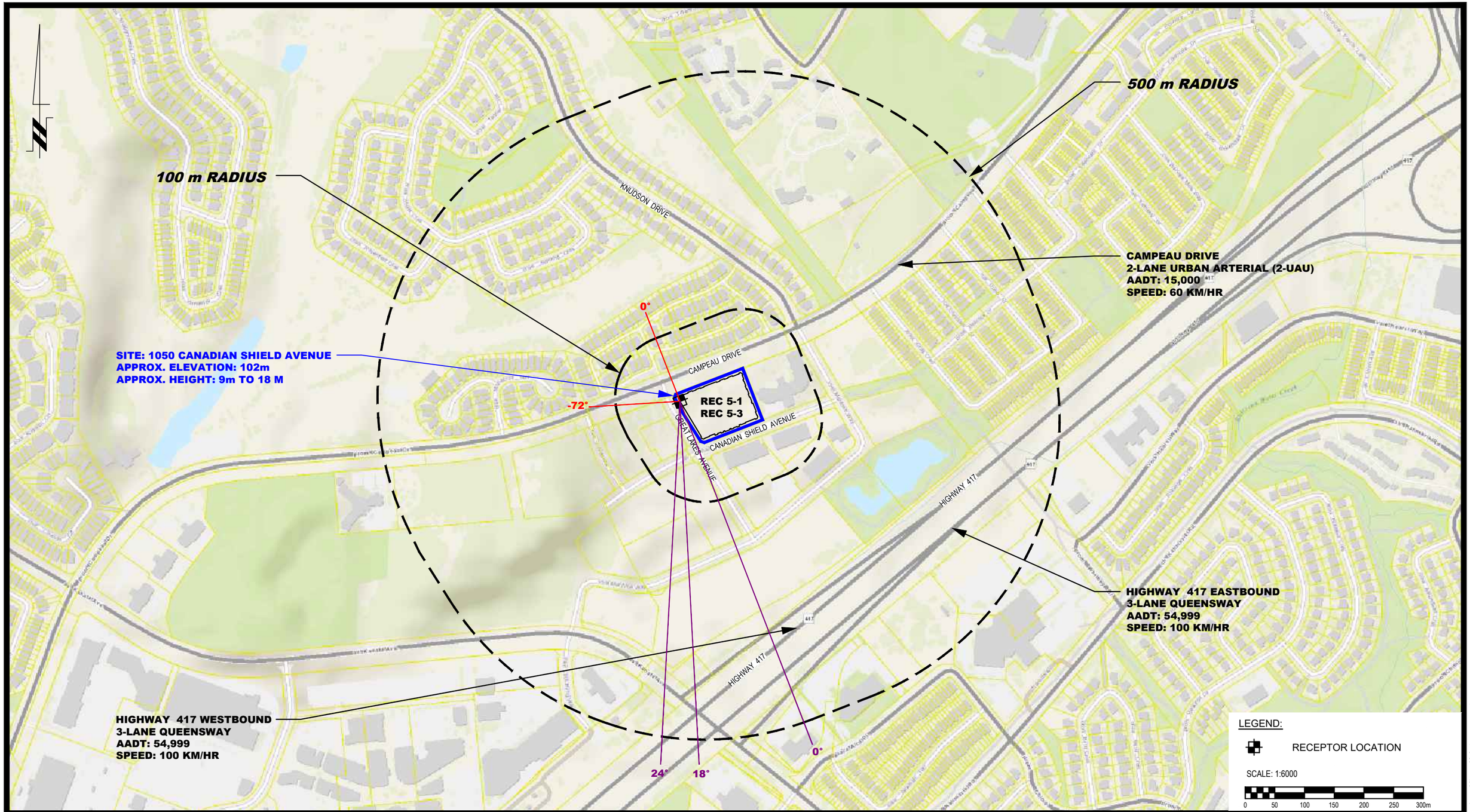



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Title:
# SITE GEOMETRY - REC 5-1 AND REC 5-3

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3E |
| Approved by: DJG | Revision No.: |

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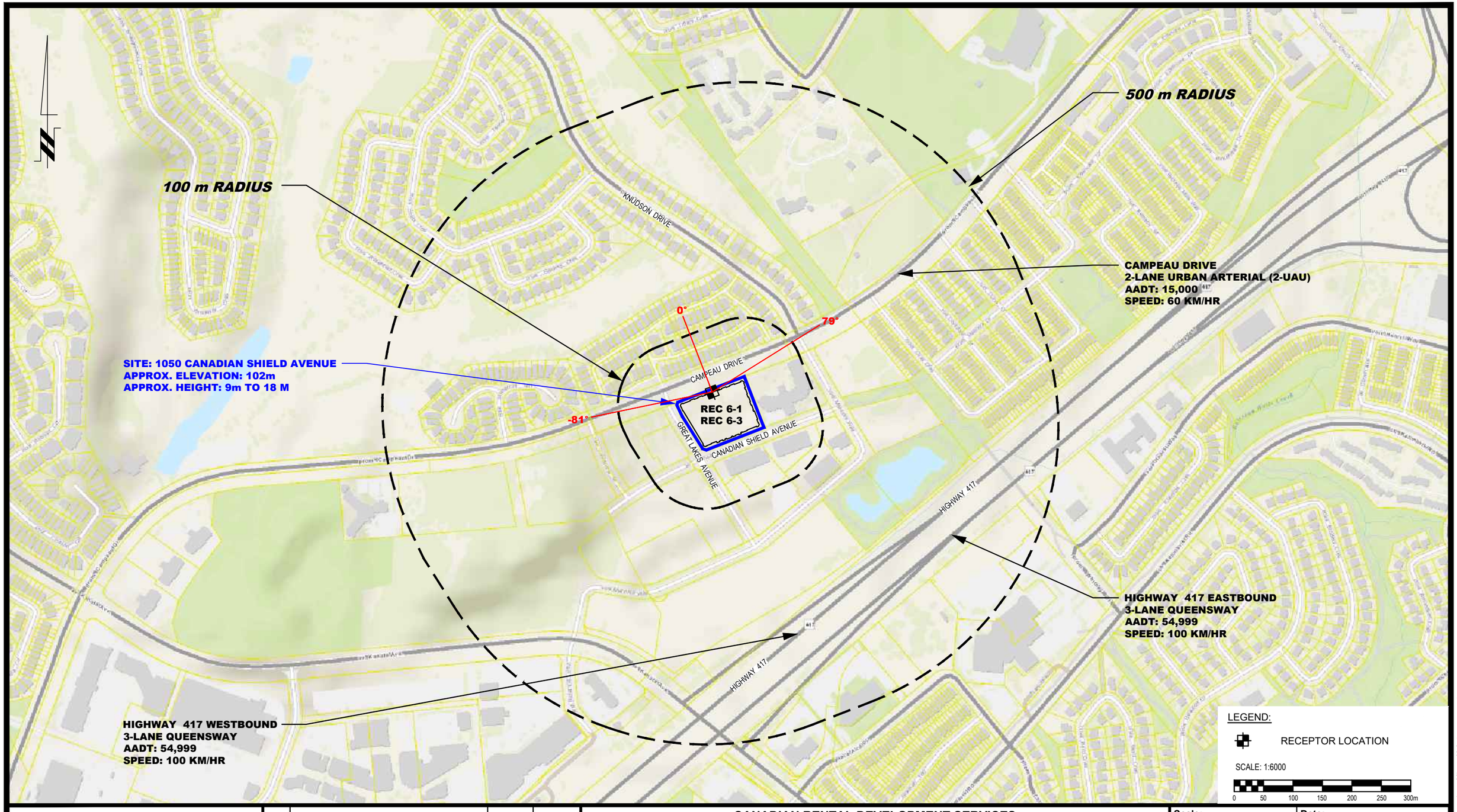



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Title:

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

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3F |
| Approved by: DJG | Revision No.: |

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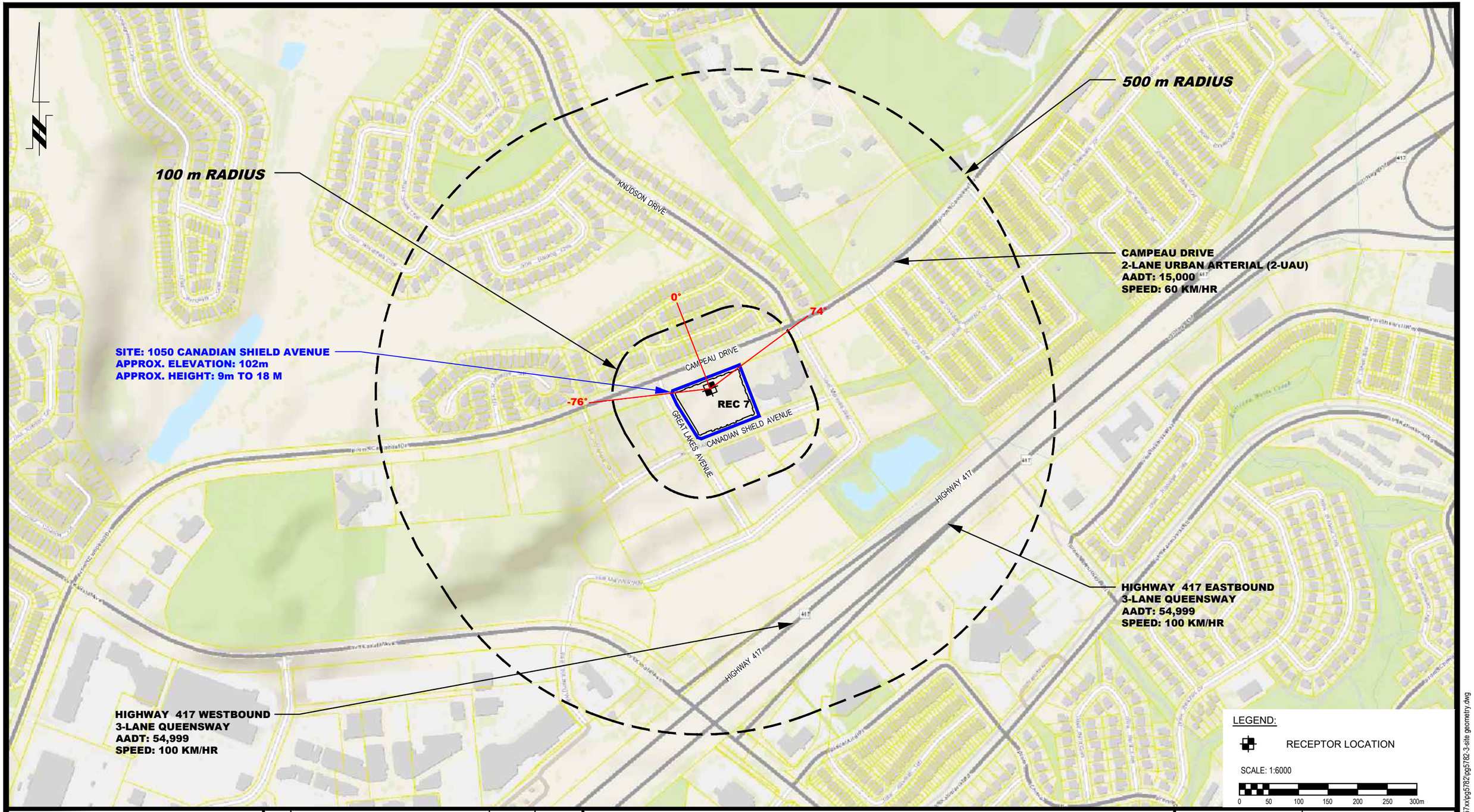



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Title:

# SITE GEOMETRY - REC 7

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3G |
| Approved by: DJG | Revision No.: |

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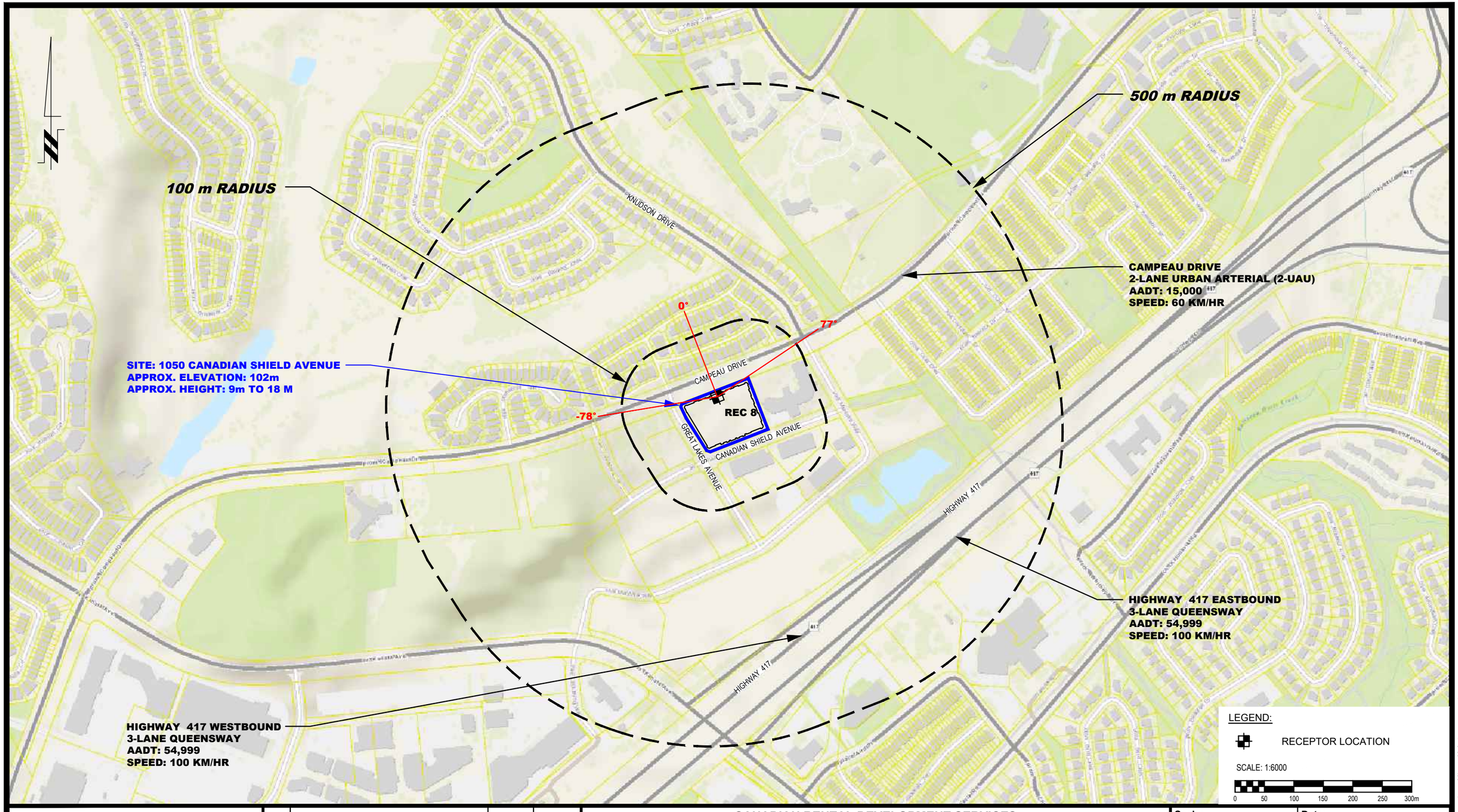


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OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 8

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3H |
| Approved by: DJG | Revision No.: |

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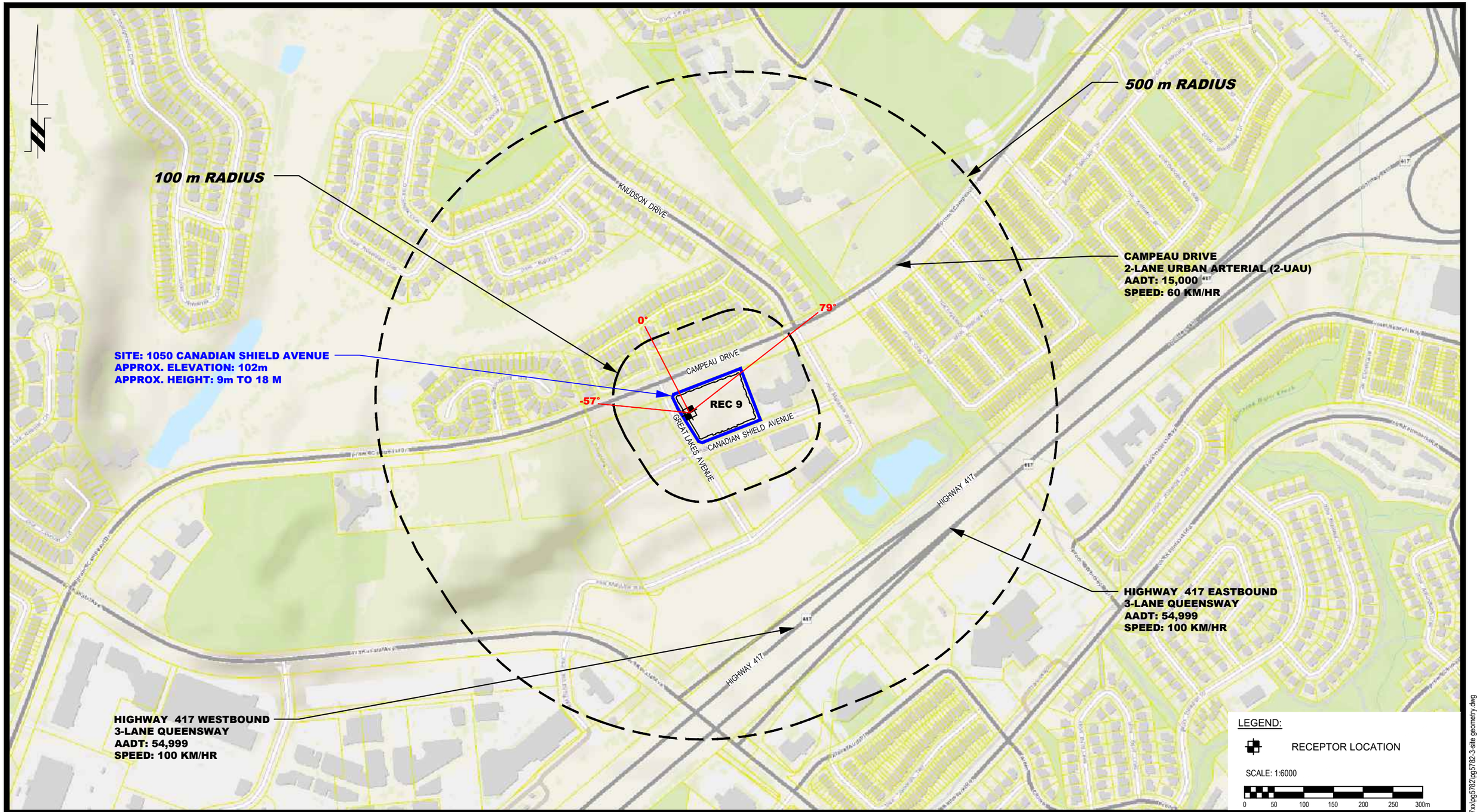



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1050 CANADIAN SHIELD AVENUE
OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 9

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3I |
| Approved by: DJG | Revision No.: |

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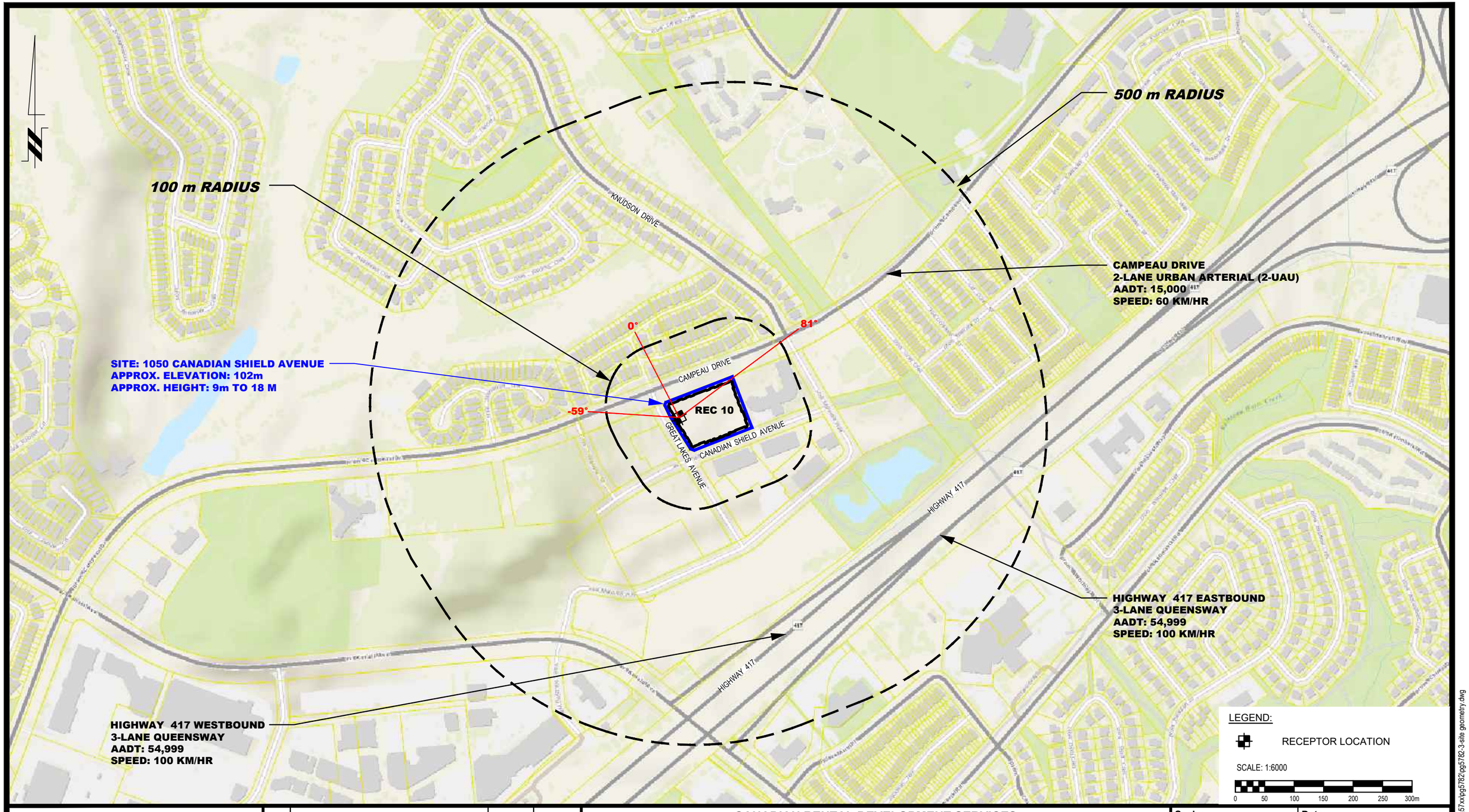


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OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 10

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3J |
| Approved by: DJG | Revision No.: |

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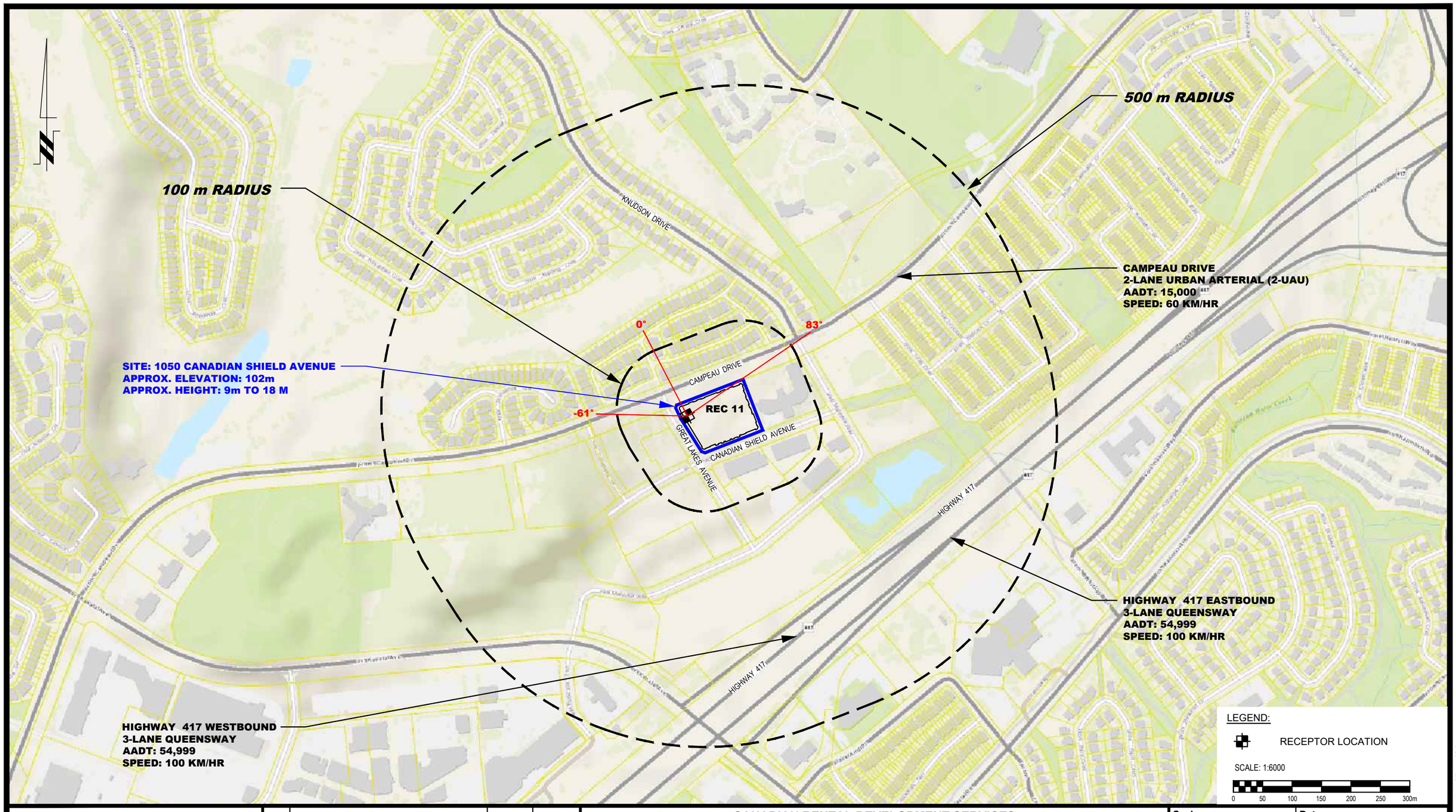


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OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 11

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3K |
| Approved by: DJG | Revision No.: |

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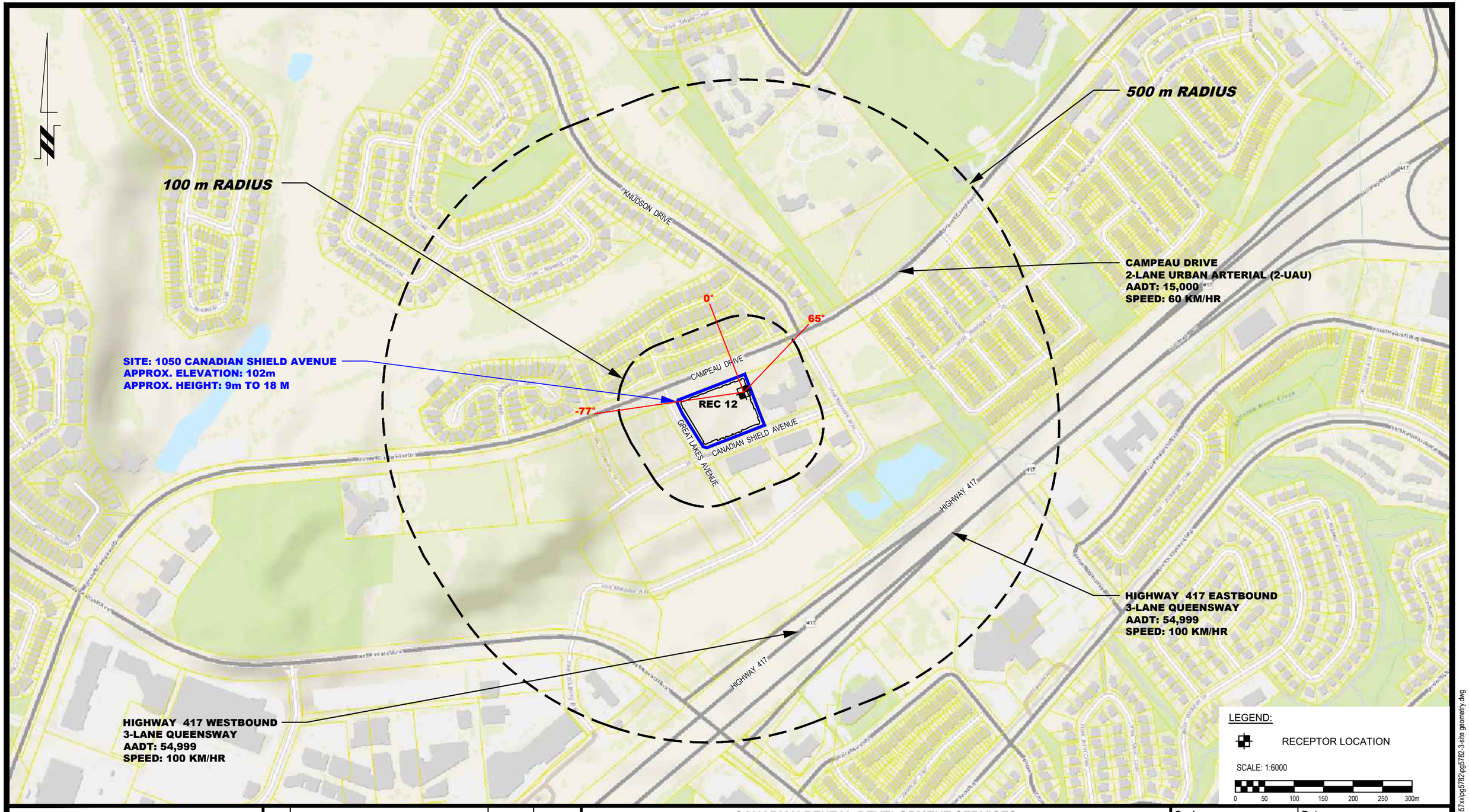


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OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 12

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3L |
| Approved by: DJG | Revision No.: |

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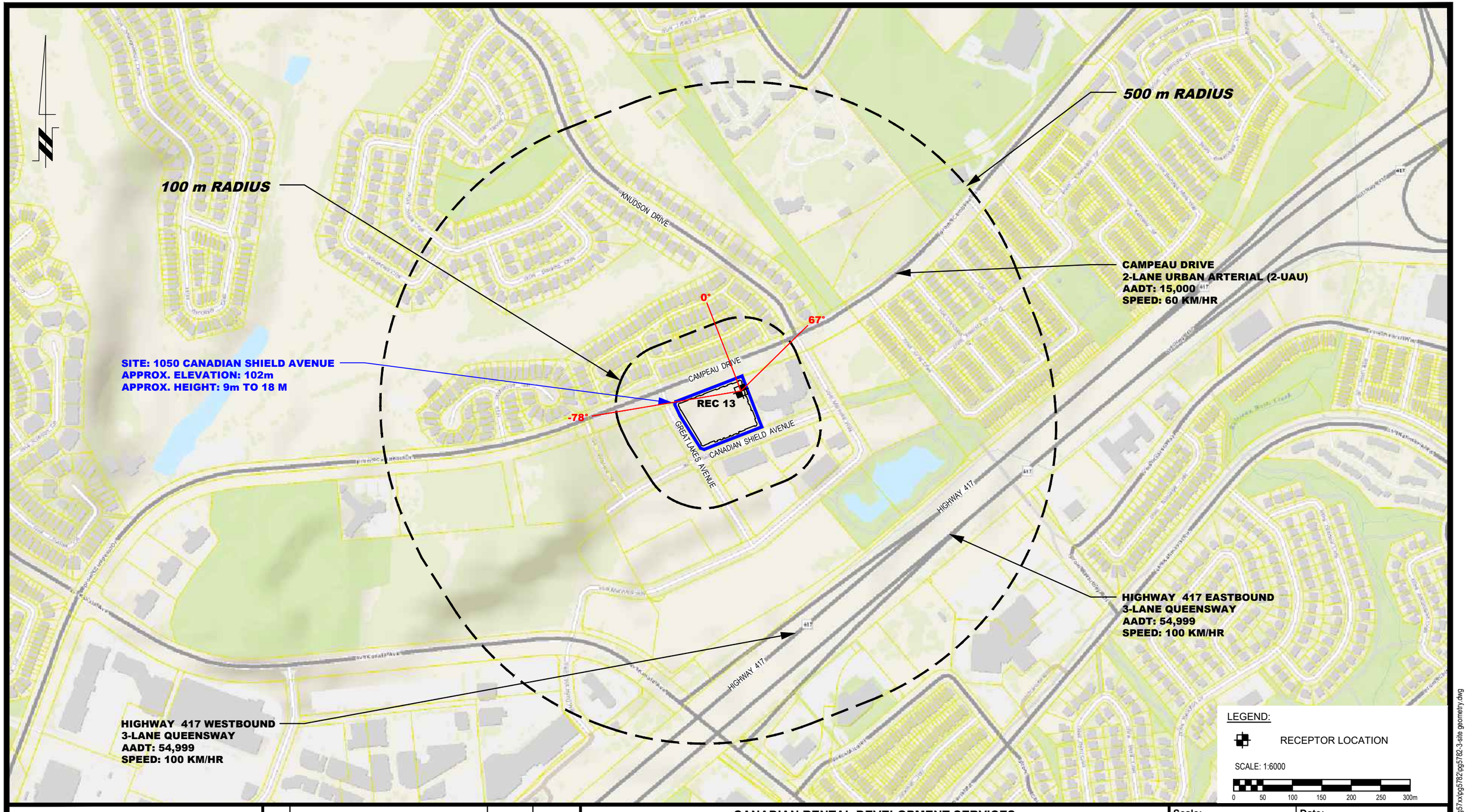



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CANADIAN RENTAL DEVELOPMENT SERVICES
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY RESIDENTIAL BUILDING
1050 CANADIAN SHIELD AVENUE
OTTAWA, ONTARIO

Title:

# SITE GEOMETRY - REC 13

| | |
|---|---|
| Scale: 1:6000 | Date: 04/2021 |
| Drawn by: YA | Report No.: PG5782-1 |
| Checked by: SB | Dwg. No.: PG5782-3M |
| Approved by: DJG | Revision No.: |

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# APPENDIX 2

**STAMSON RESULTS**

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 09:59:35
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: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : 0.00 deg 71.00 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

↑
Road data, segment # 2: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           : -59.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     60 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 410.00 / 410.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-----------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           : -64.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     60 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 380.00 / 380.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 56.46 + 0.00) = 56.46 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 71 | 0.66 | 70.00 | 0.00 | -8.68 | -4.85 | 0.00 | 0.00 | 0.00 | 56.46 |

Segment Leq : 56.46 dBA

↟

Results segment # 2: Hwy 417 East (day)

---

Source height = 1.50 m

ROAD (0.00 + 44.85 + 0.00) = 44.85 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -59 | 0 | 0.66 | 80.15 | 0.00 | -23.85 | -5.39 | 0.00 | -6.06 | 0.00 | 44.85 |

Segment Leq : 44.85 dBA

↟

Results segment # 3: Hwy 417 West (day)

---

Source height = 1.50 m

ROAD (0.00 + 45.63 + 0.00) = 45.63 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -64 | 0 | 0.66 | 80.15 | 0.00 | -23.30 | -5.14 | 0.00 | -6.08 | 0.00 | 45.63 |

Segment Leq : 45.63 dBA

Total Leq All Segments: 57.07 dBA

↟

Results segment # 1: Campeau Dr (night)

---

Source height = 1.50 m

ROAD (0.00 + 48.86 + 0.00) = 48.86 dBA

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

```
-------------------------------------------------------------------------------
     0     71   0.66  62.40   0.00  -8.68  -4.85   0.00   0.00   0.00  48.86
-------------------------------------------------------------------------------

Segment Leq : 48.86 dBA

↑
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 37.26 + 0.00) = 37.26 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -59      0   0.66  72.55   0.00 -23.85  -5.39   0.00  -6.06   0.00  37.26
-------------------------------------------------------------------------------

Segment Leq : 37.26 dBA

↑
Results segment # 3: Hwy 417 West (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 38.03 + 0.00) = 38.03 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -64      0   0.66  72.55   0.00 -23.30  -5.14   0.00  -6.08   0.00  38.03
-------------------------------------------------------------------------------

Segment Leq : 38.03 dBA

Total Leq All Segments: 49.47 dBA

↑



TOTAL Leq FROM ALL SOURCES (DAY): 57.07
                           (NIGHT): 49.47
↑
↑
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 10:01:59
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: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : 0.00 deg 71.00 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 : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           : -59.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     60 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 410.00 / 410.00 m
Receiver height           :  10.50 / 10.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-----------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           : -64.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      3 / 3
House density             :     60 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 380.00 / 380.00 m
Receiver height           :  10.50 / 10.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 58.19 + 0.00) = 58.19 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 71 | 0.39 | 70.00 | 0.00 | -7.27 | -4.54 | 0.00 | 0.00 | 0.00 | 58.19 |

Segment Leq : 58.19 dBA

↟

Results segment # 2: Hwy 417 East (day)

---

Source height = 1.50 m

ROAD (0.00 + 48.94 + 0.00) = 48.94 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -59 | 0 | 0.39 | 80.15 | 0.00 | -19.97 | -5.17 | 0.00 | -6.06 | 0.00 | 48.94 |

Segment Leq : 48.94 dBA

↟

Results segment # 3: Hwy 417 West (day)

---

Source height = 1.50 m

ROAD (0.00 + 49.67 + 0.00) = 49.67 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -64 | 0 | 0.39 | 80.15 | 0.00 | -19.51 | -4.88 | 0.00 | -6.08 | 0.00 | 49.67 |

Segment Leq : 49.67 dBA

Total Leq All Segments: 59.19 dBA

↟

Results segment # 1: Campeau Dr (night)

---

Source height = 1.50 m

ROAD (0.00 + 50.59 + 0.00) = 50.59 dBA

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

```
--------------------------------------------------------------------------------
     0     71   0.39  62.40   0.00  -7.27  -4.54   0.00   0.00   0.00  50.59
--------------------------------------------------------------------------------

Segment Leq : 50.59 dBA

↟
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 41.35 + 0.00) = 41.35 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -59      0   0.39  72.55   0.00 -19.97  -5.17   0.00  -6.06   0.00  41.35
--------------------------------------------------------------------------------

Segment Leq : 41.35 dBA

↟
Results segment # 3: Hwy 417 West (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 42.07 + 0.00) = 42.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -64      0   0.39  72.55   0.00 -19.51  -4.88   0.00  -6.08   0.00  42.07
--------------------------------------------------------------------------------

Segment Leq : 42.07 dBA

Total Leq All Segments: 51.59 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 59.19
                           (NIGHT): 51.59
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 10:09:09
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: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : 0.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 100.00 / 100.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 2: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           : -64.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 380.00 / 380.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-----------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           : -70.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 345.00 / 345.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 50.38 + 0.00) = 50.38 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 50 | 0.66 | 70.00 | 0.00 | -13.68 | -5.94 | 0.00 | 0.00 | 0.00 | 50.38 |

Segment Leq : 50.38 dBA

↟

Results segment # 2: Hwy 417 East (day)

---

Source height = 1.50 m

ROAD (0.00 + 48.37 + 0.00) = 48.37 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -64 | 0 | 0.66 | 80.15 | 0.00 | -23.30 | -5.14 | 0.00 | -3.34 | 0.00 | 48.37 |

Segment Leq : 48.37 dBA

↟

Results segment # 3: Hwy 417 West (day)

---

Source height = 1.50 m

ROAD (0.00 + 49.30 + 0.00) = 49.30 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -70 | 0 | 0.66 | 80.15 | 0.00 | -22.60 | -4.89 | 0.00 | -3.36 | 0.00 | 49.30 |

Segment Leq : 49.30 dBA

Total Leq All Segments: 54.20 dBA

↟

Results segment # 1: Campeau Dr (night)

---

Source height = 1.50 m

ROAD (0.00 + 42.78 + 0.00) = 42.78 dBA

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

```
-------------------------------------------------------------------------------
     0     50   0.66  62.40   0.00 -13.68  -5.94   0.00   0.00   0.00  42.78
-------------------------------------------------------------------------------

Segment Leq : 42.78 dBA

♠
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 40.77 + 0.00) = 40.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -64      0   0.66  72.55   0.00 -23.30  -5.14   0.00  -3.34   0.00  40.77
-------------------------------------------------------------------------------

Segment Leq : 40.77 dBA

♠
Results segment # 3: Hwy 417 West (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 41.70 + 0.00) = 41.70 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70      0   0.66  72.55   0.00 -22.60  -4.89   0.00  -3.36   0.00  41.70
-------------------------------------------------------------------------------

Segment Leq : 41.70 dBA

Total Leq All Segments: 46.60 dBA

♠



TOTAL Leq FROM ALL SOURCES (DAY): 54.20
                           (NIGHT): 46.60
♠
♠
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 10:13:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec26.te Time Period: Day/Night 16/8 hours
Description: Reception Point 2-6

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : 0.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 100.00 / 100.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           : -64.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 380.00 / 380.00 m
Receiver height           :  16.50 / 16.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-------------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           : -70.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 345.00 / 345.00 m
Receiver height           :  16.50 / 16.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 54.34 + 0.00) = 54.34 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 50 | 0.21 | 70.00 | 0.00 | -9.97 | -5.69 | 0.00 | 0.00 | 0.00 | 54.34 |

Segment Leq : 54.34 dBA

↟

Results segment # 2: Hwy 417 East (day)

---

Source height = 1.50 m

ROAD (0.00 + 55.11 + 0.00) = 55.11 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -64 | 0 | 0.21 | 80.15 | 0.00 | -16.99 | -4.71 | 0.00 | -3.34 | 0.00 | 55.11 |

Segment Leq : 55.11 dBA

↟

Results segment # 3: Hwy 417 West (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 | 0 | 0.21 | 80.15 | 0.00 | -16.48 | -4.37 | 0.00 | -3.36 | 0.00 | 55.94 |

Segment Leq : 55.94 dBA

Total Leq All Segments: 59.95 dBA

↟

Results segment # 1: Campeau Dr (night)

---

Source height = 1.50 m

ROAD (0.00 + 46.74 + 0.00) = 46.74 dBA

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

```
-------------------------------------------------------------------------------
     0     50   0.21  62.40   0.00  -9.97  -5.69   0.00   0.00   0.00  46.74
-------------------------------------------------------------------------------

Segment Leq : 46.74 dBA

🠉
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 47.52 + 0.00) = 47.52 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -64      0   0.21  72.55   0.00 -16.99  -4.71   0.00  -3.34   0.00  47.52
-------------------------------------------------------------------------------

Segment Leq : 47.52 dBA

🠉
Results segment # 3: Hwy 417 West (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      0   0.21  72.55   0.00 -16.48  -4.37   0.00  -3.36   0.00  48.35
-------------------------------------------------------------------------------

Segment Leq : 48.35 dBA

Total Leq All Segments: 52.36 dBA

🠉



TOTAL Leq FROM ALL SOURCES (DAY): 59.95
                           (NIGHT): 52.36
🠉
🠉
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 15:51:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec31.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-1

Road data, segment # 1: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
---
Angle1 Angle2 : -68.00 deg 28.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 40 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 380.00 / 380.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 2: Hwy 417 West (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999

```
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           : -73.00 deg   34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 330.00 / 330.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↟
Results segment # 1: Hwy 417 East (day)
---------------------------------------

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
-------------------------------------------------------------------------------
   -68     28   0.66  80.15   0.00 -23.30  -3.28   0.00  -3.34   0.00  50.23
-------------------------------------------------------------------------------

Segment Leq : 50.23 dBA

↟
Results segment # 2: Hwy 417 West (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.61 + 0.00) = 51.61 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -73     34   0.66  80.15   0.00 -22.28  -2.89   0.00  -3.36   0.00  51.61
-------------------------------------------------------------------------------

Segment Leq : 51.61 dBA

Total Leq All Segments: 53.98 dBA

↟
Results segment # 1: Hwy 417 East (night)
```

---

Source height = 1.50 m

ROAD (0.00 + 42.63 + 0.00) = 42.63 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -68 | 28 | 0.66 | 72.55 | 0.00 | -23.30 | -3.28 | 0.00 | -3.34 | 0.00 | 42.63 |

Segment Leq : 42.63 dBA

↟

Results segment # 2: Hwy 417 West (night)

---

Source height = 1.50 m

ROAD (0.00 + 44.01 + 0.00) = 44.01 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -73 | 34 | 0.66 | 72.55 | 0.00 | -22.28 | -2.89 | 0.00 | -3.36 | 0.00 | 44.01 |

Segment Leq : 44.01 dBA

Total Leq All Segments: 46.38 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 53.98
(NIGHT): 46.38

↟

↟

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 15:55:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec36.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-6

Road data, segment # 1: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
---
Angle1 Angle2 : -68.00 deg 28.00 deg
Wood depth : 0 (No woods.)
No of house rows : 2 / 2
House density : 40 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 380.00 / 380.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 2: Hwy 417 West (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999

```
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           : -73.00 deg   34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      2 / 2
House density             :     40 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 330.00 / 330.00 m
Receiver height           :  16.50 / 16.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠕
Results segment # 1: Hwy 417 East (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.90 + 0.00) = 56.90 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -68     28   0.21  80.15   0.00 -16.99  -2.92   0.00  -3.34   0.00  56.90
-------------------------------------------------------------------------------

Segment Leq : 56.90 dBA

🠕
Results segment # 2: Hwy 417 West (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.06 + 0.00) = 58.06 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -73     34   0.21  80.15   0.00 -16.25  -2.48   0.00  -3.36   0.00  58.06
-------------------------------------------------------------------------------

Segment Leq : 58.06 dBA

Total Leq All Segments: 60.53 dBA

🠕
Results segment # 1: Hwy 417 East (night)
```

---

Source height = 1.50 m

ROAD (0.00 + 49.31 + 0.00) = 49.31 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -68 | 28 | 0.21 | 72.55 | 0.00 | -16.99 | -2.92 | 0.00 | -3.34 | 0.00 | 49.31 |

Segment Leq : 49.31 dBA

↟

Results segment # 2: Hwy 417 West (night)

---

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 |
|---|---|---|---|---|---|---|---|---|---|---|
| -73 | 34 | 0.21 | 72.55 | 0.00 | -16.25 | -2.48 | 0.00 | -3.36 | 0.00 | 50.47 |

Segment Leq : 50.47 dBA

Total Leq All Segments: 52.94 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 60.53
(NIGHT): 52.94

↟

↟

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 11:10:11
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: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -43.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 110.00 / 110.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   32.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 475.00 / 475.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-------------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 410.00 / 410.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 49.14 + 0.00) = 49.14 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -43 | 0 | 0.66 | 70.00 | 0.00 | -14.36 | -6.50 | 0.00 | 0.00 | 0.00 | 49.14 |

Segment Leq : 49.14 dBA

↟

Results segment # 2: Hwy 417 East (day)

---

Source height = 1.50 m

ROAD (0.00 + 46.78 + 0.00) = 46.78 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 32 | 0.66 | 80.15 | 0.00 | -24.91 | -7.65 | 0.00 | -0.80 | 0.00 | 46.78 |

Segment Leq : 46.78 dBA

↟

Results segment # 3: Hwy 417 West (day)

---

Source height = 1.50 m

ROAD (0.00 + 48.63 + 0.00) = 48.63 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 39 | 0.66 | 80.15 | 0.00 | -23.85 | -6.87 | 0.00 | -0.80 | 0.00 | 48.63 |

Segment Leq : 48.63 dBA

Total Leq All Segments: 53.07 dBA

↟

Results segment # 1: Campeau Dr (night)

---

Source height = 1.50 m

ROAD (0.00 + 41.54 + 0.00) = 41.54 dBA

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

```
-------------------------------------------------------------------------------
   -43      0   0.66  62.40   0.00 -14.36  -6.50   0.00   0.00   0.00  41.54
-------------------------------------------------------------------------------

Segment Leq : 41.54 dBA

↟
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 39.19 + 0.00) = 39.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     32   0.66  72.55   0.00 -24.91  -7.65   0.00  -0.80   0.00  39.19
-------------------------------------------------------------------------------

Segment Leq : 39.19 dBA

↟
Results segment # 3: Hwy 417 West (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 41.03 + 0.00) = 41.03 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     39   0.66  72.55   0.00 -23.85  -6.87   0.00  -0.80   0.00  41.03
-------------------------------------------------------------------------------

Segment Leq : 41.03 dBA

Total Leq All Segments: 45.47 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 53.07
                           (NIGHT): 45.47
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 11:20:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec46.te Time Period: Day/Night 16/8 hours
Description: Reception Point 4-6

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -43.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 110.00 / 110.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   32.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 475.00 / 475.00 m
Receiver height           :  16.50 / 16.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-------------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 410.00 / 410.00 m
Receiver height           :  16.50 / 16.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 53.22 + 0.00) = 53.22 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -43 | 0 | 0.21 | 70.00 | 0.00 | -10.47 | -6.31 | 0.00 | 0.00 | 0.00 | 53.22 |

Segment Leq : 53.22 dBA

↟
Results segment # 2: Hwy 417 East (day)
---

Source height = 1.50 m

ROAD (0.00 + 53.64 + 0.00) = 53.64 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 32 | 0.21 | 80.15 | 0.00 | -18.16 | -7.55 | 0.00 | -0.80 | 0.00 | 53.64 |

Segment Leq : 53.64 dBA

↟
Results segment # 3: Hwy 417 West (day)
---

Source height = 1.50 m

ROAD (0.00 + 55.25 + 0.00) = 55.25 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 39 | 0.21 | 80.15 | 0.00 | -17.39 | -6.72 | 0.00 | -0.80 | 0.00 | 55.25 |

Segment Leq : 55.25 dBA

Total Leq All Segments: 58.90 dBA

↟
Results segment # 1: Campeau Dr (night)
---

Source height = 1.50 m

ROAD (0.00 + 45.62 + 0.00) = 45.62 dBA

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

```
-------------------------------------------------------------------------------
   -43      0   0.21  62.40   0.00 -10.47  -6.31   0.00   0.00   0.00  45.62
-------------------------------------------------------------------------------

Segment Leq : 45.62 dBA

↟
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 46.04 + 0.00) = 46.04 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     32   0.21  72.55   0.00 -18.16  -7.55   0.00  -0.80   0.00  46.04
-------------------------------------------------------------------------------

Segment Leq : 46.04 dBA

↟
Results segment # 3: Hwy 417 West (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 47.65 + 0.00) = 47.65 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     39   0.21  72.55   0.00 -17.39  -6.72   0.00  -0.80   0.00  47.65
-------------------------------------------------------------------------------

Segment Leq : 47.65 dBA

Total Leq All Segments: 51.30 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 58.90
                           (NIGHT): 51.30
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 11:25:55
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: Campeau Dr (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 : 60 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 # 1: Campeau Dr (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 : 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: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   18.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 495.00 / 495.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-------------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   24.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 480.00 / 480.00 m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 55.18 + 0.00) = 55.18 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -72 | 0 | 0.66 | 70.00 | 0.00 | -9.99 | -4.82 | 0.00 | 0.00 | 0.00 | 55.18 |

Segment Leq : 55.18 dBA

↟

Results segment # 2: Hwy 417 East (day)

---

Source height = 1.50 m

ROAD (0.00 + 44.09 + 0.00) = 44.09 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 18 | 0.66 | 80.15 | 0.00 | -25.21 | -10.05 | 0.00 | -0.80 | 0.00 | 44.09 |

Segment Leq : 44.09 dBA

↟

Results segment # 3: Hwy 417 West (day)

---

Source height = 1.50 m

ROAD (0.00 + 45.53 + 0.00) = 45.53 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 0.66 | 80.15 | 0.00 | -24.99 | -8.84 | 0.00 | -0.80 | 0.00 | 45.53 |

Segment Leq : 45.53 dBA

Total Leq All Segments: 55.92 dBA

↟

Results segment # 1: Campeau Dr (night)

---

Source height = 1.50 m

ROAD (0.00 + 47.58 + 0.00) = 47.58 dBA

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

```
--------------------------------------------------------------------------------
   -72      0   0.66  62.40   0.00  -9.99  -4.82   0.00   0.00   0.00  47.58
--------------------------------------------------------------------------------

Segment Leq : 47.58 dBA

↟
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 36.50 + 0.00) = 36.50 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
     0     18   0.66  72.55   0.00 -25.21 -10.05   0.00  -0.80   0.00  36.50
--------------------------------------------------------------------------------

Segment Leq : 36.50 dBA

↟
Results segment # 3: Hwy 417 West (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 37.93 + 0.00) = 37.93 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
     0     24   0.66  72.55   0.00 -24.99  -8.84   0.00  -0.80   0.00  37.93
--------------------------------------------------------------------------------

Segment Leq : 37.93 dBA

Total Leq All Segments: 48.32 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 55.92
                           (NIGHT): 48.32
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 11:29:24
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: Campeau Dr (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 : 60 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 # 1: Campeau Dr (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 : 60.00 / 60.00 m
Receiver height : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 2: Hwy 417 East (day/night)
---
Car traffic volume : 44527/3872 veh/TimePeriod *
Medium truck volume : 3542/308 veh/TimePeriod *
Heavy truck volume : 2530/220 veh/TimePeriod *
Posted speed limit : 100 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): 54999
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: Hwy 417 East (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   18.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 495.00 / 495.00 m
Receiver height           :  10.50 / 10.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Hwy 417 West (day/night)
-----------------------------------------------
Car traffic volume  : 44527/3872  veh/TimePeriod  *
Medium truck volume :  3542/308   veh/TimePeriod  *
Heavy truck volume  :  2530/220   veh/TimePeriod  *
Posted speed limit  :   100 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):  54999
    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: Hwy 417 West (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   24.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  : 480.00 / 480.00 m
Receiver height           :  10.50 / 10.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Campeau Dr (day)
```

---

Source height = 1.50 m

ROAD (0.00 + 57.13 + 0.00) = 57.13 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -72 | 0 | 0.39 | 70.00 | 0.00 | -8.37 | -4.50 | 0.00 | 0.00 | 0.00 | 57.13 |

Segment Leq : 57.13 dBA

↟
Results segment # 2: Hwy 417 East (day)
---

Source height = 1.50 m

ROAD (0.00 + 48.21 + 0.00) = 48.21 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 18 | 0.39 | 80.15 | 0.00 | -21.11 | -10.03 | 0.00 | -0.80 | 0.00 | 48.21 |

Segment Leq : 48.21 dBA

↟
Results segment # 3: Hwy 417 West (day)
---

Source height = 1.50 m

ROAD (0.00 + 49.62 + 0.00) = 49.62 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| 0 | 24 | 0.39 | 80.15 | 0.00 | -20.92 | -8.80 | 0.00 | -0.80 | 0.00 | 49.62 |

Segment Leq : 49.62 dBA

Total Leq All Segments: 58.29 dBA

↟
Results segment # 1: Campeau Dr (night)
---

Source height = 1.50 m

ROAD (0.00 + 49.53 + 0.00) = 49.53 dBA

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

```
-------------------------------------------------------------------------------
   -72      0   0.39  62.40   0.00  -8.37  -4.50   0.00   0.00   0.00  49.53
-------------------------------------------------------------------------------

Segment Leq : 49.53 dBA

↟
Results segment # 2: Hwy 417 East (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 40.61 + 0.00) = 40.61 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     18   0.39  72.55   0.00 -21.11 -10.03   0.00  -0.80   0.00  40.61
-------------------------------------------------------------------------------

Segment Leq : 40.61 dBA

↟
Results segment # 3: Hwy 417 West (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 42.03 + 0.00) = 42.03 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     24   0.39  72.55   0.00 -20.92  -8.80   0.00  -0.80   0.00  42.03
-------------------------------------------------------------------------------

Segment Leq : 42.03 dBA

Total Leq All Segments: 50.69 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 58.29
                           (NIGHT): 50.69
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 16:03:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec61.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 6-1

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -81.00 deg 79.00 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



Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

ROAD (0.00 + 58.41 + 0.00) = 58.41 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -81 | 79 | 0.66 | 70.00 | 0.00 | -9.99 | -1.59 | 0.00 | 0.00 | 0.00 | 58.41 |

Segment Leq : 58.41 dBA

Total Leq All Segments: 58.41 dBA

↟
Results segment # 1: Campeau Dr (night)
---

Source height = 1.50 m

ROAD (0.00 + 50.82 + 0.00) = 50.82 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -81 | 79 | 0.66 | 62.40 | 0.00 | -9.99 | -1.59 | 0.00 | 0.00 | 0.00 | 50.82 |

Segment Leq : 50.82 dBA

Total Leq All Segments: 50.82 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 58.41
(NIGHT): 50.82

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 27-04-2021 16:04:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec63.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 6-3

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -81.00 deg 79.00 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 : 10.50 / 10.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

ROAD (0.00 + 60.44 + 0.00) = 60.44 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -81 | 79 | 0.39 | 70.00 | 0.00 | -8.37 | -1.19 | 0.00 | 0.00 | 0.00 | 60.44 |

Segment Leq : 60.44 dBA

Total Leq All Segments: 60.44 dBA

↟
Results segment # 1: Campeau Dr (night)
---

Source height = 1.50 m

ROAD (0.00 + 52.84 + 0.00) = 52.84 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|---|---|---|---|---|---|---|---|---|---|---|
| -81 | 79 | 0.39 | 62.40 | 0.00 | -8.37 | -1.19 | 0.00 | 0.00 | 0.00 | 52.84 |

Segment Leq : 52.84 dBA

Total Leq All Segments: 52.84 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 60.44
(NIGHT): 52.84
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 07-05-2021 16:06:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec7.te Time Period: Day/Night 16/8 hours
Description: Reception Point 7

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -76.00 deg 74.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 13.50 / 13.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : 74.00 deg
Barrier height : 12.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 102.00 m
Receiver elevation : 102.00 m
Barrier elevation : 102.00 m
Reference angle : 0.00

Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

Barrier height for grazing incidence
---

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       13.50 !       12.21 !       114.21

ROAD (0.00 + 60.48 + 0.00) = 60.48 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -76     74   0.00  70.00   0.00  -6.37  -0.79   0.00   0.00  -4.87  57.97*
   -76     74   0.30  70.00   0.00  -8.28  -1.24   0.00   0.00   0.00  60.48
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 60.48 dBA

Total Leq All Segments: 60.48 dBA

↟
Results segment # 1: Campeau Dr (night)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       13.50 !       12.21 !       114.21

ROAD (0.00 + 52.88 + 0.00) = 52.88 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -76     74   0.00  62.40   0.00  -6.37  -0.79   0.00   0.00  -4.87  50.37*
   -76     74   0.30  62.40   0.00  -8.28  -1.24   0.00   0.00   0.00  52.88
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 52.88 dBA

Total Leq All Segments: 52.88 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 60.48
                           (NIGHT): 52.88
```

STAMSON 5.0 NORMAL REPORT Date: 07-05-2021 16:15:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec8.te Time Period: Day/Night 16/8 hours
Description: Reception Point 8

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -78.00 deg 77.00 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 : 10.50 / 10.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -78.00 deg Angle2 : 77.00 deg
Barrier height : 9.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 102.00 m
Receiver elevation : 102.00 m
Barrier elevation : 102.00 m
Reference angle : 0.00

Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

Barrier height for grazing incidence
---

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       10.50 !        8.70 !       110.70

ROAD (0.00 + 58.91 + 0.00) = 58.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -78     77   0.00  70.00   0.00  -5.23  -0.65   0.00   0.00  -5.20  58.91
-------------------------------------------------------------------------------

Segment Leq : 58.91 dBA

Total Leq All Segments: 58.91 dBA

↟
Results segment # 1: Campeau Dr (night)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       10.50 !        8.70 !       110.70

ROAD (0.00 + 51.32 + 0.00) = 51.32 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -78     77   0.00  62.40   0.00  -5.23  -0.65   0.00   0.00  -5.20  51.32
-------------------------------------------------------------------------------

Segment Leq : 51.32 dBA

Total Leq All Segments: 51.32 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 58.91
                          (NIGHT): 51.32
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 14-06-2021 15:42:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec9.te Time Period: Day/Night 16/8 hours
Description: Reception Point 9

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -57.00 deg 79.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -57.00 deg Angle2 : 79.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 102.00 m
Receiver elevation : 102.00 m
Barrier elevation : 102.00 m
Reference angle : 0.00

Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

Barrier height for grazing incidence
---

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       19.50 !       18.78 !       120.78

ROAD (0.00 + 60.79 + 0.00) = 60.79 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -57     79   0.00  70.00   0.00  -6.99  -1.22   0.00   0.00  -0.51  61.28*
   -57     79   0.12  70.00   0.00  -7.83  -1.38   0.00   0.00   0.00  60.79
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 60.79 dBA

Total Leq All Segments: 60.79 dBA

↟
Results segment # 1: Campeau Dr (night)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       19.50 !       18.78 !       120.78

ROAD (0.00 + 53.19 + 0.00) = 53.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -57     79   0.00  62.40   0.00  -6.99  -1.22   0.00   0.00  -0.51  53.69*
   -57     79   0.12  62.40   0.00  -7.83  -1.38   0.00   0.00   0.00  53.19
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 53.19 dBA

Total Leq All Segments: 53.19 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 60.79
                           (NIGHT): 53.19
```

STAMSON 5.0 NORMAL REPORT Date: 07-05-2021 16:34:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec10.te Time Period: Day/Night 16/8 hours
Description: Reception Point 10

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -59.00 deg 81.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -59.00 deg Angle2 : 81.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 102.00 m
Receiver elevation : 102.00 m
Barrier elevation : 102.00 m
Reference angle : 0.00

Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

Barrier height for grazing incidence
---

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       16.50 !       15.00 !       117.00

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
-------------------------------------------------------------------------------
   -59     81   0.00  70.00   0.00  -6.69  -1.09   0.00   0.00  -5.00  57.21
-------------------------------------------------------------------------------

Segment Leq : 57.21 dBA

Total Leq All Segments: 57.21 dBA

↟
Results segment # 1: Campeau Dr (night)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       16.50 !       15.00 !       117.00

ROAD (0.00 + 49.62 + 0.00) = 49.62 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -59     81   0.00  62.40   0.00  -6.69  -1.09   0.00   0.00  -5.00  49.62
-------------------------------------------------------------------------------

Segment Leq : 49.62 dBA

Total Leq All Segments: 49.62 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 57.21
                          (NIGHT): 49.62
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 07-05-2021 16:37:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec11.te Time Period: Day/Night 16/8 hours
Description: Reception Point 11

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -61.00 deg 83.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 13.50 / 13.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -61.00 deg Angle2 : 83.00 deg
Barrier height : 12.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 102.00 m
Receiver elevation : 102.00 m
Barrier elevation : 102.00 m
Reference angle : 0.00

Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

Barrier height for grazing incidence
---

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       13.50 !       12.95 !       114.95

ROAD (0.00 + 60.30 + 0.00) = 60.30 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -61     83   0.00  70.00   0.00  -6.37  -0.97   0.00   0.00  -0.25  62.41*
   -61     83   0.30  70.00   0.00  -8.28  -1.42   0.00   0.00   0.00  60.30
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 60.30 dBA

Total Leq All Segments: 60.30 dBA

↟
Results segment # 1: Campeau Dr (night)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       13.50 !       12.95 !       114.95

ROAD (0.00 + 52.70 + 0.00) = 52.70 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -61     83   0.00  62.40   0.00  -6.37  -0.97   0.00   0.00  -0.25  54.82*
   -61     83   0.30  62.40   0.00  -8.28  -1.42   0.00   0.00   0.00  52.70
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 52.70 dBA

Total Leq All Segments: 52.70 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 60.30
                           (NIGHT): 52.70
```

STAMSON 5.0 NORMAL REPORT Date: 07-05-2021 16:40:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec12.te Time Period: Day/Night 16/8 hours
Description: Reception Point 12

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -77.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -77.00 deg Angle2 : 65.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 5.00 / 5.00 m
Source elevation : 102.00 m
Receiver elevation : 102.00 m
Barrier elevation : 102.00 m
Reference angle : 0.00

Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

Barrier height for grazing incidence
---

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       16.50 !       15.35 !       117.35

ROAD (0.00 + 60.97 + 0.00) = 60.97 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -77     65   0.00  70.00   0.00  -6.37  -1.03   0.00   0.00  -4.50  58.10*
   -77     65   0.21  70.00   0.00  -7.71  -1.32   0.00   0.00   0.00  60.97
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 60.97 dBA

Total Leq All Segments: 60.97 dBA

↟
Results segment # 1: Campeau Dr (night)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       16.50 !       15.35 !       117.35

ROAD (0.00 + 53.38 + 0.00) = 53.38 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -77     65   0.00  62.40   0.00  -6.37  -1.03   0.00   0.00  -4.50  50.50*
   -77     65   0.21  62.40   0.00  -7.71  -1.32   0.00   0.00   0.00  53.38
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 53.38 dBA

Total Leq All Segments: 53.38 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 60.97
                           (NIGHT): 53.38
```

STAMSON 5.0 NORMAL REPORT Date: 07-05-2021 16:48:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec13.te Time Period: Day/Night 16/8 hours
Description: Reception Point 13

Road data, segment # 1: Campeau Dr (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 : 60 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 # 1: Campeau Dr (day/night)
---
Angle1 Angle2 : -78.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 13.50 / 13.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -78.00 deg Angle2 : 67.00 deg
Barrier height : 12.00 m
Barrier receiver distance : 3.00 / 3.00 m
Source elevation : 102.00 m
Receiver elevation : 102.00 m
Barrier elevation : 102.00 m
Reference angle : 0.00

Results segment # 1: Campeau Dr (day)
---

Source height = 1.50 m

Barrier height for grazing incidence
---

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       13.50 !       12.95 !       114.95

ROAD (0.00 + 60.35 + 0.00) = 60.35 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -78     67   0.00  70.00   0.00  -6.37  -0.94   0.00   0.00  -0.18  62.51*
   -78     67   0.30  70.00   0.00  -8.28  -1.36   0.00   0.00   0.00  60.35
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 60.35 dBA

Total Leq All Segments: 60.35 dBA

↟
Results segment # 1: Campeau Dr (night)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       13.50 !       12.95 !       114.95

ROAD (0.00 + 52.76 + 0.00) = 52.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -78     67   0.00  62.40   0.00  -6.37  -0.94   0.00   0.00  -0.18  54.92*
   -78     67   0.30  62.40   0.00  -8.28  -1.36   0.00   0.00   0.00  52.76
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 52.76 dBA

Total Leq All Segments: 52.76 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 60.35
                           (NIGHT): 52.76
```