

Geotechnical
Engineering

Environmental
Engineering

Hydrogeology

Geological
Engineering

Materials Testing

Building Science

Noise and Vibration
Monitoring

Environmental Noise Control Study

Proposed Multi-Storey Building
283-285 McLeod Street
Ottawa, Ontario

Prepared For

Zyer Developments Inc.

Paterson Group Inc.

Consulting Engineers
154 Colonnade Road South
Ottawa (Nepean), Ontario
Canada K2E 7J5

Tel: (613) 226-7381
Fax: (613) 226-6344
www.patersongroup.ca

July 28, 2021

Report: PG5490-1 Revision 1

| Table of Contents | | Page |
|--------------------------|--|-------------|
| 1.0 | Introduction | 1 |
| 2.0 | Background | 1 |
| 3.0 | Methodology and Noise Assessment Criteria | 2 |
| 4.0 | Analysis | 5 |
| 5.0 | Results | 7 |
| 6.0 | Discussion and Recommendations | |
| | 6.1 Outdoor Living Areas | 8 |
| | 6.2 Indoor Living Areas and Ventilation | 8 |
| 7.0 | Summary of Findings | 9 |
| 8.0 | Statement of Limitations | 10 |

Appendices

- Appendix 1 Table 7 - Summary of Reception Points and Geometry
 Drawing PG5490-2 - Receptor Location Plan
 Drawing PG5490-3 - Site Geometry
 Drawing PG5490-3A - Site Geometry (REC 1-1 and REC 1-8)
 Drawing PG5490-3B - Site Geometry (REC 2-1 and REC 2-8)
 Drawing PG5490-3C - Site Geometry (REC 3-1 and REC 3-8)
 Drawing PG5490-3D - Site Geometry (REC 4-1 and REC 4-8)
 Drawing PG5490-3E - Site Geometry (REC 5)
- Appendix 2 STAMSON Results

1.0 Introduction

Paterson Group (Paterson) was commissioned by Zyer Developments to conduct an environmental noise control study for the proposed multi-storey building to be located at 283-285 McLeod Street, in the City of Ottawa.

The objective of the current study is 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 eight storey residential building with one (1) underground level and a roof top terrace on the 8th floor. The building consists of a total 36 units. The underground level will consist of parking areas, mechanical/electrical rooms, waste storage, building storage and bike storage. Associated egress paths, patio and outdoor amenity spaces are further anticipated at the ground level.

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 |
| <input type="checkbox"/> 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 |
| <input type="checkbox"/> 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." |
| <input type="checkbox"/> 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.

This development 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 the proposed development will not require an aircraft/airport noise analysis. No warning clauses regarding aircraft or airport noise will be required.

4.0 Analysis

Surface Transportation Noise

The proposed building is bordered to the north by commercial buildings and residential dwellings, Gladstone Avenue, and Frank Street, to the east by commercial buildings and residential dwellings, to the west by commercial buildings and residential dwellings followed by O'Connor Street, a parking lot, and commercial buildings, to the south by McLeod Street followed by a park and a parking lot. Gladstone Avenue, Frank Street, O'Connor Street, and McLeod Street are identified within the 100 m radius of the proposed building.

Based on the City of Ottawa Official Plan, Schedule F, Gladstone Avenue is considered a 2 lane major collector road (2-UMCU). O'Connor Street is considered a 2 lane urban arterial road (2-UAU). All other roads within the 100 m radius are not classified as either arterial, collector or major collector roads and therefore are not included in this study. 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 PG5490-3 - 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 Eastbound | 3-Queensway | 54999 | 100 | 92/8 | 7 | 5 |
| Highway 417 Westbound | 3-Queensway | 54999 | 100 | 92/8 | 7 | 5 |
| Gladstone Avenue | 2-UMCU | 12000 | 50 | 92/8 | 7 | 5 |
| O'Connor Street | 2-UAU | 15000 | 50 | 92/8 | 7 | 5 |
| <input type="checkbox"/> Data obtained from the City of Ottawa document ENCG | | | | | | |

Three (3) levels of reception points were selected for this analysis. The following elevations were selected from the heights provided on the building elevation plans for this development.

| Table 5 - Elevation of Reception Points | | | |
|--|--|---------------------|-----------------------------------|
| Floor Number | Elevation at Centre of Window (m) | Floor Use | Daytime/Nighttime Analysis |
| First Floor | 1.5 | Living Area/Bedroom | daytime/nighttime |
| Eighth Floor | 23.0 | Living Area/Bedroom | daytime/nighttime |
| Roof Top Patio | 26.5 | -- | Outdoor Living Area |

For this analysis, a reception point was taken at the centre of each floor, at the first floor and eighth floor. A reception point in the centre of this area, 26.5 m high was selected for the analysis of this area. Reception points are detailed on Drawing PG5490-2 - 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, and the roadways were analyzed where they intersected the 100 m buffer zone, which is reflected in the local angles described in Paterson Drawings PG5490-3A to 3E - 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 ENG C.

The subject site is relatively flat and at grade with the neighbouring roads within the 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

5.1 Surface Transportation Noise

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

The proposed traffic noise levels were analyzed at all reception points. The results of the STAMSON software can be located in Appendix 2, and the summary of the results can be noted in Table 6.

| Table 6 - Proposed Noise Levels | | | | |
|--|----------------------------------|--|--|--|
| Reception Point | Description | Daytime at Facade $L_{EQ(16)}$ (dBA) | Nighttime at Facade $L_{EQ(16)}$ (dBA) | Outdoor Living Area $L_{EQ(16)}$ (dBA) |
| REC 1-1 | Western elevation, first floor | 46.02 | 38.42 | -- |
| REC 1-8 | Western elevation, eighth floor | 58.47 | 50.87 | -- |
| REC 2-1 | Northern elevation, first floor | 42.35 | 34.75 | -- |
| REC 2-8 | Northern elevation, eighth floor | 44.71 | 37.11 | -- |
| REC 3-1 | Eastern elevation, first floor | 45.50 | 37.91 | -- |
| REC 3-8 | Eastern elevation, eighth floor | 56.82 | 49.22 | -- |
| REC 4-1 | Southern elevation, first floor | 55.07 | 47.47 | -- |
| REC 4-8 | Southern elevation, eighth floor | 59.76 | 52.16 | -- |
| REC 5 | Outdoor Living Area | -- | -- | 54.04 |

6.0 Discussion and Recommendations

6.1 Outdoor Living Areas

A roof top patio was identified in the centre of the proposed building. One (1) receptor point was selected for the analysis at outdoor living area (REC 5). It is assumed that the roof top patio will only be utilized as an outdoor living area provided that the proposed building is constructed. The proposed $L_{eq(16)}$ at the roof top patio will be 54.04 dBA. The value is below the 55 dBA threshold that is specified by the MOECC and the City of Ottawa. Therefore, no mitigation measures will be required.

6.2 Indoor Living Areas and Ventilation

The results of the STAMSON modeling indicates that the daytime $L_{eq(16)}$ ranges between 42.35 dBA and 59.76 dBA. The ENCG states that the limits for the exterior of the pane of glass is 55 dBA. This value was exceeded on western, eastern and southern elevations. Therefore, units on the western, eastern and southern elevations should be designed with the provision for a central air conditioning unit. Additionally, warning clause Type C, as outlined in Table 3, is required for all units on the western, eastern and southern 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 Conclusion

The subject site is located at 283 to 285 McLeod Street. It is understood that the development will consist of a 8 storey residential building. The associated analysis identified four surface transportation noise sources: Highway 417 Westbound, Highway 417 Eastbound, Gladstone Avenue, O'Connor Street.

Several reception points were selected for the analysis, consisting of pane of glass reception points on both the first and top level. The western, eastern and southern elevations of the proposed building exceeded the 55 dBA guideline specified by the ENCG. Therefore, a warning clause Type C will be required for units on the western, eastern and southern elevations. Additionally, units on the western, eastern and southern elevations should be designed with the provision for a central air conditioning unit.

A review of the outdoor living area (roof top patio) was completed as well. It is assumed that the roof top patio will only be utilized as an outdoor living area provided that the proposed building is constructed. The anticipated noise level at roof top patio is below the 55 dBA threshold. Therefore, no mitigation measures will be required.

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

"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."

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 Zyer Developments or their agent(s) is not authorized without review by this firm for the applicability of our recommendations to the altered use of the report.

Paterson Group Inc.



Yolanda Tang, M.Sc.Eng.



Stephanie A. Boisvenue, P.Eng.



Report Distribution:

- Zyer Developments (e-mail copy)
- Paterson Group (1 copy)

APPENDIX 1

TABLE 7 - SUMMARY OF RECEPTION POINTS AND GEOMETRY

DRAWING PG5490-2 - RECEPTOR LOCATION PLAN

DRAWING PG5490-3 - SITE GEOMETRY

DRAWING PG5490-3A - SITE GEOMETRY (REC 1-1 and REC 1-8)

DRAWING PG5490-3B - SITE GEOMETRY (REC 2-1 and REC 2-8)

DRAWING PG5490-3C - SITE GEOMETRY (REC 3-1 and REC 3-8)

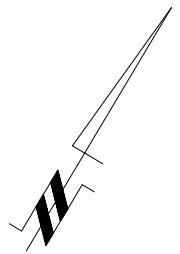
DRAWING PG5490-3D - SITE GEOMETRY (REC 4-1 and REC 4-8)

DRAWING PG5490-3E - SITE GEOMETRY (REC 5)

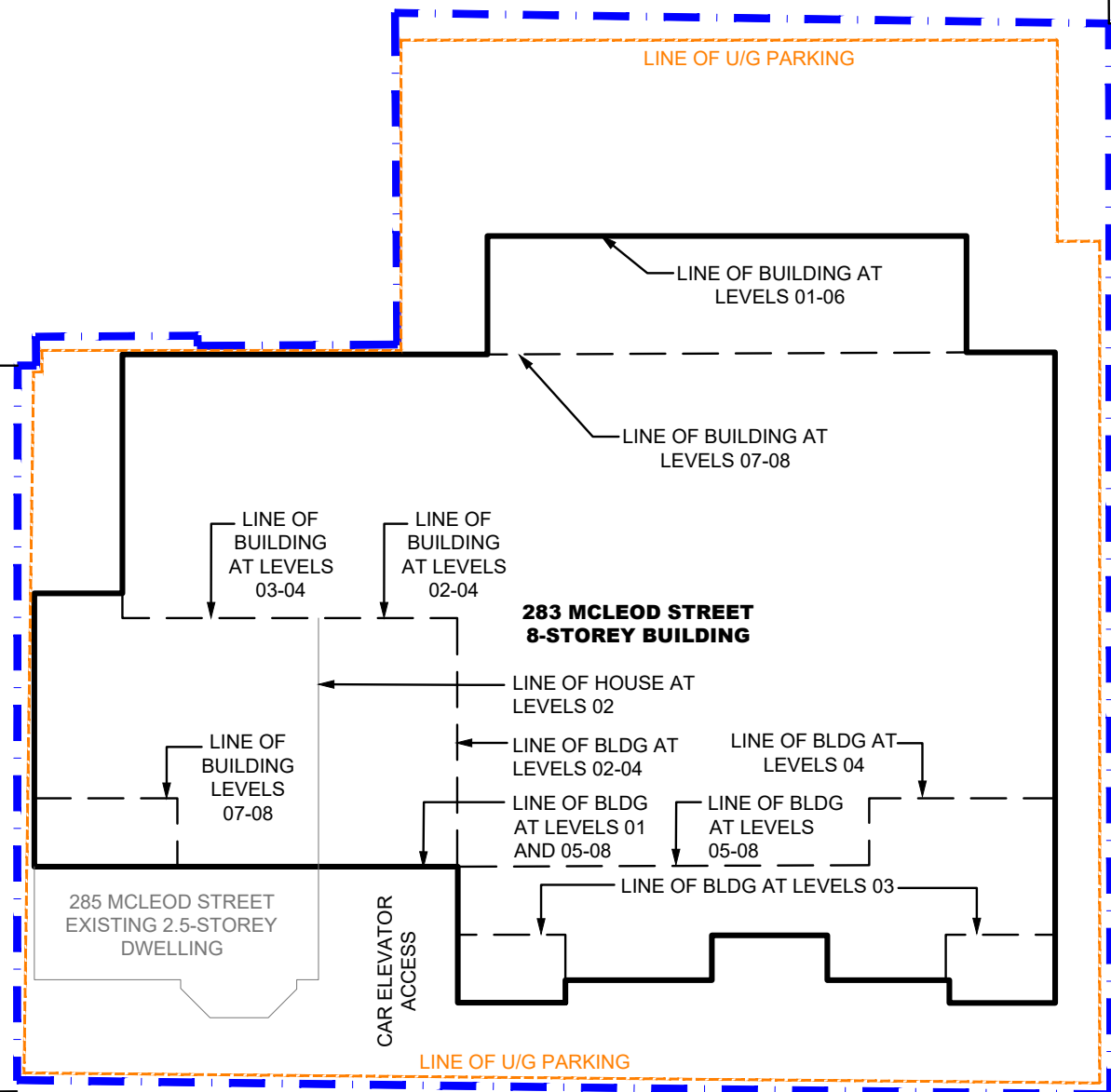
**Table 7 - Summary of Reception Points and Geometry
283 and 285 McLeod Street**

| Point of Reception | Location | Leq Day (dBA) | Gladstone Avenue | | | | | | | | O'Connor Street | | | | | | | |
|--------------------|-------------------------------|---------------|------------------|--------------|-----------|----------------------|--------------------------|-------------|--------------------|----------------------|-----------------|--------------|-----------|----------------------|--------------------------|-------------|--------------------|----------------------|
| | | | 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 | Western Elevation, 1st Floor | 46.02 | 70 | 1.5 | 70.02 | -55,0 | n/a | n/a | 24 | 30 | 35 | 1.5 | 35.03 | -75, 40 40, 76 | n/a | n/a | 24 8.5 | 30 20 |
| REC 1-8 | Western Elevation, 8th Floor | 58.47 | 70 | 23 | 73.68 | -55, 0 | n/a | n/a | 24 | 30 | 35 | 23 | 41.88 | -75, 40 40, 76 | n/a | n/a | 24 8.5 | 30 20 |
| REC 2-1 | Northern Elevation, 1st Floor | 42.35 | 60 | 1.5 | 60.02 | -67, 47 47, 68 | n/a | n/a | 24 9 | 30 45 | 60 | 1.5 | 60.02 | 0, 66 | n/a | n/a | 24 | 45 |
| REC 2-8 | Northern Elevation, 8th Floor | 44.71 | 60 | 23 | 64.26 | -65, 47 47, 67 | n/a | n/a | 24 9 | 33 47 | 60 | 23 | 64.26 | 0, 66 | n/a | n/a | 24 | 48 |
| REC 3-1 | Eastern Elevation, 1st Floor | 45.50 | 70 | 1.5 | 70.02 | 0, 47 47, 63 | n/a 1 | n/a 20 | 9 n/a | 43 n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 3-8 | Eastern Elevation, 8th Floor | 56.82 | 70 | 23 | 73.68 | 0, 47 47, 63 | n/a 1 | n/a 20 | 9 n/a | 43 n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a |
| REC 4-1 | Southern Elevation, 1st Floor | 55.07 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 50 | 1.5 | 50.02 | -66, 0 | n/a | n/a | n/a | n/a |
| REC 4-8 | Southern Elevation, 8th Floor | 59.76 | n/a | n/a | n/a | n/a | n/a | n/a | n/a | n/a | 50 | 23 | 55.04 | -66, 0 | n/a | n/a | n/a | n/a |
| REC 5 | Outdoor Living Area | 54.04 | 65 | 26.5 | 70.19 | -62, 65 | n/a | n/a | n/a | n/a | 55 | 26.5 | 61.05 | -67, 69 | n/a | n/a | n/a | n/a |

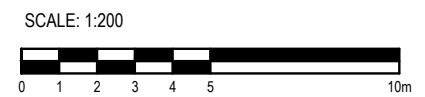
| Point of Reception | Location | Leq Day (dBA) | Highway 417 Westbound | | | | | | | | Highway 417 Eastbound | | | | | | | |
|--------------------|-------------------------------|---------------|-----------------------|--------------|-----------|----------------------|--------------------------|-------------|--------------------|----------------------|-----------------------|--------------|-----------|----------------------|--------------------------|-------------|--------------------|----------------------|
| | | | 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 | Western Elevation, 1st Floor | 46.02 | 360 | 1.5 | 360 | 0, 52 | 7 | 80 | n/a | n/a | 370 | 1.5 | 370 | 0, 49 | 7 | 80 | n/a | n/a |
| REC 1-8 | Western Elevation, 8th Floor | 58.47 | 360 | 23 | 360.73 | 0, 52 | 7 | 80 | n/a | n/a | 370 | 23 | 370.7 | 0, 49 | 7 | 80 | n/a | n/a |
| REC 2-1 | Northern Elevation, 1st Floor | 42.35 | n/a | n/a | n/a | n/a | 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 2-8 | Northern Elevation, 8th Floor | 44.71 | n/a | n/a | n/a | n/a | 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 3-1 | Eastern Elevation, 1st Floor | 45.50 | 350 | 1.5 | 350 | -50, 0 | 7 | 80 | n/a | n/a | 355 | 1.5 | 355 | -47, 0 | 7 | 80 | n/a | n/a |
| REC 3-8 | Eastern Elevation, 8th Floor | 56.82 | 350 | 23 | 350.75 | -50, 0 | 7 | 80 | n/a | n/a | 355 | 23 | 355.74 | -47, 0 | 7 | 80 | n/a | n/a |
| REC 4-1 | Southern Elevation, 1st Floor | 55.07 | 345 | 1.5 | 345 | -52, 53 | 7 | 80 | n/a | n/a | 350 | 1.5 | 350 | -49, 50 | 7 | 80 | n/a | n/a |
| REC 4-8 | Southern Elevation, 8th Floor | 59.76 | 345 | 23 | 345.77 | -52, 53 | 7 | 80 | n/a | n/a | 350 | 23 | 350.75 | -49, 50 | 7 | 80 | n/a | n/a |
| REC 5 | Outdoor Living Area | 54.04 | 355 | 26.5 | 355.99 | -51, 53 | 7 | 80 | n/a | n/a | 360 | 26.5 | 360.97 | -49, 50 | 7 | 80 | n/a | n/a |



O'CONNOR STREET



MCLEOD STREET



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

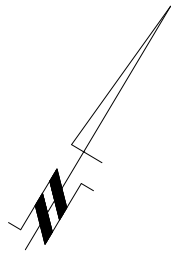
| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |

ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY BUILDING - 283 AND 285 MCLEOD STREET
OTTAWA, ONTARIO

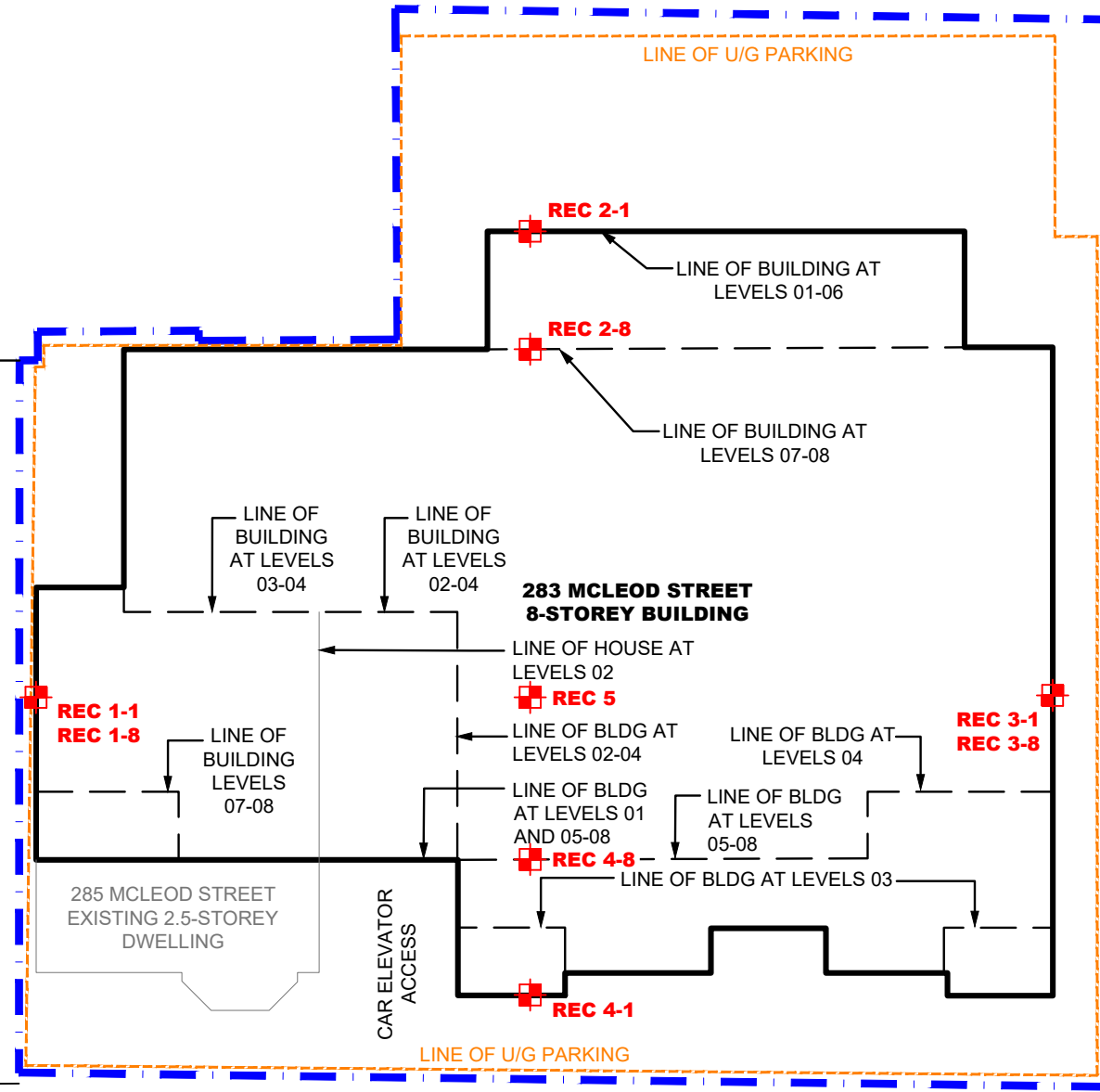
SITE PLAN

| | | | |
|--------------|-------|---------------|-----------------|
| Scale: | 1:200 | Date: | 09/2020 |
| Drawn by: | YA | Report No.: | PG5490-1 |
| Checked by: | SB | Dwg. No.: | PG5490-1 |
| Approved by: | DJG | Revision No.: | 1 |

p:\autocad\drawings\geotechnical\pg5490\pg5490-1-site plan (rev.01).dwg



O'CONNOR STREET



MCLEOD STREET

LEGEND:

RECEPTOR LOCATION

SCALE: 1:200



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |

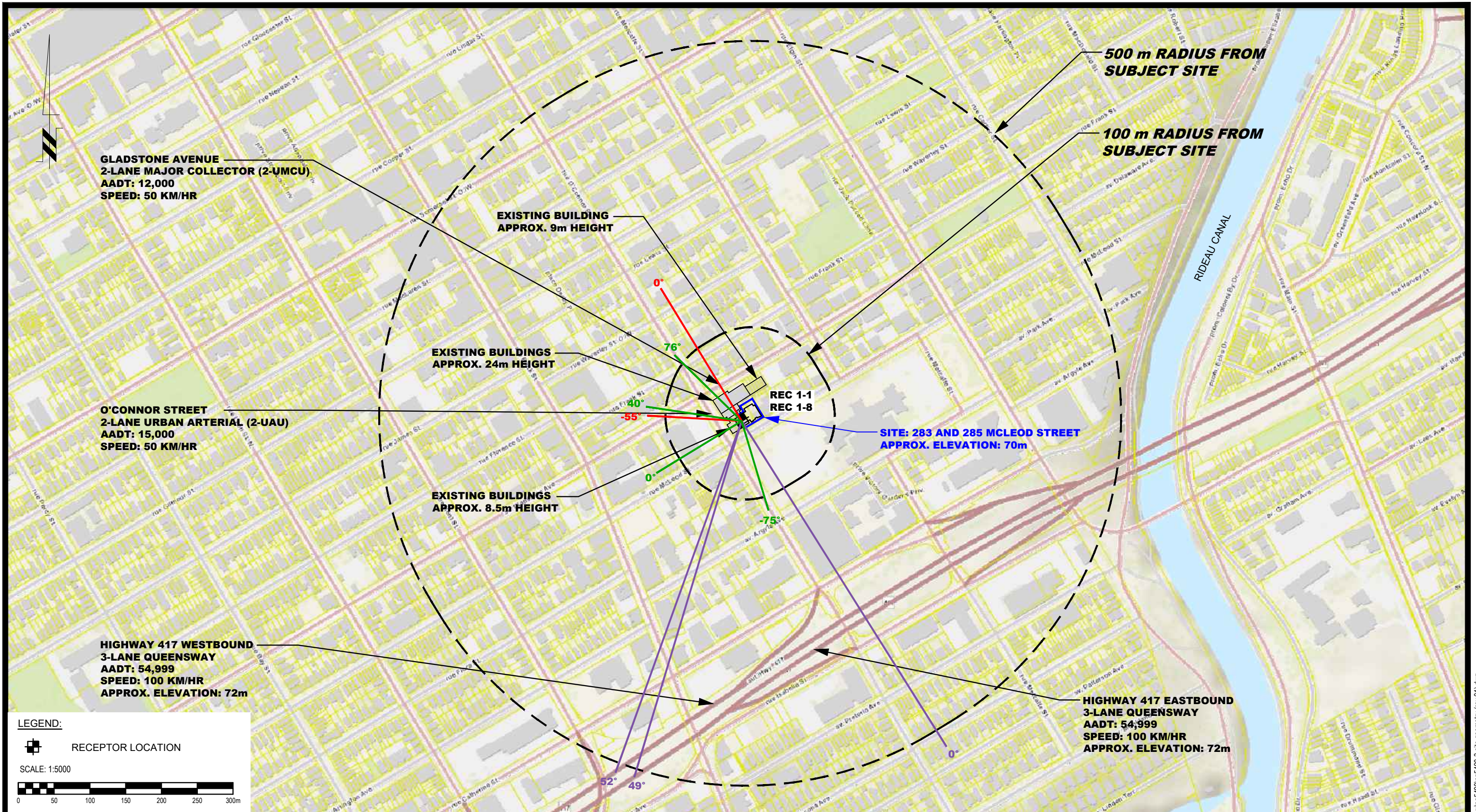
ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY BUILDING - 283 AND 285 MCLEOD STREET
OTTAWA, ONTARIO

Title: **RECEPTOR LOCATION PLAN**

Scale: 1:200
Drawn by: YA
Checked by: SB
Approved by: DJG

Date: 09/2020
Report No.: PG5490-1
Dwg. No.: **PG5490-2**
Revision No.: 1

p:\autocad\drawings\geotechnical\pg5490\pg5490-2-receptor location plan (rev.01).dwg



LEGEND:
 RECEPTOR LOCATION

SCALE: 1:5000

patersongroup
 consulting engineers

154 Colonnade Road South
 Ottawa, Ontario K2E 7J5
 Tel: (613) 226-7381 Fax: (613) 226-6344

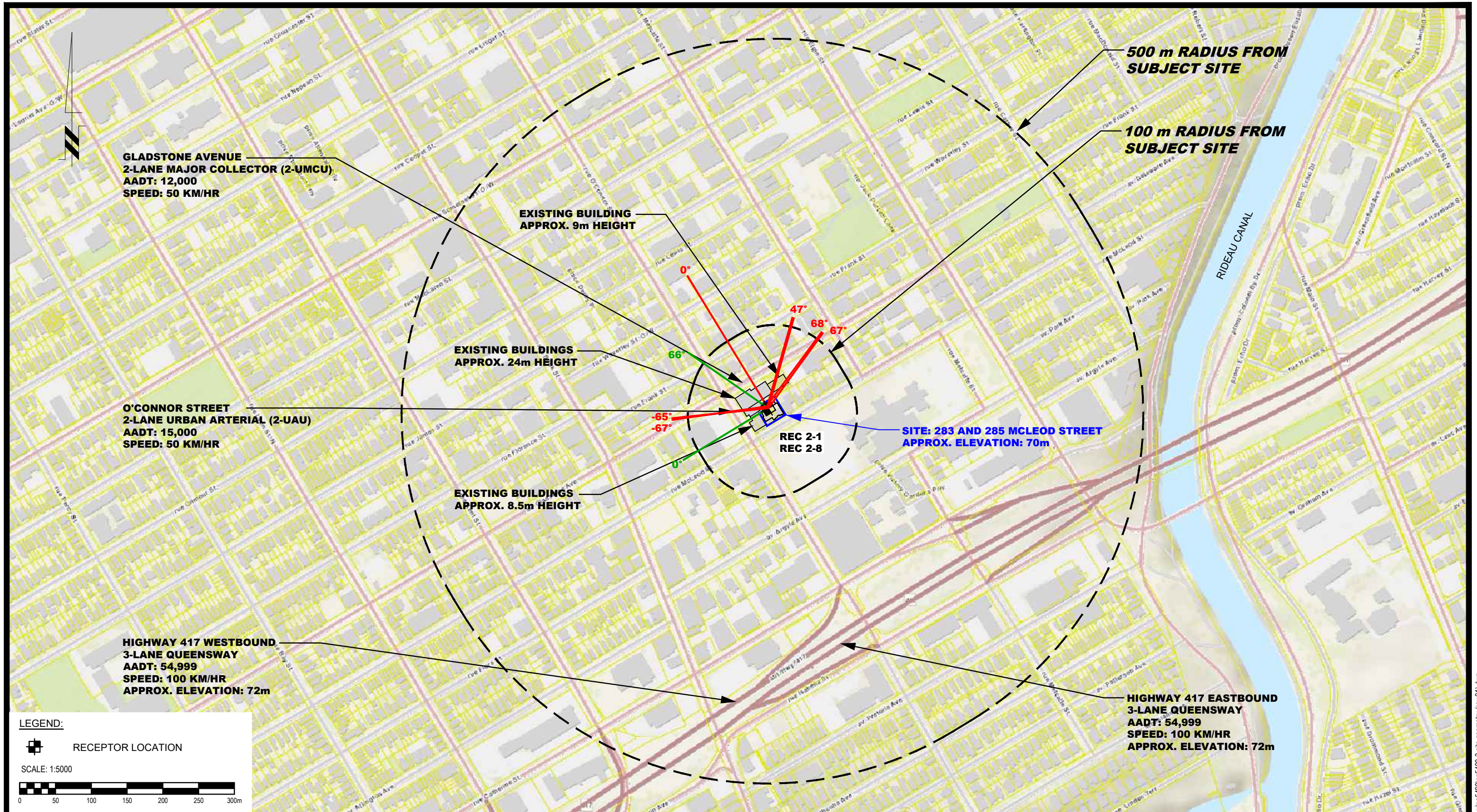
| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |


ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY BUILDING - 283 AND 285 MCLEOD STREET
 OTTAWA, ONTARIO

Title: **SITE GEOMETRY - REC 1-1 AND REC 1-8**


| | | | |
|--------------|--------|---------------|------------------|
| Scale: | 1:5000 | Date: | 10/2020 |
| Drawn by: | YA | Report No.: | PG5490-1 |
| Checked by: | SB | Dwg. No.: | PG5490-3A |
| Approved by: | DJG | Revision No.: | 1 |

p:\autocad\drawings\geotechnical\pg5490\pg5490-3-site geometry (rev.01).dwg



LEGEND:
 RECEPTOR LOCATION

SCALE: 1:5000



patersongroup
 consulting engineers

154 Colonnade Road South
 Ottawa, Ontario K2E 7J5
 Tel: (613) 226-7381 Fax: (613) 226-6344

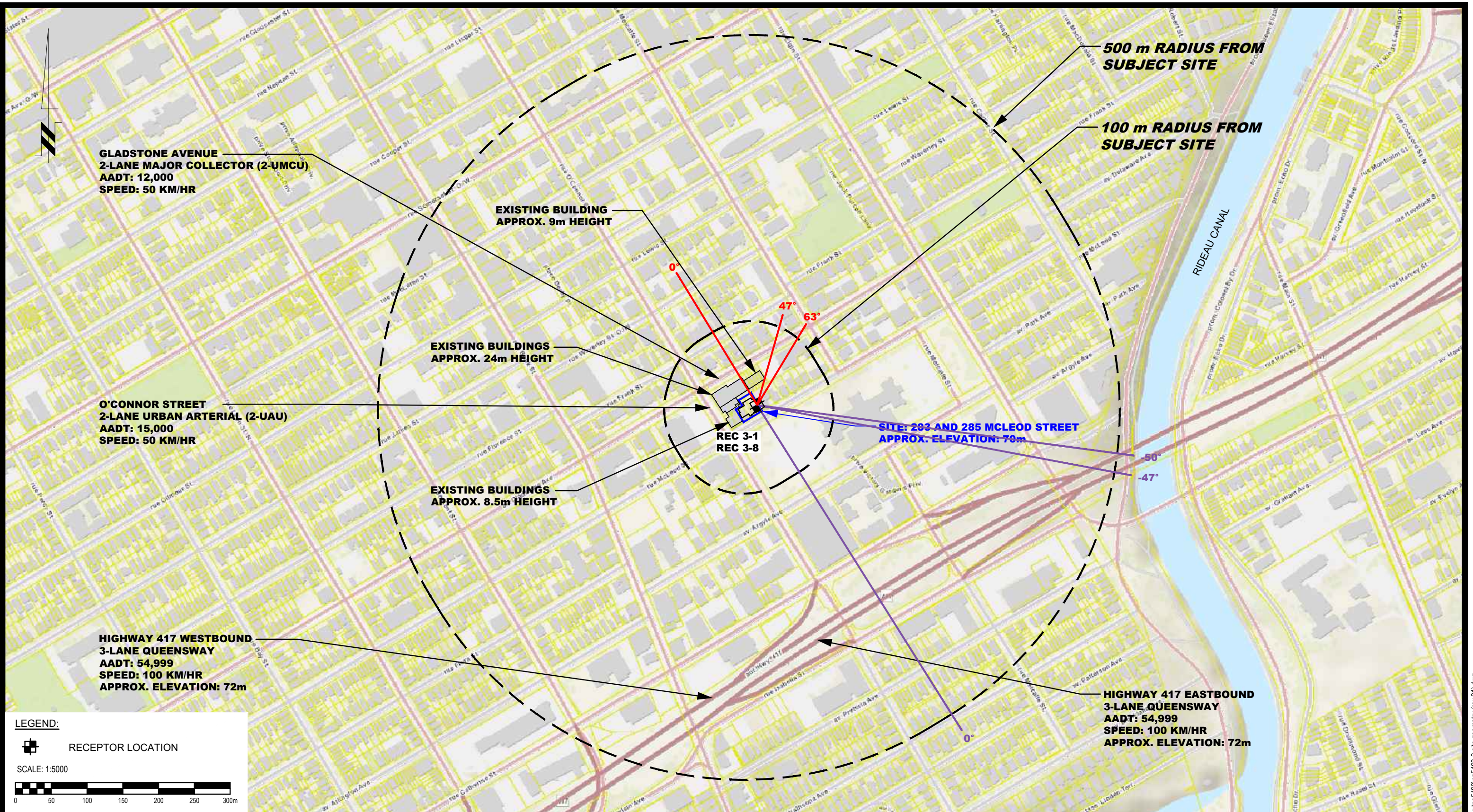
| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |



ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY BUILDING - 283 AND 285 MCLEOD STREET
 OTTAWA, ONTARIO

Title: **SITE GEOMETRY - REC 2-1 AND REC 2-8**

| | | | |
|--------------|--------|---------------|------------------|
| Scale: | 1:5000 | Date: | 10/2020 |
| Drawn by: | YA | Report No.: | PG5490-1 |
| Checked by: | SB | Dwg. No.: | PG5490-3B |
| Approved by: | DJG | Revision No.: | 1 |

p:\autocad\drawings\geotechnical\pg5490-3-site geometry (rev.01).dwg



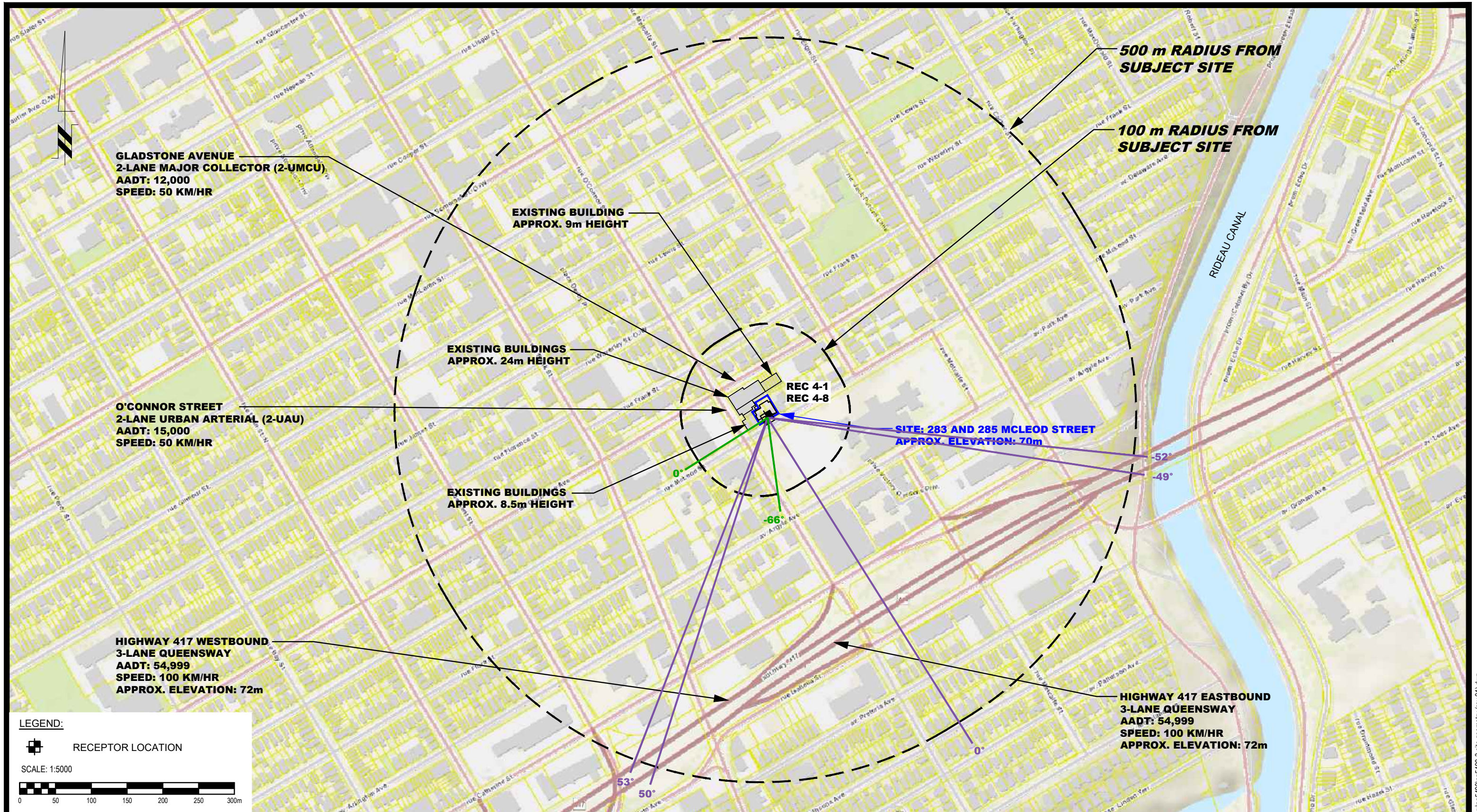
LEGEND:
 RECEPTOR LOCATION
 SCALE: 1:5000



patersongroup
 consulting engineers
 154 Colonnade Road South
 Ottawa, Ontario K2E 7J5
 Tel: (613) 226-7381 Fax: (613) 226-6344

| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |

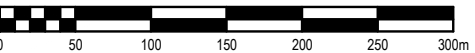
ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STORY BUILDING - 283 AND 285 MCLEOD STREET
 OTTAWA, ONTARIO
 Title: **SITE GEOMETRY - REC 3-1 AND REC 3-8**

| | | | |
|--------------|--------|---------------|------------------|
| Scale: | 1:5000 | Date: | 10/2020 |
| Drawn by: | YA | Report No.: | PG5490-1 |
| Checked by: | SB | Dwg. No.: | PG5490-3C |
| Approved by: | DJG | Revision No.: | 1 |



LEGEND:
 RECEPTOR LOCATION

SCALE: 1:5000



patersongroup
 consulting engineers

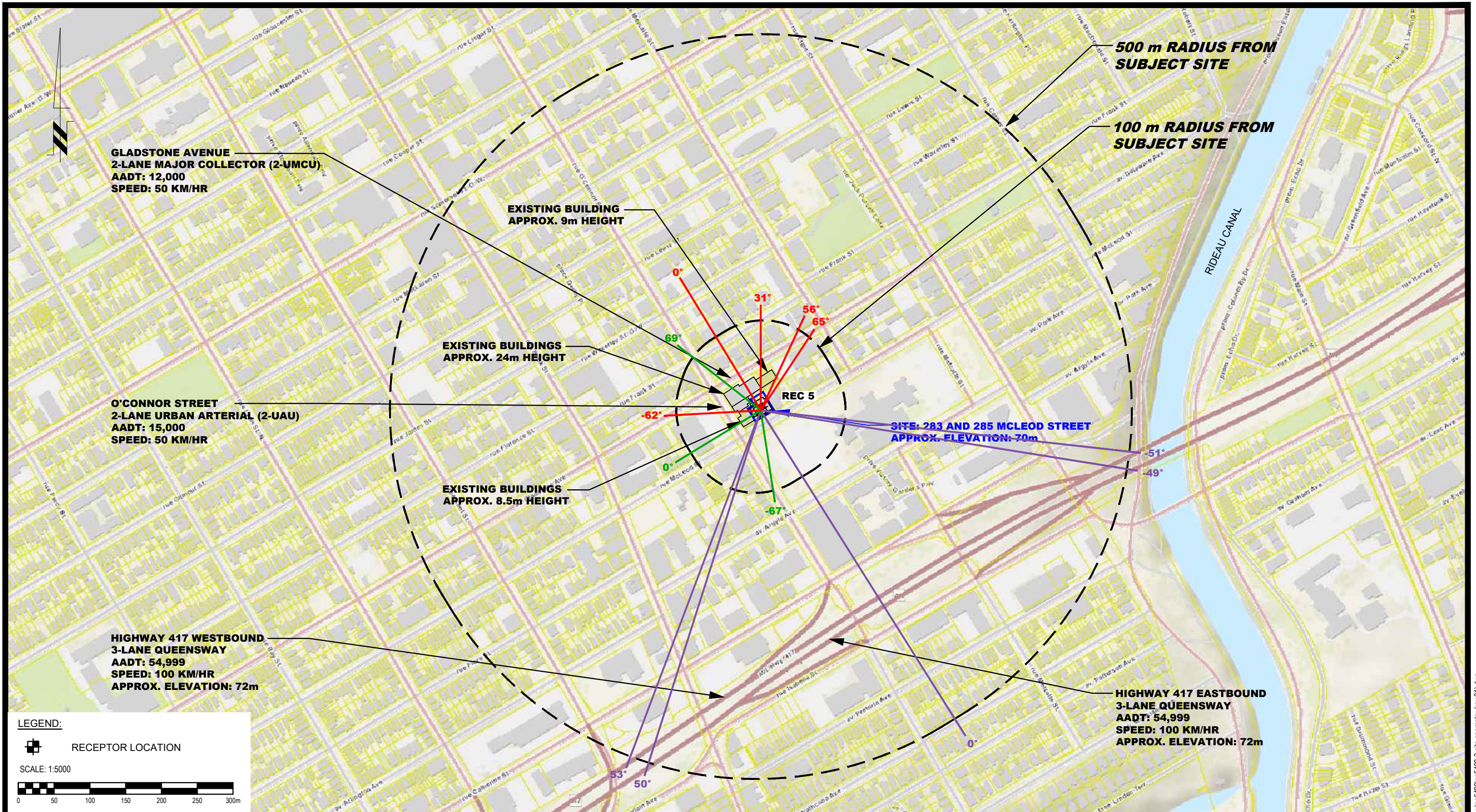
154 Colonnade Road South
 Ottawa, Ontario K2E 7J5
 Tel: (613) 226-7381 Fax: (613) 226-6344

| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |

ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY BUILDING - 283 AND 285 MCLEOD STREET
 OTTAWA, ONTARIO

Title: **SITE GEOMETRY - REC 4-1 AND REC 4-8**

| | | | |
|--------------|--------|---------------|------------------|
| Scale: | 1:5000 | Date: | 10/2020 |
| Drawn by: | YA | Report No.: | PG5490-1 |
| Checked by: | SB | Dwg. No.: | PG5490-3D |
| Approved by: | DJG | Revision No.: | 1 |



LEGEND:
 RECEPTOR LOCATION

SCALE: 1:5000

patersongroup
 consulting engineers

154 Colonnade Road South
 Ottawa, Ontario K2E 7J5
 Tel: (613) 226-7381 Fax: (613) 226-6344

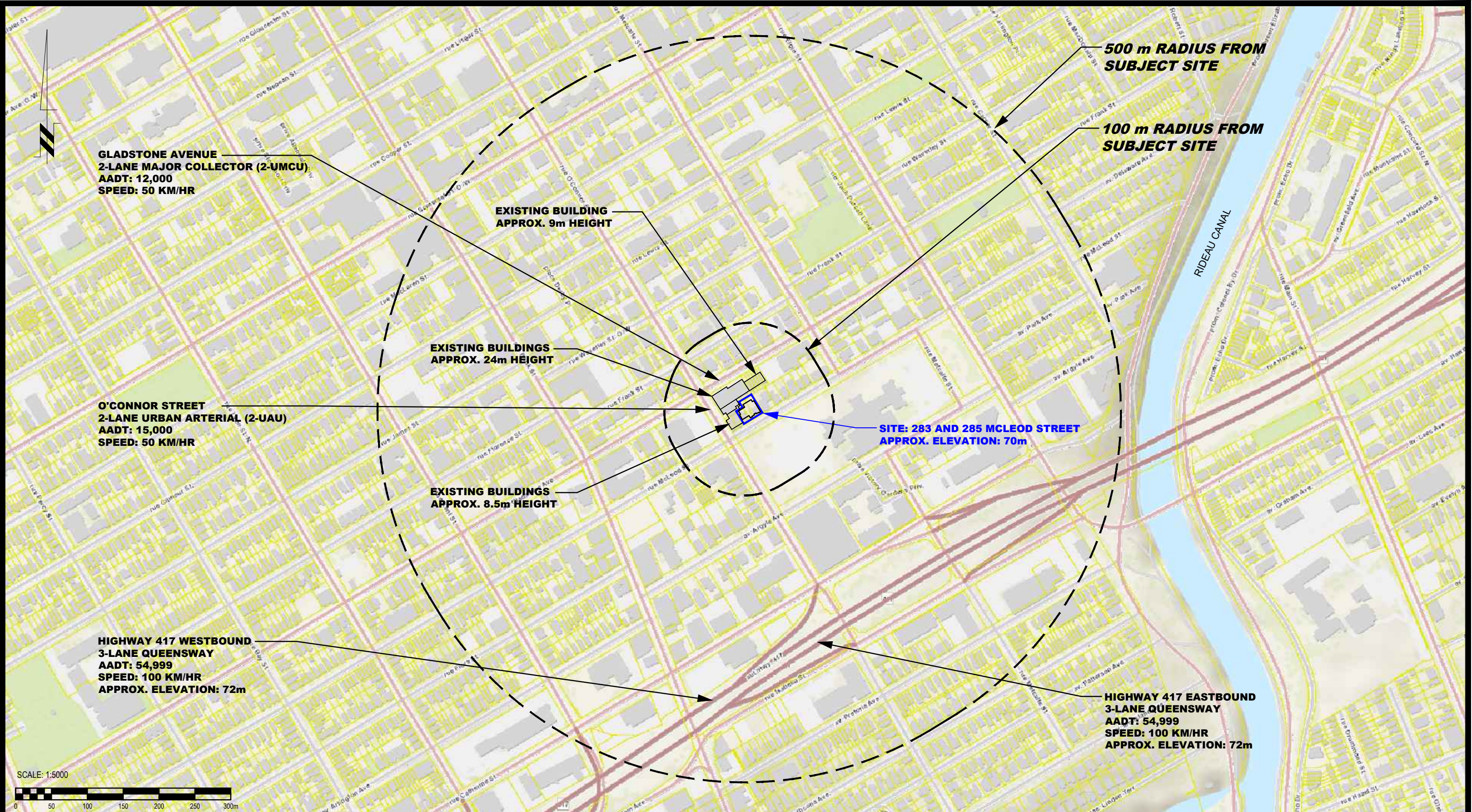
| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |

ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY BUILDING - 283 AND 285 MCLEOD STREET
OTTAWA, ONTARIO

Title: SITE GEOMETRY - REC 5

| | | | |
|--------------|--------|---------------|------------------|
| Scale: | 1:5000 | Date: | 10/2020 |
| Drawn by: | YA | Report No.: | PG5490-1 |
| Checked by: | SB | Dwg. No.: | PG5490-3E |
| Approved by: | DJG | Revision No.: | 1 |

p:\autocad\drawings\geotechnical\pg5490-3-site geometry (rev.01).dwg



patersongroup
consulting engineers

154 Colonnade Road South
Ottawa, Ontario K2E 7J5
Tel: (613) 226-7381 Fax: (613) 226-6344

| NO. | REVISIONS | DATE | INITIAL |
|-----|--------------------------------|------------|---------|
| 1 | UPDATED TO NEW CONCEPTUAL PLAN | 23/07/2021 | YT |

ZYER DEVELOPMENTS
NOISE ATTENUATION STUDY
PROPOSED MULTI-STOREY BUILDING - 283 AND 285 MCLEOD STREET
OTTAWA, ONTARIO

Title: SITE GEOMETRY

| | | | |
|--------------|--------|---------------|-----------------|
| Scale: | 1:5000 | Date: | 10/2020 |
| Drawn by: | YA | Report No.: | PG5490-1 |
| Checked by: | SB | Dwg. No.: | PG5490-3 |
| Approved by: | DJG | Revision No.: | 1 |

APPENDIX 2

STAMSON RESULTS

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

Road data, segment # 1: GladstoneAve (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 1: GladstoneAve (day/night)

Angle1 Angle2 : -55.00 deg 0.00 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 : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -55.00 deg Angle2 : 0.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 30.00 / 30.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 2: O'ConnorSt A (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 : 50 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: O'ConnorSt A (day/night)

Angle1 Angle2 : -75.00 deg 40.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 35.00 / 35.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -75.00 deg Angle2 : 40.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 30.00 / 30.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 3: O'ConnorSt B (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 : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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 # 3: O'ConnorSt B (day/night)

Angle1 Angle2 : 40.00 deg 76.00 deg

Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 35.00 / 35.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 40.00 deg Angle2 : 76.00 deg
 Barrier height : 8.50 m
 Barrier receiver distance : 20.00 / 20.00 m
 Source elevation : 70.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 70.00 m
 Reference angle : 0.00

↑

Road data, segment # 4: Hwy417 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 # 4: Hwy417 West (day/night)

 Angle1 Angle2 : 0.00 deg 52.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 7 / 7
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 360.00 / 360.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 0.00 deg Angle2 : 52.00 deg
 Barrier height : 0.50 m
 Barrier receiver distance : 358.00 / 358.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 72.00 m
 Reference angle : 0.00

↑

Road data, segment # 5: Hwy417 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 # 5: Hwy417 East (day/night)

```

-----
Angle1 Angle2 : 0.00 deg 49.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 370.00 / 370.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 49.00 deg
Barrier height : 0.50 m
Barrier receiver distance : 368.00 / 368.00 m
Source elevation : 72.00 m
Receiver elevation : 70.00 m
Barrier elevation : 72.00 m
Reference angle : 0.00

```

↑

Results segment # 1: GladstoneAve (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 ! 1.50 ! 1.50 ! 71.50

```

ROAD (0.00 + 35.67 + 0.00) = 35.67 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -55 | 0 | 0.00 | 67.51 | 0.00 | -6.69 | -5.15 | 0.00 | 0.00 | -20.00 | 35.67 |

Segment Leq : 35.67 dBA

↑
Results segment # 2: O'ConnorSt A (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 1.50 | 1.50 | 71.50 |

ROAD (0.00 + 42.85 + 0.00) = 42.85 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -75 | 40 | 0.00 | 68.48 | 0.00 | -3.68 | -1.95 | 0.00 | 0.00 | -20.00 | 42.85 |

Segment Leq : 42.85 dBA

↑
Results segment # 3: O'ConnorSt B (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 1.50 | 1.50 | 71.50 |

ROAD (0.00 + 38.16 + 0.00) = 38.16 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| 40 | 76 | 0.15 | 68.48 | 0.00 | -4.23 | -7.44 | 0.00 | 0.00 | -18.65 | 38.16 |

Segment Leq : 38.16 dBA

↑
Results segment # 4: Hwy417 West (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 ! 1.50 ! 1.48 ! 73.48

ROAD (0.00 + 37.38 + 0.00) = 37.38 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| 0 | 52 | 0.66 | 80.15 | 0.00 | -22.91 | -5.81 | 0.00 | -14.05 | 0.00 | 37.38 |
| 0 | 52 | 0.63 | 80.15 | 0.00 | -22.50 | -5.79 | 0.00 | 0.00 | 0.00 | 51.86* |
| 0 | 52 | 0.66 | 80.15 | 0.00 | -22.91 | -5.81 | 0.00 | 0.00 | 0.00 | 51.43 |

* Bright Zone !

Segment Leq : 37.38 dBA

↑
Results segment # 5: Hwy417 East (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 ! 1.50 ! 1.48 ! 73.48

ROAD (0.00 + 36.99 + 0.00) = 36.99 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| 0 | 49 | 0.66 | 80.15 | 0.00 | -23.11 | -6.02 | 0.00 | -14.03 | 0.00 | 36.99 |
| 0 | 49 | 0.63 | 80.15 | 0.00 | -22.69 | -6.00 | 0.00 | 0.00 | 0.00 | 51.45* |
| 0 | 49 | 0.66 | 80.15 | 0.00 | -23.11 | -6.02 | 0.00 | 0.00 | 0.00 | 51.02 |

* Bright Zone !

Segment Leq : 36.99 dBA

Total Leq All Segments: 46.02 dBA

↑
Results segment # 1: GladstoneAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | ! Receiver ! Height (m) | ! Barrier ! Height (m) | ! Elevation of ! Barrier Top (m) |
|----------------------|----------------------------|---------------------------|-------------------------------------|
| 1.50 ! | 1.50 ! | 1.50 ! | 71.50 |

ROAD (0.00 + 28.07 + 0.00) = 28.07 dBA

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

-55 0 0.00 59.91 0.00 -6.69 -5.15 0.00 0.00 -20.00 28.07

Segment Leq : 28.07 dBA

↑
Results segment # 2: O'ConnorSt A (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | ! Receiver ! Height (m) | ! Barrier ! Height (m) | ! Elevation of ! Barrier Top (m) |
|----------------------|----------------------------|---------------------------|-------------------------------------|
| 1.50 ! | 1.50 ! | 1.50 ! | 71.50 |

ROAD (0.00 + 35.26 + 0.00) = 35.26 dBA

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

-75 40 0.00 60.88 0.00 -3.68 -1.95 0.00 0.00 -20.00 35.26

Segment Leq : 35.26 dBA

↑
Results segment # 3: O'ConnorSt B (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 !          1.50 !          1.50 !          71.50
```

ROAD (0.00 + 30.56 + 0.00) = 30.56 dBA

```
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
      40    76   0.15 60.88  0.00 -4.23 -7.44  0.00  0.00 -18.65 30.56
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
```

Segment Leq : 30.56 dBA

↑
Results segment # 4: Hwy417 West (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 !          1.50 !          1.48 !          73.48
```

ROAD (0.00 + 29.78 + 0.00) = 29.78 dBA

```
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
      0     52   0.66 72.55  0.00 -22.91 -5.81  0.00 -14.05  0.00 29.78
      0     52   0.63 72.55  0.00 -22.50 -5.79  0.00  0.00  0.00 44.26*
      0     52   0.66 72.55  0.00 -22.91 -5.81  0.00  0.00  0.00 43.83
-----+-----+-----+-----+-----+-----+-----+-----+-----+-----+-----
```

* Bright Zone !

Segment Leq : 29.78 dBA

↑
Results segment # 5: Hwy417 East (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 ! 1.50 ! 1.48 ! 73.48

ROAD (0.00 + 29.40 + 0.00) = 29.40 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| 0 | 49 | 0.66 | 72.55 | 0.00 | -23.11 | -6.02 | 0.00 | -14.03 | 0.00 | 29.40 |
| 0 | 49 | 0.63 | 72.55 | 0.00 | -22.69 | -6.00 | 0.00 | 0.00 | 0.00 | 43.86* |
| 0 | 49 | 0.66 | 72.55 | 0.00 | -23.11 | -6.02 | 0.00 | 0.00 | 0.00 | 43.43 |

* Bright Zone !

Segment Leq : 29.40 dBA

Total Leq All Segments: 38.42 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 46.02
 (NIGHT): 38.42

↑

↑

Filename: rec18.te Time Period: Day/Night 16/8 hours
Description: Reception Point 1-8

Road data, segment # 1: GladstoneAve (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 1: GladstoneAve (day/night)

Angle1 Angle2 : -55.00 deg 0.00 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 : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -55.00 deg Angle2 : 0.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 30.00 / 30.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 2: O'ConnorSt A (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 : 50 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: O'ConnorSt A (day/night)

Angle1 Angle2 : -75.00 deg 40.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 35.00 / 35.00 m
Receiver height : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -75.00 deg Angle2 : 40.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 30.00 / 30.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 3: O'ConnorSt B (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 : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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 # 3: O'ConnorSt B (day/night)

Angle1 Angle2 : 40.00 deg 76.00 deg

Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 35.00 / 35.00 m
 Receiver height : 23.00 / 23.00 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 40.00 deg Angle2 : 76.00 deg
 Barrier height : 8.50 m
 Barrier receiver distance : 20.00 / 20.00 m
 Source elevation : 70.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 70.00 m
 Reference angle : 0.00

↑

Road data, segment # 4: Hwy417 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 # 4: Hwy417 West (day/night)

 Angle1 Angle2 : 0.00 deg 52.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 7 / 7
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 360.00 / 360.00 m
 Receiver height : 23.00 / 23.00 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 0.00 deg Angle2 : 52.00 deg
 Barrier height : 0.50 m
 Barrier receiver distance : 358.00 / 358.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 72.00 m
 Reference angle : 0.00

↑

Road data, segment # 5: Hwy417 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 # 5: Hwy417 East (day/night)

```

-----
Angle1 Angle2 : 0.00 deg 49.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 370.00 / 370.00 m
Receiver height : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 49.00 deg
Barrier height : 0.50 m
Barrier receiver distance : 368.00 / 368.00 m
Source elevation : 72.00 m
Receiver elevation : 70.00 m
Barrier elevation : 72.00 m
Reference angle : 0.00

```

↑

Results segment # 1: GladstoneAve (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 ! 23.00 ! 13.78 ! 83.78

```

ROAD (0.00 + 35.69 + 0.00) = 35.69 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -55 | 0 | 0.00 | 67.51 | 0.00 | -6.69 | -5.15 | 0.00 | 0.00 | -19.98 | 35.69 |

Segment Leq : 35.69 dBA

↑
Results segment # 2: O'ConnorSt A (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 4.57 | 74.57 |

ROAD (0.00 + 42.85 + 0.00) = 42.85 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -75 | 40 | 0.00 | 68.48 | 0.00 | -3.68 | -1.95 | 0.00 | 0.00 | -20.00 | 42.85 |

Segment Leq : 42.85 dBA

↑
Results segment # 3: O'ConnorSt B (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 10.71 | 80.71 |

ROAD (0.00 + 57.71 + 0.00) = 57.71 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| 40 | 76 | 0.00 | 68.48 | 0.00 | -3.68 | -6.99 | 0.00 | 0.00 | -0.20 | 57.61* |
| 40 | 76 | 0.02 | 68.48 | 0.00 | -3.74 | -7.04 | 0.00 | 0.00 | 0.00 | 57.71 |

* Bright Zone !

Segment Leq : 57.71 dBA



Results segment # 4: Hwy417 West (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 1.60 | 73.60 |

ROAD (0.00 + 46.68 + 0.00) = 46.68 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| 0 | 52 | 0.02 | 80.15 | 0.00 | -14.01 | -5.40 | 0.00 | -14.05 | 0.00 | 46.68 |
| 0 | 52 | 0.00 | 80.15 | 0.00 | -13.80 | -5.39 | 0.00 | 0.00 | 0.00 | 60.95* |
| 0 | 52 | 0.02 | 80.15 | 0.00 | -14.01 | -5.40 | 0.00 | 0.00 | 0.00 | 60.73 |

* Bright Zone !

Segment Leq : 46.68 dBA



Results segment # 5: Hwy417 East (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 1.60 | 73.60 |

ROAD (0.00 + 46.33 + 0.00) = 46.33 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| 0 | 49 | 0.02 | 80.15 | 0.00 | -14.13 | -5.66 | 0.00 | -14.03 | 0.00 | 46.33 |
| 0 | 49 | 0.00 | 80.15 | 0.00 | -13.92 | -5.65 | 0.00 | 0.00 | 0.00 | 60.58* |
| 0 | 49 | 0.02 | 80.15 | 0.00 | -14.13 | -5.66 | 0.00 | 0.00 | 0.00 | 60.36 |

* Bright Zone !

Segment Leq : 46.33 dBA

Total Leq All Segments: 58.47 dBA

↑
Results segment # 1: GladstoneAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 13.78 | 83.78 |

ROAD (0.00 + 28.10 + 0.00) = 28.10 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -55 | 0 | 0.00 | 59.91 | 0.00 | -6.69 | -5.15 | 0.00 | 0.00 | -19.98 | 28.10 |

Segment Leq : 28.10 dBA

↑
Results segment # 2: O'ConnorSt A (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 4.57 | 74.57 |

ROAD (0.00 + 35.26 + 0.00) = 35.26 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -75 | 40 | 0.00 | 60.88 | 0.00 | -3.68 | -1.95 | 0.00 | 0.00 | -20.00 | 35.26 |

Segment Leq : 35.26 dBA

↑
Results segment # 3: O'ConnorSt B (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|----------------------|------------------------|-----------------------|---------------------------------|
| 1.50 | 23.00 | 10.71 | 80.71 |

ROAD (0.00 + 50.11 + 0.00) = 50.11 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| 40 | 76 | 0.00 | 60.88 | 0.00 | -3.68 | -6.99 | 0.00 | 0.00 | -0.20 | 50.01* |
| 40 | 76 | 0.02 | 60.88 | 0.00 | -3.74 | -7.04 | 0.00 | 0.00 | 0.00 | 50.11 |

* Bright Zone !

Segment Leq : 50.11 dBA

↑
Results segment # 4: Hwy417 West (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|----------------------|------------------------|-----------------------|---------------------------------|
| 1.50 | 23.00 | 1.60 | 73.60 |

ROAD (0.00 + 39.09 + 0.00) = 39.09 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| 0 | 52 | 0.02 | 72.55 | 0.00 | -14.01 | -5.40 | 0.00 | -14.05 | 0.00 | 39.09 |
| 0 | 52 | 0.00 | 72.55 | 0.00 | -13.80 | -5.39 | 0.00 | 0.00 | 0.00 | 53.36* |
| 0 | 52 | 0.02 | 72.55 | 0.00 | -14.01 | -5.40 | 0.00 | 0.00 | 0.00 | 53.14 |

* Bright Zone !

Segment Leq : 39.09 dBA

↑
Results segment # 5: Hwy417 East (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | ! Receiver Height (m) | ! Barrier Height (m) | ! Elevation of Barrier Top (m) |
|----------------------|--------------------------|-------------------------|-----------------------------------|
| 1.50 ! | 23.00 ! | 1.60 ! | 73.60 |

ROAD (0.00 + 38.73 + 0.00) = 38.73 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| 0 | 49 | 0.02 | 72.55 | 0.00 | -14.13 | -5.66 | 0.00 | -14.03 | 0.00 | 38.73 |
| 0 | 49 | 0.00 | 72.55 | 0.00 | -13.92 | -5.65 | 0.00 | 0.00 | 0.00 | 52.98* |
| 0 | 49 | 0.02 | 72.55 | 0.00 | -14.13 | -5.66 | 0.00 | 0.00 | 0.00 | 52.76 |

* Bright Zone !

Segment Leq : 38.73 dBA

Total Leq All Segments: 50.87 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 58.47
(NIGHT): 50.87

↑

↑

Filename: rec21.te Time Period: Day/Night 16/8 hours
Description: Reception Point 2-1

Road data, segment # 1: Gladstone A (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 1: Gladstone A (day/night)

Angle1 Angle2 : -67.00 deg 47.00 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 : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -67.00 deg Angle2 : 47.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 30.00 / 30.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 2: Gladstone B (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 2: Gladstone B (day/night)

Angle1 Angle2 : 47.00 deg 68.00 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 : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 47.00 deg Angle2 : 68.00 deg
Barrier height : 9.00 m
Barrier receiver distance : 45.00 / 45.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 3: O'Connor St (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 : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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 # 3: O'Connor St (day/night)

Angle1 Angle2 : 0.00 deg 66.00 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           :      2      (Flat/gentle slope; with barrier)
Barrier angle1      :      0.00 deg  Angle2 : 66.00 deg
Barrier height       :      24.00 m
Barrier receiver distance : 45.00 / 45.00 m
Source elevation     :      70.00 m
Receiver elevation   :      70.00 m
Barrier elevation    :      70.00 m
Reference angle      :      0.00

```

↑
Results segment # 1: Gladstone A (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 !      1.50 !      1.50 !          71.50

```

ROAD (0.00 + 39.51 + 0.00) = 39.51 dBA

```

Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
  -67   47   0.00  67.51   0.00  -6.02  -1.98   0.00   0.00 -20.00  39.51
-----

```

Segment Leq : 39.51 dBA

↑
Results segment # 2: Gladstone B (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 !      1.50 !      1.50 !          71.50

```

ROAD (0.00 + 32.53 + 0.00) = 32.53 dBA

```

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

```

 47 68 0.12 67.51 0.00 -6.74 -9.66 0.00 0.00 -18.57 32.53

Segment Leq : 32.53 dBA

↑
 Results segment # 3: O'Connor St (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 ! 1.50 ! 1.50 ! 71.50

ROAD (0.00 + 38.10 + 0.00) = 38.10 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 0 66 0.00 68.48 0.00 -6.02 -4.36 0.00 0.00 -20.00 38.10

Segment Leq : 38.10 dBA

Total Leq All Segments: 42.35 dBA

↑
 Results segment # 1: Gladstone A (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 ! 1.50 ! 1.50 ! 71.50

ROAD (0.00 + 31.91 + 0.00) = 31.91 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

 -67 47 0.00 59.91 0.00 -6.02 -1.98 0.00 0.00 -20.00 31.91

Segment Leq : 31.91 dBA



Filename: rec28.te Time Period: Day/Night 16/8 hours
Description: Reception Point 2-8

Road data, segment # 1: Gladstone A (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 1: Gladstone A (day/night)

Angle1 Angle2 : -65.00 deg 47.00 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 : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -65.00 deg Angle2 : 47.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 33.00 / 33.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑
Road data, segment # 2: Gladstone B (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 2: Gladstone B (day/night)

Angle1 Angle2 : 47.00 deg 67.00 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 : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 47.00 deg Angle2 : 67.00 deg
Barrier height : 9.00 m
Barrier receiver distance : 47.00 / 47.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 3: O'Connor St (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 : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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 # 3: O'Connor St (day/night)

Angle1 Angle2 : 0.00 deg 66.00 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     : 23.00 / 23.00 m
Topography          :      2      (Flat/gentle slope; with barrier)
Barrier angle1      :  0.00 deg   Angle2 : 66.00 deg
Barrier height      : 24.00 m
Barrier receiver distance : 48.00 / 48.00 m
Source elevation    : 70.00 m
Receiver elevation  : 70.00 m
Barrier elevation   : 70.00 m
Reference angle     :  0.00

```

↑
Results segment # 1: Gladstone A (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 !      23.00 !      11.17 !      81.17

```

```

ROAD (0.00 + 39.43 + 0.00) = 39.43 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----
  -65    47   0.00  67.51  0.00 -6.02 -2.06  0.00  0.00 -20.00  39.43
-----

```

Segment Leq : 39.43 dBA

↑
Results segment # 2: Gladstone B (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 !      23.00 !      6.15 !      76.15

```

```

ROAD (0.00 + 41.56 + 0.00) = 41.56 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----

```

47 67 0.00 67.51 0.00 -6.02 -9.54 0.00 0.00 -10.38 41.56

Segment Leq : 41.56 dBA

↑
Results segment # 3: O'Connor St (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | ! Receiver ! Height (m) | ! Barrier ! Height (m) | ! Elevation of ! Barrier Top (m) | | | |
|----------------------|----------------------------|---------------------------|-------------------------------------|------|---|-------|
| 1.50 | ! | 23.00 | ! | 5.80 | ! | 75.80 |

ROAD (0.00 + 38.10 + 0.00) = 38.10 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

0 66 0.00 68.48 0.00 -6.02 -4.36 0.00 0.00 -20.00 38.10

Segment Leq : 38.10 dBA

Total Leq All Segments: 44.71 dBA

↑
Results segment # 1: Gladstone A (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | ! Receiver ! Height (m) | ! Barrier ! Height (m) | ! Elevation of ! Barrier Top (m) | | | |
|----------------------|----------------------------|---------------------------|-------------------------------------|-------|---|-------|
| 1.50 | ! | 23.00 | ! | 11.17 | ! | 81.17 |

ROAD (0.00 + 31.83 + 0.00) = 31.83 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

-65 47 0.00 59.91 0.00 -6.02 -2.06 0.00 0.00 -20.00 31.83

Segment Leq : 31.83 dBA



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

Road data, segment # 1: Gladstone A (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 1: Gladstone A (day/night)

Angle1 Angle2 : 0.00 deg 47.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 47.00 deg
Barrier height : 9.00 m
Barrier receiver distance : 43.00 / 43.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 2: Gladstone B (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 2: Gladstone B (day/night)

Angle1 Angle2 : 47.00 deg 63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Road data, segment # 3: Hwy417 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: Hwy417 West (day/night)

Angle1 Angle2 : -50.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 350.00 / 350.00 m

Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -50.00 deg Angle2 : 0.00 deg
Barrier height : 0.50 m
Barrier receiver distance : 348.00 / 348.00 m
Source elevation : 72.00 m
Receiver elevation : 70.00 m
Barrier elevation : 72.00 m
Reference angle : 0.00

↑

Road data, segment # 4: Hwy417 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 # 4: Hwy417 East (day/night)

Angle1 Angle2 : -47.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 355.00 / 355.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -47.00 deg Angle2 : 0.00 deg
Barrier height : 0.50 m
Barrier receiver distance : 353.00 / 353.00 m
Source elevation : 72.00 m
Receiver elevation : 70.00 m
Barrier elevation : 72.00 m
Reference angle : 0.00

↑

Results segment # 1: Gladstone A (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 1.50 | 1.50 | 71.50 |

ROAD (0.00 + 34.81 + 0.00) = 34.81 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| 0 | 47 | 0.12 | 67.51 | 0.00 | -7.49 | -5.89 | 0.00 | 0.00 | -19.31 | 34.81 |

Segment Leq : 34.81 dBA

↑
Results segment # 2: Gladstone B (day)

Source height = 1.50 m

ROAD (0.00 + 43.38 + 0.00) = 43.38 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|--------|-------|-------|-------|--------|
| 47 | 63 | 0.66 | 67.51 | 0.00 | -11.11 | -12.12 | 0.00 | -0.90 | 0.00 | 43.38 |

Segment Leq : 43.38 dBA

↑
Results segment # 3: Hwy417 West (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 1.50 | 1.48 | 73.48 |

ROAD (0.00 + 37.42 + 0.00) = 37.42 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -50 | 0 | 0.66 | 80.15 | 0.00 | -22.71 | -5.94 | 0.00 | -14.07 | 0.00 | 37.42 |
| -50 | 0 | 0.63 | 80.15 | 0.00 | -22.30 | -5.93 | 0.00 | 0.00 | 0.00 | 51.92* |

-50 0 0.66 80.15 0.00 -22.71 -5.94 0.00 0.00 0.00 51.49

* Bright Zone !

Segment Leq : 37.42 dBA

↑

Results segment # 4: Hwy417 East (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 1.50 ! | 1.48 ! | 73.48 |

ROAD (0.00 + 37.11 + 0.00) = 37.11 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -47 | 0 | 0.66 | 80.15 | 0.00 | -22.81 | -6.17 | 0.00 | -14.06 | 0.00 | 37.11 |
| -47 | 0 | 0.63 | 80.15 | 0.00 | -22.40 | -6.15 | 0.00 | 0.00 | 0.00 | 51.60* |
| -47 | 0 | 0.66 | 80.15 | 0.00 | -22.81 | -6.17 | 0.00 | 0.00 | 0.00 | 51.17 |

* Bright Zone !

Segment Leq : 37.11 dBA

Total Leq All Segments: 45.50 dBA

↑

Results segment # 1: Gladstone A (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 1.50 ! | 1.50 ! | 71.50 |

ROAD (0.00 + 27.21 + 0.00) = 27.21 dBA

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

0 47 0.12 59.91 0.00 -7.49 -5.89 0.00 0.00 -19.31 27.21

Segment Leq : 27.21 dBA

↑
Results segment # 2: Gladstone B (night)

Source height = 1.50 m

ROAD (0.00 + 35.79 + 0.00) = 35.79 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|--------|-------|-------|-------|--------|
| 47 | 63 | 0.66 | 59.91 | 0.00 | -11.11 | -12.12 | 0.00 | -0.90 | 0.00 | 35.79 |

Segment Leq : 35.79 dBA

↑
Results segment # 3: Hwy417 West (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 1.50 ! | 1.48 ! | 73.48 |

ROAD (0.00 + 29.83 + 0.00) = 29.83 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -50 | 0 | 0.66 | 72.55 | 0.00 | -22.71 | -5.94 | 0.00 | -14.07 | 0.00 | 29.83 |
| -50 | 0 | 0.63 | 72.55 | 0.00 | -22.30 | -5.93 | 0.00 | 0.00 | 0.00 | 44.32* |
| -50 | 0 | 0.66 | 72.55 | 0.00 | -22.71 | -5.94 | 0.00 | 0.00 | 0.00 | 43.90 |

* Bright Zone !

Segment Leq : 29.83 dBA

↑
Results segment # 4: Hwy417 East (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 1.50 | 1.48 | 73.48 |

ROAD (0.00 + 29.51 + 0.00) = 29.51 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -47 | 0 | 0.66 | 72.55 | 0.00 | -22.81 | -6.17 | 0.00 | -14.06 | 0.00 | 29.51 |
| -47 | 0 | 0.63 | 72.55 | 0.00 | -22.40 | -6.15 | 0.00 | 0.00 | 0.00 | 44.00* |
| -47 | 0 | 0.66 | 72.55 | 0.00 | -22.81 | -6.17 | 0.00 | 0.00 | 0.00 | 43.57 |

* Bright Zone !

Segment Leq : 29.51 dBA

Total Leq All Segments: 37.91 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 45.50
(NIGHT): 37.91

↑

↑

Filename: rec38.te Time Period: Day/Night 16/8 hours
Description: Reception Point 3-8

Road data, segment # 1: Gladstone A (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 1: Gladstone A (day/night)

Angle1 Angle2 : 0.00 deg 47.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 47.00 deg
Barrier height : 9.00 m
Barrier receiver distance : 43.00 / 43.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 2: Gladstone B (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 2: Gladstone B (day/night)

Angle1 Angle2 : 47.00 deg 63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 47.00 deg Angle2 : 63.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 43.00 / 43.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 3: Hwy417 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: Hwy417 West (day/night)

Angle1 Angle2 : -50.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 7 / 7
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 350.00 / 350.00 m
 Receiver height : 23.00 / 23.00 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -50.00 deg Angle2 : 0.00 deg
 Barrier height : 0.50 m
 Barrier receiver distance : 348.00 / 348.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 72.00 m
 Reference angle : 0.00

↑

Road data, segment # 4: Hwy417 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 # 4: Hwy417 East (day/night)

 Angle1 Angle2 : -47.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 7 / 7
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 355.00 / 355.00 m
 Receiver height : 23.00 / 23.00 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -47.00 deg Angle2 : 0.00 deg
 Barrier height : 0.50 m
 Barrier receiver distance : 353.00 / 353.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m

Barrier elevation : 72.00 m
 Reference angle : 0.00

↑
 Results segment # 1: Gladstone A (day)

 Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 9.79 | 79.79 |

ROAD (0.00 + 54.88 + 0.00) = 54.88 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| 0 | 47 | 0.00 | 67.51 | 0.00 | -6.69 | -5.83 | 0.00 | 0.00 | -4.17 | 50.82* |
| 0 | 47 | 0.02 | 67.51 | 0.00 | -6.79 | -5.84 | 0.00 | 0.00 | 0.00 | 54.88 |

* Bright Zone !

Segment Leq : 54.88 dBA

↑
 Results segment # 2: Gladstone B (day)

 Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 9.79 | 79.79 |

ROAD (0.00 + 49.27 + 0.00) = 49.27 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|--------|-------|-------|-------|--------|
| 47 | 63 | 0.02 | 67.51 | 0.00 | -6.79 | -10.55 | 0.00 | -0.90 | 0.00 | 49.27 |
| 47 | 63 | 0.02 | 67.51 | 0.00 | -6.79 | -10.55 | 0.00 | 0.00 | 0.00 | 50.17* |
| 47 | 63 | 0.02 | 67.51 | 0.00 | -6.79 | -10.55 | 0.00 | 0.00 | 0.00 | 50.17 |

* Bright Zone !

Segment Leq : 49.27 dBA

↑

Results segment # 3: Hwy417 West (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 1.61 | 73.61 |

ROAD (0.00 + 46.62 + 0.00) = 46.62 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -50 | 0 | 0.02 | 80.15 | 0.00 | -13.89 | -5.57 | 0.00 | -14.07 | 0.00 | 46.62 |
| -50 | 0 | 0.00 | 80.15 | 0.00 | -13.68 | -5.56 | 0.00 | 0.00 | 0.00 | 60.90* |
| -50 | 0 | 0.02 | 80.15 | 0.00 | -13.89 | -5.57 | 0.00 | 0.00 | 0.00 | 60.69 |

* Bright Zone !

Segment Leq : 46.62 dBA

↑

Results segment # 4: Hwy417 East (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 1.61 | 73.61 |

ROAD (0.00 + 46.30 + 0.00) = 46.30 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -47 | 0 | 0.02 | 80.15 | 0.00 | -13.95 | -5.84 | 0.00 | -14.06 | 0.00 | 46.30 |
| -47 | 0 | 0.00 | 80.15 | 0.00 | -13.74 | -5.83 | 0.00 | 0.00 | 0.00 | 60.57* |
| -47 | 0 | 0.02 | 80.15 | 0.00 | -13.95 | -5.84 | 0.00 | 0.00 | 0.00 | 60.36 |

* Bright Zone !

Segment Leq : 46.30 dBA

Total Leq All Segments: 56.82 dBA



Results segment # 1: Gladstone A (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 9.79 | 79.79 |

ROAD (0.00 + 47.28 + 0.00) = 47.28 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| 0 | 47 | 0.00 | 59.91 | 0.00 | -6.69 | -5.83 | 0.00 | 0.00 | -4.17 | 43.22* |
| 0 | 47 | 0.02 | 59.91 | 0.00 | -6.79 | -5.84 | 0.00 | 0.00 | 0.00 | 47.28 |

* Bright Zone !

Segment Leq : 47.28 dBA



Results segment # 2: Gladstone B (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 9.79 | 79.79 |

ROAD (0.00 + 41.67 + 0.00) = 41.67 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|--------|-------|-------|-------|--------|
| 47 | 63 | 0.02 | 59.91 | 0.00 | -6.79 | -10.55 | 0.00 | -0.90 | 0.00 | 41.67 |
| 47 | 63 | 0.02 | 59.91 | 0.00 | -6.79 | -10.55 | 0.00 | 0.00 | 0.00 | 42.57* |
| 47 | 63 | 0.02 | 59.91 | 0.00 | -6.79 | -10.55 | 0.00 | 0.00 | 0.00 | 42.57 |

* Bright Zone !

Segment Leq : 41.67 dBA

↑

Results segment # 3: Hwy417 West (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 1.61 | 73.61 |

ROAD (0.00 + 39.02 + 0.00) = 39.02 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -50 | 0 | 0.02 | 72.55 | 0.00 | -13.89 | -5.57 | 0.00 | -14.07 | 0.00 | 39.02 |
| -50 | 0 | 0.00 | 72.55 | 0.00 | -13.68 | -5.56 | 0.00 | 0.00 | 0.00 | 53.31* |
| -50 | 0 | 0.02 | 72.55 | 0.00 | -13.89 | -5.57 | 0.00 | 0.00 | 0.00 | 53.09 |

* Bright Zone !

Segment Leq : 39.02 dBA

↑

Results segment # 4: Hwy417 East (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 1.61 | 73.61 |

ROAD (0.00 + 38.70 + 0.00) = 38.70 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -47 | 0 | 0.02 | 72.55 | 0.00 | -13.95 | -5.84 | 0.00 | -14.06 | 0.00 | 38.70 |
| -47 | 0 | 0.00 | 72.55 | 0.00 | -13.74 | -5.83 | 0.00 | 0.00 | 0.00 | 52.98* |
| -47 | 0 | 0.02 | 72.55 | 0.00 | -13.95 | -5.84 | 0.00 | 0.00 | 0.00 | 52.76 |

* Bright Zone !

Segment Leq : 38.70 dBA

Total Leq All Segments: 49.22 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 56.82
(NIGHT): 49.22

↑

↑

Filename: rec41.te Time Period: Day/Night 16/8 hours
Description: Reception Point 4-1

Road data, segment # 1: O'Connor St (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 : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: O'Connor St (day/night)

Angle1 Angle2 : -66.00 deg 0.00 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: Hwy417 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: Hwy417 West (day/night)

Angle1 Angle2 : -52.00 deg 53.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 345.00 / 345.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -52.00 deg Angle2 : 53.00 deg
Barrier height : 0.50 m
Barrier receiver distance : 343.00 / 343.00 m
Source elevation : 72.00 m
Receiver elevation : 70.00 m
Barrier elevation : 72.00 m
Reference angle : 0.00

↑

Road data, segment # 3: Hwy417 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 # 3: Hwy417 East (day/night)

Angle1 Angle2 : -49.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 350.00 / 350.00 m

Receiver height : 1.50 / 1.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -49.00 deg Angle2 : 50.00 deg
 Barrier height : 0.50 m
 Barrier receiver distance : 348.00 / 348.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 72.00 m
 Reference angle : 0.00

↑

Results segment # 1: O'Connor St (day)

Source height = 1.50 m

ROAD (0.00 + 54.75 + 0.00) = 54.75 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -66 | 0 | 0.66 | 68.48 | 0.00 | -8.68 | -5.05 | 0.00 | 0.00 | 0.00 | 54.75 |

Segment Leq : 54.75 dBA

↑

Results segment # 2: Hwy417 West (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 1.50 ! | 1.48 ! | 73.48 |

ROAD (0.00 + 40.70 + 0.00) = 40.70 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -52 | 53 | 0.66 | 80.15 | 0.00 | -22.60 | -2.76 | 0.00 | -14.08 | 0.00 | 40.70 |
| -52 | 53 | 0.63 | 80.15 | 0.00 | -22.20 | -2.75 | 0.00 | 0.00 | 0.00 | 55.20* |
| -52 | 53 | 0.66 | 80.15 | 0.00 | -22.60 | -2.76 | 0.00 | 0.00 | 0.00 | 54.78 |

* Bright Zone !

Segment Leq : 40.70 dBA

↑

Results segment # 3: Hwy417 East (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 1.50 | 1.48 | 73.48 |

ROAD (0.00 + 40.40 + 0.00) = 40.40 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -49 | 50 | 0.66 | 80.15 | 0.00 | -22.71 | -2.97 | 0.00 | -14.07 | 0.00 | 40.40 |
| -49 | 50 | 0.63 | 80.15 | 0.00 | -22.30 | -2.95 | 0.00 | 0.00 | 0.00 | 54.89* |
| -49 | 50 | 0.66 | 80.15 | 0.00 | -22.71 | -2.97 | 0.00 | 0.00 | 0.00 | 54.47 |

* Bright Zone !

Segment Leq : 40.40 dBA

Total Leq All Segments: 55.07 dBA

↑

Results segment # 1: O'Connor St (night)

Source height = 1.50 m

ROAD (0.00 + 47.15 + 0.00) = 47.15 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -66 | 0 | 0.66 | 60.88 | 0.00 | -8.68 | -5.05 | 0.00 | 0.00 | 0.00 | 47.15 |

Segment Leq : 47.15 dBA

↑

Results segment # 2: Hwy417 West (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
|-------------------|---------------------|--------------------|------------------------------|

-----+-----+-----+-----
 1.50 ! 1.50 ! 1.48 ! 73.48

ROAD (0.00 + 33.10 + 0.00) = 33.10 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -52 | 53 | 0.66 | 72.55 | 0.00 | -22.60 | -2.76 | 0.00 | -14.08 | 0.00 | 33.10 |
| -52 | 53 | 0.63 | 72.55 | 0.00 | -22.20 | -2.75 | 0.00 | 0.00 | 0.00 | 47.61* |
| -52 | 53 | 0.66 | 72.55 | 0.00 | -22.60 | -2.76 | 0.00 | 0.00 | 0.00 | 47.18 |

* Bright Zone !

Segment Leq : 33.10 dBA

↑

Results segment # 3: Hwy417 East (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 1.50 ! | 1.48 ! | 73.48 |

ROAD (0.00 + 32.80 + 0.00) = 32.80 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -49 | 50 | 0.66 | 72.55 | 0.00 | -22.71 | -2.97 | 0.00 | -14.07 | 0.00 | 32.80 |
| -49 | 50 | 0.63 | 72.55 | 0.00 | -22.30 | -2.95 | 0.00 | 0.00 | 0.00 | 47.30* |
| -49 | 50 | 0.66 | 72.55 | 0.00 | -22.71 | -2.97 | 0.00 | 0.00 | 0.00 | 46.87 |

* Bright Zone !

Segment Leq : 32.80 dBA

Total Leq All Segments: 47.47 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 55.07
 (NIGHT): 47.47

↑

↑

Filename: rec48.te Time Period: Day/Night 16/8 hours
Description: Reception Point 4-8

Road data, segment # 1: O'Connor St (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 : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: O'Connor St (day/night)

Angle1 Angle2 : -66.00 deg 0.00 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 : 23.00 / 23.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Road data, segment # 2: Hwy417 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: Hwy417 West (day/night)

Angle1 Angle2 : -52.00 deg 53.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 345.00 / 345.00 m
Receiver height : 23.00 / 23.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -52.00 deg Angle2 : 53.00 deg
Barrier height : 0.50 m
Barrier receiver distance : 343.00 / 343.00 m
Source elevation : 72.00 m
Receiver elevation : 70.00 m
Barrier elevation : 72.00 m
Reference angle : 0.00

↑

Road data, segment # 3: Hwy417 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 # 3: Hwy417 East (day/night)

Angle1 Angle2 : -49.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 7 / 7
House density : 80 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 350.00 / 350.00 m

Receiver height : 23.00 / 23.00 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -49.00 deg Angle2 : 50.00 deg
 Barrier height : 0.50 m
 Barrier receiver distance : 348.00 / 348.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 72.00 m
 Reference angle : 0.00

↑

Results segment # 1: O'Connor St (day)

Source height = 1.50 m

ROAD (0.00 + 58.80 + 0.00) = 58.80 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -66 | 0 | 0.02 | 68.48 | 0.00 | -5.31 | -4.37 | 0.00 | 0.00 | 0.00 | 58.80 |

Segment Leq : 58.80 dBA

↑

Results segment # 2: Hwy417 West (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 23.00 ! | 1.61 ! | 73.61 |

ROAD (0.00 + 49.89 + 0.00) = 49.89 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -52 | 53 | 0.02 | 80.15 | 0.00 | -13.82 | -2.35 | 0.00 | -14.08 | 0.00 | 49.89 |
| -52 | 53 | 0.00 | 80.15 | 0.00 | -13.62 | -2.34 | 0.00 | 0.00 | 0.00 | 64.19* |
| -52 | 53 | 0.02 | 80.15 | 0.00 | -13.82 | -2.35 | 0.00 | 0.00 | 0.00 | 63.97 |

* Bright Zone !

Segment Leq : 49.89 dBA

↑

Results segment # 3: Hwy417 East (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 23.00 | 1.61 | 73.61 |

ROAD (0.00 + 49.58 + 0.00) = 49.58 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -49 | 50 | 0.02 | 80.15 | 0.00 | -13.89 | -2.61 | 0.00 | -14.07 | 0.00 | 49.58 |
| -49 | 50 | 0.00 | 80.15 | 0.00 | -13.68 | -2.60 | 0.00 | 0.00 | 0.00 | 63.87* |
| -49 | 50 | 0.02 | 80.15 | 0.00 | -13.89 | -2.61 | 0.00 | 0.00 | 0.00 | 63.66 |

* Bright Zone !

Segment Leq : 49.58 dBA

Total Leq All Segments: 59.76 dBA

↑

Results segment # 1: O'Connor St (night)

Source height = 1.50 m

ROAD (0.00 + 51.20 + 0.00) = 51.20 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|-------|--------|
| -66 | 0 | 0.02 | 60.88 | 0.00 | -5.31 | -4.37 | 0.00 | 0.00 | 0.00 | 51.20 |

Segment Leq : 51.20 dBA

↑

Results segment # 2: Hwy417 West (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
|-------------------|---------------------|--------------------|------------------------------|

-----+-----+-----+-----
 1.50 ! 23.00 ! 1.61 ! 73.61

ROAD (0.00 + 42.30 + 0.00) = 42.30 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -52 | 53 | 0.02 | 72.55 | 0.00 | -13.82 | -2.35 | 0.00 | -14.08 | 0.00 | 42.30 |
| -52 | 53 | 0.00 | 72.55 | 0.00 | -13.62 | -2.34 | 0.00 | 0.00 | 0.00 | 56.59* |
| -52 | 53 | 0.02 | 72.55 | 0.00 | -13.82 | -2.35 | 0.00 | 0.00 | 0.00 | 56.38 |

* Bright Zone !

Segment Leq : 42.30 dBA

↑

Results segment # 3: Hwy417 East (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 23.00 ! | 1.61 ! | 73.61 |

ROAD (0.00 + 41.99 + 0.00) = 41.99 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -49 | 50 | 0.02 | 72.55 | 0.00 | -13.89 | -2.61 | 0.00 | -14.07 | 0.00 | 41.99 |
| -49 | 50 | 0.00 | 72.55 | 0.00 | -13.68 | -2.60 | 0.00 | 0.00 | 0.00 | 56.27* |
| -49 | 50 | 0.02 | 72.55 | 0.00 | -13.89 | -2.61 | 0.00 | 0.00 | 0.00 | 56.06 |

* Bright Zone !

Segment Leq : 41.99 dBA

Total Leq All Segments: 52.16 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 59.76
 (NIGHT): 52.16

↑

↑

Filename: rec5.te Time Period: Day/Night 16/8 hours
Description: Reception Point 5

Road data, segment # 1: GladstoneAve (day/night)

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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

Data for Segment # 1: GladstoneAve (day/night)

Angle1 Angle2 : -62.00 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 : 26.50 / 26.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -62.00 deg Angle2 : 65.00 deg
Barrier height : 25.00 m
Barrier receiver distance : 17.00 / 17.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 2: O'Connor St (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 : 50 km/h
Road gradient : 0 %

Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 15000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: O'Connor St (day/night)

Angle1 Angle2 : -67.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 55.00 / 55.00 m
Receiver height : 26.50 / 26.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -67.00 deg Angle2 : 69.00 deg
Barrier height : 25.00 m
Barrier receiver distance : 14.00 / 14.00 m
Source elevation : 70.00 m
Receiver elevation : 70.00 m
Barrier elevation : 70.00 m
Reference angle : 0.00

↑

Road data, segment # 3: Hwy417 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: Hwy417 West (day/night)

Angle1 Angle2 : -51.00 deg 53.00 deg

Wood depth : 0 (No woods.)
 No of house rows : 7 / 7
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 355.00 / 355.00 m
 Receiver height : 26.50 / 26.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -51.00 deg Angle2 : 53.00 deg
 Barrier height : 25.00 m
 Barrier receiver distance : 14.00 / 14.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 70.00 m
 Reference angle : 0.00

↑

Road data, segment # 4: Hwy417 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 # 4: Hwy417 East (day/night)

 Angle1 Angle2 : -49.00 deg 50.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 7 / 7
 House density : 80 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 360.00 / 360.00 m
 Receiver height : 26.50 / 26.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -49.00 deg Angle2 : 50.00 deg
 Barrier height : 25.00 m
 Barrier receiver distance : 14.00 / 14.00 m
 Source elevation : 72.00 m
 Receiver elevation : 70.00 m
 Barrier elevation : 70.00 m

Reference angle : 0.00

↑

Results segment # 1: GladstoneAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 26.50 | 19.96 | 89.96 |

ROAD (0.00 + 43.75 + 0.00) = 43.75 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -62 | 65 | 0.00 | 67.51 | 0.00 | -6.37 | -1.51 | 0.00 | 0.00 | -15.88 | 43.75 |

Segment Leq : 43.75 dBA

↑

Results segment # 2: O'Connor St (day)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 26.50 | 20.14 | 90.14 |

ROAD (0.00 + 45.72 + 0.00) = 45.72 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -67 | 69 | 0.00 | 68.48 | 0.00 | -5.64 | -1.22 | 0.00 | 0.00 | -15.90 | 45.72 |

Segment Leq : 45.72 dBA

↑

Results segment # 3: Hwy417 West (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 ! 26.50 ! 25.59 ! 95.59

ROAD (0.00 + 49.96 + 0.00) = 49.96 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -51 | 53 | 0.00 | 80.15 | 0.00 | -13.74 | -2.38 | 0.00 | -14.06 | 0.00 | 49.96 |
| -51 | 53 | 0.00 | 80.15 | 0.00 | -13.74 | -2.38 | 0.00 | 0.00 | -4.37 | 59.65* |
| -51 | 53 | 0.00 | 80.15 | 0.00 | -13.74 | -2.38 | 0.00 | 0.00 | 0.00 | 64.02 |

* Bright Zone !

Segment Leq : 49.96 dBA

↑
Results segment # 4: Hwy417 East (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 ! 26.50 ! 25.61 ! 95.61

ROAD (0.00 + 49.70 + 0.00) = 49.70 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -49 | 50 | 0.00 | 80.15 | 0.00 | -13.80 | -2.60 | 0.00 | -14.05 | 0.00 | 49.70 |
| -49 | 50 | 0.00 | 80.15 | 0.00 | -13.80 | -2.60 | 0.00 | 0.00 | -4.34 | 59.41* |
| -49 | 50 | 0.00 | 80.15 | 0.00 | -13.80 | -2.60 | 0.00 | 0.00 | 0.00 | 63.75 |

* Bright Zone !

Segment Leq : 49.70 dBA

Total Leq All Segments: 54.04 dBA

↑
Results segment # 1: GladstoneAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 26.50 | 19.96 | 89.96 |

ROAD (0.00 + 36.15 + 0.00) = 36.15 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -62 | 65 | 0.00 | 59.91 | 0.00 | -6.37 | -1.51 | 0.00 | 0.00 | -15.88 | 36.15 |

Segment Leq : 36.15 dBA

↑
Results segment # 2: O'Connor St (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 26.50 | 20.14 | 90.14 |

ROAD (0.00 + 38.12 + 0.00) = 38.12 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|-------|-------|-------|-------|--------|--------|
| -67 | 69 | 0.00 | 60.88 | 0.00 | -5.64 | -1.22 | 0.00 | 0.00 | -15.90 | 38.12 |

Segment Leq : 38.12 dBA

↑
Results segment # 3: Hwy417 West (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 | 26.50 | 25.59 | 95.59 |

ROAD (0.00 + 42.37 + 0.00) = 42.37 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -51 | 53 | 0.00 | 72.55 | 0.00 | -13.74 | -2.38 | 0.00 | -14.06 | 0.00 | 42.37 |
| -51 | 53 | 0.00 | 72.55 | 0.00 | -13.74 | -2.38 | 0.00 | 0.00 | -4.37 | 52.05* |
| -51 | 53 | 0.00 | 72.55 | 0.00 | -13.74 | -2.38 | 0.00 | 0.00 | 0.00 | 56.43 |

* Bright Zone !

Segment Leq : 42.37 dBA

↑

Results segment # 4: Hwy417 East (night)

Source height = 1.50 m

Barrier height for grazing incidence

| Source Height (m) | Receiver Height (m) | Barrier Height (m) | Elevation of Barrier Top (m) |
|-------------------|---------------------|--------------------|------------------------------|
| 1.50 ! | 26.50 ! | 25.61 ! | 95.61 |

ROAD (0.00 + 42.10 + 0.00) = 42.10 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|--------|-------|--------|
| -49 | 50 | 0.00 | 72.55 | 0.00 | -13.80 | -2.60 | 0.00 | -14.05 | 0.00 | 42.10 |
| -49 | 50 | 0.00 | 72.55 | 0.00 | -13.80 | -2.60 | 0.00 | 0.00 | -4.34 | 51.82* |
| -49 | 50 | 0.00 | 72.55 | 0.00 | -13.80 | -2.60 | 0.00 | 0.00 | 0.00 | 56.15 |

* Bright Zone !

Segment Leq : 42.10 dBA

Total Leq All Segments: 46.44 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 54.04
(NIGHT): 46.44

↑

↑