



D. G. Biddle & Associates Limited

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NOISE IMPACT STUDY

FOR

PROPOSED LAND SEVERANCE

4973 OLD BROCK ROAD, CLAREMONT,

CITY OF PICKERING

REGIONAL MUNICIPALITY OF DURHAM

OUR FILE: 121041

DATE: AUGUST 2021

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August 31, 2021

1023343 Ontario Inc.
26 McCaw Court
Port Perry ON, L9L 0B3

Attention: Ms. Doreen Kemp

**Re: Noise Impact Study
Proposed Land Severance Application
4973 Old Brock Road, Claremont
City of Pickering, Region of Durham
Our File: 121041**

Dear Ms. Kemp:

In support of the Land Severance Application, we herewith provide the following Environment Noise Impact Study.


This report has been prepared to determine the noise generated by vehicular traffic from Central Street (Regional Road 5) and its effect on the above noted property. Where required, noise abatement measures have been used to reduce sound levels to Ministry of the Environment, Conservation and Parks (MECP) minimum design criteria.

Should you have any questions on the foregoing, please do not hesitate to contact our office.

Yours truly,

D.G. BIDDLE & ASSOCIATES LIMITED

Bryn Cummings, B.A.Sc.
Engineer in Training


Peter Cane, P.Eng.
Municipal Project Engineer, Associate



PDC/BC/bc
Encl.

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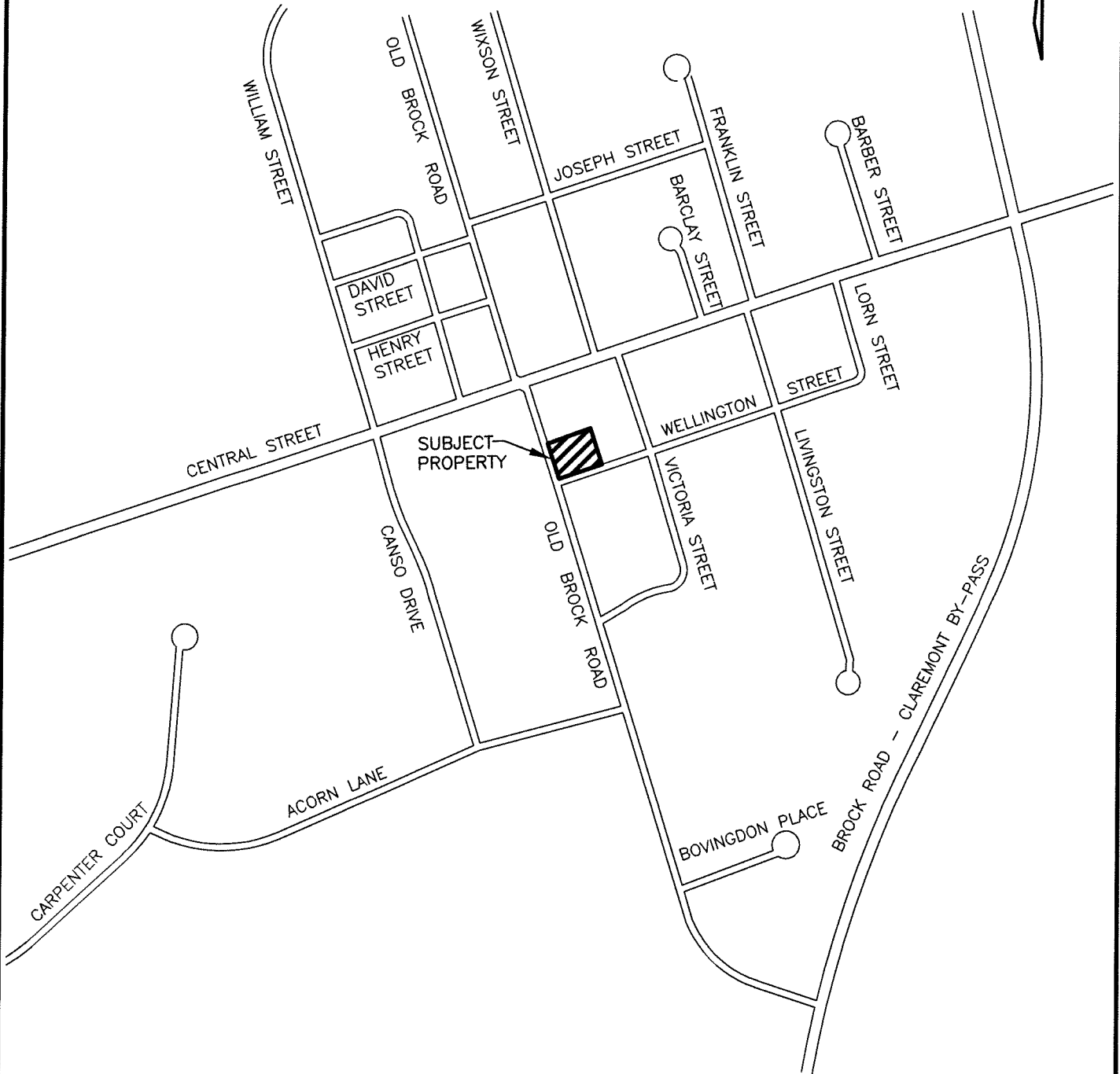
1.0 INTRODUCTION

In support of the Land Severance Application, this Noise Impact Study has been prepared to assess the impact of vehicular traffic from Central Street (Regional Road 5) on the proposed development. The report has been undertaken to ensure that appropriate abatement measures will be implemented to reduce noise levels to Ministry of the Environment, Conservation and Parks minimum design criteria.

The subject plan is located at 4973 Old Brock Road, Claremont (Part Lot 18, Concession 8), in the City of Pickering, Regional Municipality of Durham. The proposed development is bounded on the east and north by existing residential lands. The site is bound to the south by Wellington Street, and to the west by Old Brock Road. A Site Location Plan illustrating the location of the conceptual plan of subdivision is attached as Figure 1.

The development will encompass an area of approximately 0.14 ha. The proposed development will consist of a single residential dwelling.

TOWN OF CLAREMONT



4973 OLD BROCK ROAD, CLAREMONT

SITE LOCATION PLAN



D.G. Biddle & Associates Limited

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SCALE N.T.S.
 DRAWN B.C.
 DESIGN B.C.
 CHECKED P.D.C.
 DATE AUG 2021

PROJECT
 121041

DWG
 FIG 1

2.0 NOISE LEVEL GUIDELINES AND CRITERIA

The Ministry of the Environment, Conservation and Parks has recommended noise level criteria for various locations and time of day. These criteria for vehicular traffic are summarized below.

Outdoor Amenity Area (Back Yard)
(7a.m. - 11p.m.) - 16 hr. Leq = 55dBA

Indoor Living and Dining Areas
(7a.m. - 11p.m.) - 16 hr. Leq = 45dBA

Indoor Bedroom Areas
(11p.m. - 7a.m.) - 8 hr. Leq = 40dBA

2.1 Outdoor Amenity Space

If noise levels in outdoor amenity spaces exceed 55dBA, purchasers must be informed, by means of warning clauses registered on title, of potentially annoying noise levels. If these noise levels exceed 60dBA, appropriate noise abatement measures such as acoustical fences, berms, increased building setbacks or reorientation of dwelling units and lots must be employed to reduce noise levels.

2.2 Ventilation

If daytime noise levels at the exterior wall face are in the range of 55 to 65dBA, the ventilation system must be designed to accommodate central air conditioning installed at the owner's discretion. If daytime noise levels exceed 65dBA, central air conditioning must be installed with the building's construction.

If nighttime noise levels at the exterior wall face are in the range of 50 to 60dBA, the ventilation system must be designed to accommodate central air conditioning installed at the owner's discretion. If nighttime noise levels exceed 60dBA, central air conditioning must be installed with the building's construction.

2.3 Indoor Living and Dining Areas / Bedrooms

In determining building construction materials (walls, windows, doors) required to reduce indoor noise levels to the above recommended guidelines, daytime and nighttime noise levels at the exterior wall face are determined. If daytime and nighttime noise levels are 65dBA or less and 60dBA or less respectively, standard Ontario Building Code (OBC) construction practices are adequate. If the external noise levels exceed the above criteria, building components having extra sound deadening properties are required at time of construction.

3.0 NOISE SOURCE

As illustrated on the Noise Impact Study Site Plan (Figure 2), the proposed development will be located within 100m of Central Street (Regional Road 5). Vehicular noise generated by this road has the potential to affect future residents.

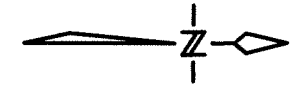
The proposed development is located in close proximity to a four-way stop intersection at Central Street and Old Brock Road. A correction factor must be made for interrupted traffic flow at this intersection as noise generated by vehicles accelerating from a stopped position will have a greater impact than vehicles which drive by uninterrupted. For this purpose, noise receivers between 0m and 59m from the intersection will have 2dBA added to their STAMSON 5.0 output values, receivers between 60m and 150m will have 1dBA added.

Vehicular traffic volume information for Central Street was obtained from the Regional Municipality of Durham Planning Department and is tabulated below and attached in Schedule 1.

TABLE 1 – FORECASTED TRAFFIC VOLUMES

| NAME OF ROAD SEGMENT | CENTRAL STREET (REGIONAL ROAD 5) |
|-----------------------------|---|
| AADT | 20,000 |
| No. of Lanes | 4 |
| Percentage Trucks | 10% |
| Heavy/Medium Truck Ratio | 60:40 |
| Speed (km/hr) | 50 |

OLD BROCK ROAD



WELLINGTON STREET

CENTRAL STREET

EX CONC SIDEWALK EX ASPHALT EX ASPHALT EX ASPHALT EX CONC SIDEWALK

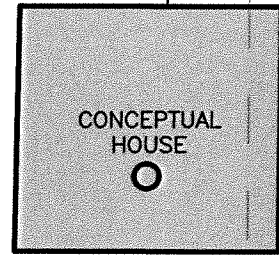
EXISTING GRAVEL DRWY

EXISTING DETACHED HOUSE

EXISTING DETACHED HOUSE

EXISTING DECK

84.33±



PART 2
PROPOSED SEVERANCE

PART 1
RETAINED PARCEL

EX BOARD FENCE

EX BOARD FENCE

EX BOARD FENCE

LEGEND

- ⊙ LOCATION OF OAA RECEIVER
- PROVISIONS FOR OPTIONAL CENTRAL AIR CONDITIONING. WARNING CLAUSE 1

4973 OLD BROCK ROAD, CLAREMONT

NOISE IMPACT STUDY SITE PLAN



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SCALE 1:400
 DRAWN B.C.
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 DATE AUG 2021

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FIG 2

Y:\JOB FILES\121000\121041 4973 OLD BROCK RD, CLAREMONT\121041 DRAWINGS\121000 ENGINEERING DRAWINGS\121041 NIS FIGURES.DWG

4.0 NOISE IMPACT ON PROPOSED DEVELOPMENT

4.1 Method of Analysis

The Ministry of the Environment, Conservation and Parks' computer-based prediction model, Stamson 5.0, was used to calculate noise levels from Central Street traffic. Information regarding source-receiver distances and dwelling orientations was obtained from the Preliminary Grading / Servicing Plan prepared by this office, as illustrated on the Noise Impact Study Location Plan, Figure 2.

4.2 Anticipated Noise Levels

Tabulated below are the anticipated noise levels at various locations within the proposed development. It is noted that the values reported below include the correction for interrupted traffic flow. Stamson output files are attached to the end of this report.

TABLE 2 - ANTICIPATED NOISE LEVELS

| LOCATION | DAYTIME (16 hr.) Leq (dBA) | NIGHTTIME (8 hr.) Leq (dBA) |
|----------------------|---------------------------------------|--|
| North Wall | 56.4** | 50.7** |
| West Wall | 52.8 | 47.1 |
| Outdoor Amenity Area | 52.4 | N/A |

* Outdoor Amenity Area Noise Levels(OAA > 55dBA)

(1) Noise Abatement Measures Required (OAA > 60dBA)

** Dwelling unit to be fitted with ducting size to allow installation of air conditioning (daytime levels > 55dBA, nighttime levels > 50dBA)

(2) Air conditioning must be installed (daytime levels > 65dBA, nighttime levels > 60dBA)

5.0 RECOMMENDATIONS

5.1 Outdoor Amenity Area Measures

Based on the anticipated noise levels, summarized in Table 2, the severed lot can anticipate noise levels within the outdoor amenity areas to be below 55 dBA. Therefore, no warning clauses are required to be registered on title based on anticipated outdoor amenity area noise levels.

5.2 Ventilation Requirements

Anticipated noise levels for the proposed dwelling was calculated at the first and second floor exterior walls to determine the ventilation requirements. Based on anticipated noise levels tabulated in Table 2, the severed lot can anticipate noise levels above 55dBA and 50dBA during daytime and nighttime, respectively. Therefore, the proposed dwelling must be constructed with forced air heating system and ducting to allow for central air conditioning installation.

Based on this recommendation, the following clause must be registered on title for the above lots and be included in offers of purchase and sale. This clause is to state:

Warning Clause #1

“This dwelling unit has been fitted with a forced air heating system and the ducting, etc. was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the Municipality’s and the Ministry of the Environment, Conservation and Parks’ noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MECP Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property.)”

5.3 Building Components

Based on the anticipated noise levels reported in Table 2, the severed lot can anticipate noise levels at the building face below 65dBA and 60dBA during daytime and nighttime, respectively. Therefore, enhanced building construction materials are not required. Standard Ontario Building Code materials and techniques are adequate.

6.0 CONCLUSIONS

With the implementation of noise abatement measures such as provisions for air conditioning systems, indoor noise levels are anticipated to be within the Ministry of the Environment, Conservation and Parks Guidelines. Outdoor noise levels throughout the development are anticipated to be within the MECP Guidelines.

SCHEDULE 1

FORECASTED TRAFFIC VOLUMES



The Regional Municipality of Durham

Planning and Economic
Development Department

Planning Division

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4TH FLOOR
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www.durham.ca

Brian Bridgeman, MCIP, RPP
Commissioner of Planning and
Economic Development

ROAD SEGMENT TRAFFIC FORECASTS FOR NOISE ANALYSES

This information is to be used as the basis for assessing the potential impacts of noise, generated by traffic on Provincial Highways and arterial roads, on proposed land uses that are sensitive (e.g., residential subdivisions). Arterial roads include existing and future Type A, B and C, as designated in the Durham Regional Official Plan.

Noise assessment reports recommend specific measures to be integrated into the design of sensitive developments to reduce road noise impacts to acceptable levels.

Provided For:

Name / Name of Firm: Bryn Cummings, D.G.Biddle & Associated Limited
Address: 96 King St E, Oshawa, ON
Telephone: (905) 576-8500 Fax:

Location of Proposal:

1712 Central St, Claremont, ON

Municipality: Pickering Lot(s): Concession:

Durham Region File No. (if available):

Name of Property Owner (if available):

Date Request Received: Tuesday, July 20, 2021 Received By: Victor Copetti

Date Forecast Sent: Monday, July 26, 2021

| Name of Road Segment | Forecasted AADT* | No. of Lanes | % of Trucks | Heavy : Medium Truck Ratio | | Speed (km/h) |
|--|------------------|--------------|-------------|----------------------------|----|--------------|
| Central Street (Sideline 20 to Brock Rd) | 20,000 | 4 | 10 | 60 | 40 | 50 |
| | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 |
| | 0 | 0 | 0 | 0 | 0 | 0 |

* Average Annual Daily Traffic. Forecast based on ultimate development according to the Durham Regional Official Plan.

TRAFFIC VOLUME CALCULATIONS

Project : 4973 Old Brock Road
Project No. : 121041

Central Street Traffic Data

| | | | |
|--------------------------------|----------|----|--|
| Average Annual Daily Traffic : | 20000 | | |
| Number of Lanes: | 4 | | |
| % Truck | 10 | | |
| Heavy:Medium Ratio: | 60 | 40 | |
| Speed | 50 km/hr | | |
| Day: Night Ratio: | 90 | 10 | |

Daytime Traffic

$$\text{Car Traffic} \quad \frac{20000 \times 0.90 \times 0.90}{4} = 16200 / 16 \text{ hr}$$

$$\text{Medium Truck Traffic} \quad \frac{20000 \times 0.90 \times 0.10 \times 0.40}{4} = 720 / 16 \text{ hr}$$

$$\text{Heavy Truck Traffic} \quad \frac{20000 \times 0.90 \times 0.10 \times 0.60}{4} = 1080 / 16 \text{ hr}$$

Nighttime Traffic

$$\text{Car Traffic} \quad \frac{20000 \times 0.10 \times 0.90}{4} = 1800 / 8 \text{ hr}$$

$$\text{Medium Truck Traffic} \quad \frac{20000 \times 0.10 \times 0.10 \times 0.40}{4} = 80 / 8 \text{ hr}$$

$$\text{Heavy Truck Traffic} \quad \frac{20000 \times 0.10 \times 0.10 \times 0.70}{4} = 120 / 8 \text{ hr}$$

SCHEDULE 2

STAMSON 5.0 OUTPUT

Filename: P2WW.te Time Period: Day/Night 16/8 hours
 Description: PART 2 WEST WALL DAY AND NIGHT

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

 Car traffic volume : 16200/1800 veh/TimePeriod *
 Medium truck volume : 720/80 veh/TimePeriod *
 Heavy truck volume : 1080/120 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 2 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 4.00
 Heavy Truck % of Total Volume : 6.00
 Day (16 hrs) % of Total Volume : 90.00

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

 Angle1 Angle2 : -90.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 1
 House density : 20 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 96.00 / 96.00 m
 Receiver height : 1.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: CENTRAL (day)

 Source height = 1.57 m

ROAD (0.00 + 51.79 + 0.00) = 51.79 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| -90 | 0 | 0.66 | 70.52 | 0.00 | -13.37 | -4.46 | 0.00 | -0.90 | 0.00 | 51.79 |

Segment Leq : 51.79 dBA

Total Leq All Segments: 51.79 dBA

↑
 Results segment # 1: CENTRAL (night)

Source height = 1.57 m

ROAD (0.00 + 46.14 + 0.00) = 46.14 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| -90 | 0 | 0.57 | 63.99 | 0.00 | -12.64 | -4.31 | 0.00 | -0.90 | 0.00 | 46.14 |

Segment Leq : 46.14 dBA

Total Leq All Segments: 46.14 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 51.79
(NIGHT): 46.14

↑

↑

Filename: P20AA.te Time Period: Day/Night 16/8 hours
Description: PART 2 OUTDOOR AMENITY AREA

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

Car traffic volume : 16200/1800 veh/TimePeriod *
Medium truck volume : 720/80 veh/TimePeriod *
Heavy truck volume : 1080/120 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 2 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 4.00
Heavy Truck % of Total Volume : 6.00
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : -24.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 96.00 / 96.00 m
Receiver height : 1.50 / 0.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: CENTRAL (day)

Source height = 1.57 m

ROAD (0.00 + 51.41 + 0.00) = 51.41 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| -24 | 90 | 0.66 | 70.52 | 0.00 | -13.37 | -3.11 | 0.00 | -2.64 | 0.00 | 51.41 |

Segment Leq : 51.41 dBA

Total Leq All Segments: 51.41 dBA

↑

Results segment # 1: CENTRAL (night)

Source height = 1.57 m

ROAD (0.00 + 47.50 + 0.00) = 47.50 dBA

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

| | | | | | | | | | | |
|-----|----|------|-------|------|--------|-------|------|------|------|-------|
| -24 | 90 | 0.66 | 63.99 | 0.00 | -13.38 | -3.11 | 0.00 | 0.00 | 0.00 | 47.50 |
|-----|----|------|-------|------|--------|-------|------|------|------|-------|

Segment Leq : 47.50 dBA

Total Leq All Segments: 47.50 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 51.41

(NIGHT): 47.50

↑

↑

Filename: P2NW.te Time Period: Day/Night 16/8 hours
 Description: PART 2 NORTH WALL DAY AND NIGHT

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

 Car traffic volume : 16200/1800 veh/TimePeriod *
 Medium truck volume : 720/80 veh/TimePeriod *
 Heavy truck volume : 1080/120 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 2 %
 Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 20000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 4.00
 Heavy Truck % of Total Volume : 6.00
 Day (16 hrs) % of Total Volume : 90.00

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

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 1 / 1
 House density : 20 %
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 89.00 / 89.00 m
 Receiver height : 1.50 / 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: CENTRAL (day)

 Source height = 1.57 m

ROAD (0.00 + 55.35 + 0.00) = 55.35 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| -90 | 90 | 0.66 | 70.52 | 0.00 | -12.82 | -1.45 | 0.00 | -0.90 | 0.00 | 55.35 |

Segment Leq : 55.35 dBA

Total Leq All Segments: 55.35 dBA

↑
 Results segment # 1: CENTRAL (night)

Source height = 1.57 m

ROAD (0.00 + 49.67 + 0.00) = 49.67 dBA

| Angle1 | Angle2 | Alpha | RefLeq | P.Adj | D.Adj | F.Adj | W.Adj | H.Adj | B.Adj | SubLeq |
|--------|--------|-------|--------|-------|--------|-------|-------|-------|-------|--------|
| -90 | 90 | 0.57 | 63.99 | 0.00 | -12.13 | -1.30 | 0.00 | -0.90 | 0.00 | 49.67 |

Segment Leq : 49.67 dBA

Total Leq All Segments: 49.67 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 55.35
(NIGHT): 49.67

↑

↑