REPORT
Project: 125600-6.04.01

ENVIRONMENTAL NOISE IMPACT ASSESSMENT
4639 BANK STREET
CITY OF OTTAWA

Prepared for Glenview Homes
by IBI GROUP

SEPTEMBER 2020

Table of Contents

1 INTRODUCTION 1

2 BACKGROUND 2

2.1 Noise Sources 2

2.2 Sound Level Limits for Road Traffic 2

2.2.1 Indoor Sound Level Criterion 2

2.2.2 Outdoor Sound Level Criterion 3

2.2.3 Indoor Sound Level Criterion – Building Components 3

3 ROADWAY NOISE 4

3.1 Traffic Volume Data 4

3.2 Calculation Methods 4

4 ABATEMENT MEASURES 6

4.1 Indoor Sound Levels 6

4.2 Building Components 6

4.3 Outdoor Sound Levels 7

5 SUMMARY OF ATTENUATION MEASURES 8

5.1 Warning Clauses 8

5.2 Ventilation Requirements and Building Components 8

5.3 Noise Barrier 9

6 CONCLUSION 10

7 PROFESSIONAL AUTHORIZATION 10

Table of Contents (continued)

List of Tables

Table 3.1 Traffic and Road Data Summary
Table 3.2 Unattenuated Noise Levels at Building Face
Table 3.3 Unattenuated Noise Levels at OLA
Table 4.1 STC Ratings

List of Drawings

Noise Plan – Drawing No. C-N

List of Appendices

Appendix A STAMSON Noise Calculations
Appendix B Sound Transmission Class (STC) Calculations
Appendix C Sample Architectural Drawings

1 INTRODUCTION

This report has been prepared to determine transportation-related noise impacts for the residential development, located at 4639 Bank Street within the Leitrim Community of Ottawa, Ontario. The report analyses the expected noise levels within the development and recommends any warning clauses and associated noise abatement measures required in the Agreement of Purchase and Sale of each dwelling unit.

The proposed development consists of 112 stacked townhomes and is bound by Bank Street to the west, Rotary Way to the north, the Ottawa Rotary Home to the east and residential dwelling units to the south.

2 BACKGROUND

2.1 Noise Sources

The proposed development will be primarily subjected to roadway noise from Bank Street and Rotary Way.

The Airport Vicinity Development Zone (AVDZ), as shown on Annex 10 and Schedule K of the 2013 Official Plan, does cross the northern property boundary of the site. The building footprints, however, will remain outside the ADVZ, therefore Aircraft noise from the Ottawa International Airport is not included in the analysis for this study.

There are no rail lines within 500 metres of the site. As such, no consideration has been given to the noise impacts from rail traffic in accordance with the City of Ottawa Environmental Noise Control (ENC) Guidelines, dated January 2016.

2.2 Sound Level Limits for Road Traffic

Sound level criteria for road traffic are taken from the ENC Guidelines and the *Ministry of the Environment Publication NPC-300 (August 2013)*. Noise levels are expressed in the form Leq (T), which refers to a weighted level of a steady sound carrying the same total energy in the time period T (in hours) as the observed fluctuation sound.

2.2.1 Indoor Sound Level Criterion

The recommended indoor sound level criteria from Table 2.2b of the ENC Guidelines are as follows:

- Bedrooms – 23:00 to 07:00 – 40 dBA Leq (8 hours)
- Other areas – 07:00 to 23:00 – 45 dBA Leq (16 hours)

The sound levels are based on the windows and doors to an indoor space being closed.

The proposed development consists of two-and-a-half storey stacked townhome units. For the purpose of assessing the critical indoor noise in this study, the outdoor noise levels are observed at 5.4 metres for the plane of the living room windows during the daytime and at 8.3 metres for the bedroom windows during the nighttime. These heights relative to ground level were determined by reviewing the living room and bedroom window locations on the profile view architectural drawings (see **Appendix C**) and shall be used to determine noise impacts from Bank Street on the critical, upper-level units.

As per NPC-300 C7.1.3, if the daytime outdoor sound levels exceed 65 dBA at the living room window or if the nighttime sound levels exceed 60 dBA at the bedroom window, then the building must be compliant with the Ontario Building Code. Should the outdoor sound levels exceed this criteria, then the building component (walls, windows, etc.) must be designed to achieve indoor sound level criteria.

As per NPC-300 C7.1.2.1 and C7.1.2.2, when the outdoor noise levels are greater than 55 dBA and less than or equal to 65 dBA at the living room window and/or greater than 50 dBA and less than or equal to 60 dBA at the bedroom window, then a warning clause is compulsory. This warning clause specifies that forced air heating with a provision for central air conditioning is required. Should the outdoor sound levels exceed the criteria, central air conditioning is mandatory and a warning clause is required.

2.2.2 Outdoor Sound Level Criterion

As per Table 2.2a of the ENC Guidelines, the sound level criteria for the outdoor living area (OLA) for the daytime period between 07:00 and 23:00 hours is 55 dBA Leq (16). Sound levels for the OLA are typically calculated 3 metres from the building face at the centre of the unit or within the centre of the OLA at a height of 1.5 metres above the ground.

If the Leq sound level is less than or equal to the above criteria then no further action is required by the developer. If the sound level exceeds the criteria by less than 5 dBA then the developer may, with City approval, either provide a warning clause to prospective purchasers or install physical attenuation. For sound levels greater than 5 dBA above the criteria, control measures are required to reduce the noise levels as close to 55 dBA as technically, economically and administratively possible. Should the sound levels with the barrier in place exceed 55 dBA a warning clause is also required.

2.2.3 Indoor Sound Level Criterion – Building Components

As per NPC-300 C7.1.3, when the outdoor sound levels are less than or equal to 65 dBA at the living room window and/or less than or equal to 60 dBA at the bedroom level, then the building must be compliant with the Ontario Building Code. Should the outdoor sound levels exceed this criteria then the building component (walls, windows etc.) must be designed to achieve indoor sound level criteria.

3 ROADWAY NOISE

3.1 Traffic Volume Data

The major sources of road noise impacting the site are expected to originate from the traffic flows along Bank Street and Rotary Way:

Bank Street

Bank Street is currently a two-lane, undivided rural roadway with a posted speed limit of 70 km/h within the vicinity of the subject site. Ultimately, this section of Bank Street will be reconstructed as a four-lane urban arterial divided (4-UAD) roadway. The noise analysis conducted for this study has been conservatively based on Bank Street with its ultimate, four-lane configuration and a posted speed limit of 70 km/h.

Rotary Way

Rotary Way is a two-lane urban collector roadway (2-UCU) with a posted speed limit of 50 km/h.

Table 3.1 below summarizes the traffic and road parameters used in this report. These parameters were extracted from Appendix B: Table B1 of the ENC Guidelines for both Bank Street and Rotary Way, and are conservatively based on the capacity of each roadway.

TABLE 3.1: TRAFFIC AND ROAD DATA SUMMARY

	BANK STREET	ROTARY WAY
Annual Average Daily Traffic (AADT)	35,000	8,000
Posted Speed Limit (km/h)	70	50
% Medium Trucks	7%	7%
% Heavy Trucks	5%	5%
% Daytime Traffic	92%	92%

3.2 Calculation Methods

Roadway noise is calculated using the STAMSON 5.04 computer program from the Ontario Ministry of the Environment (MOE).

Unattenuated daytime and nighttime noise levels at the building face calculated to determine indoor sound levels are shown in **Table 3.2** below. Parameters used for calculating the noise levels, including the perpendicular distance from source to receiver and the roadway segment angles are also indicated. Since Bank Street is modelled with its ultimate configuration as an arterial, four-lane divided road, the noise levels are calculated separately for the northbound and southbound lanes and then combined.

In instances where a townhome block mirrors another block that has been analysed, it was deemed unnecessary to repeat the noise calculations.

There are no outdoor living areas (OLAs) attached to the units, there is a Communal Amenity Space adjacent to Building 4 which is exposed to Bank Street traffic noise. A calculation has been carried out as shown on **Table 3.3** at a location that lines up with the front of the units so that there is no allowance for building screening of the traffic noise.

TABLE 3.2: UNATTENUATED NOISE LEVELS AT BUILDING FACE

LOCATION		ROADWAY	SOURCE - RECEIVER DISTANCE (m)	SEGMENT ANGLES		INDOOR NOISE LEVELS (dBA)	
Lot / Block	UNITS		NB/ SB LANES	LEFT	RIGHT	DAYTIME	NIGHTTIME
Building 1	Units 1 & 2	Bank Street Rotary Way	53.5/ 65.0 19.5	5 -80	90 90	65.03	57.87
Building 1	Units 3 & 4	Bank Street	61.0/ 72.5 35.5	-35 10	0 90	59.23	52.60
Building 1	Units 15 & 16	Bank Street	30.0/ 41.5	-70	0	64.64	57.45
Building 1	Units 17 & 18	Bank Street Rotary Way	22.5/ 34.0 15.0	-90 -90	90 90	70.79	63.69
Building 2	Units 1 & 2	Bank Street	28.5/ 40.0	0	80	65.27	58.10
Building 2	Units 13 & 14	Bank Street	19.0/ 31.5	-90	90	70.79	63.50
Building 3	Units 1 & 2	Bank Street	26.5/ 39.0	0	35	62.82	55.51
Building 4	Units 1 & 2	Bank Street	49.0/ 61.5	0	40	59.64	47.85
Building 4	Units 3 & 4	Bank Street	49.0/ 61.5	-90	0	62.15	55.20
Building 4	Units 9 & 10	Bank Street	34.0/ 46.5	0	60	63.35	56.18
Building 4	Units 11 & 12	Bank Street	34.0/ 46.5	0	90	64.33	57.24
Building 4	Units 13 & 14	Bank Street	26.5/ 39.0	0	70	65.32	58.09
Building 4	Units 15 & 16	Bank Street	26.5/ 39.0	-90	0	65.82	58.65
Building 5	Units 7 & 8	Bank Street	66.0/ 77.5	-25	0	55.91	48.91
Building 5	Units 15 & 16	Bank Street	60.5/ 72.0	-35	5	63.85	56.98
Building 6	Units 3 & 4	Rotary Way	71.0	10	90	50.37	43.55
Building 6	Units 9 & 10	Bank Street Rotary Way	60.5/ 72.0 60.5	-5 10	35 90	59.23	52.24
Building 6	Units 11 & 12	Bank Street	60.5/ 72.0	15	40	56.23	49.24
Building 6	Units 13 & 14	Bank Street	60.5/ 72.0	35	50	53.58	46.66

As indicated in **Table 3.2** above, there are numerous locations which exceed the noise criteria at the building face.

TABLE 3.3: UNATTENUATED NOISE LEVELS AT OLA

LOCATION	ROADWAY	SOURCE - RECEIVER DISTANCE (m)	SEGMENT ANGLES		OUTDOOR NOISE LEVELS (dBA)
		NB/ SB LANES	LEFT	RIGHT	
Common Amenity	Bank Street	20.0/32.5	-90	90	70.05

As indicated in **Table 3.3** the noise level in the Common Amenity Space exceeds the noise criteria.

4 ABATEMENT MEASURES

4.1 Indoor Sound Levels

For dwelling units in Blocks 1 to 4 fronting onto Bank Street or located within close proximity to the Bank & Rotary Way intersection, daytime noise levels at the building face are shown to exceed 65 dBA, requiring mandatory central air conditioning, a review of the building components and a Type 'D' warning clause.

Select dwelling units in Blocks 1 to 6 will experience noise levels in excess of 55 dBA but below 65 dBA. Most of these dwelling units are either partially screened by other units or are well setback from both Bank Street, as well as the Bank & Rotary intersection. For all of these dwelling units, an alternative means of ventilation is required, as well as a Type 'C' warning clause in the Agreement of Purchase and Sale. Alternative means of ventilation usually consist of a forced air heating system with ducts sized for future installation of central air conditioning.

4.2 Building Components

Based on the results of the indoor noise assessment in **Table 3.2**, an analysis of the required building components for dwelling units expected to experience noise levels at the building face exceeding 65 dBA has been conducted following the Sound Transmission Class (STC) Method. This method was developed by the National Research Council (NRC), and involves a review of architectural plans to determine appropriate design assumptions (i.e. window/floor area ratios) to calculate the STC rating for windows and glazed doors.

Based on sample architectural drawings provided for a 3 bedroom terrace unit end unit, the kitchen floor area and dining room/ den was included in the 'living room' calculation for the daytime, as plans indicate that there is no typically no partitioning between these living spaces. The 'Master Bedroom' was used to calculate the STC rating during the nighttime, as this bedroom has the highest potential exposure from outdoor noise on Bank Street, with windows on two exterior walls. The STC ratings for both the living room and bedroom were calculated based on the critical upper floor units, consistent with the remainder of the noise analysis conducted for this study.

The STC calculations were carried out to determine the required STC rating for exterior windows. Exterior walls were assumed to have an STC rating of 40, which is a conservative value for an insulated wood frame construction wall designed to accommodate Ottawa winters. With the exterior walls in place, the amount of sound energy absorbed by the windows is calculated and the STC rating required to meet the sound criteria was determined. All rooms were assumed to have an intermediate absorptive interior rather than a hard or very absorptive interior, as would be expected for a residential unit. The required STC ratings for the windows and glazed doors are summarized in **Table 4.1** below.

STC calculations and sample architectural plans for end units are included in **Appendix B** and **Appendix C**, respectively.

TABLE 4.1: STC RATINGS

DWELLING UNIT	ROOM TYPE	STC RATING
		WINDOWS & GLAZED DOORS
3 Bedroom Terrace Homes – End Units	Living Room	33
	Bedroom	32

4.3 Outdoor Sound Levels

As per **Table 3.3** in Section 3.2 the Communal Amenity Space exceeds the noise centers. A noise barrier is proposed parallel to Bank Street and extending on both sides as shown on the noise plan **Drawing No C-N**. With the barrier in place the noise level is reduced from 70.05 dBA to 59.97 dBA with a top of barrier elevation of 107.70. Due to grading constraints the barrier height varies from 2.95 to 2.5 meters. While the level is below 60 dBA it is above 55 dBA requiring a Type “B” warning clause for all units in the development which share the communal space. It is not practical to reduce the noise below 55 dBA as it would require a barrier/berm combination in excess of 5 meters in height which is not practical.

5 SUMMARY OF ATTENUATION MEASURES

5.1 Warning Clauses

A clause regarding noise must appear on the Agreement of Purchase and Sale on the title of the lots and townhouse units indicated on **Drawing No. C-N**, as listed below:

Type 'B' All Blocks all Units

Type 'C' Block 1 – Units 3, 4, 7, 8, 11, 12, 15, 16, 19, 20
Block 2 – Units 9 & 10
Block 3 – Units 1 & 2
Block 4 – Units 1 to 12
Block 5 – Units 7, 8, 13 to 16
Block 6 – Units 1, 2, 9 to 12

Type 'D' Block 1 – Units 1, 2, 5, 6, 9, 10, 13, 14, 17, 18
Block 2 – Units 1, 2, 11 to 20
Block 3 – Units 9 to 20
Block 4 – Units 13 to 20

The following warning clauses are taken from Section C8.1 of NPC 300:

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 Bank Street traffic may on occasion interfere with some activities of the dwelling occupants as the sound levels exceed the City's and the Ministry of the Environment's noise criteria."
Type C	"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 City's and the Ministry of the Environment's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MOE Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property."
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 City's and the Ministry of the Environment's noise criteria."

5.2 Ventilation Requirements and Building Components

All dwelling units requiring a Type 'C' warning clause listed in Section 5.1 shall have a forced air heating system sized to accommodate a central air conditioning system.

All dwelling units requiring a Type 'D' warning clause shall have mandatory central air conditioning and acoustical review of building components.

5.3 Noise Barrier

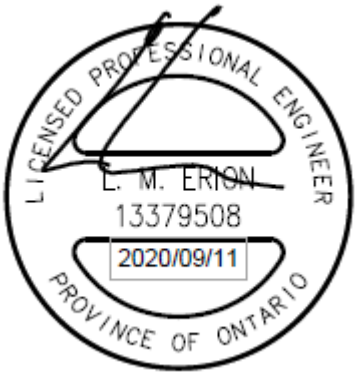
A noise barrier Constructed to current City of Ottawa and MOE standards is required for the Communal Amenity Space at the location shown on the Noise Plan Drawing No. C-N.

6 CONCLUSION

This report outlines the impact of roadway noise on the proposed residential development, located within the Leitrim Community of Ottawa at 4639 Bank Street. As indicated through the analysis conducted for this study, it is anticipated that noise levels will remain within the standards established by the City of Ottawa and Ministry of the Environment (MOE) with the exception of select units as indicated on **Drawing No. C-N**. For these dwelling units, appropriate warning clauses and associated noise abatement measures must be provided on the Agreement of Purchase and Sale. Sound Transmission Class (STC) ratings for windows and glazed doors are provided for dwelling units with the highest exposure to Bank Street.

7 PROFESSIONAL AUTHORIZATION

Prepared by:



Lance M. Erion, P.Eng.

J:\125600_4639BankSt\6.0_Technical\6.04_Civil\01_Brief_Noise Study - September 2020\CTR_noise_impact_assessment_4639_bank_2020-09-03.docx

LEGEND:

C D — NOISE RECEIVER LOCATION / WARNING CLAUSE

● — LOCATION OF INDOOR NOISE RECEPTOR

△ — LOCATION OF OUTDOOR NOISE RECEPTOR

F — F — NOISE FENCE AND GATE LOCATION

Project North

REMOVE AND REPLACE SIDEWALK

REMOVE AND REPLACE BARRIER CURB WITH DEPRESSED CURB

BOTTOM OF 3:1 TERRACE TO EXISITNG

BOTTOM OF 3:1 TERRACE TO EXISITNG

BOTTOM OF 3:1 TERRACE TO EXISITNG

BUILDING 6 URBAN TERRACE HOMES 16 UNITS — FF=106.54, TF=105.50, USF=103.11 — UNITS 1 & 2, UNITS 3 & 4, UNITS 9 & 10, UNITS 11 & 12, UNITS 13 & 14, UNITS 15 & 16

COMMUNAL AMENITY SPACE 200m²

BUILDING 5 URBAN TERRACE HOMES 16 UNITS — FF=106.59, TF=105.55, USF=103.16 — UNITS 7 & 8, UNITS 15 & 16, UNITS 13 & 14

BUILDING 1 TERRACE HOMES 20 UNITS — FF=106.81, TF=105.46, USF=103.32 — UNITS 5 & 6, UNITS 7 & 8, UNITS 9 & 10, UNITS 11 & 12, UNITS 13 & 14, UNITS 15 & 16, UNITS 17 & 18, UNITS 19 & 20

BUILDING 2 TERRACE HOMES 20 UNITS — FF=106.80, TF=105.45, USF=103.37 — UNITS 1 & 2, UNITS 9 & 10, UNITS 11 & 12, UNITS 13 & 14, UNITS 15 & 16, UNITS 17 & 18, UNITS 19 & 20

BUILDING 3 TERRACE HOMES 20 UNITS — FF=106.85, TF=105.50, USF=103.42 — UNITS 1 & 2, UNITS 9 & 10, UNITS 11 & 12, UNITS 13 & 14, UNITS 15 & 16, UNITS 17 & 18, UNITS 19 & 20

BUILDING 4 TERRACE HOMES 20 UNITS — FF=106.91, TF=105.56, USF=103.48 — UNITS 1 & 2, UNITS 3 & 4, UNITS 5 & 6, UNITS 7 & 8, UNITS 9 & 10, UNITS 11 & 12, UNITS 13 & 14, UNITS 15 & 16, UNITS 17 & 18, UNITS 19 & 20

CB1 T/G 104.60 — CB2 T/G 104.63 — CB3 T/G 104.65 — CB4 T/G 104.60 — CB5 T/G 104.65 — CB6 T/G 104.70 — CB7 T/G 104.72 — CB8 T/G 104.80 — CB9 T/G 104.82 — CB10 T/G 104.90

T/G 104.67 INV. 103.67 — T/G 104.77 INV. 103.77 — T/G 105.10 INV. 104.10 — T/G 104.95 INV. 103.95 — T/G 104.87 INV. 103.87 — T/G 105.05 INV. 104.05 — T/G 105.00 INV. 104.00 — T/G 104.91 INV. 103.91 — T/G 104.86 INV. 103.86 — T/G 104.84 INV. 103.84 — T/G 104.55 INV. 103.55

HYD B/F 105.14 — HYD B/F 105.07 — HYD B/F 105.22

1.5m ASPHALT SIDEWALK — 1.8m ASPHALT SIDEWALK — 1.5m CONC. SW. — 1.5m ASPH. SW. — 1.8m ASPHALT S.W.

GARBAGE BINS (3R) — HP (S) 104.97 — HP (S) 104.96 — HP (S) 104.94 — HP (S) 104.92

1 STOREY VINYL SIDED DWELLING No. 4693

SITE BENCHMARK: MAG NAIL IN HYDRO POLE ELEV = 104.97

FUTURE BACK OF SIDEWALK GRADES PER PRELIMINARY BANK ST DESIGN, INTERIM TERRACING REQUIRED TO MATCH EXISTING DITCH

PROPOSED BANK STREET FUTURE DESIGN

NOISE BARRIER TOP OF WALL ELEVATION 107.70m HEIGHT VARIES 2.95 TO 2.5m

ROTARY WAY

BANK STREET

FIRE ACCESS ROUTE

ASPHALT EDGE — PARKING AREA — EDGE OF ROAD — EDGE OF ASPHALT — PAINT LINE — CONCRETE CURB — SIDEWALK — DITCH — TOP OF SLOPE — BOTTOM OF SLOPE — O/H WIRES — SIGN — MH — CB — CONC PAD — HWELL — TRANS — HP — LS — SAN STM

KEY PLAN

SITE

CONSULTANTS

Project Coordinator
Terrain Development Consulting
Architect:
M. David Blakely Architects Inc.
Landscape:
James B. Lennox & Assoc. Inc.
Surveyor:
J.D.Barnes Ltd.
Geotech:
Golder Associates Ltd.

1:300 0 3 9 15m

SEAL

LICENSED PROFESSIONAL ENGINEER
L. M. ERNH
13379508
2020-09-11
PROVINCE OF ONTARIO

IBI GROUP
Suite 400 – 333 Preston Street
Ottawa ON K1S 5N4 Canada
tel 613 225 1311 / 613 241 3300 fax 613 225 9868
ibigroup.com

PROJECT
4639 BANK STREET
4639 Bank Street

PROJECT NO: 125600

DRAWN BY:	CHECKED BY:
D.D./E.H.	R.M.
PROJECT MGR:	APPROVED BY:
D.Y.	D.Y.

SHEET TITLE
NOISE PLAN

SHEET NUMBER	ISSUE
C-N	1

SCALE CHECK 1 cm

CLIENT
GLENVIEW HOMES
Glenview homes
190 O'Connor St., 11th floor, Ottawa, ON

ISSUES

No.	DESCRIPTION	DATE
1	SUBMITTED FOR ZBA AND SPA	2020-09-11

NOT FOR CONSTRUCTION

File Location: J:\125600_4639BankSt\7.0_Production\7.03_Design\04_Civil\Sheets\C-N NOISE PLAN.dwg Last Saved: September 11, 2020, by Ehennie Plotted: Friday, September 11, 2020 11:02:11 AM by Eric Hennie

APPENDIX A
NOISE CALCULATIONS (STAMSON)

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 14:22:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 1, Units 1 & 2 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 5.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 53.50 / 53.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 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           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Rotary (day/night)
------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

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

Data for Segment # 3: Rotary (day/night)
----------------------------------------
Angle1   Angle2           : -80.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  19.50 / 19.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 58.86 + 0.00) = 58.86 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	90	0.54	71.98	0.00	-8.52	-4.60	0.00	0.00	0.00	58.86

Segment Leq : 58.86 dBA

Results segment # 2: Bank St S (day)

Source height = 1.50 m

ROAD (0.00 + 57.56 + 0.00) = 57.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	90	0.54	71.98	0.00	-9.83	-4.60	0.00	0.00	0.00	57.56

Segment Leq : 57.56 dBA

Results segment # 3: Rotary (day)

Source height = 1.50 m

ROAD (0.00 + 62.66 + 0.00) = 62.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	90	0.54	65.75	0.00	-1.76	-1.34	0.00	0.00	0.00	62.66

Segment Leq : 62.66 dBA

Total Leq All Segments: 65.03 dBA

Results segment # 1: Bank St N (night)

Source height = 1.50 m

ROAD (0.00 + 51.92 + 0.00) = 51.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	90	0.46	64.39	0.00	-8.04	-4.42	0.00	0.00	0.00	51.92

Segment Leq : 51.92 dBA

↟
Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 50.69 + 0.00) = 50.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
5	90	0.46	64.39	0.00	-9.27	-4.42	0.00	0.00	0.00	50.69

Segment Leq : 50.69 dBA

↟
Results segment # 3: Rotary (night)

Source height = 1.50 m

ROAD (0.00 + 55.31 + 0.00) = 55.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	90	0.46	58.16	0.00	-1.66	-1.19	0.00	0.00	0.00	55.31

Segment Leq : 55.31 dBA

Total Leq All Segments: 57.87 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 65.03
(NIGHT): 57.87

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 14:25:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 1, Units 3 & 4 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -35.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 61.00 / 61.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
------------------------------------------
Angle1   Angle2           : -35.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  72.50 / 72.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Rotary (day/night)
------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

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

Data for Segment # 3: Rotary (day/night)
------------------------------------------
Angle1   Angle2           :  10.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  35.50 / 35.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 55.32 + 0.00) = 55.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	0	0.54	71.98	0.00	-9.40	-7.26	0.00	0.00	0.00	55.32

Segment Leq : 55.32 dBA

Results segment # 2: Bank St S (day)

Source height = 1.50 m

ROAD (0.00 + 54.16 + 0.00) = 54.16 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	0	0.54	71.98	0.00	-10.56	-7.26	0.00	0.00	0.00	54.16

Segment Leq : 54.16 dBA

Results segment # 3: Rotary (day)

Source height = 1.50 m

ROAD (0.00 + 55.02 + 0.00) = 55.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	90	0.54	65.75	0.00	-5.77	-4.96	0.00	0.00	0.00	55.02

Segment Leq : 55.02 dBA

Total Leq All Segments: 59.63 dBA

Results segment # 1: Bank St N (night)

Source height = 1.50 m

ROAD (0.00 + 48.28 + 0.00) = 48.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	0	0.46	64.39	0.00	-8.87	-7.24	0.00	0.00	0.00	48.28

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

Segment Leq : 48.28 dBA

↟
Results segment # 2: Bank St S (night)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 47.19 + 0.00) = 47.19 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -35      0   0.46  64.39   0.00  -9.96  -7.24   0.00   0.00   0.00  47.19
-------------------------------------------------------------------------------

Segment Leq : 47.19 dBA

↟
Results segment # 3: Rotary (night)
----------------------------------

Source height = 1.50 m

ROAD (0.00 + 47.94 + 0.00) = 47.94 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     90   0.46  58.16   0.00  -5.45  -4.77   0.00   0.00   0.00  47.94
-------------------------------------------------------------------------------

Segment Leq : 47.94 dBA

Total Leq All Segments: 52.60 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 59.63
                           (NIGHT): 52.60
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 14:33:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 1, Units 15 & 16 -
Indoor

Road data, segment # 1: Bank St N (day/night)
Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -70.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 30.00 / 30.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           : -70.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  41.50 / 41.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.58 + 0.00) = 62.58 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70      0   0.54  71.98   0.00  -4.65  -4.76   0.00   0.00   0.00  62.58
-------------------------------------------------------------------------------

Segment Leq : 62.58 dBA
```

↟

```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.40 + 0.00) = 60.40 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70      0   0.54  71.98   0.00  -6.82  -4.76   0.00   0.00   0.00  60.40
-------------------------------------------------------------------------------

Segment Leq : 60.40 dBA

Total Leq All Segments: 64.64 dBA
```

↟

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 55.34 + 0.00) = 55.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	0	0.46	64.39	0.00	-4.38	-4.66	0.00	0.00	0.00	55.34

Segment Leq : 55.34 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 53.29 + 0.00) = 53.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	0	0.46	64.39	0.00	-6.44	-4.66	0.00	0.00	0.00	53.29

Segment Leq : 53.29 dBA

Total Leq All Segments: 57.45 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.64
(NIGHT): 57.45

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 11:06:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 1 - Units 17 & 18 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 22.50 / 22.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  34.00 / 34.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Rotary (day/night)
-----------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

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

Data for Segment # 3: Rotary (day/night)
-----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
-----------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 68.01 + 0.00) = 68.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.54	71.98	0.00	-2.72	-1.25	0.00	0.00	0.00	68.01

Segment Leq : 68.01 dBA

Results segment # 2: Bank St S (day)

Source height = 1.50 m

ROAD (0.00 + 65.25 + 0.00) = 65.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.54	71.98	0.00	-5.48	-1.25	0.00	0.00	0.00	65.25

Segment Leq : 65.25 dBA

Results segment # 3: Rotary (day)

Source height = 1.50 m

ROAD (0.00 + 64.50 + 0.00) = 64.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.54	65.75	0.00	0.00	-1.25	0.00	0.00	0.00	64.50

Segment Leq : 64.50 dBA

Total Leq All Segments: 70.97 dBA

Results segment # 1: Bank St N (night)

Source height = 1.50 m

ROAD (0.00 + 60.73 + 0.00) = 60.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.46	64.39	0.00	-2.56	-1.09	0.00	0.00	0.00	60.73

Segment Leq : 60.73 dBA

↟
Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 58.12 + 0.00) = 58.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.46	64.39	0.00	-5.17	-1.09	0.00	0.00	0.00	58.12

Segment Leq : 58.12 dBA

↟
Results segment # 3: Rotary (night)

Source height = 1.50 m

ROAD (0.00 + 57.07 + 0.00) = 57.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.46	58.16	0.00	0.00	-1.09	0.00	0.00	0.00	57.07

Segment Leq : 57.07 dBA

Total Leq All Segments: 63.69 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 70.97
(NIGHT): 63.69

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 10:00:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 2 - Units 1 & 2 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 0.00 deg 80.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 28.50 / 28.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)

Angle1 Angle2	:	0.00 deg 80.00 deg
Wood depth	:	0 (No woods.)
No of house rows	:	0 / 0
Surface	:	1 (Absorptive ground surface)
Receiver source distance	:	40.00 / 40.00 m
Receiver height	:	5.40 / 8.30 m
Topography	:	1 (Flat/gentle slope; no barrier)
Reference angle	:	0.00

Results segment # 1: Bank St N (day)

Source height = 1.50 m

ROAD (0.00 + 63.25 + 0.00) = 63.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	0	0.54	71.98	0.00	-4.30	-4.43	0.00	0.00	0.00	63.25

Segment Leq : 63.25 dBA

Results segment # 2: Bank St S (day)

Source height = 1.50 m

ROAD (0.00 + 60.98 + 0.00) = 60.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	0	0.54	71.98	0.00	-6.57	-4.43	0.00	0.00	0.00	60.98

Segment Leq : 60.98 dBA

Total Leq All Segments: 65.27 dBA

Results segment # 1: Bank St N (night)

Source height = 1.50 m

ROAD (0.00 + 56.03 + 0.00) = 56.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	0	0.46	64.39	0.00	-4.06	-4.30	0.00	0.00	0.00	56.03

Segment Leq : 56.03 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 53.89 + 0.00) = 53.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	0	0.46	64.39	0.00	-6.20	-4.30	0.00	0.00	0.00	53.89

Segment Leq : 53.89 dBA

Total Leq All Segments: 58.10 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.27
(NIGHT): 58.10

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 10:07:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 2 - Units 13 & 14 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 19.00 / 19.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  31.50 / 31.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 69.15 + 0.00) = 69.15 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.54  71.98   0.00  -1.58  -1.25   0.00   0.00   0.00  69.15
-------------------------------------------------------------------------------

Segment Leq : 69.15 dBA
```

↟

```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 65.76 + 0.00) = 65.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90     90   0.54  71.98   0.00  -4.97  -1.25   0.00   0.00   0.00  65.76
-------------------------------------------------------------------------------

Segment Leq : 65.76 dBA

Total Leq All Segments: 70.79 dBA
```

↟

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 61.80 + 0.00) = 61.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.46	64.39	0.00	-1.49	-1.09	0.00	0.00	0.00	61.80

Segment Leq : 61.80 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 58.60 + 0.00) = 58.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.46	64.39	0.00	-4.69	-1.09	0.00	0.00	0.00	58.60

Segment Leq : 58.60 dBA

Total Leq All Segments: 63.50 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.79
(NIGHT): 63.50

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 17:26:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 3, Units 1 & 2 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 0.00 deg 35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 26.50 / 26.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   35.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  39.00 / 39.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.91 + 0.00) = 60.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     35   0.54  71.98   0.00  -3.81  -7.26   0.00   0.00   0.00  60.91
-------------------------------------------------------------------------------

Segment Leq : 60.91 dBA
```

↟

```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.32 + 0.00) = 58.32 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     35   0.54  71.98   0.00  -6.40  -7.26   0.00   0.00   0.00  58.32
-------------------------------------------------------------------------------

Segment Leq : 58.32 dBA

Total Leq All Segments: 62.82 dBA
```

↟

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 53.55 + 0.00) = 53.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	35	0.46	64.39	0.00	-3.60	-7.24	0.00	0.00	0.00	53.55

Segment Leq : 53.55 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 51.11 + 0.00) = 51.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	35	0.46	64.39	0.00	-6.04	-7.24	0.00	0.00	0.00	51.11

Segment Leq : 51.11 dBA

Total Leq All Segments: 55.51 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.82
(NIGHT): 55.51

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 15:58:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 4, Units 1 & 2 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 0.00 deg 40.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 49.00 / 49.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  61.50 / 61.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

🠝

```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.32 + 0.00) = 57.32 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     40   0.54  71.98   0.00  -7.93  -6.73   0.00   0.00   0.00  57.32
-------------------------------------------------------------------------------

Segment Leq : 57.32 dBA
```

🠝

```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.80 + 0.00) = 55.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     40   0.54  71.98   0.00  -9.46  -6.73   0.00   0.00   0.00  55.80
-------------------------------------------------------------------------------

Segment Leq : 55.80 dBA

Total Leq All Segments: 59.64 dBA
```

🠝

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 50.20 + 0.00) = 50.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	40	0.46	64.39	0.00	-7.49	-6.70	0.00	0.00	0.00	50.20

Segment Leq : 50.20 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 48.77 + 0.00) = 48.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	40	0.46	64.39	0.00	-8.92	-6.70	0.00	0.00	0.00	48.77

Segment Leq : 48.77 dBA

Total Leq All Segments: 52.55 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.64
(NIGHT): 52.55

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 15:03:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 4, Units 3 & 4 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 49.00 / 49.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.50 / 60.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.79 + 0.00) = 59.79 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.54  71.98   0.00  -7.93  -4.27   0.00   0.00   0.00  59.79
-------------------------------------------------------------------------------

Segment Leq : 59.79 dBA
```

↟

```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.37 + 0.00) = 58.37 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.54  71.98   0.00  -9.35  -4.27   0.00   0.00   0.00  58.37
-------------------------------------------------------------------------------

Segment Leq : 58.37 dBA

Total Leq All Segments: 62.15 dBA
```

↟

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 52.80 + 0.00) = 52.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.46	64.39	0.00	-7.49	-4.10	0.00	0.00	0.00	52.80

Segment Leq : 52.80 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 51.47 + 0.00) = 51.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.46	64.39	0.00	-8.82	-4.10	0.00	0.00	0.00	51.47

Segment Leq : 51.47 dBA

Total Leq All Segments: 55.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.15
(NIGHT): 55.20

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 15:41:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 4, Units 9 & 10 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 0.00 deg 60.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   60.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.50 / 46.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```



```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 61.26 + 0.00) = 61.26 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     60   0.54  71.98   0.00  -5.48  -5.24   0.00   0.00   0.00  61.26
-------------------------------------------------------------------------------

Segment Leq : 61.26 dBA
```



```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.16 + 0.00) = 59.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     60   0.54  71.98   0.00  -7.58  -5.24   0.00   0.00   0.00  59.16
-------------------------------------------------------------------------------

Segment Leq : 59.16 dBA

Total Leq All Segments: 63.35 dBA
```

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 54.05 + 0.00) = 54.05 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	60	0.46	64.39	0.00	-5.17	-5.17	0.00	0.00	0.00	54.05

Segment Leq : 54.05 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 52.07 + 0.00) = 52.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	60	0.46	64.39	0.00	-7.15	-5.17	0.00	0.00	0.00	52.07

Segment Leq : 52.07 dBA

Total Leq All Segments: 56.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.35
(NIGHT): 56.18

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 16:02:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 4, Units 11 & 12 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  46.50 / 46.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.24 + 0.00) = 62.24 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.54  71.98   0.00  -5.48  -4.27   0.00   0.00   0.00  62.24
-------------------------------------------------------------------------------

Segment Leq : 62.24 dBA
```

↟

```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.14 + 0.00) = 60.14 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     90   0.54  71.98   0.00  -7.58  -4.27   0.00   0.00   0.00  60.14
-------------------------------------------------------------------------------

Segment Leq : 60.14 dBA

Total Leq All Segments: 64.33 dBA
```

↟

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 55.11 + 0.00) = 55.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.46	64.39	0.00	-5.17	-4.10	0.00	0.00	0.00	55.11

Segment Leq : 55.11 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 53.13 + 0.00) = 53.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.46	64.39	0.00	-7.15	-4.10	0.00	0.00	0.00	53.13

Segment Leq : 53.13 dBA

Total Leq All Segments: 57.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.33
(NIGHT): 57.24

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 15:36:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 4, Units 13 & 14 -
Indoor

Road data, segment # 1: Bank St N (day/night)
Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 0.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 26.50 / 26.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  39.00 / 39.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```



```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.41 + 0.00) = 63.41 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     70   0.54  71.98   0.00  -3.81  -4.76   0.00   0.00   0.00  63.41
-------------------------------------------------------------------------------

Segment Leq : 63.41 dBA
```



```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 60.82 + 0.00) = 60.82 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     70   0.54  71.98   0.00  -6.40  -4.76   0.00   0.00   0.00  60.82
-------------------------------------------------------------------------------

Segment Leq : 60.82 dBA

Total Leq All Segments: 65.32 dBA
```

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 56.13 + 0.00) = 56.13 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	70	0.46	64.39	0.00	-3.60	-4.66	0.00	0.00	0.00	56.13

Segment Leq : 56.13 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 53.68 + 0.00) = 53.68 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	70	0.46	64.39	0.00	-6.04	-4.66	0.00	0.00	0.00	53.68

Segment Leq : 53.68 dBA

Total Leq All Segments: 58.09 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.32
(NIGHT): 58.09

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 15:07:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 4, Units 15 & 16 -
Indoor

Road data, segment # 1: Bank St N (day/night)
Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 26.50 / 26.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  39.00 / 39.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```



```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.91 + 0.00) = 63.91 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.54  71.98   0.00  -3.81  -4.27   0.00   0.00   0.00  63.91
-------------------------------------------------------------------------------

Segment Leq : 63.91 dBA
```



```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 61.32 + 0.00) = 61.32 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -90      0   0.54  71.98   0.00  -6.40  -4.27   0.00   0.00   0.00  61.32
-------------------------------------------------------------------------------

Segment Leq : 61.32 dBA

Total Leq All Segments: 65.82 dBA
```



```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 56.69 + 0.00) = 56.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.46	64.39	0.00	-3.60	-4.10	0.00	0.00	0.00	56.69

Segment Leq : 56.69 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 54.24 + 0.00) = 54.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	0	0.46	64.39	0.00	-6.04	-4.10	0.00	0.00	0.00	54.24

Segment Leq : 54.24 dBA

Total Leq All Segments: 58.65 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.82
(NIGHT): 58.65

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 18:47:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 5, Units 7 & 8 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -25.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 66.00 / 66.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           : -25.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  77.50 / 77.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```



```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.41 + 0.00) = 53.41 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -25      0   0.54  71.98   0.00  -9.93  -8.65   0.00   0.00   0.00  53.41
-------------------------------------------------------------------------------

Segment Leq : 53.41 dBA
```



```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.33 + 0.00) = 52.33 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -25      0   0.54  71.98   0.00 -11.01  -8.65   0.00   0.00   0.00  52.33
-------------------------------------------------------------------------------

Segment Leq : 52.33 dBA

Total Leq All Segments: 55.91 dBA
```



```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 46.38 + 0.00) = 46.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.46	64.39	0.00	-9.37	-8.64	0.00	0.00	0.00	46.38

Segment Leq : 46.38 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 45.37 + 0.00) = 45.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-25	0	0.46	64.39	0.00	-10.39	-8.64	0.00	0.00	0.00	45.37

Segment Leq : 45.37 dBA

Total Leq All Segments: 48.91 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.91
(NIGHT): 48.91

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 10:37:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 5 - Units 15 & 16 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -35.00 deg 5.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.50 / 60.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           : -35.00 deg   5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  72.00 / 72.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.97 + 0.00) = 55.97 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -35      5   0.54  71.98   0.00  -9.35  -6.66   0.00   0.00   0.00  55.97
-------------------------------------------------------------------------------

Segment Leq : 55.97 dBA
```

↟

```
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 54.81 + 0.00) = 54.81 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -35      5   0.54  71.98   0.00 -10.51  -6.66   0.00   0.00   0.00  54.81
-------------------------------------------------------------------------------

Segment Leq : 54.81 dBA

Total Leq All Segments: 58.44 dBA
```

↟

```
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 48.93 + 0.00) = 48.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	5	0.46	64.39	0.00	-8.82	-6.64	0.00	0.00	0.00	48.93

Segment Leq : 48.93 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 47.83 + 0.00) = 47.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-35	5	0.46	64.39	0.00	-9.92	-6.64	0.00	0.00	0.00	47.83

Segment Leq : 47.83 dBA

Total Leq All Segments: 51.43 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 58.44
(NIGHT): 51.43

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 14:42:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rotary.te Time Period: Day/Night 16/8 hours
Description: Building 6, Units 3 & 4 -
Indoor

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

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

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

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

Angle1 Angle2 : 10.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 71.00 / 71.00 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Rotary (day)

Source height = 1.50 m

ROAD (0.00 + 50.37 + 0.00) = 50.37 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	90	0.54	65.75	0.00	-10.42	-4.96	0.00	0.00	0.00	50.37

Segment Leq : 50.37 dBA

Total Leq All Segments: 50.37 dBA

↟
Results segment # 1: Rotary (night)

Source height = 1.50 m

ROAD (0.00 + 43.55 + 0.00) = 43.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	90	0.46	58.16	0.00	-9.83	-4.77	0.00	0.00	0.00	43.55

Segment Leq : 43.55 dBA

Total Leq All Segments: 43.55 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 50.37
(NIGHT): 43.55

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 10:56:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 6 - Units 9 & 10 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -5.00 deg 35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.50 / 60.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
------------------------------------------
Angle1   Angle2           :  -5.00 deg   35.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  72.00 / 72.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: Rotary (day/night)
------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     1 %
Road pavement       :     1 (Typical asphalt or concrete)

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

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

Data for Segment # 3: Rotary (day/night)
----------------------------------------
Angle1   Angle2           :  10.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.50 / 60.50  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Bank St N (day)
------------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.97 + 0.00) = 55.97 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    -5     35   0.54  71.98   0.00  -9.35  -6.66   0.00   0.00   0.00  55.97
-------------------------------------------------------------------------------
```

Segment Leq : 55.97 dBA

↟
Results segment # 2: Bank St S (day)

Source height = 1.50 m

ROAD (0.00 + 54.81 + 0.00) = 54.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	35	0.54	71.98	0.00	-10.51	-6.66	0.00	0.00	0.00	54.81

Segment Leq : 54.81 dBA

↟
Results segment # 3: Rotary (day)

Source height = 1.50 m

ROAD (0.00 + 51.44 + 0.00) = 51.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
10	90	0.54	65.75	0.00	-9.35	-4.96	0.00	0.00	0.00	51.44

Segment Leq : 51.44 dBA

Total Leq All Segments: 59.23 dBA

↟
Results segment # 1: Bank St N (night)

Source height = 1.50 m

ROAD (0.00 + 48.93 + 0.00) = 48.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-5	35	0.46	64.39	0.00	-8.82	-6.64	0.00	0.00	0.00	48.93

Segment Leq : 48.93 dBA

↟
Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 47.83 + 0.00) = 47.83 dBA

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

```
-------------------------------------------------------------------------------
    -5     35   0.46  64.39   0.00  -9.92  -6.64   0.00   0.00   0.00  47.83
-------------------------------------------------------------------------------

Segment Leq : 47.83 dBA

♠
Results segment # 3: Rotary (night)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 44.57 + 0.00) = 44.57 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    10     90   0.46  58.16   0.00  -8.82  -4.77   0.00   0.00   0.00  44.57
-------------------------------------------------------------------------------

Segment Leq : 44.57 dBA

Total Leq All Segments: 52.24 dBA

♠



TOTAL Leq FROM ALL SOURCES (DAY): 59.23
                           (NIGHT): 52.24
♠
♠
```

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 14:49:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 6, Units 11 & 12 -
Indoor

Road data, segment # 1: Bank St N (day/night)
Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 15.00 deg 40.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.50 / 60.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           :  15.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  72.00 / 72.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.76 + 0.00) = 53.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    15     40   0.54  71.98   0.00  -9.35  -8.88   0.00   0.00   0.00  53.76
-------------------------------------------------------------------------------

Segment Leq : 53.76 dBA

🠝
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.60 + 0.00) = 52.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    15     40   0.54  71.98   0.00 -10.51  -8.88   0.00   0.00   0.00  52.60
-------------------------------------------------------------------------------

Segment Leq : 52.60 dBA

Total Leq All Segments: 56.23 dBA

🠝
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 46.74 + 0.00) = 46.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
15	40	0.46	64.39	0.00	-8.82	-8.83	0.00	0.00	0.00	46.74

Segment Leq : 46.74 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 45.64 + 0.00) = 45.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
15	40	0.46	64.39	0.00	-9.92	-8.83	0.00	0.00	0.00	45.64

Segment Leq : 45.64 dBA

Total Leq All Segments: 49.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 56.23
(NIGHT): 49.24

STAMSON 5.0 NORMAL REPORT Date: 02-09-2020 18:58:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: 4639bank.te Time Period: Day/Night 16/8 hours
Description: Building 6, Units 13 & 14 - Indoor

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : 35.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.50 / 60.50 m
Receiver height : 5.40 / 8.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↟
Road data, segment # 2: Bank St S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St S (day/night)
-------------------------------------------
Angle1   Angle2           :  35.00 deg   50.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  72.00 / 72.00  m
Receiver height           :   5.40 / 8.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠝
Results segment # 1: Bank St N (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 51.12 + 0.00) = 51.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    35     50   0.54  71.98   0.00  -9.35 -11.52   0.00   0.00   0.00  51.12
-------------------------------------------------------------------------------

Segment Leq : 51.12 dBA

🠝
Results segment # 2: Bank St S (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 49.95 + 0.00) = 49.95 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    35     50   0.54  71.98   0.00 -10.51 -11.52   0.00   0.00   0.00  49.95
-------------------------------------------------------------------------------

Segment Leq : 49.95 dBA

Total Leq All Segments: 53.58 dBA

🠝
Results segment # 1: Bank St N (night)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 44.17 + 0.00) = 44.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
35	50	0.46	64.39	0.00	-8.82	-11.40	0.00	0.00	0.00	44.17

Segment Leq : 44.17 dBA

Results segment # 2: Bank St S (night)

Source height = 1.50 m

ROAD (0.00 + 43.06 + 0.00) = 43.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
35	50	0.46	64.39	0.00	-9.92	-11.40	0.00	0.00	0.00	43.06

Segment Leq : 43.06 dBA

Total Leq All Segments: 46.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 53.58
(NIGHT): 46.66

STAMSON 5.0 NORMAL REPORT Date: 09-09-2020 15:46:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Time Period: Day/Night 16/8 hours
Description: Common Amenity Space OLA

Road data, segment # 1: Bank St N (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank St N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 / 15.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Bank ST S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank ST S (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 32.50 / 15.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Bank St N (day)

Source height = 1.50 m

ROAD (0.00 + 68.45 + 0.00) = 68.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	71.98	0.00	-2.07	-1.46	0.00	0.00	0.00	68.45

Segment Leq : 68.45 dBA

Results segment # 2: Bank ST S (day)

Source height = 1.50 m

ROAD (0.00 + 64.95 + 0.00) = 64.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.66	71.98	0.00	-5.57	-1.46	0.00	0.00	0.00	64.95

Segment Leq : 64.95 dBA

Total Leq All Segments: 70.05 dBA

Results segment # 1: Bank St N (night)

Source height = 1.50 m

ROAD (0.00 + 63.09 + 0.00) = 63.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.57	64.39	0.00	0.00	-1.30	0.00	0.00	0.00	63.09

Segment Leq : 63.09 dBA

Results segment # 2: Bank ST S (night)

Source height = 1.50 m

ROAD (0.00 + 63.09 + 0.00) = 63.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.57	64.39	0.00	0.00	-1.30	0.00	0.00	0.00	63.09

Segment Leq : 63.09 dBA

Total Leq All Segments: 66.10 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.05
(NIGHT): 66.10

STAMSON 5.0 NORMAL REPORT Date: 11-09-2020 10:17:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: bank4639.te Time Period: Day/Night 16/8 hours
Description: Common Amenity Space with barrier

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

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 17500
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: Bank N (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 1.50 / 4.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.95 m
Barrier receiver distance : 5.00 / 5.00 m
Source elevation : 104.35 m
Receiver elevation : 104.42 m
Barrier elevation : 104.75 m
Reference angle : 0.00

Road data, segment # 2: Bank S (day/night)

Car traffic volume : 14168/1232 veh/TimePeriod *
Medium truck volume : 1127/98 veh/TimePeriod *
Heavy truck volume : 805/70 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 1 %
Road pavement : 1 (Typical asphalt or concrete)

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

```
    24 hr Traffic Volume (AADT or SADT):  17500
    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: Bank S (day/night)
----------------------------------------
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  32.50 / 32.50  m
Receiver height           :   1.50 / 4.50   m
Topography                :      2       (Flat/gentle slope; with
barrier)
Barrier angle1            : -90.00 deg   Angle2 : 90.00 deg
Barrier height            :   2.95 m
Barrier receiver distance :   5.00 / 5.00   m
Source elevation          : 104.35 m
Receiver elevation        : 104.42 m
Barrier elevation         : 104.75 m
Reference angle           :   0.00

Results segment # 1: Bank N (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 !        1.15 !       105.90

ROAD (0.00 + 58.11 + 0.00) = 58.11 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj
SubLeq
-------------------------------------------------------------------------
---
   -90     90   0.48  71.98   0.00  -1.85  -1.14   0.00   0.00 -10.88
58.11
-------------------------------------------------------------------------
---

Segment Leq : 58.11 dBA
```

Results segment # 2: Bank S (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	1.16	105.91

ROAD (0.00 + 55.36 + 0.00) = 55.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.48	71.98	0.00	-4.98	-1.14	0.00	0.00	-10.50	55.36

Segment Leq : 55.36 dBA

Total Leq All Segments: 59.96 dBA

Results segment # 1: Bank N (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	4.50	3.40	108.15

ROAD (0.00 + 61.12 + 0.00) = 61.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.39	64.39	0.00	-1.74	-0.97	0.00	0.00	-4.01	57.67*
-90	90	0.57	64.39	0.00	-1.96	-1.30	0.00	0.00	0.00	61.12

* Bright Zone !

Segment Leq : 61.12 dBA

Results segment # 2: Bank S (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	4.50	3.70	108.45

ROAD (0.00 + 57.81 + 0.00) = 57.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.39	64.39	0.00	-4.68	-0.97	0.00	0.00	-1.92	56.82*
-90	90	0.57	64.39	0.00	-5.27	-1.30	0.00	0.00	0.00	57.81

* Bright Zone !

Segment Leq : 57.81 dBA

Total Leq All Segments: 62.78 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.96
(NIGHT): 62.78

APPENDIX B
SOUND TRANSMISSION CLASS (STC)
CALCULATIONS

Living/Dining Room - Typical 3 Bedroom Terrace Homes - End Unit

Reverse Evaluation of Sound Transmission Class (STC) for Building Components

1.0	Free field sound level		70.79	dBA	Noise source
	Correction for reflections		3	dBA	Road
	Outdoor sound level		73.79	dBA	Indoor Quarters
	Indoor sound level	(Daytime)	45	dBA	Living
	Required Noise Reduction (NR)		28.79	dB	Subtract indoor from outdoor sound level
2.0	Sound angle of insidence	0 to 90 degrees			C_1 Correction from Table 7.7 0 dB
					Sum 28.79 dB

	Component:	Wall		STC 40 dB
3.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		C_4 from Table 7.10 7 dB
	Component category	d. Sealed thick window, or exterior wall, or roof/ceiling		Correction -7 dB
4.0	Room floor area	31.4 m^2	82.86624 % of floor area	
	Component Area	26.02 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -4 dB
				Correction 4 dB
5.0	Noise reduction if only this component transmits sound			37 dB
6.0	Required noise reduction (from Step 1)			29 dB
7.0	Term C_2: Subtract the Required NR from the Noise Reduction for this component			8.2 dB
8.0	Determine from Table 7.8 the corresponding value of total transmitted sound energy			16 %

	Component:	Window		After step 2 28.79 dB
9.0	Transmits	84 % of total sound energy		C_2 from Table 7.8 1 dB
10.0	Room floor area	31.4 m^2	31.91083 % of floor area	
	Component Area	10.02 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -4 dB
11.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		
	Component category	d. Sealed thick window, or exterior wall, or roof/ceil		C_4 from Table 7.10 7 dB
			$STC=NR+C_1+C_2+C_3+C_4$	Required STC 33

Tables from Environmental Noise Assessment in Land Use Planning, dated 1999, published by the MOE

Master Bedroom - Typical 3 Bedroom Terrace Homes - End Unit

Reverse Evaluation of Sound Transmission Class (STC) for Building Components

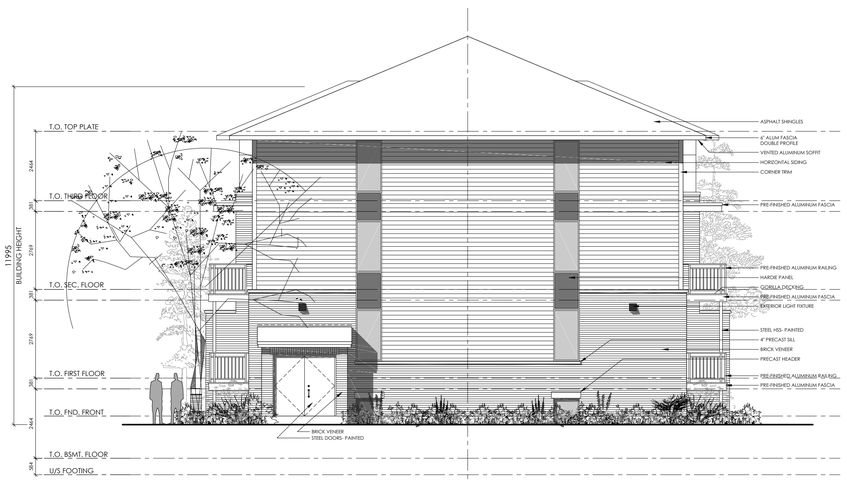
1.0	Free field sound level		63.69	dBA	Noise source
	Correction for reflections		3	dBA	Road
	Outdoor sound level		66.69	dBA	Indoor Quarters
	Indoor sound level	(Night time)	40	dBA	Sleeping
	Required Noise Reduction (NR)		26.69	dB	Subtract indoor from outdoor sound level
2.0	Sound angle of insidence	0 to 90 degrees			C_1 Correction from Table 7.7 0 dB
					Sum 26.69 dB

	Component:	Wall		STC 40 dB
3.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		C_4 from Table 7.10 7 dB
	Component category	d. Sealed thick window, or exterior wall, or roof/ceiling		Correction -7 dB
4.0	Room floor area	13.6 m^2	95.58824 % of floor area	
	Component Area	13 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -3 dB
				Correction 3 dB
5.0	Noise reduction if only this component transmits sound			36 dB
6.0	Required noise reduction (from Step 1)			27 dB
7.0	Term C_2: Subtract the Required NR from the Noise Reduction for this component			9.3 dB
8.0	Determine from Table 7.8 the corresponding value of total transmitted sound energy			12 %

	Component:	Window		After step 2 26.69 dB
9.0	Transmits	88 % of total sound energy		C_2 from Table 7.8 1 dB
10.0	Room floor area	13.6 m^2	44.85294 % of floor area	
	Component Area	6.1 m^2		
	Room absorption category	Intermediate		C_3 from Table 7.9 -3 dB
11.0	Noise spectrum type	D - Mixed Road Traffic, Distant Aircraft		
	Component category	d. Sealed thick window, or exterior wall, or roof/ceil		C_4 from Table 7.10 7 dB
			$STC=NR+C_1+C_2+C_3+C_4$	Required STC 32

Tables from Environmental Noise Assessment in Land Use Planning, dated 1999, published by the MOE

APPENDIX C
SAMPLE ARCHITECTURAL DRAWINGS



3 INTERNAL END ELEVATIONS
A2 SCALE: 1:100

2 FRONT ELEVATIONS (EAST)
A2 SCALE: 1:100

4 EXTERNAL END ELEVATIONS (NORTH & SOUTH)
A2 SCALE: 1:100

1 FRONT ELEVATIONS - BANK STREET (WEST)
A2 SCALE: 1:100

EXTERIOR COLOURS- PALETTE 1

- BRICK:	MERIDIAN- COVENTRY
- STONE:	BRAMTON FINESSE- CANVAS BEIGE, SUAVE
- SIDING:	KAYCAN- VINYL- CATLEMORE
- WINDOWS:	JELDWEN- CHESTNUT BRONZE
- PANELS:	HARDIE BOARD- TO MATCH COMMERCIAL BROWN
- ALUMINUM SOFFIT/ FASCIA:	KAYCAN- COMMERCIAL BROWN
- ALUMINUM RAILINGS:	COMMERCIAL BROWN
- ASPHALT SHINGLES:	DARK BROWN

EXTERIOR COLOURS- PALETTE 2

- BRICK:	MERIDIAN- CAVENDISH
- STONE:	BRAMTON FINESSE- MINERAL GREY, SUAVE
- SIDING:	KAYCAN- VINYL- BISQUE
- WINDOWS:	JELDWEN- SABLE
- PANELS:	HARDIE BOARD- TO MATCH CHARCOAL
- ALUMINUM SOFFIT/ FASCIA:	KAYCAN- CHARCOAL
- ALUMINUM RAILINGS:	CHARCOAL
- ASPHALT SHINGLES:	DUAL BLACK

M. David Blakely Architect Inc.
2200 Prince of Wales Dr. Suite 101 Ottawa, Ontario
Phone (613) 226-8811 Fax (613) 226-7942 K2E 6Z9

GENERAL NOTES:

1. THE CONTRACTOR IS RESPONSIBLE FOR CHECKING AND VERIFYING ALL DIMENSIONS. ANY DISCREPANCY MUST BE REPORTED TO M. DAVID BLAKELY ARCHITECT INC.
2. ALL WORK AND MATERIALS TO BE IN COMPLIANCE WITH ALL CODES, REGULATIONS, & BY-LAWS
3. ADDITIONAL DRAWINGS MAY BE ISSUED FOR CLARIFICATION TO ASSIST THE PROPER EXECUTION OF WORK. SUCH DRAWINGS WILL HAVE THE SAME MEANING AND INTENT AS IF THEY WERE INCLUDED WITH THE PLANS IN CONTRACT DOCUMENTS
4. DO NOT SCALE DRAWINGS.
5. THIS DRAWING SHALL NOT BE USED OR COPIED WITHOUT THE AUTHORIZATION OF THE ARCHITECT
6. THIS DRAWING SHALL NOT BE USED FOR PERMIT OR CONSTRUCTION UNLESS THE DRAWING BEARS THE ARCHITECT'S SEAL AND SIGNATURE

SEAL

No.	DATE	DESCRIPTION	INIT.
1.	28/08/20	FOR SITE PLAN SUBMISSION	MB
2.			
3.			
4.			
5.			
6.			
7.			
8.			
9.			
10.			
11.			
12.			

REVISIONS

No.	DATE	DESCRIPTION	INIT.
13.			
14.			
15.			
16.			
17.			
18.			
19.			
20.			
21.			
22.			
23.			
24.			

REVISIONS

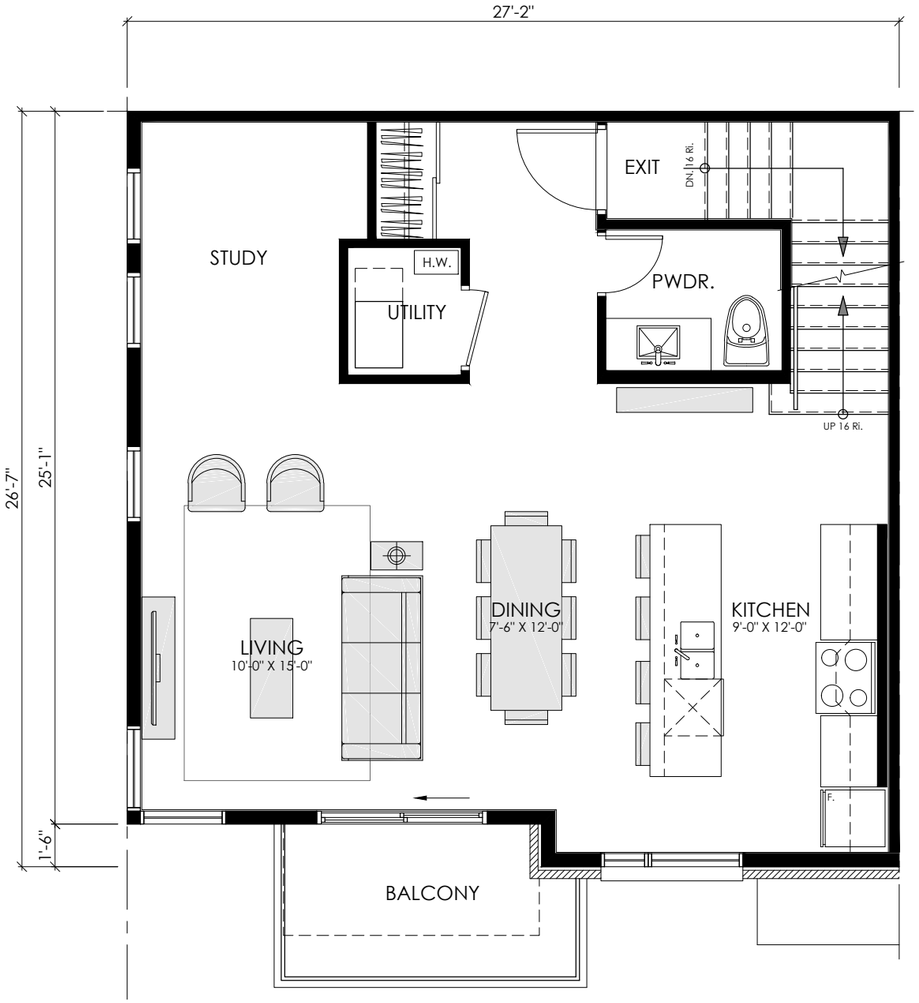
A - DETAIL NUMBER
B - SHEET NUMBER (DETAIL REQUIRED)
C - SHEET NUMBER (DETAIL LOCATION)

PROJECT:
PLANNED UNIT DEVELOPMENT
4639 BANK STREET
OTTAWA, ONTARIO

CLIENT:
Glenview homes

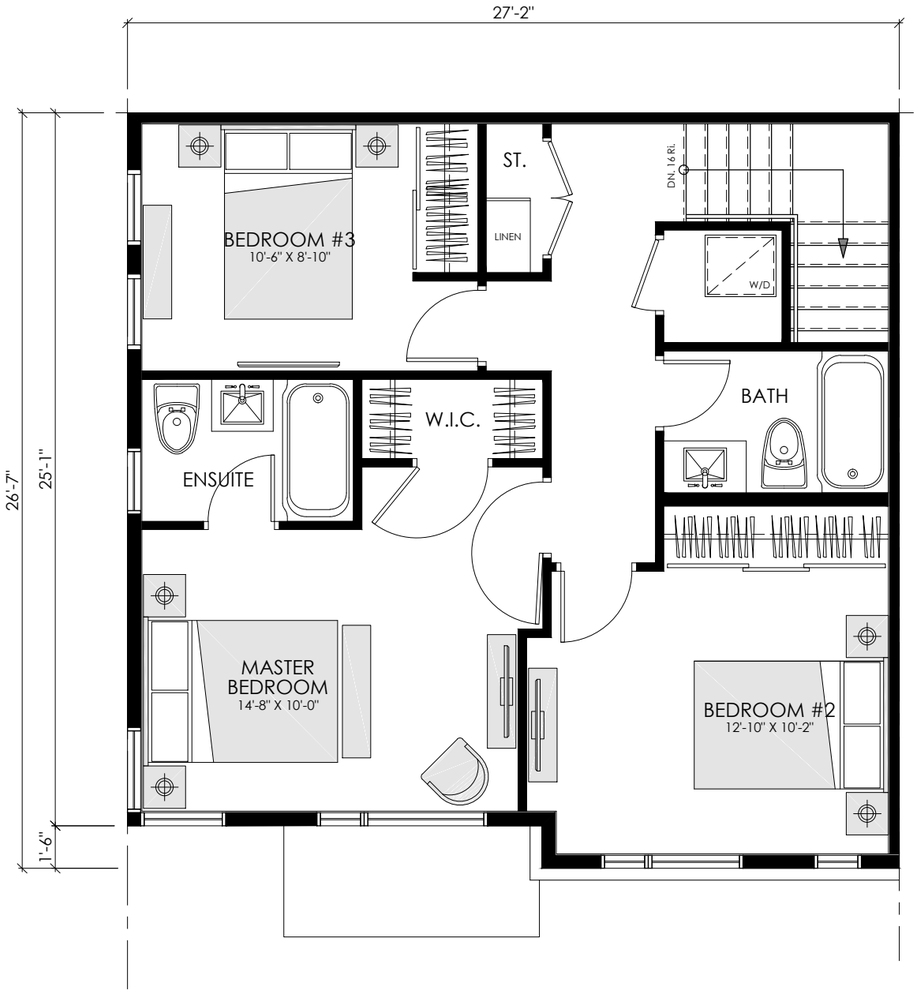
DRAWING TITLE:
BUILDINGS 2&3 ELEVATIONS
TERRACE HOMES

DATE: AUGUST, 2020
SCALE: 1 : 100
DRAWN BY: mdb
CHECKED: MDB
SHEET No. REV No.: A2



3 BEDROOM
UPPER END UNIT: MAIN FLOOR

FLOOR AREA: 706 ft²



3 BEDROOM
UPPER END UNIT: UPPER FLOOR

FLOOR AREA: 700 ft²

M. David Blakely
Architect Inc.
2200 Prince of Wales Dr. Suite 101 Ottawa, Ontario
Phone (613) 226-8811 Fax (613) 226-7942 k2E 6Z9

A4

3 BEDROOM UPPER END UNIT: 1,439 ft²

BACK-TO-BACK
STACKED TERRACE HOMES
Rev. 02 | JAN 15, 2020
SCALE: 3/16" = 1'-0"

Glenview homes