

GRADIENTWIND

ENGINEERS & SCIENTISTS

January 23, 2025

Katasa Groupe + Developpement
69 rue Jean-Proulx, Unit 301
Gatineau, QC, J8Z 1W2

Re: Draft Comments Report
265 Carling Avenue, Ottawa, Ontario
GW File No.: 23-293 – Response Letter

Gradient Wind Engineering Inc. (Gradient Wind) was retained by Katasa Groupe + Developpement to undertake a detailed traffic noise assessment for the proposed development located at 265 Carling Avenue in Ottawa, Ontario. This addendum letter is supplemental to our previous report (ref. *Gradient Wind report #23-293 – Detailed Traffic Noise Study*, dated January 23, 2024), to address the comments received by the City of Ottawa on July 19, 2024.

Gradient Wind received the following comments from the City of Ottawa:

Comment 3.a *“Stationary Noise Study will be required, after mechanical design has been completed, and will be conditioned as part of approval process, unless submitted and approved, prior to drafting DAR. Study should speak to mechanical units of this building and any mitigation required for occupants, as well as neighboring properties.”*

GW Response: The stationary noise assessment will be performed once more information is known about the mechanical systems. The building will be designed to comply with the NPC-300 sound level limits.

Comment 3.b: *“We understand that a roof top amenity is proposed. Please confirm this and any other proposed exterior amenity space, and provide applicable recommendations, as required”*

GW Response: There are two amenity spaces located on the roof of the building. One on the east and west sides of the mechanical penthouse. Gradient Wind performed noise calculations at the centre of each area as per ENCG requirement. The primary sources of noise are Carling Avenue, Bronson Avenue, and Highway 417. Table 1 (below) summarizes the AADT values used for each roadway included in this assessment. Figure 1 shows the receptor locations and source – receiver distances. Details of the STAMSON calculations are shown in Appendix A.

TABLE 1: ROADWAY TRAFFIC DATA

Segment	Roadway Class	Speed Limit (km/h)	Ultimate AADT	Day/Night Split	Truck Volume Percentages	
					Medium Truck	Heavy Truck
Carling Avenue	4-Lane urban arterial (divided)	60	35,000	92/8	7	5
Bronson	4-Lane urban arterial (undivided)	50	30,000	92/8	7	5
Highway 417	Provincial Freeway	100	189,079	85/15	4	2

The results of the study are shown in Table 2.

TABLE 2: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES

Receptor Number	Receptor Height Above Grade (m)	Receptor Location	STAMSON Roadway Noise Level (dBA)	
			Day	Night
7	28.5	OLA – Amenity Space East	73	N / A
8	28.5	OLA – Amenity Space West	70	N / A

Since the levels of both OLA receivers are greater than 60 dBA, therefore noise barriers will be need around the perimeter of terraces. Our recommendation is to use a 2.0 -meter-high barrier, in order to reduces noise level to 59 dBA. Noise barrier locations are shown in Figure 2.

Results of the calculations also indicate that the following Type B Warning Clause¹ will be required on all Lease, Purchase and Sale Agreements, as summarized below.

¹ MECP, Environnemental Noise Guidelines, NPC 300 – Part C, Section 8



Type B:

"Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic (rail traffic) (air traffic) may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

This concludes our response letter. If you have any questions or wish to discuss our findings, please contact the undersigned.

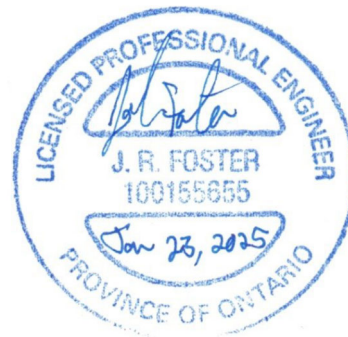
Sincerely,

Gradient Wind Engineering Inc.

Sergio Nunez Andres

Sergio Nunez Andres, B.Eng
Junior Environmental Scientist

Gradient Wind File 23-293 – Response Letter



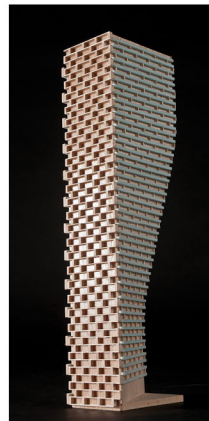
Joshua Foster, P.Eng.
Lead Engineer





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APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA

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STAMSON 5.0 NORMAL REPORT Date: 24-01-2025 09:33:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rl.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
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: Carling Ave (day/night)

Angle1 Angle2 : -39.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 28.50 / 28.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



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

Car traffic volume : 24288/2112 veh/TimePeriod *
Medium truck volume : 1932/168 veh/TimePeriod *
Heavy truck volume : 1380/120 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 30000
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: Bronson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 28.50 / 28.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 3: Highway 417 (day/night)

Car traffic volume : 151074/26660 veh/TimePeriod *
Medium truck volume : 6429/1134 veh/TimePeriod *
Heavy truck volume : 3214/567 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 189079
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 4.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 85.00

Data for Segment # 3: Highway 417 (day/night)

Angle1 Angle2 : -90.00 deg 59.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 435.00 / 435.00 m
Receiver height : 28.50 / 28.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Results segment # 1: Carling Ave (day)

Source height = 1.50 m

ROAD (0.00 + 70.01 + 0.00) = 70.01 dBA

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

-39	90	0.00	73.68	0.00	-2.22	-1.45	0.00	0.00	0.00
70.01									

Segment Leq : 70.01 dBA

Results segment # 2: Bronson (day)

Source height = 1.50 m

ROAD (0.00 + 67.94 + 0.00) = 67.94 dBA

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

-90	90	0.00	71.49	0.00	-3.55	0.00	0.00	0.00	0.00
67.94									

Segment Leq : 67.94 dBA

Results segment # 3: Highway 417 (day)

Source height = 1.19 m

ROAD (0.00 + 64.05 + 0.00) = 64.05 dBA

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

-90	59	0.00	83.30	0.00	-14.62	-0.82	0.00	-3.80	0.00
64.05									



Segment Leq : 64.05 dBA

Total Leq All Segments: 72.74 dBA

Results segment # 1: Carling Ave (night)

Source height = 1.50 m

ROAD (0.00 + 62.41 + 0.00) = 62.41 dBA

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

--									
-39	90	0.00	66.08	0.00	-2.22	-1.45	0.00	0.00	0.00
62.41									

--

Segment Leq : 62.41 dBA

Results segment # 2: Bronson (night)

Source height = 1.50 m

ROAD (0.00 + 60.34 + 0.00) = 60.34 dBA

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

--									
-90	90	0.00	63.89	0.00	-3.55	0.00	0.00	0.00	0.00
60.34									

--

Segment Leq : 60.34 dBA

Results segment # 3: Highway 417 (night)

Source height = 1.19 m

ROAD (0.00 + 63.33 + 0.00) = 63.33 dBA

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

--									
-90	59	0.00	78.77	0.00	-14.62	-0.82	0.00	0.00	0.00
63.33									



--
Segment Leq : 63.33 dBA

Total Leq All Segments: 66.97 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 72.74
(NIGHT): 66.97



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STAMSON 5.0 NORMAL REPORT Date: 24-01-2025 09:35:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
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: Carling Ave (day/night)

Angle1 Angle2 : -35.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 26.00 / 26.00 m
Receiver height : 28.50 / 28.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Road data, segment # 2: Highway 417 (day/night)

Car traffic volume : 151074/26660 veh/TimePeriod *
Medium truck volume : 6429/1134 veh/TimePeriod *
Heavy truck volume : 3214/567 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 189079
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 4.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 85.00

Data for Segment # 2: Highway 417 (day/night)

Angle1 Angle2 : -90.00 deg 36.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 441.00 / 441.00 m
Receiver height : 28.50 / 28.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00



Results segment # 1: Carling Ave (day)

Source height = 1.50 m

ROAD (0.00 + 69.70 + 0.00) = 69.70 dBA

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

--									
-35	90	0.00	73.68	0.00	-2.39	-1.58	0.00	0.00	0.00
69.70									

--

Segment Leq : 69.70 dBA

Results segment # 2: Highway 417 (day)

Source height = 1.19 m

ROAD (0.00 + 60.33 + 0.00) = 60.33 dBA

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

--									
-90	36	0.00	76.56	0.00	-14.68	-1.55	0.00	0.00	0.00
60.33									

--

Segment Leq : 60.33 dBA

Total Leq All Segments: 70.18 dBA

Results segment # 1: Carling Ave (night)

Source height = 1.50 m

ROAD (0.00 + 62.11 + 0.00) = 62.11 dBA

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

--									
-35	90	0.00	66.08	0.00	-2.39	-1.58	0.00	0.00	0.00
62.11									

--



Segment Leq : 62.11 dBA

Results segment # 2: Highway 417 (night)

Source height = 1.19 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									

--									
-90	36	0.00	72.03	0.00	-14.68	-1.55	0.00	0.00	0.00
55.80									

Segment Leq : 55.80 dBA

Total Leq All Segments: 63.02 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 70.18
(NIGHT): 63.02





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STAMSON 5.0 NORMAL REPORT Date: 24-01-2025 09:32:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r12.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
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: Carling Ave (day/night)

Angle1 Angle2 : -39.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 28.50 / 28.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -39.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 28.50 m
Reference angle : 0.00



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

Car traffic volume : 24288/2112 veh/TimePeriod *
Medium truck volume : 1932/168 veh/TimePeriod *
Heavy truck volume : 1380/120 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 30000
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: Bronson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 28.50 / 28.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.00 m
Barrier receiver distance : 4.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 28.50 m
Reference angle : 0.00



Road data, segment # 3: Highway 417 (day/night)

Car traffic volume : 151074/26660 veh/TimePeriod *
Medium truck volume : 6429/1134 veh/TimePeriod *
Heavy truck volume : 3214/567 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 189079
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 4.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 85.00

Data for Segment # 3: Highway 417 (day/night)

Angle1 Angle2 : -90.00 deg 59.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 435.00 / 435.00 m
Receiver height : 28.50 / 28.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 59.00 deg
Barrier height : 2.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 28.50 m
Reference angle : 0.00



Results segment # 1: Carling Ave (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	28.50	-8.64	19.86

ROAD (0.00 + 51.58 + 0.00) = 51.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-39	90	0.00	73.68	0.00	-2.22	-1.45	0.00	0.00	-18.43

SubLeq

51.58

Segment Leq : 51.58 dBA



Results segment # 2: Bronson (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	28.50	-3.18	25.32

ROAD (0.00 + 51.25 + 0.00) = 51.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	71.49	0.00	-3.55	0.00	0.00	0.00	-16.68

SubLeq

51.25

Segment Leq : 51.25 dBA



Results segment # 3: Highway 417 (day)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	28.50	-0.50	28.00

ROAD (0.00 + 56.45 + 0.00) = 56.45 dBA

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

-90	59	0.00	83.30	0.00	-14.62	-0.82	0.00	-3.80	0.00
64.05									
-90	59	0.00	83.30	0.00	-14.62	-0.82	0.00	0.00	-11.40
56.45									

Segment Leq : 56.45 dBA

Total Leq All Segments: 58.57 dBA



Results segment # 1: Carling Ave (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	28.50	-8.64	19.86

ROAD (0.00 + 43.98 + 0.00) = 43.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-39	90	0.00	66.08	0.00	-2.22	-1.45	0.00	0.00	-18.43

SubLeq

43.98

Segment Leq : 43.98 dBA



Results segment # 2: Bronson (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	28.50	-7.94	20.56

ROAD (0.00 + 42.68 + 0.00) = 42.68 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	63.89	0.00	-3.55	0.00	0.00	0.00	-17.66

SubLeq

42.68

Segment Leq : 42.68 dBA



Results segment # 3: Highway 417 (night)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	28.50	-0.50	28.00

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
-90	59	0.00	78.77	0.00	-14.62	-0.82	0.00	0.00	-11.40

SubLeq

51.92

Segment Leq : 51.92 dBA

Total Leq All Segments: 52.99 dBA



TOTAL Leq FROM ALL SOURCES (DAY) : 58.57
(NIGHT) : 52.99





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ENGINEERS & SCIENTISTS

STAMSON 5.0 NORMAL REPORT Date: 24-01-2025 09:30:57
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rl.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
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: Carling Ave (day/night)

Angle1 Angle2 : -39.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 28.50 / 28.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -39.00 deg Angle2 : 90.00 deg
Barrier height : 3.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 28.50 m
Reference angle : 0.00



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

Car traffic volume : 24288/2112 veh/TimePeriod *
Medium truck volume : 1932/168 veh/TimePeriod *
Heavy truck volume : 1380/120 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

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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: Bronson (day/night)

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 28.50 / 28.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 3.00 m
Barrier receiver distance : 4.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 28.50 m
Reference angle : 0.00



Road data, segment # 3: Highway 417 (day/night)

Car traffic volume : 151074/26660 veh/TimePeriod *
Medium truck volume : 6429/1134 veh/TimePeriod *
Heavy truck volume : 3214/567 veh/TimePeriod *
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 189079
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 4.00
Heavy Truck % of Total Volume : 2.00
Day (16 hrs) % of Total Volume : 85.00

Data for Segment # 3: Highway 417 (day/night)

Angle1 Angle2 : -90.00 deg 59.00 deg
Wood depth : 0 (No woods.)
No of house rows : 3 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 435.00 / 435.00 m
Receiver height : 28.50 / 28.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 59.00 deg
Barrier height : 3.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 28.50 m
Reference angle : 0.00



Results segment # 1: Carling Ave (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	28.50	-8.64	19.86

ROAD (0.00 + 51.33 + 0.00) = 51.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-39	90	0.00	73.68	0.00	-2.22	-1.45	0.00	0.00	-18.68

SubLeq

51.33

Segment Leq : 51.33 dBA

Results segment # 2: Bronson (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	28.50	-3.18	25.32

ROAD (0.00 + 50.47 + 0.00) = 50.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	71.49	0.00	-3.55	0.00	0.00	0.00	-17.47

SubLeq

50.47

Segment Leq : 50.47 dBA



Results segment # 3: Highway 417 (day)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	28.50	-0.50	28.00

ROAD (0.00 + 54.25 + 0.00) = 54.25 dBA

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

-90	59	0.00	83.30	0.00	-14.62	-0.82	0.00	-3.80	0.00
64.05									
-90	59	0.00	83.30	0.00	-14.62	-0.82	0.00	0.00	-13.60
54.25									

Segment Leq : 54.25 dBA

Total Leq All Segments: 57.10 dBA

Results segment # 1: Carling Ave (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	28.50	-8.64	19.86

ROAD (0.00 + 43.73 + 0.00) = 43.73 dBA

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

-39	90	0.00	66.08	0.00	-2.22	-1.45	0.00	0.00	-18.68
43.73									



Segment Leq : 43.73 dBA

Results segment # 2: Bronson (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	28.50	-7.94	20.56

ROAD (0.00 + 42.33 + 0.00) = 42.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	63.89	0.00	-3.55	0.00	0.00	0.00	-18.01

SubLeq

42.33

Segment Leq : 42.33 dBA

Results segment # 3: Highway 417 (night)

Source height = 1.19 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.19	28.50	-0.50	28.00

ROAD (0.00 + 49.73 + 0.00) = 49.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	59	0.00	78.77	0.00	-14.62	-0.82	0.00	0.00	-13.60

SubLeq

49.73



Segment Leq : 49.73 dBA

Total Leq All Segments: 51.29 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.10
(NIGHT): 51.29

