January 23, 2025

Katasa Groupe + Developpment
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 Clause[1] 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.

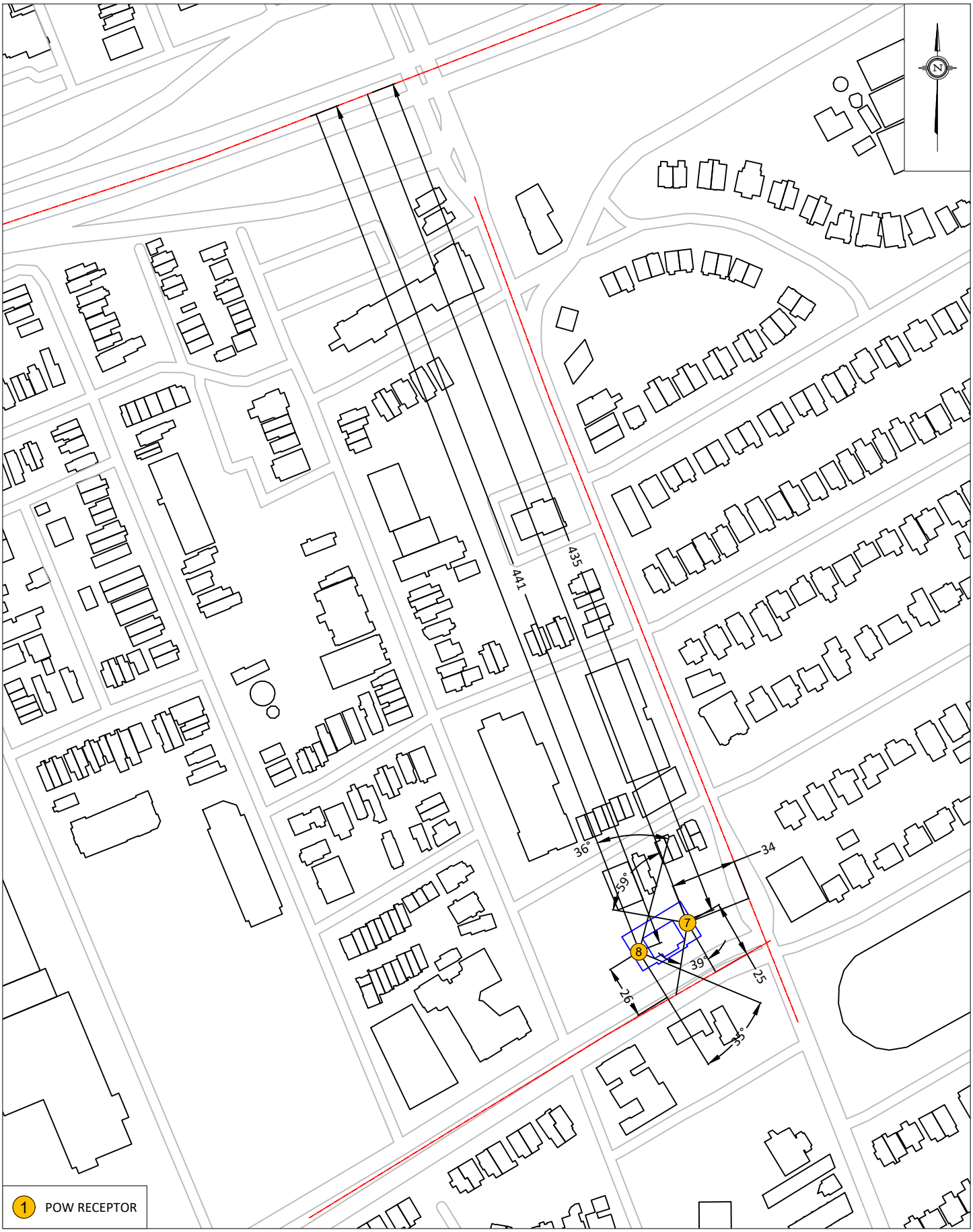
Sincerely,

Gradient Wind Engineering Inc.

Sergio Nunez Andres, B.Eng
Junior Environmental Scientist

Joshua Foster, P.Eng.
Lead Engineer

Gradient Wind File 23-293 – Response Letter



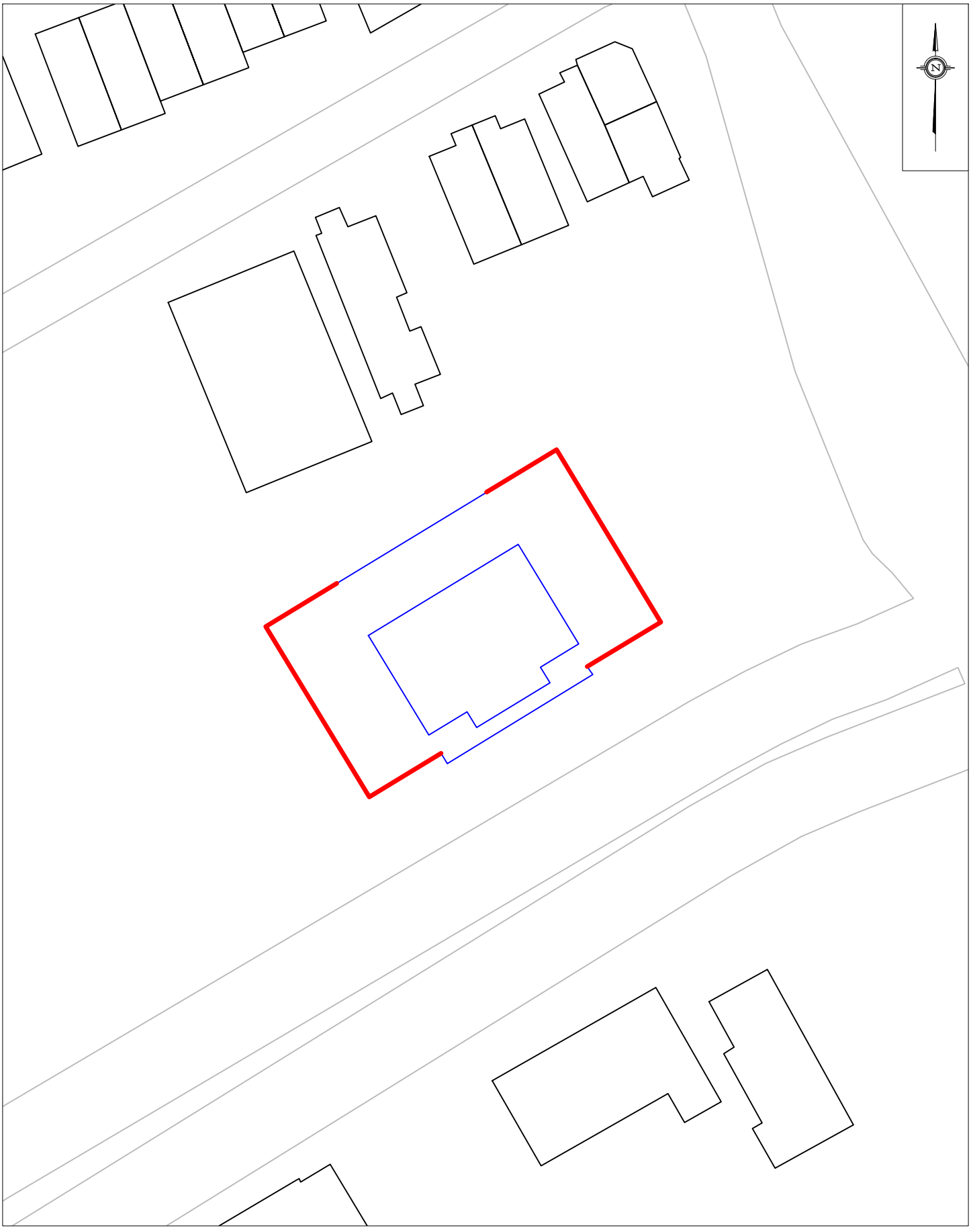
GRADIENTWIND
ENGINEERS & SCIENTISTS

127 WALGREEN ROAD , OTTAWA, ON
613 836 0934 • GRADIENTWIND.COM

PROJECT	265 CARLING AVENUE, OTTAWA RESPONSE LETTER
SCALE	1:2500 (APPROX.)
DRAWING NO.	GW23-293-R1
DATE	JANUARY 23, 2025
DRAWN BY	S.N.

DESCRIPTION

FIGURE 1:
RECEPTOR DISTANCES AND EXPOSURE ANGLES



GRADIENTWIND
ENGINEERS & SCIENTISTS

127 WALGREEN ROAD , OTTAWA, ON
613 836 0934 • GRADIENTWIND.COM

PROJECT	265 CARLING AVENUE, OTTAWA RESPONSE LETTER		DESCRIPTION
SCALE	1:500 (APPROX.)	DRAWING NO.	GW23-293-R2
DATE	JANUARY 27, 2025	DRAWN BY	S.N.

FIGURE 2:
NOISE BARRIER SUGGESTED LOCATION

GRADIENTWIND
ENGINEERS & SCIENTISTS

APPENDIX A

STAMSON 5.04 – INPUT AND OUTPUT DATA

127 WALGREEN ROAD, OTTAWA, ON, CANADA K0A 1L0 | 613 836 0934
GRADIENTWIND.COM

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

Filename: r1.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
```

```
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
```

```
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      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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
SubLeq
-------------------------------------------------------------------------------
--
   -39     90   0.00  73.68   0.00  -2.22  -1.45   0.00   0.00 -18.43
51.58
-------------------------------------------------------------------------------
--

Segment Leq : 51.58 dBA
```

```
Results segment # 2: Bronson (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 !       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
SubLeq
-------------------------------------------------------------------------------
--
   -90     90   0.00  71.49   0.00  -3.55   0.00   0.00   0.00 -16.68
51.25
-------------------------------------------------------------------------------
--

Segment Leq : 51.25 dBA
```

```
Results segment # 3: Highway 417 (day)
---------------------------------------

Source height = 1.19 m

Barrier height for grazing incidence
---------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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
SubLeq
-------------------------------------------------------------------------------
--
   -39     90   0.00  66.08   0.00  -2.22  -1.45   0.00   0.00 -18.43
43.98
-------------------------------------------------------------------------------
--

Segment Leq : 43.98 dBA
```

```
Results segment # 2: Bronson (night)
------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       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
SubLeq
-------------------------------------------------------------------------------
--
   -90     90   0.00  63.89   0.00  -3.55   0.00   0.00   0.00 -17.66
42.68
-------------------------------------------------------------------------------
--

Segment Leq : 42.68 dBA
```

```
Results segment # 3: Highway 417 (night)
----------------------------------------

Source height = 1.19 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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
SubLeq
-------------------------------------------------------------------------------
--
   -90     59   0.00  78.77   0.00 -14.62  -0.82   0.00   0.00 -11.40
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
```

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

Filename: r1.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:

    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            :   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      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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
SubLeq
-------------------------------------------------------------------------
--
   -39     90   0.00  73.68   0.00  -2.22  -1.45   0.00   0.00 -18.68
51.33
-------------------------------------------------------------------------
--

Segment Leq : 51.33 dBA


Results segment # 2: Bronson (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 !       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
SubLeq
-------------------------------------------------------------------------
--
   -90     90   0.00  71.49   0.00  -3.55   0.00   0.00   0.00 -17.47
50.47
-------------------------------------------------------------------------
--

Segment Leq : 50.47 dBA
```

```
Results segment # 3: Highway 417 (day)
---------------------------------------

Source height = 1.19 m

Barrier height for grazing incidence
---------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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
SubLeq
-------------------------------------------------------------------------
--
   -90     90   0.00  63.89   0.00  -3.55   0.00   0.00   0.00 -18.01
42.33
-------------------------------------------------------------------------
--

Segment Leq : 42.33 dBA


Results segment # 3: Highway 417 (night)
----------------------------------------

Source height = 1.19 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! 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
SubLeq
-------------------------------------------------------------------------
--
   -90     59   0.00  78.77   0.00 -14.62  -0.82   0.00   0.00 -13.60
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
```