



Roadway Traffic Noise Assessment

275 Carling Avenue

Ottawa, Ontario

REPORT: GWE17-194 – Traffic Noise

Prepared For:

Keith Taggart
Taggart Group of Companies (Tamarack)
3187 Albion Road South
Ottawa, ON
K1V 8Y3

Prepared By:

Michael Lafortune, Environmental Scientist
Joshua Foster, P.Eng., Principal

January 31, 2018

EXECUTIVE SUMMARY

This document describes a roadway traffic noise assessment performed for a proposed retirement home development located at 275 Carling Avenue, in Ottawa, Ontario. The development comprises a new 16-storey building situated to the west of the existing commercial office building at the northwest corner of Carling Avenue and Bronson Avenue. Amenity space is provided in the form of common terraces located atop the three-storey podium, as well as at the 16th floor. Balconies less than 4 m in depth are not considered as outdoor living areas, as per the ENCG. The major sources of transportation noise are Carling Avenue, Bronson Avenue, as well was Highway 417. Figure 1 illustrates a complete site plan with surrounding context.

The assessment is based on: (i) theoretical noise prediction methods that conform to the Ministry of the Environment and Climate Change (MOECC) and City of Ottawa requirements; (ii) noise level criteria as specified by the City of Ottawa's Environmental Noise Control Guidelines (ENCG); (iii) future vehicular traffic volumes based on the City of Ottawa's Official Plan roadway classifications; and (iv) architectural drawings received from Roderick Lahey Architect Inc.

The results of the current analysis indicate that noise levels will range between 61 and 72 dBA during the daytime period (07:00-23:00) and between 53 and 64 dBA during the nighttime period (23:00-07:00). The highest noise levels (i.e. 72 dBA) occur along the development's south façade, which is nearest and most exposed to Carling Avenue. Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, as indicated on Figure 3.

Results of the calculations also indicate that the development will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. A Warning Clause¹ will also be required be placed on all Lease, Purchase and Sale Agreements.

Noise levels at the fourth-floor terrace (Receptor 9 and 10), as well as the 16th-floor terrace (Receptor 11), are expected to approach 72 and 67 dBA respectively, during the daytime period. If these areas are to be used as outdoor living areas, noise control measures are required to reduce the L_{eq} to 55 dBA. Consideration of 2.4, 2.2 and 1.6 m noise barriers surrounding the terraces, proved that noise levels can

¹ City of Ottawa Environmental Noise Control Guidelines, January 2016

Taggart Group of Companies (Tamarack) – 275 Carling Avenue

Roadway Traffic Noise Assessment



be reduced to 60 dBA, as illustrated in Figure 4. Reducing noise levels to 55 dBA would require excessive barrier heights that would not be feasible. Noise barriers and noise mitigating guardrails must be continuous with no openings, and have a minimum surface density of 20 kg/m².

TABLE OF CONTENTS

	PAGE
1. INTRODUCTION	1
2. TERMS OF REFERENCE	1
3. OBJECTIVES	1
4. METHODOLOGY	2
4.1 Background	2
4.2 Roadway Traffic Noise	2
4.2.1 Criteria for Roadway Traffic Noise	2
4.2.1 Roadway Traffic Volumes	3
4.2.2 Theoretical Transportation Noise Predictions	4
4.3 Indoor Noise Calculations	4
5. RESULTS AND DISCUSSION	6
5.1 Roadway Traffic Noise Levels	6
5.2 Noise Control Measures	6
5.3 Noise Barrier Calculation	8
6. CONCLUSIONS AND RECOMMENDATIONS	8

FIGURES

APPENDICES:

Appendix A – STAMSON 5.04 Input and Output Data

1. INTRODUCTION

Gradient Wind Engineering Inc. (GWE) was retained by Taggart Group of Companies (Tamarack) to undertake a roadway traffic noise assessment of a proposed retirement home development located at 275 Carling Avenue in Ottawa, Ontario. This report summarizes the methodology, results and recommendations related to a roadway traffic noise assessment. GWE's scope of work involved assessing exterior and interior noise levels generated by local roadway traffic. The assessment was performed on the basis of theoretical noise calculation methods conforming to the City of Ottawa² and Ministry of the Environment and Climate Change (MOECC)³ guidelines. Noise calculations were based on architectural drawings received from Roderick Lahey Architect Inc., with future traffic volumes corresponding to the City of Ottawa's Official Plan (OP) roadway classifications.

2. TERMS OF REFERENCE

The focus of this roadway traffic noise assessment is a proposed retirement home development, comprising a new 16-storey building situated to the west of the existing commercial office building at the northwest corner of Carling Avenue and Bronson Avenue. The site is surrounded by mixed-use commercial and residential zones. Amenity space maybe provided in the form of common terraces located atop the three-storey podium, as well as at the 16th floor. Balconies less than 4 m in depth are not considered as outdoor living areas, as per the ENCG. The major sources of transportation noise are Carling Avenue, Bronson Avenue, as well was Highway 417. Figure 1 illustrates a complete site plan with surrounding context.

3. OBJECTIVES

The main goals of this work are to: (i) calculate the future noise levels on the study building produced by local roadway traffic, and (ii) ensure that interior and exterior noise levels do not exceed the allowable limits specified by the City of Ottawa's Environmental Noise Control Guidelines as outlined in Section 4 of this report.

² City of Ottawa Environmental Noise Control Guidelines, January 2016

³ Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013

4. METHODOLOGY

4.1 Background

Noise can be defined as any obtrusive sound. It is created at a source, transmitted through a medium, such as air, and intercepted by a receiver. Noise may be characterized in terms of the power of the source or the sound pressure at a specific distance. While the power of a source is characteristic of that particular source, the sound pressure depends on the location of the receiver and the path that the noise takes to reach the receiver. Measurement of noise is based on the decibel unit, dBA, which is a logarithmic ratio referenced to a standard noise level (2×10^{-5} Pascals). The 'A' suffix refers to a weighting scale, which better represents how the noise is perceived by the human ear. With this scale, a doubling of power results in a 3 dBA increase in measured noise levels and is just perceptible to most people. An increase of 10 dBA is often perceived to be twice as loud.

4.2 Roadway Traffic Noise

4.2.1 Criteria for Roadway Traffic Noise

For vehicle traffic, the equivalent sound energy level, L_{eq} , provides a measure of the time varying noise levels, which is well correlated with the annoyance of sound. It is defined as the continuous sound level, which has the same energy as a time varying noise level over a period of time. For roadways, the L_{eq} is commonly calculated on the basis of a 16-hour (L_{eq16}) daytime (07:00-23:00) / 8-hour (L_{eq8}) nighttime (23:00-07:00) split to assess its impact on residential buildings. The City of Ottawa's Environmental Noise Control Guidelines (ENCG) specifies that the recommended indoor noise limit range (that is relevant to this study) is 45 and 40 dBA for residence living rooms and sleeping quarters respectively, as listed in Table 1. To account for deficiencies in building construction, these levels should be targeted toward 42 and 37 dBA.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD & RAIL)⁴

Type of Space	Time Period	L_{eq} (dBA)	
		Road	Rail
General offices, reception areas, retail stores, etc.	07:00 – 23:00	50	45
Living/dining/den areas of residences, hospitals, schools, nursing/retirement homes, day-care centres, theatres, places of worship, libraries, individual or semi-private offices, conference rooms, etc.	07:00 – 23:00	45	40
Sleeping quarters of hotels/motels	23:00 – 07:00	45	40
Sleeping quarters of residences, hospitals, nursing/retirement homes, etc.	23:00 – 07:00	40	35

Predicted noise levels at the plane of window (POW) dictate the action required to achieve the recommended sound levels. An open window is considered to provide a 10 dBA reduction in noise, while a standard closed window is capable of providing a minimum 20 dBA noise reduction⁵. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the building should consider the need for having windows and doors closed, which normally triggers the need for central air conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, building components will require higher levels of sound attenuation⁶.

The sound level criterion for outdoor living areas is 55 dBA, which applies during the daytime (07:00 to 23:00). When noise levels exceed 55 dBA, mitigation must be provided to reduce noise levels where technically and administratively feasible to acceptable levels at or below the criterion.

4.2.1 Roadway Traffic Volumes

The ENCG dictates that noise calculations should consider future sound levels based on a roadway's classification at the mature state of development. Therefore, traffic volumes are based on the roadway classifications outlined in the City of Ottawa's Official Plan (OP) and Transportation Master Plan⁷ which provide additional details on future roadway expansions. Average Annual Daily Traffic (AADT) volumes

⁴ Adapted from ENCG 2016 – Tables 2.2b and 2.2c

⁵ Burberry, P.B.. (2014). *Mitchell's Environment and Services*. Routledge, Page 125

⁶ MOECC, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

⁷ City of Ottawa Transportation Master Plan, November 2013

are then based on data in Table B1 of the ENCG for each roadway classification. Table 2 (below) summarizes the AADT values used for each roadway included in this assessment.

TABLE 2: ROADWAY TRAFFIC DATA

Segment	Roadway / Transit Class	Speed Limit (km/h)	Traffic Volumes
Carling Avenue	4-UAU	60	30,000
Bronson Avenue	4-UAU	50	30,000
Highway 417 Eastbound	6-Highway	100	73,333
Highway 417 Westbound			73,333

4.2.2 Theoretical Transportation Noise Predictions

Noise predictions were performed with the aid of the MOECC computerized noise assessment program, STAMSON 5.04, for road and rail analysis. Roadway traffic noise calculations were performed by treating each roadway segment as separate line sources of noise, and by using existing building locations as noise barriers. In addition to the traffic volumes summarized in Table 2, theoretical noise predictions were based on the following parameters:

- Truck traffic on all roadways was taken to comprise 5% heavy trucks and 7% medium trucks, as per ENCG requirements for noise level predictions
- The day/night split was taken to be 92% / 8% respectively for all streets
- Absorptive and reflective intermediate ground surfaces based on specific source-receiver path ground characteristics
- Site topography treated as flat or gently sloping
- Noise receptors were strategically identified at 11 locations around the study area (see Figure 2)

4.3 Indoor Noise Calculations

The difference between outdoor and indoor noise levels is the noise attenuation provided by the building envelope. According to common industry practice, complete walls and individual wall elements are rated according to the Sound Transmission Class (STC). The STC ratings of common residential walls built in conformance with the Ontario Building Code (2012) typically exceed STC 35, depending on exterior

cladding, thickness and interior finish details. For example, brick veneer walls can achieve STC 50 or more. Standard vinyl or wood sided exterior “2X6” walls have around STC 35. Standard good quality double-glazed non-operable windows can have STC ratings ranging from 25 to 40, depending on the window manufacturer, pane thickness and inter-pane spacing. As previously mentioned, the windows are the known weak point in a partition.

As per Section 4.2, when daytime noise levels (from road and rail sources) at the plane of the window exceed 65 dBA, calculations must be performed to evaluate the sound transmission quality of the building components to ensure acceptable indoor noise levels. The calculation procedure⁸ considers:

- Window type and total area as a percentage of total room floor area
- Exterior wall type and total area as a percentage of the total room floor area
- Acoustic absorption characteristics of the room
- Outdoor noise source type and approach geometry
- Indoor sound level criteria, which varies according to the intended use of a space

Based on published research⁹, exterior walls possess specific sound attenuation characteristics that are used as a basis for calculating the required STC ratings of windows in the same partition. Due to the limited information, available at the time of the study, which was prepared for site plan approval, detailed floor layouts and building elevations have not been finalized; therefore, detailed STC calculations could not be performed at this time. As a guideline, the anticipated STC requirements for windows have been estimated based on the overall noise reduction required for each intended use of space (STC = outdoor noise level – targeted indoor noise levels).

⁸ Building Practice Note: Controlling Sound Transmission into Buildings by J.D. Quirt, National Research Council of Canada, September 1985

⁹ CMHC, Road & Rail Noise: Effects on Housing

5. RESULTS AND DISCUSSION

5.1 Roadway Traffic Noise Levels

The results of the roadway traffic noise calculations are summarized in Table 3 below. A complete set of input and output data from all STAMSON 5.04 calculations are available in Appendix A.

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES

Receptor Number	Plane of Window Receptor Location	Noise Level (dBA)	
		Day	Night
1	3rd Floor - North Façade	61	53
2	3rd Floor - East Façade	68	61
3	3rd Floor - South Façade	72	64
4	3rd Floor - West Façade	68	61
5	15th Floor - North Façade	67	59
6	15th Floor - East Façade	71	63
7	15th Floor - South Façade	72	64
8	15th Floor - West Façade	67	60
9	4th Floor Terrace - North Side	67	59
10	4th Floor Terrace - South Side	72	64
11	16th Floor Terrace	67	59

The results of the current analysis indicate that noise levels will range between 61 and 72 dBA during the daytime period (07:00-23:00) and between 53 and 64 dBA during the nighttime period (23:00-07:00). The highest noise levels (i.e. 72 dBA) occur along the development's south façade, which is nearest and most exposed to Carling Avenue.

5.2 Noise Control Measures

The noise levels predicted due to roadway traffic exceed the criteria listed in Section 4.2 for building components. As discussed in Section 4.3 the anticipated STC requirements for windows have been estimated based on the overall noise reduction required for each intended use of space (STC = outdoor noise level – targeted indoor noise levels). As per city of Ottawa requirements, detailed STC calculations will be required to be completed prior to building permit application for each unit type. The STC

requirements for the windows are summarized below for various units within the development (see Figure 3 and 4):

- **Bedroom Windows**
 - (i) Bedroom windows facing east and south will require a minimum STC of 35
 - (ii) Bedroom windows facing north and west will require a minimum STC of 31
 - (iii) All other bedroom windows are to satisfy Ontario Building Code (OBC 2012) requirements
- **Living Room Windows**
 - (i) Living room facing east and south will require a minimum STC of 30
 - (ii) Living room facing north and west will require a minimum STC of 26
 - (iii) All other living room windows are to satisfy Ontario Building Code (OBC 2012) requirements
- **Exterior Walls**
 - (i) Exterior wall components on the north, east, south and west façades will require a minimum STC of 45 which will be achieved with brick cladding or an acoustical equivalent according to NRC test data¹⁰

The STC requirements would apply to windows, doors, spandrel panels and curtainwall elements. Exterior wall components on these façades are recommended to have a minimum STC of 45, where a window / wall system is used. A review of window supplier literature indicates that the specified STC ratings can be achieved by a variety of window systems having a combination of glass thickness and inter-pane spacing. We have specified an example window configuration, however several manufacturers and various combinations of window components, such as those proposed, will offer the necessary sound attenuation rating. It is the responsibility of the manufacturer to ensure that the specified window achieves the required STC. This can only be assured by using window configurations that have been certified by laboratory testing. The requirements for STC ratings assume that the remaining components of the building are constructed and installed according to the minimum standards of the Ontario Building Code. The specified STC requirements also apply to swinging and/or sliding patio doors.

¹⁰ J.S. Bradley and J.A. Birta. Laboratory Measurements of the Sound Insulation of Building Façade Elements, National Research Council October 2000.

Results of the calculations also indicate that the development will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. In addition to ventilation requirements, Warning Clauses will also be required be placed on all Lease, Purchase and Sale Agreements, as summarized in Section 6.

5.3 Noise Barrier Calculation

Noise levels at the fourth-floor terrace (Receptor 9 and 10), as well as the 16th-floor terrace (Receptor 11), are expected to approach 72 and 67 dBA respectively, during the daytime period. If these areas are to be used as outdoor living areas, noise control measures are required to reduce the L_{eq} to 55 dBA. Consideration of 2.4, 2.2 and 1.6 m noise barriers surrounding the terraces, proved that noise levels can be reduced to 60 dBA, as illustrated in Figure 4. Reducing noise levels to 55 dBA would require excessive barrier heights that would not be feasible. Noise barriers and noise mitigating guardrails must be continuous with no openings, and have a minimum surface density of 20 kg/m². Table 4 summarizes the results of the barrier investigation. A sample STAMSON 5.04 input for Receptor 9 is shown in Figure 5.

TABLE 4: RESULTS OF BARRIER INVESTIGATION

Location	Reference Receptors	Barrier Height (m)	Daytime L_{eq} Noise Levels (dBA)		Barrier Height (m) at 55 dBA
			Without Barrier	With Barrier	
4th Floor Terrace - North Side	9	2.4	67	60	3.5
4th Floor Terrace - South Side	10	2.2	72	60	4.2
16th Floor Terrace	11	1.6	67	60	2.5

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that noise levels will range between 61 and 72 dBA during the daytime period (07:00-23:00) and between 53 and 64 dBA during the nighttime period (23:00-07:00). The highest noise levels (i.e. 72 dBA) occur along the development's south façade, which is nearest and most exposed to Carling Avenue. Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, as indicated on Figure 3.

Results of the calculations also indicate that the development will require central air conditioning, which will allow occupants to keep windows closed and maintain a comfortable living environment. The following Warning Clause¹¹ will also be required be placed on all Lease, Purchase and Sale Agreements, as summarized below:

"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 roadway traffic may, on occasion, interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the City and the Ministry of the Environment and Climate Change. To help address the need for sound attenuation, this development includes:

- *STC rated multi-pane glazing elements and spandrel panels*
 - *East and west façade bedroom/living room: STC 35/30*
 - *North and west façade bedroom/living room: STC 31/26*
- *STC rated exterior walls*
 - *North, east, south and west façade: STC 45*

This dwelling unit has also been designed with air conditioning. Air conditioning will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the City and the Ministry of the Environment and Climate Change.

To ensure that provincial sound level limits are not exceeded, it is important to maintain these sound attenuation features."

Noise levels at the fourth-floor terrace (Receptor 9 and 10), as well as the 16th-floor terrace (Receptor 11), are expected to approach 72 and 67 dBA respectively, during the daytime period. If these areas are to be used as outdoor living areas, noise control measures are required to reduce the L_{eq} to 55 dBA. Consideration of 2.4, 2.2 and 1.6 m noise barriers surrounding the terraces, proved that noise levels can be reduced to 60 dBA, as illustrated in Figure 4. Reducing noise levels to 55 dBA would require excessive

¹¹ City of Ottawa Environmental Noise Control Guidelines, January 2016



barrier heights that would not be feasible. Noise barriers and noise mitigating guardrails must be continuous with no openings, and have a minimum surface density of 20 kg/m².

This concludes our assessment and report. If you have any questions or wish to discuss our findings please advise us. In the interim, we thank you for the opportunity to be of service.

Yours truly,

Gradient Wind Engineering Inc.

A handwritten signature in blue ink, appearing to read "M. LaF" followed by a stylized surname.

Michael Lafortune
Environmental Scientist
GWE17-194 – Traffic Noise



Joshua Foster, P.Eng.
Principal



127 Walgreen Road
Ottawa, Ontario
(613) 836 0934

GRADIENTWIND
ENGINEERING INC

PROJECT

275 CARLING AVENUE
ROADWAY TRAFFIC NOISE ASSESSMENT

DESCRIPTION

SCALE

1:4000 (APPROX.)

DRAWING NO.
GWE17-194-1

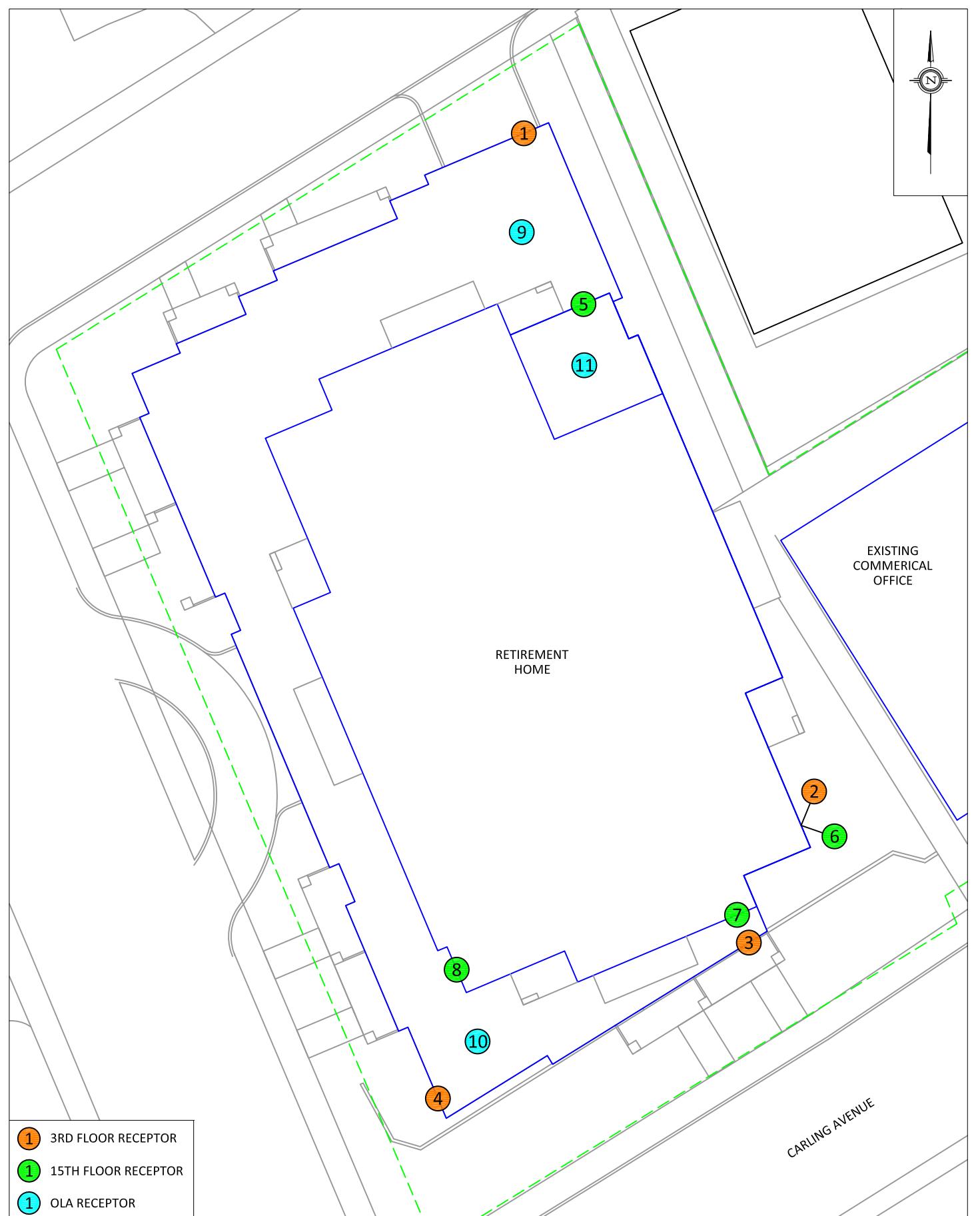
DATE

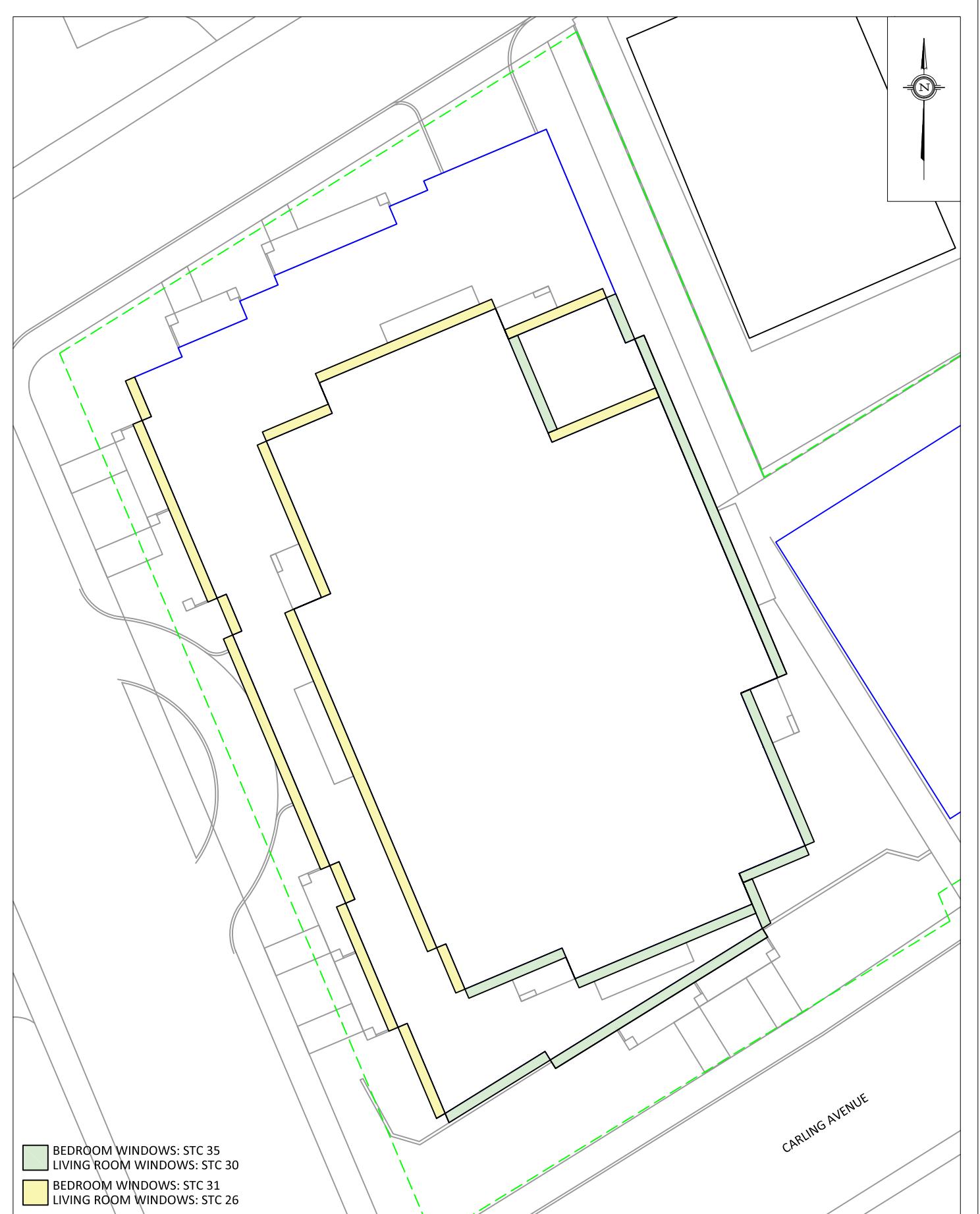
JANUARY 15, 2018

DRAWN BY

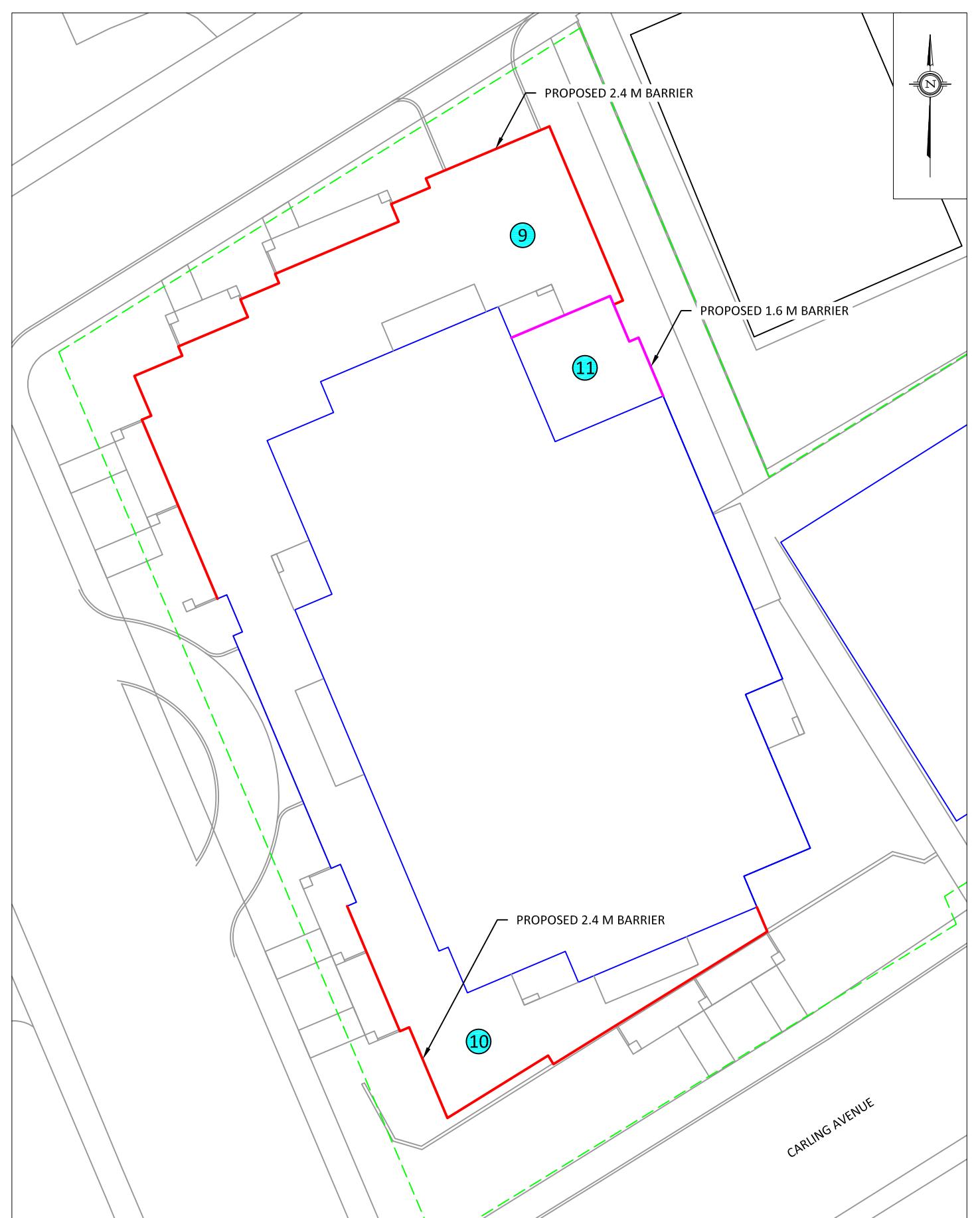
M.L.

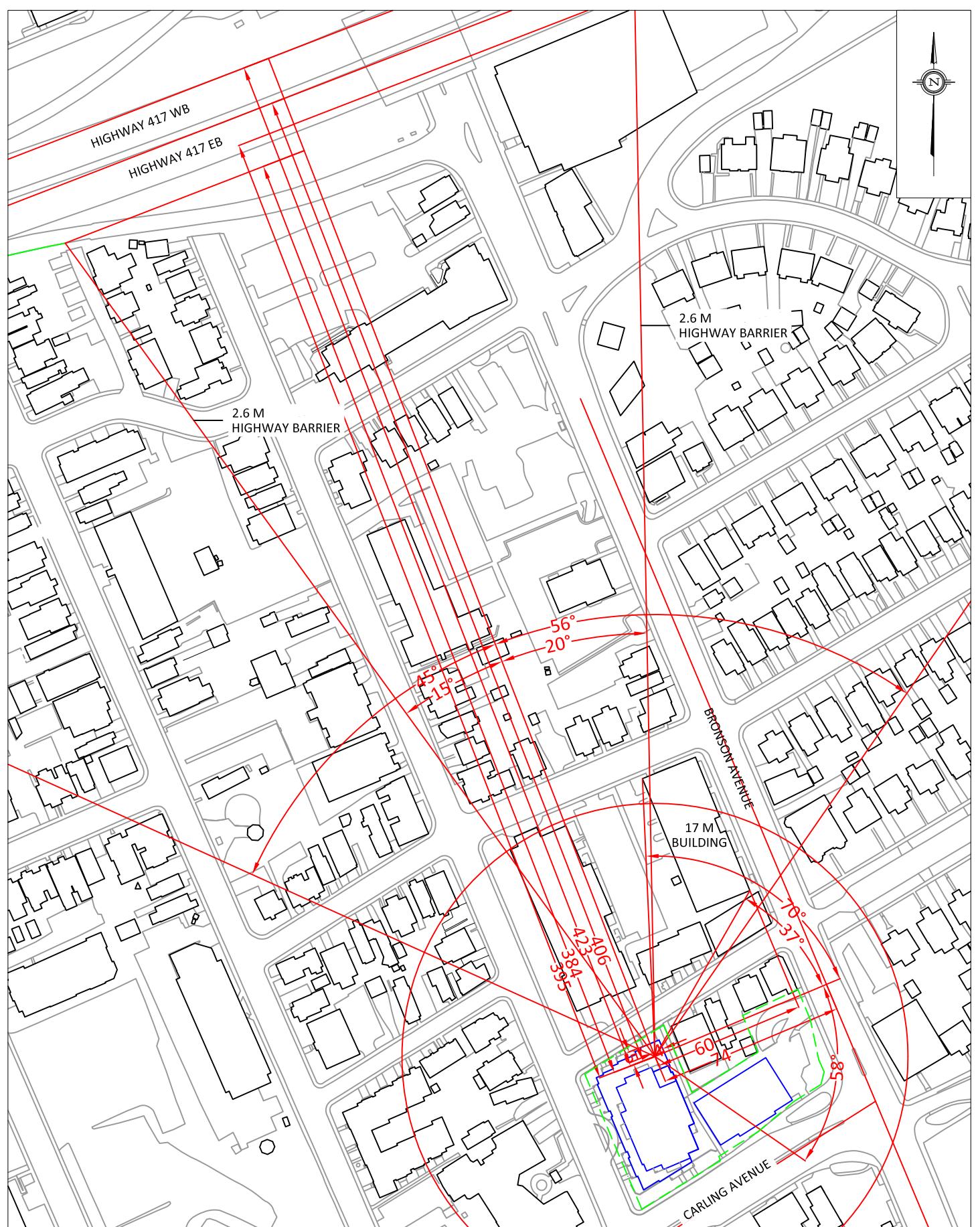
FIGURE 1:
SITE PLAN AND SURROUNDING CONTEXT





GRADIENTWIND <small>ENGINEERING INC</small>	PROJECT	275 CARLING AVENUE		DESCRIPTION FIGURE 3: WINDOW STC REQUIREMENTS
	SCALE	1:300 (APPROX.)	DRAWING NO.	
	DATE	JANUARY 15, 2018	DRAWN BY	
			M.L.	





127 Walgreen Road
Ottawa, Ontario
(613) 836 0934

PROJECT

275 CARLING AVENUE
ROADWAY TRAFFIC NOISE ASSESSMENT

DESCRIPTION

FIGURE 5:
RECEPTOR 9 STAMSON INPUT DATA

SCALE

1:2000 (APPROX.)

DRAWING NO.
GWE17-194-1

DATE

JANUARY 15, 2018

DRAWN BY

M.L.



APPENDIX A

STAMSON 5.04 - INPUT AND OUTPUT DATA

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:58:15
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r1.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB1 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB1 (day/night)

 Angle1 Angle2 : -40.00 deg -15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 401.00 / 401.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -40.00 deg Angle2 : -15.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 378.00 / 378.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 2: 417EB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

 Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 401.00 / 401.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -15.00 deg Angle2 : 20.00 deg
 Barrier height : 11.00 m
 Barrier receiver distance : 23.00 / 23.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417EB3 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB3 (day/night)

 Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 401.00 / 401.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 390.00 / 390.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 4: 417WB1 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB1 (day/night)

 Angle1 Angle2 : -40.00 deg -15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 418.00 / 418.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -40.00 deg Angle2 : -15.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 378.00 / 378.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 5: 417WB2 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 5: 417WB2 (day/night)

Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 418.00 / 418.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -15.00 deg Angle2 : 20.00 deg
 Barrier height : 11.00 m
 Barrier receiver distance : 23.00 / 23.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 6: 417WB3 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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 # 6: 417WB3 (day/night)

 Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 418.00 / 418.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 390.00 / 390.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 7: Bronson1 (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 # 7: Bronson1 (day/night)

 Angle1 Angle2 : -90.00 deg -23.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 71.00 / 71.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -23.00 deg
 Barrier height : 17.00 m
 Barrier receiver distance : 60.00 / 60.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 8: Bronson2 (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 # 8: Bronson2 (day/night)

 Angle1 Angle2 : -23.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 71.00 / 71.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -23.00 deg Angle2 : 0.00 deg
 Barrier height : 8.00 m
 Barrier receiver distance : 60.00 / 60.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB1 (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 !	9.50 !	1.95 !	1.95

ROAD (0.00 + 53.12 + 0.00) = 53.12 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-40	-15	0.00	81.40	0.00	-14.27	-8.57	0.00	0.00	-5.43

53.12
--

Segment Leq : 53.12 dBA

Results segment # 2: 417EB2 (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 !	9.50 !	9.04 !	9.04

ROAD (0.00 + 51.60 + 0.00) = 51.60 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-15 51.60	20	0.00	81.40	0.00	-14.27	-7.11	0.00	0.00	-8.42

Segment Leq : 51.60 dBA

Results segment # 3: 417EB3 (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 !	9.50 !	1.71 !	1.71

ROAD (0.00 + 53.80 + 0.00) = 53.80 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
20	56	0.00	81.40	0.00	-14.27	-6.99	0.00	0.00	-6.33

53.80

Segment Leq : 53.80 dBA

Results segment # 4: 417WB1 (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 !	9.50 !	2.26 !	2.26

ROAD (0.00 + 53.30 + 0.00) = 53.30 dBA

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

--	-40	-15	0.00	81.40	0.00	-14.45	-8.57	0.00	0.00	-5.07
	53.30									

Segment Leq : 53.30 dBA

Results segment # 5: 417WB2 (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 !	9.50 !	9.06 !	9.06

ROAD (0.00 + 51.47 + 0.00) = 51.47 dBA

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

-15	20	0.00	81.40	0.00	-14.45	-7.11	0.00	0.00	-8.36
51.47									

Segment Leq : 51.47 dBA

Results segment # 6: 417WB3 (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 !	9.50 !	2.03 !	2.03

ROAD (0.00 + 54.71 + 0.00) = 54.71 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
20	56	0.00	81.40	0.00	-14.45	-6.99	0.00	0.00	-5.25

Segment Leq : 54.71 dBA

Results segment # 7: Bronson1 (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 !	9.50 !	2.74 !	2.74

ROAD (0.00 + 42.29 + 0.00) = 42.29 dBA

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

--	-90	-23	0.00	71.49	0.00	-6.75	-4.29	0.00	0.00	-18.16
	42.29									

--

Segment Leq : 42.29 dBA

Results segment # 8: Bronson2 (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	9.50	2.74	2.74

ROAD (0.00 + 37.00 + 0.00) = 37.00 dBA

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

--	-23	0	0.00	71.49	0.00	-6.75	-8.94	0.00	0.00	-18.81
	37.00									

Segment Leq : 37.00 dBA

Total Leq All Segments: 61.01 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	9.50 !	1.95 !	1.95

ROAD (0.00 + 45.52 + 0.00) = 45.52 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-40	-15	0.00	73.80	0.00	-14.27	-8.57	0.00	0.00	-5.43

45.52

Segment Leq : 45.52 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	9.04	9.04

ROAD (0.00 + 44.00 + 0.00) = 44.00 dBA

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

-15	20	0.00	73.80	0.00	-14.27	-7.11	0.00	0.00	-8.42
44.00									

Segment Leq : 44.00 dBA

Results segment # 3: 417EB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	1.71	1.71

ROAD (0.00 + 46.20 + 0.00) = 46.20 dBA

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

20	56	0.00	73.80	0.00	-14.27	-6.99	0.00	0.00	-6.34
46.20									

Segment Leq : 46.20 dBA

Results segment # 4: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	9.50 !	2.26 !	2.26

ROAD (0.00 + 45.70 + 0.00) = 45.70 dBA

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

--	-40	-15	0.00	73.80	0.00	-14.45	-8.57	0.00	0.00	-5.07
	45.70									

Segment Leq : 45.70 dBA

Results segment # 5: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	9.50 !	9.06 !	9.06

ROAD (0.00 + 43.87 + 0.00) = 43.87 dBA

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

-15	20	0.00	73.80	0.00	-14.45	-7.11	0.00	0.00	-8.36
43.87									

Segment Leq : 43.87 dBA

Results segment # 6: 417WB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	9.50 !	2.03 !	2.03

ROAD (0.00 + 47.11 + 0.00) = 47.11 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
20	56	0.00	73.80	0.00	-14.45	-6.99	0.00	0.00	-5.25

47.11

Segment Leq : 47.11 dBA

Results segment # 7: Bronson1 (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	9.50	2.74	2.74

ROAD (0.00 + 34.69 + 0.00) = 34.69 dBA

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

--	-90	-23	0.00	63.89	0.00	-6.75	-4.29	0.00	0.00	-18.16
	34.69									

Segment Leq : 34.69 dBA

Results segment # 8: Bronson2 (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	9.50	2.74	2.74

ROAD (0.00 + 29.40 + 0.00) = 29.40 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-23	0	0.00	63.89	0.00	-6.75	-8.94	0.00	0.00	-18.81

29.40

Segment Leq : 29.40 dBA

Total Leq All Segments: 53.41 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 61.01
 (NIGHT): 53.41

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:58:49
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: 417EB1 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB1 (day/night)

Angle1 Angle2 : 0.00 deg 17.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 445.00 / 445.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 0.00 deg Angle2 : 17.00 deg
 Barrier height : 52.00 m
 Barrier receiver distance : 9.00 / 9.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 2: 417EB2 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

Angle1 Angle2 : 17.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 445.00 / 445.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 17.00 deg Angle2 : 90.00 deg
 Barrier height : 26.00 m
 Barrier receiver distance : 16.00 / 16.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417WB1 (day/night)

Car traffic volume	:	59370/5163	veh/TimePeriod	*
Medium truck volume	:	4723/411	veh/TimePeriod	*
Heavy truck volume	:	3373/293	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)	:	73333
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: 417WB1 (day/night)

Angle1	Angle2	:	0.00 deg	17.00 deg
Wood depth		:	0	(No woods.)
No of house rows		:	0 / 0	
Surface		:	2	(Reflective ground surface)
Receiver source distance		:	462.00 / 462.00 m	
Receiver height		:	9.50 / 9.50 m	
Topography		:	2	(Flat/gentle slope; with barrier)
Barrier angle1		:	0.00 deg	Angle2 : 17.00 deg
Barrier height		:	52.00 m	
Barrier receiver distance		:	9.00 / 9.00 m	
Source elevation		:	0.00 m	
Receiver elevation		:	0.00 m	
Barrier elevation		:	0.00 m	
Reference angle		:	0.00	

Road data, segment # 4: 417WB2 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB2 (day/night)

Angle1 Angle2 : 17.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 462.00 / 462.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 17.00 deg Angle2 : 90.00 deg
 Barrier height : 26.00 m
 Barrier receiver distance : 16.00 / 16.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : -72.00 deg 10.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 23.00 / 23.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Road data, segment # 6: Bronson1 (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 # 6: Bronson1 (day/night)

 Angle1 Angle2 : -90.00 deg 21.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 72.00 / 72.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 21.00 deg
 Barrier height : 26.00 m
 Barrier receiver distance : 9.00 / 9.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 7: Bronson2 (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 # 7: Bronson2 (day/night)

 Angle1 Angle2 : 21.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 72.00 / 72.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 41.00 deg Angle2 : 90.00 deg
 Barrier height : 8.00 m
 Barrier receiver distance : 39.00 / 39.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB1 (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	9.50	9.34	9.34

ROAD (0.00 + 36.43 + 0.00) = 36.43 dBA

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

0	17	0.00	81.40	0.00	-14.72	-10.25	0.00	0.00	-20.00
36.43									

Segment Leq : 36.43 dBA

Results segment # 2: 417EB2 (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 !	9.50 !	9.21 !	9.21

ROAD (0.00 + 44.55 + 0.00) = 44.55 dBA

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

--	17	90	0.00	81.40	0.00	-14.72	-3.92	0.00	0.00	-18.21
	44.55									

Segment Leq : 44.55 dBA

Results segment # 3: 417WB1 (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 !	9.50 !	9.34 !	9.34

ROAD (0.00 + 36.26 + 0.00) = 36.26 dBA

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

--	0	17	0.00	81.40	0.00	-14.89	-10.25	0.00	0.00	-20.00
	36.26									

Segment Leq : 36.26 dBA

Results segment # 4: 417WB2 (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 !	9.50 !	9.22 !	9.22

ROAD (0.00 + 44.39 + 0.00) = 44.39 dBA

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

--	17	90	0.00	81.40	0.00	-14.89	-3.92	0.00	0.00	-18.20
	44.39									

Segment Leq : 44.39 dBA

Results segment # 5: Carling (day)

Source height = 1.50 m

ROAD (0.00 + 67.74 + 0.00) = 67.74 dBA

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

--	-72	10	0.00	73.01	0.00	-1.86	-3.41	0.00	0.00	0.00
	67.74									

Segment Leq : 67.74 dBA

Results segment # 6: Bronson1 (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	9.50	8.50	8.50

ROAD (0.00 + 43.31 + 0.00) = 43.31 dBA

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

-90	21	0.00	71.49	0.00	-6.81	-2.10	0.00	0.00	-19.27
43.31									

Segment Leq : 43.31 dBA

Results segment # 7: Bronson2 (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	9.50	5.16	5.16

ROAD (55.14 + 51.04 + 0.00) = 56.56 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 21 41 0.00 71.49 0.00 -6.81 -9.54 0.00 0.00 0.00
 55.14

--
 41 90 0.00 71.49 0.00 -6.81 -5.65 0.00 0.00 -7.99
 51.04

Segment Leq : 56.56 dBA

Total Leq All Segments: 68.12 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	9.34	9.34

ROAD (0.00 + 28.83 + 0.00) = 28.83 dBA

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

--	0	17	0.00	73.80	0.00	-14.72	-10.25	0.00	0.00	-20.00
	28.83									

Segment Leq : 28.83 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	9.21	9.21

ROAD (0.00 + 36.95 + 0.00) = 36.95 dBA

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

--	17	90	0.00	73.80	0.00	-14.72	-3.92	0.00	0.00	-18.21
	36.95									

Segment Leq : 36.95 dBA

Results segment # 3: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	9.34	9.34

ROAD (0.00 + 28.67 + 0.00) = 28.67 dBA

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

--	0	17	0.00	73.80	0.00	-14.89	-10.25	0.00	0.00	-20.00
	28.67									

Segment Leq : 28.67 dBA

Results segment # 4: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	9.22	9.22

ROAD (0.00 + 36.79 + 0.00) = 36.79 dBA

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

--	17	90	0.00	73.80	0.00	-14.89	-3.92	0.00	0.00	-18.20
	36.79									

Segment Leq : 36.79 dBA

Results segment # 5: Carling (night)

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									

--	-72	10	0.00	65.41	0.00	-1.86	-3.41	0.00	0.00	0.00
	60.14									

Segment Leq : 60.14 dBA

Results segment # 6: Bronson1 (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	9.50	8.50	8.50

ROAD (0.00 + 35.71 + 0.00) = 35.71 dBA

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

--	-90	21	0.00	63.89	0.00	-6.81	-2.10	0.00	0.00	-19.27
	35.71									

Segment Leq : 35.71 dBA

Results segment # 7: Bronson2 (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	9.50	5.16	5.16

ROAD (47.54 + 43.44 + 0.00) = 48.97 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 21 41 0.00 63.89 0.00 -6.81 -9.54 0.00 0.00 0.00
 47.54

--
 41 90 0.00 63.89 0.00 -6.81 -5.65 0.00 0.00 -7.99
 43.44

Segment Leq : 48.97 dBA

Total Leq All Segments: 60.52 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.12
 (NIGHT): 60.52

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:58:54
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r3.te Time Period: Day/Night 16/8 hours
 Description:

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

 Angle1 Angle2 : -76.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 19.00 / 19.00 m
 Receiver height : 9.50 / 9.50 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 : -9.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 77.00 / 77.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 33.00 deg Angle2 : 90.00 deg
 Barrier height : 8.00 m
 Barrier receiver distance : 44.00 / 44.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: Carling (day)

Source height = 1.50 m

ROAD (0.00 + 71.63 + 0.00) = 71.63 dBA

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

--	-76	90	0.00	73.01	0.00	-1.03	-0.35	0.00	0.00	0.00
	71.63									

Segment Leq : 71.63 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	9.50	4.93	4.93

ROAD (58.07 + 50.89 + 0.00) = 58.83 dBA

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

-9	33	0.00	71.49	0.00	-7.10	-6.32	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

58.07									
33	90	0.00	71.49	0.00	-7.10	-4.99	0.00	0.00	-8.51

Segment Leq : 58.83 dBA

Total Leq All Segments: 71.85 dBA

Results segment # 1: Carling (night)

Source height = 1.50 m

ROAD (0.00 + 64.03 + 0.00) = 64.03 dBA

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

--	-76	90	0.00	65.41	0.00	-1.03	-0.35	0.00	0.00	0.00
	64.03									

Segment Leq : 64.03 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	9.50	4.93	4.93

ROAD (50.47 + 43.29 + 0.00) = 51.23 dBA

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

-9	33	0.00	63.89	0.00	-7.10	-6.32	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

50.47									
33	90	0.00	63.89	0.00	-7.10	-4.99	0.00	0.00	-8.51

Segment Leq : 51.23 dBA

Total Leq All Segments: 64.25 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.85
 (NIGHT): 64.25

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:58:59
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r4.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB1 (day/night)

Car traffic volume	:	59370/5163	veh/TimePeriod	*
Medium truck volume	:	4723/411	veh/TimePeriod	*
Heavy truck volume	:	3373/293	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):	73333
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: 417EB1 (day/night)

Angle1 Angle2	:	-34.00 deg	-10.00 deg	
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	452.00 / 452.00 m		
Receiver height	:	9.50 / 9.50 m		
Topography	:	2	(Flat/gentle slope; with barrier)	
Barrier angle1	:	-34.00 deg	Angle2 : -10.00 deg	
Barrier height	:	2.60 m		
Barrier receiver distance	:	430.00 / 430.00 m		
Source elevation	:	0.00 m		
Receiver elevation	:	0.00 m		
Barrier elevation	:	0.00 m		
Reference angle	:	0.00		

Road data, segment # 2: 417EB2 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

Angle1 Angle2 : -10.00 deg -3.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 452.00 / 452.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -10.00 deg Angle2 : -5.00 deg
 Barrier height : 6.00 m
 Barrier receiver distance : 410.00 / 410.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417WB1 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417WB1 (day/night)

Angle1 Angle2 : -34.00 deg -10.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 469.00 / 469.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -34.00 deg Angle2 : -10.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 430.00 / 430.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 4: 417WB2 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB2 (day/night)

Angle1 Angle2 : -10.00 deg -3.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 469.00 / 469.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -10.00 deg Angle2 : -5.00 deg
 Barrier height : 6.00 m
 Barrier receiver distance : 410.00 / 410.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : 10.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 21.00 / 21.00 m
 Receiver height : 9.50 / 9.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: 417EB1 (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 !	9.50 !	1.88 !	1.88

ROAD (0.00 + 52.29 + 0.00) = 52.29 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-34	-10	0.00	81.40	0.00	-14.79	-8.75	0.00	0.00	-5.57

52.29

Segment Leq : 52.29 dBA

Results segment # 2: 417EB2 (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	9.50	2.24	2.24

ROAD (0.00 + 40.34 + 47.06) = 47.90 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -10 -5 0.00 81.40 0.00 -14.79 -15.56 0.00 0.00 -10.71
 40.34

--
 -5 -3 0.00 81.40 0.00 -14.79 -19.54 0.00 0.00 0.00
 47.06

Segment Leq : 47.90 dBA

Results segment # 3: 417WB1 (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 !	9.50 !	2.16 !	2.16

ROAD (0.00 + 52.56 + 0.00) = 52.56 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-34	-10	0.00	81.40	0.00	-14.95	-8.75	0.00	0.00	-5.13

52.56

Segment Leq : 52.56 dBA

Results segment # 4: 417WB2 (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	9.50	2.50	2.50

ROAD (0.00 + 41.63 + 46.90) = 48.03 dBA

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

-10	-5	0.00	81.40	0.00	-14.95	-15.56	0.00	0.00	-9.25
41.63									

-5	-3	0.00	81.40	0.00	-14.95	-19.54	0.00	0.00	0.00
46.90									

Segment Leq : 48.03 dBA

Results segment # 5: Carling (day)

Source height = 1.50 m

ROAD (0.00 + 68.02 + 0.00) = 68.02 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

--
10 90 0.00 73.01 0.00 -1.46 -3.52 0.00 0.00 0.00
68.02

--
Segment Leq : 68.02 dBA

Total Leq All Segments: 68.33 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49 !	9.50 !	1.88 !	1.88

ROAD (0.00 + 44.69 + 0.00) = 44.69 dBA

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

--	-34	-10	0.00	73.80	0.00	-14.79	-8.75	0.00	0.00	-5.57
44.69										

Segment Leq : 44.69 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	2.24	2.24

ROAD (0.00 + 32.74 + 39.47) = 40.30 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -10 -5 0.00 73.80 0.00 -14.79 -15.56 0.00 0.00 -10.71
 32.74

--
 -5 -3 0.00 73.80 0.00 -14.79 -19.54 0.00 0.00 0.00
 39.47

Segment Leq : 40.30 dBA

Results segment # 3: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	2.16	2.16

ROAD (0.00 + 44.97 + 0.00) = 44.97 dBA

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

-34	-10	0.00	73.80	0.00	-14.95	-8.75	0.00	0.00	-5.13
44.97									

Segment Leq : 44.97 dBA

Results segment # 4: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	9.50	2.50	2.50

ROAD (0.00 + 34.04 + 39.31) = 40.44 dBA

Angle1 SubLeq	Angle2 RefLeq	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-10	34.04								

--									
-10	34.04								

--									
-5	39.31								

Segment Leq : 40.44 dBA

Results segment # 5: Carling (night)

Source height = 1.50 m

ROAD (0.00 + 60.43 + 0.00) = 60.43 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

--
10 90 0.00 65.41 0.00 -1.46 -3.52 0.00 0.00 0.00
60.43

--
Segment Leq : 60.43 dBA

Total Leq All Segments: 60.74 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.33
(NIGHT): 60.74

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:59:04
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r5.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB1 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB1 (day/night)

 Angle1 Angle2 : -44.00 deg -15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 411.00 / 411.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -29.00 deg Angle2 : -16.00 deg
 Barrier height : 32.00 m
 Barrier receiver distance : 222.00 / 222.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 2: 417EB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

 Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 411.00 / 411.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -9.00 deg Angle2 : -4.00 deg
 Barrier height : 17.00 m
 Barrier receiver distance : 222.00 / 222.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417EB3 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB3 (day/night)

 Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 411.00 / 411.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 400.00 / 400.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 4: 417WB1 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB1 (day/night)

 Angle1 Angle2 : -44.00 deg -15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 428.00 / 428.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -29.00 deg Angle2 : -16.00 deg
 Barrier height : 32.00 m
 Barrier receiver distance : 222.00 / 222.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 5: 417WB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 5: 417WB2 (day/night)

 Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 428.00 / 428.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -9.00 deg Angle2 : -4.00 deg
 Barrier height : 17.00 m
 Barrier receiver distance : 222.00 / 222.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 6: 417WB3 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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 # 6: 417WB3 (day/night)

 Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 428.00 / 428.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 400.00 / 400.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 7: Bronson1 (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 # 7: Bronson1 (day/night)

 Angle1 Angle2 : -90.00 deg -41.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 72.00 / 72.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -41.00 deg
 Barrier height : 17.00 m
 Barrier receiver distance : 58.00 / 58.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 8: Bronson2 (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 # 8: Bronson2 (day/night)

 Angle1 Angle2 : -41.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 72.00 / 72.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -41.00 deg Angle2 : 0.00 deg
 Barrier height : 8.00 m
 Barrier receiver distance : 58.00 / 58.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB1 (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	42.70	20.44	20.44

ROAD (56.23 + 40.23 + 44.47) = 56.61 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -44 -29 0.00 81.40 0.00 -14.38 -10.79 0.00 0.00 0.00
 56.23

--
 -29 -16 0.00 81.40 0.00 -14.38 -11.41 0.00 0.00 -15.38
 40.23

--
 -16 -15 0.00 81.40 0.00 -14.38 -22.55 0.00 0.00 0.00
 44.47

Segment Leq : 56.61 dBA

Results segment # 2: 417EB2 (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	42.70	20.44	20.44

ROAD (52.25 + 51.46 + 58.27) = 59.91 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -15 -9 0.00 81.40 0.00 -14.38 -14.77 0.00 0.00 0.00
 52.25

--
 -9 -4 0.00 81.40 0.00 -14.38 -15.56 0.00 0.00 -0.93
 50.52*
 -9 -4 0.00 81.40 0.00 -14.38 -15.56 0.00 0.00 0.00
 51.46

--
 -4 20 0.00 81.40 0.00 -14.38 -8.75 0.00 0.00 0.00
 58.27

* Bright Zone !

Segment Leq : 59.91 dBA

Results segment # 3: 417EB3 (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	42.70	2.60	2.60

ROAD (0.00 + 55.03 + 0.00) = 55.03 dBA

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

20	56	0.00	81.40	0.00	-14.38	-6.99	0.00	0.00	-5.00
55.03									

Segment Leq : 55.03 dBA

Results segment # 4: 417WB1 (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	42.70	21.33	21.33

ROAD (56.05 + 40.91 + 44.29) = 56.45 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -44 -29 0.00 81.40 0.00 -14.55 -10.79 0.00 0.00 0.00
 56.05

--
 -29 -16 0.00 81.40 0.00 -14.55 -11.41 0.00 0.00 -14.52
 40.91

--
 -16 -15 0.00 81.40 0.00 -14.55 -22.55 0.00 0.00 0.00
 44.29

Segment Leq : 56.45 dBA

Results segment # 5: 417WB2 (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	42.70	21.33	21.33

ROAD (52.07 + 51.28 + 58.09) = 59.73 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -15 -9 0.00 81.40 0.00 -14.55 -14.77 0.00 0.00 0.00
 52.07

--
 -9 -4 0.00 81.40 0.00 -14.55 -15.56 0.00 0.00 0.00
 51.28*
 -9 -4 0.00 81.40 0.00 -14.55 -15.56 0.00 0.00 0.00
 51.28

--
 -4 20 0.00 81.40 0.00 -14.55 -8.75 0.00 0.00 0.00
 58.09

* Bright Zone !

Segment Leq : 59.73 dBA

Results segment # 6: 417WB3 (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	42.70	4.19	4.19

ROAD (0.00 + 59.85 + 0.00) = 59.85 dBA

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

20	56	0.00	81.40	0.00	-14.55	-6.99	0.00	0.00	-2.61
57.24*									
20	56	0.00	81.40	0.00	-14.55	-6.99	0.00	0.00	0.00
59.85									

* Bright Zone !

Segment Leq : 59.85 dBA

Results segment # 7: Bronson1 (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 !	42.70 !	9.51 !	9.51

ROAD (0.00 + 46.20 + 0.00) = 46.20 dBA

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

--	-90	-41	0.00	71.49	0.00	-6.81	-5.65	0.00	0.00	-12.82
46.20										

--
Segment Leq : 46.20 dBA

Results segment # 8: Bronson2 (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	42.70	9.51	9.51

ROAD (0.00 + 58.25 + 0.00) = 58.25 dBA

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

-41	0	0.00	71.49	0.00	-6.81	-6.42	0.00	0.00	-0.38
57.87*									
-41	0	0.00	71.49	0.00	-6.81	-6.42	0.00	0.00	0.00
58.25									

* Bright Zone !

Segment Leq : 58.25 dBA

Total Leq All Segments: 66.82 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	20.44	20.44

ROAD (48.63 + 32.63 + 36.87) = 49.01 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -44 -29 0.00 73.80 0.00 -14.38 -10.79 0.00 0.00 0.00
 48.63

--
 -29 -16 0.00 73.80 0.00 -14.38 -11.41 0.00 0.00 -15.38
 32.63

--
 -16 -15 0.00 73.80 0.00 -14.38 -22.55 0.00 0.00 0.00
 36.87

Segment Leq : 49.01 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	20.44	20.44

ROAD (44.65 + 43.86 + 50.67) = 52.31 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -15 -9 0.00 73.80 0.00 -14.38 -14.77 0.00 0.00 0.00
 44.65

--
 -9 -4 0.00 73.80 0.00 -14.38 -15.56 0.00 0.00 -0.94
 42.92*
 -9 -4 0.00 73.80 0.00 -14.38 -15.56 0.00 0.00 0.00
 43.86

--
 -4 20 0.00 73.80 0.00 -14.38 -8.75 0.00 0.00 0.00
 50.67

* Bright Zone !

Segment Leq : 52.31 dBA

Results segment # 3: 417EB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	2.60	2.60

ROAD (0.00 + 47.43 + 0.00) = 47.43 dBA

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

20	56	0.00	73.80	0.00	-14.38	-6.99	0.00	0.00	-5.00
47.43									

Segment Leq : 47.43 dBA

Results segment # 4: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	21.33	21.33

ROAD (48.45 + 33.31 + 36.69) = 48.86 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -44 -29 0.00 73.80 0.00 -14.55 -10.79 0.00 0.00 0.00
 48.45

--
 -29 -16 0.00 73.80 0.00 -14.55 -11.41 0.00 0.00 -14.52
 33.31

--
 -16 -15 0.00 73.80 0.00 -14.55 -22.55 0.00 0.00 0.00
 36.69

Segment Leq : 48.86 dBA

Results segment # 5: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	21.33	21.33

ROAD (44.47 + 43.68 + 50.49) = 52.13 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -15 -9 0.00 73.80 0.00 -14.55 -14.77 0.00 0.00 0.00
 44.47

--
 -9 -4 0.00 73.80 0.00 -14.55 -15.56 0.00 0.00 0.00
 43.68*
 -9 -4 0.00 73.80 0.00 -14.55 -15.56 0.00 0.00 0.00
 43.68

--
 -4 20 0.00 73.80 0.00 -14.55 -8.75 0.00 0.00 0.00
 50.49

* Bright Zone !

Segment Leq : 52.13 dBA

Results segment # 6: 417WB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	4.19	4.19

ROAD (0.00 + 52.26 + 0.00) = 52.26 dBA

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

20	56	0.00	73.80	0.00	-14.55	-6.99	0.00	0.00	-2.61
49.64*									
20	56	0.00	73.80	0.00	-14.55	-6.99	0.00	0.00	0.00
52.26									

* Bright Zone !

Segment Leq : 52.26 dBA

Results segment # 7: Bronson1 (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 !	42.70 !	9.51 !	9.51

ROAD (0.00 + 38.61 + 0.00) = 38.61 dBA

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

--	-90	-41	0.00	63.89	0.00	-6.81	-5.65	0.00	0.00	-12.82
	38.61									

Segment Leq : 38.61 dBA

Results segment # 8: Bronson2 (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	42.70	9.51	9.51

ROAD (0.00 + 50.66 + 0.00) = 50.66 dBA

Angle1 SubLeq	Angle2 SubLeq	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-41	0	0.00	63.89	0.00	-6.81	-6.42	0.00	0.00	-0.38

50.28*	-41	0	0.00	63.89	0.00	-6.81	-6.42	0.00	0.00
50.66									

* Bright Zone !

Segment Leq : 50.66 dBA

Total Leq All Segments: 59.23 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.82
 (NIGHT): 59.23

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:59:10
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r6.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB1 (day/night)

Car traffic volume	:	59370/5163	veh/TimePeriod	*
Medium truck volume	:	4723/411	veh/TimePeriod	*
Heavy truck volume	:	3373/293	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):	73333
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: 417EB1 (day/night)

Angle1 Angle2	:	0.00 deg	17.00 deg	
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	445.00 / 445.00	m	
Receiver height	:	42.70 / 42.70	m	
Topography	:	2	(Flat/gentle slope; with barrier)	
Barrier angle1	:	0.00 deg	Angle2 : 17.00 deg	
Barrier height	:	52.00	m	
Barrier receiver distance	:	9.00 / 9.00	m	
Source elevation	:	0.00	m	
Receiver elevation	:	0.00	m	
Barrier elevation	:	0.00	m	
Reference angle	:	0.00		

Road data, segment # 2: 417EB2 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

Angle1 Angle2 : 17.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 445.00 / 445.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 17.00 deg Angle2 : 90.00 deg
 Barrier height : 26.00 m
 Barrier receiver distance : 16.00 / 16.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417WB1 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417WB1 (day/night)

 Angle1 Angle2 : 0.00 deg 17.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 462.00 / 462.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 0.00 deg Angle2 : 17.00 deg
 Barrier height : 52.00 m
 Barrier receiver distance : 9.00 / 9.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 4: 417WB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB2 (day/night)

 Angle1 Angle2 : 17.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 462.00 / 462.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 17.00 deg Angle2 : 90.00 deg
 Barrier height : 26.00 m
 Barrier receiver distance : 16.00 / 16.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : -72.00 deg 10.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 23.00 / 23.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Road data, segment # 6: Bronson1 (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 # 6: Bronson1 (day/night)

 Angle1 Angle2 : -90.00 deg 21.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 72.00 / 72.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 21.00 deg
 Barrier height : 26.00 m
 Barrier receiver distance : 9.00 / 9.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 7: Bronson2 (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 # 7: Bronson2 (day/night)

 Angle1 Angle2 : 21.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 72.00 / 72.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 41.00 deg Angle2 : 90.00 deg
 Barrier height : 8.00 m
 Barrier receiver distance : 39.00 / 39.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB1 (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 !	42.70 !	41.87 !	41.87

ROAD (0.00 + 36.43 + 0.00) = 36.43 dBA

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

--	0	17	0.00	81.40	0.00	-14.72	-10.25	0.00	0.00	-20.00
	36.43									

Segment Leq : 36.43 dBA

Results segment # 2: 417EB2 (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	42.70	41.22	41.22

ROAD (0.00 + 62.75 + 0.00) = 62.75 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
62.74*									

17	90	0.00	81.40	0.00	-14.72	-3.92	0.00	0.00	-0.02
62.75									
17	90	0.00	81.40	0.00	-14.72	-3.92	0.00	0.00	0.00
62.75									

* Bright Zone !

Segment Leq : 62.75 dBA

Results segment # 3: 417WB1 (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 !	42.70 !	41.90 !	41.90

ROAD (0.00 + 36.26 + 0.00) = 36.26 dBA

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

--	0	17	0.00	81.40	0.00	-14.89	-10.25	0.00	0.00	-20.00
	36.26									

Segment Leq : 36.26 dBA

Results segment # 4: 417WB2 (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	42.70	41.27	41.27

ROAD (0.00 + 62.59 + 0.00) = 62.59 dBA

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

17	90	0.00	81.40	0.00	-14.89	-3.92	0.00	0.00	-0.02
62.57*									
17	90	0.00	81.40	0.00	-14.89	-3.92	0.00	0.00	0.00
62.59									

* Bright Zone !

Segment Leq : 62.59 dBA

Results segment # 5: Carling (day)

Source height = 1.50 m

ROAD (0.00 + 67.74 + 0.00) = 67.74 dBA

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

--	-72	10	0.00	73.01	0.00	-1.86	-3.41	0.00	0.00	0.00
	67.74									

Segment Leq : 67.74 dBA

Results segment # 6: Bronson1 (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	42.70	37.55	37.55

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									

-90	21	0.00	71.49	0.00	-6.81	-2.10	0.00	0.00	-0.02
62.56*									
-90	21	0.00	71.49	0.00	-6.81	-2.10	0.00	0.00	0.00
62.58									

* Bright Zone !

Segment Leq : 62.58 dBA

Results segment # 7: Bronson2 (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	42.70	20.38	20.38

ROAD (55.14 + 59.03 + 0.00) = 60.51 dBA

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

21	41	0.00	71.49	0.00	-6.81	-9.54	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

41	90	0.00	71.49	0.00	-6.81	-5.65	0.00	0.00	-0.05
----	----	------	-------	------	-------	-------	------	------	-------

41	90	0.00	71.49	0.00	-6.81	-5.65	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

* Bright Zone !

Segment Leq : 60.51 dBA

Total Leq All Segments: 71.00 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	41.87	41.87

ROAD (0.00 + 28.83 + 0.00) = 28.83 dBA

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

--	0	17	0.00	73.80	0.00	-14.72	-10.25	0.00	0.00	-20.00
	28.83									

Segment Leq : 28.83 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	41.22	41.22

ROAD (0.00 + 55.16 + 0.00) = 55.16 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
55.14*									

17	90	0.00	73.80	0.00	-14.72	-3.92	0.00	0.00	-0.02
55.14*									
17	90	0.00	73.80	0.00	-14.72	-3.92	0.00	0.00	0.00
55.16									

* Bright Zone !

Segment Leq : 55.16 dBA

Results segment # 3: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	41.90	41.90

ROAD (0.00 + 28.67 + 0.00) = 28.67 dBA

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

--	0	17	0.00	73.80	0.00	-14.89	-10.25	0.00	0.00	-20.00
	28.67									

Segment Leq : 28.67 dBA

Results segment # 4: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	41.27	41.27

ROAD (0.00 + 54.99 + 0.00) = 54.99 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
54.98*									

17	90	0.00	73.80	0.00	-14.89	-3.92	0.00	0.00	-0.02
54.99									
17	90	0.00	73.80	0.00	-14.89	-3.92	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 54.99 dBA

Results segment # 5: Carling (night)

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									

--	-72	10	0.00	65.41	0.00	-1.86	-3.41	0.00	0.00	0.00
	60.14									

Segment Leq : 60.14 dBA

Results segment # 6: Bronson1 (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	42.70	37.55	37.55

ROAD (0.00 + 54.98 + 0.00) = 54.98 dBA

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

-90	21	0.00	63.89	0.00	-6.81	-2.10	0.00	0.00	-0.02
54.96*									
-90	21	0.00	63.89	0.00	-6.81	-2.10	0.00	0.00	0.00
54.98									

* Bright Zone !

Segment Leq : 54.98 dBA

Results segment # 7: Bronson2 (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	42.70	20.38	20.38

ROAD (47.54 + 51.43 + 0.00) = 52.92 dBA

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

21	41	0.00	63.89	0.00	-6.81	-9.54	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

47.54									
41	90	0.00	63.89	0.00	-6.81	-5.65	0.00	0.00	-0.05
51.38*									
41	90	0.00	63.89	0.00	-6.81	-5.65	0.00	0.00	0.00
51.43									

* Bright Zone !

Segment Leq : 52.92 dBA

Total Leq All Segments: 63.40 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.00
 (NIGHT): 63.40

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:59:16
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r7.te Time Period: Day/Night 16/8 hours
 Description:

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

Angle1 Angle2	:	-75.00 deg	90.00 deg	
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	21.00 / 21.00	m	
Receiver height	:	42.70 / 42.70	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 : 0.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 77.00 / 77.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 34.00 deg Angle2 : 90.00 deg
 Barrier height : 8.00 m
 Barrier receiver distance : 45.00 / 45.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: Carling (day)

Source height = 1.50 m

ROAD (0.00 + 71.17 + 0.00) = 71.17 dBA

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

--	-75	90	0.00	73.01	0.00	-1.46	-0.38	0.00	0.00	0.00
	71.17									

Segment Leq : 71.17 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	42.70	18.62	18.62

ROAD (57.15 + 59.32 + 0.00) = 61.38 dBA

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

0	34	0.00	71.49	0.00	-7.10	-7.24	0.00	0.00	0.00
---	----	------	-------	------	-------	-------	------	------	------

34	90	0.00	71.49	0.00	-7.10	-5.07	0.00	0.00	-0.06
----	----	------	-------	------	-------	-------	------	------	-------

* Bright Zone !

Segment Leq : 61.38 dBA

Total Leq All Segments: 71.60 dBA

Results segment # 1: Carling (night)

Source height = 1.50 m

ROAD (0.00 + 63.57 + 0.00) = 63.57 dBA

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

--	-75	90	0.00	65.41	0.00	-1.46	-0.38	0.00	0.00	0.00
	63.57									

Segment Leq : 63.57 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	42.70	18.62	18.62

ROAD (49.55 + 51.72 + 0.00) = 53.78 dBA

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

0	34	0.00	63.89	0.00	-7.10	-7.24	0.00	0.00	0.00
---	----	------	-------	------	-------	-------	------	------	------

34	90	0.00	63.89	0.00	-7.10	-5.07	0.00	0.00	-0.06
----	----	------	-------	------	-------	-------	------	------	-------

34	90	0.00	63.89	0.00	-7.10	-5.07	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

* Bright Zone !

Segment Leq : 53.78 dBA

Total Leq All Segments: 64.00 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.60
 (NIGHT): 64.00

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:59:23
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r8.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB1 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB1 (day/night)

Angle1 Angle2 : -35.00 deg -22.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 445.00 / 445.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -35.00 deg Angle2 : -22.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 423.00 / 423.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 2: 417EB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

 Angle1 Angle2 : -22.00 deg -4.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 445.00 / 445.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -22.00 deg Angle2 : -9.00 deg
 Barrier height : 32.00 m
 Barrier receiver distance : 228.00 / 228.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417WB1 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417WB1 (day/night)

 Angle1 Angle2 : -35.00 deg -22.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 463.00 / 463.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -35.00 deg Angle2 : -22.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 423.00 / 423.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 4: 417WB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB2 (day/night)

 Angle1 Angle2 : -22.00 deg -4.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 463.00 / 463.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -22.00 deg Angle2 : -9.00 deg
 Barrier height : 32.00 m
 Barrier receiver distance : 228.00 / 228.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : 10.00 deg 81.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 27.00 / 27.00 m
 Receiver height : 42.70 / 42.70 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: 417EB1 (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	42.70	3.53	3.53

ROAD (0.00 + 55.26 + 0.00) = 55.26 dBA

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

-35	-22	0.00	81.40	0.00	-14.72	-11.41	0.00	0.00	-3.96
51.30*									
-35	-22	0.00	81.40	0.00	-14.72	-11.41	0.00	0.00	0.00
55.26									

* Bright Zone !

Segment Leq : 55.26 dBA

Results segment # 2: 417EB2 (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	42.70	21.59	21.59

ROAD (0.00 + 40.93 + 51.11) = 51.51 dBA

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

-22	-9	0.00	81.40	0.00	-14.72	-11.41	0.00	0.00	-14.33
40.93									

-9	-4	0.00	81.40	0.00	-14.72	-15.56	0.00	0.00	0.00
51.11									

Segment Leq : 51.51 dBA

Results segment # 3: 417WB1 (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	42.70	5.06	5.06

ROAD (0.00 + 55.09 + 0.00) = 55.09 dBA

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

-35	-22	0.00	81.40	0.00	-14.89	-11.41	0.00	0.00	0.00
55.09*									
-35	-22	0.00	81.40	0.00	-14.89	-11.41	0.00	0.00	0.00
55.09									

* Bright Zone !

Segment Leq : 55.09 dBA

Results segment # 4: 417WB2 (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	42.70	22.41	22.41

ROAD (0.00 + 41.60 + 50.94) = 51.42 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -22 -9 0.00 81.40 0.00 -14.89 -11.41 0.00 0.00 -13.49
 41.60

--
 -9 -4 0.00 81.40 0.00 -14.89 -15.56 0.00 0.00 0.00
 50.94

Segment Leq : 51.42 dBA

Results segment # 5: Carling (day)

Source height = 1.50 m

ROAD (0.00 + 66.41 + 0.00) = 66.41 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

--
10 81 0.00 73.01 0.00 -2.55 -4.04 0.00 0.00 0.00
66.41

--
Segment Leq : 66.41 dBA

Total Leq All Segments: 67.25 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	3.53	3.53

ROAD (0.00 + 47.66 + 0.00) = 47.66 dBA

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

-35	-22	0.00	73.80	0.00	-14.72	-11.41	0.00	0.00	-3.96
43.70*									
-35	-22	0.00	73.80	0.00	-14.72	-11.41	0.00	0.00	0.00
47.66									

* Bright Zone !

Segment Leq : 47.66 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	21.59	21.59

ROAD (0.00 + 33.33 + 43.51) = 43.91 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-22	-9	0.00	73.80	0.00	-14.72	-11.41	0.00	0.00	-14.33

33.33									
-9	-4	0.00	73.80	0.00	-14.72	-15.56	0.00	0.00	0.00

Segment Leq : 43.91 dBA

Results segment # 3: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	5.05	5.05

ROAD (0.00 + 47.49 + 0.00) = 47.49 dBA

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

-35	-22	0.00	73.80	0.00	-14.89	-11.41	0.00	0.00	0.00
47.49*									
-35	-22	0.00	73.80	0.00	-14.89	-11.41	0.00	0.00	0.00
47.49									

* Bright Zone !

Segment Leq : 47.49 dBA

Results segment # 4: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	42.70	22.41	22.41

ROAD (0.00 + 34.00 + 43.34) = 43.82 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

--
 -22 -9 0.00 73.80 0.00 -14.89 -11.41 0.00 0.00 -13.49
 34.00

--
 -9 -4 0.00 73.80 0.00 -14.89 -15.56 0.00 0.00 0.00
 43.34

Segment Leq : 43.82 dBA

Results segment # 5: Carling (night)

Source height = 1.50 m

ROAD (0.00 + 58.82 + 0.00) = 58.82 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
SubLeq

--
10 81 0.00 65.41 0.00 -2.55 -4.04 0.00 0.00 0.00
58.82

--
Segment Leq : 58.82 dBA

Total Leq All Segments: 59.66 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.25
(NIGHT): 59.66

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:59:29
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB1 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB1 (day/night)

Angle1 Angle2 : -45.00 deg -15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 406.00 / 406.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -45.00 deg Angle2 : -15.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 384.00 / 384.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 2: 417EB2 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 406.00 / 406.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -15.00 deg Angle2 : 20.00 deg
 Barrier height : 10.80 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417EB3 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB3 (day/night)

 Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 406.00 / 406.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 395.00 / 395.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 4: 417WB1 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB1 (day/night)

Angle1 Angle2 : -45.00 deg 15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 423.00 / 423.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -45.00 deg Angle2 : 15.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 384.00 / 384.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 5: 417WB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 5: 417WB2 (day/night)

 Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 423.00 / 423.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -15.00 deg Angle2 : 20.00 deg
 Barrier height : 10.80 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 6: 417WB3 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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 # 6: 417WB3 (day/night)

Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 423.00 / 423.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 2.60 m
 Barrier receiver distance : 395.00 / 395.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 7: Bronson1 (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 # 7: Bronson1 (day/night)

 Angle1 Angle2 : -90.00 deg -37.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 74.00 / 74.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -37.00 deg
 Barrier height : 17.00 m
 Barrier receiver distance : 60.00 / 60.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 8: Bronson2 (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 # 8: Bronson2 (day/night)

 Angle1 Angle2 : -37.00 deg 58.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 74.00 / 74.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -37.00 deg Angle2 : 58.00 deg
 Barrier height : 10.80 m
 Barrier receiver distance : 4.00 / 4.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB1 (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 !	12.30 !	2.08 !	2.08

ROAD (0.00 + 54.00 + 0.00) = 54.00 dBA

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

--	-45	-15	0.00	81.40	0.00	-14.32	-7.78	0.00	0.00	-5.29
	54.00									

Segment Leq : 54.00 dBA

Results segment # 2: 417EB2 (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	12.30	12.17	12.17

ROAD (0.00 + 59.96 + 0.00) = 59.96 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-15	20	0.00	81.40	0.00	-14.32	-7.11	0.00	0.00	0.00

59.96*									
-15	20	0.00	81.40	0.00	-14.32	-7.11	0.00	0.00	0.00
59.96									

* Bright Zone !

Segment Leq : 59.96 dBA

Results segment # 3: 417EB3 (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 !	12.30 !	1.79 !	1.79

ROAD (0.00 + 53.94 + 0.00) = 53.94 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
20	56	0.00	81.40	0.00	-14.32	-6.99	0.00	0.00	-6.14

53.94

Segment Leq : 53.94 dBA

Results segment # 4: 417WB1 (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 !	12.30 !	2.49 !	2.49

ROAD (0.00 + 57.11 + 0.00) = 57.11 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-45	15	0.00	81.40	0.00	-14.50	-4.77	0.00	0.00	-5.01

Segment Leq : 57.11 dBA

Results segment # 5: 417WB2 (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	12.30	12.17	12.17

ROAD (0.00 + 59.78 + 0.00) = 59.78 dBA

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

-15	20	0.00	81.40	0.00	-14.50	-7.11	0.00	0.00	0.00
59.78*									
-15	20	0.00	81.40	0.00	-14.50	-7.11	0.00	0.00	0.00
59.78									

* Bright Zone !

Segment Leq : 59.78 dBA

Results segment # 6: 417WB3 (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 !	12.30 !	2.21 !	2.21

ROAD (0.00 + 54.79 + 0.00) = 54.79 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
20 54.79	56	0.00	81.40	0.00	-14.50	-6.99	0.00	0.00	-5.12

Segment Leq : 54.79 dBA

Results segment # 7: Bronson1 (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 !	12.30 !	3.54 !	3.54

ROAD (0.00 + 41.93 + 0.00) = 41.93 dBA

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

--	-90	-37	0.00	71.49	0.00	-6.93	-5.31	0.00	0.00	-17.32
	41.93									

Segment Leq : 41.93 dBA

Results segment # 8: Bronson2 (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	12.30	11.72	11.72

ROAD (0.00 + 61.78 + 0.00) = 61.78 dBA

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

-37	58	0.00	71.49	0.00	-6.93	-2.78	0.00	0.00	-0.04
61.74*									
-37	58	0.00	71.49	0.00	-6.93	-2.78	0.00	0.00	0.00
61.78									

* Bright Zone !

Segment Leq : 61.78 dBA

Total Leq All Segments: 66.79 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	2.08 !	2.08

ROAD (0.00 + 46.41 + 0.00) = 46.41 dBA

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

--	-45	-15	0.00	73.80	0.00	-14.32	-7.78	0.00	0.00	-5.29
46.41										

Segment Leq : 46.41 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	12.17	12.17

ROAD (0.00 + 52.36 + 0.00) = 52.36 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-15	20	0.00	73.80	0.00	-14.32	-7.11	0.00	0.00	0.00

52.36*									
-15	20	0.00	73.80	0.00	-14.32	-7.11	0.00	0.00	0.00
52.36									

* Bright Zone !

Segment Leq : 52.36 dBA

Results segment # 3: 417EB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	1.79 !	1.79

ROAD (0.00 + 46.34 + 0.00) = 46.34 dBA

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

20	56	0.00	73.80	0.00	-14.32	-6.99	0.00	0.00	-6.14
46.34									

Segment Leq : 46.34 dBA

Results segment # 4: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	2.49 !	2.49

ROAD (0.00 + 49.52 + 0.00) = 49.52 dBA

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

--	-45	15	0.00	73.80	0.00	-14.50	-4.77	0.00	0.00	-5.01
	49.52									

Segment Leq : 49.52 dBA

Results segment # 5: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	12.17	12.17

ROAD (0.00 + 52.18 + 0.00) = 52.18 dBA

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

-15	20	0.00	73.80	0.00	-14.50	-7.11	0.00	0.00	0.00
52.18*									
-15	20	0.00	73.80	0.00	-14.50	-7.11	0.00	0.00	0.00
52.18									

* Bright Zone !

Segment Leq : 52.18 dBA

Results segment # 6: 417WB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	2.21	2.21

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									

20	56	0.00	73.80	0.00	-14.50	-6.99	0.00	0.00	-5.12
47.19									

Segment Leq : 47.19 dBA

Results segment # 7: Bronson1 (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	12.30	3.54	3.54

ROAD (0.00 + 34.33 + 0.00) = 34.33 dBA

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

-90	-37	0.00	63.89	0.00	-6.93	-5.31	0.00	0.00	-17.32
34.33									

Segment Leq : 34.33 dBA

Results segment # 8: Bronson2 (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	12.30	11.72	11.72

ROAD (0.00 + 54.19 + 0.00) = 54.19 dBA

Angle1 SubLeq	Angle2 SubLeq	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-37	58	0.00	63.89	0.00	-6.93	-2.78	0.00	0.00	-0.04

54.14*									
-37	58	0.00	63.89	0.00	-6.93	-2.78	0.00	0.00	0.00
54.19									

* Bright Zone !

Segment Leq : 54.19 dBA

Total Leq All Segments: 59.20 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.79
 (NIGHT): 59.20

STAMSON 5.0 NORMAL REPORT Date: 16-01-2018 15:36:26
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r9b.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB1 (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB1 (day/night)

Angle1 Angle2 : -45.00 deg -15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 406.00 / 406.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -45.00 deg Angle2 : -15.00 deg
 Barrier height : 13.20 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 2: 417EB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB2 (day/night)

 Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 406.00 / 406.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -15.00 deg Angle2 : 20.00 deg
 Barrier height : 13.20 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 3: 417EB3 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417EB3 (day/night)

 Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 406.00 / 406.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 13.20 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 4: 417WB1 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 4: 417WB1 (day/night)

 Angle1 Angle2 : -45.00 deg 15.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 423.00 / 423.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -45.00 deg Angle2 : 15.00 deg
 Barrier height : 13.20 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 5: 417WB2 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 5: 417WB2 (day/night)

 Angle1 Angle2 : -15.00 deg 20.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 423.00 / 423.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -15.00 deg Angle2 : 20.00 deg
 Barrier height : 13.20 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 6: 417WB3 (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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 # 6: 417WB3 (day/night)

 Angle1 Angle2 : 20.00 deg 56.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 423.00 / 423.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : 20.00 deg Angle2 : 56.00 deg
 Barrier height : 13.20 m
 Barrier receiver distance : 5.00 / 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 7: Bronson1 (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 # 7: Bronson1 (day/night)

 Angle1 Angle2 : -90.00 deg -37.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 74.00 / 74.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -37.00 deg
 Barrier height : 17.00 m
 Barrier receiver distance : 60.00 / 60.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 8: Bronson2 (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 # 8: Bronson2 (day/night)

 Angle1 Angle2 : -37.00 deg 58.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 74.00 / 74.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -37.00 deg Angle2 : 58.00 deg
 Barrier height : 13.20 m
 Barrier receiver distance : 4.00 / 4.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB1 (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 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 50.74 + 0.00) = 50.74 dBA

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

--	-45	-15	0.00	81.40	0.00	-14.32	-7.78	0.00	0.00	-8.55
	50.74									

Segment Leq : 50.74 dBA

Results segment # 2: 417EB2 (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 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 51.02 + 0.00) = 51.02 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-15 51.02	20	0.00	81.40	0.00	-14.32	-7.11	0.00	0.00	-8.94

Segment Leq : 51.02 dBA

Results segment # 3: 417EB3 (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 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 51.80 + 0.00) = 51.80 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
20	56	0.00	81.40	0.00	-14.32	-6.99	0.00	0.00	-8.28

Segment Leq : 51.80 dBA

Results segment # 4: 417WB1 (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 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 53.40 + 0.00) = 53.40 dBA

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

--	-45	15	0.00	81.40	0.00	-14.50	-4.77	0.00	0.00	-8.72
	53.40									

Segment Leq : 53.40 dBA

Results segment # 5: 417WB2 (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 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 50.87 + 0.00) = 50.87 dBA

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

--	-15	20	0.00	81.40	0.00	-14.50	-7.11	0.00	0.00	-8.91
	50.87									

Segment Leq : 50.87 dBA

Results segment # 6: 417WB3 (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 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 51.65 + 0.00) = 51.65 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
20 51.65	56	0.00	81.40	0.00	-14.50	-6.99	0.00	0.00	-8.25

Segment Leq : 51.65 dBA

Results segment # 7: Bronson1 (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 !	12.30 !	3.54 !	3.54

ROAD (0.00 + 41.93 + 0.00) = 41.93 dBA

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

--	-90	-37	0.00	71.49	0.00	-6.93	-5.31	0.00	0.00	-17.32
	41.93									

--
Segment Leq : 41.93 dBA

Results segment # 8: Bronson2 (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 !	12.30 !	11.72 !	11.72

ROAD (0.00 + 49.99 + 0.00) = 49.99 dBA

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

--	-37	58	0.00	71.49	0.00	-6.93	-2.78	0.00	0.00	-11.79
	49.99									

Segment Leq : 49.99 dBA

Total Leq All Segments: 60.00 dBA

Results segment # 1: 417EB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	12.17	12.17

ROAD (0.00 + 43.14 + 0.00) = 43.14 dBA

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

--	-45	-15	0.00	73.80	0.00	-14.32	-7.78	0.00	0.00	-8.55
43.14										

Segment Leq : 43.14 dBA

Results segment # 2: 417EB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 43.42 + 0.00) = 43.42 dBA

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

--	-15	20	0.00	73.80	0.00	-14.32	-7.11	0.00	0.00	-8.94
	43.42									

Segment Leq : 43.42 dBA

Results segment # 3: 417EB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	12.17	12.17

ROAD (0.00 + 44.21 + 0.00) = 44.21 dBA

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

--	20	56	0.00	73.80	0.00	-14.32	-6.99	0.00	0.00	-8.28
	44.21									

Segment Leq : 44.21 dBA

Results segment # 4: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 45.81 + 0.00) = 45.81 dBA

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

--	-45	15	0.00	73.80	0.00	-14.50	-4.77	0.00	0.00	-8.72
	45.81									

Segment Leq : 45.81 dBA

Results segment # 5: 417WB2 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	12.17 !	12.17

ROAD (0.00 + 43.27 + 0.00) = 43.27 dBA

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

--	-15	20	0.00	73.80	0.00	-14.50	-7.11	0.00	0.00	-8.91
	43.27									

Segment Leq : 43.27 dBA

Results segment # 6: 417WB3 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	12.17	12.17

ROAD (0.00 + 44.06 + 0.00) = 44.06 dBA

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

20	56	0.00	73.80	0.00	-14.50	-6.99	0.00	0.00	-8.25
44.06									

Segment Leq : 44.06 dBA

Results segment # 7: Bronson1 (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	12.30	3.54	3.54

ROAD (0.00 + 34.33 + 0.00) = 34.33 dBA

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

--	-90	-37	0.00	63.89	0.00	-6.93	-5.31	0.00	0.00	-17.32
	34.33									

Segment Leq : 34.33 dBA

Results segment # 8: Bronson2 (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	12.30	11.72	11.72

ROAD (0.00 + 42.40 + 0.00) = 42.40 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-37	58	0.00	63.89	0.00	-6.93	-2.78	0.00	0.00	-11.79

42.40

Segment Leq : 42.40 dBA

Total Leq All Segments: 52.40 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.00
 (NIGHT): 52.40

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:58:24
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r10.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB (day/night)

 Angle1 Angle2 : -35.00 deg -2.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 450.00 / 450.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -35.00 deg Angle2 : -2.00 deg
 Barrier height : 10.80 m
 Barrier receiver distance : 15.00 / 15.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417WB (day/night)

 Angle1 Angle2 : -35.00 deg -2.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 467.00 / 467.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -35.00 deg Angle2 : -2.00 deg
 Barrier height : 10.80 m
 Barrier receiver distance : 15.00 / 15.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : -76.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 23.00 / 23.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -76.00 deg Angle2 : 90.00 deg
 Barrier height : 10.80 m
 Barrier receiver distance : 3.00 / 3.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : -3.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 95.00 / 95.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -3.00 deg Angle2 : 90.00 deg
 Barrier height : 10.80 m
 Barrier receiver distance : 9.00 / 9.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB (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	12.30	11.94	11.94

ROAD (0.00 + 59.26 + 0.00) = 59.26 dBA

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

-35	-2	0.00	81.40	0.00	-14.77	-7.37	0.00	0.00	-2.27
56.98*									
-35	-2	0.00	81.40	0.00	-14.77	-7.37	0.00	0.00	0.00
59.26									

* Bright Zone !

Segment Leq : 59.26 dBA

Results segment # 2: 417WB (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	12.30	11.95	11.95

ROAD (0.00 + 59.10 + 0.00) = 59.10 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
56.90*									

-35	-2	0.00	81.40	0.00	-14.93	-7.37	0.00	0.00	-2.20
59.10									
-35	-2	0.00	81.40	0.00	-14.93	-7.37	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 59.10 dBA

Results segment # 3: Carling (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	12.30	10.89	10.89

ROAD (0.00 + 70.80 + 0.00) = 70.80 dBA

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

-76	90	0.00	73.01	0.00	-1.86	-0.35	0.00	0.00	-4.96
65.84*									
-76	90	0.00	73.01	0.00	-1.86	-0.35	0.00	0.00	0.00
70.80									

* Bright Zone !

Segment Leq : 70.80 dBA

Results segment # 4: 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	12.30	11.28	11.28

ROAD (0.00 + 60.61 + 0.00) = 60.61 dBA

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

-3	90	0.00	71.49	0.00	-8.02	-2.87	0.00	0.00	-4.50
56.10*									
-3	90	0.00	71.49	0.00	-8.02	-2.87	0.00	0.00	0.00
60.61									

* Bright Zone !

Segment Leq : 60.61 dBA

Total Leq All Segments: 71.71 dBA

Results segment # 1: 417EB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	11.94	11.94

ROAD (0.00 + 51.66 + 0.00) = 51.66 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
49.39*									

-35	-2	0.00	73.80	0.00	-14.77	-7.37	0.00	0.00	-2.27
51.66									

* Bright Zone !

Segment Leq : 51.66 dBA

Results segment # 2: 417WB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	12.30	11.95	11.95

ROAD (0.00 + 51.50 + 0.00) = 51.50 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
49.30*									

-35	-2	0.00	73.80	0.00	-14.93	-7.37	0.00	0.00	-2.20
51.50									

* Bright Zone !

Segment Leq : 51.50 dBA

Results segment # 3: Carling (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	12.30	10.89	10.89

ROAD (0.00 + 63.20 + 0.00) = 63.20 dBA

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

-76	90	0.00	65.41	0.00	-1.86	-0.35	0.00	0.00	-4.96
58.24*									
-76	90	0.00	65.41	0.00	-1.86	-0.35	0.00	0.00	0.00
63.20									

* Bright Zone !

Segment Leq : 63.20 dBA

Results segment # 4: 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	12.30	11.28	11.28

ROAD (0.00 + 53.01 + 0.00) = 53.01 dBA

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

-3	90	0.00	63.89	0.00	-8.02	-2.87	0.00	0.00	-4.50
48.51*									
-3	90	0.00	63.89	0.00	-8.02	-2.87	0.00	0.00	0.00
53.01									

* Bright Zone !

Segment Leq : 53.01 dBA

Total Leq All Segments: 64.11 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 71.71
 (NIGHT): 64.11

STAMSON 5.0 NORMAL REPORT Date: 16-01-2018 15:37:56
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r10b.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB (day/night)

Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB (day/night)

Angle1 Angle2 : -35.00 deg -2.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 450.00 / 450.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -35.00 deg Angle2 : -2.00 deg
 Barrier height : 13.00 m
 Barrier receiver distance : 15.00 / 15.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417WB (day/night)

 Angle1 Angle2 : -35.00 deg -2.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 467.00 / 467.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -35.00 deg Angle2 : -2.00 deg
 Barrier height : 13.00 m
 Barrier receiver distance : 15.00 / 15.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : -76.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 23.00 / 23.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -76.00 deg Angle2 : 90.00 deg
 Barrier height : 13.00 m
 Barrier receiver distance : 3.00 / 3.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

Angle1 Angle2 : -3.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 95.00 / 95.00 m
 Receiver height : 12.30 / 12.30 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -3.00 deg Angle2 : 90.00 deg
 Barrier height : 13.00 m
 Barrier receiver distance : 9.00 / 9.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB (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 !	12.30 !	11.94 !	11.94

ROAD (0.00 + 52.59 + 0.00) = 52.59 dBA

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

--	-35	-2	0.00	81.40	0.00	-14.77	-7.37	0.00	0.00	-6.67
	52.59									

Segment Leq : 52.59 dBA

Results segment # 2: 417WB (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 !	12.30 !	11.95 !	11.95

ROAD (0.00 + 52.47 + 0.00) = 52.47 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-35	-2	0.00	81.40	0.00	-14.93	-7.37	0.00	0.00	-6.63

52.47

Segment Leq : 52.47 dBA

Results segment # 3: Carling (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 !	12.30 !	10.89 !	10.89

ROAD (0.00 + 57.44 + 0.00) = 57.44 dBA

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

--	-76	90	0.00	73.01	0.00	-1.86	-0.35	0.00	0.00	-13.36
	57.44									

Segment Leq : 57.44 dBA

Results segment # 4: 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	12.30	11.28	11.28

ROAD (0.00 + 51.91 + 0.00) = 51.91 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-3	90	0.00	71.49	0.00	-8.02	-2.87	0.00	0.00	-8.70

51.91

Segment Leq : 51.91 dBA

Total Leq All Segments: 60.29 dBA

Results segment # 1: 417EB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	11.94 !	11.94

ROAD (0.00 + 44.99 + 0.00) = 44.99 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-35 44.99	-2	0.00	73.80	0.00	-14.77	-7.37	0.00	0.00	-6.67

Segment Leq : 44.99 dBA

Results segment # 2: 417WB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	12.30 !	11.95 !	11.95

ROAD (0.00 + 44.87 + 0.00) = 44.87 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-35	-2	0.00	73.80	0.00	-14.93	-7.37	0.00	0.00	-6.63

44.87

Segment Leq : 44.87 dBA

Results segment # 3: Carling (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 !	12.30 !	10.89 !	10.89

ROAD (0.00 + 49.85 + 0.00) = 49.85 dBA

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

--	-76	90	0.00	65.41	0.00	-1.86	-0.35	0.00	0.00	-13.36
	49.85									

Segment Leq : 49.85 dBA

Results segment # 4: 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	12.30	11.28	11.28

ROAD (0.00 + 44.31 + 0.00) = 44.31 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-3	90	0.00	63.89	0.00	-8.02	-2.87	0.00	0.00	-8.70

44.31

Segment Leq : 44.31 dBA

Total Leq All Segments: 52.69 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.29
 (NIGHT): 52.69

STAMSON 5.0 NORMAL REPORT Date: 15-01-2018 10:58:38
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r11.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB (day/night)

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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): 73333
 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: 417EB (day/night)

 Angle1 Angle2 : -39.00 deg 39.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 415.00 / 415.00 m
 Receiver height : 45.70 / 45.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -39.00 deg Angle2 : 39.00 deg
 Barrier height : 44.20 m
 Barrier receiver distance : 3.00 / 3.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417WB (day/night)

 Angle1 Angle2 : -39.00 deg 39.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 432.00 / 432.00 m
 Receiver height : 45.70 / 45.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -39.00 deg Angle2 : 39.00 deg
 Barrier height : 44.20 m
 Barrier receiver distance : 3.00 / 3.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : -90.00 deg 43.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 73.00 / 73.00 m
 Receiver height : 45.70 / 45.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 43.00 deg
 Barrier height : 44.20 m
 Barrier receiver distance : 4.00 / 4.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB (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	45.70	45.38	45.38

ROAD (0.00 + 63.35 + 0.00) = 63.35 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-39	39	0.00	81.40	0.00	-14.42	-3.63	0.00	0.00	0.00

63.35*									
-39	39	0.00	81.40	0.00	-14.42	-3.63	0.00	0.00	0.00
63.35									

* Bright Zone !

Segment Leq : 63.35 dBA

Results segment # 2: 417WB (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	45.70	45.39	45.39

ROAD (0.00 + 63.17 + 0.00) = 63.17 dBA

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

-39	39	0.00	81.40	0.00	-14.59	-3.63	0.00	0.00	0.00
63.17*									
-39	39	0.00	81.40	0.00	-14.59	-3.63	0.00	0.00	0.00
63.17									

* Bright Zone !

Segment Leq : 63.17 dBA

Results segment # 3: 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	45.70	43.28	43.28

ROAD (0.00 + 56.04 + 0.00) = 56.04 dBA

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

--	-90	43	0.00	71.49	0.00	-6.87	-1.31	0.00	0.00	-7.26
	56.04									

Segment Leq : 56.04 dBA

Total Leq All Segments: 66.66 dBA

Results segment # 1: 417EB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	45.70	45.38	45.38

ROAD (0.00 + 55.75 + 0.00) = 55.75 dBA

Angle1 SubLeq	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-39 55.75*	39	0.00	73.80	0.00	-14.42	-3.63	0.00	0.00	0.00
-39 55.75	39	0.00	73.80	0.00	-14.42	-3.63	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 55.75 dBA

Results segment # 2: 417WB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	45.70	45.39	45.39

ROAD (0.00 + 55.57 + 0.00) = 55.57 dBA

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

-39	39	0.00	73.80	0.00	-14.59	-3.63	0.00	0.00	0.00
55.57*									
-39	39	0.00	73.80	0.00	-14.59	-3.63	0.00	0.00	0.00
55.57									

* Bright Zone !

Segment Leq : 55.57 dBA

Results segment # 3: 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	45.70	43.28	43.28

ROAD (0.00 + 48.44 + 0.00) = 48.44 dBA

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

-90	43	0.00	63.89	0.00	-6.87	-1.31	0.00	0.00	-7.26
48.44									

Segment Leq : 48.44 dBA

Total Leq All Segments: 59.06 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.66
 (NIGHT): 59.06

STAMSON 5.0 NORMAL REPORT Date: 16-01-2018 15:38:31
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r11b.te Time Period: Day/Night 16/8 hours
 Description:

Road data, segment # 1: 417EB (day/night)

Car traffic volume	:	59370/5163	veh/TimePeriod	*
Medium truck volume	:	4723/411	veh/TimePeriod	*
Heavy truck volume	:	3373/293	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):	73333
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: 417EB (day/night)

Angle1	Angle2	:	-39.00 deg	39.00 deg
Wood depth	:	0	(No woods.)	
No of house rows	:	0 / 0		
Surface	:	2	(Reflective ground surface)	
Receiver source distance	:	415.00 / 415.00 m		
Receiver height	:	45.70 / 45.70 m		
Topography	:	2	(Flat/gentle slope; with barrier)	
Barrier angle1	:	-39.00 deg	Angle2 :	39.00 deg
Barrier height	:	45.80 m		
Barrier receiver distance	:	3.00 / 3.00 m		
Source elevation	:	0.00 m		
Receiver elevation	:	0.00 m		
Barrier elevation	:	0.00 m		
Reference angle	:	0.00		

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

 Car traffic volume : 59370/5163 veh/TimePeriod *
 Medium truck volume : 4723/411 veh/TimePeriod *
 Heavy truck volume : 3373/293 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) : 73333
 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: 417WB (day/night)

 Angle1 Angle2 : -39.00 deg 39.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 432.00 / 432.00 m
 Receiver height : 45.70 / 45.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -39.00 deg Angle2 : 39.00 deg
 Barrier height : 45.80 m
 Barrier receiver distance : 3.00 / 3.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

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

 Angle1 Angle2 : -90.00 deg 43.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 2 (Reflective ground surface)
 Receiver source distance : 73.00 / 73.00 m
 Receiver height : 45.70 / 45.70 m
 Topography : 2 (Flat/gentle slope; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 43.00 deg
 Barrier height : 45.80 m
 Barrier receiver distance : 4.00 / 4.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Results segment # 1: 417EB (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 !	45.70 !	45.38 !	45.38

ROAD (0.00 + 57.06 + 0.00) = 57.06 dBA

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

--	-39	39	0.00	81.40	0.00	-14.42	-3.63	0.00	0.00	-6.29
	57.06									

Segment Leq : 57.06 dBA

Results segment # 2: 417WB (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 !	45.70 !	45.39 !	45.39

ROAD (0.00 + 56.95 + 0.00) = 56.95 dBA

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

--	-39	39	0.00	81.40	0.00	-14.59	-3.63	0.00	0.00	-6.22
	56.95									

--
Segment Leq : 56.95 dBA

Results segment # 3: 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 !	45.70 !	43.28 !	43.28

ROAD (0.00 + 50.28 + 0.00) = 50.28 dBA

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

--	-90	43	0.00	71.49	0.00	-6.87	-1.31	0.00	0.00	-13.03
	50.28									

Segment Leq : 50.28 dBA

Total Leq All Segments: 60.45 dBA

Results segment # 1: 417EB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.49 !	45.70 !	45.38 !	45.38

ROAD (0.00 + 49.46 + 0.00) = 49.46 dBA

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

--	-39	39	0.00	73.80	0.00	-14.42	-3.63	0.00	0.00	-6.29
	49.46									

Segment Leq : 49.46 dBA

Results segment # 2: 417WB (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.49	45.70	45.39	45.39

ROAD (0.00 + 49.35 + 0.00) = 49.35 dBA

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

--	-39	39	0.00	73.80	0.00	-14.59	-3.63	0.00	0.00	-6.22
	49.35									

Segment Leq : 49.35 dBA

Results segment # 3: 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	45.70	43.28	43.28

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	43	0.00	63.89	0.00	-6.87	-1.31	0.00	0.00	-13.03
42.68									

Segment Leq : 42.68 dBA

Total Leq All Segments: 52.85 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 60.45
 (NIGHT): 52.85