



Roadway Traffic Noise Assessment

1354 - 1376 & Carling Avenue

Ottawa, Ontario

REPORT: GWE17-038 – Traffic Noise R3

Prepared For:

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EXECUTIVE SUMMARY

This document describes a roadway traffic noise assessment performed for a proposed multi-phase mixed-use development located at 1376 and 1354 Carling Avenue in Ottawa, Ontario. The initial phase of the proposed mixed-use development comprises an 18-storey mixed-use building with a 6-storey podium (Building C) and an 8-storey residential building (Building E). In the second phase of development, three buildings will be added onto the western half of the property (Building A, B and D), as illustrated in Figure 1. The proponent is simultaneously seeking a rezoning application for the entire site and a site plan approval application for the first phase (Building C and E). Therefore, a detailed noise assessment and a feasibility noise assessment were completed for the first and second phase of development, respectively. The major sources of transportation noise are Carling Avenue and 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) site plan drawings received from Geiger Huot Architects.

The results of the current analysis indicate that noise levels will range between 52 and 76 dBA during the daytime period (07:00-23:00) and between 45 and 68 dBA during the nighttime period (23:00-07:00). The highest noise level (i.e. 76 dBA) occurs along the north facade of Building C, which is nearest and most exposed to Carling Avenue and Highway 417. Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, as indicated in Figures 4 to 6.

In addition to upgraded windows, the installation of central air conditioning (or similar mechanical system) will be required for Building C and E which will allow occupants to keep windows closed and maintain a comfortable living environment. A Warning Clause in all Agreements of Lease, Purchase and Sale will be required for these units.

Investigation into the application of a noise barrier surrounding the west terrace (Receptor 22) found that a height of 4 m would be needed to reduce noise levels 60 dBA, and a barrier height exceeding 5 m would

be needed to reduce noise levels to 55 dBA. The use of barriers as noise control for the space would be impractical given the required height exceeds the City of Ottawa's preferred height for noise barriers. Furthermore, barriers are counterintuitive to the programmed function of the space as a rooftop terrace where views are desired. Lastly, a 1.8 m wind screen will be provided for this terrace, as part of GWE's pedestrian level wind study report recommendations. Investigation into the application of a 1.1 m noise barrier surrounding the south terrace (Receptor 23) found that noise levels can be feasibly reduced to 55 dBA. Investigation into the application of a 1.1 m noise barrier surrounding the rooftop terrace (Receptor 24) found that noise levels can be feasibly reduced to 59 dBA. STAMSON calculations consider barrier along the roof edge, due to software limitations. Although the resultant noise levels on the west terrace and rooftop terrace are elevated, other outdoor living areas within the development comply with the ENCG and offer an alternative for residences to seek a quite outdoor environment. Recommended noise barriers are illustrated in Figure 7.

The noise levels predicted for Building A, B and D indicate that noise control measures, including upgraded Building components, will be required; however, these areas are feasible for development. The ENCG outlines several outdoor living area noise control measures in order of preference, which should be considered in the future design (see Section 5.3).

With regards to stationary noise impacts from the proposed buildings on surrounding noise-sensitive buildings, once the mechanical plans for the proposed building become available, a stationary noise study will be performed. This study will include recommendations for any noise control measures that may be necessary to ensure noise levels are below the City of Ottawa's sound level limits at the surrounding noise-sensitive buildings.

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1. INTRODUCTION

Gradient Wind Engineering Inc. (GWE) was retained by Holloway Lodging Corporation to undertake a roadway traffic noise assessment of a proposed multi-phase, mixed-use development at 1376 and 1354 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 based on theoretical noise calculation methods conforming to the City of Ottawa¹ and Ministry of the Environment and Climate Change (MOECC)² guidelines. Noise calculations were based on architectural drawings received from Geiger Huot Architects, 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 the initial phase of the proposed mixed-use development, which comprises a 18-storey mixed-use building with a 6-storey podium (Building C) and an 8-storey residential building (Building E). In the second phase of development, three buildings will be added onto the western half of the property (Building A, B and D), as illustrated in Figure 1. The proponent is simultaneously seeking a rezoning application for the entire site and a site plan approval application for the first phase (Building C and E). Therefore, a detailed noise assessment and a feasibility noise assessment were completed for the first and second phase of development, respectively. The site is located to the southwest of the Carling Avenue & Archibald Street intersection. Surrounding the site is Highway 417 to the north, commercial zones to the east and west, and residential land to the south. Amenity space is provided at grade to the rear of Building C, D and E. The major sources of transportation noise are Carling Avenue and Highway 417. Figure 1 illustrates a complete site plan with surrounding context.

¹ City of Ottawa Environmental Noise Control Guidelines, January 2016

² Ontario Ministry of the Environment and Climate Change – Environmental Noise Guidelines, Publication NPC-300, Queens Printer for Ontario, Toronto, 2013

3. OBJECTIVES

The principal objectives of this work are to: (i) calculate the impact of future noise levels produced by local roadway traffic on the study building, 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.

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 based on 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 50, 45 and 40 dBA for retail, living rooms and sleeping quarters respectively, as listed in Table 1. Based on GWE's experience, more comfortable indoor noise levels should be targeted toward 47, 42 and 37 dBA to control peak noise and deficiencies in building envelope construction.

TABLE 1: INDOOR SOUND LEVEL CRITERIA (ROAD & RAIL)³

Type of Space	Time Period	Leq (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 reduction⁴. 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 attenuation⁵.

The sound level criterion for outdoor living areas is 55 dBA, which applies during the daytime period (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 Plan⁶, which provide additional details on future roadway expansions. Average Annual Daily Traffic (AADT) volumes

³ Adapted from ENCG 2016 – Tables 2.2b and 2.2c

⁴ Burberry, P.B.. (2014). Mitchell's Environment and Services. Routledge, Page 125

⁵ MOECC, Environmental Noise Guidelines, NPC 300 – Part C, Section 7.1.3

⁶ 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 EB	6-UAD	60	25,000
Carling Avenue WB	6-UAD	60	25,000
Highway 417 EB	8-Freeway	100	73,333
Highway 417 WB	8-Freeway	100	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 (grass) and reflective (pavement) intermediate ground surfaces based on specific source-receiver path ground characteristics
- Topography considered in height parameters

Noise receptors were strategically placed at 21 locations around the study area (see Figure 2 and 3).

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, concrete and masonry walls can achieve STC 50 or more. Curtain wall systems typically provide around STC 35, depending on the glazing elements. 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.

According to the ENCG, 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 procedure⁷ 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 research⁸, 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).

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, and a sample set of STAMSON input parameters are available in Figure 8 to 13.

⁷ Building Practice Note: Controlling Sound Transmission into Buildings by J.D. Quirt, National Research Council of Canada, September 1985

⁸ CMHC, Road & Rail Noise: Effects on Housing

TABLE 3: EXTERIOR NOISE LEVELS DUE TO ROADWAY TRAFFIC SOURCES

Receptor Number	Receptor Height (m)	Plane of Window Receptor Location	Noise Level (dBA)	
			Day	Night
1	16.5	6 th Floor – Building A – North Façade	74	66
2	16.5	6 th Floor – Building B – East Façade	71	64
3	16.5	6 th Floor – Building A – South Façade	61	54
4	16.5	6 th Floor – Building A – West Façade	71	63
5	16.5	6 th Floor – Building C – North Façade	75	67
6	16.5	6 th Floor – Building C – East Façade	71	63
7	16.5	6 th Floor – Building C – South Façade	60	52
8	16.5	6 th Floor – Building C – West Façade	71	64
9	53.5	18 th Floor – Building A – North Façade	75	68
10	53.5	18 th Floor – Building B – East Façade	72	64
11	53.5	18 th Floor – Building A – South Façade	66	59
12	53.5	18 th Floor – Building A – West Façade	73	65
13	53.5	18 th Floor – Building C – North Façade	76	68
14	53.5	18 th Floor – Building C – East Façade	72	65
15	53.5	18 th Floor – Building C – West Façade	73	65
16	23.4	8 th Floor – Building E – North Façade	67	60
17	23.4	8 th Floor – Building E – East Façade	65	58
18	23.4	8 th Floor – Building E – West Façade	67	59
19	23.4	8 th Floor – Building D – West Façade	70	62
20	1.5	Ground Level Courtyard – Building D	54	47
21	1.5	Ground Level Courtyard – Building E	52	45
22	19.5	7 th Floor West Terrace – Building C	71	64
23	19.5	7 th Floor South Terrace – Building C	57	49
24	64.5	Rooftop Terrace – Building C	61	53

The results of the current analysis indicate that noise levels will range between 52 and 76 dBA during the daytime period (07:00-23:00) and between 45 and 68 dBA during the nighttime period (23:00-07:00). The highest noise level (i.e. 76 dBA) occurs along the north facade of Building C, which is nearest and most exposed to Carling Avenue and Highway 417.

5.2 Noise Control Measures (Building C and E)

The noise levels predicted due to road traffic exceed the criteria listed in the ENCG for building components. This section provides the noise control measures for Building C and E, which are the subject of site plan approval. 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, the completion of detailed STC calculations will be required 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 4 to 6):

- **Bedroom Windows and Curtain Wall Systems**
 - (i) Bedroom windows facing north on Building C will require a minimum STC of 39
 - (ii) Bedroom windows facing east and west on Building C will require a minimum STC of 36
 - (iii) Bedroom windows along the far west façade on Building C will require a minimum STC of 34
 - (iv) Bedroom windows facing north and west on Building E will require a minimum STC of 30
 - (v) All other bedroom windows are to satisfy Ontario Building Code (OBC 2012) requirements

- **Living room Windows and Curtain Wall Systems**
 - (i) Living room windows facing north on Building C will require a minimum STC of 34
 - (ii) Living room windows facing east and west on Building C will require a minimum STC of 31
 - (iii) Living room windows along the far west façade on Building C will require a minimum STC of 29
 - (iv) Living room windows facing north and west on Building E will require a minimum STC of 25
 - (v) All other living room windows are to satisfy Ontario Building Code (OBC 2012) requirements

- **Retail Windows and Curtain Wall Systems**
 - (i) Retail windows facing north on Building C will require a minimum STC of 29
 - (ii) Retail windows facing east on Building C will require a minimum STC of 26
 - (iii) Retail windows along the far west façade on Building C will require a minimum STC of 24
 - (iv) All other retail windows are to satisfy Ontario Building Code (OBC 2012) requirements

- **Exterior Walls**

- (i) Exterior wall components on these façades are recommended to have a minimum STC of 45, where a window / wall system is used. Wall assemblies meeting STC 45 would include steel stud walls a minimum of 92 mm deep filled with batt insulation, exterior dense glass sheeting, and 16 mm gypsum board on either inside

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 not specified any particular window configurations, as there are several manufacturers and various combinations of window components that will offer the necessary sound attenuation rating. However, 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. As per City of Ottawa requirements, all specified Building components will require review by a qualified acoustical engineer for conformance to the recommendations of this report prior to building permit application

Results of the calculations also indicate that all units in Building C and E will require central air conditioning (or similar mechanical system), 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.

5.2.1 Noise Barrier Calculation

Noise levels at the Building C terraces (Receptor 22 to 24) are expected to approach 71, 57 and 61 dBA respectively, during the daytime period. According to the ENCG, if these areas are to be used as outdoor living areas, noise control measures are required to reduce the L_{eq} to 55 dBA.

Investigation into the application of a noise barrier surrounding the west terrace (Receptor 22) found that a height of 4 m would be needed to reduce noise levels 60 dBA, and a barrier height exceeding 5 m would be needed to reduce noise levels to 55 dBA. The use of barriers as noise control for the space would be impractical given the required height exceeds the City of Ottawa's preferred height for noise barriers. Furthermore, barriers are counterintuitive to the programed function of the space as a rooftop terrace where views are desired. Lastly, a 1.8 m wind screen will be provided for this terrace, as part of GWE's

pedestrian level wind study report recommendations. Investigation into the application of a 1.1 m noise barrier surrounding the south terrace (Receptor 23) found that noise levels can be feasibly reduced to 55 dBA. Investigation into the application of a 1.1 m noise barrier surrounding the rooftop terrace (Receptor 24) found that noise levels can be feasibly reduced to 59 dBA. STAMSON calculations consider barrier along the roof edge, due to software limitations. Although the resultant noise levels on the west terrace and rooftop terrace are elevated, other outdoor living areas within the development comply with the ENCG and offer an alternative for residences to seek a quite outdoor environment. Table 4 summarizes the results of the barrier investigation, and recommended noise barriers are illustrated in Figure 7.

TABLE 4: RESULTS OF BARRIER INVESTIGATION

Location	Reference Receptors	Barrier Height (m)	Daytime L_{eq} Noise Levels (dBA)	
			Without Barrier	With Barrier
7 th Floor West Terrace – Building C	22	1.8	71	66
		4		60
		5		58
7 th Floor South Terrace – Building C	23	1.1	57	55
Rooftop Terrace – Building C	24	1.1	61	59
		4		55

5.3 Noise Control Measures (Building A, B and D)

As the second phase applies only to rezoning at this time, the following generic noise control measures should be considered in the future design development of these buildings. The noise levels predicted for Building A, B and D indicate that noise control measures, including upgraded Building components, will be required; however, these areas are feasible for development. The ENCG outlines several outdoor living area noise control measures in order of preference, which should be considered in the future design. They are as follows:

-
- Distance setback with soft ground
 - Insertion of noise insensitive land uses between source and sensitive receptor
 - Orientation of buildings to provide sheltered zones in amenity areas
 - Shared outdoor amenity areas
 - Earth berms
 - Acoustic barriers

6. CONCLUSIONS AND RECOMMENDATIONS

The results of the current analysis indicate that noise levels will range between 52 and 76 dBA during the daytime period (07:00-23:00) and between 45 and 68 dBA during the nighttime period (23:00-07:00). The highest noise level (i.e. 76 dBA) occurs along the north facade of Building C, which is nearest and most exposed to Carling Avenue and Highway 417. Building components with a higher Sound Transmission Class (STC) rating will be required where exterior noise levels exceed 65 dBA, as indicated in Figures 4 to 6.

In addition to upgraded windows, the installation of central air conditioning (or similar mechanical system) will be required for Building C and E which will allow occupants to keep windows closed and maintain a comfortable living environment. The following Warning Clause⁹ in all Agreements of Lease, Purchase and Sale will be required for these units:

⁹ City of Ottawa Environmental Noise Control Guidelines, January 2016

“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 glass glazing elements and spandrel panels*
 - *Building C north façade bedroom/living room/retail: STC 39/34/29*
 - *Building C east and west façade bedroom/living room: STC 36/31*
 - *Building C far west façade bedroom/living room/retail: STC 34/29/24*
 - *Building E north and west façade bedroom/living room: STC 30/25*
- *STC rated exterior walls*
 - *Building C north east and west façade: STC 45*
 - *Building E north and west façade: STC 45*

This dwelling unit has also been designed with central air conditioning (or similar mechanical system). 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.”

Investigation into the application of a noise barrier surrounding the west terrace (Receptor 22) found that a height of 4 m would be needed to reduce noise levels 60 dBA, and a barrier height exceeding 5 m would be needed to reduce noise levels to 55 dBA. The use of barriers as noise control for the space would be impractical given the required height exceeds the City of Ottawa’s preferred height for noise barriers. Furthermore, barriers are counterintuitive to the programed function of the space as a rooftop terrace where views are desired. Lastly, a 1.8 m wind screen will be provided for this terrace, as part of GWE’s pedestrian level wind study report recommendations. Investigation into the application of a 1.1 m noise barrier surrounding the south terrace (Receptor 23) found that noise levels can be feasibly reduced to 55 dBA. Investigation into the application of a 1.1 m noise barrier surrounding the rooftop terrace (Receptor

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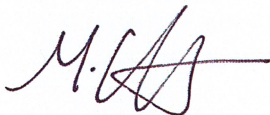
The noise levels predicted for Building A, B and D indicate that noise control measures, including upgraded Building components, will be required; however, these areas are feasible for development. The ENCG outlines several outdoor living area noise control measures in order of preference, which should be considered in the future design (see Section 5.3).

With regards to stationary noise impacts from the proposed buildings on surrounding noise-sensitive buildings, once the mechanical plans for the proposed building become available, a stationary noise study will be performed. This study will include recommendations for any noise control measures that may be necessary to ensure noise levels at the surrounding noise-sensitive buildings due to mechanical equipment on the roof of the proposed building are below the City of Ottawa's Noise Guidelines.

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,

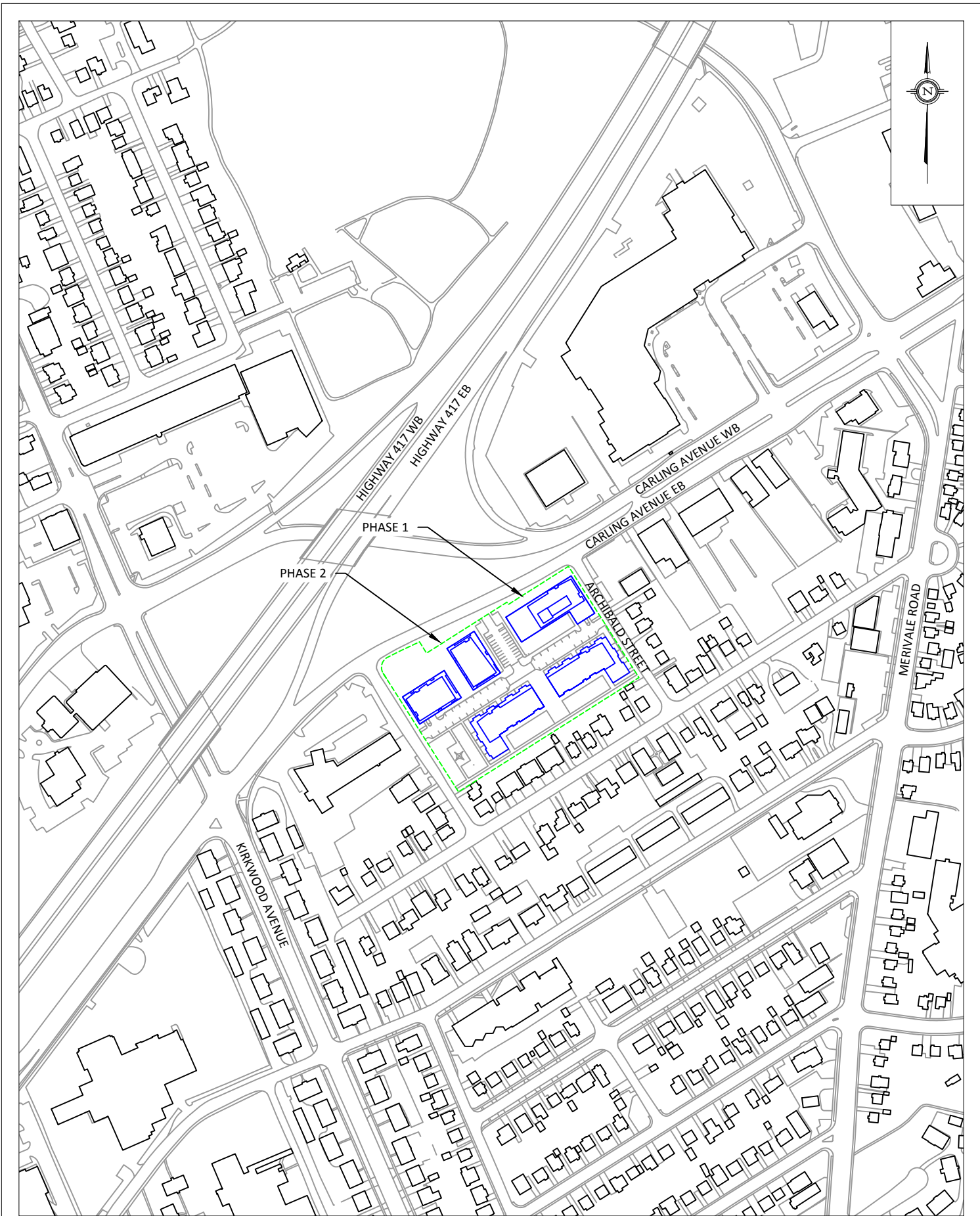
Gradient Wind Engineering Inc.




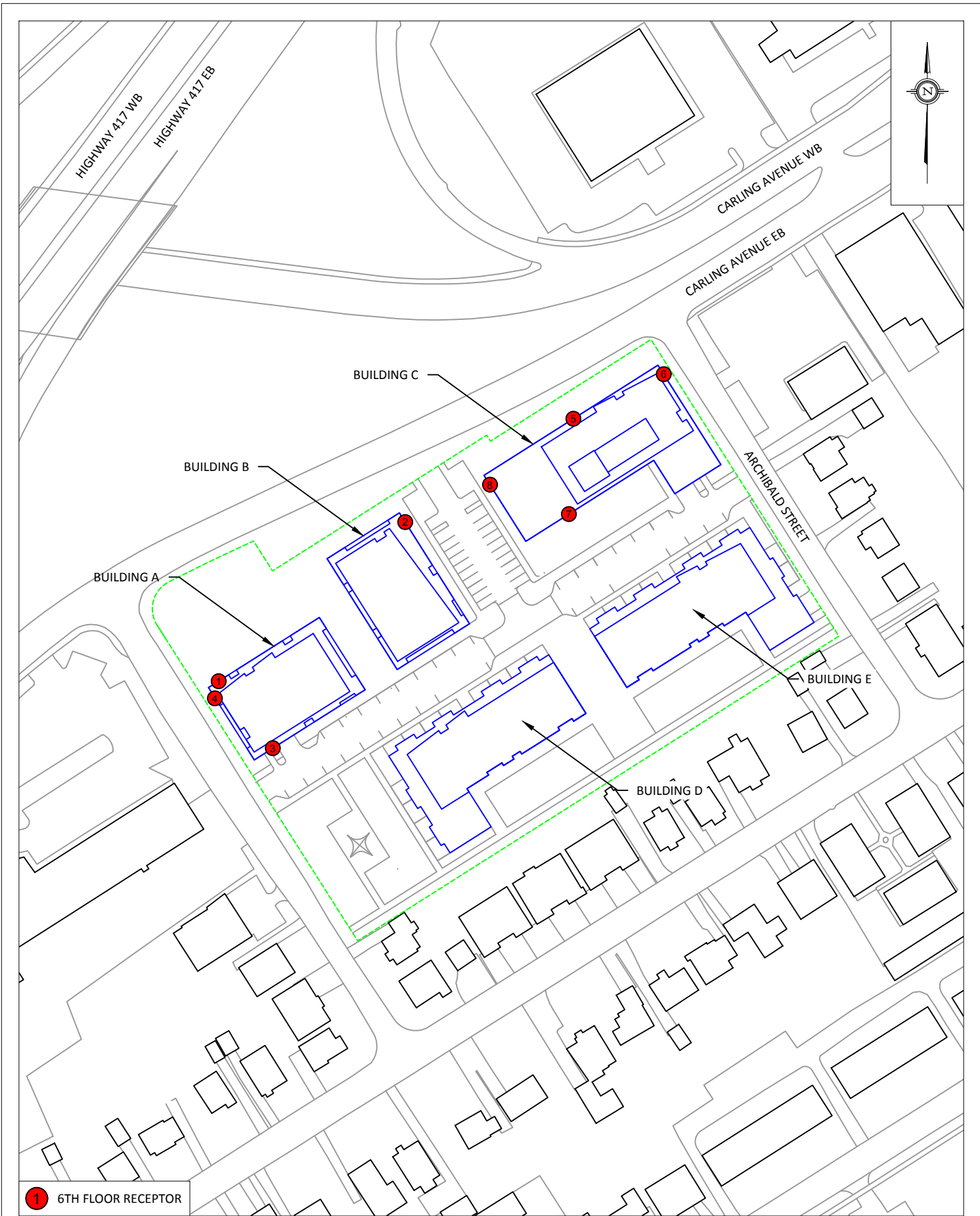
Michael Lafortune
Environmental Scientist
GWE17-038 – Traffic Noise R3

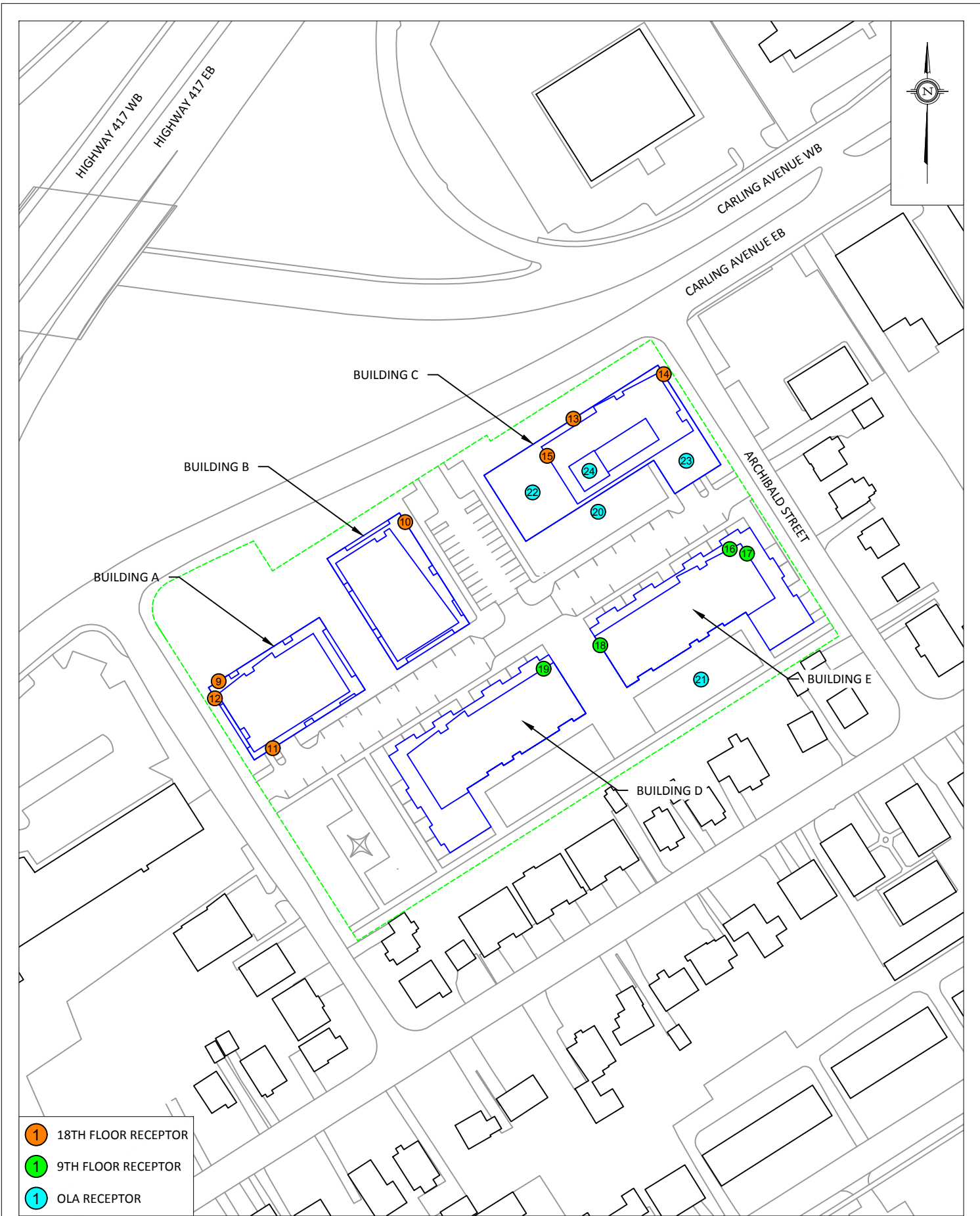


Joshua Foster, P.Eng.
Principal




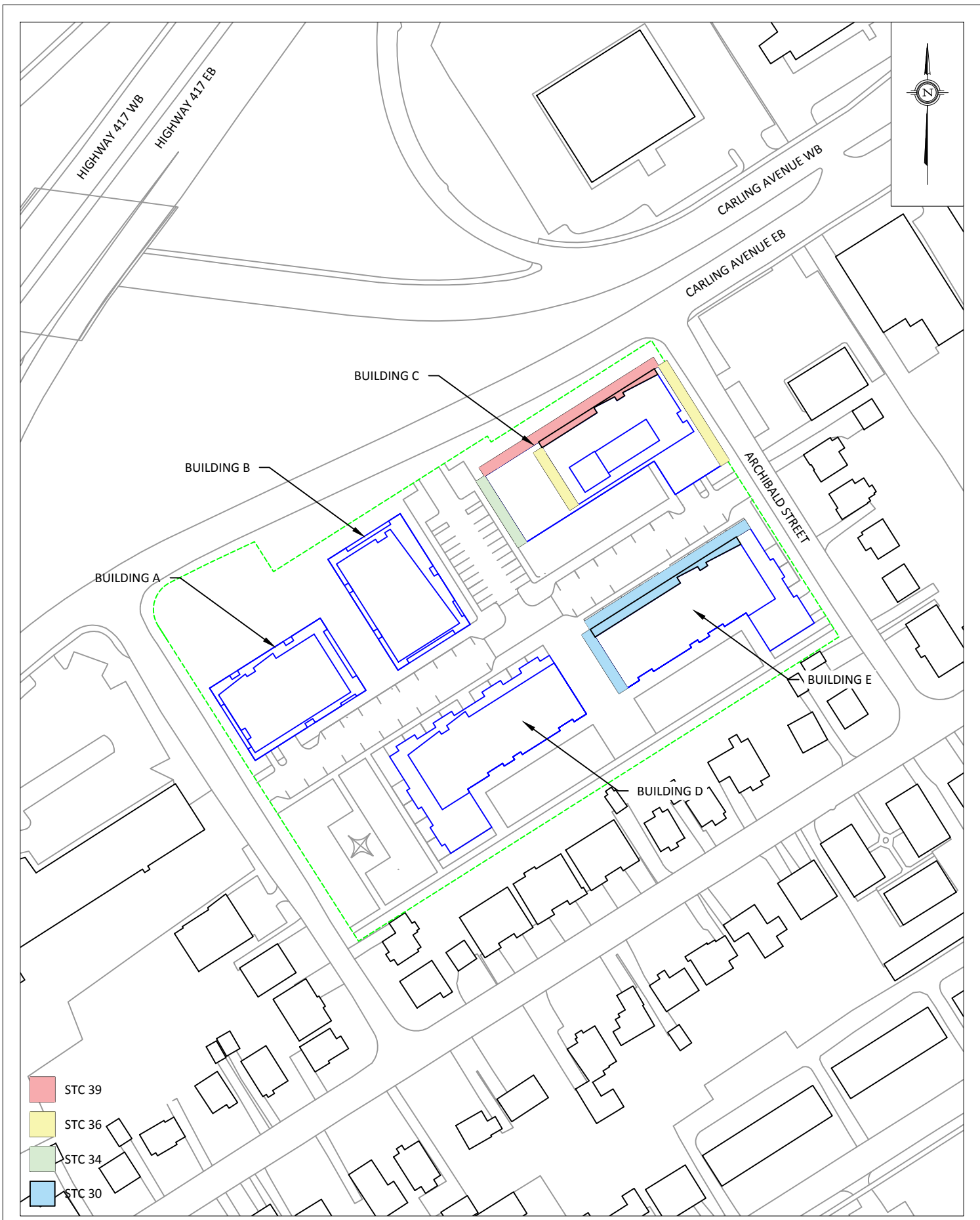
	PROJECT 1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT		DESCRIPTION FIGURE 1: SITE PLAN AND SURROUNDING CONTEXT	
	127 Walgreen Road Ottawa, Ontario (613) 836 0934	SCALE 1:4000 (APPROX.)		DRAWING NO. GWE17-038-1
	DATE DECEMBER 18, 2018	DRAWN BY M.L.		






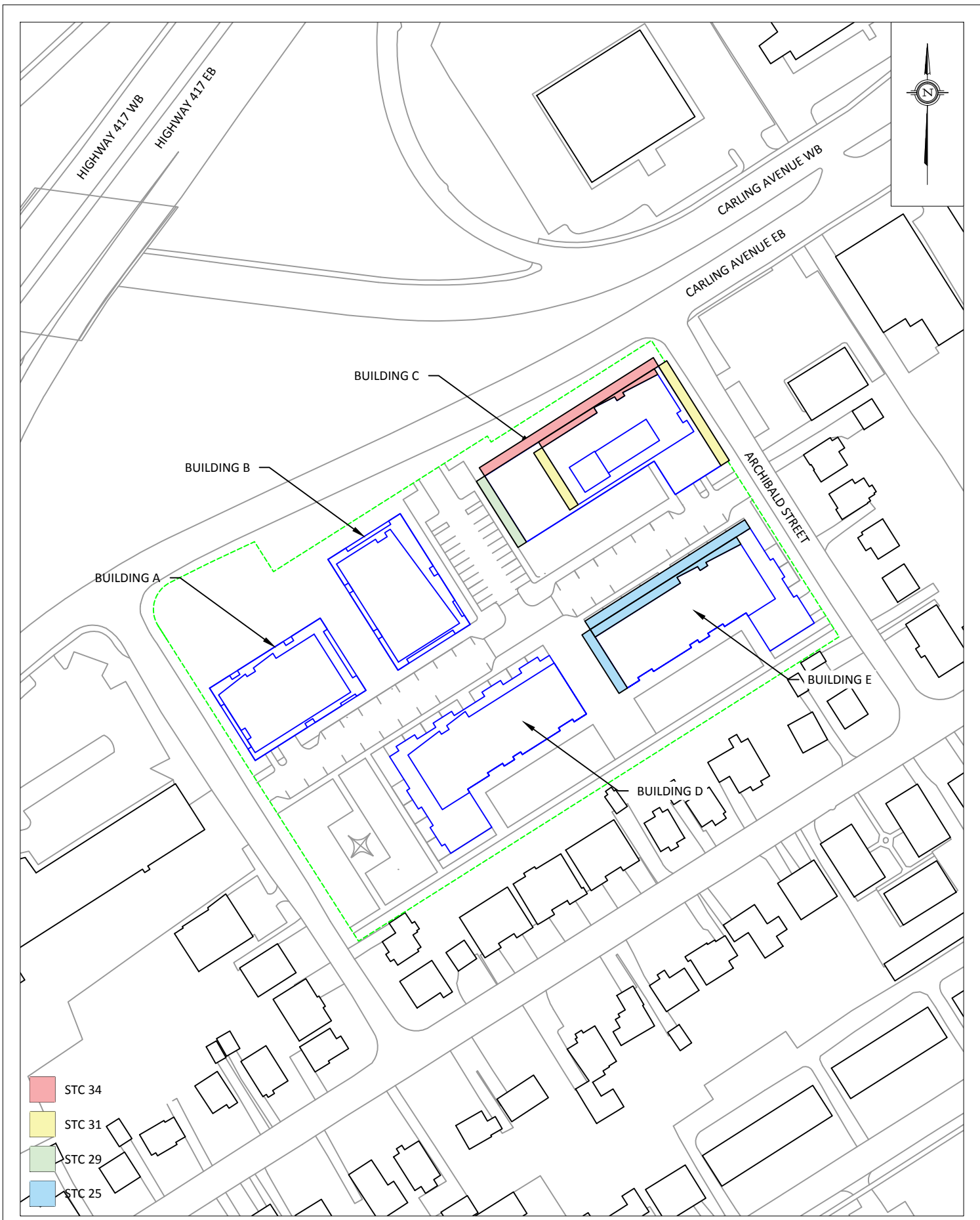
- ① 18TH FLOOR RECEPTOR
- ① 9TH FLOOR RECEPTOR
- ① OLA RECEPTOR

 GRADIENT WIND ENGINEERING INC	127 Walgreen Road Ottawa, Ontario (613) 836 0934	PROJECT 1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION
	SCALE 1:1500 (APPROX.)	DRAWING NO. GWE17-038-3	FIGURE 3: RECEPTOR LOCATIONS
	DATE DECEMBER 18, 2018	DRAWN BY M.L.	




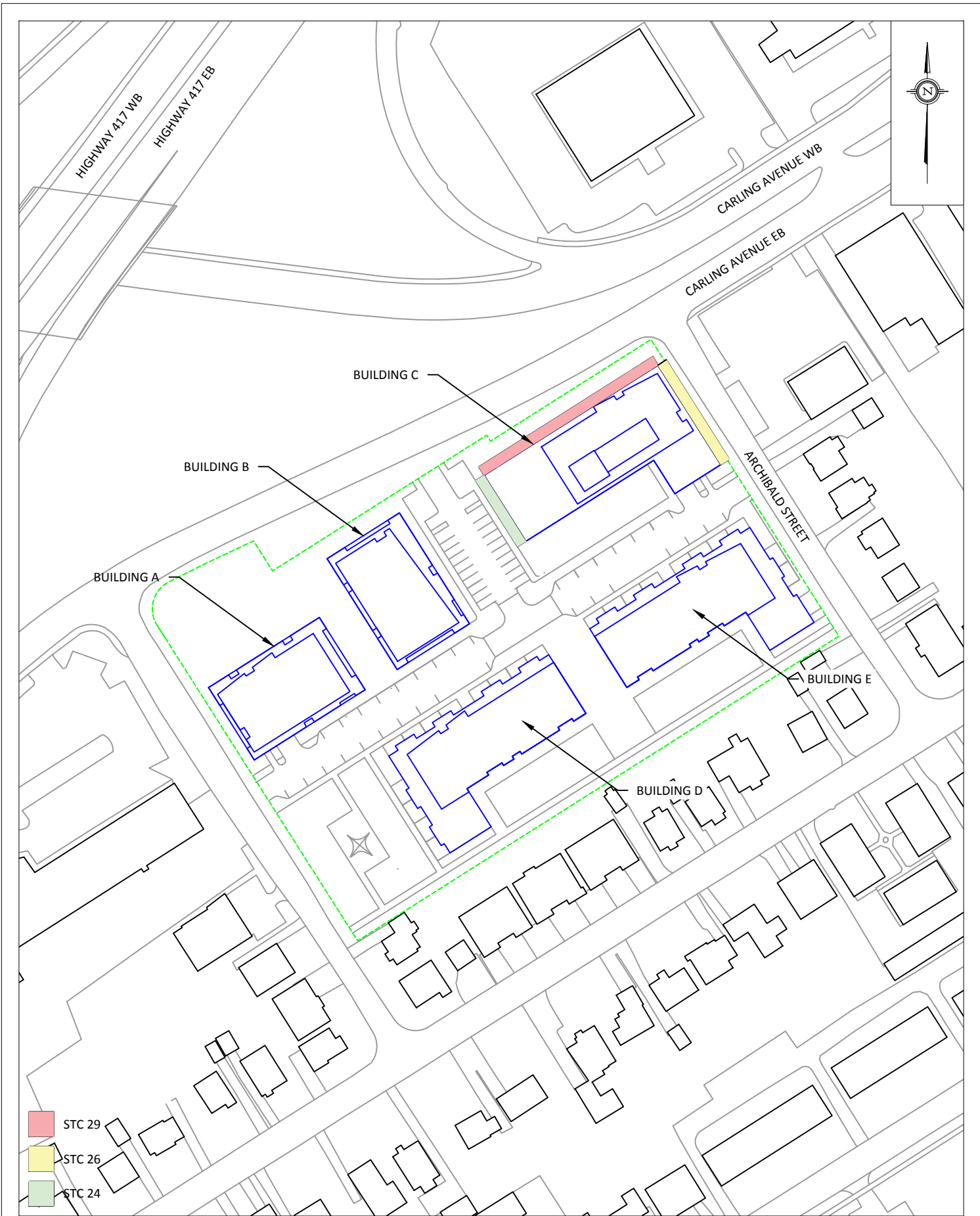
- STC 39
- STC 36
- STC 34
- STC 30

	PROJECT 127 Walgreen Road Ottawa, Ontario (613) 836 0934	PROJECT 1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION FIGURE 4: BEDROOM WINDOW STC REQUIREMENTS	
	SCALE 1:1500 (APPROX.)	DRAWING NO. GWE17-038-4		
	DATE DECEMBER 18, 2018	DRAWN BY M.L.		



- STC 34
- STC 31
- STC 29
- STC 25

	127 Walgreen Road Ottawa, Ontario (613) 836 0934	PROJECT 1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION <div style="text-align: right;">FIGURE 5: LIVING ROOM WINDOW STC REQUIREMENTS</div>	
	SCALE 1:1500 (APPROX.)	DRAWING NO. GWE17-038-5		
	DATE DECEMBER 18, 2018	DRAWN BY M.L.		



- STC 29
- STC 26
- STC 24



GRADIENT WIND
ENGINEERING INC

127 Walgreen Road
Ottawa, Ontario
(613) 836 0934

PROJECT

1376 & 1354 CARLING AVENUE, OTTAWA
ROADWAY TRAFFIC NOISE ASSESSMENT

SCALE

1:1500 (APPROX.)

DRAWING NO.

GWE17-038-6

DATE

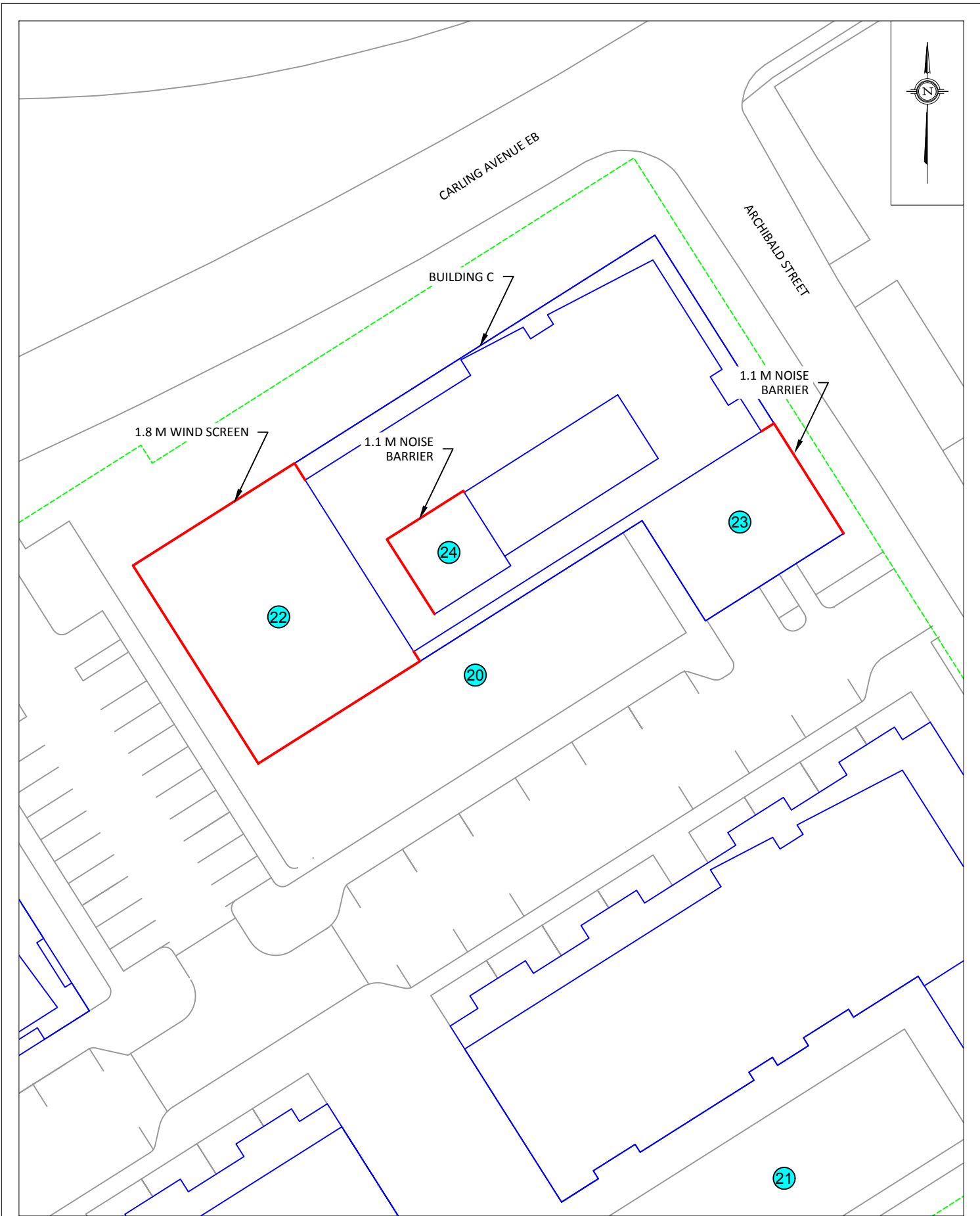
DECEMBER 18, 2018


DRAWN BY

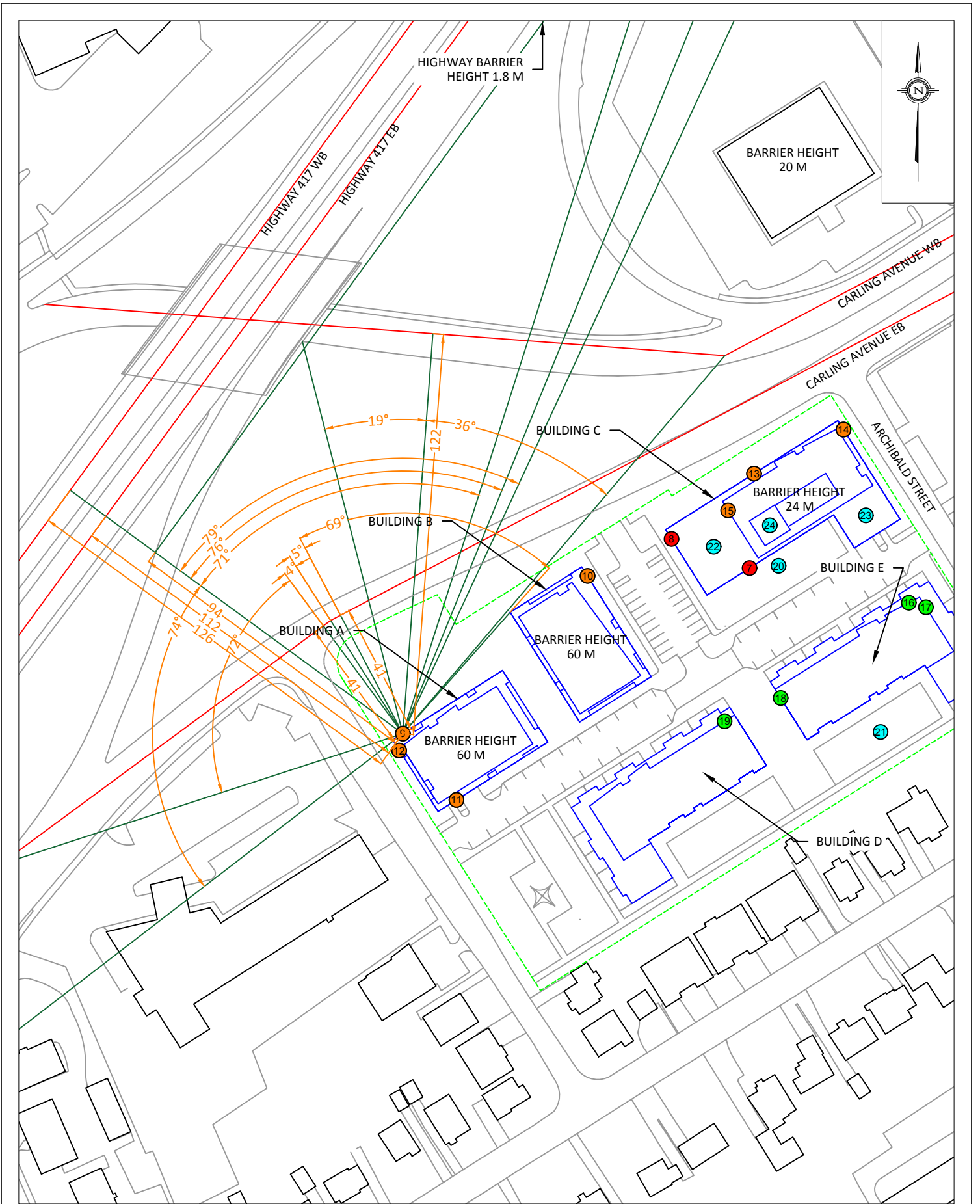
M.L.


DESCRIPTION

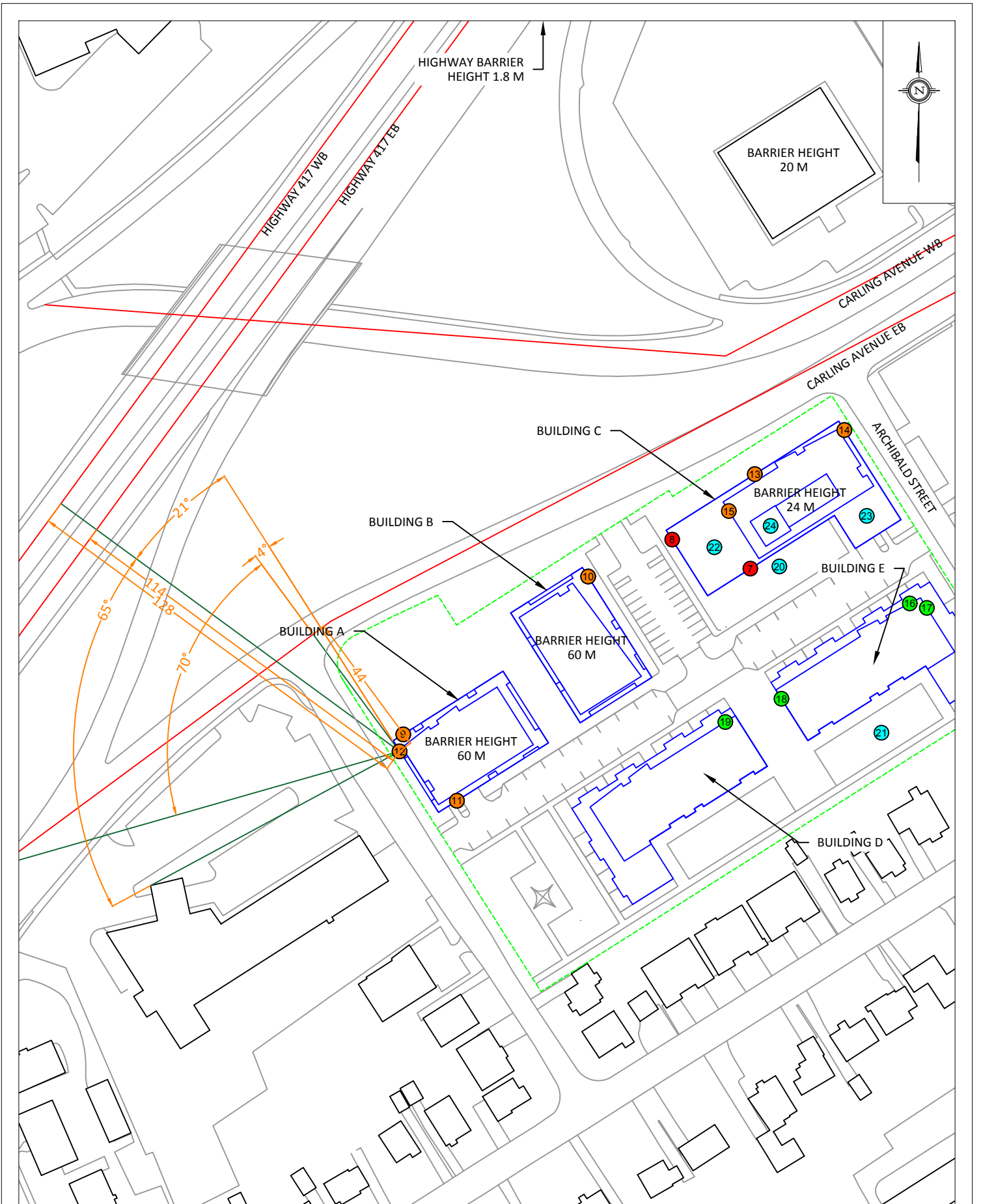
FIGURE 6:
RETAIL WINDOW STC REQUIREMENTS




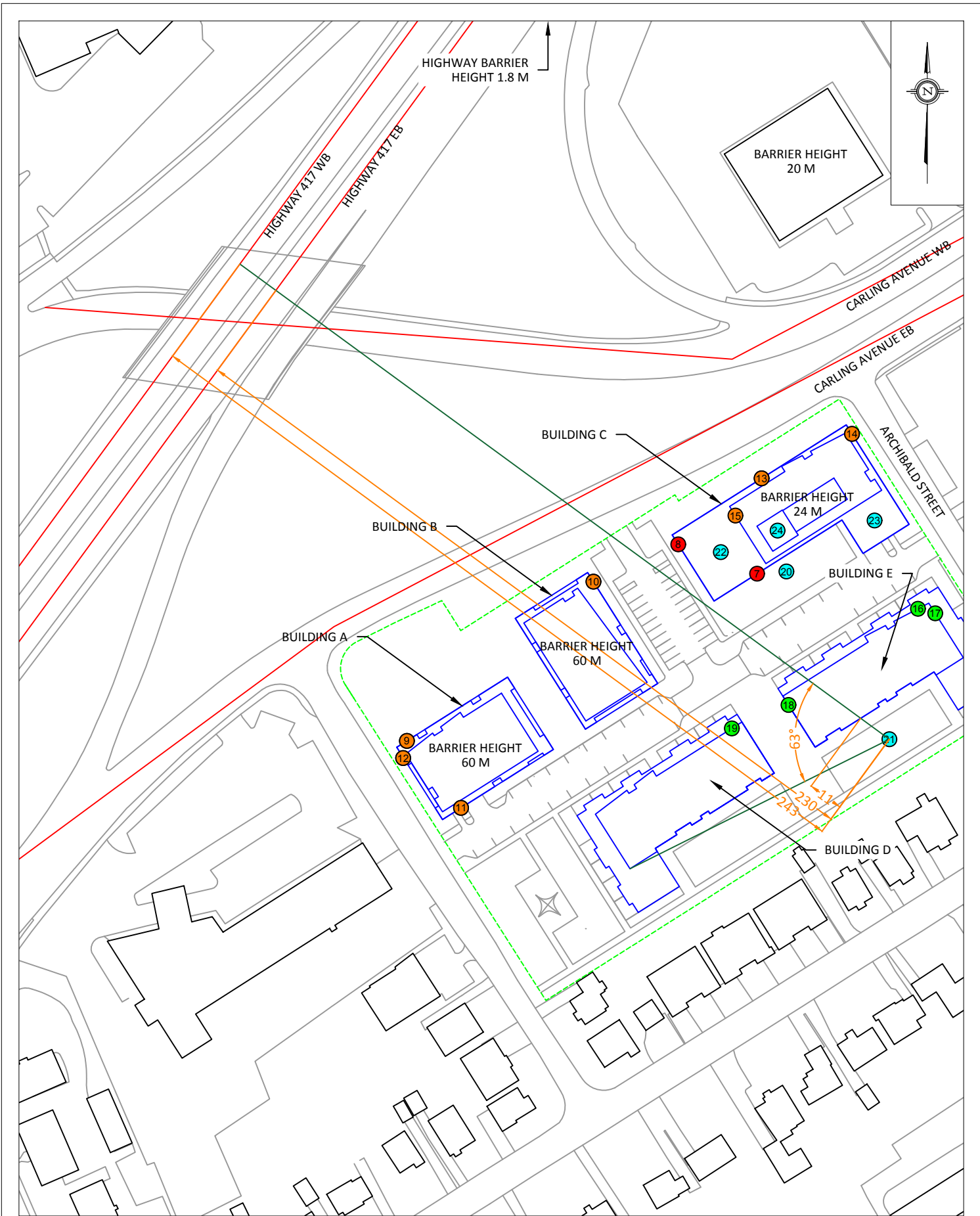
	127 Walgreen Road Ottawa, Ontario (613) 836 0934	PROJECT 1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION FIGURE 7: PROPOSED NOISE BARRIER LOCATIONS
	SCALE 1:500 (APPROX.)	DRAWING NO. GWE17-038-7	
	DATE DECEMBER 18, 2018	DRAWN BY M.L.	

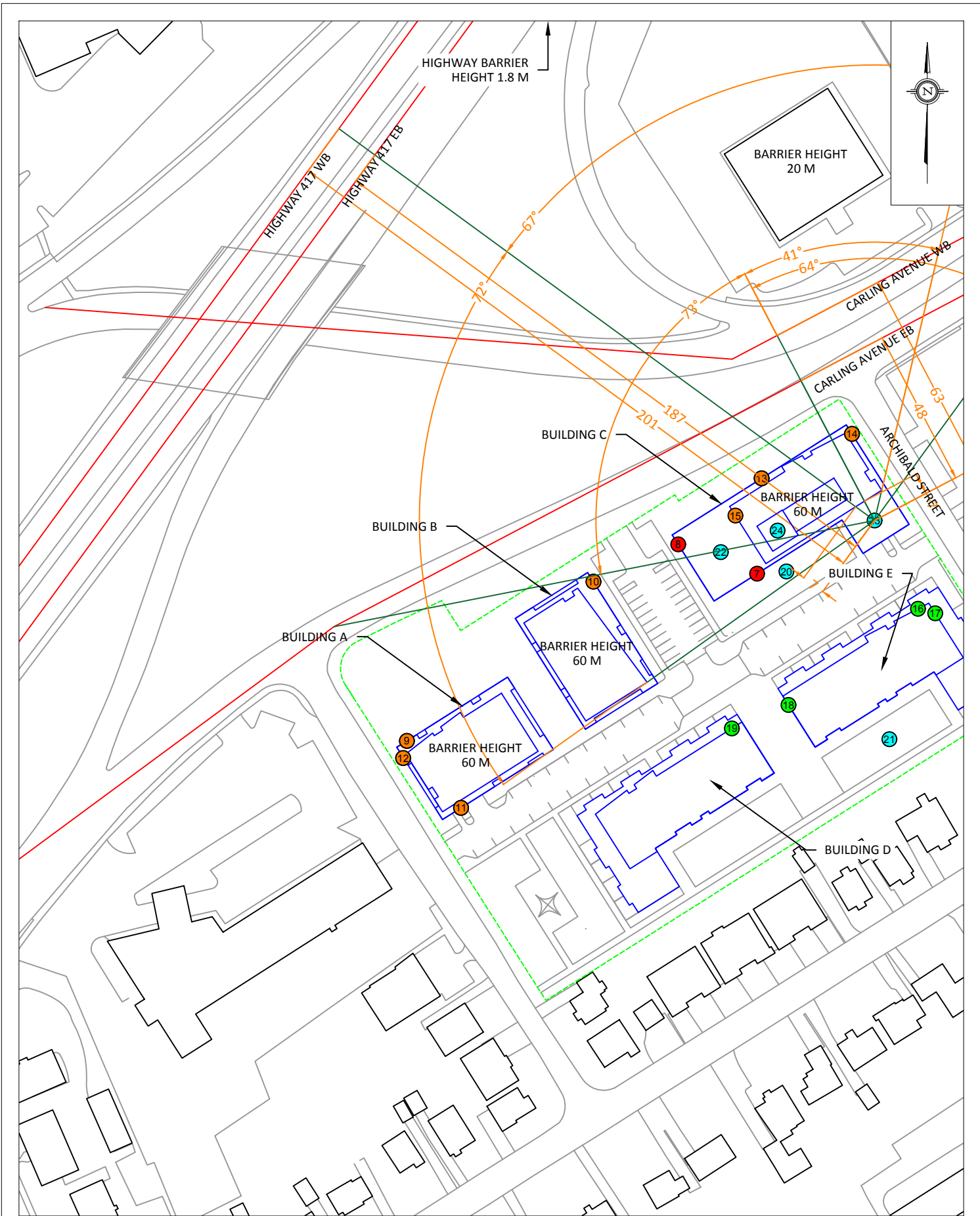


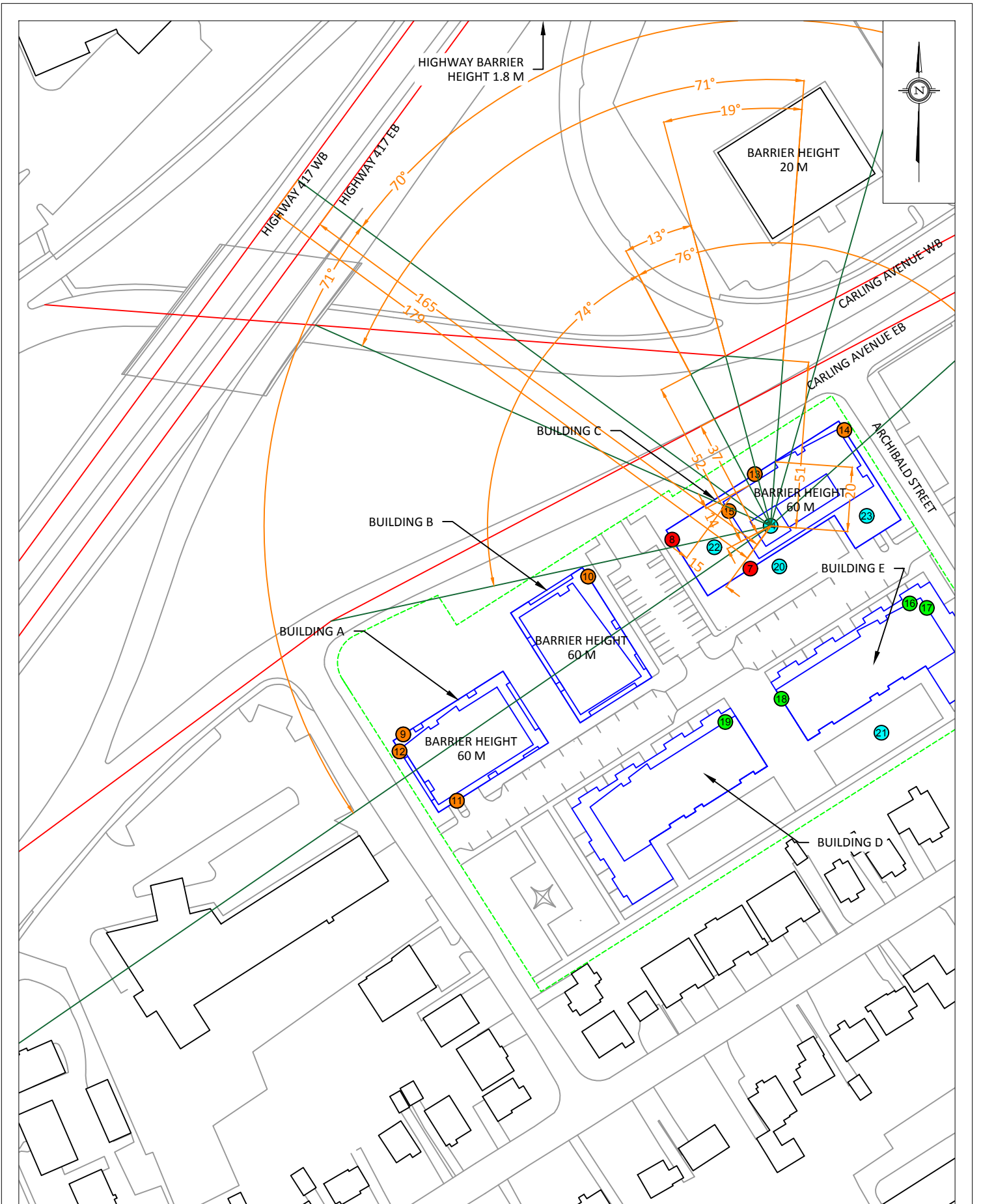
	127 Walgreen Road Ottawa, Ontario (613) 836 0934	PROJECT 1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION FIGURE 8: STAMSON INPUT PARAMETERS - RECEPTOR 1
	SCALE 1:1500 (APPROX.)	DRAWING NO. GWE17-038-8	
	DATE DECEMBER 18, 2018	DRAWN BY M.L.	




 <p>127 Walgreen Road Ottawa, Ontario (613) 836 0934</p> <p>GRADIENT WIND ENGINEERING INC</p>	PROJECT	1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION
	SCALE	1:1500 (APPROX.)	DRAWING NO.
	DATE	DECEMBER 18, 2018	DRAWN BY
		GWE17-038-9	FIGURE 9: STAMSON INPUT PARAMETERS - RECEPTOR 4
		M.L.	







	127 Walgreen Road Ottawa, Ontario (613) 836 0934	PROJECT 1376 & 1354 CARLING AVENUE, OTTAWA ROADWAY TRAFFIC NOISE ASSESSMENT	DESCRIPTION FIGURE 13: STAMSON INPUT PARAMETERS - RECEPTOR 24
	SCALE 1:1500 (APPROX.)	DRAWING NO. GWE17-038-13	
	DATE DECEMBER 18, 2018	DRAWN BY M.L.	

APPENDIX A

STAMSON 5.04 - INPUT AND OUTPUT DATA SAMPLE



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : -5.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 41.00 / 41.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : -19.00 deg 36.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 122.00 / 122.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Angle1 Angle2 : -74.00 deg 79.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 112.00 / 112.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 71.00 deg Angle2 : 76.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 94.00 / 94.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00

#

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

```

-----
Angle1 Angle2 : -74.00 deg 79.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 126.00 / 126.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 71.00 deg Angle2 : 76.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 94.00 / 94.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00
  
```

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

ROAD (0.00 + 64.10 + 0.00) = 64.10 dBA

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

SubLeq

--

-72	4	0.00	72.21	0.00	-4.37	-3.74	0.00	0.00	0.00
-----	---	------	-------	------	-------	-------	------	------	------

64.10

--

Segment Leq : 64.10 dBA

#



Results segment # 2: CarlingEB2 (day)

Source height = 1.50 m

ROAD (0.00 + 63.99 + 0.00) = 63.99 dBA

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

SubLeq

--

-5	69	0.00	72.21	0.00	-4.37	-3.86	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

63.99

--

Segment Leq : 63.99 dBA

#



Results segment # 3: CarlingWB (day)

Source height = 1.50 m

ROAD (0.00 + 56.00 + 0.00) = 56.00 dBA

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

SubLeq

--
-19 36 0.21 72.21 0.00 -11.02 -5.20 0.00 0.00 0.00
56.00

--

Segment Leq : 56.00 dBA

#



Results segment # 4: 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	16.50	2.94	8.94

ROAD (69.60 + 54.12 + 51.65) = 69.79 dBA

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

-74	71	0.21	81.40	0.00	-10.57	-1.23	0.00	0.00	0.00
69.60									

71	76	0.10	81.40	0.00	-9.62	-16.12	0.00	0.00	-4.32
51.33*									

71	76	0.21	81.40	0.00	-10.57	-16.71	0.00	0.00	0.00
54.12									

76	79	0.21	81.40	0.00	-10.57	-19.18	0.00	0.00	0.00
51.65									

* Bright Zone !

Segment Leq : 69.79 dBA

#



Results segment # 5: 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	16.50	3.78	9.78

ROAD (68.98 + 53.50 + 51.03) = 69.17 dBA

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

-74	71	0.21	81.40	0.00	-11.19	-1.23	0.00	0.00	0.00
68.98									

71	76	0.10	81.40	0.00	-10.19	-16.12	0.00	0.00	-3.63
51.46*									

71	76	0.21	81.40	0.00	-11.19	-16.71	0.00	0.00	0.00
53.50									

76	79	0.21	81.40	0.00	-11.19	-19.18	0.00	0.00	0.00
51.03									

* Bright Zone !

Segment Leq : 69.17 dBA

Total Leq All Segments: 73.67 dBA

#



Results segment # 1: CarlingEB1 (night)

Source height = 1.50 m

ROAD (0.00 + 56.51 + 0.00) = 56.51 dBA

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

SubLeq

-72	4	0.00	64.62	0.00	-4.37	-3.74	0.00	0.00	0.00
-----	---	------	-------	------	-------	-------	------	------	------

56.51

Segment Leq : 56.51 dBA

#



Results segment # 2: CarlingEB2 (night)

Source height = 1.50 m

ROAD (0.00 + 56.39 + 0.00) = 56.39 dBA

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

SubLeq

--

-5	69	0.00	64.62	0.00	-4.37	-3.86	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

56.39

--

Segment Leq : 56.39 dBA

#



Results segment # 3: CarlingWB (night)

Source height = 1.50 m

ROAD (0.00 + 48.41 + 0.00) = 48.41 dBA

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

SubLeq

--
-19 36 0.21 64.62 0.00 -11.02 -5.20 0.00 0.00 0.00
48.41

--

Segment Leq : 48.41 dBA

#



Results segment # 4: 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	16.50	2.94	8.94

ROAD (62.00 + 46.52 + 44.05) = 62.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-74	71	0.21	73.80	0.00	-10.57	-1.23	0.00	0.00	0.00
71	76	0.10	73.80	0.00	-9.62	-16.12	0.00	0.00	-4.32
71	76	0.21	73.80	0.00	-10.57	-16.71	0.00	0.00	0.00
76	79	0.21	73.80	0.00	-10.57	-19.18	0.00	0.00	0.00

62.00

43.74*

46.52

44.05

* Bright Zone !

Segment Leq : 62.19 dBA

#



Results segment # 5: 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	16.50	3.78	9.78

ROAD (61.38 + 45.90 + 43.43) = 61.57 dBA

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

61.38	-74	71	0.21	73.80	0.00	-11.19	-1.23	0.00	0.00	0.00
-------	-----	----	------	-------	------	--------	-------	------	------	------

43.86*	71	76	0.10	73.80	0.00	-10.19	-16.12	0.00	0.00	-3.63
--------	----	----	------	-------	------	--------	--------	------	------	-------

45.90	71	76	0.21	73.80	0.00	-11.19	-16.71	0.00	0.00	0.00
-------	----	----	------	-------	------	--------	--------	------	------	------

43.43	76	79	0.21	73.80	0.00	-11.19	-19.18	0.00	0.00	0.00
-------	----	----	------	-------	------	--------	--------	------	------	------

* Bright Zone !

Segment Leq : 61.57 dBA

Total Leq All Segments: 66.07 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 73.67
(NIGHT) : 66.07

#

#



STAMSON 5.0 NORMAL REPORT Date: 28-03-2017 58:36:35
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: CarlingEB1 (day/night)

```
-----
Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

```
-----
Angle1 Angle2 : -4.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

#



Road data, segment # 2: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -36.00 deg 33.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 64.00 / 64.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 65.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 32.00 / 32.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB1 (day/night)

Angle1 Angle2 : 23.00 deg 51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 122.00 / 122.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 49.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 105.00 / 105.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00

#

Road data, segment # 5: 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 # 5: 417EB2 (day/night)

```
-----
Angle1 Angle2 : 51.00 deg 53.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 122.00 / 122.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 51.00 deg Angle2 : 53.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 37.00 / 37.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00
```

#



Road data, segment # 6: 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 # 6: 417WB1 (day/night)

Angle1 Angle2 : 23.00 deg 51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 135.00 / 135.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 49.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 105.00 / 105.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00

#



Road data, segment # 7: 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 # 7: 417WB2 (day/night)

Angle1 Angle2 : 51.00 deg 53.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 135.00 / 135.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 51.00 deg Angle2 : 53.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 37.00 / 37.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

ROAD (0.00 + 68.85 + 0.00) = 68.85 dBA

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

SubLeq

--

-4	90	0.00	72.21	0.00	-0.54	-2.82	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

68.85

--

Segment Leq : 68.85 dBA

#



Results segment # 2: CarlingWB1 (day)

Source height = 1.50 m

ROAD (0.00 + 60.37 + 0.00) = 60.37 dBA

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

SubLeq

-36	33	0.21	72.21	0.00	-7.62	-4.22	0.00	0.00	0.00
-----	----	------	-------	------	-------	-------	------	------	------

60.37

Segment Leq : 60.37 dBA

#



Results segment # 3: CarlingWB2 (day)

Source height = 1.50 m

ROAD (0.00 + 60.35 + 0.00) = 60.35 dBA

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

SubLeq

--

65	90	0.00	72.21	0.00	-3.29	-8.57	0.00	0.00	0.00
60.35									

--

Segment Leq : 60.35 dBA

#



Results segment # 4: 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	16.50	2.75	8.75

ROAD (60.23 + 56.54 + 50.44) = 62.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
23	41	0.21	81.40	0.00	-11.02	-10.16	0.00	0.00	0.00
41	49	0.10	81.40	0.00	-10.03	-13.68	0.00	0.00	-3.73
41	49	0.21	81.40	0.00	-11.02	-13.84	0.00	0.00	0.00
49	51	0.21	81.40	0.00	-11.02	-19.95	0.00	0.00	0.00

60.23

53.96*
56.54

50.44

* Bright Zone !

Segment Leq : 62.08 dBA

#



Results segment # 5: 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	16.50	13.16	13.16

ROAD (0.00 + 37.67 + 0.00) = 37.67 dBA

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

51 53 0.00 81.40 0.00 -9.10 -19.54 0.00 0.00 -15.09 37.67

Segment Leq : 37.67 dBA

#



Results segment # 6: 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	16.50	3.50	9.50

ROAD (59.69 + 56.01 + 49.90) = 61.55 dBA

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

23	41	0.21	81.40	0.00	-11.55	-10.16	0.00	0.00	0.00
59.69									

41	49	0.10	81.40	0.00	-10.52	-13.68	0.00	0.00	-2.14
55.06*									

41	49	0.21	81.40	0.00	-11.55	-13.84	0.00	0.00	0.00
56.01									

49	51	0.21	81.40	0.00	-11.55	-19.95	0.00	0.00	0.00
49.90									

* Bright Zone !

Segment Leq : 61.55 dBA

#



Results segment # 7: 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	16.50	13.48	13.48

ROAD (0.00 + 37.80 + 0.00) = 37.80 dBA

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

51 53 0.00 81.40 0.00 -9.54 -19.54 0.00 0.00 -14.51
37.80

Segment Leq : 37.80 dBA

Total Leq All Segments: 71.11 dBA

#



Results segment # 1: CarlingEB1 (night)

Source height = 1.50 m

ROAD (0.00 + 61.25 + 0.00) = 61.25 dBA

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

SubLeq

--

-4	90	0.00	64.62	0.00	-0.54	-2.82	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

61.25

--

Segment Leq : 61.25 dBA

#



Results segment # 2: CarlingWB1 (night)

Source height = 1.50 m

ROAD (0.00 + 52.77 + 0.00) = 52.77 dBA

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

SubLeq

--
-36 33 0.21 64.62 0.00 -7.62 -4.22 0.00 0.00 0.00
52.77

--

Segment Leq : 52.77 dBA

#



Results segment # 3: CarlingWB2 (night)

Source height = 1.50 m

ROAD (0.00 + 52.75 + 0.00) = 52.75 dBA

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

SubLeq

65	90	0.00	64.62	0.00	-3.29	-8.57	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

52.75

Segment Leq : 52.75 dBA

#



Results segment # 4: 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	16.50	2.75	8.75

ROAD (52.63 + 48.94 + 42.84) = 54.48 dBA

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

23	41	0.21	73.80	0.00	-11.02	-10.16	0.00	0.00	0.00
52.63									

41	49	0.10	73.80	0.00	-10.03	-13.68	0.00	0.00	-3.73
46.36*									

41	49	0.21	73.80	0.00	-11.02	-13.84	0.00	0.00	0.00
48.94									

49	51	0.21	73.80	0.00	-11.02	-19.95	0.00	0.00	0.00
42.84									

* Bright Zone !

Segment Leq : 54.48 dBA

#



Results segment # 5: 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	16.50	13.16	13.16

ROAD (0.00 + 30.07 + 0.00) = 30.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
51	53	0.00	73.80	0.00	-9.10	-19.54	0.00	0.00	-15.09

SubLeq

51	53	0.00	73.80	0.00	-9.10	-19.54	0.00	0.00	-15.09
----	----	------	-------	------	-------	--------	------	------	--------

30.07

--

Segment Leq : 30.07 dBA

#



Results segment # 6: 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	16.50	3.50	9.50

ROAD (52.10 + 48.41 + 42.31) = 53.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
23	41	0.21	73.80	0.00	-11.55	-10.16	0.00	0.00	0.00
41	49	0.10	73.80	0.00	-10.52	-13.68	0.00	0.00	-2.14
41	49	0.21	73.80	0.00	-11.55	-13.84	0.00	0.00	0.00
49	51	0.21	73.80	0.00	-11.55	-19.95	0.00	0.00	0.00

52.10

47.46*

48.41

42.31

* Bright Zone !

Segment Leq : 53.95 dBA

#



Results segment # 7: 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	16.50	13.48	13.48

ROAD (0.00 + 30.20 + 0.00) = 30.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
51	53	0.00	73.80	0.00	-9.54	-19.54	0.00	0.00	-14.51

SubLeq 30.20

Segment Leq : 30.20 dBA

Total Leq All Segments: 63.51 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 71.11
(NIGHT) : 63.51

#

#



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 : -67.00 deg 77.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 127.00 / 127.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -67.00 deg Angle2 : 77.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 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 : -90.00 deg -67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 141.00 / 141.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -67.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 53.00 / 53.00 m
Source elevation : 6.00 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 : -67.00 deg 77.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 141.00 / 141.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -67.00 deg Angle2 : 77.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 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	16.50	12.74	12.74

ROAD (0.00 + 57.42 + 0.00) = 57.42 dBA

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

-90	-67	0.00	81.40	0.00	-9.28	-8.94	0.00	0.00	-5.77
-----	-----	------	-------	------	-------	-------	------	------	-------

Segment Leq : 57.42 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	16.50	16.43	16.43

ROAD (0.00 + 51.15 + 0.00) = 51.15 dBA

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

-67 77 0.00 81.40 0.00 -9.28 -0.97 0.00 0.00 -20.00
51.15

Segment Leq : 51.15 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	16.50	13.12	13.12

ROAD (0.00 + 57.21 + 0.00) = 57.21 dBA

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

-90 -67 0.00 81.40 0.00 -9.73 -8.94 0.00 0.00 -5.52
57.21

Segment Leq : 57.21 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	16.50	16.44	16.44

ROAD (0.00 + 50.70 + 0.00) = 50.70 dBA

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

-67 77 0.00 81.40 0.00 -9.73 -0.97 0.00 0.00 -20.00
50.70

Segment Leq : 50.70 dBA

Total Leq All Segments: 61.23 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	16.50	12.74	12.74

ROAD (0.00 + 49.82 + 0.00) = 49.82 dBA

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

-90 -67 0.00 73.80 0.00 -9.28 -8.94 0.00 0.00 -5.77
49.82

Segment Leq : 49.82 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	16.50	16.43	16.43

ROAD (0.00 + 43.55 + 0.00) = 43.55 dBA

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

-67	77	0.00	73.80	0.00	-9.28	-0.97	0.00	0.00	-20.00
-----	----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 43.55 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	16.50	13.12	13.12

ROAD (0.00 + 49.61 + 0.00) = 49.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-67	0.00	73.80	0.00	-9.73	-8.94	0.00	0.00	-5.52

SubLeq 49.61

Segment Leq : 49.61 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	16.50	16.44	16.44

ROAD (0.00 + 43.10 + 0.00) = 43.10 dBA

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

-67	77	0.00	73.80	0.00	-9.73	-0.97	0.00	0.00	-20.00
-----	----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 43.10 dBA

Total Leq All Segments: 53.63 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 61.23
(NIGHT) : 53.63

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:48:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

Angle1 Angle2 : -70.00 deg 4.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 44.00 / 44.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Angle1 Angle2 : -65.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 114.00 / 114.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -65.00 deg Angle2 : 21.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -65.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 128.00 / 128.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -65.00 deg Angle2 : 21.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (day)

Source height = 1.50 m

ROAD (0.00 + 63.68 + 0.00) = 63.68 dBA

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

SubLeq

--
-70 4 0.00 72.21 0.00 -4.67 -3.86 0.00 0.00 0.00
63.68

--

Segment Leq : 63.68 dBA

#



Results segment # 2: 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	16.50	16.42	16.42

ROAD (0.00 + 67.36 + 0.00) = 67.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-65	21	0.21	81.40	0.00	-10.66	-3.38	0.00	0.00	0.00

67.36*	-65	21	0.21	81.40	0.00	-10.66	-3.38	0.00	0.00	0.00
67.36	-65	21	0.21	81.40	0.00	-10.66	-3.38	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 67.36 dBA

#



Results segment # 3: 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	16.50	16.43	16.43

ROAD (0.00 + 66.75 + 0.00) = 66.75 dBA

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

-65	21	0.21	81.40	0.00	-11.27	-3.38	0.00	0.00	0.00
66.75*									
-65	21	0.21	81.40	0.00	-11.27	-3.38	0.00	0.00	0.00
66.75									

* Bright Zone !

Segment Leq : 66.75 dBA

Total Leq All Segments: 70.97 dBA

#



Results segment # 1: CarlingEB (night)

Source height = 1.50 m

ROAD (0.00 + 56.08 + 0.00) = 56.08 dBA

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

SubLeq

--
-70 4 0.00 64.62 0.00 -4.67 -3.86 0.00 0.00 0.00
56.08

--

Segment Leq : 56.08 dBA

#



Results segment # 2: 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	16.50	16.42	16.42

ROAD (0.00 + 59.76 + 0.00) = 59.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-65	21	0.21	73.80	0.00	-10.66	-3.38	0.00	0.00	0.00

59.76*	-65	21	0.21	73.80	0.00	-10.66	-3.38	0.00	0.00	0.00
59.76	-65	21	0.21	73.80	0.00	-10.66	-3.38	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 59.76 dBA

#



Results segment # 3: 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	16.50	16.43	16.43

ROAD (0.00 + 59.15 + 0.00) = 59.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-65	21	0.21	73.80	0.00	-11.27	-3.38	0.00	0.00	0.00

59.15*	-65	21	0.21	73.80	0.00	-11.27	-3.38	0.00	0.00	0.00
59.15	-65	21	0.21	73.80	0.00	-11.27	-3.38	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 59.15 dBA

Total Leq All Segments: 63.37 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 70.97
(NIGHT) : 63.37

#

#



STAMSON 5.0 NORMAL REPORT Date: 28-03-2017 58:37:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -89.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 2: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -79.00 deg -17.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 15.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB1 (day/night)

Angle1 Angle2 : -90.00 deg -63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 149.00 / 149.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -63.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 29.00 / 29.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417EB2 (day/night)

Angle1 Angle2 : -63.00 deg 71.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 149.00 / 149.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 48.00 deg Angle2 : 71.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 64.00 / 64.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB1 (day/night)

Angle1 Angle2 : -90.00 deg -63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -63.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 29.00 / 29.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 7: 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 # 7: 417WB2 (day/night)

Angle1 Angle2 : -63.00 deg 71.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 48.00 deg Angle2 : 71.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 64.00 / 64.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

ROAD (0.00 + 71.52 + 0.00) = 71.52 dBA

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

SubLeq

--

-89	85	0.00	72.21	0.00	-0.54	-0.15	0.00	0.00	0.00
71.52									

--

Segment Leq : 71.52 dBA

#



Results segment # 2: CarlingWB1 (day)

Source height = 1.50 m

ROAD (0.00 + 62.97 + 0.00) = 62.97 dBA

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

SubLeq

-79	-17	0.21	72.21	0.00	-4.14	-5.10	0.00	0.00	0.00
62.97									

Segment Leq : 62.97 dBA

#



Results segment # 3: CarlingWB2 (day)

Source height = 1.50 m

ROAD (0.00 + 64.69 + 0.00) = 64.69 dBA

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

SubLeq

--
15 85 0.00 72.21 0.00 -3.42 -4.10 0.00 0.00 0.00
64.69

--

Segment Leq : 64.69 dBA

#



Results segment # 4: 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	16.50	14.75	14.75

ROAD (0.00 + 44.32 + 0.00) = 44.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-63	0.00	81.40	0.00	-9.97	-8.24	0.00	0.00	-18.87

SubLeq 44.32

Segment Leq : 44.32 dBA

#



Results segment # 5: 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	16.50	11.77	11.77

ROAD (67.06 + 48.32 + 0.00) = 67.12 dBA

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

-63	48	0.21	81.40	0.00	-12.07	-2.27	0.00	0.00	0.00
-----	----	------	-------	------	--------	-------	------	------	------

48	71	0.00	81.40	0.00	-9.97	-8.94	0.00	0.00	-14.17
----	----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 67.12 dBA

#



Results segment # 6: 417WB1 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.50 ! 16.50 ! 14.90 ! 14.90

ROAD (0.00 + 43.96 + 0.00) = 43.96 dBA

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

--
-90 -63 0.00 81.40 0.00 -10.36 -8.24 0.00 0.00 -18.83
43.96

--

Segment Leq : 43.96 dBA

#



Results segment # 7: 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	16.50	12.18	12.18

ROAD (66.59 + 48.59 + 0.00) = 66.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-63	48	0.21	81.40	0.00	-12.54	-2.27	0.00	0.00	0.00
48	71	0.00	81.40	0.00	-10.36	-8.94	0.00	0.00	-13.51

SubLeq 66.59

SubLeq 48.59

Segment Leq : 66.66 dBA

Total Leq All Segments: 74.62 dBA

#



Results segment # 1: CarlingEB1 (night)

Source height = 1.50 m

ROAD (0.00 + 63.93 + 0.00) = 63.93 dBA

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

SubLeq

--
-89 85 0.00 64.62 0.00 -0.54 -0.15 0.00 0.00 0.00
63.93

--

Segment Leq : 63.93 dBA

#



Results segment # 2: CarlingWB1 (night)

Source height = 1.50 m

ROAD (0.00 + 55.38 + 0.00) = 55.38 dBA

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

SubLeq

-79	-17	0.21	64.62	0.00	-4.14	-5.10	0.00	0.00	0.00
55.38									

Segment Leq : 55.38 dBA

#



Results segment # 3: CarlingWB2 (night)

Source height = 1.50 m

ROAD (0.00 + 57.09 + 0.00) = 57.09 dBA

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

SubLeq

--
15 85 0.00 64.62 0.00 -3.42 -4.10 0.00 0.00 0.00
57.09

--

Segment Leq : 57.09 dBA

#



Results segment # 4: 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	16.50	14.75	14.75

ROAD (0.00 + 36.72 + 0.00) = 36.72 dBA

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

-90	-63	0.00	73.80	0.00	-9.97	-8.24	0.00	0.00	-18.87
-----	-----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 36.72 dBA

#



Results segment # 5: 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	16.50	11.77	11.77

ROAD (59.47 + 40.72 + 0.00) = 59.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-63	48	0.21	73.80	0.00	-12.07	-2.27	0.00	0.00	0.00
48	71	0.00	73.80	0.00	-9.97	-8.94	0.00	0.00	-14.17

59.47

40.72

Segment Leq : 59.52 dBA

#



Results segment # 6: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.49 ! 16.50 ! 14.90 ! 14.90

ROAD (0.00 + 36.36 + 0.00) = 36.36 dBA

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

--
-90 -63 0.00 73.80 0.00 -10.36 -8.24 0.00 0.00 -18.83
36.36

--

Segment Leq : 36.36 dBA

#



Results segment # 7: 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	16.50	12.18	12.18

ROAD (58.99 + 40.99 + 0.00) = 59.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-63	48	0.21	73.80	0.00	-12.54	-2.27	0.00	0.00	0.00
48	71	0.00	73.80	0.00	-10.36	-8.94	0.00	0.00	-13.51

58.99

40.99

Segment Leq : 59.06 dBA

Total Leq All Segments: 67.02 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 74.62
(NIGHT) : 67.02

#

#



STAMSON 5.0 NORMAL REPORT Date: 28-03-2017 58:38:03
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

```

-----
Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

```

-----
Angle1 Angle2 : -4.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

```

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : -4.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#

Road data, segment # 3: 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 # 3: 417EB1 (day/night)

```

-----
Angle1 Angle2 : 22.00 deg 62.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 30.00 deg Angle2 : 62.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 78.00 / 78.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

```

#



Road data, segment # 4: 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 # 4: 417EB2 (day/night)

Angle1 Angle2 : 62.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 62.00 deg Angle2 : 68.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 114.00 / 114.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417WB1 (day/night)

Angle1 Angle2 : 22.00 deg 62.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 176.00 / 176.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 30.00 deg Angle2 : 62.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 78.00 / 78.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB2 (day/night)

Angle1 Angle2 : 62.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 176.00 / 176.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 62.00 deg Angle2 : 68.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 114.00 / 114.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (day)

Source height = 1.50 m

ROAD (0.00 + 68.41 + 0.00) = 68.41 dBA

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

SubLeq

--
-4 86 0.00 72.21 0.00 -0.79 -3.01 0.00 0.00 0.00
68.41

--

Segment Leq : 68.41 dBA

#



Results segment # 2: CarlingWB (day)

Source height = 1.50 m

ROAD (0.00 + 65.65 + 0.00) = 65.65 dBA

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

SubLeq

--
-4 86 0.00 72.21 0.00 -3.55 -3.01 0.00 0.00 0.00
65.65

--

Segment Leq : 65.65 dBA

#



Results segment # 3: 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	16.50	12.19	12.19

ROAD (55.24 + 48.91 + 0.00) = 56.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
22	30	0.21	81.40	0.00	-12.54	-13.62	0.00	0.00	0.00
30	62	0.00	81.40	0.00	-10.36	-7.50	0.00	0.00	-14.63

55.24

48.91

Segment Leq : 56.15 dBA

#



Results segment # 4: 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	16.50	8.80	8.80

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
62	68	0.00	81.40	0.00	-10.36	-14.77	0.00	0.00	0.00
62	68	0.21	81.40	0.00	-12.54	-15.56	0.00	0.00	0.00

56.26*									
53.30									

* Bright Zone !

Segment Leq : 53.30 dBA

#



Results segment # 5: 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	16.50	12.51	12.51

ROAD (54.84 + 49.19 + 0.00) = 55.88 dBA

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

22	30	0.21	81.40	0.00	-12.94	-13.62	0.00	0.00	0.00
----	----	------	-------	------	--------	--------	------	------	------

30	62	0.00	81.40	0.00	-10.69	-7.50	0.00	0.00	-14.01
----	----	------	-------	------	--------	-------	------	------	--------

Segment Leq : 55.88 dBA

#



Results segment # 6: 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	16.50	9.37	9.37

ROAD (0.00 + 52.90 + 0.00) = 52.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
62	68	0.00	81.40	0.00	-10.69	-14.77	0.00	0.00	0.00
62	68	0.21	81.40	0.00	-12.94	-15.56	0.00	0.00	0.00

55.93*									
52.90									

* Bright Zone !

Segment Leq : 52.90 dBA

Total Leq All Segments: 70.72 dBA

#



Results segment # 1: CarlingEB (night)

Source height = 1.50 m

ROAD (0.00 + 60.82 + 0.00) = 60.82 dBA

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

SubLeq

--

-4	86	0.00	64.62	0.00	-0.79	-3.01	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

60.82

--

Segment Leq : 60.82 dBA

#



Results segment # 2: CarlingWB (night)

Source height = 1.50 m

ROAD (0.00 + 58.05 + 0.00) = 58.05 dBA

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

SubLeq

--

-4	86	0.00	64.62	0.00	-3.55	-3.01	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

58.05

--

Segment Leq : 58.05 dBA

#



Results segment # 3: 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	16.50	12.19	12.19

ROAD (47.64 + 41.31 + 0.00) = 48.55 dBA

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

22	30	0.21	73.80	0.00	-12.54	-13.62	0.00	0.00	0.00
----	----	------	-------	------	--------	--------	------	------	------

30	62	0.00	73.80	0.00	-10.36	-7.50	0.00	0.00	-14.63
----	----	------	-------	------	--------	-------	------	------	--------

Segment Leq : 48.55 dBA

#



Results segment # 4: 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	16.50	8.80	8.80

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
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------

62	68	0.00	73.80	0.00	-10.36	-14.77	0.00	0.00	0.00
48.67*									
62	68	0.21	73.80	0.00	-12.54	-15.56	0.00	0.00	0.00
45.70									

* Bright Zone !

Segment Leq : 45.70 dBA

#



Results segment # 5: 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	16.50	12.51	12.51

ROAD (47.24 + 41.59 + 0.00) = 48.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
22	30	0.21	73.80	0.00	-12.94	-13.62	0.00	0.00	0.00
30	62	0.00	73.80	0.00	-10.69	-7.50	0.00	0.00	-14.01

SubLeq

47.24

41.59

--

Segment Leq : 48.28 dBA

#



Results segment # 6: 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	16.50	9.37	9.37

ROAD (0.00 + 45.30 + 0.00) = 45.30 dBA

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

62	68	0.00	73.80	0.00	-10.69	-14.77	0.00	0.00	0.00
48.33*									
62	68	0.21	73.80	0.00	-12.94	-15.56	0.00	0.00	0.00
45.30									

* Bright Zone !

Segment Leq : 45.30 dBA

Total Leq All Segments: 63.13 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 70.72
(NIGHT) : 63.13

#

#



STAMSON 5.0 NORMAL REPORT Date: 28-03-2017 58:38:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

Angle1 Angle2 : -72.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -72.00 deg Angle2 : 90.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -90.00 deg 71.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 161.00 / 161.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 71.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -90.00 deg 71.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 174.00 / 174.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : 71.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (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	16.50	16.11	16.11

ROAD (0.00 + 51.83 + 0.00) = 51.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	90	0.00	72.21	0.00	-4.04	-0.46	0.00	0.00	-15.89

SubLeq 51.83

Segment Leq : 51.83 dBA

#



Results segment # 2: 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	16.50	16.44	16.44

ROAD (0.00 + 56.50 + 0.00) = 56.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	71	0.00	81.40	0.00	-10.31	-0.48	0.00	0.00	-14.11

SubLeq
56.50

Segment Leq : 56.50 dBA

#



Results segment # 3: 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	16.50	16.45	16.45

ROAD (0.00 + 56.19 + 0.00) = 56.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	71	0.00	81.40	0.00	-10.64	-0.48	0.00	0.00	-14.08

SubLeq
56.19

Segment Leq : 56.19 dBA

Total Leq All Segments: 60.06 dBA

#



Results segment # 1: CarlingEB (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	16.50	16.11	16.11

ROAD (0.00 + 44.23 + 0.00) = 44.23 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	90	0.00	64.62	0.00	-4.04	-0.46	0.00	0.00	-15.89

SubLeq

-72	90	0.00	64.62	0.00	-4.04	-0.46	0.00	0.00	-15.89
-----	----	------	-------	------	-------	-------	------	------	--------

44.23

--

Segment Leq : 44.23 dBA

#



Results segment # 2: 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	16.50	16.44	16.44

ROAD (0.00 + 48.90 + 0.00) = 48.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	71	0.00	73.80	0.00	-10.31	-0.48	0.00	0.00	-14.11

SubLeq 48.90

Segment Leq : 48.90 dBA

#



Results segment # 3: 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	16.50	16.45	16.45

ROAD (0.00 + 48.59 + 0.00) = 48.59 dBA

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

-90 71 0.00 73.80 0.00 -10.64 -0.48 0.00 0.00 -14.08
48.59

Segment Leq : 48.59 dBA

Total Leq All Segments: 52.46 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 60.06
(NIGHT) : 52.46

#

#



STAMSON 5.0 NORMAL REPORT Date: 28-03-2017 58:38:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

Angle1 Angle2 : -81.00 deg -5.00 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 : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Angle1 Angle2 : -76.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 151.00 / 151.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -60.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 31.00 / 31.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -76.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 16.50 / 16.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -60.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 31.00 / 31.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : -77.00 deg -37.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 16.50 / 16.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Results segment # 1: CarlingEB (day)

Source height = 1.50 m

ROAD (0.00 + 67.01 + 0.00) = 67.01 dBA

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

SubLeq

--
-81 -5 0.00 72.21 0.00 -1.46 -3.74 0.00 0.00 0.00
67.01

--

Segment Leq : 67.01 dBA

#



Results segment # 2: 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	16.50	14.65	14.65

ROAD (0.00 + 40.86 + 65.65) = 65.66 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-60	0.00	81.40	0.00	-10.03	-10.51	0.00	0.00	-20.00
-60	21	0.21	81.40	0.00	-12.14	-3.61	0.00	0.00	0.00

40.86

65.65

Segment Leq : 65.66 dBA

#



Results segment # 3: 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	16.50	14.81	14.81

ROAD (0.00 + 40.47 + 65.18) = 65.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-60	0.00	81.40	0.00	-10.41	-10.51	0.00	0.00	-20.00
-60	21	0.21	81.40	0.00	-12.60	-3.61	0.00	0.00	0.00

40.47

65.18

Segment Leq : 65.20 dBA

#



Results segment # 4: CarlingWB (day)

Source height = 1.50 m

ROAD (0.00 + 60.18 + 0.00) = 60.18 dBA

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

SubLeq

--
-77 -37 0.21 72.21 0.00 -4.89 -7.15 0.00 0.00 0.00
60.18

--

Segment Leq : 60.18 dBA

Total Leq All Segments: 71.16 dBA

#



Results segment # 1: CarlingEB (night)

Source height = 1.50 m

ROAD (0.00 + 59.41 + 0.00) = 59.41 dBA

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

SubLeq

--
-81 -5 0.00 64.62 0.00 -1.46 -3.74 0.00 0.00 0.00
59.41

--

Segment Leq : 59.41 dBA

#



Results segment # 2: 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	16.50	14.65	14.65

ROAD (0.00 + 33.26 + 58.05) = 58.07 dBA

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

--	-76	-60	0.00	73.80	0.00	-10.03	-10.51	0.00	0.00	-20.00
	33.26									

--	-60	21	0.21	73.80	0.00	-12.14	-3.61	0.00	0.00	0.00
	58.05									

--

Segment Leq : 58.07 dBA

#



Results segment # 3: 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	16.50	14.81	14.81

ROAD (0.00 + 32.87 + 57.59) = 57.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-60	0.00	73.80	0.00	-10.41	-10.51	0.00	0.00	-20.00
32.87									
-60	21	0.21	73.80	0.00	-12.60	-3.61	0.00	0.00	0.00
57.59									

Segment Leq : 57.60 dBA

#



Results segment # 4: CarlingWB (night)

Source height = 1.50 m

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

-77	-37	0.21	64.62	0.00	-4.89	-7.15	0.00	0.00	0.00
52.59									

Segment Leq : 52.59 dBA

Total Leq All Segments: 63.56 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 71.16
(NIGHT) : 63.56

#

#



STAMSON 5.0 NORMAL REPORT Date: 19-04-2018 16:10:05
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: CarlingEB1 (day/night)

```
-----
Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

```
-----
Angle1 Angle2 : -72.00 deg 4.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 41.00 / 41.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : -5.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 41.00 / 41.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : -19.00 deg 36.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 122.00 / 122.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Angle1 Angle2 : -74.00 deg 79.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 112.00 / 112.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 71.00 deg Angle2 : 76.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 94.00 / 94.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -74.00 deg 79.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 126.00 / 126.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 71.00 deg Angle2 : 76.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 94.00 / 94.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

ROAD (0.00 + 64.10 + 0.00) = 64.10 dBA

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

SubLeq

--
-72 4 0.00 72.21 0.00 -4.37 -3.74 0.00 0.00 0.00
64.10

--

Segment Leq : 64.10 dBA

#



Results segment # 2: CarlingEB2 (day)

Source height = 1.50 m

ROAD (0.00 + 63.99 + 0.00) = 63.99 dBA

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

SubLeq

--

-5	69	0.00	72.21	0.00	-4.37	-3.86	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

63.99

--

Segment Leq : 63.99 dBA

#



Results segment # 3: CarlingWB (day)

Source height = 1.50 m

ROAD (0.00 + 57.96 + 0.00) = 57.96 dBA

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

SubLeq

--

-19	36	0.00	72.21	0.00	-9.10	-5.15	0.00	0.00	0.00
-----	----	------	-------	------	-------	-------	------	------	------

57.96

--

Segment Leq : 57.96 dBA

#



Results segment # 4: 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	53.50	8.89	14.89

ROAD (71.73 + 57.10 + 54.88) = 71.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-74	71	0.00	81.40	0.00	-8.73	-0.94	0.00	0.00	0.00
71	76	0.00	81.40	0.00	-8.73	-15.56	0.00	0.00	0.00
71	76	0.00	81.40	0.00	-8.73	-15.56	0.00	0.00	0.00
76	79	0.00	81.40	0.00	-8.73	-17.78	0.00	0.00	0.00

71.73

57.10*

57.10

54.88

* Bright Zone !

Segment Leq : 71.96 dBA

#



Results segment # 5: 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	53.50	13.18	19.18

ROAD (71.21 + 56.59 + 54.37) = 71.45 dBA

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

-74	71	0.00	81.40	0.00	-9.24	-0.94	0.00	0.00	0.00
71.21									

71	76	0.00	81.40	0.00	-9.24	-15.56	0.00	0.00	0.00
56.59*									
71	76	0.00	81.40	0.00	-9.24	-15.56	0.00	0.00	0.00
56.59									

76	79	0.00	81.40	0.00	-9.24	-17.78	0.00	0.00	0.00
54.37									

* Bright Zone !

Segment Leq : 71.45 dBA

Total Leq All Segments: 75.49 dBA

#



Results segment # 1: CarlingEB1 (night)

Source height = 1.50 m

ROAD (0.00 + 56.51 + 0.00) = 56.51 dBA

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

SubLeq

--
-72 4 0.00 64.62 0.00 -4.37 -3.74 0.00 0.00 0.00
56.51

--

Segment Leq : 56.51 dBA

#



Results segment # 2: CarlingEB2 (night)

Source height = 1.50 m

ROAD (0.00 + 56.39 + 0.00) = 56.39 dBA

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

SubLeq

--

-5	69	0.00	64.62	0.00	-4.37	-3.86	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

56.39

--

Segment Leq : 56.39 dBA

#



Results segment # 3: CarlingWB (night)

Source height = 1.50 m

ROAD (0.00 + 50.37 + 0.00) = 50.37 dBA

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

SubLeq

--
-19 36 0.00 64.62 0.00 -9.10 -5.15 0.00 0.00 0.00
50.37

--

Segment Leq : 50.37 dBA

#



Results segment # 4: 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	53.50	8.89	14.89

ROAD (64.13 + 49.50 + 47.29) = 64.36 dBA

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

-74	71	0.00	73.80	0.00	-8.73	-0.94	0.00	0.00	0.00
64.13									

71	76	0.00	73.80	0.00	-8.73	-15.56	0.00	0.00	0.00
49.50*									

71	76	0.00	73.80	0.00	-8.73	-15.56	0.00	0.00	0.00
49.50									

76	79	0.00	73.80	0.00	-8.73	-17.78	0.00	0.00	0.00
47.29									

* Bright Zone !

Segment Leq : 64.36 dBA

#



Results segment # 5: 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	53.50	13.18	19.18

ROAD (63.62 + 48.99 + 46.77) = 63.85 dBA

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

-74	71	0.00	73.80	0.00	-9.24	-0.94	0.00	0.00	0.00
63.62									

71	76	0.00	73.80	0.00	-9.24	-15.56	0.00	0.00	0.00
48.99*									

71	76	0.00	73.80	0.00	-9.24	-15.56	0.00	0.00	0.00
48.99									

76	79	0.00	73.80	0.00	-9.24	-17.78	0.00	0.00	0.00
46.77									

* Bright Zone !

Segment Leq : 63.85 dBA

Total Leq All Segments: 67.89 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 75.49
(NIGHT) : 67.89

#

#



STAMSON 5.0 NORMAL REPORT Date: 19-04-2018 16:11:07
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: CarlingEB1 (day/night)

```
-----
Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

```
-----
Angle1 Angle2 : -4.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

#



Road data, segment # 2: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -36.00 deg 33.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 64.00 / 64.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 65.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 32.00 / 32.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB1 (day/night)

Angle1 Angle2 : 23.00 deg 51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 122.00 / 122.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 49.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 105.00 / 105.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417EB2 (day/night)

Angle1 Angle2 : 51.00 deg 53.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 122.00 / 122.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 51.00 deg Angle2 : 53.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 37.00 / 37.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB1 (day/night)

Angle1 Angle2 : 23.00 deg 51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 135.00 / 135.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 49.00 deg
Barrier height : 1.80 m
Barrier receiver distance : 105.00 / 105.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 6.00 m
Reference angle : 0.00

#



Road data, segment # 7: 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 # 7: 417WB2 (day/night)

Angle1 Angle2 : 51.00 deg 53.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 135.00 / 135.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 51.00 deg Angle2 : 53.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 37.00 / 37.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

ROAD (0.00 + 68.85 + 0.00) = 68.85 dBA

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

SubLeq

--
-4 90 0.00 72.21 0.00 -0.54 -2.82 0.00 0.00 0.00
68.85

--

Segment Leq : 68.85 dBA

#



Results segment # 2: CarlingWB1 (day)

Source height = 1.50 m

ROAD (0.00 + 61.75 + 0.00) = 61.75 dBA

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

SubLeq

--
-36 33 0.00 72.21 0.00 -6.30 -4.16 0.00 0.00 0.00
61.75

--

Segment Leq : 61.75 dBA

#



Results segment # 3: CarlingWB2 (day)

Source height = 1.50 m

ROAD (0.00 + 60.35 + 0.00) = 60.35 dBA

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

SubLeq

--
65 90 0.00 72.21 0.00 -3.29 -8.57 0.00 0.00 0.00
60.35

--

Segment Leq : 60.35 dBA

#



Results segment # 4: 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	53.50	7.91	13.91

ROAD (62.29 + 58.77 + 52.75) = 64.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
23	41	0.00	81.40	0.00	-9.10	-10.00	0.00	0.00	0.00
41	49	0.00	81.40	0.00	-9.10	-13.52	0.00	0.00	0.00
41	49	0.00	81.40	0.00	-9.10	-13.52	0.00	0.00	0.00
49	51	0.00	81.40	0.00	-9.10	-19.54	0.00	0.00	0.00

62.29

58.77*

58.77

52.75

* Bright Zone !

Segment Leq : 64.21 dBA

#



Results segment # 5: 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	53.50	38.94	38.94

ROAD (0.00 + 52.75 + 0.00) = 52.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
51	53	0.00	81.40	0.00	-9.10	-19.54	0.00	0.00	0.00
51	53	0.00	81.40	0.00	-9.10	-19.54	0.00	0.00	0.00

52.75*	51	53	0.00	81.40	0.00	-9.10	-19.54	0.00	0.00	0.00
52.75	51	53	0.00	81.40	0.00	-9.10	-19.54	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 52.75 dBA

#



Results segment # 6: 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	53.50	11.72	17.72

ROAD (61.85 + 58.33 + 52.31) = 63.77 dBA

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

23	41	0.00	81.40	0.00	-9.54	-10.00	0.00	0.00	0.00
61.85									

41	49	0.00	81.40	0.00	-9.54	-13.52	0.00	0.00	0.00
58.33*									
41	49	0.00	81.40	0.00	-9.54	-13.52	0.00	0.00	0.00
58.33									

49	51	0.00	81.40	0.00	-9.54	-19.54	0.00	0.00	0.00
52.31									

* Bright Zone !

Segment Leq : 63.77 dBA

#



Results segment # 7: 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	53.50	40.34	40.34

ROAD (0.00 + 52.31 + 0.00) = 52.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
51	53	0.00	81.40	0.00	-9.54	-19.54	0.00	0.00	0.00
51	53	0.00	81.40	0.00	-9.54	-19.54	0.00	0.00	0.00

52.31*	51	53	0.00	81.40	0.00	-9.54	-19.54	0.00	0.00	0.00
52.31	51	53	0.00	81.40	0.00	-9.54	-19.54	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 52.31 dBA

Total Leq All Segments: 71.94 dBA

#



Results segment # 1: CarlingEB1 (night)

Source height = 1.50 m

ROAD (0.00 + 61.25 + 0.00) = 61.25 dBA

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

SubLeq

--
-4 90 0.00 64.62 0.00 -0.54 -2.82 0.00 0.00 0.00
61.25

--

Segment Leq : 61.25 dBA

#



Results segment # 2: CarlingWB1 (night)

Source height = 1.50 m

ROAD (0.00 + 54.15 + 0.00) = 54.15 dBA

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

SubLeq

--
-36 33 0.00 64.62 0.00 -6.30 -4.16 0.00 0.00 0.00
54.15

--

Segment Leq : 54.15 dBA

#



Results segment # 3: CarlingWB2 (night)

Source height = 1.50 m

ROAD (0.00 + 52.75 + 0.00) = 52.75 dBA

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

SubLeq

--
65 90 0.00 64.62 0.00 -3.29 -8.57 0.00 0.00 0.00
52.75

--

Segment Leq : 52.75 dBA

#



Results segment # 4: 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	53.50	7.91	13.91

ROAD (54.70 + 51.17 + 45.15) = 56.62 dBA

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

23	41	0.00	73.80	0.00	-9.10	-10.00	0.00	0.00	0.00
54.70									

41	49	0.00	73.80	0.00	-9.10	-13.52	0.00	0.00	0.00
51.17*									
41	49	0.00	73.80	0.00	-9.10	-13.52	0.00	0.00	0.00
51.17									

49	51	0.00	73.80	0.00	-9.10	-19.54	0.00	0.00	0.00
45.15									

* Bright Zone !

Segment Leq : 56.62 dBA

#



Results segment # 5: 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	53.50	38.94	38.94

ROAD (0.00 + 45.15 + 0.00) = 45.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
51	53	0.00	73.80	0.00	-9.10	-19.54	0.00	0.00	0.00

45.15*	51	53	0.00	73.80	0.00	-9.10	-19.54	0.00	0.00	0.00
45.15	51	53	0.00	73.80	0.00	-9.10	-19.54	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 45.15 dBA

#



Results segment # 6: 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	53.50	11.72	17.72

ROAD (54.26 + 50.73 + 44.71) = 56.18 dBA

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

23	41	0.00	73.80	0.00	-9.54	-10.00	0.00	0.00	0.00
54.26									

41	49	0.00	73.80	0.00	-9.54	-13.52	0.00	0.00	0.00
50.73*									
41	49	0.00	73.80	0.00	-9.54	-13.52	0.00	0.00	0.00
50.73									

49	51	0.00	73.80	0.00	-9.54	-19.54	0.00	0.00	0.00
44.71									

* Bright Zone !

Segment Leq : 56.18 dBA

#



Results segment # 7: 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	53.50	40.34	40.34

ROAD (0.00 + 44.71 + 0.00) = 44.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
51	53	0.00	73.80	0.00	-9.54	-19.54	0.00	0.00	0.00

44.71*	51	53	0.00	73.80	0.00	-9.54	-19.54	0.00	0.00	0.00
44.71	51	53	0.00	73.80	0.00	-9.54	-19.54	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 44.71 dBA

Total Leq All Segments: 64.34 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 71.94
(NIGHT) : 64.34

#

#



STAMSON 5.0 NORMAL REPORT Date: 19-04-2018 16:11:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r11.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 : -90.00 deg -67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 127.00 / 127.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -67.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 53.00 / 53.00 m
Source elevation : 6.00 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 : -67.00 deg 77.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 127.00 / 127.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -67.00 deg Angle2 : 77.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 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 : -90.00 deg -67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 141.00 / 141.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -67.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 53.00 / 53.00 m
Source elevation : 6.00 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 : -67.00 deg 77.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 141.00 / 141.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -67.00 deg Angle2 : 77.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 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	53.50	34.30	34.30

ROAD (0.00 + 63.18 + 0.00) = 63.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-67	0.00	81.40	0.00	-9.28	-8.94	0.00	0.00	-0.07
-90	-67	0.00	81.40	0.00	-9.28	-8.94	0.00	0.00	0.00

63.12*									
63.18									

* Bright Zone !

Segment Leq : 63.18 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	53.50	53.14	53.14

ROAD (0.00 + 51.15 + 0.00) = 51.15 dBA

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

-67 77 0.00 81.40 0.00 -9.28 -0.97 0.00 0.00 -20.00
51.15

Segment Leq : 51.15 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	53.50	36.21	36.21

ROAD (0.00 + 62.73 + 0.00) = 62.73 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-67	0.00	81.40	0.00	-9.73	-8.94	0.00	0.00	-0.06
-90	-67	0.00	81.40	0.00	-9.73	-8.94	0.00	0.00	0.00

62.67*									
62.73									

* Bright Zone !

Segment Leq : 62.73 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	53.50	53.17	53.17

ROAD (0.00 + 50.70 + 0.00) = 50.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-67	77	0.00	81.40	0.00	-9.73	-0.97	0.00	0.00	-20.00

SubLeq 50.70

Segment Leq : 50.70 dBA

Total Leq All Segments: 66.24 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	53.50	34.30	34.30

ROAD (0.00 + 55.59 + 0.00) = 55.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-67	0.00	73.80	0.00	-9.28	-8.94	0.00	0.00	-0.07
-90	-67	0.00	73.80	0.00	-9.28	-8.94	0.00	0.00	0.00

55.52*									
55.59									

* Bright Zone !

Segment Leq : 55.59 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	53.50	53.14	53.14

ROAD (0.00 + 43.55 + 0.00) = 43.55 dBA

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

-67 77 0.00 73.80 0.00 -9.28 -0.97 0.00 0.00 -20.00
43.55

Segment Leq : 43.55 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	53.50	36.21	36.21

ROAD (0.00 + 55.13 + 0.00) = 55.13 dBA

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

-90	-67	0.00	73.80	0.00	-9.73	-8.94	0.00	0.00	-0.06
55.07*									
-90	-67	0.00	73.80	0.00	-9.73	-8.94	0.00	0.00	0.00
55.13									

* Bright Zone !

Segment Leq : 55.13 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	53.50	53.17	53.17

ROAD (0.00 + 43.10 + 0.00) = 43.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-67	77	0.00	73.80	0.00	-9.73	-0.97	0.00	0.00	-20.00

SubLeq 43.10

Segment Leq : 43.10 dBA

Total Leq All Segments: 58.64 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 66.24
(NIGHT) : 58.64

#

#



STAMSON 5.0 NORMAL REPORT Date: 19-04-2018 16:12:25
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

Angle1 Angle2 : -70.00 deg 4.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 44.00 / 44.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Angle1 Angle2 : -65.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 114.00 / 114.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -65.00 deg Angle2 : 21.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -65.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 128.00 / 128.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -65.00 deg Angle2 : 21.00 deg
Barrier height : 0.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (day)

Source height = 1.50 m

ROAD (0.00 + 63.68 + 0.00) = 63.68 dBA

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

SubLeq

--
-70 4 0.00 72.21 0.00 -4.67 -3.86 0.00 0.00 0.00
63.68

--

Segment Leq : 63.68 dBA

#



Results segment # 2: 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	53.50	53.10	53.10

ROAD (0.00 + 69.38 + 0.00) = 69.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-65	21	0.00	81.40	0.00	-8.81	-3.21	0.00	0.00	0.00
-65	21	0.00	81.40	0.00	-8.81	-3.21	0.00	0.00	0.00

69.38*									
69.38									

* Bright Zone !

Segment Leq : 69.38 dBA

#



Results segment # 3: 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	53.50	53.14	53.14

ROAD (0.00 + 68.88 + 0.00) = 68.88 dBA

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

-65	21	0.00	81.40	0.00	-9.31	-3.21	0.00	0.00	0.00
68.88*									
-65	21	0.00	81.40	0.00	-9.31	-3.21	0.00	0.00	0.00
68.88									

* Bright Zone !

Segment Leq : 68.88 dBA

Total Leq All Segments: 72.73 dBA

#



Results segment # 1: CarlingEB (night)

Source height = 1.50 m

ROAD (0.00 + 56.08 + 0.00) = 56.08 dBA

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

SubLeq

--
-70 4 0.00 64.62 0.00 -4.67 -3.86 0.00 0.00 0.00
56.08

--

Segment Leq : 56.08 dBA

#



Results segment # 2: 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	53.50	53.10	53.10

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
-65	21	0.00	73.80	0.00	-8.81	-3.21	0.00	0.00	0.00
-65	21	0.00	73.80	0.00	-8.81	-3.21	0.00	0.00	0.00

61.78*									
61.78									

* Bright Zone !

Segment Leq : 61.78 dBA

#



Results segment # 3: 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	53.50	53.14	53.14

ROAD (0.00 + 61.28 + 0.00) = 61.28 dBA

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

-65	21	0.00	73.80	0.00	-9.31	-3.21	0.00	0.00	0.00
61.28*									
-65	21	0.00	73.80	0.00	-9.31	-3.21	0.00	0.00	0.00
61.28									

* Bright Zone !

Segment Leq : 61.28 dBA

Total Leq All Segments: 65.13 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 72.73
(NIGHT) : 65.13

#

#



STAMSON 5.0 NORMAL REPORT Date: 19-04-2018 16:13:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r13.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -89.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.00 / 17.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 2: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -79.00 deg -17.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 15.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 33.00 / 33.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB1 (day/night)

Angle1 Angle2 : -90.00 deg -63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 149.00 / 149.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -63.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 29.00 / 29.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417EB2 (day/night)

Angle1 Angle2 : -63.00 deg 71.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 149.00 / 149.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 48.00 deg Angle2 : 71.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 64.00 / 64.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB1 (day/night)

Angle1 Angle2 : -90.00 deg -63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -90.00 deg Angle2 : -63.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 29.00 / 29.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 7: 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 # 7: 417WB2 (day/night)

Angle1 Angle2 : -63.00 deg 71.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 48.00 deg Angle2 : 71.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 64.00 / 64.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

ROAD (0.00 + 71.52 + 0.00) = 71.52 dBA

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

SubLeq

--
-89 85 0.00 72.21 0.00 -0.54 -0.15 0.00 0.00 0.00
71.52

--

Segment Leq : 71.52 dBA

#



Results segment # 2: CarlingWB1 (day)

Source height = 1.50 m

ROAD (0.00 + 64.16 + 0.00) = 64.16 dBA

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

SubLeq

-79	-17	0.00	72.21	0.00	-3.42	-4.63	0.00	0.00	0.00
64.16									

Segment Leq : 64.16 dBA

#



Results segment # 3: CarlingWB2 (day)

Source height = 1.50 m

ROAD (0.00 + 64.69 + 0.00) = 64.69 dBA

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

SubLeq

--
15 85 0.00 72.21 0.00 -3.42 -4.10 0.00 0.00 0.00
64.69

--

Segment Leq : 64.69 dBA

#



Results segment # 4: 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	53.50	44.55	44.55

ROAD (0.00 + 47.89 + 0.00) = 47.89 dBA

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

-90 -63 0.00 81.40 0.00 -9.97 -8.24 0.00 0.00 -15.30
47.89

Segment Leq : 47.89 dBA

#



Results segment # 5: 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	53.50	32.88	32.88

ROAD (69.33 + 62.49 + 0.00) = 70.14 dBA

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

69.33	-63	48	0.00	81.40	0.00	-9.97	-2.10	0.00	0.00	0.00
-------	-----	----	------	-------	------	-------	-------	------	------	------

62.49*	48	71	0.00	81.40	0.00	-9.97	-8.94	0.00	0.00	0.00
--------	----	----	------	-------	------	-------	-------	------	------	------

62.49	48	71	0.00	81.40	0.00	-9.97	-8.94	0.00	0.00	0.00
-------	----	----	------	-------	------	-------	-------	------	------	------

* Bright Zone !

Segment Leq : 70.14 dBA

#



Results segment # 6: 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	53.50	45.32	45.32

ROAD (0.00 + 47.80 + 0.00) = 47.80 dBA

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

-90 -63 0.00 81.40 0.00 -10.36 -8.24 0.00 0.00 -15.00
47.80

Segment Leq : 47.80 dBA

#



Results segment # 7: 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	53.50	34.65	34.65

ROAD (68.94 + 62.10 + 0.00) = 69.75 dBA

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

-63	48	0.00	81.40	0.00	-10.36	-2.10	0.00	0.00	0.00
68.94									

48	71	0.00	81.40	0.00	-10.36	-8.94	0.00	0.00	0.00
62.10*									
48	71	0.00	81.40	0.00	-10.36	-8.94	0.00	0.00	0.00
62.10									

* Bright Zone !

Segment Leq : 69.75 dBA

Total Leq All Segments: 75.98 dBA

#



Results segment # 1: CarlingEB1 (night)

Source height = 1.50 m

ROAD (0.00 + 63.93 + 0.00) = 63.93 dBA

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

SubLeq

-89	85	0.00	64.62	0.00	-0.54	-0.15	0.00	0.00	0.00
63.93									

Segment Leq : 63.93 dBA

#



Results segment # 2: CarlingWB1 (night)

Source height = 1.50 m

ROAD (0.00 + 56.56 + 0.00) = 56.56 dBA

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

SubLeq

--
-79 -17 0.00 64.62 0.00 -3.42 -4.63 0.00 0.00 0.00
56.56

--

Segment Leq : 56.56 dBA

#



Results segment # 3: CarlingWB2 (night)

Source height = 1.50 m

ROAD (0.00 + 57.09 + 0.00) = 57.09 dBA

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

SubLeq

--
15 85 0.00 64.62 0.00 -3.42 -4.10 0.00 0.00 0.00
57.09

--

Segment Leq : 57.09 dBA

#



Results segment # 4: 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	53.50	44.55	44.55

ROAD (0.00 + 40.29 + 0.00) = 40.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-63	0.00	73.80	0.00	-9.97	-8.24	0.00	0.00	-15.30

SubLeq 40.29

Segment Leq : 40.29 dBA

#



Results segment # 5: 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	53.50	32.88	32.88

ROAD (61.73 + 54.89 + 0.00) = 62.55 dBA

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

-63	48	0.00	73.80	0.00	-9.97	-2.10	0.00	0.00	0.00
61.73									

48	71	0.00	73.80	0.00	-9.97	-8.94	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

54.89*

48	71	0.00	73.80	0.00	-9.97	-8.94	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

54.89

* Bright Zone !

Segment Leq : 62.55 dBA

#



Results segment # 6: 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	53.50	45.32	45.32

ROAD (0.00 + 40.20 + 0.00) = 40.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-63	0.00	73.80	0.00	-10.36	-8.24	0.00	0.00	-15.00

SubLeq 40.20

Segment Leq : 40.20 dBA

#



Results segment # 7: 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	53.50	34.65	34.65

ROAD (61.34 + 54.50 + 0.00) = 62.16 dBA

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

-63	48	0.00	73.80	0.00	-10.36	-2.10	0.00	0.00	0.00
61.34									

48	71	0.00	73.80	0.00	-10.36	-8.94	0.00	0.00	0.00
54.50*									
48	71	0.00	73.80	0.00	-10.36	-8.94	0.00	0.00	0.00
54.50									

* Bright Zone !

Segment Leq : 62.16 dBA

Total Leq All Segments: 68.39 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 75.98
(NIGHT) : 68.39

#

#



STAMSON 5.0 NORMAL REPORT Date: 19-04-2018 16:14:12
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r14.te Time Period: Day/Night 16/8 hours
 Description:

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

```
Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

```
Angle1 Angle2 : -4.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 18.00 / 18.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : -4.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 34.00 / 34.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 3: 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 # 3: 417EB1 (day/night)

Angle1 Angle2 : 22.00 deg 62.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 30.00 deg Angle2 : 62.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 78.00 / 78.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB2 (day/night)

Angle1 Angle2 : 62.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 163.00 / 163.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 62.00 deg Angle2 : 68.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 114.00 / 114.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417WB1 (day/night)

Angle1 Angle2 : 22.00 deg 62.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 176.00 / 176.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 30.00 deg Angle2 : 62.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 78.00 / 78.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB2 (day/night)

Angle1 Angle2 : 62.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 176.00 / 176.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 62.00 deg Angle2 : 68.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 114.00 / 114.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (day)

Source height = 1.50 m

ROAD (0.00 + 68.41 + 0.00) = 68.41 dBA

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

SubLeq

-4	86	0.00	72.21	0.00	-0.79	-3.01	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

68.41

Segment Leq : 68.41 dBA

#



Results segment # 2: CarlingWB (day)

Source height = 1.50 m

ROAD (0.00 + 65.65 + 0.00) = 65.65 dBA

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

SubLeq

--
-4 86 0.00 72.21 0.00 -3.55 -3.01 0.00 0.00 0.00
65.65

Segment Leq : 65.65 dBA

#



Results segment # 3: 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	53.50	31.49	31.49

ROAD (57.51 + 63.53 + 0.00) = 64.50 dBA

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

22	30	0.00	81.40	0.00	-10.36	-13.52	0.00	0.00	0.00
57.51									

30	62	0.00	81.40	0.00	-10.36	-7.50	0.00	0.00	0.00
63.53*									
30	62	0.00	81.40	0.00	-10.36	-7.50	0.00	0.00	0.00
63.53									

* Bright Zone !

Segment Leq : 64.50 dBA

#



Results segment # 4: 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	53.50	19.93	19.93

ROAD (0.00 + 56.26 + 0.00) = 56.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
62	68	0.00	81.40	0.00	-10.36	-14.77	0.00	0.00	0.00
62	68	0.00	81.40	0.00	-10.36	-14.77	0.00	0.00	0.00

56.26*	62	68	0.00	81.40	0.00	-10.36	-14.77	0.00	0.00	0.00
56.26	62	68	0.00	81.40	0.00	-10.36	-14.77	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 56.26 dBA

#



Results segment # 5: 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	53.50	33.11	33.11

ROAD (57.18 + 63.20 + 0.00) = 64.17 dBA

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

22	30	0.00	81.40	0.00	-10.69	-13.52	0.00	0.00	0.00
57.18									

30	62	0.00	81.40	0.00	-10.69	-7.50	0.00	0.00	0.00
63.20*									
30	62	0.00	81.40	0.00	-10.69	-7.50	0.00	0.00	0.00
63.20									

* Bright Zone !

Segment Leq : 64.17 dBA

#



Results segment # 6: 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	53.50	22.41	22.41

ROAD (0.00 + 55.93 + 0.00) = 55.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
62	68	0.00	81.40	0.00	-10.69	-14.77	0.00	0.00	0.00

55.93*	62	68	0.00	81.40	0.00	-10.69	-14.77	0.00	0.00	0.00
55.93	62	68	0.00	81.40	0.00	-10.69	-14.77	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 55.93 dBA

Total Leq All Segments: 72.27 dBA

#



Results segment # 1: CarlingEB (night)

Source height = 1.50 m

ROAD (0.00 + 60.82 + 0.00) = 60.82 dBA

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

SubLeq

--

-4	86	0.00	64.62	0.00	-0.79	-3.01	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

60.82

--

Segment Leq : 60.82 dBA

#



Results segment # 2: CarlingWB (night)

Source height = 1.50 m

ROAD (0.00 + 58.05 + 0.00) = 58.05 dBA

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

SubLeq

--

-4	86	0.00	64.62	0.00	-3.55	-3.01	0.00	0.00	0.00
----	----	------	-------	------	-------	-------	------	------	------

58.05

--

Segment Leq : 58.05 dBA

#



Results segment # 3: 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	53.50	31.49	31.49

ROAD (49.92 + 55.94 + 0.00) = 56.91 dBA

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

22	30	0.00	73.80	0.00	-10.36	-13.52	0.00	0.00	0.00
49.92									

30	62	0.00	73.80	0.00	-10.36	-7.50	0.00	0.00	0.00
55.94*									
30	62	0.00	73.80	0.00	-10.36	-7.50	0.00	0.00	0.00
55.94									

* Bright Zone !

Segment Leq : 56.91 dBA

#



Results segment # 4: 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	53.50	19.93	19.93

ROAD (0.00 + 48.67 + 0.00) = 48.67 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
62	68	0.00	73.80	0.00	-10.36	-14.77	0.00	0.00	0.00

48.67*	62	68	0.00	73.80	0.00	-10.36	-14.77	0.00	0.00	0.00
48.67	62	68	0.00	73.80	0.00	-10.36	-14.77	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 48.67 dBA

#



Results segment # 5: 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	53.50	33.11	33.11

ROAD (49.58 + 55.60 + 0.00) = 56.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
22	30	0.00	73.80	0.00	-10.69	-13.52	0.00	0.00	0.00
30	62	0.00	73.80	0.00	-10.69	-7.50	0.00	0.00	0.00
30	62	0.00	73.80	0.00	-10.69	-7.50	0.00	0.00	0.00

49.58									
-------	--	--	--	--	--	--	--	--	--

55.60*									
55.60									

* Bright Zone !

Segment Leq : 56.57 dBA

#



Results segment # 6: 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	53.50	22.41	22.41

ROAD (0.00 + 48.33 + 0.00) = 48.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
62	68	0.00	73.80	0.00	-10.69	-14.77	0.00	0.00	0.00

48.33*	62	68	0.00	73.80	0.00	-10.69	-14.77	0.00	0.00	0.00
48.33	62	68	0.00	73.80	0.00	-10.69	-14.77	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 48.33 dBA

Total Leq All Segments: 64.67 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 72.27
(NIGHT) : 64.67

#

#



STAMSON 5.0 NORMAL REPORT Date: 19-04-2018 16:15:05
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r15.te Time Period: Day/Night 16/8 hours
 Description:

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

 Car traffic volume : 20240/1760 veh/TimePeriod *
 Medium truck volume : 1610/140 veh/TimePeriod *
 Heavy truck volume : 1150/100 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): 25000
 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: CarlingEB (day/night)

 Angle1 Angle2 : -81.00 deg -5.00 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 : 53.50 / 53.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

#



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

Angle1 Angle2 : -76.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 151.00 / 151.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -60.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 31.00 / 31.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -76.00 deg 21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 53.50 / 53.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -60.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 31.00 / 31.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : -77.00 deg -37.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 38.00 / 38.00 m
Receiver height : 53.50 / 53.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Results segment # 1: CarlingEB (day)

Source height = 1.50 m

ROAD (0.00 + 67.01 + 0.00) = 67.01 dBA

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

SubLeq

--
-81 -5 0.00 72.21 0.00 -1.46 -3.74 0.00 0.00 0.00
67.01

--

Segment Leq : 67.01 dBA

#



Results segment # 2: 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	53.50	44.06	44.06

ROAD (0.00 + 41.03 + 67.90) = 67.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-60	0.00	81.40	0.00	-10.03	-10.51	0.00	0.00	-19.83
-60	21	0.00	81.40	0.00	-10.03	-3.47	0.00	0.00	0.00

41.03

67.90

Segment Leq : 67.91 dBA

#



Results segment # 3: 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	53.50	44.86	44.86

ROAD (0.00 + 40.82 + 67.51) = 67.52 dBA

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

-76	-60	0.00	81.40	0.00	-10.41	-10.51	0.00	0.00	-19.65
-----	-----	------	-------	------	--------	--------	------	------	--------

-60	21	0.00	81.40	0.00	-10.41	-3.47	0.00	0.00	0.00
-----	----	------	-------	------	--------	-------	------	------	------

Segment Leq : 67.52 dBA

#



Results segment # 4: CarlingWB (day)

Source height = 1.50 m

ROAD (0.00 + 61.65 + 0.00) = 61.65 dBA

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

SubLeq

--
-77 -37 0.00 72.21 0.00 -4.04 -6.53 0.00 0.00 0.00
61.65

--

Segment Leq : 61.65 dBA

Total Leq All Segments: 72.63 dBA

#



Results segment # 1: CarlingEB (night)

Source height = 1.50 m

ROAD (0.00 + 59.41 + 0.00) = 59.41 dBA

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

SubLeq

--
-81 -5 0.00 64.62 0.00 -1.46 -3.74 0.00 0.00 0.00
59.41

--

Segment Leq : 59.41 dBA

#



Results segment # 2: 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	53.50	44.06	44.06

ROAD (0.00 + 33.43 + 60.30) = 60.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-60	0.00	73.80	0.00	-10.03	-10.51	0.00	0.00	-19.83
33.43									
-60	21	0.00	73.80	0.00	-10.03	-3.47	0.00	0.00	0.00
60.30									

Segment Leq : 60.31 dBA

#



Results segment # 3: 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	53.50	44.86	44.86

ROAD (0.00 + 33.22 + 59.92) = 59.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-60	0.00	73.80	0.00	-10.41	-10.51	0.00	0.00	-19.65
33.22									
-60	21	0.00	73.80	0.00	-10.41	-3.47	0.00	0.00	0.00
59.92									

Segment Leq : 59.93 dBA

#



Results segment # 4: CarlingWB (night)

Source height = 1.50 m

ROAD (0.00 + 54.05 + 0.00) = 54.05 dBA

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

SubLeq

--
-77 -37 0.00 64.62 0.00 -4.04 -6.53 0.00 0.00 0.00
54.05

--

Segment Leq : 54.05 dBA

Total Leq All Segments: 65.03 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 72.63
(NIGHT) : 65.03

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:47:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r16ca.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -61.00 deg -42.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 68.00 / 68.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -61.00 deg Angle2 : -42.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 52.00 / 52.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : -42.00 deg 51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 68.00 / 68.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -42.00 deg Angle2 : 12.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 52.00 / 52.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : -11.00 deg 51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 83.00 / 83.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -11.00 deg Angle2 : 12.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 52.00 / 52.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (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	23.40	6.65	6.65

ROAD (0.00 + 35.89 + 0.00) = 35.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-61	-42	0.00	72.21	0.00	-6.56	-9.77	0.00	0.00	-20.00

SubLeq 35.89

Segment Leq : 35.89 dBA

#



Results segment # 2: CarlingEB2 (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	23.40	6.65	6.65

ROAD (0.00 + 40.42 + 59.01) = 59.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-42	12	0.00	72.21	0.00	-6.56	-5.23	0.00	0.00	-20.00
12	51	0.00	72.21	0.00	-6.56	-6.64	0.00	0.00	0.00

40.42

59.01

Segment Leq : 59.07 dBA

#



Results segment # 3: CarlingWB (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	23.40	9.68	9.68

ROAD (0.00 + 35.85 + 58.14) = 58.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-11	12	0.00	72.21	0.00	-7.43	-8.94	0.00	0.00	-20.00
12	51	0.00	72.21	0.00	-7.43	-6.64	0.00	0.00	0.00

SubLeq 35.85

SubLeq 58.14

Segment Leq : 58.17 dBA

Total Leq All Segments: 61.67 dBA

#



Results segment # 1: CarlingEB1 (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	23.40	6.65	6.65

ROAD (0.00 + 28.29 + 0.00) = 28.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-61	-42	0.00	64.62	0.00	-6.56	-9.77	0.00	0.00	-20.00

SubLeq
28.29

Segment Leq : 28.29 dBA

#



Results segment # 2: CarlingEB2 (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	23.40	6.65	6.65

ROAD (0.00 + 32.83 + 51.41) = 51.47 dBA

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

-42	12	0.00	64.62	0.00	-6.56	-5.23	0.00	0.00	-20.00
32.83									

12	51	0.00	64.62	0.00	-6.56	-6.64	0.00	0.00	0.00
51.41									

Segment Leq : 51.47 dBA

#



Results segment # 3: CarlingWB (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	23.40	9.68	9.68

ROAD (0.00 + 28.25 + 50.55) = 50.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-11	12	0.00	64.62	0.00	-7.43	-8.94	0.00	0.00	-20.00
12	51	0.00	64.62	0.00	-7.43	-6.64	0.00	0.00	0.00

Segment Leq : 50.57 dBA

Total Leq All Segments: 54.07 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 61.67
(NIGHT) : 54.07

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:47:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r16eb.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 : -69.00 deg -61.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 206.00 / 206.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -69.00 deg Angle2 : -61.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 130.00 / 130.00 m
Source elevation : 6.00 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 : -61.00 deg -35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 206.00 / 206.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -61.00 deg Angle2 : -35.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 86.00 / 86.00 m
Source elevation : 6.00 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 : -35.00 deg -16.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 206.00 / 206.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -35.00 deg Angle2 : -16.00 deg
Barrier height : 16.50 m
Barrier receiver distance : 56.00 / 56.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: 417EB4 (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: 417EB4 (day/night)

Angle1 Angle2 : -16.00 deg 38.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 206.00 / 206.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -16.00 deg Angle2 : 38.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 56.00 / 56.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 417EB5 (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: 417EB5 (day/night)

Angle1 Angle2 : 38.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 206.00 / 206.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 38.00 deg Angle2 : 50.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 121.00 / 121.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 417EB6 (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: 417EB6 (day/night)

Angle1 Angle2 : 50.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 206.00 / 206.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 50.00 deg Angle2 : 65.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 157.00 / 157.00 m
Source elevation : 4.00 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	23.40	13.36	13.36

ROAD (0.00 + 50.91 + 0.00) = 50.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-69	-61	0.00	81.40	0.00	-11.38	-13.52	0.00	0.00	-5.59

SubLeq

-69	-61	0.00	81.40	0.00	-11.38	-13.52	0.00	0.00	-5.59
-----	-----	------	-------	------	--------	--------	------	------	-------

50.91

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Segment Leq : 50.91 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	23.40	16.76	16.76

ROAD (0.00 + 41.62 + 0.00) = 41.62 dBA

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

-61 -35 0.00 81.40 0.00 -11.38 -8.40 0.00 0.00 -20.00
41.62

Segment Leq : 41.62 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	23.40	19.08	19.08

ROAD (0.00 + 60.22 + 0.00) = 60.22 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-35	-16	0.00	81.40	0.00	-11.38	-9.77	0.00	0.00	0.00
-35	-16	0.00	81.40	0.00	-11.41	-9.77	0.00	0.00	0.00

60.25*									
60.22									

* Bright Zone !

Segment Leq : 60.22 dBA

#



Results segment # 4: 417EB4 (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	23.40	19.08	19.08

ROAD (0.00 + 44.79 + 0.00) = 44.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-16	38	0.00	81.40	0.00	-11.38	-5.23	0.00	0.00	-20.00

SubLeq

-16	38	0.00	81.40	0.00	-11.38	-5.23	0.00	0.00	-20.00
-----	----	------	-------	------	--------	-------	------	------	--------

44.79

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Segment Leq : 44.79 dBA

#



Results segment # 5: 417EB5 (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	23.40	12.88	12.88

ROAD (0.00 + 44.99 + 0.00) = 44.99 dBA

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

38 50 0.00 81.40 0.00 -11.38 -11.76 0.00 0.00 -13.27
44.99

Segment Leq : 44.99 dBA

#



Results segment # 6: 417EB6 (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	23.40	9.75	9.75

ROAD (0.00 + 59.18 + 0.00) = 59.18 dBA

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

50	65	0.00	81.40	0.00	-11.38	-10.79	0.00	0.00	0.00
59.23*									
50	65	0.00	81.40	0.00	-11.41	-10.80	0.00	0.00	0.00
59.18									

* Bright Zone !

Segment Leq : 59.18 dBA

Total Leq All Segments: 63.18 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	23.40	13.36	13.36

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
-69	-61	0.00	73.80	0.00	-11.38	-13.52	0.00	0.00	-5.59

SubLeq 43.31

Segment Leq : 43.31 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	23.40	16.76	16.76

ROAD (0.00 + 34.02 + 0.00) = 34.02 dBA

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

-61 -35 0.00 73.80 0.00 -11.38 -8.40 0.00 0.00 -20.00
34.02

Segment Leq : 34.02 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	23.40	19.08	19.08

ROAD (0.00 + 52.62 + 0.00) = 52.62 dBA

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

-35	-16	0.00	73.80	0.00	-11.38	-9.77	0.00	0.00	0.00
52.66*									
-35	-16	0.00	73.80	0.00	-11.41	-9.77	0.00	0.00	0.00
52.62									

* Bright Zone !

Segment Leq : 52.62 dBA

#



Results segment # 4: 417EB4 (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	23.40	19.08	19.08

ROAD (0.00 + 37.19 + 0.00) = 37.19 dBA

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

-16 38 0.00 73.80 0.00 -11.38 -5.23 0.00 0.00 -20.00
37.19

Segment Leq : 37.19 dBA

#



Results segment # 5: 417EB5 (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	23.40	12.88	12.88

ROAD (0.00 + 37.39 + 0.00) = 37.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
38	50	0.00	73.80	0.00	-11.38	-11.76	0.00	0.00	-13.27

SubLeq 37.39

Segment Leq : 37.39 dBA

#



Results segment # 6: 417EB6 (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	23.40	9.75	9.75

ROAD (0.00 + 51.58 + 0.00) = 51.58 dBA

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

50	65	0.00	73.80	0.00	-11.38	-10.79	0.00	0.00	0.00
51.63*									
50	65	0.00	73.80	0.00	-11.41	-10.80	0.00	0.00	0.00
51.58									

* Bright Zone !

Segment Leq : 51.58 dBA

Total Leq All Segments: 55.58 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 63.18
(NIGHT) : 55.58

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:47:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r16wb.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 : -69.00 deg -61.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 219.00 / 219.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -69.00 deg Angle2 : -61.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 130.00 / 130.00 m
Source elevation : 6.00 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 : -61.00 deg -35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 219.00 / 219.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -61.00 deg Angle2 : -35.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 86.00 / 86.00 m
Source elevation : 6.00 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 : -35.00 deg -16.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 219.00 / 219.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -35.00 deg Angle2 : -16.00 deg
Barrier height : 16.50 m
Barrier receiver distance : 56.00 / 56.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: 417EB4 (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: 417EB4 (day/night)

Angle1 Angle2 : -16.00 deg 38.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 219.00 / 219.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -16.00 deg Angle2 : 38.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 56.00 / 56.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 417EB5 (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: 417EB5 (day/night)

Angle1 Angle2 : 38.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 219.00 / 219.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 38.00 deg Angle2 : 50.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 121.00 / 121.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 417EB6 (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: 417EB6 (day/night)

Angle1 Angle2 : 50.00 deg 65.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 219.00 / 219.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 50.00 deg Angle2 : 65.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 157.00 / 157.00 m
Source elevation : 4.00 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	23.40	13.96	13.96

ROAD (0.00 + 51.01 + 0.00) = 51.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-69	-61	0.00	81.40	0.00	-11.64	-13.52	0.00	0.00	-5.22

SubLeq
51.01

Segment Leq : 51.01 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	23.40	17.15	17.15

ROAD (0.00 + 41.35 + 0.00) = 41.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-61	-35	0.00	81.40	0.00	-11.64	-8.40	0.00	0.00	-20.00

SubLeq

-61	-35	0.00	81.40	0.00	-11.64	-8.40	0.00	0.00	-20.00
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41.35

--

Segment Leq : 41.35 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	23.40	19.33	19.33

ROAD (0.00 + 59.95 + 0.00) = 59.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-35	-16	0.00	81.40	0.00	-11.64	-9.77	0.00	0.00	0.00
-35	-16	0.00	81.40	0.00	-11.68	-9.77	0.00	0.00	0.00

59.99*									
59.95									

* Bright Zone !

Segment Leq : 59.95 dBA

#



Results segment # 4: 417EB4 (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	23.40	19.33	19.33

ROAD (0.00 + 44.52 + 0.00) = 44.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-16	38	0.00	81.40	0.00	-11.64	-5.23	0.00	0.00	-20.00

SubLeq 44.52

Segment Leq : 44.52 dBA

#



Results segment # 5: 417EB5 (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	23.40	13.51	13.51

ROAD (0.00 + 45.77 + 0.00) = 45.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
38	50	0.00	81.40	0.00	-11.64	-11.76	0.00	0.00	-12.22

SubLeq 45.77

Segment Leq : 45.77 dBA

#



Results segment # 6: 417EB6 (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	23.40	10.56	10.56

ROAD (0.00 + 58.92 + 0.00) = 58.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
50	65	0.00	81.40	0.00	-11.64	-10.79	0.00	0.00	0.00
50	65	0.00	81.40	0.00	-11.68	-10.80	0.00	0.00	0.00

58.96*	58.92
--------	-------

* Bright Zone !

Segment Leq : 58.92 dBA

Total Leq All Segments: 62.95 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	23.40	13.96	13.96

ROAD (0.00 + 43.41 + 0.00) = 43.41 dBA

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

-69 -61 0.00 73.80 0.00 -11.64 -13.52 0.00 0.00 -5.22
43.41

Segment Leq : 43.41 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	23.40	17.15	17.15

ROAD (0.00 + 33.75 + 0.00) = 33.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-61	-35	0.00	73.80	0.00	-11.64	-8.40	0.00	0.00	-20.00

SubLeq 33.75

Segment Leq : 33.75 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	23.40	19.33	19.33

ROAD (0.00 + 52.35 + 0.00) = 52.35 dBA

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

-35	-16	0.00	73.80	0.00	-11.64	-9.77	0.00	0.00	0.00
52.39*									
-35	-16	0.00	73.80	0.00	-11.68	-9.77	0.00	0.00	0.00
52.35									

* Bright Zone !

Segment Leq : 52.35 dBA

#



Results segment # 4: 417EB4 (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	23.40	19.33	19.33

ROAD (0.00 + 36.93 + 0.00) = 36.93 dBA

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

-16 38 0.00 73.80 0.00 -11.64 -5.23 0.00 0.00 -20.00
36.93

Segment Leq : 36.93 dBA

#



Results segment # 5: 417EB5 (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	23.40	13.51	13.51

ROAD (0.00 + 38.17 + 0.00) = 38.17 dBA

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

38 50 0.00 73.80 0.00 -11.64 -11.76 0.00 0.00 -12.22
38.17

Segment Leq : 38.17 dBA

#



Results segment # 6: 417EB6 (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	23.40	10.56	10.56

ROAD (0.00 + 51.32 + 0.00) = 51.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
50	65	0.00	73.80	0.00	-11.64	-10.79	0.00	0.00	0.00
50	65	0.00	73.80	0.00	-11.68	-10.80	0.00	0.00	0.00

51.36*	51.32
--------	-------

* Bright Zone !

Segment Leq : 51.32 dBA

Total Leq All Segments: 55.35 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 62.95
(NIGHT) : 55.35

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:47:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r17.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

Angle1 Angle2 : 4.00 deg 47.00 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 : 23.40 / 23.40 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : 4.00 deg 47.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 86.00 / 86.00 m
Receiver height : 23.40 / 23.40 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

#



Road data, segment # 3: 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 # 3: 417EB1 (day/night)

Angle1 Angle2 : 4.00 deg 48.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 210.00 / 210.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 4.00 deg Angle2 : 48.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 125.00 / 125.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB2 (day/night)

Angle1 Angle2 : 48.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 210.00 / 210.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 48.00 deg Angle2 : 64.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 162.00 / 162.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417WB1 (day/night)

Angle1 Angle2 : 4.00 deg 48.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 224.00 / 224.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 4.00 deg Angle2 : 48.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 125.00 / 125.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB2 (day/night)

Angle1 Angle2 : 48.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 224.00 / 224.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 48.00 deg Angle2 : 64.00 deg
Barrier height : 4.00 m
Barrier receiver distance : 162.00 / 162.00 m
Source elevation : 4.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (day)

Source height = 1.50 m

ROAD (0.00 + 59.18 + 0.00) = 59.18 dBA

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

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4	47	0.00	72.21	0.00	-6.81	-6.22	0.00	0.00	0.00
---	----	------	-------	------	-------	-------	------	------	------

59.18

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Segment Leq : 59.18 dBA

#



Results segment # 2: CarlingWB (day)

Source height = 1.50 m

ROAD (0.00 + 58.41 + 0.00) = 58.41 dBA

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

SubLeq

--

4	47	0.00	72.21	0.00	-7.58	-6.22	0.00	0.00	0.00
---	----	------	-------	------	-------	-------	------	------	------

58.41

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Segment Leq : 58.41 dBA

#



Results segment # 3: 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	23.40	12.74	12.74

ROAD (0.00 + 49.65 + 0.00) = 49.65 dBA

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

4	48	0.00	81.40	0.00	-11.46	-6.12	0.00	0.00	-14.16
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Segment Leq : 49.65 dBA

#



Results segment # 4: 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	23.40	9.59	9.59

ROAD (0.00 + 59.38 + 0.00) = 59.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
48	64	0.00	81.40	0.00	-11.46	-10.51	0.00	0.00	0.00
48	64	0.00	81.40	0.00	-11.50	-10.52	0.00	0.00	0.00

59.42*	59.38
--------	-------

* Bright Zone !

Segment Leq : 59.38 dBA

#



Results segment # 5: 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	23.40	13.41	13.41

ROAD (0.00 + 50.51 + 0.00) = 50.51 dBA

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

4	48	0.00	81.40	0.00	-11.74	-6.12	0.00	0.00	-13.02
---	----	------	-------	------	--------	-------	------	------	--------

Segment Leq : 50.51 dBA

#



Results segment # 6: 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	23.40	10.45	10.45

ROAD (0.00 + 59.10 + 0.00) = 59.10 dBA

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

48	64	0.00	81.40	0.00	-11.74	-10.51	0.00	0.00	0.00
59.14*									
48	64	0.00	81.40	0.00	-11.78	-10.52	0.00	0.00	0.00
59.10									

* Bright Zone !

Segment Leq : 59.10 dBA

Total Leq All Segments: 65.32 dBA

#



Results segment # 1: CarlingEB (night)

Source height = 1.50 m

ROAD (0.00 + 51.59 + 0.00) = 51.59 dBA

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

SubLeq

--

4	47	0.00	64.62	0.00	-6.81	-6.22	0.00	0.00	0.00
---	----	------	-------	------	-------	-------	------	------	------

51.59

--

Segment Leq : 51.59 dBA

#



Results segment # 2: CarlingWB (night)

Source height = 1.50 m

ROAD (0.00 + 50.82 + 0.00) = 50.82 dBA

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

SubLeq

--

4	47	0.00	64.62	0.00	-7.58	-6.22	0.00	0.00	0.00
---	----	------	-------	------	-------	-------	------	------	------

50.82

--

Segment Leq : 50.82 dBA

#



Results segment # 3: 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	23.40	12.74	12.74

ROAD (0.00 + 42.06 + 0.00) = 42.06 dBA

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

4	48	0.00	73.80	0.00	-11.46	-6.12	0.00	0.00	-14.16
---	----	------	-------	------	--------	-------	------	------	--------

Segment Leq : 42.06 dBA

#



Results segment # 4: 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	23.40	9.59	9.59

ROAD (0.00 + 51.78 + 0.00) = 51.78 dBA

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

48	64	0.00	73.80	0.00	-11.46	-10.51	0.00	0.00	0.00
51.83*									
48	64	0.00	73.80	0.00	-11.50	-10.52	0.00	0.00	0.00
51.78									

* Bright Zone !

Segment Leq : 51.78 dBA

#



Results segment # 5: 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	23.40	13.41	13.41

ROAD (0.00 + 42.92 + 0.00) = 42.92 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
4	48	0.00	73.80	0.00	-11.74	-6.12	0.00	0.00	-13.02

SubLeq 42.92

Segment Leq : 42.92 dBA

#



Results segment # 6: 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	23.40	10.45	10.45

ROAD (0.00 + 51.50 + 0.00) = 51.50 dBA

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

48	64	0.00	73.80	0.00	-11.74	-10.51	0.00	0.00	0.00
51.55*									
48	64	0.00	73.80	0.00	-11.78	-10.52	0.00	0.00	0.00
51.50									

* Bright Zone !

Segment Leq : 51.50 dBA

Total Leq All Segments: 57.73 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 65.32
(NIGHT) : 57.73

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:47:39
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r18.te Time Period: Day/Night 16/8 hours
 Description:

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

```
-----
Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

```
-----
Angle1 Angle2 : -56.00 deg -4.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 75.00 / 75.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -56.00 deg Angle2 : -30.00 deg
Barrier height : 61.00 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 # 2: 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 # 2: 417EB1 (day/night)

Angle1 Angle2 : -71.00 deg -56.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 189.00 / 189.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : -56.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 114.00 / 114.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 3: 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 # 3: 417EB2 (day/night)

Angle1 Angle2 : -56.00 deg 22.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 189.00 / 189.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -56.00 deg Angle2 : -8.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 69.00 / 69.00 m
Source elevation : 6.00 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 : -71.00 deg -56.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 203.00 / 203.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : -56.00 deg
Barrier height : 15.00 m
Barrier receiver distance : 114.00 / 114.00 m
Source elevation : 6.00 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 : -56.00 deg 22.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 203.00 / 203.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -56.00 deg Angle2 : -8.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 69.00 / 69.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (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	23.40	6.46	6.46

ROAD (0.00 + 36.82 + 56.82) = 56.87 dBA

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

-56	-30	0.00	72.21	0.00	-6.99	-8.40	0.00	0.00	-20.00
36.82									

-30	-4	0.00	72.21	0.00	-6.99	-8.40	0.00	0.00	0.00
56.82									

Segment Leq : 56.87 dBA

#



Results segment # 2: 417EB1 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.50 ! 23.40 ! 13.81 ! 13.81

ROAD (0.00 + 54.25 + 0.00) = 54.25 dBA

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

--
-71 -56 0.00 81.40 0.00 -11.00 -10.79 0.00 0.00 -5.36
54.25

--

Segment Leq : 54.25 dBA

#



Results segment # 3: 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	23.40	17.59	17.59

ROAD (0.00 + 44.65 + 62.58) = 62.65 dBA

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

-56	-8	0.00	81.40	0.00	-11.00	-5.74	0.00	0.00	-20.00
44.65									

-8	22	0.00	81.40	0.00	-11.04	-7.78	0.00	0.00	0.00
62.58									

Segment Leq : 62.65 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	23.40	14.47	14.47

ROAD (0.00 + 54.23 + 0.00) = 54.23 dBA

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

-71 -56 0.00 81.40 0.00 -11.31 -10.79 0.00 0.00 -5.07
54.23

Segment Leq : 54.23 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	23.40	17.99	17.99

ROAD (0.00 + 44.34 + 62.27) = 62.33 dBA

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

-56	-8	0.00	81.40	0.00	-11.31	-5.74	0.00	0.00	-20.00
44.34									

-8	22	0.00	81.40	0.00	-11.35	-7.78	0.00	0.00	0.00
62.27									

Segment Leq : 62.33 dBA

Total Leq All Segments: 66.60 dBA

#



Results segment # 1: CarlingEB (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	23.40	6.46	6.46

ROAD (0.00 + 29.23 + 49.23) = 49.27 dBA

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

--	-56	-30	0.00	64.62	0.00	-6.99	-8.40	0.00	0.00	-20.00
29.23										

--	-30	-4	0.00	64.62	0.00	-6.99	-8.40	0.00	0.00	0.00
49.23										

--

Segment Leq : 49.27 dBA

#



Results segment # 2: 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	23.40	13.81	13.81

ROAD (0.00 + 46.65 + 0.00) = 46.65 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	-56	0.00	73.80	0.00	-11.00	-10.79	0.00	0.00	-5.36

SubLeq 46.65

Segment Leq : 46.65 dBA

#



Results segment # 3: 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	23.40	17.59	17.59

ROAD (0.00 + 37.06 + 54.98) = 55.05 dBA

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

-56	-8	0.00	73.80	0.00	-11.00	-5.74	0.00	0.00	-20.00
37.06									

-8	22	0.00	73.80	0.00	-11.04	-7.78	0.00	0.00	0.00
54.98									

Segment Leq : 55.05 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	23.40	14.47	14.47

ROAD (0.00 + 46.63 + 0.00) = 46.63 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	-56	0.00	73.80	0.00	-11.31	-10.79	0.00	0.00	-5.07

SubLeq

-71	-56	0.00	73.80	0.00	-11.31	-10.79	0.00	0.00	-5.07
-----	-----	------	-------	------	--------	--------	------	------	-------

46.63

--

Segment Leq : 46.63 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	23.40	17.99	17.99

ROAD (0.00 + 36.74 + 54.67) = 54.74 dBA

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

-56	-8	0.00	73.80	0.00	-11.31	-5.74	0.00	0.00	-20.00
-----	----	------	-------	------	--------	-------	------	------	--------

-8	22	0.00	73.80	0.00	-11.35	-7.78	0.00	0.00	0.00
----	----	------	-------	------	--------	-------	------	------	------

Segment Leq : 54.74 dBA

Total Leq All Segments: 59.00 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 66.60
(NIGHT) : 59.00

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:47:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r19.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -48.00 deg 11.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 83.00 / 83.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -48.00 deg Angle2 : -15.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 62.00 / 62.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : 11.00 deg 66.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 83.00 / 83.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 11.00 deg Angle2 : 66.00 deg
Barrier height : 18.00 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 # 3: 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 # 3: 417EB1 (day/night)

Angle1 Angle2 : -54.00 deg 37.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 189.00 / 189.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -54.00 deg Angle2 : 11.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 54.00 / 54.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB2 (day/night)

Angle1 Angle2 : 37.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 189.00 / 189.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 37.00 deg Angle2 : 86.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 40.00 / 40.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417WB1 (day/night)

Angle1 Angle2 : -54.00 deg 37.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 203.00 / 203.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -54.00 deg Angle2 : 11.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 54.00 / 54.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB2 (day/night)

Angle1 Angle2 : 37.00 deg 86.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 203.00 / 203.00 m
Receiver height : 23.40 / 23.40 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 37.00 deg Angle2 : 86.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 40.00 / 40.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (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	23.40	7.04	7.04

ROAD (0.00 + 37.42 + 56.38) = 56.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-48	-15	0.00	72.21	0.00	-7.43	-7.37	0.00	0.00	-20.00
-15	11	0.00	72.21	0.00	-7.43	-8.40	0.00	0.00	0.00

37.42

56.38

Segment Leq : 56.44 dBA

#



Results segment # 2: CarlingEB2 (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	23.40	7.57	7.57

ROAD (0.00 + 39.91 + 0.00) = 39.91 dBA

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

11 66 0.00 72.21 0.00 -7.43 -5.15 0.00 0.00 -19.72
39.91

Segment Leq : 39.91 dBA

#



Results segment # 3: 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	23.40	18.86	18.86

ROAD (0.00 + 45.97 + 61.95) = 62.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-54	11	0.00	81.40	0.00	-11.00	-4.42	0.00	0.00	-20.00
11	37	0.00	81.40	0.00	-11.04	-8.40	0.00	0.00	0.00

Segment Leq : 62.06 dBA

#



Results segment # 4: 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	23.40	20.03	20.03

ROAD (0.00 + 64.70 + 0.00) = 64.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
37	86	0.00	81.40	0.00	-11.00	-5.65	0.00	0.00	-2.99
37	86	0.00	81.40	0.00	-11.04	-5.66	0.00	0.00	0.00

61.75*									
64.70									

* Bright Zone !

Segment Leq : 64.70 dBA

#



Results segment # 5: 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	23.40	19.17	19.17

ROAD (0.00 + 45.66 + 61.64) = 61.75 dBA

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

-54	11	0.00	81.40	0.00	-11.31	-4.42	0.00	0.00	-20.00
45.66									

11	37	0.00	81.40	0.00	-11.35	-8.40	0.00	0.00	0.00
61.64									

Segment Leq : 61.75 dBA

#



Results segment # 6: 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	23.40	20.27	20.27

ROAD (0.00 + 64.38 + 0.00) = 64.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
37	86	0.00	81.40	0.00	-11.31	-5.65	0.00	0.00	-2.37
37	86	0.00	81.40	0.00	-11.35	-5.66	0.00	0.00	0.00

62.06*									
64.38									

* Bright Zone !

Segment Leq : 64.38 dBA

Total Leq All Segments: 69.66 dBA

#



Results segment # 1: CarlingEB1 (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	23.40	7.04	7.04

ROAD (0.00 + 29.82 + 48.79) = 48.84 dBA

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

-48	-15	0.00	64.62	0.00	-7.43	-7.37	0.00	0.00	-20.00
-----	-----	------	-------	------	-------	-------	------	------	--------

-15	11	0.00	64.62	0.00	-7.43	-8.40	0.00	0.00	0.00
-----	----	------	-------	------	-------	-------	------	------	------

Segment Leq : 48.84 dBA

#



Results segment # 2: CarlingEB2 (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	23.40	7.57	7.57

ROAD (0.00 + 32.32 + 0.00) = 32.32 dBA

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

11	66	0.00	64.62	0.00	-7.43	-5.15	0.00	0.00	-19.72
----	----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 32.32 dBA

#



Results segment # 3: 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	23.40	18.86	18.86

ROAD (0.00 + 38.37 + 54.36) = 54.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-54	11	0.00	73.80	0.00	-11.00	-4.42	0.00	0.00	-20.00
11	37	0.00	73.80	0.00	-11.04	-8.40	0.00	0.00	0.00

38.37

54.36

Segment Leq : 54.46 dBA

#



Results segment # 4: 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	23.40	20.03	20.03

ROAD (0.00 + 57.10 + 0.00) = 57.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
37	86	0.00	73.80	0.00	-11.00	-5.65	0.00	0.00	-2.99
37	86	0.00	73.80	0.00	-11.04	-5.66	0.00	0.00	0.00

54.15*									
57.10									

* Bright Zone !

Segment Leq : 57.10 dBA

#



Results segment # 5: 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	23.40	19.17	19.17

ROAD (0.00 + 38.06 + 54.04) = 54.15 dBA

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

-54	11	0.00	73.80	0.00	-11.31	-4.42	0.00	0.00	-20.00
38.06									

11	37	0.00	73.80	0.00	-11.35	-8.40	0.00	0.00	0.00
54.04									

--

Segment Leq : 54.15 dBA

#



Results segment # 6: 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	23.40	20.27	20.27

ROAD (0.00 + 56.79 + 0.00) = 56.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
37	86	0.00	73.80	0.00	-11.31	-5.65	0.00	0.00	-2.37
37	86	0.00	73.80	0.00	-11.35	-5.66	0.00	0.00	0.00

54.46*	56.79
--------	-------

* Bright Zone !

Segment Leq : 56.79 dBA

Total Leq All Segments: 62.06 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 69.66
(NIGHT) : 62.06

#

#



STAMSON 5.0 NORMAL REPORT Date: 28-03-2017 58:37:37
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r20.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -71.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 45.00 / 45.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : 90.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : -70.00 deg -17.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -70.00 deg Angle2 : -17.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : 15.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 15.00 deg Angle2 : 90.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: 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 # 4: 417EB1 (day/night)

Angle1 Angle2 : -71.00 deg -48.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 171.00 / 171.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : -48.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 51.00 / 51.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417EB2 (day/night)

Angle1 Angle2 : -48.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 171.00 / 171.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -48.00 deg Angle2 : 69.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417WB1 (day/night)

Angle1 Angle2 : -71.00 deg -48.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 184.00 / 184.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : -48.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 51.00 / 51.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 7: 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 # 7: 417WB2 (day/night)

Angle1 Angle2 : -48.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 184.00 / 184.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -48.00 deg Angle2 : 69.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	1.50

ROAD (0.00 + 47.48 + 0.00) = 47.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	90	0.00	72.21	0.00	-4.77	-0.48	0.00	0.00	-19.48

SubLeq 47.48

Segment Leq : 47.48 dBA

#



Results segment # 2: CarlingEB2 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	1.50

ROAD (0.00 + 40.88 + 0.00) = 40.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-70	-17	0.00	72.21	0.00	-6.02	-5.31	0.00	0.00	-20.00

SubLeq 40.88

Segment Leq : 40.88 dBA

#



Results segment # 3: CarlingWB (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	1.50

ROAD (0.00 + 43.51 + 0.00) = 43.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
15	90	0.00	72.21	0.00	-6.02	-3.80	0.00	0.00	-18.88

SubLeq 43.51

Segment Leq : 43.51 dBA

#



Results segment # 4: 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	1.50	3.29	3.29

ROAD (0.00 + 41.89 + 0.00) = 41.89 dBA

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

-71 -48 0.00 81.40 0.00 -10.57 -8.94 0.00 0.00 -20.00
41.89

Segment Leq : 41.89 dBA

#



Results segment # 5: 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	1.50	1.78	1.78

ROAD (0.00 + 48.96 + 0.00) = 48.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-48	69	0.00	81.40	0.00	-10.57	-1.87	0.00	0.00	-20.00

SubLeq
48.96

Segment Leq : 48.96 dBA

#



Results segment # 6: 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	1.50	3.16	3.16

ROAD (0.00 + 41.57 + 0.00) = 41.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	-48	0.00	81.40	0.00	-10.89	-8.94	0.00	0.00	-20.00

SubLeq 41.57

Segment Leq : 41.57 dBA

#



Results segment # 7: 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	1.50	1.76	1.76

ROAD (0.00 + 48.64 + 0.00) = 48.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-48	69	0.00	81.40	0.00	-10.89	-1.87	0.00	0.00	-20.00

SubLeq 48.64

Segment Leq : 48.64 dBA

Total Leq All Segments: 54.35 dBA

#



Results segment # 1: CarlingEB1 (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	1.50	1.50	1.50

ROAD (0.00 + 39.88 + 0.00) = 39.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	90	0.00	64.62	0.00	-4.77	-0.48	0.00	0.00	-19.48

SubLeq 39.88

Segment Leq : 39.88 dBA

#



Results segment # 2: CarlingEB2 (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	1.50	1.50	1.50

ROAD (0.00 + 33.29 + 0.00) = 33.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-70	-17	0.00	64.62	0.00	-6.02	-5.31	0.00	0.00	-20.00

SubLeq 33.29

Segment Leq : 33.29 dBA

#



Results segment # 3: CarlingWB (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	1.50	1.50	1.50

ROAD (0.00 + 35.91 + 0.00) = 35.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
15	90	0.00	64.62	0.00	-6.02	-3.80	0.00	0.00	-18.88

SubLeq 35.91

Segment Leq : 35.91 dBA

#



Results segment # 4: 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	1.50	3.29	3.29

ROAD (0.00 + 34.29 + 0.00) = 34.29 dBA

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

-71 -48 0.00 73.80 0.00 -10.57 -8.94 0.00 0.00 -20.00
34.29

Segment Leq : 34.29 dBA

#



Results segment # 5: 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	1.50	1.78	1.78

ROAD (0.00 + 41.36 + 0.00) = 41.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-48	69	0.00	73.80	0.00	-10.57	-1.87	0.00	0.00	-20.00

SubLeq

-48	69	0.00	73.80	0.00	-10.57	-1.87	0.00	0.00	-20.00
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41.36

--

Segment Leq : 41.36 dBA

#



Results segment # 6: 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	1.50	3.16	3.16

ROAD (0.00 + 33.98 + 0.00) = 33.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	-48	0.00	73.80	0.00	-10.89	-8.94	0.00	0.00	-20.00

SubLeq 33.98

Segment Leq : 33.98 dBA

#



Results segment # 7: 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	1.50	1.76	1.76

ROAD (0.00 + 41.04 + 0.00) = 41.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-48	69	0.00	73.80	0.00	-10.89	-1.87	0.00	0.00	-20.00

SubLeq

41.04

--

Segment Leq : 41.04 dBA

Total Leq All Segments: 46.75 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 54.35
(NIGHT) : 46.75

#

#



STAMSON 5.0 NORMAL REPORT Date: 18-04-2018 14:48:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r22.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 : -63.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 230.00 / 230.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -63.00 deg Angle2 : 90.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 11.00 / 11.00 m
Source elevation : 6.00 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 : -63.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 243.00 / 243.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -63.00 deg Angle2 : 90.00 deg
Barrier height : 24.00 m
Barrier receiver distance : 11.00 / 11.00 m
Source elevation : 6.00 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	1.50	1.79	1.79

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
-63	90	0.00	81.40	0.00	-11.86	-0.71	0.00	0.00	-19.48

SubLeq

-63	90	0.00	81.40	0.00	-11.86	-0.71	0.00	0.00	-19.48
-----	----	------	-------	------	--------	-------	------	------	--------

49.35

--

Segment Leq : 49.35 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	1.50	1.77	1.77

ROAD (0.00 + 49.12 + 0.00) = 49.12 dBA

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

-63	90	0.00	81.40	0.00	-12.10	-0.71	0.00	0.00	-19.48
-----	----	------	-------	------	--------	-------	------	------	--------

Segment Leq : 49.12 dBA

Total Leq All Segments: 52.25 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	1.50	1.79	1.79

ROAD (0.00 + 41.76 + 0.00) = 41.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-63	90	0.00	73.80	0.00	-11.86	-0.71	0.00	0.00	-19.48

SubLeq

-63	90	0.00	73.80	0.00	-11.86	-0.71	0.00	0.00	-19.48
-----	----	------	-------	------	--------	-------	------	------	--------

41.76

--

Segment Leq : 41.76 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	1.50	1.77	1.77

ROAD (0.00 + 41.52 + 0.00) = 41.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-63	90	0.00	73.80	0.00	-12.10	-0.71	0.00	0.00	-19.48

SubLeq
41.52

Segment Leq : 41.52 dBA

Total Leq All Segments: 44.65 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 52.25
(NIGHT) : 44.65

#

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : 49.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 28.00 / 28.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 49.00 deg Angle2 : 90.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -72.00 deg -2.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -72.00 deg Angle2 : -2.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 12.00 / 12.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 30.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 44.00 / 44.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 30.00 deg Angle2 : 90.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417EB1 (day/night)

Angle1 Angle2 : -76.00 deg -51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 152.00 / 152.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -51.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 32.00 / 32.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417EB2 (day/night)

Angle1 Angle2 : -51.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 152.00 / 152.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -51.00 deg Angle2 : 72.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 7: 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 # 7: 417WB1 (day/night)

Angle1 Angle2 : -76.00 deg -51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -51.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 32.00 / 32.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 8: 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 # 8: 417WB2 (day/night)

Angle1 Angle2 : -51.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -51.00 deg Angle2 : 72.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (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	19.50	13.07	13.07

ROAD (0.00 + 50.92 + 0.00) = 50.92 dBA

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

-77 49 0.00 72.21 0.00 -2.71 -1.55 0.00 0.00 -17.03
50.92

Segment Leq : 50.92 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	13.07	13.07

ROAD (0.00 + 43.48 + 0.00) = 43.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
49	90	0.00	72.21	0.00	-2.71	-6.42	0.00	0.00	-19.60

SubLeq
43.48

Segment Leq : 43.48 dBA

#



Results segment # 3: CarlingWB1 (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	19.50	15.18	15.18

ROAD (0.00 + 50.85 + 0.00) = 50.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	-2	0.00	72.21	0.00	-5.23	-4.10	0.00	0.00	-12.04

SubLeq

-72	-2	0.00	72.21	0.00	-5.23	-4.10	0.00	0.00	-12.04
-----	----	------	-------	------	-------	-------	------	------	--------

50.85

--

Segment Leq : 50.85 dBA

#



Results segment # 4: CarlingWB2 (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	19.50	15.41	15.41

ROAD (0.00 + 53.21 + 0.00) = 53.21 dBA

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

30 90 0.00 72.21 0.00 -4.67 -4.77 0.00 0.00 -9.56 53.21

Segment Leq : 53.21 dBA

#



Results segment # 5: 417EB1 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.50 ! 19.50 ! 16.97 ! 16.97

ROAD (0.00 + 42.77 + 0.00) = 42.77 dBA

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

--
-76 -51 0.00 81.40 0.00 -10.06 -8.57 0.00 0.00 -20.00
42.77

--

Segment Leq : 42.77 dBA

#



Results segment # 6: 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	19.50	18.71	18.71

ROAD (0.00 + 68.35 + 0.00) = 68.35 dBA

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

SubLeq	-51	72	0.00	81.40	0.00	-10.06	-1.65	0.00	0.00	-3.73
65.96*	-51	72	0.12	81.40	0.00	-11.27	-1.78	0.00	0.00	0.00
68.35										

* Bright Zone !

Segment Leq : 68.35 dBA

#



Results segment # 7: 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	19.50	17.17	17.17

ROAD (0.00 + 42.41 + 0.00) = 42.41 dBA

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

-76 -51 0.00 81.40 0.00 -10.41 -8.57 0.00 0.00 -20.00
42.41

Segment Leq : 42.41 dBA

#



Results segment # 8: 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	19.50	18.77	18.77

ROAD (0.00 + 67.95 + 0.00) = 67.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-51	72	0.00	81.40	0.00	-10.41	-1.65	0.00	0.00	-3.47
-51	72	0.12	81.40	0.00	-11.67	-1.78	0.00	0.00	0.00

65.86*									
67.95									

* Bright Zone !

Segment Leq : 67.95 dBA

Total Leq All Segments: 71.33 dBA

#



Results segment # 1: CarlingEB1 (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	19.50	13.07	13.07

ROAD (0.00 + 43.33 + 0.00) = 43.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-77	49	0.00	64.62	0.00	-2.71	-1.55	0.00	0.00	-17.03

SubLeq 43.33

Segment Leq : 43.33 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	13.07	13.07

ROAD (0.00 + 35.88 + 0.00) = 35.88 dBA

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

49	90	0.00	64.62	0.00	-2.71	-6.42	0.00	0.00	-19.60	35.88
----	----	------	-------	------	-------	-------	------	------	--------	-------

Segment Leq : 35.88 dBA

#



Results segment # 3: CarlingWB1 (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	19.50	15.18	15.18

ROAD (0.00 + 43.25 + 0.00) = 43.25 dBA

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

-72 -2 0.00 64.62 0.00 -5.23 -4.10 0.00 0.00 -12.04
43.25

Segment Leq : 43.25 dBA

#



Results segment # 4: CarlingWB2 (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	19.50	15.41	15.41

ROAD (0.00 + 45.61 + 0.00) = 45.61 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
30	90	0.00	64.62	0.00	-4.67	-4.77	0.00	0.00	-9.56

SubLeq
45.61

Segment Leq : 45.61 dBA

#



Results segment # 5: 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	19.50	16.97	16.97

ROAD (0.00 + 35.17 + 0.00) = 35.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-51	0.00	73.80	0.00	-10.06	-8.57	0.00	0.00	-20.00

SubLeq 35.17

Segment Leq : 35.17 dBA

#



Results segment # 6: 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	19.50	18.71	18.71

ROAD (0.00 + 60.75 + 0.00) = 60.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-51	72	0.00	73.80	0.00	-10.06	-1.65	0.00	0.00	-3.73
-51	72	0.12	73.80	0.00	-11.27	-1.78	0.00	0.00	0.00

58.36*									
60.75									

* Bright Zone !

Segment Leq : 60.75 dBA

#



Results segment # 7: 417WB1 (night)

Source height = 1.49 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.49 ! 19.50 ! 17.17 ! 17.17

ROAD (0.00 + 34.81 + 0.00) = 34.81 dBA

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

--
-76 -51 0.00 73.80 0.00 -10.41 -8.57 0.00 0.00 -20.00
34.81

Segment Leq : 34.81 dBA

#



Results segment # 8: 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	19.50	18.77	18.77

ROAD (0.00 + 60.35 + 0.00) = 60.35 dBA

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

58.26*	-51	72	0.00	73.80	0.00	-10.41	-1.65	0.00	0.00	-3.47
60.35	-51	72	0.12	73.80	0.00	-11.67	-1.78	0.00	0.00	0.00

* Bright Zone !

Segment Leq : 60.35 dBA

Total Leq All Segments: 63.73 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 71.33
(NIGHT) : 63.73

#

#



STAMSON 5.0 NORMAL REPORT Date: 20-04-2018 11:03:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r22b.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -77.00 deg 49.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 28.00 / 28.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -77.00 deg Angle2 : 49.00 deg
Barrier height : 19.80 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : 49.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 28.00 / 28.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 49.00 deg Angle2 : 90.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -72.00 deg -2.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 50.00 / 50.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -72.00 deg Angle2 : -2.00 deg
Barrier height : 19.80 m
Barrier receiver distance : 12.00 / 12.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 4: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 30.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 44.00 / 44.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 30.00 deg Angle2 : 90.00 deg
Barrier height : 19.80 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 5: 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 # 5: 417EB1 (day/night)

Angle1 Angle2 : -76.00 deg -51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 152.00 / 152.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -51.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 32.00 / 32.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 6: 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 # 6: 417EB2 (day/night)

Angle1 Angle2 : -51.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 152.00 / 152.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -51.00 deg Angle2 : 72.00 deg
Barrier height : 19.80 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 7: 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 # 7: 417WB1 (day/night)

Angle1 Angle2 : -76.00 deg -51.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -76.00 deg Angle2 : -51.00 deg
Barrier height : 61.00 m
Barrier receiver distance : 32.00 / 32.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 8: 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 # 8: 417WB2 (day/night)

Angle1 Angle2 : -51.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -51.00 deg Angle2 : 72.00 deg
Barrier height : 19.80 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.50 ! 19.50 ! 13.07 ! 13.07

ROAD (0.00 + 48.64 + 0.00) = 48.64 dBA

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

--
-77 49 0.00 72.21 0.00 -2.71 -1.55 0.00 0.00 -19.31
48.64

--

Segment Leq : 48.64 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	13.07	13.07

ROAD (0.00 + 43.48 + 0.00) = 43.48 dBA

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

49	90	0.00	72.21	0.00	-2.71	-6.42	0.00	0.00	-19.60
----	----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 43.48 dBA

#



Results segment # 3: CarlingWB1 (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	19.50	15.18	15.18

ROAD (0.00 + 46.76 + 0.00) = 46.76 dBA

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

-72 -2 0.00 72.21 0.00 -5.23 -4.10 0.00 0.00 -16.13
46.76

Segment Leq : 46.76 dBA

#



Results segment # 4: CarlingWB2 (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	19.50	15.41	15.41

ROAD (0.00 + 50.11 + 0.00) = 50.11 dBA

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

30	90	0.00	72.21	0.00	-4.67	-4.77	0.00	0.00	-12.66
----	----	------	-------	------	-------	-------	------	------	--------

50.11

Segment Leq : 50.11 dBA

#



Results segment # 5: 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	19.50	16.97	16.97

ROAD (0.00 + 42.77 + 0.00) = 42.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-76	-51	0.00	81.40	0.00	-10.06	-8.57	0.00	0.00	-20.00

SubLeq 42.77

Segment Leq : 42.77 dBA

#



Results segment # 6: 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	19.50	18.71	18.71

ROAD (0.00 + 62.49 + 0.00) = 62.49 dBA

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

-51 72 0.00 81.40 0.00 -10.06 -1.65 0.00 0.00 -7.19
62.49

Segment Leq : 62.49 dBA

#



Results segment # 7: 417WB1 (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.50 ! 19.50 ! 17.17 ! 17.17

ROAD (0.00 + 42.41 + 0.00) = 42.41 dBA

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

--
-76 -51 0.00 81.40 0.00 -10.41 -8.57 0.00 0.00 -20.00
42.41

--

Segment Leq : 42.41 dBA

#



Results segment # 8: 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	19.50	18.77	18.77

ROAD (0.00 + 62.35 + 0.00) = 62.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-51	72	0.00	81.40	0.00	-10.41	-1.65	0.00	0.00	-6.98

SubLeq
62.35

Segment Leq : 62.35 dBA

Total Leq All Segments: 65.77 dBA

#



Results segment # 1: CarlingEB1 (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.50 ! 19.50 ! 13.07 ! 13.07

ROAD (0.00 + 41.05 + 0.00) = 41.05 dBA

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

--
-77 49 0.00 64.62 0.00 -2.71 -1.55 0.00 0.00 -19.31
41.05

--

Segment Leq : 41.05 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	13.07	13.07

ROAD (0.00 + 35.88 + 0.00) = 35.88 dBA

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

49	90	0.00	64.62	0.00	-2.71	-6.42	0.00	0.00	-19.60
----	----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 35.88 dBA

#



Results segment # 3: CarlingWB1 (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	19.50	15.18	15.18

ROAD (0.00 + 39.16 + 0.00) = 39.16 dBA

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

-72 -2 0.00 64.62 0.00 -5.23 -4.10 0.00 0.00 -16.13
39.16

Segment Leq : 39.16 dBA

#



Results segment # 4: CarlingWB2 (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.50 ! 19.50 ! 15.41 ! 15.41

ROAD (0.00 + 42.51 + 0.00) = 42.51 dBA

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

--
30 90 0.00 64.62 0.00 -4.67 -4.77 0.00 0.00 -12.66
42.51

--

Segment Leq : 42.51 dBA

#



Results segment # 5: 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	19.50	16.97	16.97

ROAD (0.00 + 35.17 + 0.00) = 35.17 dBA

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

-76 -51 0.00 73.80 0.00 -10.06 -8.57 0.00 0.00 -20.00
35.17

Segment Leq : 35.17 dBA

#



Results segment # 6: 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	19.50	18.71	18.71

ROAD (0.00 + 54.89 + 0.00) = 54.89 dBA

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

-51 72 0.00 73.80 0.00 -10.06 -1.65 0.00 0.00 -7.19
54.89

Segment Leq : 54.89 dBA

#



Results segment # 7: 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	19.50	17.17	17.17

ROAD (0.00 + 34.81 + 0.00) = 34.81 dBA

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

-76 -51 0.00 73.80 0.00 -10.41 -8.57 0.00 0.00 -20.00
34.81

Segment Leq : 34.81 dBA

#



Results segment # 8: 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	19.50	18.77	18.77

ROAD (0.00 + 54.75 + 0.00) = 54.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-51	72	0.00	73.80	0.00	-10.41	-1.65	0.00	0.00	-6.98

SubLeq 54.75

Segment Leq : 54.75 dBA

Total Leq All Segments: 58.17 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 65.77
(NIGHT) : 58.17

#

#



STAMSON 5.0 NORMAL REPORT Date: 20-04-2018 11:03:56
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r23.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -73.00 deg 41.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 48.00 / 48.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -73.00 deg Angle2 : 41.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : 41.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 48.00 / 48.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 64.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : 41.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 63.00 / 63.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 64.00 deg
Barrier height : 18.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -72.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 187.00 / 187.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -72.00 deg Angle2 : 67.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -72.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 201.00 / 201.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -72.00 deg Angle2 : 67.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (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	19.50	16.87	16.87

ROAD (0.00 + 45.18 + 0.00) = 45.18 dBA

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

-73	41	0.00	72.21	0.00	-5.05	-1.98	0.00	0.00	-20.00
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Segment Leq : 45.18 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	16.87	16.87

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
41	64	0.00	72.21	0.00	-5.05	-8.94	0.00	0.00	-7.35

SubLeq 50.87

Segment Leq : 50.87 dBA

#



Results segment # 3: CarlingWB (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	19.50	17.50	17.50

ROAD (0.00 + 51.49 + 0.00) = 51.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
41	64	0.00	72.21	0.00	-6.23	-8.94	0.00	0.00	-5.56

SubLeq 51.49

Segment Leq : 51.49 dBA

#



Results segment # 4: 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	19.50	19.05	19.05

ROAD (0.00 + 49.32 + 0.00) = 49.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	67	0.00	81.40	0.00	-10.96	-1.12	0.00	0.00	-20.00

SubLeq 49.32

Segment Leq : 49.32 dBA

#



Results segment # 5: 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	19.50	19.08	19.08

ROAD (0.00 + 49.00 + 0.00) = 49.00 dBA

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

-72 67 0.00 81.40 0.00 -11.27 -1.12 0.00 0.00 -20.00
49.00

Segment Leq : 49.00 dBA

Total Leq All Segments: 56.64 dBA

#



Results segment # 1: CarlingEB1 (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	19.50	16.87	16.87

ROAD (0.00 + 37.58 + 0.00) = 37.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-73	41	0.00	64.62	0.00	-5.05	-1.98	0.00	0.00	-20.00

SubLeq 37.58

Segment Leq : 37.58 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	16.87	16.87

ROAD (0.00 + 43.28 + 0.00) = 43.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
41	64	0.00	64.62	0.00	-5.05	-8.94	0.00	0.00	-7.35

SubLeq 43.28

Segment Leq : 43.28 dBA

#



Results segment # 3: CarlingWB (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	19.50	17.50	17.50

ROAD (0.00 + 43.89 + 0.00) = 43.89 dBA

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

41	64	0.00	64.62	0.00	-6.23	-8.94	0.00	0.00	-5.56
----	----	------	-------	------	-------	-------	------	------	-------

Segment Leq : 43.89 dBA

#



Results segment # 4: 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	19.50	19.05	19.05

ROAD (0.00 + 41.72 + 0.00) = 41.72 dBA

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

-72 67 0.00 73.80 0.00 -10.96 -1.12 0.00 0.00 -20.00
41.72

Segment Leq : 41.72 dBA

#



Results segment # 5: 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	19.50	19.08	19.08

ROAD (0.00 + 41.41 + 0.00) = 41.41 dBA

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

-72 67 0.00 73.80 0.00 -11.27 -1.12 0.00 0.00 -20.00
41.41

Segment Leq : 41.41 dBA

Total Leq All Segments: 49.04 dBA

#

TOTAL Leq FROM ALL SOURCES (DAY) : 56.64
(NIGHT) : 49.04

#

#



STAMSON 5.0 NORMAL REPORT Date: 20-04-2018 11:04:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r23b.te Time Period: Day/Night 16/8 hours
Description:

Road data, segment # 1: CarlingEB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB1 (day/night)

Angle1 Angle2 : -73.00 deg 41.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 48.00 / 48.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -73.00 deg Angle2 : 41.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingEB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB2 (day/night)

Angle1 Angle2 : 41.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 48.00 / 48.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 64.00 deg
Barrier height : 19.10 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB (day/night)

Angle1 Angle2 : 41.00 deg 64.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 63.00 / 63.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 41.00 deg Angle2 : 64.00 deg
Barrier height : 19.10 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -72.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 187.00 / 187.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -72.00 deg Angle2 : 67.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -72.00 deg 67.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 201.00 / 201.00 m
Receiver height : 19.50 / 19.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -72.00 deg Angle2 : 67.00 deg
Barrier height : 60.00 m
Barrier receiver distance : 7.00 / 7.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB1 (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	19.50	16.87	16.87

ROAD (0.00 + 45.18 + 0.00) = 45.18 dBA

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

-73 41 0.00 72.21 0.00 -5.05 -1.98 0.00 0.00 -20.00
45.18

Segment Leq : 45.18 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	16.87	16.87

ROAD (0.00 + 46.91 + 0.00) = 46.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
41	64	0.00	72.21	0.00	-5.05	-8.94	0.00	0.00	-11.31

SubLeq
46.91

Segment Leq : 46.91 dBA

#



Results segment # 3: CarlingWB (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	19.50	17.50	17.50

ROAD (0.00 + 47.89 + 0.00) = 47.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
41	64	0.00	72.21	0.00	-6.23	-8.94	0.00	0.00	-9.16

SubLeq
47.89

Segment Leq : 47.89 dBA

#



Results segment # 4: 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	19.50	19.05	19.05

ROAD (0.00 + 49.32 + 0.00) = 49.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	67	0.00	81.40	0.00	-10.96	-1.12	0.00	0.00	-20.00

SubLeq 49.32

Segment Leq : 49.32 dBA

#



Results segment # 5: 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	19.50	19.08	19.08

ROAD (0.00 + 49.00 + 0.00) = 49.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	67	0.00	81.40	0.00	-11.27	-1.12	0.00	0.00	-20.00

SubLeq 49.00

Segment Leq : 49.00 dBA

Total Leq All Segments: 54.89 dBA

#



Results segment # 1: CarlingEB1 (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	19.50	16.87	16.87

ROAD (0.00 + 37.58 + 0.00) = 37.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-73	41	0.00	64.62	0.00	-5.05	-1.98	0.00	0.00	-20.00

SubLeq 37.58

Segment Leq : 37.58 dBA

#



Results segment # 2: CarlingEB2 (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	19.50	16.87	16.87

ROAD (0.00 + 39.32 + 0.00) = 39.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
41	64	0.00	64.62	0.00	-5.05	-8.94	0.00	0.00	-11.31

SubLeq 39.32

Segment Leq : 39.32 dBA

#



Results segment # 3: CarlingWB (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	19.50	17.50	17.50

ROAD (0.00 + 40.29 + 0.00) = 40.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
41	64	0.00	64.62	0.00	-6.23	-8.94	0.00	0.00	-9.16

SubLeq 40.29

Segment Leq : 40.29 dBA

#



Results segment # 4: 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	19.50	19.05	19.05

ROAD (0.00 + 41.72 + 0.00) = 41.72 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	67	0.00	73.80	0.00	-10.96	-1.12	0.00	0.00	-20.00

SubLeq 41.72

Segment Leq : 41.72 dBA

#



Results segment # 5: 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	19.50	19.08	19.08

ROAD (0.00 + 41.41 + 0.00) = 41.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-72	67	0.00	73.80	0.00	-11.27	-1.12	0.00	0.00	-20.00

SubLeq

41.41

--

Segment Leq : 41.41 dBA

Total Leq All Segments: 47.30 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 54.89
(NIGHT) : 47.30

#

#



STAMSON 5.0 NORMAL REPORT Date: 20-04-2018 13:30:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r24.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

Angle1 Angle2 : -74.00 deg 76.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -74.00 deg Angle2 : 76.00 deg
Barrier height : 63.00 m
Barrier receiver distance : 14.00 / 14.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -71.00 deg -19.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 51.00 / 51.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : -19.00 deg
Barrier height : 63.00 m
Barrier receiver distance : 20.00 / 20.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 13.00 deg 76.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 52.00 / 52.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 13.00 deg Angle2 : 76.00 deg
Barrier height : 63.00 m
Barrier receiver distance : 14.00 / 14.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -71.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : 70.00 deg
Barrier height : 63.00 m
Barrier receiver distance : 15.00 / 15.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -71.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 179.00 / 179.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : 70.00 deg
Barrier height : 63.00 m
Barrier receiver distance : 15.00 / 15.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (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	64.50	40.66	40.66

ROAD (0.00 + 47.50 + 0.00) = 47.50 dBA

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

-74	76	0.00	72.21	0.00	-3.92	-0.79	0.00	0.00	-20.00
-----	----	------	-------	------	-------	-------	------	------	--------

Segment Leq : 47.50 dBA

#



Results segment # 2: CarlingWB1 (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	64.50	39.79	39.79

ROAD (0.00 + 41.51 + 0.00) = 41.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	-19	0.00	72.21	0.00	-5.31	-5.39	0.00	0.00	-20.00

SubLeq 41.51

Segment Leq : 41.51 dBA

#



Results segment # 3: CarlingWB2 (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	64.50	47.54	47.54

ROAD (0.00 + 42.37 + 0.00) = 42.37 dBA

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

13 76 0.00 72.21 0.00 -5.40 -4.56 0.00 0.00 -19.88
42.37

Segment Leq : 42.37 dBA

#



Results segment # 4: 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	64.50	59.32	59.32

ROAD (0.00 + 57.16 + 0.00) = 57.16 dBA

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

-71 70 0.00 81.40 0.00 -10.41 -1.06 0.00 0.00 -12.76
57.16

Segment Leq : 57.16 dBA

#



Results segment # 5: 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	64.50	59.72	59.72

ROAD (0.00 + 57.67 + 0.00) = 57.67 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	70	0.00	81.40	0.00	-10.77	-1.06	0.00	0.00	-11.89

SubLeq
57.67

Segment Leq : 57.67 dBA

Total Leq All Segments: 60.76 dBA

#



Results segment # 1: CarlingEB (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	64.50	40.66	40.66

ROAD (0.00 + 39.91 + 0.00) = 39.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-74	76	0.00	64.62	0.00	-3.92	-0.79	0.00	0.00	-20.00

SubLeq 39.91

Segment Leq : 39.91 dBA

#



Results segment # 2: CarlingWB1 (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	64.50	39.79	39.79

ROAD (0.00 + 33.91 + 0.00) = 33.91 dBA

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

-71 -19 0.00 64.62 0.00 -5.31 -5.39 0.00 0.00 -20.00
33.91

Segment Leq : 33.91 dBA

#



Results segment # 3: CarlingWB2 (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	64.50	47.54	47.54

ROAD (0.00 + 34.78 + 0.00) = 34.78 dBA

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

13 76 0.00 64.62 0.00 -5.40 -4.56 0.00 0.00 -19.88
34.78

Segment Leq : 34.78 dBA

#



Results segment # 4: 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	64.50	59.32	59.32

ROAD (0.00 + 49.56 + 0.00) = 49.56 dBA

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

-71 70 0.00 73.80 0.00 -10.41 -1.06 0.00 0.00 -12.76
49.56

Segment Leq : 49.56 dBA

#



Results segment # 5: 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	64.50	59.72	59.72

ROAD (0.00 + 50.08 + 0.00) = 50.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	70	0.00	73.80	0.00	-10.77	-1.06	0.00	0.00	-11.89

SubLeq

50.08

Segment Leq : 50.08 dBA

Total Leq All Segments: 53.17 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 60.76
(NIGHT) : 53.17

#

#



STAMSON 5.0 NORMAL REPORT Date: 20-04-2018 13:30:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r24b.te Time Period: Day/Night 16/8 hours
Description:

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

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingEB (day/night)

Angle1 Angle2 : -74.00 deg 76.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -74.00 deg Angle2 : 76.00 deg
Barrier height : 64.10 m
Barrier receiver distance : 14.00 / 14.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 2: CarlingWB1 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB1 (day/night)

Angle1 Angle2 : -71.00 deg -19.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 51.00 / 51.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : -19.00 deg
Barrier height : 64.10 m
Barrier receiver distance : 20.00 / 20.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Road data, segment # 3: CarlingWB2 (day/night)

Car traffic volume : 20240/1760 veh/TimePeriod *
Medium truck volume : 1610/140 veh/TimePeriod *
Heavy truck volume : 1150/100 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): 25000
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: CarlingWB2 (day/night)

Angle1 Angle2 : 13.00 deg 76.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 52.00 / 52.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 13.00 deg Angle2 : 76.00 deg
Barrier height : 64.10 m
Barrier receiver distance : 14.00 / 14.00 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -71.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 165.00 / 165.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : 70.00 deg
Barrier height : 64.10 m
Barrier receiver distance : 15.00 / 15.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



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

Angle1 Angle2 : -71.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 179.00 / 179.00 m
Receiver height : 64.50 / 64.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -71.00 deg Angle2 : 70.00 deg
Barrier height : 64.10 m
Barrier receiver distance : 15.00 / 15.00 m
Source elevation : 6.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

#



Results segment # 1: CarlingEB (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	64.50	40.66	40.66

ROAD (0.00 + 47.50 + 0.00) = 47.50 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-74	76	0.00	72.21	0.00	-3.92	-0.79	0.00	0.00	-20.00

SubLeq 47.50

Segment Leq : 47.50 dBA

#



Results segment # 2: CarlingWB1 (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	64.50	39.79	39.79

ROAD (0.00 + 41.51 + 0.00) = 41.51 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	-19	0.00	72.21	0.00	-5.31	-5.39	0.00	0.00	-20.00

SubLeq

-71	-19	0.00	72.21	0.00	-5.31	-5.39	0.00	0.00	-20.00
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41.51

--

Segment Leq : 41.51 dBA

#



Results segment # 3: CarlingWB2 (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	64.50	47.54	47.54

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

13 76 0.00 72.21 0.00 -5.40 -4.56 0.00 0.00 -19.96
42.29

Segment Leq : 42.29 dBA

#



Results segment # 4: 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	64.50	59.32	59.32

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

-71 70 0.00 81.40 0.00 -10.41 -1.06 0.00 0.00 -14.94
54.98

Segment Leq : 54.98 dBA

#



Results segment # 5: 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	64.50	59.72	59.72

ROAD (0.00 + 55.34 + 0.00) = 55.34 dBA

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

-71 70 0.00 81.40 0.00 -10.77 -1.06 0.00 0.00 -14.23 55.34

Segment Leq : 55.34 dBA

Total Leq All Segments: 58.72 dBA

#



Results segment # 1: CarlingEB (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	64.50	40.66	40.66

ROAD (0.00 + 39.91 + 0.00) = 39.91 dBA

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

-74 76 0.00 64.62 0.00 -3.92 -0.79 0.00 0.00 -20.00
39.91

Segment Leq : 39.91 dBA

#



Results segment # 2: CarlingWB1 (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	64.50	39.79	39.79

ROAD (0.00 + 33.91 + 0.00) = 33.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	-19	0.00	64.62	0.00	-5.31	-5.39	0.00	0.00	-20.00

SubLeq 33.91

Segment Leq : 33.91 dBA

#



Results segment # 3: CarlingWB2 (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	64.50	47.54	47.54

ROAD (0.00 + 34.70 + 0.00) = 34.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
13	76	0.00	64.62	0.00	-5.40	-4.56	0.00	0.00	-19.96

SubLeq 34.70

Segment Leq : 34.70 dBA

#



Results segment # 4: 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	64.50	59.32	59.32

ROAD (0.00 + 47.38 + 0.00) = 47.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	70	0.00	73.80	0.00	-10.41	-1.06	0.00	0.00	-14.94

SubLeq 47.38

Segment Leq : 47.38 dBA

#



Results segment # 5: 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	64.50	59.72	59.72

ROAD (0.00 + 47.74 + 0.00) = 47.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-71	70	0.00	73.80	0.00	-10.77	-1.06	0.00	0.00	-14.23

SubLeq 47.74

Segment Leq : 47.74 dBA

Total Leq All Segments: 51.12 dBA

#



TOTAL Leq FROM ALL SOURCES (DAY) : 58.72
(NIGHT) : 51.12