NOISE IMPACT ASSESSMENT STUDY

Development Address:
1178 Cummings Avenue and 1098 Ogilvie Road
Ottawa, Ontario

City of Ottawa Building Permit: 00000000

Client:
677096 Canada Inc.
1465 Forest Valley Drive
Ottawa, ON

Attention: Denis Archambault

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Lux Place
1178 Cummings Avenue and 1098 Ogilvie Road
Ottawa, Ontario

City of Ottawa File Number: 00000000

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EXECUTIVE SUMMARY

In accordance with the City of Ottawa's Environmental Noise Control Guidelines, this report and associated study present an assessment of the environmental noise impacting on the property identified as Lux Place, located at 1178 Cummings Avenue and 1098 Ogilvie Road in Ottawa, Ontario. This development proposal is made by 677096 Canada Inc.

With respect to the residential intention of the development, the assessment indicates that indoor noise level limits due to transportation sources will only be met when windows are closed. Therefore, most units require air conditioning and building envelope components designed to ensure indoor sound level limits are met. A preliminary assessment of building envelope component requirements (windows, doors, and exterior walls) has been completed, and the results are included in this report.

The assessment also indicates that the garden respects applicable outdoor living area (“OLA”) sound level limits. A secondary amenity area between Towers 1 and 2 will be subject to noise levels within the 5 dB tolerance above the applicable sound level limit.

Finally, the potential impacts of on-site and off-site sources of stationary noise have been reviewed for the property and its surroundings. No concerns with respect to the applicable stationary noise source limits were identified.

The results indicate that the Project can be developed such that all requirements per the City of Ottawa Environmental Noise Control Guidelines are met.

1.0 INTRODUCTION / BACKGROUND INFORMATION

In accordance with the City of Ottawa's Environmental Noise Guidelines (ENCG), this report provides a detailed study of the environmental noise impact upon the development proposed by 677096 Canada Inc. and located at 1178 Cummings Avenue and 1098 Ogilvie Road in Ottawa, Ontario.
The proposed development includes three residential towers 25, 27, and 35 storeys tall (excluding mechanical penthouses on each structure). Towers 1 and 2 share a 6-storey podium, with indoor amenities and an outdoor pool located on the second floor. An 8-story hotel is also included on the southeast portion of the site, featuring a rooftop swimming pool and indoor amenity uses on the ground floor. An outdoor garden area is nestled between the towers and the hotel. The site also features a parking structure providing 5 levels of underground parking, plus visitor and bicycle parking at grade.
In accordance with City and Provincial Guidelines, ambient noise levels due to significant sources of road traffic are assessed and compared with applicable sound levels limits. Noise levels are predicted at the façades of the proposed buildings, validating residential spaces, hotel rooms, and indoor amenity spaces. Noise levels are also predicted for the identified Outdoor Living Area (OLA).
Site plans are provided in Appendix A, with the assessment locations marked.

1.1 REFERENCES

This study is based on information presented in the following drawings:

- The Architectural drawings for the project, Revision 1 “OPA & ZBA Applications”, dated 2019-07-09

Reference is made to the following documents:

1) Ontario Ministry of the Environment, Conservation and Parks (MoE) Environmental Noise Guideline publication NPC-300: Stationary and Transportation Sources - Approval and Planning, dated August 2013
2) City of Ottawa Environmental Noise Control Guidelines updated January 2016 (ENCG)
3) City of Ottawa Official Plan, May 2003
4) City of Ottawa Transportation Master Plan, November 2013 (TMP)

5) Ontario Ministry of the Environment, Conservation and Parks (MoE) modelling tool STAMSON, version 5.02

6) DBR/NRC Building Research Note BRN148: Acoustic Insulation Factor, dated June 1980 (BRN148)

In this report:

- Unless otherwise indicated, noise levels are reported in terms of sound pressure levels ("SPL") in decibels, referenced to $2x10^{-5}$ pascals.

1.2 PURPOSE

The purpose of this report is to demonstrate that Lux Place can be developed in a manner that meets all applicable requirements with respect to environmental noise.

1.3 SCOPE

This Noise Impact Assessment Study presents a detailed study of the issues, as defined by the ENCG. No further study is required or proposed.

The scope of this report is limited to the issues described above, and makes no claim as to the validity of the noise level criteria or their ability to satisfy the expectations of all persons.

2.0 SOUND LEVEL CRITERIA

2.1 TRANSPORTATION NOISE

The applicable outdoor and indoor sound level limits due to road noise per the ENCG and NPC-300 are summarized in Table 1 and Table 2. The outdoor criterion applies only to outdoor spaces that are greater than 4 metres deep and therefore do not apply to the balconies proposed for this development. There are no sources of rail or aircraft noise within the setback distances as defined in the ENCG.

Table 1: Sound Level Limit for Outdoor Living Areas

Time Period	L_{eq}(16) dBA (Road and Rail noise combined, without whistle noise)
16 hours between 07:00-23:00	55*

*Where it can be demonstrated to the satisfaction of the City of Ottawa that achieving the outdoor 55 dBA L_{eq} is not technically or economically feasible, a tolerance of not more than 5 dB above the stated limit may be acceptable.

Table 2: Sound Level Limits for Indoor Living Areas

Type of Space	Time Period	Limit L_{eq} dBA
Living/dining, den areas of residences, hospitals, nursing homes schools, daycare centres, etc.	16 hours between 07:00-23:00	45
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	8 hours between 23:00-07:00	45
Sleeping quarters	16 hours between 07:00-23:00	45
	8 hours between 23:00-07:00	40

Supplementary, good-practice design objectives for other types of indoor spaces are provided in Table 3, per the ENCG.

Table 3: Supplementary Sound Level Limits for Indoor Spaces

Type of Space	Time Period	Limit L_{eq} dBA
General offices, reception areas, retail stores, etc.	16 hours between 07:00-23:00	50
Theatres, places of worship, libraries, individual or semi-private offices, conference rooms, reading rooms, etc.	16 hours between 07:00-23:00	45
Sleeping quarters of hotels/motels	8 hours between 23:00-07:00	45
Sleeping quarters of hospitals, nursing/retirement homes, etc.	8 hours between 23:00-07:00	40

The indoor sound level analysis is based on sound levels calculated at the façades or Planes Of Windows (POW) to noise-sensitive indoor spaces. Depending on POW noise levels, noise control measures affecting ventilation systems for residential units (to allow windows to remain closed) may be required. The requirements are summarized in Table 4, per NPC-300.

Table 4: Ventilation Requirements

Assessment Location	Daytime Noise Level* (L_{eq} 16 hr)	Nighttime Noise Level* (L_{eq} 8 hr)	Ventilation Requirements
Plane of a bedroom or living/dining room window	Up to 55 dBA	Up to 50 dBA	None
	Up to 65 dBA	Up to 60 dBA	Provision for the installation of central air conditioning** in the future, at occupant's discretion
	Above 65 dBA	Above 60 dBA	Central air conditioning**

*Based on the combined road and rail noise levels, excluding rail whistle noise.
**Per NPC-300 (C7.8.1), forms of mechanical ventilation other than ducted central air may be available which satisfy the requirements.

Depending on noise levels calculated at POWs, an analysis may be required in order to identify façade components (exterior walls, windows, and doors as applicable) that will ensure that indoor noise level limits are met. The requirements for road noise levels are summarized in Table 5.

Table 5: Building Component Requirements (Road Noise)

Assessment Location	Daytime Noise Level (L_{eq} 16 hr)	Nighttime Noise Level (L_{eq} 8 hr)	Building Component Requirements
Plane of a bedroom or living/dining room window	Up to 65 dBA	Up to 60 dBA	Per the Ontario Building Code
	Above 65 dBA	Above 60 dBA	Must be designed to ensure indoor criteria are met*

* Per the ENCG (Section 5.2, page 14), the preferred assessment method is the Acoustic Insulation Factor (AIF) method.

2.2 STATIONARY SOURCE NOISE

This project is located within a Class 1 area, which is the acoustical environment typical of a major population centre. The surrounding environment is a mix of residential and light industrial adjacent to major transportation arteries. In the following table, sound level exclusion limits are extracted from the MoE Guideline.

Table 6: Exclusion Limits for Class 1 Area

Receiver Area (Class #)	Time Period	Exclusion Limit Value, 1-hour L_{eq}, dBA	
		Outdoor Point of Reception	*Plane of Window of Noise Sensitive Space*
Class 1 (Ref: MoE NPC-300)	07:00 – 19:00	50	50
	19:00 - 23:00	50	50
	23:00 - 07:00	(n/a)	45

Per NPC-300, unless it can be demonstrated that background sound levels consistently exceed the exclusion limits in a given time period, the exclusion limits set the sound level limit for noise from a stationary source.

3.0 TRANSPORTATION NOISE ASSESSMENT

3.1 ROAD TRAFFIC INFORMATION

The City of Ottawa Transportation Master Plan and the City of Ottawa Official Plan (Schedule E) have been used to identify significant roadways within the vicinity of the project that must be included in noise level calculations. The significant roadways are Highway 417, Ogilvie Road, Cummings Avenue, and Cyrville Road. Each roadway has been modelled as multiple road segments, as noted below. The roadway segments are also identified in Figure A.1 and Figure A.2 (Appendix A).

- Highway 417: East Bound (EB) and West Bound (WB) lanes modelled separately. Multiple segments per direction to account for changes in direction of the Highway.
- Ogilvie Road: separate segments for EB and WB lanes.
- Cyrville Road: divided into North (N) and South (S) segments, to account for the roadway classification change on either side of its intersection with Labelle Street / Cummings Avenue. Each segment includes both directions of travel. The North segment has been split in two to account for a change in direction of the roadway.
- Cummings Avenue: divided into N and S segments to account for the roadway classification change on either side of its intersection with Ogilvie Road. Each segment includes both directions of travel.

Cyrville Road currently includes two lanes (one per direction of travel). The City of Ottawa Transportation Master Plan notes a conceptual widening of the roadway to four lanes between Saint-Laurent Boulevard and Innes Road, to accommodate anticipated future demand (see Transportation Master Plan, Table A3 on page 110, and Map 10). The roadway's overpass above Highway 417 was replaced in 2011, and was made wide enough to accommodate four lanes in the future. This Noise Study considers only the future scenario where Cyrville Road is widened to four lanes.

Average Annual Daily Traffic (AADT) volumes have been assigned and divided by time-of-day and vehicle categories per ENCG requirements (ENCG, Appendix B). The traffic data used for noise level calculations are summarized in Table 7.

Table 7: Roadway Traffic Flow Data

Roadway Segment	Roadway Class	Speed Limit	Total AADT	AADT by Vehicle Type and Time of Day (Daytime / Nighttime)		
				Cars	Medium Trucks	Heavy Trucks
Highway 417 Eastbound	8-Lane Highway	100 km/h	146664	118739/10325	9445/821	6747/587
Highway 417 Westbound				118739/10325	9445/821	6747/587
Cyrville Road (north of Cummings)	4-Lane Urban Major Collector Undivided*	60 km/h	24000*	19430/1690	1546/134	1104/96
Cyrville Road (south of Cummings)	4-Lane Arterial Undivided*	60 km/h	30000*	24288/2112	1932/168	1380/120
Cummings Avenue (North of Ogilvie)	2-Lane Urban Major Collector Undivided	50 km/h	12000	9715/845	773/67	552/48
Cummings Avenue (south of Ogilvie)	2-Lane Arterial Undivided	50 km/h	15000	12144/1056	966/84	690/60
Ogilvie Road Eastbound	4-Lane Arterial Divided	60 km/h	35000	28336/2464	2254/196	1610/140
Ogilvie Road Wesbound				28336/2464	2254/196	1610/140

*Currently, Cyrville Road includes one lane per direction. Traffic volumes presented are for future widening to two lanes per direction.

Traffic flow was presumed to be at the centre of each roadway segment, as is normal practice.

3.2 POINTS OF ASSESSMENT

Points of Assessment (POA) have been identified at building façades and outdoor areas for the proposed development. These locations have been selected due to their potential to be worst-case locations in terms of noise levels or building component requirements, and to determine changes in sound levels along the height of each building.

Balconies are supplied for every residential unit and form the main outdoor area for the residents. Since their proposed depth is less than 4m, they are not considered an OLA. The garden north of the hotel provides supplementary outdoor space, as does the pool area on the podium between Tower 1 and 2.
The included POA are listed in the following tables. For POA located on building façades, the last two digits refer to the floor on which the POA is located (mid-height of the floor). The assessment locations are shown on Figure A.3 (Appendix A).

Table 8: Points of Assessment – Tower 1

POA	Height (rel. grade)	Location	Notes
T1A02	6.9 m	North façade near west corner, floor 02	Worst-case, north façade
T1A07	22.1 m	North façade near west corner, floor 07	Worst-case, north façade
T1A25	75.3 m	North façade near west corner, floor 25	Worst-case, north façade
T1B02	6.9 m	West façade near north corner, floor 02	Worst-case, west façade
T1B07	22.1 m	West façade near north corner, floor 07	Worst-case, west façade
T1B25	75.3 m	West façade near north corner, floor 25	Worst-case, west façade
T1C02	6.9 m	South façade near west corner, floor 02	Worst-case, south façade
T1C07	22.1 m	South façade near west corner, floor 07	Worst-case, south façade
T1C25	75.3 m	South façade near west corner, floor 25	Worst-case, south façade
T1D07	22.1 m	East façade near north corner, floor 07	Worst-case, east façade

Table 9: Points of Assessment – Tower 2

POA	Height (rel. grade)	Location	Notes
T2A02	6.9 m	North façade near east corner, floor 02	Worst-case, north façade
T2A07	22.1 m	North façade near east corner, floor 07	Worst-case, north façade
T2A27	81.8 m	North façade near east corner, floor 27	Worst-case, north façade
T2B02	6.9 m	East façade near north corner, floor 02	East façade, worst-case near Ogilvie
T2B07	22.1 m	East façade near north corner, floor 07	East façade, worst-case near Ogilvie
T2B27	81.8 m	East façade near north corner, floor 27	East façade, worst-case near Ogilvie
T2C02	6.9 m	East façade near south corner, floor 02	East façade worst-case Highway 417
T2C07	22.1 m	East façade near south corner, floor 07	East façade worst-case Highway 417
T2C27	81.8 m	East façade near south corner, floor 27	East façade worst-case Highway 417
T2D07	22.1 m	South façade near east corner, floor 07	Worst-case, south façade
T2E07	22.1 m	West façade near north corner, floor 07	Worst-case, west façade

Table 10: Points of Assessment – Tower 3

POA	Height (rel. grade)	Location	Notes
T3A02	6.9 m	North façade near west corner, floor 02	Worst-case, north façade
T3A07	22.1 m	North façade near west corner, floor 07	Worst-case, north façade
T3A27	81.8 m	North façade near west corner, floor 27	Worst-case, north façade
T3A35	105.1 m	North façade near west corner, floor 35	Worst-case, north façade
T3B02	6.9 m	West façade near north corner, floor 02	Worst-case, west façade
T3B07	22.1 m	West façade near north corner, floor 07	Worst-case, west façade
T3B33	96.2 m	West façade near north corner, floor 33	Worst-case, west façade
T3B35	105.1 m	West façade near north corner, floor 35	Worst-case, west façade
T3C02	6.9 m	Podium south façade near west corner, floor 02	Worst-case, south façade (podium)
T3C06	19.2 m	Podium south façade near west corner, floor 06	Worst-case, south façade (podium)
T3D27	81.8 m	South façade near west corner, floor 27	Worst-case, south façade (tower)
T3D35	105.1 m	South façade near west corner, floor 35	Worst-case, south façade (tower)
T3E35	105.1 m	East façade near south corner, floor 35	Worst-case, east façade (tower)

Table 11: Points of Assessment – Hotel

POA	Height (rel. grade)	Location	Notes
HA02	6.9 m	South façade near west corner, floor 02	Worst-case exposure to Highway 417
HA08	25.1 m	South façade near west corner, floor 08	Worst-case exposure to Highway 417
HB02	6.9 m	East façade near south corner, floor 02	East façade worst-case, Highway 417
HB08	25.1 m	East façade near south corner, floor 08	East façade worst-case, Highway 417
HC02	6.9 m	East façade near north corner, floor 02	East façade worst-case, Ogilvie
HC08	25.1 m	East façade near north corner, floor 08	East façade worst-case, Ogilvie
HD08	25.1 m	North façade near east corner, floor 08	North façade worst-case
HE08	25.1 m	West façade near south corner, floor 08	West façade worst-case

Table 12: Points of Assessment – Outdoor Living Areas

POA	Height (rel. grade)	Location	Notes
OLAG	1.5	Garden	Project buildings act as significant noise barriers
OLAP	6.6	2nd floor south of the common podium between Towers 1 and 2. The assessment location is 1.5 m above the floor and 3 m from the south façade.	Secondary amenity area (pool). Project buildings act as significant noise barriers

A flat topography was assumed for all calculations, with the local grade height taken as 70 m above sea level.

3.3 TRAFFIC NOISE CALCULATION DETAILS AND RESULTS

Noise level calculations were made at each POA using the MoE tool STAMSON, version 5.02. A summary of distances and angles used for calculations at each POA is included as Appendix B, and the detailed calculation results (STAMSON reports) are included as Appendix C. The calculation results are summarized in the following tables.

Table 13: Tower 1 Traffic Noise Level Calculation Results

Point of Assessment	Calculated Noise Level Daytime (dBA $L_{eq\ 16hr}$)	Calculated Noise Level Nighttime (dBA $L_{eq\ 8hr}$)
T1A02	69	62
T1A07	69	62
T1A25	69	62
T1B02	67	59
T1B07	67	59
T1B25	67	59
T1C02	63	56
T1C07	63	56
T1C25	63	56
T1D07	65	57

Table 14: Tower 2 Traffic Noise Level Calculation Results

Point of Assessment	Calculated Noise Level Daytime (dBA $L_{eq\ 16hr}$)	Calculated Noise Level Nighttime (dBA $L_{eq\ 8hr}$)
T2A02	68	61
T2A07	68	61
T2A27	68	61
T2B02	68	61
T2B07	68	61
T2B27	68	61
T2C02	68	61
T2C07	68	61
T2C27	68	61
T2D07	65	57
T2E07	65	57

Table 15: Tower 3 Traffic Noise Level Calculation Results

Point of Assessment	Calculated Noise Level Daytime (dBA $L_{eq\ 16hr}$)	Calculated Noise Level Nighttime (dBA $L_{eq\ 8hr}$)
T3A02	63	55
T3A07	63	55
T3A27	66	58
T3A35	66	58
T3B02	65	58
T3B07	65	58
T3B33	65	58
T3B35	66	58
T3C02	66	59
T3C06	66	59
T3D27	66	58
T3D35	66	58
T3E35	65	58

Table 16: Hotel Traffic Noise Level Calculation Results

Point of Assessment	Calculated Noise Level Daytime (dBA $L_{eq\ 16hr}$)	Calculated Noise Level Nighttime (dBA $L_{eq\ 8hr}$)
HA02	66	58
HA08	66	58
HB02	68	60
HB08	68	60
HC02	68	60
HC08	68	60
HD08	66	58
HE08	65	58

Table 17: OLA Traffic Noise Level Calculation Results

Point of Assessment	Calculated Noise Level Daytime (dBA $L_{eq\ 16hr}$)
OLAP	58
OLAG	52

3.4 INDOOR NOISE CONTROL MEASURES: RESIDENTIAL UNITS

The calculation results confirm that indoor noise control measures are required for some residential units. The ventilation and building component requirements are summarized below.

Table 18: Summary of Noise Control Requirements for Residential Units

Building	Façades	Floors	Ventilation Requirements	Façade Components Designed for Noise Isolation
Tower 1	North, East, West	All	Central air conditioning*	Required
	South	All	Provisions for future installation of central air conditioning*	Not required
Tower 2	North, East	All	Central air conditioning*	Required
	South, West, Podium	All	Provisions for future installation of central air conditioning*	Not required
Tower 3	North, East	All	Central air conditioning*	Required
	West	34, 35		
	South	All	Provisions for future installation of central air conditioning*	Not required
	West	Up to 33		

*Per NPC-300 (C7.8.1), forms of mechanical ventilation other than ducted central air may be available which satisfy the requirements.

In addition, Notices-on-Title are required with respect to noise for all residential units. Recommended wording per the ENCG is included in Appendix E.

As noted in Table 18, components must be designed to ensure that indoor noise level limits are met in some units. Details are provided in Section 3.7.

3.5 INDOOR NOISE CONTROL MEASURES: NON-RESIDENTIAL AREAS

The ENCG and NPC-300 do not specify a threshold for requiring building component design based on plane-of-window noise levels for non-residential areas. However, based on the comparison between indoor and POW noise limits for residential noise-sensitive spaces (Tables 2 and 4), we conclude that façade components should be designed to ensure indoor sound level limits are met when the difference between the façade and the indoor target noise levels is 20 dB or more.

Table 19 contains a summary of non-residential, noise-sensitive spaces that have been identified throughout the project.

Table 19: Summary of Noise Control Recommendations for Non-Residential Areas

Building	Indoor Area (floor)	Indoor Sound Level Target (time of day)	Representative Façade Sound Level (at POA)	Recommendation for Façade Components
Tower 1 and Tower 2 Podium	Tower 1 Lobby (ground Floor)	50 dBA (07:00 to 23:00)	67 dBA (T1B02)	Per OBC
	Tower 2 Lobby (ground Floor)	50 dBA (07:00 to 23:00)	68 dBA (T2B02)	Per OBC
	Amenities room (level 2)	45-50 dBA (07:00 to 23:00)	63 dBA (T1C02)	Per OBC
Tower 3	Lobby and Lounge (ground floor)	50 dBA (07:00 to 23:00)	63 dBA (T3A02)	Per OBC
Hotel	Lobby Bar and Dining (ground floor)	50 dBA (07:00 to 23:00)	68 dBA (HC02)	Per OBC
	Meeting Rooms (ground floor)	45 dBA (07:00 to 23:00)	66 dBA (HA02)	Designed to ensure indoor target is met
	Hotel Rooms (floors 2-8)	45 dBA (23:00 to 07:00)	58-60 dBA (various)	Per OBC

Recommended component designs for the hotel ground floor meeting rooms are included in Table 20.

3.6 NOISE CONTROL MEASURES: OUTDOOR LIVING AREAS

3.6.1 Garden

The calculated sound level is 52 dBA at OLAG, which is below the target level of 55 dBA. Noise control is not required. It should be noted that the buildings' arrangement, as it currently stands in the site plan, provides significant reductions of roadway noise, since it shades the amenity space from significant roadways.

3.6.2 Tower 1 and Tower 2 Secondary Amenity Area

Because of the intended use of this space (pool), a strict consideration of this area as an OLA is not required – thus its ad hoc designation as secondary amenity area.

The calculated sound level for this area exceeds the 55 dBA limit for OLAs (OLAP, 58 dBA). Due to the nature of use of this space and the relatively small margin to OLA limits, we conclude that the enjoyment of the space will not be disturbed even if no control measures are implemented.

However, if noise concerns should arise in the future, the daytime OLA limit can be met by incorporating a 2-metre tall noise barrier along the west edge of the amenity area. A conceptual sketch showing the recommended extent of the noise barrier is included below.

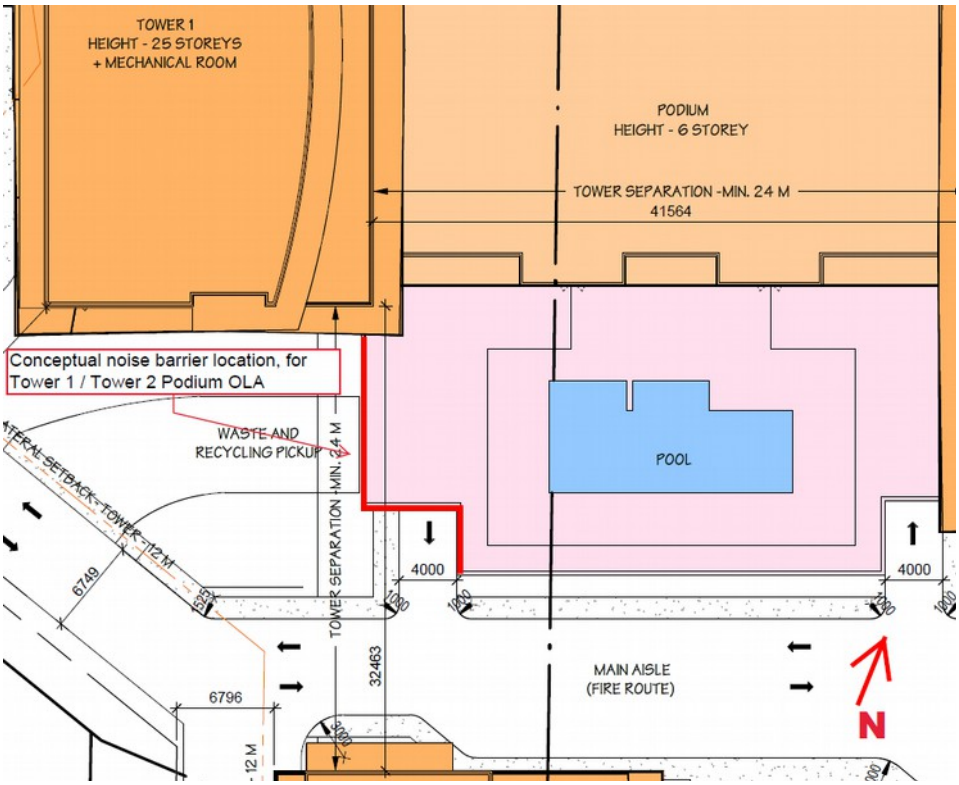

Figure 1: Conceptual Noise Barrier Location, Podium OLA

The noise barrier would need to include the following characteristics:

1. continuous construction (no gaps within the barrier or between materials); and
2. recommended surface density of at least 20 kg/m^2, but no less than 10 kg/m^2 (rooftop barrier minimum per the ENCG).

It should be noted that the buildings' arrangement, as it currently stands in the site plan, provides significant reductions of roadway noise, since it shades the amenity space from significant roadways.

3.7 ACOUSTIC INSULATION FACTOR ANALYSIS

A preliminary Acoustic Insulation Factor (AIF) analysis was performed according to BRN148 in order to confirm likely façade component construction requirements to ensure indoor sound level limits are met within the residences and non-residential indoor amenity spaces. The façade components include the exterior wall, windows that are fixed and sealed to the frame, and operable windows. Glass doors for balconies are considered as operable windows for the purpose of this analysis.
Intermediate calculation results for the AIF analysis are provided in Appendix D.

3.7.1 Exterior Wall Construction

The preliminary analysis presumes exterior wall construction equivalent to NRC exterior wall type EW1 (ref: BRN148). EW1 construction is summarized below.

- 12.7 mm gypsum board
- vapour barrier
- 38 x 89 mm studs
- 50 mm (or thicker) mineral wool or glass fibre batt insulation
- metal siding and fibre backer board

Exterior wall construction which includes additional or more sheet layer materials, cladding material with increased mass, or increased overall thickness, will generally perform better than EW1.

3.7.2 Fixed Windows, Operable Windows, and Glass Doors

Table 20 describes the preliminary minimum window construction requirements in order to meet indoor sound level limits for the noise-sensitive areas of the project. The noise isolation requirements can be met with double-glazed units at all locations.
The window requirements are determined based on the floor area of the indoor space and the total area of each type of its associated façade components. Conservative assumptions were made with respect to these, in the absence of floor plans at this early stage of the project. The results of this analysis will need to be confirmed once detailed floor plans as well as window and glass door dimensions are finalized.
The sound isolation performance of window and glass door units which include thicker glass panes and/or greater interpane space(s) than indicated in Table 20 will provide increased noise isolation performance.

Table 20: Minimum Window and Glass Door Requirements

Indoor Location	Fixed Window*	Operable Windows and Glass Doors*
Worst-case for residential bedrooms: Tower 1, north and east exposure.	Double glazing: 2-15-2 or 3-6-3	Operable window double glazing: 2-15-2 or 3-6-3
Worst-case Tower 1 north façade studio suites with balcony door.	Double glazing: 2-6-2	Balcony door double glazing: 2-6-2
Worst-case Tower 2 east façade bedrooms with balcony door.	Double glazing: 2-13-2 or 3-6-3	Balcony door double glazing: 2-13-2 or 3-6-3
Worst-case hotel meeting room: south facade	Curtain wall glass: 2-15-2 or 3-6-3	Glass door double glazing: 2-6-2

*Double glazing entries are in the format “a-b-c” where:
a is the thickness of the first pane of glass, in mm
b is the interpane thickness, in mm, and
c is the thickness of the second pane of glass, in mm

4.0 STATIONARY NOISE IMPACT ASSESSMENT

4.1 ON-SITE STATIONARY NOISE SOURCE EMISSIONS

With reference to the ENCG and NPC-300, operation of the Lux Place, in its entirety, is considered a “Stationary Source”. All individual noise sources (e.g. rooftop mechanical equipment) for this site must therefore be designed to comply with City of Ottawa and MoE requirements for noise emissions from a stationary source.

Therefore, as part of the mechanical design, all new exterior equipment serving common areas of the building must be selected to comply with City of Ottawa noise limits at adjacent noise-sensitive land uses. On a practical level, the nearest noise-sensitive land use to the site is Cyrville Towers to the east across Cummings Avenue (1177 Cummings Avenue): an 8-storey apartment building. Given the relative height of the proposed residential towers and hotel, there will be significant obstruction of line-of-sight between rooftop equipment and off-site points of reception, resulting in significant noise reduction. There are no feasibility concerns in terms of noise impacts for rooftop equipment at off-site points of reception.

4.2 OFF-SITE STATIONARY NOISE SOURCE EMISSIONS

A site visit was conducted on 07 October 2019 to review the site and its surroundings. Background noise in the area is dominated by traffic noise from nearby roadways. The proposed development surroundings include multi-storey residences, office buildings, as well as commercial light industrial uses. Information gathered during the site visit and a review of satellite images was used to identify significant sources of stationary noise with the potential to produce noise in excess of the applicable limits at the proposed development.

Our review of potential sources of off-site noise is summarized below. Reference is also made to Figure A.5 (Appendix A), which shows the locations of the subject properties.

Table 21: Review of Potential Off-Site Stationary Noise Sources

Off-Site Properties	Potential Noise Sources	Minimum Horizontal Distance to POA	Comments
1101 and 1111 Ogilvie Road	Gas station, car wash	Approx. 70 m	Insignificant sources of stationary noise.
1137 Ogilvie Road	Rooftop equipment for restaurants and shops	Approx. 115 m	Insignificant impact expected due to distance and size of HVAC equipment.
1134 Ogilvie Road	Gas station	Approx. 55 m	Insignificant source of stationary noise.
1177 Cummings Avenue	Rooftop equipment above apartment building	Approx. 70 m	Insignificant impact expected due to distance and size of HVAC equipment. Most equipment appears to be located inside a penthouse, significantly reducing radiated noise.
1221 Cyrville Road	Rooftop equipment above commercial and light industrial complex	Approx. 125 m	Insignificant impact expected due to distance and size of HVAC equipment.
1173 Cyrville Road	Rooftop equipment above office building	Approx. 60 m to OLA, 85 m to façade	Insignificant impact expected due to distance and size of HVAC equipment.
1076-1088 Ogilvie Road	Rooftop equipment atop retail buildings	Approx. 25 m	Insignificant impact expected due to distance and size of HVAC equipment.

No other potentially significant stationary noise sources were identified in the vicinity of the proposed development. We therefore conclude that there are no concerns regarding the impact of existing off-site stationary noise sources upon the proposed development.

5.0 CONCLUSION AND RECOMMENDATIONS

We conclude that the project can be developed such that all transportation noise requirements are met. Noise control requirements for transportation noise impacts upon residential areas for each of the project buildings are summarized in Table 18. A preliminary analysis of window design requirements to ensure indoor noise level are met is shown in Table 20. Requirements for the residential outdoor amenity area are discussed in Section 3.6. Notices-on-Title are also required (recommended wording in Appendix E).

We recommend that the following noise control measures be implemented for the project.

- For residences:
  - central air conditioning (or suitable equivalent per NPC-300 requirements) for all residential units;
  - all fixed windows, operable windows, and glass balcony doors for residential units to be, at a minimum, double-glazed units with glass thickness of at least 3mm per pane, and interpane spacing of at least 6mm (to be confirmed once floor plans and façade designs are developed);
  - Notices-on-Title respecting noise (recommended wording in Appendix E).
- For non-residential indoor areas:
  - double glazing for all windows and glass doors per Table 20.

In addition to the above, on-site mechanical equipment for the proposed development shall be designed to meet ENCG and NPC-300 requirements for noise emissions from a stationary source. No concerns have been identified regarding the potential impact of off-site noise sources upon the proposed development.

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4 November 2019

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Attachments:

- Appendix A: Site Plans
- Appendix B: Summary of STAMSON Input Data
- Appendix C: Stamson 5.02 outputs dated 26 September 2019
- Appendix D: Results of AIF Analysis
- Appendix E: Recommended Wording for Notices-on-Title

APPENDIX A: SITE PLANS

(attachment to Integral DX Engineering Ltd. report dated 4 November 2019)

Figure A.1: Area Plan and Roadway Segments

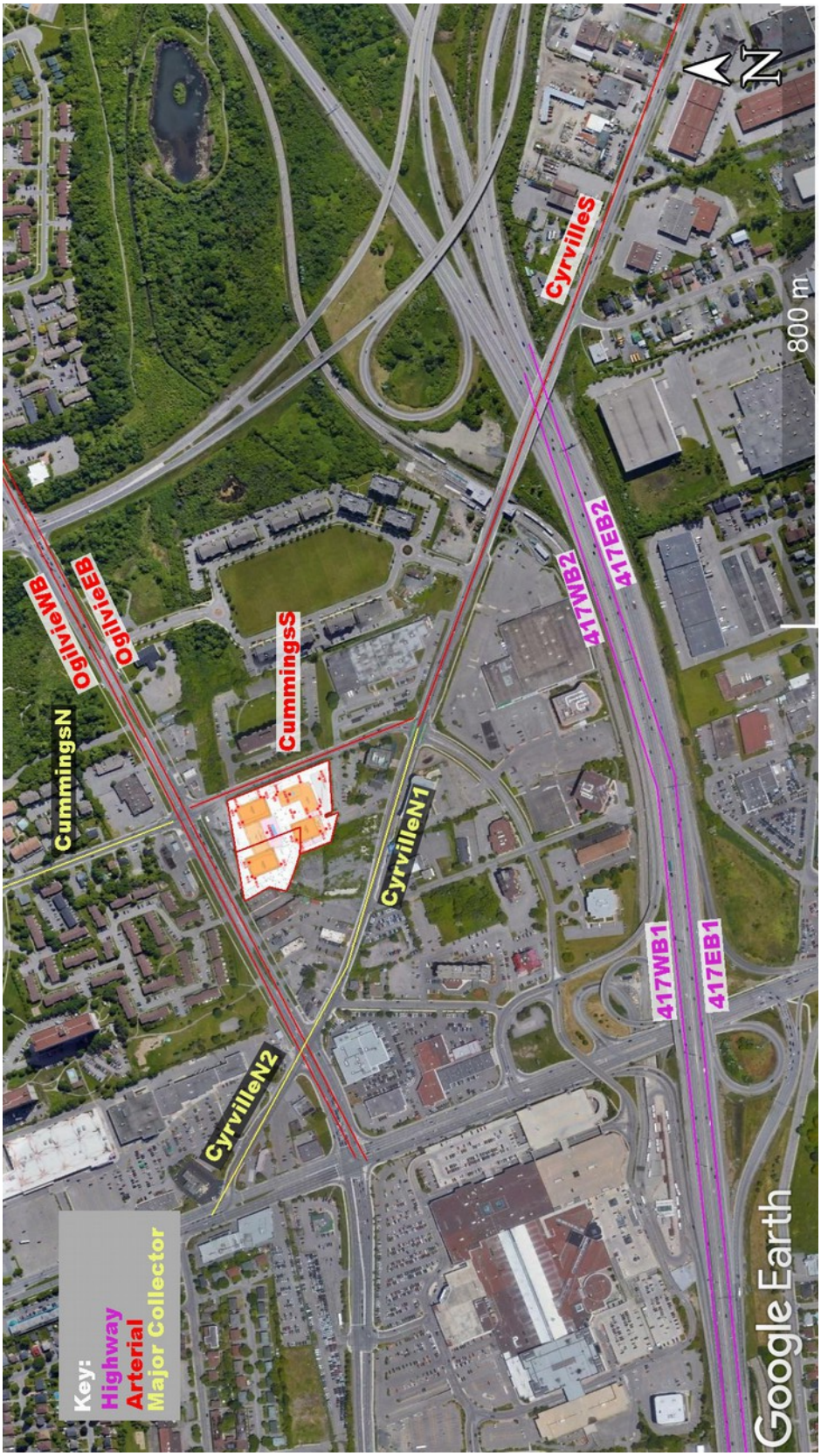

Figure A.2: Alternative Area Plan View

Figure A.3: Site Plan and Points of Assessment

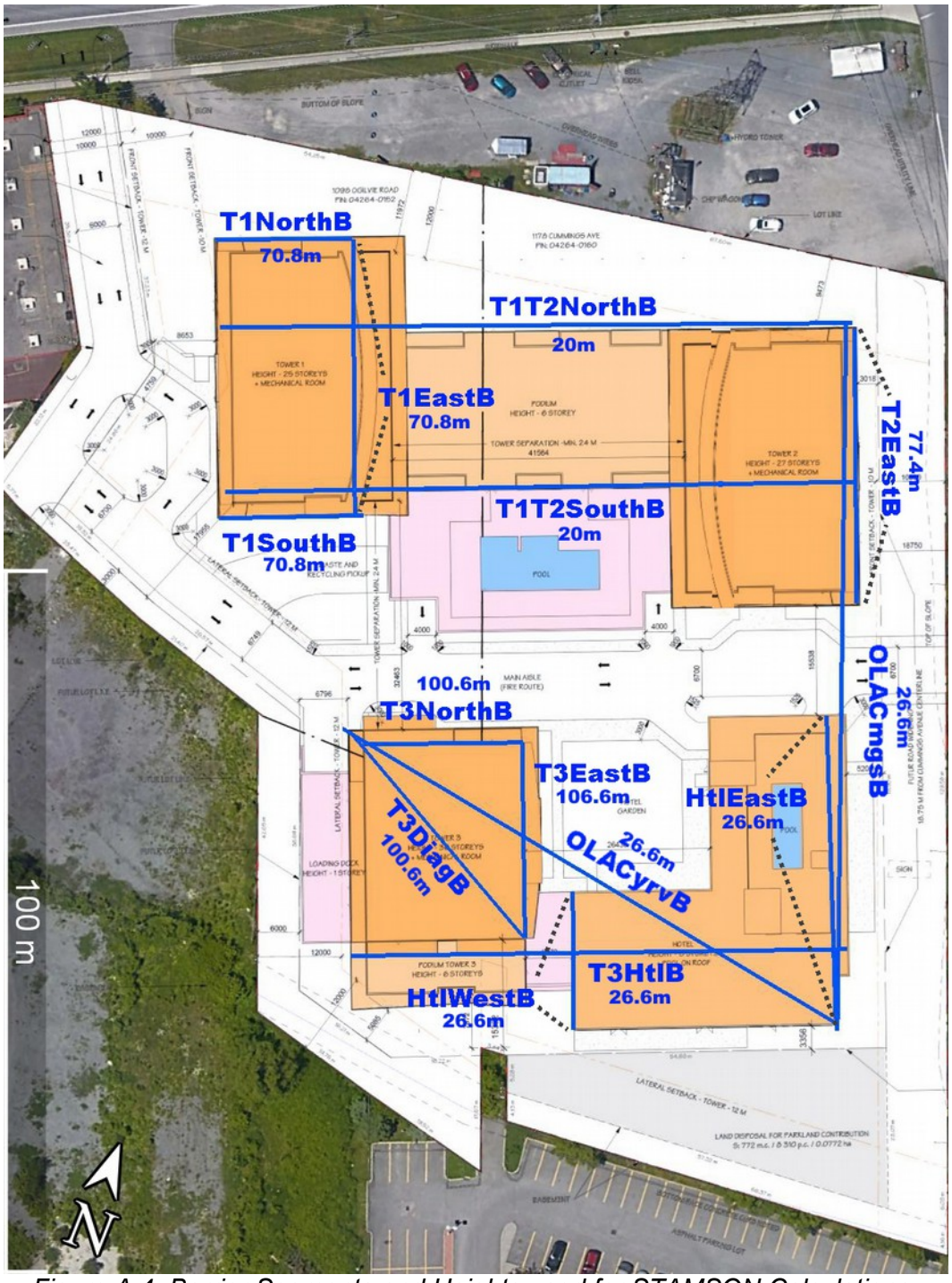

Figure A.4: Barrier Segments and Heights used for STAMSON Calculations.

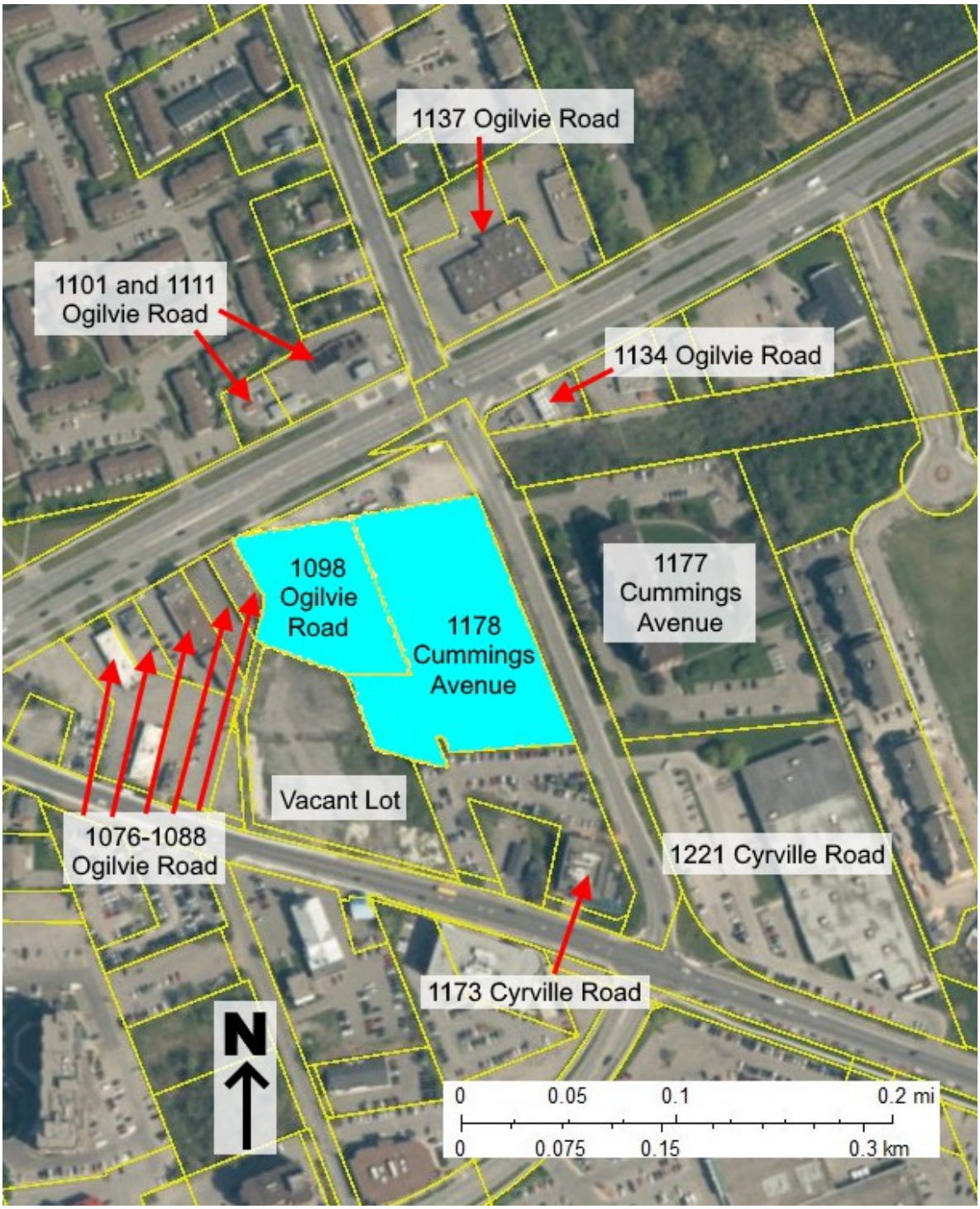

Figure A.5: Site and Surrounding Properties with Potential Off-Site Noise Sources

APPENDIX B: SUMMARY OF STAMSON INPUT DATA

(attachment to Integral DX Engineering Ltd. report dated 4 November 2019)

Table 5.1: Summary of STAMSON Input Data for Tower 1

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
T1A02 (6.9 m) T1A07 (22.1 m) T1A27 (81.8 m)	CyrvilleN2	39 to 68	162.1	70	(none)	N/A	N/A	N/A	N/A
	CummingsN	-72 to -34	102.4	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-20 to -1	111.7	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	-85 to 90	36.9	70	(none)	N/A	N/A	N/A	N/A
	OgilvieWB	-83 to 90	47.6	70	(none)	N/A	N/A	N/A	N/A
T1B02 (6.9 m) T1B07 (22.1 m) T1B27 (81.8 m)	CyrvilleN1	-38 to 27	147.1	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN2	15 to 68	159.4	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	-84 to 6	38.7	70	(none)	N/A	N/A	N/A	N/A
	OgilvieWB	-83 to 6	49.4	70	(none)	N/A	N/A	N/A	N/A
T1C02 (6.9 m) T1C07 (22.1 m) T1C27 (81.8 m)	417WB1	-5 to 75	490.7	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-46 to 7	489.4	70	T3NorthB	-46 to -33	30.2	106.6	70
	CyrvilleN1	-61 to 40	119.2	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN2	28 to 40	137.6	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-88 to -65	104.7	70	T3NorthB	-88 to -71	4.5	106.6	70
	CummingsS	0 to 64	110.3	70	T2EastB	0 to 8	88.4	77.4	70
T1D07 (22.1 m)	CyrvilleN1	-55 to -39	159.8	70	T3NorthB	-55 to -39	47.9	106.6	70
	CyrvilleS	-87 to -59	144.5	70	T3HtlB	-77 to -59	51.9	26.6	70
	CummingsN	-75 to -40	83.8	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-25 to 71	93.1	70	T2EastB	9 to 35	71.2	77.4	70
	OgilvieEB	5 to 90	40.7	70	(none)	N/A	N/A	N/A	N/A
	OgilvieWB	5 to 90	51.4	70	(none)	N/A	N/A	N/A	N/A

Table 5.2: Summary of STAMSON Input Data for Tower 2

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
T2A02 (6.9 m) T2A07 (22.1 m) T2A27 (81.8 m)	CyrvilleN2	39 to 65	220.3	70	T1EastB	39 to 50	57.1	70.8	70
	CummingsN	-87 to -79	15.9	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-65 to -1	25.3	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	-83 to 90	58.4	70	T1NorthB	-76 to -74	20.5	70.8	70
	OgilvieWB	-82 to 90	69.1	70	T1NorthB	-76 to -74	20.4	70.8	70
T2B02 (6.9 m) T2B07 (22.1 m) T2B27 (81.8 m)	CyrvilleN1	-40 to -39	191.7	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-86 to -44	180.6	70	(none)	N/A	N/A	N/A	N/A
	CummingsN	-88 to -82	15	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-70 to 85	21.4	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	5 to 90	63.8	70	(none)	N/A	N/A	N/A	N/A
	OgilvieWB	5 to 90	74.5	70	(none)	N/A	N/A	N/A	N/A
T2C02 (6.9 m) T2C07 (22.1 m) T2C27 (81.8 m)	417WB2	-40 to -5	486.1	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-41 to -39	166.7	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-86 to -45	156.9	70	(none)	N/A	N/A	N/A	N/A
	CummingsN	-88 to -84	15	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-77 to 84	21.7	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	5 to 90	95.3	70	(none)	N/A	N/A	N/A	N/A
	OgilvieWB	5 to 90	106	70	(none)	N/A	N/A	N/A	N/A
T2D07 (22.1 m)	417WB1	5 to 75	500	70	T3HtlB	5 to 40	57.6	26.6	70
	417WB2	-41 to 17	482.9	70	T3HtlB	-3 to 17	52.2	26.6	70
	CyrvilleN1	-41 to 47	163.6	70	OLACyrvB	-36 to 38	53.7	26.6	70
	CyrvilleN2	35 to 40	196.9	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-86 to -45	153.8	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	1 to 84	22.8	70	(none)	N/A	N/A	N/A	N/A

Table 5.3: Summary of STAMSON Input Data for Tower 3

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
T3A02 (6.9 m) T3A07 (22.1 m) T3A27 (81.8 m) T3A35	417EB1	74 to 81	490.4	70	(none)	N/A	N/A	N/A	N/A
	417WB1	74 to 81	466.6	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN2	39 to 74	132.7	70	(none)	N/A	N/A	N/A	N/A
	CummingsN	-78 to -59	81.5	70	T1T2SouthB	-78 to -59	24.4	20	70
	CummingsS	-50 to 0	91.7	70	T1T2SouthB	-50 to -27	24.8	20	70
	OgilvieEB	-75 to 90	108.9	70	T1T2SouthB	-25 to 69	32	20	70
	OgilvieWB	-73 to 90	119.6	70	T1T2SouthB	-25 to 69	32	20	70
T3B02 (6.9 m) T3B07 (22.1 m) T3B33 (96.2 m) T3B35 (105.1 m)	417EB1	-4 to 81	487.6	70	(none)	N/A	N/A	N/A	N/A
	417EB2	-2 to 8	484	70	(none)	N/A	N/A	N/A	N/A
	417WB1	-2 to 81	463.8	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-3 to 9	458.3	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-37 to 52	103.6	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN2	40 to 75	129.1	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	-75 to 7	110.7	70	T1SouthB	-24 to 7	33.2	70.8	70
	OgilvieWB	-73 to 7	121.4	70	T1SouthB	-24 to 7	33.2	70.8	70
T3C02 (6.9 m) T3C06 (19.2 m)	417EB1	-3 to 75	452.1	70	(none)	N/A	N/A	N/A	N/A
	417EB2	-49 to 10	446.3	70	(none)	N/A	N/A	N/A	N/A
	417WB1	-1 to 75	428.3	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-49 to 11	420.7	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-64 to 53	76.2	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-88 to -68	65.5	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	1 to 60	90.9	70	HtlWestB	1 to 7	28.1	26.6	70
T3D27 (81.8 m) T3D35 (105.1 m)	417EB1	-3 to 75	459.3	70	(none)	N/A	N/A	N/A	N/A
	417EB2	-48 to 9	453.7	70	(none)	N/A	N/A	N/A	N/A
	417WB1	-1 to 75	435.5	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-48 to 11	428.2	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-63 to 52	82	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-88 to -67	71	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	1 to 61	90.9	70	HtlWestB	1 to 21	28.1	26.6	70
T3E35 (105.1 m)	417EB2	-46 to -4	459.9	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-47 to -5	434.7	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-56 to -39	99.7	70	(none)	N/A	N/A	N/A	N/A

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
	CyrvilleS	-88 to -60	89.6	70	(none)	N/A	N/A	N/A	N/A
	CummingsN	-82 to -71	58.1	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-64 to 68	68.6	70	HtlEastB	-35 to 18	43	26.6	70
	OgilvieEB	5 to 90	138.6	70	T1T2NorthB	5 to 34	84.9	20	70
	OgilvieWB	5 to 90	149.3	70	T1T2NorthB	5 to 34	84.9	20	70

Table 5.4: Summary of STAMSON Input Data for Hotel

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
HA02 (6.9 m) HA08 (25.1 m)	417EB1	1 to 75	457.3	70	(none)	N/A	N/A	N/A	N/A
	417EB2	-47 to 13	444.7	70	(none)	N/A	N/A	N/A	N/A
	417WB1	3 to 75	433.4	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-47 to 15	419.7	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-55 to 52	92.5	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-88 to -59	83.4	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	1 to 69	60.6	70	(none)	N/A	N/A	N/A	N/A
HB02 (6.9 m) HB08 (25.1 m)	417EB2	-44 to -4	456.8	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-44 to -5	432.4	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-42 to -39	123.7	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-87 to -46	116	70	(none)	N/A	N/A	N/A	N/A
	CummingsN	-88 to -86	15	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-81 to 82	23.1	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	5 to 90	148.7	70	(none)	N/A	N/A	N/A	N/A
	OgilvieWB	5 to 90	159.3	70	(none)	N/A	N/A	N/A	N/A
HC02 (6.9 m) HC08 (25.1 m)	417EB2	-42 to -4	489.4	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-42 to -5	464.9	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-41 to -39	149.1	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleS	-87 to -45	140.1	70	(none)	N/A	N/A	N/A	N/A
	CummingsN	-88 to -85	15	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-78 to 83	23.4	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	5 to 90	116.1	70	(none)	N/A	N/A	N/A	N/A
	OgilvieWB	5 to 90	126.8	70	(none)	N/A	N/A	N/A	N/A
HD08 (25.1 m)	417WB1	75 to 81	485.9	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN2	40 to 70	184.4	70	T1EastB	63 to 70	21.2	70.8	70
	CummingsN	-88 to -83	15.7	70	T2EastB	-87 to -83	3.5	77.4	70
	CummingsS	-77 to 0	25.9	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	-76 to 90	113.8	70	T1T2NorthB	-52 to 9	60.1	20	70
	OgilvieWB	-75 to 90	124.5	70	T1T2NorthB	-52 to 9	60	20	70
HE08 (25.1 m)	417EB1	0 to 82	458.4	70	(none)	N/A	N/A	N/A	N/A
	417EB2	-3 to 13	446.4	70	(none)	N/A	N/A	N/A	N/A
	417WB1	3 to 82	434.5	70	(none)	N/A	N/A	N/A	N/A

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
	417WB2	-4 to 14	421.3	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-38 to 63	92.6	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN2	51 to 76	128.6	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	-70 to 6	153	70	T1T2NorthB	-21 to 6	99.2	20	70
	OgilvieWB	-69 to 6	163.7	70	T1T2NorthB	-21 to 6	99.2	20	70

Table 5.5: Summary of STAMSON Input Data for Outdoor Living Areas

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
OLAP1 (6.6 m)	417WB2	-43 to 11	493	70	T3HtlB	-39 to 11	62.3	26.6	70
	CyrvilleN1	-51 to 43	146.7	70	OLACyrvB	-51 to 5	36.8	26.6	70
	CyrvilleN2	31 to 70	171.5	70	T1EastB	40 to 70	7	70.8	70
	CyrvilleS	-87 to -55	134.3	70	T3HtlB	-87 to -55	41.6	26.6	70
	CummingsN	-81 to -62	56.9	70	T1T2NorthB	-81 to -62	46	20	70
	CummingsS	-50 to 28	66.7	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	28 to 74	66.7	70	HtlEastB	36 to 74	41.1	26.6	70
	OgilvieEB	-79 to 90	80.7	70	T1T2SouthB	-79 to 90	3.8	20	70
	OgilvieWB	-78 to 90	91.4	70	T1T2SouthB	-78 to 90	3.8	20	70
OLAP2 (28.1 m)	417EB1	3 to 81	493.2	70	T3HtlB	3 to 58	24.8	26.6	70
	417EB2	-43 to 16	475.5	70	T3HtlB	-29 to 16	19.7	26.6	70
	417WB1	5 to 81	469.2	70	T3HtlB	5 to 58	24.8	26.6	70
	417WB2	-43 to 17	450.9	70	T3HtlB	-30 to 17	20.1	26.6	70
	CyrvilleN1	-44 to 55	133.1	70	OLACyrvB	-44 to 55	23.2	26.6	70
	CyrvilleN2	43 to 72	169.6	70	T3EastB	43 to 57	30.3	106.6	70
	CyrvilleS	-87 to -48	124.2	70	T3HtlB	-68 to -48	31.5	26.6	70
	CummingsN	EXCLUDE to -82	21.8	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-76 to 80	32.2	70	HtlEastB	-69 to 76	6.6	26.6	70
	OgilvieEB	-74 to 90	128.7	70	T1T2NorthB	-43 to 13	74.9	20	70
	OgilvieWB	-73 to 90	139.3	70	T1T2NorthB	-43 to 13	74.9	20	70
OLAG (1.5 m)	417EB1	0 to 81	489.5	70	T3HtlB	0 to 81	21.2	26.6	70
	417EB2	-45 to 13	477.1	70	T3HtlB	-45 to 13	21.3	26.6	70
	417WB1	2 to 81	465.6	70	T3HtlB	2 to 81	21.2	26.6	70
	417WB2	-45 to 14	452.1	70	T3HtlB	-45 to 14	21.3	26.6	70
	CyrvilleN1	-51 to 54	120.7	70	OLACyrvB	-51 to 54	10.8	26.6	70
	CyrvilleN2	42 to 73	153.3	70	T3EastB	42 to 72	14	106.6	70
	CyrvilleS	-87 to -55	110.5	70	OLACyrvB	-86 to -55	10.6	26.6	70
	CummingsS	-65 to 73	55.8	70	OLACmgsB	-65 to 73	31.8	26.6	70
	OgilvieEB	-74 to 90	123.4	70	T1T2SouthB	-74 to 90	46.5	20	70
	OgilvieWB	-73 to 90	134.1	70	T1T2SouthB	-73 to 90	46.5	20	70
OLAPK	417EB1	5 to 82	452.7	70	(none)	N/A	N/A	N/A	N/A

	Roadway				Barrier				
POA (height)	Segment ID	Exposure Angles (deg)	Distance to POA (m)	Ground Elevation (m)	Barrier ID (Figure A.4)	Exposure Angles (deg)	Distance to POA (m)	Height (m)	Ground Elevation (m)
(1.5 m)	417EB2	-46 to 18	432.7	70	(none)	N/A	N/A	N/A	N/A
	417WB1	8 to 82	428.7	70	(none)	N/A	N/A	N/A	N/A
	417WB2	-46 to 19	408.2	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN1	-44 to 65	101.6	70	(none)	N/A	N/A	N/A	N/A
	CyrvilleN2	53 to 75	145	70	HtlWestB	62 to 75	11.3	26.6	70
	CyrvilleS	-88 to -49	94.6	70	(none)	N/A	N/A	N/A	N/A
	CummingsS	-80 to 79	28.5	70	(none)	N/A	N/A	N/A	N/A
	OgilvieEB	-70 to 90	171.9	70	T3HtlB	-64 to 17	27.7	26.6	70
	OgilvieWB	-68 to 90	182.6	70	T3HtlB	-64 to 17	27.7	26.6	70

APPENDIX C: STAMSON 5.02 OUTPUTS DATED 26 SEPTEMBER 2019

(attachment to Integral DX Engineering Ltd. report dated 4 November 2019)

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:00:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1A02.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 north faade near west corner.


Road data, segment # 1: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  39.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 162.10 / 162.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-----------------------------------------------
Angle1   Angle2           : -72.00 deg   -34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 102.40 / 102.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CummingsS (day/night)
-----------------------------------------------
```

```
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -20.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 111.70 / 111.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 4: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -85.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  36.90 / 36.90  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00
```

```
Data for Segment # 5: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           : -83.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  47.60 / 47.60  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    53.77 !    53.77
 2.CummingsN        !     1.50 !    50.62 !    50.62
 3.CummingsS        !     1.50 !    50.00 !    50.00
 4.OgilvieEB        !     1.50 !    66.63 !    66.63
 5.OgilvieWB        !     1.50 !    65.48 !    65.48
--------------------+----------+----------+----------
                      Total                  69.34 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    46.17 !    46.17
 2.CummingsN        !     1.50 !    43.02 !    43.02
 3.CummingsS        !     1.50 !    42.40 !    42.40
 4.OgilvieEB        !     1.50 !    59.04 !    59.04
 5.OgilvieWB        !     1.50 !    57.88 !    57.88
--------------------+----------+----------+----------
                      Total                  61.74 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 69.34
                           (NIGHT): 61.74
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:00:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1A07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 north faade near west corner.


Road data, segment # 1: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  39.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 162.10 / 162.10 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-----------------------------------------------
Angle1   Angle2           : -72.00 deg   -34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 102.40 / 102.40 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)
```

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -20.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 111.70 / 111.70 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -85.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  36.90 / 36.90  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -83.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
```

```
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  47.60 / 47.60  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.CyrvilleN2	1.50	53.77	53.77
2.CummingsN	1.50	50.62	50.62
3.CummingsS	1.50	50.00	50.00
4.OgilvieEB	1.50	66.63	66.63
5.OgilvieWB	1.50	65.48	65.48
Total			69.34 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.CyrvilleN2	1.50	46.17	46.17
2.CummingsN	1.50	43.02	43.02
3.CummingsS	1.50	42.40	42.40
4.OgilvieEB	1.50	59.04	59.04
5.OgilvieWB	1.50	57.88	57.88
Total			61.74 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 69.34
                           (NIGHT): 61.74
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:00:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1A25.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 north faade near west corner.


Road data, segment # 1: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  39.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 162.10 / 162.10 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-----------------------------------------------
Angle1   Angle2           : -72.00 deg   -34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 102.40 / 102.40 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
```

```
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -20.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 111.70 / 111.70 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -85.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  36.90 / 36.90  m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -83.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
```

```
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  47.60 / 47.60  m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.CyrvilleN2	1.50	53.77	53.77
2.CummingsN	1.50	50.62	50.62
3.CummingsS	1.50	50.00	50.00
4.OgilvieEB	1.50	66.63	66.63
5.OgilvieWB	1.50	65.48	65.48
Total			69.34 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.CyrvilleN2	1.50	46.17	46.17
2.CummingsN	1.50	43.02	43.02
3.CummingsS	1.50	42.40	42.40
4.OgilvieEB	1.50	59.04	59.04
5.OgilvieWB	1.50	57.88	57.88
Total			61.74 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 69.34
                           (NIGHT): 61.74
```

```
STAMSON 5.0         SUMMARY REPORT         Date: 02-10-2019 13:00:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1B02.TE              Time Period: Day/Night 16/8 hours
Description: Tower 1 west faade near north corner.

Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -38.00 deg   27.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 147.10 / 147.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  15.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 159.40 / 159.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -84.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  38.70 / 38.70  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 4: OgilvieWB (day/night)
-------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -83.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  49.40 / 49.40  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    57.70 !    57.70
 2.CyrvilleN2       !     1.50 !    56.46 !    56.46
 3.OgilvieEB        !     1.50 !    63.54 !    63.54
 4.OgilvieWB        !     1.50 !    62.43 !    62.43
--------------------+----------+----------+----------
                      Total                  67.02 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    50.10 !    50.10
 2.CyrvilleN2       !     1.50 !    48.86 !    48.86
 3.OgilvieEB        !     1.50 !    55.94 !    55.94
 4.OgilvieWB        !     1.50 !    54.83 !    54.83
--------------------+----------+----------+----------
                      Total                  59.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.02
                           (NIGHT): 59.42
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:01:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1B07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 west faade near north corner.


Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -38.00 deg   27.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 147.10 / 147.10 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  15.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 159.40 / 159.40 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -84.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  38.70 / 38.70  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 4: OgilvieWB (day/night)
-------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -83.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  49.40 / 49.40  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    57.70 !    57.70
 2.CyrvilleN2       !     1.50 !    56.46 !    56.46
 3.OgilvieEB        !     1.50 !    63.54 !    63.54
 4.OgilvieWB        !     1.50 !    62.43 !    62.43
--------------------+----------+----------+----------
                      Total                  67.02 dBA
Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    50.10 !    50.10
 2.CyrvilleN2       !     1.50 !    48.86 !    48.86
 3.OgilvieEB        !     1.50 !    55.94 !    55.94
 4.OgilvieWB        !     1.50 !    54.83 !    54.83
--------------------+----------+----------+----------
                      Total                  59.42 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 67.02
                           (NIGHT): 59.42
```

```
STAMSON 5.0         SUMMARY REPORT         Date: 02-10-2019 13:01:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1B25.TE              Time Period: Day/Night 16/8 hours
Description: Tower 1 west faade near north corner.


Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -38.00 deg   27.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 147.10 / 147.10 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  15.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 159.40 / 159.40 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
```

```
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -84.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  38.70 / 38.70  m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 4: OgilvieWB (day/night)
-------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -83.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  49.40 / 49.40  m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    57.70 !    57.70
 2.CyrvilleN2       !     1.50 !    56.46 !    56.46
 3.OgilvieEB        !     1.50 !    63.54 !    63.54
 4.OgilvieWB        !     1.50 !    62.43 !    62.43
--------------------+----------+----------+----------
                      Total                  67.02 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    50.10 !    50.10
 2.CyrvilleN2       !     1.50 !    48.86 !    48.86
 3.OgilvieEB        !     1.50 !    55.94 !    55.94
 4.OgilvieWB        !     1.50 !    54.83 !    54.83
--------------------+----------+----------+----------
                      Total                  59.42 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.02
                           (NIGHT): 59.42
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:01:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1C02.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 south faade near west corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  -5.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 490.70 / 490.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -46.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 489.40 / 489.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : -33.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  30.20 / 30.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

```
Road data, segment # 3: CyrvilleN1 (day/night)
------------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
------------------------------------------------
Angle1   Angle2           : -61.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 119.20 / 119.20 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CyrvilleN2 (day/night)
------------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN2 (day/night)
------------------------------------------------
Angle1   Angle2           :  28.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 137.60 / 137.60 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CyrvilleS (day/night)
------------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
```

```
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 104.70 / 104.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -88.00 deg   Angle2 : -71.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 6: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   64.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.30 / 110.30 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 8.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :  88.40 / 88.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417WB1           !     1.50 !    55.83 !    55.83
 2.417WB2           !     1.50 !    52.90 !    52.90
 3.CyrvilleN1       !     1.50 !    60.53 !    60.53
 4.CyrvilleN2       !     1.50 !    50.65 !    50.65
 5.CyrvilleS        !     1.50 !    46.91 !    46.91
 6.CummingsS        !     1.50 !    54.75 !    54.75
--------------------+----------+----------+----------
                      Total                  63.37 dBA
```

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB1	1.49	48.23	48.23
2.417WB2	1.49	45.30	45.30
3.CyrvilleN1	1.50	52.93	52.93
4.CyrvilleN2	1.50	43.05	43.05
5.CyrvilleS	1.50	39.31	39.31
6.CummingsS	1.50	47.15	47.15
Total			55.77 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.37
(NIGHT): 55.77

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:01:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1C07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 south faade near west corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  -5.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 490.70 / 490.70 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -46.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 489.40 / 489.40 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : -33.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  30.20 / 30.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

```
Road data, segment # 3: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
--------------------------------------------
Angle1   Angle2           : -61.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 119.20 / 119.20 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CyrvilleN2 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN2 (day/night)
--------------------------------------------
Angle1   Angle2           :  28.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 137.60 / 137.60 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
```

```
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 104.70 / 104.70 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -88.00 deg   Angle2 : -71.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 6: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   64.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.30 / 110.30 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 8.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :  88.40 / 88.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417WB1           !     1.50 !    55.83 !    55.83
 2.417WB2           !     1.50 !    52.90 !    52.90
 3.CyrvilleN1       !     1.50 !    60.53 !    60.53
 4.CyrvilleN2       !     1.50 !    50.65 !    50.65
 5.CyrvilleS        !     1.50 !    46.91 !    46.91
 6.CummingsS        !     1.50 !    54.75 !    54.75
--------------------+----------+----------+----------
                      Total                  63.37 dBA
```

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB1	1.49	48.23	48.23
2.417WB2	1.49	45.30	45.30
3.CyrvilleN1	1.50	52.93	52.93
4.CyrvilleN2	1.50	43.05	43.05
5.CyrvilleS	1.50	39.31	39.31
6.CummingsS	1.50	47.15	47.15
Total			55.77 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.37
(NIGHT): 55.77

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:01:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1C25.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 south faade near west corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  -5.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 490.70 / 490.70 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -46.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 489.40 / 489.40 m
Receiver height           :  75.30 / 75.30  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : -33.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  30.20 / 30.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

```
Road data, segment # 3: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
--------------------------------------------
Angle1   Angle2           : -61.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 119.20 / 119.20 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CyrvilleN2 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN2 (day/night)
--------------------------------------------
Angle1   Angle2           :  28.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 137.60 / 137.60 m
Receiver height           :  75.30 / 75.30  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
```

```
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 104.70 / 104.70 m
Receiver height           :  75.30 / 75.30  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -88.00 deg   Angle2 : -71.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :   4.50 / 4.50   m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 6: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   0.00 deg   64.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.30 / 110.30 m
Receiver height           :  75.30 / 75.30  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 8.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :  88.40 / 88.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417WB1           !     1.50 !    55.83 !    55.83
 2.417WB2           !     1.50 !    52.90 !    52.90
 3.CyrvilleN1       !     1.50 !    60.53 !    60.53
 4.CyrvilleN2       !     1.50 !    50.65 !    50.65
 5.CyrvilleS        !     1.50 !    46.91 !    46.91
 6.CummingsS        !     1.50 !    54.75 !    54.75
--------------------+----------+----------+----------
                      Total                  63.37 dBA
```

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB1	1.49	48.23	48.23
2.417WB2	1.49	45.30	45.30
3.CyrvilleN1	1.50	52.93	52.93
4.CyrvilleN2	1.50	43.05	43.05
5.CyrvilleS	1.50	39.31	39.31
6.CummingsS	1.50	47.15	47.15
Total			55.77 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.37
(NIGHT): 55.77

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:04:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T1D07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 1 east faade near north corner.


Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -55.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 159.80 / 159.80 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -55.00 deg   Angle2 : -39.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  47.90 / 47.90  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 2: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-----------------------------------------------
Angle1   Angle2           : -87.00 deg   -59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 144.50 / 144.50 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -77.00 deg   Angle2 : -59.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  51.90 / 51.90  m
```

```
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 3: CummingsN (day/night)
----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
--------------------------------------------
Angle1   Angle2           : -75.00 deg   -40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  83.80 / 83.80  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsS (day/night)
----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
--------------------------------------------
Angle1   Angle2           : -25.00 deg   71.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  93.10 / 93.10  m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   9.00 deg   Angle2 : 35.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :  71.20 / 71.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: OgilvieEB (day/night)
----------------------------------------------
```

```
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 5: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  40.70 / 40.70  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 6: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  51.40 / 51.40  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !    (m)   !  (dBA)   !  (dBA)
-------------------+----------+----------+----------
 1.CyrvilleN1      !     1.50 !    31.25 !    31.25
 2.CyrvilleS       !     1.50 !    47.79 !    47.79
 3.CummingsN       !     1.50 !    51.13 !    51.13
 4.CummingsS       !     1.50 !    56.47 !    56.47
 5.OgilvieEB       !     1.50 !    63.07 !    63.07
 6.OgilvieWB       !     1.50 !    62.06 !    62.06
-------------------+----------+----------+----------
                     Total                 66.30 dBA
```

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.CyrvilleN1	1.50	23.65	23.65
2.CyrvilleS	1.50	40.19	40.19
3.CummingsN	1.50	43.53	43.53
4.CummingsS	1.50	48.87	48.87
5.OgilvieEB	1.50	55.48	55.48
6.OgilvieWB	1.50	54.46	54.46
Total			58.71 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.30
(NIGHT): 58.71

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:01:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2A02.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 north faade near east corner.


Road data, segment # 1: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  39.00 deg   65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 220.30 / 220.30 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  39.00 deg   Angle2 : 50.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  57.10 / 57.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 2: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-----------------------------------------------
Angle1   Angle2           : -87.00 deg   -79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.90 / 15.90  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


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

```
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
-----------------------------------------------
Angle1   Angle2           : -65.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  25.30 / 25.30  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 4: OgilvieEB (day/night)
-----------------------------------------------
Angle1   Angle2           : -83.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.40 / 58.40  m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -76.00 deg   Angle2 : -74.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.50 / 20.50  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: OgilvieWB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 5: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -82.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  69.10 / 69.10  m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -76.00 deg   Angle2 : -74.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.40 / 20.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    49.61 !    49.61
 2.CummingsN        !     1.50 !    51.94 !    51.94
 3.CummingsS        !     1.50 !    61.72 !    61.72
 4.OgilvieEB        !     1.50 !    64.54 !    64.54
 5.OgilvieWB        !     1.50 !    63.78 !    63.78
--------------------+----------+----------+----------
                      Total                 68.43 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    42.01 !    42.01
 2.CummingsN        !     1.50 !    44.34 !    44.34
 3.CummingsS        !     1.50 !    54.12 !    54.12
 4.OgilvieEB        !     1.50 !    56.94 !    56.94
 5.OgilvieWB        !     1.50 !    56.19 !    56.19
--------------------+----------+----------+----------
                      Total                 60.83 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 68.43
                           (NIGHT): 60.83
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:02:03
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2A07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 north faade near east corner.


Road data, segment # 1: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  39.00 deg   65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 220.30 / 220.30 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  39.00 deg   Angle2 : 50.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  57.10 / 57.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 2: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-----------------------------------------------
Angle1   Angle2           : -87.00 deg   -79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.90 / 15.90  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


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

```
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
-----------------------------------------------
Angle1   Angle2           : -65.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  25.30 / 25.30  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 4: OgilvieEB (day/night)
-----------------------------------------------
Angle1   Angle2           : -83.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.40 / 58.40  m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -76.00 deg   Angle2 : -74.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.50 / 20.50  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: OgilvieWB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 5: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           : -82.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  69.10 / 69.10  m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -76.00 deg   Angle2 : -74.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.40 / 20.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    49.61 !    49.61
 2.CummingsN        !     1.50 !    51.94 !    51.94
 3.CummingsS        !     1.50 !    61.72 !    61.72
 4.OgilvieEB        !     1.50 !    64.54 !    64.54
 5.OgilvieWB        !     1.50 !    63.78 !    63.78
--------------------+----------+----------+----------
                      Total                 68.43 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    42.01 !    42.01
 2.CummingsN        !     1.50 !    44.34 !    44.34
 3.CummingsS        !     1.50 !    54.12 !    54.12
 4.OgilvieEB        !     1.50 !    56.94 !    56.94
 5.OgilvieWB        !     1.50 !    56.19 !    56.19
--------------------+----------+----------+----------
                      Total                 60.83 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 68.43
                           (NIGHT): 60.83
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:02:12
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2A27.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 north faade near east corner.


Road data, segment # 1: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  39.00 deg   65.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 220.30 / 220.30 m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  39.00 deg   Angle2 : 50.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  57.10 / 57.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 2: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-----------------------------------------------
Angle1   Angle2           : -87.00 deg   -79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.90 / 15.90  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


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

```
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
---------------------------------------------
Angle1   Angle2           : -65.00 deg   -1.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  25.30 / 25.30  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 4: OgilvieEB (day/night)
---------------------------------------------
Angle1   Angle2           : -83.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.40 / 58.40  m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -76.00 deg   Angle2 : -74.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.50 / 20.50  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 5: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -82.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  69.10 / 69.10  m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -76.00 deg   Angle2 : -74.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.40 / 20.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    49.66 !    49.66
 2.CummingsN        !     1.50 !    51.94 !    51.94
 3.CummingsS        !     1.50 !    61.72 !    61.72
 4.OgilvieEB        !     1.50 !    64.54 !    64.54
 5.OgilvieWB        !     1.50 !    63.79 !    63.79
--------------------+----------+----------+----------
                      Total                 68.43 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN2       !     1.50 !    42.06 !    42.06
 2.CummingsN        !     1.50 !    44.34 !    44.34
 3.CummingsS        !     1.50 !    54.12 !    54.12
 4.OgilvieEB        !     1.50 !    56.94 !    56.94
 5.OgilvieWB        !     1.50 !    56.19 !    56.19
--------------------+----------+----------+----------
                      Total                 60.83 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 68.43
                           (NIGHT): 60.83
```

```
STAMSON 5.0         SUMMARY REPORT         Date: 02-10-2019 13:02:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2B02.TE              Time Period: Day/Night 16/8 hours
Description: Tower 2 east faade near north corner.


Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -40.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 191.70 / 191.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-----------------------------------------------
Angle1   Angle2           : -86.00 deg   -44.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 180.60 / 180.60 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -70.00 deg   85.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.40 / 21.40  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
```

```
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  63.80 / 63.80  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  74.50 / 74.50  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !   (m)    !  (dBA)   !  (dBA)
-------------------+----------+----------+----------
 1.CyrvilleN1      !     1.50 !    38.42 !    38.42
 2.CyrvilleS       !     1.50 !    52.87 !    52.87
 3.CummingsN       !     1.50 !    50.95 !    50.95
 4.CummingsS       !     1.50 !    66.29 !    66.29
 5.OgilvieEB       !     1.50 !    61.12 !    61.12
 6.OgilvieWB       !     1.50 !    60.45 !    60.45
-------------------+----------+----------+----------
                     Total                  68.44 dBA

Result summary (night)
----------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !   (m)    !  (dBA)   !  (dBA)
-------------------+----------+----------+----------
 1.CyrvilleN1      !     1.50 !    30.82 !    30.82
 2.CyrvilleS       !     1.50 !    45.27 !    45.27
 3.CummingsN       !     1.50 !    43.35 !    43.35
 4.CummingsS       !     1.50 !    58.69 !    58.69
 5.OgilvieEB       !     1.50 !    53.52 !    53.52
 6.OgilvieWB       !     1.50 !    52.85 !    52.85
-------------------+----------+----------+----------
                     Total                  60.84 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 68.44
                           (NIGHT): 60.84
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:02:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2B07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 east faade near north corner.


Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -40.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 191.70 / 191.70 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-----------------------------------------------
Angle1   Angle2           : -86.00 deg   -44.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 180.60 / 180.60 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -70.00 deg   85.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.40 / 21.40  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
```

```
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  63.80 / 63.80  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  74.50 / 74.50  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    38.42 !    38.42
 2.CyrvilleS        !     1.50 !    52.87 !    52.87
 3.CummingsN        !     1.50 !    50.95 !    50.95
 4.CummingsS        !     1.50 !    66.29 !    66.29
 5.OgilvieEB        !     1.50 !    61.12 !    61.12
 6.OgilvieWB        !     1.50 !    60.45 !    60.45
--------------------+----------+----------+----------
                      Total                  68.44 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    30.82 !    30.82
 2.CyrvilleS        !     1.50 !    45.27 !    45.27
 3.CummingsN        !     1.50 !    43.35 !    43.35
 4.CummingsS        !     1.50 !    58.69 !    58.69
 5.OgilvieEB        !     1.50 !    53.52 !    53.52
 6.OgilvieWB        !     1.50 !    52.85 !    52.85
--------------------+----------+----------+----------
                      Total                  60.84 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 68.44
                           (NIGHT): 60.84
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:02:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2B27.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 east faade near north corner.


Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -40.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 191.70 / 191.70 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-----------------------------------------------
Angle1   Angle2           : -86.00 deg   -44.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 180.60 / 180.60 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsS (day/night)
-------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -70.00 deg   85.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.40 / 21.40  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: OgilvieEB (day/night)
-------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
```

```
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  63.80 / 63.80  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  74.50 / 74.50  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    38.42 !    38.42
 2.CyrvilleS        !     1.50 !    52.87 !    52.87
 3.CummingsN        !     1.50 !    50.95 !    50.95
 4.CummingsS        !     1.50 !    66.29 !    66.29
 5.OgilvieEB        !     1.50 !    61.12 !    61.12
 6.OgilvieWB        !     1.50 !    60.45 !    60.45
--------------------+----------+----------+----------
                      Total                  68.44 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.CyrvilleN1       !     1.50 !    30.82 !    30.82
 2.CyrvilleS        !     1.50 !    45.27 !    45.27
 3.CummingsN        !     1.50 !    43.35 !    43.35
 4.CummingsS        !     1.50 !    58.69 !    58.69
 5.OgilvieEB        !     1.50 !    53.52 !    53.52
 6.OgilvieWB        !     1.50 !    52.85 !    52.85
--------------------+----------+----------+----------
                      Total                  60.84 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 68.44
                           (NIGHT): 60.84
```

```
STAMSON 5.0         SUMMARY REPORT         Date: 02-10-2019 13:02:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2C02.TE              Time Period: Day/Night 16/8 hours
Description: Tower 2 east faade near south corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: 417WB2 (day/night)
-------------------------------------------
Angle1   Angle2           : -40.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 486.10 / 486.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -41.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 166.70 / 166.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -86.00 deg   -45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 156.90 / 156.90 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -84.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -77.00 deg   84.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.70 / 21.70  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: OgilvieEB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 6: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  95.30 / 95.30  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieWB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 7: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 106.00 / 106.00 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                  !  source  !   Road   !  Total
                  !  height  !   Leq    !   Leq
                  !    (m)   !  (dBA)   !  (dBA)
```

1.417WB2	1.50	52.28	52.28
2.CyrvilleN1	1.50	42.04	42.04
3.CyrvilleS	1.50	53.38	53.38
4.CummingsN	1.50	49.18	49.18
5.CummingsS	1.50	66.39	66.39
6.OgilvieEB	1.50	59.38	59.38
7.OgilvieWB	1.50	58.91	58.91
Total			68.12 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB2	1.49	44.68	44.68
2.CyrvilleN1	1.50	34.44	34.44
3.CyrvilleS	1.50	45.78	45.78
4.CummingsN	1.50	41.59	41.59
5.CummingsS	1.50	58.80	58.80
6.OgilvieEB	1.50	51.78	51.78
7.OgilvieWB	1.50	51.32	51.32
Total			60.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.12
(NIGHT): 60.53

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:03:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2C07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 east faade near south corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -40.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 486.10 / 486.10 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -41.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 166.70 / 166.70 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -86.00 deg   -45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 156.90 / 156.90 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -84.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -77.00 deg   84.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
```

```
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.70 / 21.70  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: OgilvieEB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  95.30 / 95.30  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 106.00 / 106.00 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !    (m)   !  (dBA)   !  (dBA)
-------------------+----------+----------+----------
 1.417WB2          !     1.50 !    52.28 !    52.28
```

2.CyrvilleN1	1.50	42.04	42.04
3.CyrvilleS	1.50	53.38	53.38
4.CummingsN	1.50	49.18	49.18
5.CummingsS	1.50	66.39	66.39
6.OgilvieEB	1.50	59.38	59.38
7.OgilvieWB	1.50	58.91	58.91
Total			68.12 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB2	1.49	44.68	44.68
2.CyrvilleN1	1.50	34.44	34.44
3.CyrvilleS	1.50	45.78	45.78
4.CummingsN	1.50	41.59	41.59
5.CummingsS	1.50	58.80	58.80
6.OgilvieEB	1.50	51.78	51.78
7.OgilvieWB	1.50	51.32	51.32
Total			60.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.12
(NIGHT): 60.53

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:03:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2C27.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 east faade near south corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -40.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 486.10 / 486.10 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
----------------------------------------------
Angle1   Angle2           : -41.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 166.70 / 166.70 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -86.00 deg   -45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 156.90 / 156.90 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -84.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -77.00 deg   84.00 deg
Wood depth                :      0       (No woods.)
```

```
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  21.70 / 21.70  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: OgilvieEB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieEB (day/night)
------------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  95.30 / 95.30  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieWB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieWB (day/night)
------------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 106.00 / 106.00 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !    (m)   !  (dBA)   !  (dBA)
-------------------+----------+----------+----------
```

1.417WB2	1.50	52.28	52.28
2.CyrvilleN1	1.50	42.04	42.04
3.CyrvilleS	1.50	53.38	53.38
4.CummingsN	1.50	49.18	49.18
5.CummingsS	1.50	66.39	66.39
6.OgilvieEB	1.50	59.38	59.38
7.OgilvieWB	1.50	58.91	58.91
Total			68.12 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB2	1.49	44.68	44.68
2.CyrvilleN1	1.50	34.44	34.44
3.CyrvilleS	1.50	45.78	45.78
4.CummingsN	1.50	41.59	41.59
5.CummingsS	1.50	58.80	58.80
6.OgilvieEB	1.50	51.78	51.78
7.OgilvieWB	1.50	51.32	51.32
Total			60.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.12
(NIGHT): 60.53

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:19:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2D07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 south faade near east corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :   5.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 500.00 / 500.00 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   5.00 deg   Angle2 : 40.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  57.60 / 57.60  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -41.00 deg   17.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 482.90 / 482.90 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  -3.00 deg   Angle2 : 17.00 deg
Barrier height            :  26.60 m
```

```
Elevation                 :   0.00 m
Barrier receiver distance :  52.20 / 52.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 3: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
--------------------------------------------
Angle1   Angle2           : -41.00 deg   47.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 163.60 / 163.60 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -36.00 deg   Angle2 : 38.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  53.70 / 53.70  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 4: CyrvilleN2 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
--------------------------------------------
Angle1   Angle2           :  35.00 deg   40.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 196.90 / 196.90 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

```
Road data, segment # 5: CyrvilleS (day/night)
----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -86.00 deg   -45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 153.80 / 153.80 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   1.00 deg   84.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  22.80 / 22.80  m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417WB1           !     1.50 !    52.94 !    52.94
 2.417WB2           !     1.50 !    53.05 !    53.05
 3.CyrvilleN1       !     1.50 !    50.81 !    50.81
 4.CyrvilleN2       !     1.50 !    45.29 !    45.29
 5.CyrvilleS        !     1.50 !    53.46 !    53.46
 6.CummingsS        !     1.50 !    63.30 !    63.30
--------------------+----------+----------+----------
                      Total                  64.64 dBA
```

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB1	1.49	45.35	45.35
2.417WB2	1.49	45.45	45.45
3.CyrvilleN1	1.50	43.21	43.21
4.CyrvilleN2	1.50	37.69	37.69
5.CyrvilleS	1.50	45.87	45.87
6.CummingsS	1.50	55.70	55.70
Total			57.04 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.64
(NIGHT): 57.04

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:19:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T2E07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 2 west faade near north corner.


Road data, segment # 1: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -39.00 deg   37.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 181.30 / 181.30 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -39.00 deg   Angle2 : 6.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  71.40 / 71.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 2: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  25.00 deg   66.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 206.20 / 206.20 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  25.00 deg   Angle2 : 55.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  43.00 / 43.00  m
```

```
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 3: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 3: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -83.00 deg   5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.60 / 58.60  m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -73.00 deg   Angle2 : -68.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.70 / 20.70  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 4: OgilvieWB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 4: OgilvieWB (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  :  69.30 / 69.30  m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -73.00 deg   Angle2 : -69.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  20.70 / 20.70  m
Source elevation          :  70.00 m
```

```
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.CyrvilleN1	1.50	53.64	53.64
2.CyrvilleN2	1.50	48.63	48.63
3.OgilvieEB	1.50	61.39	61.39
4.OgilvieWB	1.50	60.61	60.61
Total			64.52 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.CyrvilleN1	1.50	46.04	46.04
2.CyrvilleN2	1.50	41.03	41.03
3.OgilvieEB	1.50	53.79	53.79
4.OgilvieWB	1.50	53.01	53.01
Total			56.92 dBA

```
TOTAL Leq FROM ALL SOURCES (DAY): 64.52
                           (NIGHT): 56.92
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:03:29
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3A02.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 north faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 490.40 / 490.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 466.60 / 466.60 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
--------------------------------------------
Angle1   Angle2           :  39.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 132.70 / 132.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -78.00 deg   -59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  81.50 / 81.50  m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -78.00 deg   Angle2 : -59.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.40 / 24.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
```

```
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -50.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  91.70 / 91.70  m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -50.00 deg   Angle2 : -27.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.80 / 24.80  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 6: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -75.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 108.90 / 108.90 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 7: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
```

```
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 119.60 / 119.60 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    45.25 !    45.25
 2.417WB1           !     1.50 !    45.46 !    45.46
 3.CyrvilleN2       !     1.50 !    55.46 !    55.46
 4.CummingsN        !     1.50 !    28.77 !    28.77
 5.CummingsS        !     1.50 !    52.42 !    52.42
 6.OgilvieEB        !     1.50 !    58.07 !    58.07
 7.OgilvieWB        !     1.50 !    57.54 !    57.54
--------------------+----------+----------+----------
                      Total                  62.56 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    37.65 !    37.65
 2.417WB1           !     1.49 !    37.86 !    37.86
 3.CyrvilleN2       !     1.50 !    47.86 !    47.86
 4.CummingsN        !     1.50 !    21.17 !    21.17
 5.CummingsS        !     1.50 !    44.82 !    44.82
 6.OgilvieEB        !     1.50 !    50.48 !    50.48
 7.OgilvieWB        !     1.50 !    49.95 !    49.95
--------------------+----------+----------+----------
                      Total                  54.97 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 62.56
                           (NIGHT): 54.97
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:03:42
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3A07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 north faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 490.40 / 490.40 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 466.60 / 466.60 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-------------------------------------------
Angle1   Angle2           :  39.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 132.70 / 132.70 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -78.00 deg   -59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  81.50 / 81.50  m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -78.00 deg   Angle2 : -59.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.40 / 24.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
```

```
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -50.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  91.70 / 91.70  m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -50.00 deg   Angle2 : -27.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.80 / 24.80  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 6: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -75.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 108.90 / 108.90 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 7: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
```

```
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 119.60 / 119.60 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    45.25 !    45.25
 2.417WB1           !     1.50 !    45.46 !    45.46
 3.CyrvilleN2       !     1.50 !    55.46 !    55.46
 4.CummingsN        !     1.50 !    38.43 !    38.43
 5.CummingsS        !     1.50 !    52.62 !    52.62
 6.OgilvieEB        !     1.50 !    58.37 !    58.37
 7.OgilvieWB        !     1.50 !    57.95 !    57.95
--------------------+----------+----------+----------
                      Total                 62.83 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    37.65 !    37.65
 2.417WB1           !     1.49 !    37.86 !    37.86
 3.CyrvilleN2       !     1.50 !    47.86 !    47.86
 4.CummingsN        !     1.50 !    30.83 !    30.83
 5.CummingsS        !     1.50 !    45.02 !    45.02
 6.OgilvieEB        !     1.50 !    50.77 !    50.77
 7.OgilvieWB        !     1.50 !    50.35 !    50.35
--------------------+----------+----------+----------
                      Total                 55.23 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 62.83
                           (NIGHT): 55.23
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:03:55
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3A27.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 north faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 490.40 / 490.40 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 466.60 / 466.60 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-------------------------------------------
Angle1   Angle2           :  39.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 132.70 / 132.70 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsN (day/night)
-------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -78.00 deg   -59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  81.50 / 81.50  m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -78.00 deg   Angle2 : -59.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.40 / 24.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: CummingsS (day/night)
-------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
```

```
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -50.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  91.70 / 91.70  m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -50.00 deg   Angle2 : -27.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.80 / 24.80  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 6: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -75.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 108.90 / 108.90 m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 7: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
```

```
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 119.60 / 119.60 m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    45.25 !    45.25
 2.417WB1           !     1.50 !    45.46 !    45.46
 3.CyrvilleN2       !     1.50 !    55.46 !    55.46
 4.CummingsN        !     1.50 !    48.60 !    48.60 *
 5.CummingsS        !     1.50 !    55.05 !    55.05 *
 6.OgilvieEB        !     1.50 !    61.68 !    61.68 *
 7.OgilvieWB        !     1.50 !    61.22 !    61.22 *
--------------------+----------+----------+----------
                      Total                 65.57 dBA

  * Bright Zone  !


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    37.65 !    37.65
 2.417WB1           !     1.49 !    37.86 !    37.86
 3.CyrvilleN2       !     1.50 !    47.86 !    47.86
 4.CummingsN        !     1.50 !    41.00 !    41.00 *
 5.CummingsS        !     1.50 !    47.46 !    47.46 *
 6.OgilvieEB        !     1.50 !    54.08 !    54.08 *
 7.OgilvieWB        !     1.50 !    53.62 !    53.62 *
--------------------+----------+----------+----------
                      Total                 57.97 dBA

  * Bright Zone  !



TOTAL Leq FROM ALL SOURCES (DAY): 65.57
                           (NIGHT): 57.97
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:04:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3A35.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 north faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 490.40 / 490.40 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  74.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 466.60 / 466.60 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CyrvilleN2 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-------------------------------------------
Angle1   Angle2           :  39.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 132.70 / 132.70 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CummingsN (day/night)
-------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -78.00 deg   -59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  81.50 / 81.50  m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -78.00 deg   Angle2 : -59.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.40 / 24.40  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 5: CummingsS (day/night)
-------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
```

```
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -50.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  91.70 / 91.70  m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -50.00 deg   Angle2 : -27.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  24.80 / 24.80  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 6: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -75.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 108.90 / 108.90 m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Road data, segment # 7: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
```

```
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 119.60 / 119.60 m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -25.00 deg   Angle2 : 69.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  32.00 / 32.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    45.25 !    45.25
 2.417WB1           !     1.50 !    45.46 !    45.46
 3.CyrvilleN2       !     1.50 !    55.46 !    55.46
 4.CummingsN        !     1.50 !    48.60 !    48.60 *
 5.CummingsS        !     1.50 !    55.05 !    55.05 *
 6.OgilvieEB        !     1.50 !    61.68 !    61.68 *
 7.OgilvieWB        !     1.50 !    61.22 !    61.22 *
--------------------+----------+----------+----------
                      Total                 65.57 dBA

  * Bright Zone  !


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    37.65 !    37.65
 2.417WB1           !     1.49 !    37.86 !    37.86
 3.CyrvilleN2       !     1.50 !    47.86 !    47.86
 4.CummingsN        !     1.50 !    41.00 !    41.00 *
 5.CummingsS        !     1.50 !    47.46 !    47.46 *
 6.OgilvieEB        !     1.50 !    54.08 !    54.08 *
 7.OgilvieWB        !     1.50 !    53.62 !    53.62 *
--------------------+----------+----------+----------
                      Total                 57.97 dBA

  * Bright Zone  !



TOTAL Leq FROM ALL SOURCES (DAY): 65.57
                           (NIGHT): 57.97
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:04:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3B02.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 west faade near north corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -4.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 487.60 / 487.60 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   8.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 484.00 / 484.00 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 463.80 / 463.80 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   9.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 458.30 / 458.30 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
```

```
-----------------------------------------------
Angle1   Angle2           : -37.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 103.60 / 103.60 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  40.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 129.10 / 129.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Angle1   Angle2           : -75.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.70 / 110.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
```

```
Reference angle           :   0.00


Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 8: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           : -73.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 121.40 / 121.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.12 !    56.12
 2.417EB2           !     1.50 !    46.86 !    46.86
 3.417WB1           !     1.50 !    56.23 !    56.23
 4.417WB2           !     1.50 !    47.88 !    47.88
 5.CyrvilleN1       !     1.50 !    60.59 !    60.59
 6.CyrvilleN2       !     1.50 !    55.58 !    55.58
 7.OgilvieEB        !     1.50 !    56.53 !    56.53
 8.OgilvieWB        !     1.50 !    55.96 !    55.96
--------------------+----------+----------+----------
                      Total                 65.17 dBA

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.52 !    48.52
 2.417EB2           !     1.49 !    39.26 !    39.26
 3.417WB1           !     1.49 !    48.63 !    48.63
 4.417WB2           !     1.49 !    40.28 !    40.28
 5.CyrvilleN1       !     1.50 !    52.99 !    52.99
 6.CyrvilleN2       !     1.50 !    47.98 !    47.98
 7.OgilvieEB        !     1.50 !    48.94 !    48.94
 8.OgilvieWB        !     1.50 !    48.36 !    48.36
--------------------+----------+----------+----------
                      Total                 57.57 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.17
                           (NIGHT): 57.57
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:04:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3B07.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 west faade near north corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -4.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 487.60 / 487.60 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   8.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 484.00 / 484.00 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 463.80 / 463.80 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   9.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 458.30 / 458.30 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
```

```
Angle1   Angle2           : -37.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 103.60 / 103.60 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
---------------------------------------------
Angle1   Angle2           :  40.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 129.10 / 129.10 m
Receiver height           :  22.10 / 22.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
---------------------------------------------
Angle1   Angle2           : -75.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.70 / 110.70 m
Receiver height           :  22.10 / 22.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

```
Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   7.00 deg
Wood depth                :       0       (No woods.)
No of house rows          :       0 / 0
Surface                   :       2       (Reflective ground surface)
Receiver source distance  : 121.40 / 121.40 m
Receiver height           :  22.10 / 22.10  m
Topography                :       4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.12 !    56.12
 2.417EB2           !     1.50 !    46.86 !    46.86
 3.417WB1           !     1.50 !    56.23 !    56.23
 4.417WB2           !     1.50 !    47.88 !    47.88
 5.CyrvilleN1       !     1.50 !    60.59 !    60.59
 6.CyrvilleN2       !     1.50 !    55.58 !    55.58
 7.OgilvieEB        !     1.50 !    56.53 !    56.53
 8.OgilvieWB        !     1.50 !    55.96 !    55.96
--------------------+----------+----------+----------
                      Total                 65.17 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.52 !    48.52
 2.417EB2           !     1.49 !    39.26 !    39.26
 3.417WB1           !     1.49 !    48.63 !    48.63
 4.417WB2           !     1.49 !    40.28 !    40.28
 5.CyrvilleN1       !     1.50 !    52.99 !    52.99
 6.CyrvilleN2       !     1.50 !    47.98 !    47.98
 7.OgilvieEB        !     1.50 !    48.94 !    48.94
 8.OgilvieWB        !     1.50 !    48.36 !    48.36
--------------------+----------+----------+----------
                      Total                 57.57 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.17
                           (NIGHT): 57.57
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:40:08
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3B27.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 west faade near north corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -4.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 487.60 / 487.60 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   8.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 484.00 / 484.00 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 463.80 / 463.80 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   9.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 458.30 / 458.30 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
```

```
Angle1   Angle2           : -37.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 103.60 / 103.60 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleN2 (day/night)
------------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
------------------------------------------------
Angle1   Angle2           :  40.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 129.10 / 129.10 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieEB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
------------------------------------------------
Angle1   Angle2           : -75.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.70 / 110.70 m
Receiver height           :  96.20 / 96.20  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

```
Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 121.40 / 121.40 m
Receiver height           :  96.20 / 96.20  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.12 !    56.12
 2.417EB2           !     1.50 !    46.86 !    46.86
 3.417WB1           !     1.50 !    56.23 !    56.23
 4.417WB2           !     1.50 !    47.88 !    47.88
 5.CyrvilleN1       !     1.50 !    60.59 !    60.59
 6.CyrvilleN2       !     1.50 !    55.58 !    55.58
 7.OgilvieEB        !     1.50 !    56.88 !    56.88
 8.OgilvieWB        !     1.50 !    56.70 !    56.70
--------------------+----------+----------+----------
                      Total                 65.32 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.52 !    48.52
 2.417EB2           !     1.49 !    39.26 !    39.26
 3.417WB1           !     1.49 !    48.63 !    48.63
 4.417WB2           !     1.49 !    40.28 !    40.28
 5.CyrvilleN1       !     1.50 !    52.99 !    52.99
 6.CyrvilleN2       !     1.50 !    47.98 !    47.98
 7.OgilvieEB        !     1.50 !    49.28 !    49.28
 8.OgilvieWB        !     1.50 !    49.11 !    49.11
--------------------+----------+----------+----------
                      Total                 57.72 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.32
                           (NIGHT): 57.72
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:43:27
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3B33.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 west faade near north corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -4.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 487.60 / 487.60 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   8.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 484.00 / 484.00 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 463.80 / 463.80 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   9.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 458.30 / 458.30 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------
Angle1   Angle2           : -37.00 deg   52.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 103.60 / 103.60 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleN2 (day/night)
------------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-------------------------------------------
Angle1   Angle2           :  40.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 129.10 / 129.10 m
Receiver height           :  96.20 / 96.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieEB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -75.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.70 / 110.70 m
Receiver height           :  96.20 / 96.20  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

```
Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 121.40 / 121.40 m
Receiver height           :  96.20 / 96.20  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.12 !    56.12
 2.417EB2           !     1.50 !    46.86 !    46.86
 3.417WB1           !     1.50 !    56.23 !    56.23
 4.417WB2           !     1.50 !    47.88 !    47.88
 5.CyrvilleN1       !     1.50 !    60.59 !    60.59
 6.CyrvilleN2       !     1.50 !    55.58 !    55.58
 7.OgilvieEB        !     1.50 !    56.88 !    56.88
 8.OgilvieWB        !     1.50 !    56.70 !    56.70
--------------------+----------+----------+----------
                      Total                 65.32 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.52 !    48.52
 2.417EB2           !     1.49 !    39.26 !    39.26
 3.417WB1           !     1.49 !    48.63 !    48.63
 4.417WB2           !     1.49 !    40.28 !    40.28
 5.CyrvilleN1       !     1.50 !    52.99 !    52.99
 6.CyrvilleN2       !     1.50 !    47.98 !    47.98
 7.OgilvieEB        !     1.50 !    49.28 !    49.28
 8.OgilvieWB        !     1.50 !    49.11 !    49.11
--------------------+----------+----------+----------
                      Total                 57.72 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.32
                           (NIGHT): 57.72
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:05:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3B35.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 west faade near north corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -4.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 487.60 / 487.60 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   8.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 484.00 / 484.00 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -2.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 463.80 / 463.80 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   9.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 458.30 / 458.30 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
```

```
Angle1   Angle2           : -37.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 103.60 / 103.60 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleN2 (day/night)
------------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
------------------------------------------------
Angle1   Angle2           :  40.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 129.10 / 129.10 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: OgilvieEB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
------------------------------------------------
Angle1   Angle2           : -75.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.70 / 110.70 m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

```
Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -73.00 deg   7.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 121.40 / 121.40 m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -24.00 deg   Angle2 : 7.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  33.20 / 33.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.12 !    56.12
 2.417EB2           !     1.50 !    46.86 !    46.86
 3.417WB1           !     1.50 !    56.23 !    56.23
 4.417WB2           !     1.50 !    47.88 !    47.88
 5.CyrvilleN1       !     1.50 !    60.59 !    60.59
 6.CyrvilleN2       !     1.50 !    55.58 !    55.58
 7.OgilvieEB        !     1.50 !    58.57 !    58.57 *
 8.OgilvieWB        !     1.50 !    58.06 !    58.06 *
--------------------+----------+----------+----------
                     Total                   65.80 dBA

  * Bright Zone  !

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.52 !    48.52
 2.417EB2           !     1.49 !    39.26 !    39.26
 3.417WB1           !     1.49 !    48.63 !    48.63
 4.417WB2           !     1.49 !    40.28 !    40.28
 5.CyrvilleN1       !     1.50 !    52.99 !    52.99
 6.CyrvilleN2       !     1.50 !    47.98 !    47.98
 7.OgilvieEB        !     1.50 !    50.97 !    50.97 *
 8.OgilvieWB        !     1.50 !    50.47 !    50.47 *
--------------------+----------+----------+----------
                     Total                   58.21 dBA
    •   Bright Zone  !
    •
TOTAL Leq FROM ALL SOURCES (DAY): 65.80
                           (NIGHT): 58.21
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:05:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3C02.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 podium south, near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 452.10 / 452.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -49.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 446.30 / 446.30 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -1.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 428.30 / 428.30 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -49.00 deg   11.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 420.70 / 420.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------
Angle1   Angle2           : -64.00 deg   53.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  76.20 / 76.20  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleS (day/night)
------------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.50 / 65.50  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: CummingsS (day/night)
------------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   1.00 deg   60.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  90.90 / 90.90  m
Receiver height           :   6.90 / 6.90   m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   1.00 deg   Angle2 : 7.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  28.10 / 28.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00
```

Result summary (day)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417EB1	1.50	56.06	56.06
2.417EB2	1.50	54.90	54.90
3.417WB1	1.50	56.17	56.17
4.417WB2	1.50	55.22	55.22
5.CyrvilleN1	1.50	63.11	63.11
6.CyrvilleS	1.50	54.05	54.05
7.CummingsS	1.50	55.35	55.35
Total			66.13 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417EB1	1.49	48.46	48.46
2.417EB2	1.49	47.31	47.31
3.417WB1	1.49	48.58	48.58
4.417WB2	1.49	47.62	47.62
5.CyrvilleN1	1.50	55.51	55.51
6.CyrvilleS	1.50	46.46	46.46
7.CummingsS	1.50	47.75	47.75
Total			58.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.13
(NIGHT): 58.53

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:05:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3C06.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 podium south, near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 452.10 / 452.10 m
Receiver height           :  19.20 / 19.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -49.00 deg   10.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 446.30 / 446.30 m
Receiver height           :  19.20 / 19.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           :  -1.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 428.30 / 428.30 m
Receiver height           :  19.20 / 19.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           : -49.00 deg   11.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 420.70 / 420.70 m
Receiver height           :  19.20 / 19.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
---------------------------------------------
Angle1   Angle2           : -64.00 deg   53.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  76.20 / 76.20  m
Receiver height           :  19.20 / 19.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
---------------------------------------------
Angle1   Angle2           : -88.00 deg   -68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  65.50 / 65.50  m
Receiver height           :  19.20 / 19.20  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
---------------------------------------------
Angle1   Angle2           :   1.00 deg   60.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  90.90 / 90.90  m
Receiver height           :  19.20 / 19.20  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   1.00 deg   Angle2 : 7.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  28.10 / 28.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
```

```
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.06 !    56.06
 2.417EB2           !     1.50 !    54.90 !    54.90
 3.417WB1           !     1.50 !    56.17 !    56.17
 4.417WB2           !     1.50 !    55.22 !    55.22
 5.CyrvilleN1       !     1.50 !    63.11 !    63.11
 6.CyrvilleS        !     1.50 !    54.05 !    54.05
 7.CummingsS        !     1.50 !    55.35 !    55.35
--------------------+----------+----------+----------
                      Total                  66.13 dBA
Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.46 !    48.46
 2.417EB2           !     1.49 !    47.31 !    47.31
 3.417WB1           !     1.49 !    48.58 !    48.58
 4.417WB2           !     1.49 !    47.62 !    47.62
 5.CyrvilleN1       !     1.50 !    55.51 !    55.51
 6.CyrvilleS        !     1.50 !    46.46 !    46.46
 7.CummingsS        !     1.50 !    47.75 !    47.75
--------------------+----------+----------+----------
                      Total                  58.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.13
                           (NIGHT): 58.53
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:05:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3D27.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 south faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 459.30 / 459.30 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -48.00 deg   9.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 453.70 / 453.70 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -1.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 435.50 / 435.50 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -48.00 deg   11.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 428.20 / 428.20 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
```

```
-----------------------------------------------
Angle1   Angle2           : -63.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  82.00 / 82.00  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 6: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-----------------------------------------------
Angle1   Angle2           : -88.00 deg   -67.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  71.00 / 71.00  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 7: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-----------------------------------------------
Angle1   Angle2           :   1.00 deg   61.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  90.90 / 90.90  m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   1.00 deg   Angle2 : 21.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  28.10 / 28.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
```

```
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.00 !    56.00
 2.417EB2           !     1.50 !    54.68 !    54.68
 3.417WB1           !     1.50 !    56.10 !    56.10
 4.417WB2           !     1.50 !    55.08 !    55.08
 5.CyrvilleN1       !     1.50 !    62.71 !    62.71
 6.CyrvilleS        !     1.50 !    53.91 !    53.91
 7.CummingsS        !     1.50 !    55.88 !    55.88 *
--------------------+----------+----------+----------
                     Total                   65.93 dBA

  * Bright Zone  !

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.40 !    48.40
 2.417EB2           !     1.49 !    47.09 !    47.09
 3.417WB1           !     1.49 !    48.51 !    48.51
 4.417WB2           !     1.49 !    47.48 !    47.48
 5.CyrvilleN1       !     1.50 !    55.12 !    55.12
 6.CyrvilleS        !     1.50 !    46.32 !    46.32
 7.CummingsS        !     1.50 !    48.29 !    48.29 *
--------------------+----------+----------+----------
                     Total                   58.34 dBA

  * Bright Zone  !


TOTAL Leq FROM ALL SOURCES (DAY): 65.93
                           (NIGHT): 58.34
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:05:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3D35.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 south faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 459.30 / 459.30 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -48.00 deg   9.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 453.70 / 453.70 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           :  -1.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 435.50 / 435.50 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           : -48.00 deg   11.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 428.20 / 428.20 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
----------------------------------------
Angle1   Angle2           : -63.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
```

```
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  82.00 / 82.00  m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CyrvilleS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -67.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  71.00 / 71.00  m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   1.00 deg   61.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  90.90 / 90.90  m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   1.00 deg   Angle2 : 21.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  28.10 / 28.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------
```

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417EB1	1.50	56.00	56.00
2.417EB2	1.50	54.68	54.68
3.417WB1	1.50	56.10	56.10
4.417WB2	1.50	55.08	55.08
5.CyrvilleN1	1.50	62.71	62.71
6.CyrvilleS	1.50	53.91	53.91
7.CummingsS	1.50	55.88	55.88 *
Total			65.93 dBA

* Bright Zone !

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417EB1	1.49	48.40	48.40
2.417EB2	1.49	47.09	47.09
3.417WB1	1.49	48.51	48.51
4.417WB2	1.49	47.48	47.48
5.CyrvilleN1	1.50	55.12	55.12
6.CyrvilleS	1.50	46.32	46.32
7.CummingsS	1.50	48.29	48.29 *
Total			58.34 dBA

* Bright Zone !

TOTAL Leq FROM ALL SOURCES (DAY): 65.93
(NIGHT): 58.34

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:19:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3E27.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 east faade near south corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417EB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -46.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 459.90 / 459.90 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -47.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 434.70 / 434.70 m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
-------------------------------------------
Angle1   Angle2           : -56.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  99.70 / 99.70  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 4: CyrvilleS (day/night)
-------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -60.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  89.60 / 89.60  m
Receiver height           :  81.80 / 81.80  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CummingsN (day/night)
-------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -82.00 deg   -71.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.10 / 58.10  m
```

```
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -73.00 deg   Angle2 : -71.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :  26.50 / 26.50  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 6: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-----------------------------------------------
Angle1   Angle2           : -64.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  68.60 / 68.60  m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -35.00 deg   Angle2 : 18.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  43.00 / 43.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 138.60 / 138.60 m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   5.00 deg   Angle2 : 34.00 deg
```

```
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  84.90 / 84.90  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 8: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 149.30 / 149.30 m
Receiver height           :  81.80 / 81.80  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   5.00 deg   Angle2 : 34.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  84.90 / 84.90  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.50 !    53.30 !    53.30
 2.417WB2           !     1.50 !    53.54 !    53.54
 3.CyrvilleN1       !     1.50 !    53.56 !    53.56
 4.CyrvilleS        !     1.50 !    54.15 !    54.15
 5.CummingsN        !     1.50 !    46.84 !    46.84
 6.CummingsS        !     1.50 !    60.53 !    60.53 *
 7.OgilvieEB        !     1.50 !    57.75 !    57.75 *
 8.OgilvieWB        !     1.50 !    57.43 !    57.43 *
--------------------+----------+----------+----------
                      Total                  65.12 dBA

  * Bright Zone  !


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.49 !    45.70 !    45.70
 2.417WB2           !     1.49 !    45.94 !    45.94
 3.CyrvilleN1       !     1.50 !    45.96 !    45.96
```

```
 4.CyrvilleS        !     1.50 !    46.56 !    46.56
 5.CummingsN        !     1.50 !    39.24 !    39.24
 6.CummingsS        !     1.50 !    52.93 !    52.93 *
 7.OgilvieEB        !     1.50 !    50.15 !    50.15 *
 8.OgilvieWB        !     1.50 !    49.83 !    49.83 *
--------------------+----------+----------+----------
                      Total                  57.52 dBA

  * Bright Zone  !


TOTAL Leq FROM ALL SOURCES (DAY): 65.12
                           (NIGHT): 57.52
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:54:45
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: T3E35.TE             Time Period: Day/Night 16/8 hours
Description: Tower 3 east faade near south corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417EB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -46.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 459.90 / 459.90 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -47.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 434.70 / 434.70 m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
---------------------------------------------
Angle1   Angle2           : -56.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  99.70 / 99.70  m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 4: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
---------------------------------------------
Angle1   Angle2           : -88.00 deg   -60.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  89.60 / 89.60  m
Receiver height           : 105.10 / 105.10 m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsN (day/night)
---------------------------------------------
Angle1   Angle2           : -82.00 deg   -71.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  58.10 / 58.10  m
```

```
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -73.00 deg   Angle2 : -71.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :  26.50 / 26.50  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 6: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-----------------------------------------------
Angle1   Angle2           : -64.00 deg   68.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  68.60 / 68.60  m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -35.00 deg   Angle2 : 18.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  43.00 / 43.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 138.60 / 138.60 m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   5.00 deg   Angle2 : 34.00 deg
```

```
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  84.90 / 84.90  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 8: OgilvieWB (day/night)
--------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 149.30 / 149.30 m
Receiver height           : 105.10 / 105.10 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   5.00 deg   Angle2 : 34.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  84.90 / 84.90  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.50 !    53.30 !    53.30
 2.417WB2           !     1.50 !    53.54 !    53.54
 3.CyrvilleN1       !     1.50 !    53.56 !    53.56
 4.CyrvilleS        !     1.50 !    54.15 !    54.15
 5.CummingsN        !     1.50 !    46.86 !    46.86
 6.CummingsS        !     1.50 !    60.53 !    60.53 *
 7.OgilvieEB        !     1.50 !    57.75 !    57.75 *
 8.OgilvieWB        !     1.50 !    57.43 !    57.43 *
--------------------+----------+----------+----------
                      Total                  65.12 dBA

  * Bright Zone  !

Result summary (night)
----------------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.49 !    45.70 !    45.70
 2.417WB2           !     1.49 !    45.94 !    45.94
 3.CyrvilleN1       !     1.50 !    45.96 !    45.96
 4.CyrvilleS        !     1.50 !    46.56 !    46.56
 5.CummingsN        !     1.50 !    39.26 !    39.26
 6.CummingsS        !     1.50 !    52.93 !    52.93 *
```

```
 7.OgilvieEB        !     1.50 !    50.15 !    50.15 *
 8.OgilvieWB        !     1.50 !    49.83 !    49.83 *
--------------------+----------+----------+----------
                     Total                  57.53 dBA

  * Bright Zone  !


TOTAL Leq FROM ALL SOURCES (DAY): 65.12
                           (NIGHT): 57.53
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:05:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HA02.TE              Time Period: Day/Night 16/8 hours
Description: Hotel south faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :   1.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 457.30 / 457.30 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -47.00 deg   13.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 444.70 / 444.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           :   3.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 433.40 / 433.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           : -47.00 deg   15.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 419.70 / 419.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -55.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
```

```
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  92.50 / 92.50  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CyrvilleS (day/night)
------------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  83.40 / 83.40  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: CummingsS (day/night)
-------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   1.00 deg   69.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.60 / 60.60  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !   (m)    !  (dBA)   !  (dBA)
-------------------+----------+----------+----------
 1.417EB1          !     1.50 !    55.79 !    55.79
 2.417EB2          !     1.50 !    54.99 !    54.99
 3.417WB1          !     1.50 !    55.89 !    55.89
 4.417WB2          !     1.50 !    55.37 !    55.37
```

5.CyrvilleN1	1.50	61.88	61.88
6.CyrvilleS	1.50	54.62	54.62
7.CummingsS	1.50	58.19	58.19
Total			65.93 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417EB1	1.49	48.19	48.19
2.417EB2	1.49	47.39	47.39
3.417WB1	1.49	48.29	48.29
4.417WB2	1.49	47.78	47.78
5.CyrvilleN1	1.50	54.28	54.28
6.CyrvilleS	1.50	47.02	47.02
7.CummingsS	1.50	50.59	50.59
Total			58.33 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.93
(NIGHT): 58.33

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:06:10
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HA08.TE              Time Period: Day/Night 16/8 hours
Description: Hotel south faade near west corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :   1.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 457.30 / 457.30 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           : -47.00 deg   13.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 444.70 / 444.70 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           :   3.00 deg   75.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 433.40 / 433.40 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           : -47.00 deg   15.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 419.70 / 419.70 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
-----------------------------------------------
Angle1   Angle2           : -55.00 deg   52.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
```

```
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  92.50 / 92.50  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CyrvilleS (day/night)
------------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  83.40 / 83.40  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: CummingsS (day/night)
-------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           :   1.00 deg   69.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  60.60 / 60.60  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------

                   !  source  !   Road   !  Total
                   !  height  !   Leq    !   Leq
                   !   (m)    !  (dBA)   !  (dBA)
-------------------+----------+----------+----------
 1.417EB1          !     1.50 !    55.79 !    55.79
 2.417EB2          !     1.50 !    54.99 !    54.99
 3.417WB1          !     1.50 !    55.89 !    55.89
 4.417WB2          !     1.50 !    55.37 !    55.37
```

5.CyrvilleN1	1.50	61.88	61.88
6.CyrvilleS	1.50	54.62	54.62
7.CummingsS	1.50	58.19	58.19
Total			65.93 dBA

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417EB1	1.49	48.19	48.19
2.417EB2	1.49	47.39	47.39
3.417WB1	1.49	48.29	48.29
4.417WB2	1.49	47.78	47.78
5.CyrvilleN1	1.50	54.28	54.28
6.CyrvilleS	1.50	47.02	47.02
7.CummingsS	1.50	50.59	50.59
Total			58.33 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.93
(NIGHT): 58.33

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:06:22
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HB02.TE              Time Period: Day/Night 16/8 hours
Description: Hotel east faade near south corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417EB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -44.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 456.80 / 456.80 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -44.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 432.40 / 432.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: CyrvilleN1 (day/night)
-----------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
-------------------------------------------
Angle1   Angle2           : -42.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 123.70 / 123.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 4: CyrvilleS (day/night)
-------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -87.00 deg   -46.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 116.00 / 116.00 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CummingsN (day/night)
-------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -86.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
```

```
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CummingsS (day/night)
------------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
------------------------------------------------
Angle1   Angle2           : -81.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  23.10 / 23.10  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
------------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 148.70 / 148.70 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 8: OgilvieWB (day/night)
------------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 159.30 / 159.30 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.50 !    53.12 !    53.12
 2.417WB2           !     1.50 !    53.24 !    53.24
 3.CyrvilleN1       !     1.50 !    45.09 !    45.09
 4.CyrvilleS        !     1.50 !    54.69 !    54.69
 5.CummingsN        !     1.50 !    46.17 !    46.17
 6.CummingsS        !     1.50 !    66.17 !    66.17
 7.OgilvieEB        !     1.50 !    57.44 !    57.44
 8.OgilvieWB        !     1.50 !    57.15 !    57.15
--------------------+----------+----------+----------
                      Total                 67.78 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.49 !    45.52 !    45.52
 2.417WB2           !     1.49 !    45.64 !    45.64
 3.CyrvilleN1       !     1.50 !    37.49 !    37.49
 4.CyrvilleS        !     1.50 !    47.09 !    47.09
 5.CummingsN        !     1.50 !    38.58 !    38.58
 6.CummingsS        !     1.50 !    58.58 !    58.58
 7.OgilvieEB        !     1.50 !    49.85 !    49.85
 8.OgilvieWB        !     1.50 !    49.55 !    49.55
--------------------+----------+----------+----------
                      Total                 60.19 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.78
                           (NIGHT): 60.19
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:06:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HB08.TE              Time Period: Day/Night 16/8 hours
Description: Hotel east faade near south corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417EB2 (day/night)
-------------------------------------------
Angle1   Angle2           : -44.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 456.80 / 456.80 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-------------------------------------------
Angle1   Angle2           : -44.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 432.40 / 432.40 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 3: CyrvilleN1 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
--------------------------------------------
Angle1   Angle2           : -42.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 123.70 / 123.70 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
-------------------------------------------
Angle1   Angle2           : -87.00 deg   -46.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 116.00 / 116.00 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -86.00 deg
Wood depth                :      0       (No woods.)
```

```
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-----------------------------------------------
Angle1   Angle2           : -81.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  23.10 / 23.10  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 148.70 / 148.70 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 8: OgilvieWB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 159.30 / 159.30 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.50 !    53.12 !    53.12
 2.417WB2           !     1.50 !    53.24 !    53.24
 3.CyrvilleN1       !     1.50 !    45.09 !    45.09
 4.CyrvilleS        !     1.50 !    54.69 !    54.69
 5.CummingsN        !     1.50 !    46.17 !    46.17
 6.CummingsS        !     1.50 !    66.17 !    66.17
 7.OgilvieEB        !     1.50 !    57.44 !    57.44
 8.OgilvieWB        !     1.50 !    57.15 !    57.15
--------------------+----------+----------+----------
                      Total                 67.78 dBA


Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.49 !    45.52 !    45.52
 2.417WB2           !     1.49 !    45.64 !    45.64
 3.CyrvilleN1       !     1.50 !    37.49 !    37.49
 4.CyrvilleS        !     1.50 !    47.09 !    47.09
 5.CummingsN        !     1.50 !    38.58 !    38.58
 6.CummingsS        !     1.50 !    58.58 !    58.58
 7.OgilvieEB        !     1.50 !    49.85 !    49.85
 8.OgilvieWB        !     1.50 !    49.55 !    49.55
--------------------+----------+----------+----------
                      Total                 60.19 dBA


TOTAL Leq FROM ALL SOURCES (DAY): 67.78
                           (NIGHT): 60.19
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:06:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HC02.TE              Time Period: Day/Night 16/8 hours
Description: Hotel east faade near north corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417EB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -42.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 489.40 / 489.40 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -42.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 464.90 / 464.90 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
--------------------------------------------
Angle1   Angle2           : -41.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 149.10 / 149.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 4: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleS (day/night)
--------------------------------------------
Angle1   Angle2           : -87.00 deg   -45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 140.10 / 140.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsN (day/night)
--------------------------------------------
Angle1   Angle2           : -88.00 deg   -85.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.00 / 15.00  m
```

```
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CummingsS (day/night)
----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
----------------------------------------------
Angle1   Angle2           : -78.00 deg   83.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  23.40 / 23.40  m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
----------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 116.10 / 116.10 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 8: OgilvieWB (day/night)
----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 126.80 / 126.80 m
Receiver height           :   6.90 / 6.90   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.50 !    52.61 !    52.61
 2.417WB2           !     1.50 !    52.71 !    52.71
 3.CyrvilleN1       !     1.50 !    42.52 !    42.52
 4.CyrvilleS        !     1.50 !    53.97 !    53.97
 5.CummingsN        !     1.50 !    47.94 !    47.94
 6.CummingsS        !     1.50 !    66.06 !    66.06
 7.OgilvieEB        !     1.50 !    58.52 !    58.52
 8.OgilvieWB        !     1.50 !    58.14 !    58.14
--------------------+----------+----------+----------
                      Total                 67.85 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.49 !    45.01 !    45.01
 2.417WB2           !     1.49 !    45.11 !    45.11
 3.CyrvilleN1       !     1.50 !    34.92 !    34.92
 4.CyrvilleS        !     1.50 !    46.38 !    46.38
 5.CummingsN        !     1.50 !    40.34 !    40.34
 6.CummingsS        !     1.50 !    58.47 !    58.47
 7.OgilvieEB        !     1.50 !    50.92 !    50.92
 8.OgilvieWB        !     1.50 !    50.54 !    50.54
--------------------+----------+----------+----------
                      Total                 60.26 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 67.85
                           (NIGHT): 60.26
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:07:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HC08.TE              Time Period: Day/Night 16/8 hours
Description: Hotel east faade near north corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417EB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -42.00 deg   -4.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 489.40 / 489.40 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB2 (day/night)
-----------------------------------------
Angle1   Angle2           : -42.00 deg   -5.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 464.90 / 464.90 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 3: CyrvilleN1 (day/night)
-----------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN1 (day/night)
---------------------------------------------
Angle1   Angle2           : -41.00 deg   -39.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 149.10 / 149.10 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 4: CyrvilleS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    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):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleS (day/night)
---------------------------------------------
Angle1   Angle2           : -87.00 deg   -45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 140.10 / 140.10 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: CummingsN (day/night)
---------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsN (day/night)
---------------------------------------------
Angle1   Angle2           : -88.00 deg   -85.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
```

```
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CummingsS (day/night)
-----------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -78.00 deg   83.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  23.40 / 23.40  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 116.10 / 116.10 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 8: OgilvieWB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           :   5.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 126.80 / 126.80 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.50 !    52.61 !    52.61
 2.417WB2           !     1.50 !    52.71 !    52.71
 3.CyrvilleN1       !     1.50 !    42.52 !    42.52
 4.CyrvilleS        !     1.50 !    53.97 !    53.97
 5.CummingsN        !     1.50 !    47.94 !    47.94
 6.CummingsS        !     1.50 !    66.06 !    66.06
 7.OgilvieEB        !     1.50 !    58.52 !    58.52
 8.OgilvieWB        !     1.50 !    58.14 !    58.14
--------------------+----------+----------+----------
                      Total                 67.85 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !   (m)    !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB2           !     1.49 !    45.01 !    45.01
 2.417WB2           !     1.49 !    45.11 !    45.11
 3.CyrvilleN1       !     1.50 !    34.92 !    34.92
 4.CyrvilleS        !     1.50 !    46.38 !    46.38
 5.CummingsN        !     1.50 !    40.34 !    40.34
 6.CummingsS        !     1.50 !    58.47 !    58.47
 7.OgilvieEB        !     1.50 !    50.92 !    50.92
 8.OgilvieWB        !     1.50 !    50.54 !    50.54
--------------------+----------+----------+----------
                      Total                 60.26 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 67.85
                           (NIGHT): 60.26
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:19:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HD08.TE              Time Period: Day/Night 16/8 hours
Description: Hotel north faade near east corner.


Road data, segment # 1: 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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: 417WB1 (day/night)
-----------------------------------------
Angle1   Angle2           :  75.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 485.90 / 485.90 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 2: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  40.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 184.40 / 184.40 m
Receiver height           :  25.10 / 25.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  63.00 deg   Angle2 : 70.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :  21.20 / 21.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 3: CummingsN (day/night)
-----------------------------------------------
Car traffic volume  :  9715/845   veh/TimePeriod  *
```

```
Medium truck volume :   773/67    veh/TimePeriod  *
Heavy truck volume  :   552/48    veh/TimePeriod  *
Posted speed limit  :    40 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):  12000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsN (day/night)
-------------------------------------------
Angle1   Angle2           : -88.00 deg   -83.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  15.70 / 15.70  m
Receiver height           :  25.10 / 25.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -87.00 deg   Angle2 : -83.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :   3.50 / 3.50   m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 4: CummingsS (day/night)
---------------------------------------------
Car traffic volume  : 12144/1056  veh/TimePeriod  *
Medium truck volume :   966/84    veh/TimePeriod  *
Heavy truck volume  :   690/60    veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  15000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CummingsS (day/night)
-------------------------------------------
Angle1   Angle2           : -77.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  25.90 / 25.90  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 5: OgilvieEB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
```

```
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 5: OgilvieEB (day/night)
-------------------------------------------
Angle1   Angle2           : -76.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 113.80 / 113.80 m
Receiver height           :  25.10 / 25.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -52.00 deg   Angle2 : 9.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  60.10 / 60.10  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 6: OgilvieWB (day/night)
---------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 6: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -75.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 124.50 / 124.50 m
Receiver height           :  25.10 / 25.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -52.00 deg   Angle2 : 9.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  60.00 / 60.00  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417WB1           !     1.50 !    51.52 !    51.52
 2.CyrvilleN2       !     1.50 !    52.22 !    52.22
 3.CummingsN        !     1.50 !    43.14 !    43.14
 4.CummingsS        !     1.50 !    62.42 !    62.42
 5.OgilvieEB        !     1.50 !    59.58 !    59.58
 6.OgilvieWB        !     1.50 !    59.18 !    59.18
--------------------+----------+----------+----------
                      Total                  65.81 dBA
```

Result summary (night)

	source height (m)	Road Leq (dBA)	Total Leq (dBA)
1.417WB1	1.49	43.92	43.92
2.CyrvilleN2	1.50	44.62	44.62
3.CummingsN	1.50	35.54	35.54
4.CummingsS	1.50	54.82	54.82
5.OgilvieEB	1.50	51.98	51.98
6.OgilvieWB	1.50	51.58	51.58
Total			58.21 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.81
(NIGHT): 58.21

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 15:20:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: HE08.TE              Time Period: Day/Night 16/8 hours
Description: Hotel west faade near south corner.


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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 1: 417EB1 (day/night)
-----------------------------------------
Angle1   Angle2           :   0.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 458.40 / 458.40 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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           :  -3.00 deg   13.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 446.40 / 446.40 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           :   3.00 deg   82.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 434.50 / 434.50 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
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):  73332
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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           :  -4.00 deg   14.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4 / 4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 421.30 / 421.30 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00


Road data, segment # 5: CyrvilleN1 (day/night)
----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium 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: CyrvilleN1 (day/night)
----------------------------------------
Angle1   Angle2           : -38.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
```

```
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  92.60 / 92.60  m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 6: CyrvilleN2 (day/night)
-----------------------------------------------
Car traffic volume  : 19430/1690  veh/TimePeriod  *
Medium truck volume :  1546/134   veh/TimePeriod  *
Heavy truck volume  :  1104/96    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):  24000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: CyrvilleN2 (day/night)
-----------------------------------------------
Angle1   Angle2           :  51.00 deg   76.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 128.60 / 128.60 m
Receiver height           :  25.10 / 25.10  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium Truck % of Total Volume     :   7.00
    Heavy Truck  % of Total Volume     :   5.00
    Day (16 hrs) % of Total Volume     :  92.00

Data for Segment # 7: OgilvieEB (day/night)
-----------------------------------------------
Angle1   Angle2           : -70.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 153.00 / 153.00 m
Receiver height           :  25.10 / 25.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -21.00 deg   Angle2 : 6.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  99.20 / 99.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 8: OgilvieWB (day/night)
-----------------------------------------------
Car traffic volume  : 14168/1232  veh/TimePeriod  *
```

```
Medium truck volume :  1127/98    veh/TimePeriod  *
Heavy truck volume  :   805/70    veh/TimePeriod  *
Posted speed limit  :    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):  17500
    Percentage of Annual Growth         :   0.00
    Number of Years of Growth           :   0.00
    Medium Truck % of Total Volume      :   7.00
    Heavy Truck  % of Total Volume      :   5.00
    Day (16 hrs) % of Total Volume      :  92.00

Data for Segment # 8: OgilvieWB (day/night)
-------------------------------------------
Angle1   Angle2           : -69.00 deg   6.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 163.70 / 163.70 m
Receiver height           :  25.10 / 25.10  m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -21.00 deg   Angle2 : 6.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  99.20 / 99.20  m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00


Result summary (day)
--------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    56.22 !    56.22
 2.417EB2           !     1.50 !    49.23 !    49.23
 3.417WB1           !     1.50 !    56.28 !    56.28
 4.417WB2           !     1.50 !    49.99 !    49.99
 5.CyrvilleN1       !     1.50 !    61.62 !    61.62
 6.CyrvilleN2       !     1.50 !    54.13 !    54.13
 7.OgilvieEB        !     1.50 !    54.96 !    54.96
 8.OgilvieWB        !     1.50 !    54.59 !    54.59
--------------------+----------+----------+----------
                      Total                 65.24 dBA

Result summary (night)
----------------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.49 !    48.62 !    48.62
 2.417EB2           !     1.49 !    41.64 !    41.64
 3.417WB1           !     1.49 !    48.68 !    48.68
 4.417WB2           !     1.49 !    42.39 !    42.39
 5.CyrvilleN1       !     1.50 !    54.02 !    54.02
 6.CyrvilleN2       !     1.50 !    46.53 !    46.53
 7.OgilvieEB        !     1.50 !    47.36 !    47.36
 8.OgilvieWB        !     1.50 !    46.99 !    46.99
--------------------+----------+----------+----------
                      Total                 57.64 dBA



TOTAL Leq FROM ALL SOURCES (DAY): 65.24
                           (NIGHT): 57.64
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 02-10-2019 13:07:17
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLAG.TE              Time Period: 16 hours
Description: Garden.


Road data, segment # 1: 417EB1
------------------------------
Car traffic volume  : 59370 veh/TimePeriod  *
Medium truck volume :  4723 veh/TimePeriod  *
Heavy truck volume  :  3373 veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: 417EB1
----------------------------
Angle1   Angle2           :   0.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 489.50 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 81.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  21.20 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 2: 417EB2
------------------------------
Car traffic volume  : 59370 veh/TimePeriod  *
Medium truck volume :  4723 veh/TimePeriod  *
Heavy truck volume  :  3373 veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: 417EB2
----------------------------
Angle1   Angle2           : -45.00 deg   13.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 477.10 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -45.00 deg   Angle2 : 13.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  21.30 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 3: 417WB1
------------------------------
Car traffic volume  : 59370 veh/TimePeriod  *
Medium truck volume :  4723 veh/TimePeriod  *
Heavy truck volume  :  3373 veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: 417WB1
----------------------------
Angle1   Angle2           :   2.00 deg   81.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 465.60 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :   2.00 deg   Angle2 : 81.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  21.20 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 4: 417WB2
------------------------------
Car traffic volume  : 59370 veh/TimePeriod  *
Medium truck volume :  4723 veh/TimePeriod  *
Heavy truck volume  :  3373 veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 4: 417WB2
----------------------------
Angle1   Angle2           : -45.00 deg   14.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 452.10 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -45.00 deg   Angle2 : 14.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  21.30 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 5: CyrvilleN1
----------------------------------
Car traffic volume  : 19430 veh/TimePeriod  *
Medium truck volume :  1546 veh/TimePeriod  *
Heavy truck volume  :  1104 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 5: CyrvilleN1
--------------------------------
Angle1   Angle2           : -51.00 deg   54.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 120.70 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -51.00 deg   Angle2 : 54.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  10.80 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 6: CyrvilleN2
----------------------------------
Car traffic volume  : 19430 veh/TimePeriod  *
Medium truck volume :  1546 veh/TimePeriod  *
```

```
Heavy truck volume  :  1104 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 6: CyrvilleN2
--------------------------------
Angle1   Angle2           :  42.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 153.30 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  42.00 deg   Angle2 : 72.00 deg
Barrier height            : 106.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  14.00 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 7: CyrvilleS
---------------------------------
Car traffic volume  : 12144 veh/TimePeriod  *
Medium truck volume :   966 veh/TimePeriod  *
Heavy truck volume  :   690 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 7: CyrvilleS
-------------------------------
Angle1   Angle2           : -87.00 deg   -55.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 110.50 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -86.00 deg   Angle2 : -55.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  10.60 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 8: CummingsS
---------------------------------
Car traffic volume  : 12144 veh/TimePeriod  *
Medium truck volume :   966 veh/TimePeriod  *
Heavy truck volume  :   690 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 8: CummingsS
-------------------------------
Angle1   Angle2           : -65.00 deg   73.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  55.80 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -65.00 deg   Angle2 : 73.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  31.80 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
```

```
Reference angle           :   0.00

Road data, segment # 9: OgilvieEB
----------------------------------
Car traffic volume  : 14168 veh/TimePeriod  *
Medium truck volume :  1127 veh/TimePeriod  *
Heavy truck volume  :   805 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 9: OgilvieEB
--------------------------------
Angle1   Angle2           : -74.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 123.40 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -74.00 deg   Angle2 : 90.00 deg
Barrier height            :  20.00 mlevation                 :   0.00 m
Barrier receiver distance :  46.50 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 10: OgilvieWB
----------------------------------
Car traffic volume  : 14168 veh/TimePeriod
Medium truck volume :  1127 veh/TimePeriod
Heavy truck volume  :   805 veh/TimePeriod
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 10: OgilvieWB
---------------------------------
Angle1   Angle2           : -73.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 134.10 m
Receiver height           :   1.50 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -73.00 deg   Angle2 : 90.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  46.50 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary
--------------
                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417EB1           !     1.50 !    42.79 !    42.79
 2.417EB2           !     1.50 !    41.45 !    41.45
 3.417WB1           !     1.50 !    42.90 !    42.90
 4.417WB2           !     1.50 !    41.76 !    41.76
 5.CyrvilleN1       !     1.50 !    40.64 !    40.64
 6.CyrvilleN2       !     1.50 !    40.53 !    40.53
 7.CyrvilleS        !     1.50 !    39.95 !    39.95
 8.CummingsS        !     1.50 !    41.62 !    41.62
 9.OgilvieEB        !     1.50 !    42.26 !    42.26
10.OgilvieWB        !     1.50 !    41.92 !    41.92
--------------------+----------+----------+----------
                      Total                  51.68 dBA

TOTAL Leq FROM ALL SOURCES:       51.68
```

```
STAMSON 5.0        SUMMARY REPORT        Date: 03-10-2019 08:22:07
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: OLAP.TE             Time Period: 16 hours
Description: Pool between Tower 1 and Tower 2.


Road data, segment # 1: 417WB2
-------------------------------
Car traffic volume  : 59370 veh/TimePeriod  *
Medium truck volume :  4723 veh/TimePeriod  *
Heavy truck volume  :  3373 veh/TimePeriod  *
Posted speed limit  :   100 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 1: 417WB2
-----------------------------
Angle1   Angle2           : -43.00 deg   11.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      4
House density             :     50 %
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 493.00 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -39.00 deg   Angle2 : 11.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  62.30 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 2: CyrvilleN1
----------------------------------
Car traffic volume  : 19430 veh/TimePeriod  *
Medium truck volume :  1546 veh/TimePeriod  *
Heavy truck volume  :  1104 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 2: CyrvilleN1
----------------------------------
Angle1   Angle2           : -51.00 deg   43.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 146.70 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -51.00 deg   Angle2 : 5.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  36.80 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 3: CyrvilleN2
----------------------------------
Car traffic volume  : 19430 veh/TimePeriod  *
Medium truck volume :  1546 veh/TimePeriod  *
Heavy truck volume  :  1104 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 3: CyrvilleN2
----------------------------------
Angle1   Angle2           :  31.00 deg   70.00 deg
Wood depth                :      0       (No woods.)
```

```
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 171.50 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  40.00 deg   Angle2 : 70.00 deg
Barrier height            :  70.80 m
Elevation                 :   0.00 m
Barrier receiver distance :   7.00 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 4: CyrvilleS
---------------------------------
Car traffic volume  : 12144 veh/TimePeriod  *
Medium truck volume :   966 veh/TimePeriod  *
Heavy truck volume  :   690 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 4: CyrvilleS
-------------------------------
Angle1   Angle2           : -87.00 deg   -55.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  : 134.30 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -87.00 deg   Angle2 : -55.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  41.60 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 5: CummingsN
---------------------------------
Car traffic volume  :  9715 veh/TimePeriod  *
Medium truck volume :   773 veh/TimePeriod  *
Heavy truck volume  :   552 veh/TimePeriod  *
Posted speed limit  :    40 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 5: CummingsN
-------------------------------
Angle1   Angle2           : -81.00 deg   -62.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  56.90 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -81.00 deg   Angle2 : -62.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :  46.00 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 6: CummingsS
---------------------------------
Car traffic volume  : 12144 veh/TimePeriod  *
Medium truck volume :   966 veh/TimePeriod  *
Heavy truck volume  :   690 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
```

```
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 6: CummingsS
-------------------------------
Angle1   Angle2           : -50.00 deg   28.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.70 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : 28.00 deg
Barrier height            :  77.40 m
Elevation                 :   0.00 m
Barrier receiver distance :  25.40 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 7: OgilvieEB
---------------------------------
Car traffic volume  : 14168 veh/TimePeriod  *
Medium truck volume :  1127 veh/TimePeriod  *
Heavy truck volume  :   805 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 7: OgilvieEB
-------------------------------
Angle1   Angle2           :  28.00 deg   74.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  66.70 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            :  36.00 deg   Angle2 : 74.00 deg
Barrier height            :  26.60 m
Elevation                 :   0.00 m
Barrier receiver distance :  41.10 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 8: OgilvieWB
---------------------------------
Car traffic volume  : 14168 veh/TimePeriod  *
Medium truck volume :  1127 veh/TimePeriod  *
Heavy truck volume  :   805 veh/TimePeriod  *
Posted speed limit  :    60 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 8: OgilvieWB
-------------------------------
Angle1   Angle2           : -79.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  80.70 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -79.00 deg   Angle2 : 90.00 deg
Barrier height            :  20.00 m
Elevation                 :   0.00 m
Barrier receiver distance :   3.80 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Road data, segment # 9: CummingsS
```

```
---------------------------------
Car traffic volume  : 12144 veh/TimePeriod  *
Medium truck volume :   966 veh/TimePeriod  *
Heavy truck volume  :   690 veh/TimePeriod  *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

Data for Segment # 9: CummingsS
---------------------------------
Angle1   Angle2           : -78.00 deg   90.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0
Surface                   :      2       (Reflective ground surface)
Receiver source distance  :  91.40 m
Receiver height           :   6.60 m
Topography                :      4       (Elevated; with barrier)
Barrier angle1            : -78.00 deg   Angle2 : 90.00 deg
Barrier height            :  20.00 mlevation                 :   0.00 m
Barrier receiver distance :   3.80 m
Source elevation          :  70.00 m
Receiver elevation        :  70.00 m
Barrier elevation         :  70.00 m
Reference angle           :   0.00

Result summary
--------------

                    !  source  !   Road   !  Total
                    !  height  !   Leq    !   Leq
                    !    (m)   !  (dBA)   !  (dBA)
--------------------+----------+----------+----------
 1.417WB2           !     1.50 !    44.87 !    44.87
 2.CyrvilleN1       !     1.50 !    55.44 !    55.44
 3.CyrvilleN2       !     1.50 !    48.59 !    48.59
 4.CyrvilleS        !     1.50 !    34.01 !    34.01
 5.CummingsN        !     1.50 !    30.16 !    30.16
 6.CummingsS        !     1.50 !    46.20 !    46.20
 7.OgilvieEB        !     1.50 !    50.87 !    50.87
 8.OgilvieWB        !     1.50 !    43.65 !    43.65
 9.CummingsS        !     1.50 !    40.91 !    40.91
--------------------+----------+----------+----------
                      Total                 58.17 dBA


TOTAL Leq FROM ALL SOURCES:       58.17
```

APPENDIX D: RESULTS OF AIF ANALYSIS

(attachment to Integral DX Engineering Ltd. report dated 4 November 2019)

Table 5.6: AIF Calculation Results

Indoor Location	Road Noise				N (1)	Average AIF Needed	Floor Area (m^2)	Components				
	Indoor Limit		Facade Level					Type (2)	Area (m^2)	AR (3)	Actual Performance	
	Day	Night	Day	Night							AIF	▲PWL (4)
Tower 1 N façade bedroom at NE corner.	45	40	69	62	5	33	12.9	EW	6.1	47.1	40	-16
								OP-W	1.3	9.8	33	0
								F-W	4.0	31.0	31	12
											Total	*-4*
Tower 1 N façade bedroom without east façade exposure.	45	40	69	62	3	31	12.9	EW	6.1	47.1	40	-29
								OP-W	1.3	9.8	33	-12
								F-W	4.0	31.0	31	0
											Total	*-41*
N façade studio	45	40	69	62	3	31	42.1	EW	5.1	12.2	n/a	0
								OP-W	4.8	11.4	31	0
								F-W	5.6	13.3	33	-12
											Total	*-12*
Tower 2 E façade bedroom with balcony door	45	40	68	61	3	30	10.9	EW	3.3	29.8	42	-30
								OP-W	4.0	36.7	27	33
								F-W	2.6	23.9	31	-7
											Total	*-4*
Hotel meeting room	45	n/a	66	58	4	29	49.5	OP-W	1.8	3.6	35	-19
								F-W	29.8	60.2	28	6
											Total	*-13*

Notes:
(1) N refers to the number of different types of components.
(2) Component Types:
EW = Exterior Wall
OP-W = Operable Window
F-W = Fixed Window
(3) AR refers to the ratio of the component area and floor area, expressed as a percentage value.
(4) ▲PWL refers to the change in transmitted sound power for the specified component, compared to a component with an AIF rating equal to the average required level. The room total value is provided, and must be less than or equal to 0 to meet the indoor sound level limit.

APPENDIX E: RECOMMENDED WORDING FOR NOTICES-ON-TITLE

(attachment to Integral DX Engineering Ltd. report dated 4 November 2019)

To help address the need for sound attenuation, this development includes mulit-pane glass windows. To ensure that provincial sound level limits are not exceeded, it is important to maintain this sound attenuation feature.

This dwelling unit has also been supplied with a central air conditioning system and other measures which 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, Conservation and Parks.

"The Transferee covenants with the Transferor that the above clause, verbatim, shall be included in all subsequent Agreements of Purchase and Sale and Deeds conveying the lands described herein, which covenant shall run with the said lands and is for the benefit of the subsequent owners of the said lands and the owner of the adjacent road."