PATERSON GROUP

Environmental Noise Control Study
Proposed Mixed-Use Buildings

50 Bayswater Avenue & 1088 Somerset Street West
Ottawa, Ontario

Prepared for Manor Park Management

Report PG6568-1 dated January 27, 2023

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1.0 Introduction

Paterson Group (Paterson) was commissioned by Manor Park Management to conduct an environmental noise control study for the proposed mixed-use buildings to be located at 50 Bayswater Avenue & 1088 Somerset Street West, in the City of Ottawa.

The objective of the current study is to:

- Determine the primary noise sources impacting the site and compare the projected sound levels to guidelines set out by the Ministry of Environment and Climate Change (MOECC) and the City of Ottawa.

- Review the projected noise levels and offer recommendations regarding warning classes, construction materials or alternative sound barriers.

The following report has been prepared specifically and solely for the aforementioned project which is described herein. It contains our findings and includes acoustical recommendations pertaining to the design and construction of the subject development as they are understood at the time of writing this report.

This study has been conducted according to City of Ottawa document - Engineering Noise Control Guidelines (ENCG), dated January 2016, and the Ontario Ministry of the Environment Guideline NPC-300.

2.0 Proposed Development

It is understood that the proposed development consists of two mixed-use buildings (Building A and Building B) and one residential building (Building D). Building A will have 6 storeys and rise 20 m above-grade. Building B will have 15 storeys and rise 48 m above-grade. Building D will have 17 storeys and rise 55 m above-grade. Building A and Building B will consist of commercial / retail units on the first floor and residential units on the remaining floors. Associated ramped parking areas, access lane and landscaped areas are further anticipated. Outdoor living areas – rooftop terraces are identified at these buildings on the proposed site plan.

3.0 Methodology and Noise Assessment Criteria

The City of Ottawa outlines three (3) sources of environmental noise that must be analyzed separately:

- Surface Transportation Noise
- Stationary Noise
  - new noise-sensitive development applications (noise receptors) in proximity to existing or approved stationary sources of noise, and
  - new stationary sources of noise (noise generating) in proximity to existing or approved noise-sensitive developments
- Aircraft Noise

Surface Transportation Noise

Surface roadway traffic noise, equivalent to sound level energy L_{eq}, provides a measure of the time varying noise level over a period of time. For roadways, the L_{eq} is commonly calculated on the basis of 16-hour (L_{eq16}) daytime (07:00-23:00) and 8-hour (L_{eq8}) nighttime (23:00-7:00) split to assess its impact on residential, commercial and institutional buildings.

The City of Ottawa's Official Plan dictates that the influence area must contain any of following conditions to classify as a surface transportation noise source for a subject site:

- Within 100 m of the right-of-way of an existing or proposed arterial, collector or major collector road; a light rail transit corridor; bus rapid transit, or transit priority corridor
- Within 250 m of the right-of-way for an existing or proposed highway or secondary rail line
- Within 300 m from the right of way of a proposed or existing rail corridor or a secondary main railway line
- Within 500 m of an existing 400 series provincial highway, freeway or principle main railway line.

The Environmental Noise Guidelines for Stationary and Transportation Sources – NPC-300 outlines the limitations of noise levels in relation to the location of the receptors. These can be found in the following tables:

Table 1 – Noise Level Limit for Outdoor Living Areas

Time Period	L_{eq} Level (dBA)
Daytime, 7:00-23:00	55

- Standard taken from Table 2.2a; Sound Level Limit for Outdoor Living Areas – Road and Rail

Table 2 – Noise Level Limits for Indoor Living Areas

Type of Space	Time Period	L_{eq} Level (dBA)	
		Road	Rail
General offices, reception areas, retail stores, etc.	Daytime 7:00-23:00	50	45
Theatres, places of worship, libraries, individual or semi-private offices, conference rooms, reading rooms, etc.	Daytime 7:00-23:00	45	40
Living/dining/den areas of **residences**, hospitals, nursing/retirement homes, schools, day-care centres	Daytime 7:00-23:00	45	40
Living/dining/den areas of **residences**, hospitals, nursing/retirement homes etc. (except schools or day-care centres)	Nighttime 23:00-7:00	45	40
Sleeping quarters of hotels/motels	Nighttime 23:00-7:00	45	40
Sleeping quarters of **residences**, hospitals, nursing/retirement homes, etc.	Nighttime 23:00-7:00	40	35

- Standards taken from Table 2.2b, Sound Level Limit for Indoor Living Areas – Road and Rail and Table 2.2c, Supplementary Sound Level Limits for Indoor Spaces – Road and Rail

Predicted noise levels at the pane of window dictate the action required to achieve recommended noise levels. It is noted in ENCG that the limits outlined in Table 2 are for the noise levels on the interior of the window glass pane. An open window is considered to provide a 10 dBA noise reduction, while a standard closed window is capable to provide a minimum 20 dBA noise reduction. The noise level limits of residential units are 45 dBA daytime and 40 dBA nighttime. Therefore, where noise levels exceed 55 dBA daytime and 50 dBA nighttime, the ventilation for the building should consider the provision for central air conditioning. Where noise levels exceed 65 dBA daytime and 60 dBA nighttime, central air conditioning will be required, and the building components will require higher levels of sound attenuation.

When the noise levels are equal to or less than the specified criteria, no noise attenuation (control) measures are required.

When the exceedance of the recommended noise level limits is between 1 dBA and 5 dBA for outdoor living areas (55 dBA < Leq ≤ 60 dBA), the proposed development can be completed with no noise control measures incorporated into the site, but the prospective purchasers / tenants should be made aware by suitable Warning Clauses. When the exceedance of recommended noise level limits is more than 5 dBA for outdoor living areas (Leq > 60 dBA), noise control measures are required to reduce Leq to below 60 dBA and as close as 55 dBA as it is technically and economically feasible.

Noise attenuation (control) measures include any or all of the following:

- Noise attenuation barrier
- Provisions for the installation of central air conditioning
- Central air conditioning
- Architectural components designed to provide additional acoustic insulation

In addition to the implementation of noise attenuation features, if required, the following Warning Clauses may be recommended to advise the prospective purchasers / tenants of affected units of potential environmental noise problem:

Table 3 – Warning Clauses for Outdoor Living Areas

Leq (dBA)	Warning Clause	Description
55 dBA < $L_{eq(16)}$ ≤ 60 dBA	Warning Clause Type A	"Purchasers/tenants are advised that sound levels due to increasing road traffic (rail traffic) (air traffic) may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."
60 dBA < $L_{eq(16)}$	Warning Clause Type B	"Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic (rail traffic) (air traffic) may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."

- Clauses taken from section C8 Warning Clauses; Environmental Noise Guidelines for Stationary and Transportation Sources - NPC-300

Table 4 – Warning Clauses for Indoor Living Areas		
Leq (dBA)	**Warning Clause**	**Description**
55 dBA < $L_{eq(16)}$ ≤ 65 dBA 50 dBA < $L_{eq(8)}$ ≤ 60 dBA	Warning Clause Type C	"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."
65 dBA < $L_{eq(16)}$ 60 dBA < $L_{eq(8)}$	Warning Clause Type D	"This dwelling unit has been supplied with a central air conditioning system 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 Municipality and the Ministry of the Environment."
➢ Clauses taken from section C8 Warning Clauses; Environmental Noise Guidelines for Stationary and Transportation Sources - NPC-300		

Stationary Noise

Stationary noise sources include sources or facilities that are fixed or mobile and can cause a combination of sound and vibration levels emitted beyond the property line. These sources may include commercial air conditioner units, generators and fans. Facilities that may contribute to stationary noise may include car washes, snow disposal sites, transit stations and manufacturing facilities.

The subject site is not in proximity to existing or approved stationary sources of noise. Therefore, a stationary noise analysis will not be required.

Aircraft / Airport Noise

The subject site is not located within the Airport Vicinity Development Zone. Therefore this project will not require an aircraft/airport noise analysis. No warning clauses regarding aircraft or airport noise will be required.

4.0 Analysis

4.1 Surface Transportation Noise

The subject buildings are bordered to the north by Somerset Street West followed by commercial buildings, residential dwellings, and Wellington Street West, to the east by Bayswater Avenue followed by commercial buildings, residential dwellings, and institutional building, to the west by commercial buildings, residential dwellings, and Spadina Avenue, and to the south by residential dwellings. Somerset Street West, Wellington Street West, Bayswater Avenue, and Spadina Avenue are identified within the 100 m radius of proposed development.

Based on the City of Ottawa's Official Plan, Schedule E, Somerset Street West is considered a 2-lane urban arterial road (2-UAU). Bayswater Avenue is considered a 2-lane urban collector road (2-UCU). Other roads within the 100 m radius of the proposed development are not classified as either arterial, collector or major collector roads and therefore are not included in this study. The major sources of surface traffic noise are due to the Somerset Street West to the north and Bayswater Avenue to the east of the proposed development.

All surface transportation noise sources are presented in Drawings PG6568-3, PG6568-4, PG6568-5 - Site Geometry located in Appendix 1.

The noise levels from road traffic are provided by the City of Ottawa, taking into consideration the right-of-way width and the implied roadway classification. It is understood that these values represent the maximum allowable capacity of the proposed roadways. The parameters to be used for sound level predictions can be found below.

Table 5 – Traffic and Road Parameters

Segment	Roadway Classification	AADT Veh/Day	Speed Limit (km/h)	Day/Night Split %	Medium Truck %	Heavy Truck %
Somerset Street West	2-UAU	15000	50	92/8	7	5
Bayswater Avenue	2-UCU	8000	40	92/8	7	5

- Data obtained from the City of Ottawa document ENCG

Three (3) levels of reception points were selected for Building A, Building B, and Building D, respectively, for this analysis. The following elevations were selected from the heights provided on the survey plan for subject buildings.

Table 6 – Elevations of Reception Points			
Floor Number	**Elevation at Centre of Window (m)**	**Floor Use**	**Daytime / Nighttime Analysis**
Building A:			
First Floor	1.5	Living Area/Bedroom	Daytime / Nighttime
Sixth Floor	18.0	Living Area/Bedroom	Daytime / Nighttime
Building A, Rooftop Terrace	21.5	--	Outdoor Living Area
Building B:			
First Floor	1.5	Living Area/Bedroom	Daytime / Nighttime
Fifteenth Floor	46.5	Living Area/Bedroom	Daytime / Nighttime
Building B, Rooftop Terrace	49.5	--	Outdoor Living Area
Building D:			
First Floor	1.5	Living Area/Bedroom	Daytime / Nighttime
Seventeenth Floor	53.0	Living Area/Bedroom	Daytime / Nighttime
Building D, Rooftop Terrace	56.5	--	Outdoor Living Area

For this analysis, a reception point was taken at the centre of each floor, at the first floor and top floor. Outdoor living areas – rooftop terraces are anticipated at the proposed buildings. Receptors (REC 13, REC 14, REC 15) were selected in the centre of rooftop terraces at Building A, Building B, Building D, respectively, at 21.5 m, 49.5 m, and 56.5 m. Reception points are detailed on Drawing PG6568-2 - Receptor Locations presented in Appendix 1.

All horizontal distances have been measured from the reception point to the edge of the right-of-way. The roadways were analyzed where they intersected the 100 m buffer zone, which is reflected in the local angles described in Paterson Drawings PG6568-3A to 3E, PG6568-4A to 4E, and PG6568-5A to 5E - Site Geometry in Appendix 1. The subject site is at grade with the neighbouring roads within the 100 m radius.

Tables 8 to 10 - Summary of Reception Points and Geometry, located in Appendix 1, provides a summary of the points of reception and their geometry with respect to the noise sources. The analysis is completed so that no effects of sound reflection off of the building facade are considered, as stipulated by the ENGC.

The analysis was completed using STAMSON version 5.04, a computer program which uses the road and rail traffic noise prediction methods using ORNAMENT (Ontario Road Noise Analysis Method for Environment and Transportation) and STEAM (Sound from Trains Environment Analysis Method), publications from the Ontario Ministry of Environment and Energy.

5.0 Results

Surface Transportation Noise

The primary descriptors are the 16-hour daytime (7:00-23:00) and the 8-hour nighttime (23:00-7:00) equivalent sound levels, $L_{eq(16)}$ and $L_{eq(8)}$ for City roads.

The exterior noise levels due to roadway traffic sources were analyzed with the STAMSON version 5.04 software at all reception points. The input and output data of the STAMSON modeling can be found in Appendix 2, and the summary of the results can be found in Table 7.

Table 7: Exterior Noise Levels due to Roadway Traffic Sources

Reception Point	Height Above Grade (m)	Receptor Location	Daytime $L_{eq(16)}$ (dBA)	Nighttime $L_{eq(8)}$ (dBA)
Building A				
REC 1-1	1.5	Building A, Northern Elevation, 1st Floor	67	59
REC 1-6	18.0	Building A, Northern Elevation, 6th Floor	68	60
REC 2-1	1.5	Building A, Western Elevation, 1st Floor	63	55
REC 2-6	18.0	Building A, Western Elevation, 6th Floor	64	56
REC 3-1[a]	1.5	Building A, Eastern Elevation, 1st Floor	65	59
REC 3-1[b]	1.5	Building A, Eastern Elevation, 1st Floor	62	55
REC 3-1[b, c]	1.5	Building A, Eastern Elevation, 1st Floor	62	55
REC 3-6[a]	18.0	Building A, Eastern Elevation, 6th Floor	66	61
REC 3-6[b]	18.0	Building A, Eastern Elevation, 6th Floor	63	55
REC 3-6[b, c]	18.0	Building A, Eastern Elevation, 6th Floor	62	55
REC 4-1[a]	1.5	Building A, Southern Elevation, 1st Floor	48	41
REC 4-1[c]	1.5	Building A, Southern Elevation, 1st Floor	38	31
REC 4-6[a]	18.0	Building A, Southern Elevation, 6th Floor	52	44
REC 4-6[c]	18.0	Building A, Southern Elevation, 6th Floor	42	34
REC 13[a]	21.5	Building A, Rooftop Terrace	51	--

Table 7: Exterior Noise Levels due to Roadway Traffic Sources

Reception Point	Height Above Grade (m)	Receptor Location	Daytime $L_{eq(16)}$ (dBA)	Nighttime $L_{eq(8)}$ (dBA)
REC 13[b]	21.5	Building A, Rooftop Terrace	50	--
REC 13[b, c]	21.5	Building A, Rooftop Terrace	49	--
Building B				
REC 5-1	1.5	Building B, Northern Elevation, 1st Floor	67	60
REC 5-15	46.5	Building B, Northern Elevation, 15th Floor	69	61
REC 6-1	1.5	Building B, Western Elevation, 1st Floor	64	56
REC 6-15	46.5	Building B, Western Elevation, 15th Floor	65	58
REC 7-1	1.5	Building B, Eastern Elevation, 1st Floor	66	59
REC 7-15	46.5	Building B, Eastern Elevation, 15th Floor	68	60
REC 8-1	1.5	Building B, Southern Elevation, 1st Floor	57	50
REC 8-1[c]	1.5	Building B, Southern Elevation, 1st Floor	39	31
REC 8-15	46.5	Building B, Southern Elevation, 15th Floor	59	51
REC 8-15[c]	46.5	Building B, Southern Elevation, 15th Floor	39	31
REC 14	49.5	Building B, Rooftop Terrace	50	--
REC 14[c]	49.5	Building B, Rooftop Terrace	50	--
Building D				
REC 9-1	1.5	Building D, Northern Elevation, 1st Floor	49	41
REC 9-17	53.0	Building D, Northern Elevation, 17th Floor	69	61
REC 10-1	1.5	Building D, Western Elevation, 1st Floor	39	32
REC 10-17	53.0	Building D, Western Elevation, 17th Floor	55	47
REC 11-1	1.5	Building D, Eastern Elevation, 1st Floor	63	56
REC 11-17	53.0	Building D, Eastern Elevation, 17th Floor	65	58
REC 12-1	1.5	Building D, Southern Elevation, 1st Floor	59	52
REC 12-17	53.0	Building D, Southern Elevation, 17th Floor	61	53
REC 15	56.5	Building D, Rooftop Terrace	52	--

Table 7: Exterior Noise Levels due to Roadway Traffic Sources				
Reception Point	**Height Above Grade (m)**	**Receptor Location**	**Daytime $L_{eq(16)}$ (dBA)**	**Nighttime $L_{eq(8)}$ (dBA)**
[a] The anticipated noise level before the Construction of Building B and Building D				
[b] The anticipated noise level after the Construction of Building B				
[c] The anticipated noise level after the Construction of Building D				

6.0 Discussion and Recommendations

6.1 Outdoor Living Areas

Outdoor living areas – rooftop terraces are anticipated at the proposed buildings. One (1) receptor point was selected for the analysis in the centre of rooftop terrace at Building A (REC 13). One (1) receptor point was selected for the analysis in the centre of rooftop terrace at Building B (REC 14). One (1) receptor point was selected for the analysis in the centre of rooftop terrace at Building D (REC 15). It is assumed that the rooftop terraces will only be utilized as outdoor living areas provided that the proposed buildings are constructed. Utilizing the exteriors of proposed buildings as noise barriers, the noise levels at the rooftop terraces of Building A, Building B, and Building D will be 51 dBA, 50 dBA, and 52 dBA, respectively, during the daytime period (7:00-23:00), which are below the 55 dBA threshold value specified by the ENCG. Therefore, no further noise attenuation measures are required.

6.2 Indoor Living Areas and Ventilation

Surface Transportation Noise

The STAMSON modeling for Building A was completed for 3 scenarios, one before the construction of Buildings B and D, one after the construction of Building B, and one after the construction of Buildings B and D. The results of the STAMSON modeling indicate that the noise levels at Building A will range between 48 dBA and 68 dBA during the daytime period (07:00-23:00) and between 41 dBA and 60 dBA during the nighttime period (23:00-7:00) before the construction of Buildings B and D, while that will range between 38 dBA and 68 dBA during the daytime period (07:00-23:00) and between 31 dBA and 60 dBA during the nighttime period (23:00-7:00) after the construction of Buildings B and D. The anticipated noise levels on the western, northern, and eastern elevations of Building A will exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. It is also noted that the anticipated noise levels on the northern and eastern elevations of Building A will exceed 65 dBA before the construction of Building B, while only that on the northern elevation of Building A will exceed 65 dBA after the construction of Building B. Therefore, all units on the western, northern, and eastern elevations of Building A should be supplied with a central air conditioning unit, along with the warning clause Type D, as outlined in Table 3.

The noise levels on the northern and eastern elevations of Building A do exceed the 65 dBA threshold before the construction of Building B, while only that on the northern elevation exceeds the 65 dBA threshold after the construction of Building B. Therefore, an analysis of the building materials will be required. However, at this time the building materials and exterior wall construction details have not been finalized. Therefore, a review of the proposed building materials on the northern and eastern elevations of Building A will need to be completed.

The STAMSON modeling for Building B was completed for 2 scenarios, one before the construction of Building D, and one after the construction of Building D. The results of the STAMSON modeling indicate that the noise levels at Building B will range between 57 dBA and 69 dBA during the daytime period (07:00-23:00) and between 50 dBA and 61 dBA during the nighttime period (23:00-7:00) before the construction of Building D, while that will range between 39 dBA and 69 dBA during the daytime period (07:00-23:00) and between 31 dBA and 61 dBA during the nighttime period (23:00-7:00). The anticipated noise levels on the western, northern, eastern, and southern elevations of Building B will exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. It is also noted that the anticipated noise levels on the northern and eastern elevations of Building B will exceed 65 dBA. Therefore, all units of Building B should be supplied with a central air conditioning unit, along with the warning clause Type D, as outlined in Table 3. The noise levels on the northern and eastern elevations of Building B do exceed the 65 dBA threshold. Therefore, an analysis of the building materials will be required. However, at this time the building materials and exterior wall construction details have not been finalized. Therefore, a review of the proposed building materials on the northern and eastern elevations of Building B will need to be completed.

The results of the STAMSON modeling indicate that the noise levels at Building D will range between 39 dBA and 69 dBA during the daytime period (07:00-23:00) and between 32 dBA and 61 dBA during the nighttime period (23:00-7:00). The anticipated noise levels on the northern, eastern, and southern elevations of Building D will exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. It is also noted that the anticipated noise level on the northern elevation of Building D will exceed 65 dBA. Therefore, the units on the northern, eastern, and southern elevations of Building D should be supplied with a central air conditioning unit, along with the warning clause Type D, as outlined in Table 3. The noise level on the northern elevation of Building D exceeds the 65 dBA threshold. Therefore, an analysis of the building materials will be required. However, at this time the building materials and exterior wall construction details have not been finalized. Therefore, a review of the proposed building materials on the northern elevation of Building D will need to be completed.

Proposed Construction Specifications

It is understood that typical window and wall details are proposed for the residential buildings. The effectiveness of the noise insulation can be expressed as the Acoustical Insulation Factor (AIF), calculated as follows:

$$AIF = L_{eq(16)(Exterior)} - L_{eq(16)(Interior)} + 10\log_{10}(N) + 2 \text{ dBA}$$

Where:

$L_{eq(16)(Exterior)}$ = Calculated value at the window pane
$L_{eq(16)(Interior)}$ = 45 dBA
N = number of components in the room

No floor plans or detailed design drawings were provided for this portion of the review. A conservative approach is to assume that there are 2 components per room. Therefore, the AIF would need to be at least 28 dBA for Building A, 29 dBA for Building B, and 29 dBA for Building D.

A conversion from AIF to a Standard Transmission Class (STC) rating will require the knowledge of room dimensions in addition to the wall and window dimensions. However, a conservative approach would be to increase the AIF factor by 3. **Therefore, provided the building materials of either the windows and/or exterior walls have STC ratings of 31 or higher for Building A, 32 or higher for Building B, and 32 or higher for Building D, this would be a sufficient noise attenuation device.**

A review of industry standards for construction material indicates that, as long as the exterior claddings consist of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 32 and are considered acceptable. If alternative materials are to be utilized on the northern and eastern elevations of Building A, the northern and eastern elevations of Building B, or the northern elevation of Building D then a review will need to be completed once design details are finalized.

7.0 Summary of Findings

The subject site is located at 50 Bayswater Avenue & 1088 Somerset Street West. It is understood that the proposed development will consist of two mixed-use buildings (Building A and Building B) and one residential building (Building D). Building A will have 6 storeys and rise 20 m above-grade. Building B will have 15 storeys and rise 48 m above-grade. Building D will have 17 storeys and rise 55 m above-grade. Building A and Building B will consist of commercial / retail units on the first floor and residential units on the remaining floors. The associated analysis identified two surface transportation noise sources: Bayswater Avenue and Somerset Street West.

The surface transportation noise analysis was completed at the Outdoor Living Areas – rooftop terraces at the proposed buildings. Utilizing the exteriors of proposed buildings as noise barriers, the results of STAMSON modeling indicate that the noise levels at the rooftop terraces of Building A, Building B, and Building D are expected to be 51 dBA, 50 dBA, and 52 dBA, respectively, during the daytime period (7:00-23:00), which are below the 55 dBA threshold value specified by the ENCG. Therefore, no further noise attenuation measures are required.

Several reception points were selected for the surface transportation noise analysis at Building A, Building B, and Building D, consisting of the centre of first level and top level. The results of STAMSON modeling indicate that the noise levels on western, northern, and eastern elevations of Building A are expected to exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. It is also noted that the noise levels on the northern and eastern elevations of Building A are expected to exceed 65 dBA. Therefore, the installation of a central air conditioning unit, along with a warning clause Type D, will be required for the units on the western, northern, and eastern elevations of Building A. A review of industry standards for construction material indicates that, provided the exterior claddings of the northern and eastern elevations of Building A consist of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 31 and are considered acceptable.

The results of STAMSON modeling indicate that the noise levels on western, northern, eastern, and southern elevations of Building B are expected to exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. It is also noted that the noise levels on the northern and eastern elevations of Building B are expected to exceed 65 dBA. Therefore, the installation of a central air conditioning unit, along with a warning clause Type D, will be required for all units of Building B. A review of industry standards for construction material indicates that, provided the exterior claddings of the northern and eastern elevations of Building B consist of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 32 and are considered acceptable.

The results of STAMSON modeling indicate that the noise levels on northern, eastern, and southern elevations of Building D are expected to exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. It is also noted that the noise level on the northern elevation of Building D is expected to exceed 65 dBA. Therefore, the installation of a central air conditioning unit, along with a warning clause Type D, will be required for the units on northern, eastern, and southern elevations of Building D. A review of industry standards for construction material indicates that, provided the exterior cladding of the northern elevation of Building D consists of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 32 and are considered acceptable.

The following warning clause is to be included on all Offers of Purchase and Sale and/or lease agreements at the units on the western, northern, and eastern elevations of Building A, all units of Building B, and the units on northern, eastern, and southern elevations of Building D:

> " This dwelling unit has been supplied with a central air conditioning system 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 Municipality and the Ministry of the Environment."

8.0 Statement of Limitations

The recommendations made in this report are in accordance with our present understanding of the project. Our recommendations should be reviewed when the project drawings and specifications are complete.

The present report applies only to the project described in this document. Use of this report for purposes other than those described herein or by person(s) other than Manor Park Management or his agent(s) is not authorized without review by this firm for the applicability of our recommendations to the altered use of the report.

Paterson Group Inc.

Yolanda Tang, M.A.Sc. Stephanie A. Boisvenue, P.Eng.

Report Distribution:

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APPENDIX 1

Table 8 - Summary Of Reception Points And Geometry (Building A)

Table 9 - Summary Of Reception Points And Geometry (Building B)

Table 10 - Summary Of Reception Points And Geometry (Building D)

Drawing PG6568-1 - Site Plan

Drawing PG6568-2 - Receptor Location Plan

Drawing PG6568-3 - Site Geometry (Building A)

Drawing PG6568-3A - Site Geometry - REC 1-1 and REC 1-6

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Drawing PG6568-3C - Site Geometry - REC 3-1 and REC 3-6

Drawing PG6568-3D - Site Geometry - REC 4-1 and REC 4-6

Drawing PG6568-3E - Site Geometry - REC 13

Drawing PG5546-4 - Site Geometry (Building B)

Drawing PG6568-4A - Site Geometry - REC 5-1 and REC 5-15

Drawing PG6568-4B - Site Geometry - REC 6-1 and REC 6-15

Drawing PG6568-4C - Site Geometry - REC 7-1 and REC 7-15

Drawing PG6568-4D - Site Geometry - REC 8-1 and REC 8-15

Drawing PG6568-4E - Site Geometry - REC 14

APPENDIX 1 (Cont'd)

Drawing PG6568-5 - Site Geometry (Building D)

Drawing PG6568-5A - Site Geometry - REC 9-1 and REC 9-17

Drawing PG6568-5B - Site Geometry - REC 10-1 and REC 10-17

Drawing PG6568-5C - Site Geometry - REC 11-1 and REC 11-17

Drawing PG6568-5D - Site Geometry - REC 12-1 and REC 12-17

Drawing PG6568-5E - Site Geometry - REC 15

Table 8 - Summary of Reception Points and Geometry
50 Bayswater Avenue & 1088 Somerset Street (Building A)

Point of Reception	Location	Leq Day (dBA)	Somerset Street West								Bayswater Avenue							
			Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)	Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)
REC 1-1	Building A, Northern Elevation, 1st Floor	67	15	1.5	15.1	-88, 88	n/a	n/a	n/a	n/a	60	1.5	60.0	-57, 0	1	20	n/a	n/a
REC 1-6	Building A, Northern Elevation, 6th Floor	68	15	18.0	23.4	-88, 88	n/a	n/a	n/a	n/a	60	18.0	62.6	-57, 0	1	20	n/a	n/a
REC 2-1	Building A, Western Elevation, 1st Floor	63	15	1.5	15.1	-81, 0	1	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
REC 2-6	Building A, Western Elevation, 6th Floor	64	15	18	23.4	-81, 0	1	20	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
REC 3-1	Building A, Eastern Elevation, 1st Floor	65	15	1.5	15.1	0, 81	n/a	n/a	n/a	n/a	50	1.5	50.0	-65, 63	1	20	n/a	n/a
REC 3-1	Building A, Eastern Elevation, 1st Floor (After Building B Construction)	62	15	1.5	15.1	0, 44	n/a	n/a	n/a	n/a	75	1.5	75.0	-65, -46	1	20	n/a	n/a
			25	1.5	25.0	44, 81	n/a	n/a	48	10	50	1.5	50.0	-46, 0	n/a	n/a	48	10
											50	1.5	50.0	0, 63	n/a	n/a	n/a	n/a
REC 3-1	Building A, Eastern Elevation, 1st Floor (After Building B & Building D Construction)	62	15	1.5	15.1	0, 44	n/a	n/a	n/a	n/a	75	1.5	75.0	-65, -46	1	20	n/a	n/a
			25	1.5	25.0	44, 81	n/a	n/a	48	10	50	1.5	50.0	-46, 0	n/a	n/a	48	10
											50	1.5	50.0	0, 63	n/a	n/a	55	25
REC 3-6	Building A, Eastern Elevation, 6th Floor	66	15	18	23.4	0, 81	n/a	n/a	n/a	n/a	50	18	53.1	-65, 63	1	20	n/a	n/a
REC 3-6	Building A, Eastern Elevation, 6th Floor (After Building B Construction)	63	15	18	23.4	0, 44	n/a	n/a	n/a	n/a	75	18	77.1	-65, -46	1	20	n/a	n/a
			25	18	30.8	44, 81	n/a	n/a	48	10	50	18	53.1	-46, 0	n/a	n/a	48	10
											50	18	53.1	0, 63	n/a	n/a	n/a	n/a
REC 3-6	Building A, Eastern Elevation, 6th Floor (After Building B & Building D Construction)	62	15	18	23.4	0, 44	n/a	n/a	n/a	n/a	75	18	77.1	-65, -46	1	20	n/a	n/a
			25	18	30.8	44, 81	n/a	n/a	48	10	50	18	53.1	-46, 0	n/a	n/a	48	10
											50	18	53.1	0, 63	n/a	n/a	55	25
REC 4-1	Building A, Southern Elevation, 1st Floor	48	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	60	1.5	60.0	0, 56	n/a	n/a	n/a	n/a
REC 4-1	Building A, Southern Elevation, 1st Floor (After Building D Construction)	38	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	60	1.5	60.0	0, 48	n/a	n/a	55	35
											80	1.5	80.0	48, 56	n/a	n/a	n/a	n/a
REC 4-6	Building A, Southern Elevation, 6th Floor	52	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	60	18	62.6	0, 56	n/a	n/a	n/a	n/a
REC 4-6	Building A, Southern Elevation, 6th Floor (After Building D Construction)	42	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	60	18	62.6	0, 48	n/a	n/a	55	35
											80	18	82.0	48, 56	n/a	n/a	n/a	n/a
REC 13	Building A, Rooftop Terrace	51	15	21.5	26.2	-82, 82	n/a	n/a	n/a	n/a	60	21.5	63.7	-60, 59	n/a	n/a	n/a	n/a
REC 13	Building A, Rooftop Terrace (After Building B Construction)	50	15	21.5	26.2	-82, 61	n/a	n/a	n/a	n/a	60	21.5	63.7	-60, -29	n/a	n/a	n/a	n/a
											60	21.5	63.7	8, 59	n/a	n/a	n/a	n/a
REC 13	Building A, Rooftop Terrace (After Buildings B & D Construction)	49	15	21.5	26.2	-82, 61	n/a	n/a	n/a	n/a	60	21.5	63.7	-60, -29	n/a	n/a	n/a	n/a
											60	21.5	63.7	54, 59	n/a	n/a	n/a	n/a

Table 9 - Summary of Reception Points and Geometry
50 Bayswater Avenue & 1088 Somerset Street (Building B)

Point of Reception	Location	Leq Day (dBA)	Somerset Street West								Bayswater Avenue							
			Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)	Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)
REC 5-1	Building B, Northern Elevation, 1st Floor	67	15	1.5	15.1	-88, 87	n/a	n/a	n/a	n/a	20	1.5	20.1	-78, 0	n/a	n/a	n/a	n/a
REC 5-15	Building B, Northern Elevation, 15th Floor	69	15	46.5	48.9	-88, 87	n/a	n/a	n/a	n/a	20	46.5	50.6	-78, 0	n/a	n/a	n/a	n/a
REC 6-1	Building B, Western Elevation, 1st Floor	64	15	1.5	15.1	-83, 0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
REC 6-15	Building B, Western Elevation, 15th Floor	65	15	46.5	48.9	-83, 0	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
REC 7-1	Building B, Eastern Elevation, 1st Floor	66	15	1.5	15.1	0, 83	n/a	n/a	n/a	n/a	15	1.5	15.1	-87, 88	n/a	n/a	n/a	n/a
REC 7-15	Building B, Eastern Elevation, 15th Floor	68	15	46.5	48.9	0, 83	n/a	n/a	n/a	n/a	15	46.5	48.9	-87, 88	n/a	n/a	n/a	n/a
REC 8-1	Building B, Southern Elevation, 1st Floor	57	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	20	1.5	20.1	0, 78	n/a	n/a	n/a	n/a
REC 8-1	Building B, Southern Elevation, 1st Floor (After Building D Construction)	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	20	1.5	20.1	0, 78	n/a	n/a	55	1
REC 8-15	Building B, Southern Elevation, 15th Floor	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	20	46.5	50.6	0, 78	n/a	n/a	n/a	n/a
REC 8-15	Building B, Southern Elevation, 15th Floor (After Building D Construction)	39	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	20	46.5	50.6	0, 78	n/a	n/a	55	1
REC 14	Building B, Rooftop Terrace	50	15	49.5	51.7	-86, 85	n/a	n/a	n/a	n/a	20	49.5	53.4	-79, 79	n/a	n/a	n/a	n/a
REC 14	Building B, Rooftop Terrace (After Building D Construction)	50	15	49.5	51.7	-86, 85	n/a	n/a	n/a	n/a	20	49.5	53.4	-79, 23	n/a	n/a	n/a	n/a

Table 10 - Summary of Reception Points and Geometry
50 Bayswater Avenue & 1088 Somerset Street (Building D)

Point of Reception	Location	Leq Day (dBA)	Somerset Street West								Bayswater Avenue							
			Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)	Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)
REC 9-1	Building D, Northern Elevation, 1st Floor	49	15	1.5	15.1	-81, 81	n/a	n/a	48	1	15	1.5	15.1	-83, 0	n/a	n/a	48	1
REC 9-17	Building D, Northern Elevation, 17th Floor	69	15	53.0	55.1	-81, 81	n/a	n/a	48	1	15	53.0	55.1	-83, 0	n/a	n/a	48	1
REC 10-1	Building D, Western Elevation, 1st Floor	39	40	1.5	40.0	-34, 0	n/a	n/a	48	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
			55	1.5	55.0	-68, -34	1	20	20	33								
REC 10-17	Building D, Western Elevation, 17th Floor	55	40	53	66.4	-34, 0	n/a	n/a	48	25	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
			55	53	76.4	-68, -34	1	20	20	33								
REC 11-1	Building D, Eastern Elevation, 1st Floor	63	40	1.5	40.0	0, 68	n/a	n/a	n/a	n/a	15	1.5	15.1	-89, 88	n/a	n/a	n/a	n/a
REC 11-17	Building D, Eastern Elevation, 17th Floor	65	40	53	66.4	0, 68	n/a	n/a	n/a	n/a	15	53	55.1	-89, 88	n/a	n/a	n/a	n/a
REC 12-1	Building D, Southern Elevation, 1st Floor	59	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15	1.5	15.1	0, 82	n/a	n/a	n/a	n/a
REC 12-17	Building D, Southern Elevation, 17th Floor	61	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a	15	53	55.1	0, 82	n/a	n/a	n/a	n/a
REC 15	Building D, Rooftop Terrace	52	40	56.5	69.2	-70, 70	n/a	n/a	n/a	n/a	15	56.5	58.5	-84, 84	n/a	n/a	n/a	n/a

BAYSWATER AVENUE

SOMERSET STREET

SIDEWALK

SIDEWALK

BUILDING D
17-STOREY RESIDENTIAL TOWER

BUILDING C
1-STOREY
STORAGE BUILDING

BUILDING B
15-STOREY
COMMERCIAL /
RESIDENTIAL
TOWER

PARKING DECK

ACCESS ROAD

BUILDING A
6-STOREY
COMMERCIAL /
RESIDENTIAL
TOWER

SCALE: 1:400

0 5 10 15 20 25m

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
OTTAWA, 50 BAYSWATER AVENUE & 1088 SOMERSET STREET ONTARIO

Title:

SITE PLAN

Scale: 1:400	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-1
Approved by: SB	Revision No.:

11x17

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BAYSWATER AVENUE

SOMERSET STREET

SIDEWALK

SIDEWALK

ACCESS ROAD

REC 11-1
REC 11-17

REC 7-1
REC 7-15

BUILDING D
17-STOREY RESIDENTIAL TOWER

REC 9-1
REC 9-17

REC 15

REC 12-1
REC 12-17

BUILDING C
1-STOREY
STORAGE BUILDING

REC 5-1
REC 5-15

REC 14

REC 8-1
REC 8-15

REC 10-1
REC 10-17

BUILDING B
15-STOREY
COMMERCIAL /
RESIDENTIAL
TOWER

PARKING DECK

REC 6-1
REC 6-15

REC 3-1
REC 3-6

BUILDING A
6-STOREY
COMMERCIAL /
RESIDENTIAL
TOWER

REC 1-1
REC 1-6

REC 13

REC 4-1
REC 4-6

REC 2-1
REC 2-6

LEGEND:

RECEPTOR LOCATION

SCALE: 1:400

0 5 10 15 20 25m

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PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

RECEPTOR LOCATION PLAN

Scale: 1:400	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-2
Approved by: SB	Revision No.:

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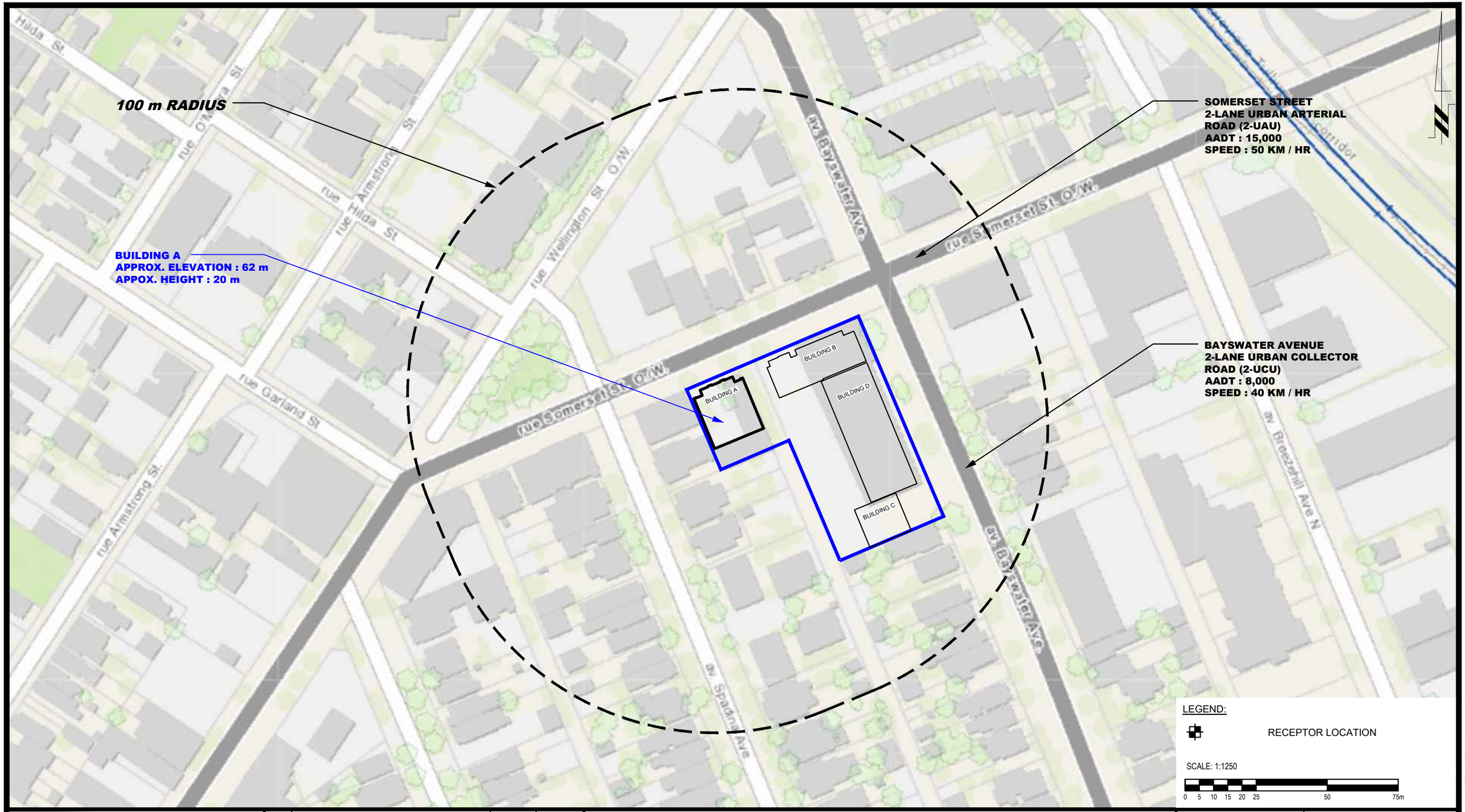

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - BUILDING A

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-3
Approved by: SB	Revision No.:

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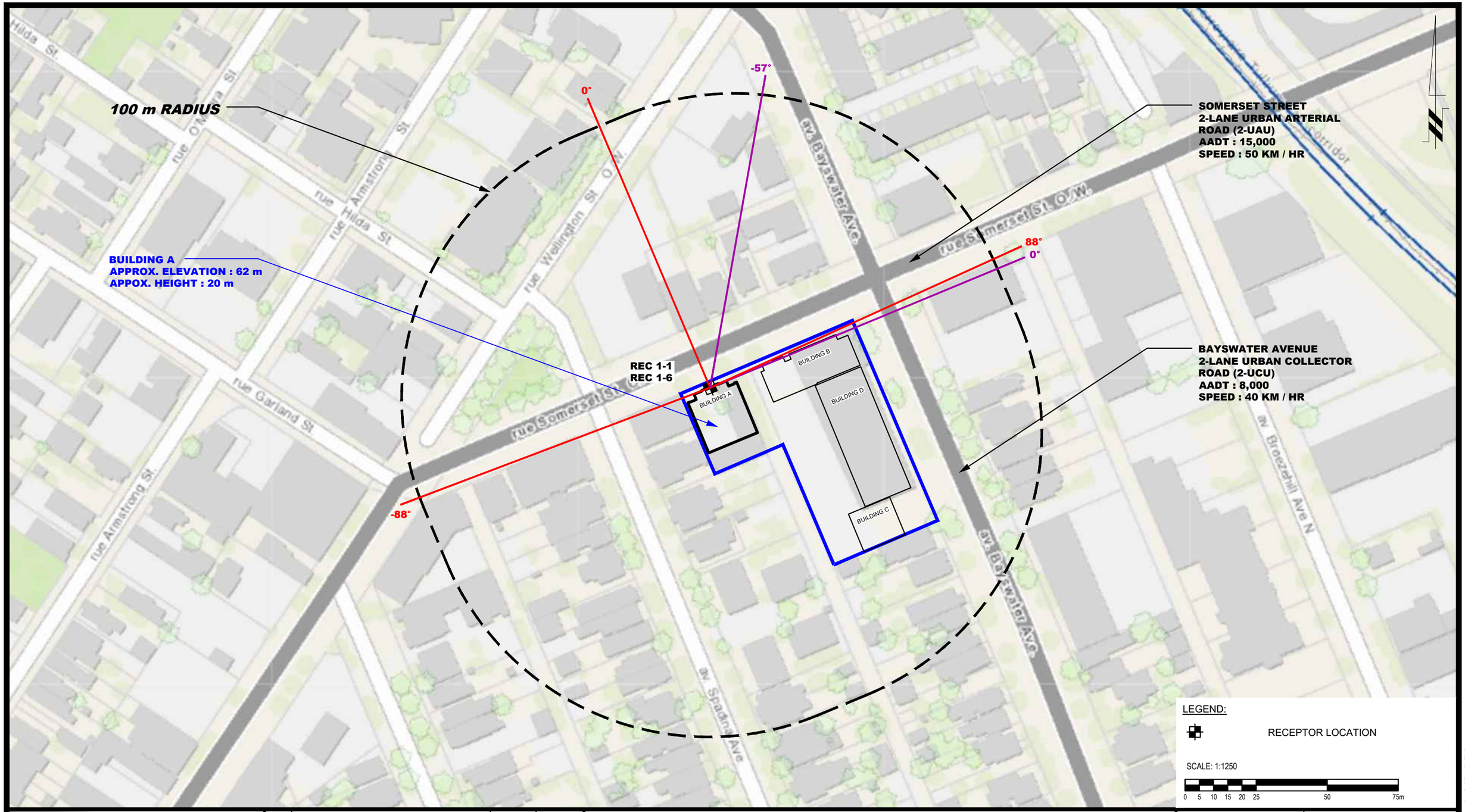

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50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 1-1 AND REC 1-6

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-3A
Approved by: SB	Revision No.:

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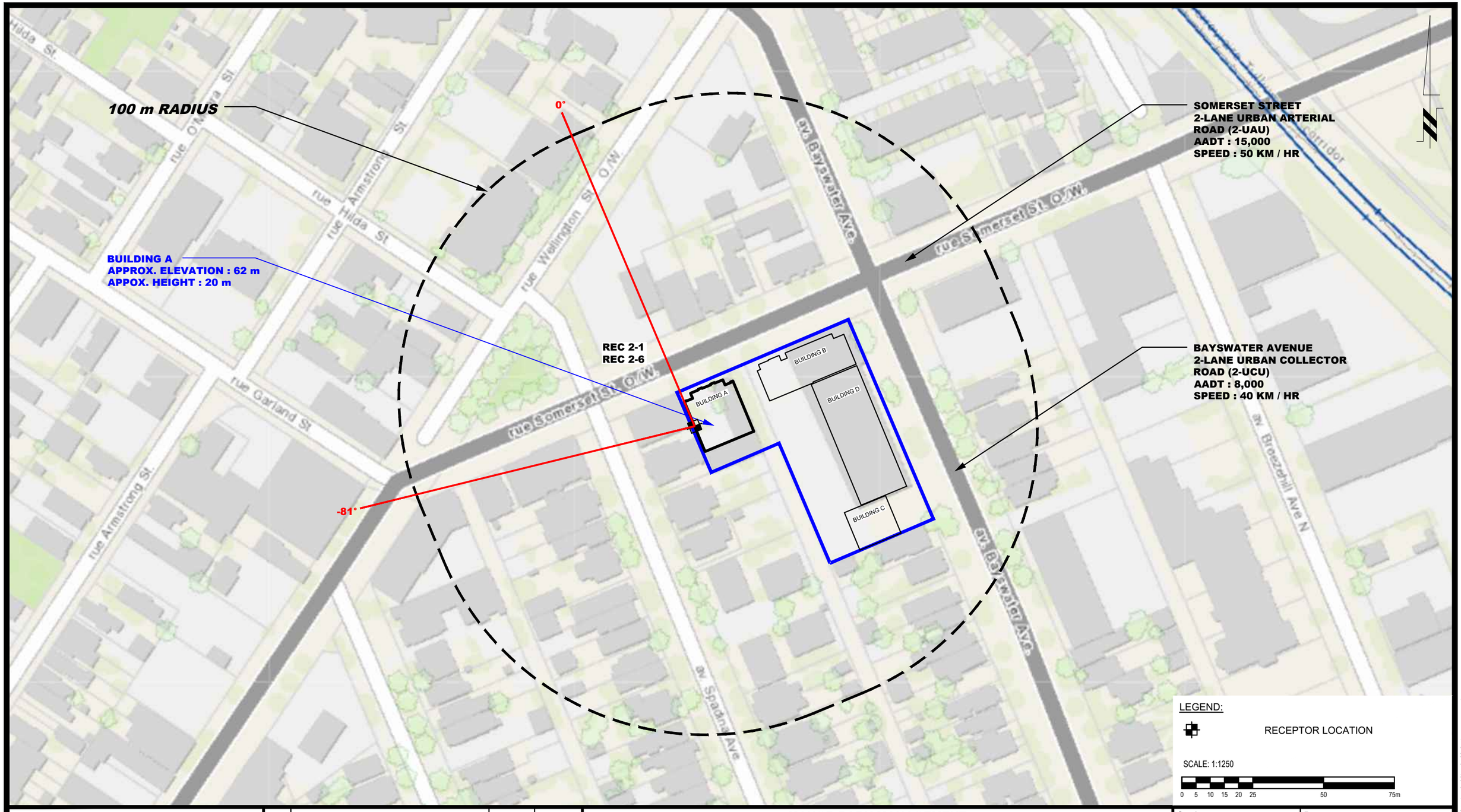

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 2-1 AND REC 2-6

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-3B
Approved by: SB	Revision No.:

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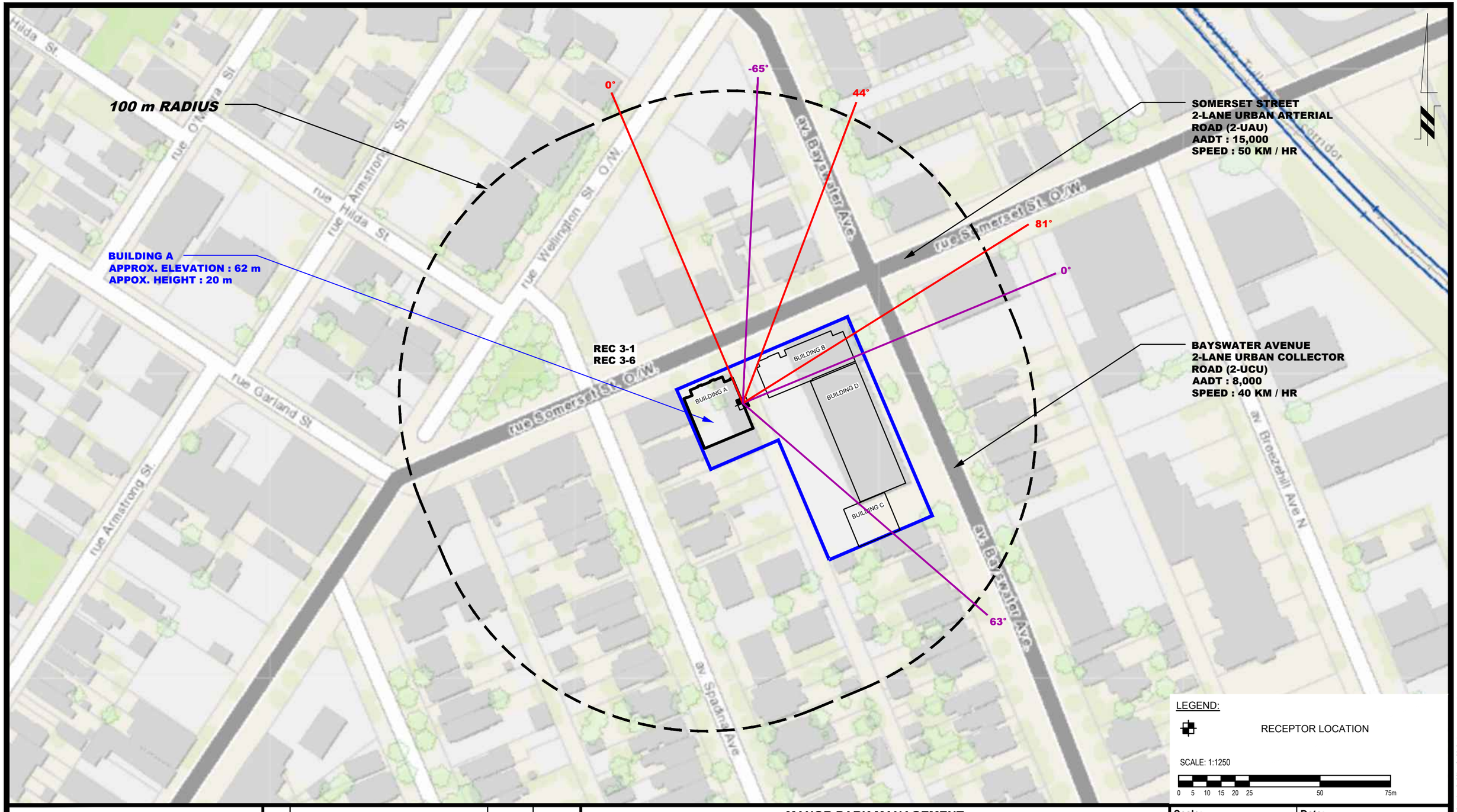

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50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 3-1 AND REC 3-6

Scale: 1:1250	Date: 01/2023
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Approved by: SB	Revision No.:

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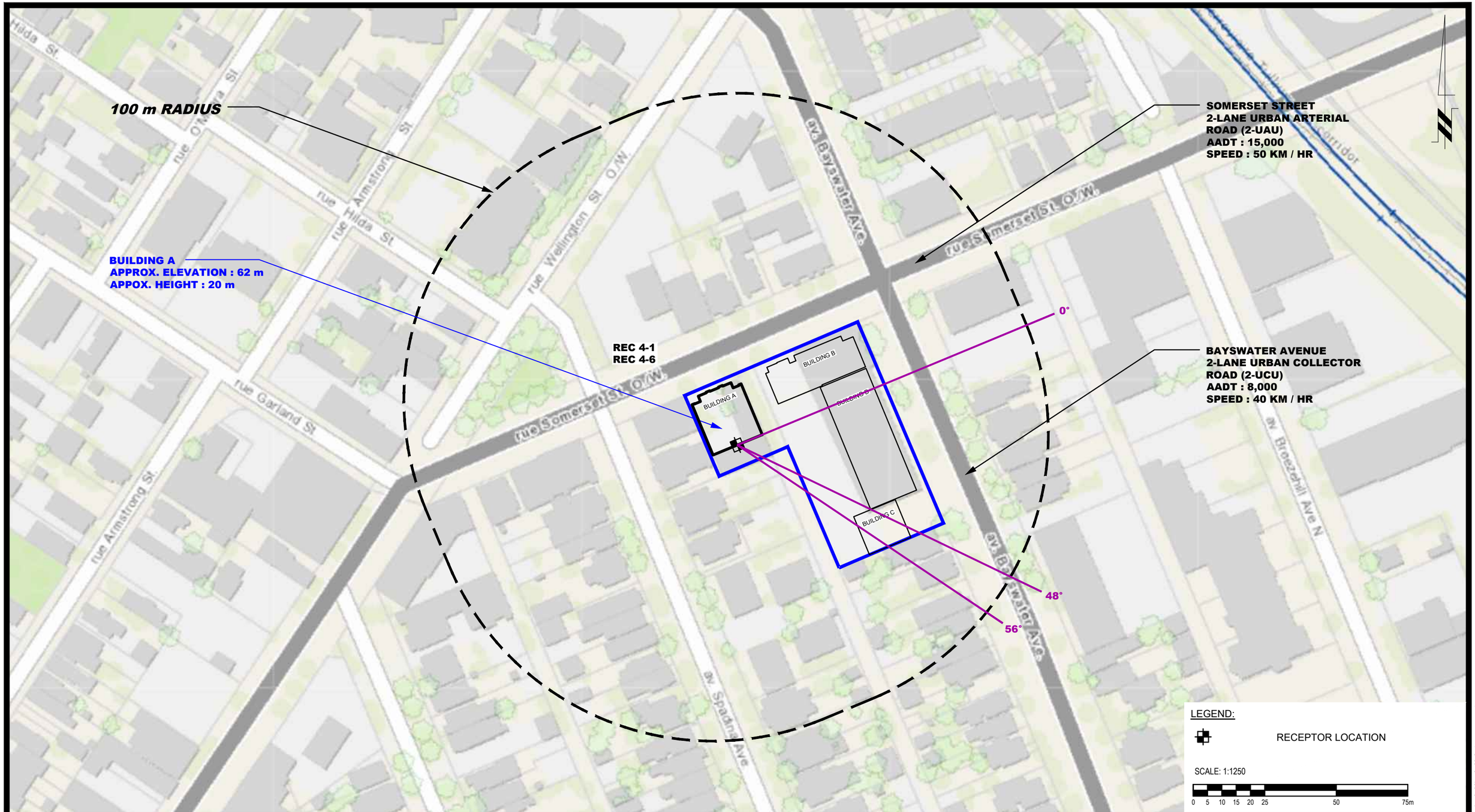

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PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 4-1 AND REC 4-6

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-3D
Approved by: SB	Revision No.:

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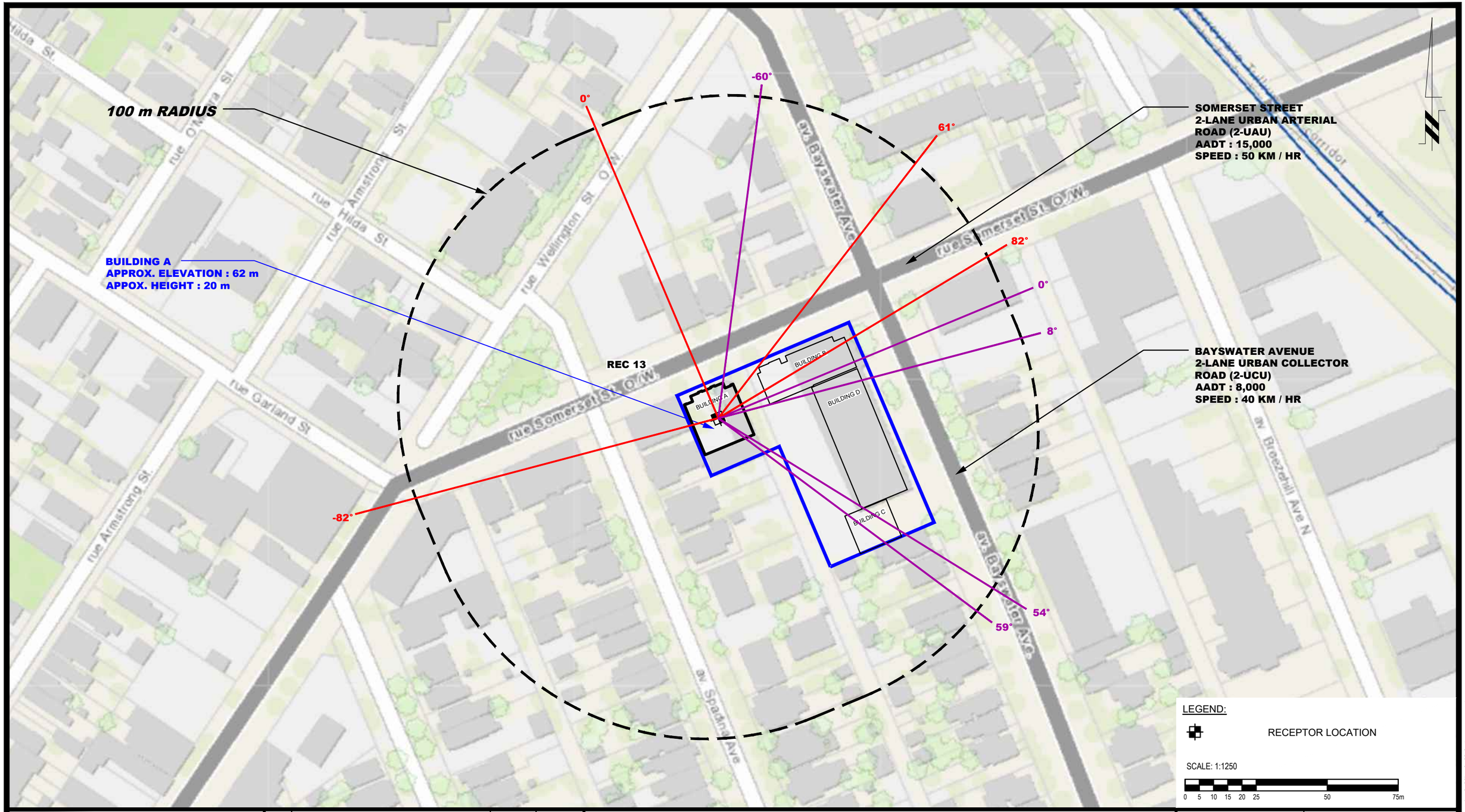

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50 BAYSWATER AVENUE & 1088 SOMERSET STREET

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Title:

SITE GEOMETRY - REC 13

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
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PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

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Title:

SITE GEOMETRY - BUILDING B

Scale: 1:1250	Date: 01/2023
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Checked by: YT	Dwg. No.: PG6568-4
Approved by: SB	Revision No.:

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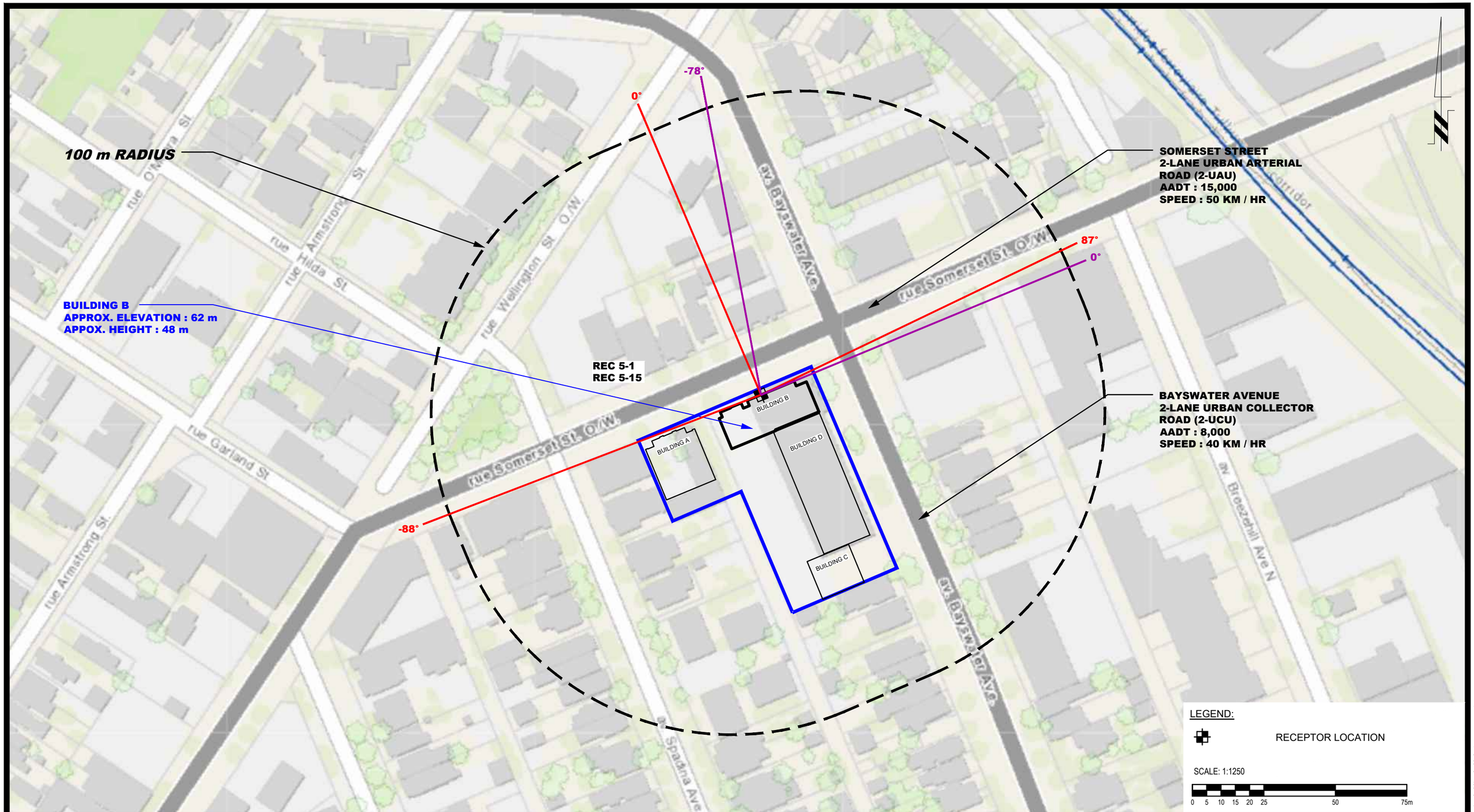

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 5-1 AND REC 5-15

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-4A
Approved by: SB	Revision No.:

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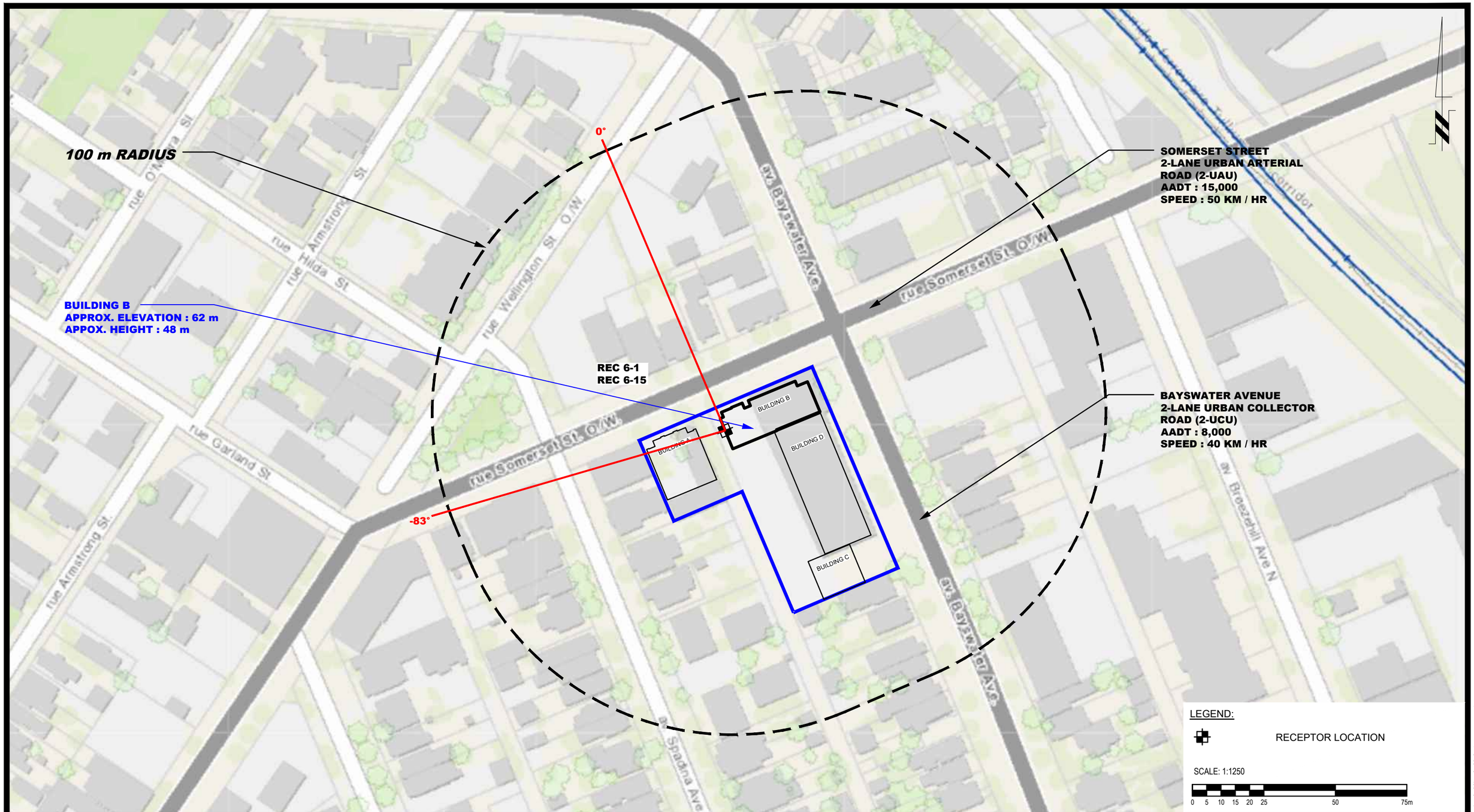

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PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

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Title:

SITE GEOMETRY - REC 6-1 AND REC 6-15

Scale: 1:1250	**Date:** 01/2023
Drawn by: YA	**Report No.:** PG6568-1
Checked by: YT	**Dwg. No.:** PG6568-4B
Approved by: SB	**Revision No.:**

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11x17

PATERSON GROUP
9 AURIGA DRIVE
OTTAWA, ON
K2E 7T9
TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL

MANOR PARK MANAGEMENT

NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 7-1 AND REC 7-15

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-4C
Approved by: SB	Revision No.:

11x17

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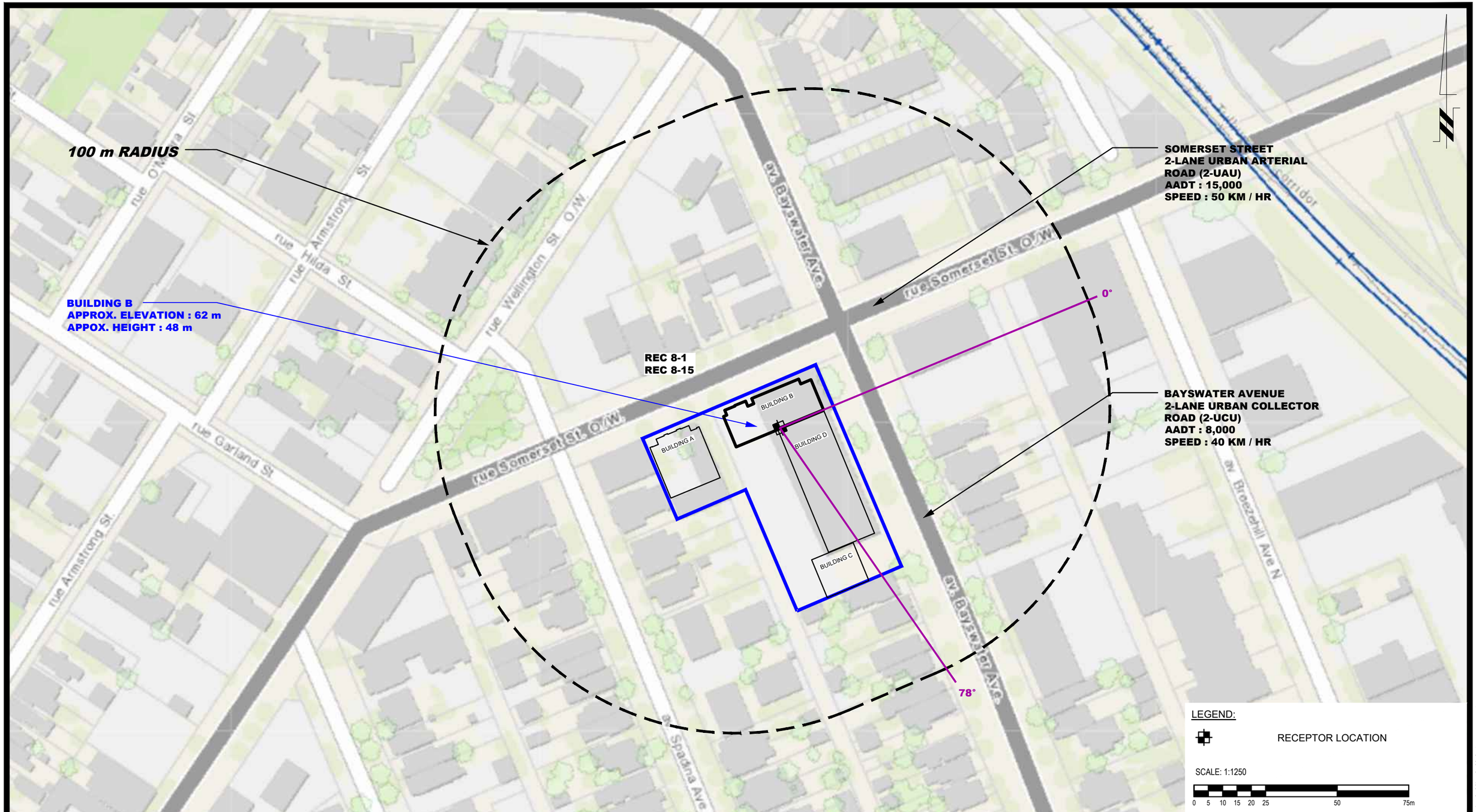

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 8-1 AND REC 8-15

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-4D
Approved by: SB	Revision No.:

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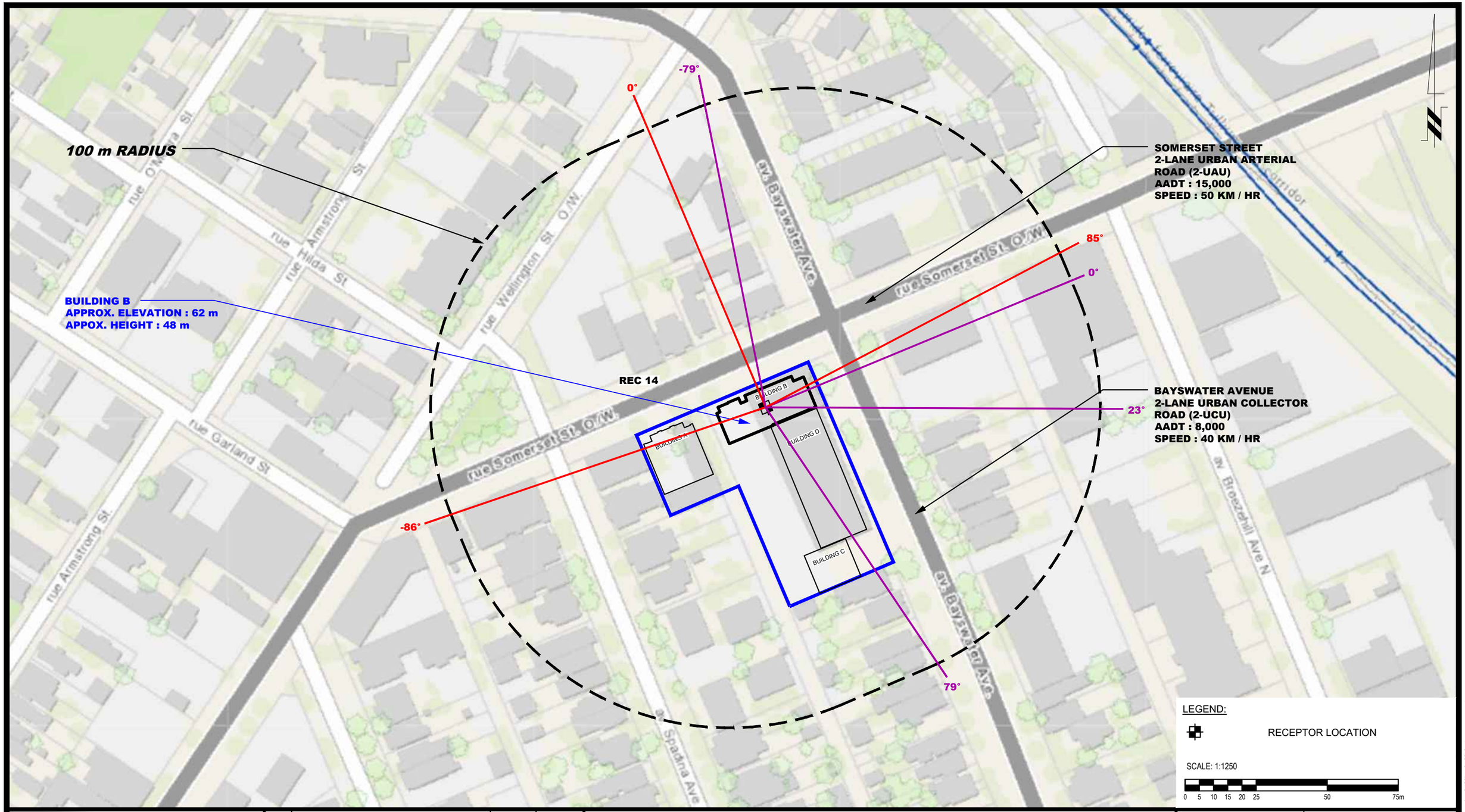

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 14

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-4E
Approved by: SB	Revision No.:

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
OTTAWA, 50 BAYSWATER AVENUE & 1088 SOMERSET STREET ONTARIO

Title:

SITE GEOMETRY - BUILDING D

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-5
Approved by: SB	Revision No.:

11x17

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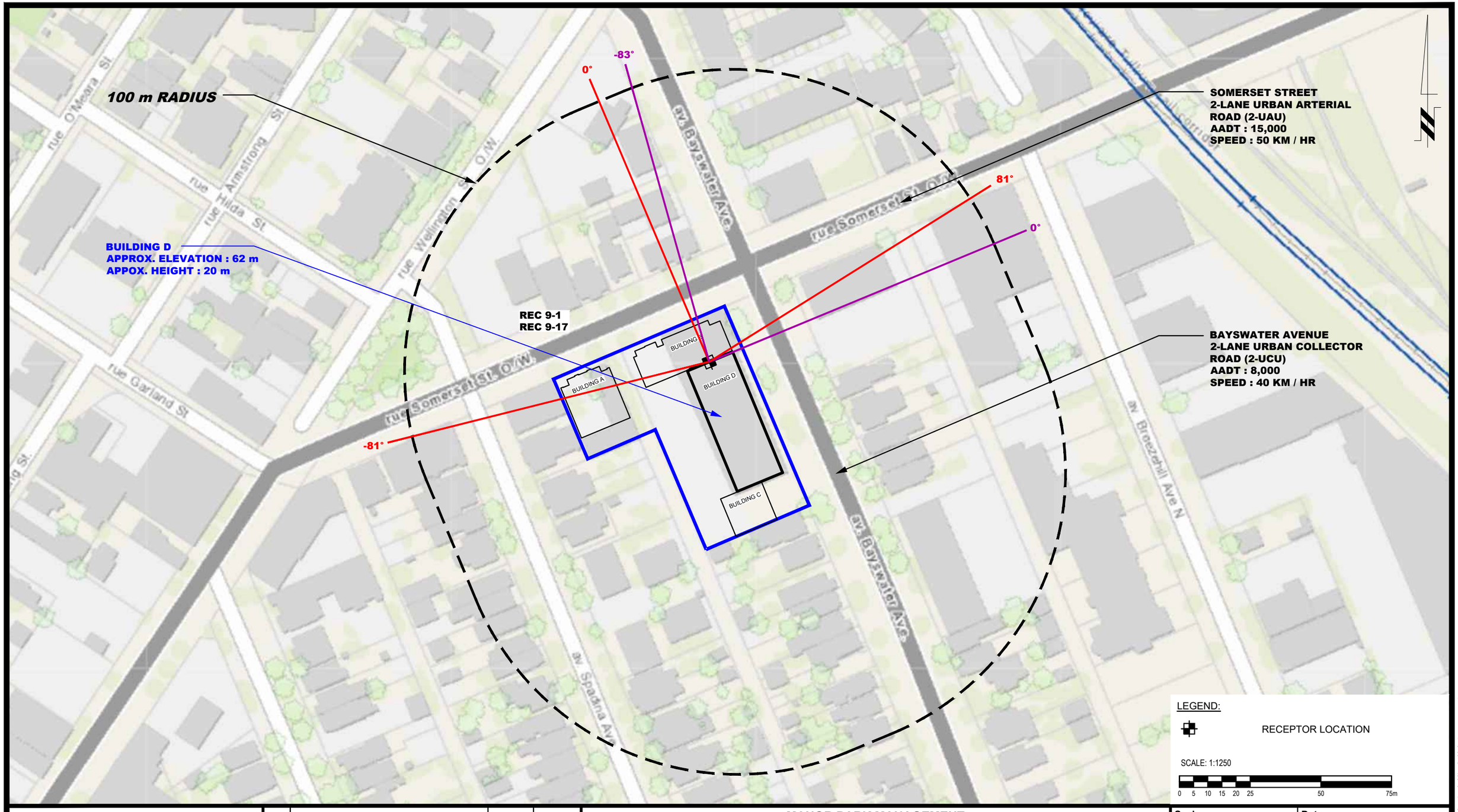

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NO.	REVISIONS	DATE	INITIAL

MANOR PARK MANAGEMENT

NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 9-1 AND REC 9-17

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-5A
Approved by: SB	Revision No.:

11x17

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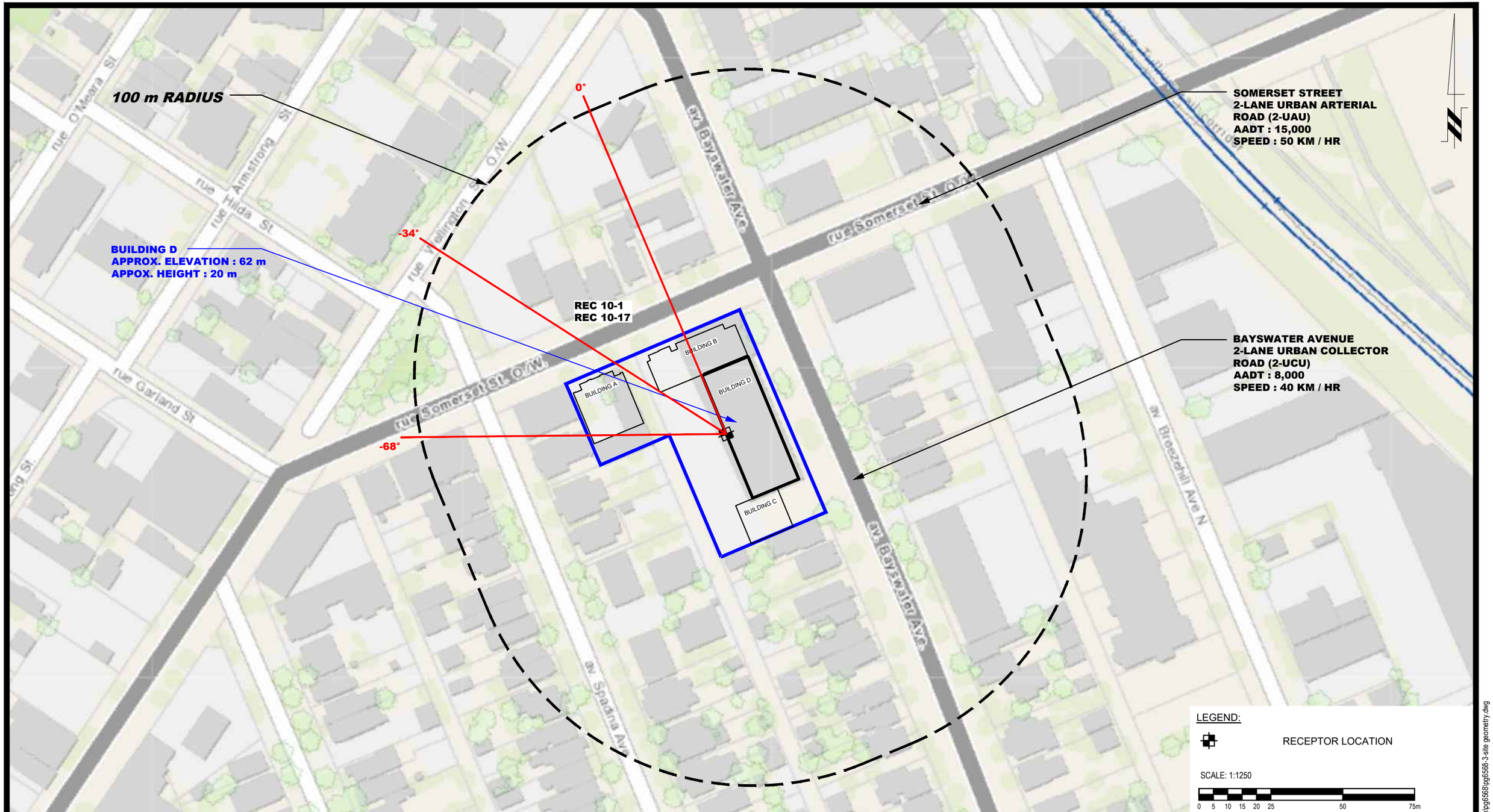

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NO.	REVISIONS	DATE	INITIAL

MANOR PARK MANAGEMENT

NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 10-1 AND REC 10-17

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-5B
Approved by: SB	Revision No.:

11x17

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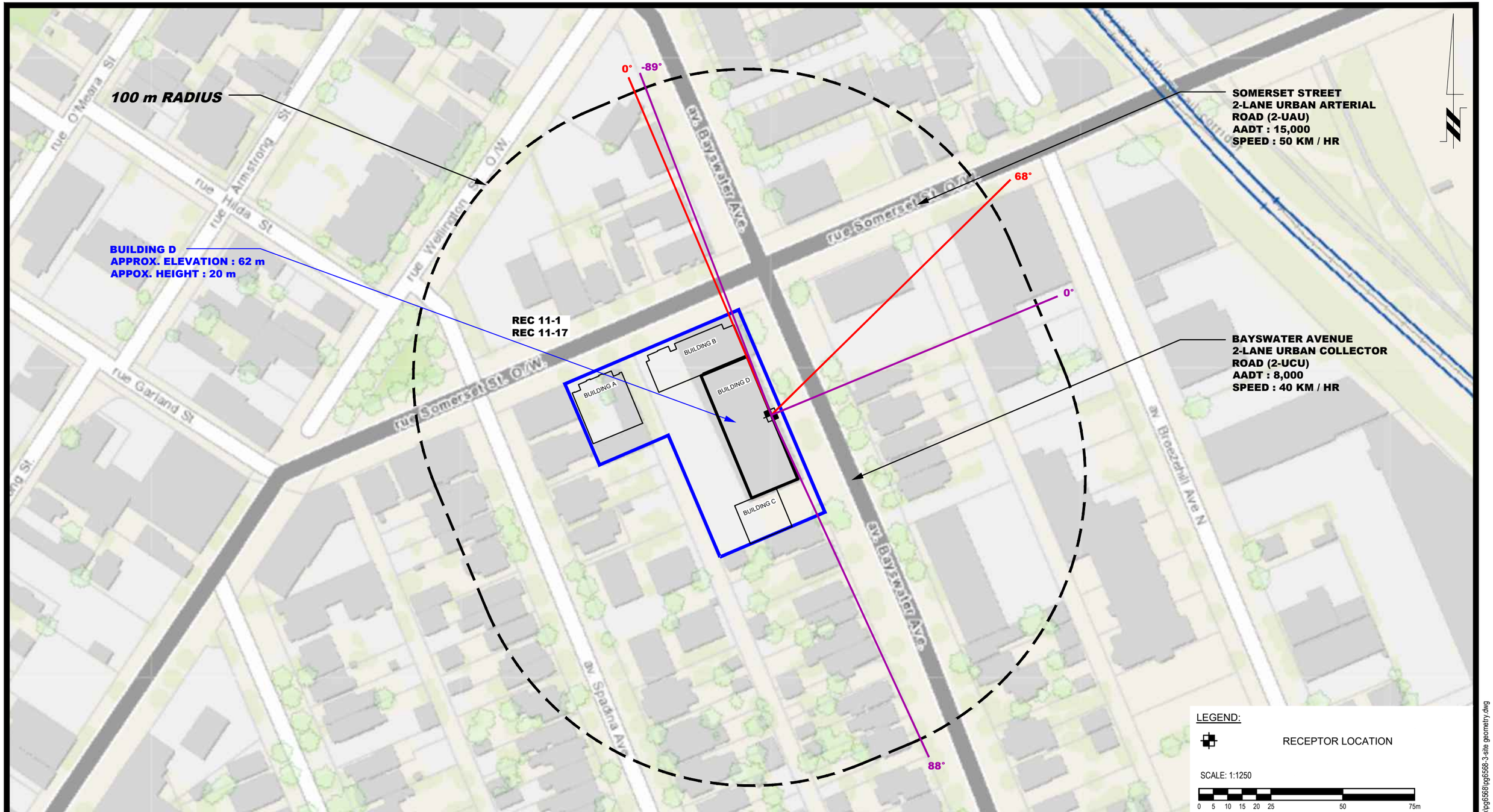

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NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 11-1 AND REC 11-17

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-5C
Approved by: SB	Revision No.:

11x17

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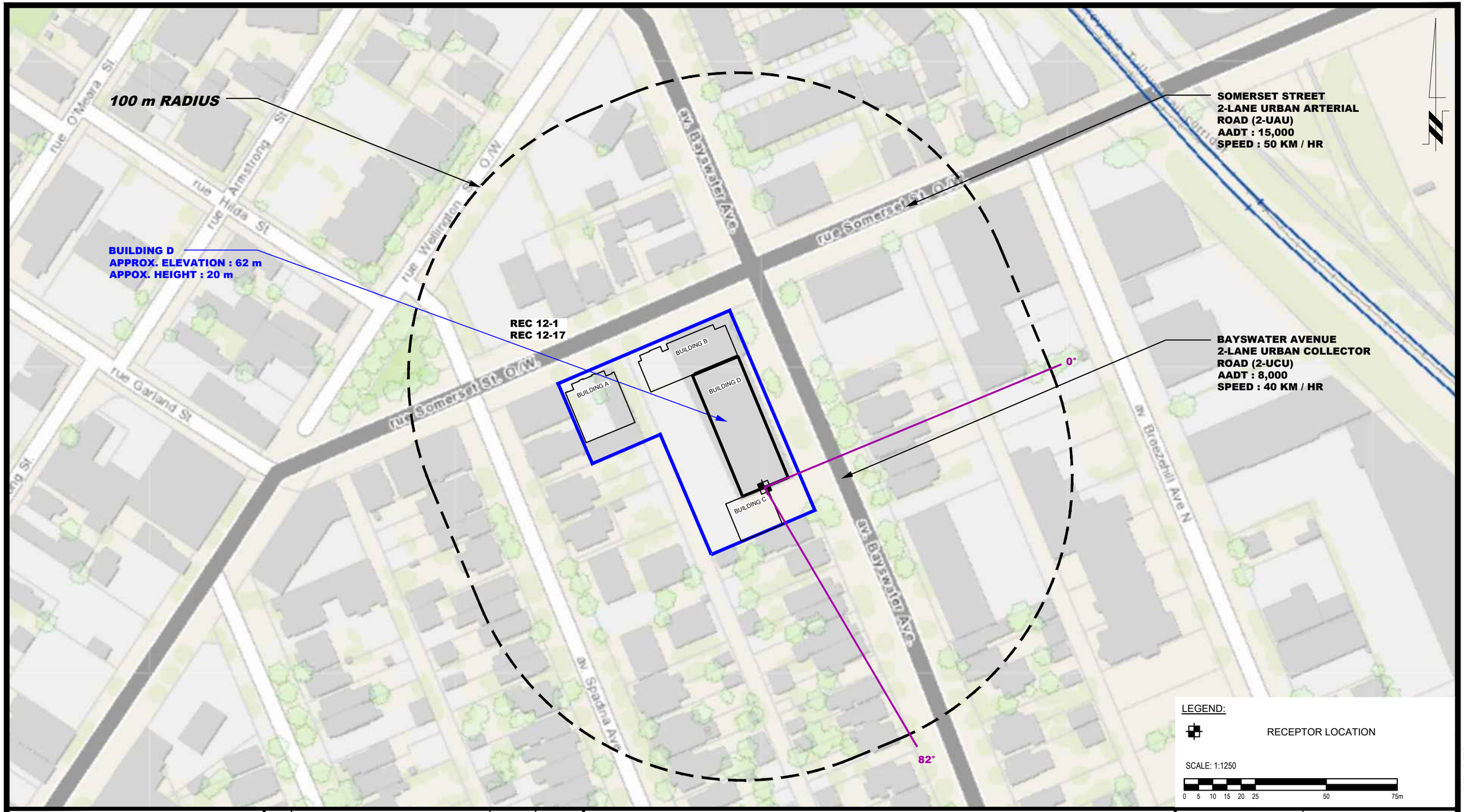

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NO.	REVISIONS	DATE	INITIAL

MANOR PARK MANAGEMENT

NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET
OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 12-1 AND REC 12-17

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-5D
Approved by: SB	Revision No.:

11x17

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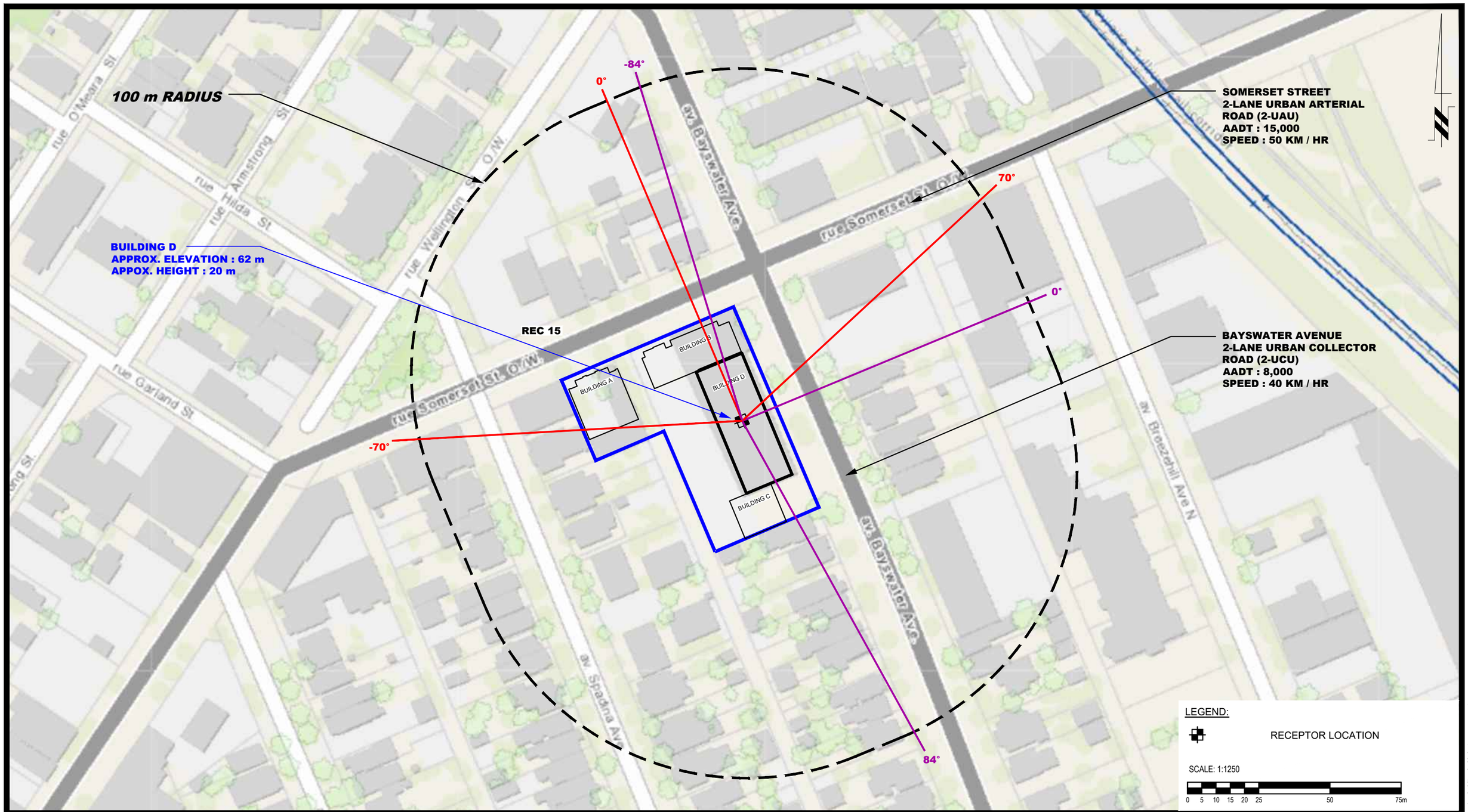

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NO.	REVISIONS	DATE	INITIAL

MANOR PARK MANAGEMENT

NOISE ATTENUATION STUDY
PROPOSED APARTMENT BUILDING
50 BAYSWATER AVENUE & 1088 SOMERSET STREET

OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 15

Scale: 1:1250	Date: 01/2023
Drawn by: YA	Report No.: PG6568-1
Checked by: YT	Dwg. No.: PG6568-5E
Approved by: SB	Revision No.:

11x17

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APPENDIX 2

STAMSON RESULTS

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 10:44:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec11.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 1-1

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

Angle1 Angle2 : -88.00 deg 88.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -57.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 67.01 + 0.00) = 67.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -88     88   0.66  68.48   0.00   0.00  -1.47   0.00   0.00   0.00  67.01
-------------------------------------------------------------------------------

Segment Leq : 67.01 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 47.56 + 0.00) = 47.56 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -57      0   0.66  63.96   0.00  -9.99  -5.50   0.00  -0.90   0.00  47.56
-------------------------------------------------------------------------------

Segment Leq : 47.56 dBA

Total Leq All Segments: 67.06 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
-----------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 59.42 + 0.00) = 59.42 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-88	88	0.66	60.88	0.00	0.00	-1.47	0.00	0.00	0.00	59.42

Segment Leq : 59.42 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 39.97 + 0.00) = 39.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	0	0.66	56.36	0.00	-9.99	-5.50	0.00	-0.90	0.00	39.97

Segment Leq : 39.97 dBA

Total Leq All Segments: 59.47 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 67.06
(NIGHT): 59.47

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 10:54:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec16.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 1-6

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

Angle1 Angle2 : -88.00 deg 88.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 18.00 / 18.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -57.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
--------------------------------------

Source height = 1.50 m

ROAD (0.00 + 67.97 + 0.00) = 67.97 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -88     88   0.17  68.48   0.00   0.00  -0.51   0.00   0.00   0.00  67.97
-------------------------------------------------------------------------------

Segment Leq : 67.97 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.92 + 0.00) = 50.92 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -57      0   0.17  63.96   0.00  -7.01  -5.13   0.00  -0.90   0.00  50.92
-------------------------------------------------------------------------------

Segment Leq : 50.92 dBA

Total Leq All Segments: 68.05 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
----------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 60.38 + 0.00) = 60.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-88	88	0.17	60.88	0.00	0.00	-0.51	0.00	0.00	0.00	60.38

Segment Leq : 60.38 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 43.32 + 0.00) = 43.32 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	0	0.17	56.36	0.00	-7.01	-5.13	0.00	-0.90	0.00	43.32

Segment Leq : 43.32 dBA

Total Leq All Segments: 60.46 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 68.05
(NIGHT): 60.46

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 10:57:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec21.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 2-1

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

Angle1 Angle2 : -81.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: SomersetStW (day)

Source height = 1.50 m

ROAD (0.00 + 63.00 + 0.00) = 63.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	0	0.66	68.48	0.00	0.00	-4.58	0.00	-0.90	0.00	63.00

Segment Leq : 63.00 dBA

Total Leq All Segments: 63.00 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

ROAD (0.00 + 55.41 + 0.00) = 55.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	0	0.66	60.88	0.00	0.00	-4.58	0.00	-0.90	0.00	55.41

Segment Leq : 55.41 dBA

Total Leq All Segments: 55.41 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 63.00
(NIGHT): 55.41
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 10:59:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec26.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 2-6

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

Angle1 Angle2 : -81.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 20 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 18.00 / 18.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: SomersetStW (day)

Source height = 1.50 m

ROAD (0.00 + 63.80 + 0.00) = 63.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	0	0.17	68.48	0.00	0.00	-3.78	0.00	-0.90	0.00	63.80

Segment Leq : 63.80 dBA

Total Leq All Segments: 63.80 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

ROAD (0.00 + 56.20 + 0.00) = 56.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	0	0.17	60.88	0.00	0.00	-3.78	0.00	-0.90	0.00	56.20

Segment Leq : 56.20 dBA

Total Leq All Segments: 56.20 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 63.80
(NIGHT): 56.20

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 11:06:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec31.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-1

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

Angle1 Angle2 : 0.00 deg 81.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 1600/800 veh/TimePeriod
Medium truck volume : 320/160 veh/TimePeriod
Heavy truck volume : 160/80 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: BayswaterAve (day/night)

Angle1 Angle2 : -65.00 deg 63.00 deg
Wood depth : 0 (No woods.)

```
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
--------------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.90 + 0.00) = 63.90 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     81   0.66  68.48   0.00   0.00  -4.58   0.00   0.00   0.00  63.90
-------------------------------------------------------------------------------

Segment Leq : 63.90 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.67 m

ROAD (0.00 + 56.40 + 0.00) = 56.40 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -65     63   0.66  68.08   0.00  -8.65  -2.12   0.00  -0.90   0.00  56.40
-------------------------------------------------------------------------------

Segment Leq : 56.40 dBA

Total Leq All Segments: 64.61 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.31 + 0.00) = 56.31 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     81   0.66  60.88   0.00   0.00  -4.58   0.00   0.00   0.00  56.31
-------------------------------------------------------------------------------
```

Segment Leq : 56.31 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.67 m

ROAD (0.00 + 56.40 + 0.00) = 56.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	63	0.66	68.08	0.00	-8.65	-2.12	0.00	-0.90	0.00	56.40

Segment Leq : 56.40 dBA

Total Leq All Segments: 59.37 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 64.61
(NIGHT): 59.37
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 11:36:27
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec31B.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-1 (After Building B Construction)

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

Angle1 Angle2 : 0.00 deg 44.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Somerset B (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 # 2: Somerset B (day/night)
--------------------------------------------
Angle1   Angle2           :  44.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  44.00 deg   Angle2 : 81.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Road data, segment # 3: Bayswater A (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater A (day/night)
---------------------------------------------
Angle1   Angle2           : -65.00 deg   -46.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  75.00 / 75.00  m
Receiver height           :   1.50 / 1.50   m
```

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

↟

```
Road data, segment # 4: Bayswater B (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater B (day/night)
-----------------------------------------------
Angle1   Angle2           : -46.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : 0.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Bayswater C (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater C (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```



```
Results segment # 1: Somerset A (day)
-------------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.07 + 0.00) = 62.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     44   0.66  68.48   0.00   0.00  -6.41   0.00   0.00   0.00  62.07
-------------------------------------------------------------------------------

Segment Leq : 62.07 dBA
```



```
Results segment # 2: Somerset B (day)
-------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 39.39 + 0.00) = 39.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    44     81   0.00  68.48   0.00  -2.22  -6.87   0.00   0.00 -20.00  39.39
```

```
-------------------------------------------------------------------------------

Segment Leq : 39.39 dBA

↟
Results segment # 3: Bayswater A (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 40.04 + 0.00) = 40.04 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -65    -46   0.66  63.96   0.00 -11.60 -11.42   0.00  -0.90   0.00  40.04
-------------------------------------------------------------------------------

Segment Leq : 40.04 dBA

↟
Results segment # 4: Bayswater B (day)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 32.80 + 0.00) = 32.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -46      0   0.00  63.96   0.00  -5.23  -5.93   0.00   0.00 -20.00  32.80
-------------------------------------------------------------------------------

Segment Leq : 32.80 dBA

↟
Results segment # 5: Bayswater C (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 50.09 + 0.00) = 50.09 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     63   0.66  63.96   0.00  -8.68  -5.18   0.00   0.00   0.00  50.09
-------------------------------------------------------------------------------
```

Segment Leq : 50.09 dBA

Total Leq All Segments: 62.39 dBA

↟
Results segment # 1: Somerset A (night)

Source height = 1.50 m

ROAD (0.00 + 54.47 + 0.00) = 54.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	44	0.66	60.88	0.00	0.00	-6.41	0.00	0.00	0.00	54.47

Segment Leq : 54.47 dBA

↟
Results segment # 2: Somerset B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 31.79 + 0.00) = 31.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
44	81	0.00	60.88	0.00	-2.22	-6.87	0.00	0.00	-20.00	31.79

Segment Leq : 31.79 dBA

↟
Results segment # 3: Bayswater A (night)

Source height = 1.50 m

ROAD (0.00 + 32.44 + 0.00) = 32.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	-46	0.66	56.36	0.00	-11.60	-11.42	0.00	-0.90	0.00	32.44

```
--------------------------------------------------------------------------------

Segment Leq : 32.44 dBA

↟
Results segment # 4: Bayswater B (night)
----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 25.21 + 0.00) = 25.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -46      0   0.00  56.36   0.00  -5.23  -5.93   0.00   0.00 -20.00  25.21
--------------------------------------------------------------------------------

Segment Leq : 25.21 dBA

↟
Results segment # 5: Bayswater C (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 42.50 + 0.00) = 42.50 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
     0     63   0.66  56.36   0.00  -8.68  -5.18   0.00   0.00   0.00  42.50
--------------------------------------------------------------------------------

Segment Leq : 42.50 dBA

Total Leq All Segments: 54.79 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 62.39
                           (NIGHT): 54.79
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 11:52:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec31c.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-1 (After Building B & D Construct

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

Angle1 Angle2 : 0.00 deg 44.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Somerset B (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 # 2: Somerset B (day/night)
--------------------------------------------
Angle1   Angle2           :  44.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  44.00 deg   Angle2 : 81.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Road data, segment # 3: Bayswater A (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater A (day/night)
---------------------------------------------
Angle1   Angle2           : -65.00 deg   -46.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  75.00 / 75.00  m
Receiver height           :   1.50 / 1.50   m
```

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

↟

```
Road data, segment # 4: Bayswater B (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater B (day/night)
-----------------------------------------------
Angle1   Angle2           : -46.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : 0.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Bayswater C (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater C (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 63.00 deg
Barrier height            :  55.00 m
Barrier receiver distance :  25.00 / 25.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Results segment # 1: Somerset A (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.07 + 0.00) = 62.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     44   0.66  68.48   0.00   0.00  -6.41   0.00   0.00   0.00  62.07
-------------------------------------------------------------------------------

Segment Leq : 62.07 dBA

↟
Results segment # 2: Somerset B (day)
-----------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
```

```
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 39.39 + 0.00) = 39.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    44     81   0.00  68.48   0.00  -2.22  -6.87   0.00   0.00 -20.00  39.39
-------------------------------------------------------------------------------

Segment Leq : 39.39 dBA

↟
Results segment # 3: Bayswater A (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 40.04 + 0.00) = 40.04 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -65    -46   0.66  63.96   0.00 -11.60 -11.42   0.00  -0.90   0.00  40.04
-------------------------------------------------------------------------------

Segment Leq : 40.04 dBA

↟
Results segment # 4: Bayswater B (day)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 32.80 + 0.00) = 32.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -46      0   0.00  63.96   0.00  -5.23  -5.93   0.00   0.00 -20.00  32.80
-------------------------------------------------------------------------------

Segment Leq : 32.80 dBA

↟
Results segment # 5: Bayswater C (day)
---------------------------------------

Source height = 1.50 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 34.17 + 0.00) = 34.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	63	0.00	63.96	0.00	-5.23	-4.56	0.00	0.00	-20.00	34.17

Segment Leq : 34.17 dBA

Total Leq All Segments: 62.13 dBA

↟

Results segment # 1: Somerset A (night)

Source height = 1.50 m

ROAD (0.00 + 54.47 + 0.00) = 54.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	44	0.66	60.88	0.00	0.00	-6.41	0.00	0.00	0.00	54.47

Segment Leq : 54.47 dBA

↟

Results segment # 2: Somerset B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 31.79 + 0.00) = 31.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
44	81	0.00	60.88	0.00	-2.22	-6.87	0.00	0.00	-20.00	31.79

Segment Leq : 31.79 dBA

↟
Results segment # 3: Bayswater A (night)

Source height = 1.50 m

ROAD (0.00 + 32.44 + 0.00) = 32.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	-46	0.66	56.36	0.00	-11.60	-11.42	0.00	-0.90	0.00	32.44

Segment Leq : 32.44 dBA

↟
Results segment # 4: Bayswater B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 25.21 + 0.00) = 25.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-46	0	0.00	56.36	0.00	-5.23	-5.93	0.00	0.00	-20.00	25.21

Segment Leq : 25.21 dBA

↟
Results segment # 5: Bayswater C (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 26.57 + 0.00) = 26.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	63	0.00	56.36	0.00	-5.23	-4.56	0.00	0.00	-20.00	26.57

Segment Leq : 26.57 dBA

Total Leq All Segments: 54.53 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.13
(NIGHT): 54.53

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 11:45:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec36.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-6

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

Angle1 Angle2 : 0.00 deg 81.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 18.00 / 18.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 1600/800 veh/TimePeriod
Medium truck volume : 320/160 veh/TimePeriod
Heavy truck volume : 160/80 veh/TimePeriod
Posted speed limit : 100 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: BayswaterAve (day/night)

Angle1 Angle2 : -65.00 deg 63.00 deg
Wood depth : 0 (No woods.)

```
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 64.70 + 0.00) = 64.70 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     81   0.17  68.48   0.00   0.00  -3.78   0.00   0.00   0.00  64.70
-------------------------------------------------------------------------------

Segment Leq : 64.70 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.67 m

ROAD (0.00 + 59.47 + 0.00) = 59.47 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -65     63   0.16  68.08   0.00  -6.07  -1.65   0.00  -0.90   0.00  59.47
-------------------------------------------------------------------------------

Segment Leq : 59.47 dBA

Total Leq All Segments: 65.84 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
-----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.10 + 0.00) = 57.10 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     81   0.17  60.88   0.00   0.00  -3.78   0.00   0.00   0.00  57.10
-------------------------------------------------------------------------------
```

Segment Leq : 57.10 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.67 m

ROAD (0.00 + 59.47 + 0.00) = 59.47 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	63	0.16	68.08	0.00	-6.07	-1.65	0.00	-0.90	0.00	59.47

Segment Leq : 59.47 dBA

Total Leq All Segments: 61.46 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 65.84
(NIGHT): 61.46
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 11:48:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec36b.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-6 (After Building B Construction)

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

Angle1 Angle2 : 0.00 deg 44.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 18.00 / 18.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Somerset B (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 # 2: Somerset B (day/night)
--------------------------------------------
Angle1   Angle2           :  44.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  44.00 deg   Angle2 : 81.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Road data, segment # 3: Bayswater A (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater A (day/night)
---------------------------------------------
Angle1   Angle2           : -65.00 deg   -46.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  75.00 / 75.00  m
Receiver height           :  18.00 / 18.00  m
```

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

↟

```
Road data, segment # 4: Bayswater B (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater B (day/night)
---------------------------------------------
Angle1   Angle2           : -46.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : 0.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Bayswater C (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater C (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

🠉
Results segment # 1: Somerset A (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.29 + 0.00) = 62.29 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     44   0.17  68.48   0.00   0.00  -6.19   0.00   0.00   0.00  62.29
-------------------------------------------------------------------------------

Segment Leq : 62.29 dBA

🠉
Results segment # 2: Somerset B (day)
-----------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       18.00 !       11.40 !        73.40

ROAD (0.00 + 39.39 + 0.00) = 39.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    44     81   0.00  68.48   0.00  -2.22  -6.87   0.00   0.00 -20.00  39.39
```

```
-------------------------------------------------------------------------------

Segment Leq : 39.39 dBA

↟
Results segment # 3: Bayswater A (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 44.73 + 0.00) = 44.73 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -65    -46   0.17  63.96   0.00  -8.14 -10.18   0.00  -0.90   0.00  44.73
-------------------------------------------------------------------------------

Segment Leq : 44.73 dBA

↟
Results segment # 4: Bayswater B (day)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       18.00 !       14.70 !        76.70

ROAD (0.00 + 32.80 + 0.00) = 32.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -46      0   0.00  63.96   0.00  -5.23  -5.93   0.00   0.00 -20.00  32.80
-------------------------------------------------------------------------------

Segment Leq : 32.80 dBA

↟
Results segment # 5: Bayswater C (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.14 + 0.00) = 53.14 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     63   0.17  63.96   0.00  -6.09  -4.72   0.00   0.00   0.00  53.14
-------------------------------------------------------------------------------
```

Segment Leq : 53.14 dBA

Total Leq All Segments: 62.88 dBA

↟
Results segment # 1: Somerset A (night)

Source height = 1.50 m

ROAD (0.00 + 54.69 + 0.00) = 54.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	44	0.17	60.88	0.00	0.00	-6.19	0.00	0.00	0.00	54.69

Segment Leq : 54.69 dBA

↟
Results segment # 2: Somerset B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	18.00	11.40	73.40

ROAD (0.00 + 31.79 + 0.00) = 31.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
44	81	0.00	60.88	0.00	-2.22	-6.87	0.00	0.00	-20.00	31.79

Segment Leq : 31.79 dBA

↟
Results segment # 3: Bayswater A (night)

Source height = 1.50 m

ROAD (0.00 + 37.14 + 0.00) = 37.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	-46	0.17	56.36	0.00	-8.14	-10.18	0.00	-0.90	0.00	37.14

```
--------------------------------------------------------------------------------

Segment Leq : 37.14 dBA

↟
Results segment # 4: Bayswater B (night)
----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       18.00 !       14.70 !        76.70

ROAD (0.00 + 25.21 + 0.00) = 25.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -46      0   0.00  56.36   0.00  -5.23  -5.93   0.00   0.00 -20.00  25.21
--------------------------------------------------------------------------------

Segment Leq : 25.21 dBA

↟
Results segment # 5: Bayswater C (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 45.55 + 0.00) = 45.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
     0     63   0.17  56.36   0.00  -6.09  -4.72   0.00   0.00   0.00  45.55
--------------------------------------------------------------------------------

Segment Leq : 45.55 dBA

Total Leq All Segments: 55.28 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 62.88
                           (NIGHT): 55.28
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 11:50:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec36c.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-6 (After Building B & D Construct

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

Angle1 Angle2 : 0.00 deg 44.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 18.00 / 18.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Somerset B (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 # 2: Somerset B (day/night)
--------------------------------------------
Angle1   Angle2           :  44.00 deg   81.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  25.00 / 25.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  44.00 deg   Angle2 : 81.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Road data, segment # 3: Bayswater A (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater A (day/night)
---------------------------------------------
Angle1   Angle2           : -65.00 deg   -46.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  75.00 / 75.00  m
Receiver height           :  18.00 / 18.00  m
```

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

↟

```
Road data, segment # 4: Bayswater B (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater B (day/night)
---------------------------------------------
Angle1   Angle2           : -46.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -46.00 deg   Angle2 : 0.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00
```

↟

```
Road data, segment # 5: Bayswater C (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater C (day/night)
------------------------------------------
Angle1   Angle2           :   0.00 deg   63.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  50.00 / 50.00  m
Receiver height           :  18.00 / 18.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   0.00 deg   Angle2 : 63.00 deg
Barrier height            :  55.00 m
Barrier receiver distance :  25.00 / 25.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Results segment # 1: Somerset A (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.29 + 0.00) = 62.29 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     44   0.17  68.48   0.00   0.00  -6.19   0.00   0.00   0.00  62.29
-------------------------------------------------------------------------------

Segment Leq : 62.29 dBA

↟
Results segment # 2: Somerset B (day)
-----------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
```

```
       1.50 !       18.00 !       11.40 !        73.40

ROAD (0.00 + 39.39 + 0.00) = 39.39 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    44     81   0.00  68.48   0.00  -2.22  -6.87   0.00   0.00 -20.00  39.39
-------------------------------------------------------------------------------

Segment Leq : 39.39 dBA

🠉
Results segment # 3: Bayswater A (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 44.73 + 0.00) = 44.73 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -65    -46   0.17  63.96   0.00  -8.14 -10.18   0.00  -0.90   0.00  44.73
-------------------------------------------------------------------------------

Segment Leq : 44.73 dBA

🠉
Results segment # 4: Bayswater B (day)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       18.00 !       14.70 !        76.70

ROAD (0.00 + 32.80 + 0.00) = 32.80 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -46      0   0.00  63.96   0.00  -5.23  -5.93   0.00   0.00 -20.00  32.80
-------------------------------------------------------------------------------

Segment Leq : 32.80 dBA

🠉
Results segment # 5: Bayswater C (day)
---------------------------------------

Source height = 1.50 m
```

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	18.00	9.75	71.75

ROAD (0.00 + 34.17 + 0.00) = 34.17 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	63	0.00	63.96	0.00	-5.23	-4.56	0.00	0.00	-20.00	34.17

Segment Leq : 34.17 dBA

Total Leq All Segments: 62.40 dBA

↑

Results segment # 1: Somerset A (night)

Source height = 1.50 m

ROAD (0.00 + 54.69 + 0.00) = 54.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	44	0.17	60.88	0.00	0.00	-6.19	0.00	0.00	0.00	54.69

Segment Leq : 54.69 dBA

↑

Results segment # 2: Somerset B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	18.00	11.40	73.40

ROAD (0.00 + 31.79 + 0.00) = 31.79 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
44	81	0.00	60.88	0.00	-2.22	-6.87	0.00	0.00	-20.00	31.79

Segment Leq : 31.79 dBA

↟
Results segment # 3: Bayswater A (night)

Source height = 1.50 m

ROAD (0.00 + 37.14 + 0.00) = 37.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-65	-46	0.17	56.36	0.00	-8.14	-10.18	0.00	-0.90	0.00	37.14

Segment Leq : 37.14 dBA

↟
Results segment # 4: Bayswater B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	18.00	14.70	76.70

ROAD (0.00 + 25.21 + 0.00) = 25.21 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-46	0	0.00	56.36	0.00	-5.23	-5.93	0.00	0.00	-20.00	25.21

Segment Leq : 25.21 dBA

↟
Results segment # 5: Bayswater C (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	18.00	9.75	71.75

ROAD (0.00 + 26.57 + 0.00) = 26.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	63	0.00	56.36	0.00	-5.23	-4.56	0.00	0.00	-20.00	26.57

Segment Leq : 26.57 dBA

Total Leq All Segments: 54.80 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 62.40
(NIGHT): 54.80

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:00:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec41.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 4-1

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 56.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

ROAD (0.00 + 48.41 + 0.00) = 48.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	56	0.66	63.96	0.00	-9.99	-5.56	0.00	0.00	0.00	48.41

Segment Leq : 48.41 dBA

Total Leq All Segments: 48.41 dBA

↟
Results segment # 1: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 40.81 + 0.00) = 40.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	56	0.66	56.36	0.00	-9.99	-5.56	0.00	0.00	0.00	40.81

Segment Leq : 40.81 dBA

Total Leq All Segments: 40.81 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 48.41
(NIGHT): 40.81
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:10:49
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec41c.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 4-1 (After Building D Construction)

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: Bayswater A (day/night)

Angle1 Angle2 : 0.00 deg 48.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 48.00 deg
Barrier height : 55.00 m
Barrier receiver distance : 35.00 / 35.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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)	8000
Percentage of Annual Growth	0.00
Number of Years of Growth	0.00
Medium 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: Bayswater B (day/night)

Angle1 Angle2	48.00 deg	56.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	80.00 / 80.00	m
Receiver height	1.50 / 1.50	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

↟

Results segment # 1: Bayswater A (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 32.19 + 0.00) = 32.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	48	0.00	63.96	0.00	-6.02	-5.74	0.00	0.00	-20.00	32.19

Segment Leq : 32.19 dBA

↟

Results segment # 2: Bayswater B (day)

Source height = 1.50 m

ROAD (0.00 + 36.97 + 0.00) = 36.97 dBA

```
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    48     56   0.66  63.96   0.00 -12.07 -14.92   0.00   0.00   0.00  36.97
-------------------------------------------------------------------------------

Segment Leq : 36.97 dBA

Total Leq All Segments: 38.22 dBA

↟
Results segment # 1: Bayswater A (night)
----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 24.60 + 0.00) = 24.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     48   0.00  56.36   0.00  -6.02  -5.74   0.00   0.00 -20.00  24.60
-------------------------------------------------------------------------------

Segment Leq : 24.60 dBA

↟
Results segment # 2: Bayswater B (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 29.38 + 0.00) = 29.38 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    48     56   0.66  56.36   0.00 -12.07 -14.92   0.00   0.00   0.00  29.38
-------------------------------------------------------------------------------

Segment Leq : 29.38 dBA

Total Leq All Segments: 30.63 dBA

↟
```

TOTAL Leq FROM ALL SOURCES (DAY): 38.22
(NIGHT): 30.63

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:01:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec46.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 4-6

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 56.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 18.00 / 18.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

ROAD (0.00 + 51.74 + 0.00) = 51.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	56	0.17	63.96	0.00	-7.01	-5.20	0.00	0.00	0.00	51.74

Segment Leq : 51.74 dBA

Total Leq All Segments: 51.74 dBA

↟
Results segment # 1: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 44.15 + 0.00) = 44.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	56	0.17	56.36	0.00	-7.01	-5.20	0.00	0.00	0.00	44.15

Segment Leq : 44.15 dBA

Total Leq All Segments: 44.15 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 51.74
(NIGHT): 44.15
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:12:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec46c.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 4-6 (After Building D Construction)

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: Bayswater A (day/night)

Angle1 Angle2 : 0.00 deg 48.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 18.00 / 18.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 48.00 deg
Barrier height : 55.00 m
Barrier receiver distance : 35.00 / 35.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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)	8000
Percentage of Annual Growth	0.00
Number of Years of Growth	0.00
Medium 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: Bayswater B (day/night)

Angle1 Angle2	48.00 deg	56.00 deg
Wood depth	0	(No woods.)
No of house rows	0 / 0	
Surface	1	(Absorptive ground surface)
Receiver source distance	80.00 / 80.00	m
Receiver height	18.00 / 18.00	m
Topography	1	(Flat/gentle slope; no barrier)
Reference angle	0.00	

↟

Results segment # 1: Bayswater A (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	18.00	8.37	70.37

ROAD (0.00 + 32.19 + 0.00) = 32.19 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	48	0.00	63.96	0.00	-6.02	-5.74	0.00	0.00	-20.00	32.19

Segment Leq : 32.19 dBA

↟

Results segment # 2: Bayswater B (day)

Source height = 1.50 m

ROAD (0.00 + 41.61 + 0.00) = 41.61 dBA

```
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    48     56   0.17  63.96   0.00  -8.47 -13.87   0.00   0.00   0.00  41.61
-------------------------------------------------------------------------------

Segment Leq : 41.61 dBA

Total Leq All Segments: 42.08 dBA

↟
Results segment # 1: Bayswater A (night)
----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       18.00 !        8.37 !        70.37

ROAD (0.00 + 24.60 + 0.00) = 24.60 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     48   0.00  56.36   0.00  -6.02  -5.74   0.00   0.00 -20.00  24.60
-------------------------------------------------------------------------------

Segment Leq : 24.60 dBA

↟
Results segment # 2: Bayswater B (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 34.02 + 0.00) = 34.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
    48     56   0.17  56.36   0.00  -8.47 -13.87   0.00   0.00   0.00  34.02
-------------------------------------------------------------------------------

Segment Leq : 34.02 dBA

Total Leq All Segments: 34.49 dBA

↟
```

TOTAL Leq FROM ALL SOURCES (DAY): 42.08
(NIGHT): 34.49

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:20:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec13.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 13

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

Angle1 Angle2 : -82.00 deg 82.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 21.50 / 21.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -82.00 deg Angle2 : 82.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
----------------------------------------------
Angle1   Angle2           : -60.00 deg   59.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :  21.50 / 21.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : 59.00 deg
Barrier height            :  20.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

🠉
Results segment # 1: SomersetStW (day)
--------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !        8.16 !        70.16

ROAD (0.00 + 48.56 + 0.00) = 48.56 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -82     82   0.00  68.48   0.00   0.00  -0.40   0.00   0.00 -19.52  48.56
-------------------------------------------------------------------------------

Segment Leq : 48.56 dBA

🠉
```

Results segment # 2: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	18.17	80.17

ROAD (0.00 + 46.23 + 0.00) = 46.23 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	59	0.00	63.96	0.00	-6.02	-1.80	0.00	0.00	-9.91	46.23

Segment Leq : 46.23 dBA

Total Leq All Segments: 50.56 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	8.16	70.16

ROAD (0.00 + 40.96 + 0.00) = 40.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	82	0.00	60.88	0.00	0.00	-0.40	0.00	0.00	-19.52	40.96

Segment Leq : 40.96 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

```
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !       18.17 !        80.17

ROAD (0.00 + 38.63 + 0.00) = 38.63 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -60     59   0.00  56.36   0.00  -6.02  -1.80   0.00   0.00  -9.91  38.63
-------------------------------------------------------------------------------

Segment Leq : 38.63 dBA

Total Leq All Segments: 42.96 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 50.56
                           (NIGHT): 42.96
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:27:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec13B.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 13 (After Building B Construction)

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

Angle1 Angle2 : -82.00 deg 61.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 21.50 / 21.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -82.00 deg Angle2 : 61.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

↑
Road data, segment # 2: Bayswater A (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater A (day/night)
---------------------------------------------
Angle1   Angle2           : -60.00 deg   -29.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :  21.50 / 21.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : -29.00 deg
Barrier height            :  20.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

♠
Road data, segment # 3: Bayswater B (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater B (day/night)
---------------------------------------------
Angle1   Angle2           :   8.00 deg   59.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :  21.50 / 21.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :   8.00 deg   Angle2 : 59.00 deg
Barrier height            :  20.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
-----------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !        8.16 !        70.16

ROAD (0.00 + 47.77 + 0.00) = 47.77 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -82     61   0.00  68.48   0.00   0.00  -1.00   0.00   0.00 -19.72  47.77
-------------------------------------------------------------------------------

Segment Leq : 47.77 dBA
```

↟

```
Results segment # 2: Bayswater A (day)
-----------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !       18.17 !        80.17

ROAD (0.00 + 40.87 + 0.00) = 40.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
```

```
-------------------------------------------------------------------------------
   -60    -29   0.00  63.96   0.00  -6.02  -7.64   0.00   0.00  -9.42  40.87
-------------------------------------------------------------------------------

Segment Leq : 40.87 dBA

↟
Results segment # 3: Bayswater B (day)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !       18.17 !        80.17

ROAD (0.00 + 42.63 + 0.00) = 42.63 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     8     59   0.00  63.96   0.00  -6.02  -5.48   0.00   0.00  -9.83  42.63
-------------------------------------------------------------------------------

Segment Leq : 42.63 dBA

Total Leq All Segments: 49.56 dBA

↟
Results segment # 1: SomersetStW (night)
-----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !        8.16 !        70.16

ROAD (0.00 + 40.17 + 0.00) = 40.17 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -82     61   0.00  60.88   0.00   0.00  -1.00   0.00   0.00 -19.72  40.17
-------------------------------------------------------------------------------

Segment Leq : 40.17 dBA
```

↟
Results segment # 2: Bayswater A (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	18.17	80.17

ROAD (0.00 + 33.28 + 0.00) = 33.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	-29	0.00	56.36	0.00	-6.02	-7.64	0.00	0.00	-9.42	33.28

Segment Leq : 33.28 dBA

↟
Results segment # 3: Bayswater B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	18.17	80.17

ROAD (0.00 + 35.04 + 0.00) = 35.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
8	59	0.00	56.36	0.00	-6.02	-5.48	0.00	0.00	-9.83	35.04

Segment Leq : 35.04 dBA

Total Leq All Segments: 41.96 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 49.56
(NIGHT): 41.96

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:29:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec13C.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 13 (After Building B & D Construct)

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

Angle1 Angle2 : -82.00 deg 61.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 21.50 / 21.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -82.00 deg Angle2 : 61.00 deg
Barrier height : 20.00 m
Barrier receiver distance : 10.00 / 10.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

↑
Road data, segment # 2: Bayswater A (day/night)

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater A (day/night)
---------------------------------------------
Angle1   Angle2           : -60.00 deg   -29.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :  21.50 / 21.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -60.00 deg   Angle2 : -29.00 deg
Barrier height            :  20.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

♠
Road data, segment # 3: Bayswater B (day/night)
-----------------------------------------------
Car traffic volume  :  6477/563   veh/TimePeriod  *
Medium truck volume :   515/45    veh/TimePeriod  *
Heavy truck volume  :   368/32    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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: Bayswater B (day/night)
---------------------------------------------
Angle1   Angle2           :  54.00 deg   59.00 deg
```

```
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  60.00 / 60.00  m
Receiver height           :  21.50 / 21.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            :  54.00 deg   Angle2 : 59.00 deg
Barrier height            :  20.00 m
Barrier receiver distance :  10.00 / 10.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00
```

Results segment # 1: SomersetStW (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	8.16	70.16

ROAD (0.00 + 47.77 + 0.00) = 47.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	61	0.00	68.48	0.00	0.00	-1.00	0.00	0.00	-19.72	47.77

Segment Leq : 47.77 dBA

Results segment # 2: Bayswater A (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	18.17	80.17

ROAD (0.00 + 40.87 + 0.00) = 40.87 dBA

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

```
--------------------------------------------------------------------------------
   -60    -29   0.00  63.96   0.00  -6.02  -7.64   0.00   0.00  -9.42  40.87
--------------------------------------------------------------------------------

Segment Leq : 40.87 dBA

↟
Results segment # 3: Bayswater B (day)
--------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !       18.17 !        80.17

ROAD (0.00 + 33.62 + 0.00) = 33.62 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
    54     59   0.00  63.96   0.00  -6.02 -15.56   0.00   0.00  -8.76  33.62
--------------------------------------------------------------------------------

Segment Leq : 33.62 dBA

Total Leq All Segments: 48.71 dBA

↟
Results segment # 1: SomersetStW (night)
----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       21.50 !        8.16 !        70.16

ROAD (0.00 + 40.17 + 0.00) = 40.17 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -82     61   0.00  60.88   0.00   0.00  -1.00   0.00   0.00 -19.72  40.17
--------------------------------------------------------------------------------

Segment Leq : 40.17 dBA
```

↟
Results segment # 2: Bayswater A (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	18.17	80.17

ROAD (0.00 + 33.28 + 0.00) = 33.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	-29	0.00	56.36	0.00	-6.02	-7.64	0.00	0.00	-9.42	33.28

Segment Leq : 33.28 dBA

↟
Results segment # 3: Bayswater B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	21.50	18.17	80.17

ROAD (0.00 + 26.02 + 0.00) = 26.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
54	59	0.00	56.36	0.00	-6.02	-15.56	0.00	0.00	-8.76	26.02

Segment Leq : 26.02 dBA

Total Leq All Segments: 41.12 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 48.71
(NIGHT): 41.12

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:40:36
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec51.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 5-1

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

Angle1 Angle2 : -88.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -78.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 67.01 + 0.00) = 67.01 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -88     87   0.66  68.48   0.00   0.00  -1.47   0.00   0.00   0.00  67.01
-------------------------------------------------------------------------------

Segment Leq : 67.01 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 57.24 + 0.00) = 57.24 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -78      0   0.66  63.96   0.00  -2.07  -4.64   0.00   0.00   0.00  57.24
-------------------------------------------------------------------------------

Segment Leq : 57.24 dBA

Total Leq All Segments: 67.45 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
-----------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 59.41 + 0.00) = 59.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-88	87	0.66	60.88	0.00	0.00	-1.47	0.00	0.00	0.00	59.41

Segment Leq : 59.41 dBA

↟

Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 49.64 + 0.00) = 49.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	0	0.66	56.36	0.00	-2.07	-4.64	0.00	0.00	0.00	49.64

Segment Leq : 49.64 dBA

Total Leq All Segments: 59.85 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 67.45
(NIGHT): 59.85

↟

↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:43:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec515.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 5-15

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

Angle1 Angle2 : -88.00 deg 87.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 46.50 / 46.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -78.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :  46.50 / 46.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 68.36 + 0.00) = 68.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -88     87   0.00  68.48   0.00   0.00  -0.12   0.00   0.00   0.00  68.36
-------------------------------------------------------------------------------

Segment Leq : 68.36 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.07 + 0.00) = 59.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -78      0   0.00  63.96   0.00  -1.25  -3.63   0.00   0.00   0.00  59.07
-------------------------------------------------------------------------------

Segment Leq : 59.07 dBA

Total Leq All Segments: 68.84 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
-----------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 60.76 + 0.00) = 60.76 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-88	87	0.00	60.88	0.00	0.00	-0.12	0.00	0.00	0.00	60.76

Segment Leq : 60.76 dBA

Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 51.48 + 0.00) = 51.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	0	0.00	56.36	0.00	-1.25	-3.63	0.00	0.00	0.00	51.48

Segment Leq : 51.48 dBA

Total Leq All Segments: 61.24 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 68.84
(NIGHT): 61.24

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:48:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec61.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 6-1

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

Angle1 Angle2 : -83.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: SomersetStW (day)

Source height = 1.50 m

ROAD (0.00 + 63.94 + 0.00) = 63.94 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	0	0.66	68.48	0.00	0.00	-4.54	0.00	0.00	0.00	63.94

Segment Leq : 63.94 dBA

Total Leq All Segments: 63.94 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

ROAD (0.00 + 56.34 + 0.00) = 56.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	0	0.66	60.88	0.00	0.00	-4.54	0.00	0.00	0.00	56.34

Segment Leq : 56.34 dBA

Total Leq All Segments: 56.34 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 63.94
(NIGHT): 56.34
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:49:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec615.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 6-15

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

Angle1 Angle2 : -83.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 46.50 / 46.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Results segment # 1: SomersetStW (day)

Source height = 1.50 m

ROAD (0.00 + 65.12 + 0.00) = 65.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	0	0.00	68.48	0.00	0.00	-3.36	0.00	0.00	0.00	65.12

Segment Leq : 65.12 dBA

Total Leq All Segments: 65.12 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

ROAD (0.00 + 57.52 + 0.00) = 57.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	0	0.00	60.88	0.00	0.00	-3.36	0.00	0.00	0.00	57.52

Segment Leq : 57.52 dBA

Total Leq All Segments: 57.52 dBA

↟

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

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 15:19:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec71.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 7-1

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

Angle1 Angle2 : 0.00 deg 83.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -87.00 deg   88.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.94 + 0.00) = 63.94 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     83   0.66  68.48   0.00   0.00  -4.54   0.00   0.00   0.00  63.94
-------------------------------------------------------------------------------

Segment Leq : 63.94 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.49 + 0.00) = 62.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -87     88   0.66  63.96   0.00   0.00  -1.47   0.00   0.00   0.00  62.49
-------------------------------------------------------------------------------

Segment Leq : 62.49 dBA

Total Leq All Segments: 66.29 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
-----------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 56.34 + 0.00) = 56.34 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	83	0.66	60.88	0.00	0.00	-4.54	0.00	0.00	0.00	56.34

Segment Leq : 56.34 dBA

↟

Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 54.89 + 0.00) = 54.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-87	88	0.66	56.36	0.00	0.00	-1.47	0.00	0.00	0.00	54.89

Segment Leq : 54.89 dBA

Total Leq All Segments: 58.69 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 66.29
(NIGHT): 58.69

↟

↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 15:22:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec715.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 7-15

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

Angle1 Angle2 : 0.00 deg 83.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 46.50 / 46.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -87.00 deg   88.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  46.50 / 46.50  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00

↟
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 65.12 + 0.00) = 65.12 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     83   0.00  68.48   0.00   0.00  -3.36   0.00   0.00   0.00  65.12
-------------------------------------------------------------------------------

Segment Leq : 65.12 dBA

↟
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.83 + 0.00) = 63.83 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -87     88   0.00  63.96   0.00   0.00  -0.12   0.00   0.00   0.00  63.83
-------------------------------------------------------------------------------

Segment Leq : 63.83 dBA

Total Leq All Segments: 67.53 dBA

↟
Results segment # 1: SomersetStW (night)
---------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 57.52 + 0.00) = 57.52 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	83	0.00	60.88	0.00	0.00	-3.36	0.00	0.00	0.00	57.52

Segment Leq : 57.52 dBA

Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 56.24 + 0.00) = 56.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-87	88	0.00	56.36	0.00	0.00	-0.12	0.00	0.00	0.00	56.24

Segment Leq : 56.24 dBA

Total Leq All Segments: 59.94

TOTAL Leq FROM ALL SOURCES (DAY): 67.53
(NIGHT): 59.94

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 12:57:01
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec81.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 8-1

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 78.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

ROAD (0.00 + 57.24 + 0.00) = 57.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	78	0.66	63.96	0.00	-2.07	-4.64	0.00	0.00	0.00	57.24

Segment Leq : 57.24 dBA

Total Leq All Segments: 57.24 dBA

↟
Results segment # 1: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 49.64 + 0.00) = 49.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	78	0.66	56.36	0.00	-2.07	-4.64	0.00	0.00	0.00	49.64

Segment Leq : 49.64 dBA

Total Leq All Segments: 49.64 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 57.24
(NIGHT): 49.64
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 13:02:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec81c.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 8-1 (After Building D Construction)

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 78.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 78.00 deg
Barrier height : 55.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 39.07 + 0.00) = 39.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     78   0.00  63.96   0.00  -1.25  -3.63   0.00   0.00 -20.00  39.07
-------------------------------------------------------------------------------

Segment Leq : 39.07 dBA

Total Leq All Segments: 39.07 dBA

↟
Results segment # 1: BayswaterAve (night)
-----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 31.48 + 0.00) = 31.48 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     78   0.00  56.36   0.00  -1.25  -3.63   0.00   0.00 -20.00  31.48
-------------------------------------------------------------------------------

Segment Leq : 31.48 dBA

Total Leq All Segments: 31.48 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 39.07
                          (NIGHT): 31.48
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 13:04:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec815.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 8-15

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 78.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 46.50 / 46.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

ROAD (0.00 + 59.07 + 0.00) = 59.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	78	0.00	63.96	0.00	-1.25	-3.63	0.00	0.00	0.00	59.07

Segment Leq : 59.07 dBA

Total Leq All Segments: 59.07 dBA

↟
Results segment # 1: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 51.48 + 0.00) = 51.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	78	0.00	56.36	0.00	-1.25	-3.63	0.00	0.00	0.00	51.48

Segment Leq : 51.48 dBA

Total Leq All Segments: 51.48 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 59.07
(NIGHT): 51.48
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 13:20:32
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec815c.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 8-15(After Building D Construction)

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 78.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 20.00 / 20.00 m
Receiver height : 46.50 / 46.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : 0.00 deg Angle2 : 78.00 deg
Barrier height : 55.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

```
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       46.50 !       44.25 !       106.25

ROAD (0.00 + 39.07 + 0.00) = 39.07 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     78   0.00  63.96   0.00  -1.25  -3.63   0.00   0.00 -20.00  39.07
-------------------------------------------------------------------------------

Segment Leq : 39.07 dBA

Total Leq All Segments: 39.07 dBA

↟
Results segment # 1: BayswaterAve (night)
-----------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       46.50 !       44.25 !       106.25

ROAD (0.00 + 31.48 + 0.00) = 31.48 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     78   0.00  56.36   0.00  -1.25  -3.63   0.00   0.00 -20.00  31.48
-------------------------------------------------------------------------------

Segment Leq : 31.48 dBA

Total Leq All Segments: 31.48 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 39.07
                          (NIGHT): 31.48
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:10:59
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec14.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 14

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

Angle1 Angle2 : -86.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 49.50 / 49.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -86.00 deg Angle2 : 85.00 deg
Barrier height : 48.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
----------------------------------------------
Angle1   Angle2           : -79.00 deg   79.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :  49.50 / 49.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -79.00 deg   Angle2 : 79.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Results segment # 1: SomersetStW (day)
--------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       49.50 !       23.90 !        85.90

ROAD (0.00 + 48.96 + 0.00) = 48.96 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -86     85   0.00  68.48   0.00   0.00  -0.22   0.00   0.00 -19.30  48.96
-------------------------------------------------------------------------------

Segment Leq : 48.96 dBA

↟
```

Results segment # 2: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	49.50	13.50	75.50

ROAD (0.00 + 42.14 + 0.00) = 42.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-79	79	0.00	63.96	0.00	-1.25	-0.57	0.00	0.00	-20.00	42.14

Segment Leq : 42.14 dBA

Total Leq All Segments: 49.78 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	49.50	23.90	85.90

ROAD (0.00 + 41.36 + 0.00) = 41.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-86	85	0.00	60.88	0.00	0.00	-0.22	0.00	0.00	-19.30	41.36

Segment Leq : 41.36 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

```
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       49.50 !       13.50 !        75.50

ROAD (0.00 + 34.55 + 0.00) = 34.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -79     79   0.00  56.36   0.00  -1.25  -0.57   0.00   0.00 -20.00  34.55
-------------------------------------------------------------------------------

Segment Leq : 34.55 dBA

Total Leq All Segments: 42.18 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 49.78
                           (NIGHT): 42.18
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:15:54
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec14c.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 14(After Building D Construction)

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

Angle1 Angle2 : -86.00 deg 85.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 49.50 / 49.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -86.00 deg Angle2 : 85.00 deg
Barrier height : 48.00 m
Barrier receiver distance : 8.00 / 8.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
----------------------------------------------
Angle1   Angle2           : -79.00 deg   23.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  20.00 / 20.00  m
Receiver height           :  49.50 / 49.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -79.00 deg   Angle2 : 23.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :  15.00 / 15.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Results segment # 1: SomersetStW (day)
--------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       49.50 !       23.90 !        85.90

ROAD (0.00 + 48.96 + 0.00) = 48.96 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -86     85   0.00  68.48   0.00   0.00  -0.22   0.00   0.00 -19.30  48.96
-------------------------------------------------------------------------------

Segment Leq : 48.96 dBA

↟
```

Results segment # 2: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	49.50	13.50	75.50

ROAD (0.00 + 40.24 + 0.00) = 40.24 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-79	23	0.00	63.96	0.00	-1.25	-2.47	0.00	0.00	-20.00	40.24

Segment Leq : 40.24 dBA

Total Leq All Segments: 49.51 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	49.50	23.90	85.90

ROAD (0.00 + 41.36 + 0.00) = 41.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-86	85	0.00	60.88	0.00	0.00	-0.22	0.00	0.00	-19.30	41.36

Segment Leq : 41.36 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

```
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       49.50 !       13.50 !        75.50

ROAD (0.00 + 32.65 + 0.00) = 32.65 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -79     23   0.00  56.36   0.00  -1.25  -2.47   0.00   0.00 -20.00  32.65
-------------------------------------------------------------------------------

Segment Leq : 32.65 dBA

Total Leq All Segments: 41.91 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 49.51
                           (NIGHT): 41.91
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:21:48
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec91.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 9-1

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

Angle1 Angle2 : -81.00 deg 81.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -81.00 deg Angle2 : 81.00 deg
Barrier height : 48.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -83.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -83.00 deg   Angle2 : 0.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :   1.00 / 1.00   m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 48.02 + 0.00) = 48.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -81     81   0.00  68.48   0.00   0.00  -0.46   0.00   0.00 -20.00  48.02
-------------------------------------------------------------------------------

Segment Leq : 48.02 dBA

↟
```

Results segment # 2: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 40.59 + 0.00) = 40.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	0	0.00	63.96	0.00	0.00	-3.36	0.00	0.00	-20.00	40.59

Segment Leq : 40.59 dBA

Total Leq All Segments: 48.74 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 40.43 + 0.00) = 40.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	81	0.00	60.88	0.00	0.00	-0.46	0.00	0.00	-20.00	40.43

Segment Leq : 40.43 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

```
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 33.00 + 0.00) = 33.00 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -83      0   0.00  56.36   0.00   0.00  -3.36   0.00   0.00 -20.00  33.00
-------------------------------------------------------------------------------

Segment Leq : 33.00 dBA

Total Leq All Segments: 41.15 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 48.74
                           (NIGHT): 41.15
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:29:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec917.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 9-17

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

Angle1 Angle2 : -81.00 deg 81.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 53.00 / 53.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -81.00 deg Angle2 : 81.00 deg
Barrier height : 48.00 m
Barrier receiver distance : 1.00 / 1.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
----------------------------------------------
Angle1   Angle2           : -83.00 deg   0.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  53.00 / 53.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -83.00 deg   Angle2 : 0.00 deg
Barrier height            :  48.00 m
Barrier receiver distance :   1.00 / 1.00   m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

♠
Results segment # 1: SomersetStW (day)
--------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       53.00 !       49.57 !       111.57

ROAD (0.00 + 68.02 + 0.00) = 68.02 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -81     81   0.00  68.48   0.00   0.00  -0.46   0.00   0.00  -4.16  63.87*
   -81     81   0.00  68.48   0.00   0.00  -0.46   0.00   0.00   0.00  68.02
-------------------------------------------------------------------------------

 * Bright Zone !
```

Segment Leq : 68.02 dBA

↟
Results segment # 2: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	53.00	49.57	111.57

ROAD (0.00 + 60.59 + 0.00) = 60.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	0	0.00	63.96	0.00	0.00	-3.36	0.00	0.00	-4.17	56.42*
-83	0	0.00	63.96	0.00	0.00	-3.36	0.00	0.00	0.00	60.59

* Bright Zone !

Segment Leq : 60.59 dBA

Total Leq All Segments: 68.74 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	53.00	49.57	111.57

ROAD (0.00 + 60.43 + 0.00) = 60.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	81	0.00	60.88	0.00	0.00	-0.46	0.00	0.00	-4.16	56.27*
-81	81	0.00	60.88	0.00	0.00	-0.46	0.00	0.00	0.00	60.43

* Bright Zone !

Segment Leq : 60.43 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	53.00	49.57	111.57

ROAD (0.00 + 53.00 + 0.00) = 53.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-83	0	0.00	56.36	0.00	0.00	-3.36	0.00	0.00	-4.17	48.83*
-83	0	0.00	56.36	0.00	0.00	-3.36	0.00	0.00	0.00	53.00

* Bright Zone !

Segment Leq : 53.00 dBA

Total Leq All Segments: 61.15 dBA

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TOTAL Leq FROM ALL SOURCES (DAY): 68.74
(NIGHT): 61.15
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 17:11:18
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec101.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 10-1

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

Angle1 Angle2 : -34.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 40.00 / 40.00 m
Receiver height : 1.50 / 1.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -34.00 deg Angle2 : 0.00 deg
Barrier height : 48.00 m
Barrier receiver distance : 25.00 / 25.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

Road data, segment # 2: Somerset B (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 # 2: Somerset B (day/night)
--------------------------------------------
Angle1   Angle2           : -68.00 deg   -34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -68.00 deg   Angle2 : -34.00 deg
Barrier height            :  20.00 m
Barrier receiver distance :  33.00 / 33.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

♠
Results segment # 1: Somerset A (day)
-------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !        1.50 !        1.50 !        63.50

ROAD (0.00 + 36.98 + 0.00) = 36.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -34      0   0.00  68.48   0.00  -4.26  -7.24   0.00   0.00 -20.00  36.98
-------------------------------------------------------------------------------

Segment Leq : 36.98 dBA
```

↟
Results segment # 2: Somerset B (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 35.60 + 0.00) = 35.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	-34	0.66	68.48	0.00	-9.37	-8.63	0.00	-0.90	0.00	49.58
-68	-34	0.00	68.48	0.00	-5.64	-7.24	0.00	0.00	-20.00	35.60

Segment Leq : 35.60 dBA

Total Leq All Segments: 39.35 dBA

↟
Results segment # 1: Somerset A (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 29.39 + 0.00) = 29.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	0	0.00	60.88	0.00	-4.26	-7.24	0.00	0.00	-20.00	29.39

Segment Leq : 29.39 dBA

↟
Results segment # 2: Somerset B (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	1.50	1.50	63.50

ROAD (0.00 + 28.00 + 0.00) = 28.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	-34	0.66	60.88	0.00	-9.37	-8.63	0.00	-0.90	0.00	41.99
-68	-34	0.00	60.88	0.00	-5.64	-7.24	0.00	0.00	-20.00	28.00

Segment Leq : 28.00 dBA

Total Leq All Segments: 31.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 39.35
(NIGHT): 31.76

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 17:16:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec1017.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 10-17

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

Angle1 Angle2 : -34.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 40.00 / 40.00 m
Receiver height : 53.00 / 53.00 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -34.00 deg Angle2 : 0.00 deg
Barrier height : 48.00 m
Barrier receiver distance : 25.00 / 25.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

↑
Road data, segment # 2: Somerset B (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 # 2: Somerset B (day/night)
--------------------------------------------
Angle1   Angle2           : -68.00 deg   -34.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      1 / 1
House density             :     20 %
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :  53.00 / 53.00  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -68.00 deg   Angle2 : -34.00 deg
Barrier height            :  20.00 m
Barrier receiver distance :  33.00 / 33.00  m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

Results segment # 1: Somerset A (day)
-------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       53.00 !       20.81 !        82.81

ROAD (0.00 + 36.98 + 0.00) = 36.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -34      0   0.00  68.48   0.00  -4.26  -7.24   0.00   0.00 -20.00  36.98
-------------------------------------------------------------------------------

Segment Leq : 36.98 dBA
```

Results segment # 2: Somerset B (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	53.00	22.10	84.10

ROAD (0.00 + 54.70 + 0.00) = 54.70 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	-34	0.00	68.48	0.00	-5.64	-7.24	0.00	-0.90	0.00	54.70
-68	-34	0.00	68.48	0.00	-5.64	-7.24	0.00	0.00	-2.26	53.34*
-68	-34	0.00	68.48	0.00	-5.64	-7.24	0.00	0.00	0.00	55.60

* Bright Zone !

Segment Leq : 54.70 dBA

Total Leq All Segments: 54.77 dBA

Results segment # 1: Somerset A (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	53.00	20.81	82.81

ROAD (0.00 + 29.39 + 0.00) = 29.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-34	0	0.00	60.88	0.00	-4.26	-7.24	0.00	0.00	-20.00	29.39

Segment Leq : 29.39 dBA

Results segment # 2: Somerset B (night)

```
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       53.00 !       22.10 !        84.10

ROAD (0.00 + 47.10 + 0.00) = 47.10 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -68    -34   0.00  60.88   0.00  -5.64  -7.24   0.00  -0.90   0.00  47.10
   -68    -34   0.00  60.88   0.00  -5.64  -7.24   0.00   0.00  -2.26  45.74*
   -68    -34   0.00  60.88   0.00  -5.64  -7.24   0.00   0.00   0.00  48.00
-------------------------------------------------------------------------------

 * Bright Zone !

Segment Leq : 47.10 dBA

Total Leq All Segments: 47.17 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 54.77
                           (NIGHT): 47.17
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:37:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec111.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 11-1

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

Angle1 Angle2 : 0.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 40.00 / 40.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -89.00 deg   88.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.44 + 0.00) = 56.44 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     68   0.66  68.48   0.00  -7.07  -4.97   0.00   0.00   0.00  56.44
-------------------------------------------------------------------------------

Segment Leq : 56.44 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.49 + 0.00) = 62.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -89     88   0.66  63.96   0.00   0.00  -1.46   0.00   0.00   0.00  62.49
-------------------------------------------------------------------------------

Segment Leq : 62.49 dBA

Total Leq All Segments: 63.45 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
-----------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 48.85 + 0.00) = 48.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	68	0.66	60.88	0.00	-7.07	-4.97	0.00	0.00	0.00	48.85

Segment Leq : 48.85 dBA

Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 54.90 + 0.00) = 54.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	88	0.66	56.36	0.00	0.00	-1.46	0.00	0.00	0.00	54.90

Segment Leq : 54.90 dBA

Total Leq All Segments: 55.86 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.45
(NIGHT): 55.86

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:40:23
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec1117.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 11-17

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

Angle1 Angle2 : 0.00 deg 68.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 40.00 / 40.00 m
Receiver height : 53.00 / 53.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00

```
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
------------------------------------------------
Angle1   Angle2           : -89.00 deg   88.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  53.00 / 53.00  m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.99 + 0.00) = 59.99 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     68   0.00  68.48   0.00  -4.26  -4.23   0.00   0.00   0.00  59.99
-------------------------------------------------------------------------------

Segment Leq : 59.99 dBA
```

↟

```
Results segment # 2: BayswaterAve (day)
---------------------------------------

Source height = 1.50 m

ROAD (0.00 + 63.88 + 0.00) = 63.88 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -89     88   0.00  63.96   0.00   0.00  -0.07   0.00   0.00   0.00  63.88
-------------------------------------------------------------------------------

Segment Leq : 63.88 dBA

Total Leq All Segments: 65.37 dBA
```

↟

```
Results segment # 1: SomersetStW (night)
-----------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 52.40 + 0.00) = 52.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	68	0.00	60.88	0.00	-4.26	-4.23	0.00	0.00	0.00	52.40

Segment Leq : 52.40 dBA

Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 56.29 + 0.00) = 56.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-89	88	0.00	56.36	0.00	0.00	-0.07	0.00	0.00	0.00	56.29

Segment Leq : 56.29 dBA

Total Leq All Segments: 57.78 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 65.37
(NIGHT): 57.78

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:45:46
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec121.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 12-1

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 82.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

ROAD (0.00 + 59.40 + 0.00) = 59.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	82	0.66	63.96	0.00	0.00	-4.56	0.00	0.00	0.00	59.40

Segment Leq : 59.40 dBA

Total Leq All Segments: 59.40 dBA

↟
Results segment # 1: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 51.81 + 0.00) = 51.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	82	0.66	56.36	0.00	0.00	-4.56	0.00	0.00	0.00	51.81

Segment Leq : 51.81 dBA

Total Leq All Segments: 51.81 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 59.40
(NIGHT): 51.81
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 16:52:33
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec1217.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 12-17

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: BayswaterAve (day/night)

Angle1 Angle2 : 0.00 deg 82.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 15.00 / 15.00 m
Receiver height : 53.00 / 53.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: BayswaterAve (day)

Source height = 1.50 m

ROAD (0.00 + 60.54 + 0.00) = 60.54 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	82	0.00	63.96	0.00	0.00	-3.41	0.00	0.00	0.00	60.54

Segment Leq : 60.54 dBA

Total Leq All Segments: 60.54 dBA

↟
Results segment # 1: BayswaterAve (night)

Source height = 1.50 m

ROAD (0.00 + 52.95 + 0.00) = 52.95 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	82	0.00	56.36	0.00	0.00	-3.41	0.00	0.00	0.00	52.95

Segment Leq : 52.95 dBA

Total Leq All Segments: 52.95 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 60.54
(NIGHT): 52.95
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 23-01-2023 17:04:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec15.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 15

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

Angle1 Angle2 : -70.00 deg 70.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 40.00 / 40.00 m
Receiver height : 56.50 / 56.50 m
Topography : 2 (Flat/gentle slope; with barrier)
Barrier angle1 : -70.00 deg Angle2 : 70.00 deg
Barrier height : 55.00 m
Barrier receiver distance : 25.00 / 25.00 m
Source elevation : 62.00 m
Receiver elevation : 62.00 m
Barrier elevation : 62.00 m
Reference angle : 0.00

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

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 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):   8000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: BayswaterAve (day/night)
-----------------------------------------------
Angle1   Angle2           : -84.00 deg   84.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  15.00 / 15.00  m
Receiver height           :  56.50 / 56.50  m
Topography                :      2       (Flat/gentle slope; with barrier)
Barrier angle1            : -84.00 deg   Angle2 : 84.00 deg
Barrier height            :  55.00 m
Barrier receiver distance :   8.00 / 8.00   m
Source elevation          :  62.00 m
Receiver elevation        :  62.00 m
Barrier elevation         :  62.00 m
Reference angle           :   0.00

↟
Results segment # 1: SomersetStW (day)
---------------------------------------

Source height = 1.50 m

Barrier height for grazing incidence
-----------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       56.50 !       22.12 !        84.12

ROAD (0.00 + 43.13 + 0.00) = 43.13 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -70     70   0.00  68.48   0.00  -4.26  -1.09   0.00   0.00 -20.00  43.13
-------------------------------------------------------------------------------

Segment Leq : 43.13 dBA

↟
```

Results segment # 2: BayswaterAve (day)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	56.50	27.16	89.16

ROAD (0.00 + 51.94 + 0.00) = 51.94 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	84	0.00	71.77	0.00	0.00	-0.30	0.00	0.00	-19.53	51.94

Segment Leq : 51.94 dBA

Total Leq All Segments: 52.48 dBA

↟
Results segment # 1: SomersetStW (night)

Source height = 1.50 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.50	56.50	22.12	84.12

ROAD (0.00 + 35.53 + 0.00) = 35.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	70	0.00	60.88	0.00	-4.26	-1.09	0.00	0.00	-20.00	35.53

Segment Leq : 35.53 dBA

↟
Results segment # 2: BayswaterAve (night)

Source height = 1.50 m

Barrier height for grazing incidence

```
-------------------------------------
Source      ! Receiver    ! Barrier     ! Elevation of
Height  (m) ! Height  (m) ! Height  (m) ! Barrier Top  (m)
------------+-------------+-------------+--------------
       1.50 !       56.50 !       27.16 !        89.16

ROAD (0.00 + 44.35 + 0.00) = 44.35 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -84     84   0.00  64.18   0.00   0.00  -0.30   0.00   0.00 -19.53  44.35
-------------------------------------------------------------------------------

Segment Leq : 44.35 dBA

Total Leq All Segments: 44.89 dBA
```



```
TOTAL Leq FROM ALL SOURCES (DAY): 52.48
                           (NIGHT): 44.89
```