

Environmental Noise Control Study Proposed Residential Development

2506 Innes Road
Ottawa, Ontario

Prepared for Concorde Properties

Report PG6894 -1 Revision 1 - Dated May 17, 2024

Table of Contents

	PAGE
1.0 Introduction	2
2.0 Proposed Development	2
3.0 Methodology and Noise Assessment Criteria	3
4.0 Analysis	7
5.0 Results	9
6.0 Discussion and Recommendations	10
7.0 Summary of Findings	12
8.0 Statement of Limitations	13

Appendices

Appendix 1	Table 8 – Summary of Reception Points and Geometry
	Drawing PG6894-1-Site Plan
	Drawing PG6894-2-Receptor Location Plan
	Drawing PG6894-3-Site Geometry (Building A)
	Drawing PG6894-3A-Site Geometry (REC 1-1 & REC 1-3)
	Drawing PG6894-3B-Site Geometry (REC 2-1 & REC 2-3)
	Drawing PG6894-3C-Site Geometry (REC 3-1 & REC 3-3)
	Drawing PG6894-4-Site Geometry (Building B)
	Drawing PG6894-4A-Site Geometry (REC 4-1 & REC 4-3)
	Drawing PG6894-4B-Site Geometry (REC 5-1 & REC 5-3)
	Drawing PG6894-4C-Site Geometry (REC 6-1 & REC 6-3)
	Drawing PG6894-5-Site Geometry (Outdoor Living Area)
	Drawing PG6894-5A-Site Geometry (REC 7)

Appendix 2	Stamson Results
-------------------	-----------------

1.0 Introduction

Paterson Group (Paterson) was commissioned by Concorde Properties to conduct an environmental noise control study for the proposed residential development to be located at 2506 Innes Road, 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 residential development as they are understood at the time of writing this report.

This study has been conducted according to the 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 residential development will consist of two (2) multi-storey buildings. Associated at-grade roadways, parking areas, landscaped areas and outdoor living areas are also anticipated as a part of the proposed residential development.

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

The City of Ottawa's Official Plan, in addition to the ENCG dictate 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 NPC-300 outlines the limitations of the stationary and environmental noise levels in relation to the location of the receptors. These can be found below in the following tables:

Table 1 - Sound Level Limits for Outdoor Living Areas	
Time Period	Required $L_{eq(16)}$ (dBA)
16-hour, 7:00-23:00	55
I. Standards taken from Table 2.2a; Sound Level Limit for Outdoor Living Areas - Road and Rail	

Table 2 - Sound Level Limits for Indoor Living Area			
Type of Space	Time Period	Required L_{eq} (dBA)	
		Road	Rail
Living/Dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc	7:00-23:00	45	40
Theaters, place of worship, libraries, individual or semi-private offices, conference rooms, reading rooms	23:00-7:00	45	40
Sleeping quarters	7:00-23:00	45	40
	23:00-7:00	40	35
I. Standards taken from Table 2.2b; Sound Level Limit for Indoor Living Areas - Road and Rail			

It is noted in ENCG that the limits outlined in Table 2 are for the sound levels on the interior of the glass pane. The ENCG further goes on to state that the limit for the exterior of the pane of glass will be 55 dBA.

If the sound level limits are exceeded at the window panes for the indoor living areas, the following Warning Clauses may be referenced:

Table 3 - Warning Clauses for Sound Level Exceedances	
Warning Clause	Description
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."
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."
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."
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."
I.	Clauses taken from section C8 Warning Clauses; Environmental Noise Guidelines - 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 proposed residential development is not in proximity to any existing or approved stationary sources of noise. Therefore, a stationary noise analysis will not be required with respect to off-site stationary noise sources impacting the proposed development.

However, if rooftop units or other noise-generating equipment that is classified as a stationary noise source are considered for the proposed residential units, a stationary noise study with respect to these new stationary noise sources will be completed under a separate cover.

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

Surface Transportation Noise

The subject site is currently occupied by an existing commercial building and bordered by Innes Road to the north, and further by residential dwellings to the east, west, and south. Innes Road, Pennington Lane, Scotland Private, and Beddoe Lane are identified within the 100 m radius of the proposed residential development.

Based on the City of Ottawa Official Plan, Schedule E, Innes Road is considered a 2-lane major collector road (2-UMCU). Other roads within the 100 m radius of the proposed residential development are not classified as either arterial, collector or major collector roads and therefore are not included in this study.

All noise sources are presented in Drawing PG6894-1-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 class. 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 4 - Traffic and Road Parameters						
Road	Implied Roadway	AADT (Veh/day)	Posted Speed (km/h)	Day/Night Split %	Medium Truck %	Heavy Truck %
Innes Road	2-UMCU	12,000	50	92/8	7	5
Data obtained from the City of Ottawa document ENCG or calculated from OC Transpo online schedules						

Seven (7) reception points were selected for this analysis. The following elevations were selected from the heights provided on the survey plan for the subject buildings.

Table 5 - Elevation of Reception Points			
Floor Number	Elevation at Centre of Window / Ground Surface (m)	Floor Use	Daytime/Nighttime Analysis
Ground Surface	1.50	Outdoor Living Area	-
1 st Floor	1.50	Living Area/Bedroom	Daytime/nighttime
3 rd Floor	7.50	Living Area/Bedroom	Daytime/nighttime

For the current analysis, the reception points were taken at the centre of the first and third floor for each building on the north, east and west side. Additionally, a receptor point for the outdoor living area was taken at 1.5 m above the ground surface. Reception points are detailed on Drawing PG6894-2-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 100m buffer zone, which is reflected in the local angles described in Paterson Drawings PG6894-3A to 3G-Site Geometry in Appendix 1.

Table 7 - 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. It should be noted that one receptor is assigned to the north most unit of each building. Since the single noise source, Innes Road, is located north of the buildings, the anticipated noise at each receptor represents the worst-case scenario of each building.

The subject site is relatively level and at grade with the neighbouring roads within 100 m radius.

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

The primary descriptors are the 16-hour daytime and the 8-hour night time equivalent sound levels, $L_{eq(16)}$ and the $L_{eq(8)}$ for City roads.

The proposed traffic noise levels were analyzed at all reception points. The results of the STAMSON software can be located in Appendix 2, and the summary of the results are noted in Table 6.

Table 6 – Proposed Noise Levels				
Reception Point	Description	OLA (dBA)	Daytime at Facade $L_{eq(16)}$ (dBA)	Nighttime at Facade $L_{eq(8)}$ (dBA)
REC 1-1	Building A, Western Elevation, 1 st Floor	--	60.15	52.55
REC 1-3	Building A, Western Elevation, 3 rd Floor	--	60.71	53.11
REC 2-1	Building A, Northern Elevation, 1 st Floor	--	65.53	57.93
REC 2-3	Building A, Northern Elevation, 3 rd Floor	--	65.87	58.27
REC 3-1	Building A, Eastern Elevation, 1 st Floor	--	60.11	52.51
REC 3-3	Building A, Eastern Elevation, 3 rd Floor	--	60.65	53.05
REC 4-1	Building B, Western Elevation, 1 st Floor	--	56.56	48.96
REC 4-3	Building B, Western Elevation, 3 rd Floor	--	57.49	49.89
REC 5-1	Building B, Northern Elevation, 1 st Floor	--	65.50	57.9
REC 5-3	Building B, Northern Elevation, 3 rd Floor	--	65.83	58.23
REC 6-1	Building B, Eastern Elevation, 1 st Floor	--	56.11	49.51
REC 6-3	Building B, Eastern Elevation, 3 rd Floor	--	57.02	49.42
REC 7	Outdoor Amenity Area	41.3		

6.0 Discussion and Recommendations

6.1 Outdoor Living Areas

One outdoor living area was analyzed as part of the current study. The outdoor living area is located to the south of Building B within the subject site. The results of the STAMSON modelling indicates that the $L_{eq(16)}$ from all sources will be 41.33 dBA. This value does not exceed the 55 dBA limit that was specified in Table 1, therefore no warning clauses in regard to the outdoor living area will be required on deeds of sale.

6.2 Indoor Living Areas and Ventilation

Indoor Living Areas

The results of the STAMSON modelling indicate that the $L_{eq(16)}$ ranges between 56.56 dBA and 65.87 dBA. These values exceed the limit of 55 dBA as specified by the ENGCC and therefore warning clauses will be required to be stated on any deeds of sale. The applicable warning clauses are summarized in Table 7 on the following page.

Table 7 - Summary of Warning Clauses – Indoor Living Areas			
Building / Elevation	Floor	Applicable Warning Clause	Additional Considerations
Building A Northern	All Floors	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.
Building A Eastern and Western	All Floors	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.
Building B Eastern and Western	All Floors	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.

Building B Northern	All Floors	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.
-----------------------------------	---------------	---------------------------------	--

The proposed daytime $L_{eq(16)}$ of the northern elevations of both buildings exceeds 65 dBA and therefore will require a review of the exterior building materials determine that there is adequate soundproofing.

Proposed Construction Specifications

It is understood that typical window and wall details are proposed for the multi-storey 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 27.3 dBA.

A conversion from AIF to a Standard Transmission Class (STC) rating will require knowledge of the 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 an STC rating of 30.3 or higher, this would be a sufficient noise attenuation device.

It is understood the proposed exterior facade of both buildings will consist of brickwork and exterior cladding. A review of industry standards for construction material indicates that, as long as the exterior cladding of the northern elevations consists of concrete panels, the masonry is composed of 4" bricks, and all windows consist of double pane glass then a minimum STC rating of greater than 30.3 will be achieved. If alternative materials are to be utilized on the northern elevation, then a review will need to be completed once design details are finalized.

7.0 Summary of Findings

The subject site is located at 2506 Innes Road, in the City of Ottawa. It is understood that the proposed residential development will consist of two multi-storey residential buildings. The associated analysis identified one surface transportation noise source: Innes Road.

Analysis of the outdoor living area was performed consisting of the outdoor living area located to the south of Building B (REC 7). REC 7 was below the 55 dBA guideline specified by the ENGCC and does not require any noise mitigation measures or warning clauses.

Several reception points were selected for the analysis, consisting of pane of glass reception points on the first and third floors of Building A and Building B. All reception points at the eastern and western elevations exceeded the 55 dBA guideline specified by the ENGCC and will require warning clause Type C to be included on all Offers of Purchase and Sale and/or lease agreements:

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.”

All receptors at the northern elevations of Building A and Building B exceeded the 65 dBA guideline specified by the ENGCC. Therefore, all units at the northern elevations will require warning clause Type D to be included on all Offers of Purchase and Sale and/or lease agreements:

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.”

Additionally, further analysis of the exterior building materials was completed to determine adequate soundproofing. It is assumed that the exterior façade will be composed of concrete panels and brickwork with a minimum depth of 4". All windows should consist of a double pane glass to meet the minimum STC rating at the northern elevations. If alternate materials are proposed at the northern elevations of Building A and Building B, a review will be required.

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 Concorde Properties or their 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.



Otilia McLaughlin, B.Eng.



Stephanie Boisvenue P.Eng.

Report Distribution:

- Concorde Properties
- Paterson Group

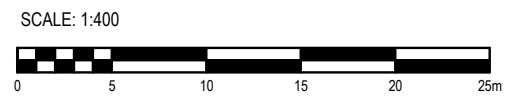
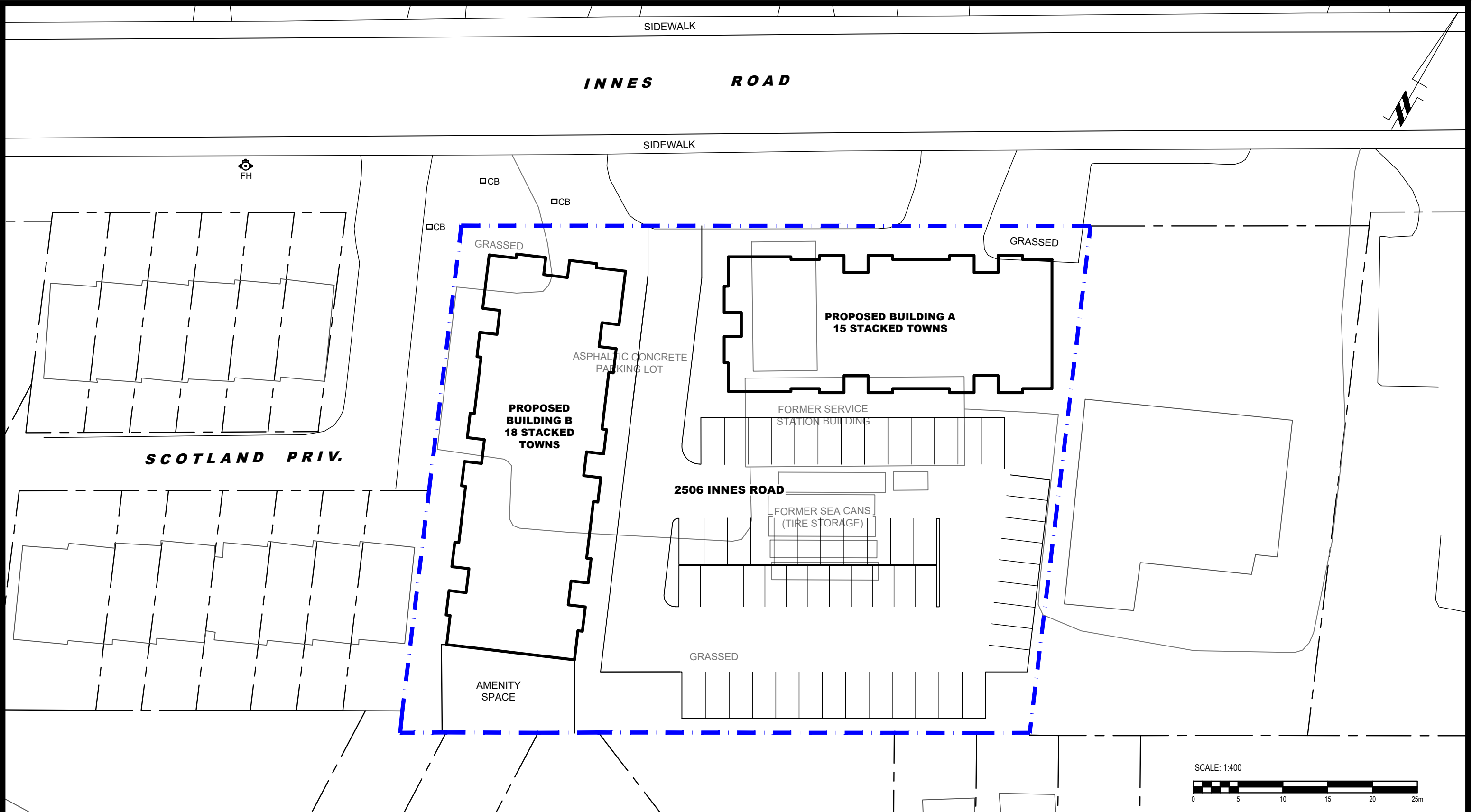
APPENDIX 1

TABLE 8 – SUMMARY OF RECEPTION POINTS AND GEOMETRY

- DRAWING PG6894-1 – SITE PLAN
- DRAWING PG6894-2 – RECEPTOR LOCATION PLAN
- DRAWING PG6894-3 – SITE GEOMETRY (BUILDING A)
- DRAWING PG6800-3A – SITE GEOMETRY (REC 1-1 & REC 1-3)
- DRAWING PG6800-3B - SITE GEOMETRY (REC 2-1 & REC 2-3)
- DRAWING PG6800-3C – SITE GEOMETRY (REC 3-1 & REC 3-3)
- DRAWING PG6894-4 – SITE GEOMETRY (BUILDING B)
- DRAWING PG6894-4A – SITE GEOMETRY (REC 4-1 & REC 4-3)
- DRAWING PG6894-4B - SITE GEOMETRY (REC 5-1 & REC 5-3)
- DRAWING PG6894-4C – SITE GEOMETRY (REC 6-1 & REC 6-3)
- DRAWING PG6894-5 – SITE GEOMETRY (OUTDOOR LIVING AREA)
- DRAWING PG6894-5A – SITE GEOMETRY (REC 7)

Table 8 - Summary of Reception Points and Geometry

2506 Innes Road											
Point of Reception	Location	Leq Day (dBA)	Leq Night (dBA)	Innes Road							
				Horizontal	Vertical	Total	Local Angle	Number of	Density	Barrier Height	Barrier
				(m)	(m)	(m)	(degree)	Rows of Houses	(%)	(m)	Distance (m)
REC 1-1	Building A, Western Elevation, 1st Floor	60.15	52.55	22	1.5	22.05	-80, 0	n/a	n/a	n/a	n/a
REC 1-3	Building A, Western Elevation, 3rd Floor	60.71	53.11	22	7.5	23.2	-80, 0	n/a	n/a	n/a	n/a
REC 2-1	Building A, Northern Elevation, 1st Floor	65.53	57.93	16	1.5	16.07	-84, 84	n/a	n/a	n/a	n/a
REC 2-3	Building A, Northern Elevation, 3rd Floor	65.87	58.27	16	7.5	17.7	-84, 84	n/a	n/a	n/a	n/a
REC 3-1	Building A, Eastern Elevation, 1st Floor	60.11	52.51	22	1.5	22.05	0, 78	n/a	n/a	n/a	n/a
REC 3-3	Building A, Eastern Elevation, 3rd Floor	60.65	53.05	22	7.5	23.2	0, 78	n/a	n/a	n/a	n/a
REC 4-1	Building B, Western Elevation, 1st Floor	56.56	48.96	36	1.5	36.03	-78, 0	n/a	n/a	n/a	n/a
REC 4-3	Building B, Western Elevation, 3rd Floor	57.49	49.89	36	7.5	36.77	-78, 0	n/a	n/a	n/a	n/a
REC 5-1	Building B, Northern Elevation, 1st Floor	65.50	57.9	16	1.5	16.07	-88, 78	n/a	n/a	n/a	n/a
REC 5-3	Building B, Northern Elevation, 3rd Floor	65.83	58.23	16	7.5	17.67	-88, 78	n/a	n/a	n/a	n/a
REC 6-1	Building B, Eastern Elevation, 1st Floor	56.11	49.51	37	1.5	37.03	0, 70	n/a	n/a	n/a	n/a
REC 6-3	Building B, Eastern Elevation, 3rd Floor	57.02	49.42	37	7.5	37.75	0, 70	n/a	n/a	n/a	n/a
REC 7	Outdoor Living Area (OLA)	41.3	-	64	1.5	64.02	64, 69 -59, -54	n/a	n/a	n/a	n/a



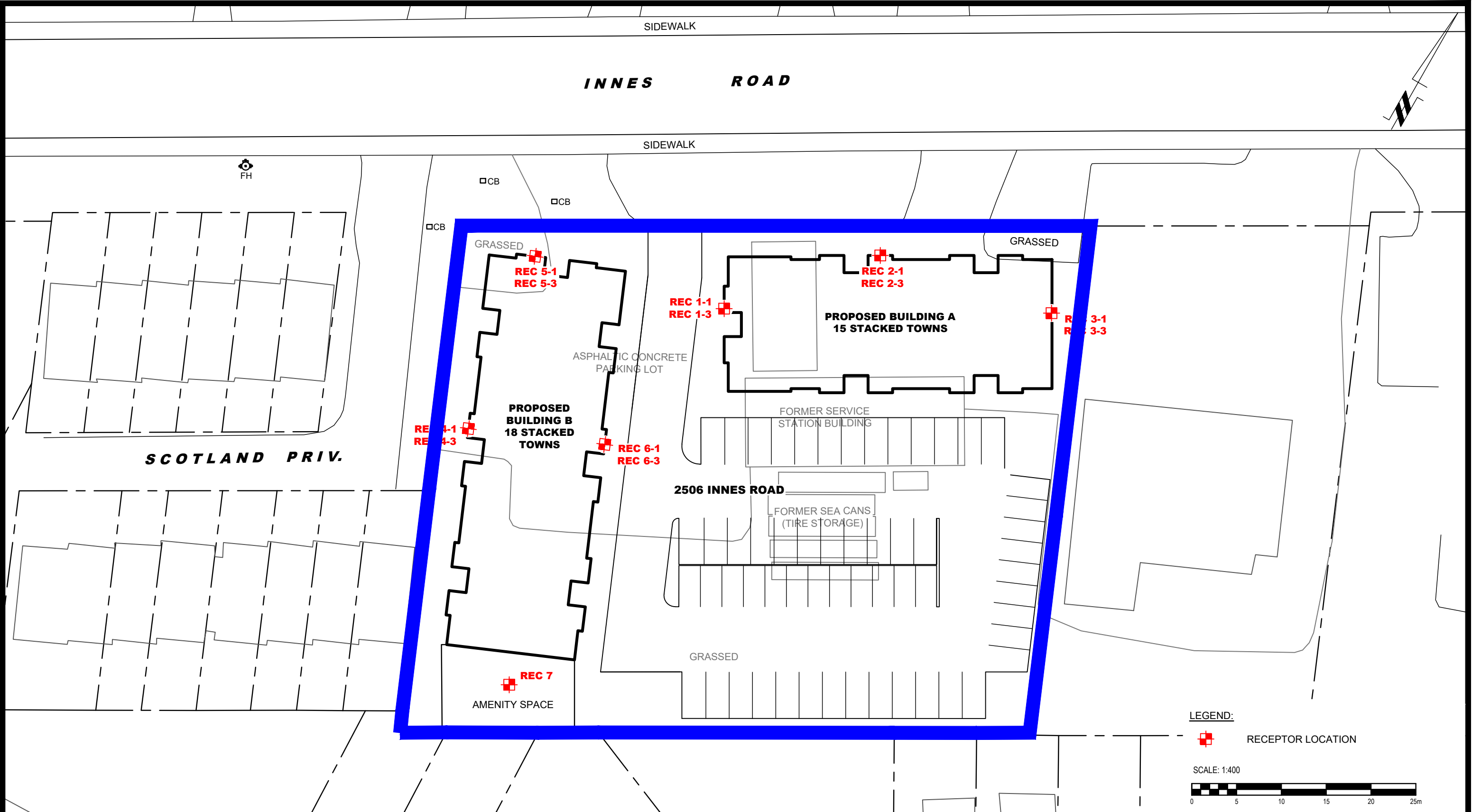
PATERSON GROUP
 9 AURIGA DRIVE
 OTTAWA, ON
 K2E 7T9
 TEL: (613) 226-7381

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

CONCORDE PROPERTIES
 GEOTECHNICAL INVESTIGATION
 PROPOSED RESIDENTIAL DEVELOPMENT
 2506 INNES ROAD
 OTTAWA, ONTARIO

Title: **SITE PLAN**

Scale:	1:400	Date:	11/2023
Drawn by:	YA	Report No.:	PE6894-1
Checked by:	OM	Dwg. No.:	PG6894-1
Approved by:	SB	Revision No.:	1



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

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

CONCORDE PROPERTIES
**GEOTECHNICAL INVESTIGATION
 PROPOSED RESIDENTIAL DEVELOPMENT
 2506 INNES ROAD**
 OTTAWA, ONTARIO
 Title: **RECEPTOR LOCATION PLAN**

Scale:	1:400	Date:	12/2023
Drawn by:	YA	Report No.:	PE6894-1
Checked by:	OM	Dwg. No.:	PG6894-2
Approved by:	SB	Revision No.:	1



1	UPDATED CONCEPTUAL PLAN	05/2024	OM
NO.	REVISIONS	DATE	INITIAL

OTTAWA,
Title:

**CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD**

SITE GEOMETRY

ONTARIO

Scale:	1:1500	Date:	11/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-3
Approved by:	SB	Revision No.:	1

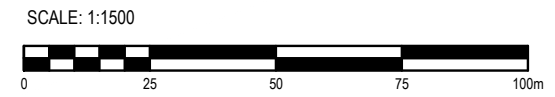


SITE : 2506 INNES ROAD
BUILDING A
APPROX ELEVATION : 89 m
APPROX HEIGHT : 13 m

INNES ROAD
2 LANE MAJOR COLLECTOR
(2-UMCU)
AADT : 12,000 VEHICLES / DAY
POSTED SPEED : 50 KM /HR

100 m RADIUS

LEGEND:
 RECEPTOR LOCATION



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

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD

OTTAWA, ONTARIO

Title: **SITE GEOMETRY - REC 1-1 AND REC 1-3**

Scale:	1:1500	Date:	12/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-3A
Approved by:	SB	Revision No.:	1



LEGEND:

RECEPTOR LOCATION

SCALE: 1:1500

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

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

OTTAWA, ONTARIO

**CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD**

Title: **SITE GEOMETRY - REC 2-1 AND REC 2-3**

Scale:	1:1500	Date:	12/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-3B
Approved by:	SB	Revision No.:	1



NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD

OTTAWA, ONTARIO

Title: **SITE GEOMETRY - REC 3-1 AND REC 3-3**

Scale:	1:1500	Date:	12/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-3C
Approved by:	SB	Revision No.:	1



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

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

OTTAWA, ONTARIO

**CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD**

SITE GEOMETRY - BUILDING B

Scale:	1:1500	Date:	11/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-4
Approved by:	SB	Revision No.:	1



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

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

**CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD**

OTTAWA, ONTARIO

Title: SITE GEOMETRY - REC 4-1 AND REC 4-3

Scale:	1:1500	Date:	12/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-4A
Approved by:	SB	Revision No.:	1



1	UPDATED CONCEPTUAL PLAN	05/2024	OM
NO.	REVISIONS	DATE	INITIAL

CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD
ONTARIO

OTTAWA,
Title:
SITE GEOMETRY - REC 5-1 AND REC 5-3

Scale:	1:1500	Date:	12/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-4B
Approved by:	SB	Revision No.:	1



LEGEND:
 RECEPTOR LOCATION

SCALE: 1:1500

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

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD

OTTAWA, ONTARIO

Title: **SITE GEOMETRY - REC 6-1 AND REC 6-3**

Scale:	1:1500	Date:	12/2023
Drawn by:	YA	Report No.:	PG6894-1
Checked by:	OM	Dwg. No.:	PG6894-4C
Approved by:	SB	Revision No.:	1



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

1	UPDATED CONCEPTUAL PLAN	05/2024	OM
NO.	REVISIONS	DATE	INITIAL

OTTAWA,
Title:

**CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD**

ONTARIO

SITE GEOMETRY - AMENITY

Scale: 1:1500
Drawn by: YA
Checked by: OM
Approved by: SB

Date: 11/2023
Report No.: PG6894-1
Dwg. No.: **PG6894-5**
Revision No.: 1



**SITE : 2506 INNES ROAD
AMENITY AREA**

**INNES ROAD
2 LANE MAJOR COLLECTOR
(2-UMCU)
AADT : 12,000 VEHICLES / DAY
POSTED SPEED : 50 KM /HR**

100 m RADIUS

REC 7

LEGEND:

RECEPTOR LOCATION

SCALE: 1:1500



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

NO.	REVISIONS	DATE	INITIAL
1	UPDATED CONCEPTUAL PLAN	05/2024	OM

OTTAWA,
Title:

**CONCORDE PROPERTIES
GEOTECHNICAL INVESTIGATION
PROPOSED RESIDENTIAL DEVELOPMENT
2506 INNES ROAD**

ONTARIO

SITE GEOMETRY - REC 7

Scale: 1:1500

Date: 12/2023

Drawn by: YA

Report No.: PG6894-1

Checked by: OM

Dwg. No.: **PG6894-5A**

Approved by: SB

Revision No.: 1

APPENDIX 2

STAMSON RESULTS

Filename: rec11.te Time Period: Day/Night 16/8 hours
 Description: REC 1-1 Building A, Western Elevation

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

 Car traffic volume : 9715/845 veh/TimePeriod *
 Medium truck volume : 773/67 veh/TimePeriod *
 Heavy truck volume : 552/48 veh/TimePeriod *
 Posted speed limit : 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): 12000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Innes (day/night)

 Angle1 Angle2 : -80.00 deg 0.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 22.00 / 22.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: Innes (day)

 Source height = 1.50 m

ROAD (0.00 + 60.15 + 0.00) = 60.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	0	0.66	67.51	0.00	-2.76	-4.60	0.00	0.00	0.00	60.15

Segment Leq : 60.15 dBA

Total Leq All Segments: 60.15 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 52.55 + 0.00) = 52.55 dBA

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

-80	0	0.66	59.91	0.00	-2.76	-4.60	0.00	0.00	0.00	52.55
-----	---	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 52.55 dBA

Total Leq All Segments: 52.55 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.15

(NIGHT): 52.55

↑

↑

Filename: rec13.te Time Period: Day/Night 16/8 hours
 Description: REC 1-3 Building A, Western Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume : 552/48    veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

Data for Segment # 1: Innes (day/night)

```
-----
Angle1  Angle2      : -80.00 deg   0.00 deg
Wood depth          : 0           (No woods.)
No of house rows   : 0 / 0
Surface            : 1           (Absorptive ground surface)
Receiver source distance : 22.00 / 22.00 m
Receiver height    : 7.50 / 7.50 m
Topography         : 1           (Flat/gentle slope; no barrier)
Reference angle    : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 60.71 + 0.00) = 60.71 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-80	0	0.48	67.51	0.00	-2.46	-4.34	0.00	0.00	0.00	60.71

Segment Leq : 60.71 dBA

Total Leq All Segments: 60.71 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 53.11 + 0.00) = 53.11 dBA

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

-80	0	0.48	59.91	0.00	-2.46	-4.34	0.00	0.00	0.00	53.11
-----	---	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 53.11 dBA

Total Leq All Segments: 53.11 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.71

(NIGHT): 53.11

↑

↑

Filename: rec21.te Time Period: Day/Night 16/8 hours
 Description: REC 2-1 Building A, Northern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume  : 552/48    veh/TimePeriod *
Posted speed limit  : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume     : 92.00
```

Data for Segment # 1: Innes (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 : 16.00 / 16.00 m
Receiver height     : 1.50 / 1.50 m
Topography          : 1           (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 65.53 + 0.00) = 65.53 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	84	0.66	67.51	0.00	-0.47	-1.51	0.00	0.00	0.00	65.53

Segment Leq : 65.53 dBA

Total Leq All Segments: 65.53 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 57.93 + 0.00) = 57.93 dBA

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

-84	84	0.66	59.91	0.00	-0.47	-1.51	0.00	0.00	0.00	57.93
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 57.93 dBA

Total Leq All Segments: 57.93 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 65.53

(NIGHT): 57.93

↑

↑

Filename: rec23.te Time Period: Day/Night 16/8 hours
 Description: REC 2-3 Building A, Northern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod  *
Medium truck volume : 773/67    veh/TimePeriod  *
Heavy truck volume : 552/48    veh/TimePeriod  *
Posted speed limit : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

Data for Segment # 1: Innes (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 : 16.00 / 16.00 m
Receiver height    : 7.50 / 7.50 m
Topography         : 1           (Flat/gentle slope; no barrier)
Reference angle    : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 65.87 + 0.00) = 65.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-84	84	0.48	67.51	0.00	-0.41	-1.23	0.00	0.00	0.00	65.87

Segment Leq : 65.87 dBA

Total Leq All Segments: 65.87 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 58.27 + 0.00) = 58.27 dBA

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

-84	84	0.48	59.91	0.00	-0.41	-1.23	0.00	0.00	0.00	58.27
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 58.27 dBA

Total Leq All Segments: 58.27 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 65.87

(NIGHT): 58.27

↑

↑

Filename: rec31.te Time Period: Day/Night 16/8 hours
 Description: REC 3-1 Building A, Eastern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume  : 552/48    veh/TimePeriod *
Posted speed limit  : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume     : 92.00
```

Data for Segment # 1: Innes (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 : 22.00 / 22.00 m
Receiver height     : 1.50 / 1.50 m
Topography         : 1          (Flat/gentle slope; no barrier)
Reference angle    : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 60.11 + 0.00) = 60.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	78	0.66	67.51	0.00	-2.76	-4.64	0.00	0.00	0.00	60.11

Segment Leq : 60.11 dBA

Total Leq All Segments: 60.11 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 52.51 + 0.00) = 52.51 dBA

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

0	78	0.66	59.91	0.00	-2.76	-4.64	0.00	0.00	0.00	52.51
---	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 52.51 dBA

Total Leq All Segments: 52.51 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.11

(NIGHT): 52.51

↑

↑

Filename: rec33.te Time Period: Day/Night 16/8 hours
 Description: REC 3-3 Building A, Eastern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume : 552/48    veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume     : 92.00
```

Data for Segment # 1: Innes (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 : 22.00 / 22.00 m
Receiver height     : 7.50 / 7.50 m
Topography          : 1 (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

```
ROAD (0.00 + 60.65 + 0.00) = 60.65 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----
0 78 0.48 67.51 0.00 -2.46 -4.40 0.00 0.00 0.00 60.65
-----
```

Segment Leq : 60.65 dBA

Total Leq All Segments: 60.65 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 53.05 + 0.00) = 53.05 dBA

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

0	78	0.48	59.91	0.00	-2.46	-4.40	0.00	0.00	0.00	53.05
---	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 53.05 dBA

Total Leq All Segments: 53.05 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.65

(NIGHT): 53.05

↑

↑

Filename: rec41.te Time Period: Day/Night 16/8 hours
 Description: REC 4-1 Building B, Western Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume : 552/48    veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth          : 0.00
Number of Years of Growth            : 0.00
Medium Truck % of Total Volume       : 7.00
Heavy Truck % of Total Volume        : 5.00
Day (16 hrs) % of Total Volume       : 92.00
```

Data for Segment # 1: Innes (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 : 36.00 / 36.00 m
Receiver height     : 1.50 / 1.50 m
Topography         : 1          (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 56.56 + 0.00) = 56.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	0	0.66	67.51	0.00	-6.31	-4.64	0.00	0.00	0.00	56.56

Segment Leq : 56.56 dBA

Total Leq All Segments: 56.56 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

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

-78	0	0.66	59.91	0.00	-6.31	-4.64	0.00	0.00	0.00	48.96
-----	---	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 48.96 dBA

Total Leq All Segments: 48.96 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 56.56

(NIGHT): 48.96

↑

↑

Filename: rec43.te Time Period: Day/Night 16/8 hours
 Description: REC 4-3 Building B, Western Elevation

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

 Car traffic volume : 9715/845 veh/TimePeriod *
 Medium truck volume : 773/67 veh/TimePeriod *
 Heavy truck volume : 552/48 veh/TimePeriod *
 Posted speed limit : 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): 12000
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 0.00
 Medium Truck % of Total Volume : 7.00
 Heavy Truck % of Total Volume : 5.00
 Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Innes (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 : 36.00 / 36.00 m
 Receiver height : 7.50 / 7.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: Innes (day)

 Source height = 1.50 m

ROAD (0.00 + 57.49 + 0.00) = 57.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	0	0.48	67.51	0.00	-5.63	-4.40	0.00	0.00	0.00	57.49

Segment Leq : 57.49 dBA

Total Leq All Segments: 57.49 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 49.89 + 0.00) = 49.89 dBA

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

-78	0	0.48	59.91	0.00	-5.63	-4.40	0.00	0.00	0.00	49.89
-----	---	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 49.89 dBA

Total Leq All Segments: 49.89 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.49

(NIGHT): 49.89

↑

↑

Filename: rec51.te Time Period: Day/Night 16/8 hours
 Description: REC 5-1 Building B, Northern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume : 552/48    veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

Data for Segment # 1: Innes (day/night)

```
-----
Angle1  Angle2      : -88.00 deg   78.00 deg
Wood depth      : 0           (No woods.)
No of house rows : 0 / 0
Surface         : 1           (Absorptive ground surface)
Receiver source distance : 16.00 / 16.00 m
Receiver height  : 1.50 / 1.50 m
Topography      : 1           (Flat/gentle slope; no barrier)
Reference angle  : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

```
ROAD (0.00 + 65.50 + 0.00) = 65.50 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-----
-88    78     0.66  67.51  0.00  -0.47 -1.55  0.00  0.00  0.00  65.50
-----
```

Segment Leq : 65.50 dBA

Total Leq All Segments: 65.50 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 57.90 + 0.00) = 57.90 dBA

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

-88	78	0.66	59.91	0.00	-0.47	-1.55	0.00	0.00	0.00	57.90
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 57.90 dBA

Total Leq All Segments: 57.90 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 65.50

(NIGHT): 57.90

↑

↑

Filename: rec53.te Time Period: Day/Night 16/8 hours
 Description: REC 5-3 Building B, Northern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume  : 552/48    veh/TimePeriod *
Posted speed limit  : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

Data for Segment # 1: Innes (day/night)

```
-----
Angle1  Angle2      : -88.00 deg   78.00 deg
Wood depth          : 0           (No woods.)
No of house rows   : 0 / 0
Surface            : 1           (Absorptive ground surface)
Receiver source distance : 16.00 / 16.00 m
Receiver height     : 7.50 / 7.50 m
Topography         : 1           (Flat/gentle slope; no barrier)
Reference angle     : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 65.83 + 0.00) = 65.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-88	78	0.48	67.51	0.00	-0.41	-1.27	0.00	0.00	0.00	65.83

Segment Leq : 65.83 dBA

Total Leq All Segments: 65.83 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 58.23 + 0.00) = 58.23 dBA

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

-88	78	0.48	59.91	0.00	-0.41	-1.27	0.00	0.00	0.00	58.23
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 58.23 dBA

Total Leq All Segments: 58.23 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 65.83

(NIGHT): 58.23

↑

↑

Filename: rec61.te Time Period: Day/Night 16/8 hours
 Description: REC 6-1 Building B, Eastern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume  : 552/48    veh/TimePeriod *
Posted speed limit  : 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): 12000
Percentage of Annual Growth         : 0.00
Number of Years of Growth           : 0.00
Medium Truck % of Total Volume      : 7.00
Heavy Truck % of Total Volume       : 5.00
Day (16 hrs) % of Total Volume      : 92.00
```

Data for Segment # 1: Innes (day/night)

```
-----
Angle1 Angle2      : 0.00 deg 70.00 deg
Wood depth          : 0 (No woods.)
No of house rows   : 0 / 0
Surface            : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height     : 1.50 / 1.50 m
Topography         : 1 (Flat/gentle slope; no barrier)
Reference angle    : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 56.11 + 0.00) = 56.11 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	70	0.66	67.51	0.00	-6.51	-4.89	0.00	0.00	0.00	56.11

Segment Leq : 56.11 dBA

Total Leq All Segments: 56.11 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 48.51 + 0.00) = 48.51 dBA

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

0	70	0.66	59.91	0.00	-6.51	-4.89	0.00	0.00	0.00	48.51
---	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 48.51 dBA

Total Leq All Segments: 48.51 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 56.11

(NIGHT): 48.51

↑

↑

Filename: rec63.te Time Period: Day/Night 16/8 hours
 Description: REC 6-3 Building B, Eastern Elevation

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

```
-----
Car traffic volume : 9715/845   veh/TimePeriod *
Medium truck volume : 773/67    veh/TimePeriod *
Heavy truck volume : 552/48    veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth          : 0.00
Number of Years of Growth            : 0.00
Medium Truck % of Total Volume       : 7.00
Heavy Truck % of Total Volume        : 5.00
Day (16 hrs) % of Total Volume       : 92.00
```

Data for Segment # 1: Innes (day/night)

```
-----
Angle1 Angle2      : 0.00 deg 70.00 deg
Wood depth          : 0 (No woods.)
No of house rows   : 0 / 0
Surface            : 1 (Absorptive ground surface)
Receiver source distance : 37.00 / 37.00 m
Receiver height     : 7.50 / 7.50 m
Topography         : 1 (Flat/gentle slope; no barrier)
Reference angle    : 0.00
```

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

```
ROAD (0.00 + 57.02 + 0.00) = 57.02 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq
-----
0 70 0.48 67.51 0.00 -5.80 -4.69 0.00 0.00 0.00 57.02
-----
```

Segment Leq : 57.02 dBA

Total Leq All Segments: 57.02 dBA

↑

Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 49.42 + 0.00) = 49.42 dBA

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

0	70	0.48	59.91	0.00	-5.80	-4.69	0.00	0.00	0.00	49.42
---	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 49.42 dBA

Total Leq All Segments: 49.42 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.02

(NIGHT): 49.42

↑

↑

Filename: rec7.te Time Period: Day/Night 16/8 hours
Description: REC 7 Outdoor Amenity Area

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 1: Innes (day/night)

Angle1 Angle2 : 64.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 64.00 / 64.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 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): 12000
Percentage of Annual Growth : 0.00

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

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

 Angle1 Angle2 : -57.00 deg -54.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0 / 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 64.00 / 64.00 m
 Receiver height : 1.50 / 1.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

↑
 Results segment # 1: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 38.85 + 0.00) = 38.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
64	69	0.66	67.51	0.00	-10.46	-18.20	0.00	0.00	0.00	38.85

Segment Leq : 38.85 dBA

↑
 Results segment # 2: Innes (day)

Source height = 1.50 m

ROAD (0.00 + 37.64 + 0.00) = 37.64 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-54	0.66	67.51	0.00	-10.46	-19.41	0.00	0.00	0.00	37.64

Segment Leq : 37.64 dBA

Total Leq All Segments: 41.30 dBA

↑
 Results segment # 1: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 31.25 + 0.00) = 31.25 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
64	69	0.66	59.91	0.00	-10.46	-18.20	0.00	0.00	0.00	31.25

Segment Leq : 31.25 dBA

↑

Results segment # 2: Innes (night)

Source height = 1.50 m

ROAD (0.00 + 30.04 + 0.00) = 30.04 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-57	-54	0.66	59.91	0.00	-10.46	-19.41	0.00	0.00	0.00	30.04

Segment Leq : 30.04 dBA

Total Leq All Segments: 33.70 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 41.30
(NIGHT): 33.70

↑

↑