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Environmental Noise Control Study

Proposed Development
3130 Woodroffe Avenue, Ottawa

Prepared For

P-Squared Concepts Inc.

August 8, 2022

Report: PG6196-1

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Table of Contents

PAGE

Appendices

1.0 Introduction

Paterson Group (Paterson) was commissioned by P-Squared Concepts Inc. to conduct an environmental noise control study for the proposed development to be located at 3130 Woodroffe Avenue, 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 will consist of two two-storey (2) residential buildings (Building A and Building B) and one dental clinic building (Building C). Each residential building will consist of one level of basement and rise 9 metres above grade. Dental clinic building will rise 6 metres above grade. Associated at-grade landscaped terraces, fire lane, driveway, and parking area are also anticipated. Amenity areas at the rear yards of Building A and Building B that will serve as Outdoor Living Areas (OLA) are further anticipated.

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 building 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.

The noise level limit of commercial building is 50 dBA daytime. Therefore, where noise levels exceed 60 dBA daytime, the ventilation for the building should consider the provision for central air conditioning. Where noise levels exceed 70 dBA daytime, central air conditioning will be required, and the building components will require higher levels of sound attenuation.

If the noise level limits are exceeded, the following Warning Clauses should be included in related deeds of sale:

Table 3 – Warning Clauses for Noise 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."

- 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

Surface Transportation Noise

The subject development is bordered to the north by Madawaska Drive and Fifth Avenue followed by residential dwellings and an institutional building, to the east by Bronson Avenue followed by residential dwellings, to the south by Old Sunset Boulevard followed by residential dwellings, to the west by residential dwellings followed by Crescent Heights. Madawaska Drive, Fifth Avenue, Bronson Avenue, Old Sunset Boulevard, and Crescent Heights are identified within the 100 m radius of proposed building.

Based on the City of Ottawa's Official Plan, Schedule E, Deerfox Drive is considered a 2 lane urban collector road (2-UCU), Stoneway Drive is considered a 2 lane urban collector road (2-UCU), and Woodroffe Avenue is considered a 4 lane urban arterial road – divided (4-UAD). 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 traffic noise are due to the Deerfox Drive and Stoneway Drive to the south and Woodroffe Avenue to the east of the proposed development.

All noise sources are presented in Drawing PG6196-3 - 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 4 – Traffic and Road Parameters

Segment	Roadway Classification	AADT Veh/Day	Speed Limit (km/h)	Day/Night Split %	Medium Truck %	Heavy Truck %
Deerfox Drive	2-UCU	8000	40	92/8	7	5
Stoneway Drive	2-UCU	8000	40	92/8	7	5
Woodroffe Avenue	4-UAD	35000	70	92/8	7	5

➢ Data obtained from the City of Ottawa document ENCG

Four (4) levels of reception points were selected for this analysis. The following elevations were selected from the heights provided on the survey plan for the subject building.

Table 5 – Elevations of Reception Points			
Floor Number	**Elevation at Centre of Window (m)**	**Floor Use**	**Daytime / Nighttime Analysis**
Buildings A and B, First Floor	2.3	Living Area/Bedroom	Daytime / Nighttime
Buildings A and B, Second Floor	6.3	Living Area/Bedroom	Daytime / Nighttime
Buildings A and B, Rear Yard	1.5	--	Outdoor Living Area
Building C, First Floor	1.5	Dental Clinic (Commercial)	Daytime

For this analysis, a reception point was taken at the centre of each floor, at the first floor and top floor. Outdoor Living Areas – amenity areas are anticipated at the rear yards of Building A and Building B. Two reception points in the centre of rear yards, 1.5 m high, were selected for the analysis of these areas. Reception points are detailed on Drawing PG6196-2 - 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 roadway was analyzed where it intersected the 100 m buffer zone, which is reflected in the local angles described in Paterson Drawings PG6196-3A to 3D, PG6196-4A to 4D, PG6196-5A to 5C - 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.

The subject site is gently sloping downward to the east 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 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 6.

Table 6: 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 1-1	2.3	Building A, Northern Elevation, 1st Floor	58	51
REC 1-2	6.3	Building A, Northern Elevation, 2nd Floor	59	51
REC 2-1	2.3	Building A, Eastern Elevation, 1st Floor	64	56
REC 2-2	6.3	Building A, Eastern Elevation, 2nd Floor	64	57
REC 3-1	2.3	Building A, Southern Elevation, 1st Floor	62	54
REC 3-2	6.3	Building A, Southern Elevation, 2nd Floor	62	55
REC 4-1	2.3	Building B, Northern Elevation, 1st Floor	58	50
REC 4-2	6.3	Building B, Northern Elevation, 2nd Floor	59	51
REC 5-1	2.3	Building B, Eastern Elevation, 1st Floor	64	57
REC 5-2	6.3	Building B, Eastern Elevation, 2nd Floor	65	57
REC 6-1	2.3	Building B, Southern Elevation, 1st Floor	64	57
REC 6-2	6.3	Building B, Southern Elevation, 2nd Floor	65	57
REC 7	1.5	Building A, Rear Yard	53	--
REC 8	1.5	Building B, Rear Yard	59	--
REC 9-1	1.5	Building C, Northern Elevation, 1st Floor	66	--
REC 10-1	1.5	Building C, Eastern Elevation, 1st Floor	73	--
REC 11-1	1.5	Building C, Southern Elevation, 1st Floor	68	--

6.0 Discussion and Recommendations

6.1 Outdoor Living Areas

Amenity areas are anticipated at the rear yards of residential buildings (Building A and Building B). Two (2) receptor points were selected for the analysis at outdoor living areas (REC 7 and REC 8). It is assumed that the rear yard amenity areas will only be utilized as outdoor living areas provided that the proposed residential buildings are constructed. The proposed Leq(16) at the rear yard of Building A will be 53 dBA, which is below the 55 dBA threshold value specified by the ENCG. However, the proposed Leq(16) at the rear yard of Building B will be 59 dBA, which exceeds the 55 dBA threshold value specified by the ENCG. This exceedance is considered acceptable provided that a Warning Clause Type A is provided on all deeds of sale.

6.2 Indoor Living Areas and Ventilation

The results of the STAMSON modeling indicate that the noise levels at Building A will range between 58 dBA and 64 dBA during the daytime period (07:00-23:00) and between 51 dBA and 57 dBA during the nighttime period (23:00-7:00). The results of the STAMSON modeling indicate that the noise levels at Building B will range between 58 dBA and 65 dBA during the daytime period (07:00-23:00) and between 50 dBA and 57 dBA during the nighttime period (23:00-7:00). The noise levels on the northern, eastern, and southern elevations of Building A and Building B will exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. Therefore, all units of Building A and Building B should be designed with the provision for adding a central air conditioning unit, along with the warning clause Type C, as outlined in Table 3. It is also noted that the results of STAMSON modeling indicate that the noise levels at Building A and Building B will be below or equal to 65 dBA, and therefore standard building materials are acceptable to provide adequate soundproofing.

The results of the STAMSON modeling indicate that the noise levels at dental clinic building will range between 66 dBA and 73 dBA during the daytime period (07:00-23:00). The noise levels on the northern, eastern, and southern elevations of dental clinic building will exceed the limit for the exterior of the pane of glass (60 dBA) specified by the ENCG. It is also noted that the noise levels on the eastern elevation of dental clinic building will exceed 70 dBA. Therefore, the dental clinic building should be supplied with a central air conditioning unit, along with the warning clause Type D, as outlined in Table 3.

The dental clinic building does exceed the 70 dBA threshold for noise on the eastern elevation. 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 eastern elevation will need to be completed.

Proposed Construction Specifications

It is understood that typical window and wall details are proposed for the dental clinic building. 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 33 dBA.

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 an STC rating of 36 or higher, this would be a sufficient noise attenuation device.**

A review of industry standards for construction material indicates that, as long as the exterior cladding of the eastern elevation consist of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 36 and are considered acceptable. If alternative materials are to be utilized on the eastern 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 3130 Woodroffe Avenue, in the City of Ottawa. It is understood that the proposed development will consist of two two-storey (2) residential buildings (Building A and Building B) and a one-storey (1) dental clinic building (Building C). Building A and Building B will rise 9 metres above grade and Building C will rise 6 metres above grade. There are three major sources of surface transportation noise to the proposed development: Deerfox Drive, Stoneway Drive, and Woodroffe Avenue.

The surface transportation noise analysis was completed at the Outdoor Living Areas – rear yards of the residential buildings (Building A and Building B). The results of STAMSON modeling indicate that the noise levels at the rear yard of Building A and Building B are expected to be 53 dBA and 59 dBA, respectively, during the daytime period. The anticipated noise levels at the rear yard of Building A are below the 55 dBA threshold value specified by the ENCG. The anticipated noise levels at the rear yard of Building B exceed the 55 dBA threshold value specified by the ENCG. This exceedance is considered acceptable provided that a Warning Clause Type A is provided on all deeds of sale.

Several reception points were selected for the surface transportation noise analysis, consisting of the centre of first level and top level of residential buildings (Building A and Building B). The results of STAMSON modeling indicate that the northern, eastern, and southern elevations of Building A and Building B are expected to exceed the 55 dBA threshold specified by the ENCG. Therefore, the design with the provision for a central air conditioning unit, along with a warning clause Type C, will be required for all units of Building A and Building B. It is also noted that the modeling indicates that the noise levels are below or equal to 65 dBA, and therefore standard building materials are acceptable to provide adequate soundproofing.

The following warning clause is to be included on all Offers of Purchase and Sale and/or lease agreements for the residential buildings (Building A and Building B):

> " 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."

Several reception points were selected for the surface transportation noise analysis, consisting of the centre of first level and top level of dental clinic building (Building C). The results of STAMSON modeling indicate that the northern, eastern, and southern elevations of Building C are expected to exceed the 60 dBA threshold specified by the ENCG. It is also noted that the eastern elevation of Building C is expected to exceed the 70 dBA threshold specified by the ENCG. Therefore, the dental clinic building should be supplied with a central air conditioning unit, along with the warning clause Type D, as outlined in Table 3. A review of industry standards for construction material indicates that, provided the exterior cladding of the eastern elevation consist of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 36 and are considered acceptable.

The following warning clause is to be included on all Offers of Purchase and Sale and/or lease agreements for the dental clinic building (Building C):

> " This building 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 P-Squared Concepts Inc. 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.

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

Report Distribution:

- ❑ P-Squared Concepts Inc. (email copy)
- ❑ Paterson Group (1 copy)

APPENDIX 1

TABLE 7 - SUMMARY OF RECEPTION POINTS AND GEOMETRY

Drawing PG6196-1 - Site Plan

Drawing PG6196-2 - Receptor Location Plan

Drawing PG6196-3 - Site Geometry (Building A)

Drawing PG6196-3A - Site Geometry (REC 1-1 and REC 1-2)

Drawing PG6196-3B - Site Geometry (REC 2-1 and REC 2-2)

Drawing PG6196-3C - Site Geometry (REC 3-1 and REC 3-2)

Drawing PG6196-3D - Site Geometry (REC 7)

Drawing PG6196-4 - Site Geometry (Building B)

Drawing PG6196-4A - Site Geometry (REC 4-1 and REC 4-2)

Drawing PG6196-4B - Site Geometry (REC 5-1 and REC 5-2)

Drawing PG6196-4C - Site Geometry (REC 6-1 and REC 6-2)

Drawing PG6196-4D - Site Geometry (REC 8)

Drawing PG6196-5 - Site Geometry (Building C)

Drawing PG6196-5A - Site Geometry (REC 9-1)

Drawing PG6196-5B - Site Geometry (REC 10-1)

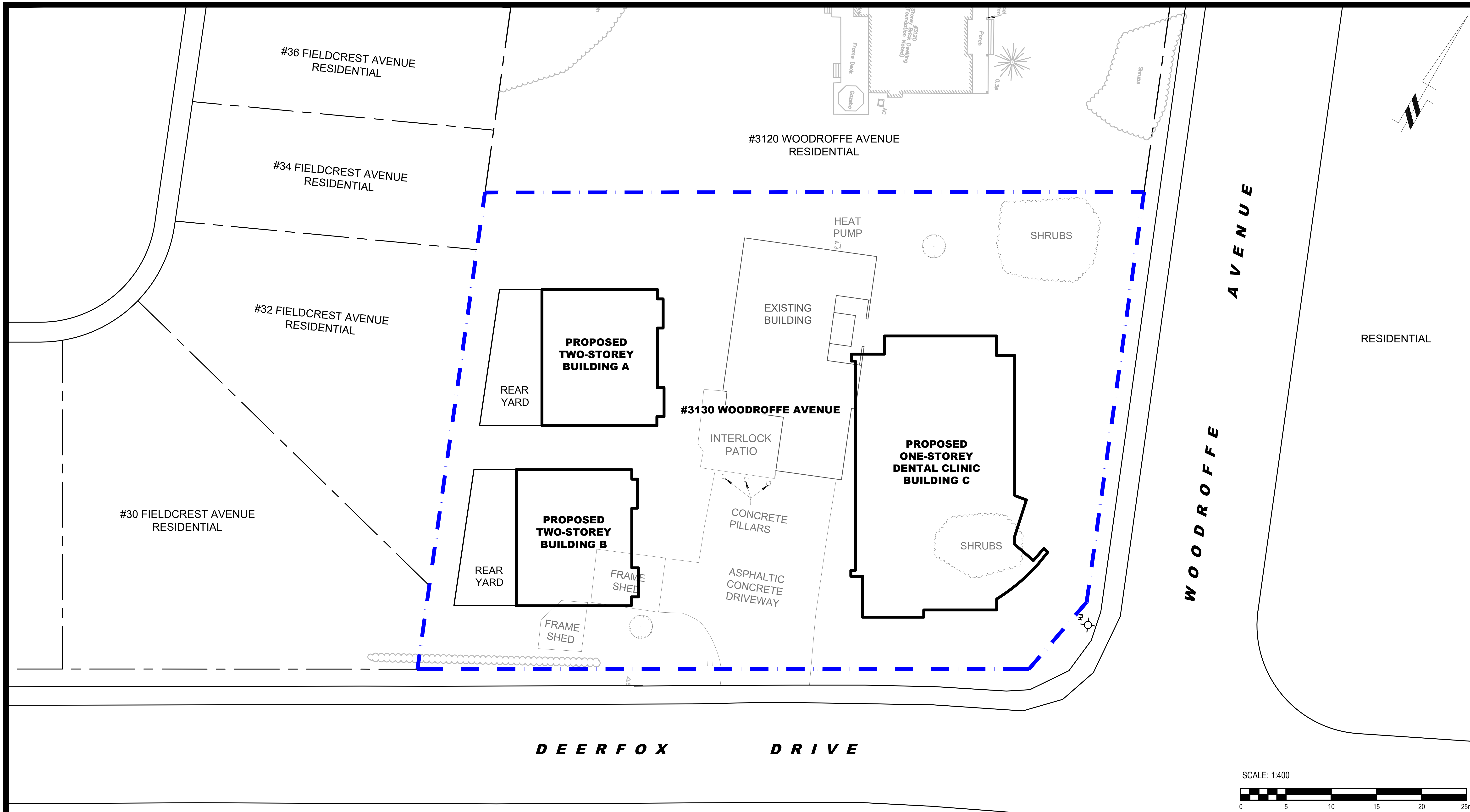
Drawing PG6196-5C - Site Geometry (REC 11-1)

Table 7 - Summary of Reception Points and Geometry
3130 Woodroffe Avenue

Point of Reception	Location	Leq Day (dBA)	Deerfox Drive						Stoneway Drive					
			Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)
REC 1-1	Building A, Northern Elevation, 1st Floor	58	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 1-2	Building A, Northern Elevation, 2nd Floor	59	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 2-1	Building A, Eastern Elevation, 1st Floor	64	35	2.3	35.1	-51, 0	n/a	n/a	90	2.3	90.0	-67, -57	n/a	n/a
REC 2-2	Building A, Eastern Elevation, 2nd Floor	64	35	6.3	35.6	-51, 0	n/a	n/a	90	6.3	90.2	-67, -57	n/a	n/a
REC 3-1	Building A, Southern Elevation, 1st Floor	62	30	2.3	30.1	-59, 74	n/a	n/a	90	2.3	90.0	18, 27	n/a	n/a
REC 3-2	Building A, Southern Elevation, 2nd Floor	62	30	6.3	30.7	-59, 74	n/a	n/a	90	6.3	90.2	18, 27	n/a	n/a
REC 4-1	Building B, Northern Elevation, 1st Floor	58	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 4-2	Building B, Northern Elevation, 2nd Floor	59	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 5-1	Building B, Eastern Elevation, 1st Floor	64	20	2.3	20.1	-68, 0	n/a	n/a	85	2.3	85.0	-78, -71	n/a	n/a
REC 5-2	Building B, Eastern Elevation, 2nd Floor	65	20	6.3	21.0	-68, 0	n/a	n/a	85	6.3	85.2	-78, -71	n/a	n/a
REC 6-1	Building B, Southern Elevation, 1st Floor	64	15	2.3	15.2	-77, 85	n/a	n/a	85	2.3	85.0	-82, -77	n/a	n/a
REC 6-2	Building B, Southern Elevation, 2nd Floor	65	15	6.3	16.3	-77, 85	n/a	n/a	85	6.3	85.2	-82, -77	n/a	n/a
REC 7	Building A, rear yard	53	35	1.5	35.0	0, 68	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
REC 8	Building B, rear yard	59	20	1.5	20.1	-27, 80	n/a	n/a	n/a	n/a	n/a	n/a	n/a	n/a
REC 9-1	Building C, Northern Elevation, 1st Floor	66	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 10-1	Building C, Eastern Elevation, 1st Floor	73	25	1.5	25.0	60, 89	n/a	n/a	55	1.5	55.0	17, 45	n/a	n/a
REC 11-1	Building C, Southern Elevation, 1st Floor	68	15	1.5	15.1	-60, 86	n/a	n/a	50	1.5	50.0	-81, -67	n/a	n/a

Table 7 - Summary of Reception Points and Geometry
3130 Woodroffe Avenue

Point of Reception	Location	Leq Day (dBA)	Woodroffe Avenue					
			Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)
REC 1-1	Building A, Northern Elevation, 1st Floor	58	65	2.3	65.0	-44, 0	n/a	n/a
REC 1-2	Building A, Northern Elevation, 2nd Floor	59	65	6.3	65.3	-44, 0	n/a	n/a
REC 2-1	Building A, Eastern Elevation, 1st Floor	64	55	2.3	55.1	-49, 67	n/a	n/a
REC 2-2	Building A, Eastern Elevation, 2nd Floor	64	55	6.3	55.4	-49, 67	n/a	n/a
REC 3-1	Building A, Southern Elevation, 1st Floor	62	60	2.3	60.0	0, 62	n/a	n/a
REC 3-2	Building A, Southern Elevation, 2nd Floor	62	60	6.3	60.3	0, 62	n/a	n/a
REC 4-1	Building B, Northern Elevation, 1st Floor	58	65	2.3	65.0	-43, 0	n/a	n/a
REC 4-2	Building B, Northern Elevation, 2nd Floor	59	65	6.3	65.3	-43, 0	n/a	n/a
REC 5-1	Building B, Eastern Elevation, 1st Floor	64	55	2.3	55.1	-49, 67	n/a	n/a
REC 5-2	Building B, Eastern Elevation, 2nd Floor	65	55	6.3	55.4	-49, 67	n/a	n/a
REC 6-1	Building B, Southern Elevation, 1st Floor	64	60	2.3	60.0	0, 62	n/a	n/a
REC 6-2	Building B, Southern Elevation, 2nd Floor	65	60	6.3	60.3	0, 62	n/a	n/a
REC 7	Building A, rear yard	53	n/a	n/a	n/a	n/a	n/a	n/a
REC 8	Building B, rear yard	59	n/a	n/a	n/a	n/a	n/a	n/a
REC 9-1	Building C, Northern Elevation, 1st Floor	66	25	1.5	25.0	-66, 0	n/a	n/a
REC 10-1	Building C, Eastern Elevation, 1st Floor	73	15	1.5	15.1	-73, 89	n/a	n/a
REC 11-1	Building C, Southern Elevation, 1st Floor	68	25	1.5	25.0	0, 85	n/a	n/a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RESIDENTIAL
#34 FIELDCREST AVENUE
RESIDENTIAL
#32 FIELDCREST AVENUE
RESIDENTIAL
#30 FIELDCREST AVENUE
RESIDENTIAL
#3120 WOODROFFE AVENUE
RESIDENTIAL
HEAT
PUMP
SHRUBS
EXISTING
BUILDING
PROPOSED
TWO-STOREY
BUILDING A
REAR
YARD
#3130 WOODROFFE AVENUE
INTERLOCK
PATIO
PROPOSED
ONE-STOREY
DENTAL CLINIC
BUILDING C
CONCRETE
PILLARS
SHRUBS
PROPOSED
TWO-STOREY
BUILDING B
REAR
YARD
FRAME
SHED
ASPHALTIC
CONCRETE
DRIVEWAY
FRAME
SHED
WOODROFFE
AVENUE
RESIDENTIAL
DEERFOX DRIVE
SCALE: 1:400
0
5
10
15
20
25m

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NO.	REVISIONS	DATE	INITIAL

P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE

OTTAWA, ONTARIO

Title:

SITE PLAN

Scale: 1:400	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-1
Approved by: SB	Revision No.:

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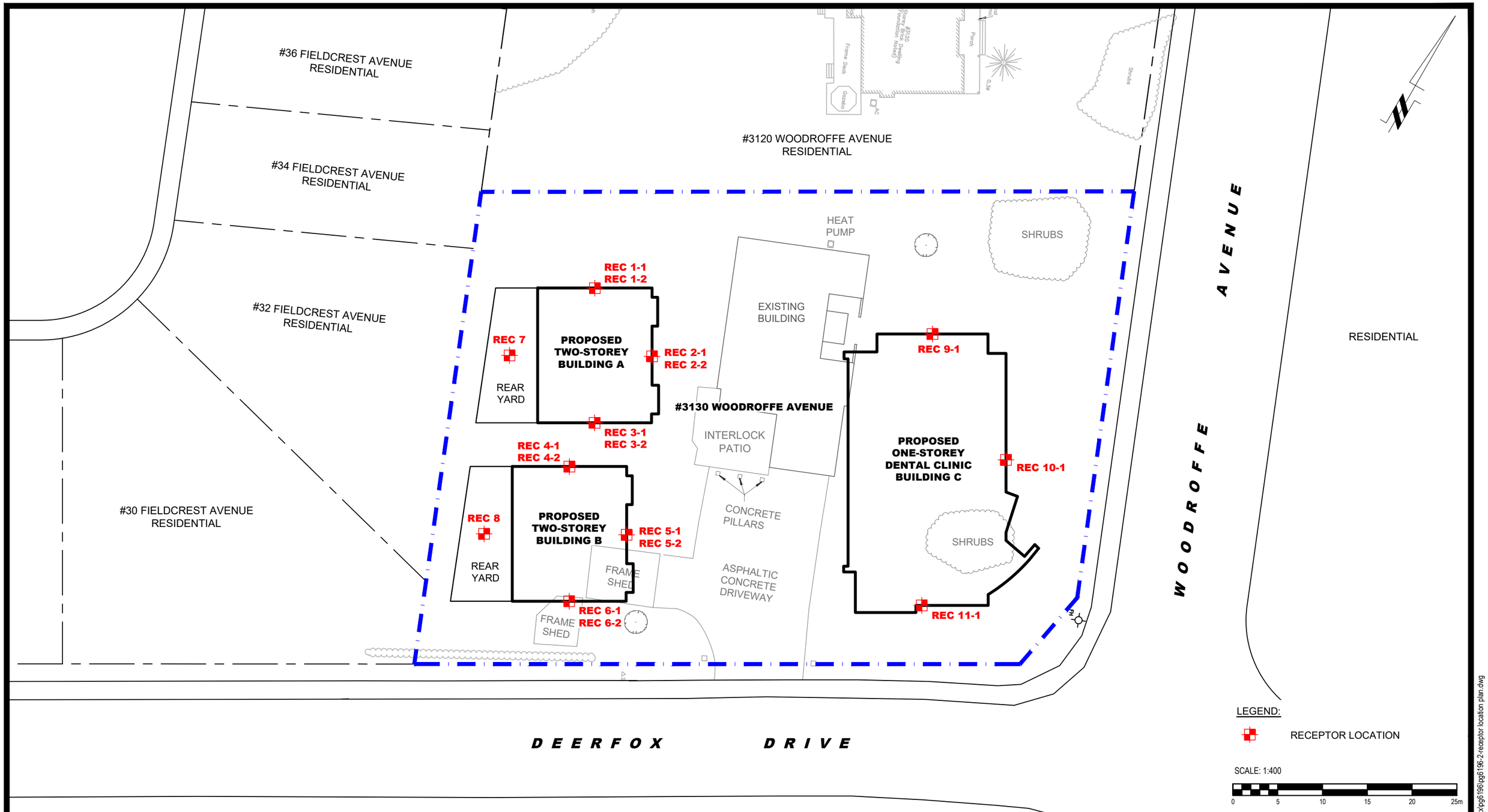

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P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
RECEPTOR LOCATION PLAN

Scale: 1:400	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-2
Approved by: SB	Revision No.:

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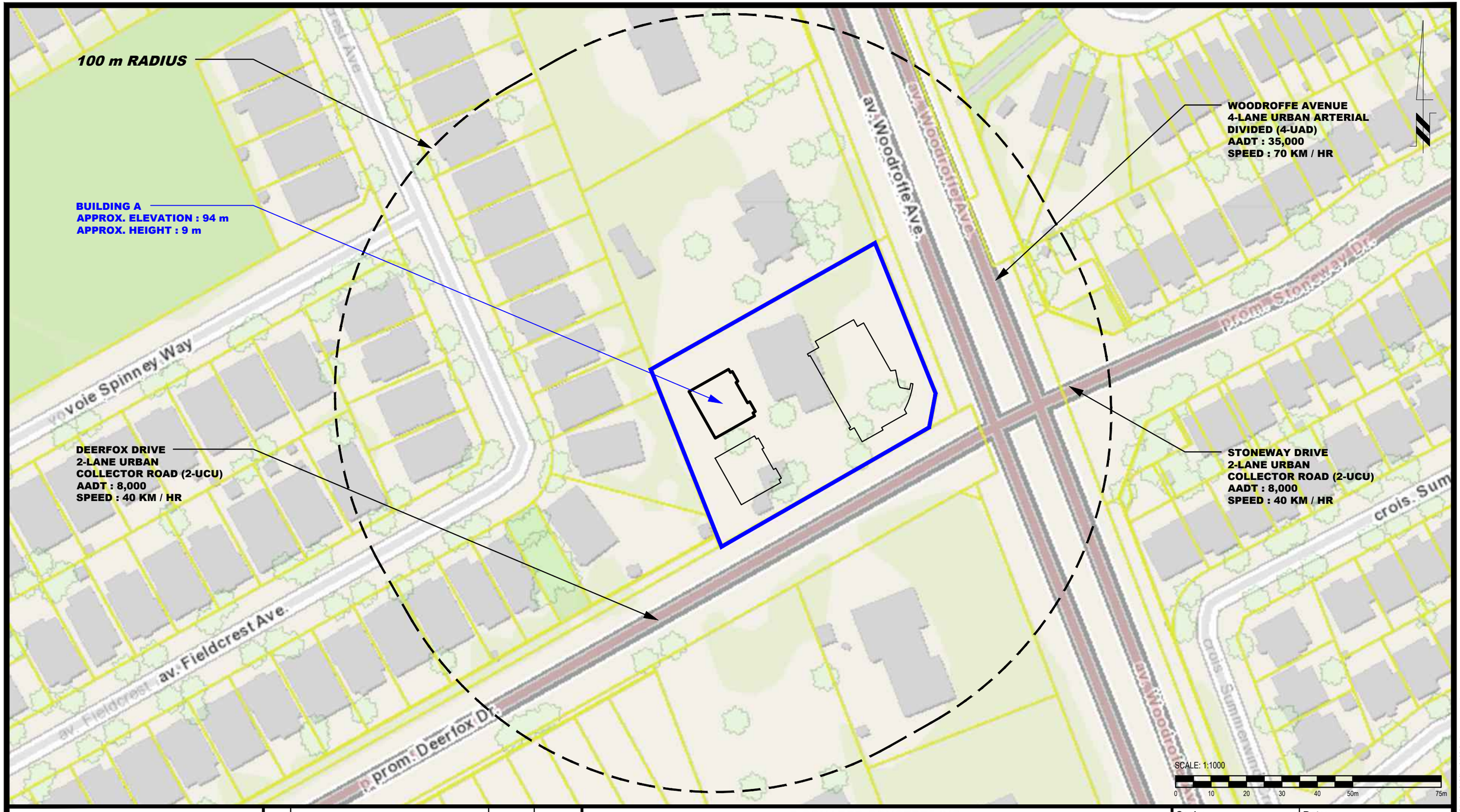

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P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - BUILDING A

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-3
Approved by: SB	Revision No.:

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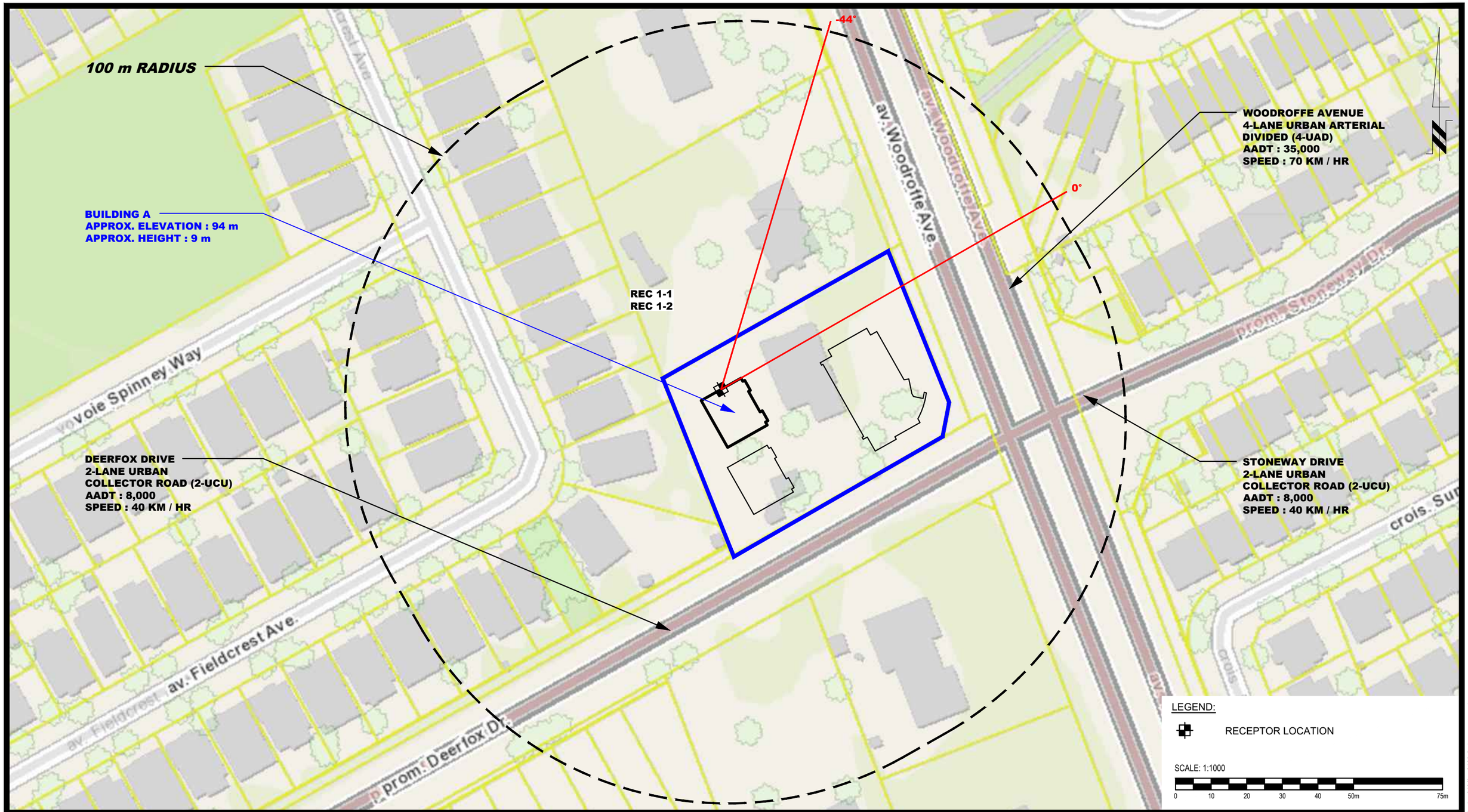

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NO.	REVISIONS	DATE	INITIAL

P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

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

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-3A
Approved by: SB	Revision No.:

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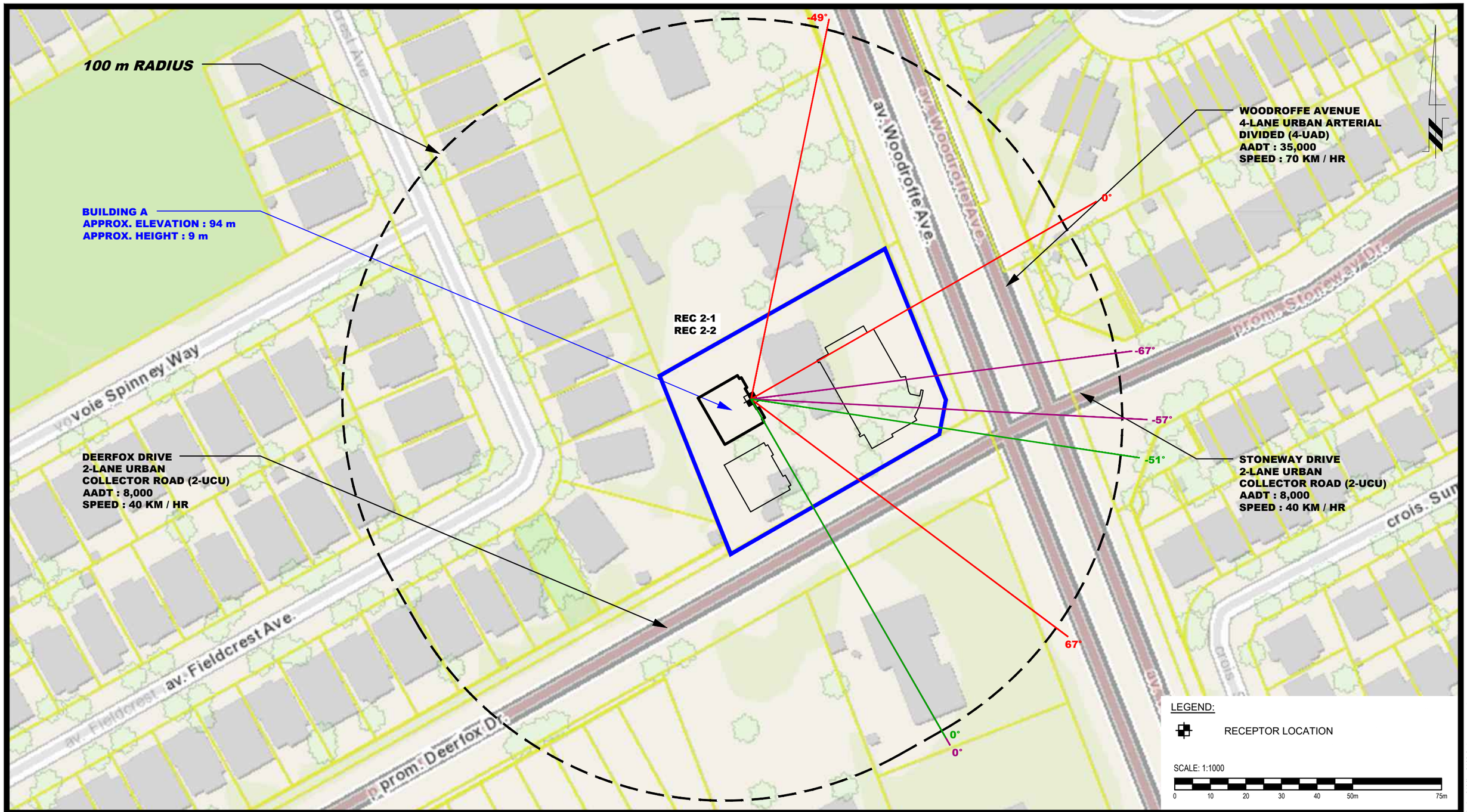

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P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

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

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-3B
Approved by: SB	Revision No.:

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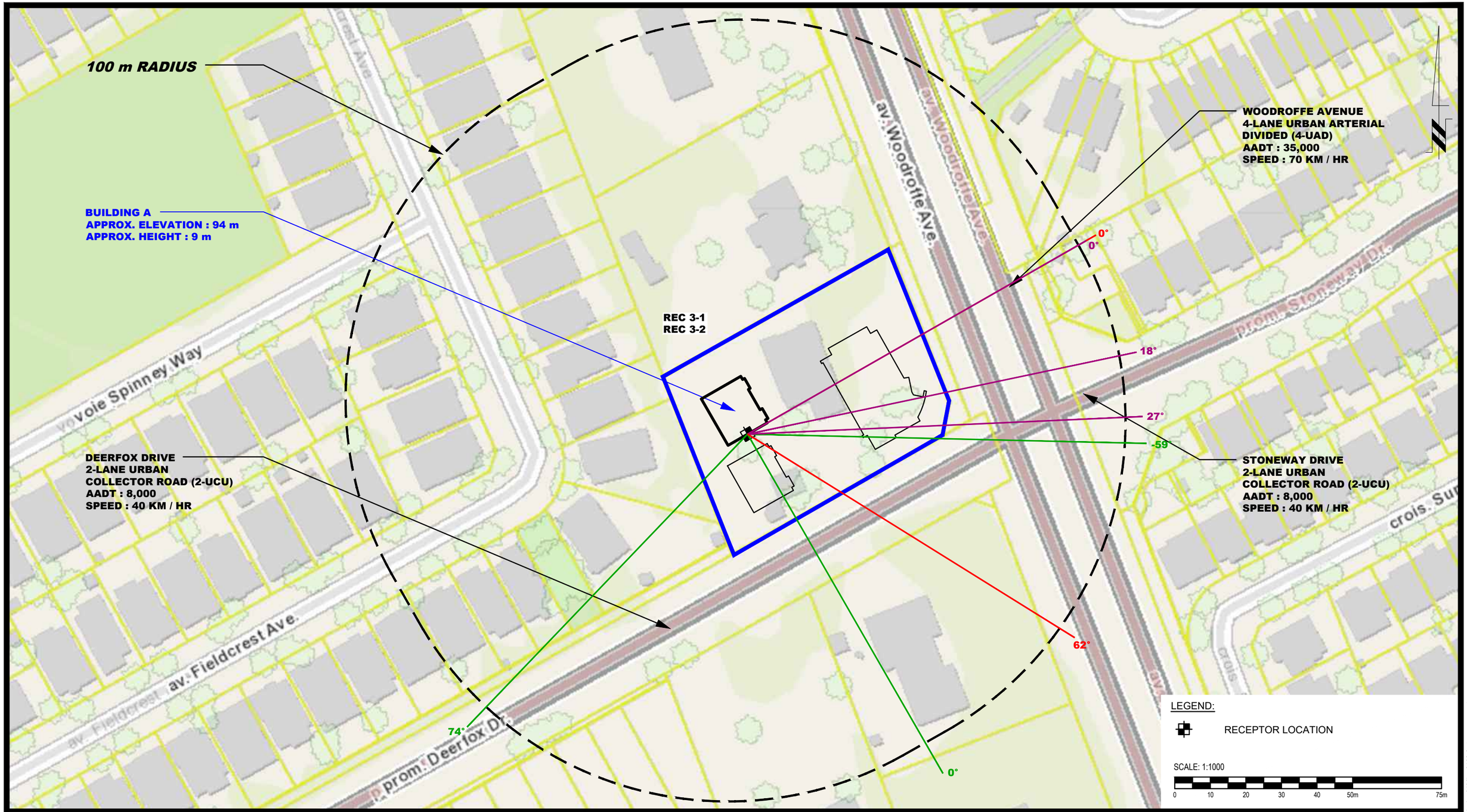

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NO.	REVISIONS	DATE	INITIAL

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NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

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

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-3C
Approved by: SB	Revision No.:

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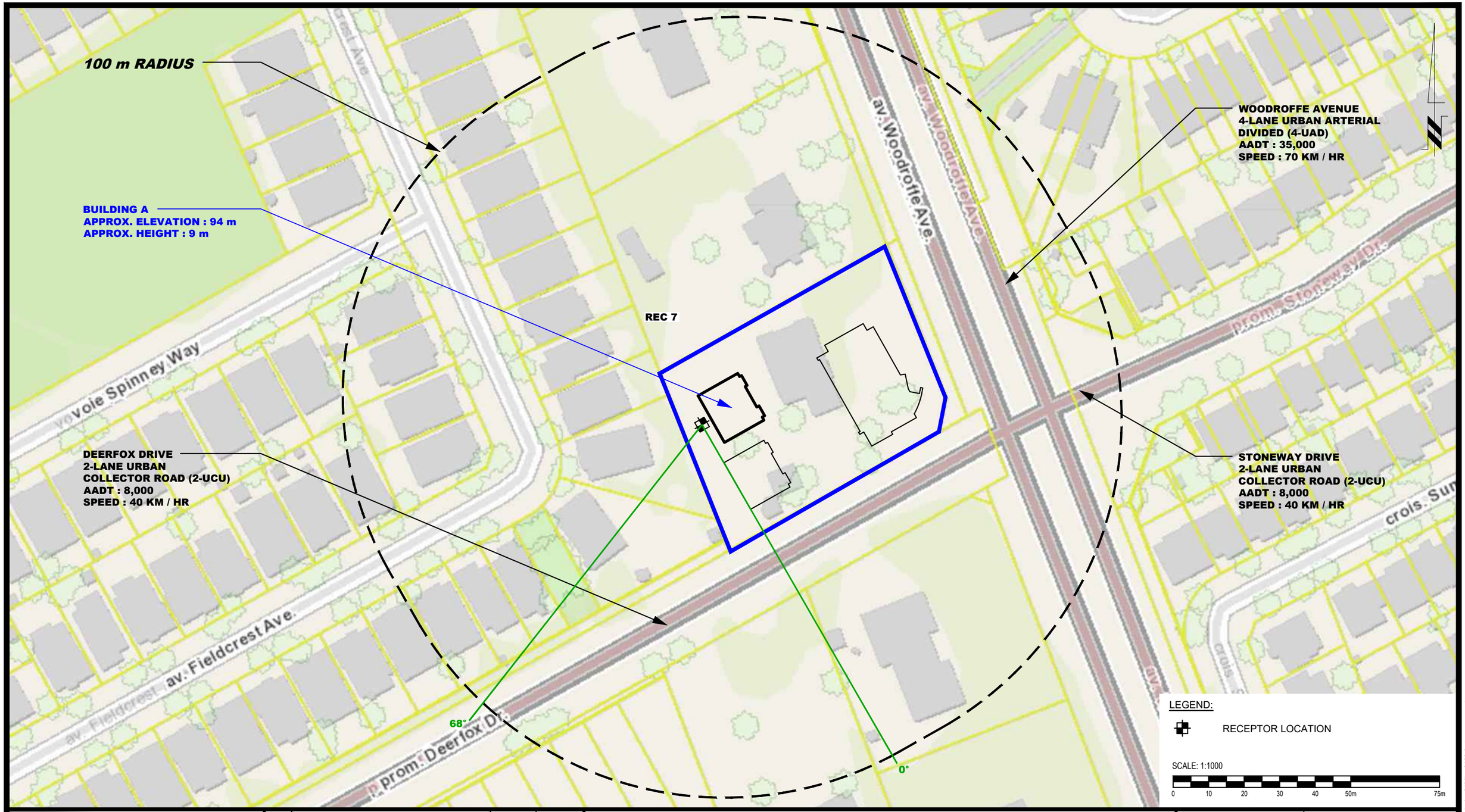

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P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - REC 7

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-3D
Approved by: SB	Revision No.:

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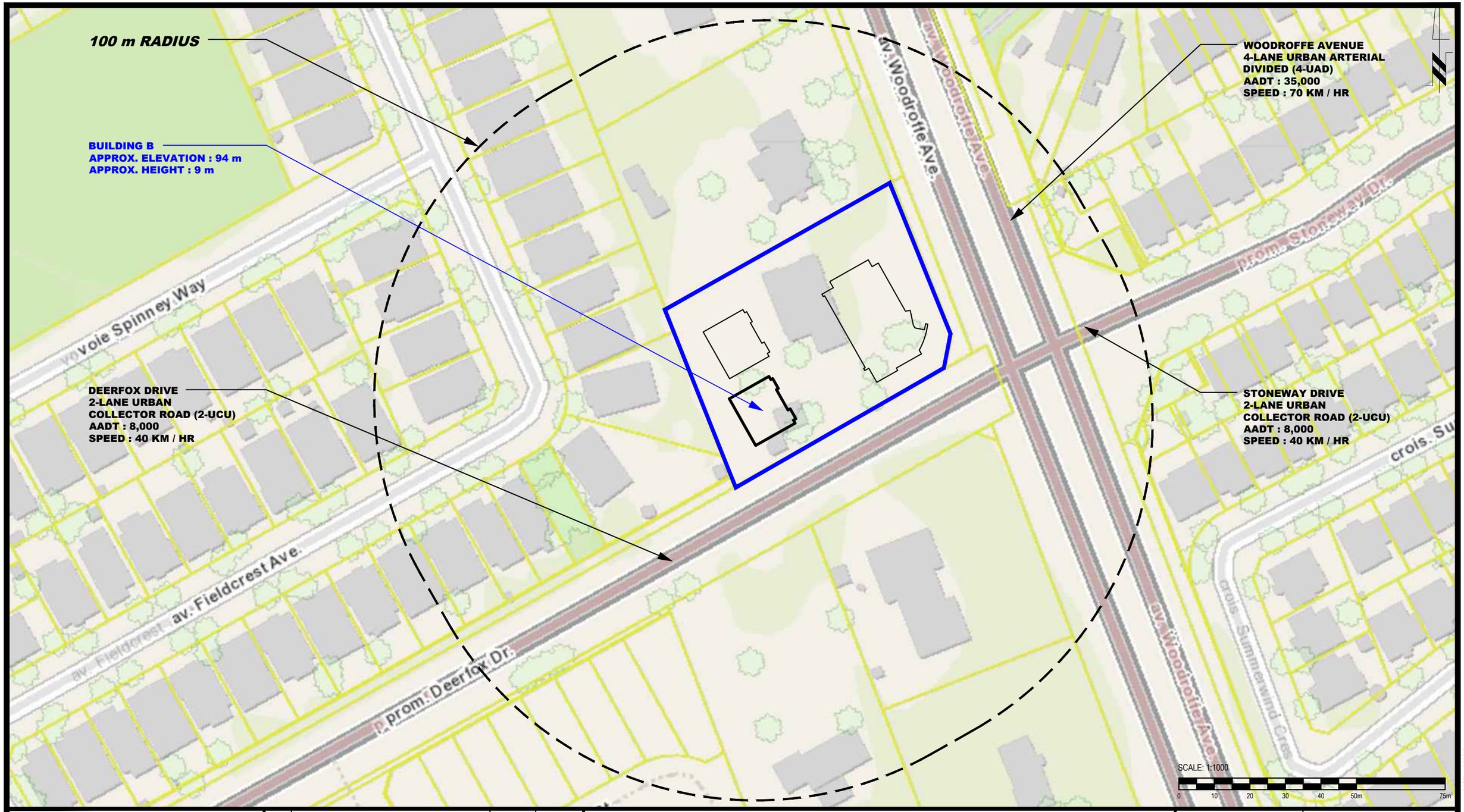

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P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - BUILDING B

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-4
Approved by: SB	Revision No.:

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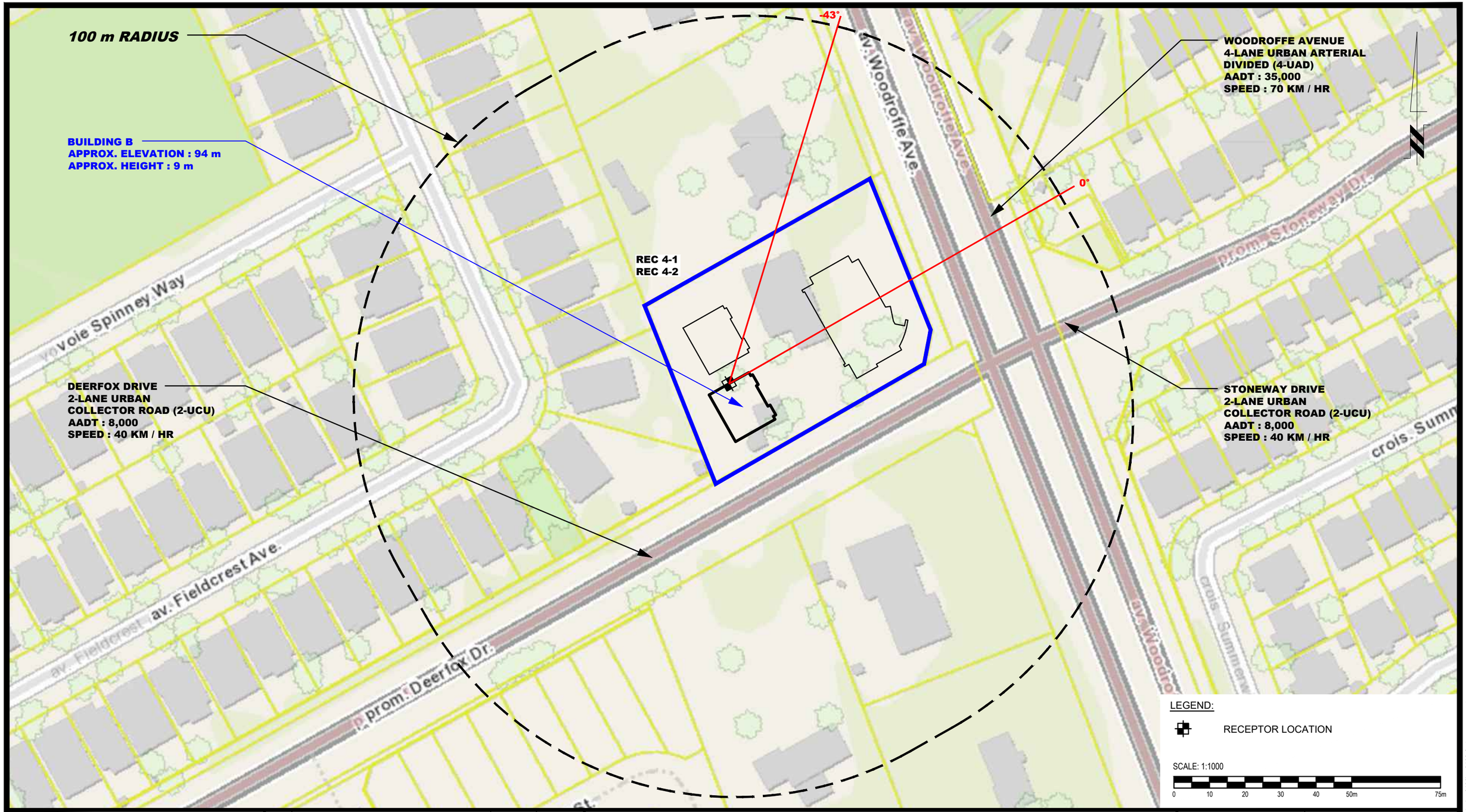

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NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - REC 4-1 AND REC 4-2

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-4A
Approved by: SB	Revision No.:

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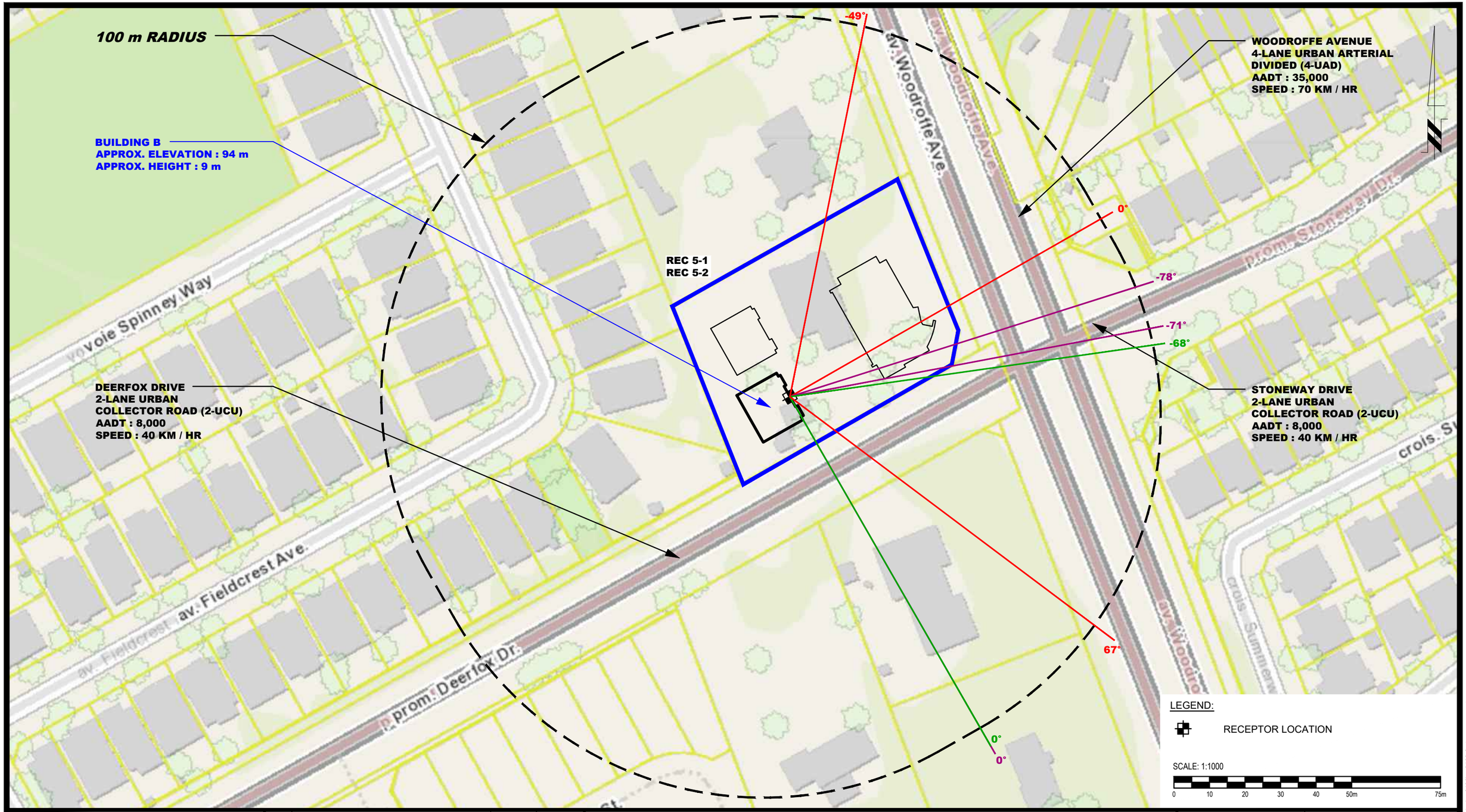

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PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - REC 5-1 AND REC 5-2

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-4B
Approved by: SB	Revision No.:

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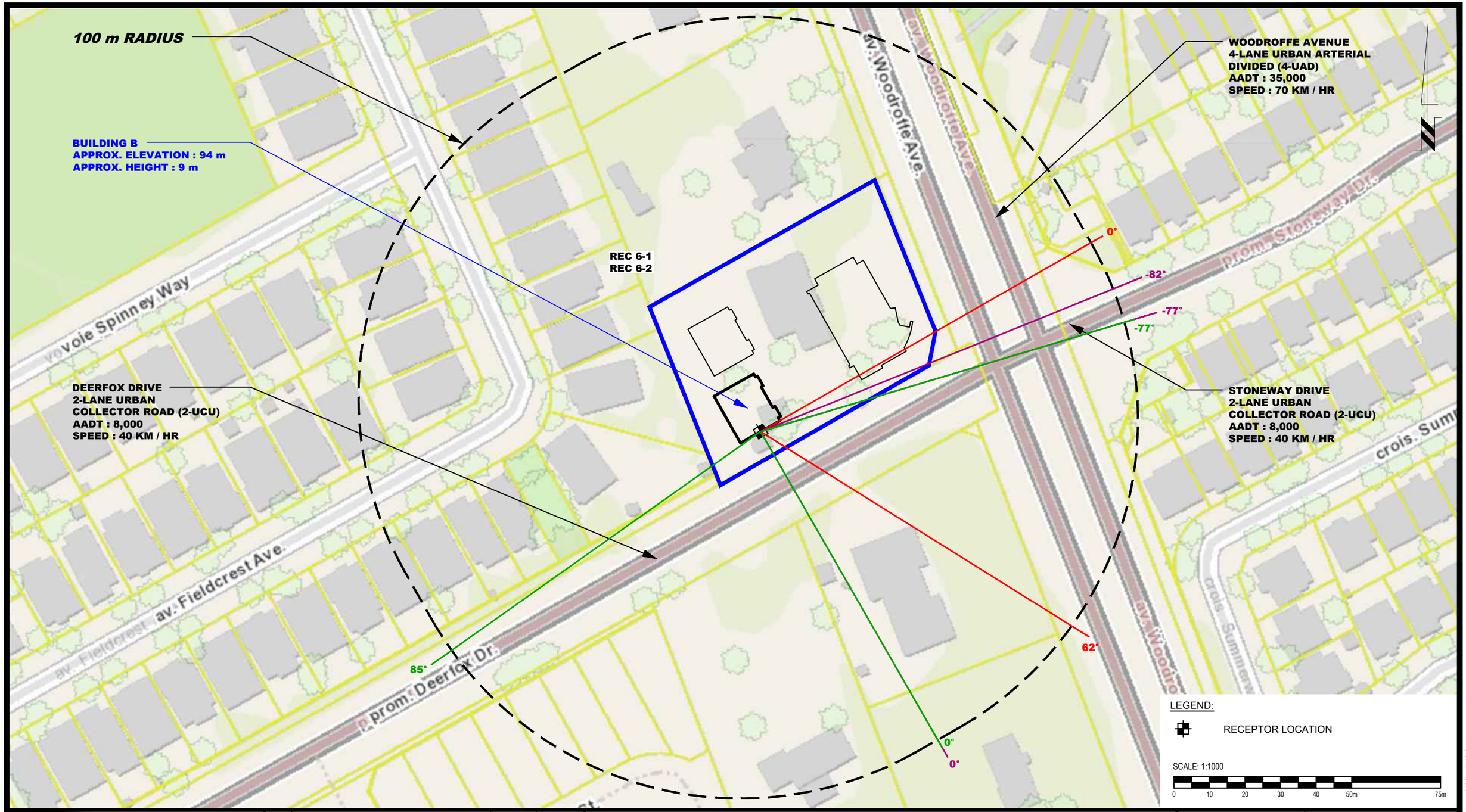

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PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

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

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-4C
Approved by: SB	Revision No.:

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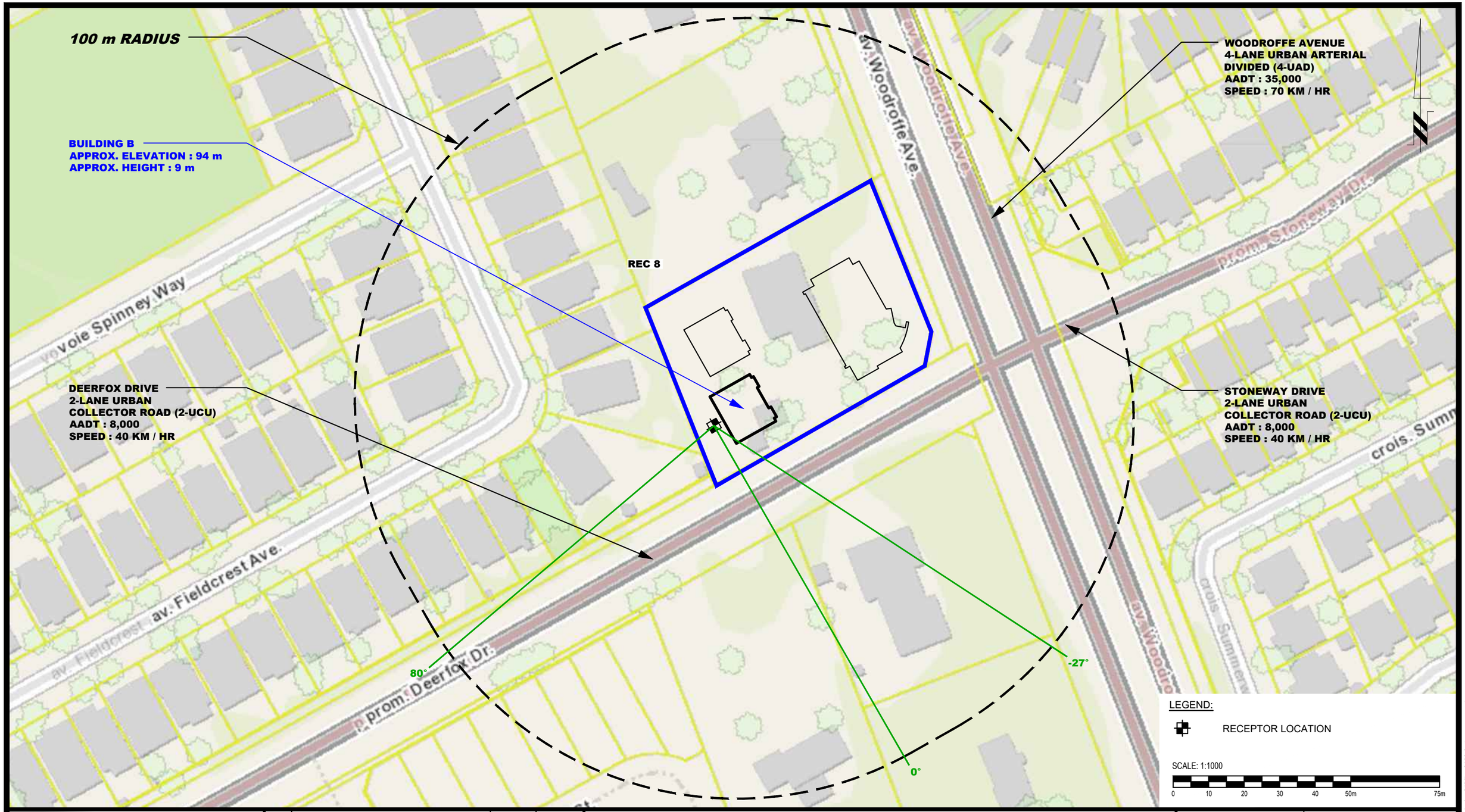

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PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:

SITE GEOMETRY - REC 8

Scale: 1:1000	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-4D
Approved by: SB	Revision No.:

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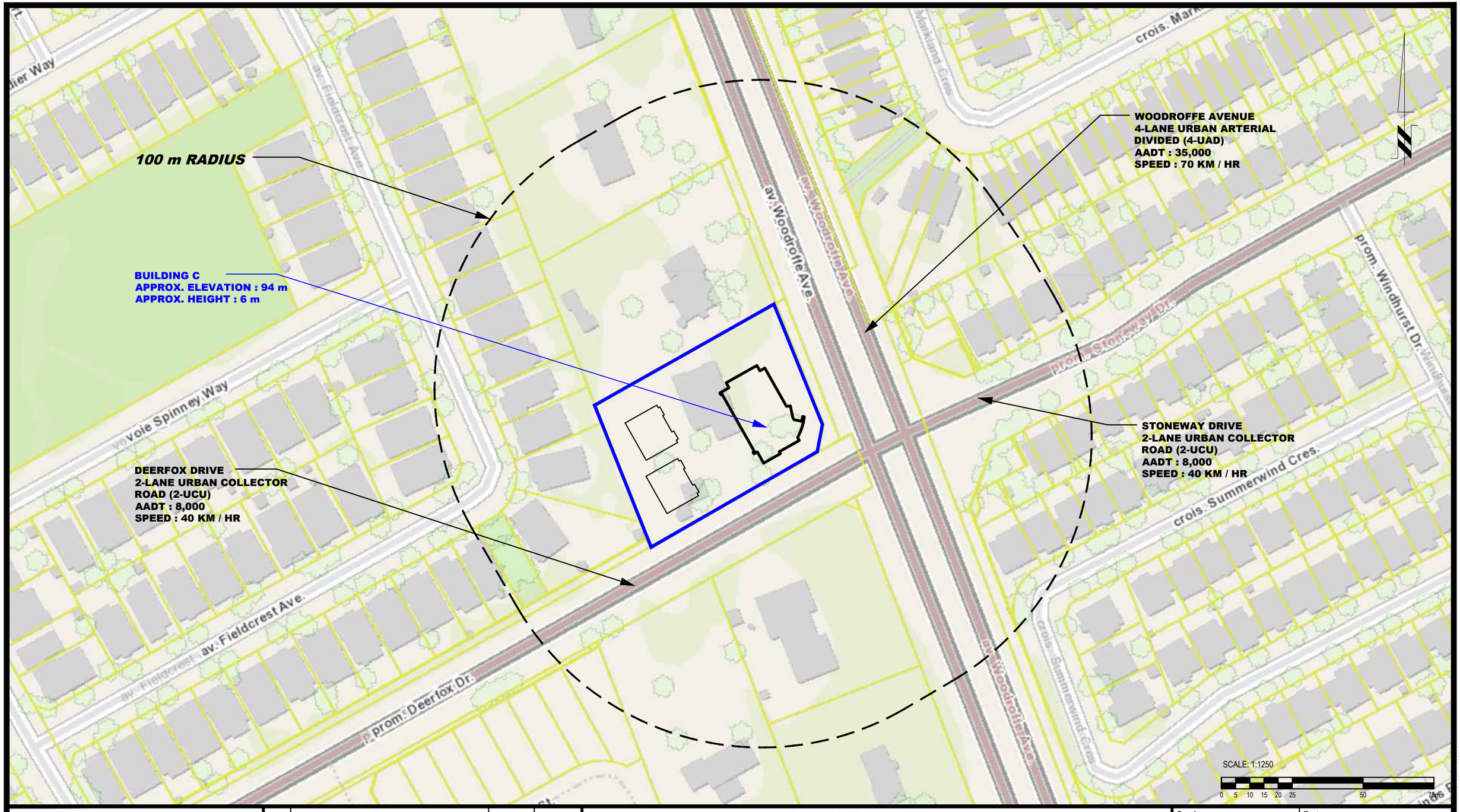

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NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - BUILDING C

Scale: 1:1250	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-5
Approved by: SB	Revision No.:

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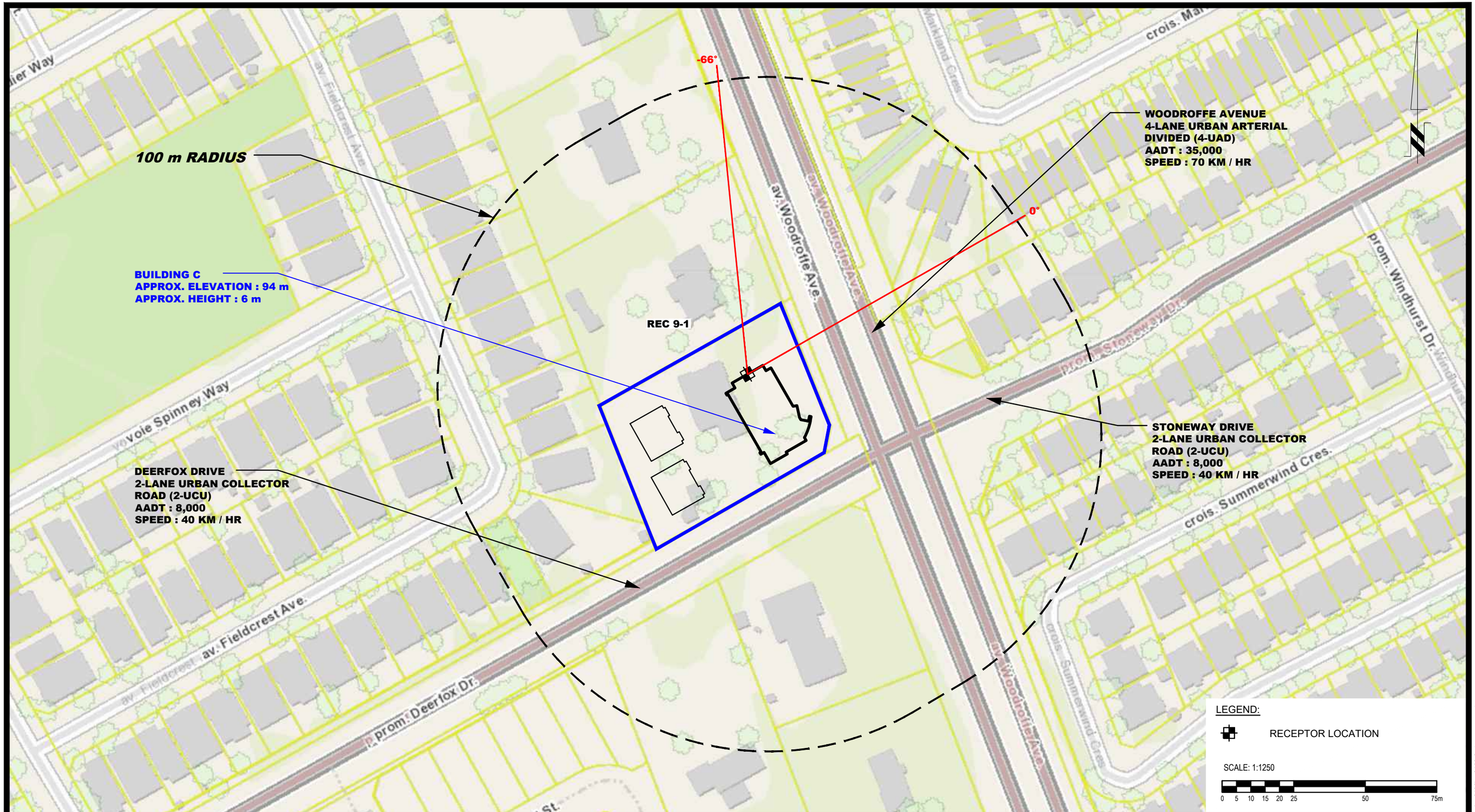

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NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - REC 9-1

Scale: 1:1250	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-5A
Approved by: SB	Revision No.:

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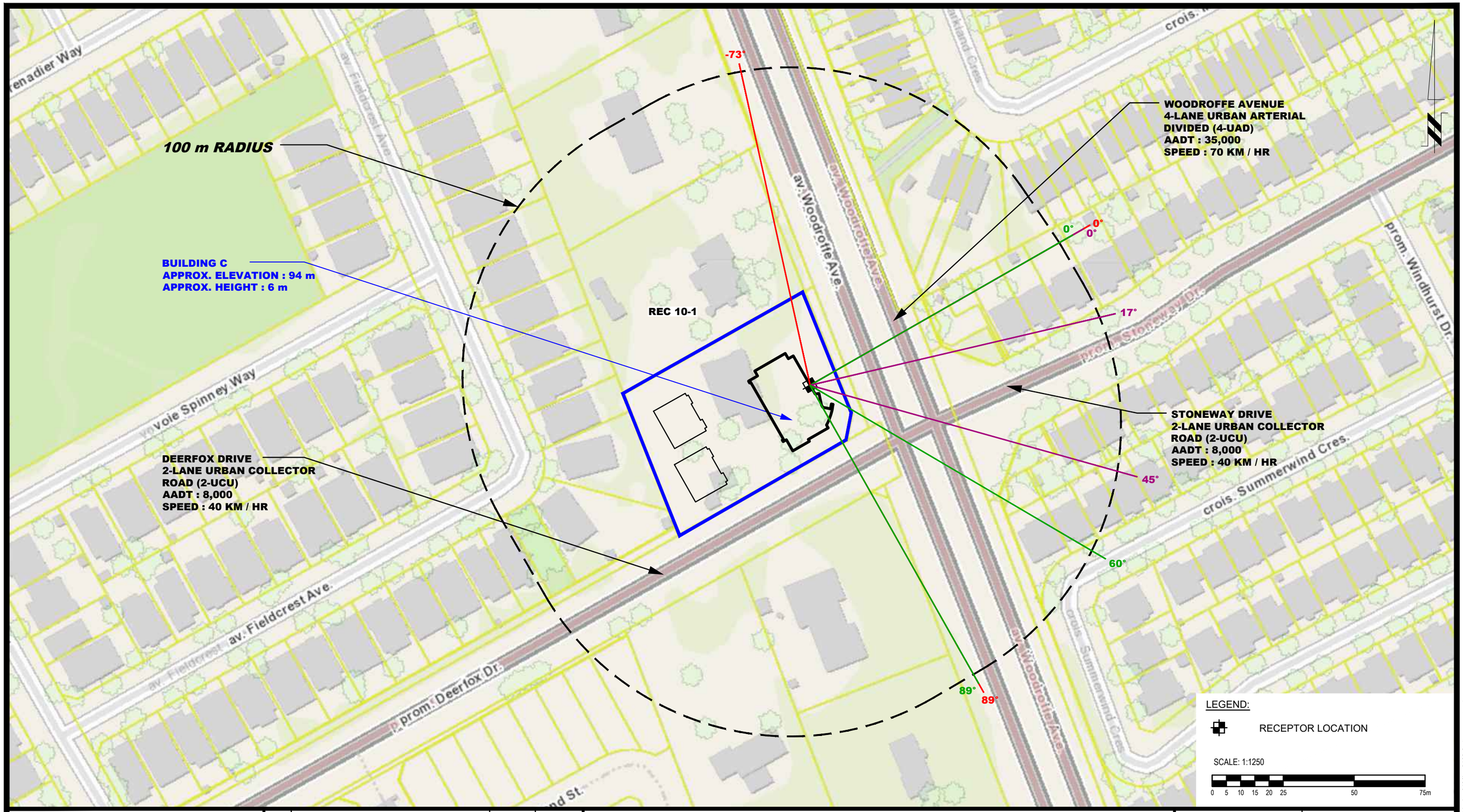

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NO.	REVISIONS	DATE	INITIAL

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NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - REC 10-1

Scale: 1:1250	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-5B
Approved by: SB	Revision No.:

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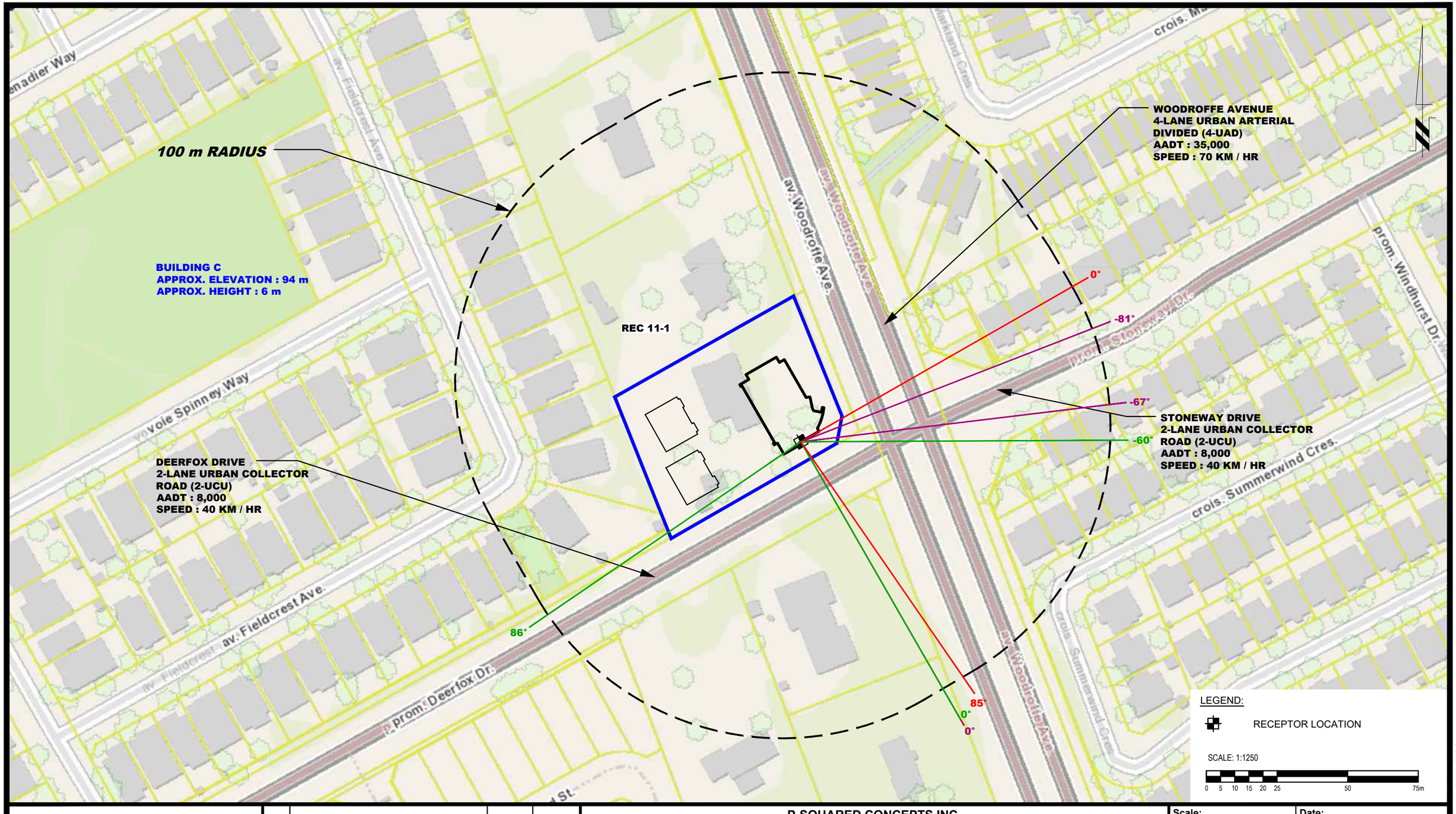

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NO.	REVISIONS	DATE	INITIAL

P-SQUARED CONCEPTS INC.
NOISE ATTENUATION STUDY
PROPOSED DEVELOPMENT
3130 WOODROFFE AVENUE
OTTAWA, ONTARIO

Title:
SITE GEOMETRY - REC 11-1

Scale: 1:1250	Date: 03/2022
Drawn by: YA	Report No.: PG6196-1
Checked by: YT	Dwg. No.: PG6196-5C
Approved by: SB	Revision No.:

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APPENDIX 2

STAMSON RESULTS

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 10:33:53
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: WoodroffeAve (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: WoodroffeAve (day/night)

Angle1 Angle2 : -44.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 2.30 / 2.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 58.18 + 0.00) = 58.18 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	0	0.64	75.00	0.00	-10.42	-6.40	0.00	0.00	0.00	58.18

Segment Leq : 58.18 dBA

Total Leq All Segments: 58.18 dBA

↟
Results segment # 1: WoodroffeAve (night)

Source height = 1.50 m

ROAD (0.00 + 50.58 + 0.00) = 50.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	0	0.64	67.40	0.00	-10.42	-6.40	0.00	0.00	0.00	50.58

Segment Leq : 50.58 dBA

Total Leq All Segments: 50.58 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 58.18
(NIGHT): 50.58
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 10:34:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec12.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 1-2

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: WoodroffeAve (day/night)

Angle1 Angle2 : -44.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 6.30 / 6.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 58.99 + 0.00) = 58.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	0	0.52	75.00	0.00	-9.66	-6.35	0.00	0.00	0.00	58.99

Segment Leq : 58.99 dBA

Total Leq All Segments: 58.99 dBA

↟
Results segment # 1: WoodroffeAve (night)

Source height = 1.50 m

ROAD (0.00 + 51.40 + 0.00) = 51.40 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-44	0	0.52	67.40	0.00	-9.66	-6.35	0.00	0.00	0.00	51.40

Segment Leq : 51.40 dBA

Total Leq All Segments: 51.40 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 58.99
(NIGHT): 51.40
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 17-03-2022 17:58:51
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: Deerfox Dr (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: Deerfox Dr (day/night)

Angle1 Angle2 : -51.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 35.00 / 35.00 m
Receiver height : 2.30 / 2.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
----------------------------------------------
Angle1   Angle2           : -67.00 deg   -57.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
----------------------------------------------
Angle1   Angle2           : -49.00 deg   67.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (day)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 52.07 + 0.00) = 52.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	0	0.64	63.96	0.00	-6.02	-5.86	0.00	0.00	0.00	52.07

Segment Leq : 52.07 dBA

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 36.57 + 0.00) = 36.57 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-57	0.64	63.96	0.00	-12.73	-14.65	0.00	0.00	0.00	36.57

Segment Leq : 36.57 dBA

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 63.31 + 0.00) = 63.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	67	0.64	75.00	0.00	-9.23	-2.45	0.00	0.00	0.00	63.31

Segment Leq : 63.31 dBA

Total Leq All Segments: 63.63 dBA

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 44.48 + 0.00) = 44.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	0	0.64	56.36	0.00	-6.02	-5.86	0.00	0.00	0.00	44.48

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

Segment Leq : 44.48 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 28.98 + 0.00) = 28.98 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -67    -57   0.64  56.36   0.00 -12.73 -14.65   0.00   0.00   0.00  28.98
--------------------------------------------------------------------------------

Segment Leq : 28.98 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.71 + 0.00) = 55.71 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -49     67   0.64  67.40   0.00  -9.23  -2.45   0.00   0.00   0.00  55.71
--------------------------------------------------------------------------------

Segment Leq : 55.71 dBA

Total Leq All Segments: 56.03 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 63.63
                           (NIGHT): 56.03
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 17-03-2022 18:00:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec22.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 2-2

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

Angle1 Angle2 : -51.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 35.00 / 35.00 m
Receiver height : 6.30 / 6.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
----------------------------------------------
Angle1   Angle2           : -67.00 deg   -57.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
----------------------------------------------
Angle1   Angle2           : -49.00 deg   67.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (day)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 52.59 + 0.00) = 52.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	0	0.52	63.96	0.00	-5.58	-5.79	0.00	0.00	0.00	52.59

Segment Leq : 52.59 dBA

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 37.90 + 0.00) = 37.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-67	-57	0.52	63.96	0.00	-11.80	-14.26	0.00	0.00	0.00	37.90

Segment Leq : 37.90 dBA

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 64.08 + 0.00) = 64.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	67	0.52	75.00	0.00	-8.56	-2.36	0.00	0.00	0.00	64.08

Segment Leq : 64.08 dBA

Total Leq All Segments: 64.39 dBA

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 44.99 + 0.00) = 44.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-51	0	0.52	56.36	0.00	-5.58	-5.79	0.00	0.00	0.00	44.99

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

Segment Leq : 44.99 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 30.31 + 0.00) = 30.31 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -67    -57   0.52  56.36   0.00 -11.80 -14.26   0.00   0.00   0.00  30.31
-------------------------------------------------------------------------------

Segment Leq : 30.31 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.49 + 0.00) = 56.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -49     67   0.52  67.40   0.00  -8.56  -2.36   0.00   0.00   0.00  56.49
-------------------------------------------------------------------------------

Segment Leq : 56.49 dBA

Total Leq All Segments: 56.80 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 64.39
                           (NIGHT): 56.80
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 11:09:48
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: Deerfox Dr (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: Deerfox Dr (day/night)

Angle1 Angle2 : -59.00 deg 74.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 30.00 / 30.00 m
Receiver height : 2.30 / 2.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
----------------------------------------------
Angle1   Angle2           :  18.00 deg   27.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
----------------------------------------------
Angle1   Angle2           :   0.00 deg   62.00 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           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (day)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 57.00 + 0.00) = 57.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	74	0.64	63.96	0.00	-4.93	-2.03	0.00	0.00	0.00	57.00

Segment Leq : 57.00 dBA

↟

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 37.99 + 0.00) = 37.99 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
18	27	0.64	63.96	0.00	-12.73	-13.23	0.00	0.00	0.00	37.99

Segment Leq : 37.99 dBA

↟

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 59.93 + 0.00) = 59.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	62	0.64	75.00	0.00	-9.85	-5.21	0.00	0.00	0.00	59.93

Segment Leq : 59.93 dBA

Total Leq All Segments: 61.74 dBA

↟

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 49.41 + 0.00) = 49.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	74	0.64	56.36	0.00	-4.93	-2.03	0.00	0.00	0.00	49.41

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

Segment Leq : 49.41 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 30.40 + 0.00) = 30.40 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
    18     27   0.64  56.36   0.00 -12.73 -13.23   0.00   0.00   0.00  30.40
--------------------------------------------------------------------------------

Segment Leq : 30.40 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.34 + 0.00) = 52.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
     0     62   0.64  67.40   0.00  -9.85  -5.21   0.00   0.00   0.00  52.34
--------------------------------------------------------------------------------

Segment Leq : 52.34 dBA

Total Leq All Segments: 54.15 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 61.74
                           (NIGHT): 54.15
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 11:12:00
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec32.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-2

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

Angle1 Angle2 : -59.00 deg 74.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 30.00 / 30.00 m
Receiver height : 6.30 / 6.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
----------------------------------------------
Angle1   Angle2           :  18.00 deg   27.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  90.00 / 90.00  m
Receiver height           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
----------------------------------------------
Angle1   Angle2           :   0.00 deg   62.00 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           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (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
-59	74	0.52	63.96	0.00	-4.56	-1.90	0.00	0.00	0.00	57.49

Segment Leq : 57.49 dBA

↟

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 38.97 + 0.00) = 38.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
18	27	0.52	63.96	0.00	-11.80	-13.19	0.00	0.00	0.00	38.97

Segment Leq : 38.97 dBA

↟

Results segment # 3: WoodroffeAve (day)

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
0	62	0.52	75.00	0.00	-9.13	-5.11	0.00	0.00	0.00	60.76

Segment Leq : 60.76 dBA

Total Leq All Segments: 62.46 dBA

↟

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 49.90 + 0.00) = 49.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	74	0.52	56.36	0.00	-4.56	-1.90	0.00	0.00	0.00	49.90

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

Segment Leq : 49.90 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 31.37 + 0.00) = 31.37 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
    18     27   0.52  56.36   0.00 -11.80 -13.19   0.00   0.00   0.00  31.37
--------------------------------------------------------------------------------

Segment Leq : 31.37 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.16 + 0.00) = 53.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
     0     62   0.52  67.40   0.00  -9.13  -5.11   0.00   0.00   0.00  53.16
--------------------------------------------------------------------------------

Segment Leq : 53.16 dBA

Total Leq All Segments: 54.86 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 62.46
                           (NIGHT): 54.86
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 10:38:53
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: WoodroffeAve (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: WoodroffeAve (day/night)

Angle1 Angle2 : -43.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 2.30 / 2.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 58.09 + 0.00) = 58.09 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	0	0.64	75.00	0.00	-10.42	-6.49	0.00	0.00	0.00	58.09

Segment Leq : 58.09 dBA

Total Leq All Segments: 58.09 dBA

↟
Results segment # 1: WoodroffeAve (night)

Source height = 1.50 m

ROAD (0.00 + 50.49 + 0.00) = 50.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	0	0.64	67.40	0.00	-10.42	-6.49	0.00	0.00	0.00	50.49

Segment Leq : 50.49 dBA

Total Leq All Segments: 50.49 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 58.09
(NIGHT): 50.49
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 10:41:04
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec42.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 4-2

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

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: WoodroffeAve (day/night)

Angle1 Angle2 : -43.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 6.50 / 6.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Results segment # 1: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 58.94 + 0.00) = 58.94 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	0	0.51	75.00	0.00	-9.62	-6.43	0.00	0.00	0.00	58.94

Segment Leq : 58.94 dBA

Total Leq All Segments: 58.94 dBA

↟
Results segment # 1: WoodroffeAve (night)

Source height = 1.50 m

ROAD (0.00 + 51.35 + 0.00) = 51.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-43	0	0.51	67.40	0.00	-9.62	-6.43	0.00	0.00	0.00	51.35

Segment Leq : 51.35 dBA

Total Leq All Segments: 51.35 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 58.94
(NIGHT): 51.35
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 17-03-2022 18:10:03
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: Deerfox Dr (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: Deerfox Dr (day/night)

Angle1 Angle2 : -68.00 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 : 2.30 / 2.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
----------------------------------------------
Angle1   Angle2           : -78.00 deg   -71.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
----------------------------------------------
Angle1   Angle2           : -49.00 deg   67.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (day)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 56.97 + 0.00) = 56.97 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	0	0.64	63.96	0.00	-2.04	-4.94	0.00	0.00	0.00	56.97

Segment Leq : 56.97 dBA

↟

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 33.87 + 0.00) = 33.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	-71	0.64	63.96	0.00	-12.33	-17.76	0.00	0.00	0.00	33.87

Segment Leq : 33.87 dBA

↟

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 63.31 + 0.00) = 63.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	67	0.64	75.00	0.00	-9.23	-2.45	0.00	0.00	0.00	63.31

Segment Leq : 63.31 dBA

Total Leq All Segments: 64.22 dBA

↟

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 49.38 + 0.00) = 49.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	0	0.64	56.36	0.00	-2.04	-4.94	0.00	0.00	0.00	49.38

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

Segment Leq : 49.38 dBA

🠉
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 26.28 + 0.00) = 26.28 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -78    -71   0.64  56.36   0.00 -12.33 -17.76   0.00   0.00   0.00  26.28
-------------------------------------------------------------------------------

Segment Leq : 26.28 dBA

🠉
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 55.71 + 0.00) = 55.71 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -49     67   0.64  67.40   0.00  -9.23  -2.45   0.00   0.00   0.00  55.71
-------------------------------------------------------------------------------

Segment Leq : 55.71 dBA

Total Leq All Segments: 56.62 dBA

🠉



TOTAL Leq FROM ALL SOURCES (DAY): 64.22
                           (NIGHT): 56.62
🠉
🠉
```

STAMSON 5.0 NORMAL REPORT Date: 17-03-2022 18:10:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec52.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 5-2

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

Angle1 Angle2 : -68.00 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 : 6.30 / 6.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
-----------------------------------------------
Angle1   Angle2           : -78.00 deg   -71.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
-----------------------------------------------
Angle1   Angle2           : -49.00 deg   67.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (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
-68	0	0.52	63.96	0.00	-1.89	-4.82	0.00	0.00	0.00	57.24

Segment Leq : 57.24 dBA

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 35.46 + 0.00) = 35.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-78	-71	0.52	63.96	0.00	-11.42	-17.07	0.00	0.00	0.00	35.46

Segment Leq : 35.46 dBA

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 64.08 + 0.00) = 64.08 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-49	67	0.52	75.00	0.00	-8.56	-2.36	0.00	0.00	0.00	64.08

Segment Leq : 64.08 dBA

Total Leq All Segments: 64.90 dBA

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 49.65 + 0.00) = 49.65 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	0	0.52	56.36	0.00	-1.89	-4.82	0.00	0.00	0.00	49.65

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

Segment Leq : 49.65 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 27.87 + 0.00) = 27.87 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -78    -71   0.52  56.36   0.00 -11.42 -17.07   0.00   0.00   0.00  27.87
--------------------------------------------------------------------------------

Segment Leq : 27.87 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 56.49 + 0.00) = 56.49 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -49     67   0.52  67.40   0.00  -8.56  -2.36   0.00   0.00   0.00  56.49
--------------------------------------------------------------------------------

Segment Leq : 56.49 dBA

Total Leq All Segments: 57.31 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 64.90
                           (NIGHT): 57.31
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 11:54:28
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: Deerfox Dr (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: Deerfox Dr (day/night)

Angle1 Angle2 : -77.00 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 : 2.30 / 2.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
----------------------------------------------
Angle1   Angle2           : -82.00 deg   -77.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
----------------------------------------------
Angle1   Angle2           :   0.00 deg   62.00 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           :   2.30 / 2.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (day)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 62.41 + 0.00) = 62.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	85	0.64	63.96	0.00	0.00	-1.54	0.00	0.00	0.00	62.41

Segment Leq : 62.41 dBA

↟

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 31.35 + 0.00) = 31.35 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	-77	0.64	63.96	0.00	-12.33	-20.28	0.00	0.00	0.00	31.35

Segment Leq : 31.35 dBA

↟

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 59.93 + 0.00) = 59.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	62	0.64	75.00	0.00	-9.85	-5.21	0.00	0.00	0.00	59.93

Segment Leq : 59.93 dBA

Total Leq All Segments: 64.36 dBA

↟

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 54.82 + 0.00) = 54.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	85	0.64	56.36	0.00	0.00	-1.54	0.00	0.00	0.00	54.82

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

Segment Leq : 54.82 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 23.76 + 0.00) = 23.76 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -82    -77   0.64  56.36   0.00 -12.33 -20.28   0.00   0.00   0.00  23.76
-------------------------------------------------------------------------------

Segment Leq : 23.76 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 52.34 + 0.00) = 52.34 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     62   0.64  67.40   0.00  -9.85  -5.21   0.00   0.00   0.00  52.34
-------------------------------------------------------------------------------

Segment Leq : 52.34 dBA

Total Leq All Segments: 56.77 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 64.36
                           (NIGHT): 56.77
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 11:57:50
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec62.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 6-2

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

Angle1 Angle2 : -77.00 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 : 6.30 / 6.30 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑
Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
-----------------------------------------------
Angle1   Angle2           : -82.00 deg   -77.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  85.00 / 85.00  m
Receiver height           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   62.00 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           :   6.30 / 6.30   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Results segment # 1: Deerfox Dr (day)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 62.59 + 0.00) = 62.59 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	85	0.52	63.96	0.00	0.00	-1.37	0.00	0.00	0.00	62.59

Segment Leq : 62.59 dBA

↟

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 33.14 + 0.00) = 33.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	-77	0.52	63.96	0.00	-11.42	-19.39	0.00	0.00	0.00	33.14

Segment Leq : 33.14 dBA

↟

Results segment # 3: WoodroffeAve (day)

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
0	62	0.52	75.00	0.00	-9.13	-5.11	0.00	0.00	0.00	60.76

Segment Leq : 60.76 dBA

Total Leq All Segments: 64.78 dBA

↟

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 55.00 + 0.00) = 55.00 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	85	0.52	56.36	0.00	0.00	-1.37	0.00	0.00	0.00	55.00

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

Segment Leq : 55.00 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 25.55 + 0.00) = 25.55 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -82    -77   0.52  56.36   0.00 -11.42 -19.39   0.00   0.00   0.00  25.55
-------------------------------------------------------------------------------

Segment Leq : 25.55 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 53.16 + 0.00) = 53.16 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     62   0.52  67.40   0.00  -9.13  -5.11   0.00   0.00   0.00  53.16
-------------------------------------------------------------------------------

Segment Leq : 53.16 dBA

Total Leq All Segments: 57.19 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 64.78
                           (NIGHT): 57.19
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 10:49:41
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec7.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 7

Road data, segment # 1: Deerfox Dr (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: Deerfox Dr (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 : 35.00 / 35.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Deerfox Dr (day)

Source height = 1.50 m

ROAD (0.00 + 52.88 + 0.00) = 52.88 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	68	0.66	63.96	0.00	-6.11	-4.97	0.00	0.00	0.00	52.88

Segment Leq : 52.88 dBA

Total Leq All Segments: 52.88 dBA

↟
Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 45.29 + 0.00) = 45.29 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	68	0.66	56.36	0.00	-6.11	-4.97	0.00	0.00	0.00	45.29

Segment Leq : 45.29 dBA

Total Leq All Segments: 45.29 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 52.88
(NIGHT): 45.29
↟
↟

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 10:51:09
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec8.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 8

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

Angle1 Angle2 : -27.00 deg 80.00 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: Deerfox Dr (day)

Source height = 1.50 m

ROAD (0.00 + 58.81 + 0.00) = 58.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-27	80	0.66	63.96	0.00	-2.07	-3.07	0.00	0.00	0.00	58.81

Segment Leq : 58.81 dBA

Total Leq All Segments: 58.81 dBA

↟
Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 51.22 + 0.00) = 51.22 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-27	80	0.66	56.36	0.00	-2.07	-3.07	0.00	0.00	0.00	51.22

Segment Leq : 51.22 dBA

Total Leq All Segments: 51.22 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 58.81
(NIGHT): 51.22

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 10:43:38
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: WoodroffeAve (day/night)

Car traffic volume : 28336/2464 veh/TimePeriod *
Medium truck volume : 2254/196 veh/TimePeriod *
Heavy truck volume : 1610/140 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 35000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium 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: WoodroffeAve (day/night)

Angle1 Angle2 : -66.00 deg 0.00 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 : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 66.26 + 0.00) = 66.26 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-66	0	0.66	75.00	0.00	-3.68	-5.05	0.00	0.00	0.00	66.26

Segment Leq : 66.26 dBA

Total Leq All Segments: 66.26 dBA

↟
Results segment # 1: WoodroffeAve (night)

Source height = 1.50 m

ROAD (0.00 + 58.67 + 0.00) = 58.67 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-66	0	0.66	67.40	0.00	-3.68	-5.05	0.00	0.00	0.00	58.67

Segment Leq : 58.67 dBA

Total Leq All Segments: 58.67 dBA

↟

TOTAL Leq FROM ALL SOURCES (DAY): 66.26
(NIGHT): 58.67

↟
↟

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 12:02:13
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: Deerfox Dr (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: Deerfox Dr (day/night)

Angle1 Angle2 : 60.00 deg 89.00 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 : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: Stoneway Dr (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: Stoneway Dr (day/night)
----------------------------------------------
Angle1   Angle2           :  17.00 deg   45.00 deg
Wood depth                :      0       (No woods.)
No of house rows          :      0 / 0
Surface                   :      1       (Absorptive ground surface)
Receiver source distance  :  55.00 / 55.00  m
Receiver height           :   1.50 / 1.50   m
Topography                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```

↟

```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
----------------------------------------------
Angle1   Angle2           : -73.00 deg   89.00 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: Deerfox Dr (day)
-------------------------------------
```

Source height = 1.50 m

ROAD (0.00 + 48.36 + 0.00) = 48.36 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
60	89	0.66	63.96	0.00	-3.68	-11.91	0.00	0.00	0.00	48.36

Segment Leq : 48.36 dBA

↟

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 46.03 + 0.00) = 46.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
17	45	0.66	63.96	0.00	-9.37	-8.56	0.00	0.00	0.00	46.03

Segment Leq : 46.03 dBA

↟

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 73.38 + 0.00) = 73.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-73	89	0.66	75.00	0.00	0.00	-1.62	0.00	0.00	0.00	73.38

Segment Leq : 73.38 dBA

Total Leq All Segments: 73.40 dBA

↟

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 40.77 + 0.00) = 40.77 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
60	89	0.66	56.36	0.00	-3.68	-11.91	0.00	0.00	0.00	40.77

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

Segment Leq : 40.77 dBA

↟
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 38.44 + 0.00) = 38.44 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
    17     45   0.66  56.36   0.00  -9.37  -8.56   0.00   0.00   0.00  38.44
--------------------------------------------------------------------------------

Segment Leq : 38.44 dBA

↟
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 65.78 + 0.00) = 65.78 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
--------------------------------------------------------------------------------
   -73     89   0.66  67.40   0.00   0.00  -1.62   0.00   0.00   0.00  65.78
--------------------------------------------------------------------------------

Segment Leq : 65.78 dBA

Total Leq All Segments: 65.80 dBA

↟



TOTAL Leq FROM ALL SOURCES (DAY): 73.40
                           (NIGHT): 65.80
↟
↟
```

STAMSON 5.0 NORMAL REPORT Date: 16-03-2022 12:05:58
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: Deerfox Dr (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: Deerfox Dr (day/night)

Angle1 Angle2 : -60.00 deg 86.00 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: Stoneway Dr (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: Stoneway Dr (day/night)
-----------------------------------------------
Angle1   Angle2           : -81.00 deg   -67.00 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
```



```
Road data, segment # 3: WoodroffeAve (day/night)
-------------------------------------------------
Car traffic volume  : 28336/2464  veh/TimePeriod  *
Medium truck volume :  2254/196   veh/TimePeriod  *
Heavy truck volume  :  1610/140   veh/TimePeriod  *
Posted speed limit  :    70 km/h
Road gradient       :     0 %
Road pavement       :     1 (Typical asphalt or concrete)

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

    24 hr Traffic Volume (AADT or SADT):  35000
    Percentage of Annual Growth        :   0.00
    Number of Years of Growth          :   0.00
    Medium 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: WoodroffeAve (day/night)
-----------------------------------------------
Angle1   Angle2           :   0.00 deg   85.00 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                :      1       (Flat/gentle slope; no barrier)
Reference angle           :   0.00
```



```
Results segment # 1: Deerfox Dr (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
-60	86	0.66	63.96	0.00	0.00	-1.88	0.00	0.00	0.00	62.07

Segment Leq : 62.07 dBA

↟

Results segment # 2: Stoneway Dr (day)

Source height = 1.50 m

ROAD (0.00 + 40.45 + 0.00) = 40.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	-67	0.66	63.96	0.00	-8.68	-14.82	0.00	0.00	0.00	40.45

Segment Leq : 40.45 dBA

↟

Results segment # 3: WoodroffeAve (day)

Source height = 1.50 m

ROAD (0.00 + 66.80 + 0.00) = 66.80 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	85	0.66	75.00	0.00	-3.68	-4.51	0.00	0.00	0.00	66.80

Segment Leq : 66.80 dBA

Total Leq All Segments: 68.07 dBA

↟

Results segment # 1: Deerfox Dr (night)

Source height = 1.50 m

ROAD (0.00 + 54.48 + 0.00) = 54.48 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-60	86	0.66	56.36	0.00	0.00	-1.88	0.00	0.00	0.00	54.48

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

Segment Leq : 54.48 dBA

🠉
Results segment # 2: Stoneway Dr (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 32.86 + 0.00) = 32.86 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -81    -67   0.66  56.36   0.00  -8.68 -14.82   0.00   0.00   0.00  32.86
-------------------------------------------------------------------------------

Segment Leq : 32.86 dBA

🠉
Results segment # 3: WoodroffeAve (night)
----------------------------------------

Source height = 1.50 m

ROAD (0.00 + 59.21 + 0.00) = 59.21 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
     0     85   0.66  67.40   0.00  -3.68  -4.51   0.00   0.00   0.00  59.21
-------------------------------------------------------------------------------

Segment Leq : 59.21 dBA

Total Leq All Segments: 60.48 dBA

🠉



TOTAL Leq FROM ALL SOURCES (DAY): 68.07
                           (NIGHT): 60.48
🠉
🠉
```