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Environmental Noise Control Study

Proposed Residential Development
585 Bobolink Ridge, Ottawa

Prepared For

Tamarack Homes
c/o H.P. Urban Inc.

June 13, 2022

Report: PG5857-1 Revision 1

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1.0 Introduction

Paterson Group (Paterson) was commissioned by Tamarack Homes c/o H.P. Urban Incorporation to conduct an environmental noise control study for the proposed residential development to be located at 585 Bobolink Ridge, 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 residential development will consist of eight (8) three-storey buildings. Associated at-grade roadways, parking areas and landscaped areas are also anticipated. No outdoor living areas are identified on the proposed site plan.

3.0 Methodology and Noise Assessment Criteria

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

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

Surface Transportation Noise

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

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

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

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

Table 1 – Noise Level Limit for Outdoor Living Areas	
Time Period	L_{eq} Level (dBA)
Daytime, 7:00-23:00	55
➤ Standard taken from Table 2.2a; Sound Level Limit for Outdoor Living Areas – Road and Rail	

Table 2 – Noise Level Limits for Indoor Living Areas			
Type of Space	Time Period	L_{eq} Level (dBA)	
		Road	Rail
General offices, reception areas, retail stores, etc.	Daytime 7:00-23:00	50	45
Theatres, places of worship, libraries, individual or semi-private offices, conference rooms, reading rooms, etc.	Daytime 7:00-23:00	45	40
Living/dining/den areas of residences , hospitals, nursing/retirement homes, schools, day-care centres	Daytime 7:00-23:00	45	40
Living/dining/den areas of residences , hospitals, nursing/retirement homes etc. (except schools or day-care centres)	Nighttime 23:00-7:00	45	40
Sleeping quarters of hotels/motels	Nighttime 23:00-7:00	45	40
Sleeping quarters of residences , hospitals, nursing/retirement homes, etc.	Nighttime 23:00-7:00	40	35
➤ Standards taken from Table 2.2b, Sound Level Limit for Indoor Living Areas – Road and Rail and Table 2.2c, Supplementary Sound Level Limits for Indoor Spaces – Road and Rail			

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

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

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

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

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

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

Table 3 – Warning Clauses for Outdoor Living Areas		
Leq (dBA)	Warning Clause	Description
$55 \text{ dBA} < L_{eq(16)} \leq 60 \text{ dBA}$	Warning Clause Type A	"Purchasers/tenants are advised that sound levels due to increasing road traffic (rail traffic) (air traffic) may occasionally interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."
$60 \text{ dBA} < L_{eq(16)}$	Warning Clause Type B	"Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road traffic (rail traffic) (air traffic) may on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment."
➤ Clauses taken from section C8 Warning Clauses; Environmental Noise Guidelines for Stationary and Transportation Sources - NPC-300		

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

Stationary Noise

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

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

Aircraft / Airport Noise

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

4.0 Analysis

Surface Transportation Noise

The subject development is bordered to the north by construction site, to the east by landscaped areas followed by Robert Grant Avenue, to the west by Putney Crescent followed by Osterley Way and construction site, to the south by Bobolink Ridge followed by Embankment Street and construction site. Robert Grant Avenue, Putney Crescent, Osterley Way, Bobolink Ridge and Embankment Street are identified within the 100 m radius of proposed development.

Based on the City of Ottawa's Official Plan, Schedule E, Robert Grant 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 single major source of traffic noise is due to the Robert Grant Avenue to the east of the proposed development.

All noise sources are presented in Drawing PG5857-3 - 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 %
Robert Grant Avenue	4-UAD	35000	60	92/8	7	5
➤ Data obtained from the City of Ottawa document ENCG						

Two (2) 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 buildings.

Table 5 – Elevations of Reception Points			
Floor Number	Elevation at Centre of Window (m)	Floor Use	Daytime / Nighttime Analysis
First Floor	1.5	Living Area/Bedroom	Daytime / Nighttime
Third Floor	7.5	Living Area/Bedroom	Daytime / Nighttime

For this analysis, a reception point was taken at the centre of each floor, at the ground floor and third floor. Reception points are detailed on Drawing PG5857-2 - Receptor Locations presented in Appendix 1.

All horizontal distances have been measured from the reception point to the edge of the right-of-way. The roadways were analyzed where they intersected the 100 m buffer zone, which is reflected in the local angles described in Paterson Drawings PG5857-3A to 3P - 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 ENGEC. It should be noted that one receptor is assigned to the eastmost unit of each building. Since the single noise source, Robert Grant Avenue, is located east to the buildings, the anticipated noise at each receptor represents the worst case scenario of each building.

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

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

5.0 Results

Surface Transportation 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	1.5	Building A, Eastern Elevation, 1st Floor	67	59
REC 9-1	1.5	Building A, Eastern Elevation, 1st Floor	68	61
REC 1-3	7.5	Building A, Eastern Elevation, 3rd Floor	68	60
REC 9-3	7.5	Building A, Eastern Elevation, 3rd Floor	69	61
REC 2-1	1.5	Building B, Eastern Elevation, 1st Floor	67	59
REC 10-1	1.5	Building B, Eastern Elevation, 1st Floor	68	61
REC 2-3	7.5	Building B, Eastern Elevation, 3rd Floor	68	60
REC 10-3	7.5	Building B, Eastern Elevation, 3rd Floor	69	62
REC 3-1	1.5	Building C, Eastern Elevation, 1st Floor	66	58
REC 11-1	1.5	Building C, Eastern Elevation, 1st Floor	67	60
REC 3-3	7.5	Building C, Eastern Elevation, 3rd Floor	67	59
REC 11-3	7.5	Building C, Eastern Elevation, 3rd Floor	68	60
REC 4-1	1.5	Building D, Eastern Elevation, 1st Floor	66	58
REC 12-1	1.5	Building D, Eastern Elevation, 1st Floor	67	60
REC 4-3	7.5	Building D, Eastern Elevation, 3rd Floor	67	59
REC 12-3	7.5	Building D, Eastern Elevation, 3rd Floor	68	60

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 5-1	1.5	Building E, Eastern Elevation, 1st Floor	60	52
REC 13-1	1.5	Building E, Eastern Elevation, 1st Floor	60	53
REC 5-3	7.5	Building E, Eastern Elevation, 3rd Floor	61	53
REC 13-3	7.5	Building E, Eastern Elevation, 3rd Floor	62	54
REC 6-1	1.5	Building F, Eastern Elevation, 1st Floor	58	51
REC 14-1	1.5	Building F, Eastern Elevation, 1st Floor	59	52
REC 6-3	7.5	Building F, Eastern Elevation, 3rd Floor	60	52
REC 14-3	7.5	Building F, Eastern Elevation, 3rd Floor	60	53
REC 7-1	1.5	Building G, Eastern Elevation, 1st Floor	58	50
REC 15-1	1.5	Building G, Eastern Elevation, 1st Floor	59	51
REC 7-3	7.5	Building G, Eastern Elevation, 3rd Floor	59	52
REC 15-3	7.5	Building G, Eastern Elevation, 3rd Floor	60	52
REC 8-1	1.5	Building H, Eastern Elevation, 1st Floor	59	51
REC 16-1	1.5	Building H, Eastern Elevation, 1st Floor	60	52
REC 8-3	7.5	Building H, Eastern Elevation, 3rd Floor	60	53
REC 16-3	7.5	Building H, Eastern Elevation, 3rd Floor	61	53

6.0 Discussion and Recommendations

6.1 Outdoor Living Areas

The subject site does not consist of any outdoor living areas. Therefore, a surface transportation noise analysis for outdoor living areas will not be required.

6.2 Indoor Living Areas and Ventilation

The results of the STAMSON modeling indicate that the noise levels at the eastmost units of Buildings A, B, C, and D will range between 66 dBA and 69 dBA during the daytime period (07:00-23:00) and between 58 dBA and 62 dBA during the nighttime period (23:00-7:00). The results of the STAMSON modeling also indicate that the noise levels at the eastmost units of Buildings E, F, G, and H will range between 58 dBA and 62 dBA during the daytime period (07:00-23:00) and between 50 dBA and 54 dBA during the nighttime period (23:00-7:00). The noise levels at all units within all buildings of the development (Buildings A to H) will exceed the limit for the exterior of the pane of glass (55 dBA) specified by the ENCG. It is also noted that the noise levels at all units of Buildings A to D will exceed 65 dBA. Therefore, all units of Buildings A to D should be supplied with a central air conditioning unit, along with the warning clause Type D, as outlined in Table 3. Also, all units of Buildings E to H should be designed with the provision for a central air conditioning unit, along with the warning clause Type C, as outlined in Table 3

It is anticipated that the noise levels at all units within Buildings A to D do exceed the 65 dBA threshold. Therefore, an analysis of the building materials will be required. However, at this time the building materials and exterior wall construction details have not been finalized. Therefore, a review of the proposed building materials will need to be completed.

Proposed Construction Specifications

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

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

Where:

$L_{eq(16)}(\text{Exterior})$ = Calculated value at the window pane

$L_{eq(16)}(\text{Interior})$ = 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 29 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 32 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 claddings of all units within Buildings A to D consist of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 32 and are considered acceptable. If alternative materials are to be utilized on the units within Buildings A to D, then a review will need to be completed once design details are finalized.

7.0 Summary of Findings

The subject site is located at 585 Bobolink Ridge, in the City of Ottawa. It is understood that the proposed development will consist of eight (8) 3-storey residential apartment buildings. There is one major source of surface transportation noise to the proposed development: Robert Grant Avenue.

Several reception points were selected for the surface transportation noise analysis, consisting of the centre of first level and top level. The results of STAMSON modeling indicate that the noise levels at all units within all buildings of the proposed development (Buildings A to H) are expected to exceed the 55 dBA threshold specified by the ENCG. It is also noted that the noise levels at all units within Buildings A to D will exceed the 65 dBA threshold. Therefore, the installation of a central air conditioning unit, along with a warning clause Type D, will be required for all units of Buildings A to D. Also, the design with the provision for a central air conditioning unit, along with the warning clause Type C, will be required for all units of Buildings E to H. A review of industry standards for construction material indicates that, provided the exterior claddings of all units of Buildings A to D consist of brick or concrete panels and that all windows consist of double pane glass, these materials have an STC rating of greater than 32 and are considered acceptable.

The following warning clause is to be included on all Offers of Purchase and Sale and/or lease agreements for all units within Buildings A to D:

" This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment."

The following warning clause is to be included on all Offers of Purchase and Sale and/or lease agreements for all units within Buildings E to H:

" 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."

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 Tamarack Homes c/o H.P. Urban Incorporation 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.



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Report Distribution:

- ☐ Tamarack Homes c/o H.P. Urban Incorporation (email copy)
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APPENDIX 1

TABLE 7 - SUMMARY OF RECEPTION POINTS AND GEOMETRY

DRAWING PG5857-1 - SITE PLAN

DRAWING PG5857-2 - RECEPTOR LOCATION PLAN

DRAWING PG5857-3 - SITE GEOMETRY

DRAWING PG5857-3A - SITE GEOMETRY (REC 1-1 and REC 1-3)

DRAWING PG5857-3B - SITE GEOMETRY (REC 2-1 and REC 2-3)

DRAWING PG5857-3C - SITE GEOMETRY (REC 3-1 and REC 3-3)

DRAWING PG5857-3D - SITE GEOMETRY (REC 4-1 and REC 4-3)

DRAWING PG5857-3E - SITE GEOMETRY (REC 5-1 and REC 5-3)

DRAWING PG5857-3F - SITE GEOMETRY (REC 6-1 and REC 6-3)

DRAWING PG5857-3G - SITE GEOMETRY (REC 7-1 and REC 7-3)

DRAWING PG5857-3H - SITE GEOMETRY (REC 8-1 and REC 8-3)

DRAWING PG5857-3I - SITE GEOMETRY (REC 9-1 and REC 9-3)

DRAWING PG5857-3J - SITE GEOMETRY (REC 10-1 and REC 10-3)

DRAWING PG5857-3K - SITE GEOMETRY (REC 11-1 and REC 11-3)

DRAWING PG5857-3L - SITE GEOMETRY (REC 12-1 and REC 12-3)

DRAWING PG5857-3M - SITE GEOMETRY (REC 13-1 and REC 13-3)

DRAWING PG5857-3N - SITE GEOMETRY (REC 14-1 and REC 14-3)

DRAWING PG5857-3O - SITE GEOMETRY (REC 15-1 and REC 15-3)

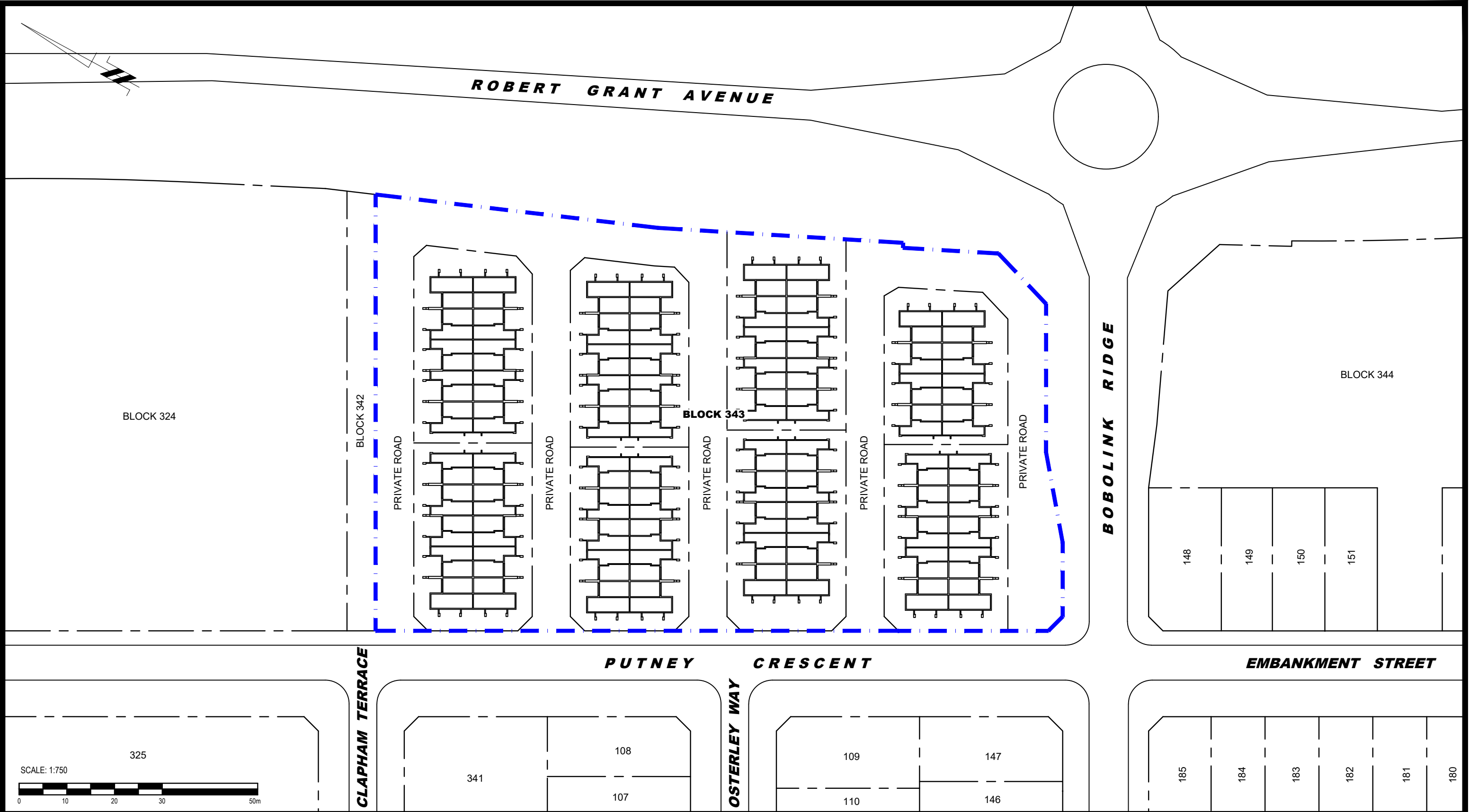
DRAWING PG5857-3P - SITE GEOMETRY (REC 16-1 and REC 16-3)

Table 7 - Summary of Reception Points and Geometry
585 Bobolink Ridge

Point of Reception	Location	Leq Day (dBA)	Robert Grant Avenue													
			Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)						
REC 1-1	Building A, Eastern Elevation, 1st Floor	67	30	1.5	30.0	-77, 71	n/a	n/a	n/a	n/a						
REC 1-3	Building A, Eastern Elevation, 3rd Floor	68	30	7.5	30.9	-77, 71	n/a	n/a	n/a	n/a						
REC 2-1	Building B, Eastern Elevation, 1st Floor	67	30	1.5	30.0	-77, 80	n/a	n/a	n/a	n/a						
REC 2-3	Building B, Eastern Elevation, 3rd Floor	68	30	7.5	30.9	-77, 80	n/a	n/a	n/a	n/a						
REC 3-1	Building C, Eastern Elevation, 1st Floor	66	35	1.5	35.0	-74, 80	n/a	n/a	n/a	n/a						
REC 3-3	Building C, Eastern Elevation, 3rd Floor	67	35	7.5	35.8	-74, 80	n/a	n/a	n/a	n/a						
REC 4-1	Building D, Eastern Elevation, 1st Floor	66	35	1.5	35.0	-72, 82	n/a	n/a	n/a	n/a						
REC 4-3	Building D, Eastern Elevation, 3rd Floor	67	35	7.5	35.8	-72, 82	n/a	n/a	n/a	n/a						
REC 5-1	Building E, Eastern Elevation, 1st Floor	60	65	1.5	65.0	-70, 58	1	30	n/a	n/a						
REC 5-3	Building E, Eastern Elevation, 3rd Floor	61	65	7.5	65.4	-70, 58	1	30	n/a	n/a						
REC 6-1	Building F, Eastern Elevation, 1st Floor	58	65	1.5	65.0	-68, 66	1	50	n/a	n/a						
REC 6-3	Building F, Eastern Elevation, 3rd Floor	60	65	7.5	65.4	-68, 66	1	50	n/a	n/a						
REC 7-1	Building G, Eastern Elevation, 1st Floor	58	70	1.5	70.0	-62, 69	1	50	n/a	n/a						
REC 7-3	Building G, Eastern Elevation, 3rd Floor	59	70	7.5	70.4	-62, 69	1	50	n/a	n/a						
REC 8-1	Building H, Eastern Elevation, 1st Floor	59	70	1.5	70.0	-56, 72	1	30	n/a	n/a						
REC 8-3	Building H, Eastern Elevation, 3rd Floor	60	70	7.5	70.4	-56, 72	1	30	n/a	n/a						

Table 7 - Summary of Reception Points and Geometry
585 Bobolink Ridge

Point of Reception	Location	Leq Day (dBA)	Robert Grant Avenue													
			Horizontal (m)	Vertical (m)	Total (m)	Local Angle (degree)	Number of Rows of Houses	Density (%)	Barrier Height (m)	Barrier Distance (m)						
REC 9-1	Building A, Eastern Elevation, 1st Floor	68	25	1.5	25.0	-81, 79	n/a	n/a	n/a	n/a						
REC 9-3	Building A, Eastern Elevation, 3rd Floor	69	25	7.5	26.1	-81, 79	n/a	n/a	n/a	n/a						
REC 10-1	Building B, Eastern Elevation, 1st Floor	68	25	1.5	25.0	-82, 84	n/a	n/a	n/a	n/a						
REC 10-3	Building B, Eastern Elevation, 3rd Floor	69	25	7.5	26.1	-82, 84	n/a	n/a	n/a	n/a						
REC 11-1	Building C, Eastern Elevation, 1st Floor	67	30	1.5	30.0	-79, 84	n/a	n/a	n/a	n/a						
REC 11-3	Building C, Eastern Elevation, 3rd Floor	68	30	7.5	30.9	-79, 84	n/a	n/a	n/a	n/a						
REC 12-1	Building D, Eastern Elevation, 1st Floor	67	30	1.5	30.0	-77, 85	n/a	n/a	n/a	n/a						
REC 12-3	Building D, Eastern Elevation, 3rd Floor	68	30	7.5	30.9	-77, 85	n/a	n/a	n/a	n/a						
REC 13-1	Building E, Eastern Elevation, 1st Floor	60	60	1.5	60.0	-74, 63	1	30	n/a	n/a						
REC 13-3	Building E, Eastern Elevation, 3rd Floor	62	60	7.5	60.5	-74, 63	1	30	n/a	n/a						
REC 14-1	Building F, Eastern Elevation, 1st Floor	59	60	1.5	60.0	-72, 71	1	50	n/a	n/a						
REC 14-3	Building F, Eastern Elevation, 3rd Floor	60	60	7.5	60.5	-72, 71	1	50	n/a	n/a						
REC 15-1	Building G, Eastern Elevation, 1st Floor	59	65	1.5	65.0	-68, 73	1	50	n/a	n/a						
REC 15-3	Building G, Eastern Elevation, 3rd Floor	60	65	7.5	65.4	-68, 73	1	50	n/a	n/a						
REC 16-1	Building H, Eastern Elevation, 1st Floor	60	65	1.5	65.0	-59, 76	1	30	n/a	n/a						
REC 16-3	Building H, Eastern Elevation, 3rd Floor	61	65	7.5	65.4	-59, 76	1	30	n/a	n/a						



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NO.	REVISIONS	DATE	INITIAL

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Title:

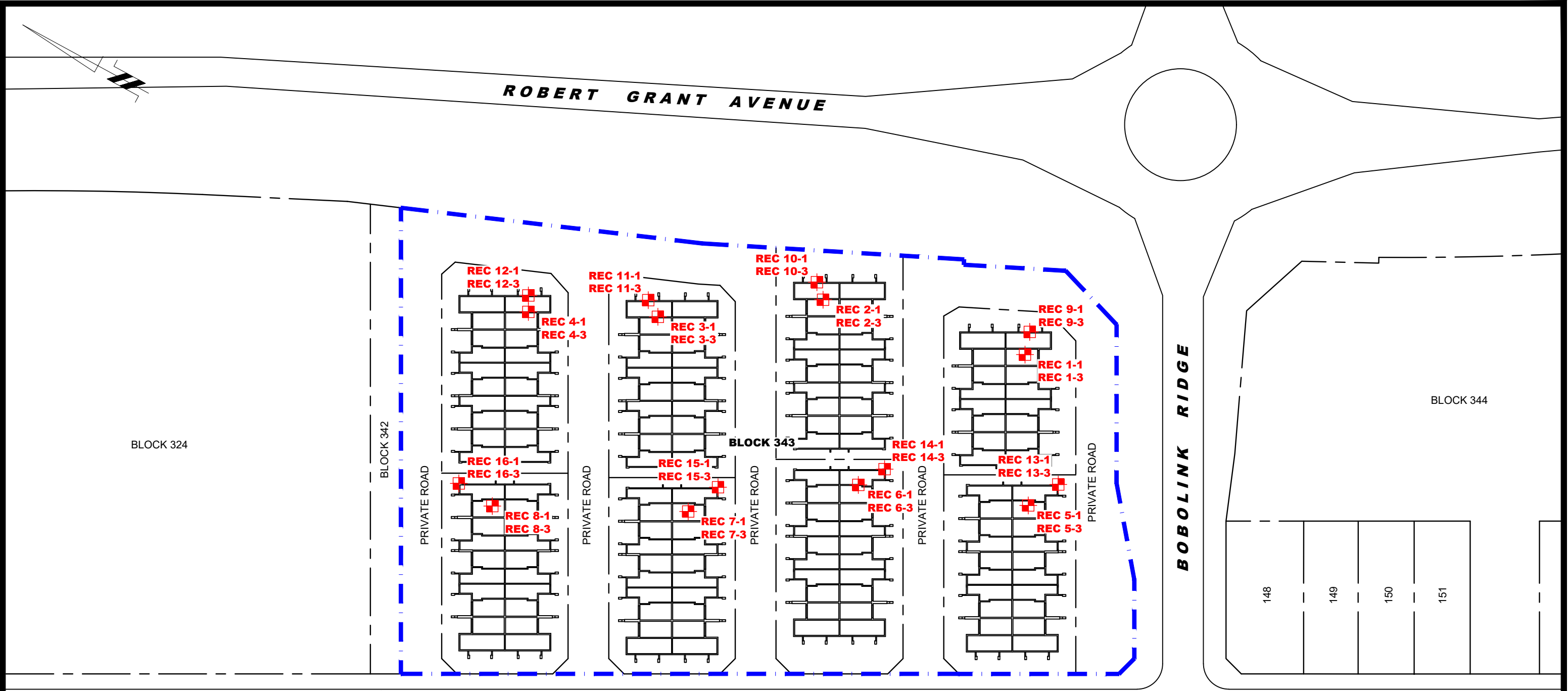
TAMARACK HOMES c/o HP URBAN INC.
NOISE ATTENUATION STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
585 BOBOLINK RIDGE

ONTARIO

SITE PLAN

Scale:	1:750	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-1
Approved by:	DJG	Revision No.:	1

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LEGEND:

 RECEPTOR LOCATION

SCALE: 1:750



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ONTARIO

RECEPTOR LOCATION PLAN

Scale:	1:750	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-2
Approved by:	DJG	Revision No.:	
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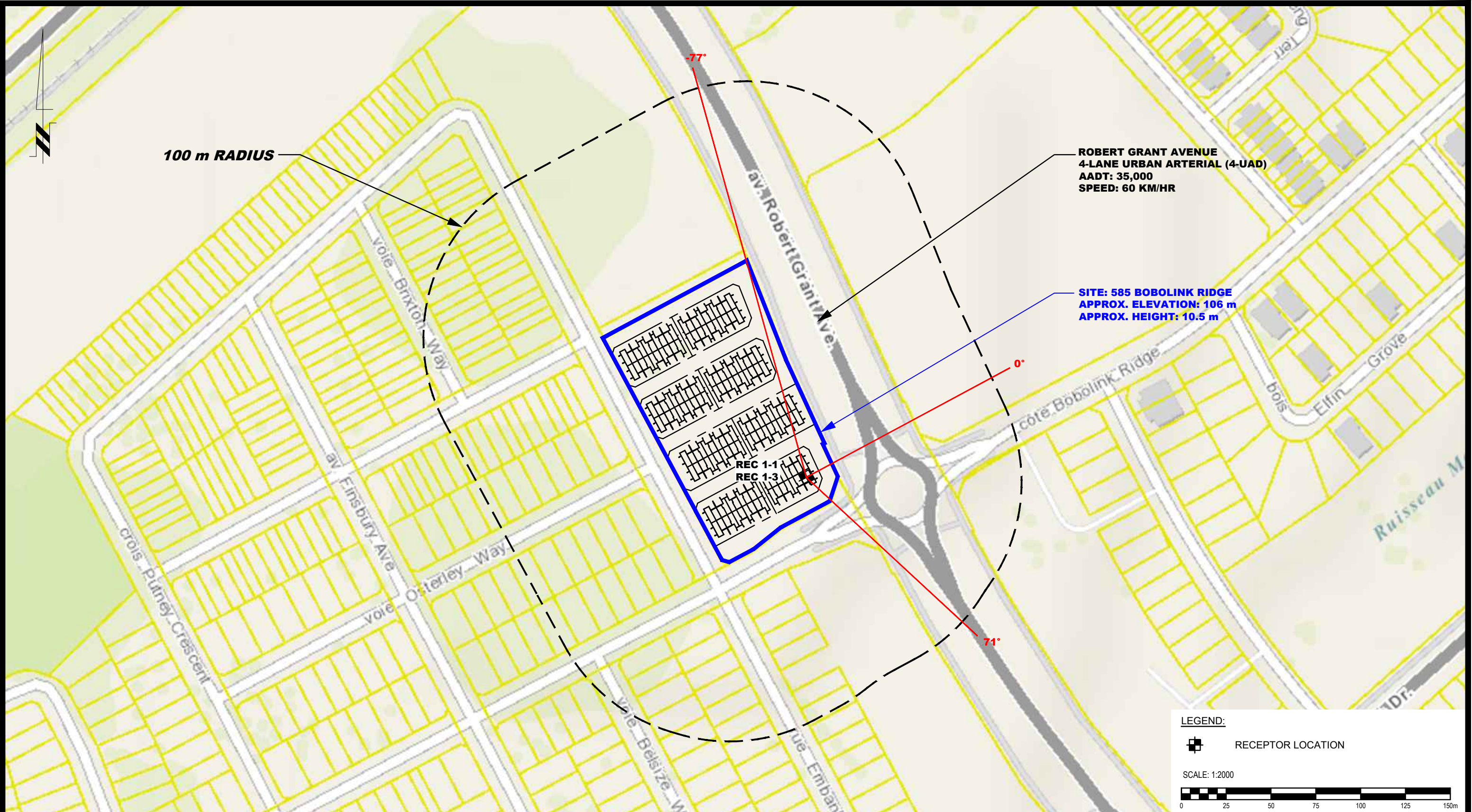
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NO.	REVISIONS	DATE	INITIAL

OTTAWA,
Title:

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ONTARIO

SITE GEOMETRY

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3
Approved by:	DJG	Revision No.:	1



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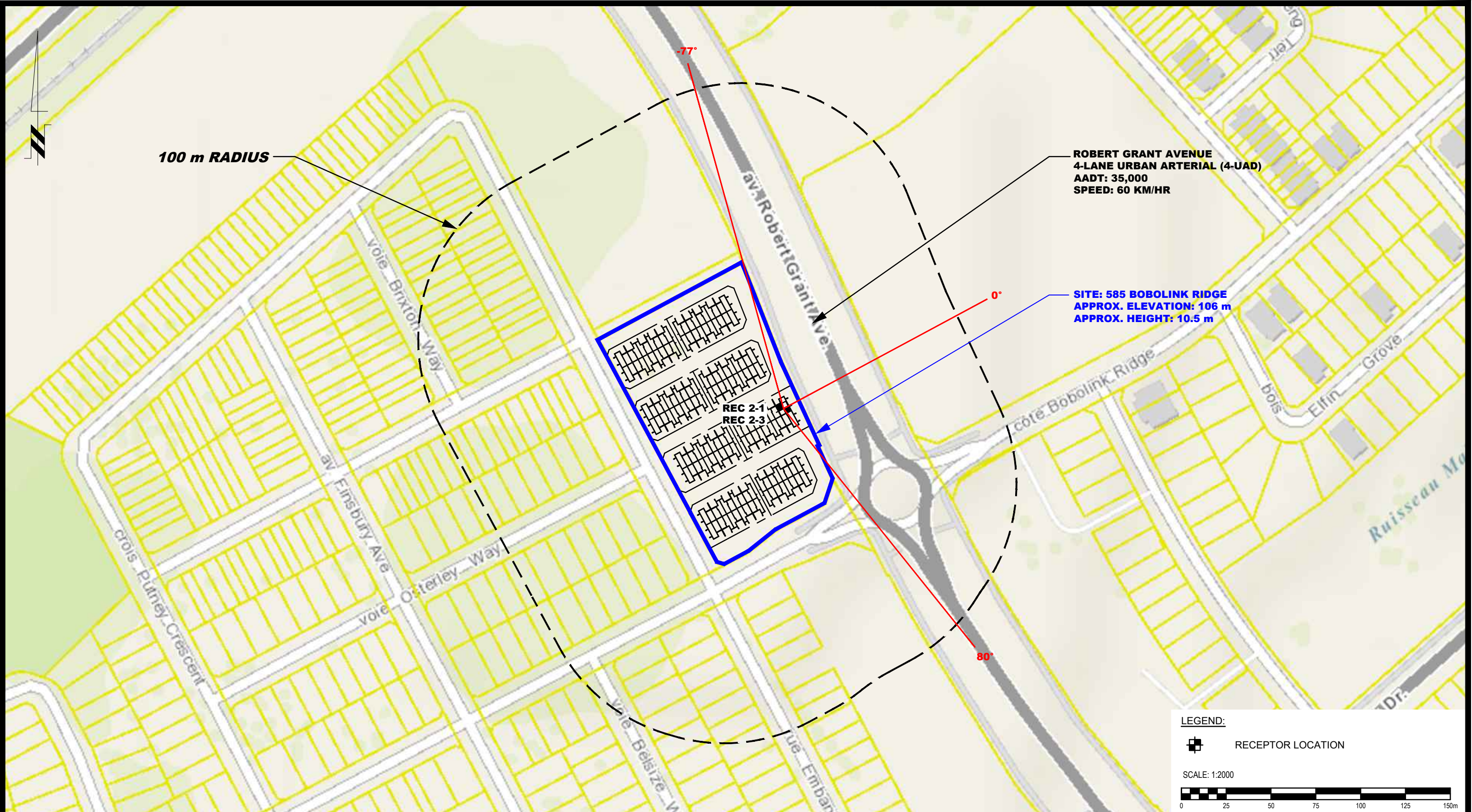
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OTTAWA, ONTARIO
Title: **SITE GEOMETRY - REC 1-1 AND REC 1-3**

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3A
Approved by:	DJG	Revision No.:	1

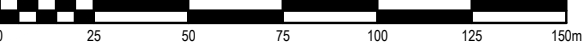
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 RECEPTOR LOCATION

SCALE: 1:2000



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NO.	REVISIONS	DATE	INITIAL

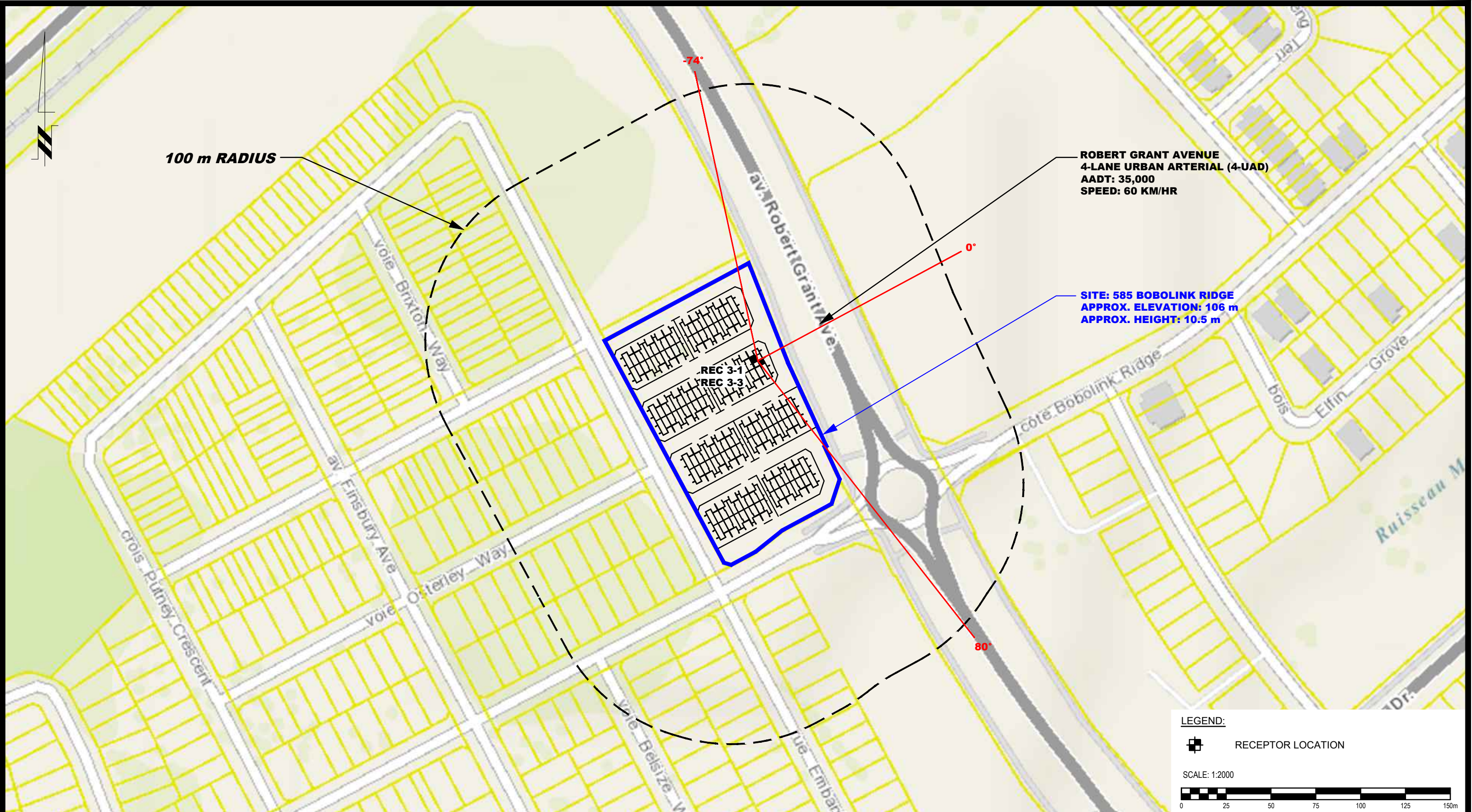
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PROPOSED RESIDENTIAL DEVELOPMENT
585 BOBOLINK RIDGE

OTTAWA, ONTARIO

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

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3B
Approved by:	DJG	Revision No.:	1

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 RECEPTOR LOCATION

SCALE: 1:2000



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NO.	REVISIONS	DATE	INITIAL

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Title:

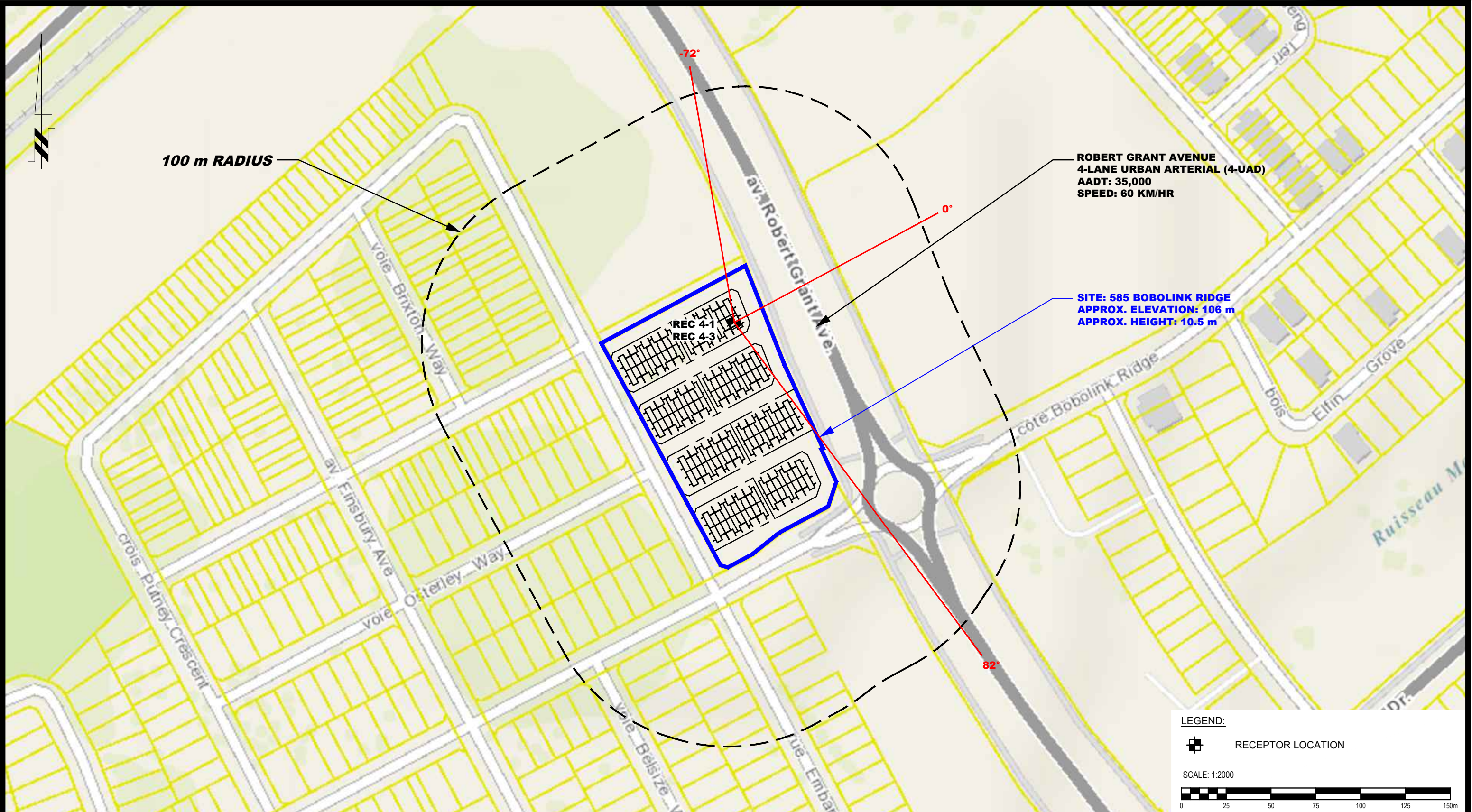
SITE GEOMETRY - REC 3-1 AND REC 3-3

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PROPOSED RESIDENTIAL DEVELOPMENT
585 BOBOLINK RIDGE

ONTARIO

Scale: 1:2000
Drawn by: YA
Checked by: SB
Approved by: DJG

Date: 06/2021
Report No.: PG5857-1
Dwg. No.: **PG5857-3C**
Revision No.: 1



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585 BOBOLINK RIDGE
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Title: **SITE GEOMETRY - REC 4-1 AND REC 4-3**

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3D
Approved by:	DJG	Revision No.:	1

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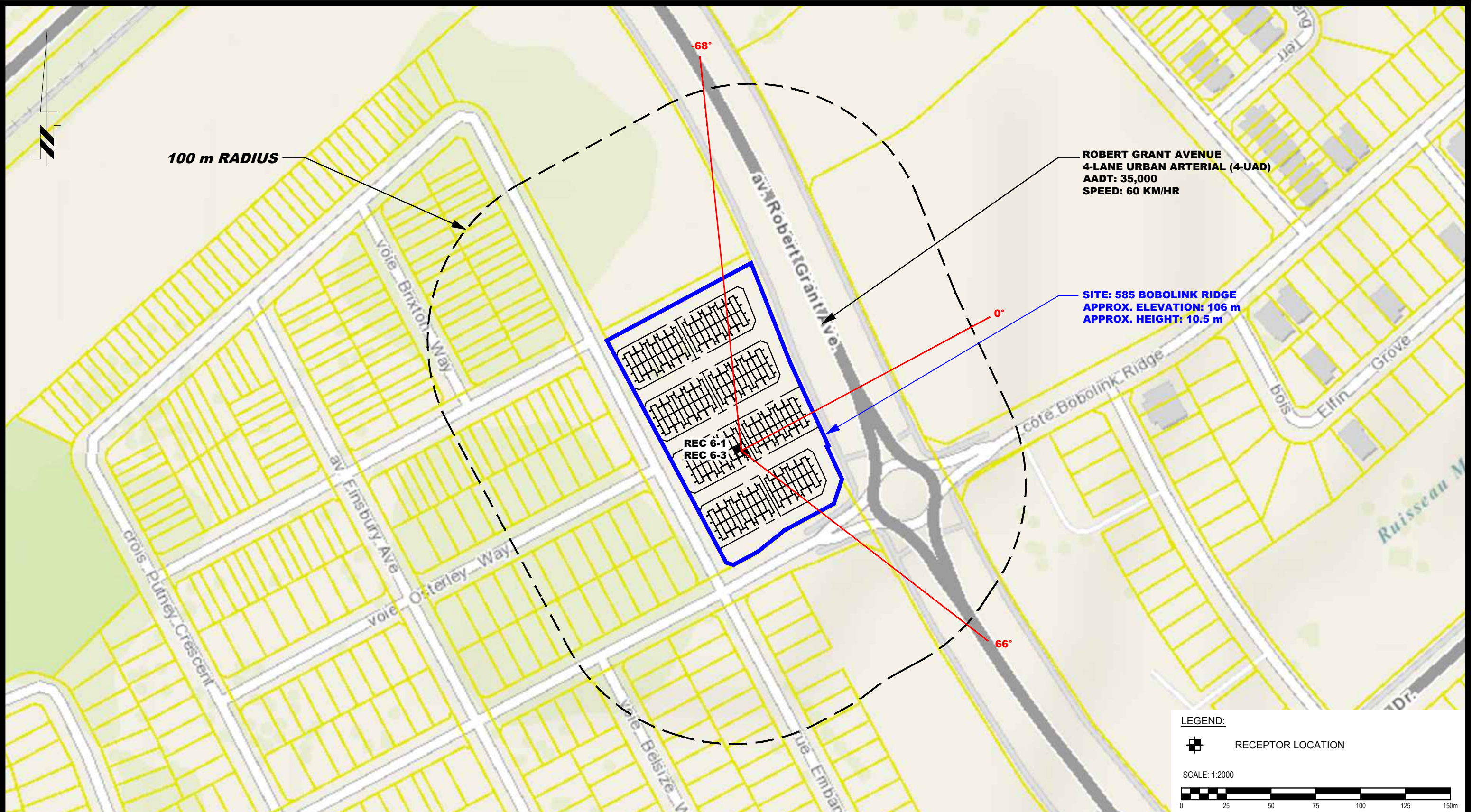
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Title: **SITE GEOMETRY - REC 5-1 AND REC 5-3**

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3E
Approved by:	DJG	Revision No.:	1

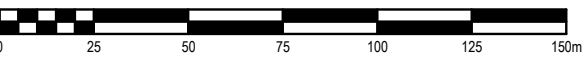
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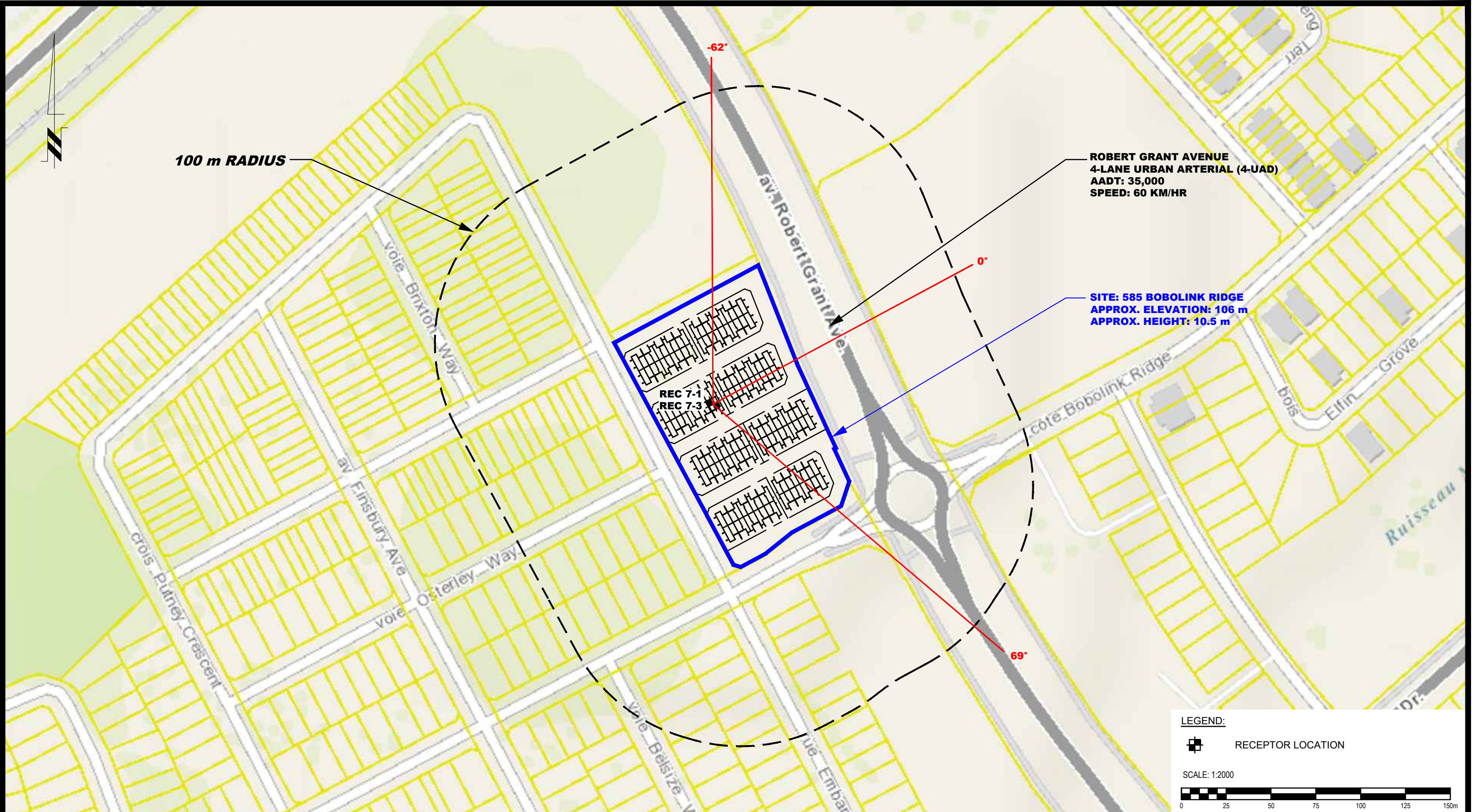
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	1	UPDATED ROAD INFORMATION	28/04/2022	YT	
	NO.	REVISIONS	DATE	INITIAL	

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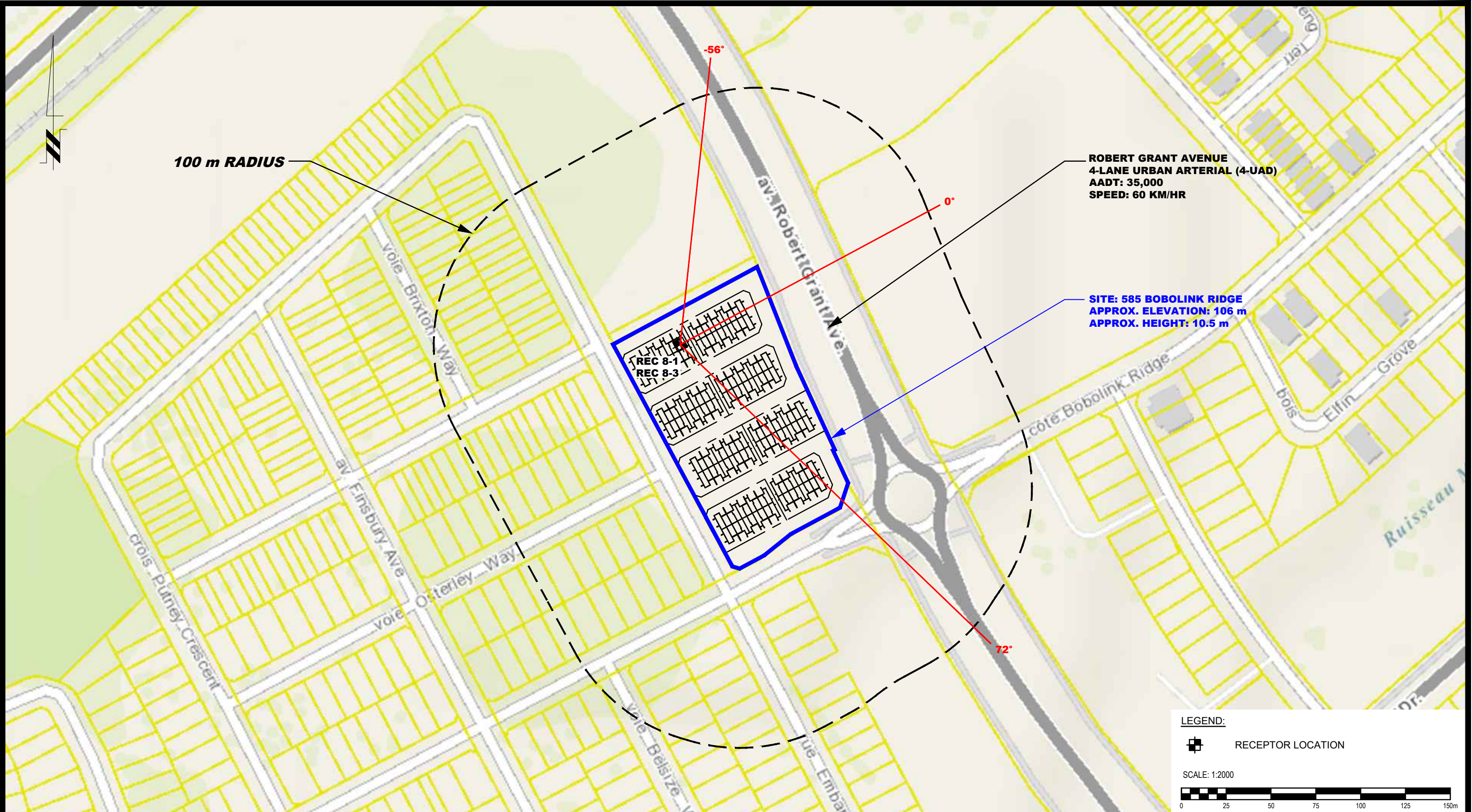
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Title: **SITE GEOMETRY - REC 7-1 AND REC 7-3**

Scale:	1:2000	Date:	06/2021
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Checked by:	SB	Dwg. No.:	PG5857-3G
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ONTARIO

SITE GEOMETRY - REC 8-1 AND REC 8-3

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3H
Approved by:	DJG	Revision No.:	1

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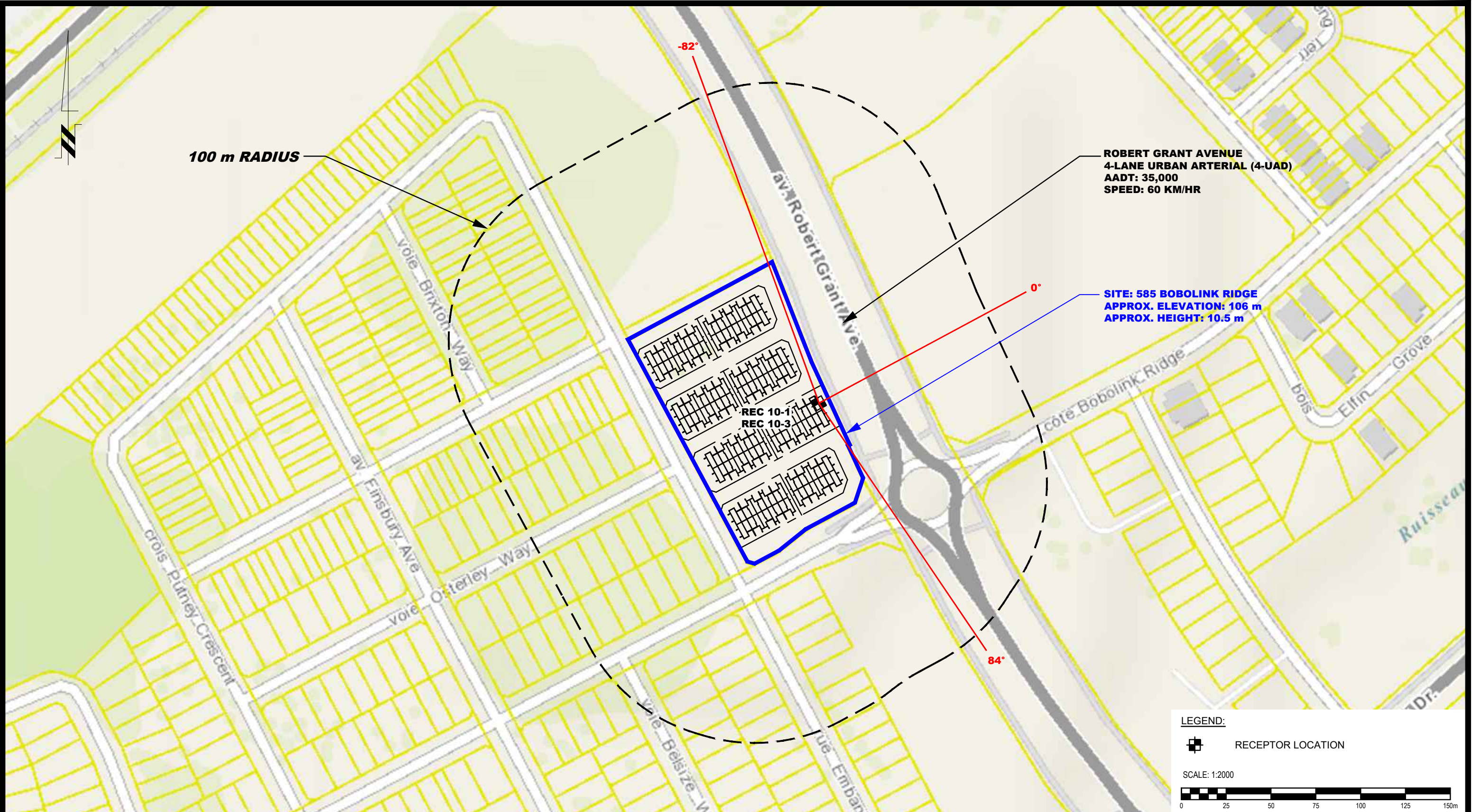
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	1	UPDATED ROAD INFORMATION	28/04/2022	YT	
	NO.	REVISIONS	DATE	INITIAL	

Scale:	1:2000	Date:	06/2021
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Approved by:	DJG	Revision No.:	

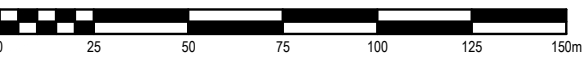
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						Drawn by: YA	Report No.: PG5857-1
						Checked by: SB	Dwg. No.: PG5857-3J
						Approved by: DJG	
	1	UPDATED ROAD INFORMATION	28/04/2022	YT		OTTAWA, Title: SITE GEOMETRY - REC 10-1 AND REC 10-3	
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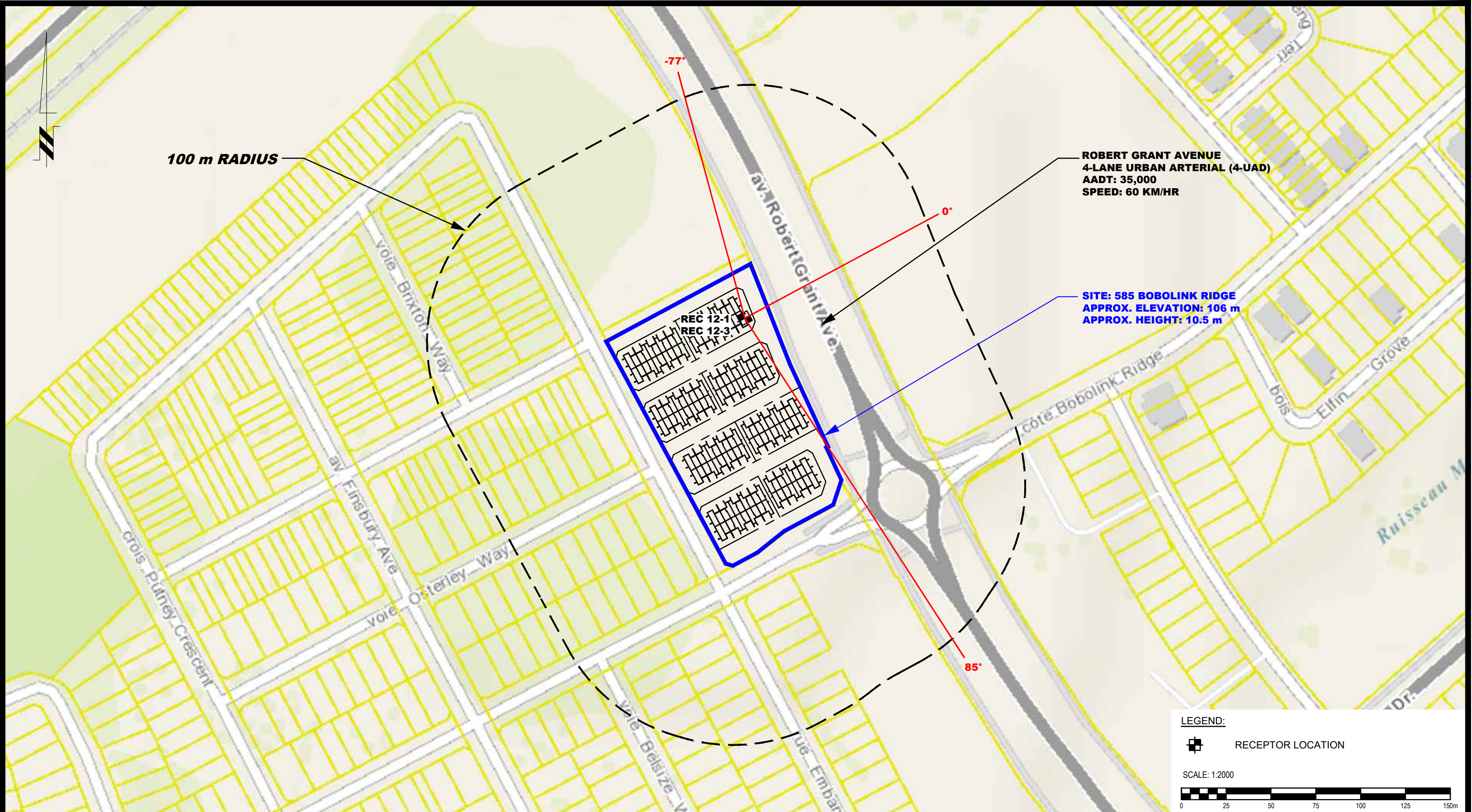
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585 BOBOLINK RIDGE
OTTAWA, ONTARIO
Title:
SITE GEOMETRY - REC 11-1 AND REC 11-3

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
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585 BOBOLINK RIDGE

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SITE GEOMETRY - REC 12-1 AND REC 12-3

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3L
Approved by:	DJG	Revision No.:	1

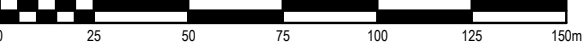
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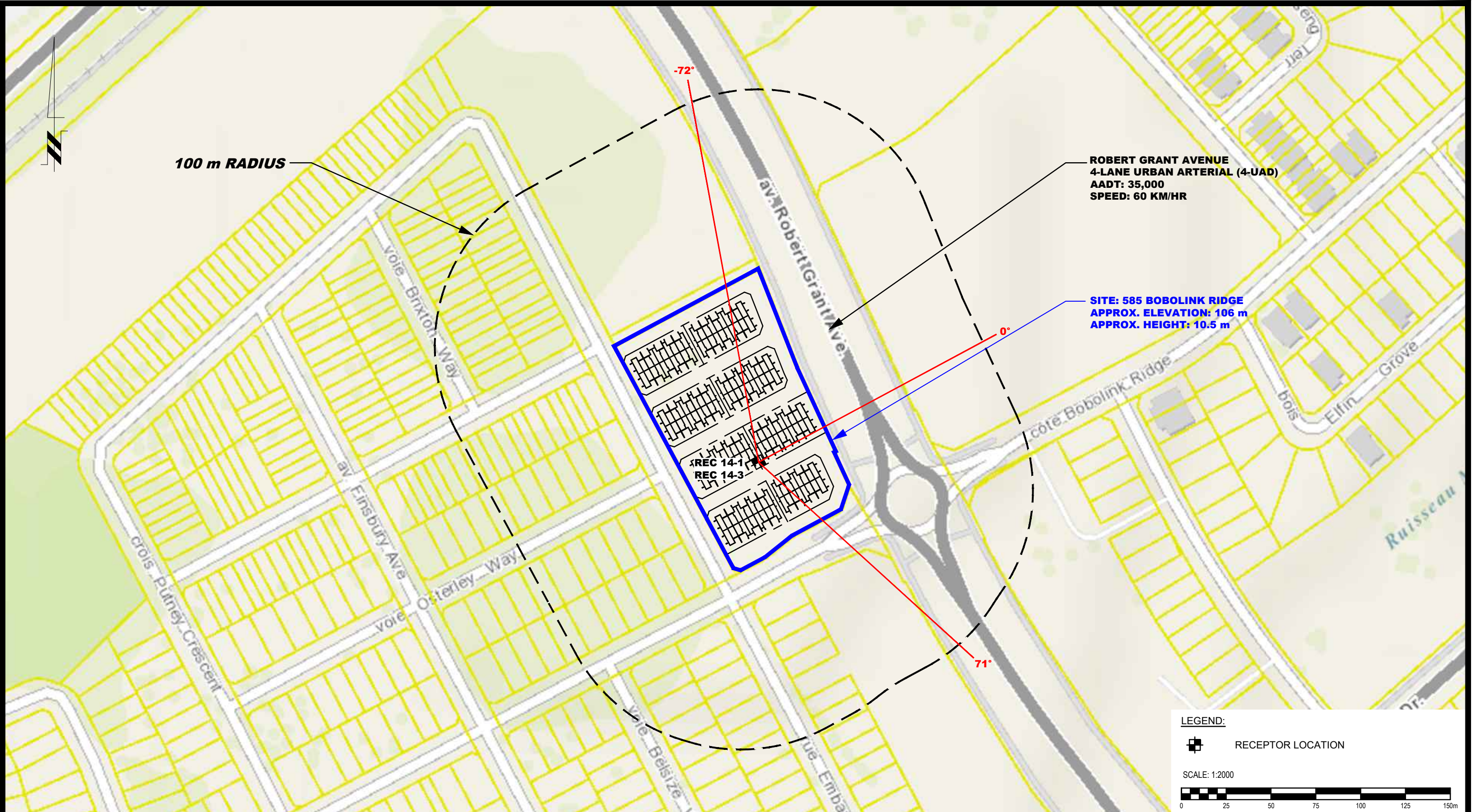
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SCALE: 1:2000



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	1	UPDATED ROAD INFORMATION	28/04/2022	YT			
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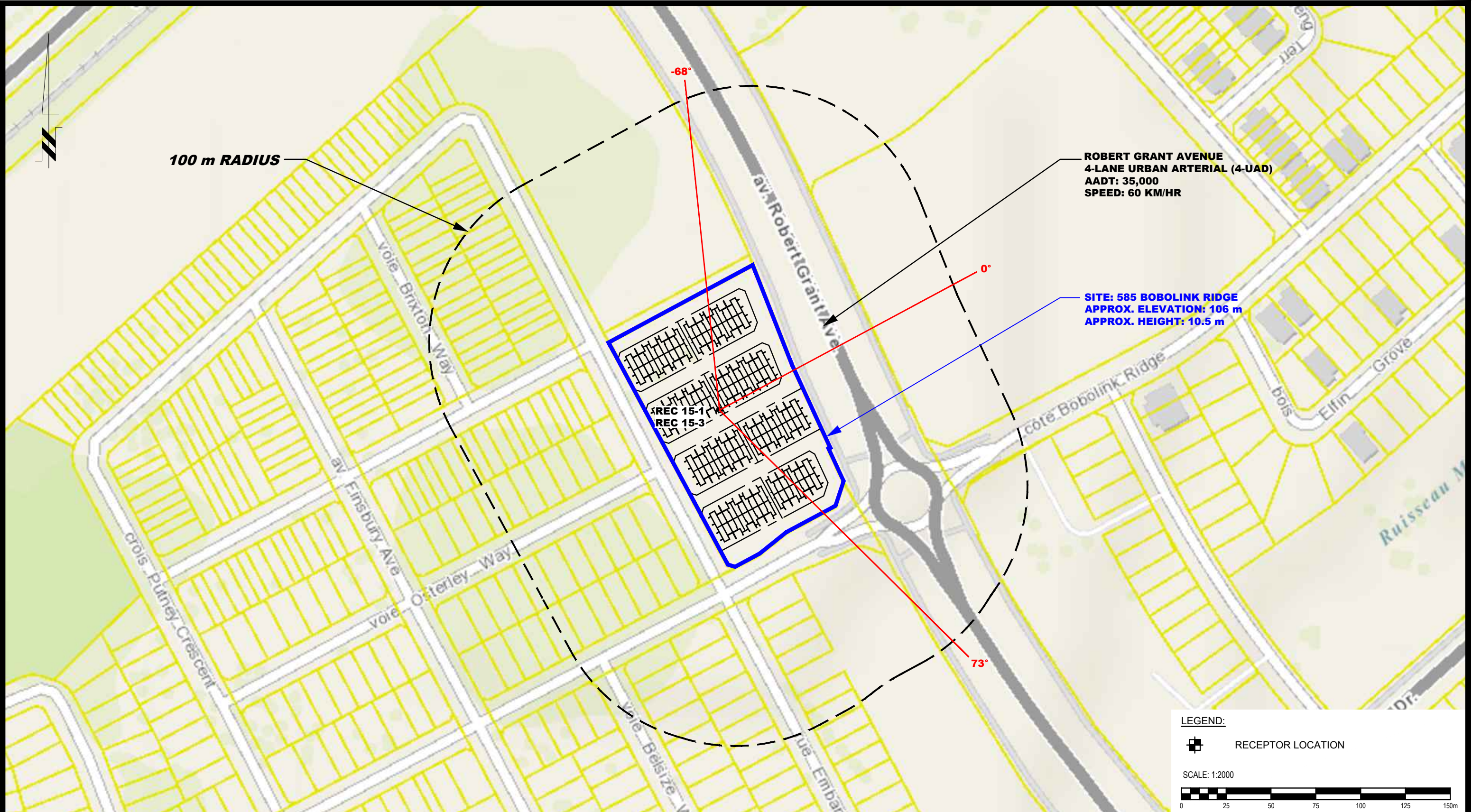
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PROPOSED RESIDENTIAL DEVELOPMENT
585 BOBOLINK RIDGE
OTTAWA, ONTARIO
Title: **SITE GEOMETRY - REC 14-1 AND REC 14-3**

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3N
Approved by:	DJG	Revision No.:	1

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1	UPDATED ROAD INFORMATION	28/04/2022	YT
NO.	REVISIONS	DATE	INITIAL

OTTAWA,
Title:

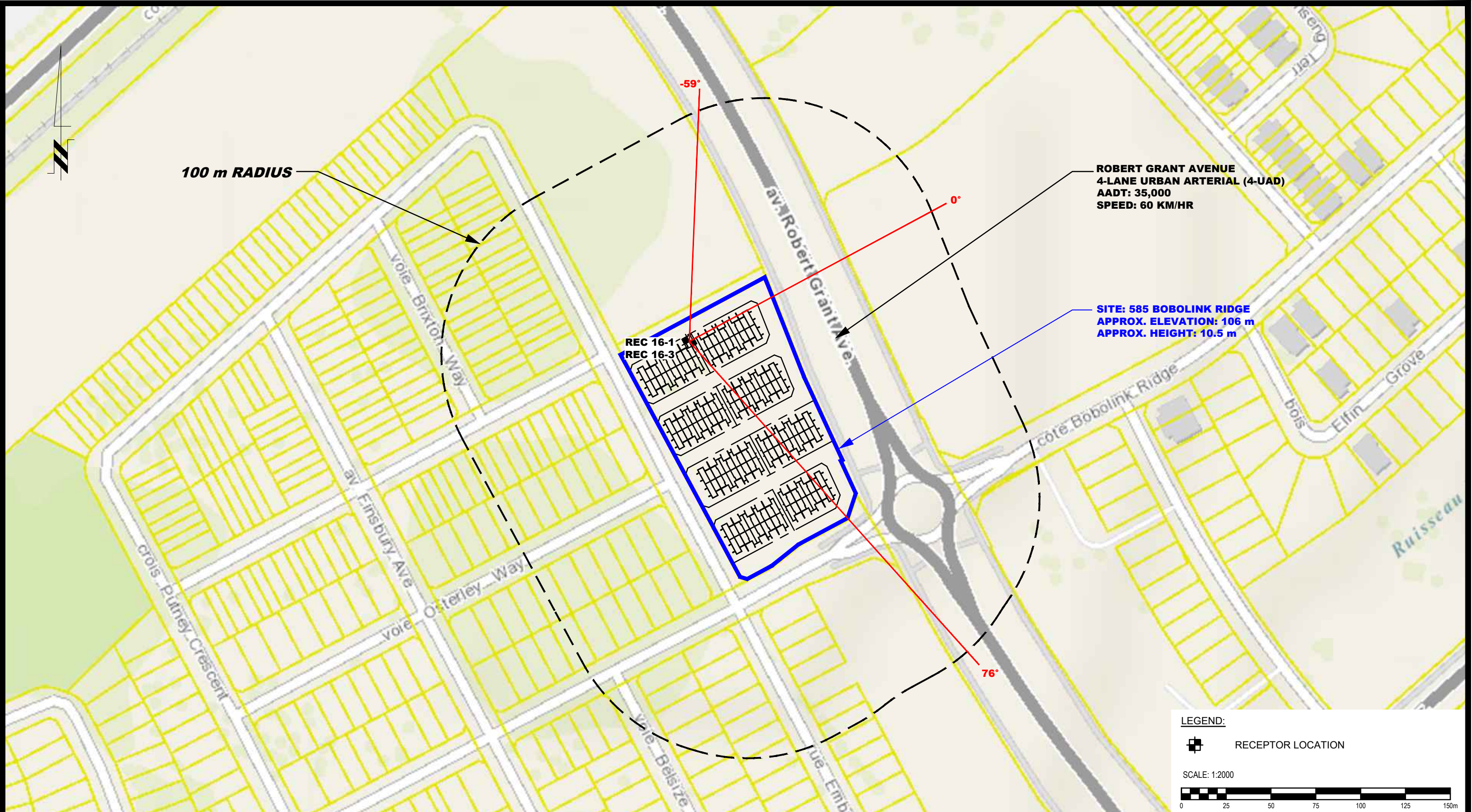
SITE GEOMETRY - REC 15-1 AND REC 15-3

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NOISE ATTENUATION STUDY
PROPOSED RESIDENTIAL DEVELOPMENT
585 BOBOLINK RIDGE

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Scale:	1:2000	Date:	06/2021
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Checked by:	SB	Dwg. No.:	PG5857-30
Approved by:	DJG	Revision No.:	1

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NO.	REVISIONS	DATE	INITIAL

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PROPOSED RESIDENTIAL DEVELOPMENT
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SITE GEOMETRY - REC 16-1 AND REC 16-3

Scale:	1:2000	Date:	06/2021
Drawn by:	YA	Report No.:	PG5857-1
Checked by:	SB	Dwg. No.:	PG5857-3P
Approved by:	DJG	Revision No.:	1

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APPENDIX 2

STAMSON RESULTS

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:34:28
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: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -77.00 deg 71.00 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 : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 66.93 + 0.00) = 66.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	71	0.66	73.68	0.00	-5.00	-1.75	0.00	0.00	0.00	66.93

Segment Leq : 66.93 dBA

Total Leq All Segments: 66.93 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 59.33 + 0.00) = 59.33 dBA

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

-77	71	0.66	66.08	0.00	-5.00	-1.75	0.00	0.00	0.00	59.33
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 59.33 dBA

Total Leq All Segments: 59.33 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 66.93

(NIGHT): 59.33

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:36:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec13.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 1-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -77.00 deg 71.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 67.69 + 0.00) = 67.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	71	0.48	73.68	0.00	-4.46	-1.53	0.00	0.00	0.00	67.69

Segment Leq : 67.69 dBA

Total Leq All Segments: 67.69 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 60.10 + 0.00) = 60.10 dBA

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

-77	71	0.48	66.08	0.00	-4.46	-1.53	0.00	0.00	0.00	60.10
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 60.10 dBA

Total Leq All Segments: 60.10 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 67.69

(NIGHT): 60.10

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:37:51
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: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -77.00 deg 80.00 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 : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 67.06 + 0.00) = 67.06 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	80	0.66	73.68	0.00	-5.00	-1.62	0.00	0.00	0.00	67.06

Segment Leq : 67.06 dBA

Total Leq All Segments: 67.06 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 59.46 + 0.00) = 59.46 dBA

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

-77	80	0.66	66.08	0.00	-5.00	-1.62	0.00	0.00	0.00	59.46
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 59.46 dBA

Total Leq All Segments: 59.46 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 67.06

(NIGHT): 59.46

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:38:53
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec23.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 2-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -77.00 deg 80.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 67.85 + 0.00) = 67.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	80	0.48	73.68	0.00	-4.46	-1.37	0.00	0.00	0.00	67.85

Segment Leq : 67.85 dBA

Total Leq All Segments: 67.85 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 60.25 + 0.00) = 60.25 dBA

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

-77	80	0.48	66.08	0.00	-4.46	-1.37	0.00	0.00	0.00	60.25
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 60.25 dBA

Total Leq All Segments: 60.25 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 67.85

(NIGHT): 60.25

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:40:06
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: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -74.00 deg 80.00 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: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 65.90 + 0.00) = 65.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-74	80	0.66	73.68	0.00	-6.11	-1.67	0.00	0.00	0.00	65.90

Segment Leq : 65.90 dBA

Total Leq All Segments: 65.90 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 58.31 + 0.00) = 58.31 dBA

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

-74	80	0.66	66.08	0.00	-6.11	-1.67	0.00	0.00	0.00	58.31
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 58.31 dBA

Total Leq All Segments: 58.31 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 65.90

(NIGHT): 58.31

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:41:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec33.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 3-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -74.00 deg 80.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 66.81 + 0.00) = 66.81 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-74	80	0.48	73.68	0.00	-5.45	-1.42	0.00	0.00	0.00	66.81

Segment Leq : 66.81 dBA

Total Leq All Segments: 66.81 dBA

↑

Results segment # 1: Robert Grant (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
--------	--------	-------	--------	-------	-------	-------	-------	-------	-------	--------

-74	80	0.48	66.08	0.00	-5.45	-1.42	0.00	0.00	0.00	59.21
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 59.21 dBA

Total Leq All Segments: 59.21 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 66.81

(NIGHT): 59.21

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:42:54
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: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -72.00 deg 82.00 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: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 65.89 + 0.00) = 65.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	82	0.66	73.68	0.00	-6.11	-1.68	0.00	0.00	0.00	65.89

Segment Leq : 65.89 dBA

Total Leq All Segments: 65.89 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 58.29 + 0.00) = 58.29 dBA

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

-72	82	0.66	66.08	0.00	-6.11	-1.68	0.00	0.00	0.00	58.29
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 58.29 dBA

Total Leq All Segments: 58.29 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 65.89
(NIGHT): 58.29

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:44:12
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec43.te Time Period: Day/Night 16/8 hours
 Description: Receptor Point 4-3

Road data, segment # 1: Robert Grant (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  :    60 km/h
Road gradient       :    0 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

```
-----
Angle1   Angle2       : -72.00 deg   82.00 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      :    7.50 / 7.50 m
Topography          :    1          (Flat/gentle slope; no barrier)
Reference angle      :    0.00
```

↑

Results segment # 1: Robert Grant (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
-72	82	0.48	73.68	0.00	-5.45	-1.43	0.00	0.00	0.00	66.80

Segment Leq : 66.80 dBA

Total Leq All Segments: 66.80 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 59.20 + 0.00) = 59.20 dBA

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

-72	82	0.48	66.08	0.00	-5.45	-1.43	0.00	0.00	0.00	59.20
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 59.20 dBA

Total Leq All Segments: 59.20 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 66.80

(NIGHT): 59.20

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:45:39
 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: Robert Grant (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  :    60 km/h
Road gradient       :    0 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

```
-----
Angle1   Angle2       : -70.00 deg   58.00 deg
Wood depth :    0      (No woods.)
No of house rows :    1 / 1
House density :   30 %
Surface      :    1      (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 1.50 / 1.50 m
Topography    :    1      (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 59.56 + 0.00) = 59.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	58	0.66	73.68	0.00	-10.57	-2.15	0.00	-1.40	0.00	59.56

Segment Leq : 59.56 dBA

Total Leq All Segments: 59.56 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 51.96 + 0.00) = 51.96 dBA

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

-70	58	0.66	66.08	0.00	-10.57	-2.15	0.00	-1.40	0.00	51.96
-----	----	------	-------	------	--------	-------	------	-------	------	-------

Segment Leq : 51.96 dBA

Total Leq All Segments: 51.96 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 59.56
(NIGHT): 51.96

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:48:05
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec53.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 5-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -70.00 deg 58.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 30 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 60.87 + 0.00) = 60.87 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-70	58	0.48	73.68	0.00	-9.43	-1.98	0.00	-1.40	0.00	60.87

Segment Leq : 60.87 dBA

Total Leq All Segments: 60.87 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 53.28 + 0.00) = 53.28 dBA

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

-70	58	0.48	66.08	0.00	-9.43	-1.98	0.00	-1.40	0.00	53.28
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 53.28 dBA

Total Leq All Segments: 53.28 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.87
(NIGHT): 53.28

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:51:08
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: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -68.00 deg 66.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 58.42 + 0.00) = 58.42 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	66	0.66	73.68	0.00	-10.57	-2.00	0.00	-2.69	0.00	58.42

Segment Leq : 58.42 dBA

Total Leq All Segments: 58.42 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 50.82 + 0.00) = 50.82 dBA

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

-68	66	0.66	66.08	0.00	-10.57	-2.00	0.00	-2.69	0.00	50.82
-----	----	------	-------	------	--------	-------	------	-------	------	-------

Segment Leq : 50.82 dBA

Total Leq All Segments: 50.82 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 58.42
(NIGHT): 50.82

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:54:21
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec63.te Time Period: Day/Night 16/8 hours
 Description: Receptor Point 6-3

Road data, segment # 1: Robert Grant (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  :    60 km/h
Road gradient       :    0 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

```
-----
Angle1   Angle2           : -68.00 deg   66.00 deg
Wood depth           :    0           (No woods.)
No of house rows     :    1 / 1
House density        :    50 %
Surface              :    1           (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height      :    7.50 / 7.50 m
Topography           :    1           (Flat/gentle slope; no barrier)
Reference angle      :    0.00
```

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 59.74 + 0.00) = 59.74 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	66	0.48	73.68	0.00	-9.43	-1.81	0.00	-2.69	0.00	59.74

Segment Leq : 59.74 dBA

Total Leq All Segments: 59.74 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 52.15 + 0.00) = 52.15 dBA

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

-68	66	0.48	66.08	0.00	-9.43	-1.81	0.00	-2.69	0.00	52.15
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 52.15 dBA

Total Leq All Segments: 52.15 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 59.74
(NIGHT): 52.15

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:57:34
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -62.00 deg 69.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 57.82 + 0.00) = 57.82 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	69	0.66	73.68	0.00	-11.11	-2.07	0.00	-2.68	0.00	57.82

Segment Leq : 57.82 dBA

Total Leq All Segments: 57.82 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 50.22 + 0.00) = 50.22 dBA

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

-62	69	0.66	66.08	0.00	-11.11	-2.07	0.00	-2.68	0.00	50.22
-----	----	------	-------	------	--------	-------	------	-------	------	-------

Segment Leq : 50.22 dBA

Total Leq All Segments: 50.22 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 57.82
(NIGHT): 50.22

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 15:58:44
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec73.te Time Period: Day/Night 16/8 hours
 Description: Receptor Point 7-3

Road data, segment # 1: Robert Grant (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  :    60 km/h
Road gradient       :    0 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

```
-----
Angle1   Angle2       : -62.00 deg   69.00 deg
Wood depth :    0      (No woods.)
No of house rows :    1 / 1
House density :    50 %
Surface      :    1      (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 7.50 / 7.50 m
Topography    :    1      (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 59.20 + 0.00) = 59.20 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-62	69	0.48	73.68	0.00	-9.90	-1.89	0.00	-2.68	0.00	59.20

Segment Leq : 59.20 dBA

Total Leq All Segments: 59.20 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 51.60 + 0.00) = 51.60 dBA

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

-62	69	0.48	66.08	0.00	-9.90	-1.89	0.00	-2.68	0.00	51.60
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 51.60 dBA

Total Leq All Segments: 51.60 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 59.20
(NIGHT): 51.60

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:01:28
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -56.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 30 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 59.01 + 0.00) = 59.01 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-56	72	0.66	73.68	0.00	-11.11	-2.16	0.00	-1.40	0.00	59.01

Segment Leq : 59.01 dBA

Total Leq All Segments: 59.01 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 51.41 + 0.00) = 51.41 dBA

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

-56	72	0.66	66.08	0.00	-11.11	-2.16	0.00	-1.40	0.00	51.41
-----	----	------	-------	------	--------	-------	------	-------	------	-------

Segment Leq : 51.41 dBA

Total Leq All Segments: 51.41 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 59.01

(NIGHT): 51.41

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:03:21
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec83.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 8-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -56.00 deg 72.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 30 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 70.00 / 70.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 60.38 + 0.00) = 60.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-56	72	0.48	73.68	0.00	-9.90	-1.99	0.00	-1.40	0.00	60.38

Segment Leq : 60.38 dBA

Total Leq All Segments: 60.38 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 52.79 + 0.00) = 52.79 dBA

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

-56	72	0.48	66.08	0.00	-9.90	-1.99	0.00	-1.40	0.00	52.79
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 52.79 dBA

Total Leq All Segments: 52.79 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.38
(NIGHT): 52.79

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:20:33
 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: Robert Grant (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  :    60 km/h
Road gradient       :    0 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

```
-----
Angle1   Angle2       : -81.00 deg   79.00 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: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 68.41 + 0.00) = 68.41 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	79	0.66	73.68	0.00	-3.68	-1.59	0.00	0.00	0.00	68.41

Segment Leq : 68.41 dBA

Total Leq All Segments: 68.41 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 60.81 + 0.00) = 60.81 dBA

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

-81	79	0.66	66.08	0.00	-3.68	-1.59	0.00	0.00	0.00	60.81
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 60.81 dBA

Total Leq All Segments: 60.81 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 68.41

(NIGHT): 60.81

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:21:58
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec93.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 9-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -81.00 deg 79.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 69.07 + 0.00) = 69.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-81	79	0.48	73.68	0.00	-3.28	-1.33	0.00	0.00	0.00	69.07

Segment Leq : 69.07 dBA

Total Leq All Segments: 69.07 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 61.47 + 0.00) = 61.47 dBA

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

-81	79	0.48	66.08	0.00	-3.28	-1.33	0.00	0.00	0.00	61.47
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 61.47 dBA

Total Leq All Segments: 61.47 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 69.07

(NIGHT): 61.47

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:24:08
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: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -82.00 deg 84.00 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: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 68.46 + 0.00) = 68.46 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	84	0.66	73.68	0.00	-3.68	-1.53	0.00	0.00	0.00	68.46

Segment Leq : 68.46 dBA

Total Leq All Segments: 68.46 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 60.87 + 0.00) = 60.87 dBA

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

-82	84	0.66	66.08	0.00	-3.68	-1.53	0.00	0.00	0.00	60.87
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 60.87 dBA

Total Leq All Segments: 60.87 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 68.46

(NIGHT): 60.87

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:25:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec103.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 10-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -82.00 deg 84.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 69.14 + 0.00) = 69.14 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-82	84	0.48	73.68	0.00	-3.28	-1.25	0.00	0.00	0.00	69.14

Segment Leq : 69.14 dBA

Total Leq All Segments: 69.14 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 61.55 + 0.00) = 61.55 dBA

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

-82	84	0.48	66.08	0.00	-3.28	-1.25	0.00	0.00	0.00	61.55
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 61.55 dBA

Total Leq All Segments: 61.55 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 69.14

(NIGHT): 61.55

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:28:30
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: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -79.00 deg 84.00 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 : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 67.12 + 0.00) = 67.12 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-79	84	0.66	73.68	0.00	-5.00	-1.56	0.00	0.00	0.00	67.12

Segment Leq : 67.12 dBA

Total Leq All Segments: 67.12 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 59.52 + 0.00) = 59.52 dBA

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

-79	84	0.66	66.08	0.00	-5.00	-1.56	0.00	0.00	0.00	59.52
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 59.52 dBA

Total Leq All Segments: 59.52 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 67.12

(NIGHT): 59.52

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:27:14
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec113.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 11-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -79.00 deg 84.00 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 : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 67.93 + 0.00) = 67.93 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-79	84	0.48	73.68	0.00	-4.46	-1.29	0.00	0.00	0.00	67.93

Segment Leq : 67.93 dBA

Total Leq All Segments: 67.93 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 60.33 + 0.00) = 60.33 dBA

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

-79	84	0.48	66.08	0.00	-4.46	-1.29	0.00	0.00	0.00	60.33
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 60.33 dBA

Total Leq All Segments: 60.33 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 67.93

(NIGHT): 60.33

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:30:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

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

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (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 : 30.00 / 30.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 67.10 + 0.00) = 67.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	85	0.66	73.68	0.00	-5.00	-1.58	0.00	0.00	0.00	67.10

Segment Leq : 67.10 dBA

Total Leq All Segments: 67.10 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 59.50 + 0.00) = 59.50 dBA

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

-77	85	0.66	66.08	0.00	-5.00	-1.58	0.00	0.00	0.00	59.50
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 59.50 dBA

Total Leq All Segments: 59.50 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 67.10

(NIGHT): 59.50

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:31:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec123.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 12-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (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 : 30.00 / 30.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 67.91 + 0.00) = 67.91 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-77	85	0.48	73.68	0.00	-4.46	-1.31	0.00	0.00	0.00	67.91

Segment Leq : 67.91 dBA

Total Leq All Segments: 67.91 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 60.31 + 0.00) = 60.31 dBA

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

-77	85	0.48	66.08	0.00	-4.46	-1.31	0.00	0.00	0.00	60.31
-----	----	------	-------	------	-------	-------	------	------	------	-------

Segment Leq : 60.31 dBA

Total Leq All Segments: 60.31 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 67.91

(NIGHT): 60.31

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:35:24
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec131.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 13-1

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -74.00 deg 63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 30 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 60.33 + 0.00) = 60.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-74	63	0.66	73.68	0.00	-9.99	-1.95	0.00	-1.40	0.00	60.33

Segment Leq : 60.33 dBA

Total Leq All Segments: 60.33 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 52.73 + 0.00) = 52.73 dBA

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

-74	63	0.66	66.08	0.00	-9.99	-1.95	0.00	-1.40	0.00	52.73
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 52.73 dBA

Total Leq All Segments: 52.73 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.33
(NIGHT): 52.73

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:34:11
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec133.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 13-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -74.00 deg 63.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 30 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 61.60 + 0.00) = 61.60 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-74	63	0.48	73.68	0.00	-8.91	-1.76	0.00	-1.40	0.00	61.60

Segment Leq : 61.60 dBA

Total Leq All Segments: 61.60 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 54.01 + 0.00) = 54.01 dBA

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

-74	63	0.48	66.08	0.00	-8.91	-1.76	0.00	-1.40	0.00	54.01
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 54.01 dBA

Total Leq All Segments: 54.01 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 61.60
(NIGHT): 54.01

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:47:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec141.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 14-1

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -72.00 deg 71.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 59.15 + 0.00) = 59.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	71	0.66	73.68	0.00	-9.99	-1.83	0.00	-2.70	0.00	59.15

Segment Leq : 59.15 dBA

Total Leq All Segments: 59.15 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 51.56 + 0.00) = 51.56 dBA

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

-72	71	0.66	66.08	0.00	-9.99	-1.83	0.00	-2.70	0.00	51.56
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 51.56 dBA

Total Leq All Segments: 51.56 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 59.15
(NIGHT): 51.56

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:49:46
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec143.te Time Period: Day/Night 16/8 hours
 Description: Receptor Point 14-3

Road data, segment # 1: Robert Grant (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  :    60 km/h
Road gradient       :    0 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

```
-----
Angle1   Angle2       : -72.00 deg   71.00 deg
Wood depth :    0      (No woods.)
No of house rows :    1 / 1
House density :    50 %
Surface      :    1      (Absorptive ground surface)
Receiver source distance : 60.00 / 60.00 m
Receiver height :    7.50 / 7.50 m
Topography    :    1      (Flat/gentle slope; no barrier)
Reference angle :    0.00
```

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 60.45 + 0.00) = 60.45 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-72	71	0.48	73.68	0.00	-8.91	-1.62	0.00	-2.70	0.00	60.45

Segment Leq : 60.45 dBA

Total Leq All Segments: 60.45 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 52.85 + 0.00) = 52.85 dBA

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

-72	71	0.48	66.08	0.00	-8.91	-1.62	0.00	-2.70	0.00	52.85
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 52.85 dBA

Total Leq All Segments: 52.85 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 60.45
(NIGHT): 52.85

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:55:55
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec151.te Time Period: Day/Night 16/8 hours
 Description: Receptor Point 15-1

Road data, segment # 1: Robert Grant (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  :    60 km/h
Road gradient       :    0 %
Road pavement      :    1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

```
-----
Angle1  Angle2      : -68.00 deg   73.00 deg
Wood depth          :    0         (No woods.)
No of house rows    :    1 / 1
House density       :    50 %
Surface            :    1         (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height     :    1.50 / 1.50 m
Topography          :    1         (Flat/gentle slope; no barrier)
Reference angle     :    0.00
```

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 58.55 + 0.00) = 58.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	73	0.66	73.68	0.00	-10.57	-1.87	0.00	-2.69	0.00	58.55

Segment Leq : 58.55 dBA

Total Leq All Segments: 58.55 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 50.95 + 0.00) = 50.95 dBA

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

-68	73	0.66	66.08	0.00	-10.57	-1.87	0.00	-2.69	0.00	50.95
-----	----	------	-------	------	--------	-------	------	-------	------	-------

Segment Leq : 50.95 dBA

Total Leq All Segments: 50.95 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 58.55
(NIGHT): 50.95

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:55:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec153.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 15-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -68.00 deg 73.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 50 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 59.90 + 0.00) = 59.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-68	73	0.48	73.68	0.00	-9.43	-1.66	0.00	-2.69	0.00	59.90

Segment Leq : 59.90 dBA

Total Leq All Segments: 59.90 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 52.30 + 0.00) = 52.30 dBA

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

-68	73	0.48	66.08	0.00	-9.43	-1.66	0.00	-2.69	0.00	52.30
-----	----	------	-------	------	-------	-------	------	-------	------	-------

Segment Leq : 52.30 dBA

Total Leq All Segments: 52.30 dBA

↑

TOTAL Leq FROM ALL SOURCES (DAY): 59.90
(NIGHT): 52.30

↑

↑

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:40:20
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec161.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 16-1

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -59.00 deg 76.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 30 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 59.69 + 0.00) = 59.69 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	76	0.66	73.68	0.00	-10.57	-2.02	0.00	-1.40	0.00	59.69

Segment Leq : 59.69 dBA

Total Leq All Segments: 59.69 dBA

⬆

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 52.09 + 0.00) = 52.09 dBA

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

-59	76	0.66	66.08	0.00	-10.57	-2.02	0.00	-1.40	0.00	52.09
-----	----	------	-------	------	--------	-------	------	-------	------	-------

Segment Leq : 52.09 dBA

Total Leq All Segments: 52.09 dBA

⬆

TOTAL Leq FROM ALL SOURCES (DAY): 59.69
(NIGHT): 52.09

⬆

⬆

STAMSON 5.0 NORMAL REPORT Date: 02-05-2022 16:42:16
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: rec163.te Time Period: Day/Night 16/8 hours
Description: Receptor Point 16-3

Road data, segment # 1: Robert Grant (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 : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 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: Robert Grant (day/night)

Angle1 Angle2 : -59.00 deg 76.00 deg
Wood depth : 0 (No woods.)
No of house rows : 1 / 1
House density : 30 %
Surface : 1 (Absorptive ground surface)
Receiver source distance : 65.00 / 65.00 m
Receiver height : 7.50 / 7.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

↑

Results segment # 1: Robert Grant (day)

Source height = 1.50 m

ROAD (0.00 + 61.03 + 0.00) = 61.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-59	76	0.48	73.68	0.00	-9.43	-1.82	0.00	-1.40	0.00	61.03

Segment Leq : 61.03 dBA

Total Leq All Segments: 61.03 dBA

↑

Results segment # 1: Robert Grant (night)

Source height = 1.50 m

ROAD (0.00 + 53.43 + 0.00) = 53.43 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
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-59	76	0.48	66.08	0.00	-9.43	-1.82	0.00	-1.40	0.00	53.43
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Segment Leq : 53.43 dBA

Total Leq All Segments: 53.43 dBA

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TOTAL Leq FROM ALL SOURCES (DAY): 61.03
(NIGHT): 53.43

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