CONSEIL DES ÉCOLES PUBLIQUES DE L'EST DE L'ONTARIO

KANATA-SUD ELEMENTARY SCHOOL, 755 COPE DRIVE, OTTAWA, ON

NOISE IMPACT STUDY

CITY FILE NO: D07-12-22-0058

JULY 19, 2022

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CITY FILE NO: D07-12-22-0058
PROJECT NO.: 219-00014-00
DATE: JULY 19, 2022

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VERSION HISTORY

VERSION	DATE	TITLE	COMMENTS	PREPARED BY
1.0	April 1, 2022	Noise Impact Study	Report for Submission	WSP
2.0	July 19, 2022	Noise Impact Study	Updated for Submission	WSP

SIGNATURES

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EXECUTIVE SUMMARY

WSP Canada Inc. was retained by Conseil des écoles publiques de l'Est de l'Ontario to update the Environmental Noise Impact Study for the proposed Kanata-Sud Secondary School institutional development to be located at 755 Cope Drive in Stittsville, Ontario (the Site). This update is completed to address comments by the City of Ottawa which includes proposed stationary sources at the Site. The Site consists of a main L-shape building and separate classroom portables, a fenced playground for childcare, a separate playground for kindergarten, outdoor sporting areas, and a parking lot.

This is completed to assess the potential noise effects of the environment onto the Site and proposed stationary sources at the Site on surrounding noise-sensitive areas. This report is based on available detailed drawings received on and before July 19, 2022.

The assessment was conducted in accordance with the City of Ottawa and the Ministry of Environment, Parks and Conservation (MECP) noise guidelines.

The significant sources of noise in the vicinity of the proposed development are transportation noise sources, mainly road traffic on Cope Drive and Bobolink Ridge urban collector roads. The significant stationary sources of noise at the Site are rooftop HVAC equipment.

The Site is located outside the Ottawa Macdonald Cartier International Airport Operating Influence Zone which includes Noise Exposure Forecast contours, and thus, aircraft noise assessment is not required.

Based on the predicted sound levels at the proposed development due to road traffic noise sources, exterior wall, door, and window construction meeting the Ontario Building Code (OBC) minimum requirements will be adequate to meet the indoor sound level limits to comply with the City of Ottawa and the MECP noise guidelines. Stationary sources at the Site are predicted to comply with the City of Ottawa and the MECP noise guidelines following the implementation of noise control measures outlined in this report. The proposed development is demonstrated to comply with the applicable noise guidelines.

TABLES

APPENDICES

FIGURES

1 INTRODUCTION

WSP Canada Inc. (WSP) was retained by Conseil des écoles publiques de l'Est de l'Ontario (school) to update the Environmental Noise Impact Study for the proposed Kanata-Sud Secondary School institutional development to be located at 755 Cope Drive in Stittsville, Ontario (the Site). This report was prepared in support of the Site Plan Approval application submission.

This update is completed to address comments by the City of Ottawa (the City) dated May 24, 2022, which includes proposed stationary sources at the Site. This is completed to assess the potential noise effects of the environment onto the Site and proposed stationary sources at the Site on surrounding noise-sensitive areas. This report was based on available detailed drawings received on and before July 19, 2022. The findings and recommendations needed to comply with the applicable noise guidelines are included herein.

1.1 THE SITE AND SURROUNDING AREA

The Site is located west of Robert Grant Avenue and is bounded by:

— To the east, Finsbury Avenue;
— To the south, Cope Drive;
— To the west, Dagenham Street; and,
— To the north, Bobolink Ridge.

The Site is proposed to be surrounded by mostly residential lots. The location of the site is shown in **Figure 1**.

1.2 THE PROPOSED DEVELOPMENT

This report is based on available detailed drawings prepared by Architecture 49 (A49) and received on and before July 19, 2022, are included in **Appendix A**. The Site consists of a main L-shape building at the southwest corner (1-storey tier on the west leg and 2-storey tier on the south leg), two (2) portable 6-pack classrooms at the southeast corner, playgrounds for childcare and kindergarten, outdoor sporting areas, and a parking lot.

2 NOISE IMPACT ASSESSMENT

2.1 NOISE SOURCES

The City's *Environmental Noise Control Guidelines* (ENCG) stipulates that a noise study shall be prepared when a new development is proposed within distances as follows:

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

The significant sources of noise in the vicinity of the proposed development are transportation noise sources. The road types were identified using the City's "Annex 1 – Road Classification and Rights-of-Way Protection" as provided in **Appendix B**. The road meeting the City's requirements is Cope Drive which is classified as an Urban Collector road. The City has clarified in the May 24, 2022, comments that Bobolink Ridge is a local roadway which is not required to be included. However, the overall conclusions of this assessment would not change and included to simplify this update which is inline with City's comments. For the purposes of this assessment, it is assumed that Bobolink Ridge has the same classification as Cope Drive. Other roads are over 100 metres away from the Site and are not expected to have a significant impact. Thus, other roads are not considered further in the assessment.

The light rail transit corridor, bus rapid transit and transit priority corridors are located greater than 100 m away from the Site and, therefore, were not included in the assessment.

The proposed development is located outside the City of Ottawa's Macdonald–Cartier International Airport Operating Influence Zone which includes Noise Exposure Forecast contours. Therefore, an assessment of aircraft noise is not required in this study.

2.2 NOISE GUIDELINES AND ASSESSMENT CRITERIA

Noise is recognized as a pollutant in the Environmental Protection Act, as uncontrolled noise can affect human activities. Ontario provincial noise control guidelines require that noise concerns are addressed in the planning of any new development.

In land use planning, although elimination or control of the source of pollution is usually a primary objective, there are general limits as to what is practical and technically possible. The City's ENCG follows the MECP's Publication NPC-300, *Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning* for acceptable levels of road traffic noise impacting noise-sensitive institutional developments and stationary noise on surrounding noise-sensitive residential areas. These limits are discussed in Section "Part C – Land Use Planning" of NPC-300 as well as Section 2 of the ENCG.

2.2.1 ROAD SOURCES ASSESSMENT CRITERIA

Table 2-1 summarizes sound level limits for road traffic applicable for the proposed institutional development.

Table 2-1 ENCG & NPC-300 Indoor Sound Level Criteria for Road Noise

AREA	TIME PERIOD	L_{EQ} (dBA) [1] -ROAD	REFERENCE
Indoor Living/Dining Areas of Schools, Daycares	Daytime (0700 – 2300h)	45	ENCG Table 2.2b

Notes: [1] Daytime: $L_{EQ\ 16HR}$; Nighttime: $L_{EQ\ 8\text{-}HR}$.

The NPC-300 and ENCG provide sound level limits in terms of energy equivalent (average) sound levels [L_{EQ}] in units of A-weighted decibels (dBA) at a specific noise-sensitive location. Outdoor areas are not considered noise-sensitive for institutional developments. Therefore, only indoor locations are identified and only during the daytime period.

To determine the appropriate noise control to achieve the criteria or sound level limits, NPC-300 and ENCG have provided further guidance.

Sound Level in Indoor Spaces - To comply with the indoor sound level criteria listed in **Table 2-1**, the ENCG and NPC-300 provides guidelines based on predicted sound level at the façade/plane of window. If the predicted sound level at the plane of window exceeds, additional considerations such as the type of windows, exterior walls, and doors that can provide noise attenuation must be selected. In addition, warning clauses to inform the future occupants are also required.

Table 2-2 summarizes requirements for type of building façade construction for institutional purpose buildings.

Table 2-2 Building Requirements for Indoor Spaces

AREA	TIME PERIOD	LEQ (DBA)[2]	BUILDING COMPONENT REQUIREMENTS
Plane of Window [1]	Daytime (0700 – 2300h)	≤ 55	Building components compliant with Ontario Building Code (OBC)
		> 55 and ≤ 65	Building components compliant with OBC
		> 65	Building components designed/selected to meet Indoor Requirements

Notes: [1] Plane of Window of an institutional purpose building leading to a noise sensitive room, such as teacher's lounge, classrooms, etc.
[2] Daytime: $L_{EQ\ 16HR}$.

2.2.2 STATIONARY SOURCES ASSESSMENT CRITERIA

For stationary sources, the MECP NPC-300 and ENCG Section 3 provides criteria based on one-hour equivalent sound level. In order to comply with the noise impact from stationary sources, the predicted sound level must comply with the noise guidelines stipulated in NPC-300 and ENCG. Two locations are typically considered: an outdoor location and the plane of window.

Both guidelines provide sound level limits for noise-sensitive receptors based on the acoustical environment of the area. NPC-300 categorizes the acoustical environment into four classes: Class 1 (urban), Class 2 (semi-urban), Class 3 (rural), or Class 4 (special cases). Based on a review of the area using aerial imagery, receptors are conservatively considered as Class 2 Area. Given that the school only operates during the daytime, **Table 2-3** summarizes the daytime sound level limit for a Class 2 Area.

Table 2-3 MECP's Exclusion Limits in dBA

	CLASS 2	
PERIOD	PLANE OF WINDOW[1]	OUTDOOR POR[2]
Daytime (07:00 – 19:00)	50	50

Notes:
1 Plane of window means a point in space corresponding with the location of the centre of a window of a noise sensitive space
2 PoR means point of reception; representing a point in a receptor location.

2.3 ROAD SOURCES

2.3.1 ROAD TRAFFIC DATA

Road traffic data were obtained from the ENCG **Appendix B** for Cope Drive and Bobolink Ridge. The data obtained from the ENCG provides future traffic volume, day/night split, commercial vehicle percentages, and posted speed limits for various roadways based on roadway class and number of lanes. The ENCG data represents the future traffic volume and corresponding to a "mature state of development", in the City's Official Plan.

The traffic and road parameters used for sound level predictions are shown in **Table 2-4**. The surrounding topography is generally flat and assessed as such.

Road traffic data from ENCG and calculations used for the study are included in **Appendix C**.

Table 2-4 Summary of Road Traffic Data Used in the Transportation Noise Analysis

ROAD	ROAD CLASSIFICATION	TRAFFIC VOLUMES (AADT)	DAY/NIGHT SPLIT (%)	MEDIUM TRUCKS (%)	HEAVY TRUCKS (%)	POSTED SPEED LIMIT (KPH)
Cope Drive	2-Lane Urban Collector	8,000	92/8	7%	5%	50
Bobolink Ridge	2-Lane Urban Collector	8,000	92/8	7%	5%	50

2.3.2 ANALYSIS METHOD

The predicted sound levels at the receptors were estimated using the future road traffic data presented in **Table 2-4**. The sound level predictions were made using the algorithms ORNAMENT, developed by the MECP, and implemented by STAMSON version 5.04, a computer software also developed by the MECP.

The following factors were taken into account in the analysis:

- Vehicle speeds;
- Road traffic volumes;
- Percentage of trucks;
- Horizontal and vertical road-receiver geometry;
- Ground absorption; and
- Screening provided by terrain, houses, existing barriers, as applicable.

The most impacted receptor locations (in terms of façade and height) were chosen as representative receptor locations for each facade. The modelled receptor locations for road sources are shown in **Figure 2**. STAMSON calculations and distances used in the calculations are included in **Appendix C**.

2.3.3 RESULTS

Sound levels were predicted at the most impacted representative façades during the daytime hours. The predicted sound levels were used to investigate building construction requirements. The results of these predictions are summarized in **Table 2-5**.

Table 2-5 Summary of Predicted Facade Sound Levels due to Road Traffic

RECEPTOR LOCATION	DESCRIPTION	DAYTIME SOUND LEVEL LEQ (dBA)
A	Northern Portable 6 Pack – North façade	55
B	Southern Portable 6 Pack – East façade	59
C	Southern Portable 6 Pack – South façade	63
D	2 Storey Building – East façade	60
E	2 Storey Building – South façade	64
F	1 Storey Building – South façade	63
G	1 Storey Building – North façade	58

The predicted sound levels shown above indicate that daytime façade sound levels are between 55 dBA and 64 dBA.

2.3.4 RECOMMENDATIONS

As shown in **Table 2-5**, the sound levels at the plane of window are below 65 dBA during the daytime hours. Thus, wall, door and window glazing assemblies meeting the minimum non-acoustical requirements of the Ontario Building Code (OBC) will be sufficient to meet the applicable indoor sound level limits.

2.3.5 WARNING CLAUSES

At the request of the City, a warning clause Type C for road noise is provided. The suggested warning clause wording is as follows; it can be modified or amended by the City's planning department, as appropriate:

Type C

"The school has been fitted with a forced air heating system and ducting, etc. and was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City's and the Ministry of the Environment's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MECP Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property.)"

2.4 STATIONARY SOURCES

2.4.1 APPLICABLE SOURCES AND RECEPTORS

Stationary source is defined in MECP NPC-300 and ENCG as sources of sound that are normally operated within the property lines of a facility. Based on a review of the mechanical schedules and roof plan dated March 21, 2022, significant proposed stationary sources of noise are the rooftop HVAC units. Insignificant sources or sources with

negligible sound level contribution off-site include small boilers and hot water heaters, small fans, and indoor equipment. No emergency generator is planned at the Site and confirmed with A49.

Surrounding noise-sensitive land uses are residential lots surrounding the site in all directions with the exception of one area to the southwest of the school which is open space. Based on residential homes that have been built, receptors are 2-storeys and modelled.

A site layout plan showing the proposed stationary source and applicable receptor locations are shown in **Figure 3**.

A total of eight (8) rooftop HVAC units (RTUs) are planned on the main school building as shown in **Figure 3**. All eight RTUs were conservatively assumed to operate simultaneously for 60 minutes in a predictable worst-case hour during the day. The school operates only during the daytime between 0700h to 1900h and assessed as such.

Sound power levels for the RTUs were provided by the manufacturer (AAON) for both the exposed condenser section and exhaust fan outlet. The sound level data used in the assessment is summarized in **Table 2-6** and manufacturer's cutsheets are provided in **Appendix D**.

Table 2-6 Stationary Source Sound Data

SOURCE ID[1]	BUILDING	DESCRIPTION	OVERALL SOUND POWER LEVEL (dBA)	OPERATION
				DAY
RTU_1c	1-Storey Main School Building	HVAC 8T Unit Condenser	88	60
RTU_1e		HVAC 8T Unit Exhaust Air	87	60
RTU_2c		HVAC 16T Unit Condenser	91	60
RTU_2e		HVAC 16T Unit Exhaust Air	87	60
RTU_3c		HVAC 11T Unit Condenser	84	60
RTU_3e		HVAC 11T Unit Exhaust Air	82	60
RTU_4c		HVAC 9T Unit Condenser	84	60
RTU_4e		HVAC 9T Unit Exhaust Air	79	60
RTU_5c	2-Storey Main School Building	HVAC 16T Unit Condenser	91	60
RTU_5e		HVAC 16T Unit Exhaust Air	87	60
RTU_6c		HVAC 16T Unit Condenser	91	60
RTU_6e		HVAC 16T Unit Exhaust Air	89	60
RTU_7c		HVAC 9T Unit Condenser	84	60
RTU_7e		HVAC 9T Unit Exhaust Air	83	60
RTU_8c		HVAC 16T Unit Condenser	91	60
RTU_8e		HVAC 16T Unit Exhaust Air	89	60

Notes:
[1] Refer **Figure 3** for source locations; locations are referred using these IDs.

The source locations and receptors placed on the proposed development are provided in **Figure 3**.

2.4.2 ANALYSIS METHODS

In order to estimate the sound levels from stationary sources to the surrounding residential areas, a predictive analysis was completed using a commercially available software package CADNA/A, a computer implementation of the ISO Standard 9613-2 "Acoustics – Attenuation of Sound During Propagation Outdoors", which takes into account the following:

— Source sound power levels;
— Distance attenuation;
— Source-receptor geometry;
— Ground and air (atmospheric) attenuation; and,
— Temperature and humidity effects on noise propagation.

Key parameters used in the model and sample calculations are located in **Appendix E**.

2.4.3 RESULTS

The overall sound levels at the proposed development using assumed predictable worst-case operations for the nearby commercial locations are summarized in **Table 2-7**.

Table 2-7 Predicted Sound Levels from Stationary Sources - Unmitigated

POR ID	POR DESCRIPTION	RECEPTOR HEIGHT (M)	PREDICTED SOUND LEVEL (dBA)	DAYTIME SOUND LEVEL LIMIT (dBA)	COMPLIANCE WITH LIMIT?
R01_W	2-storey Residential Home to the North (Window)	4.5	49	50	Yes
R01_O	2-storey Residential Home to the North (Outdoor)	1.5	49	50	Yes
R02_W	2-storey Residential Home to the East (Window)	4.5	47	50	Yes
R02_O	2-storey Residential Home to the East (Outdoor)	1.5	47	50	Yes
R03_W	2-storey Residential Home to the South (Window)	4.5	52	50	No
R03_O	2-storey Residential Home to the South (Outdoor)	1.5	48	50	Yes
R04_W	2-storey Residential Home to the West (Window)	4.5	54	50	No
R04_O	2-storey Residential Home to the West (Outdoor)	1.5	54	50	No
R05_W	2-storey Residential Home to the West (Window)	4.5	55	50	No
R05_O	2-storey Residential Home to the West (Outdoor)	1.5	54	50	No

As shown in **Table 2-7**, the predicted stationary source sound level of the proposed RTUs exceed the sound level limit at receptors to the west and south. Therefore, noise control measures are required for some of the RTUs to comply with the limits and provided in the next Section.

2.4.4 NOISE CONTROL MEASURES

In order to comply with the noise guidelines stipulated in the MECP publication, NPC-300. Acoustic barriers will be required for rooftop units RTU1, RTU2, and RTU6 to mitigate the noise impact from stationary sources.

To comply with the noise guidelines, the following noise control measures are provided:

- RTU1 barrier: an L-shape acoustic barrier modelled at least 0.5 m above the top of unit (5.5 m long west leg and 4.5 m long south leg).
- RTU2 barrier: a 3-sided acoustic barrier modelled at least 0.5 m above the top of unit (5.5 m long west leg, and 4.0 m long north and south legs).
- RTU6 barrier: an L-shape acoustic barrier modelled at least 0.5 m above the top of unit (4.0 m long west leg and 7.5 m long south leg).

The barrier locations and extent required are shown in **Figure 3**.

Acoustic barriers should be structurally sound, appropriately designed to withstand wind and snow load, constructed without cracks or surface gaps and must meet the minimum surface density of 20 kg/m². Alternatively, the barriers should comply with the requirements and certification of CAN/CSA-Z107.9-00 (R2004) – Standard for Certification of Noise Barriers (Reaffirmed 2004) or recent version.

Table 2-8 Predicted Sound Levels from Stationary Sources - Mitigated

POR ID	POR DESCRIPTION	RECEPTOR HEIGHT (M)	PREDICTED SOUND LEVEL (dBA)	DAYTIME SOUND LEVEL LIMIT (dBA)	COMPLIANCE WITH LIMIT?
R01_W	2-storey Residential Home to the North (Window)	4.5	49	50	Yes
R01_O	2-storey Residential Home to the North (Outdoor)	1.5	48	50	Yes
R02_W	2-storey Residential Home to the East (Window)	4.5	48	50	Yes
R02_O	2-storey Residential Home to the East (Outdoor)	1.5	47	50	Yes
R03_W	2-storey Residential Home to the South (Window)	4.5	48	50	Yes
R03_O	2-storey Residential Home to the South (Outdoor)	1.5	46	50	Yes
R04_W	2-storey Residential Home to the West (Window)	4.5	50	50	Yes
R04_O	2-storey Residential Home to the West (Outdoor)	1.5	49	50	Yes
R05_W	2-storey Residential Home to the West (Window)	4.5	50	50	Yes
R05_O	2-storey Residential Home to the West (Outdoor)	1.5	48	50	Yes

As shown in **Table 2-8**, the proposed school will comply with the applicable sound level limits at the nearby noise sensitive uses.

3 CONCLUSIONS

This report has been prepared to support the Site Plan Approval application. The assessment evaluated the potential for noise impact of transportation sources on the Site, and stationary sources associated with the Site on nearby residential uses.

The predicted sound levels were assessed as per the MECP Publication NPC-300 and ENCG requirements. With appropriate on-site acoustical treatment, a suitable off-site acoustical environment can be achieved. This assessment demonstrates that the Site complies with the applicable guidelines.

Table 3-1 summarizes the recommendations for the proposed development.

Table 3-1 Summary of Noise Control Requirements

BUILDING	BUILDING COMPONENTS (WALLS, WINDOWS & DOORS) STC	WARNING CLAUSE	NOISE CONTROL MEASURES
1-Storey Main School Building	OBC[1]	Type C	RTU1: at least 0.5 m higher that the unit RTU2: at least 0.5 m higher that the unit
2-Storey Main School Building	OBC[1]	Type C	RTU6: at least 0.5 m higher that the unit
Portables	OBC[1]	Type C	NPC-216[2]

Notes:
[1] OBC – Meet or exceed the minimum non-acoustical requirement of Ontario Building Code (OBC).
[2] Where possible, select equipment to comply with noise criteria of MECP Publication NPC-216, Residential Air Conditioning Devices.

The following recommendations are offered:

1. Warning clause Type C

   "This school has been fitted with a forced air heating system and ducting, etc. and was sized to accommodate central air conditioning. Installation of central air conditioning by the occupant will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the City's and the Ministry of the Environment's noise criteria. (Note: The location and installation of the outdoor air conditioning device should be done so as to comply with noise criteria of MECP Publication NPC-216, Residential Air Conditioning Devices and thus minimize the noise impacts both on and in the immediate vicinity of the subject property.)"

2. Acoustic barriers should be structurally sound, appropriately designed to withstand wind and snow load, constructed without cracks or surface gaps and must meet the minimum surface density of 20 kg/m². Alternately, the barriers should comply with the requirements and certification of CAN/CSA-Z107.9-00 (R2004) – Standard for Certification of Noise Barriers (Reaffirmed 2004) or recent version at the time of construction.

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FIGURES

LEGEND

- APPROXIMATE SITE LOCATION
- 1000 m STUDY AREA

100 50 0 100 Metres

N W E S

CLIENT:

CONSEIL DES ÉCOLES PUBLIQUES DE L'EST DE L'ONTARIO

PROJECT:

NOISE STUDY
KANATA-SUD ELEMENTARY SCHOOL
STITTSVILLE, ONTARIO

PROJECT NO:	DATE:
219-00014-00	JANUARY 2022

DESIGNED BY: -

DRAWN BY: TP

CHECKED BY: -

FIGURE NO:	SCALE:
1	1:10,000

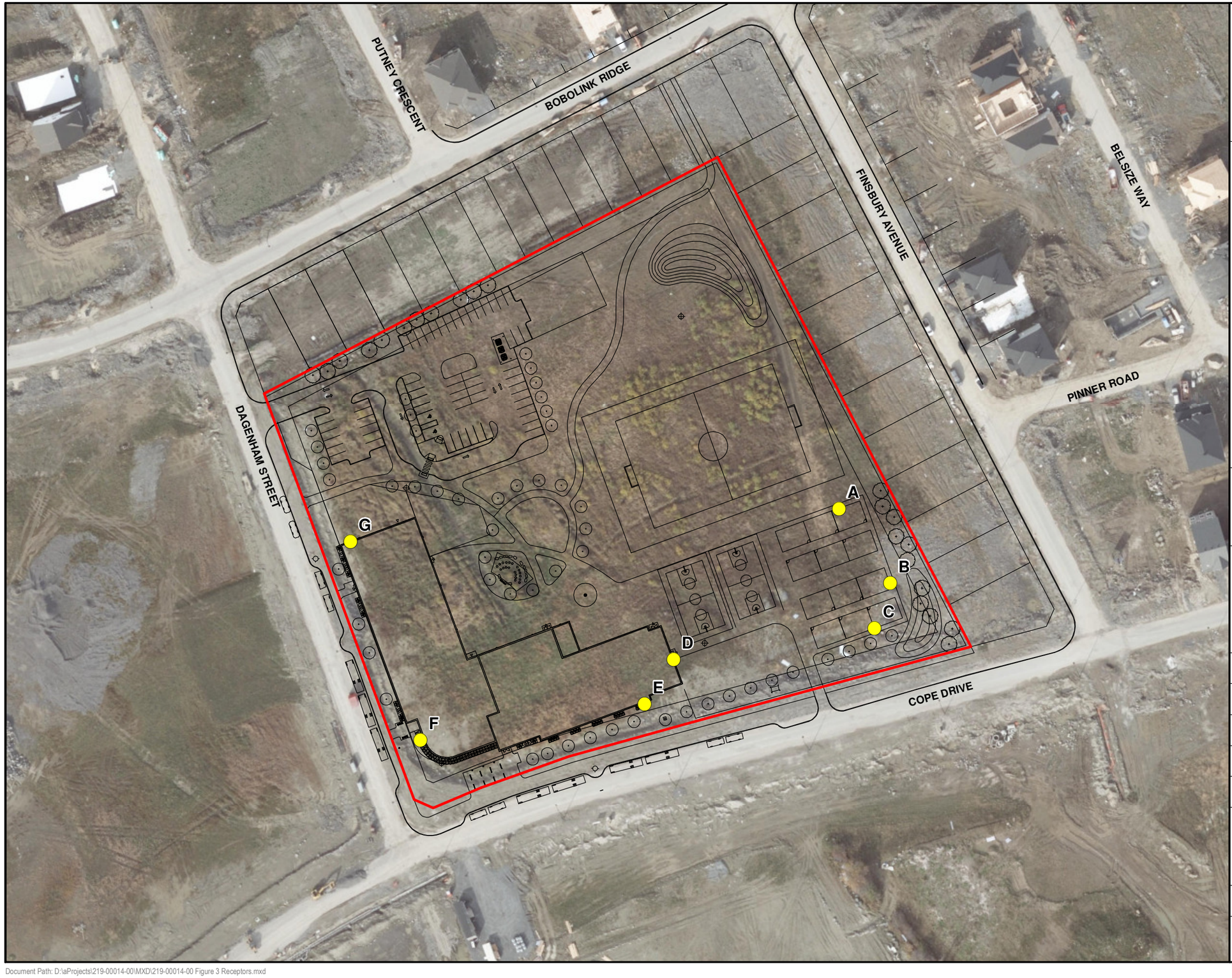
TITLE:

SITE LOCATION PLAN

DISCIPLINE: ENVIRONMENT

ISSUE:	REV.:
	-

Document Path: D:\aProjects\219-00014-00\MXD\219-00014-00 Figure 1 Site Location.mxd



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LEGEND

- APPROXIMATE SITE LOCATION
- PROPOSED DEVELOPMENT
- RECEPTORS

10 5 0 10 Metres

N W E S

CLIENT:

CONSEIL DES ÉCOLES PUBLIQUES DE L'EST DE L'ONTARIO

PROJECT:

NOISE STUDY
KANATA-SUD ELEMENTARY SCHOOL
STITTSVILLE, ONTARIO

PROJECT NO:	DATE:
219-00014-00	JANUARY 2022

DESIGNED BY: -

DRAWN BY: TP

CHECKED BY: -

FIGURE NO:	SCALE:
2	1:1,250

TITLE:

RECEPTORS

DISCIPLINE: ENVIRONMENT

ISSUE:	REV.:
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Document Path: D:\aProjects\219-00014-00\MXD\219-00014-00 Figure 3 Receptors.mxd

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PROJECT

NOISE STUDY
KANATA-SUD ELEMENTARY SCHOOL, STITTSVILLE, ONTARIO

TITLE:

RECEPTOR AND BARRIER LOCATIONS
(STATIONAIRY NOISE IMPACTS)

CLIENT:

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SCALE:	N.T.S.
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PROJECT NO.:	219-00014-00
DATE:	JULY 2022
FIGURE NO.	3
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APPENDICES

APPENDIX

A DRAWINGS

R2013 - A49_M_ARCH_E_BLDG_VT_EN - v1

SITE PLAN SYMBOLS LEGEND

- ENTRANCE
- EXIT
- MANHOLE, CATCH BASIN, ETC, REFER TO CIVIL
- LS, LIGHT STANDARD, REFER TO ELECTRICAL AND STRUCTURAL
- DENOTES SLOPED GRADE, REFER TO CIVIL
- DENOTES FIRE TRUCK ACCESS ROUTE, REFER TO CIVIL DRAWINGS
- PROPERTY LINE
- SURVEY BAR
- UTILITY POLE
- FIRE HYDRANT
- BASKETBALL NET
- SIDEWALK/ CONCRETE SURFACE
- PEDESTRIAN WALKWAY
- SWALE. REFER TO CIVIL DRAWINGS
- SETBACK LINE
- FIRE ROUTE
- BOREHOLE LOCATION
- GRASS
- FENCE LINE
- LANDSCAPING
- NEW MANHOLE FOR PORTABLE
- PADMOUNT TRANSFORMER BY HYDRO OTTAWA. PROVIDE TRANSFORMER BASE TO HYDRO OTTAWA STANDARDS. PRECAST TRANSFORMER BASE AND BOLLARDS BY GENERAL CONTRACTOR. REFER TO HYDRO OTTAWA STANDARD DETAILS UFS0001, UGS0002 AND UTS0038.
- NO PARKING - FIRE ROUTE SIGN
- HEAVY DUTY ASPHALT
- LIGHT DUTY ASPHALT

GENERAL SITE PLAN NOTES

1. OBC 3.2.5.5.(1) LOCATION OF ACCESS ROUTES

   ACCESS ROUTES REQUIRED BY ARTICLE 3.2.5.4 SHALL BE LOCATED SO THAT THE PRINCIPLE ENTRANCE AND EVERY ACCESS OPENING REQUIRED BY ARTICLE 3.2.5.1 AND 3.2.5.2. ARE LOCATED NOT LESS THAN 3M AND NOT MORE THAN 15M FROM THE CLOSEST PORTION OF THE ACCESS ROUTE REQUIRED FOR FIRE DEPARTMENT USE, MEASURED HORIZONTALLY FROM THE FACE OF THE BUILDING.

2. OBC 3.2.5.6.(1) ACCESS ROUTE DESIGN

   A PORTION OF A ROADWAY OR YARD PROVIDED AS A REQUIRED ACCESS ROUTE FOR FIRE DEPARTMENT USE SHALL, (a) HAVE A CLEAR WIDTH OF NOT LESS THAN 6M, UNLESS IT CAN BE SHOWN THAT LESSER WIDTHS ARE SATISFACTORY, (b) HAVE A CENTERLINE RADIUS NOT LESS THEN 12M, (c) HAVE AN OVERHEAD CLEARANCE OF NOT LESS THAN 5M, (d) HAVE A CHANGE OF GRADIENT NOT MORE THAN 1 IN 12.5 OVER A MINIMUM DISTANCE OF 15M, (e) BE DESIGNED TO SUPPORT THE EXPECTED LOADS IMPOSED BY FIRE FIGHTING EQUIPMENT AND BE SURFACED WITH CONCRETE ASPHALT OR OTHER MATERIAL DESIGNED TO PERMIT ACCESSIBILITY UNDER ALL CLIMATIC CONDITIONS.

3. PROVIDE 75mm THK HI-40 UNDER ALL EXTERIOR CONCRETE SIDEWALK AT ALL ENTRANCES/EXITS. EXTEND RIGID INSULATION MIN 1220 PAST THE EDGE OF CONCRETE SIDEWALKS.

4. FOR CONCRETE SIDEWALK EXPANSION AND CONTRACTION JOINTS, REFER TO CIVIL DETAIL AND SPECIFICATIONS.

5. REFER TO LANDSCAPING PLAN AND CIVIL PLANS FOR LOCATION OF SOD. ALL REMAINING AREAS NOT SLATED FOR SOD TO RECEIVE TOPSOIL AND SEED.

6. REFER TO CIVIL DRAWINGS FOR LOCATIONS OF FIRE ROUTE SIGNAGE.

7. REFER TO CIVIL DRAWINGS FOR TACTILE INDICATORS.

8. ALL CURBS ADJACENT TO PARKING AREAS AND CURBS FORMING PART OF SIDWALKS ADJACENT TO PARKING AREAS TO BE PAINTED YELLOW.

9. ENSURE FINAL PLACEMENT OF FIRE DEPARTMENT CONNECTION IS NOT MORE THAN 45 m FROM THE NEAREST FIRE HYDRANT AS PER OBC 3.2.5.16. (2).

10. LEGAL SURVEY BOUNDARIES TAKEN FROM REGISTERED PLAN 4M-1619, DATED MARCH 12, 2019, FROM THE OFFICE OF ANNIS, O'SULLIVAN, VOLLEBEKK LTD.(OLS), JOB NO. 14777-14.

11. TOPOGRAPHICAL INFORMATION TAKEN FROM TOPOGRAPHICAL PLAN OF SURVEY, BLOCKS 313 AND 314, REGISTERED PLAN 4M-1619, DATED MARCH 30, 2021, FROM THE OFFICE OF ANNIS, O'SULLIVAN, VOLLEBEKK LTD.(OLS), JOB NO. 21401-21.

SITE AND PARKING INFORMATION

TYPE OF BUILDING OR USE

SCHOOL (GROUP A-2 OCCUPANCY)

PARKING CALCULATION

20 CLASSROOMS X 1.5 = 30
2 PER 100m² OF DAYCARE GROSS FLOOR AREA (360m²) = 7
12 PORTABLES X 1.5 = 18
TOTAL PARKING REQUIRED = 55
TOTAL PARKING PROVIDED = 58
BARRIER-FREE PARKING SPACES **REQUIRED** = 3
BARRIER-FREE PARKING SPACES **PROVIDED** = 3
TOTAL SITE PARKING PROVIDED = 60

ZONING	REQUIREMENT (I1B)	PROPOSED	
ZONING = I1B - MINOR INSTITUTIONAL ZONE, SUBZONE B/ R1Z RESIDENTIAL FIRST DENSITY, SUBZONE Z			FIRE TRUCK ACCESS ROUTE IS FROM COUNTY ROAD COPE DRIVE AND SHALL CONFORM TO OBC 2012 - 3.2.5.4, 3.2.5.5 AND 3.2.5.6
MINIMUM LOT AREA: SEC. 170, TABLE 170B (b)	1000m²	28, 889m²	
MINIMUM LOT FRONTAGE: SEC. 170, TABLE 170B (a)	30.0m	± 104.61m	
MINIMUM FRONT YARD: SEC. 170, TABLE 170B (c)	6.0m	6.15m	
MINIMUM REAR YARD: SEC. 170, TABLE 170B (d)	7.5m	± 55.54m	
MINIMUM EXTERIOR SIDE YARD:	NO REQUIREMENT	-	
MINIMUM INTERIOR SIDE YARD: SEC. 170, TABLE 170B (e)	7.5m	± 93.47m	
MINIMUM CORNER SIDE YARD: SEC. 170, TABLE 170B (f)	7.5m	± 16.48m	
MINIMUM LANDSCAPED OPEN SPACE	NO REQUIREMENT	5.3% WITH PARKING LOT	
MAXIMUM LOT COVERAGE	NO REQUIREMENT	12.8% LOT COVERAGE	
PERCENTAGE OF TOTAL SITE OCCUPIED BY VEGETATION AND LANDSCAPING	NO REQUIREMENT	77% SITE OCCUPIED	
MAXIMUM BUILDING HEIGHT: SEC. 170, TABLE 170B (g)	18.0m	8.7m	
MINIMUM REQUIRED PARKING FOR NEW ELEMENTARY SCHOOL: SEC. 101, TABLE 101, N81	1.5 PER CLASSROOM (w/ PORTABLES)	58	
MINIMUM REQ. WIDTH OF A LANDSCAPED BUFFER FOR PARKING LOT: SEC. 110, TABLE 110(a)	3.0m	3.6m	
MINIMUM NUMBER OF BARRIER-FREE PARKING SPACES: BY-LAW NO. 2017-301, SECTION 111	NO. OF REGULAR PARKING SPACES - MIN. NO. OF ACCESSIBLE PARKING SPACES 51 - 75 SPACES: 3	3, SEE CALCULATION ABOVE	
MINIMUM NUMBER OF BICYCLE PARKING SPACES: SEC. 111, TABLE 111A (d)	SCHOOL: 1 PER 100m² OF GFA OFFICE: 478 / 100 = 47.81 ROUNDED TO 48 DAY CARE: 1 PER 250m² OF GFA = 360 /250 = 1.44 ROUNDED TO 2 **TOTAL: 50**	50	
BICYCLE PARKING DIMENSIONS: SEC. 111, TABLE 11B	HORIZONTAL: 0.6m by 1.8m	HORIZONTAL: 0.6m by 1.8m	

BUILDING AREA

THE GFA FOR THE SCHOOL IS AS FOLLOWS:

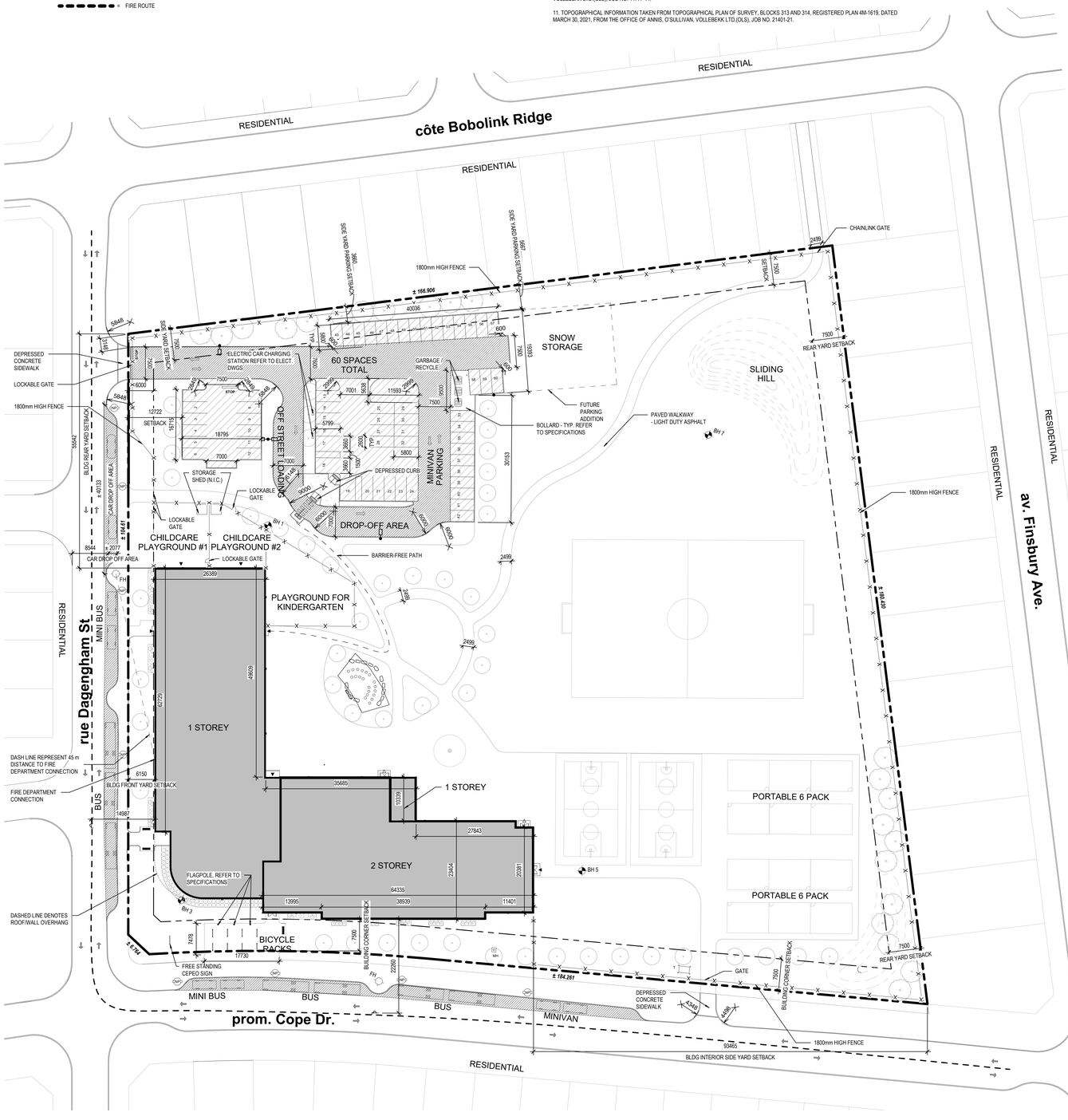
FIRST FLOOR = 3,329 m² (EXCLUDING DAYCARE)
DAYCARE = 360 m²
TOTAL BUILDING FOOTPRINT = 3,689m²
+ SECOND FLOOR = 1,092 m²
TOTAL AREA = 4,781 m²

SITE AREA

SITE AREA = 28,889 m²

PARCEL IDENTIFICATION NUMBER

PIN: 04450-1434



1 A1.0 GENERAL SITE PLAN
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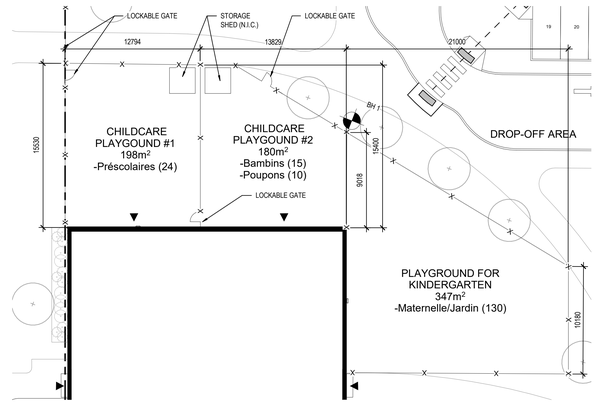
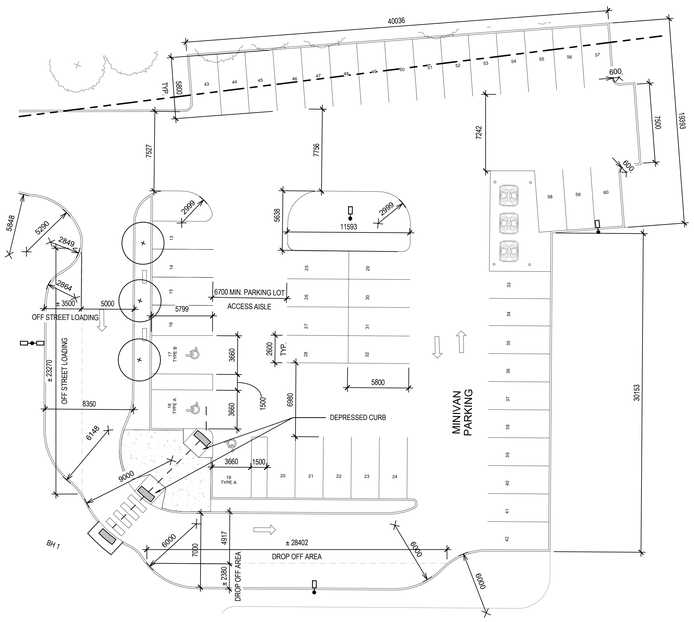


2 A1.0 ENLARGED DAYCARE SITE PLAN
1 : 200



3 A1.0 ENLARGED DROP OFF PLAN
1 : 200

D07-12-22-0058
Plan #18734

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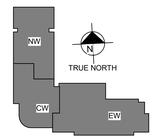
CLIENT REF. #

PROJECT:

ÉCCENTRE ÉDUCATIF DE A - KANATA-STITTSVILLE
755 PROMENADE COPE, K2S 1S3

KEY PLAN:



ISSUED FOR - REVISION:

NO.	BY	DATE	DESCRIPTION
11		07 JUL 2022	ISSUED FOR SITE PLAN CONTROL
10		16 JUN 2022	A49 ADDENDUM 1
9		31 MAR 2022	ISSUED FOR SITE PLAN CONTROL
8		30 MAR 2022	ISSUED FOR SITE PLAN CONTROL
7		21 MAR 2022	ISSUED FOR BID AND PERMIT
6		14 JAN 2022	ISSUED FOR 99% CD REVIEW
5		19 NOV 2021	ISSUED FOR 85% CD REVIEW
4		29 SEP 2021	ISSUED FOR INFORMATION
3		24 SEP 2021	ISSUED FOR 60% CD REVIEW
2		27 AUG 2021	RE-ISSUED FOR 30% CD REVIEW

PROJECT NO: 219-00014-00
DATE: JUNE 2022
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DRAWN BY: NM/ SD/ AS
CHECKED BY: MHG
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE. 25mm
DISCIPLINE: ARCHITECTURAL
TITLE: GENERAL SITE PLAN
SHEET NUMBER: A1.0
SHEET #: OF
ISSUE: DATE OF: 19 JUL 2022
REV #: 11

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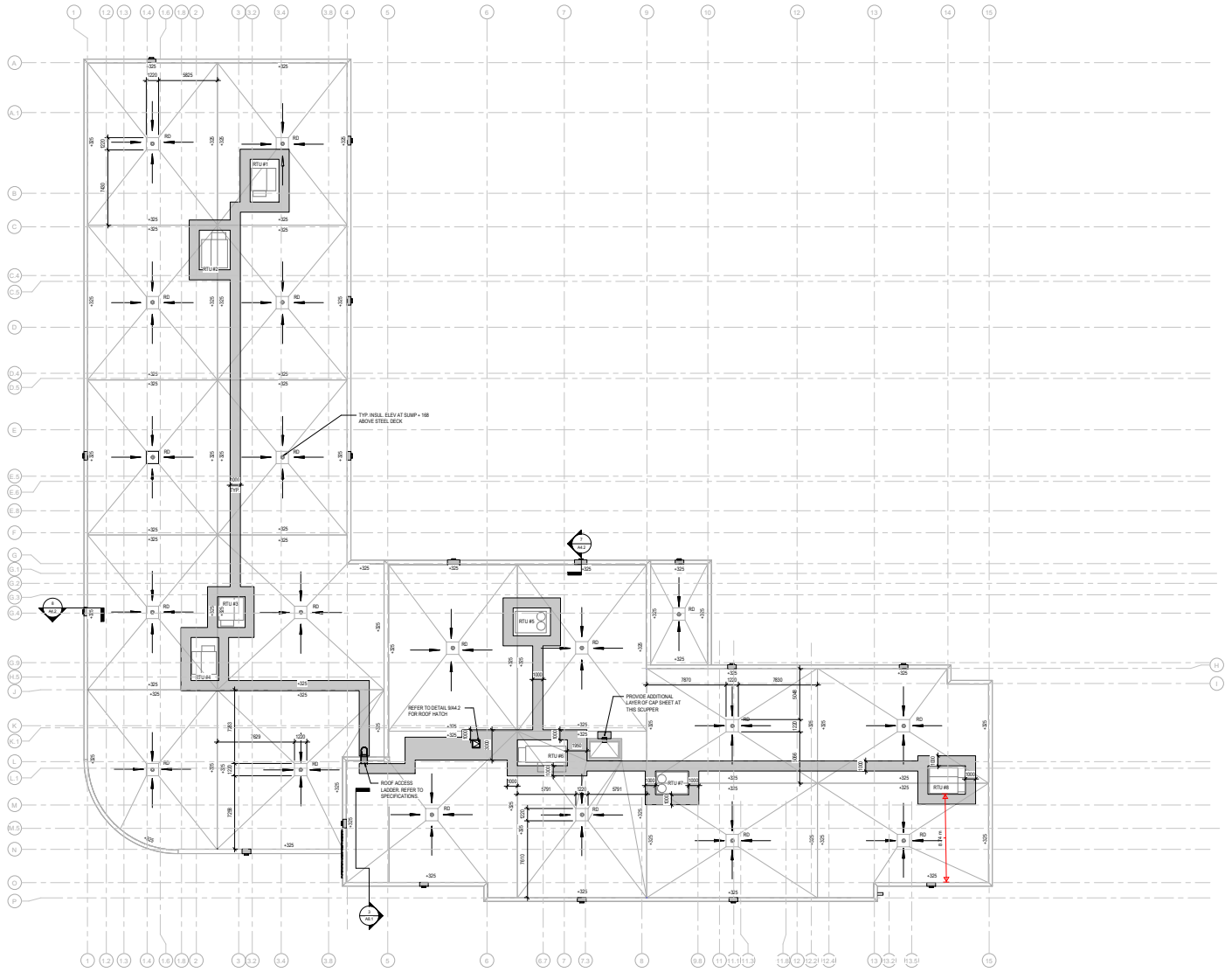

1 ROOF PLAN
A4.1 1 : 150

GENERAL ROOF NOTES

1. DO NOT SCALE DRAWINGS AND DETAILS.
2. CONTRACTOR TO VERIFY ALL DIMENSIONS ON SITE AND REPORT ANY DISCREPANCIES PRIOR TO COMMENCEMENT OF WORK IN THE CONTRACT.
3. CONTRACTOR IS RESPONSIBLE TO IDENTIFY THE LOCATION OF ELECTRICAL/MECHANICAL CONDUITS RUNNING INSIDE, ALONG, AND/OR THE UNDERSIDE OF THE STRUCTURAL DECK BEFORE ANY ROOFING COMPONENTS ARE MECHANICALLY SECURED.
4. CONTRACTOR IS RESPONSIBLE TO ENSURE ALL HEALTH AND SAFETY REGULATIONS ARE FOLLOWED DURING ROOF INSTALLATION AND FALL ARREST EQUIPMENT IS INSTALLED AND UTILIZED.
5. COMMENCEMENT OF ANY WORK IS ONLY TO BE STARTED WHEN CONTRACTOR HAS RECEIVED 'REVIEWED' AND/OR 'REVIEWED AS NOTED' ROOFING SHOP DRAWINGS FROM THE CONSULTANT. PROVIDE ENLARGED DETAILED SECTION VIEWS AT MIN. 1:10 SCALE OF ROOFING SHOP DRAWINGS, INCLUDING BUT NOT LIMITED TO, ROOF DRAINS, ROOF COWL, ROOF EXHAUST, MECHANICAL ROOF TOP UNIT CURBS, SLEEPERS, CURBS, CONTROL PARAPETS, HSS UNIT OR EQUIPMENT SUPPORTS, GAS PIPE SUPPORT, PERIMETER PARAPETS AND/OR CURBS, VENTS, FLASHINGS, AND ANY PENETRATIONS THRU NEW ROOFING SYSTEM. REFER TO SPECIFICATIONS FOR ADDITIONAL REQUIREMENTS.
6. COMMENCEMENT OF ANY WORK IS ONLY TO BE STARTED WHEN CONTRACTOR HAS RECEIVED 'REVIEWED' AND/OR 'REVIEWED AS NOTED' FROM THE CONSULTANT OF AN ENLARGED ASSEMBLY VIEW OF THE NEW ROOF SYSTEM. THIS SKETCH IS TO BE SUBMITTED IN COLOR FORMAT AND DESCRIBES ALL COMPONENTS OF THE ROOFING SYSTEM, INCLUDING BUT NOT LIMITED TO, CAP SHEET MEMBRANE, BASE SHEET MEMBRANE, FIBERBOARD, SLOPED INSULATION, INSULATIONS, VAPOUR RETARDER, PRIMERS, ALL FASTENERS, ETC., DIFFERENTIATE EACH ROOFING COMPONENT IN CONTRASTING COLOR. ALSO, PROVIDE DATA OR CUT SHEETS OF EACH ROOFING COMPONENT LISTED AND USED.
7. INSTALL ROOF ASSEMBLY IN STRICT ACCORDANCE WITH ROOFING MANUFACTURER'S MOST RECENT PRINTED BEST PRACTICES, SPECIFICATIONS AND DETAILS.
8. REFER TO SPECIFICATIONS SECTION "MODIFIED BITUMINOUS MEMBRANE ROOFING", SYSTEM.
9. PROVIDE 100 WIDE METAL CLEATS AT 300 O.C. FOR SUPPORT OF MAIN PREFINISHED CAP FLASHINGS FOR TOPS OF ALL PARAPETS AND UPSTANDS (TYP) FOR EXTERIOR SIDES OF PARAPET AND ON THE INTERIOR SIDE OF PARAPETS USE ADHESIVE RECOMMENDED BY ROOFING MANUFACTURER.
10. BENEATH PREFINISHED METAL CAP FLASHINGS, EXTEND ROOFING MEMBRANES UP AND OVER CURBS AND UPSTANDS (I.E.) DO NOT TERMINATE ROOFING MEMBRANES AT THE BOTTOM OF ANY PARAPETS, UPSTANDS AND/OR EQUIPMENT/UNIT FLASHINGS). PROVIDE SPACE AS REQ'D BETWEEN PREFINISHED FLASHINGS AND THE FACE OF ANY EQUIP./UNIT CURBS TO ENSURE A WATERTIGHT SEAL.
11. ROOF DETAILS SHOW THE APPROXIMATE NUMBER AND LOCATION OF ROOFING CONDITIONS THAT WILL BE REQUIRED IN THE AREA OF ROOFING. DETERMINE THE EXACT NUMBER AND LOCATION OF EACH DETAIL REQUIRED ON SITE AND COORDINATE WITH G.C., ROOFER, MECH. AND ELECT.
12. NO SPRAYFOAM INSULATION IS TO BE APPLIED AT EXPOSED ROOF PENETRATIONS AT GYMNASIUM ROOF DECK. NEATLY INSTALL SEALANT AND INSULATION AROUND PENETRATION READY TO RECEIVE PAINT FINISH.
13. FRAMING FOR ALL ROOF PARAPETS, CURBS, AND OTHER ROOFING COMPONENTS TO BE PRESSURE TREATED IMPREGNATED WOOD.
14. PROVIDE MIN. 16 mm P/T IMPREGNATED PLYWOOD VERTICALLY AT ALL ROOF CURBS TO ACCEPT ROOFING MEMBRANES.

ROOF LEGEND

- EXTENT OF TRAFFIC WALKWAY INDICATED BY SOLID HATCH. PROVIDE ADDITIONAL PLY OF MEMBRANE CAP SHEET IN A CONTRASTING COLOUR TO LATER SELECTION.
- RD — ROOF DRAIN AS PER 9/A4.2 COORDINATE WITH MECH.
- ROOF CRICKET. PROVIDE ADDITIONAL 4% SLOPED INSULATION AS REQ'D TO ENSURE POSITIVE DRAINAGE AROUND OBSTACLE ON ROOF SLOPE
- DIRECTION OF ROOF SLOPE AT MIN 2% UNLESS NOTED OTHERWISE
- +325.00 — APPROX. HEIGHT OF TOP OF TAPERED/ SLOPED INSULATION ABOVE STEEL DECK (HIGH POINT)
- RD — TYPICAL ROOF DISH c/w ROOF DRAIN, TOP OF FLAT ROOF INSULATION AT SUMP TO BE 198 mm ABOVE STEEL DECK. REFER TO MECHANICAL
- PV — PLUMBING VENT STACK, COORDINATE WITH MECH
- MECHANICAL UNIT, COORDINATE WITH MECHANICAL. PROVIDE PIT CURB AROUND PERIMETER
- ROOF ACCESS LADDER W/ CAGE, REFER TO DRAWING A7.7 AND SPECIFICATIONS
- HATCH ALONG EXTERIOR PARAPET DENOTES LOCATION OF TYPICAL SCUPPER

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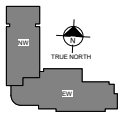
KEY PLAN:


ISSUED FOR / REVISION:

NO.	DATE	DESCRIPTION
6	21 MAR 2022	ISSUED FOR BID AND PERMIT
5	14 JAN 2022	ISSUED FOR 99% CD REVIEW
4	19 NOV 2021	ISSUED FOR 90% CD REVIEW
3	24 SEP 2021	ISSUED FOR 60% CD REVIEW
2	27 AUG 2021	RE-ISSUED FOR 30% CD REVIEW
1	04 AUG 2021	30% CD REVIEW

PROJECT NO: 219-00014-00
DATE: MARCH 2022
ORIGINAL SCALE: As indicated
DESIGNED BY: JC
DRAWN BY: NM/ SO/ AS
CHECKED BY: MHG
IF THIS BAR IS NOT 25mm LONG, ADJUST YOUR PLOTTING SCALE.
25mm
DESIGN NO.: ARCHITECTURAL
TITLE: ROOF PLAN
SHEET NUMBER: A4.1
SHEET #: OF
ISSUE: ISSUED FOR BID AND PERMIT
ISSUE #: 6
DATE OF: 21 MAR 2022

APPENDIX

B TRAFFIC DATA

Appendix B: Table of Traffic and Road Parameters To Be Used For Sound Level Predictions

Table B1 Traffic And Road Parameters To Be Used For Sound Level Predictions

Row Width (m)	Implied Roadway Class	AADT Vehicles/Day	Posted Speed Km/Hr	Day/Night Split %	Medium Trucks %	Heavy Trucks % [1]
NA [2]	Freeway, Queensway, Highway	18,333 per lane	100	92/8	7	5
37.5-44.5	6-Lane Urban Arterial-Divided (6 UAD)	50,000	50-80	92/8	7	5
34-37.5	4-Lane Urban Arterial-Divided (4-UAD)	35,000	50-80	92/8	7	5
23-34	4-Lane Urban Arterial-Undivided (4-UAU)	30,000	50-80	92/8	7	5
23-34	4-Lane Major Collector (4-UMCU)	24,000	40-60	92/8	7	5
30-35.5	2-Lane Rural Arterial (2-RAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Urban Arterial (2-UAU)	15,000	50-80	92/8	7	5
20-30	2-Lane Major Collector (2-UMCU)	12,000	40-60	92/8	7	5
30-35.5	2-Lane Outer Rural Arterial (near the extremities of the City) (2-RAU)	10,000	50-80	92/8	7	5
20-30	2-Lane Urban Collector (2-UCU)	8,000	40-50	92/8	7	5

[1] The MOE Vehicle Classification definitions should be used to estimate automobiles, medium trucks and heavy trucks.

[2] The number of lanes is determined by the future mature state of the roadway.

Annex 1 – Road Classification and Rights-of-Way Protection

This annex describes road classifications for City roads that, other than local roads, are illustrated on Schedules E to H. Rights-of-way protection requirements for various roads are described in Table 1 of this annex. Additional policies on rights-of-way are also found in the following Sections 1 and 2 of this annex. [Amendment #76, August 04, 2010]

1.0 – Classification Summary

The description that follows of the various classifications of roads is not meant to be interpreted as an absolute standard or limit, which if varied, would automatically necessitate an amendment to this Plan. Rather, these characteristics are intended to act as benchmarks against which variations in any given situation can be assessed in light of the relevant goals and objectives of this Plan. Policy 31 of Section 2.3.1 of this Plan states under what circumstances an amendment is required for changes – additions or deletions – of certain identified road classes on Schedules E to H. The following highlights the classification system used in this Plan for existing and future City roadways:

City Freeway
City freeway describes a limited access highway with high-speed traffic that serves the need for intra-city travel similar to the provincial limited access highways. Highway 174 between Highway 417 (Queensway) and Trim Road in Orléans is the only city freeway.

Arterial Roads
The arterial roads are the major roads of the City that carry large volumes of traffic over the longest distances. The majority of these roadways were formerly identified as regional roads. To best provide access to arterials, block lengths and intersections should be spaced and designed to accommodate all transportation modes; vehicular access to adjacent properties should be controlled to minimize turning movements and to reduce conflicts between travel modes; and arterials road corridors should provide a high degree of connectivity between land uses and places along and across the route. For certain roads such as the Airport Parkway, the City may apply different standards to development with regard to access and setbacks. It is recognised that the arterial road system links to provincial and inter-provincial roads, which are all an integral part of the overall network.

Arterial roads function as major public and infrastructure corridors in the urban communities and villages they traverse. They not only accommodate car and truck traffic, but also serve pedestrians, public utilities, cyclists and public transit buses. The roadway and its boulevard are therefore designed to meet the needs of these users through the provision, where appropriate, of such features as sidewalks, cycling lanes, and bus stops and shelters. In parts of the urban area and villages additional roadside features include: street furniture, pedestrian-scale lighting, and trees and other landscaping. This greenery provides visual appeal, summer shade and a defining sense of the linear nature of these travel corridors. The planning of land uses and the local road network on lands adjacent to arterial roads may occur in a manner that can reduce the need for noise attenuation barriers or fencing along extensive lengths of roadway. [Amendment #15, September 8, 2004] [Amendment #76, August 04, 2010]

Major Collector and Collector Roads
The collector roads connect communities and distribute traffic between the arterial system and the local road system. These roads tend to be shorter and carry lower volumes of traffic than do the arterials. Direct access to collector roads from adjacent properties will be permitted where such access will not introduce traffic safety or capacity concerns. The design and construction of collector roads will

accommodate the safe and efficient operation of transit services. In general, a major collector is a roadway that acts as a connection between an arterial road and collector roads.

Collector roads are the principal streets in urban and village neighbourhoods and are used by local residents, delivery and commercial vehicles, transit and school buses, cyclists, and pedestrians. The reduced speed and volumes of traffic on collector roads, compared with arterial roads, make collectors more accommodating for cyclists and pedestrians. Tree plantings, bus stops, community mailboxes and other streetscape features create roadways that are integrated with their neighbourhood. [Amendment #15, September 8, 2004]

Local Roads
Local roads are found within communities and distribute traffic from arterial and collector streets to individual properties, typically over short distances. Local roads, to varying degrees, also serve a collector road function by distributing traffic between collector streets and other local streets. Pedestrians and cyclists are major users of local roads, starting or finishing their journeys along these roads. [Amendment #15, September 8, 2004]

Lanes
A lane is a public highway that provides a secondary means of access from a public street to abutting lots. [Amendment #150, December 21, 2017]

2.0 – Rights-of-Way Protection Requirements

Section 2.3.1 Transportation indicates that the City will protect rights-of-way for the development of the transportation network of the city. In particular, this involves identifying where lands will be acquired for new rights-of-way or the widening of existing rights-of-way. This section of Annex 1 sets forth the right-of-way (ROW) widths that the City may acquire for roads, shown in Schedule E to H, and additional ROW policies. The ROW distances indicate the width of land that the City has identified will be needed to accommodate the range of possible transportation and infrastructure facilities such as: roadway lanes for cars, truck, bicycles and/or transit vehicles; sidewalks and pathways; central or side boulevards for landscaping; public utilities, lighting; and spaces for street side amenities (bus stops, mail and newspaper boxes, etc.). [Amendment #76, August 04, 2010]

Rights-of-way protection requirements can be grouped in three general categories as follows:
1. **a ROW width for a new road**- this is where a wholly new road is to be built, with this most often occurring in the urban growth areas outside of the Greenbelt; [Amendment #76, August 04, 2010]
2. **minor widening of an existing road ROW**- these happen where the existing ROW is somewhat less than the street design standard and the widening lands are usually needed to accommodate one or more of the following: [Amendment #76, August 04, 2010]
    a. an enlargement of the curb lane for cyclists, be it a wider shared lane with motorized vehicles or a newly separately marked cycle lane, either of which remedies the situation of insufficient lane space for cyclists, [Amendment #76, August 04, 2010]
    b. an increase in sidewalk width, thus allowing more room for pedestrians needs and the space requirements for street elements such as lighting poles, bus stops, etc. [Amendment #76, August 04, 2010]
    c. additional room for street landscaping, thereby permitting the introduction of trees and shrubs where none existed before or enlargement of the space for the greenery that may already exist. [Amendment #76, August 04, 2010]

Such minor road widening will occur generally along existing roadways within the Greenbelt.
3. **Major widening of a existing road ROW-** where the widening to be taken is of significant size and would be used for a combination of new traffic lanes and space for cycling, street landscaping and the addition or enlargement of sidewalks. Major road widening of an existing road ROW are typical of

street trees and similar landscaping where existing or planned roadways run immediately adjacent to or along these utility corridors. Therefore in the preparation of community design plans and Environmental Assessment Studies or the review of plans of subdivision the City may require larger road right-of-way requirements or the provision of landscape buffers for proposed roads that will lay adjacent to hydro line corridors so that the street trees and similar landscaping can also be accommodated. [Amendment #76, August 04, 2010]

Table 1- Road of Right-of-Way Protection

Road	ROW to be Protected
Arterials in the rural area (as shown on Schedules G and H of the Official Plan)	ROW to be protected is **30 metres** unless otherwise indicated
Collectors in the rural area (as shown on Schedules G and H of the Official Plan)	ROW to be protected is **26 metres** unless otherwise indicated
Local roads in the rural area	ROW to be protected is **20 metres** unless otherwise indicated
Lanes in the Urban Area	ROW to be protected for lanes where only residential land uses abut is **6 metres** unless otherwise indicated
Lanes in the Urban Area	ROW to be protected for lanes where commercial or mixed residential commercial land uses abut is **8 metres** unless otherwise indicated

Road	From	To	ROW to be Protected	Classification	Sector
Abbott West	West Ridge	Main	24	collector	urban
Abbott East	Main	Iber	26	major collector	urban
Airport Parkway	Bronson	Airport Parkway Private	ECP	arterial	urban
Albert	Empress	Bronson	40 Note: Maximum land requirement from property abutting existing ROW (10.0 m).	arterial	urban
Albert	Bronson	Elgin	VRW Note: Maximum land requirement from property abutting existing ROW (1.25 m). Subject to widening/easement policy.	arterial	urban
Albert	Elgin	MacKenzie King Bridge	VRW Note: Maximum land requirement from property abutting existing ROW (1.25m).	arterial	urban
Albion	Bank	Lester	24	collector	urban
Albion	Lester	Leitrim	G	arterial	urban
Albion	Leitrim	Del Zotto	37.5	arterial	urban
Albion	Del Zotto	Urban area limit	37.5 Note: An additional 5.0 m	arterial	urban

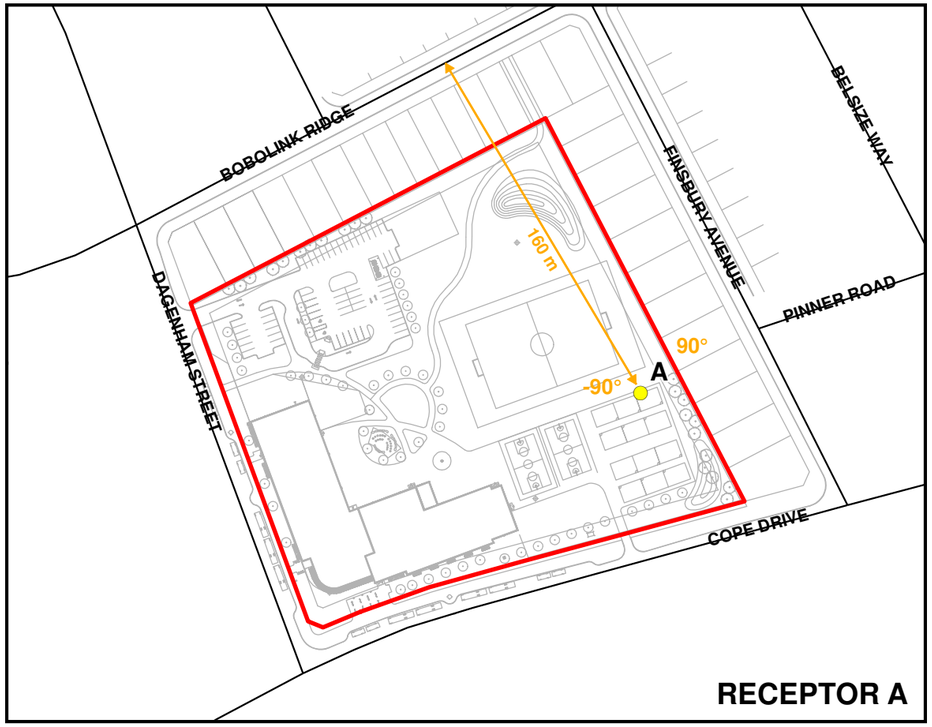
Carbery	Beechfern	Abbott East	24	collector	urban
Carling	March	Herzberg	44.5 Note: Subject to unequal widening: 44.5 m, measured from the existing south ROW limit	arterial	urban
Carling	Herzberg	Greenbelt boundary	G	arterial	urban
Carling	Greenbelt boundary	Holly Acres	44.5	arterial	urban
Carling	Holly Acres	Richmond	37.5	arterial	urban
Carling	Richmond	Bronson	44.5	arterial	urban
Carp	Approx. 600 m south of Craig Side	Approx. 600 m north of March	23	arterial	village
Carp	Richardson Side	Urban Area Limit	37.5	arterial	rural
Carp	Stittsville urban area- north limit	Hazeldean	37.5	arterial	urban
Carp	Hazeldean	Main Street	23	arterial	urban
Catherine	Bronson	Elgin	23	arterial	urban
Cedarview	Baseline	Lytle	G	arterial	urban
Cedarview	Lytle	Fallowfield	37.5 Note: An additional 5.0 m on the either side may be required to construct a rural cross-section.	arterial	urban
Cedarview	Fallowfield	Jockvale	26	major collector	urban
Cedarview	Jockvale	Kennevale	24	collector	urban
Cedarview	Strandherd	Cambrian	37.5	arterial	urban
Cedarview	Cambrian	Urban Limit	24	collector	urban
Centrepoint	63m north of Hemming-woode	Tallwood	26	major collector	urban
Chamberlain	Bronson	Bank	23	arterial	urban
Chesterton	Viewmount	Meadowlands	24	collector	urban
Chimo	Katimavik	Katimavik	24	collector	urban
Clare	34.90m east of Evered	Tweedsmuir	24 *Note: North Side*	collector	urban
Claridge	Strandherd	Woodroffe	24	collector	urban
Clementine	Bélanger	Ohio	15	local	urban
Clementine	Rockingham	Bélanger	20	local	urban
Cleopatra	West Hunt Club	Merivale	24	collector	urban
Clyde	Maitland	Baseline	34	arterial	urban
Clyde	Baseline	Merivale	34	arterial	urban
Colonial	Trim	Delson	23	arterial	village
Colonial	Western boundary of Village of Sarsfield	Eastern boundary of Village of Sarsfield	23	arterial	village
Colonnade	Merivale	Prince of Wales	26	major collector	urban
Colonnade S.	Colonnade N.	Colonnade N.	24	collector	urban
Conroy	Walkley	Greenbelt boundary	44.5	arterial	urban
Conroy	Greenbelt boundary	Bank	G	arterial	urban
Constance Bay	Dunrobin	Bayview	20	arterial	village
Constellation	Centrepoint	Baseline	24	collector	urban
Cope	Entire Length		24	collector	urban
Cordova	Withrow	Baseline	24	collector	urban

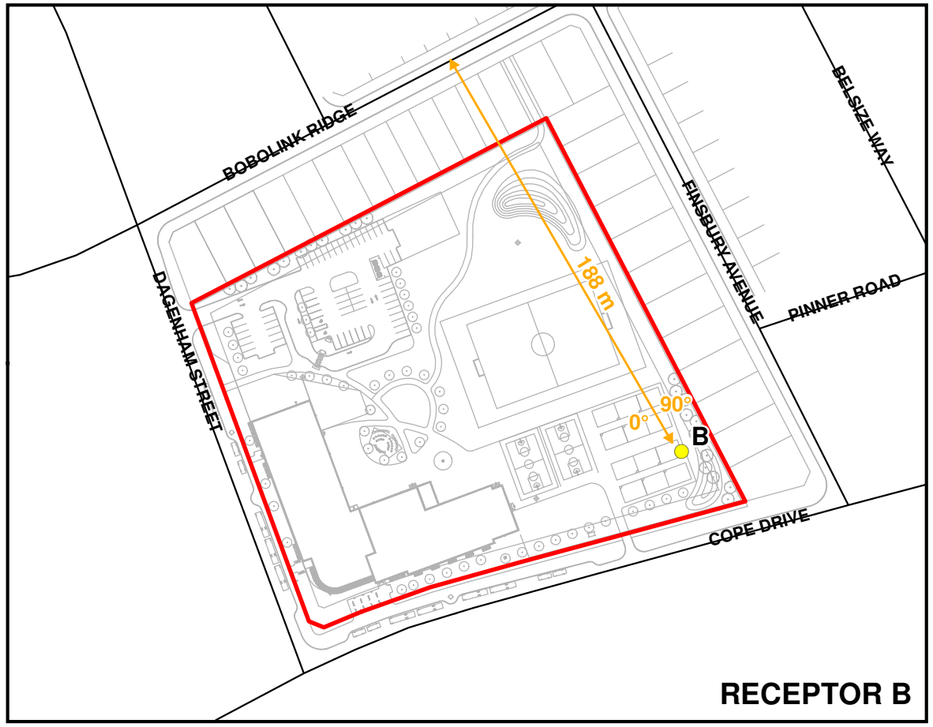
Notes:
1. All distances are in metres.
2. All unequal widening measured from centreline unless specified.
3. “ECP” – signifies Existing Corridor Protection
4. “G” – signifies Greenbelt for which unique rights-of-way protection policy apply as follows: For arterial road segments located entirely within the Greenbelt, the right-of-way requirements vary depending on: the number and width of travel lanes; the treatment of curbs, medians, and road drainage; and other amenities to be provided in the corridor. On this basis, the right-of-way to be acquired by the City and the means to acquire the land will be determined with involvement of the National Capital Commission on a case-by-case basis a road modifications are being planned. In the event that a portion of Greenbelt land is conveyed to another owner, a minimum road-widening requirement of 42.5 m shall apply for an arterial road segment adjacent to that land.
   For segments adjacent to the Greenbelt along only one side, the ROW dimension for the urban area side should be protected, with an additional 5.0 m widening requested along the Greenbelt side (to construct the wider rural cross-section). As always, the widening requirements are to be measured from the existing road centerline.
5. VRW - signifies variable rights-of-way. From the abutting properties a widening and or an easement will be taken.
6. The widening of Trim Road will be designed as no more than a 4-lane divided arterial road, with turning lanes at intersections as required, and this will not be altered without the appropriate Environmental Assessment Act reviews and the appropriate Official Plan Amendments.
7. “Uneven” means topographic or other features may require an uneven road widening, detail of which will be determined by the City normally upon examination of a development application on adjacent lands. [Amendment 15, September 8, 2004]

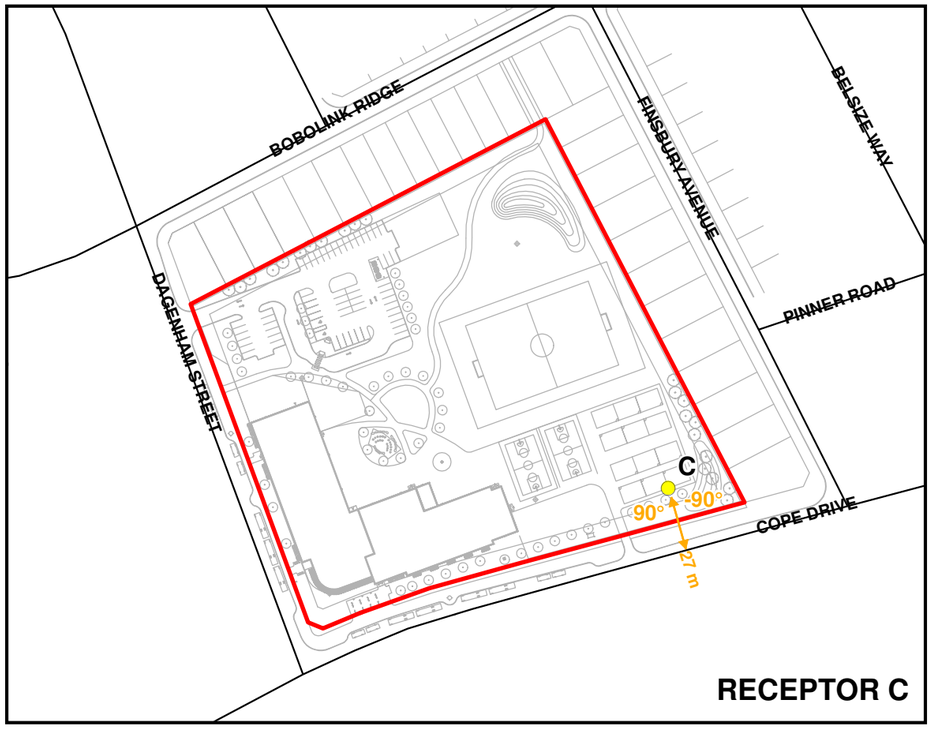
[Amendment #76, OMB File #PL100206, August 18, 2011]

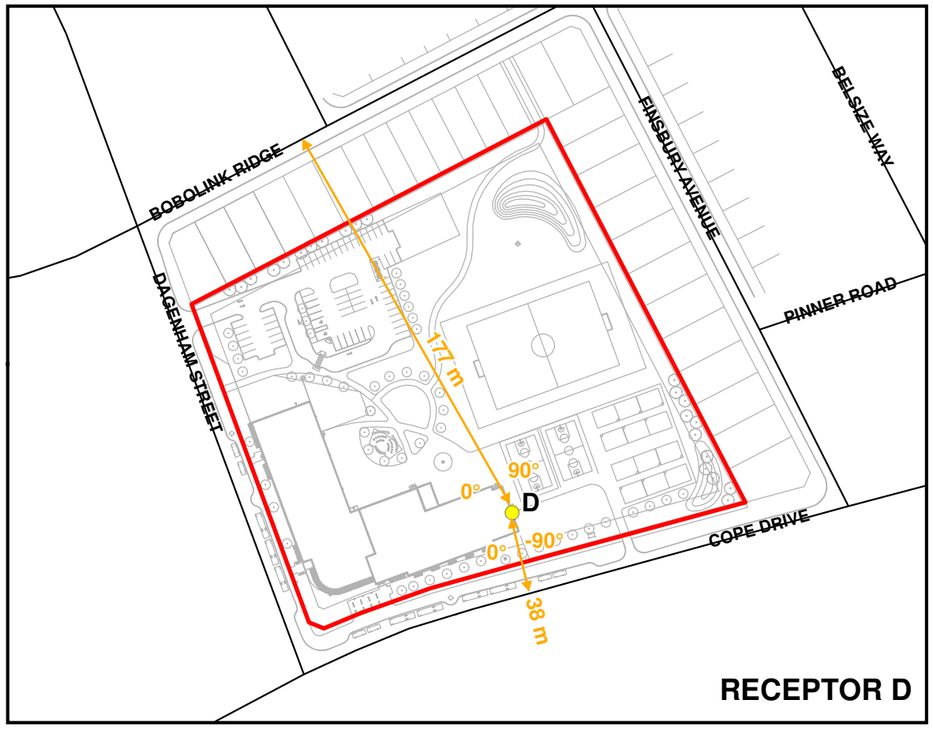
APPENDIX

C STAMSON OUTPUTS









LEGEND

- APPROXIMATE SITE LOCATION
- PROPOSED DEVELOPMENT
- RECEPTORS

N
W E
S

10 5 0 10 Metres

CLIENT:

CONSEIL DES ÉCOLES PUBLIQUES DE L'EST DE L'ONTARIO

PROJECT:

NOISE STUDY
KANATA-SUD ELEMENTARY SCHOOL
STITTSVILLE, ONTARIO

PROJECT NO:	DATE:
219-00014-00	JANUARY 2022

DESIGNED BY: -

DRAWN BY: TP

CHECKED BY: -

FIGURE NO:	SCALE:
C1	1:500

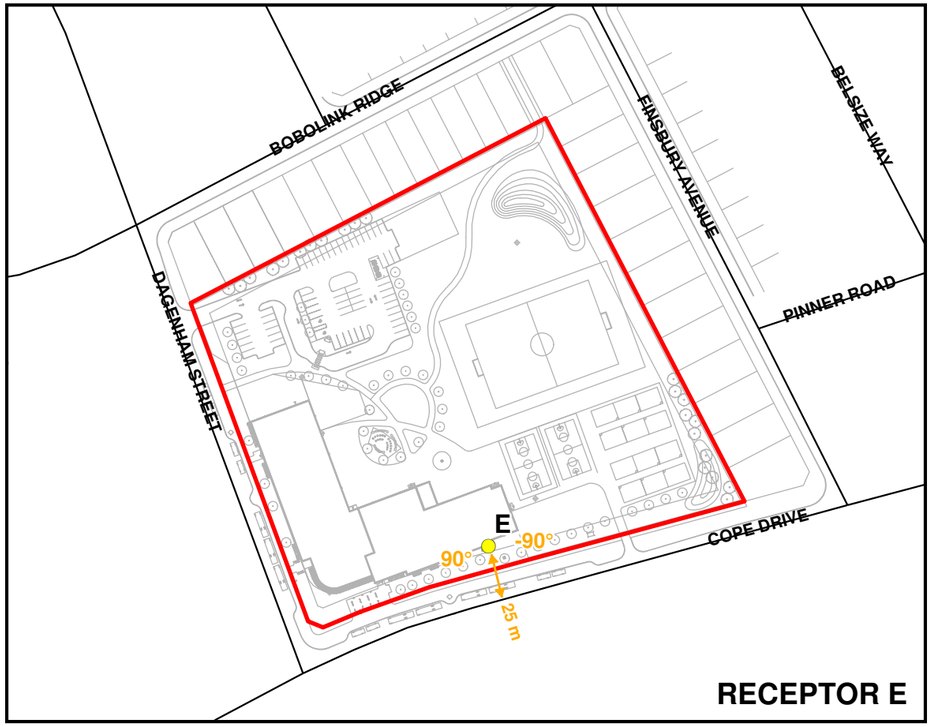
TITLE:

SITE PLAN SHOWING ANGLES AND DISTANCES
(TRANSPORTATION NOISE IMPACTS)
RECEPTORS A TO D

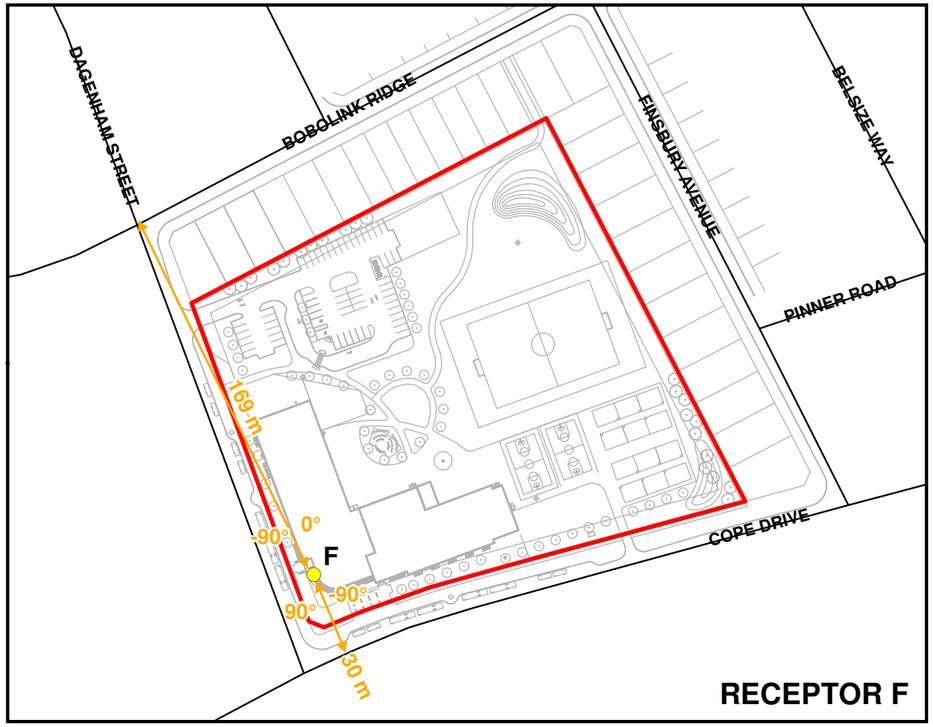
DISCIPLINE: ENVIRONMENT

ISSUE:	REV.:
	-

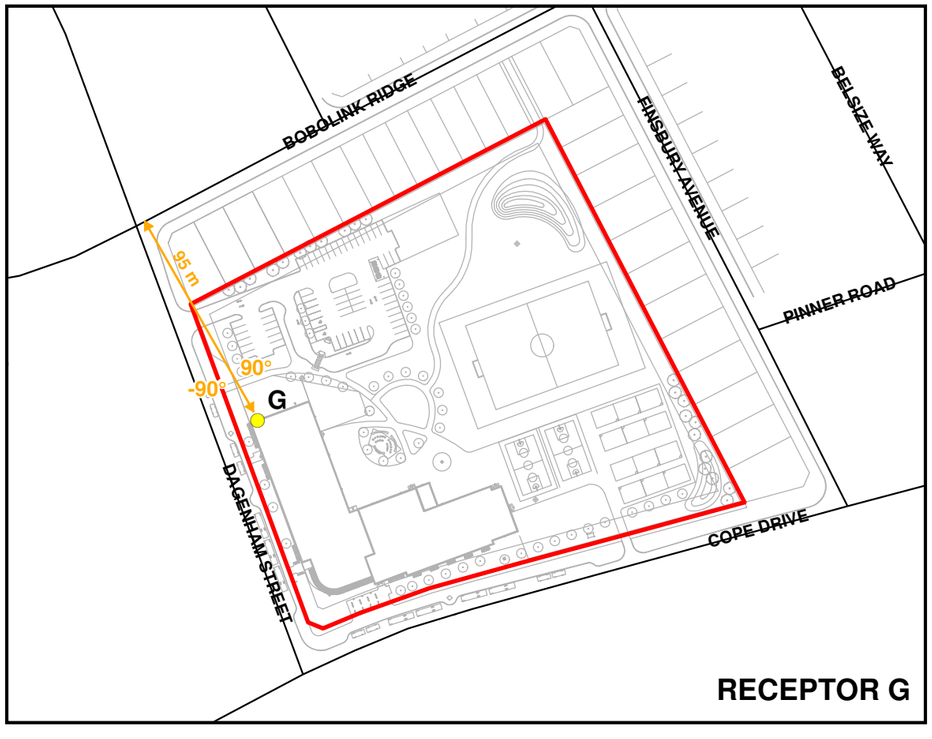
Document Path: D:\aProjects\219-00014-00\MXD\219-00014-00 Figure 4 Distances Angles.mxd



RECEPTOR E



RECEPTOR F



RECEPTOR G

wsp

LEGEND

- APPROXIMATE SITE LOCATION
- PROPOSED DEVELOPMENT
- RECEPTORS

N W E S

10 5 0 10 Metres

CLIENT:

CONSEIL DES ÉCOLES PUBLIQUES DE L'EST DE L'ONTARIO

PROJECT:

NOISE STUDY
KANATA-SUD ELEMENTARY SCHOOL
STITTSVILLE, ONTARIO

PROJECT NO:	DATE:
219-00014-00	JANUARY 2022

DESIGNED BY: -

DRAWN BY: TP

CHECKED BY: -

FIGURE NO:	SCALE:
C2	1:500

TITLE:

SITE PLAN SHOWING ANGLES AND DISTANCES
(TRANSPORTATION NOISE IMPACTS)
RECEPTORS E TO G

DISCIPLINE: ENVIRONMENT

ISSUE:	REV.:
	-

Document Path: D:\aProjects\219-00014-00\MXD\219-00014-00 Figure 5 Distances Angles.mxd

STAMSON 5.0 NORMAL REPORT Date: 24-12-2021 13:42:19
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a.te Time Period: Day/Night 16/8 hours Description: Portable 6 Pack - North Facade

Road data, segment # 1: Bobolink Rid (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
Data for Segment # 1: Bobolink Rid (day/night) ----------
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 160.00 / 160.00 m
Receiver height : 2.50 / 2.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Results segment # 1: Bobolink Rid (day) ----------

Source height = 1.50 m

ROAD (0.00 + 55.47 + 0.00) = 55.47 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 65.75 0.00 -10.28 0.00 0.00 0.00 0.00 55.47 ----------

Segment Leq : 55.47 dBA
Total Leq All Segments: 55.47 dBA

Results segment # 1: Bobolink Rid (night) ----------

Source height = 1.50 m

ROAD (0.00 + 47.88 + 0.00) = 47.88 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 58.16 0.00 -10.28 0.00 0.00 0.00 0.00 47.88 ----------

Segment Leq : 47.88 dBA

Total Leq All Segments: 47.88 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 55.47
 (NIGHT): 47.88

STAMSON 5.0 NORMAL REPORT Date: 24-12-2021 13:39:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: B.te Time Period: Day/Night 16/8 hours Description: Portable 6 Pack - East Facade

Road data, segment # 1: Bobolink Rid (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
Data for Segment # 1: Bobolink Rid (day/night) ----------
Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 188.00 / 188.00 m
Receiver height : 2.50 / 2.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Road data, segment # 2: Cope Drive (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000 Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Cope Drive (day/night) ----------

```
------------
Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 42.00 /
42.00 m
Receiver height : 2.50 / 2.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00


Results segment # 1: Bobolink Rid (day) ----------------------------------
--

Source height = 1.50 m

ROAD (0.00 + 51.76 + 0.00) = 51.76 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  0 90
0.00 65.75 0.00 -10.98 -3.01 0.00 0.00 0.00 51.76 -------------------------
-----------------------------------------------

Segment Leq : 51.76 dBA


Results segment # 2: Cope Drive (day)
----------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.27 + 0.00) = 58.27 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  -90 0
0.00 65.75 0.00 -4.47 -3.01 0.00 0.00 0.00 58.27 -------------------------
-----------------------------------------------

Segment Leq : 58.27 dBA

Total Leq All Segments: 59.15 dBA


Results segment # 1: Bobolink Rid (night) --------------------------------
------

Source height = 1.50 m

ROAD (0.00 + 44.17 + 0.00) = 44.17 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  0 90
0.00 58.16 0.00 -10.98 -3.01 0.00 0.00 0.00 44.17 -------------------------
-----------------------------------------------

Segment Leq : 44.17 dBA
```

Results segment # 2: Cope Drive (night) ----------
--

Source height = 1.50 m

ROAD (0.00 + 50.68 + 0.00) = 50.68 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 0
0.00 58.16 0.00 -4.47 -3.01 0.00 0.00 0.00 50.68 ----------

Segment Leq : 50.68 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: 24-12-2021 13:45:44
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: C.te Time Period: Day/Night 16/8 hours Description: Portable 6 Pack - South Facade

Road data, segment # 1: Cope Drive (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
Data for Segment # 1: Cope Drive (day/night) ----------
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 27.00 / 27.00 m
Receiver height : 2.50 / 2.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Results segment # 1: Cope Drive (day)

Source height = 1.50 m

ROAD (0.00 + 63.20 + 0.00) = 63.20 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 65.75 0.00 -2.55 0.00 0.00 0.00 0.00 63.20 ----------

Segment Leq : 63.20 dBA
Total Leq All Segments: 63.20 dBA

Results segment # 1: Cope Drive (night) ----------
--

Source height = 1.50 m

ROAD (0.00 + 55.60 + 0.00) = 55.60 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 58.16 0.00 -2.55 0.00 0.00 0.00 0.00 55.60 ----------

Segment Leq : 55.60 dBA

Total Leq All Segments: 55.60 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.20
 (NIGHT): 55.60

STAMSON 5.0 NORMAL REPORT Date: 27-12-2021 14:34:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: D.te Time Period: Day/Night 16/8 hours Description: 2 Storey Building - East Facade

Road data, segment # 1: Bobolink Rid (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
Data for Segment # 1: Bobolink Rid (day/night) ----------
Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 177.00 / 177.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Road data, segment # 2: Cope Drive (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000 Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Cope Drive (day/night) ----------

```
------------
Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 38.00 /
38.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00


Results segment # 1: Bobolink Rid (day) ----------------------------------
--

Source height = 1.50 m

ROAD (0.00 + 52.02 + 0.00) = 52.02 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  0 90
0.00 65.75 0.00 -10.72 -3.01 0.00 0.00 0.00 52.02 ---------------------------
-----------------------------------------------

Segment Leq : 52.02 dBA


Results segment # 2: Cope Drive (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 58.70 + 0.00) = 58.70 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  -90 0
0.00 65.75 0.00 -4.04 -3.01 0.00 0.00 0.00 58.70 ---------------------------
-----------------------------------------------

Segment Leq : 58.70 dBA

Total Leq All Segments: 59.54 dBA


Results segment # 1: Bobolink Rid (night) --------------------------------
------

Source height = 1.50 m

ROAD (0.00 + 44.43 + 0.00) = 44.43 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  0 90
0.00 58.16 0.00 -10.72 -3.01 0.00 0.00 0.00 44.43 ---------------------------
-----------------------------------------------

Segment Leq : 44.43 dBA
```

Results segment # 2: Cope Drive (night) ----------
--

Source height = 1.50 m

ROAD (0.00 + 51.11 + 0.00) = 51.11 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 0
0.00 58.16 0.00 -4.04 -3.01 0.00 0.00 0.00 51.11 ----------

Segment Leq : 51.11 dBA

Total Leq All Segments: 51.95 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 59.54
 (NIGHT): 51.95

STAMSON 5.0 NORMAL REPORT Date: 27-12-2021 14:40:15
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: e.te Time Period: Day/Night 16/8 hours Description: 2 Storey Building - South Facade

Road data, segment # 1: Cope Drive (day/night) ----------

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
Data for Segment # 1: Cope Drive (day/night) ----------

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 25.00 / 25.00 m
Receiver height : 4.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Results segment # 1: Cope Drive (day)

Source height = 1.50 m

ROAD (0.00 + 63.53 + 0.00) = 63.53 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
--- -90 90
0.00 65.75 0.00 -2.22 0.00 0.00 0.00 0.00 63.53 ----------

Segment Leq : 63.53 dBA
Total Leq All Segments: 63.53 dBA

Results segment # 1: Cope Drive (night) ----------
--

Source height = 1.50 m

ROAD (0.00 + 55.94 + 0.00) = 55.94 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 58.16 0.00 -2.22 0.00 0.00 0.00 0.00 55.94 ----------

Segment Leq : 55.94 dBA

Total Leq All Segments: 55.94 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.53
 (NIGHT): 55.94

STAMSON 5.0 NORMAL REPORT Date: 27-12-2021 15:02:35
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: f.te Time Period: Day/Night 16/8 hours Description: 1 Storey Building - South Facade

Road data, segment # 1: Bobolink Rid (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
Data for Segment # 1: Bobolink Rid (day/night) ----------
Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 169.00 / 169.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Road data, segment # 2: Cope Drive (day/night) ----------
Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000 Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

Data for Segment # 2: Cope Drive (day/night) ----------

```
------------
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective 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: Bobolink Rid (day) ----------------------------------
--

Source height = 1.50 m

ROAD (0.00 + 52.22 + 0.00) = 52.22 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  -90 0
0.00 65.75 0.00 -10.52 -3.01 0.00 0.00 0.00 52.22 -------------------------
-----------------------------------------------

Segment Leq : 52.22 dBA


Results segment # 2: Cope Drive (day)
-----------------------------------

Source height = 1.50 m

ROAD (0.00 + 62.74 + 0.00) = 62.74 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  -90 90
0.00 65.75 0.00 -3.01 0.00 0.00 0.00 0.00 62.74 ---------------------------
-----------------------------------------------

Segment Leq : 62.74 dBA

Total Leq All Segments: 63.11 dBA


Results segment # 1: Bobolink Rid (night) --------------------------------
------

Source height = 1.50 m

ROAD (0.00 + 44.63 + 0.00) = 44.63 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
-----------------------------------------------------------------  -90 0
0.00 58.16 0.00 -10.52 -3.01 0.00 0.00 0.00 44.63 -------------------------
-----------------------------------------------

Segment Leq : 44.63 dBA
```

Results segment # 2: Cope Drive (night) ----------
--

Source height = 1.50 m

ROAD (0.00 + 55.15 + 0.00) = 55.15 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 58.16 0.00 -3.01 0.00 0.00 0.00 0.00 55.15 ----------

Segment Leq : 55.15 dBA

Total Leq All Segments: 55.52 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.11
 (NIGHT): 55.52

STAMSON 5.0 NORMAL REPORT Date: 27-12-2021 15:01:47
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: G.te Time Period: Day/Night 16/8 hours Description: 1 Storey Building - North Facade

Road data, segment # 1: Bobolink Rid (day/night) ----------

Car traffic volume : 6477/563 veh/TimePeriod *
Medium truck volume : 515/45 veh/TimePeriod *
Heavy truck volume : 368/32 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 8000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00
Data for Segment # 1: Bobolink Rid (day/night) ----------

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface) Receiver source distance : 95.00 / 95.00 m
Receiver height : 1.50 / 1.50 m
Topography : 1 (Flat/gentle slope; no barrier) Reference angle : 0.00

Results segment # 1: Bobolink Rid (day) ----------
--

Source height = 1.50 m

ROAD (0.00 + 57.73 + 0.00) = 57.73 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 65.75 0.00 -8.02 0.00 0.00 0.00 0.00 57.73 ----------

Segment Leq : 57.73 dBA
Total Leq All Segments: 57.73 dBA

Results segment # 1: Bobolink Rid (night) ----------

Source height = 1.50 m

ROAD (0.00 + 50.14 + 0.00) = 50.14 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq -------
---------- -90 90
0.00 58.16 0.00 -8.02 0.00 0.00 0.00 0.00 50.14 ----------

Segment Leq : 50.14 dBA

Total Leq All Segments: 50.14 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 57.73
 (NIGHT): 50.14

APPENDIX

D SOUND DATA

AAON Standard Condenser Fan Radiated Sound Levels

Updated 10/26/2018

					Sound Power Level									Sound Pressure Level in a Hemispherical Free Field								Dist (ft) 5
		Fans	Dia	RPM	63	125	250	500	1000	2000	4000	8000	LwA	63	125	250	500	1000	2000	4000	8000	dBA
RQ 2 & 3 Ton	Inlet	1	30	850	79	74	72	70	66	62	59	59	72	68	62	60	58	54	51	48	47	60
	Outlet				81	77	71	71	67	62	59	58	73	69	66	59	59	55	51	48	46	61
	Total				83	79	74	73	69	65	62	61	75	72	67	63	62	58	54	51	50	63
RQ 4-6 Ton & RN 6 & 7 Ton	Inlet	1	30	1085	85	79	77	75	71	68	65	64	77	73	67	66	63	59	56	53	52	65
	Outlet				86	83	76	76	72	68	65	63	78	75	71	64	65	60	56	53	52	66
	Total				89	84	80	79	75	71	68	67	80	77	73	68	67	63	59	56	55	69
RN 8 & 10 Ton	Inlet	1	30	1085	92	86	85	82	78	75	72	71	84	80	75	73	70	66	63	60	60	73
	Outlet				94	90	83	83	79	75	72	71	85	82	78	71	72	68	63	60	59	73
	Total				96	91	87	86	82	78	75	74	88	84	80	75	74	70	66	63	62	76
RN 09 & 11 Ton	Inlet	2	30	1085	88	82	80	78	74	71	68	67	80	76	70	69	66	62	59	56	55	68
	Outlet				89	86	79	79	75	71	68	66	81	78	74	67	68	63	59	56	55	69
	Total				92	87	83	82	78	74	71	70	83	80	76	71	70	66	62	59	58	72
RN 13-20 Ton	Inlet	2	30	1085	95	89	88	85	81	78	75	74	87	83	78	76	73	69	66	63	63	76
	Outlet				97	93	86	86	82	78	75	74	88	85	81	74	75	71	66	63	62	76
	Total				99	94	90	89	85	81	78	77	91	87	83	78	77	73	69	66	65	79
RN 25 & 30 Ton	Inlet	3	30	1085	97	91	89	87	83	80	77	76	89	85	79	78	75	71	68	65	64	77
	Outlet				98	95	88	88	84	80	77	75	90	87	83	76	76	72	68	65	64	78
	Total				101	96	92	91	86	83	80	79	92	89	85	80	79	75	71	68	67	81
RN 26,31 & 40 Ton	Inlet	4	30	1085	98	92	91	88	84	81	78	77	90	86	81	79	76	72	69	66	66	79
	Outlet				100	96	89	89	85	81	78	77	91	88	84	77	78	74	69	66	65	79
	Total				102	98	93	92	88	84	81	80	94	90	86	81	80	76	72	69	68	82
RN 50,60 & 70 Ton	Inlet	6	30	1085	100	94	92	90	86	83	80	79	92	88	82	81	78	74	71	68	67	80
	Outlet				101	98	91	91	87	83	80	78	93	90	86	79	79	75	71	68	67	81
	Total				104	99	95	94	89	86	83	82	95	92	88	83	82	78	74	71	70	84
RN E 55,65 & 75 Ton LN & LZ 45-60 Ton RZ 45-75	Inlet	4	30	1170	92	86	87	87	86	85	85	78	92	80	74	75	75	74	73	73	66	80
	Outlet				92	86	87	87	86	85	85	78	92	80	74	75	75	74	73	73	66	80
	Total				95	89	90	90	89	88	88	81	95	83	77	78	78	77	76	76	69	83
RN E 90-140 Ton LN & LZ 75-140 Ton RZ 90-140	Inlet	8	30	1170	95	89	90	90	89	88	88	81	95	83	77	78	78	77	76	76	69	83
	Outlet				95	89	90	90	89	88	88	81	95	83	77	78	78	77	76	76	69	83
	Total				98	92	93	93	92	91	91	84	98	86	80	81	81	80	79	79	72	86
RZ 145-180	Inlet	12	30	1170	97	91	92	92	91	90	90	83	97	85	79	80	80	79	78	78	71	85
	Outlet				97	91	92	92	91	90	90	83	97	85	79	80	80	79	78	78	71	85
	Total				100	94	95	95	94	93	93	86	100	88	82	83	83	82	81	81	74	88
RZ 200-240	Inlet	16	30	1170	98	92	93	93	92	91	91	84	98	86	80	81	81	80	79	79	72	86
	Outlet				98	92	93	93	92	91	91	84	98	86	80	81	81	80	79	79	72	86
	Total				101	95	96	96	95	94	94	87	101	89	83	84	84	83	82	82	75	89

Tested in Accordance with AMCA 300 - Updated 6-15-15

15.0" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-1 Daycare*
Rep Firm:	
Date:	*07-07-2022*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*15.0 in. x 1*
CFM:	*3200*
Tip Speed:	*7,846 FPM*
Inertia:	*3 WR²*

OPERATING CONDITIONS:

Air Flow:	*3,200 CFM*
Static Pressure:	*0.98 in. Wg.*
Relief Dampers DP:	*0.44 in. Wg.*
TSP:	*1.42 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.42 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*2 / No*
Frame Size:	*145T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.865*
Enclosure Type:	*ODP*
Max Inertial Load:	*27 WR²*

FAN PERFORMANCE:

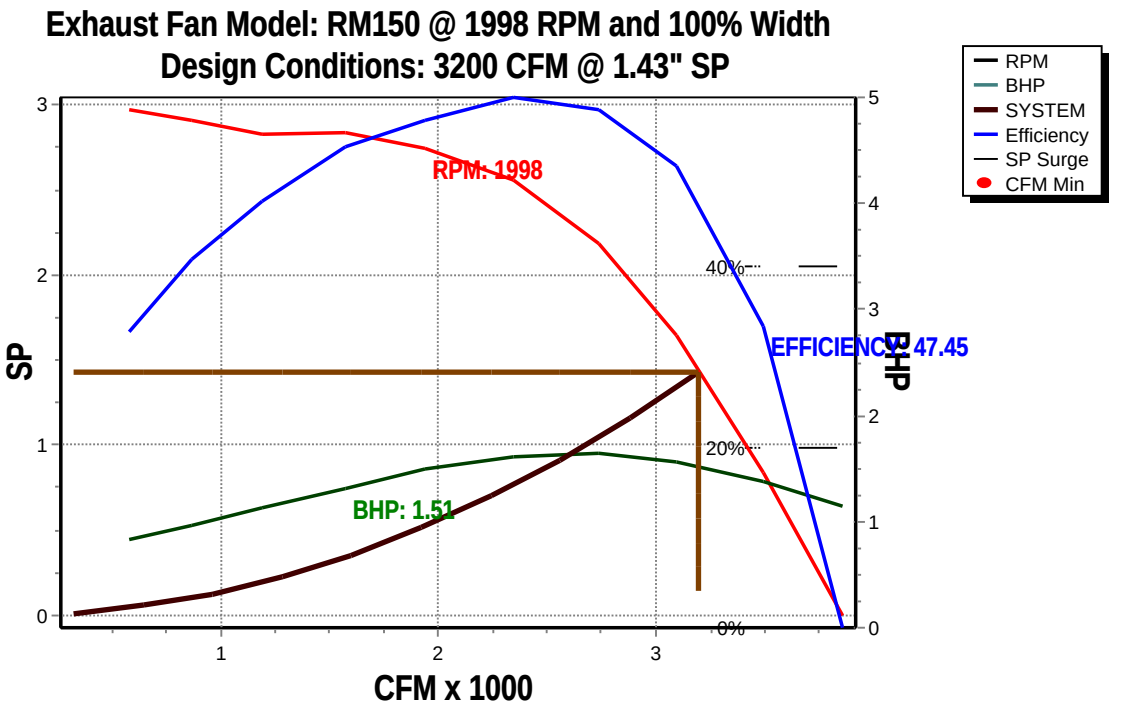
RPM:	*1998*
BHP:	*1.51*
Efficiency:	*47.4%*
In/Out Velocity:	*1624/1260 FPM*
Plenum Out Velocity:	*53 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band: **(Re 10^-12 watts)**

1	2	3	4	5	6	7	8
85	*86*	*86*	*86*	*80*	*76*	*74*	*70*
85	*86*	*86*	*86*	*80*	*76*	*74*	*70*

SOUND POWER A-Weighted: 87 / 87 dB



22.0" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-2 Kindergarten*
Rep Firm:	*Classrooms*
Date:	
	07-07-2022

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*22.0 in. x 1*
CFM:	
Tip Speed:	*6100*
Inertia:	*7,914 FPM*
	5 WR²

OPERATING CONDITIONS:

Air Flow:	*6,100 CFM*
Static Pressure:	*0.83 in. Wg.*
Relief Dampers DP:	*0.43 in. Wg.*
TSP:	*1.26 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.26 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*5 / No*
Frame Size:	*184T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*52 WR²*

FAN PERFORMANCE:

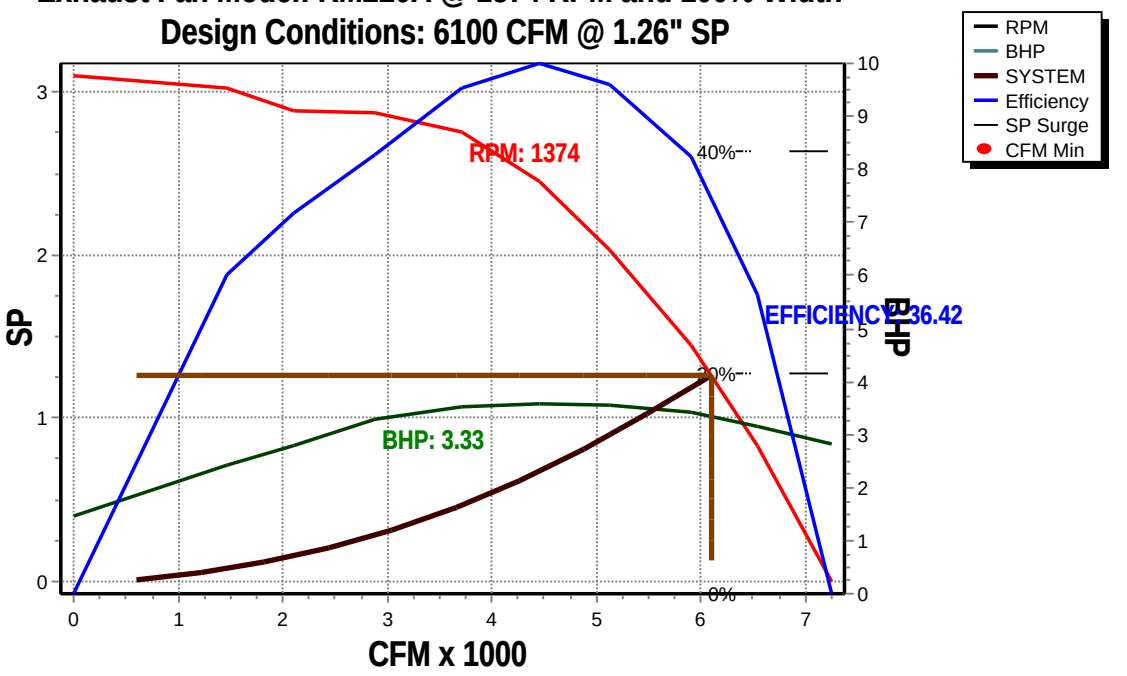
RPM:	*1374*
BHP:	*3.33*
Efficiency:	*36.4%*
In/Out Velocity:	*1865/2054 FPM*
Plenum Out Velocity:	*102 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band:							**(Re 10^-12 watts)**
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
89	*88*	*90*	*85*	*79*	*78*	*73*	*65*
89	*88*	*90*	*85*	*79*	*78*	*73*	*65*

SOUND POWER A-Weighted: 90 / 90 dB

Exhaust Fan Model: RM220A @ 1374 RPM and 100% Width
Design Conditions: 6100 CFM @ 1.26" SP



18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-3 Library and*
Rep Firm:	*Multipurpose*
Date:	
	07-07-2022

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	
Tip Speed:	*4100*
Inertia:	*6,601 FPM*
	3 WR²

OPERATING CONDITIONS:

Air Flow:	*4,100 CFM*
Static Pressure:	*1.02 in. Wg.*
Relief Dampers DP:	*0.26 in. Wg.*
TSP:	*1.28 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.28 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*2 / No*
Frame Size:	*145T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.865*
Enclosure Type:	*ODP*
Max Inertial Load:	*27 WR²*

FAN PERFORMANCE:

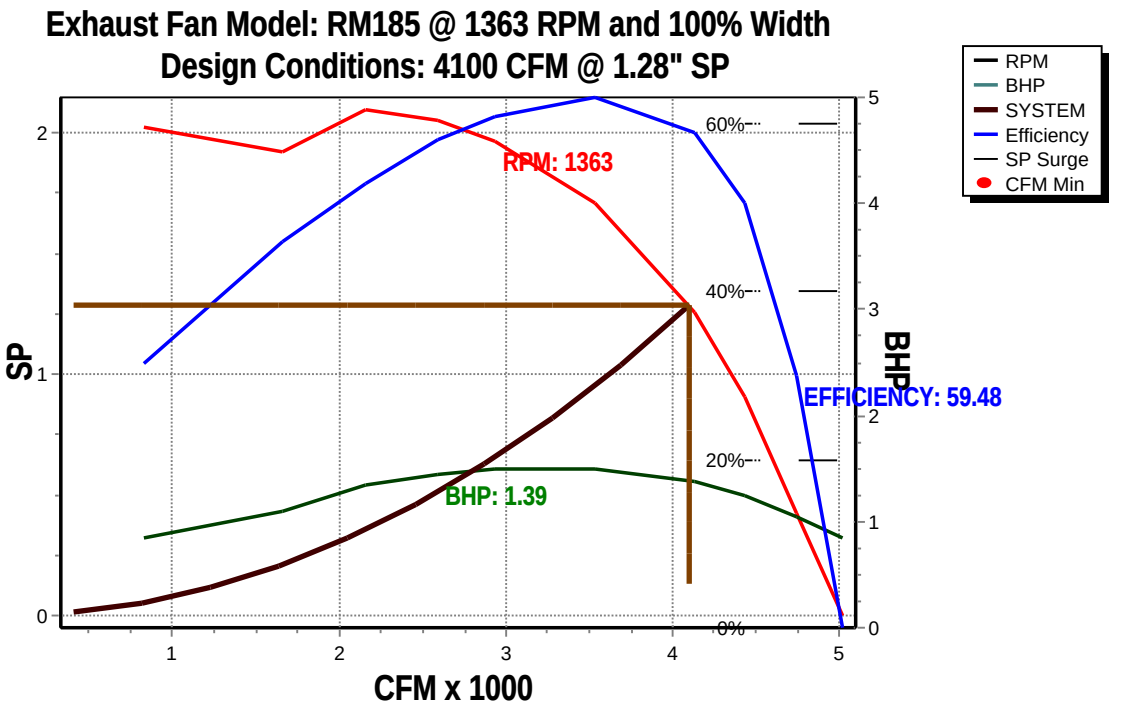
RPM:	*1363*
BHP:	*1.39*
Efficiency:	*59.5%*
In/Out Velocity:	*2081/1614 FPM*
Plenum Out Velocity:	*68 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band: **(Re 10^-12 watts)**

1	2	3	4	5	6	7	8
84	*84*	*83*	*81*	*75*	*72*	*69*	*64*
84	*84*	*83*	*81*	*75*	*72*	*69*	*64*

SOUND POWER A-Weighted: 85 / 85 dB



18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-4 Admin*
Rep Firm:	
Date:	*07-07-2022*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	*3650*
Tip Speed:	*5,822 FPM*
Inertia:	*3 WR²*

OPERATING CONDITIONS:

Air Flow:	*3,650 CFM*
Static Pressure:	*0.74 in. Wg.*
Relief Dampers DP:	*0.23 in. Wg.*
TSP:	*0.97 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*0.97 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*2 / No*
Frame Size:	*145T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.865*
Enclosure Type:	*ODP*
Max Inertial Load:	*27 WR²*

FAN PERFORMANCE:

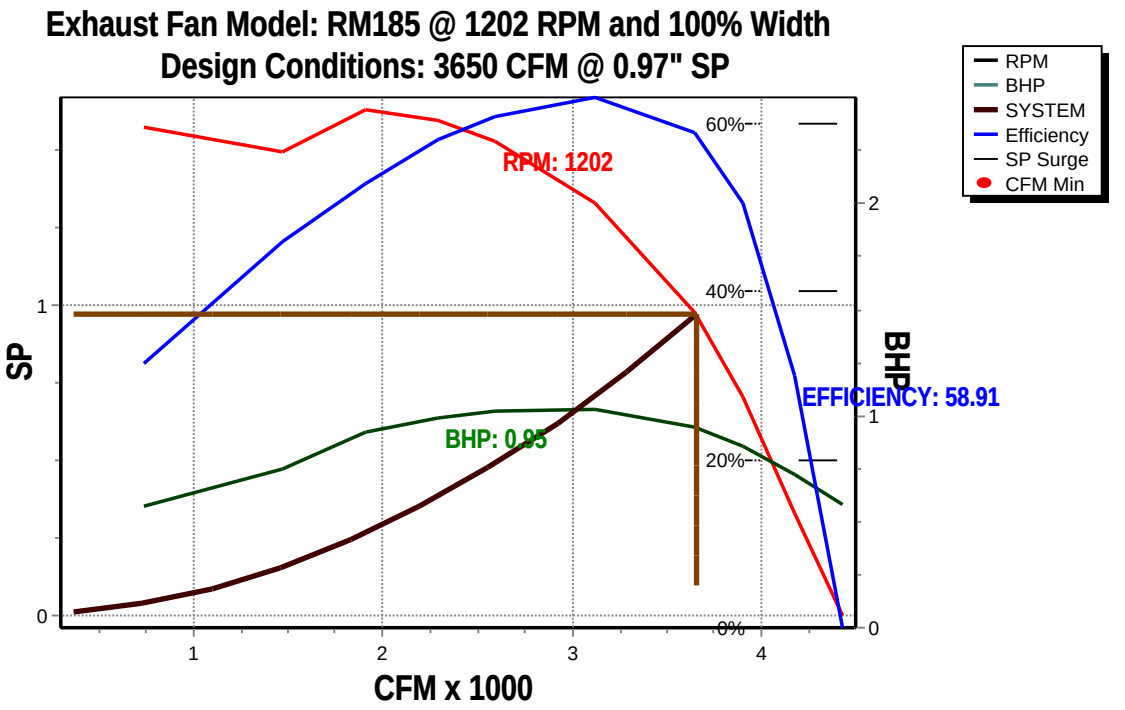
RPM:	*1202*
BHP:	*0.95*
Efficiency:	*58.9%*
In/Out Velocity:	*1853/1437 FPM*
Plenum Out Velocity:	*61 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band: **(Re 10^-12 watts)**

1	2	3	4	5	6	7	8
80	*81*	*81*	*76*	*72*	*69*	*65*	*60*
80	*81*	*81*	*76*	*72*	*69*	*65*	*60*

SOUND POWER A-Weighted: 81 / 81 dB



22.0" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-5 Gym*
Rep Firm:	
Date:	*07-07-2022*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*22.0 in. x 1*
CFM:	*6200*
Tip Speed:	*7,862 FPM*
Inertia:	*5 WR²*

OPERATING CONDITIONS:

Air Flow:	*6,200 CFM*
Static Pressure:	*0.67 in. Wg.*
Relief Dampers DP:	*0.44 in. Wg.*
TSP:	*1.11 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.11 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*5 / No*
Frame Size:	*184T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*52 WR²*

FAN PERFORMANCE:

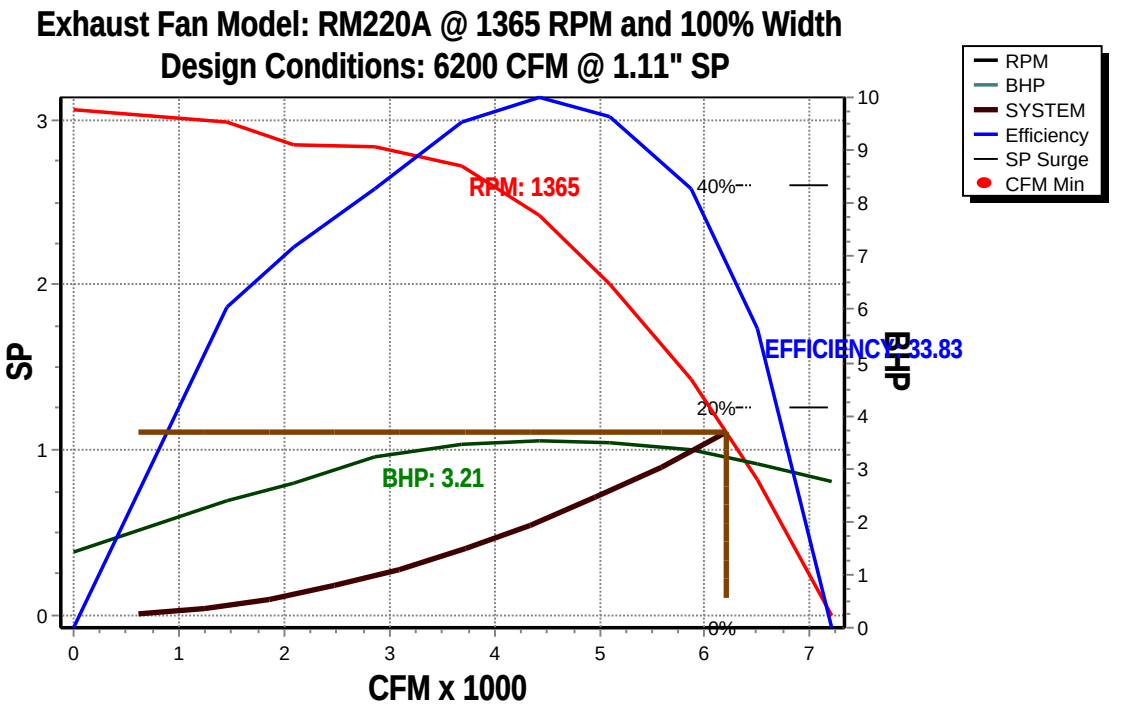
RPM:	*1365*
BHP:	*3.21*
Efficiency:	*33.8%*
In/Out Velocity:	*1896/2088 FPM*
Plenum Out Velocity:	*103 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band: **(Re 10^-12 watts)**

1	2	3	4	5	6	7	8
89	*88*	*90*	*85*	*79*	*78*	*73*	*65*
89	*88*	*90*	*85*	*79*	*78*	*73*	*65*

SOUND POWER A-Weighted: 90 / 90 dB



22.0" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-6 Ground East*
Rep Firm:	
Date:	*07-07-2022*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*22.0 in. x 1*
CFM:	*6750*
Tip Speed:	*8,490 FPM*
Inertia:	*5 WR²*

OPERATING CONDITIONS:

Air Flow:	*6,750 CFM*
Static Pressure:	*0.74 in. Wg.*
Relief Dampers DP:	*0.50 in. Wg.*
TSP:	*1.24 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.24 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*5 / No*
Frame Size:	*184T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*52 WR²*

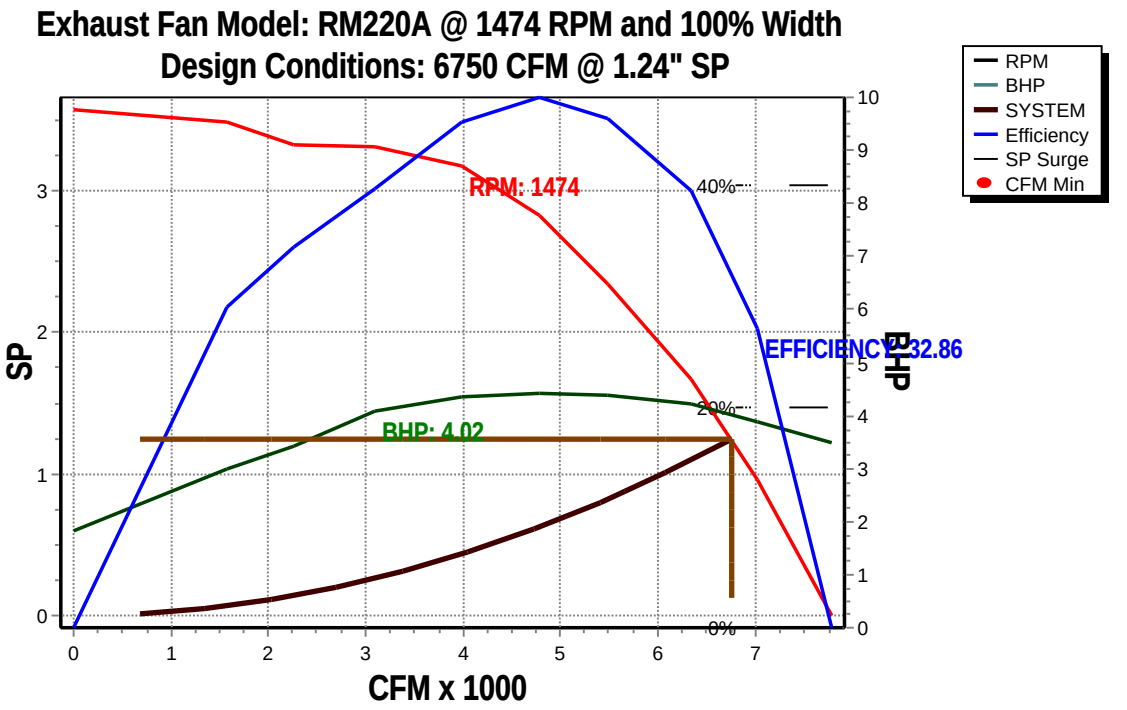
FAN PERFORMANCE:

RPM:	*1474*
BHP:	*4.02*
Efficiency:	*32.9%*
In/Out Velocity:	*2064/2273 FPM*
Plenum Out Velocity:	*112 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band:							(Re 10^-12 watts)
1	**2**	**3**	**4**	**5**	**6**	**7**	**8**
91	*89*	*92*	*88*	*80*	*80*	*75*	*67*
91	*89*	*92*	*88*	*80*	*80*	*75*	*67*

SOUND POWER A-Weighted: 92 / 92 dB



18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-7 Second Floor Zone 1*
Rep Firm:	
Date:	*07-07-2022*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	*4400*
Tip Speed:	*6,650 FPM*
Inertia:	*3 WR²*

OPERATING CONDITIONS:

Air Flow:	*4,400 CFM*
Static Pressure:	*0.64 in. Wg.*
Relief Dampers DP:	*0.35 in. Wg.*
TSP:	*0.99 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*0.99 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*2 / No*
Frame Size:	*145T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.865*
Enclosure Type:	*ODP*
Max Inertial Load:	*27 WR²*

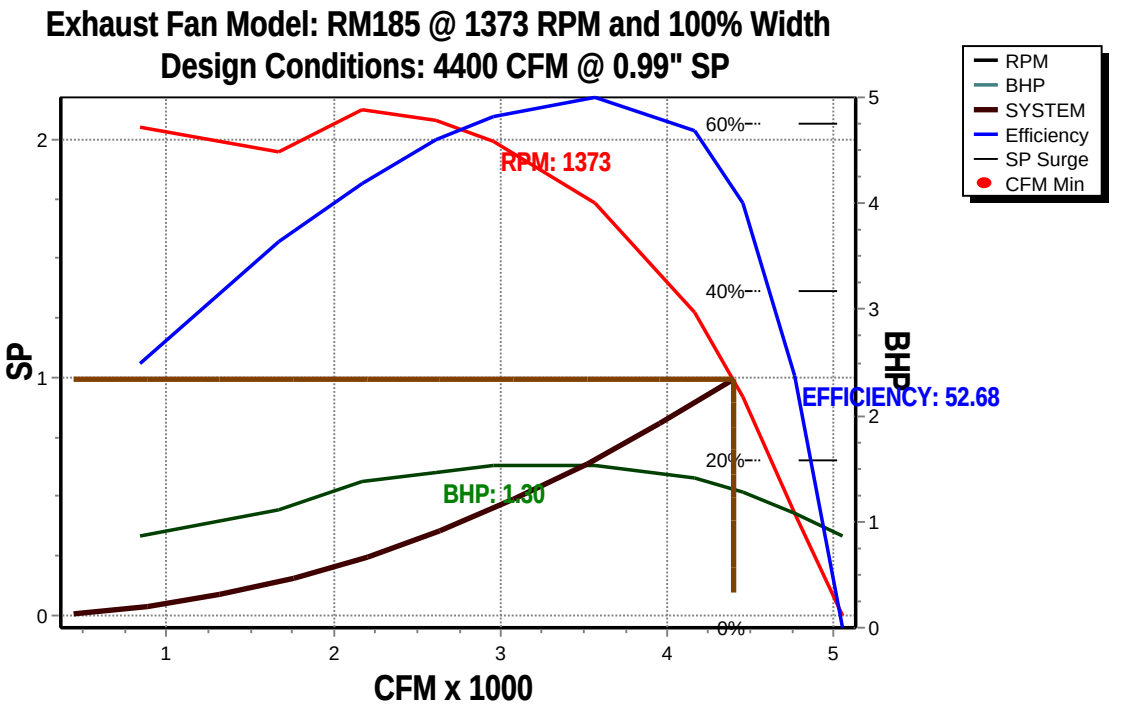
FAN PERFORMANCE:

RPM:	*1373*
BHP:	*1.30*
Efficiency:	*52.7%*
In/Out Velocity:	*2234/1732 FPM*
Plenum Out Velocity:	*73 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
(Re 10^-12 watts)								
	84	*84*	*85*	*81*	*76*	*73*	*70*	*65*
	84	*84*	*85*	*81*	*76*	*73*	*70*	*65*

SOUND POWER A-Weighted: 85 / 85 dB



22.0" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.324 (SN: 6114768-C4GU4Q4U)

JOB INFORMATION:

Job Name:	*CEPEO Kanata*
Job Tag:	*RTU-8 Second Floor Zone 2*
Rep Firm:	
Date:	*07-07-2022*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*22.0 in. x 1*
CFM:	*6800*
Tip Speed:	*8,478 FPM*
Inertia:	*5 WR²*

OPERATING CONDITIONS:

Air Flow:	*6,800 CFM*
Static Pressure:	*0.67 in. Wg.*
Relief Dampers DP:	*0.51 in. Wg.*
TSP:	*1.18 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.18 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*5 / No*
Frame Size:	*184T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*52 WR²*

FAN PERFORMANCE:

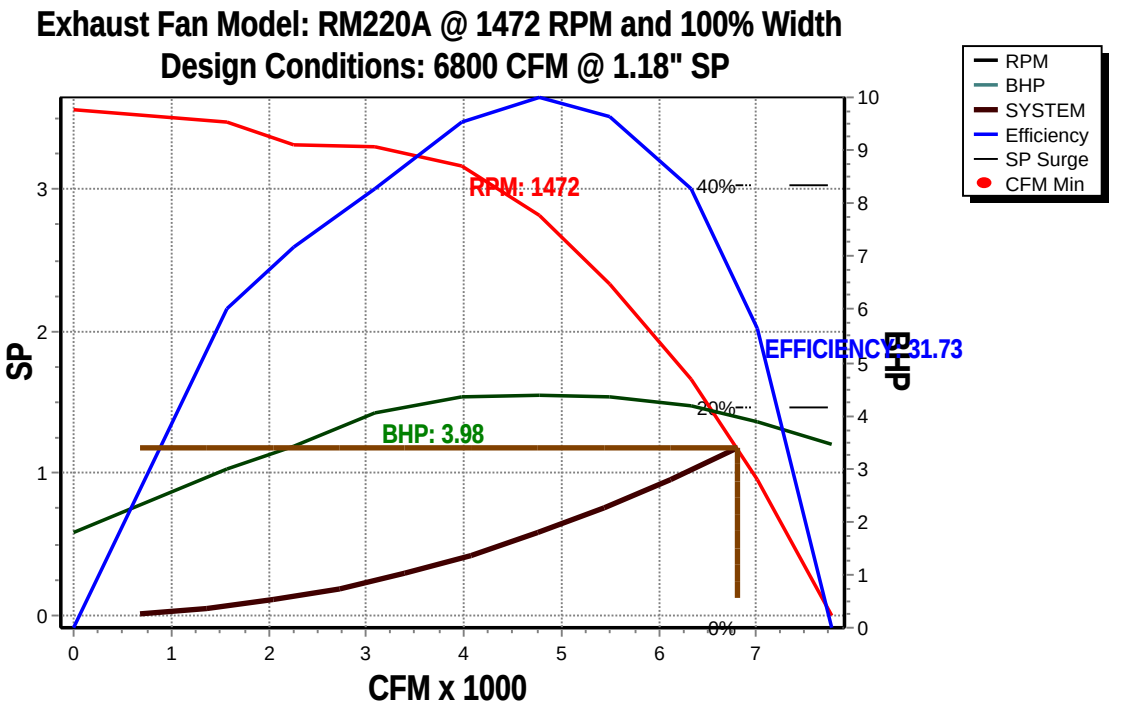
RPM:	*1472*
BHP:	*3.98*
Efficiency:	*31.7%*
In/Out Velocity:	*2080/2290 FPM*
Plenum Out Velocity:	*113 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band: **(Re 10^-12 watts)**

1	2	3	4	5	6	7	8
91	*89*	*92*	*88*	*80*	*80*	*75*	*67*
91	*89*	*92*	*88*	*80*	*80*	*75*	*67*

SOUND POWER A-Weighted: 92 / 92 dB



APPENDIX

E SUPPORTING INFORMATION

Receiver
Name: (untitled)
ID: R03_W
X: 429685.52 m
Y: 5012952.96 m
Z: 4.50 m

Point Source, ISO 9613, Name: "Condenser Fan", ID: "RTU_6c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
87	429693.47	5013011.63	9.52	0	D	A	90.8	0.0	0.0	0.0	0.0	46.5	0.4	-2.4	0.0	0.0	8.1	0.0	0.0	38.1
87	429693.47	5013011.63	9.52	0	N	A	90.8	0.0	-188.0	0.0	0.0	46.5	0.4	-2.4	0.0	0.0	8.1	0.0	0.0	-149.9
87	429693.47	5013011.63	9.52	0	E	A	90.8	0.0	-188.0	0.0	0.0	46.5	0.4	-2.4	0.0	0.0	8.1	0.0	0.0	-149.9

Point Source, ISO 9613, Name: "Exhaust Fan", ID: "RTU_6e"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
91	429690.75	5013011.61	8.80	0	D	A	89.1	0.0	0.0	0.0	0.0	46.4	0.3	-2.3	0.0	0.0	11.0	0.0	0.0	33.8
91	429690.75	5013011.61	8.80	0	N	A	89.1	0.0	-188.0	0.0	0.0	46.4	0.3	-2.3	0.0	0.0	11.0	0.0	0.0	-154.2
91	429690.75	5013011.61	8.80	0	E	A	89.1	0.0	-188.0	0.0	0.0	46.4	0.3	-2.3	0.0	0.0	11.0	0.0	0.0	-154.2

Point Source, ISO 9613, Name: "Condenser Fan ", ID: "RTU_5c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
140	429688.03	5013024.52	9.52	0	D	A	90.8	0.0	0.0	0.0	0.0	48.1	0.5	-2.4	0.0	0.0	4.9	0.0	0.0	39.7
140	429688.03	5013024.52	9.52	0	N	A	90.8	0.0	-188.0	0.0	0.0	48.1	0.5	-2.4	0.0	0.0	4.9	0.0	0.0	-148.3
140	429688.03	5013024.52	9.52	0	E	A	90.8	0.0	-188.0	0.0	0.0	48.1	0.5	-2.4	0.0	0.0	4.9	0.0	0.0	-148.3

Point Source, ISO 9613, Name: "Condenser Fan", ID: "RTU_8c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
155	429731.12	5013024.55	9.52	0	D	A	90.8	0.0	0.0	0.0	0.0	49.6	0.5	-2.4	0.0	0.0	3.2	0.0	0.0	39.8
155	429731.12	5013024.55	9.52	0	N	A	90.8	0.0	-188.0	0.0	0.0	49.6	0.5	-2.4	0.0	0.0	3.2	0.0	0.0	-148.2
155	429731.12	5013024.55	9.52	0	E	A	90.8	0.0	-188.0	0.0	0.0	49.6	0.5	-2.4	0.0	0.0	3.2	0.0	0.0	-148.2

Point Source, ISO 9613, Name: "Exhaust Fan ", ID: "RTU_8e"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
170	429733.01	5013023.71	8.80	0	D	A	89.1	0.0	0.0	0.0	0.0	49.6	0.4	-2.3	0.0	0.0	10.7	0.0	0.0	30.8
170	429733.01	5013023.71	8.80	0	N	A	89.1	0.0	-188.0	0.0	0.0	49.6	0.4	-2.3	0.0	0.0	10.7	0.0	0.0	-157.2
170	429733.01	5013023.71	8.80	0	E	A	89.1	0.0	-188.0	0.0	0.0	49.6	0.4	-2.3	0.0	0.0	10.7	0.0	0.0	-157.2

Point Source, ISO 9613, Name: "Condenser Fan", ID: "RTU_2c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
173	429643.91	5013047.77	5.52	0	D	A	90.8	0.0	0.0	0.0	0.0	51.3	0.6	-2.3	0.0	0.0	8.1	0.0	0.0	33.1
173	429643.91	5013047.77	5.52	0	N	A	90.8	0.0	-188.0	0.0	0.0	51.3	0.6	-2.3	0.0	0.0	8.1	0.0	0.0	-154.9
173	429643.91	5013047.77	5.52	0	E	A	90.8	0.0	-188.0	0.0	0.0	51.3	0.6	-2.3	0.0	0.0	8.1	0.0	0.0	-154.9
176	429643.91	5013047.77	5.52	1	D	A	90.8	0.0	0.0	0.0	0.0	51.7	0.7	-2.3	0.0	0.0	6.5	0.0	2.1	32.1
176	429643.91	5013047.77	5.52	1	N	A	90.8	0.0	-188.0	0.0	0.0	51.7	0.7	-2.3	0.0	0.0	6.5	0.0	2.1	-155.9
176	429643.91	5013047.77	5.52	1	E	A	90.8	0.0	-188.0	0.0	0.0	51.7	0.7	-2.3	0.0	0.0	6.5	0.0	2.1	-155.9

Point Source, ISO 9613, Name: "Exhaust Fan", ID: "RTU_5e"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
185	429685.87	5013023.55	8.80	0	D	A	87.0	0.0	0.0	0.0	0.0	48.0	0.3	-2.3	0.0	0.0	5.5	0.0	0.0	35.5
185	429685.87	5013023.55	8.80	0	N	A	87.0	0.0	-188.0	0.0	0.0	48.0	0.3	-2.3	0.0	0.0	5.5	0.0	0.0	-152.5
185	429685.87	5013023.55	8.80	0	E	A	87.0	0.0	-188.0	0.0	0.0	48.0	0.3	-2.3	0.0	0.0	5.5	0.0	0.0	-152.5

Point Source, ISO 9613, Name: "Condenser Fan", ID: "RTU_4c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
188	429657.21	5013008.84	5.27	0	D	A	83.8	0.0	0.0	0.0	0.0	46.9	0.4	-2.3	0.0	0.0	0.0	0.0	0.0	38.8
188	429657.21	5013008.84	5.27	0	N	A	83.8	0.0	-188.0	0.0	0.0	46.9	0.4	-2.3	0.0	0.0	0.0	0.0	0.0	-149.2

Point Source, ISO 9613, Name: "Condenser Fan", ID: "RTU_4c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
188	429657.21	5013008.84	5.27	0	E	A	83.8	0.0	-188.0	0.0	0.0	46.9	0.4	-2.3	0.0	0.0	0.0	0.0	0.0	-149.2
191	429657.21	5013008.84	5.27	1	D	A	83.8	0.0	0.0	0.0	0.0	53.9	0.8	-2.3	0.0	0.0	4.8	0.0	10.2	16.5
191	429657.21	5013008.84	5.27	1	N	A	83.8	0.0	-188.0	0.0	0.0	53.9	0.8	-2.3	0.0	0.0	4.8	0.0	10.2	-171.5
191	429657.21	5013008.84	5.27	1	E	A	83.8	0.0	-188.0	0.0	0.0	53.9	0.8	-2.3	0.0	0.0	4.8	0.0	10.2	-171.5

Point Source, ISO 9613, Name: "Condenser Fan", ID: "RTU_7c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
194	429704.84	5013013.71	9.27	0	D	A	83.8	0.0	0.0	0.0	0.0	47.1	0.4	-2.4	0.0	0.0	0.0	0.0	0.0	38.6
194	429704.84	5013013.71	9.27	0	N	A	83.8	0.0	-188.0	0.0	0.0	47.1	0.4	-2.4	0.0	0.0	0.0	0.0	0.0	-149.4
194	429704.84	5013013.71	9.27	0	E	A	83.8	0.0	-188.0	0.0	0.0	47.1	0.4	-2.4	0.0	0.0	0.0	0.0	0.0	-149.4
208	429704.84	5013013.71	9.27	1	D	A	83.8	0.0	0.0	0.0	0.0	47.2	0.4	-2.4	0.0	0.0	0.0	0.0	5.3	33.2
208	429704.84	5013013.71	9.27	1	N	A	83.8	0.0	-188.0	0.0	0.0	47.2	0.4	-2.4	0.0	0.0	0.0	0.0	5.3	-154.8
208	429704.84	5013013.71	9.27	1	E	A	83.8	0.0	-188.0	0.0	0.0	47.2	0.4	-2.4	0.0	0.0	0.0	0.0	5.3	-154.8

Point Source, ISO 9613, Name: "Condenser Fan", ID: "RTU_3c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
218	429659.38	5013015.00	5.52	0	D	A	83.8	0.0	0.0	0.0	0.0	47.6	0.5	-2.3	0.0	0.0	0.0	0.0	0.0	38.1
218	429659.38	5013015.00	5.52	0	N	A	83.8	0.0	-188.0	0.0	0.0	47.6	0.5	-2.3	0.0	0.0	0.0	0.0	0.0	-149.9
218	429659.38	5013015.00	5.52	0	E	A	83.8	0.0	-188.0	0.0	0.0	47.6	0.5	-2.3	0.0	0.0	0.0	0.0	0.0	-149.9
220	429659.38	5013015.00	5.52	1	D	A	83.8	0.0	0.0	0.0	0.0	53.6	0.8	-2.3	0.0	0.0	0.0	0.0	10.1	21.7
220	429659.38	5013015.00	5.52	1	N	A	83.8	0.0	-188.0	0.0	0.0	53.6	0.8	-2.3	0.0	0.0	0.0	0.0	10.1	-166.3
220	429659.38	5013015.00	5.52	1	E	A	83.8	0.0	-188.0	0.0	0.0	53.6	0.8	-2.3	0.0	0.0	0.0	0.0	10.1	-166.3

Point Source, ISO 9613, Name: "Condenser Fan ", ID: "RTU_1c"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
224	429647.48	5013056.58	5.12	0	D	A	87.8	0.0	0.0	0.0	0.0	51.9	0.7	-2.3	0.0	0.0	6.8	0.0	0.0	30.7
224	429647.48	5013056.58	5.12	0	N	A	87.8	0.0	-188.0	0.0	0.0	51.9	0.7	-2.3	0.0	0.0	6.8	0.0	0.0	-157.3
224	429647.48	5013056.58	5.12	0	E	A	87.8	0.0	-188.0	0.0	0.0	51.9	0.7	-2.3	0.0	0.0	6.8	0.0	0.0	-157.3
226	429647.48	5013056.58	5.12	1	D	A	87.8	0.0	0.0	0.0	0.0	52.1	0.7	-2.3	0.0	0.0	14.4	0.0	9.4	13.6
226	429647.48	5013056.58	5.12	1	N	A	87.8	0.0	-188.0	0.0	0.0	52.1	0.7	-2.3	0.0	0.0	14.4	0.0	9.4	-174.4
226	429647.48	5013056.58	5.12	1	E	A	87.8	0.0	-188.0	0.0	0.0	52.1	0.7	-2.3	0.0	0.0	14.4	0.0	9.4	-174.4
229	429647.48	5013056.58	5.12	1	D	A	87.8	0.0	0.0	0.0	0.0	52.0	0.7	-2.3	0.0	0.0	8.6	0.0	38.2	-9.4
229	429647.48	5013056.58	5.12	1	N	A	87.8	0.0	-188.0	0.0	0.0	52.0	0.7	-2.3	0.0	0.0	8.6	0.0	38.2	-197.4
229	429647.48	5013056.58	5.12	1	E	A	87.8	0.0	-188.0	0.0	0.0	52.0	0.7	-2.3	0.0	0.0	8.6	0.0	38.2	-197.4

Point Source, ISO 9613, Name: "Exahust Fan ", ID: "RTU_2e"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
231	429644.57	5013049.44	4.80	0	D	A	87.0	0.0	0.0	0.0	0.0	51.4	0.5	-2.2	0.0	0.0	11.4	0.0	0.0	25.9
231	429644.57	5013049.44	4.80	0	N	A	87.0	0.0	-188.0	0.0	0.0	51.4	0.5	-2.2	0.0	0.0	11.4	0.0	0.0	-162.1
231	429644.57	5013049.44	4.80	0	E	A	87.0	0.0	-188.0	0.0	0.0	51.4	0.5	-2.2	0.0	0.0	11.4	0.0	0.0	-162.1
233	429644.57	5013049.44	4.80	1	D	A	87.0	0.0	0.0	0.0	0.0	51.6	0.5	-2.2	0.0	0.0	9.1	0.0	2.0	25.9
233	429644.57	5013049.44	4.80	1	N	A	87.0	0.0	-188.0	0.0	0.0	51.6	0.5	-2.2	0.0	0.0	9.1	0.0	2.0	-162.1
233	429644.57	5013049.44	4.80	1	E	A	87.0	0.0	-188.0	0.0	0.0	51.6	0.5	-2.2	0.0	0.0	9.1	0.0	2.0	-162.1

Point Source, ISO 9613, Name: "Exhaust Fan", ID: "RTU_7e"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
235	429706.88	5013014.56	8.70	0	D	A	82.8	0.0	0.0	0.0	0.0	47.3	0.4	-2.3	0.0	0.0	12.0	0.0	0.0	25.5
235	429706.88	5013014.56	8.70	0	N	A	82.8	0.0	-188.0	0.0	0.0	47.3	0.4	-2.3	0.0	0.0	12.0	0.0	0.0	-162.5
235	429706.88	5013014.56	8.70	0	E	A	82.8	0.0	-188.0	0.0	0.0	47.3	0.4	-2.3	0.0	0.0	12.0	0.0	0.0	-162.5

Point Source, ISO 9613, Name: "Exahust Fan ", ID: "RTU_1e"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	l/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
237	429646.97	5013055.15	4.60	0	D	A	86.5	0.0	0.0	0.0	0.0	51.8	0.6	-2.3	0.0	0.0	11.1	0.0	0.0	25.4
237	429646.97	5013055.15	4.60	0	N	A	86.5	0.0	-188.0	0.0	0.0	51.8	0.6	-2.3	0.0	0.0	11.1	0.0	0.0	-162.6
237	429646.97	5013055.15	4.60	0	E	A	86.5	0.0	-188.0	0.0	0.0	51.8	0.6	-2.3	0.0	0.0	11.1	0.0	0.0	-162.6
238	429646.97	5013055.15	4.60	1	D	A	86.5	0.0	0.0	0.0	0.0	51.9	0.6	-2.3	0.0	0.0	12.7	0.0	39.2	-15.5
238	429646.97	5013055.15	4.60	1	N	A	86.5	0.0	-188.0	0.0	0.0	51.9	0.6	-2.3	0.0	0.0	12.7	0.0	39.2	-203.5
238	429646.97	5013055.15	4.60	1	E	A	86.5	0.0	-188.0	0.0	0.0	51.9	0.6	-2.3	0.0	0.0	12.7	0.0	39.2	-203.5

Point Source, ISO 9613, Name: "Exahust Fan ", ID: "RTU_3e"																			
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
240	429658.58	5013013.62	4.80	0	D	A	82.0	0.0	0.0	0.0	0.0	47.4	0.4	-2.3	0.0	0.0	0.0	0.0	0.0	36.5
240	429658.58	5013013.62	4.80	0	N	A	82.0	0.0	-188.0	0.0	0.0	47.4	0.4	-2.3	0.0	0.0	0.0	0.0	0.0	-151.5
240	429658.58	5013013.62	4.80	0	E	A	82.0	0.0	-188.0	0.0	0.0	47.4	0.4	-2.3	0.0	0.0	0.0	0.0	0.0	-151.5
242	429658.58	5013013.62	4.80	1	D	A	82.0	0.0	0.0	0.0	0.0	53.6	0.6	-2.3	0.0	0.0	14.0	0.0	19.3	-3.3
242	429658.58	5013013.62	4.80	1	N	A	82.0	0.0	-188.0	0.0	0.0	53.6	0.6	-2.3	0.0	0.0	14.0	0.0	19.3	-191.3
242	429658.58	5013013.62	4.80	1	E	A	82.0	0.0	-188.0	0.0	0.0	53.6	0.6	-2.3	0.0	0.0	14.0	0.0	19.3	-191.3

Point Source, ISO 9613, Name: "Exahust Fan ", ID: "RTU_4e"																			
Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	(dB)	dB(A)
244	429657.89	5013010.27	4.70	0	D	A	78.5	0.0	0.0	0.0	0.0	47.1	0.3	-2.3	0.0	0.0	8.8	0.0	0.0	24.6
244	429657.89	5013010.27	4.70	0	N	A	78.5	0.0	-188.0	0.0	0.0	47.1	0.3	-2.3	0.0	0.0	8.8	0.0	0.0	-163.4
244	429657.89	5013010.27	4.70	0	E	A	78.5	0.0	-188.0	0.0	0.0	47.1	0.3	-2.3	0.0	0.0	8.8	0.0	0.0	-163.4
246	429657.89	5013010.27	4.70	1	D	A	78.5	0.0	0.0	0.0	0.0	53.8	0.6	-2.2	0.0	0.0	4.9	0.0	10.4	11.0
246	429657.89	5013010.27	4.70	1	N	A	78.5	0.0	-188.0	0.0	0.0	53.8	0.6	-2.2	0.0	0.0	4.9	0.0	10.4	-177.0
246	429657.89	5013010.27	4.70	1	E	A	78.5	0.0	-188.0	0.0	0.0	53.8	0.6	-2.2	0.0	0.0	4.9	0.0	10.4	-177.0