REPORT

Noise Impact Assessment

OCSB Fernbank Elementary School - 620 Triangle Street

Submitted to:

Pye & Richards - Temprano & Young Architects Inc.

824 Meath Street, Suite 200
Ottawa, ON N1Z 6E8

Submitted by:

WSP Canada Inc.

126 Don Hillock Drive, Unit 2, Aurora, ON
L4G 0G9 Canada

(905) 750-3080

CA0048260.4448

April 2025

Distribution List

Electronic copy - WSP Canada Inc.

Electronic copy - Pye & Richards - Temprano & Young Architects Inc.

Document Control

Version	Date	Revision Description	Prepared By
1.0	April 4, 2025	Noise Impact Study to support a Site Plan Control (SPC) Application	WSP Canada Inc.

LIMITATIONS

WSP Canada Inc. (“WSP”) prepared this report solely for the use of the intended recipient, Ottawa Catholic School Board, in accordance with the professional services agreement between the parties. In the event a contract has not been executed, the parties agree that the WSP General Terms for Consultant shall govern their business relationship which was provided to you prior to the preparation of this report.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

WSP disclaims any obligation to update this report if, after the date of this report, any conditions appear to differ significantly from those presented in this report; however, WSP reserves the right to amend or supplement this report based on additional information, documentation or evidence.

WSP makes no other representations whatsoever concerning the legal significance of its findings.

The intended recipient is solely responsible for the disclosure of any information contained in this report. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance or decisions. WSP does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report.

WSP has provided services to the intended recipient in accordance with the professional services agreement between the parties and in a manner consistent with that degree of care, skill and diligence normally provided by members of the same profession performing the same or comparable services in respect of projects of a similar nature in similar circumstances. It is understood and agreed by WSP and the recipient of this report that WSP provides no warranty, express or implied, of any kind. Without limiting the generality of the foregoing, it is agreed and understood by WSP and the recipient of this report that WSP makes no representation or warranty whatsoever as to the sufficiency of its scope of work for the purpose sought by the recipient of this report.

In preparing this report, WSP has relied in good faith on information provided by others, as noted in the report. WSP has reasonably assumed that the information provided is correct and WSP is not responsible for the accuracy or completeness of such information.

Benchmark and elevations used in this report are primarily to establish relative elevation differences between the specific testing and/or sampling locations and should not be used for other purposes, such as grading, excavating, construction, planning, development, etc.

The original of this digital file will be kept by WSP for a period of not less than 10 years. As the digital file transmitted to the intended recipient is no longer under the control of WSP, its integrity cannot be assured. As such, WSP does not guarantee any modifications made to this digital file subsequent to its transmission to the intended recipient.

This limitations statement is considered an integral part of this report.

Executive Summary

This Noise Impact Assessment (NIA) was prepared to support a Site Plan Control (SPC) Application for the proposed Ottawa Catholic School Board (OSCB) Fernbank North Elementary School that is to be located at 620 Triangle Street in Nepean, Ontario (the Site).

The purpose of the study is to assess the potential noise effects of the environment onto the Site and assess the potential noise impact of the proposed stationary noise sources at the Site on surrounding noise-sensitive areas. The assessment was based on the Site Plan prepared by Pye & Richards – Temprano & Young Architects Inc. prepared October 10, 2024.

The assessment was conducted in accordance with the City of Ottawa guideline, Environmental Noise Control Guidelines (ENCG) and the Ministry of the Environment, Conservation and Parks (MECP) Noise Guideline "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning" (Publication NPC-300). The acceptable levels of road traffic noise impacting noise-sensitive institutional developments are discussed in Section "Part C- Land Use Planning of NPC-300 as well as Section 2 and 4 of the ENCG.

The significant noise sources in the vicinity of the proposed development are transportation noise sources, mainly road traffic on Cranesbill Road which is identified by the City of Ottawa Official Plan as major collector. The significant stationary sources of noise proposed at the Site are rooftop HVAC equipment and exhaust fans.

The Site is located outside the Ottawa Macdonald Cartier International Airport Operating Influence Zone, and thus, aircraft noise assessment is not required.

The evaluated potential noise impact of transportation sources on the Site, and stationary sources associated with the Site on nearby residential uses and onto the school itself. The predicted sound levels were assessed as per the MECP Publication NPC-300 and ENCG requirements to determine that the Site will comply with the applicable noise guidelines without additional noise control measures. Additionally, exterior walls, 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 Ottaway and the MECP noise guidelines sound level limits.

Study Limitations

WSP Canada Inc. (WSP) prepared this report solely for the use of the intended recipient, Ottawa Catholic School Board in accordance with the professional services agreement between the parties. In the event a contract has not been executed, the parties agree that the WSP General Terms for Consultant shall govern their business relationship which was provided to you prior to the preparation of this report.

The report is intended to be used in its entirety. No excerpts may be taken to be representative of the findings in the assessment.

The conclusions presented in this report are based on work performed by trained, professional and technical staff, in accordance with their reasonable interpretation of current and accepted engineering and scientific practices at the time the work was performed.

The content and opinions contained in the present report are based on the observations and/or information available to WSP at the time of preparation, using investigation techniques and engineering analysis methods consistent with those ordinarily exercised by WSP and other engineering/scientific practitioners working under similar conditions, and subject to the same time, financial and physical constraints applicable to this project.

WSP disclaims any obligation to update this report if, after the date of this report, any conditions appear to differ significantly from those presented in this report; however, WSP reserves the right to amend or supplement this report based on additional information, documentation or evidence.

WSP makes no other representations whatsoever concerning the legal significance of its findings.

The intended recipient is solely responsible for the disclosure of any information contained in this report. If a third party makes use of, relies on, or makes decisions in accordance with this report, said third party is solely responsible for such use, reliance or decisions. WSP does not accept responsibility for damages, if any, suffered by any third party as a result of decisions made or actions taken by said third party based on this report.

WSP has provided services to the intended recipient in accordance with the professional services agreement between the parties and in a manner consistent with that degree of care, skill and diligence normally provided by members of the same profession performing the same or comparable services in respect of projects of a similar nature in similar circumstances. It is understood and agreed by WSP and the recipient of this report that WSP provides no warranty, express or implied, of any kind. Without limiting the generality of the foregoing, it is agreed and understood by WSP and the recipient of this report that WSP makes no representation or warranty whatsoever as to the sufficiency of its scope of work for the purpose sought by the recipient of this report.

In preparing this report, WSP has relied in good faith on information provided by others, as noted in the report. WSP has reasonably assumed that the information provided is correct and WSP is not responsible for the accuracy or completeness of such information.

The original of this digital file will be kept by WSP for a period of not less than 10 years. As the digital file transmitted to the intended recipient is no longer under the control of WSP, its integrity cannot be assured. As such, WSP does not guarantee any modifications made to this digital file subsequent to its transmission to the intended recipient.

This limitations statement is considered an integral part of this report.

Table of Contents

TABLES

FIGURES

APPENDICES

1 INTRODUCTION

WSP Canada Inc. (WSP) retained by Ottawa Catholic School Board (OSCB) to complete an Environmental Noise Impact Assessment for the proposed Fernbank North Elementary School development to be located at 620 Triangle Street in Nepean, Ontario (the Site). This report was prepared in support of the Site Plan Control (SPC) Application submission to the City of Ottawa.

The assessment was based on the Site Plan prepared by Pye & Richards – Temprano & Young Architects Inc. prepared October 10, 2024, included in Appendix A, and was prepared in accordance with the Environmental Noise Control Guidelines (ENCG) published by the City of Ottawa, dated January 2026. The ENCG is based on the Ministry of the Environment, Conservation and Parks (MECP) Noise Guideline "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning" (Publication NPC-300).

This assessment investigates that potential for noise impacts of the environment onto the Site from nearby transportation sources (i.e. Cranesbill Road) and proposed stationary sources at the Site on surrounding noise-sensitive areas including the school itself. 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 bounded by:

- Cranesbill Road to the north with residential, with open space and residential and agricultural land use beyond this.
- Residential land use to the east followed by open space.
- Honeylocust Avenue to the south followed by residential land use.
- Triangle Street to the west with residential land use and greenspace land use further west.

The zoning designation of the are in the immediate vicinity of the Site has been obtained from the City of Ottawa from the existing zoning By-law 2008-250 and a review of the new zoning By-law Draft 1 (April 29, 2024). The Zoning By-law 2008-250 remains in effect.

Proposed changes include the following:

- The Site is currently zoned "I1A" and is proposed to be changed to "INZ", both of those codes reflect Institutional Zone and no change to land use.
- The residential area to the immediate north, west and south is currently zoned "R3Z" Residential Zones is proposed to be changed to "N3B" Neighbourhood Zone, both reflecting residential land use.
- The residential area to the east is currently zoned "R3YY" Residential Zones and is proposed to be changed to "N3B" Neighbourhood Zone, both reflecting residential land use.
- Parks in the area, currently zoned "O1" Open Space and Leisure Zones are proposed to be "GRN" Greenspace Zones.
- The other currently zoned "O1" Open Space and Leisure Zones is proposed to be "FAC", Open Sace Facility Zones.

- The residential area to the north beyond the open space is currently zoned “R3Z” Residential Zone and is proposed to be zoned “MS2” Mainstreet and Minor Corridor Zones.
- The currently zoned “DR” Development Reserve Zone to the west is proposed to be “FAC” Open Space Facility Zone.

A scaled map showing the Site with respect to the surrounding area in a 1 km radius is provided in Figure 1. A land use zoning designation plan from the City of Ottawa (By-law 2008-250) and the new draft zoning By-law is provided in Figure 2 and Figure 3, respectively.

1.2 The Proposed Development

The assessment was based on the Site Plan prepared by Pye & Richards – Temprano & Young Architects Inc. prepared March 12, 2025, and included in APPENDIX A (Site Plan). The proposed school development includes a site area of 27,149 m² which consists of a main one (1) storey building with a childcare centre, a portable area design to accommodate up to eighteen (18) future portables located to the east of the main building, outdoor play areas and a paved parking area to the northwest, as outlined in the Site Plan.

2 NOISE IMPACT ASSESSMENT CRTIERIA

2.1 Transportation Sources 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 *Environmental Noise Control Guidelines* (ENCG) follows the MECP’s Publication NPC-300, *Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning* for acceptable levels of road, rail and air 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 and 4 of the ENCG.

The 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;
- 300 metres from the right-of-way of a proposed or existing rail corridor or secondary main railway line;
- 500 metres from the right-of-way of a freeway or 400-series provincial highway or principal main railway line; or
- The defined area from the Noise Exposure Forecast (NEF) noise contour of airport/aircraft noise.

2.1.1 Aircraft Sources

The proposed development is located outside the City of Ottawa's International Airport's (Macdonald-Cartier International Airport) Vicinity Development Zone (AVDZ) and outside the Airport Operating Influencing Zone (AOIZ). Therefore, aircraft noise has not been considered in the assessment. The NEF/NEP contour map provided by the City's "Official Plan – Schedule C14 – Land Use Constraints Due to Aircraft Noise" (November 4, 2022) is included in APPENDIX B.

2.1.2 Surface Transportation Noise Sources

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 "Official Plan – Schedule C4 – Urban Road Network" (November 4, 2022) as provided in APPENDIX B. Cranesbill Road and Triangle Street are located within 100 metres of the Site and are a Major Collector and future collector respectively.

Even though as per City's Official plan shows Triangle Street as a possible future collector, as shown in aerial images and draft plan of subdivision application for the Bradley Common Development this future collector was not included in the plans. Triangle Street remains just a local road, as houses were built along Cranesbill Road and Baldcypress Way sometime after 2018 (Phase 3), and houses are being built along Bliss Cresent (Phase 4) and open space remains between Bliss Cresent and Baldcypress Way where Triangle Road were to have been proposed to continue and connect to Hazledean Road. As these developments were approved and recently either built or in the process, the likelihood of Triangle Road becoming a possible future collect as shown in the Official Plan (Schedule C4) is not likely, and thus not carried forward in the analysis.

Other roads, light rail transit, bus rapid transit, and transit priority corridor, are over 100 metres away from the Site and are not expected to have a significant impact.

Proposed and existing highways are further than 250 metres away from the proposed school. Proposed or existing rail corridor or main railway lines are further than 300 metres away. Freeway and 400-series or principal railway line are further than 500 metres away. Therefore, these transportation noise sources are not included or significant in this assessment.

2.1.3 Road Sources Assessment Criteria

The following Table 1 summarizes the sound level limits for road traffic applicable for the proposed institutional development.

Table 1: ENCG and NPC-300 Road Traffic Indoor Sound Level Criteria for Schools

Area	Time Period	L_{EQ} (dBA)[1] - Road	Reference
Schools, Daycares	Daytime (07:00 – 23:00)	45	NPC-300 Table C-2, ENGC Table 2.2b

Notes:

[1] Daytime: $L_{EQ\ 16hr}$

The NPC-300 and ENCG provides 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 an only during the daytime period.

The building envelope, such as walls, windows and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limits summarized in Table 1.

2.1.4 Building Component Requirements

To comply with the indoor sound level criteria listed in Table 2, the ENCG and NPC-300 provides guidelines based on predicted sound levels at the façade/plane of window. All buildings are required to comply with the Ontario Building Code (OBC) requirements. If the predicted sound level at façade/plane of window exceeds 65 dBA during the daytime for institutional building, additional considerations such as the type of windows, exterior walls, and doors that can provide noise attentional must be selected.

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

Table 2: Building Component Requirements for Indoor Spaces

Area	Time Period	L_{EQ} (dBA)[2]	Building Component Requirements
Plane of Window [1]	Daytime (07:00 – 23:00)	≤ 65	Building components compliant with Ontario Building Code (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 a teacher's lounge, classrooms, etc.

[2] Daytime: $L_{EQ\ 16hr}$

2.2 Stationary Sources and Assessment Criteria

Stationary source is defined in the MECP publication NPC-300 as a source of sound or combination of sources of sound that are included and normally operated within the property lines of a facility. The ENCG states new stationary sources of noise (noise generating) are defined by proximity to existing or approved noise-sensitive developments.

There are stationary noise sources introduced by the proposed school building development which is surrounded by existing residential dwellings. These stationary sources include rooftop mechanical units. Therefore, stationary noise has been included in the study to assess the potential noise impacts of the proposed development on the surrounding noise sensitive land uses and onto itself.

From aerial review and land use review, there are no significant stationary noise sources from the surrounding area that have the potential to impact the proposed school (noise sensitive land use).

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 the 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 review of the area using aerial imagery, the general area is urban residential and can be considered as a Class 1. Given that the school only operates during the daytime, Table 3 summarizes the MECP's daytime sound level limit for a Class 1 Area and was used as the applicable sound level limit for the development.

Table 3: ENCG and MECP's Exclusion Limits in dBA

Period	Class 1	
	Plane of Window[1]	Outdoor POR[2]
Daytime (07:00 – 19:00)	50	50

Notes:

[1] Plane of Window for an institutional purpose building leading to a noise sensitive room, such as a teacher's lounge, classrooms, etc.

[2] POR means Point of Reception; representing a point in a receptor location.

3 NOISE IMPACT ASSESSMENT

3.1 Transportation Noise

3.1.1 Road Traffic Data

Road traffic data were obtained from the ENCG and included in APPENDIX B for Cranesbill Road. 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 4. The surrounding topography is generally flat and assessed as such.

Table 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)
Cranesbill Road	2-Lane Major Collector	12,000	92/8	7	5	40

3.1.2 Analysis Method

Road traffic sound levels at the proposed development were predicted using Cadna/A, a commercially available noise propagation modelling software. The following parameters were taken into consideration in the model:

- Road alignments and gradients;
- Traffic volumes and design speeds;
- Commercial vehicle percentages for roads;
- Shielding provided by intervening buildings, barriers and/or topographical features; and
- Special details such as barrier and receptor locations, elevations and heights.

The software's Building Evaluation feature was used to predict the sound levels on every façade of the proposed school and portables. The software generates an array of receivers along each building façade producing a comprehensive analysis of where the highest sound levels from road noise will be located on the building.

Cranesbill Road was modelled as a road source using the U.S. FHWA Traffic Noise Model (TNM) noise emission and calculation method implemented by Cadna/A. TNM predictions were equivalent to those made using the MECP prediction software STAMSON, which is an implementation of the ORNAMENT calculation methods recommended in the ENCG. The TNM predictions were validated against the STAMSON predictions; the validation files are included in APPENDIX C.

3.1.3 Results

Based on road traffic data, sound levels were predicted at the proposed school. The Site's building and outdoor classroom location with respect to Cranesbill Road is shown on Figure 4. The predicted sound levels were used to investigate building construction requirements. The highest predicted/estimated sound levels on the façades of the proposed development are summarized in Table 5 and shown on Figure 4.

Table 5: Summary of Predicted Sound Levels due to Road Traffic

POR	Location Description	Approximate Height (m)	Daytime Highest Sound Level L_{EQ} (dBA)
Main School Building	North façade adjacent to Cranesbill Road	4.5	52
Portables	North façade adjacent to Cranesbill Road	1.5	50

3.1.4 Recommendations

As shown in Table 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 appliable indoor sound level limits.

3.2 Stationary Sources

The significant stationary sources of noise are the rooftop HVAC units and condensers. Insignificant sources or sources with negligible sound level contribution off-site include hot water heaters, and small fans associated with washrooms and indoor equipment. Additionally, there is no emergency generators are planned at the Site.

Bus drop-off location is to be located along Honeylocust Avenue and Triangle Street and located outside the school's property boundary (off-site noise source). Therefore, noise associated with the bus drop-off activities are not included in the assessment.

3.2.1 Onsite Noise Sources

A total of six (6) rooftop HVAC units (RTUs), two (2) condensers and one (1) dedicated outdoor air system (DOAS) are planned on the main school building as shown in Figure 5. All six RTUs, both condensers and DOAS unit were conservatively assumed to operate simultaneously for 60 minutes in a predictable worst-case hour during the day. The sound power levels used were under a fan operating at 100% economizer operation, as per mechanical engineer the fan under normal operating conditions would only be running at half speed due to Ottawa climate. Therefore, conservative sound power levels for the RTU units were used in the analysis.

The school operates only during the daytime between 07:00h and 19:00h and assessed as such.

The sound level data used in the assessment is summarized in Table 6 and manufacturer specifications are provided in APPENDIX D.

Table 6: Proposed Stationary Source Sound Data

Source ID[1]	Building	Description	Overall Sound Power Level (dBA)
SS_RTU1c	Proposed 1-Storey Main School Building	HVAC 11T Unit Condenser – Area Serving Kindergarten	84
SS_RTU1e		HVAC 11T Unit Exhaust Air – Area Serving Kindergarten	86
SS_RTU2c		HVAC 6T Unit Condenser – Area Serving Daycare	81
SS_RTU2e		HVAC 6T Unit Exhaust Air – Area Serving Daycare	83
SS_RTU3c		HVAC 11T Unit Condenser – Area Serving Classrooms South	84
SS_RTU3e		HVAC 11T Unit Exhaust Air – Area Serving Classrooms South	87
SS_RTU4c		HVAC 11T Unit Condenser – Area Serving Classrooms West	84
SS_RTU4e		HVAC 11T Unit Exhaust Air – Area Serving Classrooms West	86
SS_RTU5c		HVAC 11T Unit Condenser – Area Serving Classrooms North	84
SS_RTU5e		HVAC 11T Unit Exhaust Air – Area Serving Classrooms North	86
SS_RTU6c		HVAC 11T Unit Condenser – Area Serving Classrooms Gymnasium	84
SS_RTU6e		HVAC 11T Unit Exhaust Air – Area Serving Classrooms Gymnasium	85
SS_CU1A		Air Cooled VRF 10T Condenser	72
SS_CU1B		Air Cooled VRF 10T Condenser	72
SS_DOAS1		Dedicated Outdoor Air System	80

Notes:

[1] Refer to Figure 5 for source locations; locations are referred using these IDs.

3.2.2 Analysis Method

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 provided in APPENDIX E.

3.2.3 Receptors

Off-site Receptors: There are several residential lots surround the Site (north, east, south and west sides) and are considered in this assessment. These buildings were analysed as receptors at the second-floor plane of window (i.e. 4.5 metres above ground) and are described in Table 7. Outdoor points of reception were assessed at standing height of 1.5 metres above ground representing the backyards and are also described in Table 7 and shown in Figure 6

On-site Receptors: In addition to off-site receptors, the Site itself is a receptor. Figure 5 shows the school, inclusive of the proposed building and portables, in relation to onsite stationary noise sources.

3.2.4 Results

3.2.4.1 Impacts of the Proposed Development onto the Surrounding Environment

The overall sound levels of receptors of surrounding residential homes, generated using assumed predictable worst-case operations of the school, are summarized in Table 7 and shown on Figure 6.

Table 7: Summary of Predicted Sound Levels at the Surrounding Noise Sensitive Land Uses due to the Proposed Stationary Sources

POR ID	Description	Location	Receptor Height (m)	Predicted Sound Level (dBA)	Daytime Sound Level Limit (dBA)	Compliance with Limit?
R01_w	Plane of Window	2-Storey Dwelling along Cranesbill Street	4.5	39	50	Yes
R02_w	Plane of Window	2-Storey Dwelling along Cranesbill Street	4.5	41	50	Yes
R03_w	Plane of Window	2-Storey Dwelling along Cranesbill Street	4.5	39	50	Yes
R03_o	Outdoor Point of Reception		1.5	38	50	Yes
R04_w	Plane of Window	2-Storey Dwelling along Cranesbill Street	4.5	39	50	Yes
R04_o	Outdoor Point of Reception		1.5	37	50	Yes
R05_w	Plane of Window	2-Storey Dwelling along Ponderosa Street	4.5	42	50	Yes
R05_o	Outdoor Point of Reception		1.5	39	50	Yes
R06_w	Plane of Window	2-Storey Dwelling along Ponderosa Street	4.5	43	50	Yes
R06_o	Outdoor Point of Reception		1.5	44	50	Yes
R07_w	Plane of Window	2-Storey Dwelling along Ponderosa Street	4.5	44	50	Yes
R07_o	Outdoor Point of Reception		1.5	44	50	Yes
R08_w	Plane of Window	2-Storey Dwelling along Ponderosa Street	4.5	43	50	Yes
R08_o	Outdoor Point of Reception		1.5	44	50	Yes
R09_w	Plane of Window	2-Storey Dwelling along Honeylocust Street	4.5	44	50	Yes
R10_w	Plane of Window	2-Storey Dwelling along Honeylocust Street	4.5	46	50	Yes
R11_w	Plane of Window	2-Storey Dwelling along Honeylocust Street	4.5	49	50	Yes
R11_o	Outdoor Point of Reception		1.5	45	50	Yes
R12_w	Plane of Window	2-Storey Dwelling along Triangle Street	4.5	49	50	Yes
R13_w	Plane of Window	2-Storey Dwelling along Triangle Street	4.5	50	50	Yes
R14_w	Plane of Window	2-Storey Dwelling along Triangle Street	4.5	50	50	Yes
R15_w	Plane of Window	2-Storey Dwelling along Triangle Street	4.5	46	50	Yes
R16_w	Plane of Window	2-Storey Dwelling along Triangle Street	4.5	44	50	Yes
R17_w	Plane of Window	2-Storey Dwelling along Triangle Street	4.5	41	50	Yes

The predicted stationary source sound level of the proposed RTUs and condenser units meets the sound level limits at all receptors.

3.2.4.2 Impacts of the Proposed Development onto Itself

Based on the source sound data provided in Table 6, sound levels were predicted at the most impacted onsite receptors. The highest sound levels on the façades of the proposed development building and portables are summarized in Table 8 and shown in Figure 7.

Table 8: Summary of Predicted Sound Levels at the Site due to the Proposed Stationary Sources

POR	Location	Receptor Height (m)	Predicted Sound Level (dBA)	Daytime Sound Level Limit (dBA)	Compliance with Limit?
School Building	East façade	4.5	46	50	Yes
Portables	West façade	4.5	48	50	Yes

Predicted sound levels are expected to comply with the ENCG and NPC-300 at the proposed building development due to the Site's proposed stationary noise sources as shown in Table 8.

4 RECOMMENDATIONS AND CONCLUSIONS

4.1 Conclusions

WSP Canada Inc. (WSP) was retained by Ottawa Catholic School Board (OSCB), to complete an Environmental Noise Impact Assessment for the proposed Fernbank North Elementary School development to be located at 620 Triangle Street in Nepean, Ontario. This report was prepared in support of the Site Plan Control (SPC) Application submission to the City of Ottawa. The assessment evaluated the potential for noise impact of transportation sources on the proposed elementary school, and stationary sources associated with the Site on nearby residential uses and onto the school itself.

The predicted sound levels were assessed as per the MECP Publication NPC-300 and the City of Ottawa's ENCG requirements. The assessment demonstrates that the Site will comply with the applicable noise guidelines without additional noise control measures and the minimum requirement of Ontario Building Code (OBC).

4.2 Recommendations

Table 9 further summarizes the building recommendations for the proposed school development.

Table 9: Summary of Building Requirements

Building	Building Components (Walls) STC	Building Components (Windows & Doors) STC	Noise Control Measures
1-Storey Main School Building	OBC[1]	OBC[1]	N/A
Portables	OBC[1]	OBC[1]	NPC-216[2]

Notes:

[1] OBC – Meet or exceed the minimum requirement of Ontario Building Code (OBC)

[2] If portables include air conditioning, where possible, select equipment to comply with noise criteria of MECP Publication NPC-216, Residential Air Conditioning Devices.

Signature Page

WSP Canada Inc.

Carolyn Ropp, B.Sc.
Acoustics, Noise and Vibration Specialist

Cris delos Santos, M.Eng., P.Eng.
Team Lead & Senior Engineer Acoustics, Noise & Vibration

CR/CDS

APPENDIX A

Drawings

ZONING REQUIREMENTS

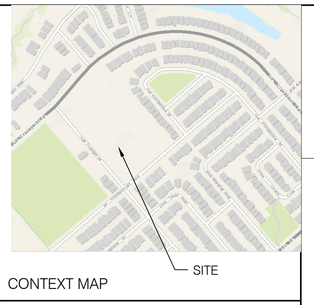
Municipality	City of Ottawa		
Legal Description			
Block 116 Registered Plan 4M-1628 and Block 204 Registered Plan		City of Ottawa	
Survey Information			
Survey Information Prepared By:	Stantec Geomatics Ltd, dated 3 September 2024		
Common Address			
4140 Kelly Farm Dr	Ottawa,	Ontario	
Project Information			
Lot Size	27,149.52 sm		
Ground Floor Area	4,690sm		
Zoning	I1A	Institutional 1A	
	Bylaw Provisions	Proposed	Compliance
Minimum Lot Width	15m	126.45	Complies
Minimum Lot Area	400 sm	7,149.52sm	Complies
Minimum Front Yard Setback	7.5m	93.6m	Complies
Minimum Rear Yard Setback	7.5m	8.9	N/A
Minimum Interior Side Yard Setback	7.5m	62.7m	Complies
Minimum Corner Side Yard Setback	4.5m	4.52m	Complies
Maximum Building Height	15.0m	7.65m	Complies

Required Parking (Schedule 1A - Area C) Rate = 1.5 per classroom (includes 16 classrooms + 6 kindergartens) Childcare 2/100sm	1.5 x 22 classrooms = 33 Spaces + 275sm Childcare/100smx2 = 6 Spaces 39 Total spaces required	89 Spaces Proposed	Complies
Future Parking (18 future portables)	1.5 x 18 portables= 27 additional Spaces total (27 + 39) = 66 Spaces	89 Spaces Proposed	Complies
HC Parking Requirements	Based on 94 parking spaces provided	4 HC Spaces Required 2 @ type A 2 @ type B	Complies
Required Bicycle Parking (1/100sm Gross Floor Area	1/100sm X4,647sm =47 spaces required	48 spaces (6 Bike Racks @ 8 spaces)	Complies
Required Loading Zones 1 per 1000-9999 sm of gross floor area	1 Loading Zone = 3.5m(W) X 7m (L) x 4.2m (H) As per zoning Section 113 (4) & (5)	1	Complies
Minimium Width of Landscaped Area (Landscape Buffer)	Abutting A Street = 3.0m	3.0m	Complies
	Abutting residential, institutional = 3.0m	3.0m	
	Other Cases - None	N/A	

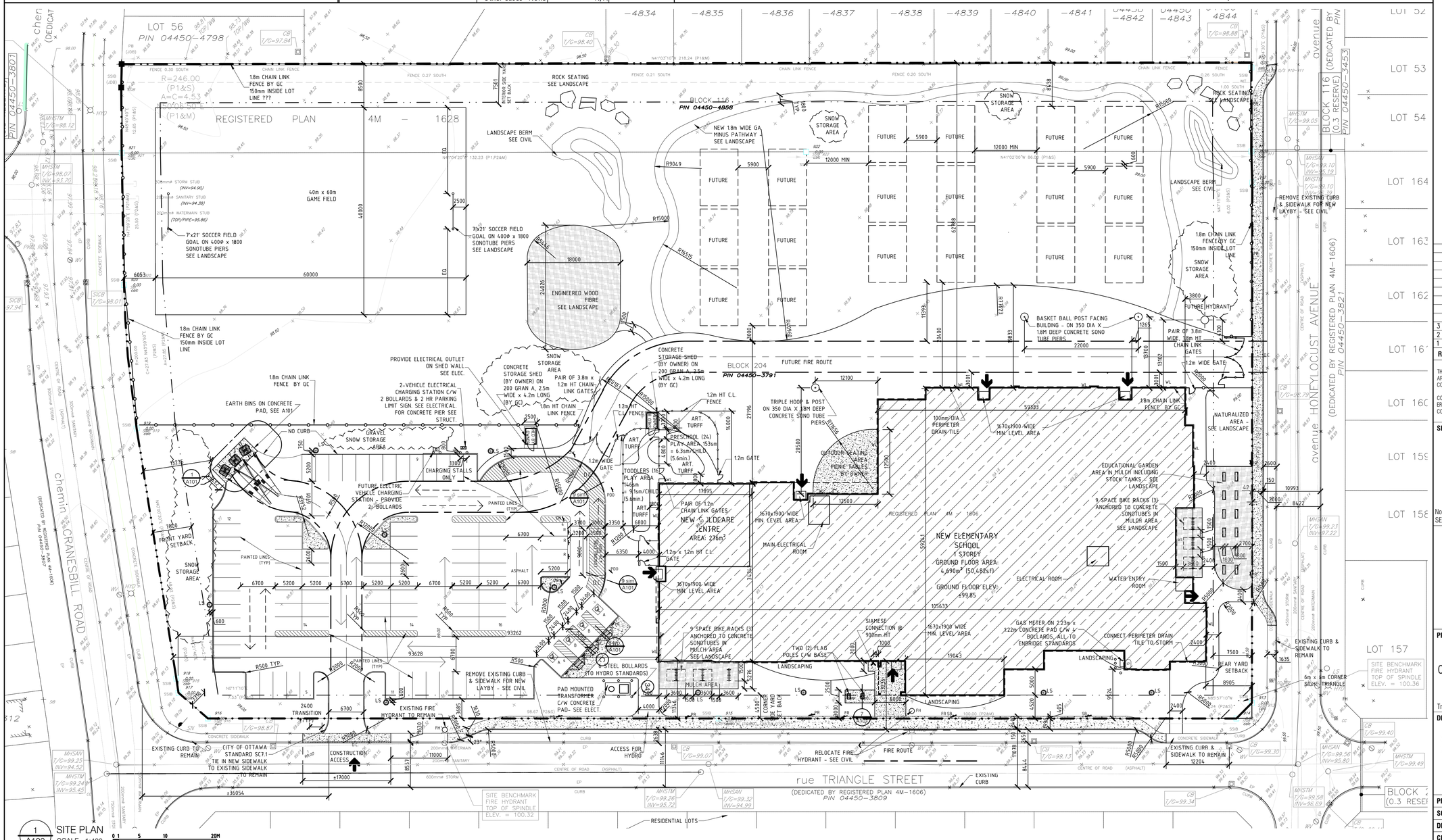
Landscaped Provisions for Parking Lots	Landscape buffer width: 3m abbuting a street, 1.5m not abbuting a street	3.6m	Complies
	Refuse collection areas must be minimum 9.0m from property line abutting a street	13m	
	Refuse collection areas must be minimum 3.0m from other property lines	N/A	
	Refuse collection area must be screened with minimum 2.0m height screen	Earth bins provided, screened by soft landscaping	
	Minimum landscaped area of parking lot = 15%	Parking Lot Area =1782sm Landacape around Parking =478sm = >15%	

GENERAL NOTES:

1. SEE SITE SERVICES, ELECTRICAL & MECHANICAL DRAWINGS FOR UNDERGROUND UTILITIES LINES AND FOR NEW GRADING. EXCAVATE BACKFILL & PROVIDE CONCRETE TO REQUIREMENTS OF MECHANICAL, ELECTRICAL & SITE SERVICES DRAWINGS AND SPECIFICATIONS AND TO REQUIREMENTS OF AUTHORITIES HAVING JURISDICTION.
2. PROVIDE 0.5M RADIUS FOR CONCRETE CURBS UNLESS OTHERWISE NOTED.
3. PERFORM LANDSCAPE & SITE WORKS INCLUDING WALKWAYS TIE INS WITHIN THE ROAD ALLOWANCE & SITE SERVICES AS INDICATED.
4. CONTRACTOR SHALL CONSTRUCT BUS LAY BY & CAR LAY BY, INCLUDING CURBS, WALKS, ASPHALT, PAVING, GRAN. BASES, TOPSOIL & SOD.
5. CONTRACTOR TO PROVIDE TEMPORARY CONSTRUCTION FENCING ALONG PROPERTY LINE TO PROTECT THE PUBLIC DURING CONSTRUCTION.
6. CONTRACTOR TO REPORT ANY ERRORS, OMISSIONS OR DISCREPANCIES ON SITE PLAN WITH ACTUAL SITE CONDITIONS TO THE ARCHITECT BEFORE PROCEEDING WITH CONSTRUCTION.
7. CONTRACTOR IS TO NOTIFY ALL UTILITY COMPANIES AND AUTHORITIES PRIOR TO ANY EXCAVATION AND ASCERTAIN LOCATIONS OF UNDERGROUND SERVICES.
8. CONTRACTOR IS TO COMPLY WITH ALL PERTINENT CODES AND BY-LAWS.
9. CONTRACTOR TO MAINTAIN POSITIVE SURFACE RUN-OFF THROUGHOUT ENTIRE CONSTRUCTION PERIOD.



CONTEXT MAP



OTTAWA CATHOLIC SCHOOL BOARD

570 WEST HUNT CLUB ROAD, NEPEAN, ON, K2G 3K4 (613)224-4455

SITE LEGEND

FH	FIRE HYDRANT - SEE MECH
DC	DEPRESSED CURB - SEE CIVIL
	CONCRETE CURB - SEE CIVIL
	CONCRETE SIDEWALK - SEE CIVIL
	ASPHALT - SEE CIVIL
	TACTILE WALKING SURFACE INDICATOR (TWSI)
	ENGINEERED WOOD FIBRE - SEE LANDSCAPE
CB	CATCH BASIN, NEW - SEE CIVIL
MH	MAN HOLE, NEW - SEE CIVIL
OC	OC TRANSPO BUS STOP SIGN
HC	HANDICAP PARKING SIGN
FR	FIRE ROUTE SIGN RX512 @ 25m SPACING
OW	ONE WAY TRAFFIC SIGN
DN	DO NOT ENTER SIGN
NP	NO PARKING SIGN (RB-52) @ 25M SPACING
NP(2)	NO PARKING SIGN (RB-55R)
NP(3)	NO PARKING SIGN (RB-51)
SB	SCHOOL BUS STOPPING ZONE SIGN (RB89R)
PDO	PARENT DROP-OFF ZONE SIGN -
PR	PARKING RESTRICTED 30 MIN. MON-FRI 7:00AM-4PM SIGN (RB-53R/RB-53L) @25M SPACING
R	RESERVED FOR DAYCARE SIGN
BH	BORE HOLE
TP	TEST PIT
LS	LIGHT STANDARD - SEE ELECTRICAL
W.L.	WALL MOUNT LIGHT FIXTURE - SEE ELEC.
FP	FLAG POLE
86x23	EXISTING GRADE
	1.8m HT. GALVANIZED CHAIN LINK FENCE UNLESS OTHERWISE NOTED
	1.2m HT. GALVANIZED CHAIN LINK FENCE
G	GAS METER
	ENTRANCE ARROW
	PAINTED LINES / NO PARKING

REV	REVISION DESCRIPTION	DATE
3	ISSUED FOR 75% REVIEW	12/MAR/2025
2	ISSUED FOR PRE-CONSULTATION	22/OCT/2024
1	ISSUED FOR CLIENT REVIEW	25/SEP/2024

SEAL

Not for construction unless SEALED and SIGNED

PROJECT NORTH

TRUE NORTH

PYE & RICHARDS - TEMPRANO & YOUNG ARCHITECTS INC.

824 Meath St. Suite 200 Ottawa, ON K1Z 6E8

613. 724. 7700 info@prty.ca

PROJECT

OCSB FERNBANK NORTH ELEMENTARY SCHOOL

Triangle Street OTTAWA, ONTARIO

DRAWING

SITE PLAN
ZONING MATRIX

PROJECT NO.	24031	DRAWING NO.	A100
SCALE -	AS NOTED		
DRAWN -	I.R.		
CHECKED -	I.R.		
PLOT DATE -	17/03/2025	**PLOTTED BY:**	IR

Dxxxxxx

#xxxxx

OCSB FERNBANK #1 ELEMENTARY SCHOOL

MECHANICAL

DRAWING LIST

SYMBOL	DESCRIPTION
M001	MECHANICAL – DRAWING LIST AND LEGENDS
M002	MECHANICAL – SCHEDULES
M003	MECHANICAL – SCHEDULES
M004	MECHANICAL – SCHEDULES
M005	MECHANICAL – DETAILS
M006	MECHANICAL – DETAILS
M007	MECHANICAL – DETAILS
M008	MECHANICAL – VRF SYSTEM PLANS AND DETAILS
M101A	FIRE PROTECTION – GROUND FLOOR PART A
M101B	FIRE PROTECTION – GROUND FLOOR PART B
M201A	PLUMBING – GROUND FLOOR PART A
M201B	PLUMBING – GROUND FLOOR PART B
M202	PLUMBING – ROOF
M301A	HVAC – GROUND FLOOR PART A
M301B	HVAC – GROUND FLOOR PART B
M302	HVAC – ROOF

GENERAL LEGEND

SYMBOL	DESCRIPTION
———	PIPING/DUCTWORK/EQUIPMENT
— — — —	NEW PIPING/DUCTWORK/EQUIPMENT BELOW SLAB

FIRE PROTECTION LEGEND

SYMBOL	DESCRIPTION
	FIRE EXTINGUISHER C/W MOUNTING BRACKET AND BACKERBOARD
	RECESSED FIRE EXTINGUISHER
	SEMI-RECESSED FIRE EXTINGUISHER
DT	DRY-TYPE SPRINKLER
	TYPICAL CONCEALED TYPE
	UPRIGHT SPRINKLER

*FIRE PROTECTION ENGINEER TO SUBMIT DETAILED SPRINKLER LAYOUT SHOP DRAWING. SPRINKLER HEADS ON PLANS FOR CONCEPTUAL DESIGN INTENT ONLY.

CONTROLS LEGEND

SYMBOL	DESCRIPTION
	LOW VOLTAGE CONTROL WIRING
T	THERMOSTAT – LINE VOLTAGE
T	TEMPERATURE SENSOR – DDC
S	SPEED CONTROLLER
P	PRESSURE SENSOR – DDC
C	KITCHEN FAN CONTROLLER – TEMPERATURE & HUMIDISTAT
R	24V CONTROL RELAY
CO2	CARBON DIOXIDE SENSOR – DDC
T	TEMPERATURE SENSOR & WELL
	SOLENOID VALVE (DCW FLUSH)

PLUMBING LEGEND

SYMBOL	DESCRIPTION
— — — —	PIPING BELOW GRADE/SLAB
DCW	DOMESTIC COLD WATER PIPING
DHW	DOMESTIC HOT WATER PIPING
DHWR	DOMESTIC HOT WATER RECIRCULATION PIPING
SAN	SANITARY PIPING
ST	STORM PIPING
V	VENT PIPING
FD	FLOOR DRAIN (TYPE)
RD	ROOF DRAIN (TYPE)
	BRANCH PIPING DOWN
	PIPING DOWN
	PIPING UP
	REDUCER
	FLOW DIRECTION
	PIPE BREAK
	CAP
	RUNNING P-TRAP
	P-TRAP
	DRAIN ASSEMBLY
	CLEAN OUT
	WALL CLEAN OUT
CO	FLOOR CLEAN OUT
	ISOLATION VALVES
PRV	PRESSURE REDUCING VALVE (PRV)
CBV	CIRCUIT BALANCING VALVE (CBV)
	SOLENOID VALVE
	STRAINER
	CHECK VALVE
	FLEXIBLE CONNECTION
	UNION
	RELIEF VALVE
	DRAIN VALVE C/W CAP & CHAIN
BFP	BACK FLOW PREVENTER (BFP)
NFHB	NON-FREEZE HOSE BIBB
HB	HOSE BIBB
TSP	ELECTRONIC TRAP SEAL PRIMER W/ BFP AND TIMED SOLENOID
EW	EMERGENCY EYEWASH STATION (TYPE)
	SEISMIC EXPANSION JOINT
	CONDENSATE PUMP (CP)
FM	FLOW METER (TYPE)
RR	REMOTE READ-OUT
	EXPANSION TANK (ET)

HVAC LEGEND

SYMBOL	DESCRIPTION
	RECTANGULAR DUCTWORK
	ROUND AND OR FABRIC DUCTWORK
	ACOUSTICALLY LINED DUCTWORK (RETURN OR SUPPLY)
	THERMALLY INSULATED DUCTWORK (RETURN OR SUPPLY)
	SILENCER (SIL)
	ROUND DUCTWORK OFFSET
	RECTANGULAR DUCTWORK OFFSET
	DUCTWORK UP
	DUCTWORK DOWN
	RECTANGULAR TO ROUND TRANSITION
	ECCENTRIC RECTANGULAR TO ROUND TRANSITION
	ECCENTRIC TRANSITION
	ROUND TAKE-OFF C/W BALANCING DAMPER
	ROUND TAKE-OFF
	TAKE-OFF C/W BALANCING DAMPER
	TAKE-OFF
	SQUARE SUPPLY DIFFUSER (TYPE)
	LINEAR SUPPLY/RETURN DIFFUSER (TYPE)
	RETURN GRILLE (RG)
	EXHAUST GRILLE (EG)
TG	TRANSFER GRILLE (TG)
	WALL GRILLE (TYPE)
L	LOUVRE (L)
TO	TRANSFER OPENING (TO)
	ACOUSTICALLY LINED TRANSFER DUCT (TD)
FD	FIRE DAMPER (FD)
SD	SMOKE DAMPER (SD)
FD/SD	COMBINATION FIRE/SMOKE DAMPER
BD	BALANCING DAMPER (BD)
BDD	BACK DRAFT DAMPER (BDD)
	FLEXIBLE CONNECTION
	TURNING VANES
M	MOTORIZED DAMPER
	FABRIC DUCT DIFFUSER (GYM)
	INLINE CABINET FAN (TYPE)
	CABINET FAN C/W UNIT MOUNTED GRILLE (TYPE)
	PROPELLER FAN (PF)
RH	DUCTED REHEAT COIL C/W BACNET CONTROLLER (RH)
SD1 / 200x95	DIFFUSER TAG DIFFUSER TYPE AIRFLOW (L/S) DUCT/DUCT CONNECTION SIZE (mm)
SG1 / 200x95 / 204	GRILLE TAG GRILLE TYPE AIRFLOW (L/S) DIMENSIONS (mm)

CLIENT

OTTAWA CATHOLIC SCHOOL BOARD

REV	REVISION DESCRIPTION	DATE
1	ISSUED FOR 75% REVIEW	2025-03-12

SEAL

PROJECT NORTH

GWAL Goodkey Weedmark & Associates Ltd. 65 years
1688 Woodward Dr.
Ottawa Ontario
Canada K2C 3R8
613 727-5111 Voice
613 727-5115 Fax
www.gwal.com Web

PROJECT

OCSB FERNBANK NORTH ELEMENTARY SCHOOL

620 Triangle Street, Ottawa, ON

DRAWING

MECHANICAL
DRAWING LIST
AND LEGENDS

PROJECT NO.	2024-682	DRAWING NO.	M001
SCALE -	AS INDICATED		
DRAWN -	G.M.		
CHECKED -	R.L.		
PLOT DATE -	03/12/25	PLOTTED BY -	

PLOT SCALE - 1:1

SHEET SIZE: A1

#xxxxx

DXXXXXX

PACKAGED HEAT PUMP ROOFTOP UNIT SCHEDULE WITH HEAT RECOVERY

TAG	LOCATION	AREA SERVED	WEIGHT (LBS)	SUPPLY FAN				RETURN/EXHAUST FAN			GAS HEATING SECTION					HEAT PUMP COOLING / HEATING COIL DATA								HOT GAS REHEAT COIL SECTION		ENERGY RECOVERY								
				AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (INWC)	TOTAL STATIC PRESSURE (INWC)	MOTOR SIZE (HP) ECM	AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (INWC)	MOTOR SIZE (HP) ECM	INPUT (MBH)	OUTPUT (MBH)	E.A.T. (°F)	L.A.T. (°F)	STAGES	COOLING TOTAL CAPACITY (BTU/H)	COOLING SENSIBLE CAPACITY (BTU/H)	COOLING E.A.T. (DB/WB) (°F)	COOLING L.A.T. (DB/WB) (°F)	STAGES	HEATING NET CAPACITY AT 47°F (MBH / COP)	HEATING NET CAPACITY AT 17°F (MBH / COP)	INVERTER SCROLL COMPRESSOR QTY	TOTAL CAPACITY (MBH)	PRESSURE DROP (INWC)	MAX O.A. RATE (CFM)	RECOVERED CAPACITY COOLING (BTU/HR)	RECOVERED CAPACITY HEATING (BTU/HR)	OAT HEATING (°F DB/WB)	OAT COOLING (°F DB/WB)	MIXED AIR LAT (°F) COOLING	MIXED AIR LAT (°F) HEATING	EFFECTIVENESS (%) TOTAL COOLING	EFFECTIVENESS (%) SENSIBLE COOLING	EFFECTIVENESS (%) TOTAL HEATING	EFFECTIVENESS (%) SENSIBLE HEATING
RTU1	ROOF	KINDERGARTEN	3107	4200	1.5	3.8	8	4200	1	4	300	240	62	114.7	MOD. 10:1	125927	108115	76.8/63.4	53.2/53.2	MODULATING	105 / 3.38	62 / 2.35	2	–	–	2,100	53744	172567	-17/-17.6	90/72	76.8	62	0.74	0.76	0.75	0.76
RTU2	ROOF	DAYCARE	1677	2500	1	3.95	4	2500	.75	2.3	160	128	58.1	105.3	MOD. 10:1	67466	60804	77.5/64	55.2/55	MODULATING	51.5 / 3.98	–	1	–	–	1,250	27259	88638	-17/-17.6	90/72	77.5	58.1	0.63	0.66	0.65	0.66
RTU3	ROOF	CLASSROOMS SOUTH	3117	4900	1.5	3.79	8	4900	1	4	400	320	60.7	120.9	MOD. 10:1	129216	118923	77/63.6	53.2/53.2	MODULATING	105 / 3.38	62 / 2.35	2	–	–	2,450	60297	193384	-17/-17.6	90/72	77	60.7	0.71	0.73	0.72	0.73
RTU4	ROOF	CLASSROOMS WEST	3107	4200	1.5	3.35	8	4200	1	4	300	240	62	114.7	MOD. 10:1	125927	108115	76.8/63.4	53.2/53.2	MODULATING	105 / 3.38	62 / 2.35	2	–	–	2,100	53744	172567	-17/-17.6	90/72	76.8	62	0.74	0.76	0.75	0.76
RTU5	ROOF	CLASSROOMS NORTH	3107	4200	1.5	3.35	8	4200	1	4	300	240	62	114.7	MOD. 10:1	125927	108115	76.8/63.4	53.2/53.2	MODULATING	105 / 3.38	62 / 2.35	2	–	–	2,100	53744	172567	-17/-17.6	90/72	76.8	62	0.74	0.76	0.75	0.76
RTU6	ROOF	GYNMASIUM	3148	5100	1.25	3.36	8	5100	1	4	400	320	60.3	118.2	MOD. 10:1	130036	121937	76.7/63.4	55/55	MODULATING	107 / 3.38	62 / 2.35	2	82.0	0.11	2550	62041	198898	-17/-17.6	90/72	76.7	62.2	0.74	0.76	0.75	0.77

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.
2. MANUFACTURER NAME & MODEL NUMBER REPRESENTS ACCEPTABLE QUALITY STANDARD ONLY. ALTERNATIVE MATERIALS MAY BE APPROVED AFTER REVIEW OF TECHNICAL INFORMATION BY ENGINEER AND APPROVED VIA ADDENDUM.

– CONTINUED BELOW –

PACKAGED HEAT PUMP ROOFTOP UNIT SCHEDULE WITH HEAT RECOVERY (CONTINUED)

– CONTINUED ABOVE –

TAG	SOUND POWER LEVEL OCTAVE BAND	63	125	250	500	1000	2000	4000	8000	RETURN AIR FILTER FILTER	RETURN AIR FILTER TYPE	SUPPLY AIR FILTER FILTER	SUPPLY AIR FILTER TYPE	ELECTRICAL DATA FLA/MCA/MOC	ELECTRICAL DATA V/PH/Hz	BASIS OF DESIGN	REMARKS
RTU1	DISCHARGE/RETURN	92/88	90/86	97/88	87/77	80/75	77/72	74/68	69/63	2" MERV 8	PRE-FILTER	4" MERV 14	PRE-FILTER	27/29/35	575/3/60	AAON RN-011-3-0-GBAC-V0-21-000-A	* EACH C/W INTEGRAL ECM MOTOR CONTROL AND NON-FUSED DISCONNECT, SINGLE POINT ELECTRICAL CONNECTION AND INTERNAL UNIT MOUNTED 120V, 15A GFI RECEPTACLE WIRED BY DIV. 26. * 600 mm HIGH ROOF CURB PER SPECIFICATION * SEE CONDENSER SUPPORT DETAIL * RTU-6 (ONLY) C/W BAS CO2 SENSOR INSTALLED WITHIN RETURN DUCT ACCESSIBLE FROM BELOW.
RTU2		86/83	84/81	88/79	84/73	75/71	73/68	70/64	64/60	2" MERV 8	PRE-FILTER	4" MERV 14	PRE-FILTER	39/45/60	208/3/60	AAON RN-006-3-0-GBAC-V0-21-000-A	
RTU3		94/90	92/88	98/89	91/81	83/78	80/75	77/72	72/67	2" MERV 8	PRE-FILTER	4" MERV 14	PRE-FILTER	28/30/35	575/3/60	AAON RN-011-3-0-GBAC-V0-21-000-A	
RTU4		92/88	90/86	97/88	87/77	80/75	77/72	74/68	69/63	2" MERV 8	PRE-FILTER	4" MERV 14	PRE-FILTER	27/29/35	575/3/60	AAON RN-011-3-0-GBAC-V0-21-000-A	
RTU5		92/88	90/86	97/88	87/77	80/75	77/72	74/68	69/63	2" MERV 8	PRE-FILTER	4" MERV 14	PRE-FILTER	27/29/35	575/3/60	AAON RN-011-3-0-GBAC-V0-21-000-A	
RTU6		95/91	93/88	98/89	91/81	83/78	80/75	77/72	72/67	2" MERV 8	PRE-FILTER	4" MERV 14	PRE-FILTER	28/30/35	575/3/60	AAON RN-011-3-0-GBAC-V0-21-000-A	

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.
2. MANUFACTURER NAME & MODEL NUMBER REPRESENTS ACCEPTABLE QUALITY STANDARD ONLY. ALTERNATIVE MATERIALS MAY BE APPROVED AFTER REVIEW OF TECHNICAL INFORMATION BY ENGINEER AND APPROVED VIA ADDENDUM.

SILENCER SCHEDULE

TAG	SYSTEM	RS TYPE	DIMENSIONS (IN) WIDTH (IN)	HEIGHT (IN)	LENGTH (IN)	AIR FLOW (CFM)	VELOCITY (FPM)	MAX. PD (INWG)	MINIMUM DYNAMIC INSERTION LOSS, dB OCTAVE BAND CENTRE FREQUENCY, Hz 63	125	250	500	1000	2000	4000	8000	BASIS OF DESIGN	REMARKS
SIL1A	RTU1 SUP	3	40	16	48	4200	945	0.24	1	7	250	28	35	32	25	20	KINETICS NOISE CONTROL: 16KCES-F/3 – 48 x 16 x 40 – 16/16	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL1B	RTU1 RET	3	40	18	48	-4200	-840	0.19	3	10	19	29	35	32	23	19	KINETICS NOISE CONTROL: 18KCES-F/3 – 48 x 18 x 40 – 15/15	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL2A	RTU2 SUP	3	26	16	85	2500	865	0.2	4	14	24	44	50	52	33	27	KINETICS NOISE CONTROL: 16KCES-F/3 – 84 x 16 x 26 – 34/34	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL2B	RTU2 RET	3	28	16	48	-2500	-804	0.12	3	9	18	29	36	33	24	19	KINETICS NOISE CONTROL: 16KCES-F/3.5 – 48 x 16 x 28 – 16/16	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL3A	RTU3 SUP	3	40	18	48	4900	980	0.17	3	9	17	28	33	30	22	19	KINETICS NOISE CONTROL: 18KCES-F/3.5 – 48 x 18 x 40 – 15/15	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL3B	RTU3 RET	3	40	18	48	-4900	-980	0.17	4	10	18	29	33	29	23	19	KINETICS NOISE CONTROL: 18KCES-F/3.5 – 48 x 18 x 40 – 15/15	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL4A	RTU4 SUP	3	34	18	48	4200	988	0.16	3	9	17	28	33	30	22	19	KINETICS NOISE CONTROL: 18KCES-F/3.5 – 48 x 18 x 34 – 15/15	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL4B	RTU4 RET	3	34	18	48	-4200	-988	0.16	4	10	18	29	33	29	23	19	KINETICS NOISE CONTROL: 18KCES-F/3.5 – 48 x 18 x 34 – 15/15	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL5A	RTU5 SUP	3	34	18	48	4200	988	0.16	3	9	17	28	33	30	22	19	KINETICS NOISE CONTROL: 18KCES-F/3.5 – 48 x 18 x 34 – 15/15	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL5B	RTU5 RET	3	34	18	36	-4200	-988	0.05	3	6	11	18	18	13	9	6	KINETICS NOISE CONTROL: 18KCRS-F/3.5 – 36 x 18 x 34	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL6A	RTU6 SUP	3	40	16	48	5100	1148	0.18	2	8	15	27	34	30	22	18	KINETICS NOISE CONTROL: 16KCES-F/4 – 48 x 16 x 40 – 16/16	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL6B	RTU6 RET1	3	24	16	48	-2550	-956	0.09	4	9	16	23	22	14	10	6	KINETICS NOISE CONTROL: 24KCRS-F/3 – 48 x 24 x 16	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER
SIL6B	RTU6 RET2	3	24	16	48	-2550	-956	0.09	4	9	16	23	22	14	10	6	KINETICS NOISE CONTROL: 24KCRS-F/3 – 48 x 24 x 16	LINING PROTECTED BY GALVANIZED PERFORATED METAL LINER AND EXTENDED CASING SILENCER

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.

DEDICATED OUTDOOR AIR SYSTEM

TAG	LOCATION	AREA SERVED	SUPPLY FAN DATA (VSD) FAN TYPE	AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (INWC)	MOTOR SIZE (HP)	EXHAUST/RETURN FAN DATA (VSD) FAN TYPE	AIR FLOW (CFM)	EXTERNAL STATIC PRESSURE (INWC)	MOTOR SIZE (HP)	AIR FLOW (CFM)	ENERGY RECOVERY DATA SUMMER RECOVERED ENERGY (BTU/H)	SUMMER L.A.T. (DB/WB)(°F)	SUMMER EFFICIENCY (DB)	WINTER RECOVERED ENERGY (DB/WB)(BTU/H)	WINTER L.A.T. (DB/WB)(°F)	WINTER EFFICIENCY SENSIBLE/LATENT (%)	ELECTRICAL DATA FLA/MCA/MOC	ELECTRICAL DATA V/PH/Hz	SOUND POWER LEVEL (dB) OCTAVE BAND	63	125	250	500	1000	2000	BASIS OF DESIGN	REMARKS
DOAS1	ROOF	W/R EXHAUST	DWDI	2500	0.5	1.5	DWDI	2500	1	1.5	1800	-31,120	78.5/68.6	76.8	207,124 / 41,557	60.71/46.3	87.2/70.0	11.1/13/20	208/3/60	SUPPLY/EXHAUST	92/96	83/88	69/74	65/69	65/69	64/68	TEMPEFF-RG 2000	C/W INTEGRAL VFD'S, DOUBLE WALL CONSTRUCTION, MOTORIZED BACKDRAFT DAMPER (X2), 600mm HIGH ROOF CURB, INTAKE/EXHAUST HOODS

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.
2. MANUFACTURER NAME & MODEL NUMBER REPRESENTS ACCEPTABLE QUALITY STANDARD ONLY. ALTERNATIVE MATERIALS MAY BE APPROVED AFTER REVIEW OF TECHNICAL INFORMATION BY ENGINEER.

GRILLE AND DIFFUSER SCHEDULE

UNIT NO.	TYPE	MODULE (mm)	INLET (mm)	MOUNT	FINISH	BASIS OF DESIGN	REMARKS
SD1	SUPPLY AIR DIFFUSER	24"x24"	AS INDICATED	T-BAR/DRYWALL	WHITE	EH PRICE SPD	SQUARE PLAQUE DIFFUSER
SD2	SUPPLY AIR DIFFUSER	12"x12"	AS INDICATED	T-BAR/DRYWALL	WHITE	EH PRICE SPD	SQUARE PLAQUE DIFFUSER
SL1	LINEAR SUPPLY AIR DIFFUSER	48"-2 SLOT	AS INDICATED	T-BAR/DRYWALL	WHITE	EH PRICE SDS WITH PLENUM	48" LONG WITH 2 SLOTS, 1" SLOT WIDTH WITH SDS PLENUM OR SITE FABRICATED PLENUM ACCEPTABLE.
SG1	SUPPLY AIR GRILLE	AS INDICATED	AS INDICATED	DRYWALL/DUCT AS INDICATED	WHITE	EH PRICE 520D	*DOUBLE DEFLECTION GRILLE C/W BALANCE DAMPER *BLACK FINISH OR BLACK PAINTED ABOVE GYM STAGE
SG2	SPIRAL DUCT SUPPLY GRILLE (DOUBLE DEFLECTION) (STEEL)	AS INDICATED	AS INDICATED	SPIRAL DUCT DIA AS PER PLANS	B17 (BLACK)	EH PRICE SDG	* STEEL CONSTRUCTION, GALVANIZED FINISH, COLOUR AS INDICATED, DOUBLE DEFLECTION, C/W OPPOSED BLADE BALANCING DAMPER VSCS. * SIZE: AS INDICATED ON PLANS * LOCATED ABOVE GYMNASIUM STAGE.
RG1	RETURN AIR GRILLE	600x200 UNLESS OTHERWISE INDICATED	AS INDICATED	T-BAR/DRYWALL	WHITE	EH PRICE 80	EGGCATE GRILLE
TG1	DUCTED TRANSFER GRILLE	600x200 UNLESS OTHERWISE INDICATED	AS INDICATED	T-BAR/DRYWALL	WHITE	EH PRICE 80	EGGCATE GRILLE DUCTED TO TRANSFER DUCT
TG2	WALL TRANSFER GRILLE	AS INDICATED	AS INDICATED	WALL	WHITE	EH PRICE 630	FIXED 45° DEFLECTION, ¾" SPACING GRILLE
TG3	HEAVY DUTY GYMNASIUM RETURN AIR GRILLE	AS INDICATED	AS INDICATED	RECESSED IN BLOCK WALL	WHITE	EH PRICE 96	FIXED 3/4" SPACING BLADES, STEEL RETURN GRILLE, MOUNTING FRAME AND ACCESSORIES
EG1	EXHAUST AIR GRILLE	AS INDICATED	AS INDICATED	WALL/CEILING	WHITE	EH PRICE 630	FIXED 45° DEFLECTION, ¾" SPACING GRILLE

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.

VRF FAN COIL SCHEDULE

UNIT NO.	LOCATION	FUNCTION	TYPE	AIR FLOW (CFM)	VRF COOLING TOTAL COOLING (BTU/H)	VRF COOLING SENSIBLE COOLING (BTU/H)	VRF COOLING AMBIENT TEMP (°F)	VRF HEATING TOTAL HEATING (BTU/H)	VRF HEATING AMBIENT TEMP (°F)	DIMENSIONS (W x H x D, in)	WEIGHT (LBS)	ELECTRICAL DATA MCA	ELECTRICAL DATA MOP	ELECTRICAL DATA V/PH/Hz	BASIS OF DESIGN	REMARKS
FC-100	VESTIBULE V100	FAN COIL	DUCTED CONCEALED CEILING	812	25914	20150	74.7/62.5	35781	66.6	39.4 x 9.6 x 31.5	82	1.8	15A	208/1/60	DAIKIN FXSQ30TAVJU	
FC-101	RECEPTION 101	FAN COIL	DUCTED CONCEALED CEILING	812	25914	19900	74.7/62.5	35508	67.2	39.4 x 9.6 x 31.5	82	1.8	15A	208/1/60	DAIKIN FXSQ30TAVJU	
FC-103	OFFICE 104	FAN COIL	DUCTED CONCEALED CEILING	600	20608	15033	74.7/62.5	28184	67.4	39.4 x 9.6 x 31.5	82	1.8	15A	208/1/60	DAIKIN FXSQ24TAVJU	
FC-104	STAFF LOUNGE 104	FAN COIL	DUCTED CONCEALED CEILING	812	25914	19955	74.7/62.5	35554	67.1	39.4 x 9.6 x 31.5	82	1.8	15A	208/1/60	DAIKIN FXSQ30TAVJU	
FC-108	MEETING ROOM 108	FAN COIL	DUCTED CONCEALED CEILING	530	15422	12103	74.7/62.5	21325	66.5	39.4 x 9.6 x 31.5	77	1.6	15A	208/1/60	DAIKIN FXSQ18TAVJU	* C/W AIR FILTER AND CABINET KIT, SEE DETAILS * SPACE TEMPERATURE SENSORS SHALL BE STANDARD BAS SENSOR MATCHING TEMPERATURE SENSORS THROUGHOUT THE BUILDING, BAS SHALL COMMUNICATE ROOM CONDITION TO BACNET GATEWAY AND BACNET GATEWAY SHALL CONTROL EACH VRF FANCOIL.
FC-111	OSR 111	FAN COIL	DUCTED CONCEALED CEILING	530	15422	11899	74.7/62.5	21052	67.3	39.4 x 9.6 x 31.5	77	1.6	15A	208/1/60	DAIKIN FXSQ18TAVJU	
FC-136A	RESCR 136A	FAN COIL	DUCTED CONCEALED CEILING	281	8291	6054	74.7/62.5	11010	67.2	21.7 x 9.6 x 31.5	55	0.8	15A	208/1/60	DAIKIN FXSQ09TAVJU	
FC-136B	WORK ROOM 136B	FAN COIL	DUCTED CONCEALED CEILING	281	8291	6054	74.7/62.5	10998	67.3	21.7 x 9.6 x 31.5	55	0.8	15A	208/1/60	DAIKIN FXSQ09TAVJU	
FC-136	LEARNING COMMONS 136	FAN COIL	DUCTED CONCEALED CEILING	1307	41456	30451	74.7/62.5	57072	66.6	55.1 x 9.6 x 31.5	104	2.8	15A	208/1/60	DAIKIN FXSQ48TAVJU	
FC-105	CORRIDOR C105	FAN COIL	DUCTED CONCEALED CEILING	1307	41456	31987	74.7/62.5	58575	64.0	55.1 x 9.6 x 31.5	104	2.8	15A	208/1/60	DAIKIN FXSQ48TAVJU	
FC-169	RESOURCE ROOM 169/KITCHEN 170	FAN COIL	DUCTED CONCEALED CEILING	281	8291	6094	74.7/62.5	11032	67.0	21.7 x 9.6 x 31.5	55	0.8	15A	208/1/60	DAIKIN FXSQ09TAVJU	

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS, INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.
2. COMPLETE WITH ACCESS HATCH TO MANUFACTURERS REQUIREMENTS WHERE LOCATED IN DRYWALL CEILINGS, COORDINATE WITH EXACT LOCATIONS WITH INTERFERENCES BY OTHER DIVISIONS.

ELECTRIC FORCE FLOW HEATING EQUIPMENT

TAG	TYPE	LOCATION	MOUNTING	CAPACITY (KW)	ELECTRICAL (V/PH/HZ)	BASIS OF DESIGN	REMARKS
FF1	FORCE FLOW	MULTIPLE LOCATIONS	RECESSED WALL MOUNT	4	347/1/60	STELPRO CBH0431C24-SW	*BUILT IN THERMOSTAT & BUILT IN 24V CONTROL MODULE, TRIM, AND MOUNTING ACCESSORIES. ON/OFF VIA BUILT IN T-STAT, OVERRIDE VIA BUILDING AUTOMATION CONTROLS.
FF2		MAIN VESTIBULE V100	RECESSED WALL MOUNT	10	347/1/60	STELPRO CBH1031C24-SW	

NOTES:
1. WIRED BY DIV. 26.

AIR COOLED VRF CONDENSING UNIT SCHEDULE

UNIT NO.	LOCATION	FUNCTION	COOLING CORRECTED CAPACITY (BTU/H)	COOLING COMBINATION RATIO (%)	COOLING AMBIENT TEMP. (°F)	HEATING AMBIENT TEMP. (°F)	HEATING CORRECTED CAPACITY (BTU/H)	BASIS OF DESIGN		CU – ELECTRICAL DATA V/PH/Hz	CU – ELECTRICAL DATA MCA/MOP	BRANCH SELECTORS MODEL	BRANCH SELECTORS QTY	BRANCH SELECTORS V/PH/Hz	BRANCH SELECTORS FLA/MCA/MOP	REMARKS
CU1A	ROOF	VRF HEATING/ OOOLING	187,093	154.2	95	47°F -22°F	273,211 124,931	DAIKIN RELQ192TAYC A	RELQ96TAYCA	575/3/60	28.5/35	BS-1 BS4Q54TVJ BS-2 BSF4Q54TVJ BS-3 BS4Q54TVJ	1 1 1	208-230/1/60 208-230/1/60 208-230/1/60	-/0.4/15 -/0.4/15 -/0.4/15	*R410A REFRIGERANT AND BRANCH SELECTOR *SEE EXTERIOR CONDENSING UNIT SEISMIC SUPPORT DETAIL (ROOFED IN SLEEPER) *SNOW/WIND HOOD KITS *INTELLIGENT TOUCH MANAGER *BACNET/IP SERVER GATEWAY *BAS ROOM LEVEL TEMPERATURE SENORS SUPPLIED BY DIV. 25
CU1B	ROOF								RELQ96TAYCA	575/3/60	28.5/35					

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS, INSTALL IN ACCORDANCE WITH MANUFACTURERS RECOMMENDATIONS.

CLIENT: OTTAWA CATHOLIC SCHOOL BOARD

REV	REVISION DESCRIPTION	DATE
1	ISSUED FOR 75% REVIEW	2025-03-12

SEAL

PROJECT NORTH

GWAL Goodkey Weedmark & Associates Ltd. 65 years
1688 Woodward Dr. Ottawa Ontario Canada K2C 3R8
613 727-5111 Voice
613 727-5115 Fax
www.gwal.com Web

PROJECT

OCSB FERNBANK NORTH ELEMENTARY SCHOOL

620 Triangle Street, Ottawa, ON

DRAWING

MECHANICAL SCHEDULES

PROJECT NO.	2024-682
SCALE -	AS INDICATED
DRAWN -	G.M.
CHECKED -	R.L.
PLOT DATE -	03/12/25

DRAWING NO. **M003**

PLOTTED BY -

PLOT SCALE - 1:1

SHEET SIZE: A1

DXXXXXXX

#xxxxx

FAN SCHEDULE

TAG	LOCATION	FUNCTION	FAN DATA						ELECTRICAL DATA		BASIS OF DESIGN	REMARKS
			TYPE	DRIVE (BELT/DIRECT)	AIR FLOW (CFM)	ESP (INWC)	FAN SPEED (RPM)	SONES	MOTOR SIZE (HP)	V/PH/Hz		
TF1	MECH. RM. 142	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	364	0.25	1000	2	125W	120/1/60	GREENHECK CSP-A410	C/W ECM MOTOR, 24V RELAY CONTROL VIA BAS TEMPERATURE SENSOR. WIRED BY DIV. 26.
TF2	ELEC. RM. 141	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	300	0.25	600	.3	216W	120/1/60	GREENHECK CSP-A710-VG	C/W ECM MOTOR, VG SPEED CONTROLLER, 24V RELAY CONTROL VIA BAS TEMPERATURE SENSOR. WIRED BY DIV. 26. TURN DOWN SPEED CONTROL TO INDICATED AIR FLOW.
TF3	SERVER RM. 137	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	300	0.25	600	.3	216W	120/1/60	GREENHECK CSP-A710-VG	C/W ECM MOTOR, VG SPEED CONTROLLER. LINE VOLTAGE THERMOSTAT BY DIV. 26. TURN DOWN SPEED CONTROL TO INDICATED AIR FLOW.
TF4	SERVER RM. 165	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	300	0.25	600	.3	216W	120/1/60	GREENHECK CSP-A710-VG	C/W ECM MOTOR, VG SPEED CONTROLLER. LINE VOLTAGE THERMOSTAT BY DIV. 26. TURN DOWN SPEED CONTROL TO INDICATED AIR FLOW.
TF5	ELEC. RM. 162	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	750	0.25	900	1	239W	120/1/60	GREENHECK CSP-A1050-VG	C/W ECM MOTOR, VG SPEED CONTROLLER, 24V RELAY CONTROL VIA BAS TEMPERATURE SENSOR. WIRED BY DIV. 26. TURN DOWN SPEED CONTROL TO INDICATED AIR FLOW.
TF6	GYM STORAGE 159A	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	100	0.25	950	1	22.4W	120/1/60	GREENHECK CSP-A125	C/W 24V RELAY CONTROL VIA BAS TIME OF DAY SCHEDULE
TF7	WATER ENTRY 102	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	100	0.25	950	1	22.4W	120/1/60	GREENHECK SP-A125	C/W 24V RELAY CONTROL VIA BAS TIME OF DAY SCHEDULE
TF8	GYM STORAGE 159B	TRANSFER AIR	CABINET FAN – INLINE	DIRECT	100	0.25	950	1	22.4W	120/1/60	GREENHECK CSP-A125	C/W 24V RELAY CONTROL VIA BAS TIME OF DAY SCHEDULE
EF1	DAYCARE EXHAUST	EXHAUST FAN	DOWN BLAST ROOF EXHAUST	DIRECT	360	0.5	1200	6	70W	120/1/60	GREENHECK G-098-VG/VGD	C/W 24V RELAY CONTROL VIA BAS TIME OF DAY SCHEDULE AND CURB ADAPTOR. C/W MOTORIZED BACK DRAFT DAMPER.
EF2	SERVERY 146	EXHAUST FAN	DOWN BLAST ROOF EXHAUST	DIRECT	200	0.375	1285	6.3	37.3W	120/1/60	GREENHECK G-097-VG/VGD	C/W CURB ADAPTOR, 24V RELAY CONTROL VIA BAS SCHEDULE OVERRIDE, VARI-GREEN WALL MOUNTED TEMPERATURE AND HUMIDITY CONTROL, AND VARI GREEN POWER TRANSFORMER. C/W MOTORIZED BACK DRAFT DAMPER. •BAS SHALL NOT OVERRIDE HUMIDITY SENSOR, ADJUSTABLE SCHEDULE.
EF3	KITCHEN 170	EXHAUST FAN	DOWN BLAST ROOF EXHAUST	DIRECT	200	0.375	1285	6.3	37.3W	120/1/60	GREENHECK G-097-VG/VGD	C/W CURB ADAPTOR, 24V RELAY CONTROL VIA BAS SCHEDULE OVERRIDE, VARI-GREEN WALL MOUNTED TEMPERATURE AND HUMIDITY CONTROL, AND VARI GREEN POWER TRANSFORMER. C/W MOTORIZED BACK DRAFT DAMPER. •BAS SHALL NOT OVERRIDE HUMIDITY SENSOR, ADJUSTABLE SCHEDULE.
EF4	MECH RM 142	MECH ROOM EXHAUST/COOLING	BOTTOM INLET EXHAUST FAN	DIRECT	300	0.25	1155	1.3	52 W	120/1/60	GREENHECK SP-A390-VG	C/W MOTORIZED DAMPER, INSULATED PLENUM, ON/OFF VIA 24V RELAY CONTROL VIA BAS TEMPERATURE SENSOR. BAS SHALL CYCLE ON/OFF VIA BAS TO PERFORM MECHANICAL ROOM COOLING AND OPEN/CLOSE ASSOCIATED MOTORIZED DAMPERS.

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.
2. DISCONNECT SWITCH BY DIV. 26.
3. SPEED CONTROLLER SHALL BE SUPPLIED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.

PROPELLER FAN SCHEDULE

TAG	LOCATION	FAN DATA			ELECTRICAL DATA			BASIS OF DESIGN	REMARKS
		FAN DIAMETER (IN)	AIR FLOW (CFM)	FAN SPEED (RPM)	FAN MOTOR (W)	V/PH/Hz	FLA		
PF1 TO PF4	GYMNASIUM	72	9,959	115	26.6	120/1/60	0.64	BIG ASS FANS ES6	* WHITE FINISH C/W CUSTOM LENGTH DOWNRODS SUCH THAT TOP OF FAN BLADES ARE MINIMUM 6 INCHES BENEATH U/S OF OPEN WEB STEEL JOISTS. FANS SHALL NOT HAVE ANY LIGHTING OR UV ACCESSORIES. * PROVIDE BIG ASS FANS BAFCON 0-10 V TOUCH SCREEN CONTROL LOCATED WITHIN STORAGE ROOM 159B. PROVIDE FOUR (4) 0-10 V FAN CONTROL MODULES, ONE (1) AT EACH NEW FAN, AND LOW VOLTAGE CONTROL WIRING FROM COMMON FAN CONTROLLER OUT TO CONTROL ALL FOUR (4) FANS AS PER MANUFACTURER INSTALLATION REQUIREMENTS.

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.
2. DISCONNECT SWITCH BY DIV. 26.
3. SPEED CONTROLLER SHALL BE SUPPLIED BY MECHANICAL CONTRACTOR, INSTALLED BY ELECTRICAL CONTRACTOR.

ELECTRIC DUCT RE-HEAT COIL SCHEDULE

TAG	ASSOCIATED RTU	LOCATION	DUCT DIMENSION		AIR FLOW (CFM)	ELECTRICAL DATA					REMARKS
			WIDTH (in)	HEIGHT (in)		BTU (kW)	STAGE	SIGNAL	V/PH/HZ	BASIS OF DESIGN	
RH1.1	RTU-1	K.D. 158	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	EACH REHEAT SHALL BE COMPLETE WITH: •ACCESSORIES: CA-LF-DS-AC-MC-TR-CF-HECB STC8-TXM-EAS-SCR-CGC-N1-BLE * SINGLE POINT ELECTRICAL CONNECTION, DISCONNECT SWITCH BY DIV. 26. * TERMINAL STRIP CONTROL.
RH1.2		K.D. 157	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH1.3		K.D. 156	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH1.4		K.D. 155	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH1.5		K.D. 154	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH2.1	RTU-2	DAYCARE	16	10	800	10,250 (3)	MOD	MOD	208/3/60	NEPTRONIC: MODEL DF C10OHB	
RH2.2			16	10	800	10,250 (3)	MOD	MOD	208/3/60	NEPTRONIC: MODEL DF C10OHB	
RH2.3			16	10	800	10,250 (3)	MOD	MOD	208/3/60	NEPTRONIC: MODEL DF C10OHB	
RH2.4		SPEC ED 143	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH3.1	RTU-3	CLASS 135	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH3.2		CLASS 134	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH3.3		CLASS 133	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH3.4		CLASS 132	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH3.5		CLASS 131	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH3.6		CLASS 130	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH4.1	RTU-4	CLASS 129	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH4.2		CLASS 128	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH4.3		CLASS 127	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH4.4		CLASS 126	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH4.5		CLASS 125	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH5.1	RTU-5	CLASS 120	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH5.2		CLASS 121	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH5.3		CLASS 122	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH5.4		CLASS 123	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	
RH5.5		CLASS 124	16	10	800	10,250 (3)	MOD	MOD	575/3/60	NEPTRONIC: MODEL DF C10OHB	

NOTES:
1. FOR DETAILS REFER TO SPECIFICATIONS.
2. ELECTRIC PRE-HEAT COIL TO BE CONNECTED TO ERV FOR MODULATION.
3. PROVIDE DUCT TRANSITIONS AS REQUIRED.
4. DUCT HEATER SHALL BE INTERLOCKED TO ONLY RUN WITH ERV.

RANGE HOOD SCHEDULE

TAG	LOCATION	MOUNTING LOCATION (WALL / ISLAND / CABINET)	AIR FLOW (L/s)	STATIC PRESSURE (IN)	SIZE (WIDTH x DEPTH)	ELECTRICAL DATA		BASIS OF DESIGN	REMARKS
						MOTOR SIZE (HP)	V/PH/Hz		
RH1	SERVERY 170	UNDER CABINET	175	0.25	30in X 19.625in	0.18	120/1/60	BROAN BCS330SSC	C/W INTEGRATED BACKDRAFT DAMPER

NOTES: 1. FOR DETAILS REFER TO SPECIFICATIONS.

CLIENT: OTTAWA CATHOLIC SCHOOL BOARD

REV	REVISION DESCRIPTION	DATE
1	ISSUED FOR 75% REVIEW	2025-03-12

SEAL

PROJECT NORTH

GWAL Goodkey Weedmark & Associates Ltd. 65 years
1688 Woodward Dr. Ottawa Ontario Canada K2C 3R8
613 727-5111 Voice
613 727-5115 Fax
www.gwal.com Web

PROJECT

OCSB FERNBANK NORTH ELEMENTARY SCHOOL

620 Triangle Street, Ottawa, ON

DRAWING

MECHANICAL SCHEDULES

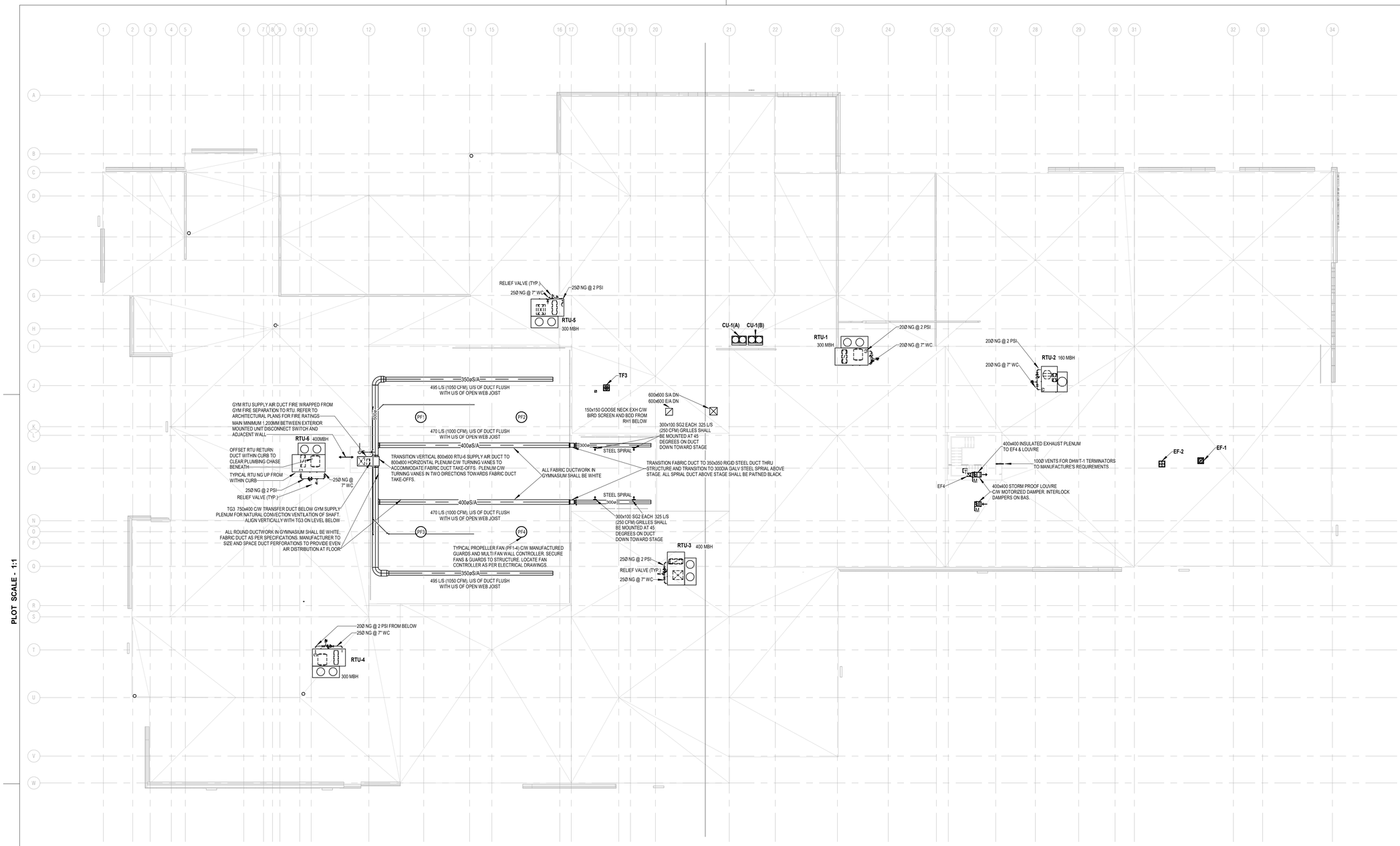
PROJECT NO.	2024-682	DRAWING NO.	M004
SCALE -	AS INDICATED		
DRAWN -	G.M.		
CHECKED -	R.L.		
PLOT DATE -	03/12/25	PLOTTED BY -	

PLOT SCALE - 1:1

SHEET SIZE: A1

DXXXXXX

#xxxxx



HVAC ROOF

1 M302

1 : 175

GENERAL NOTES

1. COORDINATE WITH ALL OTHER TRADES.
2. CONTRACTOR TO PROVIDE INTERFERENCE DRAWINGS OF ALL MECHANICAL EQUIPMENT AND DUCTWORK IN CORRIDORS, WASHROOMS, AND SERVICE ROOMS.
3. COORDINATE INTERFERENCE DRAWINGS WITH ALL OTHER TRADES.
4. PROVIDE FIRE SMOKE DAMPERS WHERE DUCTS PENETRATE FIRE SEPARATIONS. INSTALL IN ACCORDANCE WITH ULC LISTING. COORDINATE WITH ARCHITECTURAL AND STRUCTURAL ASSEMBLY.
5. ALL SUPPLY AIR DUCTWORK SHALL BE THERMALLY INSULATED INCLUDING AT SILENCERS WITH VAPOUR BARRIER.
6. ALL RECTANGULAR BALANCING DAMPERS SHALL BE MULTI-OPPOSED BLADE MANUAL DAMPER, 4-WAY SELF ADJUSTING FRAME, LINKAGES, 40 MM STANDOFF AND LOCKING QUADRANT HANDLE AS PER SPECIFICATIONS.
7. COORDINATE DUCT ROUTING WITH STRUCTURAL STEEL AND OTHER SYSTEMS AND TRADES.
8. ALL TRANSITIONS FROM ROOFTOP UNITS SHALL BE MADE WITHIN THE CURB. TRANSITION SHEET METAL GAUGE SHALL BE SAME AS SILENCER GAUGE METAL; MINIMUM SHALL BE 16 GAUGE. TRANSITIONS SHALL BE COORDINATED WITH STRUCTURAL STEEL, SO THAT SILENCERS FIT BETWEEN BEAMS AND/OR JOIST. TRANSITIONS SHALL HAVE ACOUSTIC LINING.
9. SILENCER SHALL BE AS TIGHT AS POSSIBLE TO UNDERSIDE OF STEEL ROOF DECK. (REFERENCE DETAIL). ALL DUCTWORK BETWEEN RTU & SILENCER SHALL BE MIN 16 GAUGE.
10. OFFSETS BRANCH DUCTWORK TO SUIT INTERFERENCES.
11. REFERENCE ELECTRICAL DRAWINGS FOR POWER CIRCUIT LOCATIONS FOR BUILDING AUTOMATION SYSTEM, DAMPERS AND TERMINALS.
12. ALL THERMOSTATS AND/OR SENSORS TO HAVE ROUGHED CONDUIT IN BLOCK WALL; ENSURE LOCATIONS ARE COORDINATED WITH GENERAL TRADES AND ARCHITECTURAL DRAWINGS.
13. PROVIDE CEILING ACCESS DOORS WHERE EQUIPMENT ACCESS IS REQUIRED ABOVE DRYWALL OR HARD FINISH CEILING.
14. ALL DUCT HEATERS SHALL BE FLANGED TYPE.
15. VRF FAN COILS TO BE INSTALLED AS PER DETAIL & TO MANUFACTURER'S INSTALLATION INSTRUCTIONS. ENSURE FILTER & CONTROL SECTION ACCESS IS MAINTAINED FOR SERVICE.
16. DDC CONTROLLER FOR RTU'S SHALL BE LOCATED IN CORRIDOR ABOVE ACCESSIBLE SUSPENDED CEILING DIRECTLY BELOW RTU OR IN GROUPINGS. EQUIPMENT IDENTIFICATION TAGS SHALL INDICATE CONTROLLER LOCATION.
17. SUPPLY AIR DUCT SPLITTING FITTINGS SHALL BE DIVIDED TYPE WITH RADIUS ELBOW WHERE SPACE ALLOWS; ALTERNATIVELY SQUARE ELBOW WITH TURNING VANES. DETERMINE DUCT RATIO BASED ON AIRFLOW VALUES.
18. COORDINATE ALL DUCT LOCATIONS WITH OTHER TRADES TO PRESERVE CEILING SPACE AND AVOID UNNECESSARY OFFSETS.
19. COORDINATE ALL FLOOR AND WALL PENETRATIONS WITH GENERAL TRADES.
20. COORDINATE ALL EQUIPMENT AND DUCT SUPPORTS WITH OTHER TRADES TO MINIMIZE ATTACHMENTS TO STRUCTURE. REFER TO ARCHITECTURAL AND STRUCTURAL DRAWINGS FOR DETAILS.
21. THERMALLY INSULATE ALL SUPPLY AIR SILENCERS.

OTTAWA CATHOLIC SCHOOL BOARD

REV	REVISION DESCRIPTION	DATE
1	ISSUED FOR 75% REVIEW	2025-03-12

SEAL

PROJECT NORTH

Goodkey Weedmark
Consulting Engineers

GOODKEY WEEDMARK & ASSOCIATES LIMITED
1688 Woodward Dr.
Ottawa Ontario
Canada K2C 3R8
Voice 613 727-5111
Fax 613 727-5115
Web www.gwal.com

PROJECT

OCSB FERNBANK NORTH ELEMENTARY SCHOOL

620 Triangle Street, Ottawa, ON

DRAWING

HVAC ROOF

PROJECT NO.	2024-682	DRAWING NO.	
SCALE -	1 : 175		M302
DRAWN -	GM		
CHECKED -	RL		
PLOT DATE -	03/12/25	PLOTTED BY -	

PLOT SCALE - 1:1

SHEET SIZE: A1

:FILE PATH C:\Users\gmacmaster\Documents\2024-682-M_gmacmaster.rvt

3/12/2025 9:48:25 AM

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

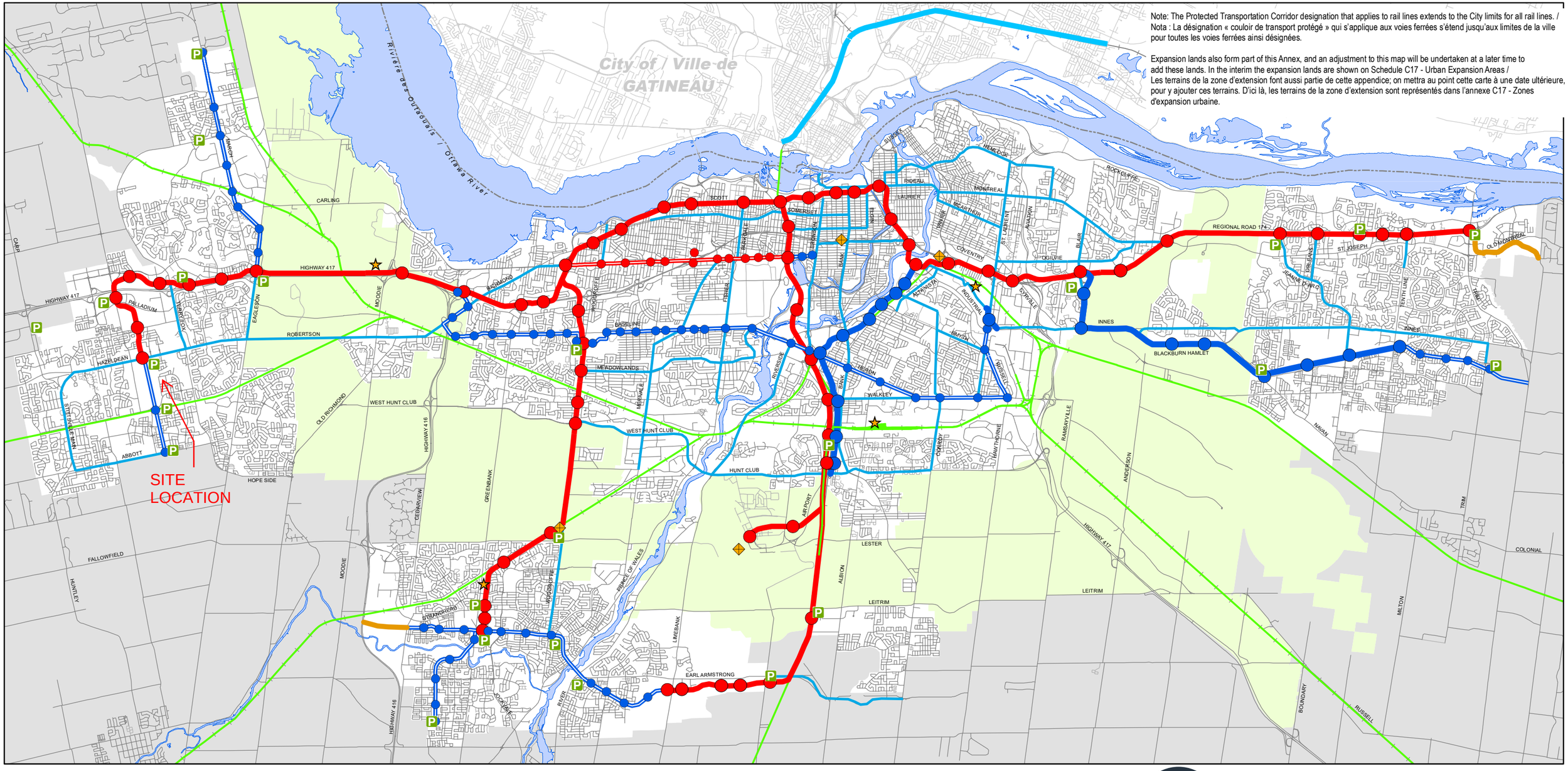
Row Width (m)	Implied Roadway Class	AADT Vehicles/Day	Posted Speed Km/Hr	Day/Night Split %	Medium Trucks %	Heavy Trucks % [1]
NA [2]	Freeway, Queensway, Highway	18,333 per lane	100	92/8	7	5
37.5-44.5	6-Lane Urban Arterial-Divided (6 UAD)	50,000	50-80	92/8	7	5
34-37.5	4-Lane Urban Arterial-Divided (4-UAD)	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.

Note: The Protected Transportation Corridor designation that applies to rail lines extends to the City limits for all rail lines. / Nota : La désignation « couloir de transport protégé » qui s'applique aux voies ferrées s'étend jusqu'aux limites de la ville pour toutes les voies ferrées ainsi désignées.

Expansion lands also form part of this Annex, and an adjustment to this map will be undertaken at a later time to add these lands. In the interim the expansion lands are shown on Schedule C17 - Urban Expansion Areas / Les terrains de la zone d'extension font aussi partie de cette appendice; on mettra au point cette carte à une date ultérieure, pour y ajouter ces terrains. D'ici là, les terrains de la zone d'extension sont représentés dans l'annexe C17 - Zones d'expansion urbaine.



RAPID TRANSIT
TRANSIT LEVEL OF SERVICE 'A'
O-Train - Grade Separated Crossings
Transitway - Grade Separated Crossings
TRANSIT LEVEL OF SERVICE 'B'
O-Train - At-Grade Crossings
Transitway - At-Grade Crossings
TRANSIT PRIORITY
Transit Priority Corridor

**Note: The intensity of transit priority (e.g., continuous bus lanes or isolated transit priority measures) shall be as designated in the Transportation Master Plan.*

TRANSPORT EN COMMUN RAPIDE
NIVEAU DE SERVICE A
O-Train - passages étagés
Transitway - passages étagés
NIVEAU DE SERVICE B
O-Train - passages à niveau
Transitway - passages à niveau
PRIORITÉ AU TRANSPORT EN COMMUN
Corridor donnant priorité au transport en commun

**Nota : D'autres renseignements sur la priorité accordée au transport en commun (p. ex. voies d'autobus continues ou mesures prioritaires de transport en commun isolées) seront publiés dans le Plan directeur des transports.*

Park and Ride	Parc-O-Bus
O-Train Station	Station de l'O-Train
Transitway Station	Station de la Transitway
Conceptual Future Transit Corridor	Avenir conceptuel - Couloir de transport en commun
Protected Transportation Corridor	Couloir de transport protégé
Inter-regional Stations	Stations interrégionales
Rail Yard	Cour de tirage pour trains
Rail Corridor	Couloir ferroviaire
Gatineau RapiBus - grade-separated	Rapibus de Gatineau en site propre

Official Plan / Plan officiel

Schedule C2 - Transit Network
ULTIMATE

Annexe C2 Réseau de Transport
ABSOLU

Approved on November 4, 2022
Approuvé le 4 novembre 2022

Consolidation and Amendments / Consolidation et amendements

0 0.5 1 2 3 4 5 km

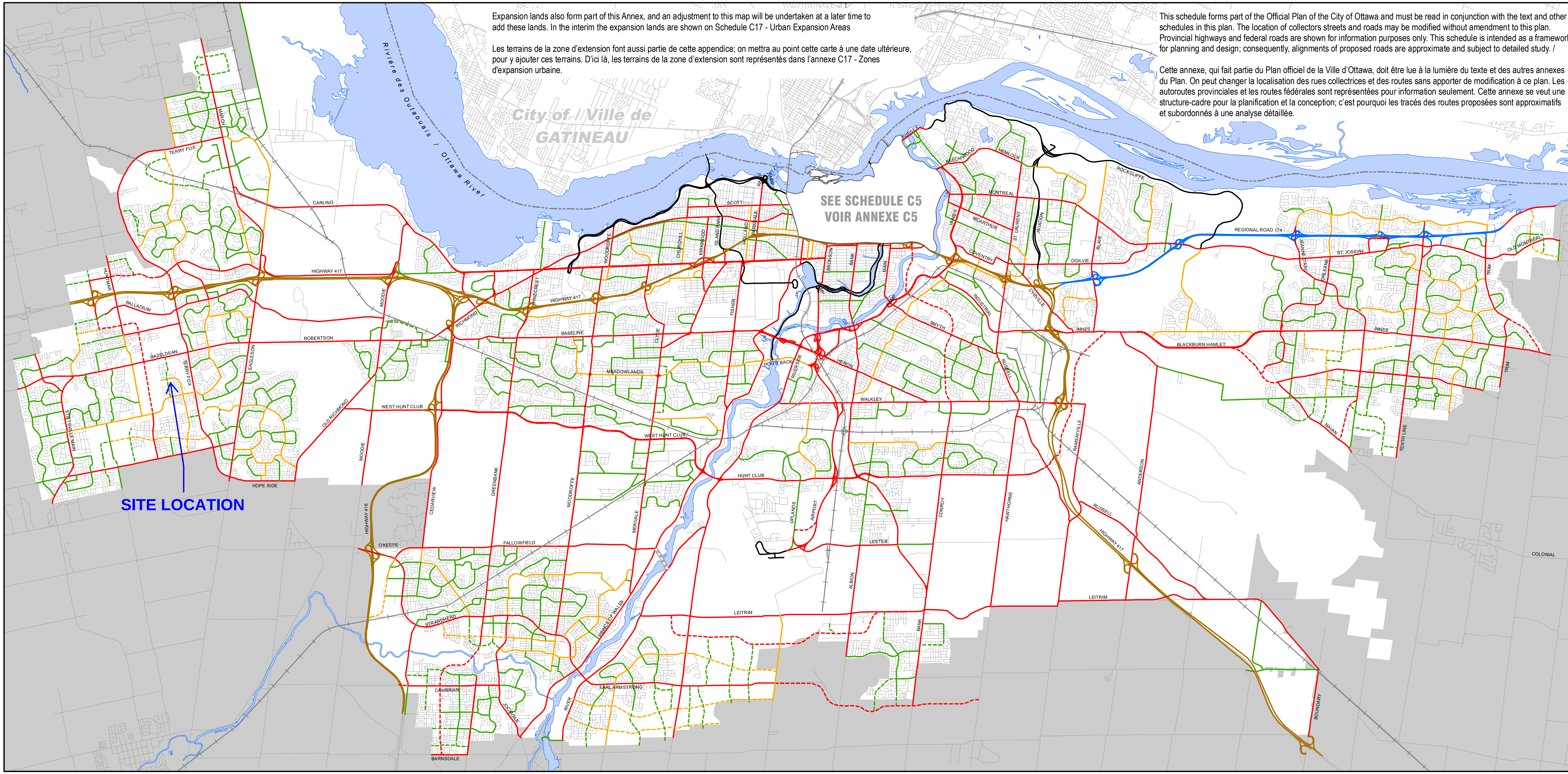
Planning, Infrastructure and Economic Development Department, Geospatial Analytics, Technology and Solutions
Services de la planification, de l'infrastructure et du développement économique, Analyse géospatiale, technologie et solutions

Expansion lands also form part of this Annex, and an adjustment to this map will be undertaken at a later time to add these lands. In the interim the expansion lands are shown on Schedule C17 - Urban Expansion Areas

Les terrains de la zone d'extension font aussi partie de cette appendice; on mettra au point cette carte à une date ultérieure, pour y ajouter ces terrains. D'ici là, les terrains de la zone d'extension sont représentés dans l'annexe C17 - Zones d'expansion urbaine.

This schedule forms part of the Official Plan of the City of Ottawa and must be read in conjunction with the text and other schedules in this plan. The location of collectors streets and roads may be modified without amendment to this plan. Provincial highways and federal roads are shown for information purposes only. This schedule is intended as a framework for planning and design; consequently, alignments of proposed roads are approximate and subject to detailed study. /

Cette annexe, qui fait partie du Plan officiel de la Ville d'Ottawa, doit être lue à la lumière du texte et des autres annexes du Plan. On peut changer la localisation des rues collectrices et des routes sans apporter de modification à ce plan. Les autoroutes provinciales et les routes fédérales sont représentées pour information seulement. Cette annexe se veut une structure-cadre pour la planification et la conception; c'est pourquoi les tracés des routes proposées sont approximatifs et subordonnés à une analyse détaillée.



Arterial - Existing		Artère - Établie
Arterial - Future (alignment defined)		Artère - Future (alignement déterminée)
Major Collector - Existing		Grande collectrice - Établie
Major Collector - Future		Grande collectrice - Future
Collector - Existing		Collectrice - Établie
Collector - Future		Collectrice - Future
River Crossing (corridor undefined)		Traversée de rivière (couloir non défini)
Provincial Highway		Route provinciale
Federally Owned Road		Chemins de propriété fédéral
City Freeway		Autoroute municipale

Official Plan / Plan officiel

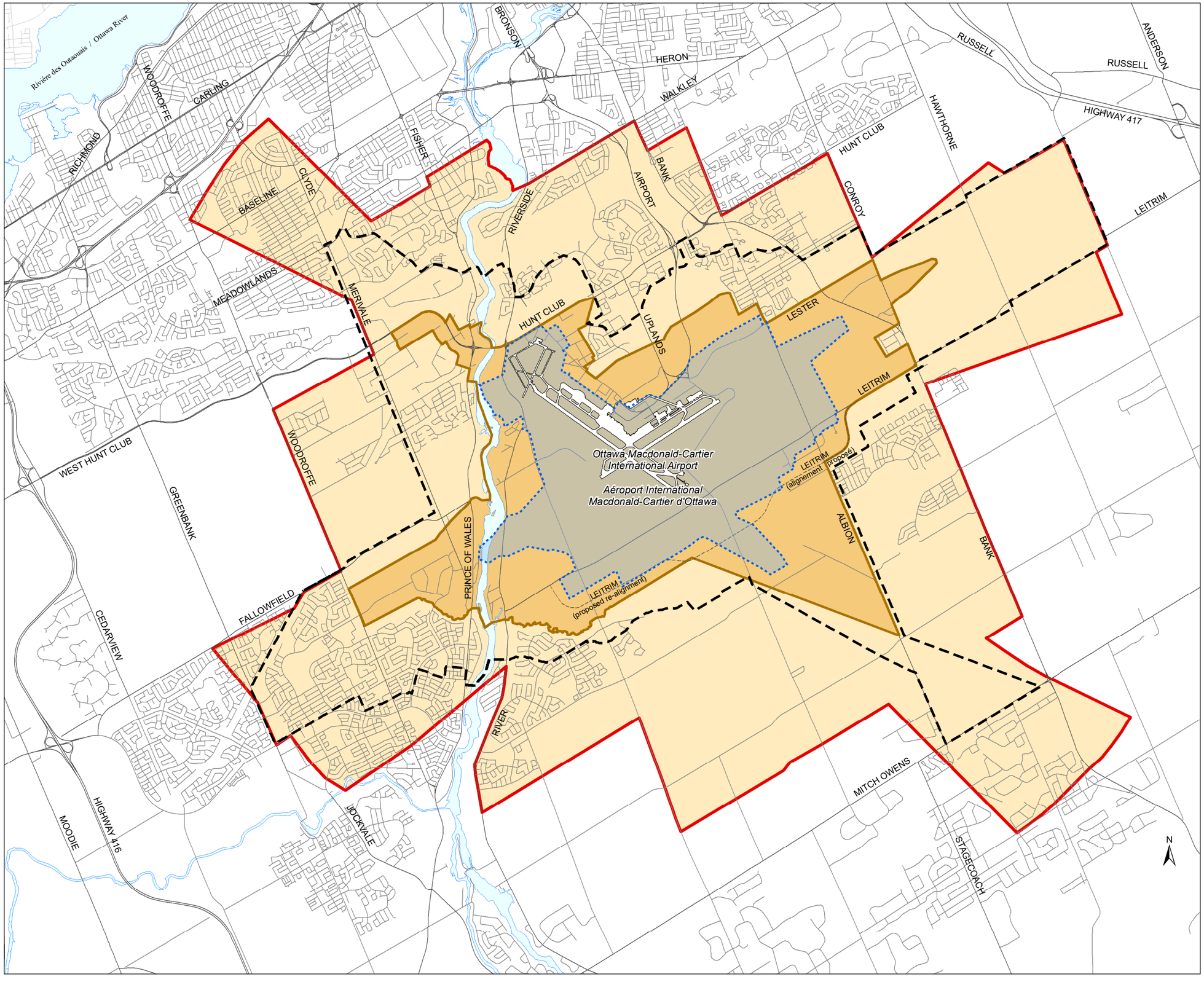
Schedule C4 - Urban Road Network
Annexe C4 Réseau routier urbain

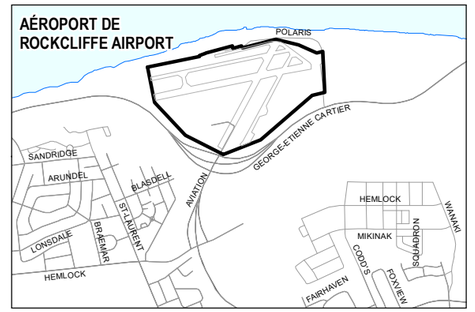
Approved on November 4, 2022
Approuvé le 4 novembre 2022

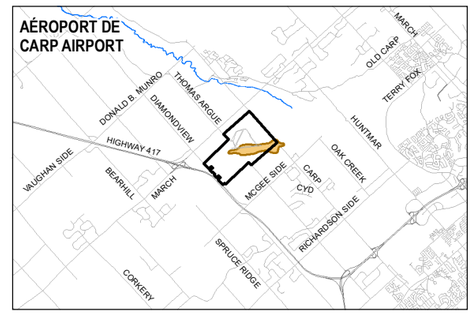
Consolidation and Amendments / Consolidation et amendements

0 0.5 1 2 3 4 5 km

Planning, Infrastructure and Economic Development Department, Geospatial Analytics, Technology and Solutions
Services de la planification, de l'infrastructure et du développement économique, Analyse géospatiale, technologie et solutions







Airport Vicinity Development Zone
Zone d'aménagement dans le voisinage de l'aéroport

25 Line (Composite of 25 NEF/NEP)
Ligne 25 (ensemble des courbes NEF et NEP 25)

35 Line (Composite of 35 NEF/NEP)
Ligne 35 (ensemble des courbes NEF et NEP 35)

Airport Zoning Regulations
Règlements de zonage applicables à de l'Aéroport

Airport Operating Influence Zone
Zone d'influence d'exploitation de l'aéroport

NOTE:
The boundaries of the Ottawa Airport Operating Influence Zone and the Airport Vicinity Development Zone, are not subject to interpretation and their precise locations should be read from a map at a scale of 1:50,000 available from the City of Ottawa and the Ottawa International Airport Authority.

NOTE:
Les limites de la Zone d'influence d'exploitation de l'aéroport Ottawa et de la Zone d'aménagement dans le voisinage de l'aéroport ne sont sujettes à aucune interprétation. Pour connaître leur emplacement exact, il faut se reporter à la carte qui les définit à une échelle de 1 : 50 000, que l'on peut se procurer auprès de la Ville d'Ottawa et de l'Administration de l'Aéroport international d'Ottawa.

Official Plan / Plan officiel

Schedule C14 - Land Use Constraints Due to Aircraft Noise
Annexe C14 - Contraintes limitant l'utilisation en raison du bruit des avions

Approved on November 4, 2022
Approuvé le 4 novembre 2022

Consolidation and Amendments / Consolidation et amendements

Ottawa

Planning, Infrastructure and Economic Development Department, Geospatial Analytics, Technology and Solutions
Services de la planification, de l'infrastructure et du développement économique, Analyse géospatiale, technologie et solutions

APPENDIX C

STAMSON Validation Files

STAMSON 5.0 NORMAL REPORT Date: 14-02-2025 14:49:26
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: FERN.te Time Period: Day/Night 16/8 hours
Description: Fernbank School North Facade (Daytime)

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

Car traffic volume : 9715/845 veh/TimePeriod *
Medium truck volume : 773/67 veh/TimePeriod *
Heavy truck volume : 552/48 veh/TimePeriod *
Posted speed limit : 40 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 12000
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 7.00
Heavy Truck % of Total Volume : 5.00
Day (16 hrs) % of Total Volume : 92.00

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

Angle1 Angle2 : -20.00 deg 50.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 110.00 / 110.00 m
Receiver height : 1.50 / 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

FF
Results segment # 1: FERN (day)

Source height = 1.50 m

ROAD (0.00 + 52.96 + 0.00) = 52.96 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-20	50	0.00	65.72	0.00	-8.65	-4.10	0.00	0.00	0.00	52.96

Segment Leq : 52.96 dBA

Total Leq All Segments: 52.96 dBA

FF

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

Source height = 1.50 m

ROAD (0.00 + 45.36 + 0.00) = 45.36 dBA
Angle1 Angle2  Alpha RefLeq  P.Adj  D.Adj  F.Adj  W.Adj  H.Adj  B.Adj SubLeq
-------------------------------------------------------------------------------
   -20     50   0.00  58.12   0.00  -8.65  -4.10   0.00   0.00   0.00  45.36
-------------------------------------------------------------------------------

Segment Leq : 45.36 dBA

Total Leq All Segments: 45.36 dBA

FF



TOTAL Leq FROM ALL SOURCES (DAY): 52.96
                           (NIGHT): 45.36
FF
FF
```

APPENDIX D

Supporting Information

Rooftop RTU Unit Information

Make:	AAON
ID & Model #:	RTU1, RTU3, RTU4. RTU5 and RTU6: RN-011-4-H60E-3GB RTU2: RN-006-8-0-E60E03KB
Volume Flow Rate (cfm)	4200, 2500, 4900, 4200, 4200, 5100
Use:	Kindergarten, Daycare, Classrooms South, Classrooms West, Classrooms North, Gynmasium
Data Used:	Manufacturer Specifications provided by Aaon
Location:	Located on the roof the school.
Notes:	Drawings & Model ID: RTU1 to RTU6

RTU Sound Power Levels [1]

	Sound Power (dBA)								Total
	63	125	250	500	1K	2K	4K	8K	(dBA)
RTU-1, Rooftop Condenser Fan (RN-011, 2 fans)	92	87	83	82	78	74	71	70	84
RTU-1, Rooftop Exhaust Fan (1 fan)	87	86	87	84	78	76	73	68	85
RTU-2, Rooftop Condenser Fan (RN-006, 1 fan)	89	84	80	79	75	71	68	67	80
RTU-2, Rooftop Exhaust Fan (1 fan)	82	83	83	81	76	73	70	66	82
RTU-3, Rooftop Condenser Fan (RN-011, 2 fan)	92	87	83	82	78	74	71	70	84
RTU-3, Rooftop Exhaust Fan (1 fan)	88	87	89	86	80	78	75	70	87
RTU-4, Rooftop Condenser Fan (RN-011, 2 fan)	92	87	83	82	78	74	71	70	84
RTU-4, Rooftop Exhaust Fan (1 fan)	92	89	96	87	82	80	78	72	85
RTU-5, Rooftop Condenser Fan (RN-011, 2 fan)	89	84	80	79	75	71	68	67	80
RTU-5, Rooftop Exhaust Fan (1 fan)	87	86	87	84	78	76	73	68	85
RTU-6, Rooftop Condenser Fan (RN-011, 2 fan)	92	87	83	82	78	74	71	70	84
RTU-6, Rooftop Exhaust Fan (1 fan)	86	86	86	82	78	76	74	69	85

Notes:

[1] See attached Manufacturer Specs provided in Appendix D.

AAON Standard Condenser Fan Radiated Sound Levels

Updated 10/26/2018

Sound Pressure Level in a Hemispherical Free Field — Dist (ft): 5

		Fans	Dia	RPM	Sound Power Level									Sound Pressure Level								
					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

18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.335 (SN: 6114768-ZAY41M85)

JOB INFORMATION:

Job Name:	*OCSB New Riverside South*
Job Tag:	*RTU1 Kindergarden*
Rep Firm:	*850*
Date:	*06/20/2023*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	*4200*
Tip Speed:	*7,449 FPM*
Inertia:	*3 WR²*

OPERATING CONDITIONS:

Air Flow:	*4,200 CFM*
Static Pressure:	*1.64 in. Wg.*
Relief Dampers DP:	*0.35 in. Wg.*
TSP:	*1.99 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.99 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*3 / No*
Frame Size:	*182T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*29 WR²*

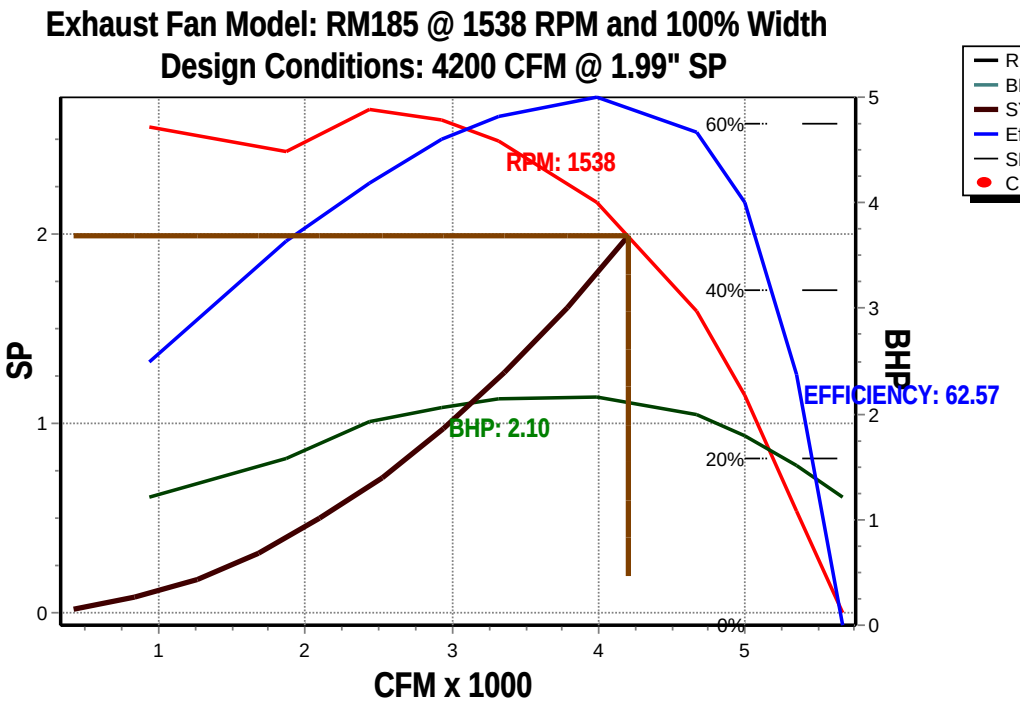
FAN PERFORMANCE:

RPM:	*1538*
BHP:	*2.10*
Efficiency:	*62.6%*
In/Out Velocity:	*2132/1654 FPM*
Plenum Out Velocity:	*70 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
(Re 10^-12 watts)								
	87	*86*	*87*	*84*	*78*	*76*	*73*	*68*
	87	*86*	*87*	*84*	*78*	*76*	*73*	*68*

SOUND POWER A-Weighted: 88 / 88 dB



15.0" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.335 (SN: 6114768-ZAY41M85)

JOB INFORMATION:

Job Name:	*OCSB New Riverside South*
Job Tag:	*RTU2 DAYCARE*
Rep Firm:	*850*
Date:	*06/20/2023*

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*15.0 in. x 1*
CFM:	*2500*
Tip Speed:	*6,955 FPM*
Inertia:	*3 WR²*

OPERATING CONDITIONS:

Air Flow:	*2,500 CFM*
Static Pressure:	*1.30 in. Wg.*
Relief Dampers DP:	*0.31 in. Wg.*
TSP:	*1.61 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.61 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*2 / No*
Frame Size:	*145T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*208/3/60*
Efficiency	*Premium / 0.865*
Enclosure Type:	*ODP*
Max Inertial Load:	*27 WR²*

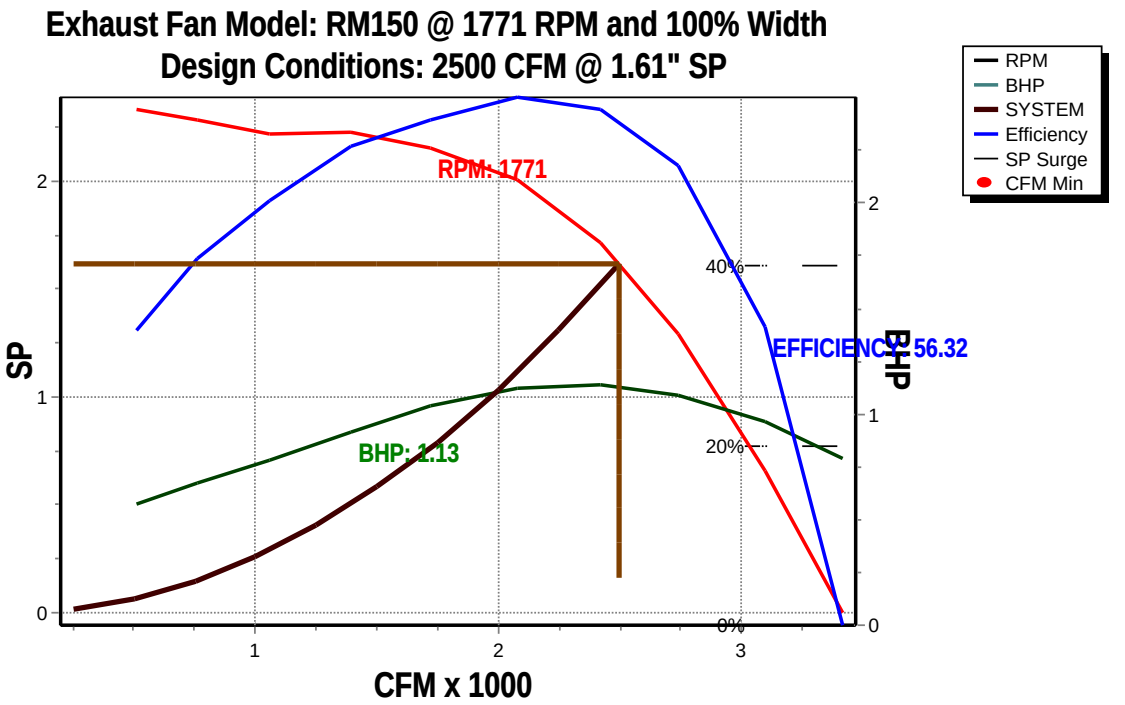
FAN PERFORMANCE:

RPM:	*1771*
BHP:	*1.13*
Efficiency:	*56.3%*
In/Out Velocity:	*1269/984 FPM*
Plenum Out Velocity:	*42 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
(Re 10^-12 watts)	*82*	*83*	*83*	*81*	*76*	*73*	*70*	*66*
	82	*83*	*83*	*81*	*76*	*73*	*70*	*66*

SOUND POWER A-Weighted: 83 / 83 dB



18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.335 (SN: 6114768-ZAY41M85)

JOB INFORMATION:

Job Name:	*OCSB New Riverside South*
Job Tag:	*RTU3 CLASSROOMS*
Rep Firm:	*SOUTH*
Date:	*850*
	06/20/2023

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	
Tip Speed:	*4900*
Inertia:	*8,151 FPM*
	3 WR²

OPERATING CONDITIONS:

Air Flow:	*4,900 CFM*
Static Pressure:	*1.75 in. Wg.*
Relief Dampers DP:	*0.35 in. Wg.*
TSP:	*2.10 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*2.10 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*3 / No*
Frame Size:	*182T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*29 WR²*

FAN PERFORMANCE:

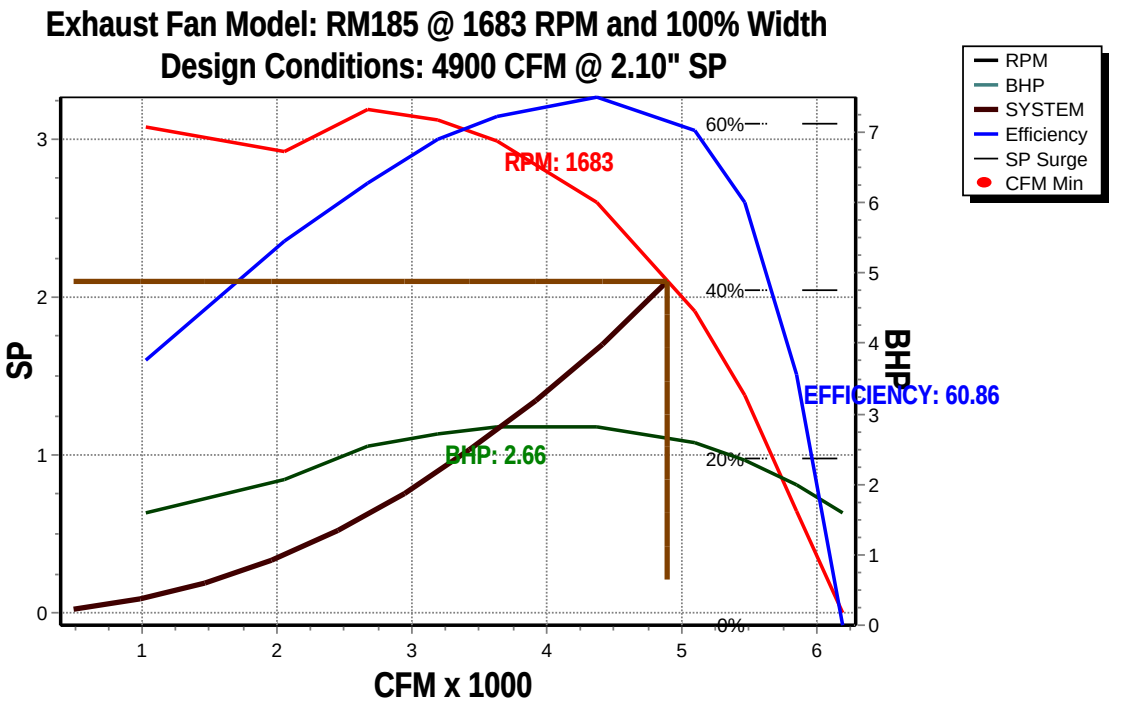
RPM:	*1683*
BHP:	*2.66*
Efficiency:	*60.9%*
In/Out Velocity:	*2487/1929 FPM*
Plenum Out Velocity:	*82 FPM*

FAN SOUND POWER (Inlet/Outlet):

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

1	2	3	4	5	6	7	8
88	*87*	*89*	*86*	*80*	*78*	*75*	*70*
88	*87*	*89*	*86*	*80*	*78*	*75*	*70*

SOUND POWER A-Weighted: 90 / 90 dB



Date Created/Modified: 6/20/2023 4:14:04 PM Using Ver 4.327 (OSN# 0123456)

Date Printed: 6/20/2023 4:24:57 PM

18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.335 (SN: 6114768-ZAY41M85)

JOB INFORMATION:

Job Name:	*OCSB New Riverside South*
Job Tag:	*RTU4 CLASSROOMS*
Rep Firm:	*WEST*
Date:	*850*
	06/20/2023

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	
Tip Speed:	*4200*
Inertia:	*7,449 FPM*
	3 WR²

OPERATING CONDITIONS:

Air Flow:	*4,200 CFM*
Static Pressure:	*1.64 in. Wg.*
Relief Dampers DP:	*0.35 in. Wg.*
TSP:	*1.99 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.99 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*3 / No*
Frame Size:	*182T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*29 WR²*

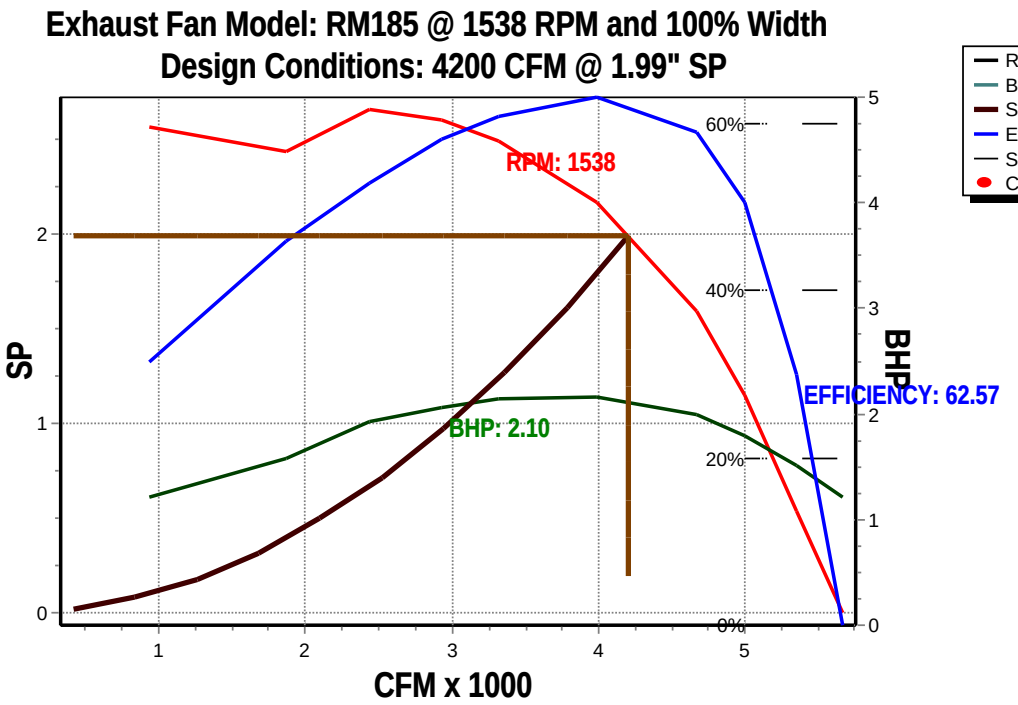
FAN PERFORMANCE:

RPM:	*1538*
BHP:	*2.10*
Efficiency:	*62.6%*
In/Out Velocity:	*2132/1654 FPM*
Plenum Out Velocity:	*70 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
(Re 10^-12 watts)								
	87	*86*	*87*	*84*	*78*	*76*	*73*	*68*
	87	*86*	*87*	*84*	*78*	*76*	*73*	*68*

SOUND POWER A-Weighted: 88 / 88 dB



18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.335 (SN: 6114768-ZAY41M85)

JOB INFORMATION:

Job Name:	*OCSB New Riverside South*
Job Tag:	*RTU5 CLASSROOMS*
Rep Firm:	*NORTH*
Date:	*850*
	06/20/2023

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	
Tip Speed:	*4200*
Inertia:	*7,449 FPM*
	3 WR²

OPERATING CONDITIONS:

Air Flow:	*4,200 CFM*
Static Pressure:	*1.64 in. Wg.*
Relief Dampers DP:	*0.35 in. Wg.*
TSP:	*1.99 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*1.99 in. Wg.*

MOTOR SELECTION:

Rated HP / Bypass:	*3 / No*
Frame Size:	*182T*
Nominal RPM:	*1760*
VAC/PH/HZ:	*575/3/60*
Efficiency	*Premium / 0.895*
Enclosure Type:	*ODP*
Max Inertial Load:	*29 WR²*

FAN PERFORMANCE:

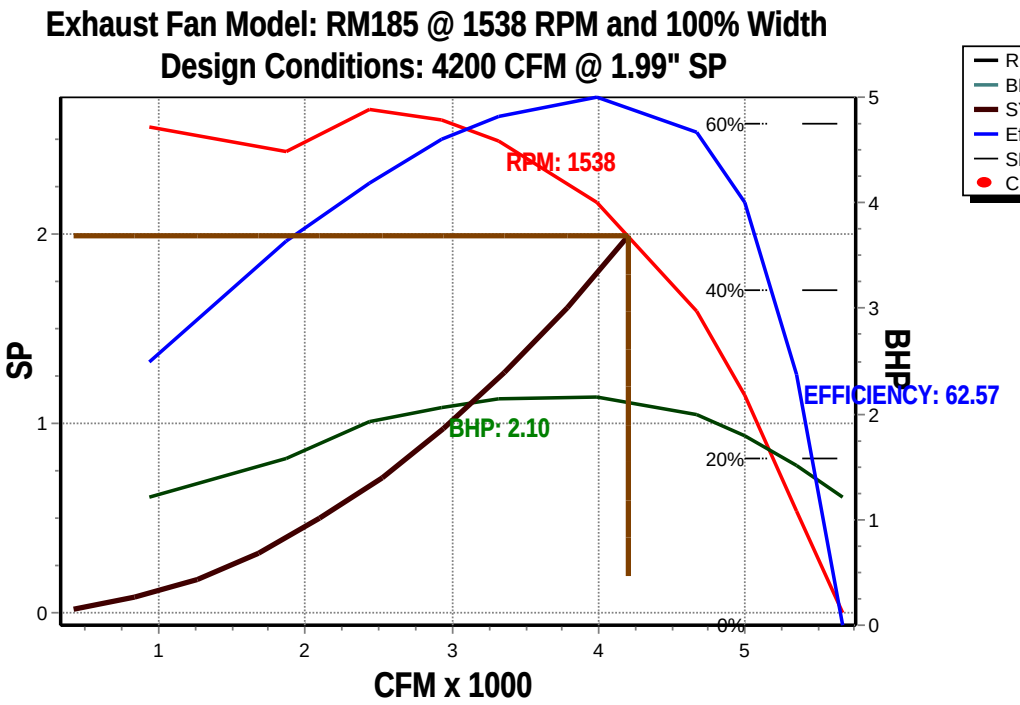
RPM:	*1538*
BHP:	*2.10*
Efficiency:	*62.6%*
In/Out Velocity:	*2132/1654 FPM*
Plenum Out Velocity:	*70 FPM*

FAN SOUND POWER (Inlet/Outlet):

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

1	2	3	4	5	6	7	8
87	*86*	*87*	*84*	*78*	*76*	*73*	*68*
87	*86*	*87*	*84*	*78*	*76*	*73*	*68*

SOUND POWER A-Weighted: 88 / 88 dB



Date Created/Modified: 6/20/2023 4:14:04 PM Using Ver 4.327 (OSN# 0123456)

Date Printed: 6/20/2023 4:25:17 PM

18.5" STAR Plenum

2425 South Yukon Ave - Tulsa, Oklahoma 74107-2728 - Ph. (918) 583-2266 Fax (918) 583-6094
AAONEcat32 Ver. 4.335 (SN: 6114768-ZAY41M85)

JOB INFORMATION:

Job Name:	*OCSB New Riverside South*
Job Tag:	*RTU6 GYMNASIUM*
Rep Firm:	*850*
Date:	*06/20/2023*
	06/20/2023

WHEEL SPECIFICATION:

Max RPM:	*2,200*
Diameter x Qty:	*18.5 in. x 1*
CFM:	*2756*
Tip Speed:	*7,628 FPM*
Inertia:	*7,628 FPM*

OPERATING CONDITIONS:

Air Flow:	*2,756 CFM*
Static Pressure:	*1.78 in. Wg.*
Relief Dampers DP:	*0.35 in. Wg.*
TSP:	*2.13 in. Wg.*
Site Altitude:	*0.00 Ft*
TSP @ Sea Level:	*2.13 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*

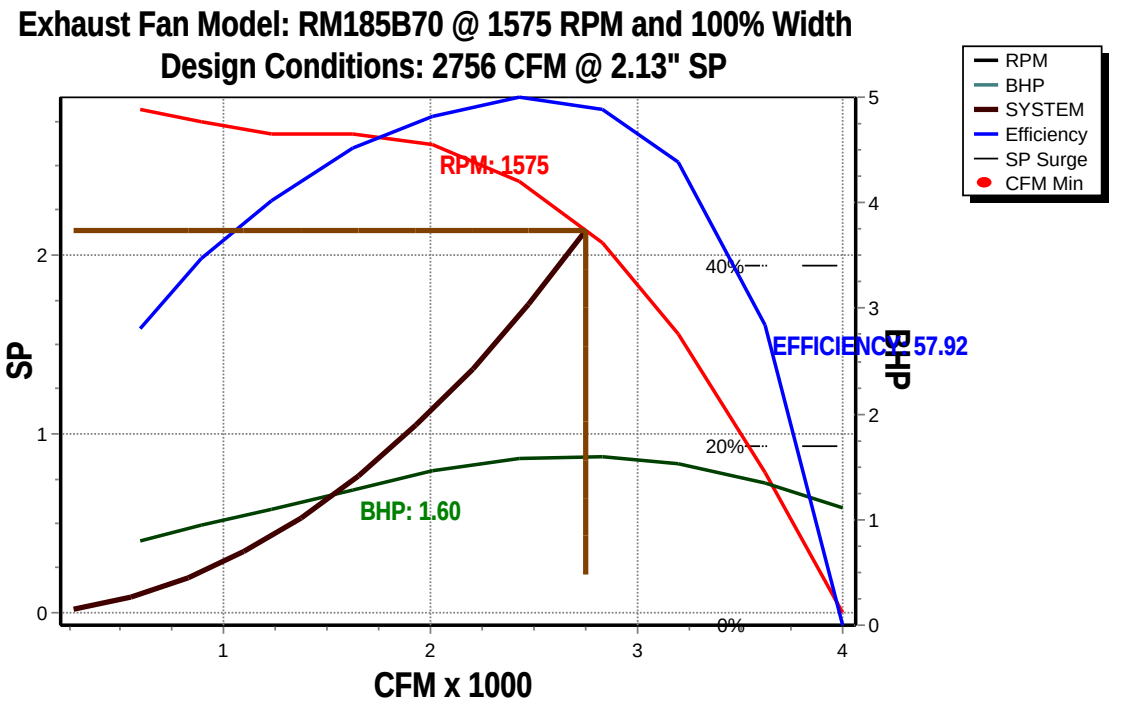
FAN PERFORMANCE:

RPM:	*1575*
BHP:	*1.60*
Efficiency:	*57.9%*
In/Out Velocity:	*/ FPM*
Plenum Out Velocity:	*46 FPM*

FAN SOUND POWER (Inlet/Outlet):

Octave Band:	**1**	**2**	**3**	**4**	**5**	**6**	**7**	**8**
(Re 10^-12 watts)								
	86	*86*	*86*	*82*	*78*	*76*	*74*	*69*
	86	*86*	*86*	*82*	*78*	*76*	*74*	*69*

SOUND POWER A-Weighted: 87 / 87 dB



Date Created/Modified: 6/20/2023 4:14:04 PM Using Ver 4.327 (OSN# 0123456)

Date Printed: 6/20/2023 4:25:27 PM

Air Cooled VRF Condensing Unit Information

Make:	Daikin
ID & Model:	RELQ192TAYCA
Cooling (tons):	10 Ton
Data Used:	Manufacturer Specifications provided by Daikin.
Location:	Located on the roof the school.
Notes:	Drawings & Model ID: CU1A and CU1B

Exhaust Fan Sound Power Levels [1]

	Sound Power (dBA)								Total
	63	125	250	500	1K	2K	4K	8K	(dBA)
CU1A/CU1B	76	72	70	72	65	58	52	47	79

Notes:

[1] See attached Manufacturer Specs provided in Appendix D.

EDUS371705C-D
202002

DAIKIN

Engineering Data

Design Manual

RELQ-TATJA, 208 / 230 V
RELQ-TAYDA, 460 V
RELQ-TAYCA, 575 V

Heat Recovery 60 Hz

R-410A

VRV
Aurora Series

9.3 RELQ-TAYCA

Outdoor unit model No.			RELQ72TAYCA	RELQ96TAYCA	RELQ120TAYCA
Power supply			3 phase, 575 V, 60 Hz	3 phase, 575 V, 60 Hz	3 phase, 575 V, 60 Hz
★1 Cooling capacity	Nominal	Btu/h (kW)	72,000 (21.1)	96,000 (28.1)	120,000 (35.2)
	Rated		69,000 (20.2)	92,000 (27.0)	114,000 (33.4)
★2 Heating capacity	Nominal	Btu/h (kW)	81,000 (23.7)	108,000 (31.7)	135,000 (39.6)
	Rated		77,000 (22.6)	103,000 (30.2)	129,000 (37.8)
Casing color			Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)	Ivory White (5Y7.5/1)
Dimensions: (H × W × D)		in. (mm)	66-11/16 × 48-7/8 × 30-3/16 (1,694 × 1,242 × 767)	66-11/16 × 48-7/8 × 30-3/16 (1,694 × 1,242 × 767)	66-11/16 × 48-7/8 × 30-3/16 (1,694 × 1,242 × 767)
Heat exchanger			Cross Fin Coil	Cross Fin Coil	Cross Fin Coil
Compressor	Type		Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type	Hermetically Sealed Scroll Type
	Volume	m³/h	12.7	17.5	23.1
	Number of revolutions	r/min	3,738	3,294	4,350
	Motor output × number of units	kW	3.9 × 1	5.0 × 1	6.6 × 1
	Starting method		Soft Start	Soft Start	Soft Start
Fan	Type		Propeller Fan	Propeller Fan	Propeller Fan
	Motor output	kW	0.7 × 2	0.7 × 2	0.7 × 2
	Airflow rate	cfm (m³/min)	7,283 (206)	7,989 (226)	8,806 (249)
	Drive		Direct Drive	Direct Drive	Direct Drive
Connecting pipes	Liquid pipe	in. (mm)	ϕ3/8 (9.5) C1220T (Brazing Connection)	ϕ3/8 (9.5) C1220T (Brazing Connection)	ϕ1/2 (12.7) C1220T (Brazing Connection)
	Suction gas pipe	in. (mm)	ϕ3/4 (19.1) C1220T (Brazing Connection)	ϕ7/8 (22.2) C1220T (Brazing Connection)	ϕ1-1/8 (28.6) C1220T (Brazing Connection)
	High / Low pressure gas pipe	in. (mm)	ϕ5/8 (15.9) C1220T (Brazing Connection)	ϕ3/4 (19.1) C1220T (Brazing Connection)	ϕ3/4 (19.1) C1220T (Brazing Connection)
Weight		lbs (kg)	727 (330)	793 (360)	793 (360)
Sound pressure level (Reference data)		dB (A)	60 (65 ★3)	61 (67 ★3)	63.5 (67 ★3)
Sound power level (Reference data)		dB	79	80.5	84.5
Safety devices			High Pressure Switch, Fan Driver Overload Protector, Overcurrent Fuse, Inverter Overload Protector, Leak Detecting Device	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Fuse, Inverter Overload Protector, Leak Detecting Device	High Pressure Switch, Fan Driver Overload Protector, Overcurrent Fuse, Inverter Overload Protector, Leak Detecting Device
Defrost method			Deicer	Deicer	Deicer
Capacity control		%	10.7-100	9.4-100	8.6-100
Refrigerant	Refrigerant name		R410A	R410A	R410A
	Charge	lbs (kg)	25.8 (11.7)	25.8 (11.7)	25.8 (11.7)
	Control		Electronic Expansion Valve	Electronic Expansion Valve	Electronic Expansion Valve
Standard accessories			Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps	Installation Manual, Operation Manual, Connection Pipes, Clamps

Notes:

★1 Indoor temp.: 80°FDB (26.7°CDB) , 67°FWB (19.4°CWB) / Outdoor temp.: 95°FDB (35.0°CDB) / Equivalent piping length: 25 ft. (7.6 m), level difference: 0 ft. (0 m).

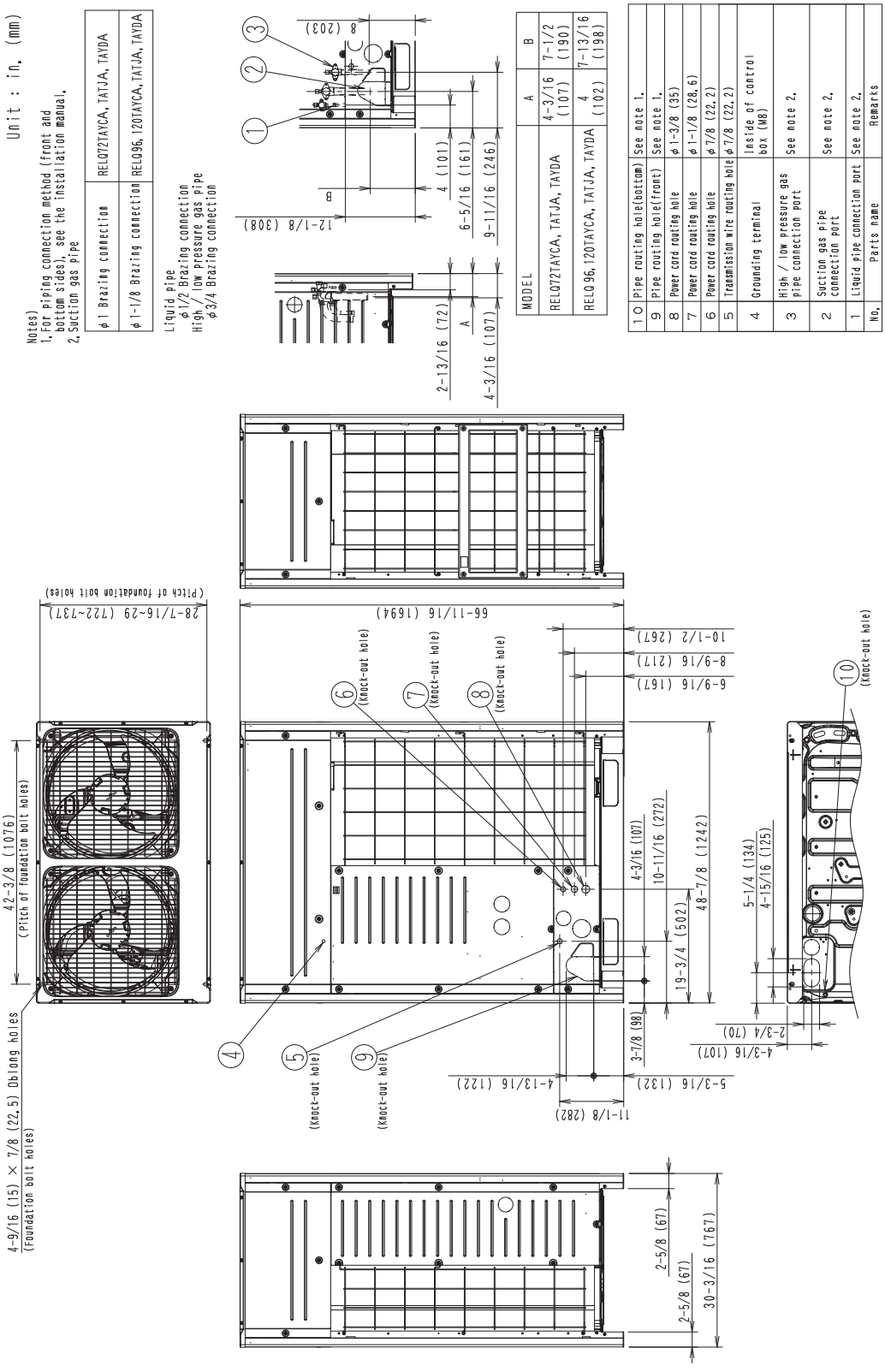
★2 Indoor temp.: 70°FDB (21.1°CDB) / Outdoor temp.: 47°FDB (8.3°CDB) , 43°FWB (6.1°CWB) / Equivalent piping length: 25 ft. (7.6 m), level difference: 0 ft. (0 m).

★3 Sound pressure level may increase during heating operation at ambient temps below 41°F (5°C) value in parenthesis is the max sound pressure at those conditions.

C: 4D107389C, C: 4D107390D, C: 4D107391C

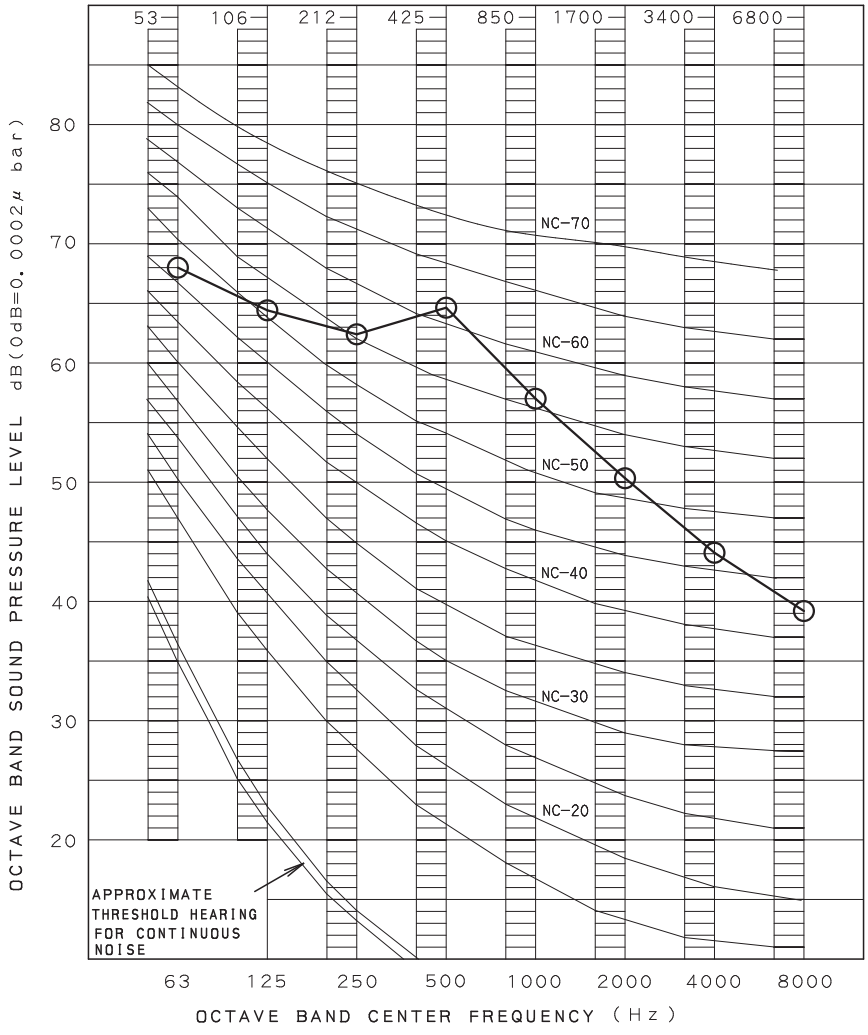
10. Dimensions

RELQ72-120TATJA / TAYDA / TAYCA



C: 3D107340A

RELQ120TATJA / TAYDA / TAYCA



OVER ALL (dB)

SCALE	60Hz
A	63.5

(B.G.N IS ALREADY RECTIFIED)

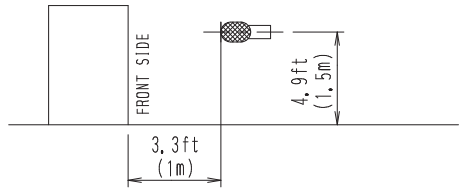
OPERATING CONDITIONS

POWER SOURCE 208/230V, 460V, 575V 60Hz

MEASURING PLACE

ANECHOIC CHAMBER(CONVERSION VALUE)

LOCATION OF MICROPHONE



NOTE : THE OPERATING SOUND IS MEASURED IN ANECHOIC CHAMBER, IF IT IS MEASURED UNDER THE ACTUAL INSTALLATION CONDITIONS, IT IS NORMALLY OVER THE SET VALUE DUE TO ENVIRONMENTAL NOISE AND SOUND REFLECTION.

4D107378A

Dedicated Outdoor Air System (DOAS) Information

Make:	Tempeff
ID & Model:	RG 2000
Flow Rate (cfm):	2500
Data Used:	Manufacturer Specifications provided by
Location:	Located on the roof the school.
Notes:	Drawings & Model ID: DOAS_1

Exhaust Fan Sound Power Levels [1]

	Sound Power (dBA)								Total
	63	125	250	500	1K	2K	4K	8K	(dBA)
DOAS_1	60	63	75	74	74	75	66	58	80

Notes:

[1] See attached Manufacturer Specs provided in Appendix D.

TEMPEFF

DUAL CORE

675 Washington Ave, WINNIPEG, MB CANADA R2K 1M4 PH: (204) 783-1902

Project	Riverside South ES				Line In														
Tag(s)	ERV-1				Voltage	208-3-60													
Agent	HTS Canada				FLA	10.7	AMPS												
Job Number	0				AMPACITY	12	AMPS												
					MAX.NON-TIME DELAY FUSE	25	AMP												
					MAX.TIME DELAY FUSE	15	AMP												
					MAX.CIRCUIT BREAKER	20	AMP												
Short Circuit Current Rating:	5KA				MIN.WIRE SIZE	#14	AWG												

Model

RG 2000

Approximate Weight	1789 KG	3954 LBS	**Outdoor**
Heaviest Shipping Section	1053 KG	2327 LBS	
Approx. Curb Weight	249 KG	548 LB	

Fans

Supply air fan: ANPA 14 **X1**

Exhaust air fan: ANPA 14 **X1**

Technical data

Input data	Sup. air	Exh. air
Total volume (SCFM)	2500	2500
HX Air volume (SCFM)	2500	2500
Filter	Merv 10 (2")	None
	-	-
External pressure drop (in. W.C)	0.50	1.00

Output data		
Filter air velocity (fpm)	450	0
Design pressure drop filter (in W.C)	0.50	0.00
HX air velocity (fpm)	431	431
Pressure drop heat exch. (in W.C)	0.63	0.63
Pressure drop HX filter (in W.C)	0.00	0.00
Heating Coil 1 Pressure Drop (in W.C)	0.00	0.00
Heating Coil 2 Pressure Drop (in W.C)	0.00	0.00
Cooling Coil Pressure Drop (in W.C)	0.00	0.00
Auxillary Pressure Drop (in W.C)	0.00	0.00
Backdraft dampers pressure drop (in W.C)	0.00	0.00
Louver/Hood pressure drop (in W.C)	0.00	0.00
Intake/discharge pressure drop (in W.C)	0.02	0.02
Static pressure (in W.C)	1.65	1.65

Fan speed (rpm)	1830	1830	Per fan
Max (rpm)	3460	3460	
Fan efficiency (%)	71.97	71.97	
Required BHP	1.03	1.03	
Motor efficiency (%)	86.5	86.5	
Motor power rating (hp)	1.50	1.50	
Motor RPM	1755	1755	
Motor Operating Frequency (Hz)	63	63	

Power and energy demand

Input data	Calculated			
	Winter		Summer	
	DB	WB	DB	WB
Design outdoor temp. (°F)	-16.00	-16.6	90.0	72.0
Desired supply air temp. winter (°F)				
Exhaust air temperature (°F)	72.0	54.0	75.0	62.5
Output data				
Efficiency (across unit) (%)	87.2%	70.0%	76.8%	0.0%
Supply air temp. after unit (°F)	60.73	46.3	78.5	68.6
Recovered energy across unit (BTUH)	207,179	41,557	-31,120	0

Standard Features

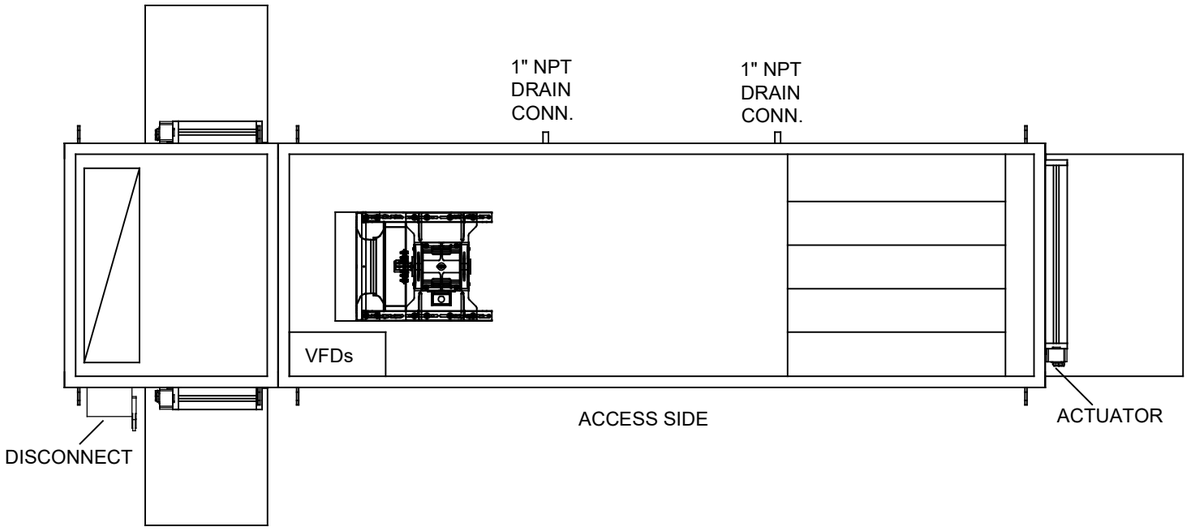
2" Foam injected panels
All sections come with hinged access doors and locking latches
Multi-Damper switchover section complete with actuators
SS Drain Pans under Heat Exchanger(s) w/ 1"NPTConnections
Galvanized Heat Exchanger Frames
Galvanized damper blades, damper rods and axles
18Ga Roof & Gutters
Hoods

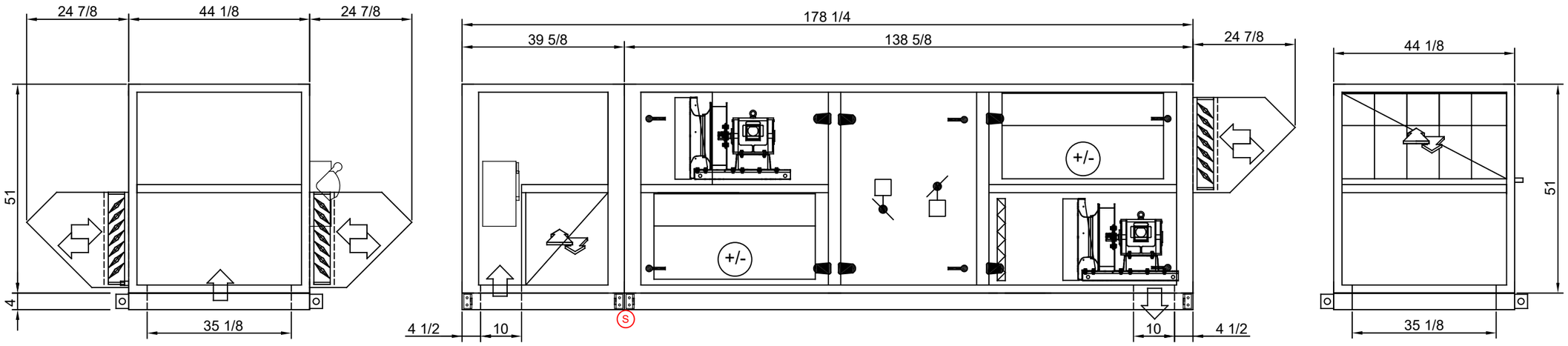
Additional Features

Exterior Casing: 24 Ga G90 Galv
Interior Casing: 24 Ga G90 Galv
Exterior paint: PowderCoat (Other)
1.5 HP WEG TEFC Premium Eff. 4 Pole 145T Frame
1.5 HP WEG TEFC Premium Eff. 4 Pole 145T Frame
SA Drive: FC-102-P1K1-T2-131F0697
RA Drive: FC-102-P1K1-T2-131F0697
1in. Seismic Spring Isolation
SA Pre-Filter: Dafco Merv 10 (2") 400 HC
Insulated Shutoff Dampers with 2 position Belimo actuator
Single point power
Non-fused Disconnect
Low Limit
4" 10Ga Baseframe
24" Roof Curb
Insulated Curb (2" Fiberglass)
Aluminum Wheel & cone all fans

Filters:
2- 20 x 20

Cells:
2- 4 x 200mm x 200mm
2- 4 x 200mm x 330mm
2- 1 x 217mm x 200mm
2- 1 x 217mm x 330mm





Ⓢ SPLIT FOR SHIPMENT

NOTES:
1. SERVICE ACCESS PANELS MUST NOT BE OBSTRUCTED RECOMMENDED CLEARANCE = SECTION SIZE.
2. DIMENSIONS ARE SUBJECT TO MANUFACTURING TOLERANCES.

FOR REFERENCE USE ONLY, SUBJECT TO CHANGE WITHOUT NOTICE

TEMPEFF
675 Washington Ave, Winnipeg, MB
Tel:(204) 783-1902

DRAWN BY	DATE	SCALE	MODEL	REV
CR	21-JUN-23	NTS	RG 2000 Type 1	

PROJECT NAME
RIVERSIDE SOUTH ES

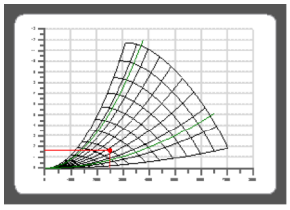
Unit Tag
ERV-1

Customer	
Project	**Description**
Your Ref.	**Our Ref.**

Input data

Volume	2500 CFM	**Temperature**	68.0 °F	**Density**	0.075 lb/cu.ft
Static Pressure	1.65 In.W.G.	**Altitude**	0 ft	**Free Inlet - Free Outlet**	

	Catalogue data		
Selected Fan **ANPA14 -**	n Max 1/min	Pw Max BHP	J lb ft²
	4000		5.22



Fan Information

OV ft/min	p tot * In.W.G.	p sta In.W.G.	p dyn ** In.W.G.	tip speed ft/min	RPM 1/min	eta Tot * %	eta Sta %	P fan BHP	Min Mot. BHP	P mot BHP	Shaft diameter in
	1.89	1.65	0.24	6699	1830	71.97	62.84	1.03			0.00

(*)Theoric value calculated taking into account the dynamic pressure at the impeller outlet
(**)Theoric value, calculated at the impeller outlet

fm[Hz]	**63**	**125**	**250**	**500**	**1000**	**2000**	**4000**	**8000**	**Tot.**
Lw3 Total Sound Power Level in the inlet duct- Lwi Inlet Duct Sound Power Level includes the effect of duct end correction									
Level Lw3 dB/dB(A)	78 / 52	71 / 55	75 / 66	69 / 66	65 / 65	65 / 66	56 / 57	51 / 50	**81 / 72**
Lw5 Inlet Total Sound Power Level - Lwmi Inlet Sound Power Level (free inlet) do not includes the effect of duct end correction									
Level Lw5 dB/dB(A)	69 / 43	67 / 51	80 / 72	76 / 73	69 / 69	66 / 68	64 / 65	60 / 59	**83 / 77**
Lw6 Total Sound Power Level at the free outlet - Lwmo Outlet Sound Power Level (free outlet) do not includes the effect of duct end correction									
Level Lw6 dB/dB(A)	87 / 60	80 / 63	84 / 75	78 / 74	74 / 74	74 / 75	65 / 66	60 / 58	**89 / 81**

Certificates

Comefri USA Inc. certifies that the ANPA14 - shown here is licensed to bear the AMCA Seal. The ratings shown are based on tests and procedures performed in accordance with AMCA Publication 211 and 311 and comply with the requirements of the AMCA Certified Ratings Program. Performance ratings include to effects of spring dampers and does not include the effects of appurtenances (accessories). Power rating (kW or BHP) does not include trasmission losses. Free inlet Lw5, LwA5 sound power levels shown are in decibels, referred to 10^{-12} watts calculated per AMCA International Standard 301. Air and free inlet Lw5, LwA5 sound performances shown are for installation type A: Free inlet - Free outlet. The AMCA Certified Ratings Seal applies to air performance and to free inlet Lw5, LwA5 sound power levels. The AMCA Certified Ratings Seal does not apply either to in-duct inlet Lw3, LwA3 sound or outlet Lw6, LwA6 sound.

APPENDIX E

Cadna Output

Receivers

Name	Sel.	M.	ID	Level Lr		Limit. Value		Land Use			Height		Coordinates		
				Day	Night	Day	Night	Type	Auto	Noise Type			X	Y	Z
				(dBA)	(dBA)	(dBA)	(dBA)				(m)		(m)	(m)	(m)
Plane of Window R01			SSOFF_R01_w	39.3	-80.2	50.5	0.0				4.50	r	429611.65	5014940.33	4.50
Plane of Window R02			SSOFF_R02_w	40.6	-80.2	50.5	0.0				4.50	r	429637.90	5014968.05	4.50
Plane of Window R03			SSOFF_R03_w	38.8	-80.2	50.5	0.0				4.50	r	429668.93	5015000.05	4.50
Outdoor Point of Reception R03			SSOFF_R03_o	37.9	-80.2	50.5	0.0				1.50	r	429661.75	5014994.95	1.50
Plane of Window R04			SSOFF_R04_w	38.5	-80.2	50.5	0.0				4.50	r	429740.83	5014999.67	4.50
Outdoor Point of Reception R04			SSOFF_R04_o	37.3	-80.2	50.5	0.0				1.50	r	429750.27	5014991.11	1.50
Plane of Window R05			SSOFF_R05_w	41.5	-80.2	50.5	0.0				4.50	r	429787.77	5014953.27	4.50
Plane of Window R06			SSOFF_R06_w	43.2	-80.2	50.5	0.0				4.50	r	429821.67	5014912.38	4.50
Outdoor Point of Reception R06			SSOFF_R06_o	43.9	-80.2	50.5	0.0				1.50	r	429818.19	5014909.38	1.50
Plane of Window R07			SSOFF_R07_w	43.9	-80.2	50.5	0.0				4.50	r	429844.56	5014884.73	4.50
Outdoor Point of Reception R07			SSOFF_R07_o	44.4	-80.2	50.5	0.0				1.50	r	429841.22	5014882.31	1.50
Plane of Window R08			SSOFF_R08_w	43.1	-80.2	50.5	0.0				4.50	r	429869.63	5014858.78	4.50
Outdoor Point of Reception R08			SSOFF_R08_o	43.7	-80.2	50.5	0.0				1.50	r	429864.63	5014854.60	1.50
Plane of Window R09			SSOFF_R09_w	44.1	-80.2	50.5	0.0				4.50	r	429863.96	5014815.69	4.50
Plane of Window R10			SSOFF_R10_w	46.2	-80.2	50.5	0.0				4.50	r	429832.87	5014789.52	4.50
Plane of Window R11			SSOFF_R11_w	48.7	-80.2	50.5	0.0				4.50	r	429789.39	5014755.28	4.50
Outdoor Point of Reception R11			SSOFF_R11_o	44.5	-80.2	50.5	0.0				1.50	r	429804.78	5014767.16	1.50
Plane of Window R12			SSOFF_R12_w	48.6	-80.2	50.5	0.0				4.50	r	429742.69	5014766.17	4.50
Plane of Window R13			SSOFF_R13_w	50.0	-80.2	50.5	0.0				4.50	r	429723.20	5014787.81	4.50
Plane of Window R15			SSOFF_R15_w	46.3	-80.2	50.5	0.0				4.50	r	429678.56	5014838.80	4.50
Plane of Window R16			SSOFF_R16_w	43.9	-80.2	50.5	0.0				4.50	r	429655.17	5014869.92	4.50
Plane of Window R17			SSOFF_R17_w	41.0	-80.2	50.5	0.0				4.50	r	429629.19	5014901.19	4.50
Outdoor Point of Reception R05			SSOFF_R05_o	39.2	-80.2	50.5	0.0				1.50	r	429783.99	5014950.85	1.50
Plane of Window R14			SSOFF_R14_w	50.2	-80.2	50.5	0.0				4.50	r	429707.09	5014809.09	4.50

Point Sources

Name	Sel.	M.	ID	Result. PWL			Lw / Li			Correction			Sound Reduction		Attenuation	Operating Time			K0	Freq.	Direct.	Height		Coordinates		
				Day	Evening	Night	Type	Value	norm.	Day	Evening	Night	R	Area		Day	Special	Night						X	Y	Z
				(dBA)	(dBA)	(dBA)			dB(A)	dB(A)	dB(A)	dB(A)		(m²)		(min)	(min)	(min)	(dB)	(Hz)		(m)		(m)	(m)	(m)
Air Cooled VRF Condenser 1			SS_CU1A	71.6	71.6	71.6	Lw	COND_VRF		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429750.21	5014830.17	5.89
Air Cooled VRF Condenser 2			SS_CU1B	71.6	71.6	71.6	Lw	COND_VRF		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429749.26	5014831.31	5.89
RTU-1 11T Condenser (2 fan)			SS_RTU1c	83.9	83.9	83.9	Lw	COND_RTU_RN011		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429743.92	5014837.73	6.08
RTU-1 11T Exhaust Fan			SS_RTU1e	85.5	85.5	85.5	Lw	EF_RTU_1		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	1.50	g	429745.12	5014837.03	5.60
RTU-2 6T Condenser (1 fan)			SS_RTU2c	80.9	80.9	80.9	Lw	COND_RTU_RN006		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429735.65	5014854.73	5.93
RTU-2 6T Exhaust Fan			SS_RTU2e	82.5	82.5	82.5	Lw	EF_RTU_2		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	1.50	g	429735.15	5014853.68	5.60
RTU-3 11T Condenser (2 fan)			SS_RTU3c	83.9	83.9	83.9	Lw	COND_RTU_RN011		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429767.40	5014838.97	6.08
RTU-3 11T Exhaust Fan			SS_RTU3e	87.4	87.4	87.4	Lw	EF_RTU_3		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	1.50	g	429766.57	5014837.67	5.60
RTU-4 11T Condenser (2 fan)			SS_RTU4c	83.9	83.9	83.9	Lw	COND_RTU_RN011		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429794.79	5014821.08	6.08
RTU-4 11T Exhaust Fan			SS_RTU4e	85.5	85.5	85.5	Lw	EF_RTU_4		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	1.50	g	429793.57	5014821.90	5.60
RTU-5 11T Condenser (2 fan)			SS_RTU5c	83.9	83.9	83.9	Lw	COND_RTU_RN011		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429759.87	5014816.27	6.08
RTU-5 11T Exhaust Fan			SS_RTU5e	85.5	85.5	85.5	Lw	EF_RTU_5		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	1.50	g	429758.69	5014817.08	5.60
RTU-6 11T Condenser (2 fan)			SS_RTU6c	83.9	83.9	83.9	Lw	COND_RTU_RN011		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	0.10	g	429780.09	5014808.58	6.08
RTU-6 11T Exhaust Fan			SS_RTU6e	84.8	84.8	84.8	Lw	EF_RTU_6		0.0	0.0	0.0				60.00	0.00	0.00	0.0		(none)	1.50	g	429781.24	5014807.87	5.60
Dedicated Outdoor Air System			SS_DOAS1	79.5	79.5	79.5	Lw	DOAS_1		0.0	0.0	0.0				60.00	0.00	0.00	3.0		(none)	0.10	g	429757.61	5014831.24	6.11

Sound Level Library

Name	ID	Type	1/3 Octave Spectrum (dB)												Source
			Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
Roof Top Unit Condenser Unit	COND_RTU_RN006	Lw			89.0	84.0	80.0	79.0	75.0	71.0	68.0	67.0	80.8	91.1	Aaon RN-006 (RTU2)
Roof Top Unit Condenser Unit	COND_RTU_RN011	Lw			92.0	87.0	83.0	82.0	78.0	74.0	71.0	70.0	83.8	94.1	Aaon RN-011
Roof Top Unit Condenser Unit	COND_RTU_RN030	Lw			101.0	96.0	92.0	91.0	86.0	83.0	80.0	79.0	92.5	103.1	Aaon RN-030
Roof Top Unit Exhaust Fan	EF_RTU_1	Lw			87.0	86.0	87.0	84.0	78.0	76.0	73.0	68.0	85.4	92.5	Aaon RN-011-4-0-H60E-3GB
Roof Top Unit Exhaust Fan	EF_RTU_2	Lw			82.0	83.0	83.0	81.0	76.0	73.0	70.0	66.0	82.4	88.8	Aaon RN-006-8-0-E60E-3KB (RTU2)
Roof Top Unit Exhaust Fan	EF_RTU_3	Lw			88.0	87.0	89.0	86.0	80.0	78.0	75.0	70.0	87.4	94.0	Aaon RN-011-4-0-H60E-3GB (RTU3)
Roof Top Unit Exhaust Fan	EF_RTU_4	Lw			87.0	86.0	87.0	84.0	78.0	76.0	73.0	68.0	85.4	92.5	Aaon RN-011-4-0-H60E-3GB (RTU4)
Roof Top Unit Exhaust Fan	EF_RTU_5	Lw			87.0	86.0	87.0	84.0	78.0	76.0	73.0	68.0	85.4	92.5	Aaon RN-011-4-0-H60E-3GB (RTU5)
Roof Top Unit Exhaust Fan	EF_RTU_6	Lw			86.0	86.0	86.0	82.0	78.0	76.0	74.0	69.0	84.7	91.7	Aaon RN-011-4-0-E60E-36B (RTU6)
Air Cooled Condensing Unit	COND_VRF	Lw			76.0	72.2	70.3	72.2	65.0	58.3	52.0	47.0	71.5	79.4	Daikin RELQ192TATCA

Name	ID	Type	1/3 Oktave Spectrum (dB)												Source
			Weight.	31.5	63	125	250	500	1000	2000	4000	8000	A	lin	
DOAS	DOAS_1	Lw			60.0	63.0	75.0	74.0	74.0	75.0	66.0	58.0	79.5	80.8	Tempeff RG 2000 Comefri ANPA14

Receiver
Name: Plane of Window R15
ID: SSOFF_R15_w
X: 429678.56 m
Y: 5014838.80 m
Z: 4.50 m

Point Source, ISO 9613, Name: "RTU-1 11T Exhaust Fan", ID: "SS_RTU1e"																				
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(A)
366	429745.12	5014837.03	5.60	0	D	A	85.5	0.0	0.0	0.0	0.0	47.5	0.4	-2.3	0.0	0.0	6.0	0.0	0.0	33.9

Point Source, ISO 9613, Name: "RTU-3 11T Exhaust Fan", ID: "SS_RTU3e"																				
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(A)
378	429766.57	5014837.67	5.60	0	D	A	87.4	0.0	0.0	0.0	0.0	49.9	0.5	-2.5	0.0	0.0	2.1	0.0	0.0	37.4
382	429766.57	5014837.67	5.60	1	D	A	87.4	0.0	0.0	0.0	0.0	50.2	0.5	-2.5	0.0	0.0	11.1	0.0	2.1	26.0
385	429766.57	5014837.67	5.60	1	D	A	87.4	0.0	0.0	0.0	0.0	59.1	1.1	-2.5	0.0	0.0	9.6	0.0	15.0	5.1

Point Source, ISO 9613, Name: "RTU-1 11T Condenser (2 fan)", ID: "SS_RTU1c"																				
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(A)
388	429743.92	5014837.73	6.08	0	D	A	83.9	0.0	0.0	0.0	0.0	47.3	0.4	-2.3	0.0	0.0	0.0	0.0	0.0	38.4

Point Source, ISO 9613, Name: "RTU-2 6T Exhaust Fan", ID: "SS_RTU2e"																				
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(A)
390	429735.15	5014853.68	5.60	0	D	A	82.5	0.0	0.0	0.0	0.0	46.3	0.4	-2.4	0.0	0.0	0.0	0.0	0.0	38.1

Point Source, ISO 9613, Name: "RTU-5 11T Exhaust Fan", ID: "SS_RTU5e"																				
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(A)
402	429758.69	5014817.08	5.60	0	D	A	85.5	0.0	0.0	0.0	0.0	49.4	0.5	-2.5	0.0	0.0	4.8	0.0	0.0	33.3

Point Source, ISO 9613, Name: "RTU-2 6T Condenser (1 fan)", ID: "SS_RTU2c"																				
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(A)
404	429735.65	5014854.73	5.93	0	D	A	80.9	0.0	0.0	0.0	0.0	46.5	0.4	-2.4	0.0	0.0	0.0	0.0	0.0	36.4

Point Source, ISO 9613, Name: "RTU-5 11T Condenser (2 fan)", ID: "SS_RTU5c"																				
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(A)
406	429759.87	5014816.27	6.08	0	D	A	83.9	0.0	0.0	0.0	0.0	49.5	0.5	-2.6	0.0	0.0	0.0	0.0	0.0	36.4
418	429759.87	5014816.27	6.08	1	D	A	83.9	0.0	0.0	0.0	0.0	49.7	0.5	-2.5	0.0	0.0	0.0	0.0	2.0	34.1
421	429759.87	5014816.27	6.08	1	D	A	83.9	0.0	0.0	0.0	0.0	50.7	0.6	-2.5	0.0	0.0	12.4	0.0	4.8	17.9

Point Source, ISO 9613, Name: "RTU-3 11T Condenser (2 fan)", ID: "SS_RTU3c"																				
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(A)
450	429767.40	5014838.97	6.08	0	D	A	83.9	0.0	0.0	0.0	0.0	50.0	0.6	-2.5	0.0	0.0	1.7	0.0	0.0	34.2
463	429767.40	5014838.97	6.08	1	D	A	83.9	0.0	0.0	0.0	0.0	59.0	1.2	-2.5	0.0	0.0	0.0	0.0	8.7	17.5

Point Source, ISO 9613, Name: "Dedicated Outdoor Air System", ID: "SS_DOAS1"																				
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(A)
467	429757.61	5014831.24	6.11	0	D	A	79.5	0.0	0.0	3.0	0.0	49.0	0.6	-2.4	0.0	0.0	0.0	0.0	0.0	35.3

Point Source, ISO 9613, Name: "RTU-4 11T Exhaust Fan", ID: "SS_RTU4e"																				
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(A)
470	429793.57	5014821.90	5.60	0	D	A	85.5	0.0	0.0	0.0	0.0	52.3	0.6	-2.5	0.0	0.0	16.3	0.0	0.0	18.8
481	429793.57	5014821.90	5.60	1	D	A	85.5	0.0	0.0	0.0	0.0	59.0	1.1	-2.5	0.0	0.0	0.0	0.0	9.1	18.6

Point Source, ISO 9613, Name: "RTU-6 11T Exhaust Fan", ID: "SS_RTU6e"																				
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(A)
503	429781.24	5014807.87	5.60	0	D	A	84.8	0.0	0.0	0.0	0.0	51.6	0.7	-2.7	0.0	0.0	15.7	0.0	0.0	19.5

Point Source, ISO 9613, Name: "RTU-6 11T Condenser (2 fan)", ID: "SS_RTU6c"																				
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(A)
517	429780.09	5014808.58	6.08	0	D	A	83.9	0.0	0.0	0.0	0.0	51.5	0.6	-2.7	0.0	0.0	11.5	0.0	0.0	23.0

Point Source, ISO 9613, Name: "RTU-4 11T Condenser (2 fan)", ID: "SS_RTU4c"																				
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(A)
529	429794.79	5014821.08	6.08	0	D	A	83.9	0.0	0.0	0.0	0.0	52.4	0.7	-2.5	0.0	0.0	10.8	0.0	0.0	22.5
533	429794.79	5014821.08	6.08	1	D	A	83.9	0.0	0.0	0.0	0.0	59.0	1.2	-2.5	0.0	0.0	0.0	0.0	8.7	17.5

Point Source, ISO 9613, Name: "Air Cooled VRF Condenser 2", ID: "SS_CU1B"																				
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(A)
555	429749.26	5014831.31	5.89	0	D	A	71.6	0.0	0.0	0.0	0.0	48.0	0.2	-2.3	0.0	0.0	0.0	0.0	0.0	25.7

Point Source, ISO 9613, Name: "Air Cooled VRF Condenser 1", ID: "SS_CU1A"																				
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(A)
559	429750.21	5014830.17	5.89	0	D	A	71.6	0.0	0.0	0.0	0.0	48.2	0.2	-2.3	0.0	0.0	0.0	0.0	0.0	25.5

wsp.com