

Noise Impact Study

**1225 Dundas Street East,
Mississauga, Ontario
SW22159.00**

Prepared For
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1.0 Introduction

At the request of Dundix Realty Holdings c/o SmartCentres REIT (Client), Thornton Tomasetti (TT) presents this Noise Impact Study (NIS) regarding the planned development located at 1225 Dundas Street East, Mississauga Ontario (the Project).

The purpose of this study is to assess the noise impact on the Project from surrounding noise sources and the noise impact of the Project on surrounding noise sensitive areas. This report is intended to support the Zoning By-Law Amendment (ZBA) and Site Plan Approval (SPA) application for the Project as a feasibility study.

An NIS was previously prepared by TT (dated June 28, 2022) and reviewed by the City of Mississauga. This revision takes into account current development drawings, and comments provided by the City of Mississauga.

Where applicable, this report will provide noise control recommendations to meet the requirements of the applicable Land Use Planning Authority (LUPA), and noise criteria developed by the Ontario Ministry of the Environment, Conservation and Parks (MECP).

Where predicted sound impacts are lower than applicable action thresholds identified, the project should be designed to meet the Ontario Building Code (OBC) as a minimum standard.

2.0 Site and Surrounding Area

2.1 Project Location

The Project is located on the north corner of the intersection of Dundas Street East and Arena Road, approximately 400m southwest of Dixie Road. For this report, Project North is perpendicular to Dundas Street East.

The Project is bordered on the north and east by residential land uses. The Project is bordered on the West and south by commercial land uses. The broader neighborhood includes residential and commercial land uses along the north side of Dundas Street East. Commercial land uses, including hotels/motels are located on the south side of Dundas Street East, with industrial lands located further to the south

An illustration of the project location and surrounding area is provided in Figure 1.

2.2 Zoning & Official Plan

The Project site is zoned as C3 “General Commercial” under the City of Mississauga Zoning By-Law No. 0225-2007, and designated as “Mixed Use” under the City of Mississauga’s Official Plan. Surrounding areas are zoned for residential, commercial and employment uses. A zoning map is presented in Figure 2.

2.3 Planned Development

The Project will consist of a residential building and 4 townhouse blocks. The residential building includes a 9-storey podium and two 18-storey + MPH towers, with 1 level of underground parking. The proposed new site plan is provided in Figure 3.

2.4 Site Inspection

TT personnel attended the Project site on June 21, 2022 in order to inspect the acoustical environment in the area of the Project. The ambient sound environment was observed to be dominated by traffic noise from the adjacent Dundas Street East.

Transportation noise from adjacent roadways is discussed in Section 5.0 of this report.

No individual stationary noise sources were distinguishable from the Project site, but an inspection of publicly accessible areas of the surrounding neighborhood did identify potentially significant stationary noise sources (roof top HVAC units). Stationary noise sources are discussed in Section 6.0 of this report.

2.5 Topography

Based on the observed and/or reported conditions on and around the Project site, the local topography is considered to be essentially flat.

3.0 Ministry of the Environment Conservation and Parks

The MECP's *Environmental Noise Guideline – Stationary and Transportation Sources – Approval and Planning* (NPC-300) provides province wide assessment standards and criteria for evaluating noise impacts from transportation sources such as roads, railways and aircraft, as well as stationary sources such as mechanical equipment, and industrial facilities. In preparing this NIS report, TT has referred to *Part A Background and Part C Land Use Planning* of NPC-300.

This NIS report has been prepared to support land use planning decisions, and is not intended to support an application for an Environmental Compliance Approval (ECA) in accordance with *Part B Stationary Sources* of NPC-300, and Section 9 of the Environmental Protection Act.

4.0 Land Use Planning Authority

In addition to the MECP's standards and criteria, some LUPAs impose additional requirements on applications for development approval. The LUPAs for this Project are the Region of Peel and the City of Mississauga.

4.1 Region of Peel

Peel Region defers to the MECP and municipalities in regard to noise by-laws and regulations.

4.2 City of Mississauga

The City of Mississauga's Noise Study Terms of Reference generally align with the requirements of NPC-300, with the following exceptions:

- The impact of noise from the proposed development on itself should also be considered.
- Road traffic data must be obtained from the City when analyzing transportation noise from City roads.

5.0 Transportation Noise Assessment

5.1 Critical Transportation Noise Receptors

NPC-300 defines a point of reception for the assessment of transportation noise sources as either the Plane of Window (POW) of a noise sensitive indoor space or an Outdoor Living Area (OLA) representing an area of a noise sensitive land use intended for quiet enjoyment of the outdoor environment.

The POW receptor(s) most likely to be affected by transportation noise are those representing the residential suites of the Project that have maximum exposure to Dundas Street East. Specifically, POW receptors were assessed for the following:

- all facades of the Project podium,
- all facades of both towers and
- all facades of the townhouse blocks.

Based on provided site plans of the Project, the following were assessed as OLAs for the development

- 10th floor private common amenity terrace (OLA1)
- At-grade common amenity area, associated with the indoor amenity area (OLA2)
- Central at-grade common amenity area (OLA3).

The locations of the above OLAs are shown in Figure 3.

As the residential building includes a private common amenity area, an assessment of individual terraces is not considered necessary based on definitions outlined in NPC-300. In addition, as the townhouse rooftop terraces are less than 4 m in depth, the minimum requirements outlined in NPC-300 are not met and an assessment was not completed for these amenity areas.

5.2 Transportation Noise Sources

5.2.1 Road Noise Sources

Dundas Street East (adjacent to the south) represent the most significant road noise sources for the Project. Ultimate traffic data for Dundas Street East and Queen Frederica Drive/Blundell Road was requested from the City of Mississauga. Traffic data was provided for Dundas Street East only. A copy of the traffic data provided is included in Appendix B. The traffic data is summarized in Table 1.

Table 1: Traffic Data Summary

Street	AADT	% Trucks	Med/Hvy	Day/Night	Speed Limit
Dundas Street East	46,500	4%	55/45	90/10	60 km/h

5.2.2 Rail Noise Sources

The closest railway is located 400 m south of the Project and outside of the minimum separation distances required for inclusion. Therefore, an assessment of railway impacts is not considered necessary.

5.2.3 Aircraft Noise Sources

The development is located outside of the Pearson airport NEF 25 noise contours. Therefore, an assessment of aircraft noise is not considered necessary.

5.3 Transportation Sound Level Limits

5.3.1 Outdoor Living Areas

Impacts to OLAs from combined road and rail traffic are assessed against a 16-hour daytime (07:00 – 23:00) equivalent sound pressure level (L_{eq}) reported in dBA. The MECP outdoor sound level limits and the sliding scale of required noise reduction measures for road and rail noise at OLAs are listed in Table 2. Note that whistle noise is not included in the assessment of rail noise at an OLA.

Table 2: MECP Outdoor Sound Level Limit & Mitigation for OLAs – Combined Road & Rail Traffic

Category	Sound Level $L_{eq,16hr}$ (dBA)	Mitigation Measures	NPC-300 Warning Clause Required
Outdoor Limit	55	None	None
OLA Mitigation Threshold	56 - 60	Optional	Type A unless sound level brought below 55 dBA
OLA Mitigation Threshold	>60	Required to achieve sound level below 60 dBA	Type B unless sound level brought below 55 dBA

5.3.2 Indoor Living Areas

Impacts to POWs from combined road and rail (if applicable) traffic are assessed against a 16-hour daytime (07:00 – 23:00) and 8-hour nighttime (23:00 – 07:00) equivalent sound pressure level (L_{eq}) reported in dBA. The combined impact is used to determine the requirement for ventilation and warning clauses. The MECP POW sound level limits and the sliding scale of required noise reduction measures for combined road and rail noise at POWs are listed in Table 3. Note that whistle noise is not included in the assessment of rail noise for this purpose.

Table 3: MECP POW Sound Level Limit: Ventilation & Warning Clauses – Combined Road & Rail Traffic

Category	Daytime $L_{eq,16hr}$ (dBA)	Nighttime $L_{eq,8hr}$ (dBA)	Mitigation Measures	NPC-300 Warning Clause Required
POW Limit	55	50	None	None
POW Mitigation Threshold Living & Bedrooms	56 - 65	51 – 60	Include forced air heating and provision for central air conditioning	Type C
POW Mitigation Threshold Living & Bedrooms	>65	>60	Include central air conditioning	Type D

Impacts to indoor noise levels from road and rail (if applicable) traffic are assessed against a 16-hour daytime (07:00 – 23:00) and 8-hour nighttime (23:00 – 07:00) equivalent sound pressure level (L_{eq}) reported in dBA at the POW receptor. The requirements for building construction to address transportation noise impacts to indoor sound levels are determined independently for road and rail noise, with the resulting requirements then being combined logarithmically. The MECP indoor sound level limits and the required noise reduction measures for road and rail noise at POWs are listed in Table 4. Note that whistle noise is included in the assessment of rail noise for this purpose.

Table 4: MECP Indoor Sound Level Limit & Construction Requirements – Road & Rail Traffic

Category	Daytime $L_{eq,16hr}$ (dBA)	Nighttime $L_{eq,8hr}$ (dBA)	Total $L_{eq,24hr}$ (dBA)	Mitigation Measures
Road Indoor Limit Living Rooms / Bedrooms	45 / 45	45 / 40	-	Not Applicable
Road POW Mitigation Threshold Living & Bedrooms	>65	>60	-	Design building components to achieve indoor sound level limit
Rail Indoor Limit Living Rooms / Bedrooms	40 / 40	40 / 35	-	Not Applicable
Rail POW Mitigation Threshold Living & Bedrooms	>60	>55	-	Design building components to achieve indoor sound level limit
Rail POW Mitigation Threshold Bedrooms	-	-	>60	Minimum of brick veneer or masonry equivalent construction from foundation to rafters in first row of dwellings if within 100m of tracks

5.4 Transportation Sound Level Predictions

Road traffic noise modelling was calculated with the Cadna/A noise propagation software, using line sources and sound emission rates calculated using the ORNAMENT algorithms (the MECP road traffic noise model). A validation file comparing the Cadna/A and MECP STAMSON 5.04 road traffic noise model is shown in Appendix D.

The surrounding lands are considered to be essentially flat. Therefore, a gradient adjustment was not applied in the noise modelling.

Screening effect from the development itself and surrounding buildings was included in the noise modelling. The modelling of the OLA impacts also takes into consideration the open area at grade of the podium.

5.4.1 Amenity Area Impacts

A summary of the worst-case calculated sound levels for the OLAs is presented in Table 5, and shown in Figure 4.

Table 5: Calculated OLA Sound Levels due to Road Sources

Location	Predicted Transportation Sound Levels (dBA)
	Daytime (07:00–23:00) $L_{eq,16hr}$
10 th Floor Common Amenity Area (OLA1)	52
At-Grade Common Amenity Area (OLA2)	44
Central At-Grade Common Amenity Area (OLA3)	52

As the predicted roadway sound levels are below 55 dBA in all OLAs, no additional noise controls are considered necessary.

5.4.2 Façade Impacts

A summary of the worst-case calculated sound levels for each building are presented in Table 6 shown in Figures 5a and 5b for the daytime and night-time periods, respectively.

Table 6: Worst-case Façade Sound Levels due to Road Sources

Building	Predicted Transportation Sound Levels (dBA)	
	Daytime (07:00–23:00) $L_{eq,16hr}$	Nighttime (23:00–07:00) $L_{eq,8hr}$
Podium	70	63
Building A	67	60
Building B	67	60
Townhouse Block A	59	52
Townhouse Block B	53	47
Townhouse Block C	48	42
Townhouse Block D	56	50

As the predicted sound levels exceed 65 dBA during the daytime along the podium, Building A and Building B, an assessment of building façade components is required.

5.5 Transportation Noise Control Recommendations

Noise control recommendations for the identified critical receptors and the corresponding noise sensitive land uses that they represent in the proposed redevelopment are summarized in Table 7 and discussed in the subsequent sections.

Table 7: Transportation Noise Control Measures Summary

Building	Façade	Barrier	Building Components	Ventilation	Warning Clause
Podium	N	n/a	Meet OBC Requirements	none	none
	E	n/a	Meet OBC Requirements	Forced-Air Heating	Type C
	S	n/a	Designed to achieve indoor req'ts	Central Air Conditioning	Type D
	W	n/a	Meet OBC Requirements	Forced-Air Heating	Type C
Building A	N	n/a	Meet OBC Requirements	none	none
	E	n/a	Meet OBC Requirements	Forced-Air Heating	Type C
	S	n/a	Designed to achieve indoor req'ts	Central Air Conditioning	Type D
	W	n/a	Meet OBC Requirements	Forced-Air Heating	Type C
Building B	N	n/a	Meet OBC Requirements	none	none
	E	n/a	Meet OBC Requirements	Forced-Air Heating	Type C
	S	n/a	Designed to achieve indoor req'ts	Central Air Conditioning	Type D
	W	n/a	Meet OBC Requirements	Forced-Air Heating	Type C
Townhouse Block A	S and W	n/a	Meet OBC Requirements	Forced-Air Heating	Type C
	N and E	n/a	Meet OBC Requirements	none	none
Townhouse Block B & C	all	n/a	Meet OBC Requirements	none	none
Townhouse Block D	S and E	n/a	Meet OBC Requirements	Forced-Air Heating	none
	N and W	n/a	Meet OBC Requirements	none	none

5.5.1 Outdoor Living Areas – Barriers

As shown in Section 5.4.1 above, the sound levels within the OLAs are predicted to be less than 55 dBA. Therefore, noise controls are not required for the Project OLAs.

5.5.2 Indoor Living Areas - Ventilation

Sensitive receptors along the south façades of the podium and towers are predicted to be above 65 dBA during the 16-hour day (07:00 – 23:00) and/or 60 dBA during the 8-hour night (23:00 – 07:00) due to road noise, therefore central air conditioning will be required for the south facade units of the podium and Building A and B.

Sensitive receptors along the west and east façades of the podium and towers, the south and west façade units of Townhouse Block A and the south façade units of townhouse block D are predicted to have sound levels between 55 dBA and 65 dBA during the 16-hour day (07:00 – 23:00) and/or 50 dBA and 60 dBA during the 8-hour night (23:00 – 07:00) due to road, therefore forced air heating with the provision for future installation of central air conditioning is the minimum requirement for these units.

Sensitive receptors along the other façades of the Project are predicted to be below 55 dBA during the 16-hour day (07:00 – 23:00) and/or 50 dBA during the 8-hour night (23:00 – 07:00) due to road noise, therefore no specific ventilation requirements are considered necessary. A summary of the ventilation requirements are shown in Table 7 above.

TT understands that the Project plan includes forced air heating and central air conditioning for the entirety of the Project, therefore the above noted requirements are expected to be met.

5.5.3 Indoor Living Areas - Building Components

Based on the above roadway analysis, the south façades must be designed to achieve the indoor sound level limit.

The building component requirements were determined using the National Research Council Building Practice Note BPN-56. At the time of the assessment, suite layouts showing room types and dimensions were not available. The following assumptions were applied for the Project:

- 70% glazing for the wall component of living room and bedroom facades;
- Bedroom façade-to-floor area ratio of 100%
- Living/Dining room façade-to-floor area ratio of 50%
- Non-glazing wall component to have an STC 37 rating for all facades.

A summary of the building component requirements is included in the following table.

Table 8: Building Envelope Requirements

Building	Façade	Non-Glazing	Living/Dining Glazing	Bedroom Glazing
Podium	North	OBC	OBC	OBC
	East	OBC	OBC	OBC
	South	STC 37	STC 29	STC 30
	West	OBC	OBC	OBC
	Corner units (SW&SE)	STC 37	STC 32	STC 33
Building A	North	OBC	OBC	OBC
	East	OBC	OBC	OBC
	South	STC 37	OBC (STC 28)	OBC (STC 29)
	West	OBC	OBC	OBC
	Corner units (SW&SE)	STC 37	STC 31	STC 32
Building B	North	OBC	OBC	OBC
	East	OBC	OBC	OBC
	South	STC 37	OBC (STC 28)	OBC (STC 29)
	West	OBC	OBC	OBC
	Corner units (SW&SE)	STC 37	STC 31	STC 32
Townhouse Block A, B, C & D	all	OBC	OBC	OBC

5.5.4 Warning Clauses

The following examples of warning clause wordings are based on applicable guidance documents and TT's experience regarding common requests from stakeholders. Precise wordings may be modified by the Client with input from the relevant LUPA(s), stakeholders, and/or legal counsel if required.

The **Type C** warning clause is required to be included in the development agreements for specific dwelling units if one or more representative POW receptors is predicted to be exposed to transportation sound pressure levels greater than 55 dBA and less than or equal to 65 dBA during the 16-hour day (07:00 – 23:00) or greater than 50 dBA and less than or equal to 60 dBA during the 8-hour night (23:00 – 07:00), and the Project includes forced air heating with the provision for installation of central air conditioning in the future. The Type C warning clause is as follows:

"This dwelling unit has been designed with the provision for adding central air conditioning at the occupant's discretion. Installation of central air conditioning by the occupant in low and medium density developments will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks."

The **Type D** warning clause is required to be included in the development agreements for specific dwelling units if one or more representative POW receptors is predicted to be exposed to transportation sound pressure levels greater than 65 dBA during the 16-hour day (07:00 – 23:00) or 60 dBA during the 8-hour night (23:00 – 07:00), and the Project includes central air conditioning. The Type D warning clause is as follows:

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

Warning clauses are to be included in all agreements of Offers of Purchase and Sale, lease/rental agreements and condominium declarations. A summary of the warning clause requirements is shown in Table 7 above.

6.0 Surrounding Stationary Noise Assessment

6.1 Critical Stationary Noise Receptors

NPC-300 defines a point of reception for the assessment of stationary noise sources as any location on a noise sensitive land use where noise from a stationary source is received. This typically includes both points of reception on building façades, representing the plane-of-window of noise sensitive spaces (POR) and outdoor points of reception representing areas such as balconies, gardens, patios, and terraces (OPOR). These locations may be the same or different from the POW and OLA receptors identified as part of a transportation noise assessment.

The project point of reception (PPOR) and project outdoor point of reception (POPOR) receptor(s) on the Project were applied consistent with the roadway noise assessment. The noise sensitive PPOR include all facades of the Project podium, towers and townhouse blocks. Similarly, the POPORs include the three OLAs applied in the roadway noise modelling and include the 10th floor private common amenity terrace and the two (2) at-grade common amenity areas

6.2 Stationary Noise Sources

NPC-300 defines a stationary source of noise as one or more sources of sound that are normally operated within a given property. Stationary sources typically include mechanical equipment such as Heating, Ventilation and Air Conditioning (HVAC) equipment, standby power generators with routine testing, and heavy vehicle traffic (truck idling, driving, and loading).

Certain sources of noise, such as residential air conditioners, passenger automobile traffic in parking lots, or temporary noise such as that related to construction are not considered to be stationary sources in NPC-300 and are not assessed in this report.

Based on a review of satellite imagery, and field inspection, exterior HVAC equipment has been identified in the area surrounding the project. Table 9 and Figure 6 provide a summary of the assumed surrounding stationary source data. Because TT was unable to inspect equipment installed on surrounding properties, the following assumptions have been made:

- Equipment with no visible fans was assumed to be heating only, and/or located in an acoustical enclosure, therefore noise impacts from this equipment are assumed to be negligible;
- “Small” HVAC equipment (1-2 visible fans) was assumed to have a sound power level of approximately 78-82 dBA (based on Carrier model 48HCA05 and 48HCD08)

Table 9: Surrounding Stationary Noise Sources

Source ID	Source Description	Source Location	Source Sound Power (dBA)	Source Type	Notes & Assumptions
SHVAC01 – SHVAC38	“Small” HVAC units	Surrounding roof tops	78 - 82	Steady	60 min/hr (07:00 – 23:00) 15 min/hr [1] (23:00 – 07:00)

Notes: [1] Surrounding business are closed between the hours of 11 pm and 7 am, where AC units are expected to be shut down to conserve energy. A 15 min duty cycle was applied as a conservative assessment for an operating HVAC unit to maintain temperature set points during the overnight period.

6.3 Project Area Classification

NPC-300 defines the applicable sound pressure level limit at a given receptor as the higher of a set exclusionary sound level limit based on the area classification of that receptor, or the actual background sound level at the location of the receptor, whichever is higher. For the purposes of this report, the defined exclusionary limits were used for the purposes of assessing compliance.

NPC-300 defines a Class 1 area as having an acoustical environment typical of a major population centre, where the background sound level is dominated by the activities of people, usually road traffic, often referred to as “urban hum” during both day and night. For this assessment, the Project lands and surroundings are considered to representative of a Class 1 area, as roadway noise is dominant during all periods of the day.

The applicable guideline limits are the higher of the NPC-300 exclusionary limits or the existing ambient sound environment from roadway noise. As an assessment/measurement of existing roadway noise levels was not completed, the NPC-300 exclusionary sound level limits were applied. This is considered

to be conservative, as relaxed guideline limits are considered applicable given the high roadway noise levels from Dundas Street East.

Table 10 provides a summary of the applicable exclusionary sound level limits for steady noise sources impacting receptors in a Class 1 area. Steady stationary noise sources are assessed against a 1 hour equivalent sound pressure level (L_{eq}) expressed in A-weighted decibels (dBA). Routine testing of emergency equipment, if applicable, is assessed separately from other stationary noise sources, and is compared to sound level limits that are 5 dBA higher than would otherwise apply.

Table 10: Class 1 Exclusionary Sound Level Limits – Steady Noise

Time Period	Normal Operations Steady Noise ($L_{eq,1hr}$, dBA)		Emergency Equipment Testing Steady Noise ($L_{eq,1hr}$, dBA)	
	POR	OPOR	POR	OPOR
Daytime (07:00 – 19:00)	50	50	55	55
Evening (19:00 – 23:00)	50	50	55	55
Nighttime (23:00 – 07:00)	45	-	50	-

6.4 Stationary Sound Level Predictions

Sound levels at the PORs due to the nearby stationary sources were calculated using the software CadnaA in accordance with the methods described in ISO 9613-2. Noise impact modelling took into consideration the effects of existing buildings in the surroundings (screening and 2 orders of reflections). Reflective ground was applied in the noise modelling, as the surroundings are considered to be primarily paved and or concrete surfaces.

The following tables provides a summary of the modelling results for stationary noise impacts to the Project, based on the sources identified in Section 6.2 above. Modelled OPOR impacts are shown in Figure 7. Modelled façade noise impacts are shown in Figures 8a and 8b for daytime/evening and night-time periods respectively. A modelling output file for a west façade receptor is included in Appendix D.

Table 11: Calculated OPOR Sound Levels due to Surrounding Stationary Sources

Location	Time Period	Steady Sound Level $L_{eq,1hr}$ (dBA)	Steady Sound Level Limit $L_{eq,1hr}$ (dBA)	Compliance
10 th Floor Common Amenity Area (OLA1)	Daytime/Evening	39	50	Yes
At-Grade Common Amenity Area (OLA2)	Daytime/Evening	38	50	Yes
Central At-Grade Common Amenity Area (OLA3)	Daytime/Evening	36	50	Yes

Table 12: Worst-case Predicted Stationary Noise Source Impacts to the Project

Building	Time Period	Steady Sound Level $L_{eq,1hr}$ (dBA)	Steady Sound Level Limit $L_{eq,1hr}$ (dBA)	Compliance
Podium & Towers	Daytime	49	50	Yes
	Evening	49	50	Yes
	Nighttime	43	45	Yes
Townhouse Blocks A, B, C & D	Daytime	47	50	Yes
	Evening	47	50	Yes
	Nighttime	41	45	Yes

Noise due to stationary noise sources is predicted to meet the applicable sound level limits at all modeled receptors on the Project.

6.5 Stationary Noise Mitigation Recommendations

No predicted exceedances of the applicable stationary sound level limits at the Project receptors have been identified; therefore, no specific mitigation is recommended at this time. Constructing the Project to meet OBC and the identified requirements for mitigation of transportation noise is expected to be sufficient to address potential impacts from minor stationary noise sources in the vicinity of the Project.

7.0 Development Mechanical Equipment Stationary Noise Assessment

At the time of the assessment, insufficient information was available to complete an assessment of the development mechanical noise impacts.

Development mechanical systems are expected to include make-up air units, cooling units, parking garage ventilation fans and an emergency generator. With the appropriate selection of equipment, locating equipment to minimize noise impacts, and including noise controls in the design (barriers, low noise units, silencers/louvres), the applicable guideline limits can be met. Once sufficient information is available, an assessment of stationary noise impacts from the development mechanical systems should be completed to confirm the applicable guideline limits are met.

Should individual residential AC units be included with the townhouse blocks, the sound levels of each units should meet MECP NPC-216 requirements.

8.0 Concluding Comments

Noise impacts associated with the proposed development at 1225 Dundas Street East, Mississauga are expected to be able to meet all applicable MECP noise limits with the inclusion of noise control measures and warning clauses as presented in Section 5.5 of this report and the design recommendations for development mechanical systems outlined in Section 7.0. Therefore, the proposed development is considered to be feasible regarding noise.

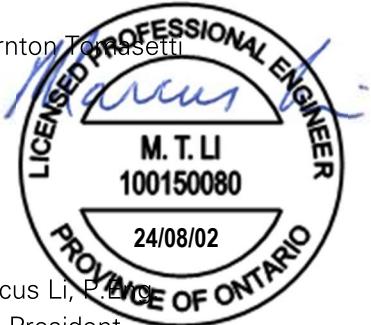
As the glazing analysis was completed based on generic room and window dimensions, a reviewed analysis should be completed once detailed floor and façade plans are available.

Once sufficient mechanical equipment is available, acoustical modelling of the impacts of this equipment should be confirmed in order to evaluate compliance with applicable MECP limits.

Please do not hesitate to contact us if there are any questions.

Yours Truly,

Thornton Tomasetti



Marcus Li, P.Eng.
Vice President

Reviewed by:

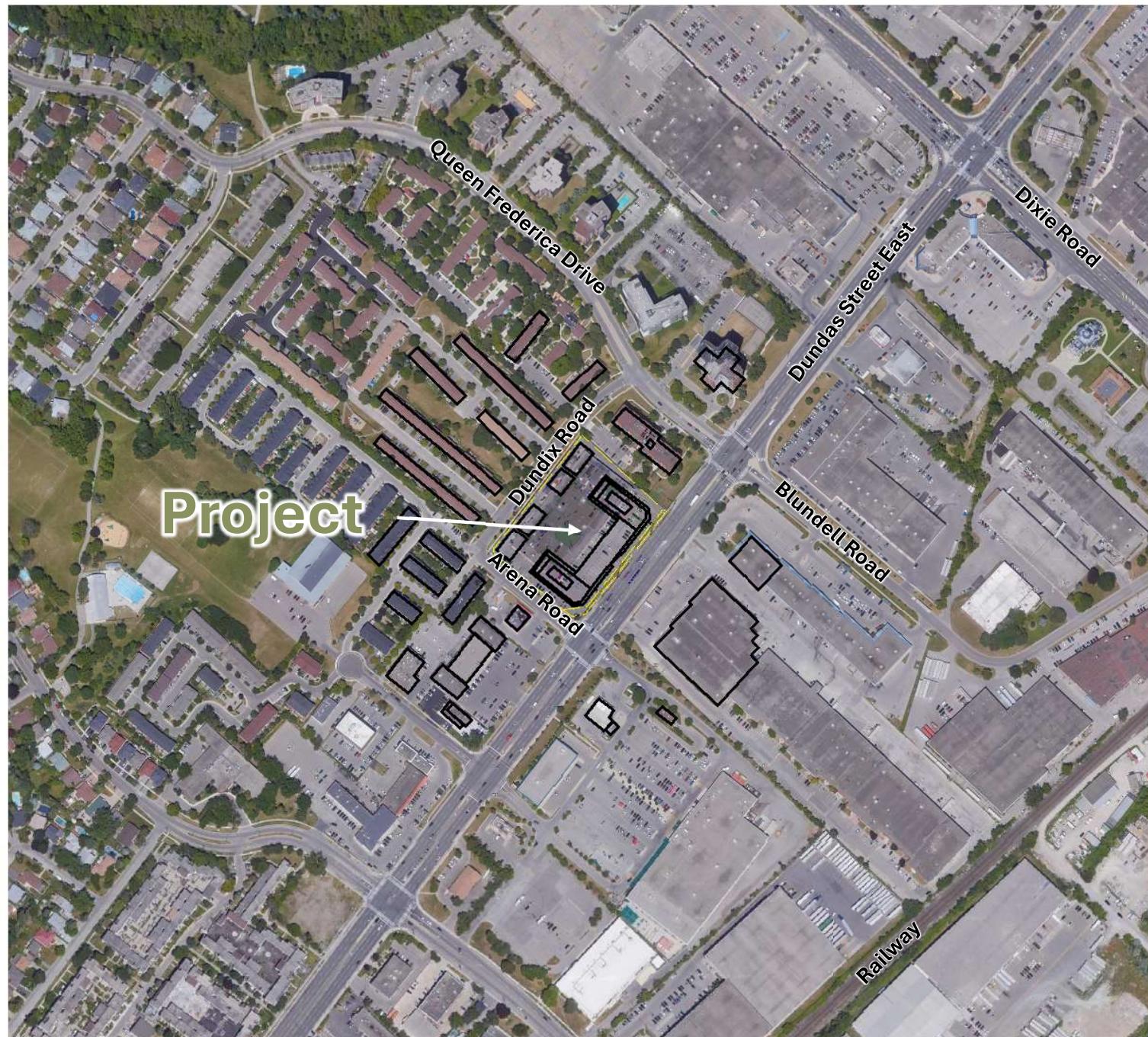
Robert Fuller, P.Eng.
Project Engineer

Disclaimer

Achieving the required noise control requirements relies on correct incorporation of noise control recommendations into Architectural and Mechanical drawings and specifications, as well as correct installation during construction. On Request, TT will conduct drawing reviews and onsite reviews of noise control measures and provide observations as appropriate; however, notwithstanding the foregoing, it is expressly understood and agreed that TT shall not have control or charge of, and shall not be responsible for the acts or omissions, including but not limited to means, methods, techniques, sequences and procedures, of the Design Professionals and/or Contractors performing design and/or construction on the Project. Accordingly, TT shall not be held responsible for the failure of any party to properly incorporate the noise control measures stated in this report.

Appendix A: Figures

- Figure 1: Project Location & Surroundings
- Figure 2: Zoning Map
- Figure 3: Project Site Plan
- Figure 4: Projected OLA Levels - Roadway
- Figure 5: Projected Façade Levels - Roadway
- Figure 6: Surrounding Stationary Noise Source Locations
- Figure 7: Projected OLA Levels - Surrounding Stationary
- Figure 8: Projected Façade Levels - Surrounding Stationary



Thornton Tomasetti

Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:

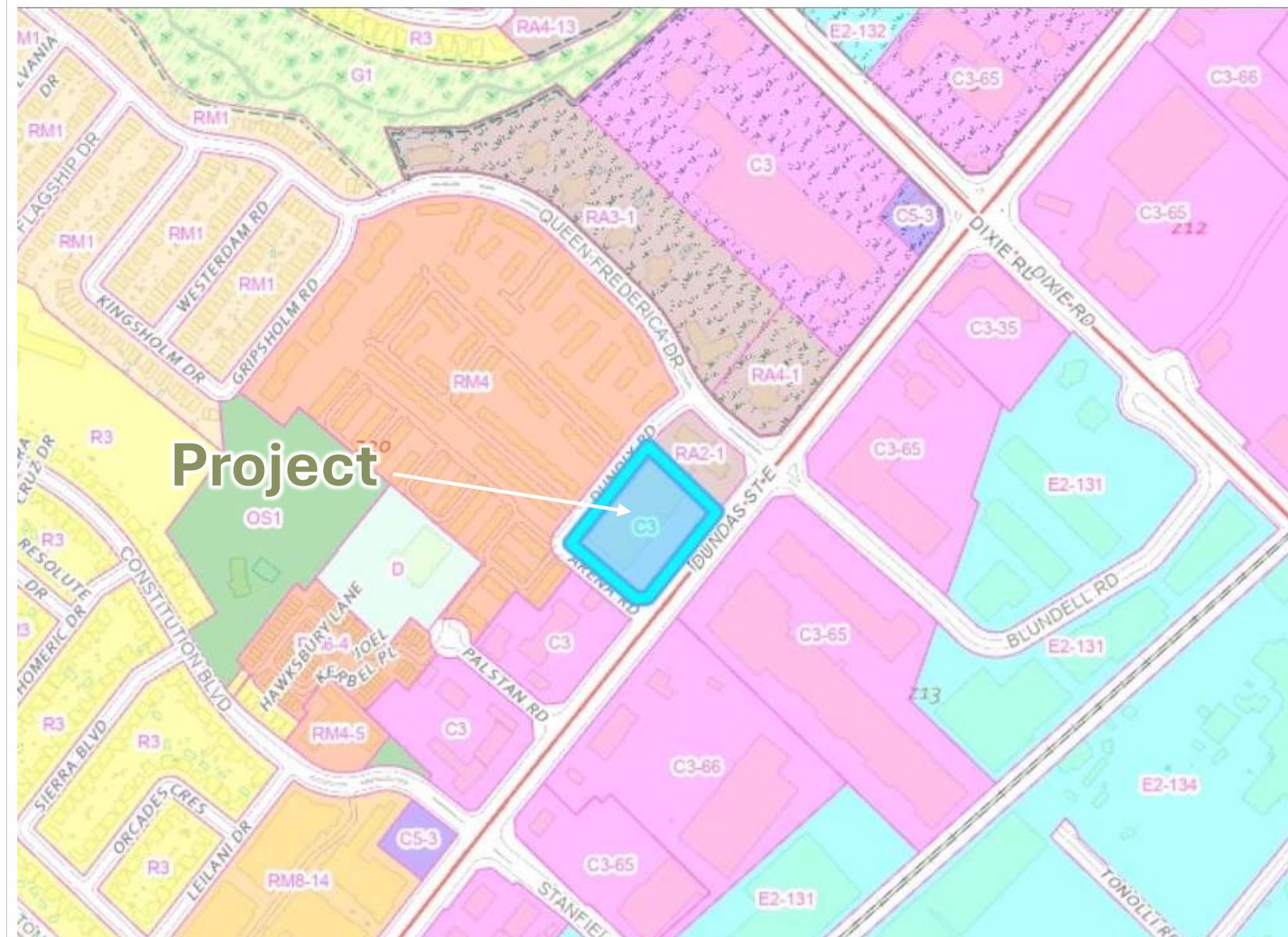
Figure Title
Project Location and
Surroundings

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

Thornton Tomasetti



Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Legend	
Road Names	
Zoning Labels	
Zoning Shapes	
A Agricultural (By-law 5500)	
AP Lester B. Pearson International	
B Buffer, Berm, Fence	
C1 Convenience Commercial	
C2 Neighbourhood Commercial	
C3 General Commercial	
C4 Mainstreet Commercial	
C5 Motor Vehicle Commercial	
CC1 Core Commercial	
CC2, CC4 Mixed Use	
CC3 Mixed Use - Transition Area	
CCO Office	
CCOS Open Space	
D Existing Use	
E1 Employment in Nodes	
E2 Employment	
E3 Industrial	
G1 Natural Hazards	
G2 Natural Features	
I Hospital and University / College	
O Office	
OS1 Community Park	
OS2 City Park	

Figure Title
Zoning Map

Produced By
MTL

TT Project # SW22159.00	Date July 31, 2024
2	

Thornton Tomasetti

Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:
1) Not to Scale

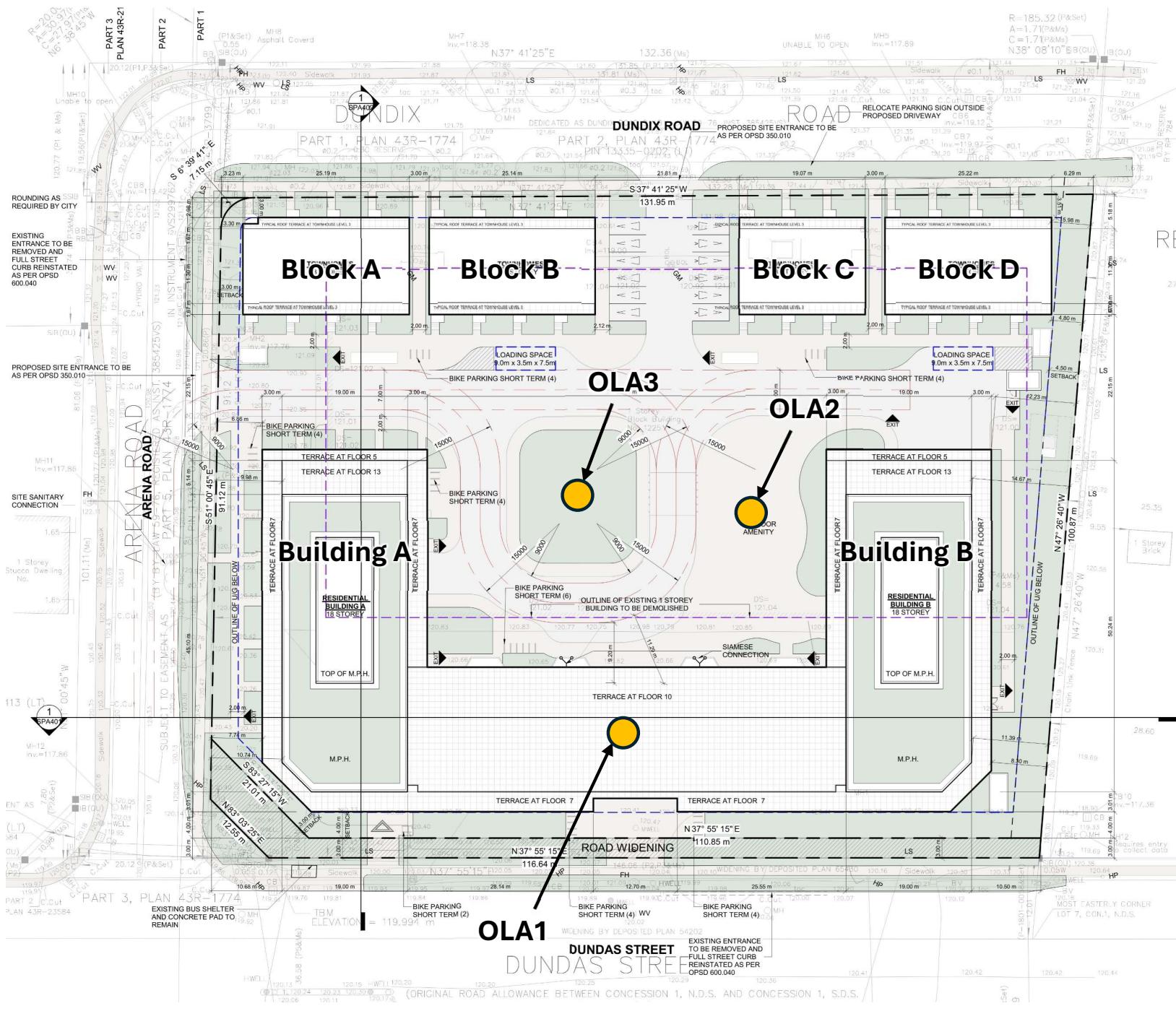
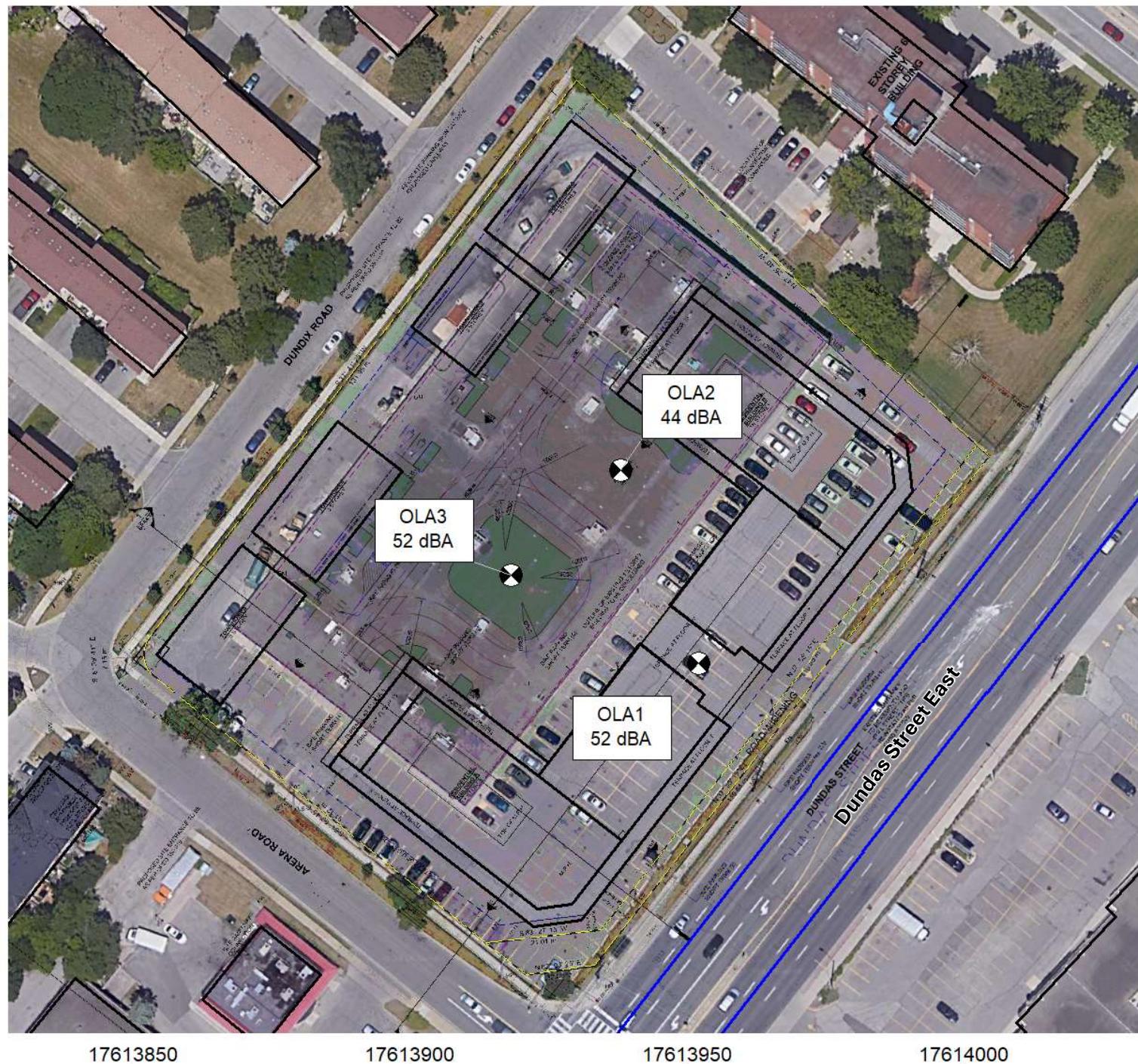


Figure Title
Project Site Plan

Produced By
MTL

TT Project #
SW22159.00
Date
July 31, 2024

Thornton Tomasetti



Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:
1) Not to Scale

Figure Title
Predicted OLA Levels –
Roadway, Daytime

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

Thornton Tomasetti

Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:

Sound Pressure Levels

0 <= ... < 30 (A)
30 <= ... < 40 (A)
40 <= ... < 45 (A)
45 <= ... < 50 (A)
50 <= ... < 55 (A)
55 <= ... < 60 (A)
60 <= ... < 65 (A)
65 <= ... < 70 (A)
70 <= ... < 75 (A)
75 <= ... (A)

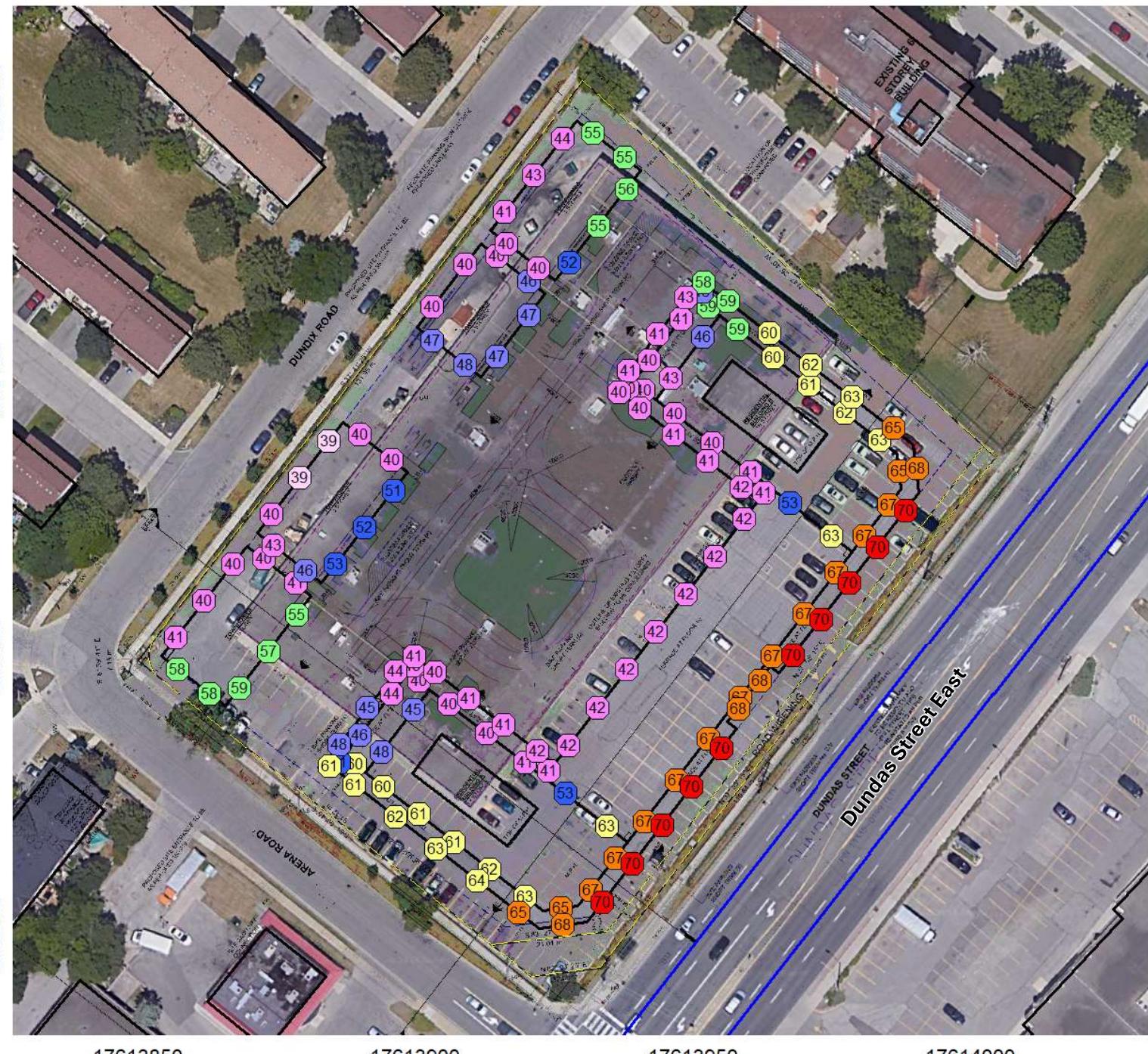
Figure Title
Predicted Façade Levels –
Roadway, Daytime

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

5a



Thornton Tomasetti

Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:

Sound Pressure Levels

0 <= ... < 30 (A)
30 <= ... < 40 (A)
40 <= ... < 45 (A)
45 <= ... < 50 (A)
50 <= ... < 55 (A)
55 <= ... < 60 (A)
60 <= ... < 65 (A)
65 <= ... < 70 (A)
70 <= ... < 75 (A)
75 <= ... (A)

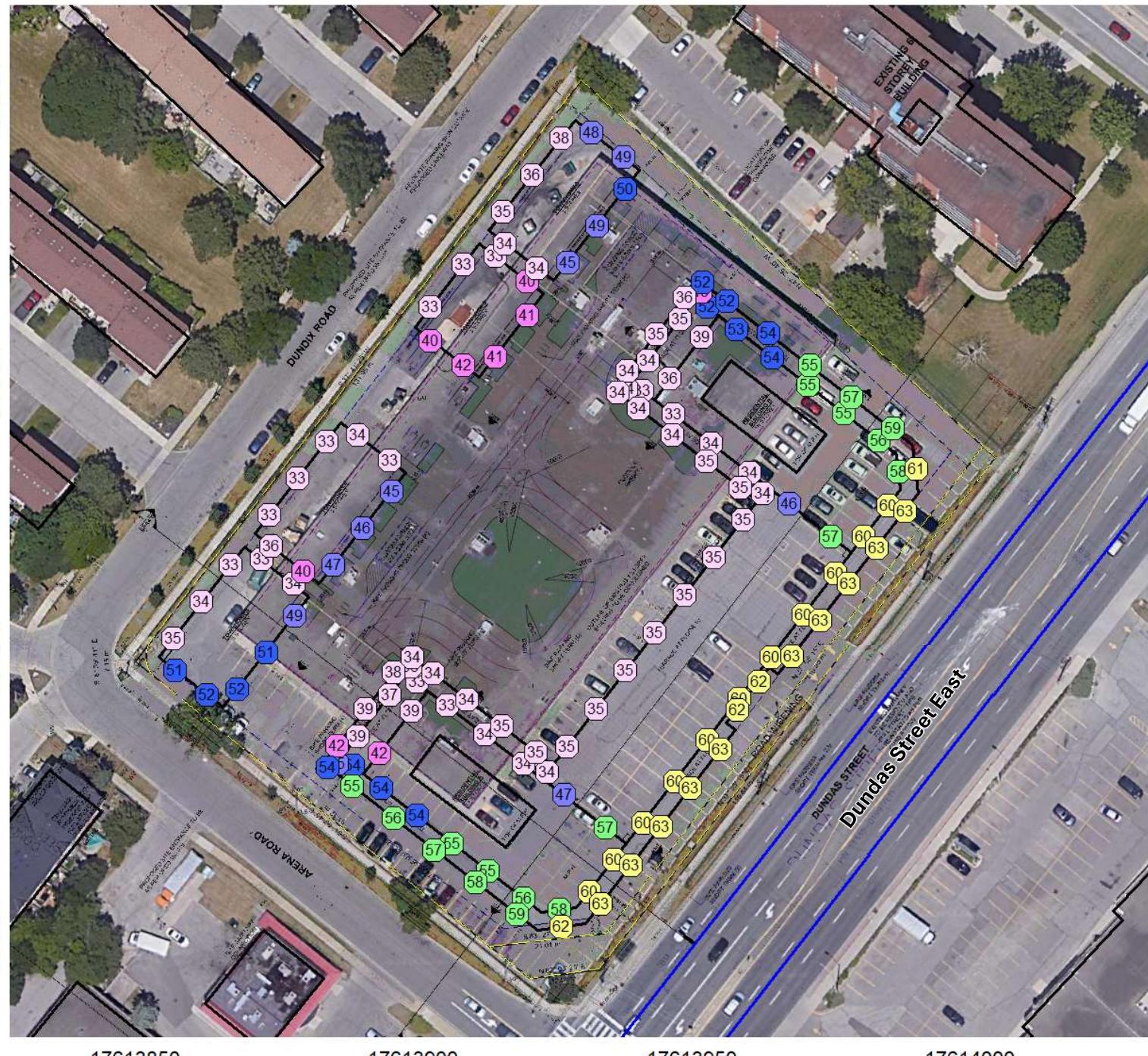
Figure Title
Predicted Façade Levels –
Roadway, Night-time

Produced By
MTL

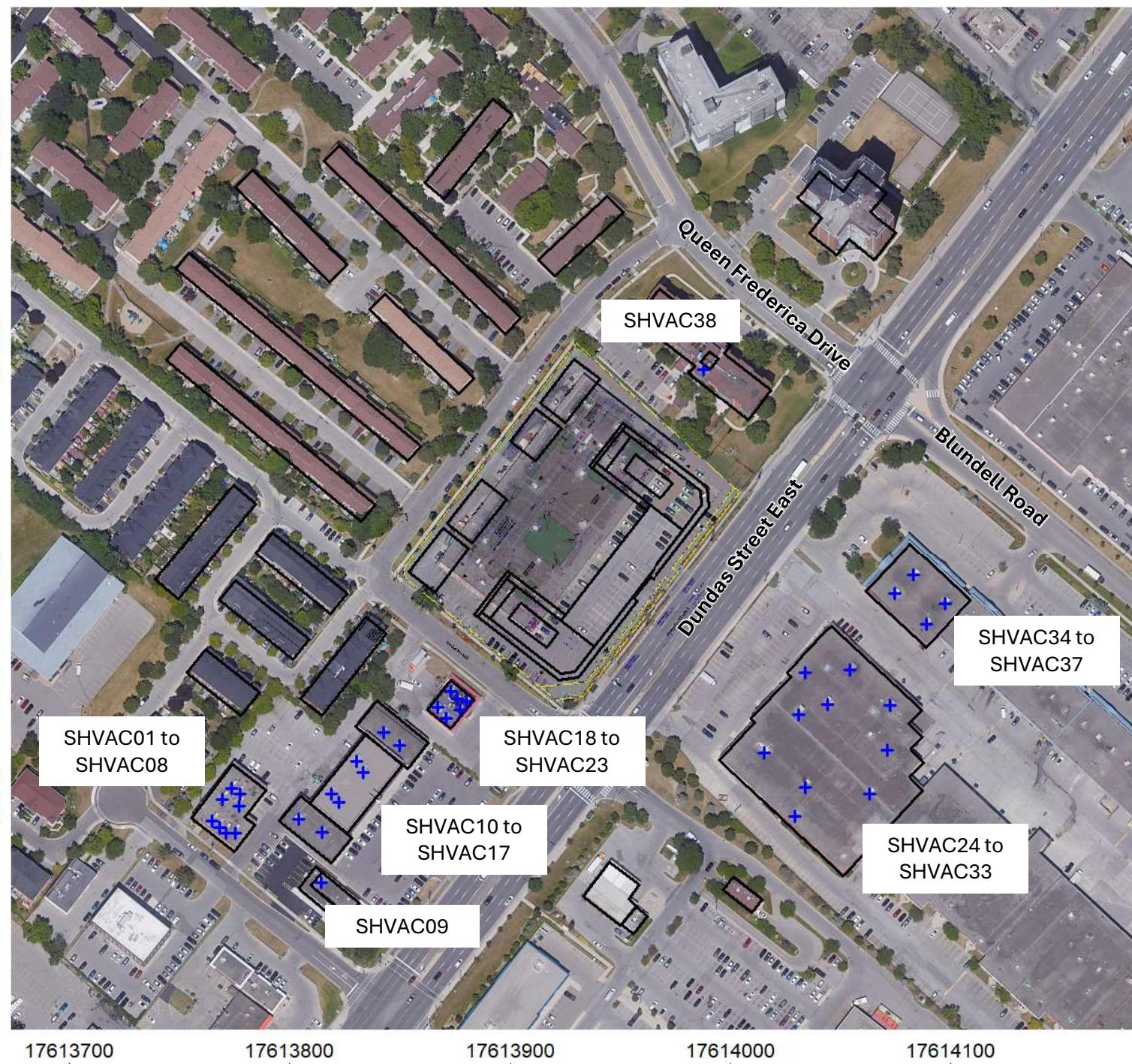
TT Project #
SW22159.00

Date
July 31, 2024

5b



Thornton Tomasetti



Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:

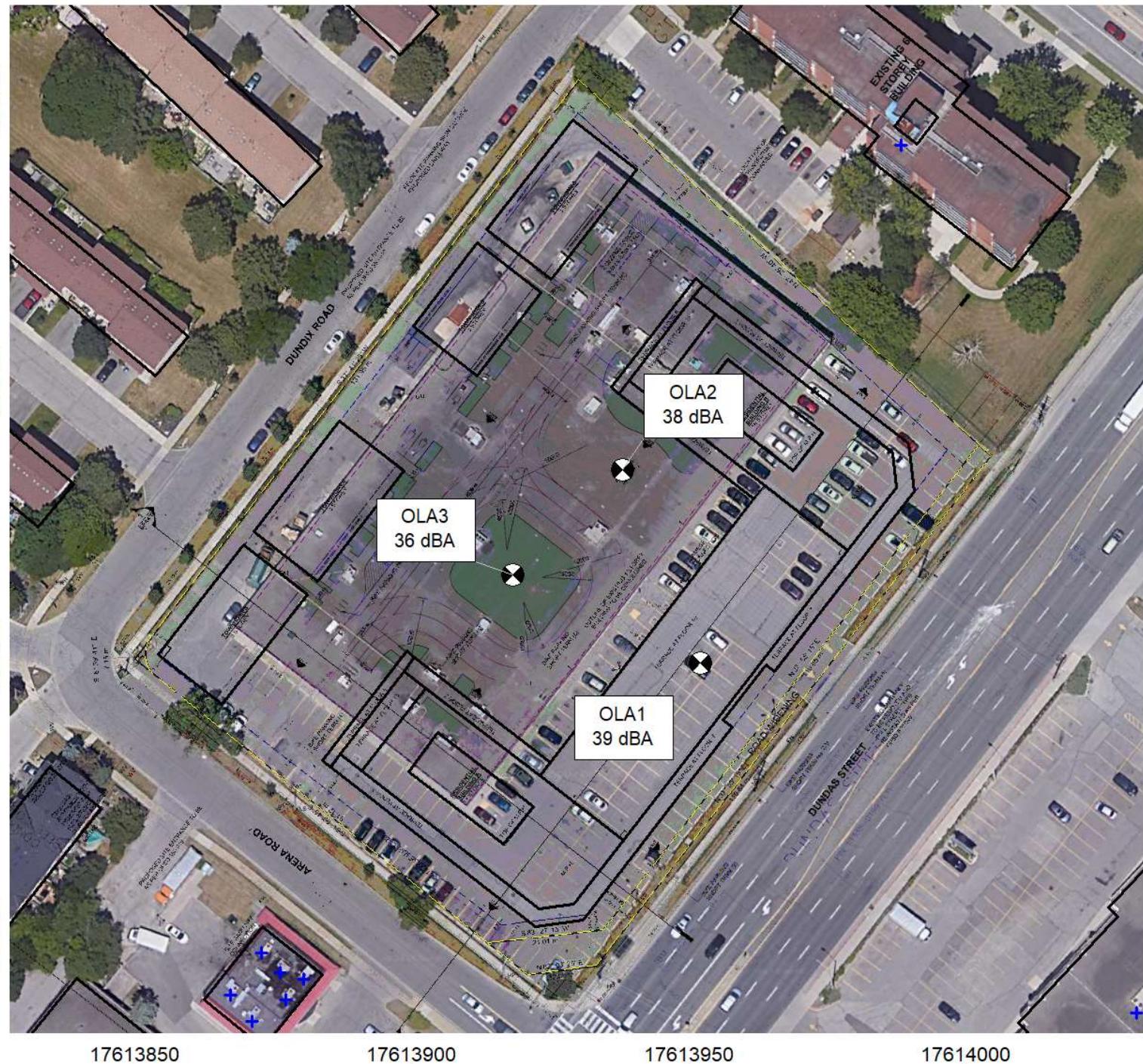
Figure Title
Surrounding Stationary
Noise Source Locations

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

Thornton Tomasetti



Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:

Figure Title
Predicted OLA Levels –
Surrounding Stationary, Day/Eve

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

Thornton Tomasetti

Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:

Sound Pressure Levels

0 <= ... < 30 (A)
30 <= ... < 40 (A)
40 <= ... < 45 (A)
45 <= ... < 50 (A)
50 <= ... < 55 (A)
55 <= ... < 60 (A)
60 <= ... < 65 (A)
65 <= ... < 70 (A)
70 <= ... < 75 (A)
75 <= ... (A)

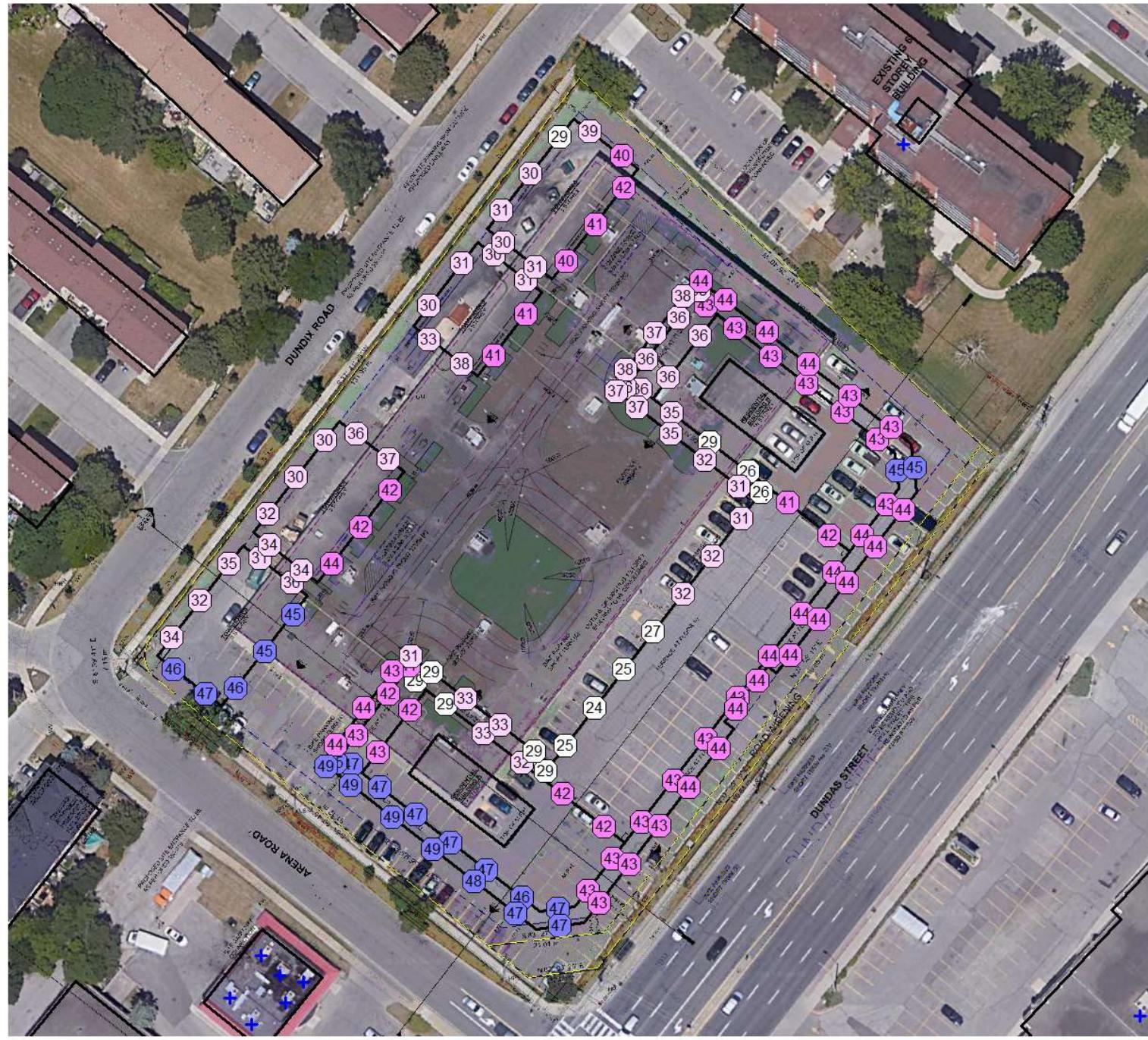
Figure Title
Predicted Façade Levels –
Surrounding Stationary, Day/Eve

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

8a



17613850

17613900

17613950

17614000

4829200

4829150

4829100

4829050

4829200

4829150

4829100

4829050

Thornton Tomasetti

Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:

Sound Pressure Levels

0 <= ... < 30 (A)
30 <= ... < 40 (A)
40 <= ... < 45 (A)
45 <= ... < 50 (A)
50 <= ... < 55 (A)
55 <= ... < 60 (A)
60 <= ... < 65 (A)
65 <= ... < 70 (A)
70 <= ... < 75 (A)
75 <= ... (A)

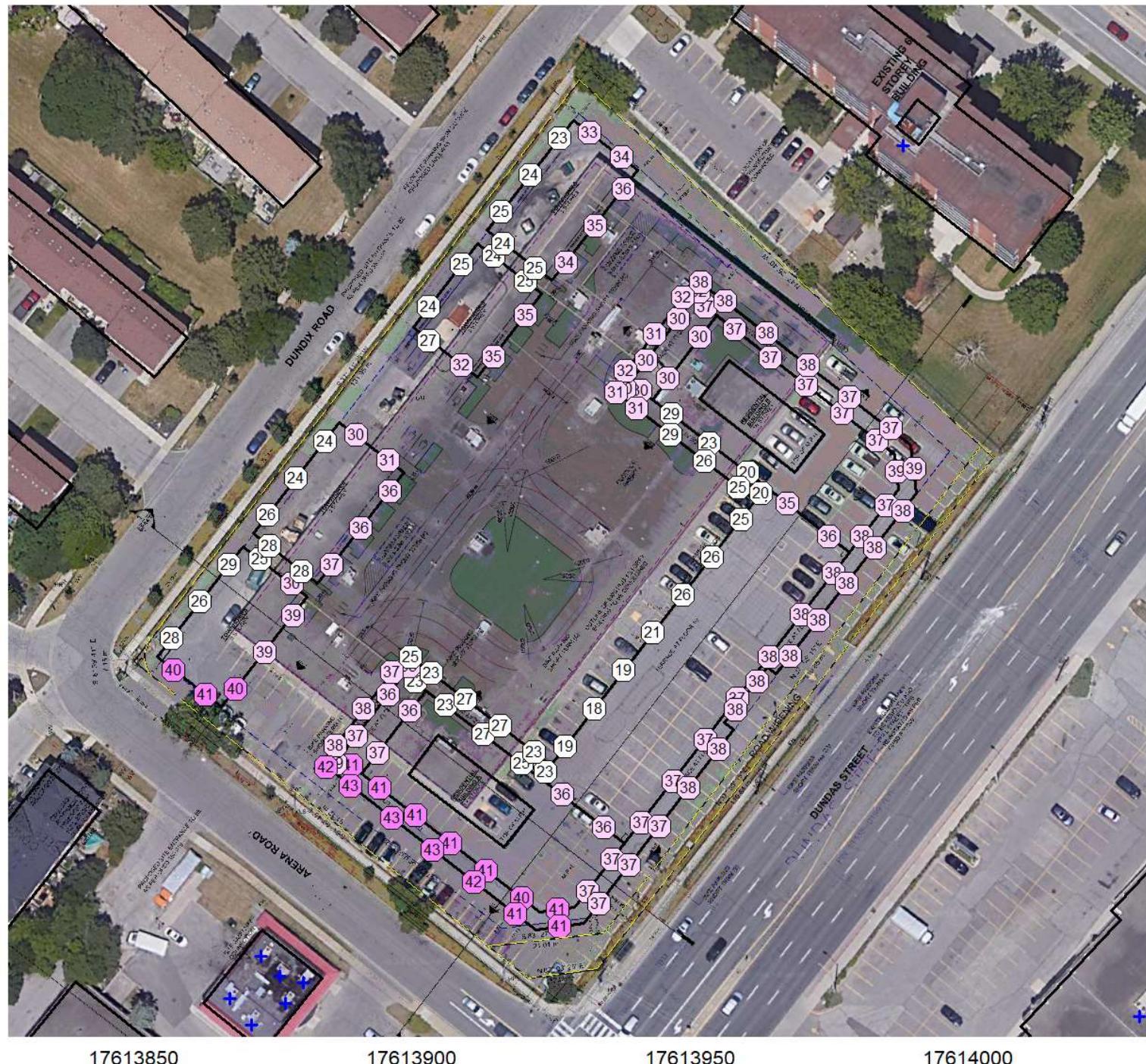
Figure Title
Predicted Façade Levels –
Surrounding Stationary, Night

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

8b



Appendix B: Traffic Data



Date: 26-Jul-24

REQUESTED BY:

Name: Marcus Li
Company: Thornton Tomasetti
Fax#

PREPARED BY:

Name: Simranpreet Singh
Tel#: 905-615-3200 ext.5917

NOISE REPORT FOR PROPOSED DEVELOPMENT

Location: Dundas St E from Tomken Rd to Dixie Rd

ID# 630

ON SITE TRAFFIC DATA

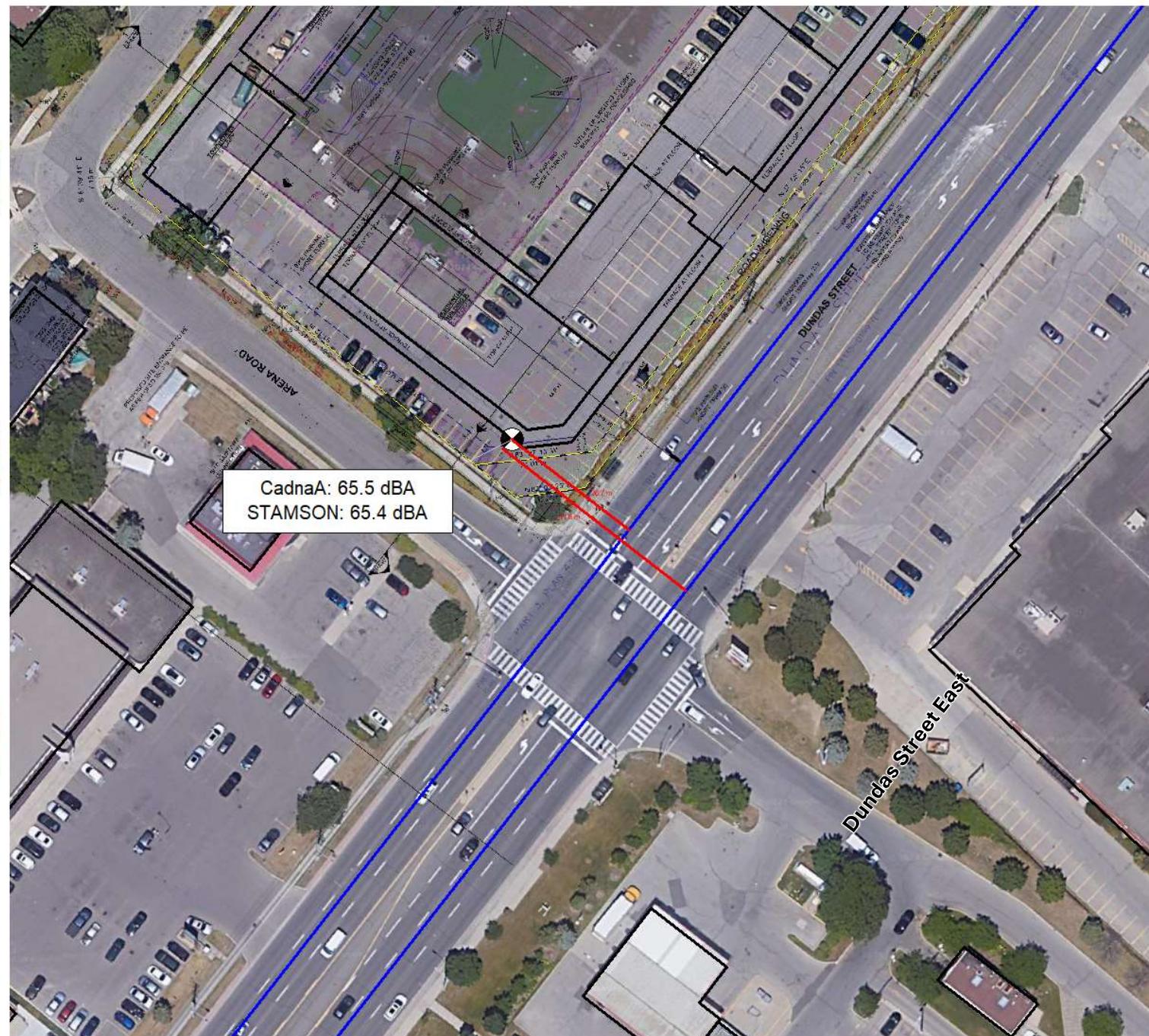
<i>Specific</i>	<i>Street Names</i>				
AADT: # of Lanes: % Trucks: Medium/Heavy Truck Ratio: Day/Night Split: Posted Speed Limit: Gradient of Road: Ultimate R.O.W.:	Dundas St E				
	46500				
	4				
	4%				
	55/45				
	90/10				
	60 km/hr				
	2%				
	42.0 m				

Comments:

Ultimate Traffic Only (2041)

Appendix C: STAMSON Validation File

Thornton Tomasetti



Client Name
Dundix Realty Holdings

Project Name
1225 Dundas St E,
Mississauga

Notes:
1) Not to Scale

Figure Title
Comparison of STAMSON
to CadnaA

Produced By
MTL

TT Project #
SW22159.00

Date
July 31, 2024

C.1

STAMSON 5.0 NORMAL REPORT Date: 26-07-2024 16:36:02
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: Fac.te Time Period: 16 hours
Description: West Facade Validation (daytime)

Road data, segment # 1: DundasWB

Car traffic volume : 20088 veh/TimePeriod
Medium truck volume : 460 veh/TimePeriod
Heavy truck volume : 377 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: DundasWB

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 26.70 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: DundasEB

Car traffic volume : 20088 veh/TimePeriod
Medium truck volume : 460 veh/TimePeriod
Heavy truck volume : 377 veh/TimePeriod
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: DundasEB

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 41.60 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: DundasWB

Source height = 1.16 m

ROAD (0.00 + 63.28 + 0.00) = 63.28 dBA
Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj SubLeq

0 90 0.00 68.80 0.00 -2.50 -3.01 0.00 0.00 0.00 63.28

Segment Leq : 63.28 dBA

Results segment # 2: DundasEB

Source height = 1.16 m

ROAD (0.00 + 61.36 + 0.00) = 61.36 dBA

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

0	90	0.00	68.80	0.00	-4.43	-3.01	0.00	0.00	0.00	61.36
---	----	------	-------	------	-------	-------	------	------	------	-------

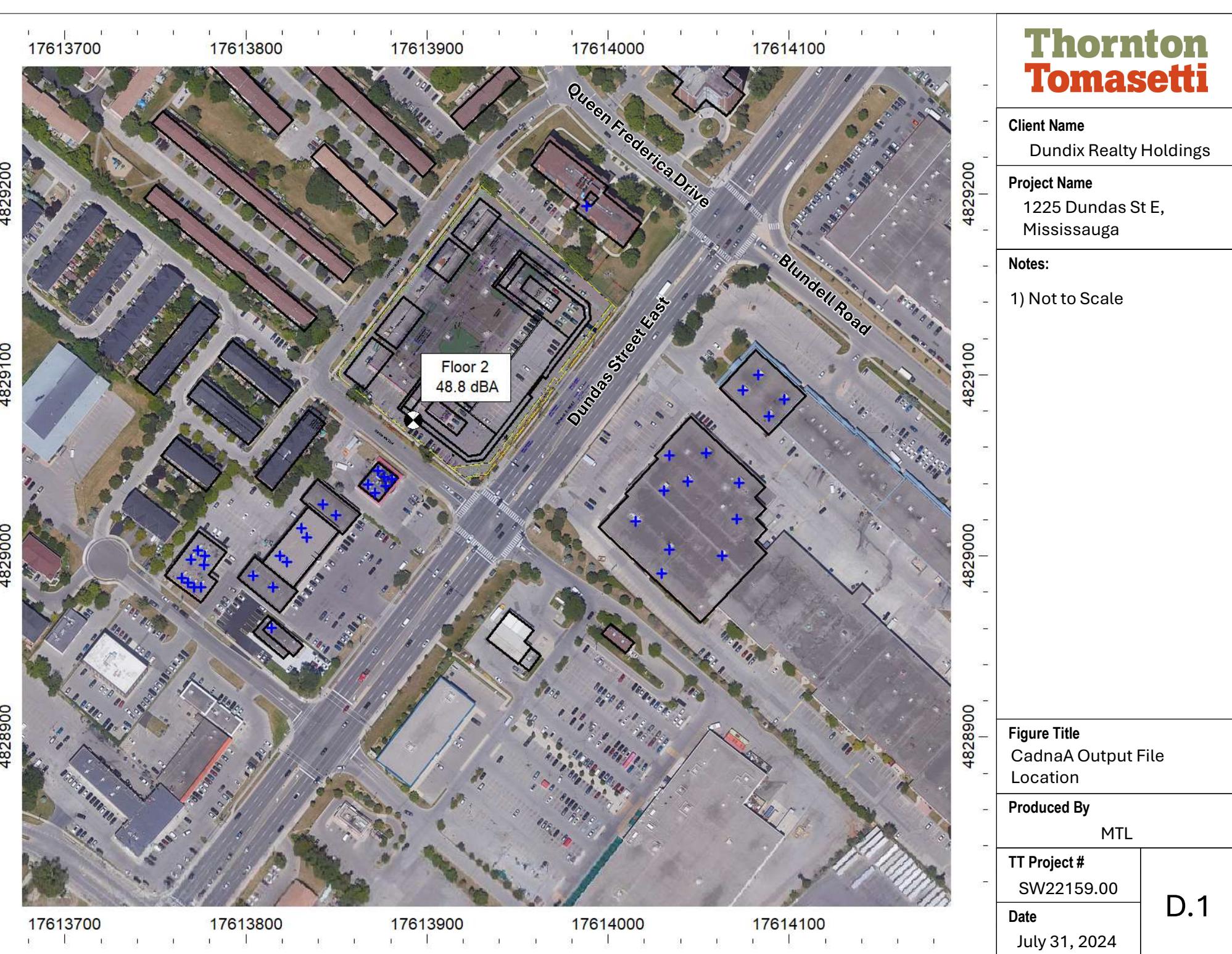
Segment Leq : 61.36 dBA

Total Leq All Segments: 65.44 dBA

TOTAL Leq FROM ALL SOURCES: 65.44

Appendix D: CadnaA Modelling Output

Thornton Tomasetti



Receiver

Name: WC Stationary

ID: !0002_CadnaA

X: 17613892.39 m

Y: 4829075.01 m

Z: 8.00 m

Point Source, ISO 9613, Name: "SHVAC21", ID: "102!SHVAC21"

Nr.	X (m)	Y (m)	Z (m)	Refl. DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
1	17613872.92	4829047.04	5.80	0 D		A	77.6	0.0	0.0	0.0	41.7	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	38.7
1	17613872.92	4829047.04	5.80	0 N		A	77.6	0.0	-6.0	0.0	41.7	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	32.7
1	17613872.92	4829047.04	5.80	0 E		A	77.6	0.0	0.0	0.0	41.7	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	38.7
2	17613872.92	4829047.04	5.80	1 D		A	77.6	0.0	0.0	0.0	52.1	0.6	-3.0	0.0	0.0	0.0	0.0	3.3	24.6
2	17613872.92	4829047.04	5.80	1 N		A	77.6	0.0	-6.0	0.0	52.1	0.6	-3.0	0.0	0.0	0.0	0.0	3.3	18.6
2	17613872.92	4829047.04	5.80	1 E		A	77.6	0.0	0.0	0.0	52.1	0.6	-3.0	0.0	0.0	0.0	0.0	3.3	24.6
3	17613872.92	4829047.04	5.80	1 D		A	77.6	0.0	0.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.8
3	17613872.92	4829047.04	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.7
3	17613872.92	4829047.04	5.80	1 E		A	77.6	0.0	0.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.8
4	17613872.92	4829047.04	5.80	1 D		A	77.6	0.0	0.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.8
4	17613872.92	4829047.04	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.7
4	17613872.92	4829047.04	5.80	1 E		A	77.6	0.0	0.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.8
5	17613872.92	4829047.04	5.80	1 D		A	77.6	0.0	0.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.8
5	17613872.92	4829047.04	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.7
5	17613872.92	4829047.04	5.80	1 E		A	77.6	0.0	0.0	0.0	43.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.8

Point Source, ISO 9613, Name: "SHVAC23", ID: "102!SHVAC23"

Nr.	X (m)	Y (m)	Z (m)	Refl. DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
6	17613880.45	4829042.41	5.80	0 D		A	77.6	0.0	0.0	0.0	41.8	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	38.6
6	17613880.45	4829042.41	5.80	0 N		A	77.6	0.0	-6.0	0.0	41.8	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	32.5
6	17613880.45	4829042.41	5.80	0 E		A	77.6	0.0	0.0	0.0	41.8	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	38.6
7	17613880.45	4829042.41	5.80	1 D		A	77.6	0.0	0.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.7
7	17613880.45	4829042.41	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.6
7	17613880.45	4829042.41	5.80	1 E		A	77.6	0.0	0.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.7
8	17613880.45	4829042.41	5.80	1 D		A	77.6	0.0	0.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.7
8	17613880.45	4829042.41	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.6
8	17613880.45	4829042.41	5.80	1 E		A	77.6	0.0	0.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.7
9	17613880.45	4829042.41	5.80	1 D		A	77.6	0.0	0.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.7
9	17613880.45	4829042.41	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.6
9	17613880.45	4829042.41	5.80	1 E		A	77.6	0.0	0.0	0.0	43.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.7
10	17613880.45	4829042.41	5.80	1 D		A	77.6	0.0	0.0	0.0	57.9	1.0	-3.0	0.0	0.0	25.0	0.0	2.1	-5.3
10	17613880.45	4829042.41	5.80	1 N		A	77.6	0.0	-6.0	0.0	57.9	1.0	-3.0	0.0	0.0	25.0	0.0	2.1	-11.4
10	17613880.45	4829042.41	5.80	1 E		A	77.6	0.0	0.0	0.0	57.9	1.0	-3.0	0.0	0.0	25.0	0.0	2.1	-5.3

Point Source, ISO 9613, Name: "SHVAC22", ID: "102!SHVAC22"

Nr.	X (m)	Y (m)	Z (m)	Refl. DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
11	17613876.16	4829043.51	5.80	0 D		A	77.6	0.0	0.0	0.0	42.0	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	38.4
11	17613876.16	4829043.51	5.80	0 N		A	77.6	0.0	-6.0	0.0	42.0	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	32.4
11	17613876.16	4829043.51	5.80	0 E		A	77.6	0.0	0.0	0.0	42.0	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	38.4
12	17613876.16	4829043.51	5.80	1 D		A	77.6	0.0	0.0	0.0	52.0	0.6	-3.0	0.0	0.0	0.0	0.0	3.3	24.6
12	17613876.16	4829043.51	5.80	1 N		A	77.6	0.0	-6.0	0.0	52.0	0.6	-3.0	0.0	0.0	0.0	0.0	3.3	18.6
12	17613876.16	4829043.51	5.80	1 E		A	77.6	0.0	0.0	0.0	52.0	0.6	-3.0	0.0	0.0	0.0	0.0	3.3	24.6
13	17613876.16	4829043.51	5.80	1 D		A	77.6	0.0	0.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.5
13	17613876.16	4829043.51	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.5
13	17613876.16	4829043.51	5.80	1 E		A	77.6	0.0	0.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.5
14	17613876.16	4829043.51	5.80	1 D		A	77.6	0.0	0.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.5
14	17613876.16	4829043.51	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.5
14	17613876.16	4829043.51	5.80	1 E		A	77.6	0.0	0.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.5
15	17613876.16	4829043.51	5.80	1 D		A	77.6	0.0	0.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.5
15	17613876.16	4829043.51	5.80	1 N		A	77.6	0.0	-6.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	4.5
15	17613876.16	4829043.51	5.80	1 E		A	77.6	0.0	0.0	0.0	43.3	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	10.5

Point Source, ISO 9613, Name: "SHVAC20", ID: "102!SHVAC20"

Nr.	X (m)	Y (m)	Z (m)	Refl. DEN	Freq. (Hz)	Lw dB(A)	I/a dB	Optime dB	K0 (dB)	Di (dB)	Adiv (dB)	Aatm (dB)	Agr (dB)	Afol (dB)	Ahous (dB)	Abar (dB)	Cmet (dB)	RL (dB)	Lr dB(A)
16	17613877.26	4829038.60	5.80	0 D		A	77.6	0.0	0.0	0.0	42.9	0.2	-3.0	0.0	0.0	0.0	0.0	0.0	37.4

Point Source, ISO 9613, Name: "SHVAC20", ID: "!02!SHVAC20"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
16	17613877.26	4829038.60	5.80	0	N		A	77.6	0.0	-6.0	0.0	0.0	42.9	0.2	-3.0	0.0	0.0	0.0	0.0	31.4
16	17613877.26	4829038.60	5.80	0	E		A	77.6	0.0	0.0	0.0	0.0	42.9	0.2	-3.0	0.0	0.0	0.0	0.0	37.4
17	17613877.26	4829038.60	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	9.7
17	17613877.26	4829038.60	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	3.7
17	17613877.26	4829038.60	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	9.7
18	17613877.26	4829038.60	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	9.7
18	17613877.26	4829038.60	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	3.7
18	17613877.26	4829038.60	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	9.7
19	17613877.26	4829038.60	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	2.0
19	17613877.26	4829038.60	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	3.7
19	17613877.26	4829038.60	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	44.1	0.3	-3.0	0.0	0.0	24.5	0.0	9.7
20	17613877.26	4829038.60	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	58.1	1.0	-3.0	0.0	0.0	25.0	0.0	2.1
20	17613877.26	4829038.60	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	58.1	1.0	-3.0	0.0	0.0	25.0	0.0	-11.6
20	17613877.26	4829038.60	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	58.1	1.0	-3.0	0.0	0.0	25.0	0.0	2.1
																			-5.5	

Point Source, ISO 9613, Name: "SHVAC17", ID: "!02!SHVAC17"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
21	17613849.62	4829022.32	5.70	0	D		A	81.7	0.0	0.0	0.0	0.0	47.6	0.4	-3.0	0.0	0.0	0.0	0.0	36.7
21	17613849.62	4829022.32	5.70	0	N		A	81.7	0.0	-6.0	0.0	0.0	47.6	0.4	-3.0	0.0	0.0	0.0	0.0	30.6
21	17613849.62	4829022.32	5.70	0	E		A	81.7	0.0	0.0	0.0	0.0	47.6	0.4	-3.0	0.0	0.0	0.0	0.0	36.7
22	17613849.62	4829022.32	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	49.0	0.4	-3.0	0.0	0.0	0.0	0.0	33.2
22	17613849.62	4829022.32	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	49.0	0.4	-3.0	0.0	0.0	0.0	0.0	27.2
22	17613849.62	4829022.32	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	49.0	0.4	-3.0	0.0	0.0	0.0	0.0	33.2
23	17613849.62	4829022.32	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	51.0	0.5	-3.0	0.0	0.0	0.0	0.0	30.9
23	17613849.62	4829022.32	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	51.0	0.5	-3.0	0.0	0.0	0.0	0.0	24.8
23	17613849.62	4829022.32	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	51.0	0.5	-3.0	0.0	0.0	0.0	0.0	30.9
24	17613849.62	4829022.32	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.4
24	17613849.62	4829022.32	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	3.3
24	17613849.62	4829022.32	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.4
25	17613849.62	4829022.32	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.4
25	17613849.62	4829022.32	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	3.3
25	17613849.62	4829022.32	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.4
26	17613849.62	4829022.32	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.4
26	17613849.62	4829022.32	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	3.3
26	17613849.62	4829022.32	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.4
27	17613849.62	4829022.32	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	54.0	0.7	-3.0	0.0	0.0	14.0	0.0	3.7
27	17613849.62	4829022.32	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	54.0	0.7	-3.0	0.0	0.0	14.0	0.0	6.3
27	17613849.62	4829022.32	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	54.0	0.7	-3.0	0.0	0.0	14.0	0.0	3.7
																			12.3	

Point Source, ISO 9613, Name: "SHVAC16", ID: "!02!SHVAC16"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
28	17613842.66	4829028.27	5.70	0	D		A	81.7	0.0	0.0	0.0	0.0	47.7	0.4	-3.0	0.0	0.0	0.0	0.0	36.6
28	17613842.66	4829028.27	5.70	0	N		A	81.7	0.0	-6.0	0.0	0.0	47.7	0.4	-3.0	0.0	0.0	0.0	0.0	30.6
28	17613842.66	4829028.27	5.70	0	E		A	81.7	0.0	0.0	0.0	0.0	47.7	0.4	-3.0	0.0	0.0	0.0	0.0	36.6
29	17613842.66	4829028.27	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	49.1	0.4	-3.0	0.0	0.0	0.0	0.0	33.1
29	17613842.66	4829028.27	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	49.1	0.4	-3.0	0.0	0.0	0.0	0.0	27.0
29	17613842.66	4829028.27	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	49.1	0.4	-3.0	0.0	0.0	0.0	0.0	33.1
30	17613842.66	4829028.27	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	50.4	0.5	-3.0	0.0	0.0	0.0	0.0	31.7
30	17613842.66	4829028.27	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	50.4	0.5	-3.0	0.0	0.0	0.0	0.0	25.7
30	17613842.66	4829028.27	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	50.4	0.5	-3.0	0.0	0.0	0.0	0.0	31.7
31	17613842.66	4829028.27	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.3
31	17613842.66	4829028.27	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	3.3
31	17613842.66	4829028.27	5.70	1	E		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.3
32	17613842.66	4829028.27	5.70	1	D		A	81.7	0.0	0.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	9.3
32	17613842.66	4829028.27	5.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	48.4	0.4	-3.0	0.0	0.0	24.5	0.0	3.3
32	17613842.66	4829028.27	5.70	1</																

Point Source, ISO 9613, Name: "SHVAC18", ID: "!02!SHVAC18"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
35	17613867.31	4829039.52	5.80	0	D		A	77.6	0.0	0.0	0.0	0.0	43.8	0.3	-3.0	0.0	0.0	0.0	0.0	36.6	
35	17613867.31	4829039.52	5.80	0	N		A	77.6	0.0	-6.0	0.0	0.0	43.8	0.3	-3.0	0.0	0.0	0.0	0.0	30.6	
35	17613867.31	4829039.52	5.80	0	E		A	77.6	0.0	0.0	0.0	0.0	43.8	0.3	-3.0	0.0	0.0	0.0	0.0	36.6	
36	17613867.31	4829039.52	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	51.3	0.6	-3.0	0.0	0.0	0.0	0.0	26.1	
36	17613867.31	4829039.52	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	51.3	0.6	-3.0	0.0	0.0	0.0	0.0	20.1	
36	17613867.31	4829039.52	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	51.3	0.6	-3.0	0.0	0.0	0.0	0.0	26.1	
37	17613867.31	4829039.52	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.9
37	17613867.31	4829039.52	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	2.9
37	17613867.31	4829039.52	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.9
38	17613867.31	4829039.52	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.9
38	17613867.31	4829039.52	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	2.9
38	17613867.31	4829039.52	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.9
39	17613867.31	4829039.52	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.9
39	17613867.31	4829039.52	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	2.9
39	17613867.31	4829039.52	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	44.9	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.9

Point Source, ISO 9613, Name: "SHVAC19", ID: "!02!SHVAC19"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
40	17613871.13	4829034.74	5.80	0	D		A	77.6	0.0	0.0	0.0	0.0	44.2	0.3	-3.0	0.0	0.0	0.0	0.0	36.2	
40	17613871.13	4829034.74	5.80	0	N		A	77.6	0.0	-6.0	0.0	0.0	44.2	0.3	-3.0	0.0	0.0	0.0	0.0	30.1	
40	17613871.13	4829034.74	5.80	0	E		A	77.6	0.0	0.0	0.0	0.0	44.2	0.3	-3.0	0.0	0.0	0.0	0.0	36.2	
41	17613871.13	4829034.74	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	51.3	0.6	-3.0	0.0	0.0	0.0	0.0	26.2	
41	17613871.13	4829034.74	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	51.3	0.6	-3.0	0.0	0.0	0.0	0.0	20.2	
41	17613871.13	4829034.74	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	51.3	0.6	-3.0	0.0	0.0	0.0	0.0	26.2	
42	17613871.13	4829034.74	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.6
42	17613871.13	4829034.74	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	2.6
42	17613871.13	4829034.74	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.6
43	17613871.13	4829034.74	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.6
43	17613871.13	4829034.74	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	2.6
43	17613871.13	4829034.74	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.6
44	17613871.13	4829034.74	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.6
44	17613871.13	4829034.74	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	2.6
44	17613871.13	4829034.74	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	45.2	0.3	-3.0	0.0	0.0	24.5	0.0	2.0	8.6
45	17613871.13	4829034.74	5.80	1	D		A	77.6	0.0	0.0	0.0	0.0	58.3	1.1	-3.0	0.0	0.0	25.0	0.0	2.1	-5.8
45	17613871.13	4829034.74	5.80	1	N		A	77.6	0.0	-6.0	0.0	0.0	58.3	1.1	-3.0	0.0	0.0	25.0	0.0	2.1	-11.8
45	17613871.13	4829034.74	5.80	1	E		A	77.6	0.0	0.0	0.0	0.0	58.3	1.1	-3.0	0.0	0.0	25.0	0.0	2.1	-5.8

Point Source, ISO 9613, Name: "SHVAC14", ID: "!02!SHVAC14"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
46	17613830.49	4829015.28	8.70	0	D		A	81.7	0.0	0.0	0.0	0.0	49.7	0.4	-3.0	0.0	0.0	0.0	0.0	34.5
46	17613830.49	4829015.28	8.70	0	N		A	81.7	0.0	-6.0	0.0	0.0	49.7	0.4	-3.0	0.0	0.0	0.0	0.0	28.5
46	17613830.49	4829015.28	8.70	0	E		A	81.7	0.0	0.0	0.0	0.0	49.7	0.4	-3.0	0.0	0.0	0.0	0.0	34.5
47	17613830.49	4829015.28	8.70	1	D		A	81.7	0.0	0.0	0.0	0.0	51.5	0.5	-3.0	0.0	0.0	0.0	0.0	23.0
47	17613830.49	4829015.28	8.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	51.5	0.5	-3.0	0.0	0.0	0.0	0.0	24.3
47	17613830.49	4829015.28	8.70	1	E		A	81.7	0.0	0.0	0.0	0.0	51.5	0.5	-3.0	0.0	0.0	0.0	0.0	30.3
48	17613830.49	4829015.28	8.70	1	D		A	81.7	0.0	0.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	7.4
48	17613830.49	4829015.28	8.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	1.4
48	17613830.49	4829015.28	8.70	1	E		A	81.7	0.0	0.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	7.4
49	17613830.49	4829015.28	8.70	1	D		A	81.7	0.0	0.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	7.4
49	17613830.49	4829015.28	8.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	1.4
49	17613830.49	4829015.28	8.70	1	E		A	81.7	0.0	0.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	7.4
50	17613830.49	4829015.28	8.70	1	D		A	81.7	0.0	0.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	2.0
50	17613830.49	4829015.28	8.70	1	N		A	81.7	0.0	-6.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	1.4
50	17613830.49	4829015.28	8.70	1	E		A	81.7	0.0	0.0	0.0	0.0	50.3	0.5	-3.0	0.0	0.0	24.5	0.0	2.0
51	17613833.42	4829009.98	8.70	0	D		A	81.7	0.0	0.0	0.0	0.0	49.9	0.5	-3.0	0.0	0.0	0.0	0.0	34.3

Point Source, ISO 9613, Name: "SHVAC15", ID: "!02!

Point Source, ISO 9613, Name: "SHVAC11", ID: "!02!SHVAC11"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
72	17613814.76	4828982.87	5.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	-2.0
72	17613814.76	4828982.87	5.80	1	E	A	81.7	0.0	0.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	4.1
73	17613814.76	4828982.87	5.80	1	D	A	81.7	0.0	0.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	4.1
73	17613814.76	4828982.87	5.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	-2.0
73	17613814.76	4828982.87	5.80	1	E	A	81.7	0.0	0.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	4.1
74	17613814.76	4828982.87	5.80	1	D	A	81.7	0.0	0.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	4.1
74	17613814.76	4828982.87	5.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	-2.0
74	17613814.76	4828982.87	5.80	1	E	A	81.7	0.0	0.0	0.0	0.0	53.0	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	4.1

Point Source, ISO 9613, Name: "SHVAC10", ID: "!02!SHVAC10"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
75	17613803.98	4828988.80	5.80	0	D	A	81.7	0.0	0.0	0.0	0.0	52.8	0.6	-3.0	0.0	0.0	8.4	0.0	0.0	22.8
75	17613803.98	4828988.80	5.80	0	N	A	81.7	0.0	-6.0	0.0	0.0	52.8	0.6	-3.0	0.0	0.0	8.4	0.0	0.0	16.8
75	17613803.98	4828988.80	5.80	0	E	A	81.7	0.0	0.0	0.0	0.0	52.8	0.6	-3.0	0.0	0.0	8.4	0.0	0.0	22.8
76	17613803.98	4828988.80	5.80	1	D	A	81.7	0.0	0.0	0.0	0.0	53.6	0.7	-3.0	0.0	0.0	0.0	0.0	2.3	28.0
76	17613803.98	4828988.80	5.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	53.6	0.7	-3.0	0.0	0.0	0.0	0.0	2.3	22.0
76	17613803.98	4828988.80	5.80	1	E	A	81.7	0.0	0.0	0.0	0.0	53.6	0.7	-3.0	0.0	0.0	0.0	0.0	2.3	28.0
77	17613803.98	4828988.80	5.80	1	D	A	81.7	0.0	0.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	3.8
77	17613803.98	4828988.80	5.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	-2.2
77	17613803.98	4828988.80	5.80	1	E	A	81.7	0.0	0.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	3.8
78	17613803.98	4828988.80	5.80	1	D	A	81.7	0.0	0.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	3.8
78	17613803.98	4828988.80	5.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	-2.2
78	17613803.98	4828988.80	5.80	1	E	A	81.7	0.0	0.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	3.8
79	17613803.98	4828988.80	5.80	1	D	A	81.7	0.0	0.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	3.8
79	17613803.98	4828988.80	5.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	-2.2
79	17613803.98	4828988.80	5.80	1	E	A	81.7	0.0	0.0	0.0	0.0	53.2	0.6	-3.0	0.0	0.0	24.9	0.0	2.0	3.8

Point Source, ISO 9613, Name: "SHVAC25", ID: "!02!SHVAC25"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
80	17614015.25	4829018.93	8.00	0	D	A	81.7	0.0	0.0	0.0	0.0	53.6	0.6	-3.0	0.0	0.0	15.7	0.0	0.0	14.7
80	17614015.25	4829018.93	8.00	0	N	A	81.7	0.0	-6.0	0.0	0.0	53.6	0.6	-3.0	0.0	0.0	15.7	0.0	0.0	8.6
80	17614015.25	4829018.93	8.00	0	E	A	81.7	0.0	0.0	0.0	0.0	53.6	0.6	-3.0	0.0	0.0	15.7	0.0	0.0	14.7

Point Source, ISO 9613, Name: "SHVAC07", ID: "!02!SHVAC07"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
81	17613777.33	4829000.11	9.10	0	D	A	81.7	0.0	0.0	0.0	0.0	53.8	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	30.2
81	17613777.33	4829000.11	9.10	0	N	A	81.7	0.0	-6.0	0.0	0.0	53.8	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	24.2
81	17613777.33	4829000.11	9.10	0	E	A	81.7	0.0	0.0	0.0	0.0	53.8	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	30.2
82	17613777.33	4829000.11	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.4
82	17613777.33	4829000.11	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-2.6
82	17613777.33	4829000.11	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.4
83	17613777.33	4829000.11	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.4
83	17613777.33	4829000.11	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-2.6
83	17613777.33	4829000.11	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.4
84	17613777.33	4829000.11	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.4
84	17613777.33	4829000.11	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-2.6
84	17613777.33	4829000.11	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.1	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.4
85	17613777.33	4829000.11	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.9	0.7	-3.0	0.0	0.0	9.4	0.0	4.0	15.7
85	17613777.33	4829000.11	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.9	0.7	-3.0	0.0	0.0	9.4	0.0	4.0	9.7
85	17613777.33	4829000.11	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.9	0.7	-3.0	0.0	0.0	9.4	0.0	4.0	15.7
86	17613777.33	4829000.11	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	58.5	1.0	-3.0	0.0	0.0	10.1	0.0	4.1	11.0
86	17613777.33	4829000.11	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	58.5	1.0	-3.0	0.0	0.0	10.1	0.0	4.1	4.9
86	17613777.33	4829000.11	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	58.5	1.0	-3.0	0.0	0.0	10.1	0.0	4.1	11.0
87	17613777.33	4829000.11	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	53.9	0.7	-						

Point Source, ISO 9613, Name: "SHVAC05", ID: "!02!SHVAC05"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
106	17613769.49	4828997.74	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.6	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.1
106	17613769.49	4828997.74	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.6	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.0
107	17613769.49	4828997.74	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.6	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.0
107	17613769.49	4828997.74	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.6	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.1
107	17613769.49	4828997.74	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.6	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	3.0

Point Source, ISO 9613, Name: "SHVAC04", ID: "!02!SHVAC04"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
108	17613775.35	4828982.46	9.10	0	D	A	81.7	0.0	0.0	0.0	0.0	54.5	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	29.5
108	17613775.35	4828982.46	9.10	0	N	A	81.7	0.0	-6.0	0.0	0.0	54.5	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	23.5
108	17613775.35	4828982.46	9.10	0	E	A	81.7	0.0	0.0	0.0	0.0	54.5	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	29.5
109	17613775.35	4828982.46	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.7
109	17613775.35	4828982.46	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.3
109	17613775.35	4828982.46	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.7
110	17613775.35	4828982.46	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.7
110	17613775.35	4828982.46	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.3
110	17613775.35	4828982.46	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.7
111	17613775.35	4828982.46	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.7
111	17613775.35	4828982.46	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.3
111	17613775.35	4828982.46	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	54.8	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.7
112	17613775.35	4828982.46	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	55.8	0.8	-3.0	0.0	0.0	8.8	0.0	3.9	15.4
112	17613775.35	4828982.46	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	55.8	0.8	-3.0	0.0	0.0	8.8	0.0	3.9	9.4
112	17613775.35	4828982.46	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	55.8	0.8	-3.0	0.0	0.0	8.8	0.0	3.9	15.4

Point Source, ISO 9613, Name: "SHVAC03", ID: "!02!SHVAC03"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
113	17613771.22	4828982.72	9.10	0	D	A	81.7	0.0	0.0	0.0	0.0	54.7	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	29.3
113	17613771.22	4828982.72	9.10	0	N	A	81.7	0.0	-6.0	0.0	0.0	54.7	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	23.3
113	17613771.22	4828982.72	9.10	0	E	A	81.7	0.0	0.0	0.0	0.0	54.7	0.7	-3.0	0.0	0.0	0.0	0.0	0.0	29.3
114	17613771.22	4828982.72	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.5
114	17613771.22	4828982.72	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.5
114	17613771.22	4828982.72	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.5
115	17613771.22	4828982.72	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.5
115	17613771.22	4828982.72	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.5
115	17613771.22	4828982.72	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.5
116	17613771.22	4828982.72	9.10	1	D	A	81.7	0.0	0.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	-3.5
116	17613771.22	4828982.72	9.10	1	N	A	81.7	0.0	-6.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.5
116	17613771.22	4828982.72	9.10	1	E	A	81.7	0.0	0.0	0.0	0.0	55.0	0.7	-3.0	0.0	0.0	24.4	0.0	2.0	2.5

Point Source, ISO 9613, Name: "SHVAC38", ID: "!02!SHVAC38"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)						
117	17613988.37	4829192.93	18.80	0	D	A	81.7	0.0	0.0	0.0	0.0	54.7	0.7	-3.0	0.0	0.0	23.6	0.0	0.0	5.7
117	17613988.37	4829192.93	18.80	0	N	A	81.7	0.0	-6.0	0.0	0.0	54.7	0.7	-3.0	0.0	0.0	23.6	0.0	0.0	-0.3
117	17613988.37	4829192.93	18.80	0	E	A	81.7	0.0	0.0	0.0	0.0	54.7	0.7	-3.0	0.0	0.0	23.6	0.0	0.0	5.7
118	17613988.37	4829192.93	18.80	1	D	A	81.7	0.0	0.0	0.0	0.0	54.9	0.7	-3.0	0.0	0.0	25.0	0.0	2.0	2.1
118	17613988.37	4829192.93	18.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	54.9	0.7	-3.0	0.0	0.0	25.0	0.0	2.0	-4.0
118	17613988.37	4829192.93	18.80	1	E	A	81.7	0.0	0.0	0.0	0.0	54.9	0.7	-3.0	0.0	0.0	25.0	0.0	2.0	2.1
119	17613988.37	4829192.93	18.80	1	D	A	81.7	0.0	0.0	0.0	0.0	60.8	1.3	-3.0	0.0	0.0	25.0	0.0	2.4	-4.8
119	17613988.37	4829192.93	18.80	1	N	A	81.7	0.0	-6.0	0.0	0.0	60.8	1.3	-3.0	0.0	0.0	25.0	0.0	2.4	-10.8
119	17613988.37	4829192.93	18.80	1	E	A	81.7	0.0	0.0	0.0	0.0	60.8	1.3	-3.0	0.0	0.0	25.0	0.0	2.4	-4.8

Point Source, ISO 9613, Name: "SHVAC02", ID: "!02!SHVAC02"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	
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Point Source, ISO 9613, Name: "SHVAC36", ID: "!02!SHVAC36"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
136	17614082.93	4829099.81	7.70	0	D		A	81.7	0.0	0.0	0.0	0.0	56.7	0.9	-3.0	0.0	0.0	23.0	0.0	0.0	4.1
136	17614082.93	4829099.81	7.70	0	N		A	81.7	0.0	-6.0	0.0	0.0	56.7	0.9	-3.0	0.0	0.0	23.0	0.0	0.0	-1.9
136	17614082.93	4829099.81	7.70	0	E		A	81.7	0.0	0.0	0.0	0.0	56.7	0.9	-3.0	0.0	0.0	23.0	0.0	0.0	4.1

Point Source, ISO 9613, Name: "SHVAC35", ID: "!02!SHVAC35"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
137	17614088.84	4829077.19	7.70	0	D		A	81.7	0.0	0.0	0.0	0.0	56.9	0.9	-3.0	0.0	0.0	22.5	0.0	0.0	4.4
137	17614088.84	4829077.19	7.70	0	N		A	81.7	0.0	-6.0	0.0	0.0	56.9	0.9	-3.0	0.0	0.0	22.5	0.0	0.0	-1.6
137	17614088.84	4829077.19	7.70	0	E		A	81.7	0.0	0.0	0.0	0.0	56.9	0.9	-3.0	0.0	0.0	22.5	0.0	0.0	4.4

Point Source, ISO 9613, Name: "SHVAC37", ID: "!02!SHVAC37"

Nr.	X	Y	Z	Refl.	DEN	Freq.	Lw	I/a	Optime	K0	Di	Adiv	Aatm	Agr	Afol	Ahous	Abar	Cmet	RL	Lr	
	(m)	(m)	(m)			(Hz)	dB(A)	dB	dB	(dB)	(dB)	(dB)	(dB)	dB(A)							
138	17614097.35	4829086.55	7.70	0	D		A	81.7	0.0	0.0	0.0	0.0	57.2	0.9	-3.0	0.0	0.0	22.7	0.0	0.0	3.8
138	17614097.35	4829086.55	7.70	0	N		A	81.7	0.0	-6.0	0.0	0.0	57.2	0.9	-3.0	0.0	0.0	22.7	0.0	0.0	-2.2
138	17614097.35	4829086.55	7.70	0	E		A	81.7	0.0	0.0	0.0	0.0	57.2	0.9	-3.0	0.0	0.0	22.7	0.0	0.0	3.8