

Noise Feasibility Study

Proposed Seniors Residential Development

7211 and 7233 Airport Road

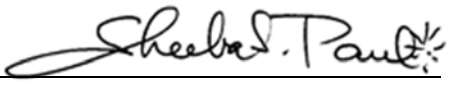
Mississauga, Ontario

Prepared for:

Air Star Holdings Inc.
Attn: Sarwan Singh
7370 Bramalea Road, Suite 17
Mississauga
Ontario L5S 1N6

Prepared by




Sheeba Paul, MEng, PEng

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Project Number: 01601305

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Figure 1: Key Plan

Figure 2: Proposed Site Plan

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Appendix A – Comments from City and HGC Engineering’s Responses

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1 Introduction

HGC Engineering was retained by Air Star Holdings Inc. to conduct a noise feasibility study for a proposed seniors' residential development to be located on the east side of Airport Road at the end of Collett Road, between Victory Crescent and Morning Star Drive, in Mississauga Ontario. The development will include one 6-storey apartment building with 1 level of underground parking. The study is required by the City of Mississauga as part of the planning and approvals process.

This study has been updated to reflect the latest site plan prepared by Chintan Virani Architect Inc. dated August 18, 2021. The study also incorporates the comments from the City dated October 5, 2020, provided in Appendix A along with HGC Engineering's responses.

Traffic noise on Airport Road and air traffic noise from the Lester B. Pearson International Airport were confirmed to be the dominant noise sources. Road traffic data for Airport Road was obtained from the Region of Peel. Road traffic noise levels were predicted at the location of the proposed building facades and in the rooftop outdoor amenity area. These data were used to predict and assess the future sound levels impacting the proposed residences with respect to Ministry of the Environment, Conservation and Parks (MECP) guidelines.

The results of this study indicate that with suitable noise control measures integrated into the design of the building, it is feasible to achieve the indoor MECP guidelines sound levels from road and air traffic. Since the site is located between Noise Exposure Forecast (NEF) 35 and 40 (approximately at NEF 36), central air conditioning is required for the residential building. Upgraded building constructions (windows, doors, walls and ceiling/roof constructions) are also required for the proposed building. Associated acoustical requirements are specified in this report. Warning clauses are recommended to inform future residents of the road and air traffic noise impacts and the neighbouring commercial uses.



2 Site Description and Noise Sources

The proposed seniors' residential development is situated on the east side of Airport Road in Mississauga, Ontario, as shown in Figure 1. A site plan prepared by Chintan Virani Architect Inc. dated August 18, 2021 is provided as Figure 2. The proposed development will consist of a 6-storey apartment building with a commercial unit on the ground floor and one level of underground parking. Appendix B includes the floor plans and building elevations.

HGC Engineering personnel visited the site to observe the acoustic environment near the proposed site and to identify the significant noise sources in the vicinity. The acoustical environment surrounding the site is urban in nature. The subject site is currently vacant. The site is situated on a 124 metre long, 71 metre wide property in a residential and light commercial area. There is an existing acoustic wall approximately 2.2 m in height along the rear lot line for the residences to the north and south of the subject property. Existing residential developments surround the proposed development to the north and south. Victory Park and existing residences are east of the site. To the west of the site and on the west side of Airport Road, there are some residences and an apartment complex, flanked by light commercial uses. Further to the southwest is a railway line, however due to its distance from the site (approximately 440 meters) and the numerous intervening uses, it was not considered as a significant noise source in this study. Refer to Figure 1 for the location of the proposed development in relation to existing structures.

The dominant noise sources that will impact the proposed development are road traffic on Airport Road and air traffic from Lester B. Pearson International Airport. The subject site is located near Pearson International Airport, and lies between the 35 and 40 (approximately at NEF 36) Noise Exposure Forecast/Noise Exposure Projection (NEF/NEP) contour (see Figure 3). Air traffic is expected to have some impact on the site and is also considered in the following analysis. There were no other major sources of significant noise evident within 500 metres of the site.

3 Sound Level Criteria

3.1 Road Traffic Noise

Guidelines for acceptable levels of road noise impacting residential developments are given in the MECP publication NPC-300, “Environmental Noise Guidelines – Stationary and Transportation Sources – Approval and Planning”, Part C release date October 21, 2013 and are listed in Table I below. The values in Table I are energy equivalent (average) sound levels [L_{EQ}] in units of A weighted decibels [dBA].

Table I: Road Traffic Noise Criteria

Area	Daytime L_{EQ} (16 hour) Road	Night-time L_{EQ} (8 hour) Road
Outdoor Living Area	55 dBA	--
Inside Living/Dining Room	45 dBA	45 dBA
Inside Bedroom	45 dBA	40 dBA

The MECP defines daytime hours as the period between 07:00 and 23:00, and nighttime hours between 23:00 and 07:00. The term "Outdoor Living Area" (OLA) is used in reference to an outdoor patio, backyard, terrace, children's playground or other area where passive recreation is expected to occur. A 7.5 m minimum setback from the property line required by the City of Mississauga and is indicated on the site plan.

The MECP guidelines allow the daytime sound levels in OLA to be exceeded by up to 5 dBA, without mitigation, if warning clauses are placed in the purchase and rental agreements to the property. Where OLA sound levels exceed 60 dBA, physical mitigation is recommended to reduce the OLA sound level to below 60 dBA and as close to 55 dBA as technically, economically and administratively feasible. Balconies and elevated terraces (e.g. rooftops) with a depth of less than 4 meters (measured perpendicular to the building façade) are not considered OLAs under MECP guidelines, and accordingly the noise criteria are not applicable there. Larger private terraces require consideration only if they are the only OLA for the occupant; in general, common outdoor amenity terraces associated with high-rise buildings are the only OLA that require consideration.

A central air conditioning system as an alternative means of ventilation to open windows is required for dwellings where nighttime sound levels outside bedroom/living/dining room windows exceed 60 dBA, or where the daytime sound levels outside bedroom/living/dining room windows exceeds 65 dBA. Forced-air ventilation with ducts sized to accommodate the future installation of central air conditioning is required when nighttime noise levels at bedroom/living/dining room windows are in the range of 51 to 60 dBA, or where the daytime sound levels outside bedroom/living/dining room windows are in the range of 56 to 65 dBA.

Building components such as walls, windows and doors must be designed to achieve indoor sound level criteria when the plane of window nighttime sound level is greater than 60 dBA or the daytime sound level is greater than 65 dBA due to road traffic noise.

Warning clauses to notify future residents of possible noise excesses are also required when nighttime sound levels exceed 50 dBA at the plane of the bedroom or living/dining room window and daytime sound levels exceed 55 dBA in the outdoor living area and at the plane of the bedroom or living/dining room window due to road traffic.

3.2 Air Traffic Noise

Indoor sound limits due to air traffic are also defined in the MECP in publication NPC -300. The maximum allowable Noise Exposure Forecast (NEF) limits are summarized in Table II.

Table II: Air Traffic Noise Criterion

Area	Indoor NEF/NEP
Living/Dining Room (indoor)	5
Bedroom (indoor)	0

The living/dining rooms, dens and bedrooms of the proposed dwelling units are the sensitive receptor locations. Typically, washrooms and kitchens are considered noise insensitive areas. There are no outdoor noise criteria for aircraft noise because there is no effective means of mitigation.

The guidelines indicate that warning clauses and mandatory central air conditioning is required for

any dwellings located above NEF/NEP contours of 30. In addition, building components including windows, doors, walls and ceiling/roof must be designed to achieve the indoor sound level criteria.

4 Traffic Noise Predictions

Traffic data for Airport Road was obtained from the Region of Peel in the form of ultimate Annual Average Daily Traffic (AADT) data, and is provided in Appendix C. Commercial percentages were provided for daytime and nighttime separately. An average of the percentages were used in the analysis. A commercial vehicle percentage was split into 1.6% medium trucks and 9.1% heavy trucks. A day night split of 84%/16% was used in the analysis along with a posted speed limit of 50 kph for the roadway in the area of the proposed development. Table III summarizes the traffic volume data used in this study.

Table III: Ultimate Road Traffic Data

Road Name		Cars	Medium Trucks	Heavy Trucks	Total
Airport Road	Daytime	36 456	653	3 715	40 824
	Nighttime	6 944	124	708	7 776
	Total	43 400	778	4 423	48 600

4.1 Road Traffic Noise Predictions

To assess the levels of road traffic noise which will impact the site in the future, predictions were made using STAMSON version 5.04, a computer algorithm developed by the MECP. All STAMSON outputs are included in Appendix D.

Prediction locations were chosen around the residential site to obtain a good representation of the future sound levels at the dwelling units with exposure to the Airport Road. Future daytime sound in the outdoor amenity areas (ground level, lower and upper terraces) to determine whether noise barriers will be necessary. Sound levels were predicted at the plane of the top storey bedroom and/or living/dining room windows during daytime and nighttime hours to investigate ventilation requirements. The results of these predictions are summarized in Table IV. The distance setback of the building indicated on the site plan was used in the analysis, along with an aerial photo to

determine the distance to the major roadway. As per MECP guidelines, the six lane roadway was split into two segments, northbound and southbound. The acoustic requirements may be subject to modifications if the site plan is changed significantly.

Table IV: Future Predicted Traffic Sound Levels, [dBA]

Prediction Location	Description	Daytime – at Façade LEQ(16)	Nighttime - at Façade LEQ(8)
[A]	West Façade	73	68
[B]	North/South Façade	67	63
[C]	East Façade	<55	<50
[D]	Lower Terrace at East, Level 6.6 m*	<55	--
[E]	Lower Terrace at West, Level 6.6 m*	62	--
[F]	Upper Terrace at West, Level 9.6 m*	59	--
[G]	Lower Terrace at East, Level 6.6 m*	55	--
[H]	Ground Floor Outdoor Amenity Area at East	<55	--

Note: *Assuming 1.07 m high parapet wall

4.2 Air Traffic

The 2005 Composite Noise Contour Map for the Lester B. Pearson International Airport was obtained. This Map indicated that the proposed site is located between the 35 and 40 NEF/NEP contour, approximately at NEF 36.

The NEF contour map was used to determine the Acoustical Insulation Factors (AIF) required for the building components for the proposed building. The MECP indoor noise criteria for aircraft traffic noise was used as a guideline.

5 Discussion and Recommendations

The predictions indicate that traffic sound levels exceed MECP plane-of-window criteria at all locations. The following recommendations are provided.

5.1 Outdoor Living Areas

The dwelling units in the retirement building have balconies that are less than 4 m in depth. These balconies are not considered to be outdoor living areas under MECP guidelines, and therefore are exempt from traffic noise assessment.

There are multiple outdoor amenity spaces (four lower terraces, four upper terraces on the north and south sides of the building and a ground level outdoor amenity located to the east well shielded by the building itself. The majority of terraces and outdoor amenity areas have sound levels that are 60 dBA or less with a minimum 1.07 m high solid parapet wall, except the two lower terraces at the northwest and southwest of the buildings.

As required by the municipality in their comments, a Table of Barrier heights is provided below to show barrier heights required to achieve sound levels ranging from 55 dBA to 60 dBA.

Table V: Required Barrier Heights to Achieve Various Sound Levels

	Prediction Location	Sound Level in OLA [dBA]					
		55	56	57	58	59	60
Barrier Height [m]	[D]	--	--	--	--	--	--
	[E]	3.1	2.7	2.3	2.0	1.7	1.5
	[F]	2.4	2.0	1.5	1.2	1.07	--
	[G]	--	--	--	--	--	--
	[H]	--	--	--	--	--	--

Larger private terraces require consideration only if they are the only OLA for the occupant; in general, common outdoor amenity terraces associated with high-rise buildings are the only OLA that require consideration. Since there is a ground level outdoor amenity area well shielded from road traffic by the building itself, the municipality may not require noise mitigation for the terraces at the northwest and southwest of the building.

An acoustic barrier height of 1.5 m is recommended for the northwest and southwest lower terraces, designated by prediction location [E], to reduce the sound level to 60 dBA, which is within the 5 dBA allowable exceedance range over the 55 dBA guideline level as per MECP guidelines.

All noise barriers must return back to the dwelling units so that the amenity areas are entirely shielded from the roadway. The wall component of the barrier should be of a solid construction with a surface density of no less than 20 kg/m^2 . The walls may be constructed from a variety of materials such as wood, glass, pre-cast concrete or other concrete/wood composite systems provided that it is free of gaps or cracks within or below its extent.

5.2 Indoor Living Areas and Ventilation Requirements

Inclusion of Central Air Conditioning

The predicted sound levels at the plane of the window of the proposed retirement building is greater than 65 during the daytime and greater than 60 during the nighttime. Additionally, since the building is located between the 35 to 40 NEF contours for Lester B. Pearson International Airport, central air conditioning is required for all the residential units or the entire building so that windows may remain closed. The guidelines also recommend warning clauses for the building. Window or through-the-wall air conditioning units, similar to motel-style units, are not recommended for any residential units because of the noise they produce and because the units penetrate through the exterior wall which degrades the overall noise insulating properties of the envelope, unless they are housed in their own closet with an access door for maintenance. The location, installation and sound ratings of the outdoor air conditioning devices should minimize noise impacts and comply with criteria of MECP publication NPC-300, as applicable.

5.3 Minimum Building Facade Constructions

Since the building is located between the 35 and 40 NEF/NEP contours for the Lester B. Pearson International Airport, air traffic noise must be considered in the building designs over the site. The site is located at approximately NEF 36.

Due to the high sound levels along the Airport Road façade combined with air traffic sound levels, MECP guidelines recommend that building components including windows, walls, ceilings and



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roofs, where applicable, must be designed so that the indoor sound levels comply with MECP noise criteria. The acoustical performance of the building components (windows, doors, and walls) must also be specified.

The acoustic insulation factors (AIF) required for road traffic and air traffic must be combined to obtain an overall AIF for the building. The required building components are selected based on the overall AIF value.

To do so, calculations were performed to determine the acoustical insulation factors to maintain indoor sound levels within MECP guidelines. The calculation methods were developed by the National Research Council (NRC). They are based on the predicted future sound levels at the building facades, and the area ratios of the facade components (walls, windows, ceiling/roof and doors) and the floor area of the adjacent room.

5.3.1 Exterior Wall Constructions

It is recommended that all exterior walls of the building be of a brick construction, which will provide sufficient acoustical insulation for the interior spaces. As noted on the elevation drawings, the exterior façade of the building is proposed to be a combination of brick or stone veneer.

5.3.2 Exterior Doors

There are glazed exterior doors (sliding or swing) for entry onto the balconies from living/dining rooms. All exterior doors should be composed of steel with a total thickness of at least 45 mm with foam or glass fibre insulation provided with integral frames and magnetic weather-stripping. The sliding patio doors have been considered as contributing to the total window area.

5.3.3 Ceiling/Roof System

As indicated on the elevation drawings, there is a metal deck with a built up roof. This construction would provide adequate sound insulation for the dwelling units below.

5.3.4 Acoustical Requirements for Glazing

Floor plans and building elevations prepared by Chintan Virani Architect Inc. dated January 22, 2021 were reviewed to determine acoustical requirements for glazing. In general, the living rooms have

window to floor area ratios of 17%. The bedrooms have window to floor area ratios of 14%.

Based upon these ratios, it was determined that the glazing exposed to Airport Road must achieve a sound transmission class (STC) rating of at least 37 for bedrooms and STC of at least 34 for living/dining rooms in order to achieve the target indoor sound level criteria due to road and air traffic. For the dwellings units at the east side facing away from road traffic noise, glazing must achieve a sound transmission class (STC) rating of at least 36 for bedrooms and STC of at least 31 for living/dining rooms in order to achieve the target indoor sound level criteria due to road and air traffic. Awning windows, and swing or sliding doors to balconies should have tight seals sufficient to achieve similar acoustical performance ratings.

Sample window assemblies which may achieve the STC requirements are summarized in Table VI below. Note that acoustic performance varies with manufacturer's construction details, and these are only guidelines to provide some indication of the type of glazing likely to be required. Acoustical test data for the selected assemblies should be requested from the supplier, to ensure that the stated acoustic performance levels will be achieved by their assemblies.

Table VI: Glazing Constructions Satisfying STC Requirements

STC Requirement	Glazing Configuration (STC)
28 – 29	Any double glazed unit
30 – 31	3(13)3
32 – 33	4(10)4
34	4(19)4
35 – 36	6(10)4, 5(16)4
37	6(13)6, 6(20)5, 5(25)6
38	6(25)5, 6L(13)6

In Table VI, the numbers outside the parentheses indicate minimum pane thicknesses in millimetres and the number in parentheses indicates the minimum inter-pane gap in millimetres. “L” indicates a laminated pane. OBC indicates any glazing construction meeting the minimum requirements of the Ontario Building Code.

If the exterior wall construction, floor plans and window areas are changed significantly, an acoustical consultant should provide revised recommendations for the glazing constructions.

5.4 Warning Clauses

The MECP guidelines recommend that appropriate warning clauses be used in the Development Agreements and in purchase, sale and lease agreements (typically by reference to the Development Agreements), to inform future owners and occupants about noise concerns from transportation sources in the area. The following clauses are recommended.

- (a) Purchasers/tenants are advised that despite the inclusion of noise control features in the development and within the building units, sound levels due to increasing road and air traffic may occasionally interfere with some activities of the dwelling unit occupants as the sound levels exceed the Municipality's and the Ministry of the Environment, Conservation and Parks noise criteria.
- (b) 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 Municipality's and the Ministry of the Environment's noise criteria.
- (c) Purchasers/tenants are advised that due to the proximity of the adjacent commercial uses, noise from the uses may at times be audible.

These sample clauses are provided by the MECP as examples and can be modified by the Municipality as required.

6 Impact of the Development on the Environment

Sound levels from stationary (non-traffic) sources of noise such as rooftop air-conditioners, cooling towers, exhaust fans, etc. should not exceed the minimum one-hour L_{EQ} ambient (background) sound level from road traffic, at any potentially impacted residential point of reception (on or off site). Typical minimum ambient sound levels in the area are expected to be up to 50-55 dBA during the day and about 5 dB less at night, at nearby residential receptors. Thus, any electro-mechanical equipment associated with this development (e.g. cooling towers, fresh-air handling equipment, etc.) should be designed such that they do not result in noise impact beyond these ranges. It is noted that

each individual suite includes its own HVAC unit, housed in its own closet, which are to be vented to the outside. There are no rooftop units expected on the building. At the time of this study, the design of the proposed building was in its initial stages, and the mechanical systems, including ventilation (intake and exhaust vents) for the parking garage, had not yet been developed. Mechanical equipment noise levels will be verified during the detailed design phase of the project and appropriate mitigation will be provided, as necessary.

7 Impact of the Development on Itself

Section 5.8.1.1 of the Ontario Building Code (OBC), released on January 1, 2020, specifies the minimum required sound insulation characteristics for demising partitions of dwelling units, in terms of Sound Transmission Class (STC) or Apparent Sound Transmission Class (ASTC) values. In order to maintain adequate acoustical privacy between separate suites in a multi-tenant building, inter-suite walls must meet or exceed STC-50 or ASTC-47. Suite separation from a refuse chute, or elevator shaft, must meet or exceed STC-55. In addition, it is recommended that the floor/ceiling constructions separating suites from any amenity, commercial or other mechanical spaces also meet or exceed STC-55. Tables 1 and 2 in Section SB-3 of the Supplementary Guideline to the OBC provide a comprehensive list of constructions that will meet the above requirements.

Tarion's Builder Bulletin B19R requires the internal design of condominium projects to integrate suitable acoustic features to insulate the suites from noise from each other and amenities in accordance with the OBC, and limit the potential intrusions of mechanical and electrical services in the development on its residents. If B19R certification is needed, an acoustical consultant is required to review the mechanical and electrical drawings and details of demising constructions and mechanical/electrical equipment, when available, to help ensure that the noise impact of the development on itself is maintained within acceptable levels.

8 Summary of Recommendations

The following list and table summarizes the recommendations made in this report.

1. Central air conditioning systems are recommended for all residential units or the entire building.
2. Certain minimum building and glazing constructions are recommended, as indicated in Section

5.3.

3. Warning clauses should be used to inform future residents of the road traffic and air traffic noise issues.

Table VII: Summary of Noise Control Requirements and Noise Warning Clauses

Units	Acoustic Barrier	Ventilation Requirements *	Type of Warning Clause	Building Façade Constructions**
Seniors Building	✓+	Central A/C	a, b, c	West façade: LR/DR: STC - 34 BR: STC - 37 East façade: LR/DR: STC - 31 BR: STC - 36

Notes:

+ Minimum 1.07 m high parapet wall or acoustic barriers as noted in Table V.

* The location, installation and sound rating of the air conditioning condensers must be compliant with MECP Guideline NPC-216.

OBC – meeting the minimum requirements of the Ontario Building Code.

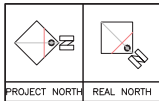
6.1 Implementation

To ensure that the noise control recommendations outlined above are fully implemented, it is recommended that:

- 1) Prior to the issuance of occupancy permits for this development, the Municipality's building inspector or a Professional Engineer qualified to perform acoustical engineer services in the Province of Ontario should certify that the noise control measures have been properly incorporated, installed and constructed.



Figure 1 - Key Plan



PROJECT NORTH REAL NORTH

	3.5M 9.0M TYPICAL LOADING SPACE 3.5MX9.0M
	2.6M 5.2M REGULAR PARKING 2.6MX5.2M
	3.4M 1.5M 2.4M 5.2M TYPE A TYPE B BARRIER FREE: TYPE A (3.4X5.2) & TYPE B (2.4X5.2) WITH 1.5 ACCESS AISLE

LEGEND	
	ACOUSTIC FENCE
	DECORATIVE FENCE
	PROPOSED WALL
	SIDE WALK
	PAINTED RUMBLE STRIP
	BUILDING ENTRANCE
	STOP SIGN
TOTAL CURB LENGTH = 0'-0" L.F.	

LEGEND	
	ASPHALT PAVEMENT AREA
	CA - CONCRETE AREA (HARD LANDSCAPE) CONCRETE PAVEMENT AREA
	GRAVEL AREA
	DEMOLITION WORK
	SOFT LANDSCAPE AREA
	FIRE ROUTE

CHINTAN VIRANI

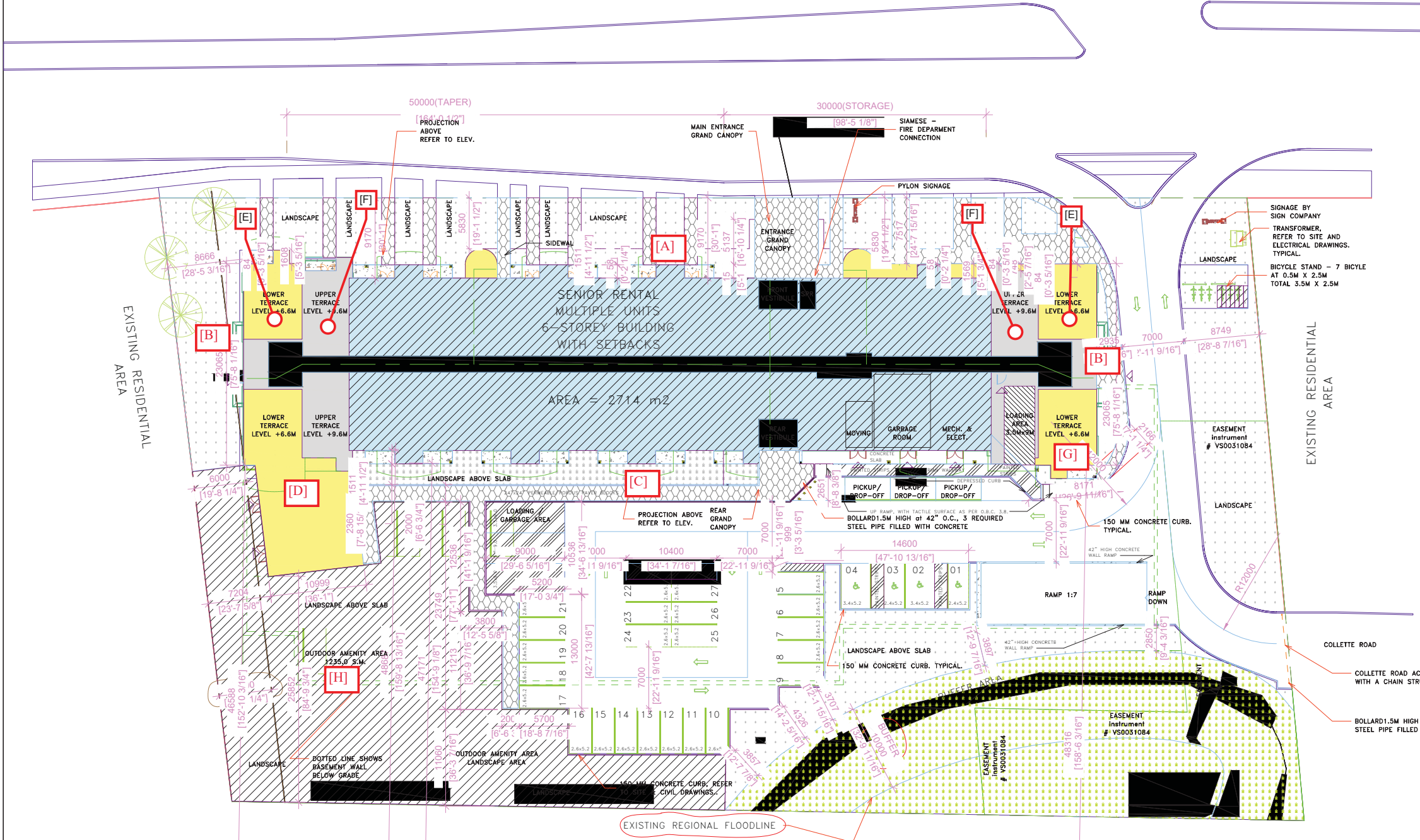
ARCHITECT INC.

CHINTAN J. VIRANI

B. ARCH. | OAA, MRAIC, | AIA | COAI

9898 HOLLY CRESCENT,
WINDSOR, ONTARIO,
CANADA N8R 1Z3

PHONE: (519)979-9017
CELL: (519) 567-1800
FAX: (519) 979-4909
EMAIL:chintan@chintan.ca
WWW.CHINTAN.CA



BUILT - UP AREA STATISTICS	AREA - sq.mt.	EXISTING AREA - sq.mt.	DEMOLISH AREA - sq.mt.	TOTAL EXISTING TO REMAIN AREA - sq.ft.	PROPOSED AREA - sq.mt.	TOTAL AREA - sq.mt.	TOTAL LOT COVERAGE AREA - sq.mt.
SITE AREA	8,656.00	-	-	-	-	-	-
BASEMENT BELOW FIRST FLOOR					1,184.28		
BASEMENT PARKING BELOW GRADE					3,323.13		
BASEMENT AREA - TOTAL					4,507.41		
FIRST FLOOR AREA					2,171.00		
SECOND FLOOR AREA					2,085.00		
THIRD FLOOR AREA					1,840.00		
FOURTH FLOOR AREA					1,498.18		
FIFTH FLOOR AREA					1,498.18		
SIXTH FLOOR AREA					1,498.18		
TOTAL BUILDING AREA					15,457.09		
TOTAL LOT COVERAGE					2,171.00	2,171.00	
ASPHALT PAVEMENT AREA					1,965.10	1,965.10	
LANDSCAPE AREA STATISTICS							
SOFT LANDSCAPE AREA					3,757.15		
HARD LANDSCAPE CONCRETE AREA					0,762.75		
POROUS PAVEMENT AREA					0.00		
TOTAL LANDSCAPE AREA					4,519.90	4,519.90	
CONCRETE CURB = 377.00 L.M.							

VICTORIA PARK

Figure 2 - Proposed Site Plan

STATISTICS	
1. GROSS FLOOR AREA (GFA)	15,457.09 SQ.M
2. FLOOR SPACE INDEX (FSI)	1.78
3. SITE AREA	8,656.00 SQ.M
4. SITE (BUILDING) COVERAGE	2,171.00 SQ.M
5. BUILDING HEIGHT	18.60 M
6. SETBACKS :	
A. FRONT-YARD SETBACK	5.815 M / 9.169 M
B. REAR-YARD SETBACK	39.136 M
C. SIDE-YARD SETBACKS	6.00 M / 17.814 M
7. TOTAL PARKING	110 No. (103+07)
8. BICYCLE PARKING	47 No.
9. LOADING SPACES	03 No.
10. LANDSCAPE AREA (PERCENTAGE)	52.22%
11. INDOOR AND OUTDOOR AMENITY AREA (M2 AND %)	&

SINGLE BEDROOM UNITS = 1.18 SPACES FOR RESIDENTS -TOTAL UNITS = 118 = 16 + 26 + 22 + 18 + 18 + 18
TWO BED ROOM UNITS = 1.36 SPACES FOR RESIDENTS -TOTAL UNITS = 10
TOTAL UNITS = 128 UNITS
PERSONAL SERVICE SHOPS/ RETAIL = 5.4 SPACES PER 100M² GFA, COMMERCIAL AREA = 228.70 S.M.
PARKING SPACES REQUIRED FOR RESIDENTIAL- 1 BED ROOM UNITS = 118 X 1.18 = 139 SPACES - 1 BED UNIT
2 BED ROOM UNITS = 10 X 1.36 = 14 SPACES - 2 BED UNIT
VISITOR PARKING SPACES = 0.20 PER UNIT = 128 X .20 = 26 SPACES - FOR VISITORS
PARKING SPACES REQUIRED FOR SHOPS/RETAIL = 228.70 M² + 100 = 2,287 X 5.4 = 12,34 = 13 SPACES FOR COMMERCIAL AREA = 192 SPACES
TOTAL REQUIRED SPACES = 110 No. (103+07)
REQUIRED REGULAR PARKING = 188 SPACES
REQUIRED HANDICAPPED PARKING = 7 SPACES
REQUIRED TOTAL PARKING = 192 SPACES
PROVIDED HANDICAPPED PARKING = 07 SPACES (BASEMENT 3 + 4 ON GRADE)
PROVIDED REGULAR PARKING = 103 SPACES (BASEMENT 86 + 17 ON GRADE)
PROVIDED TOTAL PARKING = 110 SPACES
- LOADING SPACES REQUIRED = 1 - LOADING SPACES PROVIDED = 3
PARKING DEFICIENCY = 192-110 = 82 SPACES - VARIANCE REQUIRED OR NOT, TO DEPEND ON NEW ZONING BY-LAWS;
REFER TO NEW ZONING BY-LAWS PREPARED BY WESTON CONSULTING;

UNITS:	
FIRST FLOOR	= 16 UNITS - ALL 1 BED ROOM
SECOND FLOOR	= 28 UNITS - 2 UNITS OF 2 BED ROOM + 26 UNITS OF 1 BED ROOM
THIRD FLOOR	= 24 UNITS - 2 UNITS OF 2 BED ROOM + 22 UNITS OF 1 BED ROOM
FOURTH FLOOR	= 20 UNITS - 2 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM
FIFTH FLOOR	= 20 UNITS - 2 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM
SIXTH FLOOR	= 20 UNITS - 2 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM
TOTAL	= 128 UNITS - 8 UNITS OF 2 BED ROOM + 120 UNITS OF 1 BED ROOM
BARRIER FREE UNITS REQUIRED AS PER O.B.C. 3.8.2.1.(5)	
15% OF 128 UNITS = 19 UNITS -	1 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM
	(1 ON 2ND FLOOR) + (3 UNITS ON EACH FLOOR)

PROPOSED SITE PLAN -
SCALE: 1:250

PROJECT

PROPOSED SENIOR RENTAL BUILDING

7211 & 7233 AIRPORT ROAD
PARTS # 1, 2 & 3
MISSISSAUGA, ONTARIO

DRAWING TITLE

- PROPOSED SITE PLAN

NOTE:
- DO NOT SCALE DRAWINGS.
- ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE JOB SITE.
- ANY AND ALL DISCREPANCIES TO BE REPORTED TO THE ARCHITECT.
- ALL DRAWINGS REMAIN THE PROPERTY OF THE ARCHITECT.

A
BC

A. DETAIL NO.
B. LOCATION SHEET
C. DETAILED ON

PROJECT NO.1625

DATE
JUNE 2016

DRAWN BY
K.V.

CHECKED BY
K.V.

DRAWING NO.
SP-100

24"x36"

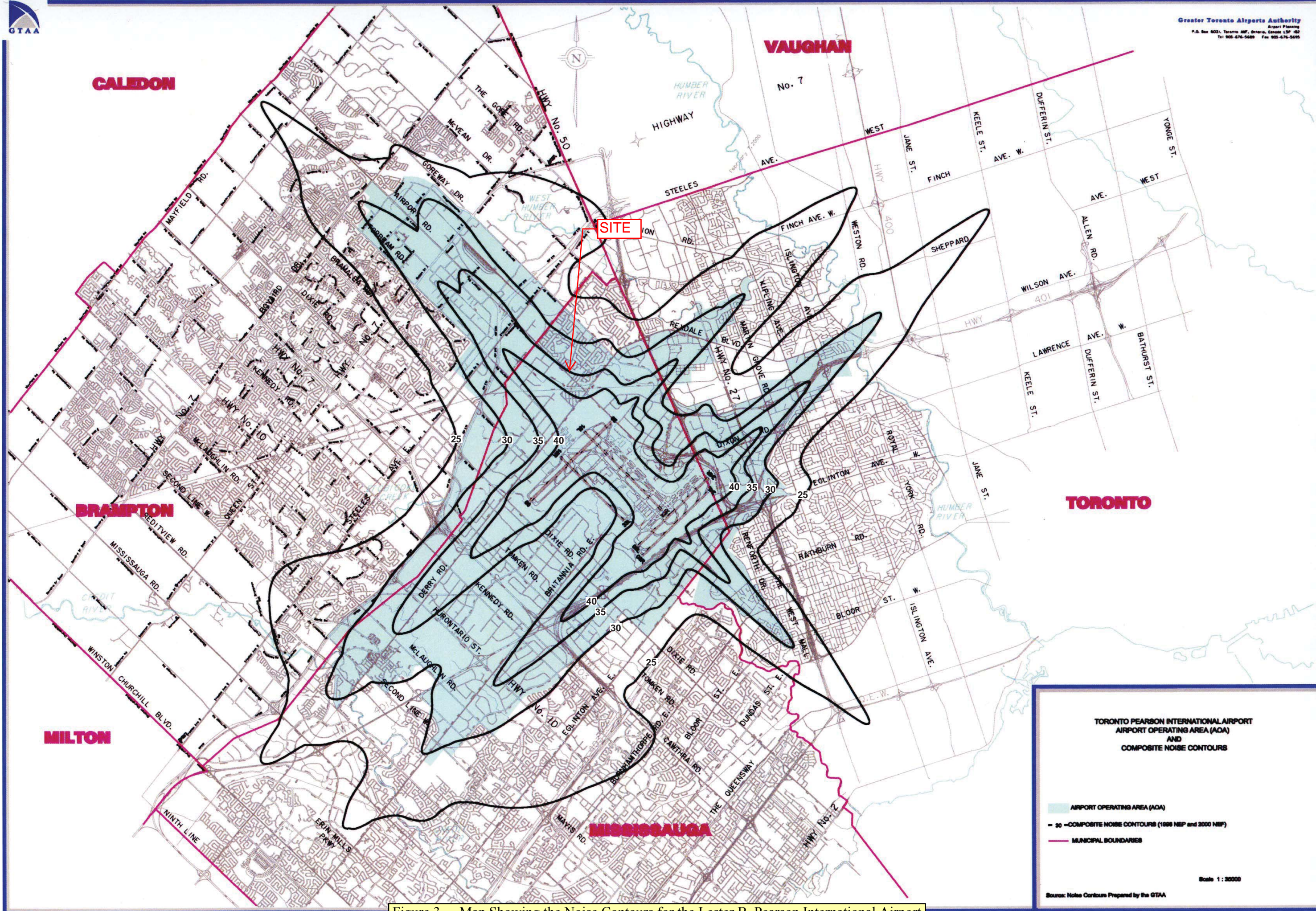


Figure 3 - Map Showing the Noise Contours for the Lester B. Pearson International Airport

APPENDIX A

Comments from City and HGC Engineering's Responses

HGC Engineering Responses to Comments – provided in RED

Acoustical Studies - As part of the processing of the above noted site plan application a noise concern was identified by the Development and Design Division due to noise levels from Airport Road and air traffic noise from Lester B. Pearson Airport. A Noise Report was prepared by HGC Engineering dated December 15, 2017. We require that, as a condition of site plan approval, an Acoustical Consultant certify that all site design and acoustical screening requirements are in conformity with the recommendations of this Report. The warning clauses recommended in report section '5.4 Warning Clauses' must be added to the Development Agreement.

Created : 2018-05-16 04:39:46 Last Modified : 2020-03-10 10:44:29

Noted.

[REVISE NOISE STUDY]

A letter from HGC Engineering dated January 28, 2020 was received, however none of the original Noise Study (dated Dec 15, 2017) comments were addressed. Please provide an updated Noise Study with the next circulation. Further comments may be pending upon review of the updated report.

HGC Engineering did not received the comments referenced above.

The owner is to submit an updated Noise Study which is to include the following: (i) Show all STAMSON outputs in the Appendix.

Noted.

(ii) Assess the noise levels for all the amenity areas as per the latest site design. Include a table showing the unmitigated noise levels for all OLAs.

Unmitigated sound levels in all of the amenity spaces are provided in Table IV.

(iii) Include a table showing mitigated sounds levels from 55 to 60dBA versus barrier heights for road traffic noise.

Mitigated sound levels in all of the amenity spaces from 55 to 60 dBA are provided in Table V.

(iv) As this development is located within the NEF/NEP 36 aircraft noise contour, the owner will be required to enter into an agreement with the City and GTAA. See comment #8 for further details.

Noted.

(v) Include a plan in the Appendix showing the location of all noise assessment points.

Figure 2 identifies the noise assessment points.

(vi) The report states under section 2 that apart from road and air traffic, there are no other major sources of significant noise evident within 500 metres of the site. However, a warning clause is recommended for commercial facilities under Section 5.4. Please clarify.

It is our normal practice to include a noise warning clause for nearby commercial uses since they may at times be audible during periods of low traffic noise and not necessarily above the MECP noise limits.

(vii) Confirm that the Ultimate Traffic data for Airport Road is still valid, given that the data provided in the Appendix is from 2014.

The latest ultimate traffic data has been updated from the Region of Peel. The ultimate data is essentially the same, but the commercial percentages and day/night split has changed.

(viii) The report is to include a description of impacts of noise generated by a proposed development on the surrounding environment, as well as the impact of noise from the proposed development on itself.

Noted. This has been included in the latest updated noise report.

Created : 2018-06-18 03:09:23 Last Modified : 2020-04-22 01:20:03

Noise Impacts (continued):

Mississauga Official Plan:

City of Mississauga has recently introduced revised Official Plan Noise policies (including for airports) that are intended, in part, to promote revitalization opportunities in the Malton neighbourhood. As these policies differ from the existing Aircraft Operating Area policies in the Region of Peel Official Plan, it is our understanding that the proposed residential development at 7211 & 7233 Airport Road would require an Official Plan Amendment (OPA) with Region of Peel. Until such time as an OPA is incorporated by Region of Peel, the GTAA will withhold further comment as it pertains to noise sensitive land uses in the Airport Operating Area.

However, if authorization of the Official Plan Amendment and Rezoning Applications are granted by City of Mississauga the GTAA requests, as conditions of approval, the following;

? completion of a noise impact study from a qualified noise engineer certifying that the design drawings submitted for the proposed residential units are in compliance with all applicable Ministry of the Environment (MOE) noise guidelines (Publication NPC-300). In addition, the GTAA requests an acoustical certification from a qualified noise engineer that the townhouses are in compliance with all applicable MOE noise guidelines and the noise study referred to above. Should the City of Mississauga proceed with approval to permit residential development on the subject property, it should only do so once it has been established that the conditions stated above will be met (as the result of a detailed noise analysis being undertaken and acoustic design features being incorporated into the building components).

Noted.

? establishment of a tripartite Aircraft Noise Warning Agreement (including the developer, the City of Mississauga and the GTAA) for the subject property. This is due to the proximity of the proposed development to the Airport and its location within the 35-40 NEF/NEP and the Toronto Pearson Airport

Operating Area (AOA). The Aircraft Noise Warning Agreement would stipulate that as a condition of subdivision approval, the Developer must enter into a Development Agreement, registerable on title, which contains among other things, construction conditions and warning clauses for development on the site.

Noted.

GTAA, 416-776-3635, Greg.Straatsma@GTAA.com

Created: 2018-06-19 12:10:57 Last Modified :



ACOUSTICS



NOISE



VIBRATION

www.hgcengineering.com

APPENDIX B
Supporting Drawings

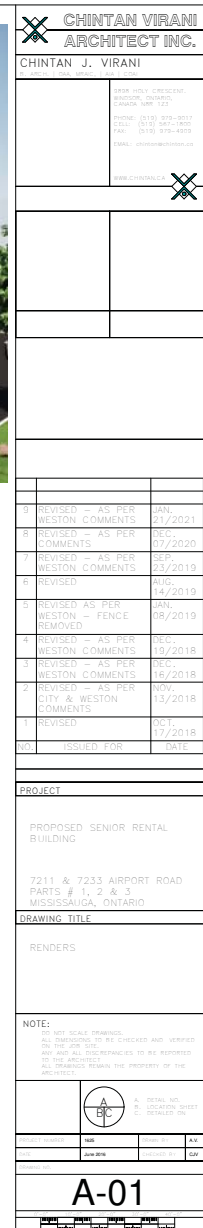
PROPOSED SENIOR RENTAL BUILDING

7211 & 7233 AIRPORT ROAD,
PARTS # 1, 2 & 3,
MISSISSAUGA, ONTARIO

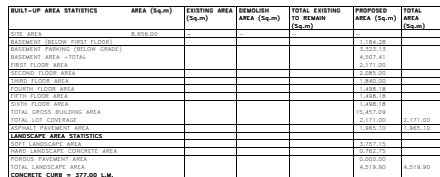
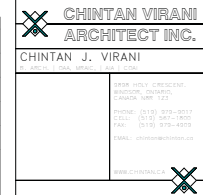


CHINTAN VIRANI - OAA MEMBERSHIP SEAL # 6382		CHINTAN VIRANI - OAA CERTIFICATE OF PRACTICE # 4931			
ITEM		ONTARIO BUILDING CODE DATA MATRIX PARTS 3 & 9		ONTARIO BUILDING CODE REFERENCE	
1.	PROJECT DESCRIPTION	<input checked="" type="checkbox"/> NEW	<input checked="" type="checkbox"/> PART 3	<input type="checkbox"/> PART 9	
		<input type="checkbox"/> CHANGE OF USE	<input type="checkbox"/> ADDITION	<input type="checkbox"/> ALTERATION	
2.	MAJOR OCCUPANCY(IES)	GROUP - C, RESIDENTIAL		3.1.2.1(1)	3.10.2
3.	BUILDING AREA (sq.m.)			3.4.1.2(1)	3.4.1.2(1)
	FIRST FLOOR AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 2,171.00 sq.m.	3.4.1.2(1)	3.4.1.2(1)
	SECOND FLOOR AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 2,085.00 sq.m.		
	THIRD FLOOR AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 1,840.00 sq.m.		
	FOURTH FLOOR AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 1,495.18 sq.m.		
	FIFTH FLOOR AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 1,495.18 sq.m.		
	SIXTH FLOOR AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 1,495.18 sq.m.		
	BASEMENT FLOOR AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 4,886.55 sq.m.		
	TOTAL AREA (sq.m.)	EXISTING = 0.00 sq.m.	NEW = 15,457.92 sq.m.		
4.	LAND AREA	EXISTING = 0.00 sq.m.	NEW = 2,571.00 sq.m.	3.4.1.2(1)	3.4.1.2(1)
5.	NUMBER OF STOREYS	BASEMENT = 1	FLOOR = 6	3.2.2.1(1)	3.2.2.1(1)
6.	HEIGHT OF BUILDING (m)	NOT A HIGH BUILDING PER 3.2.2.1(1)(a) LESS THAN 18M TO TOP FLOOR		3.2.2.1(1)	3.2.2.1(1)
7.	NUMBER OF STREETS / FIRE FIGHTER ACCESS ROUTES	1 - 1 STREET		3.2.2.1(1)	3.2.2.1(1)
8.	BUILDING CLASSIFICATION	3.2.2.1(1) GROUP C, UP TO 6 STOREYS, SPRINKLERED, NONCOMBUSTIBLE CONSTRUCTION		3.2.2.1(1)	3.2.2.1(1)
9.	SPRINKLER SYSTEM (EXISTING)	<input checked="" type="checkbox"/> EXISTING BUILDING	<input type="checkbox"/> NEW BUILDING	3.2.2.1(1)	3.2.2.1(1)
		<input type="checkbox"/> SELECTED COMPARTMENT	<input type="checkbox"/> SELECTED FLOOR AREA	3.2.2.1(1)	3.2.2.1(1)
		<input type="checkbox"/> BASEMENT ONLY	<input type="checkbox"/> IN USE OF ROOF RATING	3.2.2.1(1)	3.2.2.1(1)
		<input type="checkbox"/> NOT REQUIRED	<input type="checkbox"/> NOT REQUIRED	3.2.2.1(1)	3.2.2.1(1)
10.	STANDPIPE REQUIRED	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	3.2.2.1(1)	3.2.2.1(1)
11.	FIRE ALARM REQUIRED	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	3.2.2.1(1)	3.2.2.1(1)
12.	WATER SERVICE / SUPPLY IS ADEQUATE	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	3.2.2.1(1)	3.2.2.1(1)
13.	HIGH BUILDING	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	3.2.2.1(1)	3.2.2.1(1)
14.	PERMITTED CONSTRUCTION	<input type="checkbox"/> COMBUSTIBLE	<input checked="" type="checkbox"/> NON-COMBUSTIBLE	3.2.2.1(1)	3.2.2.1(1)
	ACTUAL CONSTRUCTION	<input type="checkbox"/> COMBUSTIBLE	<input checked="" type="checkbox"/> NON-COMBUSTIBLE	3.2.2.1(1)	3.2.2.1(1)
15.	MEZZANINE(S) AREA (sq.m.)	NOT APPLICABLE		3.2.2.1(1)	3.2.2.1(1)
16.	OCCUPANT LOAD BASED ON	DESIGN OF BUILDING OR UNITS - OR RES. X 2.0M ² = 018 PERSONS		3.1.17(1)	3.1.17(1)
		AREA DESIGNED TOTAL MAX. OCCUPANCY = 115 PERSONS		3.1.17(1)	3.1.17(1)
OCCUPANT LOAD DESIGNED PER 3.1.17(1)(1) - FOR WHICH THE AREA IS DESIGNED - 3.1.17(1)(2) - IF THE FLOOR AREA IS DESIGNED FOR AN OCCUPANT LOAD OTHER THAN THAT DETERMINED FROM TABLE 3.1.17(1)(2), A PERMANENT SIGN INDICATING THAT OCCUPANT LOAD SHALL BE POSTED IN A CONSPICUOUS LOCATION.					
17.	BARRIER FREE DESIGN	<input checked="" type="checkbox"/> YES	<input type="checkbox"/> NO	3.8 - 3.8.1.2(1) ENTRANCE	3.8 - 3.8.2.2(1)
18.	SEASONING SUBSTANCES	<input type="checkbox"/> YES	<input checked="" type="checkbox"/> NO	3.8.1(1)	3.8.1(1)
19.	ISOLATED FIRE RESISTANCE RATING (IFR)	HORIZONTAL ASSEMBLIES		3.8.2.2(1)	3.8.2.2(1)
		FLOORS - 2 HOURS		3.8.2.2(1)	3.8.2.2(1)
		ROOF - 1 HOURS		3.8.2.2(1)	3.8.2.2(1)
		MEZZANINE - NOT APPLICABLE		3.8.2.2(1)	3.8.2.2(1)
		FIRE RESISTANCE RATING OF SUPPORTING MEMBERS		3.8.2.2(1)	3.8.2.2(1)
		FLOORS - 2 HOURS		3.8.2.2(1)	3.8.2.2(1)
		ROOF - 2 HOURS		3.8.2.2(1)	3.8.2.2(1)
		MEZZANINE - NOT APPLICABLE		3.8.2.2(1)	3.8.2.2(1)

CHINTAN VIRANI ARCHITECT INC.	
CHINTAN J. VIRANI	
FOR ANY COMMENTS, CONTACT: CHINTAN J. VIRANI, CHINTAN VIRANI ARCHITECT INC. PHONE: (905) 879-8010 FAX: (905) 879-8010 EMAIL: chintan@chintanvirani.ca	
DATE: 10/10/2019	
PROJECT: 7211 & 7233 AIRPORT ROAD, PARTS # 1, 2 & 3, MISSISSAUGA, ONTARIO	
DRAWING TITLE: TITLE SHEET	
NOTE: ALL DIMENSIONS SHOWN ARE TO FACE UNLESS OTHERWISE NOTED. ALL DIMENSIONS TO BE CHECKED AND VERIFIED BY THE ARCHITECT. THE ARCHITECT IS NOT RESPONSIBLE FOR THE ACCURACY OF THE INFORMATION PROVIDED BY THE CLIENT.	
A-00	



[illegible]



UNITS:


FIRST FLOOR	= 16 UNITS - ALL 1 BED ROOM
SECOND FLOOR	= 28 UNITS = 2 UNITS OF 2 BED ROOM + 26 UNITS OF 1 BED ROOM
THIRD FLOOR	= 28 UNITS = 2 UNITS OF 2 BED ROOM + 26 UNITS OF 1 BED ROOM
FOURTH FLOOR	= 20 UNITS = 2 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM
FIFTH FLOOR	= 20 UNITS = 2 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM
SIXTH FLOOR	= 20 UNITS = 2 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM
TOTAL	= 128 UNITS = 8 UNITS OF 2 BED ROOM + 120 UNITS OF 1 BED ROOM

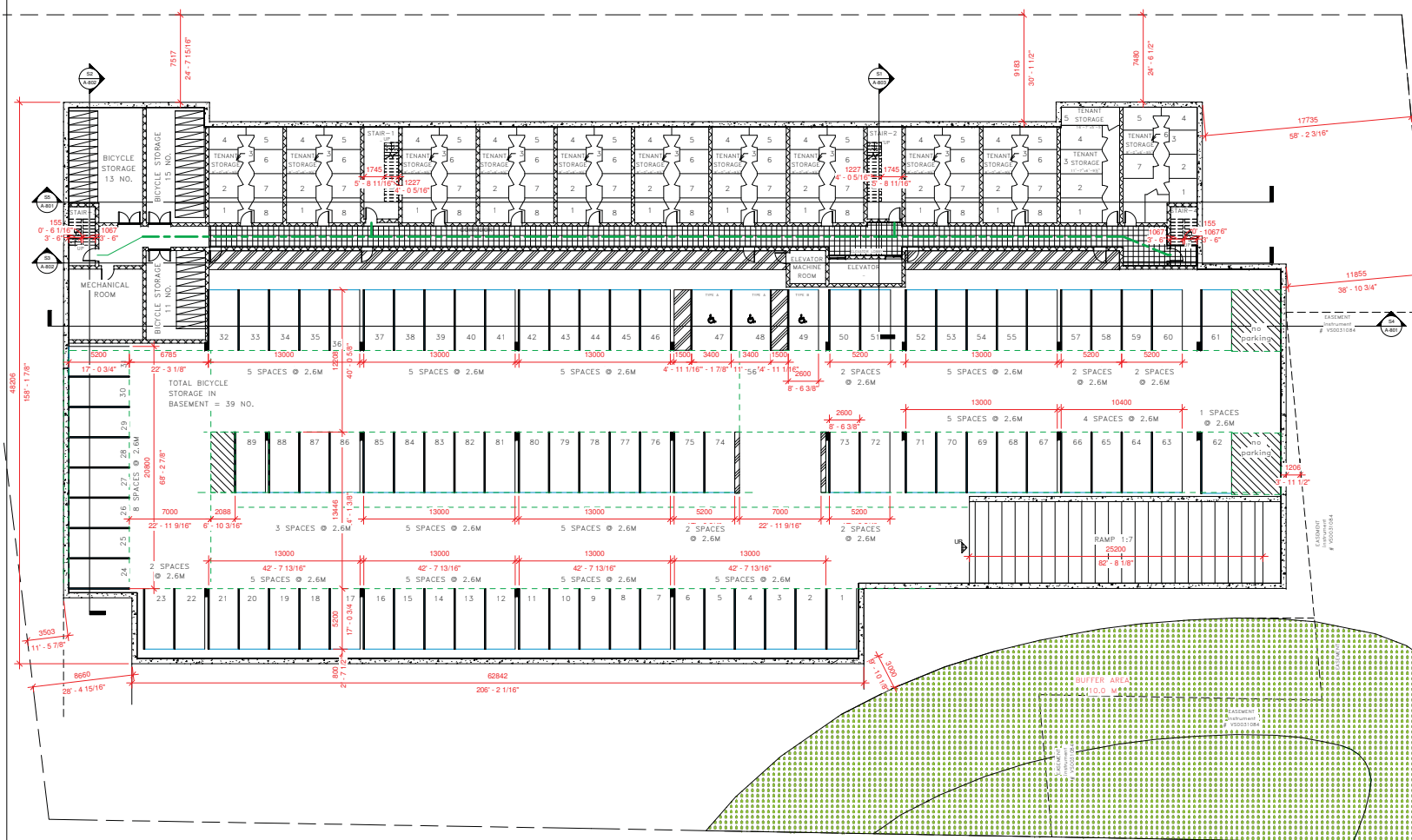
BARRIER FREE UNITS REQUIRED AS PER D.C. 2.8.2.1(5)

15% OF 128 UNITS = 19 UNITS

15 UNITS OF 2 BED ROOM + 18 UNITS OF 1 BED ROOM = (1 ON 2ND FLOOR) + (5 UNITS ON EACH FLOOR

1 SITE PLAN 1 : 250 A-100

NOTE:			
DO NOT SCALE DRAWING.			
ALL DIMENSIONS TO BE CHECKED AND VERIFIED ON THE JOB SITE.			
ANY AND ALL DISCREPANCIES TO BE REPORTED TO THE ARCHITECT.			
ALL DIMENSIONS FORM THE PROPERTY OF THE ARCHITECT.			
		A. DETAIL NOT	
		C. DETAIL ON SHEET	
B. DETAIL ON SHEET C. DETAIL ON SHEET			
DESIGNED BY	NAME	DESIGNED BY	A.S.
DATE	JUNE 1978	DESIGNED BY	LAN
PROJECT NO.			
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9	REVISED - AS PER WESTON COMMENTS	JAN.	21/2021
8	REVISED - AS PER COMMENTS	DEC	07/2020
7	REVISED - AS PER WESTON COMMENTS	DEC	23/2019
6	REVISED	SEP.	14/2019
5	REVISED AS PER WESTON - FENCE REMOVED	JAN.	08/2019
4	REVISED - AS PER WESTON COMMENTS	DEC.	19/2018
3	REVISED - AS PER WESTON COMMENTS	DEC.	16/2018
2	REVISED - AS PER CITY & WESTON COMMENTS	NOV.	03/2018
1	REVISED	DEC.	17/2018
NO	ISSUED FOR	DATE	

PROJECT

PROPOSED SENIOR RENTAL
BUILDING

7211 & 7233 AIRPORT ROAD
PARTS # 1, 2 & 3
MISSISSAUGA, ONTARIO

DRAWING TITLE

BASEMENT

NOTE:

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ON THE JOB SITE.
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TO THE ARCHITECT
ALL DRAWINGS REMAIN THE PROPERTY OF THE
ARCHITECT.

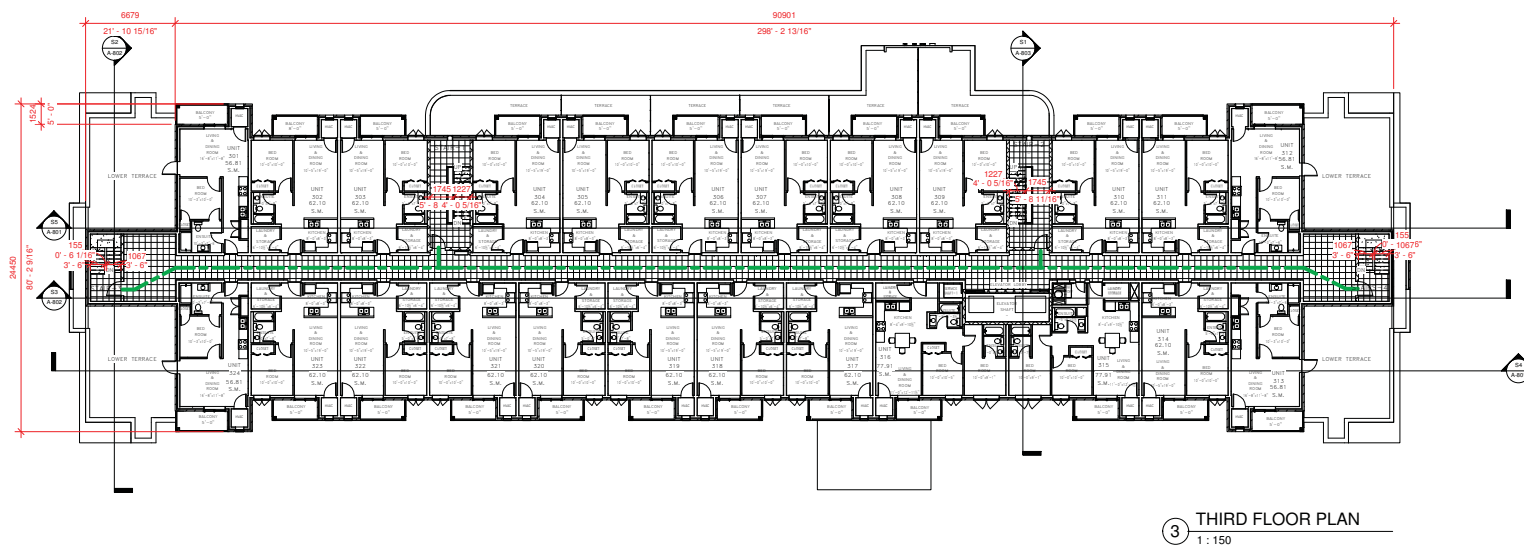
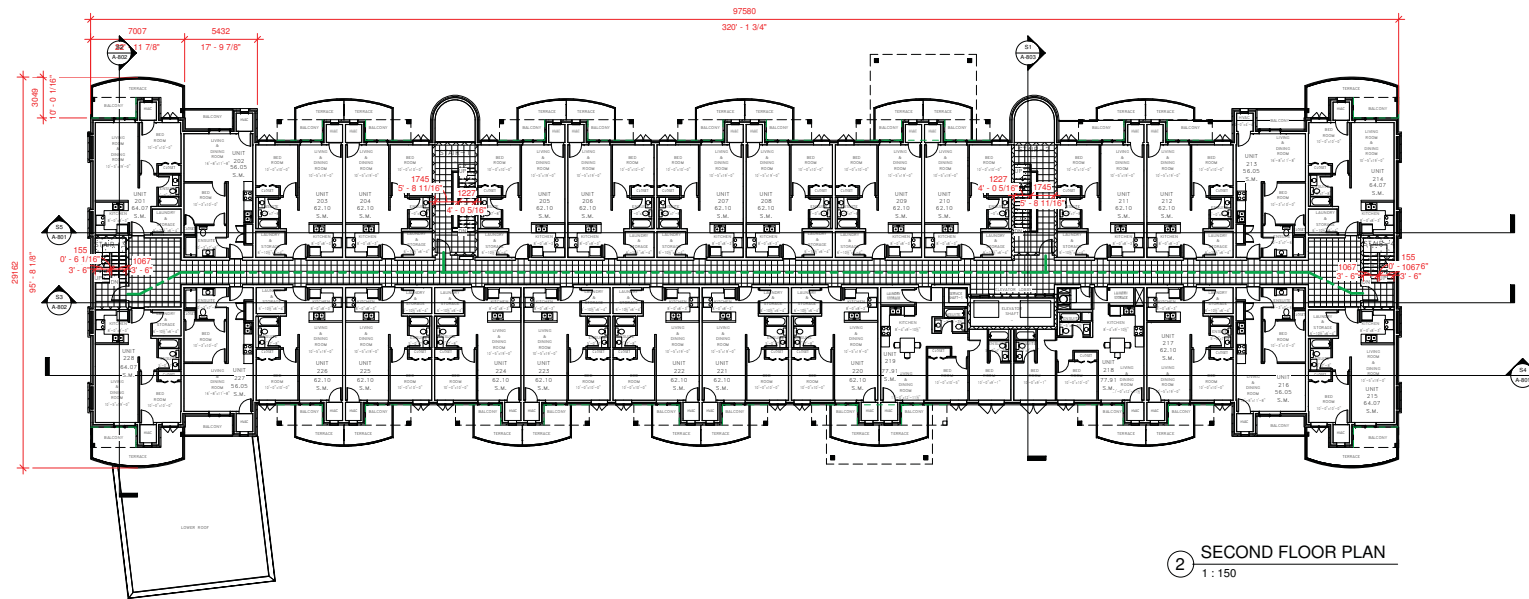


	A. DETAIL NO.
	B. LOCATION SHEET
	C. DETAILED ON

PRODUCT NUMBER	1626	Issued By	A.V.
DATE	June 2016	Checked By	CN

A-200

1 BASEMENT PLAN
1 : 150



1	REVISED - AS PER WESTON COMMENTS	JAN, 21/2021
2	REVISED - AS PER WESTON COMMENTS	DEC, 07/2020
3	REVISED - AS PER WESTON COMMENTS	SEP, 23/2019
4	REVISED	AUG, 14/2019
5	REVISED AS PER WESTON - FENCE REMOVED	JAN, 28/2019
6	REVISED - AS PER WESTON COMMENTS	DEC, 19/2018
7	REVISED - AS PER WESTON COMMENTS	DEC, 16/2018
8	REVISED - AS PER CITY & WESTON COMMENTS	NOV, 11/2018
9	REVISED	OCT, 17/2018
10	ISSUED FOR	DATE

PROJECT

PROPOSED SENIOR RENTAL BUILDING

7211 & 7233 AIRPORT ROAD
PARTS # 1, 2 & 3
MISSISSAUGA, ONTARIO

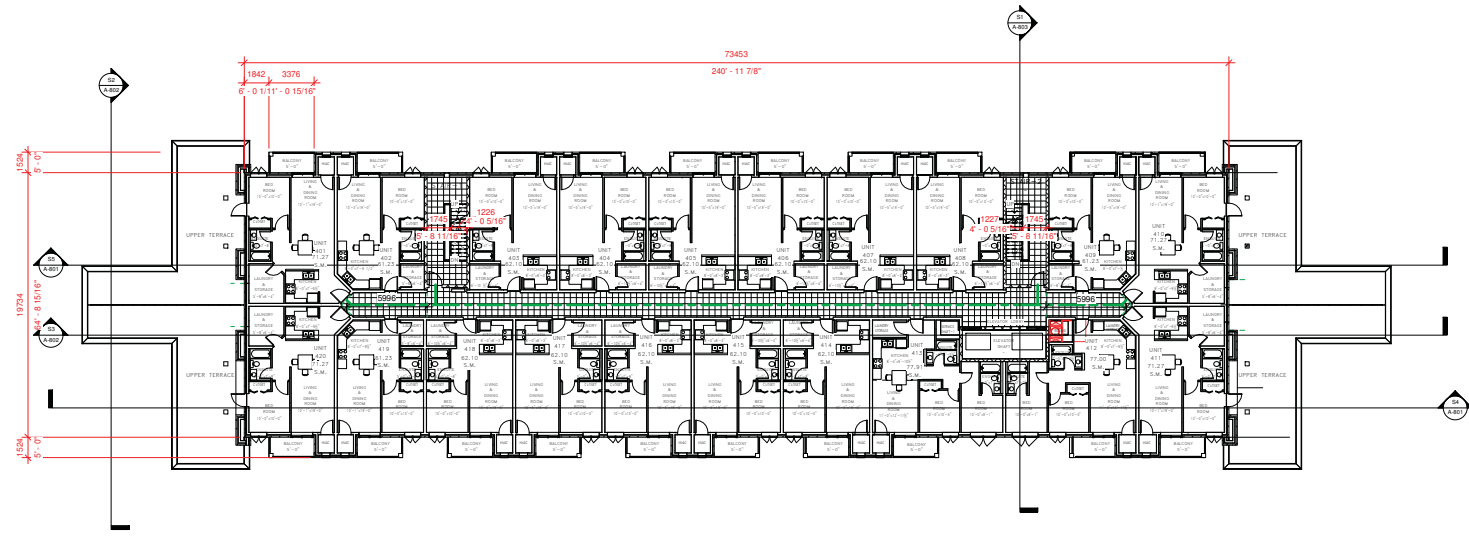
DRAWING TITLE

FOURTH & FIFTH FLOORPLANS

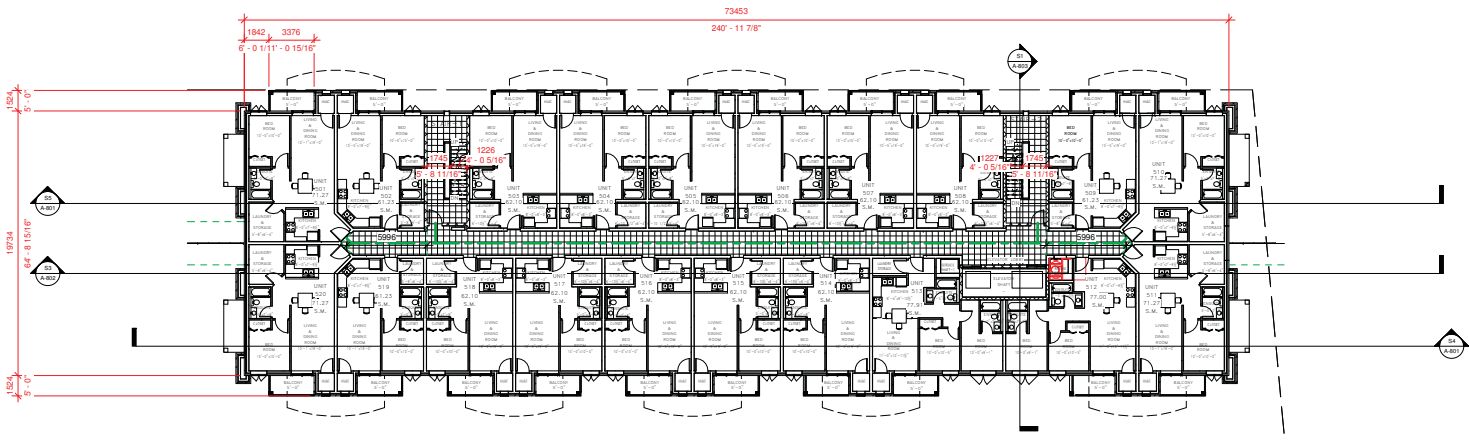
NOTE:
ALL DIMENSIONS TO BE CHECKED AND VERIFIED BY THE ARCHITECT PRIOR TO CONSTRUCTION. THE ARCHITECT SHALL BE RESPONSIBLE FOR THE ACCURACY OF THE DIMENSIONS.

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3	SCALE: 1/8" = 1'-0"	4	SCALE: 1/8" = 1'-0"

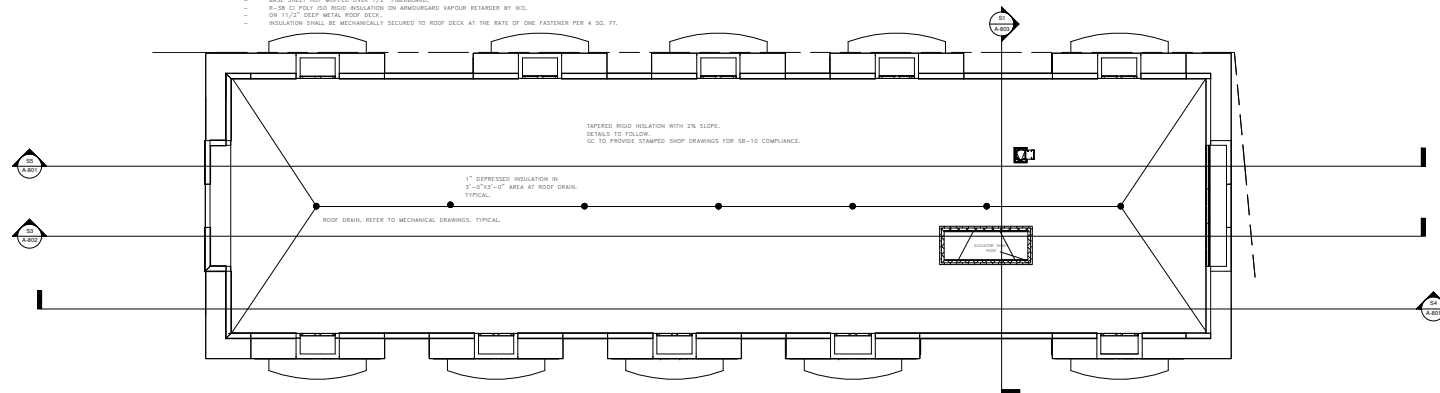
A-500



4 FOURTH FLOOR PLAN
1:150



5 FIFTH FLOOR PLAN
1:150



7 ROOF PLAN
1 : 150

A-600

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**CHINTAN VIRANI
ARCHITECT INC.**

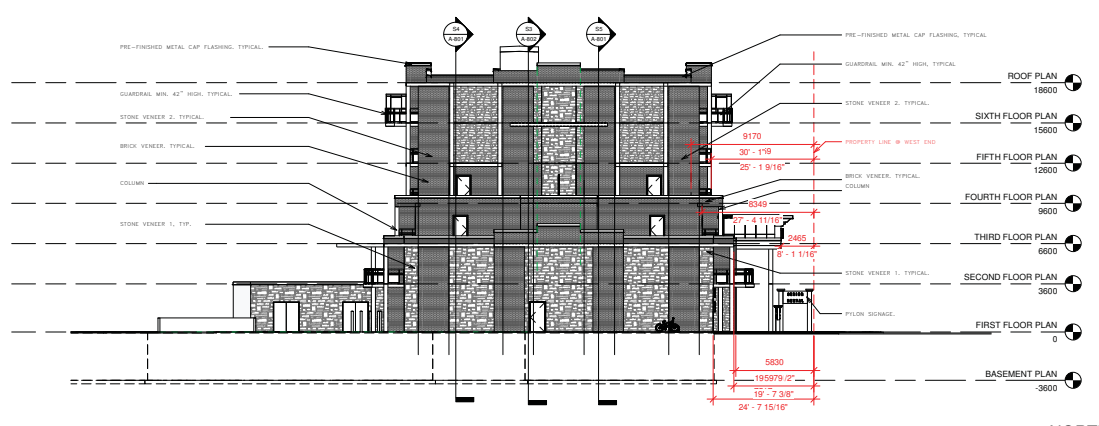
CHINTAN J. VIRANI

1. ALL WORK SUBMITTED
 2. ALL WORK SUBMITTED
 3. ALL WORK SUBMITTED

1. ALL WORK SUBMITTED
 2. ALL WORK SUBMITTED
 3. ALL WORK SUBMITTED



① WEST ELEVATION
1 : 150

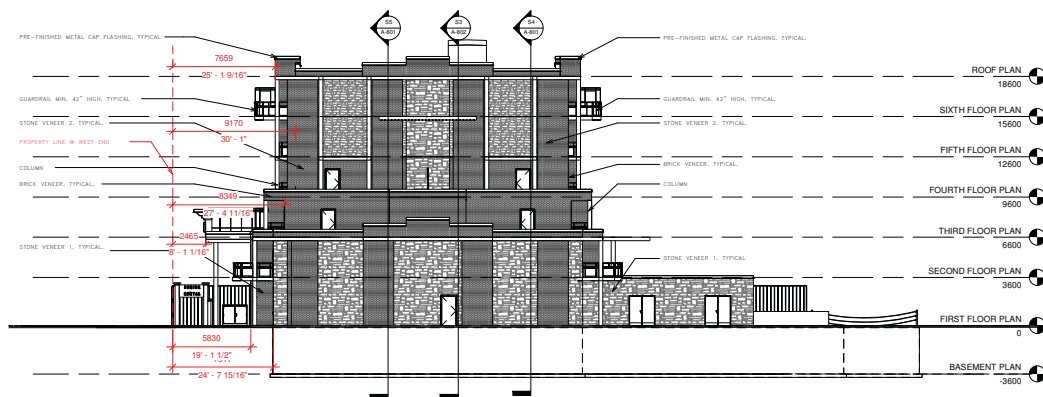


② NORTH ELEVATION
1 : 150

PROJECT		
PROPOSED SENIOR RENTAL BUILDING		
7211 & 7233 AIRPORT ROAD PARTS # 1, 2 & 3 MISSISSAUGA, ONTARIO		
DRAWING TITLE		
ELEVATION-1 WEST & NORTH SIDE ELEVATION		
NOTE:		
1. ALL WORK SUBMITTED 2. ALL WORK SUBMITTED 3. ALL WORK SUBMITTED		
DATE	BY	APP
DATE	BY	APP
A-701		



③ EAST ELEVATION
1:150



④ SOUTH ELEVATION
1:150

CHINTAN VIRANI ARCHITECT INC.
CHINTAN J. VIRANI

FOR ANY COMMENTS:
CHINTAN J. VIRANI
PHONE: (913) 878-8811
CELL: (913) 878-8811
FAX: (913) 878-8811
EMAIL: chintan@chintanvirani.com

1. REVISED - AS PER WESTON COMMENTS JAN. 21/2021

2. REVISED - AS PER WESTON COMMENTS DEC. 07/2020

3. REVISED - AS PER WESTON COMMENTS SEP. 23/2019

4. REVISED - AS PER WESTON COMMENTS AUG. 14/2019

5. REVISED - AS PER WESTON COMMENTS JAN. 28/2019

6. REVISED - AS PER WESTON COMMENTS DEC. 19/2018

7. REVISED - AS PER WESTON COMMENTS DEC. 16/2018

8. REVISED - AS PER CITY & WESTON COMMENTS NOV. 13/2018

9. REVISED - OCT. 17/2018

10. ISSUED FOR DATE

PROJECT

PROPOSED SENIOR RENTAL BUILDING

7211 & 7233 AIRPORT ROAD
PARTS # 1, 2 & 3
MISSISSAUGA, ONTARIO

DRAWING TITLE

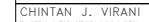
ELEVATION-2
EAST & SOUTH SIDE ELEVATION

NOTE:

1. NOT TO SCALE DIMENSIONS.
ALL DIMENSIONS TO BE CHECKED AND VERIFIED BY THE USER.
ANY AND ALL INTERFERENCES TO BE REPORTED TO THE ARCHITECT.
THE ARCHITECT HAS NO RESPONSIBILITY FOR THE RESULTS.

1. TOTAL NO.
2. CREATING SHEET
3. REVISION NO.

A-702



PHONE: (519) 979-3017
CELL: (519) 587-1800
FAX: (519) 979-4009
EMAIL: chinton@chinton.ca

WWW.CHINTAL.CA



3	REVISED -- AS PER WESTON COMMENTS	JAN. 21/2021
4	REVISED -- AS PER COMMENTS	DEC. 07/2020
7	REVISED -- AS PER WESTON COMMENTS	SEP. 23/2019
8	REVISED	AUG. 14/2019
9	REVISED AS PER WESTON -- FENCE REMOVED	JAN. 08/2019
4	REVISED -- AS PER WESTON COMMENTS	DEC. 19/2018
5	REVISED -- AS PER WESTON COMMENTS	DEC. 16/2018
12	REVISED -- AS PER CITY & WESTON COMMENTS	NOV. 13/2018
11	REVISED	OCT. 17/2018
NO.	ISSUED FOR	DATE

PROJECT
PROPOSED SENIOR RENTAL BUILDING

7211 & 7233 AIRPORT ROAD
PARTS # 1, 2 & 3
MISSISSAUGA, ONTARIO

SECTIONS—1

NOTE:
DO NOT SCALE DRAWINGS.
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ON THE JOB SITE.
ANY AND ALL DISCREPANCIES TO BE REPORTED
TO THE ARCHITECT.
ALL DRAWINGS REMAIN THE PROPERTY OF THE
ARCHITECT.



A-801

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31	0	0	0	0	0
32	0	0	0	0	0
33	0	0	0	0	0
34	0	0	0	0	0
35	0	0	0	0	0
36	0	0	0	0	0
37	0	0	0	0	0
38	0	0	0	0	0
39	0	0	0	0	0
40	0	0	0	0	0
41	0	0	0	0	0
42	0	0	0	0	0
43	0	0	0	0	0
44	0	0	0	0	0
45	0	0	0	0	0
46	0	0	0	0	0
47	0	0	0	0	0
48	0	0	0	0	0
49	0	0	0	0	0
50	0	0	0	0	0
51	0	0	0	0	0
52	0	0	0	0	0
53	0	0	0	0	0
54	0	0	0	0	0
55	0	0	0	0	0
56	0	0	0	0	0
57	0	0	0	0	0
58	0	0	0	0	0
59	0	0	0	0	0
60	0	0	0	0	0
61	0	0	0	0	0
62	0	0	0	0	0
63	0	0	0	0	0
64	0	0	0	0	0
65	0	0	0	0	0
66	0	0	0	0	0
67	0	0	0	0	0
68	0	0	0	0	0
69	0	0	0	0	0
70	0	0	0	0	0
71	0	0	0	0	0
72	0	0	0	0	0
73	0	0	0	0	0
74	0	0	0	0	0
75	0	0	0	0	0
76	0	0	0	0	0
77	0	0	0	0	0
78	0	0	0	0	0
79	0	0	0	0	0
80	0	0	0	0	0
81	0	0	0	0	0

NO.	ISSUED FOR	DATE
1	REVISED - AS PER WESTON COMMENTS	JAN. 21/2021
2	REVISED - AS PER WESTON COMMENTS	DEC. 07/2020
3	REVISED - AS PER WESTON COMMENTS	SEP. 23/2019
4	REVISED	AUG. 14/2019
5	REVISED AS PER WESTON - FENCE REMOVED	JAN. 08/2019
6	REVISED - AS PER WESTON COMMENTS	DEC. 19/2018
7	REVISED - AS PER WESTON COMMENTS	DEC. 16/2018
8	REVISED - AS PER CITY & WESTON COMMENTS	NOV. 11/2018
9	REVISED	OCT. 17/2018

NO.	ISSUED FOR	DATE
-----	------------	------

PROJECT

PROPOSED SENIOR RENTAL BUILDING

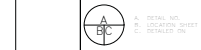
7211 & 7233 AIRPORT ROAD
PARTS # 1, 2 & 3
MISSISSAUGA, ONTARIO

DRAWING TITLE

SECTIONS-2

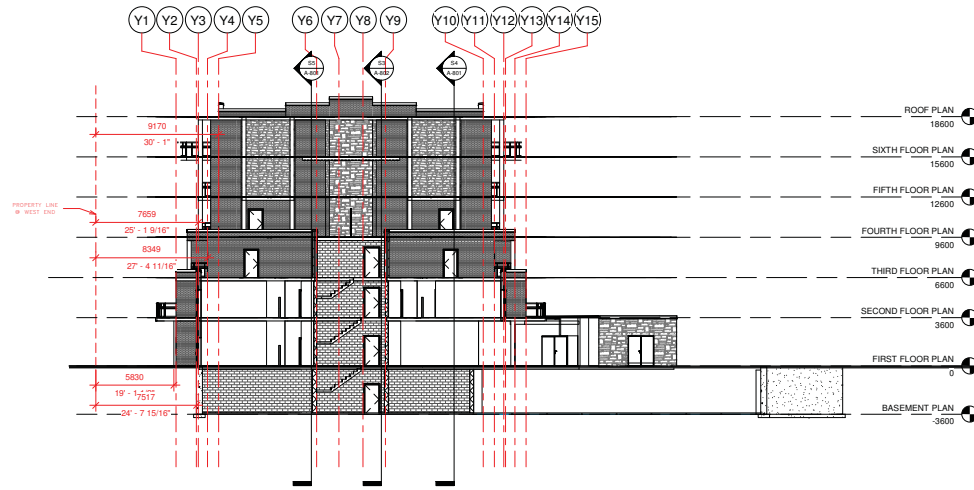
NOTE:

1. ALL WORK TO BE DONE
2. ALL DIMENSIONS TO BE CHECKED AND VERIFIED
3. ALL WORK TO BE DONE IN ACCORDANCE WITH THE
4. ALL WORK TO BE DONE IN ACCORDANCE WITH THE
5. ALL WORK TO BE DONE IN ACCORDANCE WITH THE



DATE	10/17/2018	BY	AV
DATE	10/17/2018	BY	GW

A-802



S2 Section 3
1:150



S3 Section 4
1:150



CHINTAN VIRANI ARCHITECT INC.
 CHINTAN J. VIRANI

1000 KENNEDY ROAD, SUITE 100
 MISSISSAUGA, ONTARIO L4Y 1G7
 TEL: (905) 876-8811
 FAX: (905) 876-8812
 EMAIL: info@chintanvirani.com

1. REVISED - AS PER WESTON COMMENTS JAN. 27/2021
 2. REVISED - AS PER WESTON COMMENTS DEC. 07/2020
 3. REVISED - AS PER WESTON COMMENTS SEP. 23/2019
 4. REVISED - AS PER WESTON COMMENTS AUG. 14/2019
 5. REVISED AS PER WESTON - FENCE REMOVED JAN. 28/2019
 6. REVISED - AS PER WESTON COMMENTS DEC. 19/2018
 7. REVISED - AS PER WESTON COMMENTS DEC. 16/2018
 8. REVISED - AS PER CITY & WESTON COMMENTS NOV. 13/2018
 9. REVISED - OCT. 17/2018
 10. ISSUED FOR DATE

PROJECT
 PROPOSED SENIOR RENTAL BUILDING
 7211 & 7213 AIRPORT ROAD
 PARTS # 1, 2 & 3
 MISSISSAUGA, ONTARIO

DRAWING TITLE
 SECTIONS-3

NOTE:
 1. NOT TO BE USED FOR CONSTRUCTION.
 2. ALL DIMENSIONS TO BE CHECKED AND VERIFIED BY THE ARCHITECT.
 3. ALL DIMENSIONS TO BE CHECKED AND VERIFIED BY THE ARCHITECT.
 4. ALL DIMENSIONS TO BE CHECKED AND VERIFIED BY THE ARCHITECT.

NORTH

S1 Section 5
 1:50

A-803

APPENDIX C

Road Traffic Data

Date: October 25, 2021
 From: Sheeba Paul, HGC Engineering
 Re: Traffic Data Request – Airport Road (700 m north of Derry Road)

Sheeba,
 As per your request, we are providing the following 2019 traffic data:

	Existing	Ultimate
24 Hour Traffic Volume	35,330	48,600
# of Lanes	6	6
Day/Night Split	84/16	84/16
Day Trucks (% of Total Volume)	1.6% Medium 8.7% Heavy	1.6% Medium 8.7% Heavy
Night Trucks (% of Total Volume)	0.7% Medium 9.1% Heavy	0.7% Medium 9.1% Heavy
Right-of-Way Width	45 meters	
Posted Speed Limit	50 km/h	

Please note:

1. The current volume is not the Annual Average Daily Traffic, but the averaged raw volumes over three data collection days. If you need the Annual Average Traffic Volume, please visit the Peel Open Data website below:
<http://opendata.peelregion.ca/data-categories/transportation/traffic-count-stations.aspx>
2. The ultimate volume is the planned volume during a level of service 'D' where a 2 second vehicle headway and a volume to capacity ratio of 0.9 is assumed. Traffic signals and hourly variations in traffic are also incorporated into the ultimate volume.

If you require further assistance, please contact me at jade.huangfu@peelregion.ca.

Regards,

Jade Huangfu
 Transportation Analyst, Transportation System Planning
 Transportation Division, Public Works, Region of Peel
 10 Peel Centre Drive, Suite B, 4th Floor, Brampton, ON, L6T 4B9
 E: jade.huangfu@peelregion.ca

APPENDIX D
Sample STAMSON Output

STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:22:44
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a.te Time Period: Day/Night 16/8 hours
 Description: **Daytime and nighttime sound levels at the West Façade, prediction location [A]**

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

```
-----
Car traffic volume : 18228/3472 veh/TimePeriod *
Medium truck volume : 327/62 veh/TimePeriod *
Heavy truck volume : 1857/354 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 24300
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.60
Heavy Truck % of Total Volume : 9.10
Day (16 hrs) % of Total Volume : 84.00
```

Data for Segment # 1: airport NB (day/night)

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 17.40 / 17.40 m
Receiver height : 17.10 / 17.10 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Road data, segment # 2: airport SB (day/night)

```
-----
Car traffic volume : 18228/3472 veh/TimePeriod *
Medium truck volume : 327/62 veh/TimePeriod *
Heavy truck volume : 1857/354 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 24300
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.60
Heavy Truck % of Total Volume : 9.10
Day (16 hrs) % of Total Volume : 84.00
```



Data for Segment # 2: airport SB (day/night)

```

-----
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth           :           0       (No woods.)
No of house rows     :           0 / 0
Surface              :           2       (Reflective ground surface)
Receiver source distance : 33.40 / 33.40 m
Receiver height       : 17.10 / 17.10 m
Topography            :           1       (Flat/gentle slope; no barrier)
Reference angle       :           0.00
  
```

Results segment # 1: airport NB (day)

Source height = 1.74 m

ROAD (0.00 + 70.85 + 0.00) = 70.85 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	71.50	0.00	-0.64	0.00	0.00	0.00	0.00

```

-----
SubLeq
---
-90      90      0.00  71.50      0.00  -0.64      0.00      0.00      0.00      0.00
70.85
-----
---
  
```

Segment Leq : 70.85 dBA

Results segment # 2: airport SB (day)

Source height = 1.74 m

ROAD (0.00 + 68.02 + 0.00) = 68.02 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	71.50	0.00	-3.48	0.00	0.00	0.00	0.00

```

-----
SubLeq
---
-90      90      0.00  71.50      0.00  -3.48      0.00      0.00      0.00      0.00
68.02
-----
---
  
```

Segment Leq : 68.02 dBA

Total Leq All Segments: 72.67 dBA

Results segment # 1: airport NB (night)

Source height = 1.74 m

ROAD (0.00 + 66.66 + 0.00) = 66.66 dBA

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

-90	90	0.00	67.31	0.00	-0.64	0.00	0.00	0.00	0.00
66.66									

Segment Leq : 66.66 dBA

Results segment # 2: airport SB (night)

Source height = 1.74 m

ROAD (0.00 + 63.83 + 0.00) = 63.83 dBA

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

-90	90	0.00	67.31	0.00	-3.48	0.00	0.00	0.00	0.00
63.83									

Segment Leq : 63.83 dBA

Total Leq All Segments: 68.48 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 72.67
(NIGHT): 68.48



STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:23:03
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: b.te Time Period: Day/Night 16/8 hours
 Description: **Daytime and nighttime sound levels at the North/South
 Façade, prediction location [B]**

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

```
-----
Car traffic volume : 18228/3472 veh/TimePeriod *
Medium truck volume : 327/62 veh/TimePeriod *
Heavy truck volume : 1857/354 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 24300
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.60
Heavy Truck % of Total Volume : 9.10
Day (16 hrs) % of Total Volume : 84.00
```

Data for Segment # 1: airport NB (day/night)

```
-----
Angle1 Angle2 : -90.00 deg 0.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 26.90 / 26.90 m
Receiver height : 17.10 / 17.10 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Road data, segment # 2: airport SB (day/night)

```
-----
Car traffic volume : 18228/3472 veh/TimePeriod *
Medium truck volume : 327/62 veh/TimePeriod *
Heavy truck volume : 1857/354 veh/TimePeriod *
Posted speed limit : 50 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 24300
Percentage of Annual Growth : 0.00
Number of Years of Growth : 10.00
Medium Truck % of Total Volume : 1.60
Heavy Truck % of Total Volume : 9.10
Day (16 hrs) % of Total Volume : 84.00
```



Data for Segment # 2: airport SB (day/night)

```

-----
Angle1   Angle2           : -90.00 deg   0.00 deg
Wood depth           :           0       (No woods.)
No of house rows     :           0 / 0
Surface              :           1       (Absorptive ground surface)
Receiver source distance : 42.90 / 42.90 m
Receiver height       : 17.10 / 17.10 m
Topography           :           1       (Flat/gentle slope; no barrier)
Reference angle       :           0.00

```

Results segment # 1: airport NB (day)

Source height = 1.74 m

ROAD (0.00 + 64.98 + 0.00) = 64.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	0	0.18	71.50	0.00	-3.01	-3.51	0.00	0.00	0.00

```

-----
SubLeq
---
-90      0      0.18  71.50   0.00  -3.01  -3.51   0.00   0.00   0.00
64.98
-----
---
```

Segment Leq : 64.98 dBA

Results segment # 2: airport SB (day)

Source height = 1.74 m

ROAD (0.00 + 62.58 + 0.00) = 62.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	0	0.18	71.50	0.00	-5.41	-3.51	0.00	0.00	0.00

```

-----
SubLeq
---
-90      0      0.18  71.50   0.00  -5.41  -3.51   0.00   0.00   0.00
62.58
-----
---
```

Segment Leq : 62.58 dBA

Total Leq All Segments: 66.95 dBA

Results segment # 1: airport NB (night)

Source height = 1.74 m

ROAD (0.00 + 60.79 + 0.00) = 60.79 dBA

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

-90	0	0.18	67.31	0.00	-3.01	-3.51	0.00	0.00	0.00
60.79									

Segment Leq : 60.79 dBA

Results segment # 2: airport SB (night)

Source height = 1.74 m

ROAD (0.00 + 58.39 + 0.00) = 58.39 dBA

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

-90	0	0.18	67.31	0.00	-5.41	-3.51	0.00	0.00	0.00
58.39									

Segment Leq : 58.39 dBA

Total Leq All Segments: 62.76 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 66.95
(NIGHT): 62.76



STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:23:19
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: c.te Time Period: Day/Night 16/8 hours
 Description: **Daytime and nighttime sound levels at the East Façade,
 prediction location [C]**

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

```
-----
Car traffic volume   : 18228/3472   veh/TimePeriod   *
Medium truck volume :   327/62     veh/TimePeriod   *
Heavy truck volume  :  1857/354    veh/TimePeriod   *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement      :     1 (Typical asphalt or concrete)
```

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

```
24 hr Traffic Volume (AADT or SADT): 24300
Percentage of Annual Growth       : 0.00
Number of Years of Growth         : 10.00
Medium Truck % of Total Volume    : 1.60
Heavy Truck % of Total Volume     : 9.10
Day (16 hrs) % of Total Volume    : 84.00
```

Data for Segment # 1: airport NB (day/night)

```
-----
Angle1   Angle2       : -90.00 deg   90.00 deg
Wood depth      : 0           (No woods.)
No of house rows : 0 / 0
Surface         : 1           (Absorptive ground surface)
Receiver source distance : 40.40 / 40.40 m
Receiver height  : 17.10 / 17.10 m
Topography      : 2           (Flat/gentle slope; with
barrier)
Barrier angle1   : -90.00 deg   Angle2 : 90.00 deg
Barrier height   : 20.00 m
Barrier receiver distance : 0.50 / 0.50 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle  : 0.00
```

Road data, segment # 2: airport SB (day/night)

```
-----
Car traffic volume   : 18228/3472   veh/TimePeriod   *
Medium truck volume :   327/62     veh/TimePeriod   *
Heavy truck volume  :  1857/354    veh/TimePeriod   *
Posted speed limit  :    50 km/h
Road gradient       :     0 %
Road pavement      :     1 (Typical asphalt or concrete)
```

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

24 hr Traffic Volume (AADT or SADT): 24300
 Percentage of Annual Growth : 0.00
 Number of Years of Growth : 10.00
 Medium Truck % of Total Volume : 1.60
 Heavy Truck % of Total Volume : 9.10
 Day (16 hrs) % of Total Volume : 84.00

Data for Segment # 2: airport SB (day/night)

```

-----
Angle1   Angle2           : -90.00 deg   90.00 deg
Wood depth      :          0          (No woods.)
No of house rows :          0 / 0
Surface         :          1          (Absorptive ground surface)
Receiver source distance : 56.40 / 56.40 m
Receiver height  : 17.10 / 17.10 m
Topography      :          2          (Flat/gentle slope; with
barrier)
Barrier angle1   : -90.00 deg   Angle2 : 90.00 deg
Barrier height    : 20.00 m
Barrier receiver distance : 0.50 / 0.50 m
Source elevation  : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation  : 0.00 m
Reference angle   : 0.00
  
```

Results segment # 1: airport NB (day)

Source height = 1.74 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.74 !          17.10 !          16.91 !          16.91
  
```

ROAD (0.00 + 49.94 + 0.00) = 49.94 dBA

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

```

-----
---
-90      90      0.00  71.50   0.00  -4.30   0.00   0.00   0.00  -17.26
49.94
-----
---
  
```

Segment Leq : 49.94 dBA



Results segment # 2: airport SB (day)

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	17.10	16.96	16.96

ROAD (0.00 + 48.68 + 0.00) = 48.68 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	71.50	0.00	-5.75	0.00	0.00	0.00	-17.07

SubLeq

48.68

Segment Leq : 48.68 dBA

Total Leq All Segments: 52.37 dBA

Results segment # 1: airport NB (night)

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	17.10	16.91	16.91

ROAD (0.00 + 45.75 + 0.00) = 45.75 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.00	67.31	0.00	-4.30	0.00	0.00	0.00	-17.26

SubLeq

45.75

Segment Leq : 45.75 dBA



Results segment # 2: airport SB (night)

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	! Receiver Height (m)	! Barrier Height (m)	! Elevation of Barrier Top (m)
1.74	!	17.10	!
		16.96	!
			16.96

ROAD (0.00 + 44.49 + 0.00) = 44.49 dBA

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

-90	90	0.00	67.31	0.00	-5.75	0.00	0.00	0.00	-17.07
-----	----	------	-------	------	-------	------	------	------	--------

44.49

Segment Leq : 44.49 dBA

Total Leq All Segments: 48.18 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 52.37
(NIGHT): 48.18



STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:23:36
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: dola.te Time Period: 16 hours
 Description: **Daytime sound levels at Lower Terrace at East, Level 6.6 m with a minimum 1.07 m high solid parapet, prediction location [D]**

Road data, segment # 1: airport NB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: airport NB

 Angle1 Angle2 : -90.00 deg -45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 42.40 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -45.00 deg
 Barrier height : 1.07 m
 Elevation : 6.60 m
 Barrier receiver distance : 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 6.60 m
 Barrier elevation : 6.60 m
 Reference angle : 0.00

Road data, segment # 2: airport SB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: airport SB

 Angle1 Angle2 : -90.00 deg -45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 58.40 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : -45.00 deg
 Barrier height : 1.07 m



Elevation : 6.60 m
 Barrier receiver distance : 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 6.60 m
 Barrier elevation : 6.60 m
 Reference angle : 0.00

Results segment # 1: airport NB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	1.50	0.75	7.35

ROAD (0.00 + 52.07 + 0.00) = 52.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-45	0.39	71.50	0.00	-6.28	-7.93	0.00	0.00	-5.22

SubLeq

52.07

Segment Leq : 52.07 dBA

Results segment # 2: airport SB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	1.50	0.96	7.56

ROAD (0.00 + 50.33 + 0.00) = 50.33 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	-45	0.39	71.50	0.00	-8.21	-7.93	0.00	0.00	-5.03

SubLeq

50.33

Segment Leq : 50.33 dBA



Total Leq All Segments: 54.30 dBA

TOTAL Leq FROM ALL SOURCES: 54.30



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NOISE



VIBRATION

STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:24:41
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: eola.te Time Period: 16 hours
 Description: **Daytime sound levels at Lower Terrace at West, Level 6.6 m with a minimum 1.07 m high solid parapet, prediction location [D]**

Road data, segment # 1: airport NB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: airport NB

 Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 20.90 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 45.00 deg
 Barrier height : 1.07 m
 Elevation : 6.60 m
 Barrier receiver distance : 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 6.60 m
 Barrier elevation : 6.60 m
 Reference angle : 0.00

Road data, segment # 2: airport SB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: airport SB

 Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 36.90 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 45.00 deg
 Barrier height : 1.07 m



Elevation : 6.60 m
 Barrier receiver distance : 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 6.60 m
 Barrier elevation : 6.60 m
 Reference angle : 0.00

Results segment # 1: airport NB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	1.50	-0.02	6.58

ROAD (0.00 + 59.03 + 0.00) = 59.03 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	45	0.39	71.50	0.00	-2.00	-1.94	0.00	0.00	-8.53

SubLeq

59.03

Segment Leq : 59.03 dBA

Results segment # 2: airport SB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	1.50	0.64	7.24

ROAD (0.00 + 58.39 + 0.00) = 58.39 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	45	0.39	71.50	0.00	-5.44	-1.94	0.00	0.00	-5.74

SubLeq

58.39

Segment Leq : 58.39 dBA

Total Leq All Segments: 61.73 dBA

TOTAL Leq FROM ALL SOURCES: 61.73



ACOUSTICS



NOISE



VIBRATION

STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:24:10
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: eola.te Time Period: 16 hours
 Description: **Daytime sound levels at Lower Terrace at West, Level 6.6 m with additional mitigation (2.3 m high barrier height), prediction location [E]**

Road data, segment # 1: airport NB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: airport NB

 Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 20.90 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 45.00 deg
 Barrier height : 2.30 m
 Elevation : 6.60 m
 Barrier receiver distance : 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 6.60 m
 Barrier elevation : 6.60 m
 Reference angle : 0.00

Road data, segment # 2: airport SB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: airport SB

 Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 36.90 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 45.00 deg



```

Barrier height      : 2.30 m
Elevation           : 6.60 m
Barrier receiver distance : 5.00 m
Source elevation    : 0.00 m
Receiver elevation   : 6.60 m
Barrier elevation    : 6.60 m
Reference angle     : 0.00

```

Results segment # 1: airport NB

Source height = 1.74 m

Barrier height for grazing incidence

```

Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.74 !          1.50 !          -0.02 !          6.58

```

ROAD (0.00 + 54.75 + 0.00) = 54.75 dBA

```

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

```

```

-----
-90    45    0.32  71.50    0.00  -1.90  -1.83    0.00    0.00 -13.02
54.75

```

Segment Leq : 54.75 dBA

Results segment # 2: airport SB

Source height = 1.74 m

Barrier height for grazing incidence

```

Source      ! Receiver      ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.74 !          1.50 !          0.64 !          7.24

```

ROAD (0.00 + 53.86 + 0.00) = 53.86 dBA

```

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

```

```

-----
-90    45    0.32  71.50    0.00  -5.15  -1.83    0.00    0.00 -10.67
53.86

```



Segment Leq : 53.86 dBA

Total Leq All Segments: 57.34 dBA

TOTAL Leq FROM ALL SOURCES: 57.34



ACOUSTICS



NOISE



VIBRATION

STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:24:58
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: fola.te Time Period: 16 hours
 Description: **Daytime sound levels at Upper Terrace at West, Level 9.6 m with a minimum 1.07 m high solid parapet, prediction location [F]**

Road data, segment # 1: airport NB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: airport NB

 Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 23.60 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 45.00 deg
 Barrier height : 1.07 m
 Elevation : 9.60 m
 Barrier receiver distance : 7.00 m
 Source elevation : 0.00 m
 Receiver elevation : 9.60 m
 Barrier elevation : 9.60 m
 Reference angle : 0.00

Road data, segment # 2: airport SB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: airport SB

 Angle1 Angle2 : -90.00 deg 45.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 39.60 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : -90.00 deg Angle2 : 45.00 deg
 Barrier height : 1.07 m




```

Elevation                :    9.60 m
Barrier receiver distance :    7.00 m
Source elevation          :    0.00 m
Receiver elevation        :    9.60 m
Barrier elevation          :    9.60 m
Reference angle           :    0.00

```

Results segment # 1: airport NB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.74 !	1.50 !	-1.28 !	8.32

ROAD (0.00 + 55.18 + 0.00) = 55.18 dBA

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

-90	45	0.30	71.50	0.00	-2.56	-1.80	0.00	0.00	-11.96
55.18									

Segment Leq : 55.18 dBA

Results segment # 2: airport SB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	! Receiver ! Height (m)	! Barrier ! Height (m)	! Elevation of ! Barrier Top (m)
1.74 !	1.50 !	-0.16 !	9.44

ROAD (0.00 + 56.02 + 0.00) = 56.02 dBA

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

-90	45	0.30	71.50	0.00	-5.48	-1.80	0.00	0.00	-8.20
56.02									

Segment Leq : 56.02 dBA

Total Leq All Segments: 58.63 dBA

TOTAL Leq FROM ALL SOURCES: 58.63



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NOISE



VIBRATION

STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:25:13
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: gola.te Time Period: 16 hours
 Description: **Daytime sound levels at Lower Terrace at East, Level 6.6 m with minimum 1.07 m high solid barrier, prediction location [G]**

Road data, segment # 1: airport NB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: airport NB

 Angle1 Angle2 : 45.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 34.90 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : 45.00 deg Angle2 : 90.00 deg
 Barrier height : 1.07 m
 Elevation : 6.60 m
 Barrier receiver distance : 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 6.60 m
 Barrier elevation : 6.60 m
 Reference angle : 0.00

Road data, segment # 2: airport SB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: airport SB

 Angle1 Angle2 : 45.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 50.90 m
 Receiver height : 1.50 m
 Topography : 4 (Elevated; with barrier)
 Barrier angle1 : 45.00 deg Angle2 : 90.00 deg
 Barrier height : 1.07 m



Elevation : 6.60 m
 Barrier receiver distance : 5.00 m
 Source elevation : 0.00 m
 Receiver elevation : 6.60 m
 Barrier elevation : 6.60 m
 Reference angle : 0.00

Results segment # 1: airport NB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	1.50	0.59	7.19

ROAD (0.00 + 52.98 + 0.00) = 52.98 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
45	90	0.39	71.50	0.00	-5.10	-7.93	0.00	0.00	-5.48

SubLeq

52.98

Segment Leq : 52.98 dBA

Results segment # 2: airport SB

Source height = 1.74 m

Barrier height for grazing incidence

Source Height (m)	Receiver Height (m)	Barrier Height (m)	Elevation of Barrier Top (m)
1.74	1.50	0.87	7.47

ROAD (0.00 + 51.10 + 0.00) = 51.10 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
45	90	0.39	71.50	0.00	-7.38	-7.93	0.00	0.00	-5.08

SubLeq

51.10

Segment Leq : 51.10 dBA

Total Leq All Segments: 55.15 dBA

TOTAL Leq FROM ALL SOURCES: 55.15



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NOISE



VIBRATION

STAMSON 5.0 NORMAL REPORT Date: 29-10-2021 09:25:32
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: hola.te Time Period: 16 hours
 Description: **Daytime sound level at Ground Floor Outdoor Amenity Area
 at East, prediction location [H]**

Road data, segment # 1: airport NB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: airport NB

 Angle1 Angle2 : 45.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 65.40 m
 Receiver height : 1.50 m
 Topography : 2 (Flat/gentle slope; with
 barrier)
 Barrier angle1 : 45.00 deg Angle2 : 90.00 deg
 Barrier height : 20.00 m
 Barrier receiver distance : 26.00 m
 Source elevation : 0.00 m
 Receiver elevation : 0.00 m
 Barrier elevation : 0.00 m
 Reference angle : 0.00

Road data, segment # 2: airport SB

 Car traffic volume : 18228 veh/TimePeriod *
 Medium truck volume : 327 veh/TimePeriod *
 Heavy truck volume : 1857 veh/TimePeriod *
 Posted speed limit : 50 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 2: airport SB

 Angle1 Angle2 : 45.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 81.40 m
 Receiver height : 1.50 m
 Topography : 2 (Flat/gentle slope; with
 barrier)
 Barrier angle1 : 45.00 deg Angle2 : 90.00 deg



```

Barrier height           : 20.00 m
Barrier receiver distance : 26.00 m
Source elevation         : 0.00 m
Receiver elevation       : 0.00 m
Barrier elevation        : 0.00 m
Reference angle          : 0.00

```

Results segment # 1: airport NB

Source height = 1.74 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver    ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.74 !          1.50 !          1.59 !          1.59

```

ROAD (0.00 + 41.22 + 0.00) = 41.22 dBA

```

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

```

```

-----
---
    45    90    0.00  71.50    0.00  -6.39  -6.02    0.00    0.00 -17.86
41.22
-----
---
```

Segment Leq : 41.22 dBA

Results segment # 2: airport SB

Source height = 1.74 m

Barrier height for grazing incidence

```

-----
Source      ! Receiver    ! Barrier      ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
          1.74 !          1.50 !          1.58 !          1.58

```

ROAD (0.00 + 40.47 + 0.00) = 40.47 dBA

```

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

```

```

-----
---
    45    90    0.00  71.50    0.00  -7.35  -6.02    0.00    0.00 -17.66
40.47
-----
---
```

Segment Leq : 40.47 dBA



Total Leq All Segments: 43.87 dBA

TOTAL Leq FROM ALL SOURCES: 43.87



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NOISE



VIBRATION