April 6, 2026

Urban & Environmental Management Inc.
4701 St. Clair Ave, Suite 301
Niagara Falls, Ontario L2E 3S9

E-mail: mbenson@uemconsulting.com

Attention: Mike Benson, RPP
Agent

Re: Noise Impact Study of the Proposed Development
5190 & 5204 Stanley Avenue, Niagara Falls, Ontario
Pinchin File: 364967

1.0 INTRODUCTION

Pinchin Ltd. (Pinchin) was retained by Urban & Environmental Management Inc. (Client) to prepare a noise impact study report of their Client's proposed Development (Development) at 5190 & 5204 Stanley Avenue, Niagara Falls, Ontario. This report is to satisfy the requirements outlined in the City of Niagara Falls Pre-Consultation Checklist, dated March 6, 2025.

Based on a review of information provided by the Client, the proposed Development will include the construction of three (3) new commercial units on the ground floor. Two (2) residential units will be built above the ground floor. For the noise impacts from road traffic and external stationary sources, the study only considers the two residential units.

Figure 1, Appendix B, shows the locations of the proposed Development, noise sensitive receptors, stationary sources and nearby roadways. Additional drawings are included in Appendix C.

2.0 NOISE CRITERIA

In this study, the applicable guideline limits were taken from the Niagara Region Publication [1] and the Ontario Ministry of Environment, Conservation and Parks (MECP) Publication NPC-300 [2]. Guidance from the Niagara Region's Noise Impact and Vibration Study Terms of Reference [3] was used in the preparation of this report. The guideline limits outlined in the publications are very similar. Note that the Niagara Region requires the prediction of traffic noise impact shall be based on a 20-year traffic forecast.

The applicable noise criteria for this proposed Development are described as follows:

2.1 Exterior Building Façade Noise Criteria

Where the sound levels at the exterior of the building facades exceed 55 dBA at living/dining room windows during daytime hours and 50 dBA at bedroom windows during nighttime periods, the unit must be provided with forced air heating with provision for central air conditioning. Where the sound levels

exceed by more than 10 dB (i.e. 65 dBA at living/dining room windows and 60 dBA at bedroom windows), central air conditioning must be incorporated into the building design prior to occupancy. Warning clauses are applicable as well.

2.2 Noise Criteria for Stationary Sources

For non-transportation sources (i.e. rooftop HVACs and exhausts, etc.), the applicable MECP noise criteria at a point of reception (POR) are dictated by Publication NPC-300 [2] for Class 1 Areas. These guidelines state that the one-hour sound exposures (Leq, 1 hour) from stationary noise sources in Class 1 areas shall not exceed:

- the higher of 50 dBA or background noise between 0700h and 1900h;
- the higher of 50 dBA or background noise between 1900h and 2300h; and
- the higher of 45 dBA or background noise between 2300h and 0700h.

3.0 TRAFFIC NOISE IMPACT ASSESSMENT

3.1 Road Traffic Data and Projections

The sources of road traffic noise affecting the Development include Stanley Avenue to the west, Valley Way to the northwest, McRae Street to the south and Highway 420 further to the south.

The Annual Average Daily Traffic (AADT) volumes for the identified regional/local roadways were obtained from the Niagara Region and the City of Niagara Falls. The traffic data were projected to year 2046 using an annual growth rate of 2.5%. Commercial vehicle percentages were determined based on the statistics on the vehicle classification. A day/night split of 90/10 was used for the road component.

For Highway 420 (Falls Avenue), the road traffic data and truck percentages were obtained from the MTO website iCorridor. A day/night split of 67/33 was used for Highway 420, per STAMSON protocol. The traffic data were projected to year 2046 using an average, historical growth rate of 2.0%.

Tables D1 to D4, Appendix D, provide the details of the road traffic data and projections.

3.2 Road Traffic Noise Impact

To evaluate the road traffic noise impact on the Development, one (1) onsite receptor was selected from the Development's most affected location. Receptor "Front" represents the upper floor windows on the front (west) building façade of the residential units. The location of the selected receptor is shown in Figure 1, Appendix B.

Traffic noise impact was predicted using the MECP computer program STAMSON (Version 5.04) [4]. STAMSON uses the traffic volumes for the road/rail and basic topographical information for the site in its

calculations. The program accounts for adjustments in sound levels with vehicle volume, distance, finite segment, pavement surface, and acoustical shielding. Details of STAMSON calculations are included in Appendix D.

The calculation results are provided in Table 1, Appendix A. Table 2, Appendix A, summarizes the requirements on ventilation, building components (windows and walls) and warning clauses.

The assessment shows that the residential units should be designed with the provision for the installation of central air conditioning in the future, at the occupant's discretion. Warning clause Type C is required. Building components should be built to meet the Ontario Building Code (OBC) requirements. Details of the warning clause are included in Appendix F.

It should be noted that central air conditioning systems will be installed in both the residential and commercial units. As such, the ventilation requirement has been met.

4.0 STATIONARY SOURCE NOISE IMPACT ASSESSMENT

In this part of the study, two types of stationary sources were considered – external stationary sources and stationary sources associated with the Development.

4.1 External Stationary Sources

Based on the review of aerial photos, it was determined that potential noise sources would include the following:

- One (1) exhaust (EF1), two (2) HVAC units (HVAC1, 2) and three (3) condensers (CD1, 2, 3) on the roof of the Tim Hortons restaurant at 5233 Stanley Avenue; and
- Eleven (11) HVAC units (HVAC3-13) on the roof of the Town Centre Plaza at 5233 Stanley Avenue.

The sound power levels for the identified rooftop units were assumed from the catalogues of typical HVAC units and Pinchin past measurements. Details of manufacturer sound data are included in Appendix E.

An acoustic model was prepared using CadnaA (Version 2026). CadnaA calculates sound levels surrounding the Development according to ISO standard 9613-2 [5], “Acoustics – Attenuation of Sound during Propagation Outdoors.” The ISO calculation method, considered conservative, accounts for reduction in sound level with distance due to geometrical spreading, air absorption, ground attenuation, and acoustical shielding. Calculation parameters were set in accordance with the ISO standard, and detailed protocols can be provided upon request.

The following parameters were used in the acoustic model:

- Ground absorption was set to 0.0 for reflective surfaces (e.g. roads and paved surfaces), and 1.0 for absorptive grounds;
- 1st order reflection was taken into account;
- Temperature of 10 ºC and relative humidity of 70%;
- Barrier coefficients: C1: 3.0; C2: 20.0; C3: 0.0;
- All sources were spectral unless otherwise specified; and
- All buildings and structures had a reflection loss of one (1) dB.

In modelling the noise impact from the rooftop equipment, the following assumption was made. All HVAC units were assumed operating for 60 minutes, 45 minutes and 30 minutes during daytime, evening and nighttime hours, respectively. The selected duty cycles are in line with operations of typical comfort heating equipment used at commercial/residential buildings.

Table 3, Appendix A, lists the identified stationary sources. Table 4, Appendix A, summarizes the compliance status of the external sources at the Development receptor “Front”. Daytime noise impact contour map is presented in Figure 2, Appendix B.

The predicted noise impact from external stationary sources on the Development meets the NPC-300 noise criteria for Class 1 area. Noise control measures are not required.

4.2 The Development on Nearby Residences

At the time this report was prepared, detailed information on mechanical equipment proposed for the Development was not available. However, it was advised by the Client that the Development may have five (5) rooftop units (INT_HVAC2-6). The proposed rooftop units would be similar to the existing unit (INT_HVAC1) on the roof of the convenience store. As such, manufacturer sound data for the existing unit were used in the modelling. Details of manufacturer sound data are included in Appendix E.

To evaluate the noise impact from the Development on nearby residences, three (3) noise sensitive receptors were selected. Receptor R1 represents a two-storey home located at the corner of Stanley Avenue and Valley Way. Receptor R2 represents another two-storey home located to the north of Development. Receptor R3 represents a two-storey home located to the east of the Development, along McRae St.

An acoustic model was prepared using CadnaA (Version 2026). The modelling protocol was similar to the modelling of external stationary sources.

Table 3, Appendix A, lists the identified stationary sources. Table 5, Appendix A, summarizes the compliance status of the Development at external receptors. Daytime noise impact contour map is presented in Figure 3, Appendix B.

The predicted noise impact from the Development on external receptor locations also meets the NPC-300 noise criteria for Class 1 area. Noise control measures are not required.

5.0 CONCLUSIONS

An assessment of the noise impact was completed by modelling the individual contributions of the significant noise sources.

The assessment shows that the road traffic noise impact on the Development meets NPC-300 noise criteria, with the provision for the future installation of air conditioning systems. In addition, applicable warning clause Type C is required. Details of the warning clause are included in Appendix F. It should be noted that central air conditioning systems will be installed in both the residential and commercial units. As such, the ventilation requirement has been met.

The predicted noise impact from external stationary sources on the Development meets the NPC-300 noise criteria for Class 1 area. Noise control measures are not required.

The predicted noise impact from the Development on external receptor locations also meets the NPC-300 noise criteria for Class 1 area. Noise control measures are not required.

6.0 TERMS AND LIMITATIONS

This work was performed subject to the Terms and Limitations presented or referenced in the proposal for this project.

Information provided by Pinchin is intended for Client use only. Pinchin will not provide results or information to any party unless disclosure by Pinchin is required by law. Any use by a third party of reports or documents authored by Pinchin or any reliance by a third party on or decisions made by a third party based on the findings described in said documents, is the sole responsibility of such third parties. Pinchin accepts no responsibility for damages suffered by any third party as a result of decisions made or actions conducted. No other warranties are implied or expressed.

7.0 CLOSURE

Should you have any questions or concerns regarding the contents of this letter, please contact the Project Manager at 647.287.1677 or wli@pinchin.com.

Sincerely,

Pinchin Ltd.

Prepared by:

Weidong Li, Ph.D., P.Eng.
Senior Project Engineer

Reviewed by:

Aidan Maher, P.Eng.
Senior Project Manager

8.0 REFERENCES

1. Niagara Region, Regional Road Traffic Noise Control, November 1, 2006.
2. Ministry of the Environment Publication NPC-300, "Environmental Noise Guideline Stationary and Transportation Sources – Approval and Planning", August 2013.
3. Niagara Region, Noise Impact and Vibration Study Terms of Reference, August 2022.
4. Ministry of the Environment's STAMSON/STEAM Computer Programme, (Version 5.04), 1989.
5. ISO 9613-2: 1996, Acoustics –Attenuation of Sound During Propagation outdoors. Part 2 – General Method of Calculation.

J:\364000s\0364967.000 UEM,5190&5204StanleyAve,ERC,NOISE\Deliverables\Report\364967 Noise Impact Study 5190&5204 Stanley Ave Niagara Fls UEM April 6, 2026.docx

Template: Master Noise Impact Study Letter, ERC, July 18, 2024

APPENDIX A

Tables

(5 Pages)

Table 1: Road Traffic Noise Impact Predictions

Road Name	Point of Reception Description	Predicted Road Noise Level, (Leq, dBA) [1]	
		Daytime (16 hr)	Nighttime (8 hr)
Stanley Avenue	Front Façade of Commercial/Residential Building, 6.0 m High	63	57
Valley Way	Front Façade of Commercial/Residential Building, 6.0 m High	51	44
McRae Street	Front Façade of Commercial/Residential Building, 6.0 m High	46	40
Highway 420 / Falls Avenue	Front Façade of Commercial/Residential Building, 6.0 m High	50	49
	Total Traffic Noise Impact	64	58

Notes:

- Daytime hours are between 7:00 am and 11:00 pm and nighttime hours are between 11:00 pm and 7:00 am.

[1] STAMSON predicted sound levels at the planes of windows in dBA.

Table 2: Summary of Noise Control Measures

Point of Reception ID [1]	Façade Description [2]	Predicted Unmitigated Sound Level at the West Facade (Leq, dBA) [3]		Exterior Window STC Requirements [4]	Ventilation Requirements [5]	Wall Requirements [6]	Warning Clauses [7]
		Daytime (16 hr)	Nighttime (8 hr)				
Front	Front Façade of Commercial/Residential Building, 6.0 m High	64	58	OBC	Provision for A/C	OBC	Type C

Notes:

[1] The building blocks are labelled in Figure 1.
[2] The front facades faces Stanley Avenue.
[3] STAMSON predicted sound levels at the planes of windows or outdoor living areas in dBA.
[4] OBC - the window should be designed to meet the Ontario Building Code requirements.
[5] The dwelling should be designed with a provision for the installation of central air conditioning in the future, at the occupant's discretion
[6] OBC - the wall should be designed and constructed to meet the Ontario Building Code requirements.
[7] See Appendix F.

Table 3: Noise Source Summary Table, External and Internal

Source ID [1]	Source Description	1/1 Octave Band Sound Power Level (dB, Ref. 10-12 W) [2]										Source Location [3]	Sound Characteristics [4]	Noise Control Measures [5]	Source of Data [6]
		31.5	63	125	250	500	1000	2000	4000	8000	L_w(A)				
CD1	Condensing Unit	78	85	86	82	77	69	65	60	53	**78**	O	S	U	File
CD2	Condensing Unit	78	85	86	82	77	69	65	60	53	**78**	O	S	U	File
CD3	Condensing Unit	78	85	86	82	77	69	65	60	53	**78**	O	S	U	File
EF1	Kitchen Exhaust	79	82	83	78	77	78	72	59	57	**81**	O	S	U	File
HVAC1	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
HVAC10	HVAC Unit	85	87	89	86	82	79	73	68	62	**84**	O	S	U	File
HVAC11	HVAC Unit	85	87	89	86	82	79	73	68	62	**84**	O	S	U	File
HVAC12	HVAC Unit	85	87	89	86	82	79	73	68	62	**84**	O	S	U	File
HVAC13	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
HVAC2	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
HVAC3	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
HVAC4	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
HVAC5	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
HVAC6	HVAC Unit	85	87	89	86	82	79	73	68	62	**84**	O	S	U	File
HVAC7	HVAC Unit	85	87	89	86	82	79	73	68	62	**84**	O	S	U	File
HVAC8	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
HVAC9	HVAC Unit		88	86	81	77	75	70	66	71	**80**	O	S	U	Man
INT_HVAC1	HVAC Unit - Development			67	65	70	72	70	67	57	**76**	O	S	U	Man
INT_HVAC2	HVAC Unit - Development			67	65	70	72	70	67	57	**76**	O	S	U	Man
INT_HVAC3	HVAC Unit - Development			67	65	70	72	70	67	57	**76**	O	S	U	Man
INT_HVAC4	HVAC Unit - Development			67	65	70	72	70	67	57	**76**	O	S	U	Man
INT_HVAC5	HVAC Unit - Development			67	65	70	72	70	67	57	**76**	O	S	U	Man
INT_HVAC6	HVAC Unit - Development			67	65	70	72	70	67	57	**76**	O	S	U	Man

Notes:

[1] Wherever possible, the Source ID is identical with that used in the ESDM report.

[2] Sound Power Levels of continuous noise sources, in dBA, do not include sound characteristic adjustments per NPC-104. Values are unadjusted, unmitigated PWLs.
Sound Power Levels of impulsive noise sources, in dBAI, are A-weighted incorporating an impulsive time weighting.

[3] Source Location:
O - located/installed outside the building, including on the roof
I - located/installed inside the building

[4] Sound Characteristic
S = Steady; I = Impulsive; T = Tonal
Q = Quasi-Steady Impulsive; B = Buzzing; C = Cyclic

[5] Noise Control Measures
S = Silencer/Muffler; L = Lagging; O = other
A = Acoustic lining, plenum; E = acoustic enclosure; U = uncontrolled
B = Barrier, berm, screening

[6] Mea - Measured; Man - Manufacturer's Data; File - Pinchin past measurements
Cal - Engineering Calculations; ### - Same as ID ###

Table 4: Acoustic Assessment Summary Table - From External Stationary Sources on the Development

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
Front	Front/West Façade of Commercial/Residential Building, 6.0 m High	Daytime	44	50	Yes
		Evening	43	50	Yes
		Nighttime	42	45	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

Table 5: Acoustic Assessment Summary Table - From Development on External Receptors

Point of Reception ID	Point of Reception Description	Time Period [1]	Total Level at POR (L_{eq}, 1-hr) [2]	Performance Limit (L_{eq} 1-hr) [3]	Compliance with Performance Limit (Yes/No)
R1	Home to North, 4.5 m High	Daytime	41	50	Yes
		Evening	40	50	Yes
		Nighttime	38	45	Yes
R2	Home to North, 4.5 m High	Daytime	41	50	Yes
		Evening	40	50	Yes
		Nighttime	38	45	Yes
R3	Home to East, 4.5 m High	Daytime	44	50	Yes
		Evening	43	50	Yes
		Nighttime	41	45	Yes

Notes:

[1] The predictable worst-case one (1) hour period was considered in the study.

[2] Worst-case one hour equivalent sound level from all applicable sources operating in dBA.

[3] NPC-300 exclusionary sound level limits of one hour L_{eq} for Class 1 Areas.

APPENDIX B

Figures

(3 Pages)

Figure 1 - Scaled Area Plan, Showing the Development, Roadways and Staionary Sources

N

Drawn by: WNL	
Scale: 1:1,500	
Date: April 6, 2026	

2742556 Ontario Ltd.,5204 Stanley Avenue, Niagara Falls, ON

Pinchin Project: 364967

PINCHIN

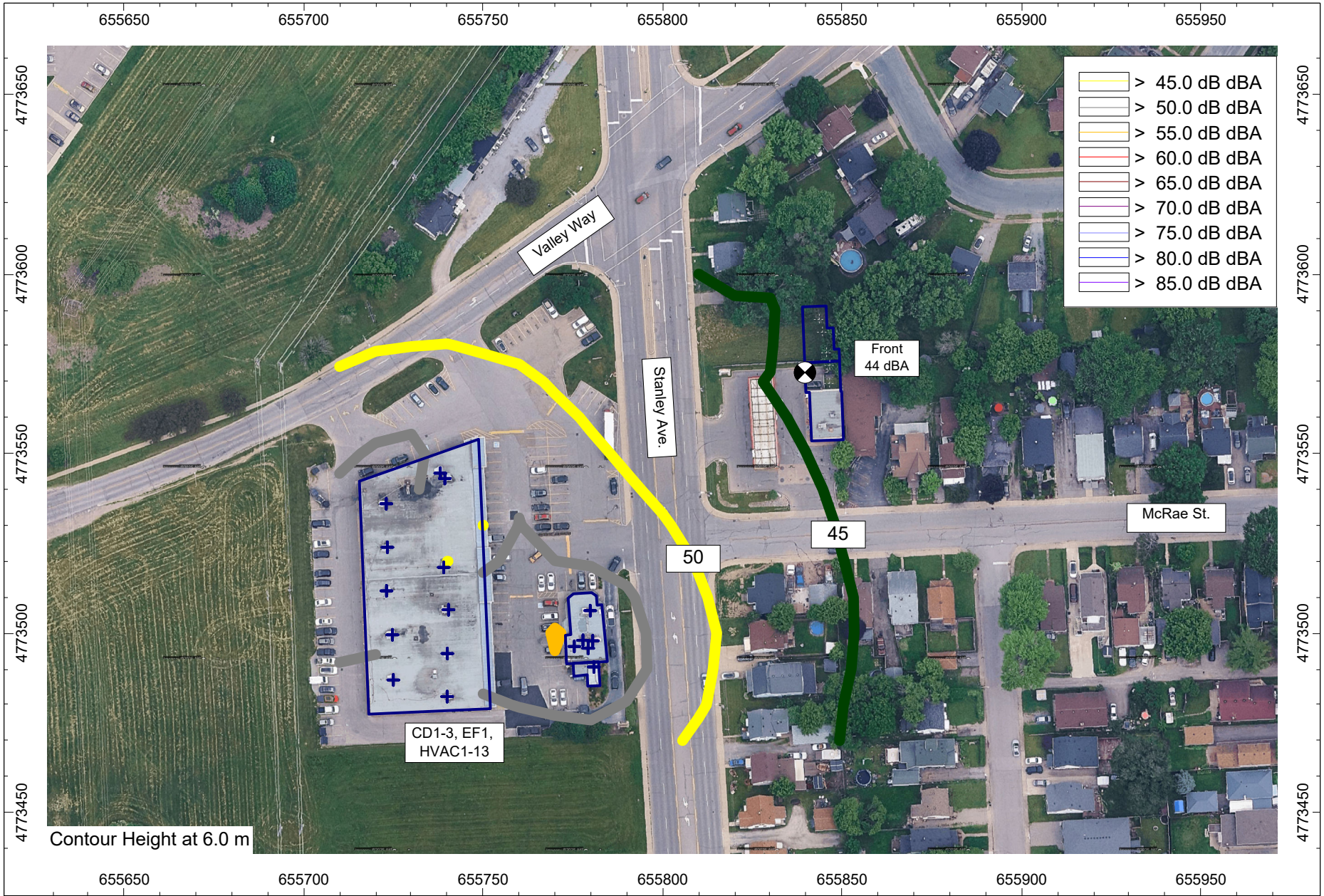

Figure 2 - Daytime Noise Impact Contour Map, From External Sources on the Development ("Front")

N

Drawn by: WNL	
Scale: 1:1,500	
Date: April 6, 2026	

2742556 Ontario Ltd.,5204 Stanley Avenue, Niagara Falls, ON

Pinchin Project: 364967

PINCHIN

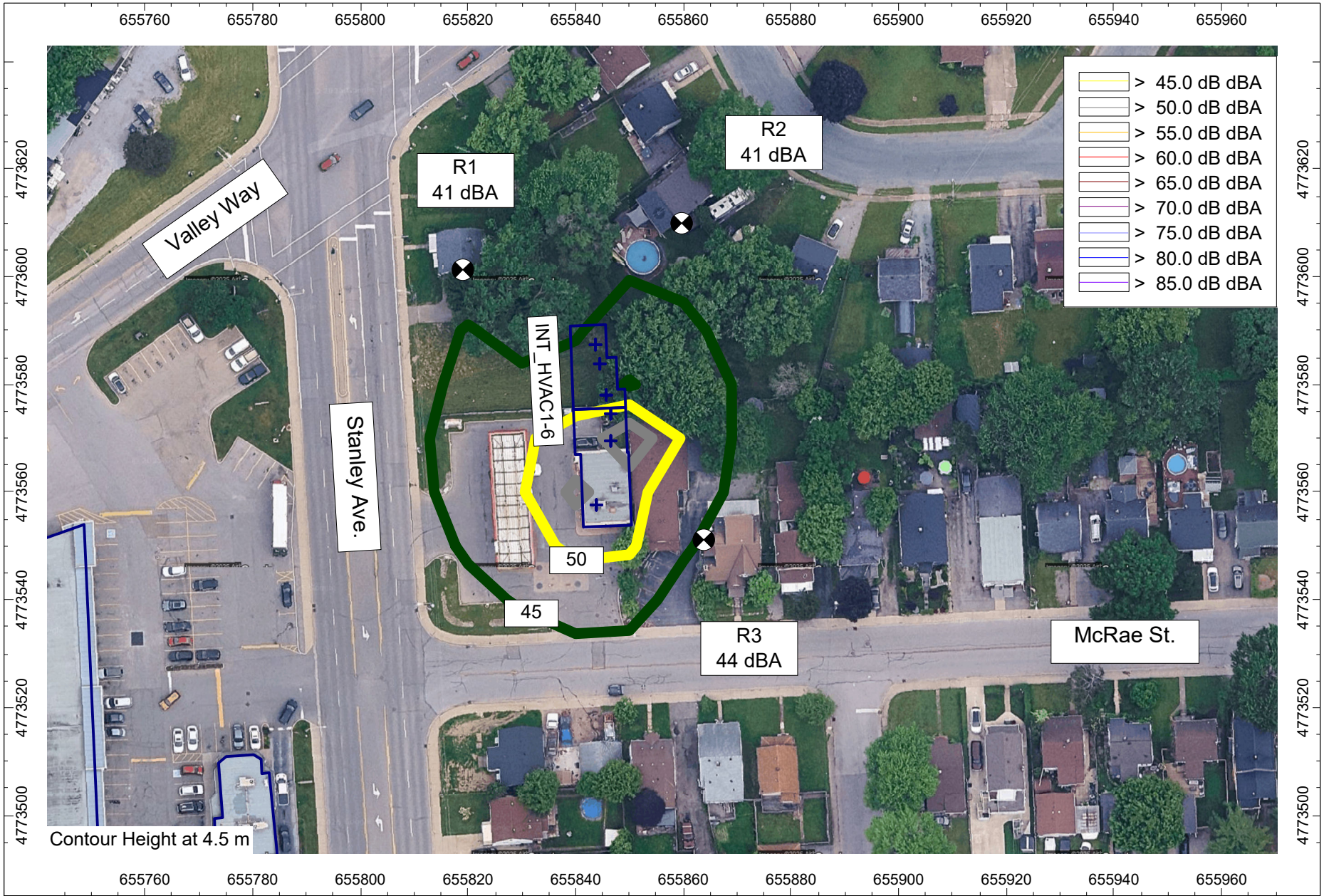

Figure 3 - Daytime Noise Impact Contour Map, From Development on External Sensitive Receptors

N

2742556 Ontario Ltd.,5204 Stanley Avenue, Niagara Falls, ON

Pinchin Project: 364967

Drawn by: WNL

Scale: 1:1,000

Date: April 6, 2026

PINCHIN

APPENDIX C

Additional Drawings

(4 Pages)

5190 Stanley Avenue

Wang

5190 Stanley Ave, Niagara Falls, ON L2E 5A4

DRAWING LIST

ISSUED DRAWINGS LIST

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SHEET NAME

Title Page

RAIMONDO + ASSOCIATES ARCHITECTS INC.

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NIAGARA FALLS, ONTARIO
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TEL | 905-357-4441
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EMAIL | mail@raimondoarchitects.com
WEB | www.raimondoarchitects.com

SHEET #

A0-000

Name of Practice:	
Raimondo + Associates Architects Inc.	
4687 Queen Street, Niagara Falls ON	
Name of Project:	
5190 Stanley Ave	
Project Location:	
5190 Stanley Ave, Niagara Falls, ON L2E 5A4	

Item	Ontario Building Code Data Matrix - *Part 9*						Reference
9.01	Project Type:	☐New Construction ■Addition ☐Renovation ☐Change of Use ☐Addition & Renovation Description:					1.1.2.4.(A)
9.02	Major Occupancy(s) Classification:	Group C + Group E					9.10.2.
9.03	Superimposed Major Occupancies:	☐No ■Yes Description:					9.10.2.3.
9.04	Building Area (m²):	Description:		Existing:	New:	Total:	1.4.1.2.[A]
		Building footprint Area			185 M²	185 M²	
		Total:					
9.05	Gross Area (m²):	Description:		Existing:	New:	Total:	1.4.1.2.[A]
		Ground Floor			185 M²	185 M²	
		2nd Floor			97 M²	97 M²	
		Total:			282 M²	282 M²	
9.06	Mezzanine Area (m²)	Description:		Existing:	New:	Total:	9.10.4.1.
		Total:					
9.07	Building Height:	Storeys Above Grade: 2 Meters Above Grade: 7.3 M Storeys Below Grade: 0					1.4.1.2.[A]& 9.10.4.
9.08	Number of Streets / Fire Fighter Access:	2 Street(s)					9.10.20
9.09	Sprinkler System:	☐Required ■Not Required					9.10.8.2.-4., & 3.2.4.8.(4)
		Provided:	☐Entire Building		☐Select Compartments		
			☐Select Floor Areas		☐Basement Only		
			☐In Lieu of Roof Rating		☐None		
		Description:					
9.10	Fire Alarm System:	■Required ☐Not Required Type Provided: ■Single Stage ☐Two Stage ☐None					9.10.18.
9.11	Water Service / Supply is Adequate:	☐No ■Yes					9.31.3
9.12	Construction Type:	Restriction:					9.10.6., 3.1.5., & 3.1.4.7.
		☐Combustible Permitted ☐Non-Combustible Required					
		☐Encapsulated Mass Timber					
		Actual:					
		☐Combustible ☐Non-Combustible					
		■Combination of Combustible and Non-combustible					
		☐Encapsulated Mass Timber					
		☐Combination of Encapsulated Mass Timber and Non-combustible					
		Heavy Timber Construction: ☐No ☐Yes					3.2.1.4.
9.13	Post-disaster Building	☐No ☐Yes					[A] 1.1.2.2.(2) & Part 4
9.14	Occupant Load:	Floor Level / Area	Occupancy Type	Based On	Occupant Load (Persons)	Posted Limit Required	9.9.1.3. Table 3.1.17.1.
				0' - 0"		0' - 0"	
						0' - 0"	
		Total:					
9.15	Barrier-Free Design:	☐No Explanation: ☐Yes					9.5.2. & 3.8
9.16	Hazardous Substances:	☐No Explanation: ☐Yes					9.10.1.3.
9.17	Required Fire Resistance Rating (FRR):	Horizontal Assemblies	Rating (FRR)	Supporting Assembly (H)	Noncombustible in lieu of rating?		9.10.8. and 9.10.11.
		Floors Over Basement			☐No ☐Yes ☐NA		
		Floors			☐No ☐Yes ☐NA		
		Mezzanine			☐No ☐Yes ☐NA		
		Roof			☐No ☐NA		
9.18a	Spatial Separation:	Wall	EBF Area (m²)	L.D. (m)	L/H or H/L	Req. FRR (H)	% Unprotected Openings Permitted	% Unprotected Openings Provided	9.10.14., 9.10.15
		North	000.0	000.0	0.0/0.0	0 HR	00.0%	00.0%	
		West	000.0	000.0	0.0/0.0	0 HR	00.0%	00.0%	
		South	000.0	000.0	0.0/0.0	0 HR	00.0%	00.0%	
		East	000.0	000.0	0.0/0.0	0 HR	00.0%	00.0%	
9.18b		Wall	Construction Type				Cladding Type		
		North	--				☐Non-combustible		
		West	--				☐Non-combustible		
		South	--				☐Non-combustible		
		East	--				☐Non-combustible		
9.19a	Plumbing Fixture Requirements:	Ratio: *Male:Female = 50:50 Except as noted otherwise*							9.31. & 3.7.4
		Floor Lvl./Area	Occ. Load	OBC Ref.	W/C Req.	W/C Provided			
9.19b		Floor Lvl./Area	B/F W/C Req.	B/F W/C Prov.	Univ W/R Req.	Univ W/R Prov.			
9.20	Energy Efficiency:	Compliance Path:	☐SB-10 *Prescriptive* (Div.4) ☐SB-10 *Performance* (Div.2)						12.2.1.2
			☐SB-10 *Prescriptive* (Div.2)						
		Residential Compliance Option:	☐SB-12 *Prescriptive* Compliance Packages						
			☐SB-12 *Performance* Compliance						
			☐SB-12 Other: Energy Star for New Homes						
			☐EnerGuide for New Houses						
		Project Design Conditions:							
		Climatic Zone:							
		Fenestration:	Gross Above Grade Wall or Roof Area (m²)		Gross Fenestration Area (m²)		Fenestration Ratio		
		Vertical (W+D)							
		Skylights							
		Space Heating Fuel	☐Natural Gas ☐Oil ☐Electricity ☐Propane ☐Solid Fuel ☐Earth Energy						
		Heating Equipment Efficiency	☐92% AFUE ☐84% - <92% AFUE						
		Other Conditions	☐ICF Basement ☐ICF Above Grade						
			☐Walk-out Basement ☐Slab-on-Ground						
			☐Log/Post & Beam ☐Blown-in Ins. Above Grade Wall						
			☐Spray-applied Foam Insulation Above Grade Wall						SB-12 T3.1.1.2.A-C
			☐Drain Water Heat Recovery Unit Provided						T3.1.1.3.A-C
		Compliance Package							
9.21	Sound Transmission Design:	Is there more than 1 dwelling unit per building? ☐No ☐Yes							5.8.1.2., 5.8.1.4. & 9.11.1.4.
		Option Implemented:							
		Notes:							
	Notes	--							

Property Identification

PART OF LOT --, CONCESSION --,
GEOGRAPHIC TOWNSHIP OF --
in the
TOWN OF ----
REGIONAL MUNICIPALITY OF ----

Key Name

Zoning By-Law Requirements GC GC ZONE	As Per Zoning By-law Number 2667 PERMITTED	 PROPOSED
FRONT YARD DEPTH	10.11	10.11
REAR YARD DEPTH	10m	2.66m
INTERIOR SIDE YARD SETBACK	3m	1.78m
EXTERIOR SIDE YARD DEPTH	N/A	N/A
MAXIMUM LOT COVERAGE	70%	86%
GREEN SPACE REQUIRMENTS	30%	13%

Footer

Zoning By-Law Requirements R1D R1D ZONE	As Per Zoning By-law Number 2667 PERMITTED	 PROPOSED
FRONT YARD DEPTH	6m	16.11
REAR YARD DEPTH	7.5m	2.66m
INTERIOR SIDE YARD SETBACK	1.2m	1.78m
EXTERIOR SIDE YARD DEPTH	4.5m	N/A
MAXIMUM LOT COVERAGE	45%	86%
GREEN SPACE REQUIRMENTS	30%	13%
MAXIMUM HEIGHT OF BUILDING	10m	7.32m

Footer

Site Statistics

Area Name	Area M²	Area FT²	% of Total Area
Proposed landscape	124.64	1,341.61	15.75%
Proposed Hardscape	465.45	5,010.09	58.80%
Proposed Building	201.52	2,169.16	25.46%
Lot Area Totals	791.61	8,520.86	100.00%

Existing Site Statistics

Area Name	Area M²	Area FT²	% of Total Area
Existing sidewalk	47.26	508.72	3.88%
Existing landscape	134.54	1,448.15	11.06%
Existing Hardscape	911.82	9,814.75	74.94%
Existing building	123.18	1,325.92	10.12%
Lot Area Totals	1,216.81	13,097.59	100.00%

PARKING REQUIREMENT

Retail:

1 Parking space per every 25 sqm
185.8 sqm / 25sqm = 7.42

Existing Retail:

117 sqm / 25 sqm = 4.68

Dwelling

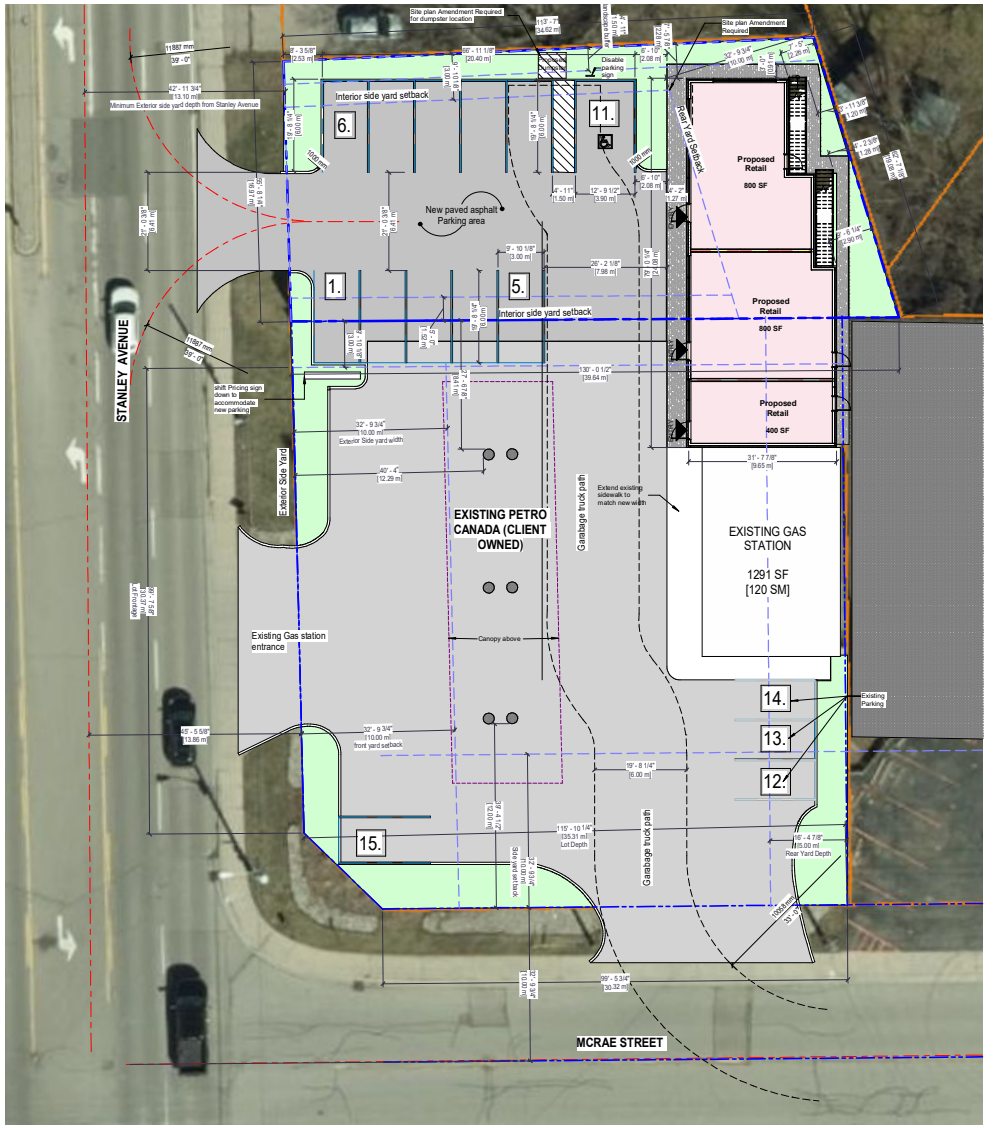
1.4 Parking space for each unit
1.4 x 2 units = 2.8

Total

7.42 + 2.80 = 11 spaces

Total with Existing Gas station

7.42 + 2.80 + 4.68 = 14.9 round to 15 spaces



1 **Overall site plan**

RAIMONDO + ASSOCIATES ARCHITECTS INC.

4687 Queen Street Suite 2,
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E | mail@raimondoarchitects.com

CLIENT NAME

Wang

PROJECT NAME

5190 Stanley Avenue

PROJECT ADDRESS

5190 Stanley Ave, Niagara Falls, ON L2E 5A4

SHEET NAME

Overall site plan and Ground Floor plan

DRAWN BY:	MBK
DATE:	2025-09-02 2:19:21 PM
SCALE:	As indicated
PROJECT NO.:	24-102
CHECKED:	---

SHEET #

A1-001

REV. #

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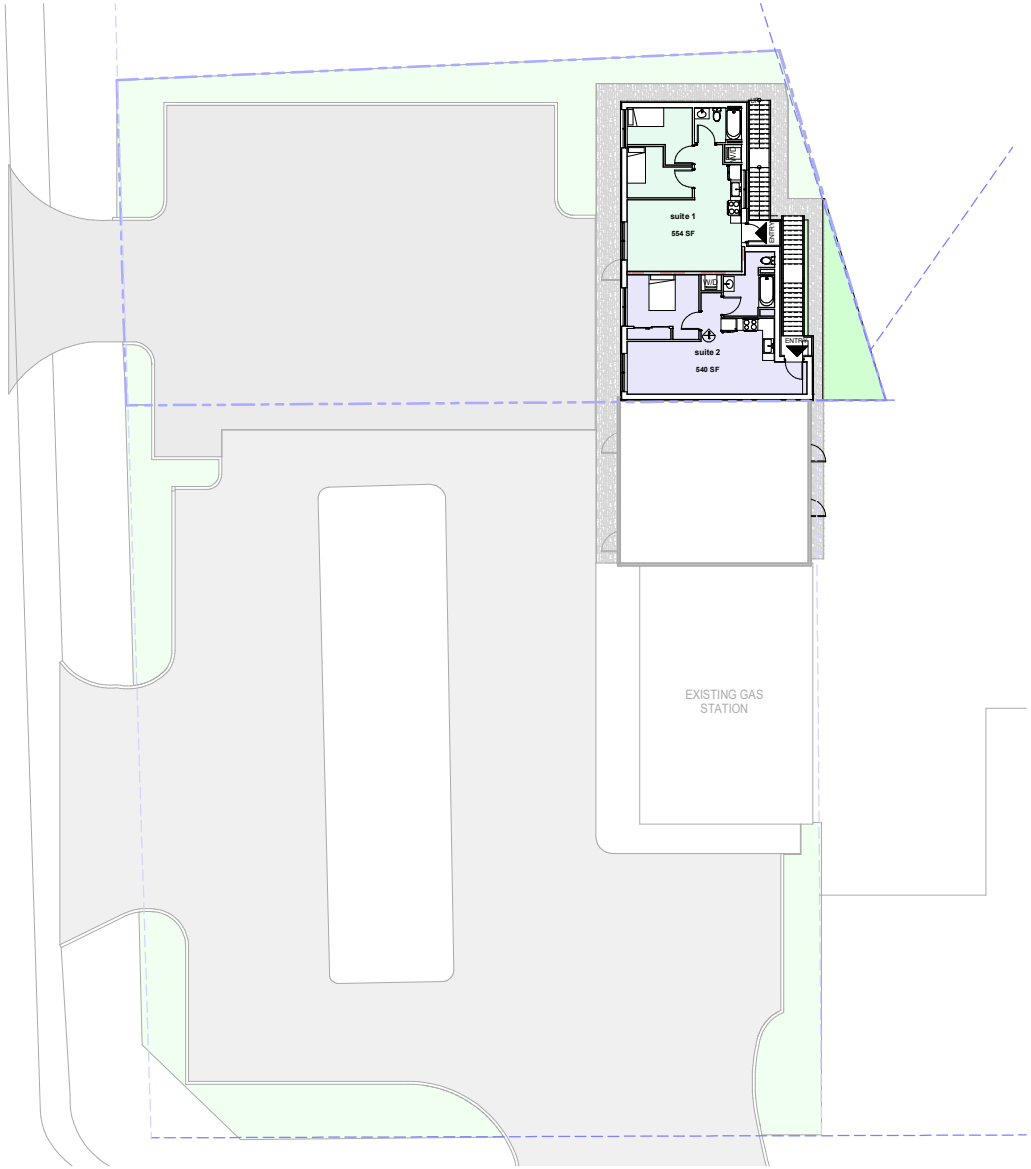

1 A1-002 **2nd Floor Level Option 2**
scale: 1" = 10'-0"

J:\2024\24-102 - Wang - 5190 Stanley Avenue\03-Drafting\00-Revit\24-102 - Wang - 5190 Stanley Avenue.rvt

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CLIENT NAME
Wang

PROJECT NAME
5190 Stanley Avenue

PROJECT ADDRESS
5190 Stanley Ave, Niagara Falls, ON L2E 6A4

SHEET NAME
2nd Floor plan

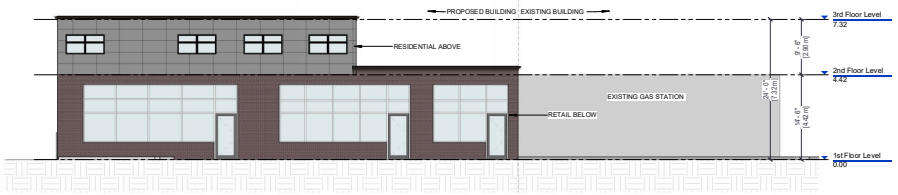
DRAWN BY:	MBK
DATE:	2025-09-02 2:19:21 PM
SCALE:	1" = 10'-0"
PROJECT NO.:	24-102
CHECKED:	--

SHEET #
A1-002

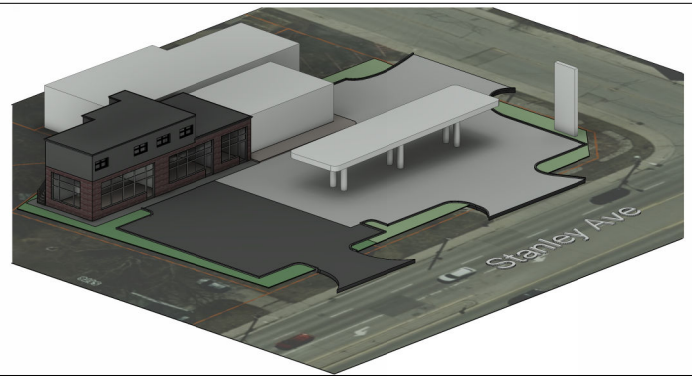
REV. #

3D view 2

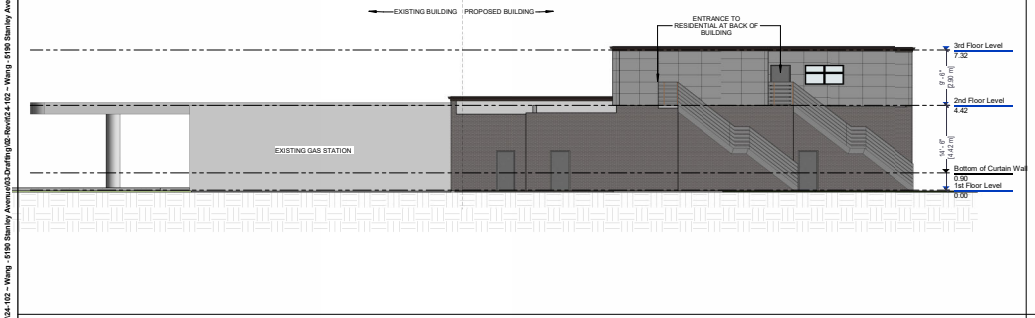
3D view 3



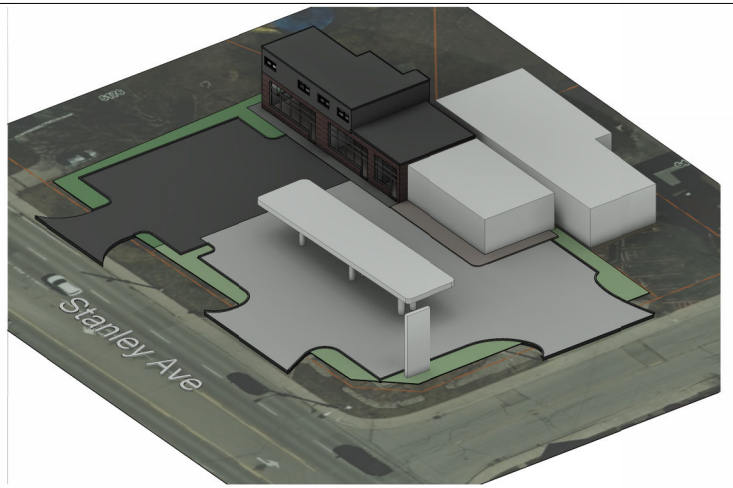
West Elevation - Front of Building



3D Aerial View 2



East Elevation - Back of Building



3D Aerial View

J:\2024\24-102 - Wang - 5190 Stanley Avenue\03-Drafting\05-Revit\24-102 - Wang - 5190 Stanley Avenue.rvt

RAIMONDO + ASSOCIATES ARCHITECTS INC.

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CLIENT NAME
Wang

PROJECT NAME
5190 Stanley Avenue

PROJECT ADDRESS
5190 Stanley Ave, Niagara Falls, ON L2E 5A4

SHEET NAME
Elevation & Renders

DRAWN BY: MBK
DATE: 2025-09-02 2:19:30 PM
SCALE: As indicated
PROJECT NO.: 24-102
CHECKED: ---

SHEET #
A1-003

REV. #

APPENDIX D

Traffic Data and STAMSON Calculations

(18 Pages)

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Region
Street: 610304 - NB
Location: 610304

A study of vehicle traffic was conducted with the device having serial number 407412. The study was done in the NB lane at 610304 - NB in Niagara Region, ON in county. The study began on 2025-07-08 at 12:00 AM and concluded on 2025-07-09 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 8,264 vehicles passed through the location with a peak volume of 194 on 2025-07-08 at [03:45 PM-04:00 PM] and a minimum volume of 5 on 2025-07-08 at [04:15 AM-04:30 AM]. The AADT count for this study was 8,264.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 KM/H range or lower. The average speed for all classifed vehicles was 47 KM/H with 41.51% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 45KM/H and the 85th percentile was 56.97 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 129	130 to >
998	1246	2532	1765	1017	386	125	52	28	17	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 7870 which represents 96 percent of the total classified vehicles. The number of Small Trucks in the study was 88 which represents 1 percent of the total classified vehicles. The number of Trucks/Buses in the study was 113 which represents 1 percent of the total classified vehicles. The number of Tractor Trailers in the study was 95 which represents 1 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 24.9	25.0 to >							
3405	4465	88	113	70	10	13	2							

CHART 2

HEADWAY

During the peak traffic period, on 2025-07-08 at [03:45 PM-04:00 PM] the average headway between vehicles was 4.615 seconds. During the slowest traffic period, on 2025-07-08 at [04:15 AM-04:30 AM] the average headway between vehicles was 150 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 24.00 and 35.00 degrees C.

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Falls
Street: Valley Way - EB
Location: 16

A study of vehicle traffic was conducted with the device having serial number 407433. The study was done in the EB lane at Valley Way - EB in Niagara Falls, ON in 40m east of Homewood Ave county. The study began on 2025-04-24 at 12:00 AM and concluded on 2025-04-28 at 12:00 AM, lasting a total of 96.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 7,814 vehicles passed through the location with a peak volume of 54 on 2025-04-26 at [01:30 PM-01:45 PM] and a minimum volume of 0 on 2025-04-24 at [02:45 AM-03:00 AM]. The AADT count for this study was 1,954.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 KM/H range or lower. The average speed for all classifed vehicles was 42 KM/H with 18.96% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 45KM/H and the 85th percentile was 51.62 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to >
1421	2023	2809	939	345	117	46	16	0	0	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 7622 which represents 99 percent of the total classified vehicles. The number of Small Trucks in the study was 48 which represents 1 percent of the total classified vehicles. The number of Trucks/Buses in the study was 27 which represents 0 percent of the total classified vehicles. The number of Tractor Trailers in the study was 19 which represents 0 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 21.9	22.0 to >							
3748	3874	48	27	15	2	1	1							

CHART 2

HEADWAY

During the peak traffic period, on 2025-04-26 at [01:30 PM-01:45 PM] the average headway between vehicles was 16.364 seconds. During the slowest traffic period, on 2025-04-24 at [02:45 AM-03:00 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 8.00 and 37.00 degrees C.

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Falls
Street: Valley Way - WB
Location: 16

A study of vehicle traffic was conducted with the device having serial number 407409. The study was done in the WB lane at Valley Way - WB in Niagara Falls, ON in 40m east of Homewood Ave county. The study began on 2025-04-24 at 12:00 AM and concluded on 2025-04-28 at 12:00 AM, lasting a total of 96.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 6,947 vehicles passed through the location with a peak volume of 59 on 2025-04-24 at [05:00 PM-05:15 PM] and a minimum volume of 0 on 2025-04-24 at [01:30 AM-01:45 AM]. The AADT count for this study was 1,737.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 KM/H range or lower. The average speed for all classifed vehicles was 43 KM/H with 20.02% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 45KM/H and the 85th percentile was 51.80 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to >
1238	1719	2585	962	310	76	32	7	0	0	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 6877 which represents 99 percent of the total classified vehicles. The number of Small Trucks in the study was 19 which represents 0 percent of the total classified vehicles. The number of Trucks/Buses in the study was 29 which represents 0 percent of the total classified vehicles. The number of Tractor Trailers in the study was 4 which represents 0 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 21.9	22.0 to >							
3297	3580	19	29	3	1	0	0							

CHART 2

HEADWAY

During the peak traffic period, on 2025-04-24 at [05:00 PM-05:15 PM] the average headway between vehicles was 15 seconds. During the slowest traffic period, on 2025-04-24 at [01:30 AM-01:45 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 8.00 and 37.00 degrees C.

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Falls
Street: McRae St - EB
Location: 71

A study of vehicle traffic was conducted with the device having serial number 402527. The study was done in the EB lane at McRae St - EB in Niagara Falls, ON in btwn Ottawa Ave & Buchanan Ave county. The study began on 2024-10-16 at 12:00 AM and concluded on 2024-10-20 at 12:00 AM, lasting a total of 96.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 3,968 vehicles passed through the location with a peak volume of 32 on 2024-10-18 at [02:15 PM-02:30 PM] and a minimum volume of 0 on 2024-10-16 at [01:00 AM-01:15 AM]. The AADT count for this study was 992.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 39 KM/H range or lower. The average speed for all classifed vehicles was 36 KM/H with 8.37% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 39KM/H and the 85th percentile was 48.55 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to >
1446	1264	901	223	58	25	10	6	8	0	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 3807 which represents 97 percent of the total classified vehicles. The number of Small Trucks in the study was 21 which represents 1 percent of the total classified vehicles. The number of Trucks/Buses in the study was 99 which represents 3 percent of the total classified vehicles. The number of Tractor Trailers in the study was 14 which represents 0 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 21.9	22.0 to >							
2655	1152	21	99	12	1	1	0							

CHART 2

HEADWAY

During the peak traffic period, on 2024-10-18 at [02:15 PM-02:30 PM] the average headway between vehicles was 27.273 seconds. During the slowest traffic period, on 2024-10-16 at [01:00 AM-01:15 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 5.00 and 30.00 degrees C.

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Falls
Street: McRae St - WB
Location: 71

A study of vehicle traffic was conducted with the device having serial number 406328. The study was done in the WB lane at McRae St - WB in Niagara Falls, ON in btwn Ottawa Ave & Buchanan Ave county. The study began on 2024-10-16 at 12:00 AM and concluded on 2024-10-20 at 12:00 AM, lasting a total of 96.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 3,905 vehicles passed through the location with a peak volume of 29 on 2024-10-16 at [07:30 AM-07:45 AM] and a minimum volume of 0 on 2024-10-16 at [12:45 AM-01:00 AM]. The AADT count for this study was 976.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 KM/H range or lower. The average speed for all classifed vehicles was 41 KM/H with 21.82% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 45KM/H and the 85th percentile was 53.07 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 104	105 to >
1033	914	1069	429	232	98	54	21	8	0	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 3720 which represents 96 percent of the total classified vehicles. The number of Small Trucks in the study was 38 which represents 1 percent of the total classified vehicles. The number of Trucks/Buses in the study was 83 which represents 2 percent of the total classified vehicles. The number of Tractor Trailers in the study was 17 which represents 0 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 21.9	22.0 to >							
2201	1519	38	83	15	2	0	0							

CHART 2

HEADWAY

During the peak traffic period, on 2024-10-16 at [07:30 AM-07:45 AM] the average headway between vehicles was 30 seconds. During the slowest traffic period, on 2024-10-16 at [12:45 AM-01:00 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 5.00 and 28.00 degrees C.

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Region
Street: 610304 - SB
Location: 610304

A study of vehicle traffic was conducted with the device having serial number 405065. The study was done in the SB lane at 610304 - SB in Niagara Region, ON in county. The study began on 2025-07-08 at 12:00 AM and concluded on 2025-07-09 at 12:00 AM, lasting a total of 24.00 hours. Traffic statistics were recorded in 15 minute time periods. The total recorded volume showed 8,855 vehicles passed through the location with a peak volume of 178 on 2025-07-08 at [04:00 PM-04:15 PM] and a minimum volume of 8 on 2025-07-08 at [03:00 AM-03:15 AM]. The AADT count for this study was 8,855.

SPEED

Chart 1 lists the values of the speed bins and the total traffic volume for each bin. At least half the vehicles were traveling in the 45 - 50 KM/H range or lower. The average speed for all classifed vehicles was 47 KM/H with 43.54% vehicles exceeding the posted speed of 50 KM/H. 0.00% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 45KM/H and the 85th percentile was 57.32 KM/H.

< to 39	40 to 44	45 to 49	50 to 54	55 to 59	60 to 64	65 to 69	70 to 74	75 to 79	80 to 84	85 to 89	90 to 94	95 to 99	100 to 129	130 to >
1117	1147	2667	1937	1195	424	154	48	33	11	0	0	0	0	0

CHART 1

CLASSIFICATION

Chart 2 lists the values of the classification bins and the total traffic volume accumulated for each bin.
Most of the vehicles classified during the study were Passenger Vehicles. The number of Passenger Vehicles in the study was 8488 which represents 97 percent of the total classified vehicles. The number of Small Trucks in the study was 60 which represents 1 percent of the total classified vehicles. The number of Trucks/Buses in the study was 93 which represents 1 percent of the total classified vehicles. The number of Tractor Trailers in the study was 92 which represents 1 percent of the total classified vehicles.

< to 4.9	5.0 to 7.9	8.0 to 9.9	10.0 to 12.9	13.0 to 15.9	16.0 to 18.9	19.0 to 24.9	25.0 to >							
4672	3816	60	93	73	6	9	4							

CHART 2

HEADWAY

During the peak traffic period, on 2025-07-08 at [04:00 PM-04:15 PM] the average headway between vehicles was 5.028 seconds. During the slowest traffic period, on 2025-07-08 at [03:00 AM-03:15 AM] the average headway between vehicles was 100 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 25.00 and 34.00 degrees C.

Table D1 - Summary of Road Traffic on Stanley Avenue

AADT - 2025	17119				Niagara Region [1]
AADT - Projected to 2046, 2.5% Annual Increase	28753				Projected volume [2]
Day / Night (90/10)	Breakdown	24-hour	Day - 90%	Night - 10%	Per STASMSON protocol
Passenger Cars	96.68%	27798	25018	2780	Average from Chart 2
Medium Trucks	1.67%	480	432	48	"Small Trucks" + 60% of "Trucks/Buses"
Heavy Trucks	1.65%	474	427	47	"Tractor Trailers" + 40% of "Trucks/Buses"

Notes

1. The road traffic data was provided by the Niagara Region in November 2025.

2. The volume in 2046 was were projected based on an annual 2.5% compounded growth rate.

Table D2 - Summary of Road Traffic on Valley Way

AADT - 2025	3691				Niagara Region [1]
AADT - Projected to 2046, 2.5% Annual Increase	6199				Projected volume [2]
Day / Night (90/10)	Breakdown	24-hour	Day - 90%	Night - 10%	Per STASMSON protocol
Passenger Cars	99.00%	6137	5524	614	Average from Chart 2
Medium Trucks	0.70%	43	39	4	"Small Trucks" + 60% of "Trucks/Buses"
Heavy Trucks	0.30%	19	17	2	"Tractor Trailers" + 40% of "Trucks/Buses"

Notes

1. The road traffic data was provided by the Niagara Region in November 2025.

2. The volume in 2046 was projected based on an annual 2.5% compounded growth rate.

Table D3 - Summary of Road Traffic on McRae St.

AADT - 2024	1968				Niagara Region [1]
AADT - Projected to 2046, 2.5% Annual Increase	3388				Projected volume [2]
Day / Night (90/10)	Breakdown	24-hour	Day - 90%	Night - 10%	Per STASMSON protocol
Passenger Cars	96.40%	3266	2939	327	Average from Chart 2
Medium Trucks	2.20%	75	67	7	"Small Trucks" + 60% of "Trucks/Buses"
Heavy Trucks	1.40%	47	43	5	"Tractor Trailers" + 40% of "Trucks/Buses"

Notes

1. The road traffic data was provided by the Niagara Region in November 2024.

2. The volume in 2046 was projected based on an annual 2.5% compounded growth rate.

Table D4 - Summary of Road Traffic on Highway 420

AADT - 2019	44900				MTO [1]
AADT - Projected to 2046, 2.0% Annual Increase	76639				Projected volume [2]
Day / Night (90/10)	Breakdown	24-hour	Day - 67%	Night - 33%	Per STASMSON protocol
Passenger Cars	96.0%	73574	49294	24279	96% per Historical AADTT
Medium Trucks	1.0%	766	513	253	25% of Total Trucks (4%)
Heavy Trucks	3.0%	2299	1540	759	75% of Total Trucks (4%)

Notes

1. The road traffic data was obtained from the MTO iCorridor website.

2. The volume in 2046 was projected based on the average, historical growth rate of 2.0%.

The vehicle percentages (96% for cars and 4% for trucks) were determined based on MTO historical traffic data.

The truck percentage ratio (5/15) was taken from the MTO Environmental Guide for Noise, 2022.

STAMSON 5.0 NORMAL REPORT Date: 02-04-2026 10:17:38
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: stanley.te Time Period: Day/Night 16/8 hours
Description: Predicted Traffic Noise Impact from Stanley Avenue at Receptor “Front”

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

Car traffic volume : 25018/2780 veh/TimePeriod *
Medium truck volume : 432/48 veh/TimePeriod *
Heavy truck volume : 427/47 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): 17119
Percentage of Annual Growth : 2.50
Number of Years of Growth : 21.00
Medium Truck % of Total Volume : 1.67
Heavy Truck % of Total Volume : 1.65
Day (16 hrs) % of Total Volume : 90.00

Data for Segment # 1: Stanley (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 : 40.00 / 40.00 m
Receiver height : 6.00 / 6.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Stanley (day)

Source height = 1.13 m

ROAD (0.00 + 63.44 + 0.00) = 63.44 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	67.70	0.00	-4.26	0.00	0.00	0.00	0.00	63.44

Segment Leq : 63.44 dBA

Total Leq All Segments: 63.44 dBA

Results segment # 1: Stanley (night)

Source height = 1.13 m

ROAD (0.00 + 56.89 + 0.00) = 56.89 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	90	0.00	61.15	0.00	-4.26	0.00	0.00	0.00	0.00	56.89

Segment Leq : 56.89 dBA

Total Leq All Segments: 56.89 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 63.44
(NIGHT): 56.89

STAMSON 5.0 NORMAL REPORT Date: 02-04-2026 10:19:51
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: valley.te Time Period: Day/Night 16/8 hours
Description: Predicted Traffic Noise Impact from Valley Way at Receptor "Front"

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

Car traffic volume	:	5524/614	veh/TimePeriod *
Medium truck volume	:	39/4	veh/TimePeriod *
Heavy truck volume	:	17/2	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)	:	3691
Percentage of Annual Growth	:	2.50
Number of Years of Growth	:	21.00
Medium Truck % of Total Volume	:	0.70
Heavy Truck % of Total Volume	:	0.30
Day (16 hrs) % of Total Volume	:	90.00

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

Angle1 Angle2	:	-90.00 deg	30.00 deg
Wood depth	:	0	(No woods.)
No of house rows	:	0 / 0	
Surface	:	2	(Reflective ground surface)
Receiver source distance	:	60.00 / 60.00	m
Receiver height	:	6.00 / 6.00	m
Topography	:	1	(Flat/gentle slope; no barrier)
Reference angle	:	0.00	

Results segment # 1: Valley (day)

Source height = 0.74 m

ROAD (0.00 + 50.83 + 0.00) = 50.83 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	30	0.00	58.61	0.00	-6.02	-1.76	0.00	0.00	0.00	50.83

Segment Leq : 50.83 dBA

Total Leq All Segments: 50.83 dBA

Results segment # 1: Valley (night)

Source height = 0.75 m

ROAD (0.00 + 44.31 + 0.00) = 44.31 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	30	0.00	52.09	0.00	-6.02	-1.76	0.00	0.00	0.00	44.31

Segment Leq : 44.31 dBA

Total Leq All Segments: 44.31 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 50.83
(NIGHT): 44.31

STAMSON 5.0 NORMAL REPORT Date: 02-04-2026 10:22:13
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: mcrae.te Time Period: Day/Night 16/8 hours
Description: Predicted Traffic Noise Impact from McRae St. at Receptor "Front"

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

Car traffic volume : 2939/327 veh/TimePeriod *
Medium truck volume : 67/7 veh/TimePeriod *
Heavy truck volume : 43/5 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): 1968
Percentage of Annual Growth : 2.50
Number of Years of Growth : 22.00
Medium Truck % of Total Volume : 2.20
Heavy Truck % of Total Volume : 1.40
Day (16 hrs) % of Total Volume : 90.00

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

Angle1 Angle2 : 0.00 deg 35.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 45.00 / 45.00 m
Receiver height : 6.00 / 6.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: McRae (day)

Source height = 1.09 m

ROAD (0.00 + 46.38 + 0.00) = 46.38 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	35	0.00	58.26	0.00	-4.77	-7.11	0.00	0.00	0.00	46.38

Segment Leq : 46.38 dBA

Total Leq All Segments: 46.38 dBA

Results segment # 1: McRae (night)

Source height = 1.10 m

ROAD (0.00 + 39.90 + 0.00) = 39.90 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	35	0.00	51.78	0.00	-4.77	-7.11	0.00	0.00	0.00	39.90

Segment Leq : 39.90 dBA

Total Leq All Segments: 39.90 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 46.38
(NIGHT): 39.90

STAMSON 5.0 NORMAL REPORT Date: 02-04-2026 10:35:30
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: hwy420.te Time Period: Day/Night 16/8 hours
Description: Predicted Traffic Noise Impact from Highway 420 at Receptor "Front"

Road data, segment # 1: Hwy420 (day/night)

Car traffic volume : 49294/24279 veh/TimePeriod *
Medium truck volume : 513/253 veh/TimePeriod *
Heavy truck volume : 1540/759 veh/TimePeriod *
Posted speed limit : 60 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

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

24 hr Traffic Volume (AADT or SADT): 44900
Percentage of Annual Growth : 2.00
Number of Years of Growth : 27.00
Medium Truck % of Total Volume : 1.00
Heavy Truck % of Total Volume : 3.00
Day (16 hrs) % of Total Volume : 67.00

Data for Segment # 1: Hwy420 (day/night)

Angle1 Angle2 : 0.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 290.00 / 290.00 m
Receiver height : 6.00 / 6.00 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Hwy420 (day)

Source height = 1.32 m

ROAD (0.00 + 49.55 + 0.00) = 49.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.53	73.48	0.00	-19.69	-4.24	0.00	0.00	0.00	49.55

Segment Leq : 49.55 dBA

Total Leq All Segments: 49.55 dBA

Results segment # 1: Hwy420 (night)

Source height = 1.32 m

ROAD (0.00 + 49.49 + 0.00) = 49.49 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
0	90	0.53	73.42	0.00	-19.69	-4.24	0.00	0.00	0.00	49.49

Segment Leq : 49.49 dBA

Total Leq All Segments: 49.49 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 49.55
(NIGHT): 49.49

APPENDIX E

Manufacturer Sound Data

(2 Pages)

Coil Dimensions

Model	Tons	Fin height in.	Fin length in.
DSG	3	24.248	38.068
DSG	4	24.248	38.068
DSG	5	24.248	38.068
DSG	6	34.640	38.068

AHRI Ratings

MODEL	CAPACITY	EER2	SEER2	EER	IEER
DSG036	35,000	12.0	14.0	N/A	N/A
DSG048	46,000	11.8	13.7	N/A	N/A
DSG060	57,500	11.8	13.7	N/A	N/A
DSG072	69,000	N/A	N/A	11.8	16.7

INT_HVAC1-6

Sound Data

Static Pressure	3 TON SOUND (DB) AT 60 HZ									
	INDOOR CFM	COMPONET	A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
0.8	1,160	Discharge	67	83.1	78.4	65.6	60.2	58.3	55.4	54.8	48.2
		Inlet	62	82.4	75.9	59.4	54.9	52.3	47.3	45.7	40.8
1.8		Discharge	77	87.3	86.5	76.4	71.3	70.6	65.1	65.5	62.1
		Inlet	69	83.7	81.6	69.5	64.5	62.0	57.6	57.8	55.8
N/A	N/A	Outdoor	72	N/A	60.2	63.4	65.4	66.0	65.2	62.0	57.0

Static Pressure	4 TON SOUND (DB) AT 60 HZ									
	INDOOR CFM	COMPONET	A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
0.8	1,570	Discharge	73	98.0	85.8	70.3	64.4	62.4	58.0	57.8	52.5
		Inlet	70	90.2	82.4	67.8	60.7	56.9	51.3	49.7	45.8
1.8		Discharge	77	97.9	84.5	76.6	72.1	69.0	65.3	65.6	61.8
		Inlet	70	89.1	80.2	71.5	64.5	62.2	57.7	57.7	54.8
N/A	N/A	Outdoor	76	N/A	63.0	66.6	69.5	71.9	67.3	61.7	52.6

Static Pressure	5 TON SOUND (DB) AT 60 HZ									
	INDOOR CFM	COMPONET	A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
0.8	1,820	Discharge	75	98.4	83.2	76.1	69.8	67.2	63.2	63.4	59.4
		Inlet	68	84.1	78.6	74.1	62.2	60.0	55.2	55.2	51.9
1.8		Discharge	80	92.8	87.1	81.9	76.0	72.4	68.2	68.2	65.6
		Inlet	73	87.9	83.9	73.3	67.3	64.8	61.2	60.8	58.0
N/A	N/A	Outdoor	77	N/A	66.6	65.1	70.4	72.0	69.7	66.6	57.4

Static Pressure	6 TON SOUND (DB) AT 60 HZ									
	INDOOR CFM	COMPONET	A-WEIGHTED	63	125	250	500	1000	2000	4000	8000
0.8	2,100	Discharge	64	82.1	74.4	63.4	60.3	55.7	53.4	52.6	47.4
		Inlet	60	75.7	72.8	59.6	56.5	53.5	49.6	43.6	40.5
1.8		Discharge	76	92.9	86.7	76.9	70.7	67.0	63.5	63.8	59.7
		Inlet	70	85.5	83.4	69.5	63.8	61.6	56.0	55.0	52.1
N/A	N/A	Outdoor	79	N/A	62.9	67.5	71.8	74.9	71.8	66.9	58.6

Notes:

[1] Outdoor sound data is measured in accordance with AHRI standard 270.

[2] Discharge and Inlet sound data measured in accordanced with AHRI standard 260.

[3] Measurements are expressed in terms of sound power. Do not compare these values to sound pressure values because sound pressure depends on specific environment factors which normally do not match individual applications. Sound power values are independent of the environment and therefore more accurate.

[4] A-weighted sound ratings filter out high and very low frequencies, to better approximate the response of "average" human ear. A-weighted measurements for Daikin units are taken in accordance with AHRI standard 270.

Sound Performance

ZF/ZR/XP Indoor Sound Power Levels

Size (Tons)	CFM	ESP (IWG)	Blower		Sound Power, dB (10^{-12}) Watts							
					Sound Rating[1] dB (A)	Octave Band Centerline Frequency (Hz)						
			RPM	BHP		63	125	250	500	1000	2000	4000	8000
036 (3.0)	1200	0.2	630	0.41	63	82	77	59	50	43	42	40	45
048 (4.0)	1600	0.2	791	0.54	72	95	84	58	54	46	44	45	44
060 (5.0)	2000	0.2	840	0.67	62	84	71	58	53	50	49	49	49
072 (6.0)	2200	0.3	920	1.45	76	61	71	68	67	72	66	61	54

1. These values have been accessed using a model of sound propagation from a point source into the hemispheric/free field. The dBA values provided are to be used for reference only. Calculation of dBA values cover matters of system design and the fan manufacture has no way of knowing the details of each system. This constitutes an exception to any specification or guarantee requiring a dBA value of sound data in any other form than sound power level ratings.

ZF/ZR Outdoor Sound Power Levels

Size (Tons)	Sound Rating[1] dB (A)	Octave Band Centerline Frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000
036 (3.0)	81	87.5	86.0	81.0	77.0	75.0	69.5	65.5	70.5
048 (4.0)	80	84.5	81.0	80.0	78.0	75.0	70.0	67.0	70.5
060 (5.0)	82	86.5	87.5	81.5	77.5	75.0	71.5	68.0	70.5

HVAC_1F

1. Rated in accordance with ARI 270 standard.

XP Outdoor Sound Power Levels

Size (Tons)	Sound Rating[1] dB (A)	Octave Band Centerline Frequency (Hz)							
		63	125	250	500	1000	2000	4000	8000
036 (3.0)	76	83.5	84.5	76.5	72.0	68.0	66.0	60.0	56.0
048 (4.0)	80	85.0	83.0	81.0	77.5	75.5	71.5	67.5	61.5
060 (5.0)	80	86.0	84.0	81.0	77.0	75.5	71.0	66.5	60.5

1. Rated in accordance with ARI 270 standard.

APPENDIX F

Warning Clause

(1 Page)

Warning Clause Type C

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