

Environmental Noise Feasibility Study

116 Four Mile Creek Road

Proposed Residential Development Town of Niagara-on-the-Lake

September 8, 2025
Project: 125-0107

Prepared for

Pinewood Homes (Niagara) Ltd.

Prepared by



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VALCOUSTICS

Canada Ltd.

Version History

Version #	Date	Comments
1.0	September 8, 2025	Prepared for Submission

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Environmental Noise Feasibility Study

116 Four Mile Creek Road

Proposed Residential Development

Town of Niagara-on-the-Lake

EXECUTIVE SUMMARY

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Feasibility Study for the proposed residential development to support the Official Plan Amendment (OPA) / Zoning By law Amendment (ZBA) application submission to the Town of Niagara-on-the-Lake and Regional Municipality of Niagara Falls.

The development consists of a 4-storey apartment building with 77 units.

The significant noise source with potential to impact the proposed development is road traffic on Four Mile Creek Road and Highway 405.

The sound levels on site have been predicted and compared with the applicable Ministry of the Environment, Conservation and Parks (MECP) noise guideline limits to determine the need for noise mitigation. To meet the applicable transportation noise source guideline limits:

- All residential units require mandatory air conditioning.
- The applicable indoor noise guidelines at all buildings are predicted to be met without any special wall and window upgrades beyond the minimum non-acoustical requirements of the Ontario Building Code (OBC).

Final requirements should be checked once detailed architectural plans are available or if the site plan changes.

1.0 INTRODUCTION

Valcoustics Canada Ltd. (VCL) was retained to prepare an Environmental Noise Feasibility Study for the proposed residential development to support the Official Plan Amendment (OPA) / Zoning By law Amendment (ZBA) application submission to the Town of Niagara-on-the-Lake and Regional Municipality of Niagara Falls.

The predicted sound levels and noise mitigation measures needed for the proposed development to comply with noise guidelines of the MECP are outlined herein.

1.1 THE SITE AND SURROUNDING AREA

The proposed development is located at 116 Four Mile Creek Road in the Town of Niagara-on-the-Lake (on the west side of Four Mile Creek Road and approximately 300 m north of Highway 405). The site is bounded by:

- Existing residential development, with an existing green house beyond, to the north;
- Four Mile Creek Road, with vacant lands (zoned as Low Density Residential and Conservation) beyond, to the east;
- Vacant land (zone as Low Density Residential), with existing residential dwellings and a restaurant beyond, to the south; and
- Existing residential subdivision to the west.

A Key Plan is included as Figure 1.

1.2 THE PROPOSED DEVELOPMENT

The development consists of a 4-storey, L-shaped apartment building with 77 units. The proposed building will be situated along the east and south sides of the site. The north and west portions of the site will be used for outdoor parking and driveways. A covered patio will be provided at grade near southeast corner of the building, with a rooftop amenity space above. An additional outdoor amenity area will be located at southwest corner of the site.

Private patios/balconies to be provided will be small (less than 4 m in depth).

The study is based on the Architectural drawing set prepared by Raimondo+Associates Architects Inc., dated August 18, 2025, and Site Plan prepared by Upper Canada Consultants, dated August 14, 2025. Figure 2 shows the Site Plan. The drawings set is included as Appendix A.

2.0 NOISE SOURCES

2.1 TRANSPORTATION NOISE SOURCES

The transportation noise source with potential to impact the proposed development is the road traffic on Four Mile Creek Road and Highway 405. Traffic volumes on other surrounding roadways are anticipated to be minor and no significant noise impact at the subject site is expected. Thus, the other roadways have not been considered further in this assessment.

Current (year 2021) 24-hour traffic volumes for Four Mile Creek Road were provided by the Region of Niagara in the form of 24-hour automatic traffic recorder (ATR) reports. Future

(year 2045) traffic volumes were obtained by escalating the current volumes at a growth rate of 2%, compounded annually. Truck and day/night percentages were calculated from the ATR Report. The posted speed limit for Four Mile Creek Road in the vicinity of the site is 50 km/hr.

Future (year 2045) road traffic data for Highway 405 was obtained from the Ontario Ministry of Transportation. To be conservative, the Summer Average Daily Traffic (SADT) was used in this assessment as it is greater than the Annual Average Daily Traffic (AADT).

The westbound and eastbound traffic volumes on Highway 405 were assumed to be 50% each of the provided SADT. As recommended by the MTO for freeways, medium/heavy trucks were assumed to be 25%/75% of the total truck percentages, the day/night split is assumed to be 67%/33%.

The traffic data is shown in Appendix B and summarized in Table 1.

TABLE 1 ROAD TRAFFIC DATA

Roadway	Year	AADT/SADT ⁽¹⁾	% Trucks		Day/Night Split (%)	Speed Limit (kph)
			Medium	Heavy		
Four Mile Creek Road ⁽²⁾	2021 (2045)	11 220 (18 047)	3.03	0.88	95/5	50
Highway 405 ⁽³⁾	2045	22600	5.25	15.75	67/33	100

Notes:

- (1) AADT – Annual Average Daily Traffic; SADT – Summer Average Daily Traffic.
- (2) Current (year 2021) volumes and truck percentages for Four Mile Creek Road were provided by the Region of Niagara in the form of 24-hour automatic traffic recorder (ATR) reports.
Future (year 2045) volumes, shown in brackets, were obtained by escalating the current volumes at a growth rate of 2%, compounded annually. The day/night split was assumed.
- (3) As recommended by the MTO for freeways, medium/heavy trucks were assumed to be 25%/75% of the total truck percentages, the day/night split is assumed to be 67%/33%.

2.2 STATIONARY NOISE SOURCES

As confirmed by the VCL on-site investigation conducted on August 6, 2025, there are no stationary noise sources, such as industrial or commercial facilities, in the vicinity of the site.

3.0 ENVIRONMENTAL NOISE GUIDELINES

3.1 MECP PUBLICATION NPC-300 – TRANSPORTATION NOISE SOURCES

The applicable noise guidelines for new residential development are those in MECP Publication NPC-300, “Environmental Noise Guideline, Stationary and Transportation Sources - Approval and Planning”. The environmental noise guidelines of the MECP, as provided in Publication NPC-300, are discussed briefly below and summarized in Appendix C.

3.1.1 Architectural Elements

In the daytime, the indoor criterion for road noise is $L_{eq\ Day}^{(1)}$ of 45 dBA for sensitive spaces such as living/dining rooms, dens and bedrooms. At night, the indoor criterion for road noise is $L_{eq\ Night}^{(2)}$ of 45 dBA for sensitive spaces such as living/dining rooms and dens and 40 dBA for bedrooms.

The architectural design of the building envelope (walls, windows, etc.) must provide adequate sound isolation to achieve these indoor sound level limits.

3.1.2 Ventilation

In accordance with the MECP noise guideline for road traffic sources, if the daytime sound level, $L_{eq\ Day}$, at the exterior face of a noise sensitive window is greater than 65 dBA, means must be provided so that windows can be kept closed for noise control purposes and central air conditioning is required. For daytime sound levels between 56 dBA and 65 dBA inclusive, there need only be the provision for adding air conditioning at a later date. A warning clause advising the occupant of the potential interference with some activities is also required. At nighttime, air conditioning would be required when the sound level exceeds 60 dBA ($L_{eq\ Night}$) at a noise sensitive window (provision for adding air conditioning is required when greater than 50 dBA).

3.1.3 Outdoors

For outdoor amenity areas ("Outdoor Living Areas" - OLA's), the guideline is 55 dBA $L_{eq\ Day}$ (0700 to 2300 hours), with an excess not exceeding 5 dBA considered acceptable if it is technically not practicable to achieve the 55 dBA objective, providing warning clauses are registered on title.

Note that for road traffic sources, a balcony is not considered an OLA, unless it is the only OLA for the occupant and it is:

- at least 4 m in depth; and
- unenclosed.

3.2 NIAGARA REGION

Niagara Region noise guidelines are contained in a Public Works Department Policy Manual, Regional Road Traffic Noise Control, dated November 9, 2006.

The noise requirements for new developments are very similar to the MECP requirements described above. Note that Niagara Region requires traffic volumes to be projected to a condition 20 years in the future.

(1) 16-hour energy equivalent sound level (0700-2300 hours).

(2) 8-hour energy equivalent sound level (2300-0700 hours).

4.0 TRANSPORTATION NOISE IMPACT ASSESSMENT

4.1 ASSESSMENT

Using the road traffic data in Table 1, the sound levels, in terms of equivalent continuous sound pressure level over the daytime and nighttime periods (L_{eq} Day and L_{eq} Night), were determined using STAMSON V5.04 – ORNAMENT, the computerized road traffic noise prediction model of the MECP.

The daytime and nighttime sound levels at the building facades were assessed at a height of 11.4 m, representing the top-storey (worst-case) bedroom windows. The daytime OLA sound levels at the amenity spaces were calculated at a height of 1.5 m above grade or above the terrace floor slab, at the centre of each outdoor common amenity area.

Inherent acoustical screening of the building due to its orientation to the noise source was taken into account. To be conservative, screening from existing and proposed developments in the vicinity of the subject site was not included in the assessment.

At the building facades, the highest unmitigated daytime/nighttime sound levels of 65 dBA/57 dBA are predicted to occur on the exterior plane of windows on the east façade of the building, the closest and most exposed to Four Mile Creek Road. The highest unmitigated daytime OLA sound level of 63 dBA is predicted to occur at the ground and 2nd floor outdoor amenity areas near the southeast corner of the building.

Table 2 summarizes the unmitigated daytime and nighttime sound level predictions. Sample sound level calculation details are included as Appendix D.

TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS OUTDOORS

Location ⁽¹⁾	Source	Distance (m) ⁽²⁾	L_{eq} Day (dBA)	L_{eq} Night (dBA)
A Southeast Corner 4-storey East Face	Four Mile Creek Road	25	64	55
	Highway 405, WB	359	51	51
	Highway 405, EB	390	50	50
	TOTAL	–	65	57
A Southeast Corner 4-storey South Face	Four Mile Creek Road	25	61	51
	Highway 405, WB	359	55	55
	Highway 405, EB	390	54	54
	TOTAL	–	62	58

.../cont'd

TABLE 2 PREDICTED UNMITIGATED SOUND LEVELS OUTDOORS (continued)

Location ⁽¹⁾	Source	Distance (m) ⁽²⁾	L _{eq} Day (dBA)	L _{eq} Night (dBA)
B Northeast Corner 4-storey East Face	Four Mile Creek Road	22	65	55
	Highway 405, WB	415	50	50
	Highway 405, EB	445	49	49
	TOTAL	–	65	57
B Northeast Corner 4-storey North Face	Four Mile Creek Road	22	63	53
C Covered Patio Ground Floor OLA	Four Mile Creek Road	29	63	–
C Rooftop Amenity 2 nd Floor OLA	Four Mile Creek Road	29	63	–
D Southwest Corner Ground Amenity OLA	Highway 405, WB	335	51	–
	Highway 405, EB	365	50	–
	TOTAL	–	53	–

Notes:

(1) See Figure 2.

(2) Distance indicated is taken from the centreline of the noise source to the point of reception.

4.2 NOISE ABATEMENT REQUIREMENTS

The noise control measures can generally be classified into two categories which are interrelated, but which can be treated separately for the most part:

- a) Architectural elements to achieve acceptable indoor noise guidelines;
- b) Design features to protect the OLA's.

Noise abatement requirements are summarized in Table 3 along with the notes to Table 3.

4.2.1 Indoors

4.2.1.1 Architectural Elements

The indoor sound level guidelines can be achieved by using appropriate construction for exterior walls, windows and doors.

In determining the worst-case architectural requirements for the residential units, wall and window areas were assumed to be 50% and 50% of the associated floor area, respectively, on each facade of a corner room with both facades exposed directly or at an angle to the road traffic noise sources, for both living/dining areas and sleeping quarters.

Based on the predicted sound levels, exterior wall and window construction meeting the minimum non-acoustical requirements of the Ontario Building Code will be sufficient to meet the indoor noise criteria.

The final sound isolation requirements should be reviewed when detailed architectural plans are developed. Wall and window constructions should also be reviewed at this point to ensure that they will meet the required sound isolation performance. This is typically required by the Town at the time of building permit application.

4.2.1.2 Ventilation Requirements

Based on the predicted sound levels, all the residential units require the provision for the adding air conditioning at a later date. In multi-unit buildings such as this, the provision for adding air conditioning requirement is typically not practical to implement. Thus, the ventilation requirement has been upgraded to mandatory air conditioning.

4.2.2 **Outdoors**

The unmitigated daytime OLA sound levels at the grade-level common amenity patio and 2nd-floor rooftop common amenity area, both located near the southeast corner of the building, are predicted to exceed the 60 dBA upper limit of the MECP noise guidelines. With regard to the elevated terrace, NPC-300 notes that elevated terraces are only treated as OLA's if they are the only outdoor living area for the occupants. As such, the elevated terrace will not be treated as a OLA, and mitigation is not recommended, because an amenity space is provided in the southwest corner of the building for the quiet enjoyment of the outdoors. Similarly, with regard to the grade level common amenity patio, the amenity space in the southwest corner allows for the quiet enjoyment of the outdoors. Furthermore, this outdoor amenity space is connected to the indoor amenity room, and as such is expected to be more of a functional outdoor space and not a space for the quiet enjoyment of the outdoor environment. For these reasons, it is recommended that the grade-level common amenity patio and 2nd floor terrace not be treated as an outdoor living areas with regard to the sound level limits in NPC-300.

For the amenity space at the southwest corner of the building, the MECP sound level limit is expected to be met without additional mitigation.

4.2.3 **Warning Clauses**

Warning clauses are a tool to inform prospective owners/occupants of potential annoyance due to existing noise sources. Where the guideline sound level limits are exceeded, appropriate

warning clauses should be registered on title or included in the development agreement that is registered on title. The warning clauses should also be included in agreements of Offers of Purchase and Sale and lease/rental agreements to make future occupants aware of the potential noise situation. Locations requiring warning clauses and the appropriate wording are given in Table 3 and in the notes to Table 3, respectively.

TABLE 3 NOISE ABATEMENT MEASURES

Location	Air Conditioning ⁽¹⁾	Exterior Wall ⁽²⁾	Exterior Window ⁽³⁾	Sound Barrier ⁽⁴⁾	Warning Clauses ⁽⁵⁾
All residential units	Mandatory	No special acoustical requirements			A + B

Notes:

- (1) Where means must be provided to allow windows to remain closed for road/rail noise control purposes, a commonly used technique is that of central air conditioning. Provision for adding air conditioning typically takes the form of a ducted ventilation system suitably sized to permit the addition of central air conditioning by the occupant.
- (2) STC - Sound Transmission Class Rating (Reference ASTM-E413).
Requirements are based on the architectural drawings prepared by Mountainview, dated April 25, 2023.
- (3) A sliding glass walkout door should be considered as a window and be included in the percentage of glazing. Window and exterior wall requirements were based on standard assumptions and should be reviewed once building (floor) plans are finalized.

The window STC rating applies to the entire window assembly and not just the glazing. The window supplier should provide acoustical laboratory test data (following a recognized test standard) for the intended windows indicated the STC ratings can be met.
- (4) Sound barriers must be of solid construction having a minimum face density of 20 kg/m² with no gaps or cracks
- (5) Warning clauses to be registered on title and be included in Offers of Purchase and Sale for designated lots:
 - 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 traffic may occasionally interfere with some activities of the dwelling occupants as the sound level may exceed the noise criteria of the Ministry of the Environment, Conservation and Parks and/or the municipality."
 - 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 sound level limits of the Municipality and the Ministry of the Environment."
- (6) All exterior doors shall be fully weather-stripped.

5.0 CONCLUSIONS

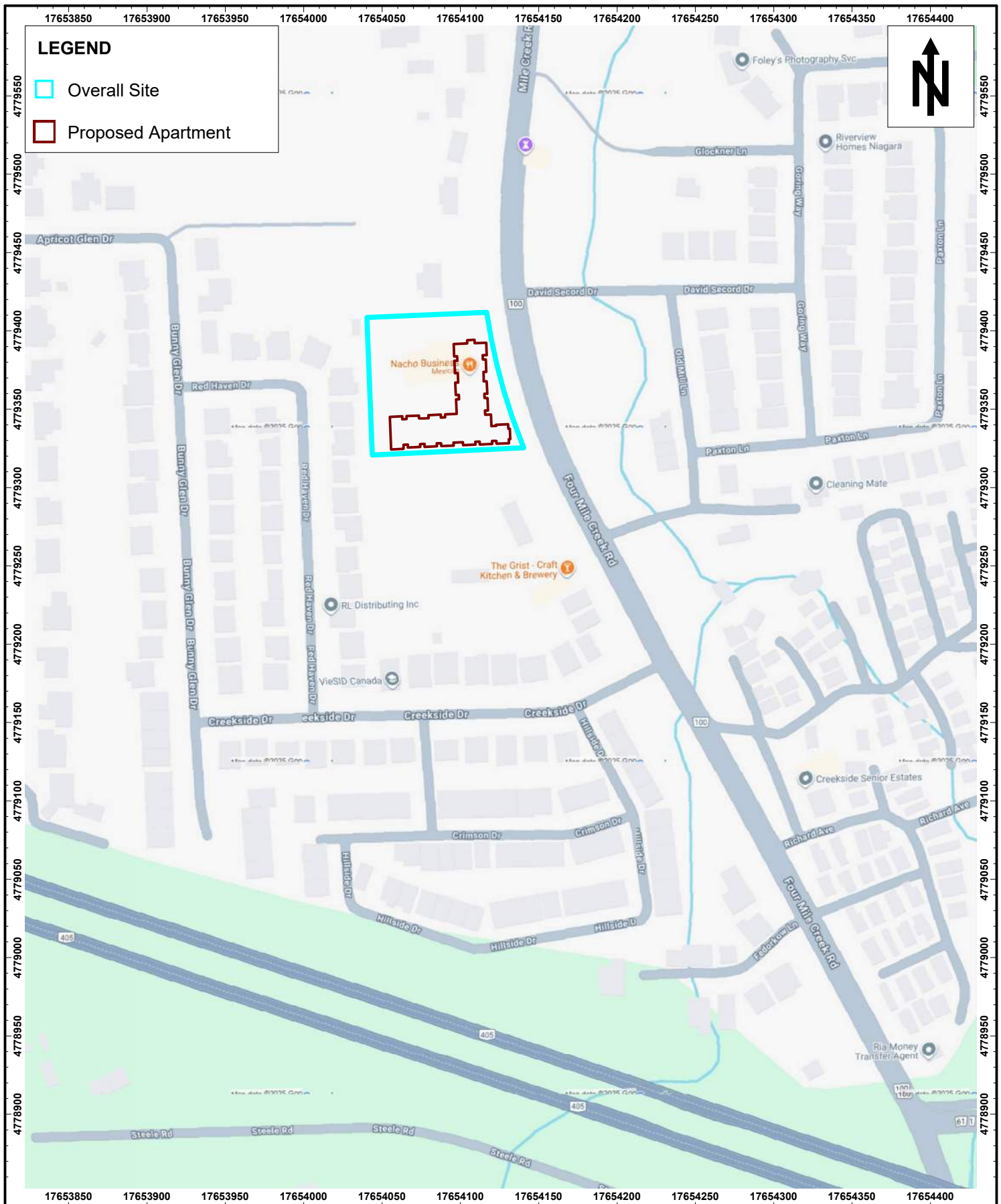
With appropriate acoustical design of the development, a suitable acoustical environment can be provided and the applicable MECP noise guideline requirements met.

The approvals and administrative procedures are available to ensure that the acoustical requirements are implemented.

6.0 REFERENCES

1. PC STAMSON 5.04, "Computer Program for Road Traffic Noise Assessment", Ontario Ministry of the Environment and Climate Change.
2. Building Practice Note No. 56: "Controlling Sound Transmission into Buildings", by J. D. Quirt, Division of Building Research, National Council of Canada, September 1985.
3. "Road and Rail Noise: Effects on Housing", Canada Mortgage and Housing Corporation, Publication NHA 5156, 81/10.
4. "Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning", Ontario Ministry of the Environment, Publication NPC-300, October 2013.
5. "Public Works Department Policy Manual, Regional Road Traffic Noise Control, Niagara Region, November 9, 2006.

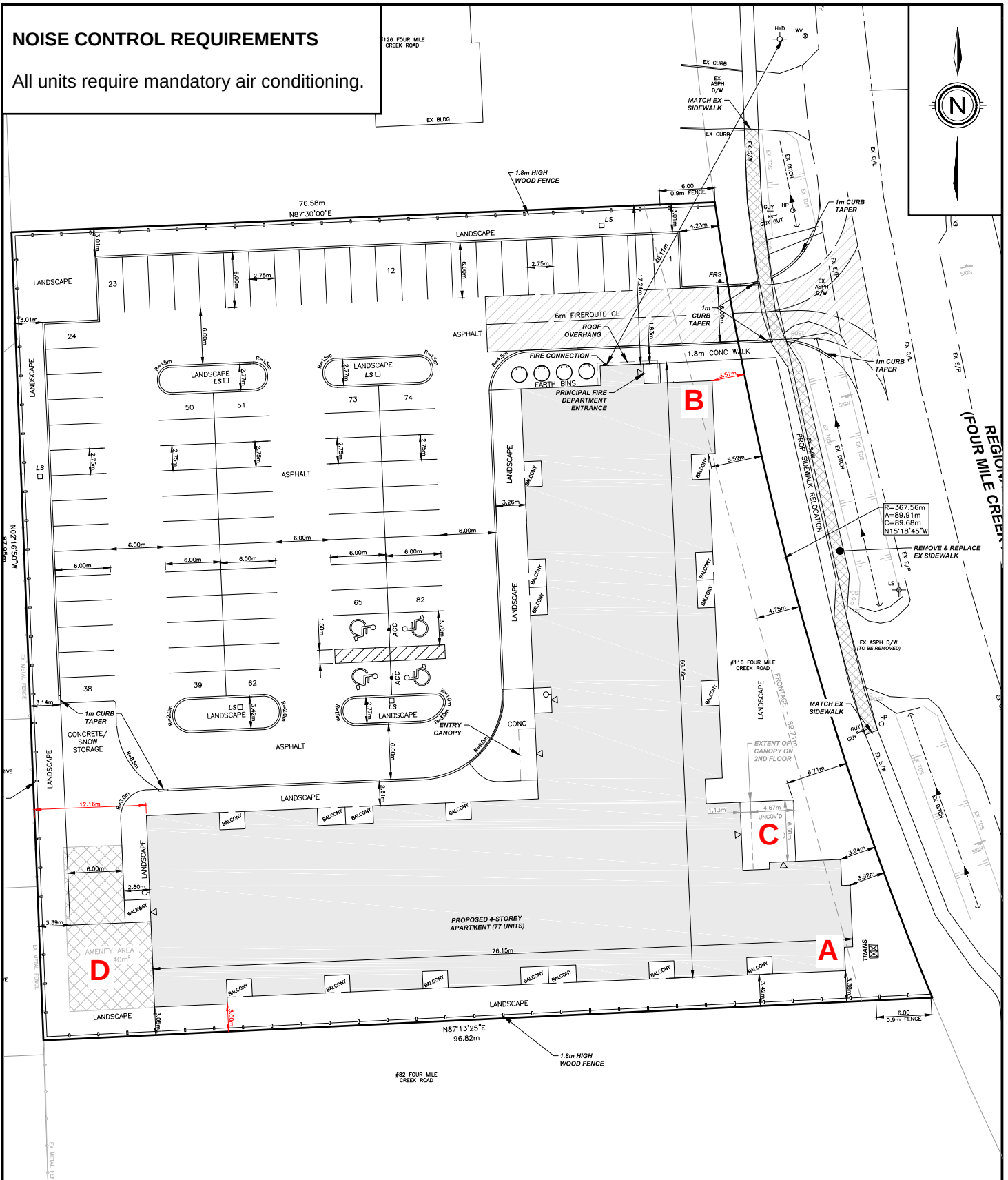
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116 Four Mile Creek, NOL - Noise v1_0.docx



 VALCOUSTICS <i>Canada Ltd.</i> consulting acoustical engineers	Title		Date	Figure 1
	Key Plan		2025-09-02	
	Project Name		Project No.	
	116 Four Mile Creek, NOL		1250107.000	

NOISE CONTROL REQUIREMENTS

All units require mandatory air conditioning.



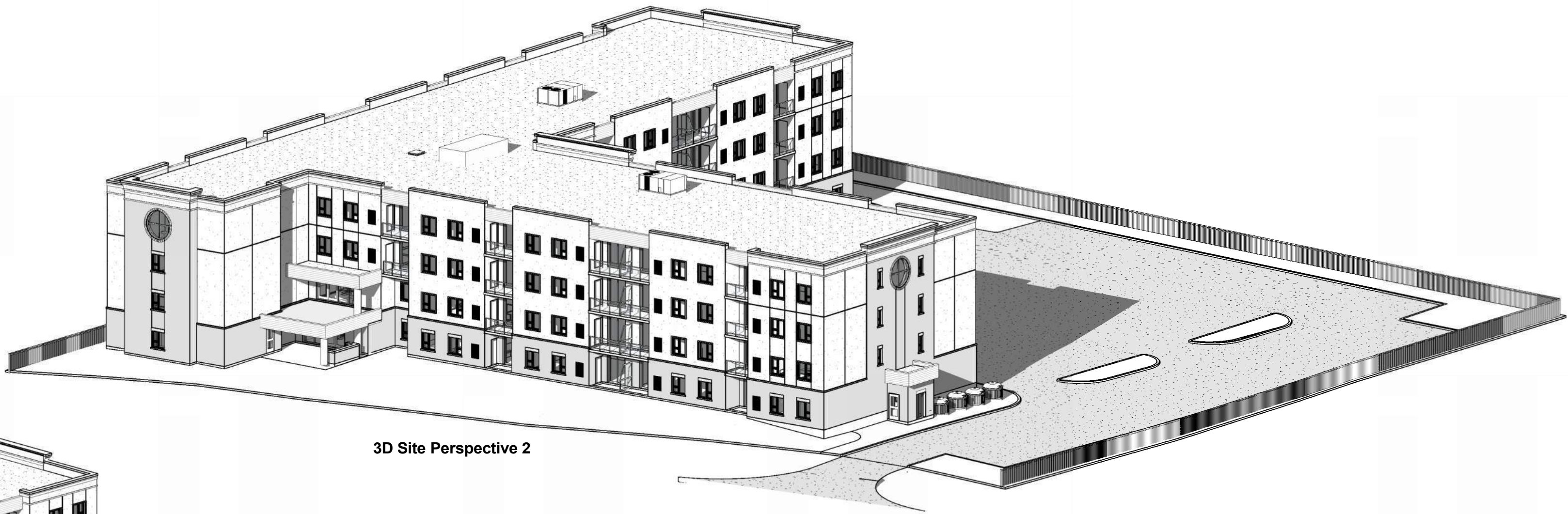
Base drawing prepared by Upper Canada Consultants

	Title SITE PLAN	Date 2025-09-02	Figure 2
	Project Name 116 Four Mile Creek, Niagara-on-the-Lake	Project No. 1250107.000	

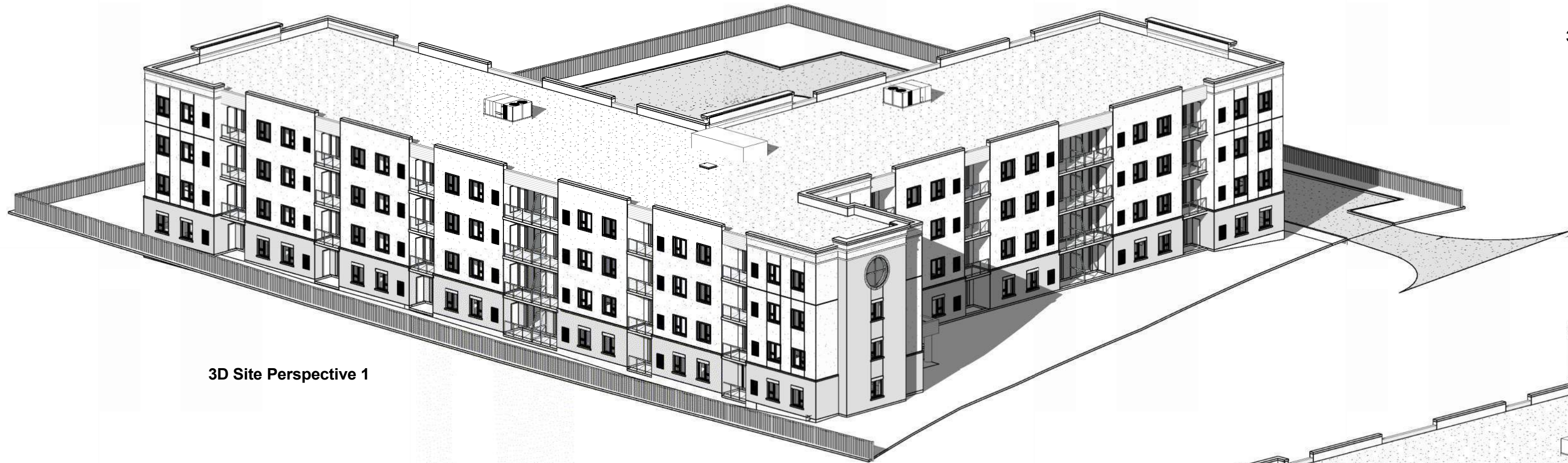
APPENDIX A

PLANS AND DRAWINGS

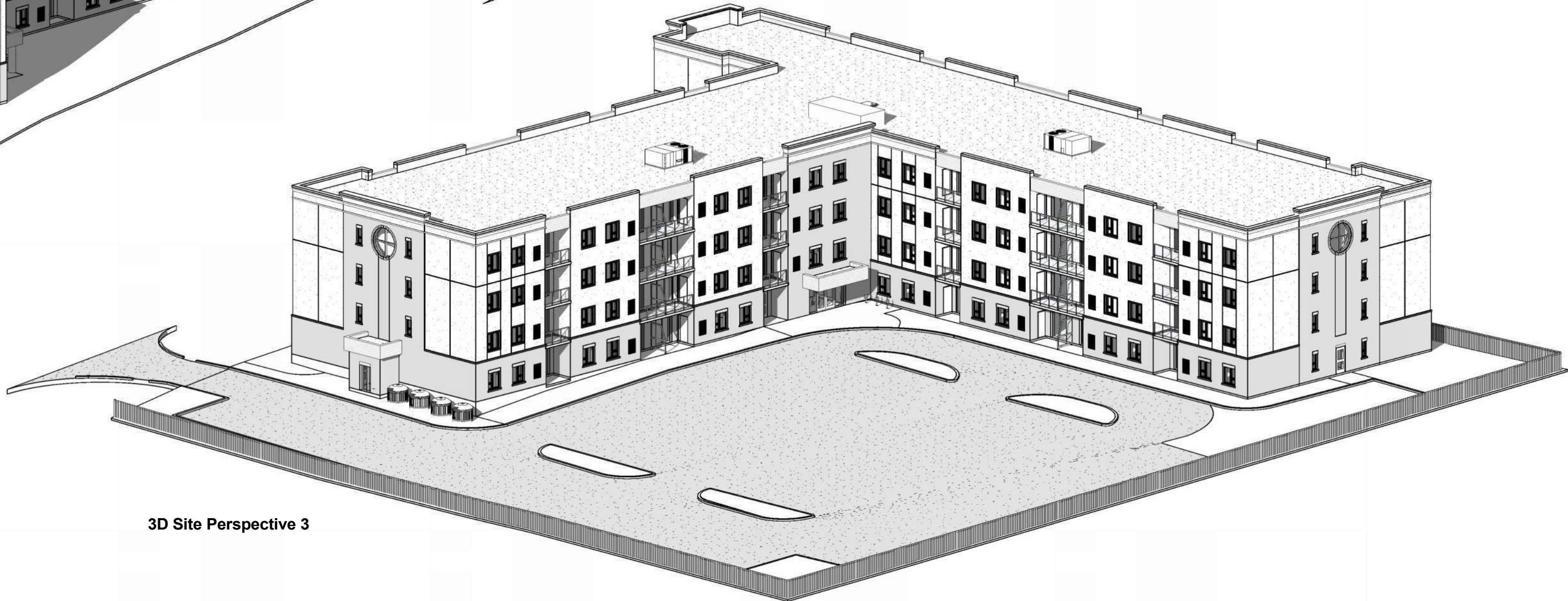
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3D Site Perspective 2



3D Site Perspective 1



3D Site Perspective 3

MATERIAL LEGEND

- Eifs / Stucco Rainscreen
 - Colour 1 - French Vanilla
RGB: (227,221,208)
 - Colour 2 - Ivory Key
RGB: (205,196,178)
- Brick Veneer
 - Morning Smoke Colour
- Glazing
- Metal Siding
 - Dark Walnut Colour
- Metals
 - Sable Colour
RGB (101,94,84)

A 6-12-2023 Issued For Pre-Con

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+ ASSOCIATES
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CLIENT NAME

Pinewood Homes (Tara)

PROJECT NAME

**Pine Mansions 4 -
Apartment Building**

PROJECT ADDRESS

116 Four Mile Creek Road, NOTL

SHEET NAME

Building Elevations

DRAWN BY: JJV

DATE: 8/18/2025 12:11:14 PM

SCALE: As indicated

PROJECT NO.: 22-069

CHECKED: ER

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Elevation - North
scale: 1 : 125



Elevation - West
scale: 1 : 125



Elevation - South
scale: 1 : 125

MATERIAL LEGEND

- Eifs / Stucco Rainscreen
 - Colour 1 - French Vanilla
RGB: (227,221,208)
 - Colour 2 - Ivory Key
RGB: (205,196,178)
- Brick Veneer
Morning Smoke Colour
- Glazing
- Metal Siding
Dark Walnut Colour
- Metals
Sable Colour
RGB (101,94,84)

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CLIENT NAME

Pinewood Homes (Tara)

PROJECT NAME

Pine Mansions 4 -
Apartment Building

PROJECT ADDRESS

116 Four Mile Creek Road, NOTL

SHEET NAME

Building Elevations

DRAWN BY:

JJV

DATE:

8/18/2025 12:11:47 PM

SCALE:

As indicated

PROJECT NO.:

22-069

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APPENDIX B

ROAD TRAFFIC DATA

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Region
Street: 610133 - NB
Location: 610133

A study of vehicle traffic was conducted with the device having serial number 403592. The study was done in the NB lane at 610133 - NB in Niagara Region, ON in county. The study began on 2021-09-01 at 12:00 AM and concluded on 2021-09-02 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 5,509 vehicles passed through the location with a peak volume of 125 on 2021-09-01 at [12:00 PM-12:15 PM] and a minimum volume of 0 on 2021-09-01 at [03:00 AM-03:15 AM]. The AADT count for this study was 5,509.

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 50 - 55 KM/H range or lower. The average speed for all classified vehicles was 53 KM/H with 76.90% vehicles exceeding the posted speed of 50 KM/H. 0.13% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 50KM/H and the 85th percentile was 59.05 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 >
66	247	958	2481	1142	412	134	34	16	6	4	3	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 5319 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 90 which represents 2 percent of the total classified vehicles. The number of Tractor Trailers in the study was 34 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 21.9	22.0 to >							
3196	2123	60	90	8	7	14	5							

CHART 2

HEADWAY

During the peak traffic period, on 2021-09-01 at [12:00 PM-12:15 PM] the average headway between vehicles was 7.143 seconds. During the slowest traffic period, on 2021-09-01 at [03:00 AM-03:15 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 23.00 and 38.00 degrees C.

MH Corbin Traffic Analyzer Study
Computer Generated Summary Report
City: Niagara Region
Street: 610133 - SB
Location: 610133

A study of vehicle traffic was conducted with the device having serial number 405073. The study was done in the SB lane at 610133 - SB in Niagara Region, ON in county. The study began on 2021-09-01 at 12:00 AM and concluded on 2021-09-02 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 5,711 vehicles passed through the location with a peak volume of 164 on 2021-09-01 at [05:00 PM-05:15 PM] and a minimum volume of 0 on 2021-09-01 at [02:00 AM-02:15 AM]. The AADT count for this study was 5,711.

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 60 - 65 KM/H range or lower. The average speed for all classified vehicles was 64 KM/H with 97.54% vehicles exceeding the posted speed of 50 KM/H. 0.62% percent of the total vehicles were traveling in excess of 89 KM/H. The mode speed for this traffic study was 60KM/H and the 85th percentile was 71.49 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 >
23	31	86	457	1209	1575	1237	732	223	82	26	9	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 5435 which represents 96 percent of the total classified vehicles. The number of Small Trucks in the study was 73 which represents 1 percent of the total classified vehicles. The number of Trucks/Buses in the study was 117 which represents 2 percent of the total classified vehicles. The number of Tractor Trailers in the study was 65 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 21.9	22.0 to >							
1907	3528	73	117	31	7	9	18							

CHART 2

HEADWAY

During the peak traffic period, on 2021-09-01 at [05:00 PM-05:15 PM] the average headway between vehicles was 5.455 seconds. During the slowest traffic period, on 2021-09-01 at [02:00 AM-02:15 AM] the average headway between vehicles was 900 seconds.

WEATHER

The roadway surface temperature over the period of the study varied between 23.00 and 39.00 degrees C.

Prepared For: Niagara Region

Prepared By: **PYRAMID Traffic Inc.**

Location: Four Mile Creek Rd, btwn Johanna Dr & Warner Rd

Start Date: Thursday Apr 29, 2021

Site ID: 610133

Interval: 15 min.

Period Ending	Channel 1 NB	Channel 2 SB	Hourly Summary	Period Ending	Channel 1 NB	Channel 2 SB	Hourly Summary
0:15	3	4		12:15	70	59	566
0:30	2	1		12:30	58	76	539
0:45	4	1		12:45	73	62	535
1:00	1	4	20	13:00	89	68	555
1:15	0	3	16	13:15	66	74	566
1:30	3	3	19	13:30	80	87	599
1:45	3	1	18	13:45	61	60	585
2:00	0	0	13	14:00	86	76	590
2:15	0	1	11	14:15	89	63	602
2:30	1	0	6	14:30	74	70	579
2:45	1	1	4	14:45	82	66	606
3:00	0	2	6	15:00	71	73	588
3:15	0	1	6	15:15	94	63	593
3:30	0	2	7	15:30	80	61	590
3:45	0	1	6	15:45	63	66	571
4:00	1	1	6	16:00	86	69	582
4:15	1	0	6	16:15	86	84	595
4:30	2	4	10	16:30	84	70	608
4:45	1	6	16	16:45	100	88	667
5:00	4	4	22	17:00	74	64	650
5:15	4	3	28	17:15	92	66	638
5:30	8	14	44	17:30	81	64	629
5:45	15	9	61	17:45	68	51	560
6:00	5	16	74	18:00	73	51	546
6:15	15	12	94	18:15	70	51	509
6:30	18	30	120	18:30	40	45	449
6:45	19	33	148	18:45	41	39	410
7:00	12	37	176	19:00	33	33	352
7:15	21	46	216	19:15	46	31	308
7:30	44	54	266	19:30	51	37	311
7:45	37	62	313	19:45	31	24	286
8:00	38	58	360	20:00	25	34	279
8:15	39	51	383	20:15	17	29	248
8:30	45	50	380	20:30	30	21	211
8:45	40	65	386	20:45	14	17	187
9:00	56	65	411	21:00	18	14	160
9:15	44	49	414	21:15	22	16	152
9:30	66	49	434	21:30	12	17	130
9:45	62	51	442	21:45	12	11	122
10:00	46	49	416	22:00	14	12	116
10:15	56	55	434	22:15	9	9	96
10:30	63	66	448	22:30	12	15	94
10:45	59	64	458	22:45	7	9	87
11:00	65	57	485	23:00	6	8	75
11:15	95	56	525	23:15	12	5	74
11:30	92	69	557	23:30	9	5	61
11:45	58	81	573	23:45	2	4	51
12:00	73	64	588	0:00	4	5	46

AM Peak: **588**

PM Peak: **667**

24 HR VOLUME: **7116**

Richard Li

From: Awil, Montaha <Montaha.Awil@niagararegion.ca>
Sent: August 19, 2025 8:37 AM
To: Richard Li
Cc: Rataul, Manny; Kanda, Seema
Subject: RE: Online Form - Traffic Data Request
Attachments: ATR - Four Mile Creek btwn York Rd and Townline Rd - 2021.pdf; Traffic Information Request Form-2025.pdf

Hello Richard

Please see attached for the requested ATR Data. Our accounting department will be mailing an official invoice to your office in the upcoming weeks. Please note that the traffic information request form is not an official invoice.

Please note that these were the counts that were carried out though the year, and the AADT can be calculated by averaging the 2 dates.

Kind regards

Montaha Awil
Road Safety Technician
Transportation Planning - Public Works
1815 Sir Isaac Brock Way. Thorold
Montaha.Awil@niagararegion.ca
Phone: (905) 980-6000 Ext 3712


From: Richard Li <richard@valcoustics.com>
Sent: Monday, August 18, 2025 6:04 PM
To: Awil, Montaha <Montaha.Awil@niagararegion.ca>
Subject: RE: Online Form - Traffic Data Request

**Niagara Region Security
Warning:**

This is an external email, use caution when opening attachments or clicking links

Hi Montaha,

Yes, I would like to purchase the data.

Thank you

Richard Qiang Li, P.Eng
Associate

A Trinity Consultants Canada Team 🍁

WorkingBuildings | Cerami | Longman Lindsey | Valcoustics | Jaffe Holden
Consultants in Acoustics, AV, IT & Security, Commissioning

30 Wertheim Court, Unit 25, Richmond Hill, Ontario, L4B 1B9 Canada
richard@valcoustics.com | 647-954-1538
Trinity Consultants | Built Environment

From: Awil, Montaha <Montaha.Awil@niagararegion.ca>

Sent: August 13, 2025 8:59 AM

To: Richard Li <richard@valcoustics.com>

Subject: RE: Online Form - Traffic Data Request

Hello Richard

We have compiled the requested ATR data. The cost of the ATR data comes to \$87.00 (HST Included); please confirm if you would like to proceed with the purchase.

Kind regards

Montaha Awil
Road Safety Technician
Transportation Planning - Public Works
1815 Sir Isaac Brock Way. Thorold
Montaha.Awil@niagararegion.ca
Phone: (905) 980-6000 Ext 3712


From: Niagara Region Website <webmaster@niagararegion.ca>

Sent: Thursday, July 31, 2025 2:04 PM

To: Kanda, Seema <Seema.Kanda@niagararegion.ca>; Rataul, Manny <Manny.Rataul@niagararegion.ca>; Awil, Montaha <Montaha.Awil@niagararegion.ca>

Subject: Online Form - Traffic Data Request

Traffic Data Request

To reply, copy the email address from below and put into 'To'. (if resident entered their email address)

Traffic data
24 hour automatic traffic recorder - speed, classification and volume

Development Application Number
Pinewood Homes (Niagara) Ltd.

Project or Property Development
Proposed Residential Development

Limits of Project or Street Address of Property Development
116 Four Mile Creek Road

Property City
Niagara-on-the-Lake

List the Road Segments or Intersections that Data is Requested For
Four Mile Creek Road, closest segment(s) to the subject site at 116 Four Mile Creek Road

Company
Valcoustics Canada Ltd

Company Address
30 Wertheim Court, Unit 25

Company City
Richmond Hill

Company Province
Ontario

Company Postal Code
L4B 1B9

Contact Name
Richard Li

Contact Phone
6479541538

Contact Email
richard@valcoustics.com

Agree to terms and conditions
Yes

Richard Li

From: Tai, Arthur (MTO) <Arthur.Tai@ontario.ca>
Sent: August 12, 2025 4:10 PM
To: Richard Li
Subject: RE: Traffic Data Request: HWY 405 (VCL#1250107.000 - 116 Four Mile Creek, NOL-Noise)

Importance: Low

Hi Richard,

In response to your request please find below the information available from this office for Highway 405 at Four Mile Creek Road:

2021 AADT = 7,150
2021 SADT = 7,750
2045 AADT = 20,900
2045 SADT = 22,600

Existing Number of Through Lanes = 4
Posted Speed = 100 km/hr
% Trucks (in 2021) = 21%

Please note that the above information is estimated based upon our current knowledge of the area, which may be subject to change in the future.

If you require further information, please don't hesitate to contact me.

Thanks,

Arthur

Arthur Tai | Team Leader

Systems Analysis and Forecasting Office,
Transportation Planning Branch,
Ontario Ministry of Transportation

T: 416-540-9421

From: Richard Li <richard@valcoustics.com>
Sent: Tuesday, August 12, 2025 1:54 PM
To: Tai, Arthur (MTO) <Arthur.Tai@ontario.ca>
Cc: Ian Matthew <ian@valcoustics.com>
Subject: RE: Traffic Data Request: HWY 405 (VCL#1250107.000 - 116 Four Mile Creek, NOL-Noise)

CAUTION -- EXTERNAL E-MAIL - Do not click links or open attachments unless you recognize the sender.

Hi Arthur,

I'm following up our traffic data request below sent on Julyu 30, 2025.

Thank you,

Richard Qiang Li, Ph.D., P.Eng.
Acoustical Engineer



30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
Tel: 905-764-5223 ext. 245
Direct: 647-954-1538
Fax: 905-764-6813
solutions@valcoustics.com

From: Richard Li
Sent: July 30, 2025 1:32 AM
To: Tai, Arthur (MTO) <Arthur.Tai@ontario.ca>
Cc: Ian Matthew <ian@valcoustics.com>
Subject: Traffic Data Request: HWY 405 (VCL#1250107.000 - 116 Four Mile Creek, NOL-Noise)

Hi Arthur,

We are working on noise study for a development located at 116 Four Mile Creek Rd, Niagara-on-the-Lake, to the north of Highway 405. Please see the Google Map image below for reference. Could you please provide the latest traffic data for Hwy 405, closest to the subject site? We need current and ultimate AADT/SADT, number of through lanes, posted speed and percentage of trucks.

Thank you,

Richard Qiang Li, Ph.D., P.Eng.
Acoustical Engineer



30 Wertheim Court, Unit 25
Richmond Hill, Ontario
Canada L4B 1B9
Tel: 905-764-5223 ext. 245
Direct: 647-954-1538
Fax: 905-764-6813
solutions@valcoustics.com



116 Four Mile Creek Rd

Building



Directions



Save



Nearby



Send to
phone



Share



116 Four Mile Creek Rd, Niagara-on-the-Lake
ON LOS 1J0



Suggest an edit on 116 Four Mile Creek Rd



Add a missing place



Add your business



Add a label



Your Maps activity

Photos



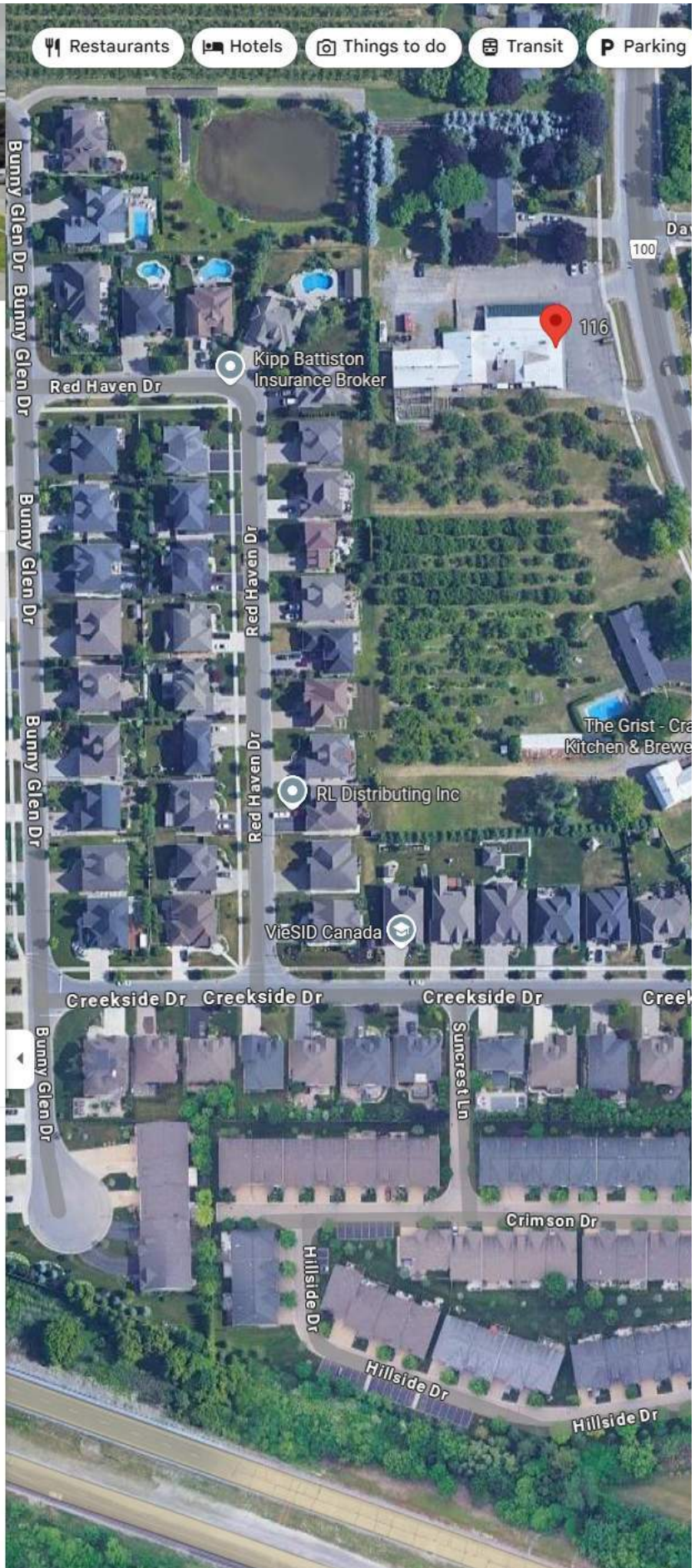
At this place

Nacho Business

4.9 ★★★★★ (231)

Mexican restaurant · Floor 1

Closed · Opens 9 a.m.



APPENDIX C

ENVIRONMENTAL NOISE GUIDELINES

APPENDIX C

ENVIRONMENTAL NOISE GUIDELINES

MINISTRY OF THE ENVIRONMENT, CONSERVATION AND PARKS (MECP)

Reference: MECP Publication NPC-300, October 2013: “*Environmental Noise Guideline, Stationary and Transportation Sources – Approval and Planning*”.

SPACE	SOURCE	TIME PERIOD	CRITERION
Living/dining, den areas of residences, hospitals, nursing homes, schools, daycare centres, etc.	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Living/dining, den areas of residences, hospitals, nursing homes, etc. (except schools or daycare centres)	Road	23:00 to 07:00	45 dBA
	Rail	23:00 to 07:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 5
Sleeping quarters	Road	07:00 to 23:00	45 dBA
	Rail	07:00 to 23:00	40 dBA
	Aircraft	24-hour period	NEF/NEP 0
Sleeping quarters	Road	23:00 to 07:00	40 dBA
	Rail	23:00 to 07:00	35 dBA
	Aircraft	24-hour period	NEF/NEP 0
Outdoor Living Areas	Road and Rail	07:00 to 23:00	55 dBA
Outdoor Point of Reception	Aircraft	24-hour period	NEF/NEP 30 [#]
	Stationary Source		
	Class 1 Area	07:00 to 19:00 ⁽¹⁾	50* dBA
		19:00 to 23:00 ⁽¹⁾	50* dBA
	Class 2 Area	07:00 to 19:00 ⁽²⁾	50* dBA
		19:00 to 23:00 ⁽²⁾	45* dBA
	Class 3 Area	07:00 to 19:00 ⁽³⁾	45* dBA
		19:00 to 23:00 ⁽³⁾	40* dBA
	Class 4 Area	07:00 to 19:00 ⁽⁴⁾	55* dBA
		19:00 to 23:00 ⁽⁴⁾	55* dBA

..../cont'd

SPACE	SOURCE	TIME PERIOD	CRITERION
Plane of a Window of Noise Sensitive Spaces	Stationary Source Class 1 Area	07:00 to 19:00 ⁽¹⁾	50* dBA
		19:00 to 23:00 ⁽¹⁾	50* dBA
		23:00 to 07:00 ⁽¹⁾	45* dBA
	Class 2 Area	07:00 to 19:00 ⁽²⁾	50* dBA
		19:00 to 23:00 ⁽²⁾	50* dBA
		23:00 to 07:00 ⁽²⁾	45* dBA
	Class 3 Area	07:00 to 19:00 ⁽³⁾	45* dBA
		19:00 to 23:00 ⁽³⁾	45* dBA
		23:00 to 07:00 ⁽³⁾	40* dBA
	Class 4 Area	07:00 to 19:00 ⁽⁴⁾	60* dBA
		19:00 to 23:00 ⁽⁴⁾	60* dBA
		23:00 to 07:00 ⁽⁴⁾	55* dBA

- # may not apply to in-fill or re-development.
 * or the minimum hourly background sound exposure $L_{eq(1)}$, due to road traffic, if higher.
 (1) Class 1 Area: Urban.
 (2) Class 2 Area: Urban during day; rural-like evening and night.
 (3) Class 3 Area: Rural.
 (4) Class 4 Area: Subject to land use planning authority's approval.

Reference: MECP Publication ISBN 0-7729-2804-5, 1987: "Environmental Noise Assessment in Land-Use Planning".

EXCESS ABOVE RECOMMENDED SOUND LEVEL LIMITS (dBA)	CHANGE IN SUBJECTIVE LOUDNESS ABOVE	MAGNITUDE OF THE NOISE PROBLEM	NOISE CONTROL MEASURES (OR ACTION TO BE TAKEN)
No excess (<55 dBA)	—	No expected noise problem	None
1 to 5 inclusive (56 to 60 dBA)	Noticeably louder	Slight noise impact	If no physical measures are taken, then prospective purchasers or tenants should be made aware by suitable warning clauses.
6 to 10 inclusive (61 - 65 dBA)	Almost twice as loud	Definite noise impact	Recommended.
11 to 15 inclusive (66 - 70 dBA)	Almost three times as loud	Serious noise impact	Strongly Recommended.
16 and over (>70 dBA)	Almost four times as loud	Very serious noise impact	Strongly Recommended (may be mandatory).

APPENDIX D

SAMPLE STAMSON CALCULATION

STAMSON 5.04 NORMAL REPORT Date: 02-09-2025 13:45:40
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: a_ef.te Time Period: Day/Night 16/8 hours
Description: **Predicted Sound Levels - East Facade**

Road data, segment # 1: Four Mile Cr (day/night)

Car traffic volume : 15787/848 veh/TimePeriod *
Medium truck volume : 1038/56 veh/TimePeriod *
Heavy truck volume : 301/16 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): 11220
Percentage of Annual Growth : 2.00
Number of Years of Growth : 24.00
Medium Truck % of Total Volume : 6.06
Heavy Truck % of Total Volume : 1.76
Day (16 hrs) % of Total Volume : 94.90

Data for Segment # 1: Four Mile Cr (day/night)

Angle1 Angle2 : -69.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 2 (Reflective ground surface)
Receiver source distance : 25.00 / 25.00 m
Receiver height : 11.40 / 11.40 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 2: 405 WB (day/night)

Car traffic volume : 5952/2975 veh/TimePeriod *
Medium truck volume : 396/198 veh/TimePeriod *
Heavy truck volume : 1187/593 veh/TimePeriod *
Posted speed limit : 100 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): 11300
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 5.25
Heavy Truck % of Total Volume : 15.75
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 2: 405 WB (day/night)

Angle1 Angle2 : -90.00 deg -21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 359.00 / 359.00 m
Receiver height : 11.40 / 11.40 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Road data, segment # 3: 405 EB (day/night)

Car traffic volume : 5952/2975 veh/TimePeriod *
Medium truck volume : 396/198 veh/TimePeriod *
Heavy truck volume : 1187/593 veh/TimePeriod *
Posted speed limit : 100 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): 11300
Percentage of Annual Growth : 0.00
Number of Years of Growth : 0.00
Medium Truck % of Total Volume : 5.25
Heavy Truck % of Total Volume : 15.75
Day (16 hrs) % of Total Volume : 66.67

Data for Segment # 3: 405 EB (day/night)

Angle1 Angle2 : -90.00 deg -21.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0 / 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 390.00 / 390.00 m
Receiver height : 11.40 / 11.40 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Four Mile Cr (day)

Source height = 1.15 m

ROAD (0.00 + 64.28 + 0.00) = 64.28 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-69	90	0.00	67.04	0.00	-2.22	-0.54	0.00	0.00	0.00	64.28

Segment Leq : 64.28 dBA

Results segment # 2: 405 WB (day)

Source height = 1.99 m

ROAD (0.00 + 50.56 + 0.00) = 50.56 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-21	0.35	74.48	0.00	-18.59	-5.33	0.00	0.00	0.00	50.56

Segment Leq : 50.56 dBA

Results segment # 3: 405 EB (day)

Source height = 1.99 m

ROAD (0.00 + 50.07 + 0.00) = 50.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-21	0.35	74.48	0.00	-19.08	-5.33	0.00	0.00	0.00	50.07

Segment Leq : 50.07 dBA

Total Leq All Segments: 64.62 dBA

Results segment # 1: Four Mile Cr (night)

Source height = 1.15 m

ROAD (0.00 + 54.58 + 0.00) = 54.58 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-69	90	0.00	57.34	0.00	-2.22	-0.54	0.00	0.00	0.00	54.58

Segment Leq : 54.58 dBA

Results segment # 2: 405 WB (night)

Source height = 1.99 m

ROAD (0.00 + 50.55 + 0.00) = 50.55 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-21	0.35	74.48	0.00	-18.59	-5.33	0.00	0.00	0.00	50.55

Segment Leq : 50.55 dBA

Results segment # 3: 405 EB (night)

Source height = 1.99 m

ROAD (0.00 + 50.07 + 0.00) = 50.07 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj	SubLeq
-90	-21	0.35	74.48	0.00	-19.08	-5.33	0.00	0.00	0.00	50.07

Segment Leq : 50.07 dBA

Total Leq All Segments: 57.01 dBA

TOTAL Leq FROM ALL SOURCES (DAY): 64.62
(NIGHT): 57.01