

TOWN OF CALEDON
PLANNING
RECEIVED
May 4, 2022

NOISE IMPACT STUDY

CHICKADEE LANE ROUNDING OUT AREA "B"
13935, 13951 AND 13999 CHICKADEE LANE, 0 KING STREET
AND
550, 600 AND 615 GLASGOW ROAD
PART OF LOT 10, CONCESSION 5 AND 6
TOWN OF CALEDON
TOWN FILE NO. POPA 2020-0001, 21T-20001C AND RZ 2020-0004

PREPARED FOR
ZANCOR HOMES (BOLTON) LTD.

UPDATED MAY 2ND 2022

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1. INTRODUCTION

This Noise Impact Study for the proposed Residential Subdivision was prepared by CANDEVCON LIMITED on behalf of Zancor Homes (Bolton) Ltd. The purpose of the Study is to investigate the potential noise impacts on the proposed Residential Subdivision and to provide recommendations with respect to noise control measures.

The proposed Residential Subdivision is located immediately north of Emil Kolb Parkway and east of Glasgow Road, in the Town of Caledon. **Figure 1** illustrates the location of the proposed Residential Subdivision. The proposed Residential Subdivision comprises 151 street townhouse units, one (1) proposed single detached unit and two (2) single detached units. The subject subdivision also comprises the road widening of Glasgow Road and four (4) proposed Local Roads (Street 'A', Street 'B', Street 'C' and Street 'D').

The surrounding land uses in the vicinity of the proposed Residential Subdivision are: existing residential and woodlands to the north; existing residential, woodlands and vacant lands to the east; Emil Kolb Parkway, woodlands and existing residential beyond to the south; and Glasgow Road, an existing park and woodlands to the west. The proposed Draft Plan of Subdivision is provided in **Figure 2**.

This Study defines the projected noise levels from the nearby roads, specifically Emil Kolb Parkway, and recommends noise mitigation measures to satisfy the requirements of the Ministry of the Environment, Conservation and Parks (MECP), the Region of Peel and the Town of Caledon.



**ZANCOR HOMES
(BOLTON) LTD.**

CHICKADEE GROVE COMMUNITY
PART OF LOT 10, CONCESSION 5 AND
PART OF LOT 10, CONCESSION 6
TOWN OF CALEDON

LOCATION PLAN

CEP CANDEVCON LIMITED
CONSULTING ENGINEERS AND PLANNERS

9358 GOREWAY DRIVE
TEL. (905) 794-0600

BRAMPTON, ONTARIO L6P 0M7
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DRAWN BY:

B.W.

PROJECT No.

W17003

CHECKED BY:

D.L.

FIGURE No.

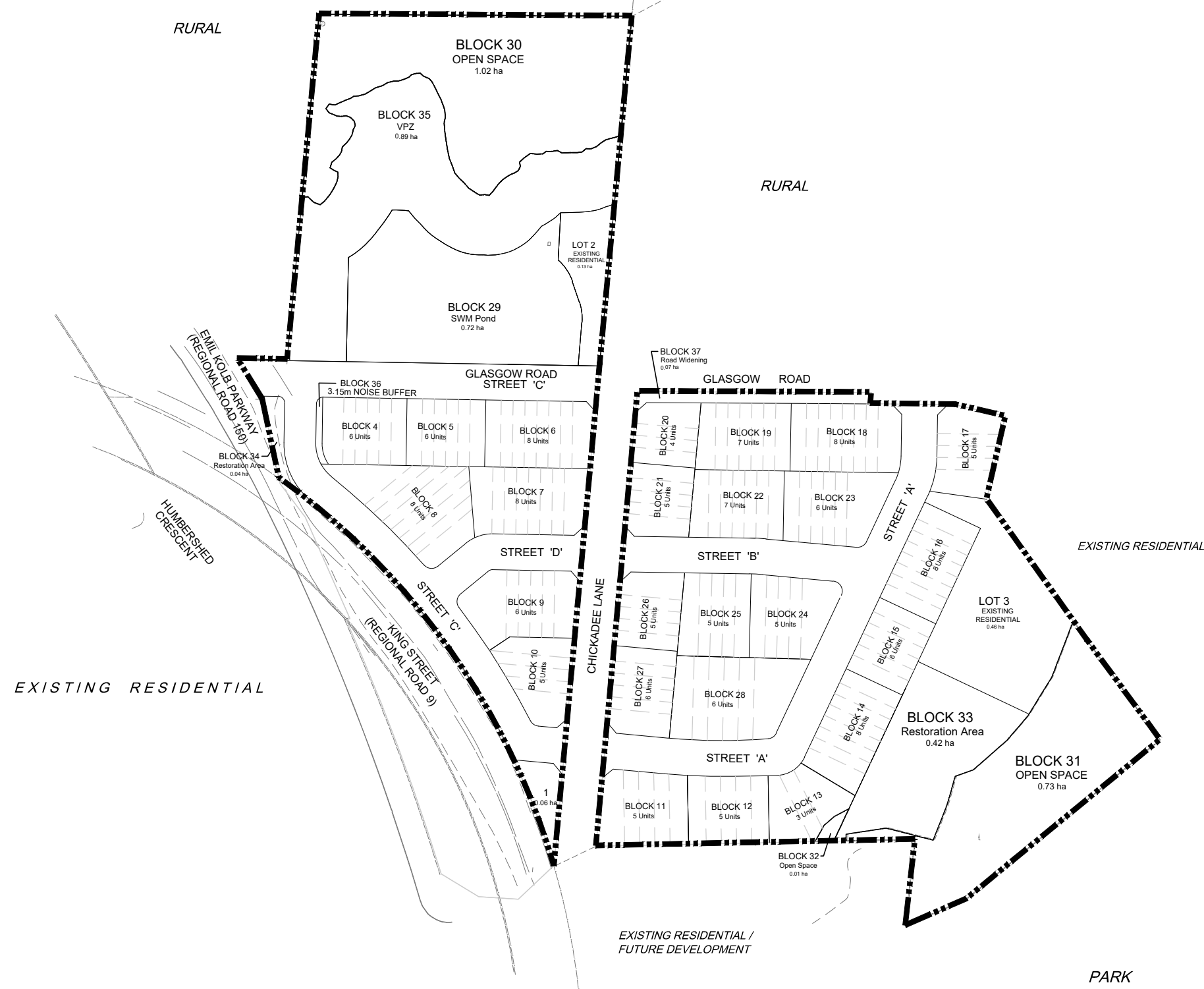
SCALE:

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DATE:

Mar. 26, 2019



ZANCOR HOMES (BOLTON) LTD.
PROPOSED RESIDENTIAL SUBDIVISION
CHICKADEE GROVE COMMUNITY
TOWN OF CALEDON

**DRAFT PLAN OF
SUBDIVISION**



CDG CANDEVCON LIMITED
CONSULTING ENGINEERS AND PLANNERS

TEL. (905) 794-0600 FAX (905) 794-0611

DATE:	MAY, 2nd 2022	JOB No.	W17003
DESIGN:	K.F.	FIG. No.	2
SCALE:	1:2500		

2. NOISE ASSESSMENT

2.1 Roadway Traffic Noise Sources

The principal roadway noise source that will impact the subject subdivision is the vehicular traffic on Emil Kolb Parkway to the south. The roadway traffic data for Emil Kolb Parkway was obtained from the Region of Peel. The roadway traffic data is included in **Appendix A**.

Although King Street is an arterial roadway that is within the vicinity of the proposed Residential Subdivision, the existing residential lands that are at the southeast corner of the King Street at Emil Kolb Parkway intersection will shield the proposed dwelling units from the roadway noise source on King Street. In addition, since Emil Kolb Parkway is between King Street and the proposed Residential Subdivision, the roadway noise source on Emil Kolb Parkway will drown out the roadway noise source on King Street.

Emil Kolb Parkway (Regional Road 150), within the vicinity of the proposed Residential Subdivision, is currently a four-lane arterial roadway with an urban cross-section and is under the jurisdiction of the Region of Peel. The roadway is to remain at four (4) lanes in the future. During the daytime, the total percentage of trucks is anticipated to be 10 percent with a heavy to medium truck ratio of 1.86 (65%/35% split). During the night-time, the total percentage of trucks is anticipated to be 13 percent with a heavy to medium truck ratio of 1.67 (63%/37% split). Emil Kolb Parkway has a posted speed limit of 60 km/h. To satisfy the requirements set forth by the Town of Caledon, the sound level analysis is to assume a traffic speed that is 10 km/h over the speed limit¹.

The percentages of daily traffic to be attributed to the daytime (7:00 a.m. to 11:00 p.m.) and the night-time (11:00 p.m. to 7:00 a.m.) periods were based on the recommended day-night traffic volume split of 90 percent - 10 percent from the Region of Peel.

Table 1 summarizes the projected traffic volumes used in the analysis.

¹ Development Standards Manual Version 5.0, Town of Caledon, 2019.

2. NOISE ASSESSMENT (CONT'D)

2.1 Roadway Traffic Noise Sources (Cont'd)

**TABLE 1
PROJECTED (ULTIMATE) ROADWAY TRAFFIC VOLUMES**

Road Characteristic	Emil Kolb Parkway
Jurisdiction	Region of Peel
Ultimate No. Lanes	4
Ultimate AADT	32,400
Traffic Speed	70 km/h (See Note 1)
% Day Trucks	
Medium	3.50%
Heavy	6.50%
% Night Trucks	
Medium	4.90%
Heavy	8.20%
Day/Night Volume Ratio	90%/10%

Note 1: The traffic speed is assumed to be 10 km/h over the speed limit.

2.2 Other Noise Sources

The subject subdivision is not located near any railways or major industrial facilities and is therefore not affected by rail or industrial noise sources.

2. NOISE ASSESSMENT (CONT'D)

2.3 Aircraft Noise

The 2000 Noise Exposure Forecast and the 1996 Noise Exposure Projections/2000 Noise Exposure Forecast Composite Noise Contour Maps for the Lester B. Pearson International Airport were obtained from Transport Canada. Aircraft noise exposure is rated by Transport Canada in terms of Noise Exposure Forecasts (NEF) for five-year time periods and Noise Exposure Projections (NEP) for longer time periods. NEF contours are available for 2000 and NEP contours for 1996.

The proposed Residential Subdivision is well outside the NEP/NEF 25 contour (the lowest threshold of Noise Exposure Projections); therefore, there are no specific noise concerns or requirements in relation to the attenuation of aircraft noise for the proposed Residential Subdivision.

2.4 Noise Criteria

Noise impacts from the road traffic were assessed using the principles and procedures in the MECP's Environmental Noise Guideline² and the Town of Caledon's Development Standards Manual. The sound level limits contained in the "Environmental Noise Guideline" document, adopted by the Region of Peel, have been used as criteria for acceptability. The criteria is summarized in **Table 2**.

² Environmental Noise Guideline, Stationary and Transportation Sources-Approval and Planning, Publication NPC-300: Ministry of the Environment, Conservation and Parks August 2013 and General Guidelines for the Preparation of Acoustical Reports in the Region of Peel- November 2012.

2. NOISE ASSESSMENT (CONT'D)

2.4 Noise Criteria (Cont'd)

TABLE 2
REGION OF PEEL NOISE CRITERIA (ROAD TRAFFIC)

Location	Outdoor	Indoor
Outdoor Living Area	55 dBA (7 am - 11 pm) L _{eq} (16 hour)	N/A
Bedroom Window	50 dBA (11 pm - 7 am) L _{eq} (8 hour)	40 dBA (11 pm - 7 am) L _{eq} (8 hour)
Living Room Window	55 dBA (7 am - 11 pm) L _{eq} (16 hour)	45 dBA (7 am - 11 pm) L _{eq} (16 hour)

An outdoor living area (OLA) in a residential subdivision generally refers to a rear yard. A minimum rear yard depth of 7.5m, measured from the rear face of the building, is required in the Town of Caledon.

As per the requirements set forth by the Town of Caledon, where the noise levels exceed the 55 dBA L_{eq} sound level limit, noise mitigation measures such as barriers are required to attenuate the sound levels to the 55 dBA L_{eq} sound level limit (Town approval is required where sound levels exceed the limit by no more than 5 dBA). If the town approves an outdoor living area with a projected daytime sound level that exceeds the noise criteria by no more than 5 dBA, a warning clause in all Offers of Purchase and Sale for the specific lot/unit is required. In addition, where the noise attenuating barrier is adjacent to public property, a warning clause in the Development Agreement and in all Offers of Purchase and Sale for the specific lots/units are required. The wording of such warning clauses is provided in **Appendix B**.

2. NOISE ASSESSMENT (CONT'D)

2.4 Noise Criteria (Cont'd)

For residential buildings, the MECP have ventilation requirements which are based on the sound level at the exterior building facade. Where the daytime (7:00-23:00) sound level in the plane of a bedroom or living/dining room window is greater than 65 dBA L_{eq} and/or where the night-time (23:00-7:00) sound level in the plane of a bedroom or living/dining room window is greater than 60 dBA L_{eq} , central air conditioning for the specific lots/units are required. Where the daytime (7:00-23:00) sound level in the plane of a bedroom or living/dining room window is greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq} , and/or where the night-time (23:00-7:00) sound level in the plane of a bedroom or living/dining room window is greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq} , forced air heating with provision for central air conditioning for the specific lots/units are required. Residences with ventilation requirements must provide a warning clause in all Offers of Purchase and Sale.

In addition, where the daytime (7:00-23:00) sound levels outside the bedroom or living/dining room window exceed 65 dBA L_{eq} and/or the night-time (23:00-7:00) sound levels outside the bedroom or living/dining room window exceed 60 dBA L_{eq} , building components including windows, walls and doors, where applicable, should be designed so that the indoor sound levels comply with the sound level limit criteria specified in **Table 2**.

2. NOISE ASSESSMENT (CONT'D)

2.5 Projected Sound Levels

L_{eq} sound levels caused by the vehicular traffic on Emil Kolb Parkway were projected for specific units at the rear yard and at the building façade. All of the sound level projections were calculated using the computerized model³ of the MECP's ORNAMENT procedure⁴.

Daytime sound levels were projected for an outdoor living area at a point located 3m from the rear wall of the building facade and 1.5m above the ground. In addition, daytime and night-time sound levels were projected for the second storey building facade at a height of 4.5 m above the ground.

Since the buildings are not sited yet on the individual lots/blocks, typical single detached 2- storey house and typical townhouse configurations and setbacks were assumed. It was also assumed that the building footprint would be setback approximately 7.5m (25 feet) from the street line for houses and 6m (20 feet) from the street line for townhouses.

The results from the Stamson 5.04 model for the daytime and night-time periods are summarized in **Table 3**, assuming no acoustical barriers. Typical computer reports are included in **Appendix C**.

³ STAMSON 5.04 computer model, Ministry of the Environment, Conservation and Parks, 2000.

⁴ ORNAMENT, Ontario Road Noise Analysis Method for Environment and Transportation, Technical Document, Ministry of the Environment, Conservation and Parks, 1989.

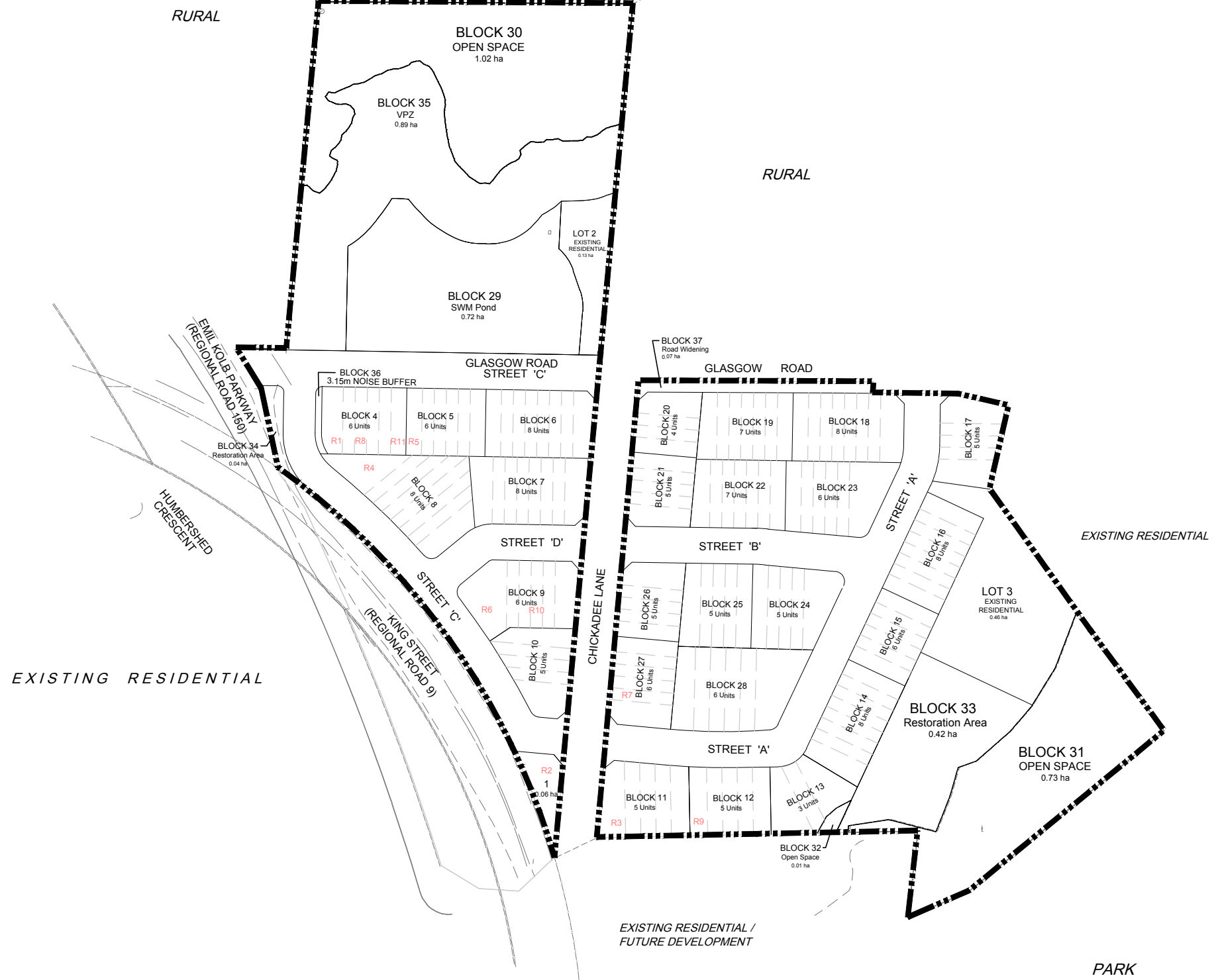
2. NOISE ASSESSMENT (CONT'D)

2.5 Projected Sound Levels (Cont'd)

TABLE 3
PROJECTED L_{eq} SOUND LEVELS - WITHOUT ACOUSTICAL BARRIER

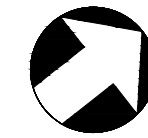
Location	Daytime L_{eq} Rear Yard	Night-time L_{eq} Facade	Daytime L_{eq} Facade
R1	69 dBA	64 dBA	69 dBA
R2	61 dBA	56 dBA	62 dBA
R3	58 dBA	53 dBA	58 dBA
R4	53 dBA	63 dBA	69 dBA
R5	52 dBA	49 dBA	55 dBA
R6	60 dBA	56 dBA	61 dBA
R7	47 dBA	49 dBA	55 dBA
R8	62 dBA	57 dBA	62 dBA
R9	55 dBA	50 dBA	56 dBA
R10	54 dBA	51 dBA	56 dBA
R11	56 dBA	52 dBA	58 dBA

Figure 3 illustrates the receptor locations which were analysed in this study.



**ZANCOR HOMES (BOLTON) LTD.
 PROPOSED RESIDENTIAL SUBDIVISION
 CHICKADEE GROVE COMMUNITY
 TOWN OF CALEDON**

RECEPTOR LOCATION PLAN



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 CONSULTING ENGINEERS AND PLANNERS

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DATE: MAY, 2nd 2022	JOB No. W17003
DESIGN: K.F.	FIG. No. 3
SCALE: 1:2500	

3. NOISE ATTENUATION MEASURES

3.1 Outdoor Recreation Areas

The data presented in **Table 3** indicates that the daytime rear yard sound levels will exceed the 55 dBA L_{eq} limit for Lot 1, all of the units in Blocks 4, 10 and 11 and the three (3) units in Block 9 that are the closest to Emil Kolb Parkway.

Therefore, based on the Town of Caledon requirements, noise mitigation measures such as barriers are required to attenuate the sound levels to within 55 dBA L_{eq} .

3.2 Minimum Barrier Requirements

Based on the sound level analysis summarized in **Table 4**, to meet the outdoor daytime sound level requirements at the rear yards for Blocks 4 and 9 to 11 and Lot 1, the following acoustic fence barriers are proposed:

- A 3.1m high acoustic barrier (consisting of a 2.4m high acoustic fence and a 0.7m high berm) along the south and east property lines of Block 4.
- A 2.2m high fence along the south property line of Blocks 9 and 10,
- A 2.2m high fence along the south property line of Lot 1,
- A 1.8m high fence along the south and east property lines of Block 11.

With the proposed acoustic fence barriers, with the exception of the three (3) units in Block 4 that are the closest to Emil Kolb Parkway, the outdoor living areas will have a daytime sound level within the 55 dBA L_{eq} sound level limit. For the three (3) units in Block 4 that are the closest to Emil Kolb Parkway, with the proposed acoustic barrier, sound levels at the outdoor living area exceed the limit by no more than 5 dBA. As per the Town of Caledon requirements, outdoor living areas with daytime sound levels that exceed the limit by no more than 5 dBA will need the Town's approval. For the three (3) units in Block 4 that are the closest to Emil Kolb Parkway, since the daytime sound level will exceed the noise criteria by no more than 5 dBA, a warning clause in all Offers of Purchase and Sale for the units is required.

3. NOISE ATTENUATION MEASURES (CONT'D)

3.2 Minimum Barrier Requirements (Cont'd)

In addition, as per the Town of Caledon requirements, for the dwelling units with portions of a proposed acoustic fence barrier that is adjacent to public property, a warning clause in the Development Agreement and in all Offers of Purchase and Sale for the specific lots/units are required.

TABLE 4
PROJECTED L_{eq} SOUND LEVELS - WITH ACOUSTICAL BARRIERS

Location	Recommended Barrier Height	Daytime L_{eq} Rear Yard
R1	3.1m	60 dBA
R2	2.2m	55 dBA
R3	1.8m	54 dBA
R6	2.2m	55 dBA
R8	2.4m	56 dBA

The MECP's guidelines require that acoustical fencing be solid, with no gaps or holes and have a minimum surface density of 20 kg/m² (4 lb/ft²). Appropriate treatment of attenuation barriers at discontinuities and points of termination involves extending the barrier to approximately the midpoint of the house; returning to the side wall of the house or extending the sound barrier for a minimum of 3 times the distance between the side wall and barrier, past the rear wall of the house.

3. NOISE ATTENUATION MEASURES (CONT'D)

3.3 Ventilation and Warning Clause Requirements

For residential buildings, the MECP have ventilation requirements which are based on the sound level at the exterior building facade.

Based on the sound level analysis summarized in **Table 3**, for the two (2) units in Block 4 that are the closest to Emil Kolb Parkway and for all of the dwelling units in Block 8, the daytime sound level will be greater than 65 dBA L_{eq} and/or the night-time sound level will be greater than 60 dBA L_{eq} . Therefore, the dwelling units will require mandatory air conditioning.

For Lot 1, the four (4) units in Block 4 that are the farthest away from Emil Kolb Parkway, the four (4) units in Block 9 that are the closest to Emil Kolb Parkway, all of the units in Blocks 10 and 11, the unit in Block 12 that is the closest to Emil Kolb Parkway and the unit in Block 27 that is closest to Emil Kolb Parkway, since the night-time sound levels in the plane of the bedroom or living/dining room window are greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq} and/or the daytime sound levels in the plane of the bedroom or living/dining room window are greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq} , forced air heating with provision for central air conditioning is required.

The sound levels at the remaining units will be below the noise criteria of 50 dBA L_{eq} (night-time) and 55 dBA L_{eq} (daytime); Therefore, no noise mitigation measures are required.

3. NOISE ATTENUATION MEASURES (CONT'D)

3.4 Facade Components

To comply with the MECP's interior sound level criterion of 40 dBA L_{eq} (night-time) for bedrooms and 45 dBA L_{eq} (daytime) for living rooms, STC rating requirements were examined for building facade components, namely windows, walls and doors.

The analysis indicates that the two (2) units in Block 4 that are the closest to Emil Kolb Parkway and all of the dwelling units in Block 8 will have daytime sound levels that are greater than 65 dBA L_{eq} and/or night-time sound levels that are greater than 60 dBA L_{eq} . Therefore, special building components will be required to satisfy the MECP criteria. Special building components are to be reviewed when the proposed lot configuration and the proposed grading becomes available.

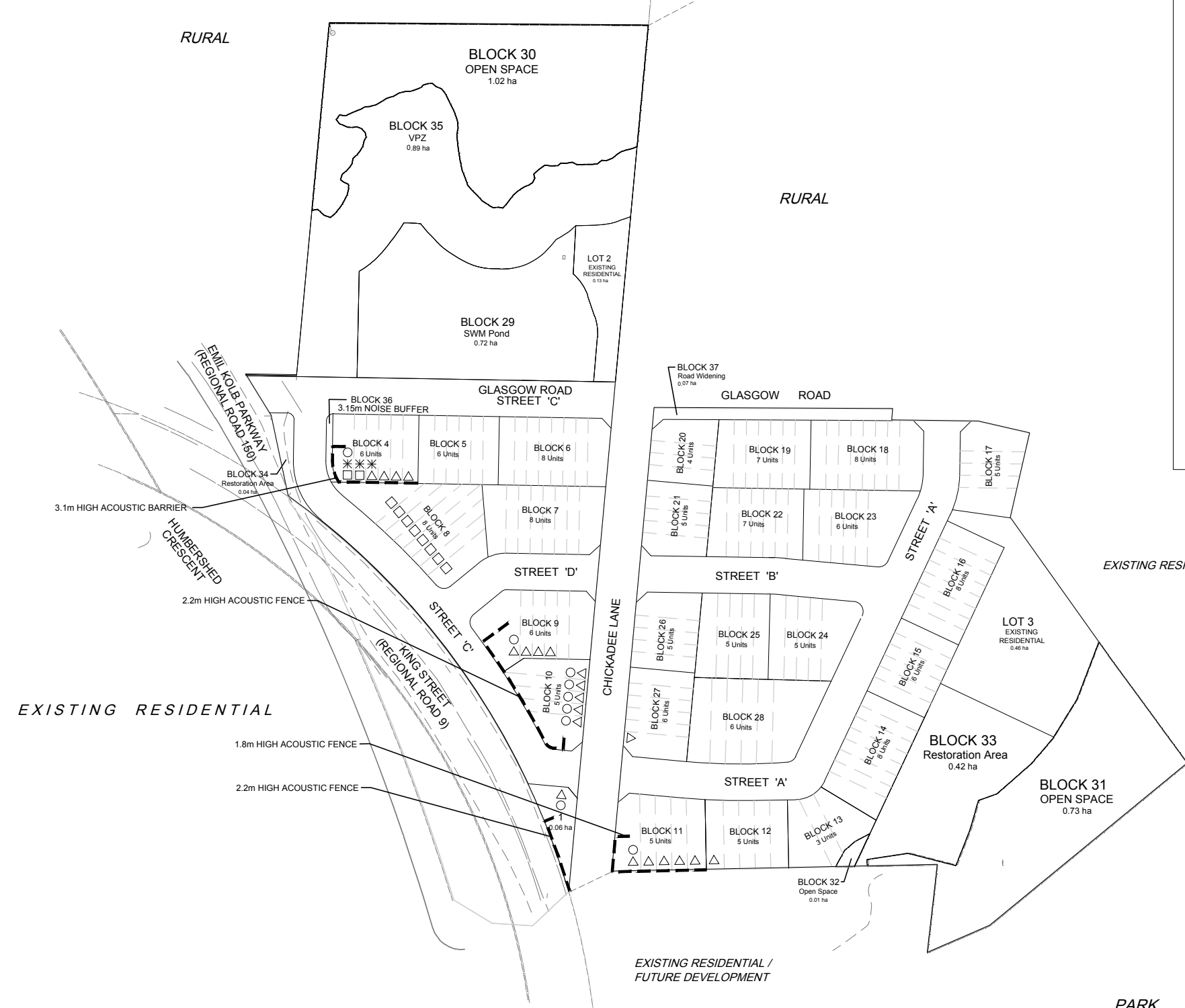
4. SUMMARY

Figure 4 illustrates the location and the length of the barriers along with the special ventilation and warning clause requirements for the appropriate units within the proposed Residential Subdivision.











Based on the proposed Noise Mitigation Plan, a 3.1m high acoustic barrier (consisting of a 2.4m high acoustic fence and a 0.7m high berm) along the south and east property lines of Block 4, a 2.2m high fence along the south property line of Blocks 9 and 10, a 2.2m high fence along the south property line of Lot 1 and a 1.8m high fence along the south and east property lines of Block 11 are required. A warning clause is required for the dwelling units with portions of a proposed acoustic fence barrier that is adjacent to public property. The wording of such warning clauses is provided in **Appendix B**.

With the proposed acoustic fence barriers, with the exception of the three (3) units in Block 4 that are the closest to Emil Kolb Parkway, the outdoor living areas will have a daytime sound level within the 55 dBA L_{eq} sound level limit. For the three (3) units in Block 4 that are the closest to Emil Kolb Parkway, with the proposed acoustic barrier, sound levels at the outdoor living area exceed the limit by no more than 5 dBA. As per the Town of Caledon requirements, outdoor living areas with daytime sound levels that exceed the limit by no more than 5 dBA will need the Town's approval. Based on MECP requirements, for the three (3) units in Block 4 that are the closest to Emil Kolb Parkway, since the daytime sound level will exceed the noise criteria by no more than 5 dBA, a warning clause in all Offers of Purchase and Sale for the units is required.

For the two (2) units in Block 4 that are the closest to Emil Kolb Parkway and for all of the dwelling units in Block 8, the daytime sound level will be greater than 65 dBA L_{eq} and/or the night-time sound level will be greater than 60 dBA L_{eq} . Therefore, the dwelling units will require mandatory air conditioning and special building components. Special building components are to be reviewed when the proposed lot configuration and the proposed grading becomes available.

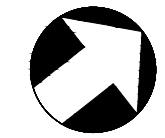


LEGEND:

-  ● WARNING CLAUSE "B".
-  ● ROAD TRAFFIC MAY CONTINUE TO BE OF CONCERN DESPITE INCLUSION OF NOISE CONTROL FEATURES.
-  ● WARNING CLAUSE "C".
-  ● PROVISION FOR AIR CONDITIONING.
-  ● WARNING CLAUSE "D".
-  ● MANDATORY AIR CONDITIONING.
-  ● SPECIAL BUILDING COMPONENTS.
-  ● WARNING CLAUSE "E".
-  ● THIS NOISE BARRIER IS THE SOLE RESPONSIBILITY OF THE OWNER. IT IS THE OWNER'S RESPONSIBILITY TO REPAIR OR REPLACE HIS/HER SECTION OF THE WALL.
-  ● PROPOSED ACOUSTIC BARRIER.

**ZANCOR HOMES (BOLTON) LTD.
 PROPOSED RESIDENTIAL SUBDIVISION
 CHICKADEE GROVE COMMUNITY
 TOWN OF CALEDON**

**NOISE MITIGATION
 PLAN**



CANDEVCON LIMITED
 CONSULTING ENGINEERS AND PLANNERS

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DATE: MAY, 2nd 2022	JOB No. W17003
DESIGN: K.F.	FIG. No. 4
SCALE: 1:2500	

4. SUMMARY (CONT'D)

For Lot 1, the four (4) units in Block 4 that are the farthest away from Emil Kolb Parkway, the four (4) units in Block 9 that are the closest to Emil Kolb Parkway, all of the units in Blocks 10 and 11, the unit in Block 12 that is the closest to Emil Kolb Parkway and the unit in Block 27 that is closest to Emil Kolb Parkway, since the night-time sound levels in the plane of the bedroom or living/dining room window are greater than 50 dBA L_{eq} and less than or equal to 60 dBA L_{eq} and/or the daytime sound levels in the plane of the bedroom or living/dining room window are greater than 55 dBA L_{eq} and less than or equal to 65 dBA L_{eq} , forced air heating with provision for central air conditioning is required.

Based on the above analysis, with the measures given, the proposed Residential Subdivision will satisfy the requirements of the Ministry of the Environment, Conservation and Parks, The Region of Peel and the Town of Caledon.

This Report was prepared by:

CANDEVCON LIMITED



**Brian Wong, P. Eng.
Intermediate Transportation Engineer**



**David Lee, P. Eng.
Project Manager**



APPENDIX A

Roadway Traffic Volume Data

February 13th, 2019

Brian Wong
Candevcon
Traffic Data Request

Brian:

As per your request, we are providing the following traffic data.

Emil Kolb Pkwy, north of King Street West

	Existing	Planned/Ultimeate
24 Hour Traffic Volume	11,681	32,400
# of Lanes	4	4
Day/Night Split	90/10	90/10
Day Trucks (% of Total Volume)	3.5% Medium 6.5% Heavy	3.5% Medium 6.5% Heavy
Night Trucks (% of Total Volume)	4.9% Medium 8.2% Heavy	4.9% Medium 8.2% Heavy
Right-of-Way Width	45 metres	
Posted Speed Limit	60 km/h	

If you require further assistance, please contact me at (905) 791-7800 ext. 8594

Regards,

Parsham Bahrami
Transportation Planner, Infrastructure Planning & Design
Transportation Division, Public Works, Region of Peel

10 Peel Centre Drive, Suite B, 4th Floor, Brampton, ON, L6T 4B9
E: parshan.bahrami@peelregion.ca • W: 905-791-7800 x8594

Public Works

10 Peel Centre Dr., Suite B, Brampton, ON L6T 4B9
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APPENDIX B

Warning Clauses

APPENDIX B
Warning Clauses

Warning Clause “B”

“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 on occasions interfere with some activities of the dwelling occupants as the sound levels exceed the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks.”

Warning Clause “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, Conservation and Parks.”

Warning Clause “D”

“This dwelling unit has been supplied with a central air conditioning system which will allow windows and exterior doors to remain closed, thereby ensuring that the indoor sound levels are within the sound level limits of the Municipality and the Ministry of the Environment, Conservation and Parks. The air cooled condenser unit is located in a noise insensitive area and has a maximum ARI rating of 7.6 Bels for 3.5 tons or less.”

APPENDIX B
Warning Clauses (Cont'd)

Warning Clause “E”

“Purchasers/tenants are advised that a noise barrier wall is located at the rear/side of this property. The owner of this property also owns his/her section of the noise barrier wall. The noise barrier wall is not in public ownership. Monitoring, maintenance, inspection, repair and replacement of this noise barrier wall, including any associated costs, are the sole responsibility of the property owner. The Town of Caledon is in no way responsible for this noise barrier wall. Should this noise barrier wall fail, it is the property owner’s responsibility to repair or replace his/her section of the wall, at his/her cost. If the property owner fails to maintain the noise barrier wall, the Town of Caledon will notify the requirement to repair in writing. If the property owner does not comply with the Town’s request, the Town will correct the deficiency and bill the property owner accordingly”

APPENDIX C

Stamson 5.04 Sound Level Calculations

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Proposed Subdivision, Receptor Location 2	
Daytime, Rear Yard, No acoustic barrier	C-1
Night-time, Facade, No acoustic barrier	C-2
Daytime, Facade, No acoustic barrier	C-3
Daytime, Rear Yard, 2.2m high acoustic barrier	C-4

STAMSON REPORT - RECEPTOR LOCATION 2
[DAYTIME, REAR YARD, NO ACOUSTIC BARRIER]

STAMSON 5.0 NORMAL REPORT Date: 29-06-2021 12:42:43
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2d.te Time Period: 16 hours
Description:

Road data, segment # 1: Chickadee

Car traffic volume : 26244 veh/TimePeriod *
Medium truck volume : 1021 veh/TimePeriod *
Heavy truck volume : 1895 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Chickadee

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 80.00 m
Receiver height : 1.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00

Results segment # 1: Chickadee

Source height = 1.60 m

ROAD (0.00 + 61.26 + 0.00) = 61.26 dBA

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

-90 90 0.66 74.76 0.00 -12.05 -1.45 0.00 0.00 0.00
61.26

Segment Leq : 61.26 dBA

Total Leq All Segments: 61.26 dBA

TOTAL Leq FROM ALL SOURCES: 61.26

STAMSON REPORT - RECEPTOR LOCATION 2
 [NIGHT-TIME, FACADE, NO ACOUSTIC BARRIER]

STAMSON 5.0 NORMAL REPORT Date: 29-06-2021 12:46:07
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2n.te Time Period: 8 hours
 Description:

Road data, segment # 1: Chickadee

 Car traffic volume : 2816 veh/TimePeriod *
 Medium truck volume : 159 veh/TimePeriod *
 Heavy truck volume : 266 veh/TimePeriod *
 Posted speed limit : 70 km/h
 Road gradient : 0 %
 Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Chickadee

 Angle1 Angle2 : -90.00 deg 90.00 deg
 Wood depth : 0 (No woods.)
 No of house rows : 0
 Surface : 1 (Absorptive ground surface)
 Receiver source distance : 79.00 m
 Receiver height : 4.50 m
 Topography : 1 (Flat/gentle slope; no barrier)
 Reference angle : 0.00

Results segment # 1: Chickadee

 Source height = 1.69 m

ROAD (0.00 + 56.48 + 0.00) = 56.48 dBA
 Angle1 Angle2 Alpha RefLeq P.Adj D.Adj F.Adj W.Adj H.Adj B.Adj
 SubLeq

 -90 90 0.56 69.06 0.00 -11.29 -1.29 0.00 0.00 0.00
 56.48

Segment Leq : 56.48 dBA

Total Leq All Segments: 56.48 dBA

TOTAL Leq FROM ALL SOURCES: 56.48

STAMSON REPORT - RECEPTOR LOCATION 2
 [DAYTIME, FACADE, NO ACOUSTIC BARRIER]

STAMSON 5.0 NORMAL REPORT Date: 29-06-2021 12:44:57
 MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2df.te Time Period: 16 hours
 Description:

Road data, segment # 1: Chickadee

```
-----
Car traffic volume : 26244 veh/TimePeriod *
Medium truck volume : 1021 veh/TimePeriod *
Heavy truck volume : 1895 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)
```

Data for Segment # 1: Chickadee

```
-----
Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 79.00 m
Receiver height : 4.50 m
Topography : 1 (Flat/gentle slope; no barrier)
Reference angle : 0.00
```

Results segment # 1: Chickadee

Source height = 1.60 m

ROAD (0.00 + 62.15 + 0.00) = 62.15 dBA

Angle1	Angle2	Alpha	RefLeq	P.Adj	D.Adj	F.Adj	W.Adj	H.Adj	B.Adj
-90	90	0.57	74.76	0.00	-11.31	-1.30	0.00	0.00	0.00

SubLeq
62.15

Segment Leq : 62.15 dBA

Total Leq All Segments: 62.15 dBA

TOTAL Leq FROM ALL SOURCES: 62.15

STAMSON REPORT - RECEPTOR LOCATION 2
[DAYTIME, REAR YARD, 2.2m HIGH ACOUSTIC BARRIER]

STAMSON 5.0 NORMAL REPORT Date: 01-09-2021 08:44:39
MINISTRY OF ENVIRONMENT AND ENERGY / NOISE ASSESSMENT

Filename: r2db.te Time Period: 16 hours
Description:

Road data, segment # 1: Chickadee

Car traffic volume : 26244 veh/TimePeriod *
Medium truck volume : 1021 veh/TimePeriod *
Heavy truck volume : 1895 veh/TimePeriod *
Posted speed limit : 70 km/h
Road gradient : 0 %
Road pavement : 1 (Typical asphalt or concrete)

Data for Segment # 1: Chickadee

Angle1 Angle2 : -90.00 deg 90.00 deg
Wood depth : 0 (No woods.)
No of house rows : 0
Surface : 1 (Absorptive ground surface)
Receiver source distance : 80.00 m
Receiver height : 1.50 m
Topography : 2 (Flat/gentle slope; with
barrier)
Barrier angle1 : -90.00 deg Angle2 : 90.00 deg
Barrier height : 2.20 m
Barrier receiver distance : 2.20 m
Source elevation : 0.00 m
Receiver elevation : 0.00 m
Barrier elevation : 0.00 m
Reference angle : 0.00

Results segment # 1: Chickadee

Source height = 1.60 m

Barrier height for grazing incidence

Source ! Receiver ! Barrier ! Elevation of
Height (m) ! Height (m) ! Height (m) ! Barrier Top (m)
-----+-----+-----+-----
1.60 ! 1.50 ! 1.50 ! 1.50

ROAD (0.00 + 54.83 + 0.00) = 54.83 dBA

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

-90 90 0.53 74.76 0.00 -11.09 -1.22 0.00 0.00 -7.62
54.83

Segment Leq : 54.83 dBA

Total Leq All Segments: 54.83 dBA

TOTAL Leq FROM ALL SOURCES: 54.83